www.abcnc.pl

POWRÓT DO STRONY GŁÓWNEJ

TABLE OF CONTENTS

HOW TO USE THIS PRODUCT GUIDE

THIS PRODUCT GUIDE PROVIDES A COMPREHENSIVE OVERVIEW TO ORDERING AND SPECIFYING DIAMOND® BRAND ROLLER CHAIN. USE IT TO:

Learn how Diamond chain is manufactured to be the longest lasting chain.

Identify and select replacement chain for existing ANSI drive, attachment or special chain applications.

Select the most appropriate chain for new applications.

Learn how to maintain Diamond chain.

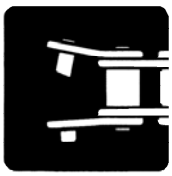
Order chains, components, tools and accessories.

Consult the Table of Contents for a listing of general sections, or select individual products or subjects from the index at the end of this product guide.

ORDERING

For complete ordering information, terms and conditions, please see the Ordering section noted in the table of contents.

WARNING



Chain will break if misused or abused.

Serious injury or property damage can result.

Select, install, guard and maintain chain in accordance with equipment manufacturer and Diamond Chain Company's recommendations.

Read assembly instructions with carton **before** installation. For further information request DCC Bulletin 1067 or other literature related to your particular application.

402 Kentucky Avenue, Indianapolis, Indiana 46225-1174 • 1-800-U.S. CHAIN

Nothing outlasts a Diamond.®
www.diamondchain.com

FROM STANDARD DRIVE CHAINS TO SPECIALTY APPLICATIONS, NOTHING OUTLASTS A DIAMOND.

DIAMOND CHAIN HISTORY

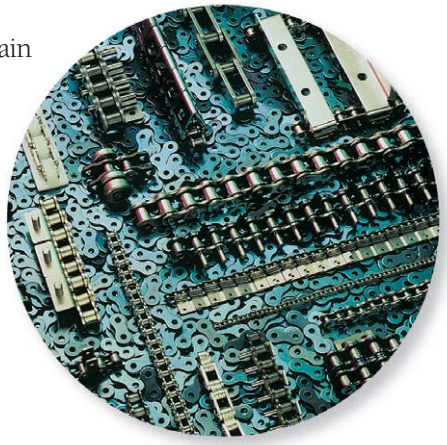
Diamond Chain has a long history of producing the highest quality roller chain. As one of the oldest roller chain manufacturers in the world, Diamond has learned a few things over the years about improving the quality, and ultimately the value, of every chain it makes. The following pages provide a glimpse into that history and the lessons that Diamond has learned that are built into the best roller chain available.

Arthur C. Newby, Edward C. Fletcher and Glenn Howe, with a $5,000 investment, started what was to become the Diamond Chain Company by forming The Indianapolis Chain & Stamping Company on December 24, 1890. They took the diamond as their trademark because it symbolized perfection and acted as a constant reminder of their endeavor. In its humble beginnings, The Indianapolis Chain & Stamping Company (IC&SC) specialized in bicycle chain. As one of the first companies in the United States to produce bicycle chain, IC&SC prospered, outgrowing its original quarters and moving to larger facilities in 1892.

In 1901, when the bicycle chain business slumped, IC&SC rebounded by developing and introducing to industry a twin-roller roller chain.

From December 17, 1903, when Diamond chain was used on the Wright brothers' first flying machine, to the present, Diamond Chain has been a major supplier of chain for aircraft, motorcycles, engines and various other uses.

In 1950 Diamond Chain was acquired by American Steel Foundries, Inc. – the largest steel foundry in the world, and in 1962 the name of the parent company was changed to AMSTED Industries Incorporated.



During Diamond's many years of producing the highest quality roller chain they have tested, examined and discovered many developments which have significantly increased the performance of their roller chains. These developments have rarely become "product lines" but rather, "product improvements" which have been incorporated into daily production so that all customers can benefit, without special requests or premium prices.

In addition to continued product improvement, Diamond has introduced a detailed roller chain Drive Selection Software program. This software will improve the way chain is specified by engineers and designers by simplifying a multitude of sometimes difficult calculations and equations.

In today's environment, Diamond, while focusing on the increased use of technology, still operates under the same inventive, grassroots philosophy it was founded on – providing its customers with a high-quality product possessing the best balance of performance, reliability, price and delivery that meet or exceed their requirements.

Micropitch® chain is constructed of stainless steel and is designed to deliver big results in smaller applications. The attachment chain shown is designed for the plastic film industry and is yet another special application chain designed for a specific purpose.

TAKE A CLOSER LOOK AT DIAMOND, YOU'LL SEE THE VALUE

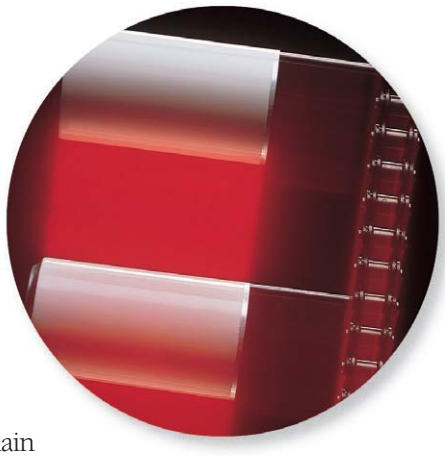
If you're looking for the best roller chain that money can buy, it'll pay to take a closer look at Diamond roller chain. Diamond roller chain may look like your everyday chain, but upon closer inspection there are numerous differences that translate into superior performance and better value. From the strict attention to detail to the design of the chain itself, to the extra steps we take during manufacturing, those differences really add up on your bottom line. We build long life, lasting value and enduring customer relationships into every link of chain…and that is the Diamond difference.

Over the years we've produced tens of thousands of types of roller chain for a wide variety of applications from oil field and deco ovens, to conveyors and combines. So, if your application calls for some special attention, our application engineers can easily help you find that lasting solution.

Please, take a closer look at Diamond roller chain...we do. That closer look is what makes ours better than other chains. And what you can't see, you can experience with improved performance – which means less downtime, less repair costs and increased productivity. Those are just some of the differences that a Diamond chain makes.

ISO 9001 CERTIFIED

ISO 9001



Building high-quality roller chain is a matter of demanding precision – a matter of establishing critical parameters, both in component fabrication and final assembly, and monitoring them to ensure that they are maintained.

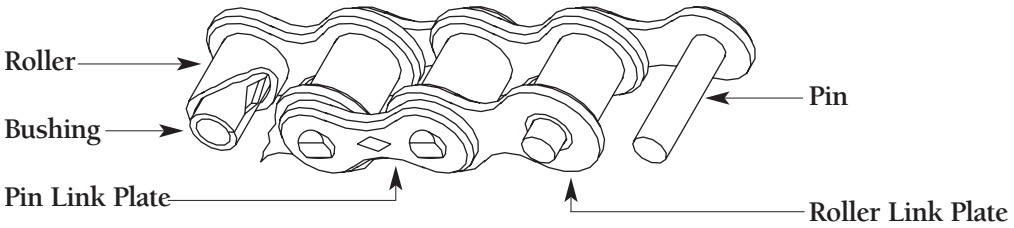
ISO 9001:2000 certification is awarded to companies that specify requirements for a quality management system and demonstrate their ability to provide products that fulfill customer requirements and aims to enhance customer satisfaction. **Diamond is ISO 9001:2000 certified.** That means you can be sure that Diamond chain is consistently manufactured following detailed processes developed by Diamond and proven to produce some of the world's longest running and best performing roller chains.

Each component of a Diamond chain is engineered and produced with optimum performance in mind. Exacting specifications cover critical properties of all component parts and assemblies. Diamond's ISO 9001 certification is proof of the fact that "we say what we do and do what we say."

Marked by the unique beveled link plates, Diamond's Press-Fit Multiple Strand chain is a common sight on oil rigs throughout the world.

CHAIN COMPONENTS

Roller chain is not that hard to understand. It is normally made up of five components:



Collectively, these components produce a series of "traveling bearings." To accomplish this, the chain is assembled with alternate inside and outside links. The inside links that employ bushings and/or rollers are called roller links, and the outside links that employ the pins are called pin links, or connecting links. In operation, the pins articulate inside the bushings leaving the rollers free to turn on the outside of the bushings for "rolling" action as the chain enters and exits the sprocket.

Every Diamond chain is made from the highest quality raw materials available. Starting with the proper raw materials is the foundation of **any** quality product. Diamond pays close attention to chemistry and dimensional specifications which are critical factors as the material is transformed into components capable of handling the toughest job. Producing these components requires painstaking attention to detail and control of fabrication, heat treatment, finishing and assembly processes. Other chain manufacturers may do a good job in some of these areas but at Diamond, we consistently do it better in all.

MANUFACTURING PROCESS

Diamond jewels are sought out because of their enduring perfection. The same argument can be made for a Diamond chain. But, unlike precious gems, Diamond chain is readily available directly from us or your authorized Diamond distributor.

The process of manufacturing the longest lasting chain begins by purchasing the materials to our detailed specifications. This is the way we've always done it because we must specify chemistry, dimensional size and even the direction of the grain in order to fabricate components capable of performing to your expectations.

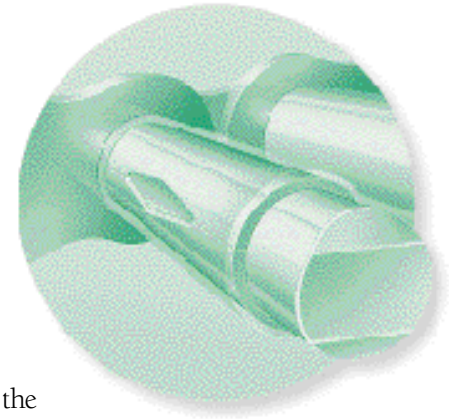
Transforming these raw materials into individual components that meet our high standards is no easy task. Again, we've learned that attention to detail is a key to achieving the desired result, which is the user's satisfaction. Some of the steps taken to provide this satisfaction are:

Link plate pitch holes are produced using a three-part process to create a polished hole with maximum bearing area and minimal surface imperfection. Maximum bearing area increases chain integrity, and a smooth surface within the pitch hole maximizes the ability to handle heavy loads, especially in fatigue-sensitive applications. Even with the three-part process,

Link Plate Pitch Holes

Both chains shown here are engineered for resistance to the environment. One, a Nickel-Plated Drive chain, is designed to resist rust when exposed to water. The other, an AP Stainless Steel Conveyor chain, is engineered to minimize chemical corrosion. Both are designed to give you longer lasting performance in less-than-desirable environments.

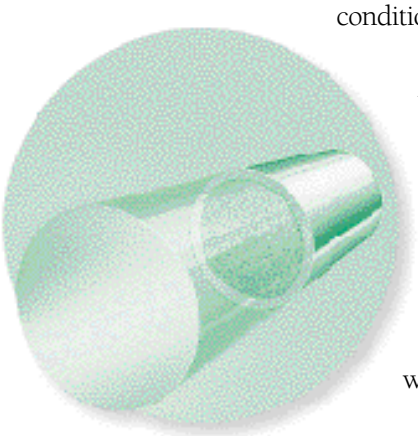
link plates are left with a small "breakout" area. To minimize the effects of this, Diamond provides a unique identifying feature on our ¾" through 2-¼" pitch, standard and heavy series chains. This identifying feature, a beveled edge, is unique to Diamond, and we use it to orient and assemble the link plates in a direction which minimizes negative effects of the breakout.



Bushing Orientation

Many years ago, Diamond discovered that forming bushings from strip produced a far superior component, particularly when the chain is operated in an application that is subjected to bushing fatigue. Diamond also developed processes which orient the chain bushings to position the seam away from the load bearing surface. Positioning the bushings results in a smoother, more uniform bearing surface and helps to reduce chain length variation. In ¼" through 1-¾" pitch chains, our standard bushings are produced using this method.

Diamond provides solid rollers on many "standard" models because a large percentage of roller chain applications transmit higher loads at lower speeds. Under these conditions the integrity of a solid roller is beneficial. There are, of course, exceptions to these standards and depending upon the specific conditions, formed rollers are available either by design or customer request.



Case Hardened Pins

To most users, the obvious indication of quality is superior wear life. Poor wear life often leads to regular adjustment or replacement, which reduces productivity and adds cost to an operation. Heat treatment of component parts is an additional procedure to prolong wear life which gives them the ability to perform to their optimum, depending upon what the environment may be. In the vast majority of applications, wear life is critical, so Diamond heat treats those components which control chain elongation very carefully.

Virtually all of our standard pins, bushings and rollers are carburized, or case hardened. This closely controlled process transforms the outside of the parts into a hard, wear-resistant surface but allows the inner core to remain tough and ductile so as to absorb normal shock loading. In most applications this combination provides the perfect balance between wear resistance and durability.

Link plates, on the other hand, are not normally subjected to wear but must be tough to resist the loads, sometimes heavy, to which the chain may be exposed. Their heat treatment is designed to produce tough, ductile and shock-resistant properties, but sometimes heat treatment is not enough. For those sizes that are routinely subjected to heavy or shock loads Diamond further conditions the link plates using a process called "shot peening." In this process, small steel pellets, or shot, are propelled at the link plates. When they strike the surface they leave a tiny indentation which causes the material to work harden. This work hardening creates compressive stresses on the surface of the link plate that allows it to resist, beyond conventional heat treatment, premature fatigue failures.

Bindery chain was developed specifically for the book binding industry. It is just one of many special application attachment chains that we have developed for specific industries.

Shot Peening

The attention to detail that goes into the fabrication of component parts is not forgotten when assembly operations begin. During the assembly of every pitch of Diamond chain, four key components (pin, bushing, pin link plates and roller link plates) are examined carefully. These four parts are critical in maintaining chain integrity and controlling chain length. Sections of chain are tensile-tested for conformance to Diamond's specifications which are greater than those specified by ASME/ANSI, The American Society of Mechanical Engineers and The American National Standards Institute. Sub-assemblies are evaluated, too, for both pin and bushing press-out force. Holding-power tests are done to ensure that the sub-assemblies are of the highest quality and will not become the "weak link" in the chain. All this "self inspection" allows us to examine how the parts work separately as well as together. And, when new components are added during assembly, additional tests are performed to ensure the integrity of the complete chain remains unchanged.

Diamond even identifies our chains with a unique code, we call it a "date stamp," that is applied during assembly. This code gives us information about the components used to produce the chain. This means that Diamond Chain has traceability as to the material used to produce a component, fabricated on a specific piece of machinery, heat treated in a specific furnace and finally, assembled on a specific date. That's a significant feature that other chain manufacturers just don't have.


Preloading

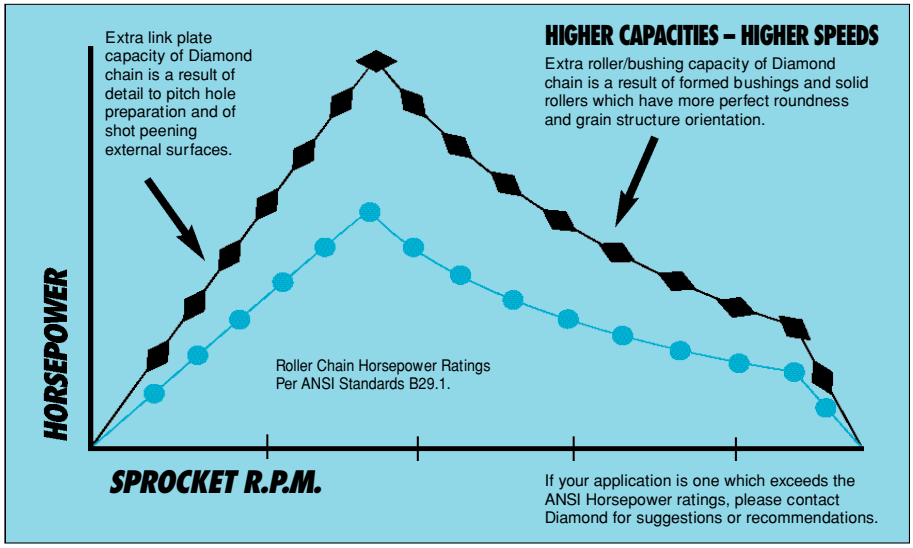
One might think that assembly is the final step in producing a product, but at Diamond we still have a couple of things left to do. After the chains are assembled, we apply an initial load to the chains, called preload. This loading approximates the recommended loading a chain can expect in service. Preloading is done to align the various chain components such as pins, bushings and link plates. Preloading helps eliminate initial elongation and can increase the usable service life of your chain.

We even subject our own product to performance testing at conditions well beyond recommended limits. Tests on link plate fatigue, roller/bushing fatigue and initial lubrication wear are performed to search out the chain's endurance limits. This "torture testing" allows us to set recommended limits that we can stand behind.

CHAIN PERFORMANCE

You could look at two different brands of roller chain and probably not see a difference on the surface. However, where you will see a difference is in their performance. The working load of a roller chain is often its most important characteristic. Contrary to popular belief, there is no consistent relationship between a roller chain's working load capacity and its ultimate tensile strength. Many times chains are selected on their published tensile strengths, which are breaking loads.

DIAMOND CHAIN PERFORMANCE



Chains must be selected based upon loads that they can transmit repeatedly over millions of cycles. So, chains with equal tensile strengths can, and commonly do, have very different working load capacities. In fact, chains with higher published tensile strengths than Diamond could easily have much lower working load capacities.

WHY USE ROLLER CHAIN?

DURABILITY – Roller chain drives give long service life because the chain load is distributed over several sprocket teeth, keeping bearing pressures relatively low for the power transmitted.

RUGGEDNESS – The proportions, parts heat treatment, and press-fit construction of roller chains help them withstand shock loads and rough drive conditions.

EFFICIENCY – Roller chains transmit power with high efficiency throughout the entire life of the drive. There are no large separating forces, radial loads, thrusts, or bearing pressures to waste power. Therefore, machine frames and bearings may be smaller, lighter and less costly.

VERSATILITY – Drive center distances may be long or short, fixed or adjustable, to suit machine design. Roller chain can transmit power to several shafts from a single drive shaft. Roller chains can engage sprockets on either side and drive sprockets in either direction. Roller chains operate efficiently over a wide speed range in minimum space.

CONVENIENCE – Chain installation requires only the alignment that can be readily obtained with commonly available hand tools. Roller chains can be easily connected and disconnected with standard connecting links. Roller chains can be replaced or maintained without disturbing the sprockets, shafts or bearings.

PRECISION – Diamond roller chains are manufactured with great precision. Close control of chain length, roller diameters and other critical dimensions contribute to smooth, quiet action and high efficiency.

A CHAIN IS ONLY WORTH ITS WEAKEST LINK

Let's face it, there are less expensive chains out there, but are they worth it? Probably not in the long run. In most cases, cheap chain doesn't last as long so you have to replace it more often. That means downtime and all of the costs associated with it: idle workers, lost production, repair/replacement costs – it all adds up. Don't be fooled. Initial costs aren't necessarily real costs. Here's an example work sheet that will help you understand the real costs associated with less expensive chain. Please take the time with your Diamond Chain representative or distributor to complete the example using chains and costs that reflect your specific drive conditions. It will clearly illustrate that the investment in Diamond roller chain is definitely worth it when compared to the long-term repair and replacement costs of a less expensive chain.

ANNUAL CHAIN COST ANALYSIS

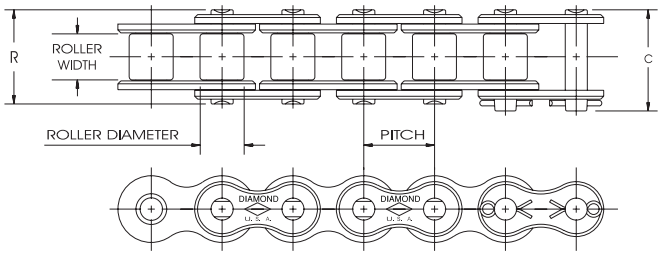
		BARGAIN CHAIN	DIAMOND CHAIN
A.	Unit cost of new chain ($/chain-Ft):	_____	_____
B.	Length required for application (chain-Ft):	_____	_____
C.	Chain cost per application, A x B ($/chain):	_____	_____
D.	Chains used per year (chains/Yr):	_____	_____
E.	Annual cost of chains, C x D ($/Yr):	_____	_____
F.	Chain repairs per year (repairs/Yr):	_____	_____
G.	Average hours of downtime per repair (downtime-Hrs/repair):	_____	_____
H.	Costs per downtime-hour, including cost of repair labor, lost efficiency, lost profits, etc. ($/downtime-Hr):	_____	_____
I.	Annual downtime costs, F x G x H ($/Yr):	_____	_____
J.	Total annual costs incurred, E + I ($/Yr):	_____	_____

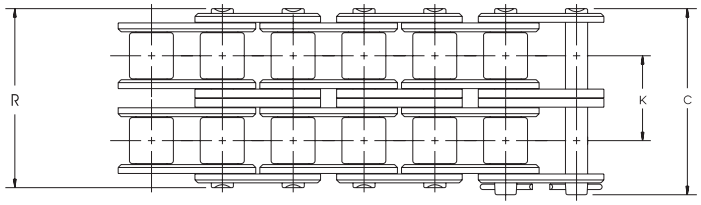
STANDARD SERIES CHAIN

Chain Descriptions and Dimensions

Standard Series Chain

Though it's referred to as standard chain, it's anything but. Our Standard Series chains, built to ASME/ANSI B29.1 standards, are manufactured to very specific requirements. The only thing standard about our chains are their ability to fit many standard applications. From industry to agriculture, our Standard Series chains are designed to last longer than any other manufacturer's roller chain.





Dimensions in Inches and Pounds

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
25	1/4	1/8	*.130	.090	.030	.37	.34	....	.084	875
25-2	1/4	1/8	*.130	.090	.030	.63	.59	.252	.163	1750
25-3	1/4	1/8	*.130	.090	.030	.88	.84	.252	.246	2625
35	3/8	3/16	*.200	.141	.050	.56	.50	....	.210	2100
35-2	3/8	3/16	*.200	.141	.050	.96	.90	.399	.450	4200
35-3	3/8	3/16	*.200	.141	.050	1.36	1.31	.399	.680	6300
35-4	3/8	3/16	*.200	.141	.050	1.76	1.70	.399	.910	8400
35-5	3/8	3/16	*.200	.141	.050	2.16	2.11	.399	1.140	10500
35-6	3/8	3/16	*.200	.141	.050	2.57	2.51	.399	1.370	12600
40	1/2	5/16	.312	.156	.060	.72	.67	....	.410	4000
40-2	1/2	5/16	.312	.156	.060	1.29	1.24	.566	.800	8000
40-3	1/2	5/16	.312	.156	.060	1.85	1.80	.566	1.200	12000
40-4	1/2	5/16	.312	.156	.060	2.42	2.37	.566	1.600	16000
40-6	1/2	5/16	.312	.156	.060	3.56	3.51	.566	2.420	24000
41	1/2	1/4	.306	.141	.050	.65	.57	....	.260	2400
50	5/8	3/8	.400	.200	.080	.89	.83	....	.680	6600
50-2	5/8	3/8	.400	.200	.080	1.60	1.55	.713	1.320	13200
50-3	5/8	3/8	.400	.200	.080	2.31	2.26	.713	1.980	19800
50-4	5/8	3/8	.400	.200	.080	3.03	2.97	.713	2.640	26400
50-5	5/8	3/8	.400	.200	.080	3.75	3.69	.713	3.300	33000
50-6	5/8	3/8	.400	.200	.080	4.46	4.40	.713	3.960	39600
50-8	5/8	3/8	.400	.200	.080	5.89	5.83	.713	5.300	52800
50-10	5/8	3/8	.400	.200	.080	7.32	7.26	.713	6.620	66000
60	3/4	1/2	.469	.234	.094	1.11	1.04	....	.990	8500
60-2	3/4	1/2	.469	.234	.094	2.01	1.94	.897	1.950	17000
60-3	3/4	1/2	.469	.234	.094	2.91	2.84	.897	2.880	25500
60-4	3/4	1/2	.469	.234	.094	3.81	3.74	.897	3.900	34000
60-5	3/4	1/2	.469	.234	.094	4.71	4.64	.897	4.970	42500
60-6	3/4	1/2	.469	.234	.094	5.60	5.53	.897	5.960	51000
60-8	3/4	1/2	.469	.234	.094	7.40	7.33	.897	7.940	68000
60-10	3/4	1/2	.469	.234	.094	9.19	9.12	.897	9.920	85000

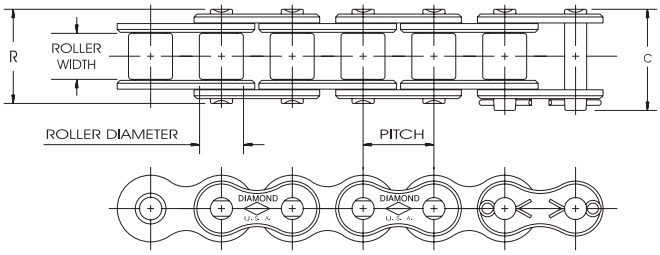
* Chains are rollerless — dimension shown is bushing diameter.
ASME/ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

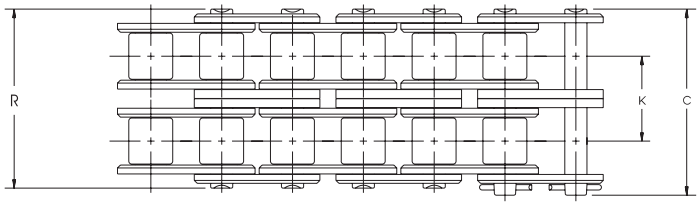
Chart continues on next page.

STANDARD SERIES CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN





Dimensions in Inches and Pounds

Chart continued from previous page.

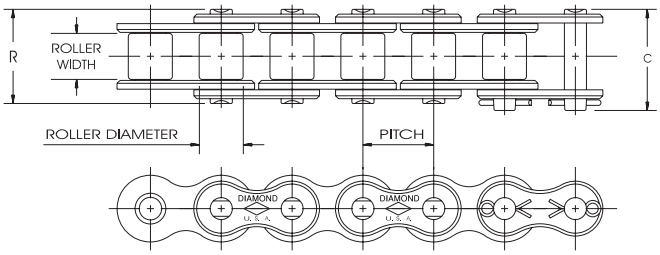
ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
80	1	5/8	.625	.312	.125	1.44	1.32	....	1.73	14500
80-2	1	5/8	.625	.312	.125	2.59	2.47	1.153	3.37	29000
80-3	1	5/8	.625	.312	.125	3.74	3.62	1.153	5.02	43500
80-4	1	5/8	.625	.312	.125	4.90	4.79	1.153	6.73	58000
80-5	1	5/8	.625	.312	.125	6.06	5.94	1.153	8.40	72500
80-6	1	5/8	.625	.312	.125	7.22	7.10	1.153	10.07	87000
80-8	1	5/8	.625	.312	.125	9.53	9.40	1.153	13.41	116000
100	1 1/4	3/4	.750	.375	.156	1.73	1.61	....	2.51	24000
100-2	1 1/4	3/4	.750	.375	.156	3.14	3.02	1.408	4.91	48000
100-3	1 1/4	3/4	.750	.375	.156	4.56	4.43	1.408	7.40	72000
100-4	1 1/4	3/4	.750	.375	.156	5.97	5.84	1.408	9.80	96000
100-5	1 1/4	3/4	.750	.375	.156	7.38	7.25	1.408	12.20	120000
100-6	1 1/4	3/4	.750	.375	.156	8.78	8.66	1.408	14.60	144000
100-8	1 1/4	3/4	.750	.375	.156	11.60	11.48	1.408	19.40	192000
120	1 1/2	1	.875	.437	.187	2.14	2.00	....	3.69	34000
120-2	1 1/2	1	.875	.437	.187	3.93	3.79	1.789	7.35	68000
120-3	1 1/2	1	.875	.437	.187	5.72	5.58	1.789	11.10	102000
120-4	1 1/2	1	.875	.437	.187	7.52	7.38	1.789	14.70	136000
120-5	1 1/2	1	.875	.437	.187	9.31	9.17	1.789	18.43	170000
120-6	1 1/2	1	.875	.437	.187	11.10	10.96	1.789	22.11	204000
120-8	1 1/2	1	.875	.437	.187	14.68	14.54	1.789	29.47	272000
120-10	1 1/2	1	.875	.437	.187	18.26	18.12	1.789	36.83	340000
140	1 3/4	1	1.000	.500	.219	2.31	2.14	....	5.00	46000
140-2	1 3/4	1	1.000	.500	.219	4.24	4.07	1.924	9.65	92000
140-3	1 3/4	1	1.000	.500	.219	6.16	6.00	1.924	14.30	138000
140-4	1 3/4	1	1.000	.500	.219	8.09	7.93	1.924	18.95	184000
140-6	1 3/4	1	1.000	.500	.219	11.94	11.78	1.924	28.25	276000
160	2	1 1/4	1.125	.562	.250	2.73	2.54	....	6.53	58000
160-2	2	1 1/4	1.125	.562	.250	5.04	4.85	2.305	12.83	116000
160-3	2	1 1/4	1.125	.562	.250	7.35	7.16	2.305	19.03	174000
160-4	2	1 1/4	1.125	.562	.250	9.66	9.47	2.305	25.60	232000
160-6	2	1 1/4	1.125	.562	.250	14.27	14.09	2.305	37.78	348000
180	2 1/4	1 13/32	1.406	.687	.281	3.15	2.88	....	9.06	76000
180-2	2 1/4	1 13/32	1.406	.687	.281	5.75	5.48	2.592	17.67	152000
180-3	2 1/4	1 13/32	1.406	.687	.281	8.34	8.07	2.592	26.20	228000
200	2 1/2	1 1/2	1.562	.781	.312	3.44	3.12	....	10.65	95000
200-2	2 1/2	1 1/2	1.562	.781	.312	6.26	5.94	2.817	21.50	190000
200-3	2 1/2	1 1/2	1.562	.781	.312	9.08	8.76	2.817	32.30	285000
200-4	2 1/2	1 1/2	1.562	.781	.312	11.90	11.58	2.817	42.90	380000
200-6	2 1/2	1 1/2	1.562	.781	.312	17.52	17.21	2.817	64.50	570000
240	3	1 7/8	1.875	.937	.375	4.32	3.83	....	17.03	157600
240-2	3	1 7/8	1.875	.937	.375	7.77	7.27	3.458	33.44	315200
240-3	3	1 7/8	1.875	.937	.375	11.23	10.73	3.458	49.77	472800

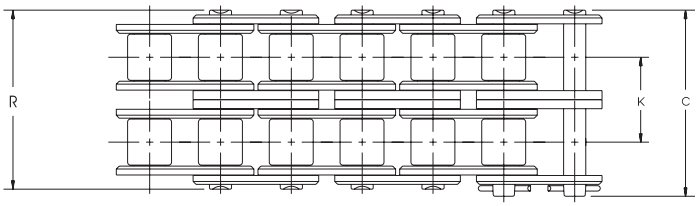
HEAVY SERIES CHAIN

Chain Descriptions and Dimensions

Heavy Series Chain

Heavy Series chains, also built in accordance with ASME/ANSI B29.1, are designed using link plate material from the next larger size chain. Heavy Series chains are not necessarily stronger than Standard Series chains, but the thicker link plate material provides an increase in fatigue resistance for those drives subjected to heavy shock loads, multiple stops/starts or reversing.





Dimensions in Inches and Pounds

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
60H	3/4	1/2	.469	.234	.125	1.24	1.17	....	1.18	8500
60H-2	3/4	1/2	.469	.234	.125	2.27	2.20	1.028	2.33	17000
60H-3	3/4	1/2	.469	.234	.125	3.31	3.24	1.028	3.47	25500
60H-4	3/4	1/2	.469	.234	.125	4.34	4.26	1.028	4.61	34000
80H	1	5/8	.625	.312	.156	1.57	1.45	....	2.02	14500
80H-2	1	5/8	.625	.312	.156	2.84	2.72	1.283	3.93	29000
80H-3	1	5/8	.625	.312	.156	4.14	4.02	1.283	5.92	43500
80H-4	1	5/8	.625	.312	.156	5.42	5.30	1.283	7.87	58000
100H	1 1/4	3/4	.750	.375	.187	1.86	1.74	....	2.82	24000
100H-2	1 1/4	3/4	.750	.375	.187	3.41	3.28	1.539	5.58	48000
100H-3	1 1/4	3/4	.750	.375	.187	4.95	4.82	1.539	8.32	72000
100H-4	1 1/4	3/4	.750	.375	.187	6.49	6.37	1.539	11.04	96000
120H	1 1/2	1	.875	.437	.219	2.27	2.13	....	4.08	34000
120H-2	1 1/2	1	.875	.437	.219	4.20	4.06	1.924	8.04	68000
120H-3	1 1/2	1	.875	.437	.219	6.13	5.99	1.924	11.99	102000
120H-4	1 1/2	1	.875	.437	.219	8.06	7.92	1.924	15.94	136000
120H-6	1 1/2	1	.875	.437	.219	11.91	11.77	1.924	23.84	204000
140H	1 3/4	1	1.000	.500	.250	2.44	2.28	....	5.40	46000
140H-2	1 3/4	1	1.000	.500	.250	4.50	4.34	2.055	10.65	92000
140H-3	1 3/4	1	1.000	.500	.250	6.56	6.39	2.055	15.90	138000
140H-4	1 3/4	1	1.000	.500	.250	8.62	8.45	2.055	21.10	184000
160H	2	1 1/4	1.125	.562	.281	2.86	2.68	....	7.03	58000
160H-2	2	1 1/4	1.125	.562	.281	5.30	5.12	2.436	13.88	116000
160H-3	2	1 1/4	1.125	.562	.281	7.75	7.56	2.436	20.68	174000
160H-4	2	1 1/4	1.125	.562	.281	10.17	10.00	2.436	27.62	232000
180H	2 1/4	1 13/32	1.406	.687	.312	3.28	3.01	....	9.59	76000
180H-2	2 1/4	1 13/32	1.406	.687	.312	6.00	5.73	2.723	18.86	152000
180H-3	2 1/4	1 13/32	1.406	.687	.312	8.73	8.46	2.723	28.14	228000
200H	2 1/2	1 1/2	1.562	.781	.375	3.71	3.39	....	13.38	110000
200H-2	2 1/2	1 1/2	1.562	.781	.375	6.79	6.48	3.083	26.38	220000
200H-3	2 1/2	1 1/2	1.562	.781	.375	9.88	9.56	3.083	40.85	330000
240H	3	1 7/8	1.875	.937	.500	4.85	4.35	...	21.08	157600

ASME/ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

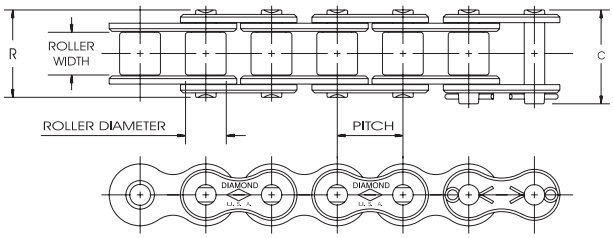
NON-STANDARD SERIES CHAIN

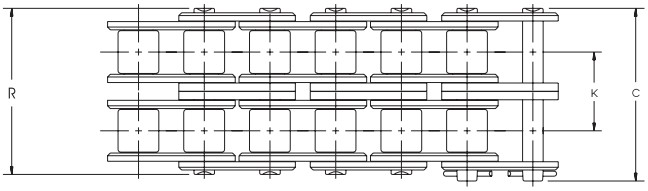
Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

Non-standard Series Chain

Prior to the ASME/ANSI standards, Diamond Chain produced many chains having unique dimensions, often for very specific applications. After industry's adoption of ASME/ANSI standards many of these chains became the current Standard or Heavy Series chains, but some did not. Diamond recognizes that a considerable amount of industrial equipment still utilizes these unique chains and so whenever possible we continue to produce them. The information below may be useful in identifying your "non-standard, but still very important" model.





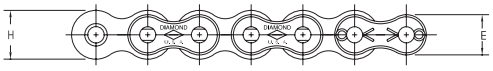
Dimensions in Inches and Pounds

Diamond Number	Other ID	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
61 x 3/16		1	3/16	.325	.141	.040	.47	.43	....	.22	1600
65 x 1/8	BS #4	1/2	1/8	.306	.141	.040	.46	.42	....	.18	2250
867	BS #7	1/2	5/16	.335	.174	.060	.73	.68	....	.43	4200
148 x 1/4	BS #10	5/8	1/4	.400	.200	.080	.73	.67	....	.59	6600
148 x 5/16		5/8	5/16	.400	.200	.080	.86	.74	....	.64	6600
433 x 3/8		3/4	3/8	.469	.234	.094	.98	.91	....	.91	8500
435 x 3/8		1	3/8	.562	.281	.125	1.14	1.05	....	1.11	9000
435 x 1/2		1	1/2	.562	.281	.125	1.27	1.18	....	1.21	9000
472		1 1/2	3/4	.875	.437	.187	1.86	1.72	....	3.40	34000
472-2		1 1/2	3/4	.875	.437	.187	3.45	3.30	1.55	6.76	68000
472-3		1 1/2	3/4	.875	.437	.187	5.00	4.85	1.55	10.08	102000
472-4		1 1/2	3/4	.875	.437	.187	6.55	6.41	1.55	13.40	136000
264	64S	2 1/2	1 1/2	1.562	.875	.375	3.71	3.39	....	13.68	148500
264-3	64S-3	2 1/2	1 1/2	1.562	.875	.375	9.88	9.56	3.083	40.92	445500

61 x 3/16 uses an alternating pitch of .6 and .4 inches. Consult Diamond for 65 x 1/8 standard attachment availability.

Link Plate Height

Many times chains are contained within guides or extrusions to protect them from contamination. If this is the case, link plate height can be a critical dimension. The following charts represent nominal pin and roller link plate heights for the models shown. If more detailed information is required please contact Diamond's application engineers.



Dimensions in Inches

Link Plate Height*	Model Number													
	#25	#35	#40	#41	#50	#60	#80	#100	#120	#140	#160	#180	#200	#240
E	.205	.308	.410	.310	.512	.615	.820	1.025	1.230	1.435	1.640	1.845	2.050	2.422
H	.238	.356	.475	.383	.594	.713	.950	1.188	1.425	1.663	1.900	2.138	2.375	2.806

* Nominal values are shown. For information on specific models contact Diamond.

Dimensions in Inches

Link Plate Height*	Model Number								
	#60H	#80H	#100H	#120H	#140H	#160H	#180H	#200H	#240H
E	.615	.820	1.025	1.230	1.435	1.640	1.845	2.050	2.422
H	.713	.950	1.188	1.425	1.663	1.900	2.138	2.375	2.806

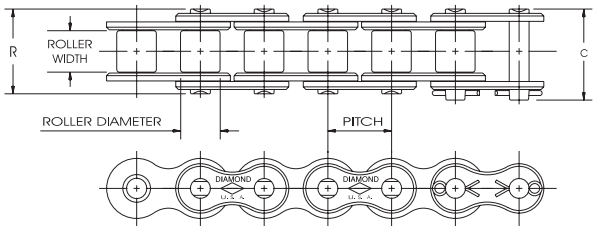
* Nominal values are shown. For information on specific models contact Diamond.

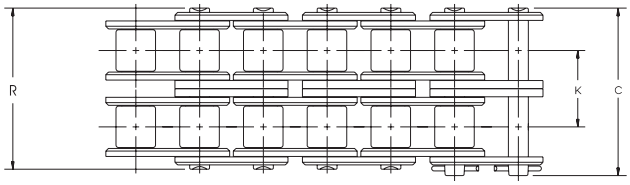
OBSOLETE CHAIN

Chain Descriptions and Dimensions

Obsolete Chain

We have produced several types of chain, and for various reasons some of those chains were determined to be impractical to produce. We regret that all of these chains are no longer in production, but if your chain happens to be one of these, assistance from Diamond's application engineers can often provide a practical replacement chain. The following information is offered for reference only.





Dimensions in Inches and Pounds

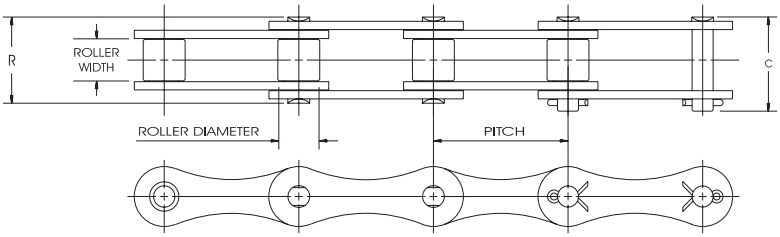
Diamond Number	Other ID	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
88	05B-1	8mm	1/8	.197	.090	.030	.37	.34	....	.12	1300
61 x 1/4		1	1/4	.306	.141	.050	.61	.57	....	.26	1900
65 x 3/16		1/2	3/16	.306	.141	.040	.47	.43	....	.21	2250
433 x 5/16		3/4	5/16	.469	.234	.094	.92	.85	....	.85	8500
433 x 5/8		3/4	5/8	.469	.234	.094	1.23	1.16	....	1.09	8500
435 x 5/8		1	5/8	.562	.281	.125	1.39	1.30	....	1.31	9000
434 x 1/2		1	1/2	.625	.312	.125	1.31	1.19	....	1.61	14500
431 x 1/2		1 1/4	1/2	.625	.312	.125	1.31	1.19	....	1.33	11000
431 x 5/8		1 1/4	5/8	.625	.312	.125	1.44	1.32	....	1.43	11000
437 x 3/4		1 1/2	3/4	.750	.375	.156	1.73	1.61	....	2.23	24000

DOUBLE-PITCH POWER TRANSMISSION ROLLER CHAIN

Chain Descriptions and Dimensions

Double-Pitch Power Transmission Roller Chain

These chains, produced to ASME/ANSI B29.3, have figure-eight style link plates. Their dimensions are similar to Standard Series chains with the exception of the pitch, which is twice that of the Standard Series. The increase in pitch means that only half the number of component parts are required per foot which can significantly lower the cost. Typical uses for these types of chains include light load drives commonly found in agriculture.

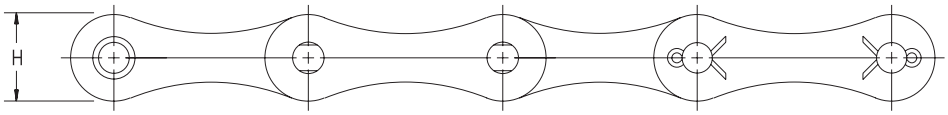


Dimensions in Inches and Pounds

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Pate Thickness	C	R	Weight Per Foot	Average Tensile Strength
2040	1	5/16	.312	.156	.060	.76	.68	.28	3700
2050	1 1/4	3/8	.400	.200	.080	.92	.84	.52	6100
2060	1 1/2	1/2	.469	.234	.094	1.11	1.05	.72	8500
2080	2	5/8	.625	.312	.125	1.44	1.32	1.13	14500

Link Plate Height

Many times chains are contained within guides or extrusions to protect them from contamination. If this is the case, link plate height can be a critical dimension. The following represent nominal pin and roller link plate heights for the models shown. If more detailed information is required please contact Diamond's application engineers.



Dimensions in Inches

Link Plate Height*	Model Number			
	2040	2050	2060	2080
H	.475	.594	.712	.950

* Nominal values are shown. For information on specific models contact Diamond.

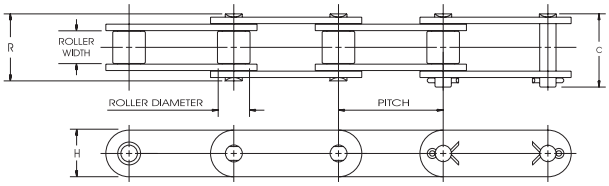
DOUBLE-PITCH CONVEYOR ROLLER CHAIN

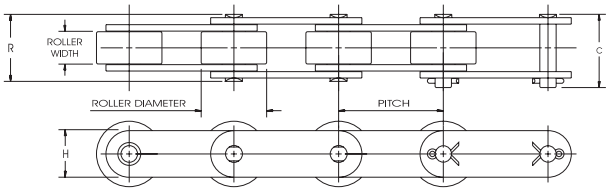
Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

Double-Pitch Conveyor Roller Chain

Produced to ASME/ANSI B29.4, these chains are used in conveyor applications when loads are low and speeds are moderate. They are similar to the Double-Pitch Power Transmission chains, but with link plates that have an oval contour, and can be produced with either standard or over-sized rollers. They are most often found working on conveyors of all shapes and sizes and can be supplied with one or more of our many attachments to carry or convey products.





Dimensions in Inches and Pounds

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
C-2040	1	5/16	.312	.156	.060	.76	.68	.34	3700
C-2050	1 1/4	3/8	.400	.200	.080	.92	.84	.58	6100
C-2060H	1 1/2	1/2	.469	.234	.125	1.25	1.18	1.05	8500
C-2080H	2	5/8	.625	.312	.156	1.57	1.45	1.40	14500
C-2100H	2 1/2	3/4	.750	.375	.187	1.86	1.74	2.48	24000
C-2120H	3	1	.875	.437	.219	2.27	2.13	3.60	34000
C-2160H	4	1 1/4	1.125	.562	.281	2.86	2.68	6.18	58000

Dimensions in Inches and Pounds

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
C-2042	1	5/16	.625	.156	.060	.76	.68	.50	3700
C-2052	1 1/4	3/8	.750	.200	.080	.92	.84	.81	6100
C-2062H	1 1/2	1/2	.875	.234	.125	1.25	1.18	1.42	8500
C-2082H	2	5/8	1.125	.312	.156	1.57	1.45	2.13	14500
C-2102H	2 1/2	3/4	1.562	.375	.187	1.86	1.74	3.51	24000
C-2122H	3	1	1.750	.437	.219	2.27	2.13	5.48	34000
C-2162H	4	1 1/4	2.250	.562	.281	2.86	2.68	9.34	58000

Link Plate Height

Many times chains are contained within guides or extrusions to protect them from contamination. If this is the case, link plate height can be a critical dimension. The following represent nominal pin and roller link plate heights for the models shown. If more detailed information is required please contact Diamond's application engineers.

Dimensions in Inches

Link Plate Height*	Model Number						
	C2040	C2050	C2060H C2062H	C2080H C2082H	C2100H C2102H	C2120H C2122H	C2160H C2162H
H	.475	.594	.712	.950	1.187	1.425	1.900

* Nominal values are shown. For information on specific models contact Diamond.

STANDARD ATTACHMENT ROLLER CHAIN

Chain Descriptions and Dimensions

Standard Attachment Roller Chain

Single- and Double-Pitch chains are available assembled with either attachment link plates or extended pins. While most carbon steel attachment chains fall within Diamond's **Attachment Chain Program** and ship in **48 hours** (for quantities up to 100 feet) in 3-5 working days (for quantities of 101 to 300 feet) or in 5-7 working days (for quantities of 301 to 500 feet), stainless steel, nickel-plated and ACE coated attachment chains also get special attention through Diamond's **5-day** shipping program. These attachments' shapes and sizes are "standard" their uses are limited only by your imagination. Now the chain that lasts the longest, arrives the fastest because from the minute you place your order, we have from **48 hours to 5 days** to get it out the door. That way you don't wait -- wasting countless dollars in downtime.

When designing or specifying attachment chains, consider the following information to avoid problems with either installation or performance.

Standard Attachments: Standard attachments described on the following pages are normally much less expensive than special designs. However, if a specialty attachment is necessary please refer to the Made-To-Order section of this guide or contact Diamond's application engineers for possible design options.

Link Plate Location: Attachments, regardless of standard or special design, assembled on pin links are less expensive than those assembled on roller links.

Modifications: Diamond's attachment link plates are specifically designed and heat treated to permit further operations by the user such as drilling, reaming, and tapping if desired. At no time should attachment links be modified by welding because the heat applied can adversely affect the heat treatment of the steel, resulting in either reduced performance or failure.

Extended Pins: Extended pins, made from medium carbon steel, are specially heat treated for ductility and toughness and can be easily assembled at virtually any spacing. It is important to note that if pairs of extended pins are specified, they must be located in a common pin link. In some applications this may require the use of an offset in the cycle.

Diamond does not recommend using "shouldered pins." They are generally expensive to manufacture and can often compromise quality due to high stress concentrations at the point where diameters change. Additions of sleeves or bearings on the extended pins will often yield a more dependable design and at a lower cost.

Attachment Hole Sizes: Diamond's standard attachment hole sizes are designed to accommodate the most common screw sizes. If your application requires a different attachment hole size, than shown in this section, please contact Diamond, as many alternate lug holes are available and may be available from stock.

Dimensions in Inches

Chain Size	Hole Diameter	Screw Size	Screw Diameter
25	.125	#3	.099
35	.102	#2	.086
40	.141	#5	.125
41	.141	#5	.125
50	.203	#10	.190
60	.203	#10	.190
80	.266	1/4	.250
100	.343	5/16	.312
120	.386	3/8	.375
140	.448	7/16	.438
160	.516	1/2	.500

Dimensions in Inches

Chain Size	Hole Diameter*	Screw Size	Screw Diameter
C2040	.141	# 5	.125
C2050	.203	#10	.190
C2060H	.203	#10	.190
C2080H	.266	1/4	.250
C2100H	.328	5/16	.312
C2120H	.391	3/8	.375
C2160H	.516	1/2	.500

*Straight, one hole attachments have larger diameters than shown. Refer to Double-Pitch Straight and Bent Attachment tables for more detail.

STANDARD ATTACHMENT ROLLER CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Assembly: While it is possible to purchase base chain or attachment components and construct an attachment chain, it is strongly recommended that chains be ordered and assembled at the factory to ensure the proper fit and alignment of all parts along with any length or matching requirements.

Manufacturing Length Tolerance: ASME/ANSI defines the permissible length of an assembled section of roller chain. The allowable length tolerances vary from model to model and are also affected by the chain's construction, i.e., with or without attachments.

As an example, the assembled length tolerance for an ASME/ANSI one inch pitch chain (#80) is +.016"/-.000" per foot. When attachments are added to the chain's design, the tolerance for length expands to +.032"/-.000" per foot. This means that a section of #80 chain 12 pitches long (12" nominal) can measure as long as 12.016" but *no less than* 12.000". The same section of chain assembled with bent, straight, or extended pin attachments could measure as long as 12.032" but again, *no less than* 12.000".

In common practice, manufacturers strive to produce chain nearer to the nominal figure, but the maximum allowable length tolerance should always be considered when designing for take-ups and catenary chain sag. If the application requires it, some design and assembly steps can be taken to direct the length of the chain toward the nominal. However, on a routine basis machine designs based on a nominal or specified chain length should be avoided.

Length Matching of Roller Chains: Many applications require two or more chains, normally with attachments, to run in parallel with "flights" joining the chains together forming a conveyor or transfer type system. In these cases it is critical to have the chains ordered as a set, matched for length and installed on the machinery with the same relationship to one another as when they were manufactured.

Diamond offers two degrees of matching for parallel operation: Class I and Class II.

Class I - A Class I match assures that the longest and the shortest chain in a given set will not vary in overall length by more than .006"/ft. Again using #80 chain as an example, the length of two #80 chains 120 pitches long will not vary by more than .060" in overall length (10ft. x .006"/ft. = .060"). The shortest could measure 120" + .000" (remember, no negative tolerance) and the longest could measure up to 120" + .060" and satisfy the Class I requirement. Class I matching is most often accomplished by assembling the chains from selected lots of component parts.

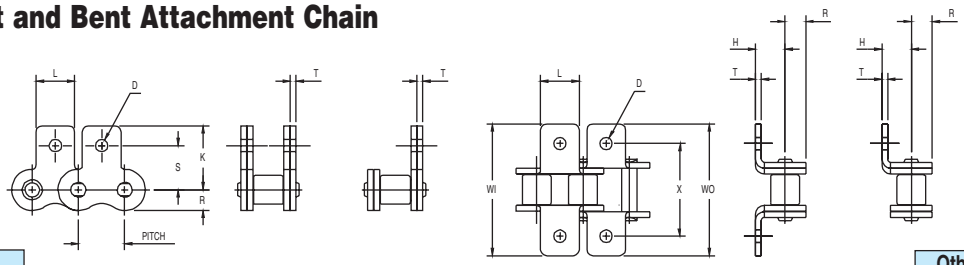
Class II - A Class II match is much more stringent and assures that the longest and the shortest chain in a given set will not vary in overall length by more than .002"/ft. Applying this new tolerance to the above example, the length of two #80 chains 120 pitches long will not vary by more than .020" in overall length (10ft. x .002"/ft. = .020"). The shortest could measure 120" + .000" and the longest could measure 120" + .020" and satisfy the requirement. Class II matching is quite difficult and requires some very unique procedures.

Differences - It is important to remember that matched chains still fall under the overall length limitations imposed by either ASME/ANSI or the manufacturer. Matching ***does not*** assure the user of chains with a finite overall length, only that the chains in the set have a controlled relationship to one another.

STANDARD ATTACHMENT ROLLER CHAIN

Chain Descriptions and Dimensions

Standard Straight and Bent Attachment Chain



Others	Diamond
M-35, SA1	S1 (one hole)
M-1, SK1	S2 (one hole)

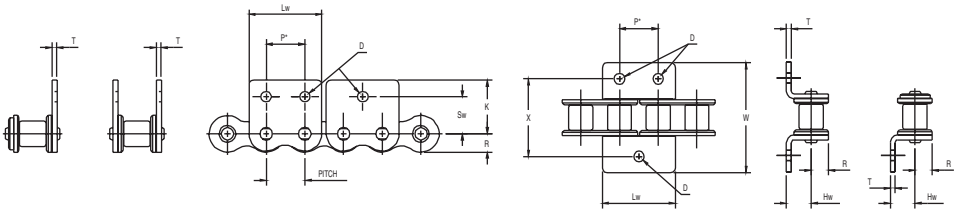
Others	Diamond
A1	B1 (one hole)
K1	B2 (one hole)

Dimensions in Inches

ASME/ANSI Number	Pitch Inches	D	H	K	L	R Max.	S	T	WI	WO	X
25	.250	.125	.180	.451	.218	.119	.308	.030	.781	.843	.562
35	.375	.102	.250	.577	.312	.178	.387	.050	1.125	1.125	.750
40	.500	.141	.312	.684	.375	.238	.489	.060	1.390	1.390	1.000
41	.500	.141	.282	.698	.375	.192	.482	.050	1.375	1.375	.937
50	.625	.203	.406	.895	.500	.297	.618	.080	1.812	1.812	1.250
60	.750	.203	.478	1.038	.625	.356	.716	.094	2.135	2.135	1.500
80	1.000	.266	.625	1.339	.750	.475	.968	.125	2.750	2.750	2.000
100	1.250	.343	.784	1.696	1.000	.594	1.233	.156	3.077	3.406	2.500
120	1.500	.386	.917	2.024	1.125	.713	1.424	.187	3.841	4.239	2.995
140	1.750	.448	1.127	2.445	1.375	.831	1.750	.220	4.361	4.826	3.500
160	2.000	.516	1.250	2.756	1.500	.950	2.007	.250	5.078	5.609	4.000

Above attachments available for multiple strand chain.

Wide Contour Straight and Bent Attachment Chain



Others	Diamond
WM-35	WCS1 (one hole)
WM-35-2	WCS1 (two holes)

Others	Diamond
WM-1	WCS2 (one hole)
WM-2	WCS2 (two holes)

Others	Diamond
WA-1	WCB1 (one hole)
WA-2, A2	WCB1 (two holes)

Others	Diamond
WK-1	WCB2 (one hole)
WK-2, K2	WCB2 (two holes)

Dimensions in Inches

ASME/ANSI Number	Pitch Inches	D	Hw	K	Lw	P	R Max.	Sw	T	W	X
*35	.375	.125	.262	.577	.727	.375	.178	.399	.050	1.105	.750
*40	.500	.141	.326	.684	.946	.500	.238	.503	.060	1.366	1.000
*41	.500	.141	.282	.698	.878	.500	.192	.482	.050	1.372	.937
*50	.625	.203	.406	.895	1.211	.625	.297	.618	.080	1.807	1.250
*60	.750	.203	.478	1.038	1.420	.750	.356	.716	.094	2.135	1.500
*80	1.000	.266	.625	1.339	1.885	1.000	.475	.967	.125	2.750	2.000
*†100	1.250	.343	.784	1.696	2.362	1.250	.594	1.233	.156	3.408	2.500
*†120	1.500	.386	.917	2.023	2.836	1.500	.713	1.424	.187	4.239	2.995

* Attachment available on pin link plate only.
† These items not available with 48-hour delivery.

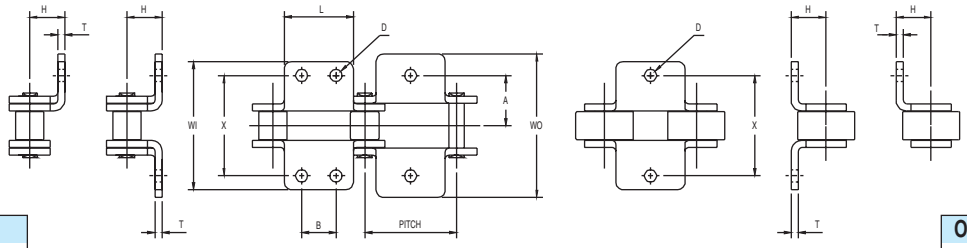
Contact Diamond Chain for available attachments on roller links (wide contour).
Above attachments available for mutiple strand chain.

STANDARD ATTACHMENT ROLLER CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

Double-Pitch Bent Attachments
Oval Contour Link Plates
Standard and Oversized Roller



Others	Diamond
A1	B1 (one hole)
A2	B1 (two holes)

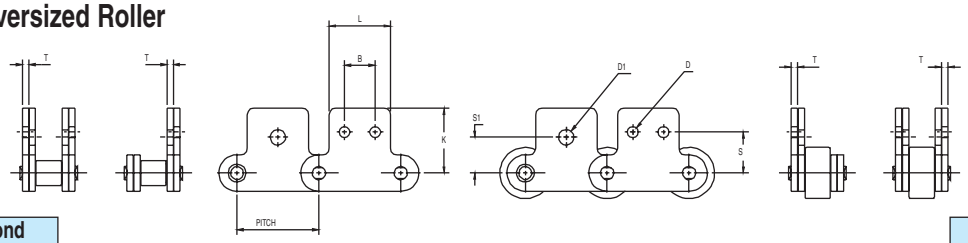
Others	Diamond
K1	B2 (one hole)
K2	B2 (two holes)

Dimensions in Inches

Standard Roller ASME/ANSI #	Roller Diam.	Pitch Inches	A	B	D	H	L	T	WI	WO	X	Large Roller ASME/ANSI #	Roller Diam.
*C2040	.312	1.00	.500	.375	.141	.359	.750	.060	1.350	1.483	1.000	C-2042	.625
*C2050	.400	1.25	.625	.469	.203	.453	.937	.080	1.692	1.863	1.250	C-2052	.750
*C2060H	.469	1.50	.844	.562	.203	.578	1.125	.125	2.171	2.446	1.688	C-2062H	.875
*C2080H	.625	2.00	1.094	.750	.266	.766	1.500	.156	2.792	3.125	2.188	C-2082H	1.125
*C2100H	.750	2.50	1.312	.937	.328	.922	1.875	.187	3.554	3.951	2.625	C-2102H	1.562
*C2120H	.875	3.00	1.562	1.125	.391	1.095	2.250	.219	4.318	4.782	3.125	C-2122H	1.750
*C2160H	1.125	4.00	2.063	1.500	.516	1.438	3.000	.281	5.520	6.116	4.125	C-2162H	2.250

*Two attachment holes stock.
One attachment hole made-to-order.

Double-Pitch Straight Attachments
Oval Contour Link Plates
Standard and Oversized Roller



Others	Diamond
M-35, SA1	S1 (one hole)
M-35-2, SA2	S1 (two holes)

Others	Diamond
M-1, SK1	S2 (one hole)
M-2, SK2	S2 (two holes)

Dimensions in Inches

Standard Roller ASME/ANSI #	Roller Diam.	Pitch Inches	With Two* Attachment Holes B	D	S	K	L	T	With One Attachment Hole D1	S1	Large Roller ASME/ANSI #	Roller Diam.
*C2040	.312	1.00	.375	.141	.531	.773	.750	.060	.188	.438	C-2042	.625
*C2050	.400	1.25	.469	.203	.625	.971	.937	.080	.250	.563	C-2052	.750
*C2060H	.469	1.50	.562	.203	.750	1.203	1.125	.125	.329	.688	C-2062H	.875
*C2080H	.625	2.00	.750	.266	1.000	1.590	1.500	.156	.375	.875	C-2082H	1.125
*C2100H	.750	2.50	.937	.328	1.250	1.982	1.875	.187	.516	1.125	C-2102H	1.562
*C2120H	.875	3.00	1.125	.391	1.469	2.367	2.250	.219	.563	1.312	C-2122H	1.750
*C2160H	1.125	4.00	1.500	.516	2.000	3.090	3.000	.281	.750	1.750	C-2162H	2.250

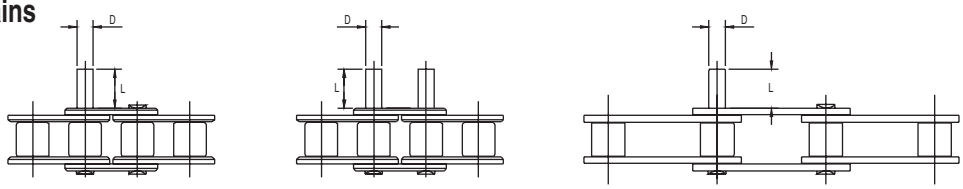
*Two attachment holes stock.
One attachment hole made-to-order.

STANDARD ATTACHMENT ROLLER CHAIN

Chain Descriptions and Dimensions

Standard Extended Pins

For ASME/ANSI Standard Series Chains
Double-Pitch Conveyor Chains



Others	Diamond
D1	E1 (one extended pin)
D3	E2 (two extended pins)

Dimensions in Inches

ASME/ ANSI #	Pitch Inches	D±.0005"	L±.010"
35	.375	.141	.375
40	.500	.156	.383
41	.500	.141	.375
50	.625	.200	.468
60	.750	.234	.562

ASME ANSI #	Pitch Inches	D±.0005"	L±.010"
80	1.00	.312	.750
100	1.25	.375	.937
120	1.50	.437	1.125
140	1.75	.500	1.312
160	2.00	.562	1.500

ASME/ANSI #	Pitch Inches	D±.0005"	L±.010"
C-2040, C-2042	1.00	.156	.375
C-2050, C-2052	1.25	.200	.468
C-2060H, C-2062H	1.50	.234	.562
C-2080H, C-2082H	2.00	.312	.750
C-2100H, C-2102H	2.50	.375	.937
C-2120H, C-2122H	3.00	.437	1.125
C-2160H, C-2162H	4.00	.562	1.500

Standard Attachment Terminology	Other Manufacturers	Diamond Terminology	Description
Single- and Double-Pitch Lugs	A1	B1 one hole	Bent attachment, one side, one hole
	A2	B1 two holes	Bent attachment, one side, two holes
	K1	B2 one hole	Bent attachment, both sides, one hole
	K2	B2 two holes	Bent attachment, both sides, two holes
	SA1, M-35	S1 one hole	Straight attachment, one side, one hole
	SA2, M-35-2	S1 two holes	Straight attachment, one side, two holes
	SK1, M-1	S2 one hole	Straight attachment, both sides, one hole
	SK2, M-2	S2 two holes	Straight attachment, both sides, two holes
Wide Contour Lugs	WM-35	WCS1 one hole	Wide contour, straight attachment, one side, one hole
	WM-35-2	WCS1 two holes	Wide contour, straight attachment, one side, two holes
	WM-1	WCS2 one hole	Wide contour, straight attachment, both sides, one hole
	WM-2	WCS2 two holes	Wide contour, straight attachment, both sides, two holes
	WA-1	WCB1 one hole	Wide contour, bent attachment, one side, one hole
	WA-2, A2	WCB1 two holes	Wide contour, bent attachment, one side, two holes
	WK-1	WCB2 one hole	Wide contour, bent attachment, both sides, one hole
	WK-2, K2	WCB2 two holes	Wide contour, bent attachment, both sides, two holes
Extended Pins	D1	E1	One pin in link extended
	D3	E2	Both pins in link extended

MULTIPLE STRAND CHAIN

Chain Descriptions and Dimensions

Diamond Multiple Strand Roller Chain

When the loads or speeds are too great for a single strand chain to carry, multiple strand roller chain, which is the equivalent of two or more single strand chains assembled with common pins, can often provide the necessary capacity. These chains are manufactured in several widths, depending upon the specific model, up to twelve strands wide. Diamond's multiple strand chains are available with two types of construction – with center plates slip-fit on the pins or with center plates press-fit on the pins.

Slip-fit center plate: Slip-fit center plate multiple strand chains have been used for decades and are most suitable for drives of moderate severity. These chains are designed for ease of disassembly throughout the entire length of chain. The chains can be shortened or sections can be added quickly with minimal effort. However, with the slip-fit design, the user may experience accelerated fatigue failures in exchange for the ease of alteration in the field.

Press-fit center plate: Press-fit multiple strand chains were originally developed by Diamond for service in applications that require the utmost in multiple strand chain capacity. Multiple strand chains with press-fit center plates have significantly greater fatigue strength than their slip-fit center plate counterparts, because press-fit construction assures rigid, permanent support for the pins at each tension point with no relative movement, which can cause wear or fatigue.

The superiority of press-fit center plate chain over the slip-fit center plate chain has been proven many, many times in actual service where the drive conditions are severe. The extreme durability and ruggedness of Diamond multiple strand roller chains are exemplified by their wide acceptance for use on such heavy-duty equipment as power shovels, diesel engines, and oil drilling and pumping units.

While the press-fit construction does provide the increased fatigue resistance that is essential in many applications, the user does give up some convenience because the chain's length is not readily shortened in the field. For this reason press-fit center plate chains should always be ordered in the exact pitch length required, including a Bushed Center Plate Link (BCL) connecting link.

MULTIPLE STRAND CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Bushed Center Plate Links (BCL): With the development of the BCL connecting link for press-fit center plate chains almost fifty years ago, Diamond made a significant engineering advance. These links have virtually the same superior durability and high resistance to fatigue found only in press-fit center plate chain, yet they are as easily installed and removed as slip-fit center plate type connecting links.

The BCL connecting link is constructed using center plate assemblies, consisting of two center plates securely held together with two press-fit bushings. These bushings, hardened to resist wear, have inside diameters precision ground after assembly into the center plates. The grinding tolerances are extremely close with respect to both the pitch dimension and hole size to assure a close sliding-fit on the chain pins.

These features reduce to a minimum the possibility of any relative motion between pins and bushings and assures equal distribution of chain-load across pins throughout the service-life of the chain.

Diamond BCL connecting links are available for ⅝" through 2-½" pitch Standard Series, press-fit center plate multiple-strand chain.

The cost of manufacturing BCL connecting links is unavoidably higher than that of slip-fit center plate links, but the greater durability and high resistance to fatigue more than warrants the additional cost.

Bushed Center Plate Assembly

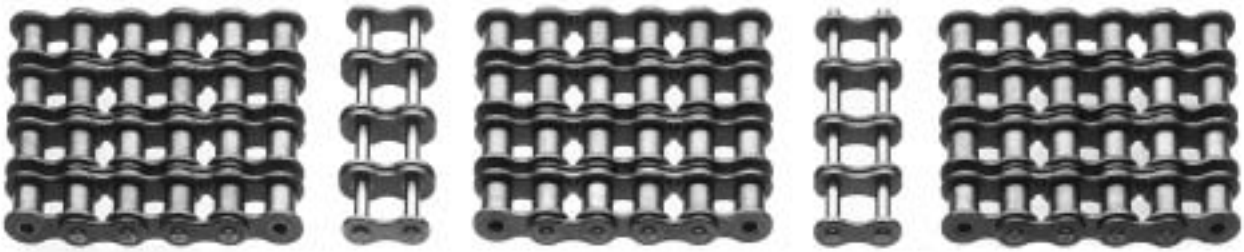
Four-Pitch Press-Fit Offset Link Assembly: Pins are press-fit in offset link pitch holes. Four-pitch length permits the use of BCL connecting links on either end, giving maximum capacity of chain assembly.

MULTIPLE STRAND CHAIN

Chain Descriptions and Dimensions

BCL Connecting Link

BCL Connecting Link

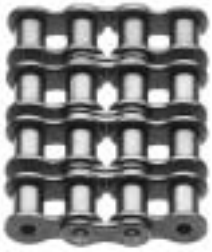


One End of Chain

5-Pitch Section of Chain

Other End of Chain

4-Pitch Offset Link Assembly



3-Pitch Section of Chain

When the ability to shorten press-fit center plate multiple strand chain is a requirement, it is recommended that the original chain be ordered to the exact length needed in pitches including two connecting links of the BCL type, with a **five-pitch section of the chain** between the two.

When the chain has elongated through normal wear the equivalent of one pitch, the **five-pitch section of chain should be replaced by a four-pitch offset link assembly**, which has press-fit link plates throughout, providing maximum structural rigidity.

When subsequent wear-elongation is sufficient to allow the removal of another pitch of chain, the **four-pitch offset link assembly should be replaced by a three-pitch section** of press-fit center plate chain.

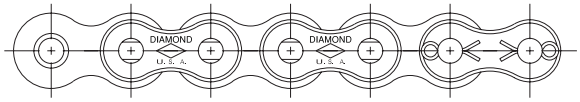
Similarly, should a drive on fixed centers require an odd number of pitches in the original chain length, the chain should be specified to include a **four-pitch offset link assembly** between two BCL connecting links. To shorten the chain by the equivalent of one pitch, the **four-pitch offset link assembly should be replaced with a three-pitch section** of press-fit center plate chain.

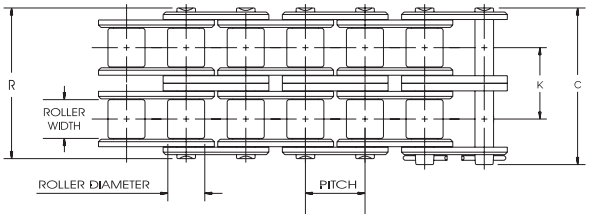
In general, the use of offset links in any chain design should be avoided whenever possible due to the decreased load carrying ability of the offset. However, if an offset must be employed, the use of a two- or four-pitch offset link assembly in multiple strand chains, especially press-fit center plate chain, is preferred over one-pitch offset links. Single-pitch offsets do not provide the desirable structural rigidity found in the two- and four-pitch assemblies.

MULTIPLE STRAND CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN





Dimensions in Inches and Pounds

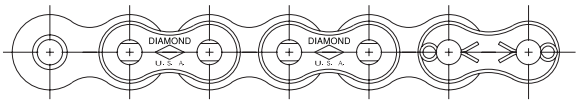
ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
25-2	1/4	1/8	*.130	.090	.030	.63	.59	.252	.163	1750
25-3	1/4	1/8	*.130	.090	.030	.88	.84	.252	.246	2625
35-2	3/8	3/16	*.200	.141	.050	.96	.90	.399	.450	4200
35-3	3/8	3/16	*.200	.141	.050	1.36	1.31	.399	.680	6300
35-4	3/8	3/16	*.200	.141	.050	1.76	1.70	.399	.910	8400
35-5	3/8	3/16	*.200	.141	.050	2.16	2.11	.399	1.140	10500
35-6	3/8	3/16	*.200	.141	.050	2.57	2.51	.399	1.370	12600
40-2	1/2	5/16	.312	.156	.060	1.29	1.24	.566	.800	8000
40-3	1/2	5/16	.312	.156	.060	1.85	1.80	.566	1.200	12000
40-4	1/2	5/16	.312	.156	.060	2.42	2.37	.566	1.600	16000
40-6	1/2	5/16	.312	.156	.060	3.56	3.51	.566	2.420	24000
50-2	5/8	3/8	.400	.200	.080	1.60	1.55	.713	1.320	13200
50-3	5/8	3/8	.400	.200	.080	2.31	2.26	.713	1.980	19800
50-4	5/8	3/8	.400	.200	.080	3.03	2.97	.713	2.640	26400
50-5	5/8	3/8	.400	.200	.080	3.75	3.69	.713	3.300	33000
50-6	5/8	3/8	.400	.200	.080	4.46	4.40	.713	3.960	39600
50-8	5/8	3/8	.400	.200	.080	5.89	5.83	.713	5.300	52800
50-10	5/8	3/8	.400	.200	.080	7.32	7.26	.713	6.620	66000
60-2	3/4	1/2	.469	.234	.094	2.01	1.94	.897	1.950	17000
60-3	3/4	1/2	.469	.234	.094	2.91	2.84	.897	2.880	25500
60-4	3/4	1/2	.469	.234	.094	3.81	3.74	.897	3.900	34000
60-5	3/4	1/2	.469	.234	.094	4.71	4.64	.897	4.970	42500
60-6	3/4	1/2	.469	.234	.094	5.60	5.53	.897	5.960	51000
60-8	3/4	1/2	.469	.234	.094	7.40	7.33	.897	7.940	68000
60-10	3/4	1/2	.469	.234	.094	9.19	9.12	.897	9.920	85000
80-2	1	5/8	.625	.312	.125	2.59	2.47	1.153	3.370	29000
80-3	1	5/8	.625	.312	.125	3.74	3.62	1.153	5.020	43500
80-4	1	5/8	.625	.312	.125	4.90	4.79	1.153	6.730	58000
80-5	1	5/8	.625	.312	.125	6.06	5.94	1.153	8.400	72500
80-6	1	5/8	.625	.312	.125	7.22	7.10	1.153	10.070	87000
80-8	1	5/8	.625	.312	.125	9.53	9.40	1.153	13.410	116000
100-2	1 1/4	3/4	.750	.375	.156	3.14	3.02	1.408	4.910	48000
100-3	1 1/4	3/4	.750	.375	.156	4.56	4.43	1.408	7.400	72000
100-4	1 1/4	3/4	.750	.375	.156	5.97	5.84	1.408	9.800	96000
100-5	1 1/4	3/4	.750	.375	.156	7.38	7.25	1.408	12.200	120000
100-6	1 1/4	3/4	.750	.375	.156	8.78	8.66	1.408	14.600	144000
100-8	1 1/4	3/4	.750	.375	.156	11.60	11.48	1.408	19.400	192000
120-2	1 1/2	1	.875	.437	.187	3.93	3.79	1.789	7.350	68000
120-3	1 1/2	1	.875	.437	.187	5.72	5.58	1.789	11.100	102000
120-4	1 1/2	1	.875	.437	.187	7.52	7.38	1.789	14.700	136000
120-5	1 1/2	1	.875	.437	.187	9.31	9.17	1.789	18.430	170000
120-6	1 1/2	1	.875	.437	.187	11.10	10.96	1.789	22.110	204000
120-8	1 1/2	1	.875	.437	.187	14.68	14.54	1.789	29.470	272000
120-10	1 1/2	1	.875	.437	.187	18.26	18.12	1.789	36.830	340000

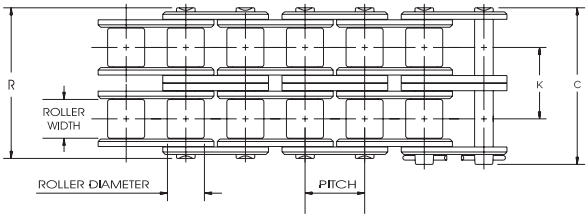
* Chains are rollerless — dimension shown is bushing diameter.
ASME/ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

Chart continues on next page.

MULTIPLE STRAND CHAIN

Chain Descriptions and Dimensions





Dimensions in Inches and Pounds

Chart continued from previous page.

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
140-2	1¾	1	1.000	.500	.219	4.24	4.07	1.924	9.65	92000
140-3	1¾	1	1.000	.500	.219	6.16	6.00	1.924	14.30	138000
140-4	1¾	1	1.000	.500	.219	8.09	7.93	1.924	18.95	184000
140-6	1¾	1	1.000	.500	.219	11.94	11.78	1.924	28.25	276000
160-2	2	1¼	1.125	.562	.250	5.04	4.85	2.305	12.83	116000
160-3	2	1¼	1.125	.562	.250	7.35	7.16	2.305	19.03	174000
160-4	2	1¼	1.125	.562	.250	9.66	9.47	2.305	25.60	232000
160-6	2	1¼	1.125	.562	.250	14.27	14.09	2.305	37.78	348000
180-2	2¼	1 13/32	1.406	.687	.281	5.75	5.48	2.592	17.67	152000
180-3	2¼	1 13/32	1.406	.687	.281	8.34	8.07	2.592	26.20	228000
200-2	2½	1½	1.562	.781	.312	6.26	5.94	2.817	21.50	190000
200-3	2½	1½	1.562	.781	.312	9.08	8.76	2.817	32.30	285000
200-4	2½	1½	1.562	.781	.312	11.90	11.58	2.817	42.90	380000
200-6	2½	1½	1.562	.781	.312	17.52	17.21	2.817	64.50	570000
240-2	3	1⅞	1.875	.937	.375	7.77	7.27	3.458	33.44	315200
240-3	3	1⅞	1.875	.937	.375	11.23	10.73	3.458	49.77	472800

ASME/ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

HIGH STRENGTH/LIFT CHAIN

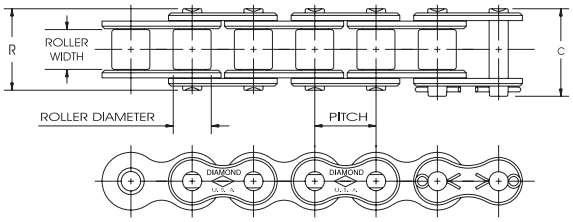
Chain Descriptions and Dimensions

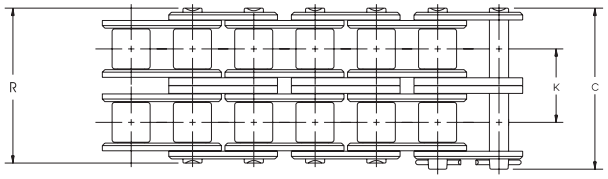
Produced in accordance with ASME/ANSI B29.1, these chains are designed for the rigors of heavy loads and lifting. Depending on your specific application, Diamond offers three options from which to choose.

High Strength (HS) Drive Chains

HS Series Drive chains are built in accordance with ASME/ANSI B29.1 and are dimensionally identical to Heavy Series Drive chains, but are specially designed and incorporate pins produced from medium carbon alloy steel. These pins are through-hardened to give the chain a higher working load capacity and additional resistance to fatigue in high load and pulsating type applications. Users of these chains should remember that wear life may be slightly reduced due to the material and heat treatment of the chain pins. Slip-fit type connecting links and offset links are not available for these chains.

Note: Offset links and slip-fit connecting links are not recommended for any High Strength or Lift Chain.



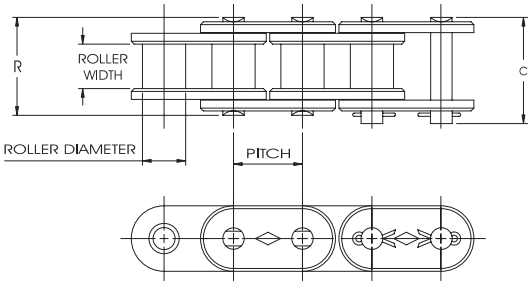


Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
60HS	¾	½	.469	.234	.125	1.24	1.17	1.18	12000
80HS	1	⅝	.625	.312	.156	1.57	1.45	2.02	21000
100HS	1¼	¾	.750	.375	.187	1.86	1.74	2.82	30000
120HS	1½	1	.875	.437	.219	2.27	2.13	4.08	41000
140HS	1¾	1	1.000	.500	.250	2.44	2.28	5.40	56000
160HS	2	1¼	1.125	.562	.281	2.86	2.68	7.03	70000
180HS	2¼	1 13/32	1.406	.687	.312	3.28	3.01	9.59	95000
200HS	2½	1½	1.562	.781	.375	3.71	3.39	13.75	136000
200HS-2	2½	1½	1.562	.781	.375	6.79	6.48	26.38	270000
200HS-3	2½	1½	1.562	.781	.375	9.88	9.56	40.85	405000
240HS	3	1⅞	1.875	.937	.500	4.85	4.35	21.08	157600

For the ultimate in Diamond Chain High Strength performance, consider Diamond HS Oval Contour chains. Specially designed with pins produced from medium carbon alloy steel and FULL Oval Contour pin and roller link plates, providing the maximum link plate rigidity for high load fatigue applications.

Note: Offset links and slip-fit connecting links are not recommended for any High Strength or Lift Chain.



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
60HSOC	¾	½	.469	.234	.125	1.24	1.17	1.42	12000
80HSOC	1	⅝	.625	.312	.156	1.57	1.45	2.38	21000
100HSOC	1¼	¾	.750	.375	.187	1.86	1.74	3.29	30000

HIGH STRENGTH/LIFT CHAIN

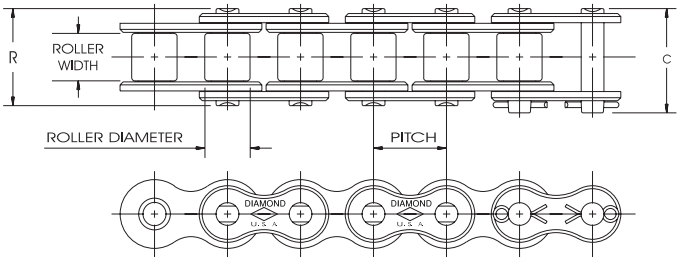
Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

Hoist Chain

These chains are built in accordance with ASME/ANSI B29.24 and are dimensionally identical to Standard Series Drive chains, but also incorporate pins produced from medium carbon alloy steel, through-hardened, to give the chains higher working load capacity and additional resistance to fatigue. Additionally, these chains are produced with solid rollers for increased performance when loading is high, but speeds are slow. Users of these chains should be aware that wear life may be slightly reduced due to the material and heat treatment of the chain pins.

Note: Slip-fit type connecting links and offset links are not available for these chains.



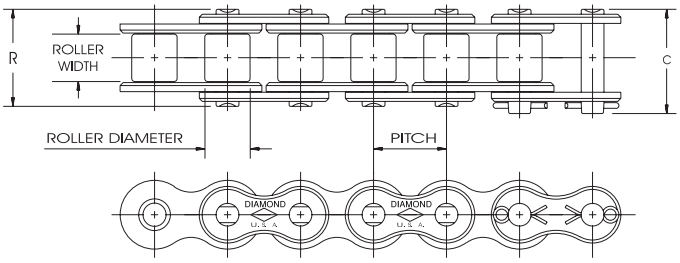
Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
625	5/8	3/8	.400	.200	.080	.89	.83	.68	8000
750	3/4	1/2	.469	.234	.094	1.11	1.04	.99	10500

Rollerless Lift Chain

These chains are specifically designed for tension linkages where frequent articulation requires the increased bearing area of a roller chain. Rollerless Lift chains are dimensionally identical to Standard Series Drive chains but are produced without rollers.

Note: Slip-fit type connecting links and offset links are not available for these chains.



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
55S	5/8	3/8	*.280	.200	.080	.89	.83	.55	†8000
65S	3/4	1/2	*.332	.234	.094	1.11	1.04	.81	†10500
85	1	5/8	*.442	.312	.125	1.44	1.32	1.41	14500
105	1 1/4	3/4	*.532	.375	.156	1.73	1.61	2.08	24000
125	1 1/2	1	*.620	.437	.187	2.14	2.00	3.04	34000

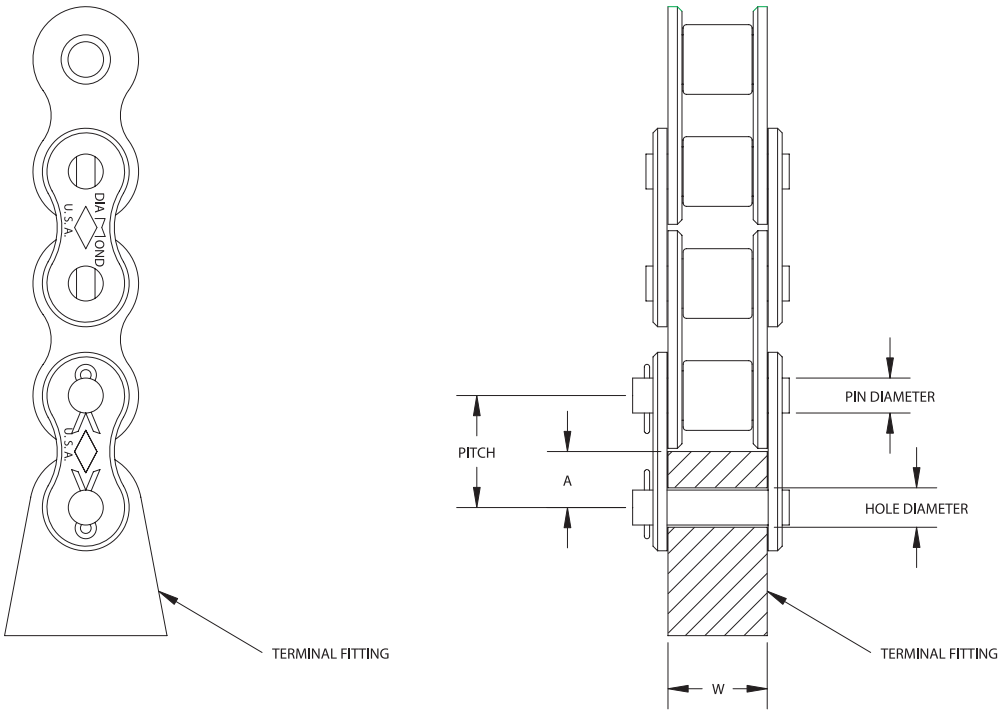
* Chains are rollerless — dimension shown is bushing diameter.
† Numbers 55S and 65S are assembled with medium carbon through-hardened pins.

HIGH STRENGTH/LIFT CHAIN

Chain Descriptions and Dimensions

Terminal Fittings

Diamond does not provide terminal fittings. We recommend that fittings be made of through-hardened steel, heat treated to RC 40-45. They should be machined accurately to ensure proper mating with chain link plates and to provide uniform loading across the width of the chain. Chains should always be attached to the terminal fittings using a press-fit style connecting link. Terminal fittings should be inspected regularly and the above conditions maintained. Worn, damaged or corroded chains and/or terminal fittings can lead to chain failure which may result in either personal injury or property damage.



Dimensions in Inches

Diamond Number	Pitch Inches	W +.000 -.031	Pin Diameter	Hole Diameter	A (max.)
60 H or HS	¾	.764	.234	.237	.375
80 H or HS	1	.955	.312	.315	.500
100 H or HS	1¼	1.141	.375	.378	.625
120 H or HS	1½	1.458	.437	.440	.750
140 H or HS	1¾	1.523	.500	.503	.875
160 H or HS	2	1.838	.562	.565	1.000
180 H ot HS	2¼	2.058	.687	.690	1.125
200 H or HS	2½	2.285	.781	.784	1.250
625	⅝	.542	.200	.203	.312
750	¾	.696	.234	.237	.375
55 S*	⅝	.542	.200	.203	.312
65 S*	¾	.696	.234	.237	.375
85*	1	.886	.312	.315	.500
105*	1¼	1.076	.375	.378	.625
125*	1½	1.390	.437	.440	.750

* Chains are roller less.

OIL FIELD CHAIN

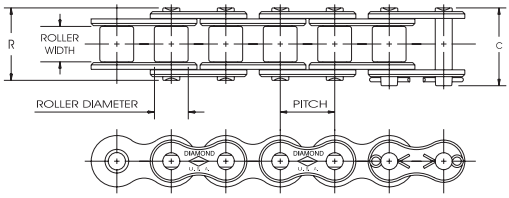
Chain Descriptions and Dimensions

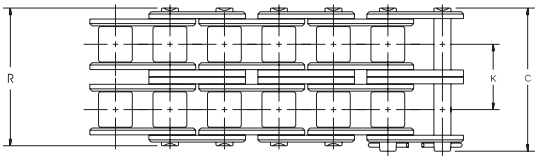
Roller chains used in the oil and natural gas industries are subjected to some of the greatest loads and harshest environments. These conditions are far more severe than usually found in industrial applications. These “Oil Field” chains can be either single strand or multiple strand and are typically constructed using Heavy Series components.

We produce our Oil Field chains with the same attention to detail that goes into all our products, but additionally these models are subjected to the most up to date API (American Petroleum Institute) Specification 7F performance testing. By examining the label on the box which proudly displays the API logo, users of our chains can be certain they are receiving the highest quality, best-performing product available. Only those companies which have established quality systems, approved and routinely audited, are authorized to display this symbol.

American Petroleum Institute

The following list of chain sizes and configurations are those which meet or exceed the performance criteria defined in API Specification 7F. It is highly recommended that multiple strand chains used in oil field applications be constructed with press-fit center plates. More information about press-fit construction is available in the Multiple Strand section of this product guide.





Dimensions in Inches and Pounds

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
40	½	5/16	.312	.156	.060	.72	.67	—	.41	4000
40-2	½	5/16	.312	.156	.060	1.29	1.24	.566	.80	8000
40-3	½	5/16	.312	.156	.060	1.85	1.80	.566	1.20	12000
40-4	½	5/16	.312	.156	.060	2.42	2.37	.566	1.60	16000
40-6	½	5/16	.312	.156	.060	3.56	3.51	.566	2.42	24000
50	5/8	3/8	.400	.200	.080	.89	.83	—	.68	6600
50-2	5/8	3/8	.400	.200	.080	1.60	1.55	.713	1.32	13200
50-3	5/8	3/8	.400	.200	.080	2.31	2.26	.713	1.98	19800
50-4	5/8	3/8	.400	.200	.080	3.03	2.97	.713	2.64	26400
50-5	5/8	3/8	.400	.200	.080	3.75	3.69	.713	3.30	33000
50-6	5/8	3/8	.400	.200	.080	4.46	4.40	.713	3.96	39600
50-8	5/8	3/8	.400	.200	.080	5.89	5.83	.713	5.30	52800
50-10	5/8	3/8	.400	.200	.080	7.32	7.26	.713	6.62	66000
60	¾	½	.469	.234	.094	1.11	1.04	—	.99	8500
60H	¾	½	.469	.234	.125	1.24	1.17	—	1.18	8500
60-2	¾	½	.469	.234	.094	2.01	1.94	.897	1.95	17000
60H-2	¾	½	.469	.234	.125	2.27	2.20	1.028	2.33	17000
60-3	¾	½	.469	.234	.094	2.91	2.84	.897	2.88	25500
60H-3	¾	½	.469	.234	.125	3.31	3.24	1.028	3.47	25500
60-4	¾	½	.469	.234	.094	3.81	3.74	.897	3.90	34000
60H-4	¾	½	.469	.234	.125	4.34	4.26	1.028	4.61	34000
60-5	¾	½	.469	.234	.094	4.71	4.64	.897	4.97	42500
60-6	¾	½	.469	.234	.094	5.60	5.53	.897	5.96	51000
60-8	¾	½	.469	.234	.094	7.40	7.33	.897	7.94	68000
60-10	¾	½	.469	.234	.094	9.19	9.12	.897	9.92	85000

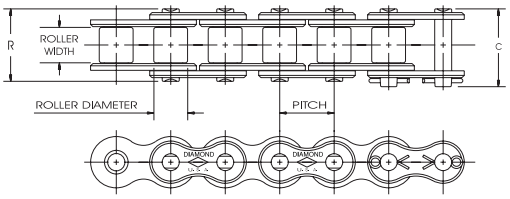
ASME/ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

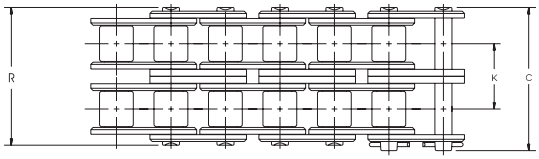
Chart continues on next page.

OIL FIELD CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN





Dimensions in Inches and Pounds

Chart continued from previous page.

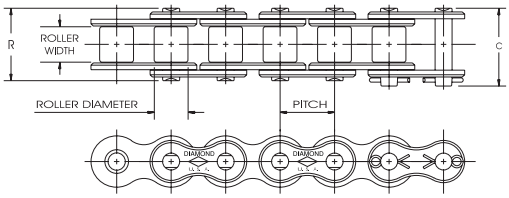
ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
80	1	5/8	.625	.312	.125	1.44	1.32	—	1.73	14500
80H	1	5/8	.625	.312	.156	1.57	1.45	—	2.02	14500
80-2	1	5/8	.625	.312	.125	2.59	2.47	1.153	3.37	29000
80H-2	1	5/8	.625	.312	.156	2.84	2.72	1.283	3.93	29000
80-3	1	5/8	.625	.312	.125	3.74	3.62	1.153	5.02	43500
80H-3	1	5/8	.625	.312	.156	4.14	4.02	1.283	5.92	43500
80-4	1	5/8	.625	.312	.125	4.90	4.79	1.153	6.73	58000
80H-4	1	5/8	.625	.312	.156	5.42	5.30	1.283	7.87	58000
80-5	1	5/8	.625	.312	.125	6.06	5.94	1.153	8.40	72500
80-6	1	5/8	.625	.312	.125	7.22	7.10	1.153	10.07	87000
80-8	1	5/8	.625	.312	.125	9.53	9.40	1.153	13.41	116000
100	1 1/4	3/4	.750	.375	.156	1.73	1.61	—	2.51	24000
100H	1 1/4	3/4	.750	.375	.187	1.86	1.74	—	2.82	24000
100-2	1 1/4	3/4	.750	.375	.156	3.14	3.02	1.408	4.91	48000
100H-2	1 1/4	3/4	.750	.375	.187	3.41	3.28	1.539	5.58	48000
100-3	1 1/4	3/4	.750	.375	.156	4.56	4.43	1.408	7.40	72000
100H-3	1 1/4	3/4	.750	.375	.187	4.95	4.82	1.539	8.32	72000
100-4	1 1/4	3/4	.750	.375	.156	5.97	5.84	1.408	9.80	96000
100H-4	1 1/4	3/4	.750	.375	.187	6.49	6.37	1.539	11.04	96000
100-5	1 1/4	3/4	.750	.375	.156	7.38	7.25	1.408	12.20	120000
100-6	1 1/4	3/4	.750	.375	.156	8.78	8.66	1.408	14.60	144000
100-8	1 1/4	3/4	.750	.375	.156	11.60	11.48	1.408	19.40	192000
120	1 1/2	1	.875	.437	.187	2.14	2.00	—	3.69	34000
120H	1 1/2	1	.875	.437	.219	2.27	2.13	—	4.08	34000
120-2	1 1/2	1	.875	.437	.187	3.93	3.79	1.789	7.35	68000
120H-2	1 1/2	1	.875	.437	.219	4.20	4.06	1.924	8.04	68000
120-3	1 1/2	1	.875	.437	.187	5.72	5.58	1.789	11.10	102000
120H-3	1 1/2	1	.875	.437	.219	6.13	5.99	1.924	11.99	102000
120-4	1 1/2	1	.875	.437	.187	7.52	7.38	1.789	14.70	136000
120H-4	1 1/2	1	.875	.437	.219	8.06	7.92	1.924	15.94	136000
120-5	1 1/2	1	.875	.437	.187	9.31	9.17	1.789	18.43	170000
120-6	1 1/2	1	.875	.437	.187	11.10	10.96	1.789	22.11	204000
120H-6	1 1/2	1	.875	.437	.219	11.91	11.77	1.924	23.84	204000
120-8	1 1/2	1	.875	.437	.187	14.68	14.54	1.789	29.47	272000
120-10	1 1/2	1	.875	.437	.187	18.26	18.12	1.789	36.83	340000
140	1 3/4	1	1.000	.500	.219	2.31	2.14	—	5.00	46000
140H	1 3/4	1	1.000	.500	.250	2.44	2.28	—	5.40	46000
140-2	1 3/4	1	1.000	.500	.219	4.24	4.07	1.924	9.65	92000
140H-2	1 3/4	1	1.000	.500	.250	4.50	4.34	2.055	10.65	92000
140-3	1 3/4	1	1.000	.500	.219	6.16	6.00	1.924	14.30	138000
140H-3	1 3/4	1	1.000	.500	.250	6.56	6.39	2.055	15.90	138000
140-4	1 3/4	1	1.000	.500	.219	8.09	7.93	1.924	18.95	184000
140H-4	1 3/4	1	1.000	.500	.250	8.62	8.45	2.055	21.10	184000
140-6	1 3/4	1	1.000	.500	.219	11.94	11.78	1.924	28.25	276000

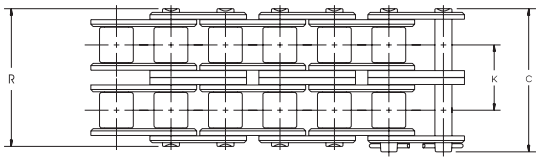
ASME/ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

Chart continues on next page.

OIL FIELD CHAIN

Chain Descriptions and Dimensions





American Petroleum Institute

Dimensions in Inches and Pounds

Chart continued from previous page.

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
160	2	1 1/4	1.125	.562	.250	2.73	2.54	—	6.53	58000
160H	2	1 1/4	1.125	.562	.281	2.86	2.68	—	7.03	58000
160-2	2	1 1/4	1.125	.562	.250	5.04	4.85	2.305	12.83	116000
160H-2	2	1 1/4	1.125	.562	.281	5.30	5.12	2.436	13.88	116000
160-3	2	1 1/4	1.125	.562	.250	7.35	7.16	2.305	19.03	174000
160H-3	2	1 1/4	1.125	.562	.281	7.75	7.56	2.436	20.68	174000
160-4	2	1 1/4	1.125	.562	.250	9.66	9.47	2.305	25.60	232000
160H-4	2	1 1/4	1.125	.562	.281	10.17	10.00	2.436	27.62	232000
160-6	2	1 1/4	1.125	.562	.250	14.27	14.09	2.305	37.78	348000
180	2 1/4	1 13/32	1.406	.687	.281	3.15	2.88	—	9.06	76000
180H	2 1/4	1 13/32	1.406	.687	.312	3.28	3.01	—	9.59	76000
180-2	2 1/4	1 13/32	1.406	.687	.281	5.75	5.48	2.592	17.67	152000
180H-2	2 1/4	1 13/32	1.406	.687	.312	6.00	5.73	2.723	18.86	152000
180-3	2 1/4	1 13/32	1.406	.687	.281	8.34	8.07	2.592	26.20	228000
180H-3	2 1/4	1 13/32	1.406	.687	.312	8.73	8.46	2.723	28.14	228000
200	2 1/2	1 1/2	1.562	.781	.312	3.44	3.12	—	10.65	95000
200H	2 1/2	1 1/2	1.562	.781	.375	3.71	3.39	—	13.38	110000
200-2	2 1/2	1 1/2	1.562	.781	.312	6.26	5.94	2.817	21.50	190000
200H-2	2 1/2	1 1/2	1.562	.781	.375	6.79	6.48	3.083	26.38	220000
200-3	2 1/2	1 1/2	1.562	.781	.312	9.08	8.76	2.817	32.30	285000
200H-3	2 1/2	1 1/2	1.562	.781	.375	9.88	9.56	3.083	40.85	330000
200-4	2 1/2	1 1/2	1.562	.781	.312	11.90	11.58	2.817	42.90	380000
200-6	2 1/2	1 1/2	1.562	.781	.312	17.52	17.21	2.817	64.50	570000
240	3	1 7/8	1.875	.937	.375	4.32	3.83	....	17.03	157600
240H	3	1 7/8	1.875	.937	.500	4.85	4.35	....	21.08	157600
240-2	3	1 7/8	1.875	.937	.375	7.77	7.27	3.458	33.44	315200
240-3	3	1 7/8	1.875	.937	.375	11.23	10.73	3.458	49.77	472800

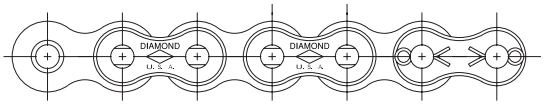
ASME/ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

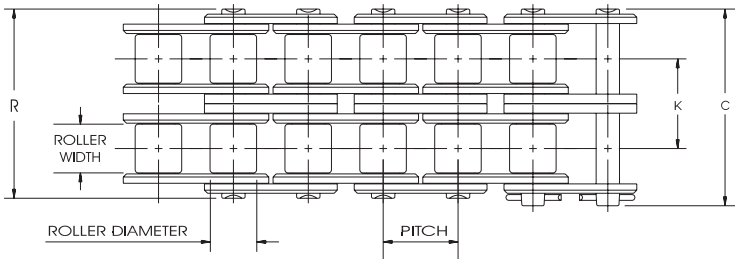
OIL FIELD CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Additionally, Diamond produces a narrow width 1-½" pitch roller chain for some of the older rigs and associated equipment as well as 2-½" pitch chain with a special larger pin diameter. These chains do not fall under the ASME/ANSI standards and therefore are not covered by API. Diamond still produces these non-standard chain to the highest quality standards, ensuring its superior performance.



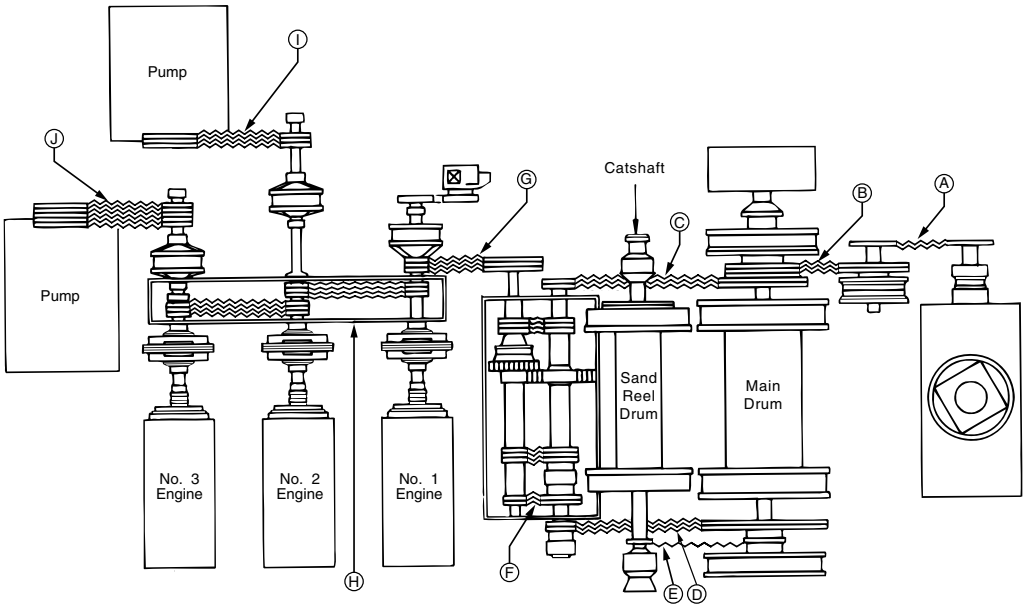


Dimensions in Inches and Pounds

Diamond Number	Other ID	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
472	....	1½	¾	.875	.437	.187	1.93	1.80	....	3.41	34000
472-2	....	1½	¾	.875	.437	.187	3.45	3.30	1.55	6.76	68000
472-3	....	1½	¾	.875	.437	.187	5.00	4.85	1.55	10.08	102000
472-4	....	1½	¾	.875	.437	.187	6.55	6.41	1.55	13.40	136000
264	64S	2½	1½	1.562	.875	.375	3.71	3.39	...	13.68	148500
264-3	64S-3	2½	1½	1.562	.875	.375	9.88	9.56	3.083	40.92	445500

OIL FIELD CHAIN

Chain Descriptions and Dimensions



Chain Drive	Rig Horsepower						
	4000	3000	2000	1500	1000	750	500
A. Rotary Table	160-2	160-2 200H-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1
B. Rotary Countershaft	160-2	160-2 200H-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1
C. High Drum	240-3	200H-3	160-4	160-3	140-3 160-2	160-2 140-2	120-3 140-2
D. Low Drum	240-3	200H-3	160-4	160-3	140-3 160-2	160-2 140-3	120-3 140-2
E. Catshaft	160-2	160-2 200H-1	160-2	160-1 140-2	160-1 140-2	160-1 140-2	140-1 120-1
F. Transmission	140-8	160-4 200H-3	160-4 160-3	160-3	160-2 140-3	140-2	120-2 100-3
G. Drawworks Input	140-8	120-8	120-6	120-4	120-3 120-4	100-4	100-3 100-4
H. Compound	140-8	120-8	120-6	120-4	120-3 120-4	100-4	100-3
I. & J. Mud Pump Drives	140-8	120-8	120-8 120-6	120-6 120-4	120-4 120-3	100-6 100-4	100-4 100-3

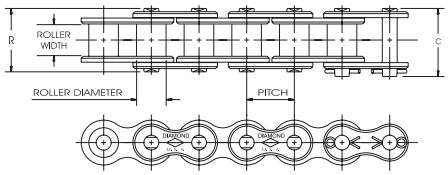
SPECIAL LUBRICATED CHAIN

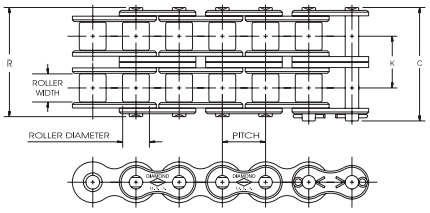
Chain Descriptions and Dimensions

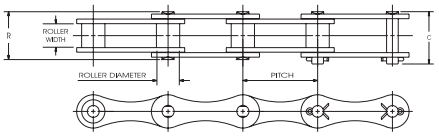
When the environment or location of your roller chain drive is such that regular lubrication is not possible or practical, consider Diamond Chain's Special Lubricated chains. Diamond offers three types of chain designed specifically to deliver the highest level of performance – even in applications that can't or don't receive proper lubrication.

DURALUBE® Chain

For applications where regular lubrication is a challenge, DURALUBE can offer a longer lasting solution. This chain is constructed using a one-piece powdered metal bushing/roller combination which has lubricant drawn in under vacuum. In service, this lubricant is released and provides supplemental lubrication to the pin/bushing joint between regularly scheduled maintenance. Generally, the wear life of DURALUBE chain can be five times that of standard (initially lubricated only) chain.







Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
40-DL	1/2	5/16	.312	.156	.060	.72	.67	....	.40	3300
40-2-DL	1/2	5/16	.312	.156	.060	1.29	1.24	.566	.81	6600
50-DL	5/8	3/8	.400	.200	.080	.89	.83	....	.65	5200
50-2-DL	5/8	3/8	.400	.200	.080	1.60	1.55	.713	1.27	10400
60-DL	3/4	1/2	.469	.234	.094	1.11	1.04	....	.95	7400
60-2-DL	3/4	1/2	.469	.234	.094	2.01	1.94	.897	1.85	14800
80-DL	1	5/8	.625	.312	.125	1.44	1.32	....	1.60	13000
2040-DL	1	5/16	.312	.156	.060	.76	.68	....	.30	3300
2050-DL	1 1/4	3/8	.400	.200	.080	.92	.84	....	.47	5200
2060-DL	1 1/2	1/2	.469	.234	.094	1.11	1.05	....	.70	7400

Attachments for pin link only. Consult Diamond for standard attachment availability.

Due to the nature of DURALUBE chain's construction, the following speed and temperature limitations should be considered prior to the chain's selection or installation.

Single-Pitch	Max. Speed
#40	1300 ft/min
#50	1000 ft/min
#60	850 ft/min
#80	650 ft/min

Ambient temperature should not exceed 120° F.

Double-Pitch	Max. Speed
All	600 ft/min

Ambient temperature should not exceed 120° F.

SPECIAL LUBRICATED CHAIN

Chain Descriptions and Dimensions

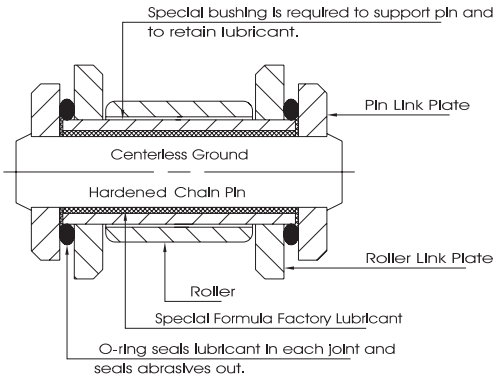
DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

RING LEADER® O-ring Chain

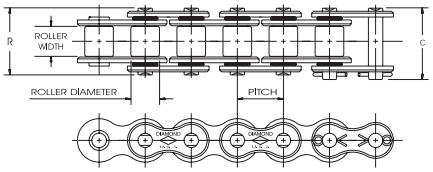
Diamond's RING LEADER O-ring chain is specifically designed for applications that don't permit regular lubrication, requiring the chain to depend entirely upon initial factory lubrication throughout its service life. Depending upon the specific conditions, RING LEADER can provide up to ten times the wear life of standard chain.

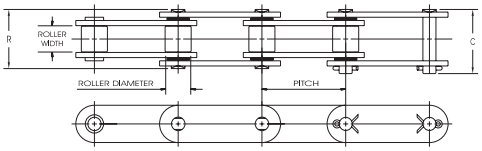
Industries such as agriculture, food processing, packaging, printing, textile and chemical processing can introduce contaminants that damage standard chain. Dirt, mud, food particles, paper fines, dust and moisture can cause buildup on the chain and clog the openings on standard roller chain where lubrication enters the pin/bushing area. These contaminants can even get inside the chain, actually damaging the surface of pins and bushings.

RING LEADER O-ring chain is constructed with O-rings that seal a specially formulated lubricant into every joint. This sealed-in lubricant is essential for the chain's optimum wear life and the O-rings also help to seal out and protect the internal surfaces from dirt, contaminants and moisture. Diamond recommends that RING LEADER O-ring chain receive periodic external lubrication to maintain moisture on the external O-ring surfaces and to lubricate roller/sprocket contact surfaces. Note: Standard RING LEADER O-ring chain can routinely operate in ambient temperatures up to 150° F. For higher temperature requirements, special O-rings can be substituted, allowing operation in temperatures of 400° F or greater.



Because the RING LEADER chain lasts up to ten times longer than regular chain, overall economy of operation is improved. With lubrication already sealed into the chain, maintenance expense is lowered. RING LEADER O-ring chain experiences less wear elongation during normal operation, thus providing a longer service life. Life cycle costs of RING LEADER chain can be dramatically less than for standard chain in certain applications which translates into longer lasting roller chain and a real cost savings.





Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
50 XLO	5/8	3/8	.400	.200	.080	.95	.89	.72	6500
50H XLO	5/8	3/8	.400	.214	.094	1.02	.96	.93	9300
60 XLO	3/4	1/2	.469	.234	.094	1.21	1.13	1.01	7700
80 XLO	1	5/8	.625	.312	.125	1.51	1.41	1.77	13500
100 XLO	1 1/4	3/4	.750	.375	.156	1.83	1.74	2.55	22000
120 XLO	1 1/2	1	.875	.437	.187	2.24	2.12	3.76	30000
140 XLO	1 3/4	1	1.000	.500	.219	2.49	2.35	5.10	42000
160 XLO	2	1 1/4	1.125	.562	.250	2.96	2.82	6.66	52000
C2050 XLO	1 1/4	3/8	.400	.200	.080	.95	.89	.59	6500
C2060H XLO	1 1/2	1/2	.469	.234	.125	1.27	1.21	1.17	7700

Consult Diamond for standard attachment availability.

SPECIAL LUBRICATED CHAIN

Chain Descriptions and Dimensions

DUST STOPPER™ Chain

Fora applications which require the combined benefits of DURALUBE design construction and RING LEADER style O-rings and a specially formulated lubricant, DUST STOPPER offers the utmost in speciallized protection. DUST STOPPER uses a one piece powdered metal bushing/roller combination which has lubricant drawn in under vacuum and is constructed with O-rings that seal a specially formulated lubricant into every joint. Wear life of DUST STOPPER chain is significantly greater than that of standard (initially lubricated only) chain. Due to the nature of DUST STOPPER chain's design and construction, ambient temperature should not exceed 120˚F and maximum speed limitations should be considered prior to the chain's selection or installation.

	Max. Speed
40XDLO	1300 ft/min
50XDLO	1000 ft/min
60XDLO	850 ft/min
80XDLO	650 ft/min

- Seals dust, dirt and debris out
- Seals lubrication in
- Very minimal, if any, secondary lubrication required
- Improved wear resistance and toughness
- Combines the advantages of two proven Diamond products:
    - Ring Leader" O-Ring Chain &
    - Duralube" Self-lubricating Chain

Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Pate Thickness	C	R	Weight Per Foot	Average Tensile Strength	Max. Speed ft/min
40XDLO	½	5/16	.312	.156	.060	.78	.73	.43	3300	1300
50XDLO	⅝	⅜	.400	.200	.080	.95	.59	.68	5200	1000
60XDLO	¾	½	.469	.234	.094	1.21	1.13	.95	7400	850
80XDLO	1	⅝	.625	.312	.125	1.51	1.41	1.59	13000	650

CORROSION/MOISTURE RESISTANT CHAIN

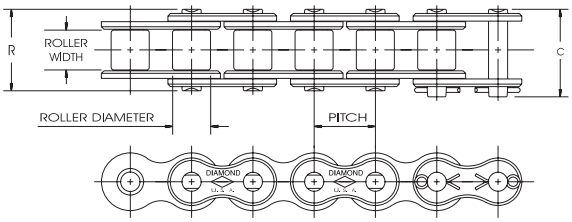
Chain Descriptions and Dimensions

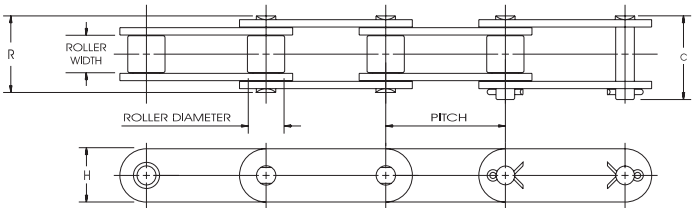
Nickel-Plated Chain

Diamond Chain produces a full line of Nickel-Plated roller chains for a variety of uses in environments where the chains are exposed to moisture. Common uses include applications exposed to the weather, high humidity or those on machines that are frequently washed down with water.

Diamond Nickel-Plated chain is different from many rust-resistant chains, because Diamond electroless nickel plates all of the components before assembly, virtually eliminating the possibility of stress-corrosion cracking. Pre-assembly plating also ensures all components are plated, which prevents internal rust from seeping out and causing contamination. Standard attachments are available with quick delivery. See standard attachment chain section for dimensional information.

Note: These chains are not intended to resist corrosion from caustic chemicals or acids. For those types of applications, stainless steel chain is recommended.





Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
25NP	1/4	1/8	*.130	.090	.030	.37	.34	.085	875
35NP	3/8	3/16	*.200	.141	.050	.56	.50	.220	2100
40NP	1/2	5/16	.312	.156	.060	.72	.67	.420	4000
50NP	5/8	3/8	.400	.200	.080	.89	.83	.680	6600
60NP	3/4	1/2	.469	.234	.094	1.11	1.04	.970	8500
80NP	1	5/8	.625	.312	.125	1.44	1.32	1.700	14500
100NP	1 1/4	3/4	.750	.375	.156	1.73	1.61	2.500	24000
120NP	1 1/2	1	.875	.437	.187	2.14	2.00	3.700	34000
C2040NP	1	5/16	.312	.156	.060	.76	.68	.320	3700
C2050NP	1 1/4	3/8	.400	.200	.080	.92	.84	.550	6100
C2060HNP	1 1/2	1/2	.469	.234	.125	1.25	1.18	.970	8500

* Chains are rollerless — dimension shown is bushing diameter.
Standard attachments are available for above models.

CORROSION/MOISTURE RESISTANT CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Diamond ACE®

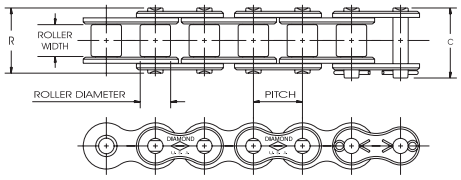
Diamond ACE (Anti-Corrosion Exterior) chain is uniquely designed and incorpoates an electrochemically bonded, protected exterior coating that is applied to the componet parts prior to assembly. Pre-assembly coating ensures all componet parts are thoroughly treated, which prevents internal rust from seeping out and causing contamination.

The protective coating serves as an insulating barrier that actually oxidizes before the carbon steel base chain, thus protecting and preserving the chain's physical and structural integrity.

Common applications for Diamond ACE include exposure to weather, high humidity or on machinery that is routinely washed down with water. Standard attachments are available with quick delivery. See standard attachment chain section for dimensional program.

Note: These chains are not intended to resist corrosion from caustic chemicals or acids. Stainless steel chain is normally recommended for those types of applications. Contact Diamond's Application Engineers for assistance in selecting the proper chain for your application.

Single-Pitch Drive chains

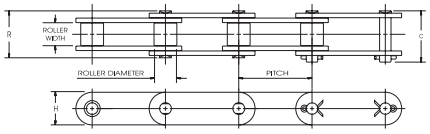


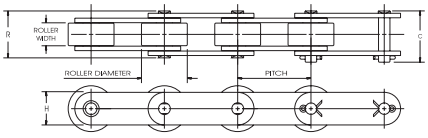
Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
40 ACE	1/2	5/16	.312	.156	.060	.720	.670	.420	4000
50 ACE	5/8	3/8	.400	.200	.080	.890	.830	.680	6600
60 ACE	3/4	1/2	.469	.234	.094	1.110	1.040	.970	8500
80 ACE	1	5/8	.625	.312	.125	1.440	1.320	1.700	14500

* For sizes not listed, contact Diamond for availability on a made-to-order basis.
Standard attachments are available for above models

Double-Pitch Drive chains





Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
C-2040 ACE	1	5/16	.312	.156	.060	.760	.680	.340	3700
C-2042 ACE	1	5/16	.625	.156	.060	.760	.680	.340	3700
C-2050 ACE	1 1/4	3/8	.400	.200	.080	.920	.840	.580	6100
C-2052 ACE	1 1/4	3/8	.750	.200	.080	.920	.840	.580	6100
C-2060H ACE	1 1/2	1/2	.469	.234	.125	1.250	1.180	1.050	8500
C-2060H ACE	1 1/2	1/2	.875	.234	.125	1.250	1.180	1.050	8500
C-2080H ACE	2	5/8	.625	.312	.156	1.570	1.450	1.400	14500
C-2080H ACE	2	5/8	1.125	.312	.156	1.570	1.450	1.400	14500

* For sizes not listed, contact Diamond for availability on a made-to-order basis.
Standard attachments are available for above models.

CORROSION/MOISTURE RESISTANT CHAIN

Chain Descriptions and Dimensions

Stainless Steel Chain

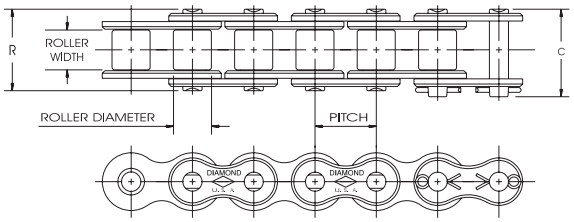
Diamond produces a wide range of Single-Pitch Drive and Double-Pitch Conveyor chains manufactured in four combinations of stainless steel depending upon the specific application.

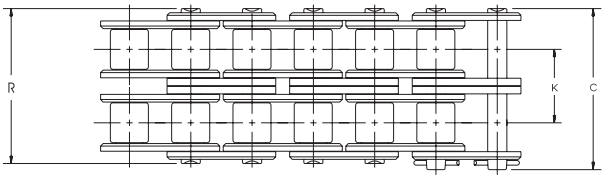
AP Stainless Chain: This chain is assembled using 300 Series (austenitic stainless) link plates, bushings and rollers along with a precipitation-hardened stainless steel pin. This combination increases the wear life of this chain over those constructed entirely of 300 Series components. AP Stainless chains are well suited for food processing, and are approved by the Food and Drug Administration. AP Stainless will be supplied unless otherwise specified.

300 Series Stainless Chain: These chains are assembled entirely from 300 Series (austenitic) components. They have excellent corrosion resistance and very low magnetic permeability but cannot be expected to have the same wear resistance of our heat treated stainless chains. For industries that require it, 300 Series chains can be considered "non-sparking."

400 Series Stainless Chain: These chains are manufactured using 300 Series link plates but have pins, bushings and rollers that are produced from 400 Series (martensitic) heat treated stainless. This combination significantly increases wear resistance over those that are constructed using only 300 Series stainless chains. The properties of the 400 Series heat treated parts may, in some instances, cause them to discolor when in contact with certain chemicals.

600 Series Stainless Chain: These chains are assembled using 300 Series link plates, with pins, bushings and rollers made from 600 Series (17-4/17-7) precipitation-hardened stainless.





Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	LinkPlate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
47SS	.1475	.072	*.090	.062	.015	.25	.22	.....	.035	180
25SS	1/4	1/8	*.130	.090	.030	.37	.34	.....	.084	700
25-2SS	1/4	1/8	*.130	.090	.030	.63	.59	.252	.163	1400
35SS	3/8	3/16	*.200	.141	.050	.56	.50	.....	.210	1700
40SS	1/2	5/16	.312	.156	.060	.72	.67	.....	.410	3000
40-2SS	1/2	5/16	.312	.156	.060	1.29	1.24	.566	.800	6000
41SS	1/2	1/4	.306	.141	.050	.65	.57	.....	.280	1700
50SS	5/8	3/8	.400	.200	.080	.89	.83	.....	.680	4700
50-2SS	5/8	3/8	.400	.200	.080	1.60	1.55	.713	1.320	9400
60SS	3/4	1/2	.469	.234	.094	1.11	1.04	.....	1.000	6750
60-2SS	3/4	1/2	.469	.234	.094	2.01	1.94	.897	1.950	13500
80SS	1	5/8	.625	.312	.125	1.44	1.32	.....	1.690	12000

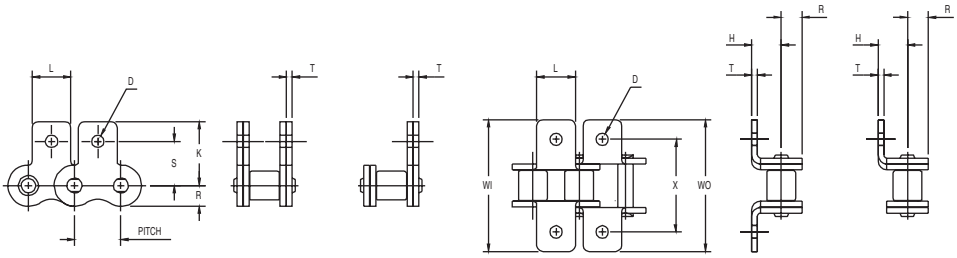
* Chains are rollerless — dimension shown is bushing diameter.

CORROSION/MOISTURE RESISTANT CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Standard Straight and Bent Attachment Stainless Steel Chain



Others	Diamond
M-35, SA1	S1 (one hole)
M-1, SK1	S2 (one hole)

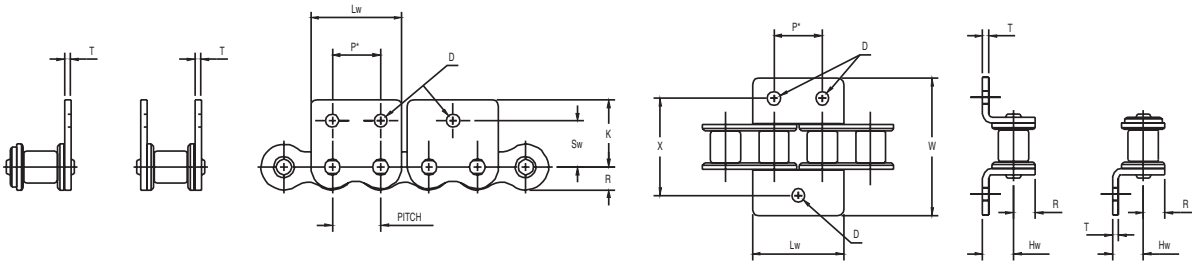
Others	Diamond
A1	B1 (one hole)
K1	B2 (one hole)

Dimensions in Inches

Diamond Number	Pitch Inches	D	H	K	L	R Max.	S	T	WI	WO	X
25SS	.250	.125	.180	.451	.218	.119	.308	.030	.781	.843	.562
35SS	.375	.102	.250	.577	.312	.178	.387	.050	1.125	1.125	.750
40SS	.500	.141	.312	.684	.375	.238	.489	.060	1.390	1.390	1.000
41SS	.500	.141	.282	.698	.375	.192	.482	.050	1.375	1.375	.937
50SS	.625	.203	.406	.895	.500	.297	.618	.080	1.812	1.812	1.250
60SS	.750	.203	.478	1.038	.625	.356	.716	.094	2.135	2.135	1.500
80SS	1.000	.266	.625	1.339	.750	.475	.968	.125	2.750	2.750	2.000

Above attachments available for multiple strand chain.

Wide Contour Straight and Bent Attachment Stainless Steel Chain



Others	Diamond
WM-35	WCS1 (one hole)
WM-35-2	WCS1 (two holes)

Others	Diamond
WM-1	WCS2 (one hole)
WM-2	WCS2 (two holes)

Others	Diamond
WA-1	WCB1 (one hole)
WA-2, A2	WCB1 (two holes)

Others	Diamond
WK-1	WCB2 (one hole)
WK-2, K2	WCB2 (two holes)

Dimensions in Inches

Diamond Number	Pitch Inches	D	Hw	K	Lw	P	R Max.	Sw	T	W	X
35SS	.375	.125	.262	.577	.727	.375	.178	.399	.050	1.105	.750
40SS	.500	.141	.326	.684	.946	.500	.238	.503	.060	1.366	1.000
50SS	.625	.203	.406	.895	1.211	.625	.297	.618	.080	1.807	1.250
60SS	.750	.203	.478	1.038	1.420	.750	.356	.716	.094	2.135	1.500
80SS	1.000	.266	.625	1.339	1.885	1.000	.475	.967	.125	2.750	2.000

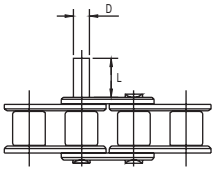
Contact Diamond Chain for available attachments on roller links (wide contour).
Above attachments available for multiple strand chain.

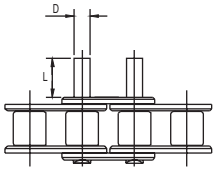
CORROSION/MOISTURE RESISTANT CHAIN

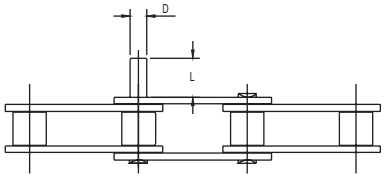
Chain Descriptions and Dimensions

Standard Extended Pin Stainless Steel Chain

Others	Diamond
D1	E1 (one extended pin)
D3	E2 (two extended pins)





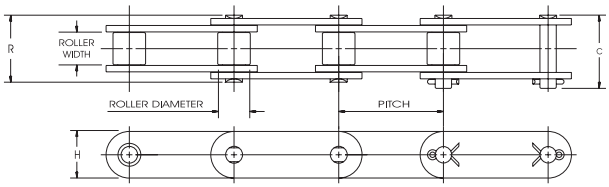


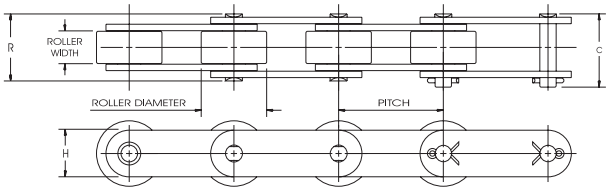
Dimensions in Inches

Diamond Number	Pitch Inches	D ± .0005"	L ± .010"
35SS	.375	.141	.375
40SS	.500	.156	.383
41SS	.500	.141	.375
50SS	.625	.200	.469
60SS	.750	.234	.562
80SS	1.000	.312	.750

Dimensions in Inches

Diamond Number	Pitch Inches	D ± .0005"	L ± .010"
C2040SS	1.00	.156	.375
C2042SS	1.00	.156	.375
C2050SS	1.25	.200	.469
C2052SS	1.25	.200	.469
C2060SS	1.50	.234	.562
C2062SS	1.50	.234	.562
C2080SS	2.00	.312	.750
C2082SS	2.00	.312	.750





Double-Pitch Oval Contour Stainless Steel Conveyor Chain - Standard Diameter Roller

Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
C-2040SS	1	5/16	.312	.156	.060	.76	.68	.34	3000
C-2050SS	1¼	⅜	.400	.200	.080	.92	.84	.56	4700
C-2060SS	1½	½	.469	.234	.094	1.11	1.05	.81	6750
C-2080SS	2	⅝	.625	.312	.125	1.44	1.32	1.40	12000

Double-Pitch Oval Contour Stainless Steel Conveyor Chain - Large Diameter Roller

Dimensions in Inches and Pounds

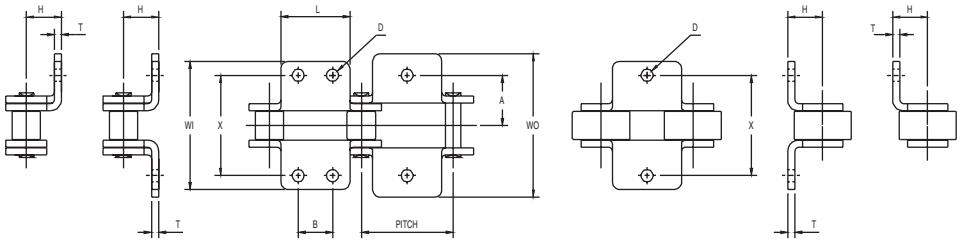
Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
C-2042SS	1	5/16	.625	.156	.060	.76	.68	.55	3000
C-2052SS	1¼	⅜	.750	.200	.080	.92	.84	.86	4700
C-2062SS	1½	½	.875	.234	.094	1.11	1.05	1.27	6750
C-2082SS	2	⅝	1.125	.312	.125	1.44	1.32	2.06	12000

CORROSION/MOISTURE RESISTANT CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Double-Pitch Oval Contour Stainless Steel Conveyor Chain Bent Attachments
Oval Contour Link Plates
Standard and Oversized Roller



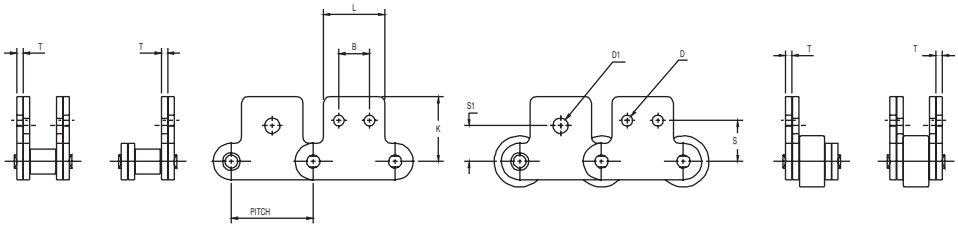
Others	Diamond
A1	B1 (one hole)
A2	B1 (two holes)

Others	Diamond
K1	B2 (one hole)
K2	B2 (two holes)

Dimensions in Inches

Standard Roller												Large Roller	
Diamond Number	Roller Diameter	Pitch Inches	A	B	D	H	L	T	WI	WO	X	Diamond Number	Roller Diameter
C2040SS	.312	1.00	.500	.375	.141	.355	.750	.060	1.350	1.488	1.000	C2042SS	.625
C2050SS	.400	1.25	.625	.469	.203	.453	.937	.080	1.692	1.863	1.250	C2052SS	.750
C2060SS	.469	1.50	.844	.562	.203	.561	1.125	.094	2.115	2.317	1.688	C2062SS	.875
C2080SS	.625	2.00	1.094	.750	.266	.739	1.500	.125	2.760	3.028	2.188	C2082SS	1.125

Double-Pitch Oval Contour Stainless Steel Conveyor Chain Straight Attachments
Oval Contour Link Plates
Standard and Oversized Roller



Others	Diamond
M-35, SA1	S1 (one hole)
M-35-2, SA2	S1 (two holes)

Others	Diamond
M-1, SK1	S2 (one hole)
M-2, SK2	S2 (two holes)

Dimensions in Inches

Standard Roller			2 Attachment Holes						1 Attachment Hole		Large Roller	
Diamond Number	Roller Diameter	Pitch Inches	B	D	S	K	L	T	D1	S1	Diamond Number	Roller Diameter
C2040SS	.312	1.00	.375	.141	.531	.773	.750	.060	.188	.438	C2042SS	.625
C2050SS	.400	1.25	.469	.203	.625	.971	.937	.080	.250	.563	C2052SS	.750
C2060SS	.469	1.50	.562	.203	.750	1.203	1.125	.094	.329	.688	C2062SS	.875
C2080SS	.625	2.00	.750	.266	1.000	1.590	1.500	.125	.375	.875	C2082SS	1.125

CORROSION/MOISTURE RESISTANT CHAIN

TR = Total Resistance

PR = Partial Resistance

SR = Satisfactory Resistance

NR = Not Recommended

Corrosion Resistance of Stainless Steel Chains

	AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Acetic Acid				
Dilute 70°F	TR	TR	PR	NR
Dilute Boiling	TR	PR	PR	NR
Conc. 70°F	TR	TR	PR	NR
Conc. Boiling	PR	SR	PR	NR
Acetic Anhydride	TR	TR	SR	NR
Acetic Vapors	TR	PR	- - - -	NR
Acetone	TR	TR	SR	NR
Alcohol (Methyl, Ethyl, Propyl, and Butyl)	TR	TR	TR	NR
Aluminum Acetate	TR	TR	- - - -	NR
Aluminum Chloride	PR	PR	PR	NR
Aluminum Sulfate				
70°F	SR	TR	- - - -	NR
Boiling	SR	SR	- - - -	NR
Aluminum Potassium Sulfate				
70°F	TR	TR	PR	NR
Boiling	SR	SR	- - - -	NR
Ammonia (Ammonium Hydroxide)	TR	TR	TR	NR
Ammonium Bicarbonate	TR	TR	TR	NR
Ammonium Chloride				
70°F	TR	TR	SR	NR
Boiling	NR	SR	- - - -	NR
Ammonium Nitrate	TR	TR	TR	NR
Ammonium Oxalate	TR	TR	TR	NR
Ammonium Persulfate	TR	TR	- - - -	NR
Ammonium Sulfate				
70°F	TR	TR	SR	NR
plus 0.5% H_2SO_4	TR	TR	- - - -	NR
plus 5.0% H_2SO_4	TR	PR	- - - -	NR
Ammonium Stannichloride				
70°F	SR	SR	- - - -	NR
120°F	NR	NR	- - - -	NR
Aniline	TR	TR	TR	NR
Aniline Hydrochloride	PR	PR	- - - -	NR
Antimony, Molten, 1100°F	NR	NR	NR	NR
Baking Soda (Sodium Bicarbonate)	TR	TR	TR	NR
Barium Carbonate	TR	TR	TR	NR
Barium Chloride				
70°F	TR	TR	SR	NR
Hot	SR	SR	- - - -	NR
Barium Nitrate	TR	TR	- - - -	NR
Barium Sulfate	TR	TR	- - - -	NR
Beer	TR	TR	TR	NR
Beet Juice	TR	TR	TR	NR
Benzene (Benzol)	TR	TR	TR	NR
Benzine	TR	TR	TR	NR
Benzoic Acid	TR	TR	TR	NR

	AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Bichloride of Mercury				
less than 0.1%	TR	TR	- - - -	NR
greater than 0.7%-cold	SR	SR	- - - -	NR
greater than 0.7%-hot	PR	PR	- - - -	- - - -
Calcium Hypochloride	PR	PR	PR	NR
Blood (Meat Juices)	TR	TR	TR	NR
Blue Vitriol (Copper Sulfate)				
5%-70°F	TR	TR	TR	NR
Saturated Solution-Boiling	TR	TR	- - - -	NR
Borax	TR	TR	TR	NR
Boric Acid	TR	TR	TR	NR
Bromine	NR	NR	NR	NR
Buttermilk	TR	TR	TR	NR
Butyric Acid	SR	TR	TR	NR
Calcium Chloride (Alkaline)				
Boiling	TR	TR	- - - -	NR
Boiling, 300 lbs. Pressure	NR	PR	- - - -	NR
Calcium Carbonate	TR	TR	TR	NR
Calcium Oxychloride	PR	PR	- - - -	NR
Calcium Sulfate	TR	TR	- - - -	NR
Carbolic Acid	TR	TR	TR	NR
Carbon Disulfide	TR	TR	TR	NR
Carbon Monoxide	TR	TR	TR	NR
Carbon Tetrachloride (Pure)	TR	TR	TR	NR
Carnallite (Potassium, Magnesium Chloride)	SR	SR	- - - -	NR
Caustic Lime, Potash or Soda (Calcium, Potassium, or Sodium Hydroxide), Lye				
70°F	TR	TR	TR	NR
Boiling	SR	SR	SR	NR
Cellulose	TR	TR	- - - -	NR
Chlorine Gas				
Dry	NR	PR	PR	NR
Moist	NR	NR	NR	NR
Chlorinated Water	NR	PR	TR	NR
Chlorobenzine	TR	TR	- - - -	NR
Chloroform	TR	TR	- - - -	NR
Chromic Acid				
70°F	TR	SR	PR	NR
Boiling	PR	PR	- - - -	NR
with SO_3, Boiling	NR	NR	NR	NR
Chrome Aluminum	TR	TR	- - - -	NR
Boiling	NR	NR	- - - -	NR
Citric Acid-10%				
70°F	TR	TR	TR	NR
Boiling	PR	PR	NR	NR
Cola Syrup	TR	TR	SR	NR
Copperas (Ferrous Sulfate)	SR	SR	SR	NR
Copper Acetate	TR	TR	- - - -	NR

Chart continues on next page.

CORROSION/MOISTURE RESISTANT CHAIN

DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

Corrosion Resistance of Stainless Steel Chains

Chart continued from previous page.

	AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Copper Carbonate	TR	TR	TR	NR
Copper Chloride				
70°F	PR	PR	PR	NR
Boiling	NR	NR	NR	NR
Copper Cyanide	TR	TR	TR	NR
Copper Nitrate	TR	TR	TR	NR
Copper Sulfate	TR	TR	TR	NR
Creosote	TR	TR	TR	NR
Cyanogen Gas	TR	TR	- - - -	NR
Dichloro-ethane (Ethylidene Chloride, Ethylene Chloride, Dutch Liquor)	TR	TR	- - - -	NR
Dyewood Liquor	TR	TR	- - - -	NR
Epsom Salts (Magnesium Sulfate)	TR	TR	SR	NR
Ether	TR	TR	TR	NR
Ferric Hydroxide	TR	TR	TR	NR
Ferric Chloride	PR	PR	PR	NR
Ferric Nitrate	TR	TR	TR	NR
Ferric or Ferrous Sulfate	SR	SR	SR	NR
Formaldehyde (Formalin)	TR	TR	TR	NR
Formic Acid	PR	SR	PR	NR
Fruit Juices	SR	TR	PR	NR
Fuel Oil	TR	TR	- - - -	NR
Fuel Oil Containing Sulfuric Acid	PR	PR	- - - -	NR
Gallic Acid	TR	TR	TR	NR
Gasoline	TR	TR	TR	NR
Glauber's Salt (Sodium Sulfate)	TR	TR	TR	NR
Glue acidified	SR	SR	- - - -	NR
Glycerine	TR	TR	TR	NR
Grape Juice	SR	TR	TR	NR
Gypsum (Calcium Sulfate)	TR	TR	- - - -	NR
Hydrogen Peroxide	SR	SR	SR	NR
Hydrobromic Acid	PR	PR	PR	NR
Hydrochloric Acid (Muriatic)				
70°F	NR	PR	PR	NR
Boiling	NR	NR	NR	NR
Fumes-70°F	NR	PR	PR	NR
Hydrocyanic Acid (Prussic Acid)	TR	TR	PR	NR
Hydrofluoric Acid Fumes	PR	PR	- - - -	NR
Hydrafluosilic Acid	PR	PR	- - - -	NR
Hydrofluosilic Acid Fumes	NR	NR	NR	NR
Hyposulfite of Soda (Hypo, Sodium Thiosulfate)	TR	TR	SR	NR
Hydrogen Sulfide				
Dry	TR	TR	- - - -	NR
Moist, H_2SO, Present	NR	PR	- - - -	NR
Inks				
Alkaline	TR	TR	- - - -	NR
Acid	SR	SR	- - - -	NR
Iodine				
Dry	NR	TR	- - - -	NR
Moist	NR	NR	NR	NR
Iodotorm	TR	TR	- - - -	NR
Kerosene	TR	TR	TR	NR
Ketchup	TR	SR	SR	NR

	AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Lactic Acid				
70°F	SR	TR	SR	NR
150°F	PR	PR	PR	NR
Lard	TR	TR	- - - -	NR
Lead, Molten, 1200°F	SR	SR	PR	NR
Linseed Oil	SR	TR	SR	NR
Lye (Sodium or Potassium Hydroxide)				
70°F	TR	TR	TR	NR
Boiling	SR	SR	SR	NR
Lysol	TR	TR	PR	NR
Magnesium Chloride				
70°F	SR	SR	SR	NR
Hot	PR	PR	PR	NR
Magnesium Oxychloride	PR	PR	- - - -	NR
Magnesium Sulfate (Epsom Salt)	TR	TR	SR	NR
Malic Acid	TR	TR	SR	NR
Manganese Chloride	TR	TR	- - - -	NR
Marsh Gas (Illuminating Gas)	TR	TR	- - - -	NR
Mash, Hot	TR	TR	- - - -	NR
Mayonnaise	TR	SR	PR	NR
Mercury	TR	TR	- - - -	NR
Methyl Aldehyde	TR	TR	- - - -	NR
Milk-Sweet or Sour	TR	TR	TR	NR
Mine Water, Acid	TR	TR	TR	NR
Mixed Acids				
a. 50% H_2SO_4 50% HNO_3				
70°F	SR	SR	SR	NR
Boiling	PR	PR	PR	NR
b. 75% H_2SO_4 25% HNO_3				
70°F	SR	SR	SR	NR
Boiling	PR	PR	PR	NR
c. 5% H_2SO_4 5% HNO_3 80% H_2O				
70°F	SR	SR	SR	NR
Boiling	SR	SR	- - - -	NR
d. Chromic and Sulfuric	PR	PR	- - - -	NR
Molasses	TR	TR	- - - -	NR
Mustard (Prepared)	TR	TR	NR	NR
Naphtha, Pure or Crude	TR	TR	TR	NR
Nickel Chloride	SR	SR	- - - -	NR
Nickel Sulfate	TR	TR	- - - -	NR
Nitre (Potassium Nitrate)	TR	TR	TR	NR
Nitric Acid				
70°F	SR	TR	TR	NR
Concentrated, Boiling	SR	SR	NR	NR
Fuming, Concentrated, Boiling	PR	PR	NR	NR
Nitrous Acid	SR	TR	SR	NR
Oleic Acid	TR	SR	SR	NR
Oils, Mineral or Vegetable				
Refined	TR	TR	TR	NR
Crude	SR	SR	SR	NR
Oxalic Acid	PR	PR	SR	NR
Paraffin	TR	TR	TR	NR
Phenol (Carbolic Acid)	TR	TR	TR	NR

Chart continues on next page.

CORROSION/MOISTURE RESISTANT CHAIN

Corrosion Resistance of Stainless Steel Chains

Chart continued from previous page.

	AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Petroleum	TR	TR	TR	NR
Petroleum Ether	TR	TR	TR	NR
Phosphoric Acid, Technical	TR	SR	PR	NR
Boiling Crude	NR	NR	NR	NR
Picric Acid	TR	TR	TR	NR
Plaster of Paris (Sulfate of Lime, Gypsum)	TR	TR	- - - -	NR
Potash (Potassium Carbonate)	TR	TR	TR	NR
Potassium Bitartrate	SR	SR	- - - -	NR
Potassium Bichromate	TR	TR	TR	NR
Potassium Bromide	SR	SR	PR	NR
Potassium Chlorate	TR	TR	TR	NR
Potassium Chloride	SR	SR	SR	NR
Potassium Cyanide	TR	TR	TR	NR
Potassium Hydroxide				
Boiling	SR	SR	SR	NR
Molten, 650°F	NR	NR	NR	NR
Potassium Hypochlorite	SR	SR	- - - -	NR
Potassium Iodide	TR	TR	- - - -	NR
Potassium Nitrate (Nitre, Saltpeter)	TR	TR	TR	NR
Potassium Oxylate	TR	TR	SR	NR
Potassium Permanganate	TR	TR	TR	NR
Potassium Sulfate	TR	TR	TR	NR
Potassium Sulfide	TR	TR	- - - -	NR
Pyrogallic Acid	TR	TR	TR	NR
Prussic Acid (Hydrocyanic Acid)	TR	TR	PR	NR
Quinine Sulfate	TR	TR	SR	NR
Quinine Bisulfate	SR	SR	PR	NR
Rosin, Molten	TR	TR	TR	NR
Salt (Sodium Chloride, Salt Brine)				
70°F	SR	SR	PR	NR
150°F	SR	SR	PR	NR
Sea Water	SR	SR	PR	NR
Sewage, Sulfuric Acid Present	SR	SR	- - - -	NR
Silver Bromide	SR	SR	SR	NR
Silver Nitrate	TR	TR	TR	NR
Soda Ash (Sodium Carbonate)	TR	TR	TR	NR
Sodium Acetate	TR	TR	TR	NR
Sodium Bicarbonate (Baking Soda)	TR	TR	TR	NR
Sodium Bisulfate, Dilute	TR	TR	- - - -	NR
Sodium Bisulfate	TR	TR	- - - -	NR
Sodium Citrate	TR	TR	TR	NR
Sodium Chlorate	TR	TR	TR	NR
Sodium Chloride (Salt, Salt Brine)				
70°F	SR	SR	PR	NR
150°F	SR	SR	PR	NR
Sodium Cyanide	TR	TR	- - - -	NR
Sodium Fluoride	SR	SR	SR	NR
Sodium Hydroxide				
70°F	TR	TR	TR	NR
Molten, 600°F	SR	SR	- - - -	NR
Sodium Hypochlorite	SR	SR	PR	NR
Slightly Alkaline	TR	TR	- - - -	NR
Sodium Perchlorate	NR	TR	- - - -	NR
Sodium Hyposulfite (Hypo)	TR	TR	SR	NR
Sodium Nitrate (Chili Saltpeter, Soda Nitre)	TR	TR	TR	NR
Molten, 600°F	SR	SR	- - - -	NR
Sodium Peroxide	TR	TR	- - - -	NR
Sodium Salicylate	TR	TR	TR	NR
Sodium Sulfate (Glauber's Salt)	TR	TR	TR	NR
Sodium Sulfide	SR	SR	SR	NR
Sodium Thiosulfate (Hypo)	TR	TR	SR	NR
Stannic Chloride (Tetrachloride of Tin)	NR	NR	NR	NR
Stannous Chloride	PR	PR	NR	NR
Starch	TR	TR	- - - -	NR
Strontium Hydroxide	TR	TR	- - - -	NR
Strontium Nitrate	TR	TR	- - - -	NR
Sugar or Cane Juice	TR	TR	- - - -	NR
Sulfur, Dry				
Molten, 260°F	TR	TR	- - - -	NR
Molten, 750°F	PR	PR	- - - -	NR
Sulfur Monochloride (Rubber Vulcanizing)	TR	TR	- - - -	NR
Sulfur Dioxide Gas, Moist	NR	SR	- - - -	NR
Sulfurous Acid Water Solution				
Atmospheric Pressure	TR	TR	- - - -	NR
Over 60 lbs. Pressure	PR	PR	- - - -	NR
Sulfuric Acid				
70°F	SR	SR	- - - -	NR
Boiling	NR	NR	NR	NR
Fuming	PR	PR	- - - -	NR
Vapor (Battery Room)	SR	SR	- - - -	NR
Tannic Acid	TR	TR	SR	NR
Tanning Liquor	TR	TR	- - - -	NR
Tartaric Acid	TR	TR	SR	NR
Tetrachloride of Tin	NR	NR	NR	NR
Tin, Molten, 1100°F	NR	NR	NR	NR
Trichloroethylene	SR	SR	SR	NR
Uric Acid	TR	TR	TR	NR
Varnish	TR	TR	TR	NR
Vegetables	TR	TR	TR	NR
Vinegar (Acetic Acid)	TR	TR	PR	NR
Whiskey	TR	TR	- - - -	NR
Wood Pulp	TR	TR	- - - -	NR
Yeast	TR	TR	- - - -	NR
Zinc, Molten, 1100°F	NR	NR	NR	NR
Zinc Chloride				
100°F	TR	TR	PR	NR
Boiling	PR	PR	- - - -	NR
Zinc Cyanide	TR	TR	- - - -	NR
Zinc Nitrate	TR	TR	- - - -	NR
Zinc Sulfate (White Vitriol)	SR	TR	TR	NR

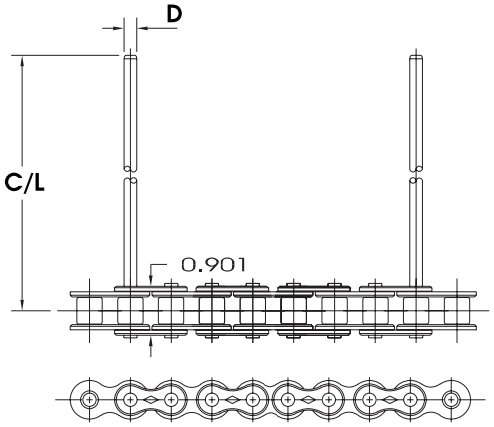
SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

Pin Oven Chain

Long lasting, true running, high quality Pin Oven chain is critical for two-piece metal decorating operations that transfer and cure literally thousands of cans per minute. Diamond Chain is the world leader, producing the highest quality and best performing chain for this important and very demanding application. Depending upon your needs, we offer two styles of base chain that can help you to be the most productive and cost effective.

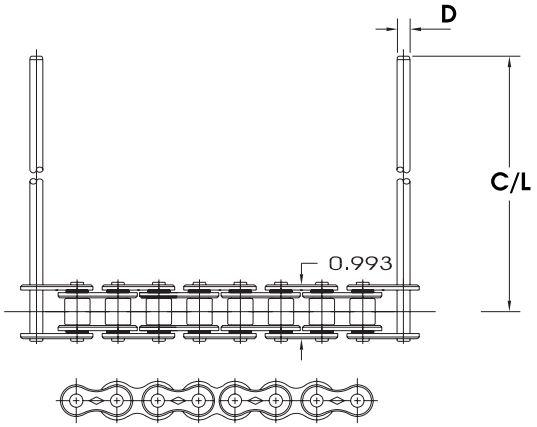
Standard Pin Oven Chain: Our Standard Pin Oven chain begins its life as ¾" pitch ANSI chain but that's where the "standard" part ends. We improve this chain's ability to perform in the harshest of environments by providing the components with the same superior qualities as our industrial drive chains such as: raw material selection and closely controlled heat treatment. Then we incorporate some additional clearances to accommodate the high temperatures of the drying ovens and allow more access for lubricant to enter the critical pin/bushing joint.



STANDARD PIN OVEN CHAIN

RING LEADER® O-ring Pin Oven Chain: High temperatures, contaminants and higher line speeds place ever increasing demands on Pin Oven chain. Malfunctioning or rapidly wearing Pin Oven chain can be very costly due to replacement cost, downtime, and lost production.

Now there is an Pin Oven chain that may make all others obsolete... Diamond RING LEADER O-ring Pin Oven chain, a special version of Diamond's industrial RING LEADER O-ring chain.



O-RING PIN OVEN CHAIN

SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

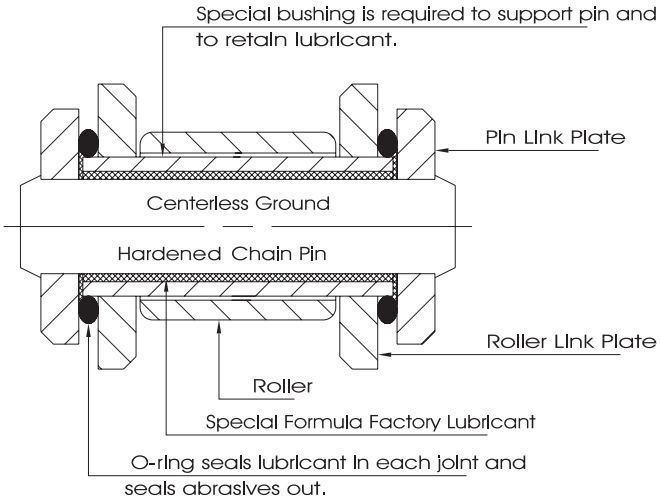
DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

RING LEADER® O-ring Pin Oven chain resulted from state-of-the-art Diamond engineering and is specially adapted for use in the high temperature atmosphere of decorating ovens. Consistent lubrication in each chain joint, along with Diamond's O-ring technology, allows O-ring Pin Oven chain to resist contaminants, run with less vibration and achieve longer life than standard chain.

The same through-pin design that has proven superior in our standard Pin Oven chains makes for smoother running with less vibration even at high line speeds. And because O-ring Pin Oven chain wears more evenly and consistently you'll experience less downtime, fewer wrecks, fewer jams and more consistent production capacity.

Diamond O-ring Pin Oven chain employs specially compounded O-rings that seal out contaminants and seal in a lubricant that functions at chain temperatures up to 450°F. The consistent, sealed-in lubrication in RING LEADER O-ring Pin Oven chain means less external lubrication need be applied which can reduce the chance of can contamination from excess lubrication.

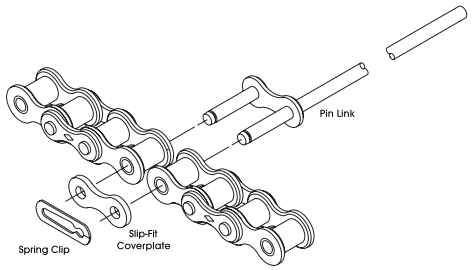
Note: When using O-ring Pin Oven chain for the first time it is important to remove or reposition cleaning devices such as wire brushes so they do not damage the O-rings.



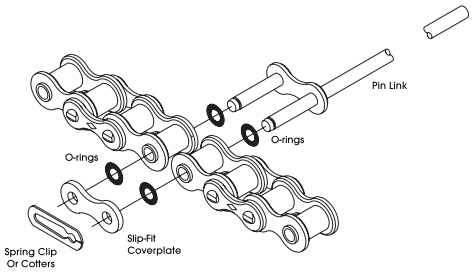
SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

Extended pins: Diamond chains are designed so the carrier pins are the actual chain pins, not just an add-on attachment. This "through pin" design assures the user that the chain is of the highest strength and integrity. All Pin Oven chains are normally assembled with through-hardened medium carbon (bendable) extended carrier pins, but stainless steel or case-hardened low carbon (break away) pins are also available upon request. Standard bendable pins are heat treated to produce a tough, ductile pin, capable of withstanding incidental contact with jammed product or interference with machine framework. If the obstruction is minor and the extended pins become bent they can be easily straightened back to their original position in a matter of seconds and production is back on line. For those rare occasions where the obstruction is significant enough to break the pins, the failed joint can be replaced using a repair link shown below.



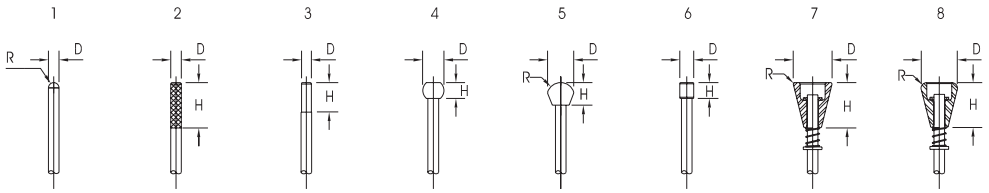
STANDARD PIN OVEN CHAIN



RING LEADER O-RING PIN OVEN CHAIN

In fact, we construct our chains so well that we've even omitted the sidemash on these chains so that if there is a need to repair a link, you won't even need to grind a pin. Just remove the air pressure from the tension device, clamp the chain in position, use a pin extractor to remove the failed pin link and install the repair link just like a normal connecting link. Reverse the procedure with the clamp and line pressure and begin production. The strength, integrity and smoother operating characteristics of our through pin design will make themselves apparent early on in the chain's service life.

Tips and pin extensions: At Diamond, we learned a long time ago that there are a lot of optional tips and pin extensions that users like. To date, we've produced dozens of different combinations. The most common extension/tip combination is our spring-loaded pin tip assembled with a side plate to end-of-tip dimension of seven inches. But that's not to say that your oven or the cans you're producing don't need something a little different. And if that's the case, let us know. We know how important your particular configuration is and we'll certainly do whatever we can to get it to you. The following table shows the most common tips that are currently available. Depending upon the design, the tips can be manufactured from steel, aluminum, heat stabilized nylon, or high temperature PEEK™. The tip's design, material, and pin extension of your choice can be combined to provide you with the optimum chain for your specific application. If your tip isn't here, then give our application engineers a call and we'll get right to work.



Dimensions in Inches

	1	2	3	4	5	6	7	8
D	.234	.247	.215	.468	.575	.352	.875	.820
H	N/A	1.000	.650	.350	.472	.350	1.000	1.000
R	.117	N/A	N/A	N/A	.300	N/A	45 deg.	.125

Ordering instructions: Use the above drawing showing available tips and specify whether Standard or RING LEADER base chain is desired, type of pin material (bendable, breakable or stainless), type of tip configuration and the extension from the *centerline* of the chain to the end of the pin including the tip.

PEEK™ is a trademark of Amoco Performance Products, Inc.

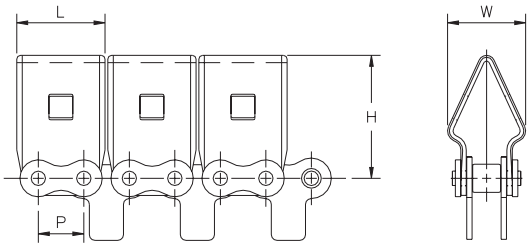
SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Bindery Chain

Diamond's Bindery chains are specifically designed for long life and smooth operations in the book binding industry. These #40 base chains are used in the saddle binding machinery to convey sorted and collated book pages for stitching and trimming. The specific book's size is easily accommodated by inserting the user's attachments into the square holes of the "saddle lug."



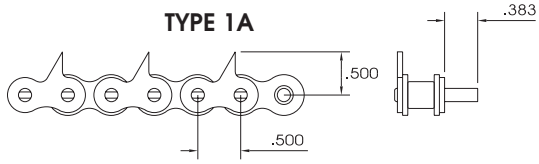
Dimensions in Inches

Type	P	L	H	W
1	.500	.988	1.354	.858
2	.500	.990	1.310	.819

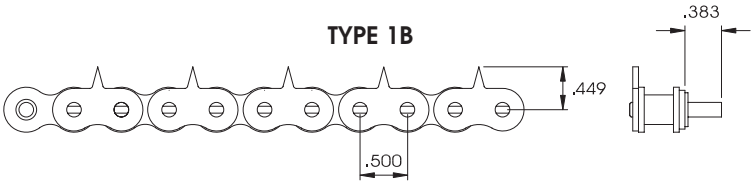
Plastic Film Feeder Chain

These special chains are designed for thermoforming applications and unusual conveying applications such as creating polystyrene plates, shrink wrap, blister packs and many other plastic items. The chain features precise, pointed link plates combined with extended pins or straight attachments (for additional rigidity in operation) which make them ideal for conveying plastic film into thermoforming operations. Several models are available for your conveying needs.

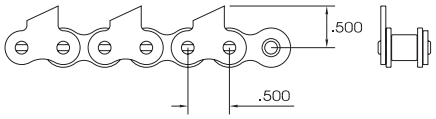
TYPE 1A



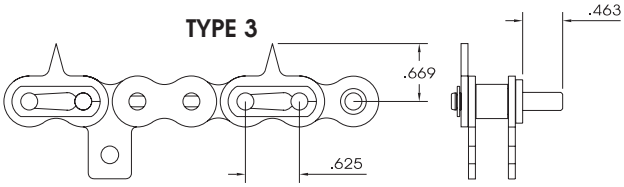
TYPE 1B



TYPE 2

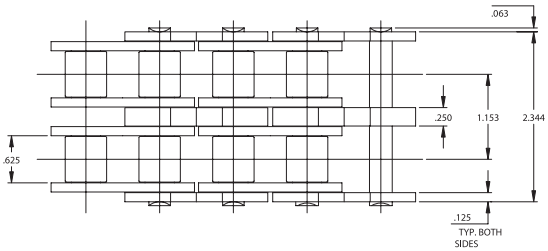


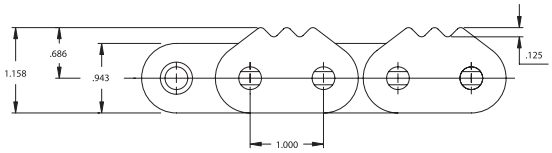
TYPE 3



Serrated Top Chain

Serrated top chains are designed for lumber industry applications such as edge finishing. This chain features specially designed link plates to maximize grip while minimizing wood damage. When lubricated properly, Diamond Serrated Top chain offers superior performance, longer service life and reduced downtime due to elongation and fatigue failures. Serrated Top chain 80-2 is stocked and offers features such as double thickness serrated top centerplates for shock loading advantages and superior chain lubricant for smoother running and tracking. Single and other multiple strand versions may be ordered to meet your conveying needs. Our engineering staff can help determine the Diamond chain that best suits your operating conditions of frequency and depth of shock loading, as well as abrasion factors, temperature and humidity factors.





SPECIAL APPLICATION CHAIN

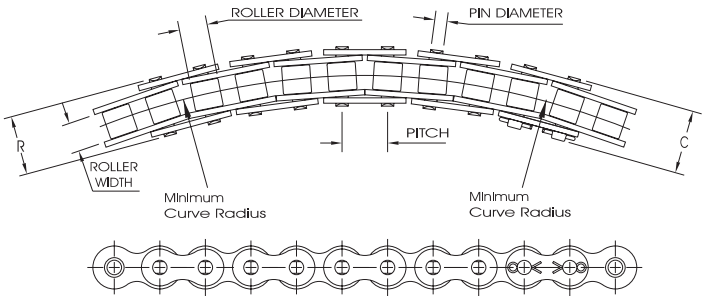
Chain Descriptions and Dimensions

Additional Clearance Chain

Diamond produces two types of chain specifically designed to allow for lateral deviations that standard chains can't handle. Depending upon the application, either of these should be quite suitable.

POWER CURVE® Chain

This chain is manufactured using a pin which is both smaller in diameter and slightly longer than its Standard Series version. This design allows for extra clearance between both the pin and the bushing and in overall chain width as well.



Dimensions in Inches and Pounds

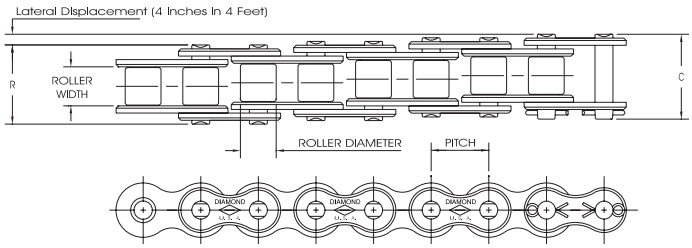
Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Min. Lateral Radius	Weight Per Foot	Average Tensile Strength
40LG	1/2	5/16	.312	.136	.060	.77	.69	14	.39	2400
50LG	5/8	3/8	.400	.172	.080	.90	.86	16	.66	4600
60LG	3/4	1/2	.469	.200	.094	1.14	1.07	22	.94	6100
80LG	1	5/8	.625	.281	.125	1.47	1.35	36	1.60	11500

Consult Diamond for standard attachment availability.

TUF-FLEX® Chain

TUF-FLEX chain is designed to handle shaft or sprocket misalignment more than lateral turns. TUF-FLEX chains can handle up to four inches of lateral displacement in every four feet of chain length and up to eight degrees of axial twist.

TUF-FLEX is a rugged power transmission chain especially engineered to provide extra durability and unusual flexibility to meet the strenuous service demanded by heavy-duty construction machinery.



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
120-C	1 1/2	1	.875	.437	.187	2.16	2.02	3.69	34000
140-C	1 3/4	1	1.000	.500	.219	2.33	2.16	5.00	46000
160-HC	2	1 1/4	1.125	.562	.281	2.86	2.68	7.09	70000
200-C	2 1/2	1 1/2	1.562	.781	.312	3.45	3.14	10.65	95000

SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

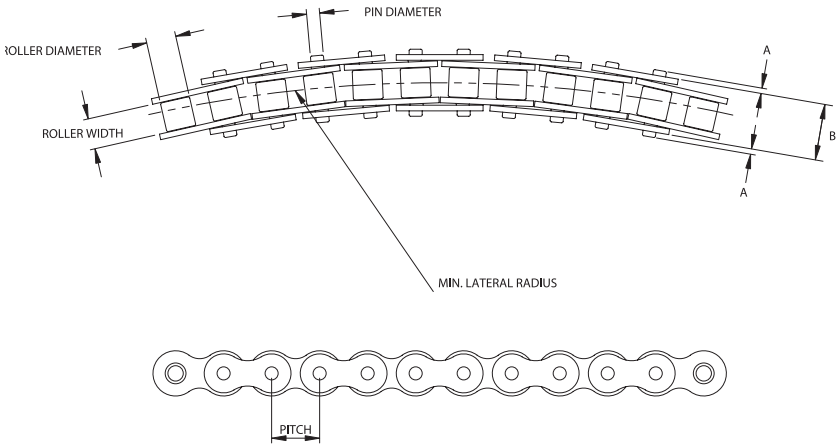
DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Straight Running and Side-Flexing Roller Chain

Base chains are designed with specially extended pins to retain plastic "snap on" flat top plates. Diamond offers chains for both straight running and side-flexing applications. These chains can be used with standard ASME/ANSI 40 and ASME/ANSI 60 sprockets. Chains are available both in carbon steel and stainless steel material.

Note: Diamond does not offer the plastic flat top plates.

#43 SB and #63 SB Side-Flexing Roller Chain For Plastic "Snap On" Flat Top Chains

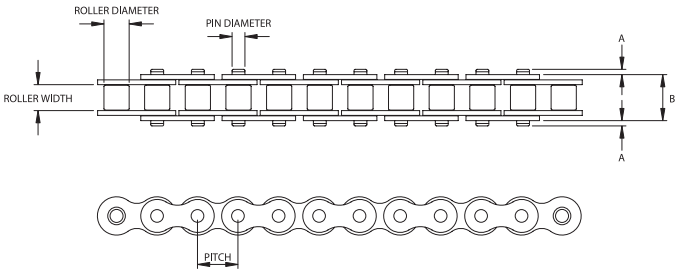


Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	A	B	Min. Lateral Radius	Weight Per Foot	Average Tensile Strength
43 SB	1/2	5/16	.312	.136	.060	.056	.588	14	.390	2400
63 SB	3/4	1/2	.469	.200	.094	.120	.900	22	.940	6100

Chain is also available in stainless steel. Diamond 43 SB SS and 63 SB SS.

#43 and #63 Straight Running Roller Chain For Plastic "Snap On" Plastic Chains



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	A	B	Weight Per Foot	Average Tensile Strength
43	1/2	5/16	.312	.156	.060	.065	.568	.410	4000
63	3/4	1/2	.469	.234	.094	.105	.898	.990	8500

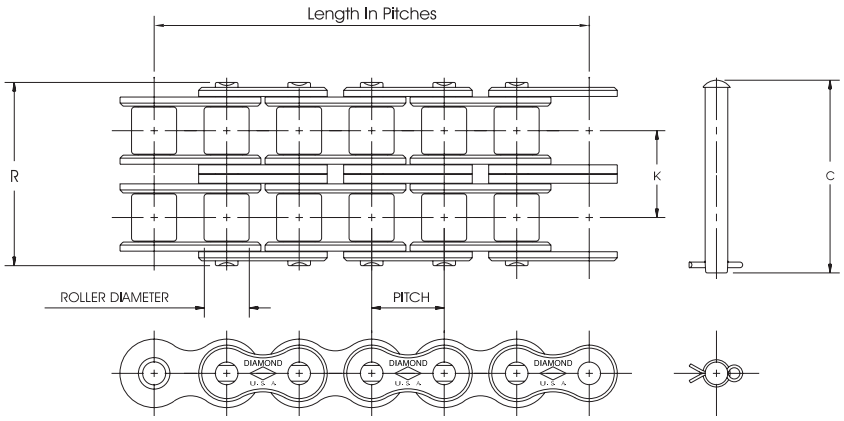
Chain is also available in stainless steel. Diamond 43 SS and 63 SS.

SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

Coupling Chain

These chains are specifically designed to work in concert with drive couplings to provide near-seamless power transmission. The chain's file-hard components develop a high-capacity unit durable enough to deliver long after other chains fail.



Dimensions in Inches and Pounds

Diamond Number	Pitch	Roller Width	Roller Diameter	C	R	K	Length Pitches	Weight Per Chain
D4012	1/2	0.312	0.312	1.297	1.24	0.566	12	0.41
D4016	1/2	0.312	0.312	1.297	1.24	0.566	16	0.55
D5016	5/8	0.375	0.400	1.592	1.55	0.713	16	1.12
D5018	5/8	0.375	0.400	1.592	1.55	0.713	18	1.26
D6018	3/4	0.500	0.469	1.980	1.94	0.897	18	2.16
D6020	3/4	0.500	0.469	1.980	1.94	0.897	20	2.40
D6022	3/4	0.500	0.469	1.980	1.94	0.897	22	2.64
D8018	1	0.625	0.625	2.567	2.47	1.153	18	5.00
D8020	1	0.625	0.625	2.567	2.47	1.153	20	5.56
D10018	1 1/4	0.750	0.750	3.162	3.02	1.408	18	9.24
D10020	1 1/4	0.750	0.750	3.162	3.02	1.408	20	10.30
D12018	1 1/2	1.000	0.875	3.977	3.79	1.789	18	16.20
D12022	1 1/2	1.000	0.875	3.977	3.79	1.789	22	19.80

SPECIAL APPLICATION CHAIN

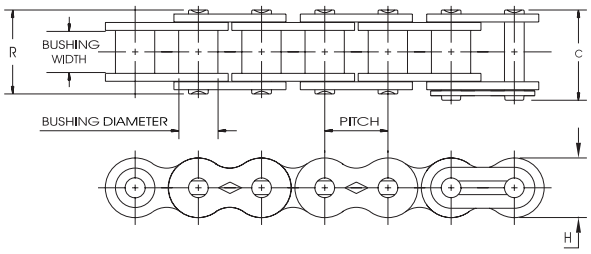
Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Micropitch® Chain

Micropitch chain, originally developed for use in electronic equipment for the aircraft industry, is made using standard bushing type construction which offers a large joint bearing area. This larger area permits greater loads and speeds. Micropitch chain is constructed entirely of non-magnetic stainless steel and is well suited for precision applications such as instrumentation devices and printers/plotters.

Micropitch chain is applied on the basis of maximum working loads imposed in the drive. For chain speed less than 100 feet per minute, maximum working load should not exceed 20 pounds. For speeds greater than 100 feet per minute, the maximum working load should be reduced depending upon the specifics of the drive. As a general rule, working loads should not exceed 12 pounds for chain speed greater than 500 feet per minute. Contact Diamond's applications engineering department for more information.



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Bushing Width	Bushing Diameter	Pin Diameter	Link Plate Thickness	H	C	R	Average Tensile Strength
47SS	.147	.072	.090	.062	.015	.138	.250	.220	180

Powersports Chain

Diamond's Powersports chains are designed to meet the individual needs of the powersports enthusiast for ATVs, go-karts, motorcycles and snowmobiles. Multi-Service chains, Duralube® chains and RING LEADER® O-ring chains each offer specific functional advantages for your street, farm, track or trail applications.

MULTI-SERVICE chains – though referred to as standard chain – are anything but. Multi-Service chains offer Diamond's superior manufacturing parts processing technology which includes material selection, precise component fabrication, exacting heat treatment and assembly techniques.

DURALUBE® chains eliminate "hit or miss" lubrication. This chain is constructed using a one-piece powdered metal bushing/roller combination which has lubricant drawn in under vacuum. In service, this lubricant is released and provides supplemental lubrication to the pin/bushing joint between regularly scheduled maintenance.

RING LEADER® O-ring chains are top of the line chains offering allowable working loads that provide extra load carrying capability and up to four times the service life of regular chains. O-ring lubrication system seals in lubricant and seals out foreign contaminants. Appearance options on some models include:

Brass Plated chains for the flashy high-end "gold look" shine and rust resistant finish.
Nickel Plated chains for the classy "chrome or silver look" shine and rust resistant finish.
Standard steel chains for the "back to basics look."

SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

PowerSports Chain

Dimensions in Inches and Pounds

Diamond Number	Plating	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
35MS	....	3/8	3/16	*.200	.141	.050	.56	.50	....	.210	2000
35MS BR	Brass	3/8	3/16	*.200	.141	.050	.56	.50	....	.210	2000
35-2MS	....	3/8	3/16	*.200	.141	.050	.96	.90	.399	.450	4200
35-3**	....	3/8	3/16	*.200	.141	.050	1.36	1.31	.399	.770	6300
41MS	....	1/2	1/4	.306	.141	.050	.65	.57	....	.260	2400
40 DL	....	1/2	5/16	.312	.156	.060	.72	.67	....	.400	3300
40MS	....	1/2	5/16	.312	.156	.060	.72	.67	....	.410	4000
428MS	....	1/2	5/16	.335	.174	.060	.72	.67	....	.430	4200
428-2	....	1/2	5/16	.335	.174	.060	1.29	1.24	.566	.880	8400
520MS	....	5/8	1/4	.400	.200	.080	.77	.71	....	.590	6600
520H	Brass	5/8	1/4	.400	.214	.094	.80	.74	....	.820	9300
520XLO	....	5/8	1/4	.400	.214	.094	.89	.83	....	.850	9300
520XLO NI	Nickel	5/8	1/4	.400	.214	.094	.89	.83	....	.860	9300
520XLO BP	Brass	5/8	1/4	.400	.214	.094	.89	.83	....	.860	9300
530MS	....	5/8	3/8	.400	.200	.080	.89	.83	....	.680	6600
530ENP	Nickel	5/8	3/8	.400	.200	.080	.89	.83	....	.690	6600
530BP	Brass	5/8	3/8	.400	.200	.080	.89	.83	....	.680	6600
530DL	....	5/8	3/8	.400	.200	.086	.89	.83	....	.650	6600
530XLO	....	5/8	3/8	.400	.214	.094	1.02	.96	....	.930	9300
530XLO BP	Brass	5/8	3/8	.400	.214	.094	1.02	.96	....	.930	9300
630MS	....	3/4	3/8	.469	.234	.094	.98	.91	....	.910	8500
630BP	Brass	3/4	3/8	.469	.234	.094	.98	.91	....	.910	8500

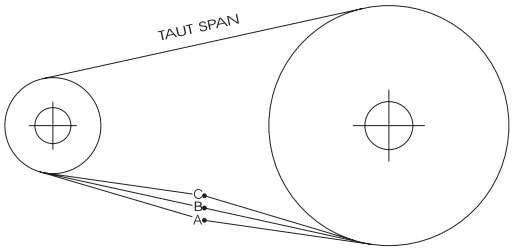
* These chains are rollerless – dimension shown is bushing diameter.
** Chain uses oval contour sideplates and is supplied riveted endless.

Maintenance and Lubrication

Diamond exercises rigid controls and surveillance throughout production to ensure uniformity of all component parts. Of course, no matter how superior a roller chain, its full potential will not be realized if it's not properly installed and maintained.

Tensioning

If the chain is too tight or too loose, service life will suffer. A chain that is too tight creates unnecessary wear. A chain that is too slack can easily top the sprocket teeth and quickly cause a failure. Consult powersports equipment manufacturer's manual for proper tensioning and mid-span movement.



MID-SPAN MOVEMENT

Cleaning and Re-lubrication

Perhaps the largest contributor to shortened chain life is inadequate lubrication. All working parts of a chain should be lubricated uniformly. The use of the highest viscosity oil that allows for flow between the link plates and coats pin-bushing areas will nornally provide the greatest wear resistance. Clean and lubricate chain periodically as riding situations warrant.

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

Chain Descriptions and Dimensions

Can't find a standard attachment to fit your needs? Give us a call and we'll design one for you. We've designed literally thousands of attachments over our 100-year history and we're more than happy to design one to fit your needs. In fact, some of our stock attachments were born from custom orders just like yours.

Diamond custom-designs chains to fit your exact needs. First, we search through our vast collection of designs to see if one currently exists that satisfies your requirements. Using or adapting an existing design not only improves economy, but it also increases our responsiveness to your needs. If we can't find an existing design that will work, we'll design one that will. Then we add your design to our list so if you ever need to re-order, the design is ready and waiting.

For every custom order our application and design engineers are involved from the very beginning. These engineers review the application, propose solutions and then monitor the chain through its design and production. They'll even advise you of any special considerations and maintenance procedures to make sure your custom chain is one of the longest lasting chains you own.

To make the custom-design process easier, the following pages display dozens of attachments that may be suitable for your application. Use these designs as a starting point and look for features, or the exact attachment, that will satisfy your requirements. When designing or specifying attachment chains, consider the following information to avoid problems with either installation or performance:

Standard Attachments: Standard attachments described in the standard attachment section of this guide are normally much less expensive than special designs.

Link Plate Location: Attachments are normally less expensive when assembled on the pin link rather than on the roller link.

Modifications: Attachment link plates are specifically designed and heat treated to permit further operations by the user such as drilling, reaming, and tapping if desired. At no time should attachment links be modified by welding because the heat applied can adversely affect the heat treatment of the steel, resulting in either reduced performance or failure.

Extended Pins: Extended pins, made from medium carbon steel, are specially heat treated for ductility and toughness and can be easily assembled at virtually any spacing. It is important to note that if pairs of extended pins are specified, they must be located in a common pin link. In some applications this may require the use of an offset in the cycle.

Diamond does not recommend using "shouldered pins." They are generally expensive to manufacture and can often compromise quality due to high stress concentrations at the point where diameters change. Additions of sleeves or bearings on the extended pins will often yield a more dependable design and at a lower cost.

Dimensions in Inches

Chain Size	Hole Diameter	Screw Size	Screw Diameter
25	.102	#3	.099
35	.094	#2	.086
40	.125	#5	.125
41	.125	#5	.125
50	.203	#10	.190
60	.203	#10	.190
80	.250	1/4	.250
100	.312	5/16	.312
120	.375	3/8	.375
140	.438	7/16	.438
160	.500	1/2	.500

Dimensions in Inches

Chain Size	Hole Diameter*	Screw Size	Screw Diameter
C2040	.125	# 5	.125
C2050	.203	#10	.190
C2060H	.203	#10	.190
C2080H	.266	1/4	.250
C2100H	.328	5/16	.312
C2120H	.391	3/8	.375
C2160H	.516	1/2	.500

*Straight, one hole attachments have larger diameters than shown. Refer to Double-Pitch Straight and Bent Attachment tables for more detail.

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Chain Descriptions and Dimensions

Attachment Hole Sizes: If your application requires a different attachment hole than shown in this section, please contact Diamond, as alternate lug holes may be available.

Assembly: While it is possible to purchase base chain or attachment components and construct an attachment chain, it is strongly recommended that chains be ordered and assembled at the factory to ensure the proper fit and alignment of all parts, along with any length or matching requirements.

Manufacturing Length Tolerance

ASME/ANSI defines the permissible length of an assembled section of roller chain. The allowable length tolerances vary from model to model and are also affected by the chain's construction, i.e., with or without attachments.

As an example, the assembled length tolerance for an ASME/ANSI one inch pitch chain (#80) is +.016"/-.000" per foot. When attachments are added to the chain's design, the tolerance for length expands to +.032"/-.000" per foot. This means that a section of #80 chain 12 pitches long (12" nominal) can measure as long as 12.016" but *no less than* 12.000". The same section of chain assembled with bent, straight, or extended pin attachments could measure as long as 12.032" but again, *no less than* 12.000".

Commonly, manufacturers strive to produce chain nearer to the nominal figure but the maximum allowable over length tolerance should always be considered when designing for take-ups and catenary chain sag. If the application requires, some design/assembly steps can be taken to direct the length of the chain toward the nominal; however, on a routine basis machine designs based on a nominal or specified chain length should be avoided.

Length Matching of Roller Chains

Many applications require two or more chains, normally with attachments, to run in parallel with "flights" joining the chains together forming a conveyor or transfer type system. In these cases it is critical to have the chains ordered as a set, matched for length and installed on the machinery with the same relationship to one another as when they were manufactured.

Diamond offers two degrees of matching for parallel operation: Class I and Class II.

Class I - A Class I match assures that the longest and the shortest chain in a given set will not vary in overall length by more than .006"/ft. Again using #80 chain as an example, the length of two #80 chains 120 pitches long will not vary by more than .060" in overall length (10ft. x .006"/ft. = .060"). The shortest could measure 120" + .000" (remember, no negative tolerance) and the longest could measure up to 120" + .060" and satisfy the Class I requirement. Class I matching is most often accomplished by assembling the chains from selected lots of component parts.

Class II - A Class II match is much more stringent and assures that the longest and the shortest chain in a given set will not vary in overall length by more than .002"/ft. Applying this new tolerance to the above example, the length of two #80 chains 120 pitches long will not vary by more than .020" in overall length (10ft. x .002"/ft. = .020"). The shortest could measure 120" + .000" and the longest could measure 120" + .020" and satisfy the requirement. Class II matching is quite difficult and requires some very unique procedures.

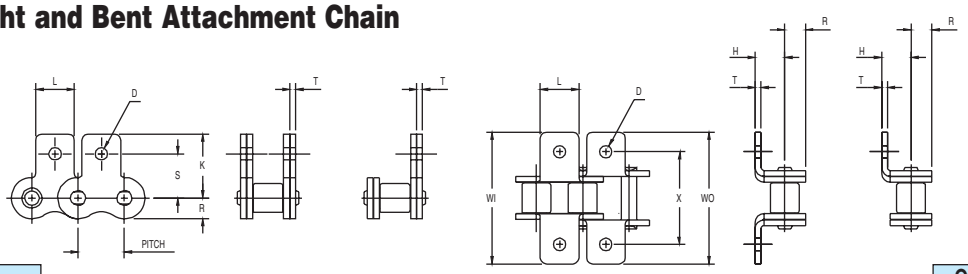
Differences - It is important to remember that matched chains still fall under the overall length limitations imposed by either ASME/ANSI or the manufacturer. Matching ***does not*** assure the user of chains with a finite overall length, only that the chains in the set have a controlled relationship to one another.

If you ever have any questions, give us a call. We're always glad to help.

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

Chain Descriptions and Dimensions

Standard Straight and Bent Attachment Chain



Others	Diamond
M-35, SA1	S1 (one hole)
M-1, SK1	S2 (one hole)

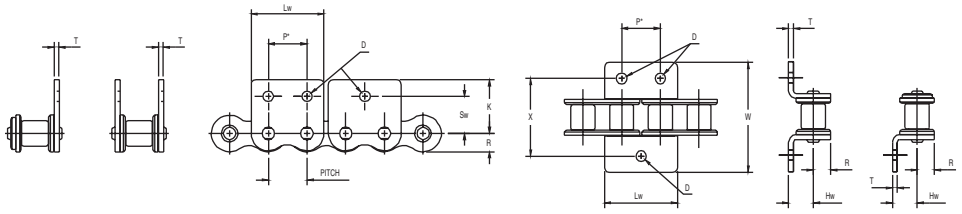
Others	Diamond
A1	B1 (one hole)
K1	B2 (one hole)

Dimensions in Inches

ASME/ANSI Number	Pitch Inches	D	H	K	L	R Max.	S	T	WI	WO	X
25	.250	.125	.180	.451	.218	.119	.308	.030	.781	.843	.562
35	.375	.102	.250	.577	.312	.178	.387	.050	1.125	1.125	.750
40	.500	.141	.312	.684	.375	.238	.489	.060	1.390	1.390	1.000
41	.500	.141	.282	.698	.375	.192	.482	.050	1.375	1.375	.937
50	.625	.203	.406	.895	.500	.297	.618	.080	1.812	1.812	1.250
60	.750	.203	.478	1.038	.625	.356	.716	.094	2.135	2.135	1.500
80	1.000	.266	.625	1.339	.750	.475	.968	.125	2.750	2.750	2.000
100	1.250	.343	.784	1.696	1.000	.594	1.233	.156	3.077	3.406	2.500
120	1.500	.386	.917	2.024	1.125	.713	1.424	.187	3.841	4.239	2.995
140	1.750	.448	1.127	2.445	1.375	.831	1.750	.220	4.361	4.826	3.500
160	2.000	.516	1.250	2.756	1.500	.950	2.007	.250	5.078	5.609	4.000

Above attachments available for mutiple strand chain.

Wide Contour Straight and Bent Attachment Chain



Others	Diamond
WM-35	WCS1 (one hole)
WM-35-2	WCS1 (two holes)

Others	Diamond
WM-1	WCS2 (one hole)
WM-2	WCS2 (two holes)

Others	Diamond
WA-1	WCB1 (one hole)
WA-2, A2	WCB1 (two holes)

Others	Diamond
WK-1	WCB2 (one hole)
WK-2, K2	WCB2 (two holes)

Dimensions in Inches

ASME/ANSI Number	Pitch Inches	D	Hw	K	Lw	P	R Max.	Sw	T	W	X
*35	.375	.125	.262	.577	.727	.375	.178	.399	.050	1.105	.750
*40	.500	.141	.326	.684	.946	.500	.238	.503	.060	1.366	1.000
*41	.500	.141	.282	.698	.878	.500	.192	.482	.050	1.372	.937
*50	.625	.203	.406	.895	1.211	.625	.297	.618	.080	1.807	1.250
*60	.750	.203	.478	1.038	1.420	.750	.356	.716	.094	2.135	1.500
*80	1.000	.266	.625	1.339	1.885	1.000	.475	.967	.125	2.750	2.000
*†100	1.250	.343	.784	1.696	2.362	1.250	.594	1.233	.156	3.408	2.500
*†120	1.500	.386	.917	2.023	2.836	1.500	.713	1.424	.187	4.239	2.995

* Attachment available on pin link plate only.
† These items not available with 48-hour delivery.

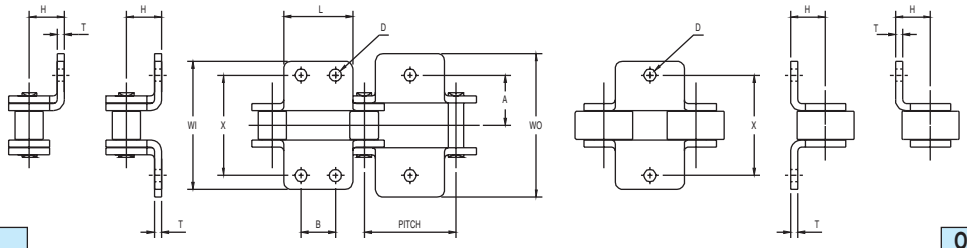
Contact Diamond Chain for available attachments on roller links (wide contour).
Above attachments available for mutiple strand chain.

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Chain Descriptions and Dimensions

Double-Pitch Bent Attachments
Oval Contour Link Plates
Standard and Oversized Roller



Others	Diamond
A1	B1 (one hole)
A2	B1 (two holes)

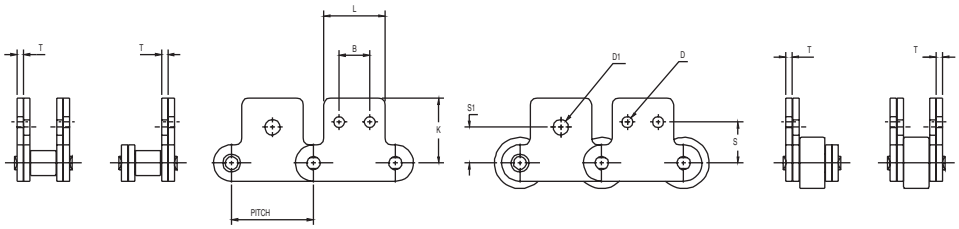
Others	Diamond
K1	B2 (one hole)
K2	B2 (two holes)

Dimensions in Inches

Standard Roller ASME/ANSI #	Standard Roller Roller Diam.	Pitch Inches	A	B	D	H	L	T	WI	WO	X	Large Roller ASME/ANSI #	Large Roller Roller Diam.
*C2040	.312	1.00	.500	.375	.141	.359	.750	.060	1.350	1.483	1.000	C-2042	.625
*C2050	.400	1.25	.625	.469	.203	.453	.937	.080	1.692	1.863	1.250	C-2052	.750
*C2060H	.469	1.50	.844	.562	.203	.578	1.125	.125	2.171	2.446	1.688	C-2062H	.875
*C2080H	.625	2.00	1.094	.750	.266	.766	1.500	.156	2.792	3.125	2.188	C-2082H	1.125
*C2100H	.750	2.50	1.312	.937	.328	.922	1.875	.187	3.554	3.951	2.625	C-2102H	1.562
*C2120H	.875	3.00	1.562	1.125	.391	1.095	2.250	.219	4.318	4.782	3.125	C-2122H	1.750
*C2160H	1.125	4.00	2.063	1.500	.516	1.438	3.000	.281	5.520	6.116	4.125	C-2162H	2.250

*Two attachment holes stock.
One attachment hole made-to-order.

Double-Pitch Straight Attachments
Oval Contour Link Plates
Standard and Oversized Roller



Others	Diamond
M-35, SA1	S1 (one hole)
M-35-2, SA2	S1 (two holes)

Others	Diamond
M-1, SK1	S2 (one hole)
M-2, SK2	S2 (two holes)

Dimensions in Inches

Standard Roller ASME/ANSI #	Standard Roller Roller Diam.	Pitch Inches	With Two* Attachment Holes B	D	S	K	L	T	With One Attachment Hole D1	S1	Large Roller ASME/ANSI #	Large Roller Roller Diam.
*C2040	.312	1.00	.375	.141	.531	.773	.750	.060	.188	.438	C-2042	.625
*C2050	.400	1.25	.469	.203	.625	.971	.937	.080	.250	.563	C-2052	.750
*C2060H	.469	1.50	.562	.203	.750	1.203	1.125	.125	.329	.688	C-2062H	.875
*C2080H	.625	2.00	.750	.266	1.000	1.590	1.500	.156	.375	.875	C-2082H	1.125
*C2100H	.750	2.50	.937	.328	1.250	1.982	1.875	.187	.516	1.125	C-2102H	1.562
*C2120H	.875	3.00	1.125	.391	1.469	2.367	2.250	.219	.563	1.312	C-2122H	1.750
*C2160H	1.125	4.00	1.500	.516	2.000	3.090	3.000	.281	.750	1.750	C-2162H	2.250

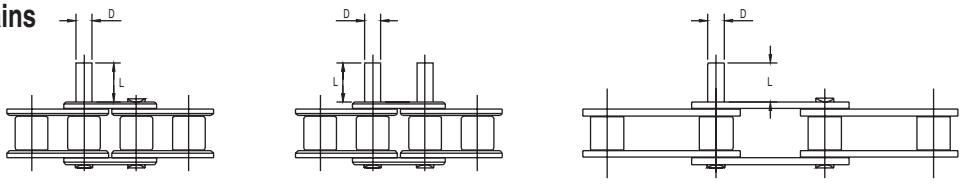
*Two attachment holes stock.
One attachment hole made-to-order.

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

Chain Descriptions and Dimensions

Standard Extended Pins

For ASME/ANSI Standard Series Chains and Double-Pitch Conveyor Chains

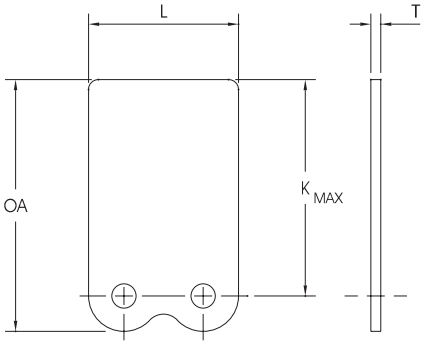


Others	Diamond
D1	E1 (one extended pin)
D3	E2 (two extended pins)

Dimensions in Inches

ASME/ ANSI #	Pitch Inches	D±.0005"	L±.010"	ASME/ ANSI #	Pitch Inches	D±.0005"	L±.010"	ASME/ANSI #	Pitch Inches	D±.0005"	L±.010"
35	.375	.141	.375	80	1.00	.312	.750	C-2040, C-2042	1.00	.156	.375
40	.500	.156	.383	100	1.25	.375	.937	C-2050, C-2052	1.25	.200	.468
41	.500	.141	.375	120	1.50	.437	1.125	C-2060H, C-2062H	1.50	.234	.562
50	.625	.200	.468	140	1.75	.500	1.312	C-2080H, C-2082H	2.00	.312	.750
60	.750	.234	.562	160	2.00	.562	1.500	C-2100H, C-2102H	2.50	.375	.937

Wide-Tall Lugs



Dimensions in Inches

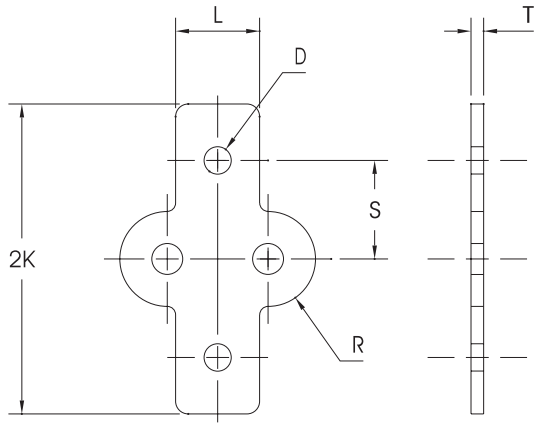
ASME/ANSI #	Pitch Inches	K (max.)	L	OA	T
35	⅜	1.290	.713	1.459	.050
40	½	1.560	.971	1.796	.060
41	½	1.560	.878	1.749	.050
50	⅝	1.810	1.209	2.103	.080
60	¾	2.049	1.420	2.384	.094
80	1	2.485	1.885	2.930	.125
100	1¼	2.927	2.362	3.483	.156

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

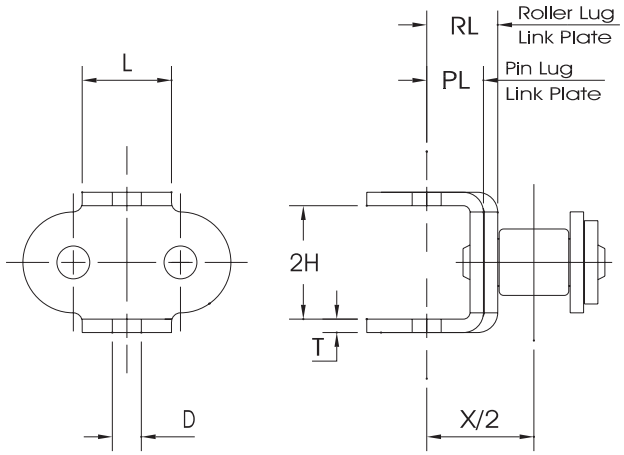
Chain Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Double Straight Lugs



Double Bent Lugs



Dimensions in Inches

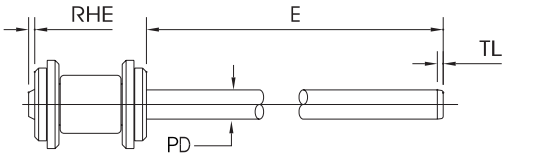
ASME/ ANSI #	Pitch Inches	D	2H	2K	L	PL	RL	R	S	T	X/2
40	½	.133	.524	1.567	.375	.219	.281	.236	.502	.060	.500
41	½	.133	.453	1.478	.375	.237	.291	.189	.476	.050	.469
50	⅝	.164	.660	1.962	.500	.268	.354	.293	.626	.080	.625
60	¾	.203	.794	2.306	.625	.303	.401	.353	.733	.094	.750
80	1	.257	1.016	3.142	.750	.424	.556	.445	.991	.123	1.000
100	1¼	.320	1.265	3.905	1.000	.545	.710	.556	1.248	.156	1.250

Consult Diamond Chain for extended pitch chain, double straight and double bent attachment availabliity.

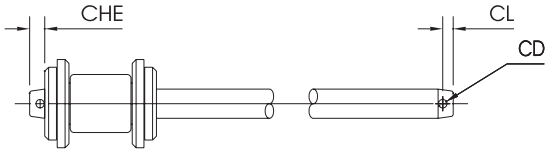
SPECIALTY/MADE-TO-ORDER ATTACHMENTS

Chain Descriptions and Dimensions

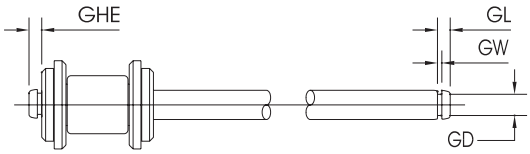
Extended Pins



Standard Design
Plain End Extended



Available
Made-to-Order



Available
Made-to-Order

Medium Carbon Steel

Dimensions in Inches

ASME/ANSI Number	Pitch Inches	CD	CHE	CL	E MAX.	E STD.	GD	GHE	GL	GW	PD	RHE	TL
25	¼	....	....	....	.83	.250	.065	.055	.055	.027	.090	.022	.027
35	⅜	.060	.108	.078	2.56	.375	.105	.072	.072	.032	.141	.032	.029
40	½	.060	.108	.078	2.88	.383	.121	.083	.083	.034	.156	.032	.029
41	½	.060	.108	.078	2.50	.370	.108	.076	.076	.034	.141	.032	.029
50	⅝	.067	.116	.082	6.50	.468	.146	.096	.096	.036	.200	.040	.032
60	¾	.067	.121	.084	10.00	.562	.171	.108	.108	.038	.234	.050	.042
80	1	.103	.182	.131	10.30	.750	.228	.134	.134	.040	.312	.063	.055
100	1¼	.115	.204	.132	10.00	.937	....	....	....	....	.375	.081	.079
120	1½	.127	.225	.153	16.00	1.125	....	....	....	....	.437	.085	.083
140	1¾	.141	.254	.168	13.80	1.312	....	....	....	....	.500	.099	.085
160	2	.157	.283	.189	11.63	1.500	....	....	....	....	.562	.105	.093
200	2½	.250	.450	.320	6.57	1.875	....	....	....	....	.781	.133	.120
C2060H	1½	.067	.121	.084	9.75	.562	....	....	....	....	.234	.050	.042
C2080H	2	.103	.182	.131	10.00	.750	....	....	....	....	.312	.063	.055

Stainless

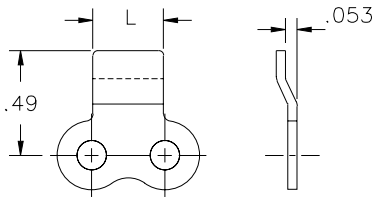
Dimensions in Inches

Diamond Number	Pitch Inches	CD	CHE	CL	E. MAX.	E. STD.	GD	GHE	GL	GW	PD	RHE	TL
25 SS	¼	....	....	....	.52	.250	.064	.055	.055	.028	.090	.022	.016
35 SS	⅜	.052	.093	.067	.90	.375	.103	.076	.076	.034	.141	.032	.029
40 SS	½	.067	.112	.078	1.25	.383	.121	.083	.083	.034	.156	.032	.031
41 SS	½	.052	.093	.067	.85	.375	.103	.076	.076	.034	.141	.032	.029
50 SS	⅝	.067	.112	.078	1.50	.468	.600	.096	.096	.036	.200	.040	.040
60 SS	¾	.067	.121	.087	1.90	.562	.170	.102	.102	.035	.234	.051	.042
80 SS	1	.101	.182	.131	3.50	.750	....	.134	....	....	.312	.069	.065

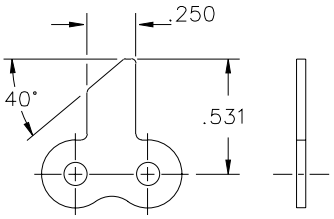
DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

ANSI 35 ⅜" PITCH .050 LINK PLATE THICKNESS UNLESS NOTED

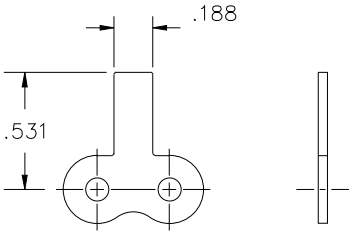
PART NO. 293063 L = .437
AVAILABLE ROLLER LINK PLATE
NOTE: OFFSET TO ALIGN WITH PIN LINK PLATE



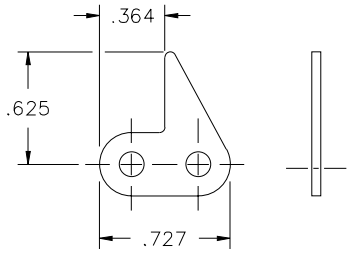
PART NO. 1913697
AVAILABLE PIN & ROLLER LINK PLATE



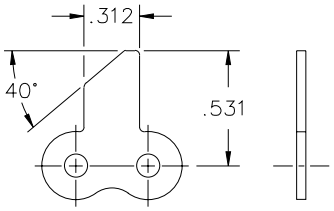
PART NO. 193064
AVAILABLE PIN LINK PLATE



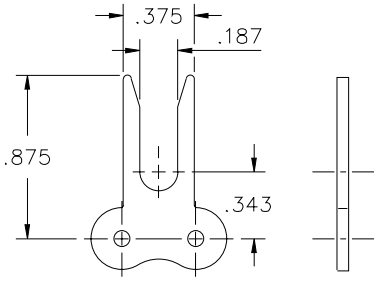
PART NO. 1912605
AVAILABLE PIN & ROLLER LINK PLATE



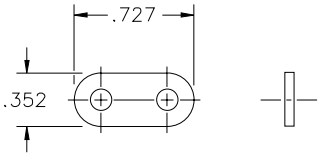
PART NO. 1913612
AVAILABLE PIN & ROLLER LINK PLATE



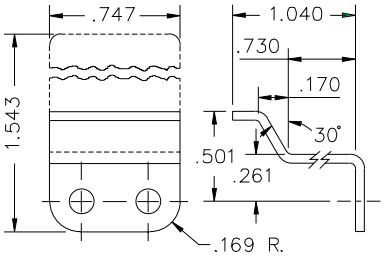
PART NO. 198139
AVAILABLE PIN & ROLLER LINK PLATE



PART NO. 2811330
AVAILABLE PIN & ROLLER LINK PLATE

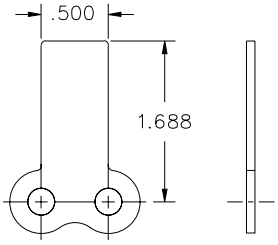


PART NO. 1912623
AVAILABLE PIN LINK PLATE

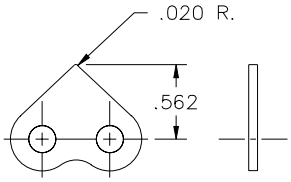


ANSI 40 ½" PITCH .060 LINK PLATE THICKNESS UNLESS NOTED

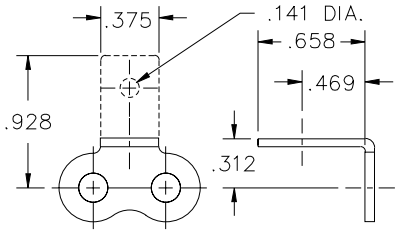
PART NO. 196347
AVAILABLE PIN & ROLLER LINK PLATE



PART NO. 193008
AVAILABLE PIN LINK PLATE

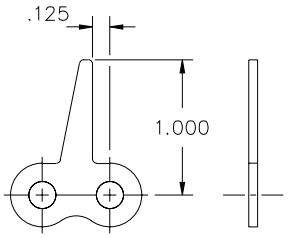


PART NO. 195696
AVAILABLE PIN LINK PLATE

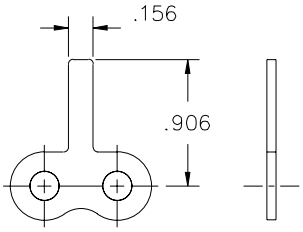


ANSI 40 ½" PITCH .060 LINK PLATE THICKNESS UNLESS NOTED

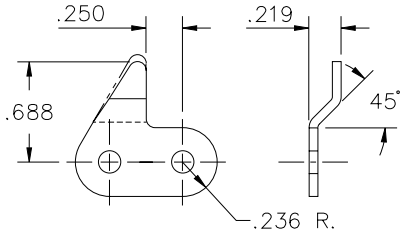
PART NO. 1910820
AVAILABLE PIN & ROLLER LINK PLATE



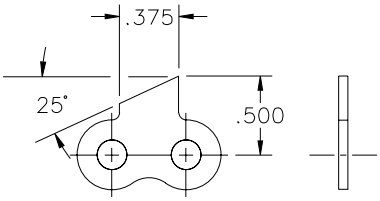
PART NO. 1911729
AVAILABLE PIN & ROLLER LINK PLATE



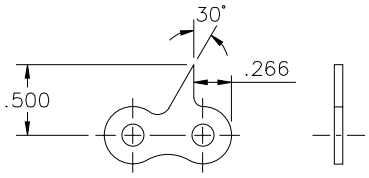
PART NO. 1913316 – RH or LH
AVAILABLE PIN LINK PLATE



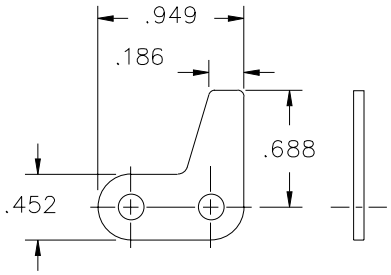
PART NO. 1910560
AVAILABLE PIN LINK PLATE



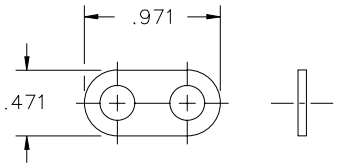
PART NO. 1912756
AVAILABLE PIN LINK PLATE



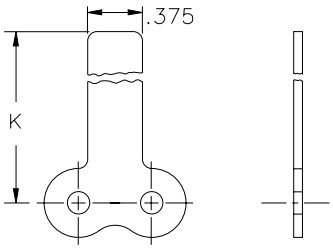
PART NO. 195862
AVAILABLE PIN LINK PLATE



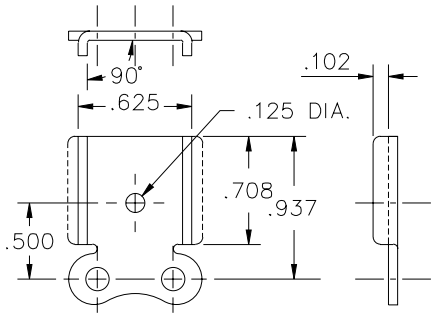
PART NO. 289302
AVAILABLE PIN & ROLLER LINK PLATE



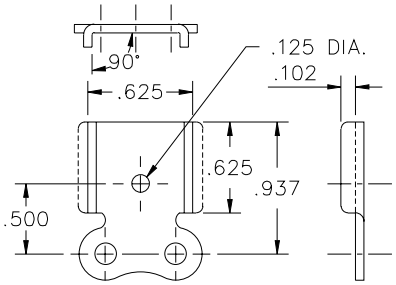
PART NO. 194446 K = 1.500
PART NO. 1913210 K = 2.312
AVAILABLE PIN & ROLLER LINK PLATE



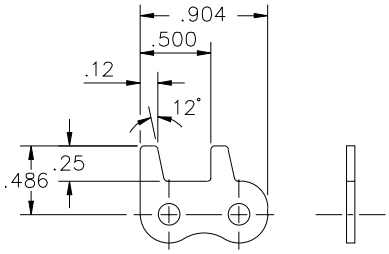
PART NO. 197306
AVAILABLE PIN LINK PLATE



PART NO. 195487
AVAILABLE PIN LINK PLATE



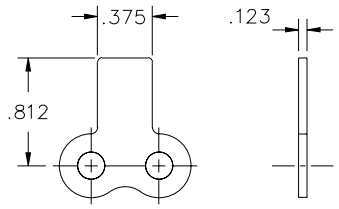
PART NO. 1912506
AVAILABLE PIN LINK PLATE



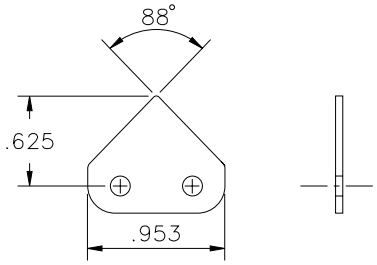
DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

ANSI 41 ½" PITCH .050 LINK PLATE THICKNESS UNLESS NOTED

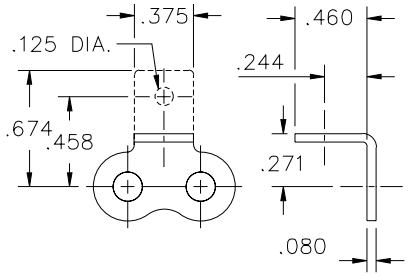
PART NO. 199973
AVAILABLE PIN LINK PLATE
NOTE: LONGER PIN REQUIRED FOR THICKER LINK PLATE



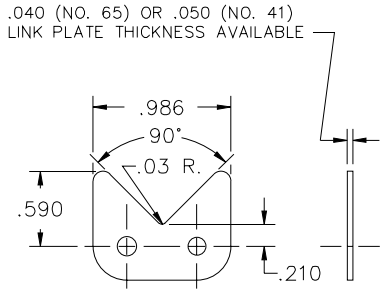
PART NO. 1913228
AVAILABLE PIN LINK PLATE



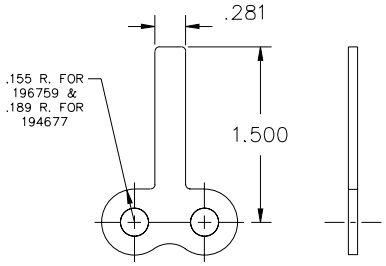
PART NO. 194691
AVAILABLE PIN LINK PLATE
NOTE: LONGER PIN REQUIRED FOR THICKER LINK PLATE



PART NO. 194677 OR 196759
AVAILABLE PIN & ROLLER LINK PLATE

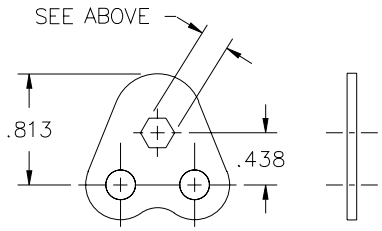


PART NO. 197283
AVAILABLE PIN LINK PLATE

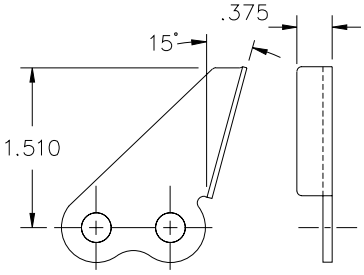


ANSI 50 ⅝" PITCH .080 LINK PLATE THICKNESS UNLESS NOTED

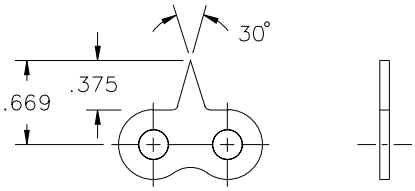
PART NO. 194230 (.315 ACROSS FLATS)
AVAILABLE PIN LINK PLATE



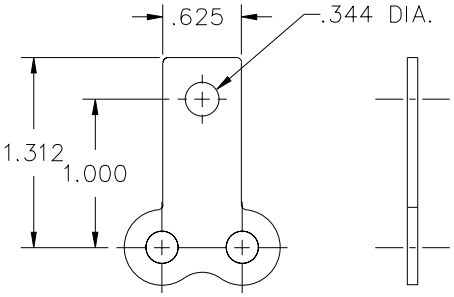
PART NO. 194830
AVAILABLE PIN LINK PLATE
NOTE: RIGHT OR LEFT HAND



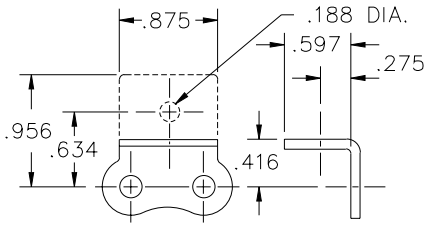
PART NO. 199309
AVAILABLE PIN LINK PLATE



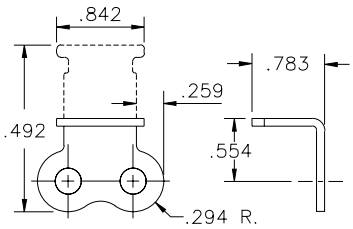
PART NO. 1910987
AVAILABLE PIN LINK PLATE



PART NO. 192029
AVAILABLE PIN LINK PLATE

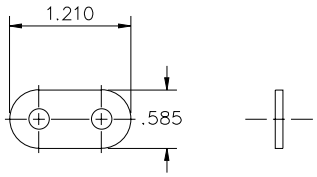


PART NO. 1913400
AVAILABLE PIN LINK PLATE

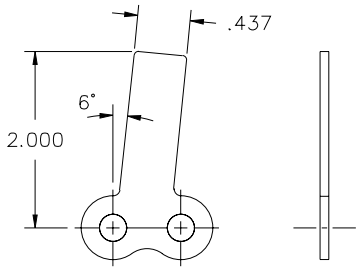


ANSI 50 5/8" PITCH .080 LINK PLATE THICKNESS UNLESS NOTED

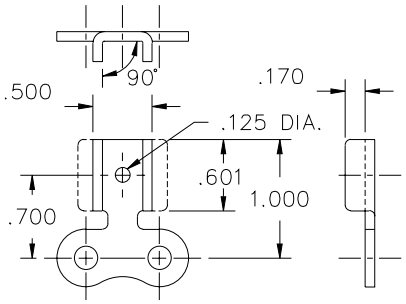
PART NO. 1913551
AVAILABLE PIN & ROLLER LINK PLATE



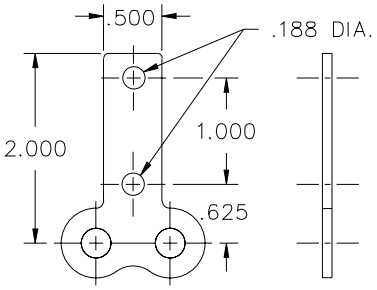
PART NO. 194017
AVAILABLE PIN & ROLLER LINK PLATE



PART NO. 1912828
AVAILABLE PIN LINK PLATE

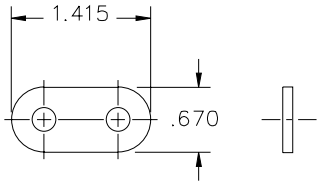


PART NO. 199384
AVAILABLE PIN & ROLLER LINK PLATE

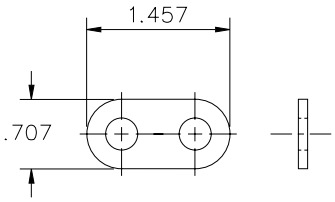


ANSI 60 3/4" PITCH .094 LINK PLATE THICKNESS UNLESS NOTED

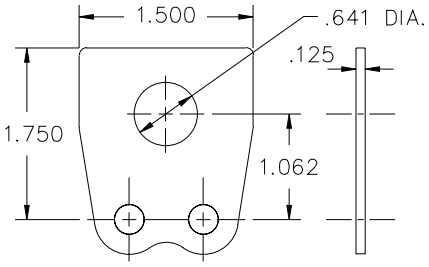
PART NO. 182802
AVAILABLE PIN & ROLLER LINK PLATE



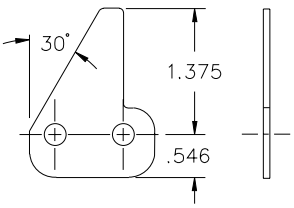
PART NO. 289918
AVAILABLE PIN & ROLLER LINK PLATE



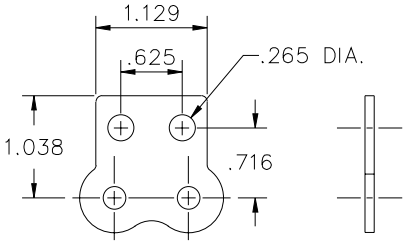
PART NO. 199588
AVAILABLE PIN LINK PLATE
NOTE: LONGER PIN REQUIRED FOR THICKER LINK PLATE



PART NO. 598699
AVAILABLE PIN & ROLLER LINK PLATE



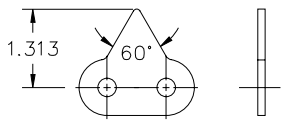
PART NO. 1613369
AVAILABLE PIN LINK PLATE



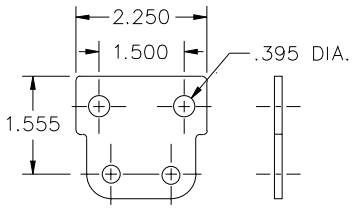
DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

ANSI 80 1" PITCH .125 LINK PLATE THICKNESS UNLESS NOTED

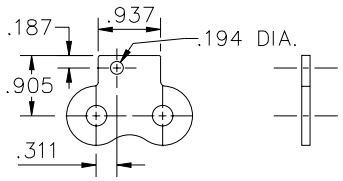
PART NO. 5913242
AVAILABLE PIN LINK PLATE



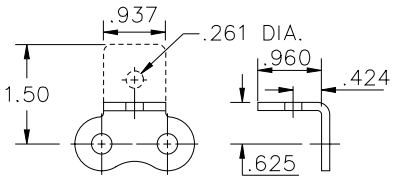
PART NO. 1611028
AVAILABLE PIN LINK PLATE



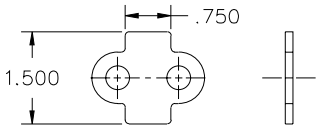
PART NO. 184368
AVAILABLE PIN & ROLLER LINK PLATE



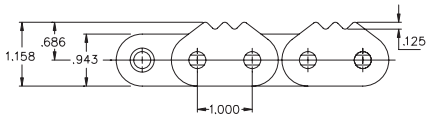
PART NO. 1913096
AVAILABLE PIN LINK PLATE



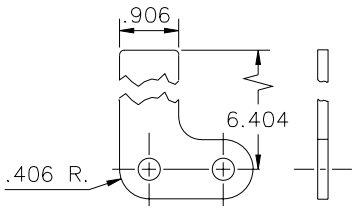
PART NO. 2913362
AVAILABLE ROLLER LINK PLATE



PART NO. 1915229
AVAILABLE PIN LINK PLATE

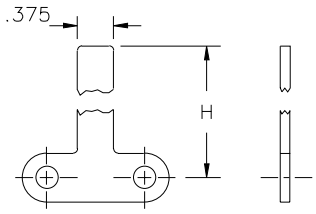


PART NO. 198709
AVAILABLE PIN & ROLLER LINK PLAT

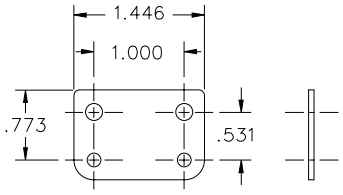


ANSI C-2040 1" PITCH (½" DOUBLE-PITCH) .060 LINK PLATE THICKNESS UNLESS NOTED

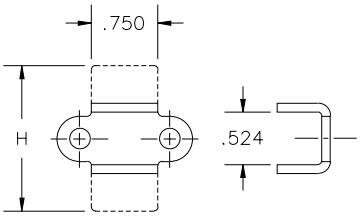
PART NO. 197781 H = 2.000
PART NO. 199460 H = 2.750
AVAILABLE PIN & ROLLER LINK PLATE



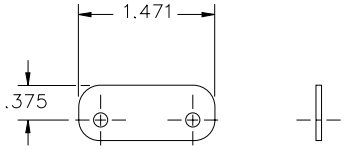
PART NO. 163852
AVAILABLE PIN & ROLLER LINK PLATE



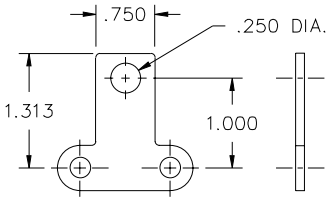
PART NO. 188653 H = 1.567
AVAILABLE PIN & ROLLER LINK PLATE



PART NO. 1912235
AVAILABLE PIN LINK PLATE

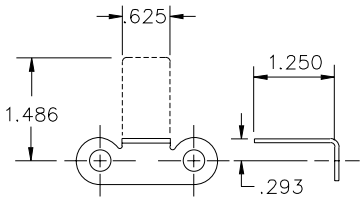


PART NO. 194060
AVAILABLE PIN LINK PLATE



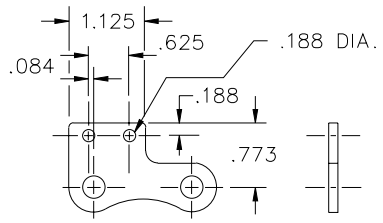
ANSI C-2050 1¼" PITCH (⅝" DOUBLE-PITCH) .080 LINK PLATE THICKNESS UNLESS NOTED

PART NO. 198195
AVAILABLE PIN & ROLLER LINK PLATE

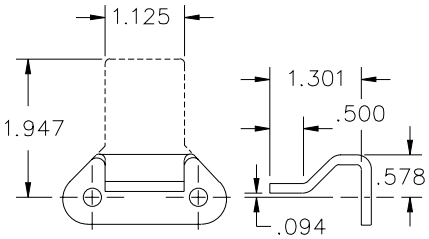


ANSI C-2060 1½" PITCH (¾" DOUBLE-PITCH) .094 LINK PLATE THICKNESS UNLESS NOTED

PART NO. 191789
AVAILABLE PIN & ROLLER LINK PLATE

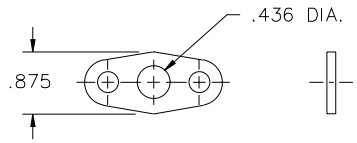


PART NO. 1911162
AVAILABLE PIN LINK PLATE

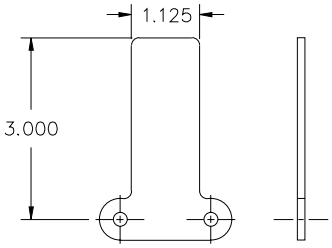


ANSI C-2060H 1½" PITCH (¾" DOUBLE-PITCH) .125 LINK PLATE THICKNESS UNLESS NOTED

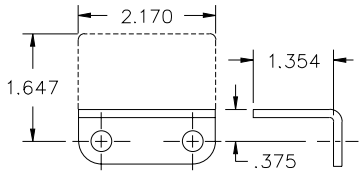
PART NO. 294725
AVAILABLE ROLLER LINK PLATE



PART NO. 192869
AVAILABLE PIN & ROLLER LINK PLATE

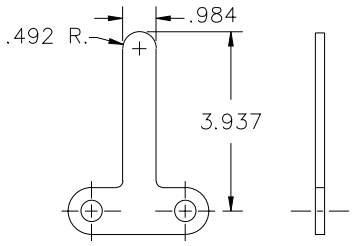


PART NO. 184860
AVAILABLE PIN & ROLLER LINK PLATE

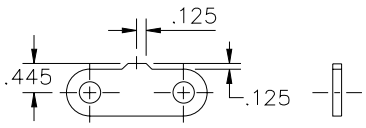


ANSI C-2080H 2" PITCH (1" DOUBLE-PITCH) .156 LINK PLATE THICKNESS UNLESS NOTED

PART NO. 199873
AVAILABLE PIN & ROLLER LINK PLATE

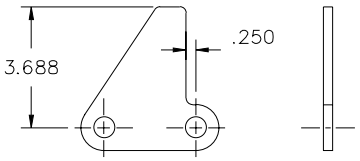


PART NO. 195064
AVAILABLE PIN & ROLLER LINK PLATE

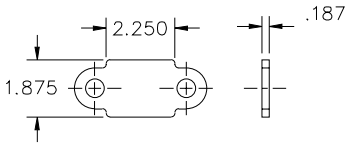


ANSI C-2120H 3" PITCH (1½" DOUBLE-PITCH) .219 LINK PLATE THICKNESS UNLESS NOTED

PART NO. 195803
AVAILABLE PIN & ROLLER LINK PLATE



PART NO. 2912769
AVAILABLE ROLLER LINK PLATE
NOTE: SHORTER PIN REQUIRED FOR THINNER LINK PLATE



Standard Attachment Terminology	Other Manufacturers	Diamond Terminology	Description
Single- and Double-Pitch Lugs	A1	B1 one hole	Bent attachment, one side, one hole
	A2	B1 two holes	Bent attachment, one side, two holes
	K1	B2 one hole	Bent attachment, both sides, one hole
	K2	B2 two holes	Bent attachment, both sides, two holes
	SA1, M-35	S1 one hole	Straight attachment, one side, one hole
	SA2, M-35-2	S1 two holes	Straight attachment, one side, two holes
	SK1, M-1	S2 one hole	Straight attachment, both sides, one hole
	SK2, M-2	S2 two holes	Straight attachment, both sides, two holes
Wide Contour Lugs	WM-35	WCS1 one hole	Wide contour, straight attachment, one side, one hole
	WM-35-2	WCS1 two holes	Wide contour, straight attachment, one side, two holes
	WM-1	WCS2 one hole	Wide contour, straight attachment, both sides, one hole
	WM-2	WCS2 two holes	Wide contour, straight attachment, both sides, two holes
	WA-1	WCB1 one hole	Wide contour, bent attachment, one side, one hole
	WA-2, A2	WCB1 two holes	Wide contour, bent attachment, one side, two holes
	WK-1	WCB2 one hole	Wide contour, bent attachment, both sides, one hole
	WK-2, K2	WCB2 two holes	Wide contour, bent attachment, both sides, two holes
Extended Pins	D1	E1	One pin in link extended
	D3	E2	Both pins in link extended

CHAIN TOOLS

Tool Descriptions and Dimensions

Important - Refer to safety instructions in Roller Chain Installation section prior to using these tools. When using chain tools, always wear safety glasses to protect your eyes.

Roller Chain Connecting Tool

CT35 or CT80 Instructions: Hook the two jaws into each end of the chain. Turn the screw clockwise to bring the two ends of chain almost together. Insert the connecting link and complete assembly of the connecting link. This tool was not made to stretch chain but simply made to hold chain.

CT80 CABLE Instructions: Place hooks on rollers past opposite side of link or links to be removed or replaced, then take up slack in the cable with a wrench until the chain between the hooks is relieved of tension. This will allow the removal of the link or links with a roller chain pin extractor. A new master or replacement link or links can then be inserted. Release the cable with the lock lever pawl and remove the tool.

CT35 Connecting Tool-Small
For use with ASME/ANSI 25 through 60H Roller chain. Enabling fast, easy replacement of broken links, this tool holds chain together in position leaving your hands free for working, not chain holding. This compact tool will save time and effort by allowing roller chain repair without removing it from the machine.

CT80 Connecting Tool-Large
For use with ASME/ANSI 80 through 240 Roller Chain single strand and also most conveyor and engineered chains with a width of 5/8" or wider between inside links. On multiple strand chains, a second connecting tool will aid in alignment of the chain.

CT80-CABLE Cable Connecting Tool-Large
For use with ASME/ANSI 80 through 240 Roller Chain single strand, multiple strand, double-pitch chain and also most conveyor and engineered chains with a width of 5/8" or wider between inside links. This tool was designed to hold the chain in place on the sprockets while being repaired.

For Chain Sizes	Model Number	Approx. Shipping Wt.
35 - 60H	CT 35	0.3 lb.
80 - 240	CT 80	2.0 lb.
80 - 240	CT 80-Cable	4.75 lb.

CHAIN TOOLS

Tool Descriptions and Dimensions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Important - Refer to safety instructions in Roller Chain Installation section prior to using these tools. When using chain tools, always wear safety glasses to protect your eyes.

Roller Chain Pin Extractor Tools

Instructions: Place jaws of tool over roller with push-out pin centered on chain pin. Tighten down by turning top handle clockwise until chain pin loosens, driving it partially through the link plate. Follow the same procedure on other pin of the same pin link. Return to original pin and force completely through pin plate. Do the same on second pin, freeing link plate from the pins. Remove disassembled pin link from the chain. It is recommended that "side-mashed or spun" pin heads be ground off flush with the pin link plate (prior to pin extraction) to insure that the chain bushing will not be damaged.

PE113 Pin Extractor-Small
For use with ASME/ANSI 25 through 60H Roller Chain. Take apart chain quickly and easily without hammers or punches. This quality hand tool is made in the USA using hardened steel parts for long lasting reliability.

PE135 Pin Extractor-Large
For use with ASME/ANSI 80-100H Roller Chain. (Pin extractor for ASME/ANSI 120 through 160 available as a special order item.) Take apart chain quickly and easily without hammers or punches. This quality hand tool is made in the USA using hardened steel parts for long lasting reliability.

PERE157 Pin Extractor-Extra Large
For use with ASME/ANSI 120-160 Roller Chain. Take apart chain quickly and easily without hammers or punches. This quality hand tool is made in the USA using hardened steel parts for long lasting reliability.

For Chain Sizes	Model Number	Description	Approx. Shipping Wt.
25 - 60H	PE 113	Chain Pin Extractor	0.80 lb.
	PE 113 - 103	Replacement Tip Assembly	0.10 lb.
	PE 113 - 108	Replacement Tip	0.01 lb.
80 - 100H	PE 135	Chain Pin Extractor	2.80 lb.
	PE 135 - 108	Replacement Tip	0.01 lb.
120-160	PERE 157	Chain Pin Extractor	8.05 lb.

TECHNICAL ENGINEERING

General Drive Considerations

One of the main advantages of the roller chain drive is its ability to perform well under widely varying conditions. Despite this ability, there are a number of rules of good design practice which, if considered early in the design process, will enable the user to obtain desirable results.

Basic dimensions and minimum ultimate tensile requirements for single-pitch, double-pitch and attachment roller chains are specified by various standards organizations worldwide. ASME/ANSI, The American Society of Mechanical Engineers and The American National Standards Institute, defines dimensions such as: pitch, roller width, roller diameter, link plate height, link plate thickness and pin diameter. The primary purpose of the standard is to ensure that manufacturers will produce chains and sub-assemblies that are similar dimensionally and therefore interchangeable. In addition, the standard does offer the user some assurance of quality by defining a minimum ultimate tensile strength for each model of chain. However, tensile strength is not always a valid method to differentiate one manufacturer's product from another. It is very important to remember that dimensional standardization does not define quality or performance characteristics.

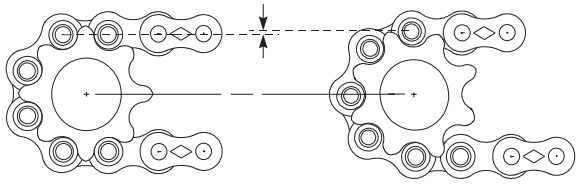
Minimum Ultimate Tensile Strength: Minimum Ultimate Tensile Strength, MUTS, is the static load required to break the chain. Tensile strength values shown in this catalog are *not* allowable working loads. Load or tension applied to the chain in service should never exceed ⅙th of the UTS. If exceeding this value is necessary for a specific application, contact Diamond Chain. Warning! A roller chain should never be loaded above 50% of MUTS for even one cycle. Doing so will permanently damage the chain.

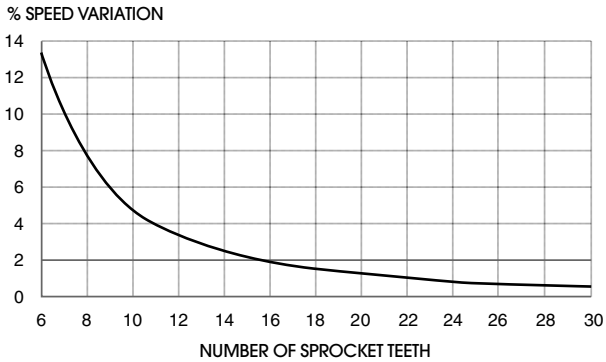
Allowable Working Load: Roller chains with equal tensile strengths can have very different working load capacities. Contrary to popular belief, *there is no consistent relationship between a roller chain's working load capacity and its ultimate tensile strength.* A chain with a higher tensile strength than a Diamond chain could have a much lower working load capacity.

Selecting Chain Size: There may be several suitable selections for any particular application. Loads, speeds, environment, cost, required service life or other factors will determine the final selection. Generally, the lowest cost drive will consist of a single strand chain of the smallest pitch that can accommodate the load. The speed and number of teeth of the smallest sprocket, most commonly the driver sprocket, also have an effect on the selection of chain size. As a rule, the smaller the pitch the higher the permissible operating speed.

Selecting Sprockets

Small Sprocket: The smallest sprocket is usually the driver or input sprocket. As the chain enters and exits, it rises and falls as each pitch engages and disengages the sprockets.





This movement, called chordal action, causes chain speed variations (drive roughness) that may be objectionable in some applications. These speed variations can normally be minimized by increasing the size of the sprockets, as shown.

TECHNICAL ENGINEERING

General Drive Considerations

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

To minimize the negative effects of chordal action, the following are suggested guidelines for the minimum number of teeth in the smallest sprocket:

Slow Speed	(Type A* lubrication region)	12 Teeth
Medium Speed	(Type B* lubrication region)	17 Teeth
High Speed	(Type C* lubrication region)	25 Teeth

* More detail on type A, B and C lubrication can be found in the Roller Chain Lubrication section of this guide.

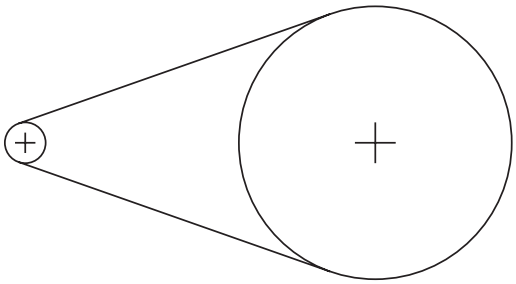
Hardened Teeth: Tooth loading *increases* as the number of teeth in the sprocket *decreases.* Hardening of sprocket teeth is recommended when the number of teeth is 25 or less and/or the sprocket will operate in:

1. Drives that are heavily loaded.
2. Abrasive conditions.
3. High speed drives.
4. Drives requiring extremely long life.

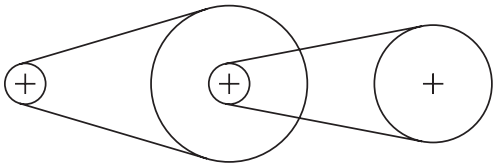
Chain Wrap: The recommended minimum wrap angle on the smallest sprocket in the drive is 120°. Wrap angle can be reduced to 90°, if good chain tension adjustment is maintained. If chain tension is not closely maintained with less than 120° wrap, the chain can jump teeth, resulting in damage to itself and/or the sprocket.

Note: For a ratio of 3:1 or less there will always be 120° or more wrap on the small sprocket, regardless of the center distance.

Drive Ratio: The ratio of the sprocket sizes is determined by the desired speed reduction or increase. The maximum recommended ratio for a single reduction is 7:1. In practice, the practical single reduction limit is affected by: the minimum size of the small sprocket, the maximum size of the large sprocket, and the need for sufficient wrap on the small sprocket. It is possible to utilize a reduction as great as 9:1 but a double reduction is preferable. It is important to remember that drive ratio is a function of the number of teeth on the sprockets, not the sprockets' diameters.



7:1 RATIO



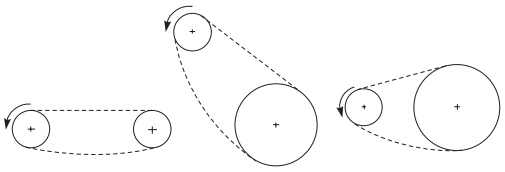
7:1 RATIO (TWO DRIVES)

TECHNICAL ENGINEERING

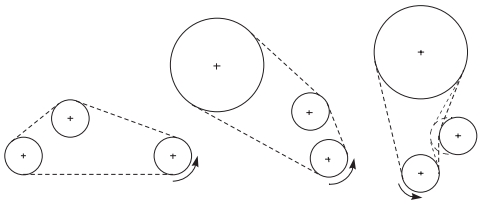
General Drive Considerations

Drive Arrangements

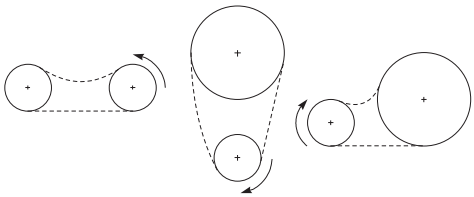
Shown below are recommended, acceptable, and not recommended drive arrangements, along with preferred direction of travel. Every effort should be made to utilize the recommended or acceptable layouts in order to obtain optimum drive life.



RECOMMENDED



ACCEPTABLE



NOT RECOMMENDED

Chain Length: Chain length must be an integral number of pitches (no fractions of pitches). Additionally, every attempt should be made during the design process to define a chain length, which is an even number of pitches including the connecting link. In a fixed center-distance drive this can be done by selecting sprockets that provide a ratio near that desired. In an adjustable center-distance drive this is achieved by providing sufficient adjustment or "take-up" so that an even number of pitches can be used and still operate with proper tension.

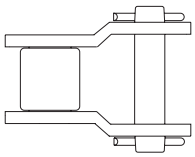
If neither of the above conditions can be met, a chain having an odd number of pitches is required. These designs require the use of offset links or "half links." Offset links are generally costly and will significantly reduce the chain's load carrying capacity.

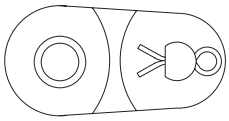
Offset Links

If required, Diamond offers two types of offsets: single-pitch and multiple-pitch.

Single-pitch offsets are constructed using hybrid link plates consisting of half pin link plate and half roller link plate contours. Single-pitch offsets are secured within the chain using a slip-fit pin and cotter keys.

Note: Single-pitch offsets can reduce the load capacity of a roller chain by as much as 30%.





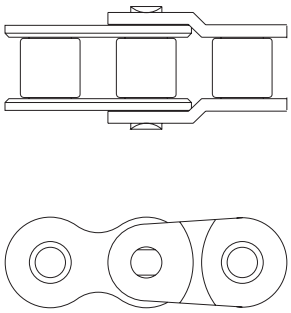
TECHNICAL ENGINEERING

General Drive Considerations

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Multiple-pitch offsets, commonly two pitches in length, are constructed with the same basic design as a single-pitch offset, with the exception that the offset link itself is riveted together with a standard roller link assembly. Multiple-pitch offsets afford the user superior performance and generally are less costly than single-pitch offsets. However, multiple-pitch offsets still reduce the load carrying capacity of the chain.

Note: Multiple-pitch offsets can offer virtually the same integrity as the base chain. However, some reduction in load carrying capacity can result from their use.



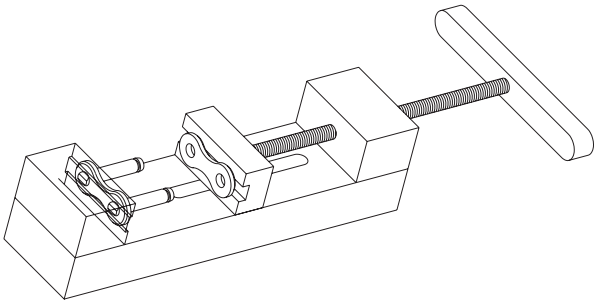
Connecting Links

Connecting links are used to join the ends of the chain together once installed on the drive. Diamond offers two types of cover plates depending upon the application and/or the user's preference: slip-fit or press-fit.

Slip-fit cover sides are supplied when the user prefers ease of assembly and disassembly. The cover plate of a slip-fit connecting link has pitch holes that are larger in diameter than the pins. This allows the user to "slip" the cover plate onto the pins before installing a spring clip or cotters. This style of connecting link is inherently weaker than the base chain because its slip-fit construction does not have the same integrity found in the assembled chain. Note: Slip-fit connecting links can reduce the chain's working load capacity by as much as 30%.

Press-fit cover plates are provided when the integrity of the connecting link needs to be equal to that of the base chain. In this design, the cover plate has pitch holes that are smaller in diameter than the pins. This requires the user to "press" the cover plate onto the pins before installing a spring clip or cotters. While more difficult to install, these links do provide the greatest load carrying capability. Diamond does not provide any specific tool for use with the installation of a press-fit cover plate. However, a modified C-Clamp-type device often makes the job much easier.

Note: Never drill out or enlarge the pitch holes of a press-fit connecting link cover side to make the installation easier.



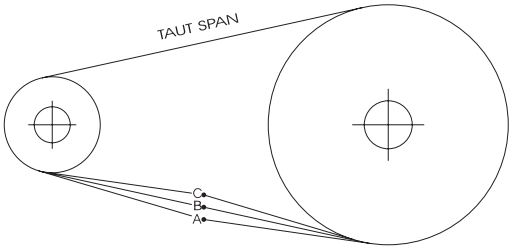
"C-CLAMP"-TYPE DEVICE

TECHNICAL ENGINEERING

General Drive Considerations

Chain Tensioning/Length Adjustment: Proper chain tension is critical to achieving acceptable service life. Chain tensioning may be accomplished by either: adjusting one of the shafts to increase the center distance, using a movable idler sprocket, or removing pitches from the chain to compensate for wear elongation.

For the majority of slow and medium speed chain drives, the total mid-span movement in the slack span should be approximately 4-6% of the drive's center distance. For drives operating at high speeds, impulse or reversing loads, the total movement should be reduced to 2-3% of the center distance. Drives with vertical centers should also be adjusted to the smaller percentage. If the drive incorporates shaft adjustment or an idler, the amount of movement or "take-up" should always allow for the removal of two pitches of chain.

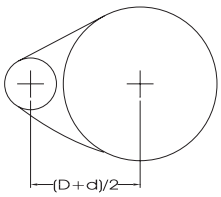


Recommended Possible Mid-Span Movement, A-C, of Slack Span

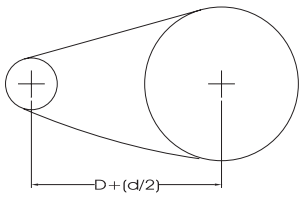
Dimensions in Inches

Drive Center-Line	Tangent Length Between Sprockets								
	5	10	15	20	30	40	60	80	100
Horizontal to 45	0.25	0.50	0.75	1.00	1.50	2.00	3.00	4.00	5.00
Vertical to 45	0.12	0.25	0.38	0.50	0.75	1.00	1.50	2.00	2.50

Drive Center Distance: The distance between driver and driven sprockets on a two-sprocket drive must be greater than one-half the sum of the sprocket outside diameters to avoid tooth interference. The shortest practical center distance is recommended.



ABSOLUTE MINIMUM CENTER DISTANCE



RECOMMENDED MINIMUM CENTER DISTANCE

General guidelines for the selection or determination of the center distance for any two-sprocket drive are:

1. For the average application, a center distance of approximately 40 pitches of chain represents good practice.
2. A center distance of 80 pitches may be considered as an approved maximum.
3. For high speed or pulsating drives a center distance as short as 20 pitches may be desirable to avoid chain whipping and potential drive damage.

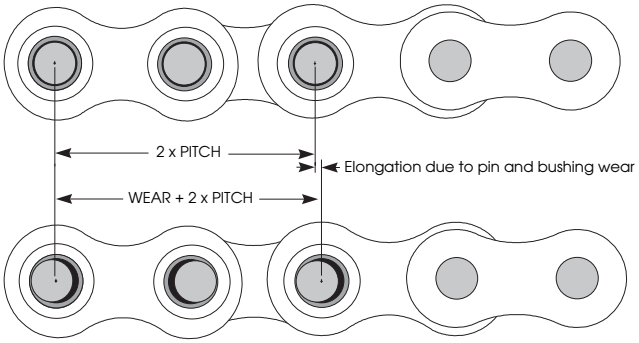
TECHNICAL ENGINEERING

General Drive Considerations

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

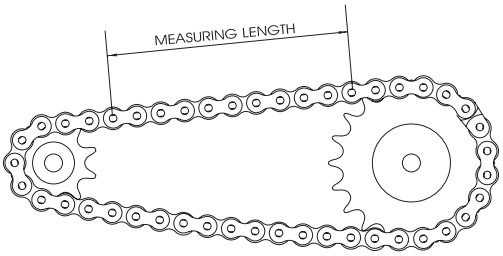
Fixed Centers: When adjustable centers or idlers cannot be used, the exact center distance must be calculated and built into the drive. Drives with fixed centers should be conservatively selected and well lubricated to minimize the rate of chain wear. Adjustment for wear elongation in fixed center distance drives is accomplished *only* by removing links or pitches to compensate for wear elongation.

Chain Wear: The individual joints in a roller chain articulate as they enter and leave the sprockets. This articulation results in wear on the pins and bushings. As material is worn away from these surfaces the chain will gradually elongate.



CHAIN DOES NOT "STRETCH" – MATERIAL IS REMOVED FROM PIN AND BUSHING

Elongation is normal and may be minimized by proper lubrication and drive maintenance. The rate of wear is dependent upon: the relationship between the load and the amount of bearing area between pin and bushing, the material and surface condition of the bearing surfaces, the adequacy of lubrication, and the frequency and degree of articulation between pins and bushings. The latter is determined by the quantity of sprockets in the drive, their speeds, the number of teeth and the length of the chain in pitches.



MEASUREMENT OF CHAIN FOR WEAR ELONGATION

Relatively accurate wear measurements can be made by using the above illustration. Measure as closely as possible from the center of one pin to the center of another. The more pitches (pins) contained within the measurement increase the accuracy. If the measured value exceeds the nominal by more than the allowable percentage the chain should be replaced. The maximum allowable wear elongation is approximately 3% for most industrial applications, based upon sprocket design. The allowable chain wear in percent can be calculated using the relationship: 200/N, where N is the number of teeth in the large sprocket. This relationship is often useful since the normal maximum allowable chain wear elongation of 3% is valid only up to 67 teeth in the large sprocket. In drives having fixed center distances, chains running in parallel or where smoother operation is required, wear should be limited to approximately 1.5%.

For example, if 12 pitches (12 pins) of a #80 chain were measured and the result was 12.360 or greater (using 3% as the maximum allowable wear), the chain should be replaced. Anything less than 12.360 would still be acceptable by most industrial standards.

For a free wear guage to assist you with this procedure, contact your nearest Diamond Chain distributor, or call 1-800-US-CHAIN. See page 138 of this catalog.

TECHNICAL ENGINEERING

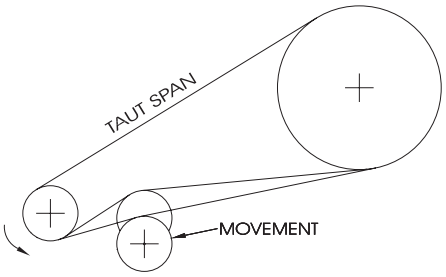
General Drive Considerations

Chain Sag: In long spans, a relatively small amount of excess chain can cause a substantial sag in the slack span. More detailed information concerning the calculation of chain sag can be found in the Conveyor Chain Selection section of this product guide. In designing drives, it is necessary to provide sufficient clearance to prevent interference between the chain and chain case or other parts of the equipment.

Idler Sprockets: Idler sprockets may be used:

1. To take up slack in chain when shaft centers are not adjustable and are not located at a proper distance to provide a snug-fitting chain.
2. To take up slack in chain developed through normal chain wear. Such take-up will be necessary only at infrequent intervals because chain elongation due to wear occurs at a very slow rate when chain is adequately lubricated.
3. To guide the chain clear of any obstructions.
4. To increase the arc of chain wrap on other sprockets.
5. To provide for a reversed direction of rotation of a sprocket, outside a closed chain.

When an idler is required, it is preferable that it engage slack chain span. If the particular design requires that an idler be installed in the taut span of chain, the service life of the chain will most likely be shortened because of the additional articulation of the chain's joints while under load.



Idler sprockets should be mounted rigidly and firmly so that they will remain in position until some change in position is needed.

When an idler is located within the chain loop it should be located near the larger sprocket. When located outside the chain loop it should be located near the smaller sprocket.

Rarely is it desirable or necessary to provide automatic take-up by means of spring-and-ratchet combinations or dead weight mechanisms. The use of such types of idlers imposes additional and unnecessary loading on the chain joints.

TECHNICAL ENGINEERING

General Drive Considerations

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Variable Speed Drives: Many drives must operate over a wide range of speeds and loads. The selected drive must be capable of performing acceptably at any of the required conditions. It is particularly important to be sure the drive is adequate at the most critical operating conditions which are often, but not limited to, the highest and lowest speeds.

Multiple Strand Chains: Used where single strand chains cannot carry the loads. These chains have two or more strands of chain assembled with common pins across the full width of the chain. More information on these types of roller chain can be found in the Multiple Strand Chain section of this guide.

Lubrication: Lubrication is the single most important factor controlling a chain's wear life. Specific methods of lubrication can be found in the Roller Chain Installation section of this guide. However, if the drive is located such that regular lubrication is infrequent or impractical, or if the drive is exposed to contaminants, consider the use of either DURALUBE®, RING LEADER® O-ring or DUST STOPPER™ chain. Details on these products can be found in the Special Lubricated Chain section of this guide.

Environment: If the drive is exposed to water, corrosive agents, contamination, or is in high or low temperature environments, consideration should be given to the use of either Nickel-Plated, Stainless Steel or RING LEADER O-ring chain. More detailed information can be found for these models in the Corrosion/Moisture Resistant and Special Lubricated sections of this product guide.

Temperature Limitations

Standard carbon steel-based chains can routinely be used where temperatures are between 0º and 350º F. For temperatures between 350º and 500º F, specially designed chains having extra internal clearances are recommended. At these temperatures, however, some loss of component hardness and reduced wear life can be expected.

Stainless steel chains should be considered when the operating temperature will be below 0º or above 500º F.

RING LEADER® O-ring chain can be routinely used at temperatures up to 150º F. If temperatures exceed this value, contact Diamond for alternate O-ring materials which may be serviceable up to 450º F.

DURALUBE® roller chains are generally limited to ambient temperatures of 120º F.

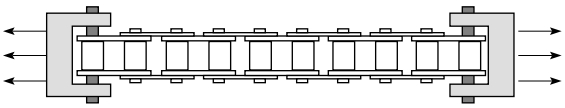
DUST STOPPER™ roller chains are generally limited to ambient temperatures of 120º F.

TECHNICAL ENGINEERING

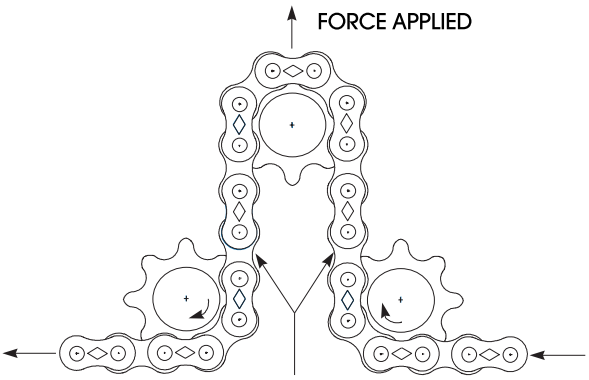
General Drive Considerations

Preloading: After assembly, Diamond applies an initial load to the chains, called preload. This loading approximates the recommended maximum loading in service. Preloading can be done either statically or dynamically. Diamond dynamically preloads all of our ¼" through 2" pitch Standard and Heavy Series single strand roller chains. Preloading is done to align the various chain components such as pins, bushings and link plates.

STATIC PRELOAD



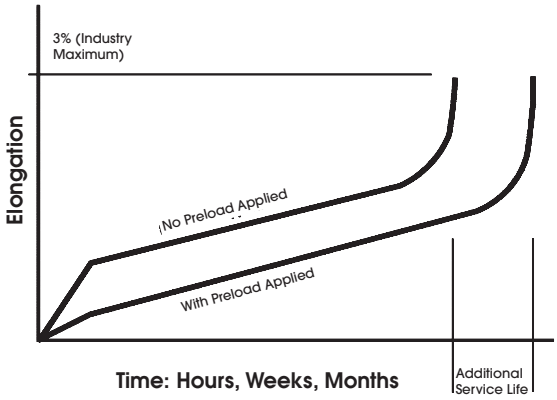
DYNAMIC PRELOAD



CHAIN UNDER TENSION

Benefit of Preloading: Preloading helps to greatly eliminate initial elongation often found in “lesser” chains. Elimination of this initial elongation can increase usable service life.

BENEFIT OF “PRELOADING”



TECHNICAL ENGINEERING

Chain Selection

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Drive Chain

This section offers guidance for the selection of economical roller chain drives, capable of meeting the great majority of drive requirements. However, when information is needed on a special problem, or whenever it seems advisable to have any drive selection confirmed or checked, feel free to contact Diamond's application engineers.

The first step in sizing and selection of a roller chain drive is to assess the known information about the drive's requirements and limitations. The following list represents the information required to adequately select a roller chain which will perform acceptably:

1. Source of input power.
2. Type of driven equipment.
3. Input horsepower available.
4. Size and speed of driving shaft.
5. Size and speed of driven shaft.
6. Center distance between shafts.
7. Available center distance adjustment, if any.
8. Space limitations such as maximum sprocket diameters.
9. Available lubrication methods.
10. Hostile environment, if any.

Additionally, the following information, if available, will enhance the ability to select the most appropriate roller chain for the application:

1. Frequent stops and starts.
2. High starting or inertial loads.
3. Extreme temperatures, i.e., above 150° F or below 0° F.
4. Large cyclic load variations in each revolution.
5. Multiple driven shafts.

TECHNICAL ENGINEERING

Chain Selection

Selecting a Chain Size

Step 1 - Determine Service Factor: In drive design, the nominal horsepower available is usually known. However, the peak horsepower actually realized by the chain may be much greater depending on the power source and the type of equipment being driven.

The service factor allows the user to estimate the maximum horsepower to which the drive may be exposed. This maximum horsepower will normally be a function of both the type of input power available combined with the type of equipment being driven. The following table lists some of the more common driver and driven combinations.

Service Factors

Type of Driven Equipment	Power Source Type A	B	C
Agitators for Liquid	1.0	1.0	1.2
Beaters	1.2	1.3	1.4
Blowers & Fans, Centrifugal	1.0	1.0	1.2
Boat Propellers	1.2	1.3	1.4
Compressors –			
Centrifugal & lobe	1.2	1.3	1.4
Reciprocating, 3+ cylinders	1.2	1.3	1.4
Reciprocating, 1 & 2 cylinders	1.4	1.5	1.7
Conveyors –			
Belt or chain, smoothly loaded	1.0	1.0	1.2
Heavy duty, not uniformly loaded	1.2	1.3	1.4
Clay Working Machinery –			
Pug mills	1.2	1.3	1.4
Brick presses, briquetting machinery	1.4	1.5	1.7
Cranes & Hoists	Consult Diamond		
Crushers	1.4	1.5	1.7
Dredges –			
Cable, reel, & conveyor drives	1.2	1.3	1.4
Cutter head, jig, & screen drives	1.4	1.5	1.7
Elevators, Bucket –			
Smoothly loaded or fed	1.0	1.0	1.2
Not uniformly loaded or fed	1.2	1.3	1.4
Feeders –			
Rotary table	1.0	1.0	1.2
Apron, screw, rotary vane	1.2	1.3	1.4
Reciprocating	1.4	1.5	1.7

Type of Driven Equipment	Power Source Type A	B	C
Food Processing –			
Slicers, dough mixers, grinders	1.2	1.3	1.4
Kilns & Dryers	1.2	1.3	1.4
Machine Tools –			
Drills, grinders, lathes	1.0	1.0	1.2
Boring mills, milling machines	1.2	1.3	1.4
Punch presses, shears	1.4	1.5	1.7
Machinery, General –			
Uniform load, non-reversing	1.0	1.0	1.2
Moderate shock load, non-reversing	1.2	1.3	1.4
Severe shock load, reversing	1.4	1.5	1.7
Mills –			
Ball, pebble, tube	1.2	1.3	1.4
Hammer, rolling	1.4	1.5	1.7
Pumps –			
Centrifugal	1.0	1.0	1.2
Reciprocating, 3+ cylinders	1.2	1.3	1.4
Reciprocating, 1 & 2 cylinders	1.4	1.5	1.7
Paper Industry –			
Pulp grinders	1.2	1.3	1.4
Calendars, mixers, sheeters	1.4	1.5	1.7
Printing Presses, Magazine & Newspaper	1.4	1.5	1.7
Textile Industry –			
Calendars, mangles, nappers	1.2	1.3	1.4
Carding machinery	1.4	1.5	1.7
Woodworking Machinery	1.2	1.3	1.4

A – Internal combustion engine with hydraulic drive.
B – Electric motor or turbine.
C – Internal combustion engine with mechanical drive.

Step 2 - Calculate the Design Horsepower: The design horsepower is determined by multiplying the input horsepower by the service factor obtained above.

Design Horsepower = Input HP x Service Factor

TECHNICAL ENGINEERING

Chain Selection

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Step 3a - Make a Preliminary Chain Selection: There may be several suitable solutions when it comes to selecting a drive. Generally, however, the smallest pitch, single strand chain that will convey the required horsepower is often the most economical. Using the following abridged horsepower ratings, an initial chain size can be identified. Enter this rating table with the approximate RPM of the smallest sprocket, driving or driven, and locate the smallest size chain capable of transmitting the required horsepower.

Abridged Horsepower Ratings

ASME/ ANSI #	Number of Teeth	Revolutions Per Minute (RPM)													
		100	300	500	700	900	1200	3000	4000	5000	6000	7000	8000	9000	10000
25	17	0.10	0.29	0.47	0.64	0.82	1.08	2.61	2.65	1.90	1.44	1.14	0.94	0.79	0.67
	21	0.12	0.35	0.58	0.80	1.01	1.34	3.22	3.64	2.60	1.98	1.57	1.29	1.08	0.92
	25	0.15	0.42	0.69	0.95	1.21	1.59	3.84	4.73	3.38	2.57	2.04	1.67	1.40	
35	17	0.34	0.97	1.58	2.18	2.77	3.66	5.64	3.67	2.62	2.00	1.58	1.30		
	21	0.42	1.19	1.95	2.69	3.43	4.52	7.75	5.03	3.60	2.74	2.17			
	25	0.50	1.42	2.32	3.21	4.08	5.38	10.07	6.54	4.68	3.56				
40	17	0.80	2.29	3.74	5.16	6.57	8.66	4.17	2.71	1.94	1.47				
	21	0.98	2.83	4.61	6.37	8.11	10.69	5.72	3.71	2.66					
	25	1.17	3.36	5.49	7.59	9.66	12.73	7.43	4.82						
41	17	0.44	1.26	2.05	2.84	3.61	3.29	0.83	0.54	0.39	0.29				
	21	0.54	1.55	2.54	3.51	4.46	4.52	1.14	0.74	0.53					
	25	0.64	1.85	3.02	4.17	5.31	5.87	1.49	0.96						
50	17	1.55	4.45	7.27	10.04	12.78	16.85	4.98	3.23	2.31					
	21	1.92	5.50	8.98	12.40	15.79	20.81	6.84	4.44						
	25	2.28	6.55	10.69	14.77	18.79	24.77	8.88							
60	17	2.66	7.65	12.49	17.26	21.96	22.77	5.76	3.74						
	21	3.29	9.45	15.43	21.32	27.13	31.26	7.91							
	25	3.92	11.25	18.37	25.38	32.30	40.61	10.27							
80	13	4.76	13.66	22.31	30.81	29.51	19.17	4.85	3.15						
	17	6.22	17.86	29.17	40.29	44.13	28.66	7.25							
	21	7.69	22.07	36.03	49.77	60.59	39.36								
	25	9.15	26.27	42.89	59.25	75.42	51.12								
100	13	9.11	26.16	42.72	51.43	35.28	22.92	5.80							
	17	11.92	34.21	55.87	76.91	52.76	34.27								
	21	14.72	42.26	69.01	95.33	72.43	47.05								
	25	17.52	50.31	82.16	113.48	94.09	61.11								
120	13	15.39	44.18	72.14	59.51	40.82	26.51								
	17	20.12	57.77	94.34	88.99	61.04	39.65								
	21	24.86	71.37	116.54	122.18	83.81	54.44								
	25	29.59	84.96	138.74	158.70	108.86	70.71								
140	13	23.81	68.36	111.52	67.32	46.18	29.99								
	17	31.13	89.39	145.97	100.67	69.05	44.85								
	21	38.46	110.42	180.31	138.22	94.81	61.58								
	25	45.79	131.45	214.66	179.53	123.15	79.99								
160	13	34.54	99.17	124.09	74.91	51.38	33.37								
	17	45.17	129.68	185.56	112.02	76.84	49.91								
	21	55.80	160.20	254.77	153.80	105.50	68.52								
180	13	47.70	136.93	136.35	82.31	56.46	36.67								
	17	62.37	179.07	203.90	123.09	84.43	54.84								
	21	77.05	221.20	279.94	169.00	115.92	75.29								
200	13	63.33	181.81	148.34	89.55	61.43	39.90								
	17	82.81	237.75	221.83	133.91	91.86	59.66								
	21	102.29	293.69	304.56	183.86	126.11									
240	13	101.99	292.82	171.64	103.61	71.07	46.16								
	17	133.37	382.92	256.66	154.94	106.28									
	21	164.76	473.02	352.39	212.73	109.86									

Complete horsepower ratings are located in the Horsepower Rating section of this guide.

If the design horsepower exceeds the capacity of single strand chain or if space limitations (i.e. sprocket diameters) are a consideration, then a multiple strand chain may be required.

TECHNICAL ENGINEERING

Chain Selection

Step 3b - Selecting a Multiple Strand Factor (if required): Multiple strand chain construction is described in detail in the Multiple Strand section of this guide. For the purpose of drive selection it is important to remember that multiple strand chain does not have the ability to transmit an even multiple of its single strand's horsepower. Example: a #80-2 chain cannot transmit two times the horsepower that a #80 single strand chain will. This is because the loading on a multiple strand chain cannot be exactly and evenly distributed across the full width of the chain due to many factors. Therefore, multiple strand chains are de-rated according to their number of strands. The following table provides values to be used in determining the single strand equivalent horsepower used in either the abridged horsepower ratings on the previous page or in the complete ASME/ANSI horsepower ratings located in the Horsepower Rating Table section of this guide.

Multiple Strand Rating Tables

Number of Strands	Multiple Strand Factor
2	1.7
3	2.5
4	3.3
5 or more	Contact Diamond

Calculating the equivalent single strand horsepower is accomplished by multiplying the input horsepower by the service factor and dividing that quantity by the multiple strand factor.

$$\text{HP(single strand eq.)} = \frac{\text{(Input Horsepower x Service Factor)}}{\text{Multiple Strand Factor}}$$

Once a tentative selection is obtained, refer to the complete ASME/ANSI horsepower ratings to more accurately define the small sprocket's required number of teeth to transmit the required design, single strand or single strand equivalent, horsepower.

In either the abridged or complete horsepower ratings, for exact speeds or numbers of teeth not shown, interpolate between the appropriate columns or lines. Studying the ratings will show that increasing the number of teeth on the small sprocket normally allows the use of a smaller pitch chain. Again, selecting the smallest pitch chain that will transmit the required horsepower makes maximum use of the chain's capacity and usually results in a more cost efficient drive.

Step 4 - Selecting the Large Sprocket: Once the chain and small sprocket sizes have been determined using the complete ASME/ANSI horsepower ratings, determine the number of teeth in the large sprocket by multiplying the number of teeth in the small sprocket by the required speed ratio. It is important to remember that roller chain drive ratios are calculated using the number of teeth on the sprockets, not sprocket diameters.

Output RPM = Input RPM ÷ Desired Ratio or,

Large Sprocket # of Teeth = Small Sprocket # of Teeth x Desired Ratio

Once the sprocket sizes have been determined, check to verify that there is no interference if any limitation was given in the initial drive requirements. If interference is confirmed, it may be possible to select a smaller pitch, multiple strand chain capable of transmitting the required horsepower, allowing the use of smaller diameter sprockets.

TECHNICAL ENGINEERING

Chain Selection

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Step 5a - Calculating Chain Length When Ratio is 1:1: If the drive is a 1:1 ratio then the chain length in pitches can be determined easily using the following relationship: the total number of pitches required (chain length) is equal to two times the center distance in pitches plus the number of teeth on one sprocket.

Chain Length = (2 x Center Distance, in pitches) + the Number of Teeth on One Sprocket

The total chain length, in pitches, should always be an even number including the terminal connecting link. This avoids the use of offset links which significantly reduce the load carrying capacity of the roller chain.

Step 5b - Calculating Chain Length When Ratio is Not 1:1: The following equation and associated table may be used to calculate the required length of chain, in pitches, when the driver and driven sprockets are different sizes.

$$L = 2C + \frac{N + n}{2} + \frac{.1013\,(N - n)^2}{4C}$$

or substituting A for $\frac{.1013\,(N - n)^2}{4}$, $L = 2C + \frac{N + n}{2} + \frac{A}{C}$

Where: L = Total chain length in pitches
n = Number of teeth on smaller sprocket
N = Number of teeth on larger sprocket
C = Center distance between shafts **in pitches**

VALUES OF A FOR CHAIN LENGTH CALCULATION

N - n	A	N - n	A	N - n	A	N - n	A
1	0.03	26	17.12	51	65.88	76	146.31
2	0.10	27	18.47	52	68.49	77	150.18
3	0.23	28	19.86	53	71.15	78	154.11
4	0.41	29	21.30	54	73.86	79	158.09
5	0.63	30	22.80	55	76.62	80	162.11
6	0.91	31	24.34	56	79.44	81	166.19
7	1.24	32	25.94	57	82.30	82	170.32
8	1.62	33	27.58	58	85.21	83	174.50
9	2.05	34	29.28	59	88.17	84	178.73
10	2.53	35	31.03	60	91.19	85	183.01
11	3.06	36	32.83	61	94.25	86	187.34
12	3.65	37	34.68	62	97.37	87	191.73
13	4.28	38	36.58	63	100.39	88	196.10
14	4.96	39	38.53	64	103.75	89	200.64
15	5.70	40	40.53	65	107.02	90	205.18
16	6.48	41	42.58	66	110.34	91	209.76
17	7.32	42	44.68	67	113.71	92	214.40
18	8.21	43	46.84	68	117.13	93	219.08
19	9.14	44	49.04	69	120.60	94	223.82
20	10.13	45	51.29	70	124.12	95	228.61
21	11.17	46	53.60	71	127.69	96	233.44
22	12.26	47	55.95	72	131.31	97	238.33
23	13.40	48	58.36	73	134.99	98	243.27
24	14.59	49	60.82	74	138.71	99	248.26
25	15.83	50	63.33	75	142.48	100	253.30

Step 5c - Calculating Chain Length (three or more sprocket drive): For three or more sprocket drives, the required chain length must be determined graphically using a layout drawing or by analyzing the drive using Diamond's Drive Selection Software.

Step 6 - Determining the Type of Lubrication Required: The ASME/ANSI horsepower ratings will indicate the recommended type of lubrication: Manual, Oil Bath or Flood-type lubrication depending upon the operating range of the chain selected. More information on lubrication and maintenance can be found in the Installation and Maintenance sections of this guide.

TECHNICAL ENGINEERING

Chain Selection

Drive Selection Example

The first step is to obtain the necessary information in order to accurately select a chain.

For this example, the following requirements are known:

Source of power	-	Mechanically driven internal combustion engine
Driven equipment	-	Two-cylinder pump
Horsepower available	-	25
Driving shaft size	-	2-¼ inches
Driving shaft speed	-	900 rpm
Driven shaft size	-	2 inches
Driven shaft speed	-	300 rpm
Center distance	-	To be determined
Drive arrangement	-	Horizontal shafts on horizontal centers
Space limitations	-	Yes, large sprocket cannot exceed 20 inches in diameter.
Lubrication	-	To be determined
Harsh Environment	-	None

Solution:

1. Select an appropriate service factor from the Service Factors table located in this section.

   The service factor for a two-cylinder pump, driven by an internal combustion engine with mechanical drive, is 1.7.

2. Calculate the Design Horsepower from the equation,

   Design Horsepower = Input HP x Service Factor or,

   Design Horsepower = 25 x 1.7 = 42.5

3. Refer to the *abridged* Horsepower Ratings in this section and see that the 42.5 design horsepower, at 900 RPM, falls within the area for #80 chain. This is the smallest single strand chain which, with a 17-tooth sprocket, will transmit the required power.

4. Refer to the complete ASME/ANSI horsepower rating rating for #80 chain and note that a #80 chain will transmit 44.13 horsepower at 900 rpm on a 17-tooth sprocket.

	Revolutions Per Minute - Small Sprocket															
	10	25	50	75	100	150	200	300	400	500	600	700	800	900	1000	1200
11	0.44	1.06	2.07	3.05	3.96	4.03	7.83	11.56	15.23	18.87	22.48	26.07	27.41	32.97	19.61	14.92
12	0.48	1.16	2.26	3.33	3.80	4.39	8.54	12.61	16.62	20.59	24.53	28.44	31.23	26.17	22.36	17.00
13	0.52	1.26	2.45	3.61	4.21	4.76	9.26	13.66	18.00	22.31	26.57	30.81	35.02	28.51	25.20	19.17
14	0.56	1.35	2.63	3.89	4.53	5.12	9.97	14.71	19.39	24.02	28.62	33.18	37.72	32.99	28.16	21.42
15	0.60	1.45	2.82	4.16	4.86	5.49	10.68	15.76	20.77	25.74	30.68	35.55	40.41	36.53	31.23	23.76
16	0.64	1.55	3.01	4.44	5.19	5.86	11.39	16.81	22.16	27.45	32.70	37.92	43.11	40.30	34.41	26.17
17	0.68	1.64	3.20	4.72	5.50	6.22	12.10	17.86	23.54	29.17	34.75	40.29	45.80	44.13	37.68	28.66
18	0.72	1.74	3.39	5.00	5.83	6.59	12.81	18.91	24.93	30.88	36.79	42.66	48.49	48.00	41.35	31.23
19	0.76	1.84	3.57	5.28	6.15	6.95	13.53	19.96	26.31	32.60	38.84	45.03	51.18	52.15	44.52	33.87
20	0.80	1.93	3.76	5.55	6.47	7.32	14.24	21.01	27.70	34.32	40.88	47.40	53.88	56.32	48.00	36.58

Excerpt from Complete ASME/ANSI #80 HP Rating

TECHNICAL ENGINEERING

Chain Selection

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

In the General Selection Information section of this guide, it was recommended that the smallest sprocket in a medium speed drive should have a minimum of 17 teeth. So, the 17-tooth sprocket should be suitable for this drive. Consult a sprocket manufacturer's catalog to verify that the 17-tooth #80 sprocket has a maximum bore that will accommodate the required 2-¼" driver shaft. For the purpose of this example, it will. (If it had not, then a larger number of teeth would have been required for the driver sprocket.)

5. The *driver* speed is 900 rpm and the *driven* speed is to be 300 rpm, so the speed ratio, or reduction, is 900/300 = 3:1. Therefore, the large sprocket should have 17 x 3 = 51 teeth. Again, check with a sprocket manufacturer's guide to be sure that the bore capacity of the sprocket is adequate for a two inch shaft.

6. In the General Selection Information section it is recommended that the center distance be as short as 20 pitches for pulsating drives or D + d/2. Using data from the Sprocket Information section, the recommended minimum center distance would be 16.81 + 5.95/2 = 19.79 inches. An acceptable start would be to select 20 pitches (#80 =1.00 inch) or 20 inches. Based on the 17/51 tooth sprockets and a center distance of 20 pitches (inches), a chain 76 pitches long including connecting link is required. This calculation was made using the chain length equation presented earlier.

7. Again, referring to the complete ASME/ANSI horsepower ratings for #80 chain, Type B lubrication is required based upon the speed and number of teeth of the 17-tooth sprocket. Oil bath lubrication will be acceptable.

8. Review the initial design requirements to see if this selection is acceptable. The only constraint that was given was that the large sprocket's diameter could not exceed 20 inches. By referring to the Sprocket Information section located in this guide we can verify that the 51-tooth, #80 sprocket has an outside diameter of 16.81 inches, well within the limitation.

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
6	2.000	2.33	1.375
7	2.305	2.68	1.622
8	2.613	3.01	1.868
9	2.924	3.35	2.254
10	3.236	3.68	2.611
11	3.550	4.01	2.888
12	3.864	4.33	3.239
13	4.179	4.66	3.523
14	4.494	4.98	3.869
15	4.810	5.30	4.158
16	5.126	5.63	4.501
17	5.442	5.95	4.794
18	5.758	6.27	5.134
19	6.076	6.59	5.430
20	6.392	6.91	5.767
21	6.710	7.24	6.066
22	7.027	7.56	6.402
23	7.344	7.88	6.702
24	7.661	8.20	7.036
25	7.979	8.52	7.338
26	8.296	8.84	7.671
27	8.614	9.16	7.974
28	8.931	9.48	8.306
29	9.249	9.80	8.611
30	9.567	10.11	8.942
31	9.885	10.43	9.247
32	10.202	10.75	9.577
33	10.520	11.07	9.883
34	10.838	11.39	10.213
35	11.156	11.71	10.520
36	11.474	12.03	10.849
37	11.792	12.35	11.156
38	12.110	12.67	11.485
39	12.428	12.99	11.792
40	12.746	13.31	12.121
41	13.064	13.63	12.429
42	13.382	13.94	12.757
43	13.700	14.26	13.065
44	14.018	14.58	13.393
45	14.336	14.90	13.702
46	14.654	15.22	14.029
47	14.972	15.54	14.338
48	15.290	15.86	14.665
49	15.608	16.18	14.975
50	15.926	16.50	15.301
51	16.244	16.81	15.611
52	16.562	17.13	15.937
53	16.880	17.45	16.248

Excerpt from Sprocket Diameters - USA Standard #80 Roller Chain

TECHNICAL ENGINEERING

Chain Selection

Slow Speed Drives Selection

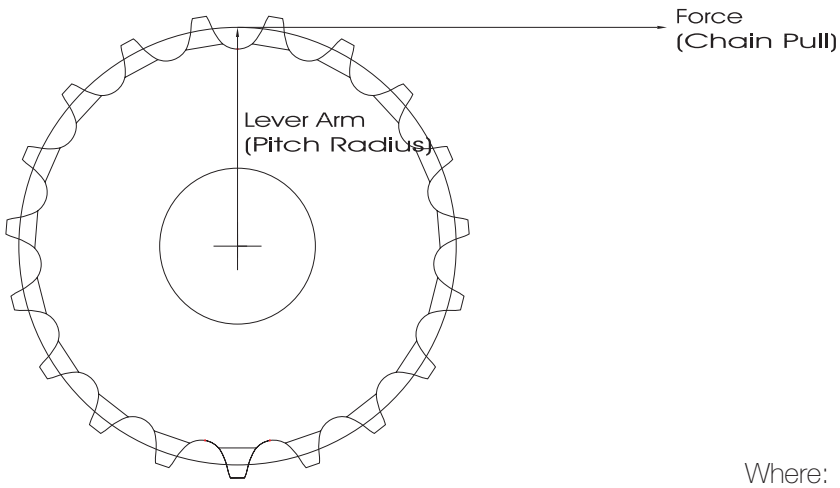
For drives operating at speeds lower than those shown in the horsepower ratings, chains may be selected on the basis of chain pull.

If chain pull is not known directly, determine it from the amount of horsepower to be transmitted by referring to equations below. By using the input horsepower, RPM and pitch radius of the sprocket (one-half pitch diameter), an approximate chain pull can be determined. An appropriate chain can be selected by comparing chain tensile strengths against the chain pull.

Important - Chain pull must not exceed $\frac{1}{6}$th of the ultimate tensile strength when the chain is connected using press-fit connecting links and no offset links are used. Chain pull must not exceed $\frac{1}{9}$th of the ultimate tensile strength when slip-fit connecting links or offset links are used in the chain.

Horsepower, Chain Pull, and Torque Equations

Torque = Force x Lever Arm = Chain Pull x Pitch Radius



$$H = \frac{L \times S}{33000} = \frac{Q \times N}{5252} = \frac{q \times N}{63025}$$

$$L = \frac{H \times 33000}{S} = \frac{H \times 396000}{P \times T \times N} = \frac{H \times 126050}{D \times N}$$

$$Q = \frac{H \times 5252}{N} \text{ or } q = \frac{H \times 63025}{N}$$

$$S = \frac{T \times P \times N}{12}$$

Where:

D = Pitch diameter of sprocket (inches)

H = Horsepower to be transmitted

L = Load or chain pull (pounds)

N = Speed of sprocket (rev./min.)

P = Pitch of chains (inches)

Q = Torque (foot-pounds)

q = Torque (inch-pounds)

S = Speed of chain (feet/min)

T = Number of teeth on sprocket

DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

Example of Slow Speed Drive Selection

Again, the first step is to obtain the necessary information.

For this example, the following requirements are known:

Horsepower available	-	2
Driving shaft size	-	2-¼ inches
Driving shaft speed	-	9 rpm
Driven shaft size	-	2-¼ inches
Driven shaft speed	-	3 rpm
Center distance	-	To be determined
Drive arrangement	-	Horizontal shafts on horizontal centers
Space limitations	-	None
Lubrication	-	Manual or Drip
Harsh environment	-	None
Inventory	-	Yes, there is an abundance of #80 chain on the shelf.

Solution:

Determine if the #80 chain will be acceptable and if so, select driver and driven sprocket sizes and center distance.

If we first use the following equation:

$$H = \frac{q \times N}{63025}$$

Where H is the horsepower available, q is the torque in inch-pounds and N is the smallest sprocket's speed in revolutions per minute.

Torque, q, in inch-pounds can also be represented by F x d where F is the force or tension in the chain, and d is the lever arm, or in this case, the pitch radius of the smallest sprocket.

Applying our known values into the equation we have:

$$2HP = \frac{q \times 9\ RPM}{63025} \quad \text{which can be rearranged to}$$

$$q = \frac{(2\ HP \times 63025)}{9\ RPM} \quad \text{or} \quad q = 14{,}006 \text{ inch-pounds}$$

TECHNICAL ENGINEERING

Chain Selection

From the previous statement that chain pull should not exceed $\frac{1}{6}$ to $\frac{1}{9}$ of the chain's tensile strength and we are tentatively trying to use #80 chain, let's assume the more conservative condition and apply $\frac{1}{9}$ to the tensile of #80 chain to arrive at our maximum working load.

Working load = chain tensile strength x $\frac{1}{9}$

= 14,500 pounds x $\frac{1}{9}$

= 1,611 pounds

Since q = F x d, then 14,006 = 1,611 x d or,

$$d \text{ (pitch radius of the sprocket)} = \frac{q}{F} = \frac{14{,}006}{1{,}611} = 8.694 \text{ inches } (\times 2 = \text{pitch diameter})$$

To determine what size sprocket this equates to, we need to again refer to the Sprocket Information section for #80 chain.

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
54	17.198	17.77	16.573
55	17.517	18.09	16.884
56	17.835	18.41	17.210
57	18.153	18.73	17.521
58	18.471	19.04	17.846
59	18.789	19.36	18.158
60	19.107	19.68	18.482
61	19.426	20.00	18.794
62	19.744	20.32	19.119
63	20.062	20.64	19.431
64	20.380	20.96	19.755
65	20.698	21.27	20.067
66	21.016	21.59	20.391
67	21.335	21.91	20.704
68	21.653	22.23	21.028
69	21.971	22.55	21.340
70	22.289	22.87	21.664
71	22.607	23.19	21.977
72	22.926	23.50	22.301
73	23.244	23.82	22.613
74	23.562	24.14	22.937
75	23.880	24.46	23.250
76	24.198	24.78	23.573
77	24.517	25.10	23.887
78	24.835	25.42	24.210
79	25.153	25.73	24.523
80	25.471	26.05	24.846
81	25.790	26.37	25.160
82	26.108	26.69	25.483
83	26.426	27.01	25.796
84	26.744	27.33	26.119
85	27.063	27.64	26.433
86	27.381	27.96	26.756
87	27.699	28.28	27.070
88	28.017	28.60	27.392

Excerpt from Sprocket Diameters - USA Standard #80 Roller Chain

DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

From this, we see that in order for a #80 chain to be used, the smallest sprocket would need to have a pitch diameter (diameter is twice the pitch radius) of 17.517, or 55 teeth! This is probably not acceptable because in order to arrive at the desired speed reduction, the driver sprocket would need to be 159 teeth.

It is safe to say that the inventory of #80 chain will have to be used on another drive and we should perhaps take another look at this selection process.

From the General Selection section, we know that slow speed drives are recommended to have at least a 12-tooth sprocket. A good approach at this time would be to examine the Sprocket Information section and determine what the diameters are (actually we want the radius) of 12-tooth sprockets for some sizes greater than #80.

Doing this, we note that:

#100 12-tooth, pitch diameter of 4.83", radius of 2.42"
#120 12-tooth, pitch diameter of 5.79", radius of 2.90"
#140 12-tooth, pitch diameter of 6.76", radius of 3.38"

And, by applying our 1/9 criteria to the tensile strengths of those three models we find:

#100 working load is 2,666 pounds
#120 working load is 3,777 pounds
#140 working load is 5,111 pounds

Now we can replace the above values into the q = F x d equation.

For #100, F = q/d = 14,006/2.42 = 5,787 pounds which EXCEEDS the recommended working load for #100 chain.

For #120, F = q/d = 14,006/2.90 = 4,829 pounds which EXCEEDS the recommended working load for #120 chain.

For #140, F = q/d = 14,006/3.38 = 4,143 pounds which IS BELOW the recommended working load for #140 chain.

Based on the above, #140 chain operating on a 12-tooth driver is an acceptable solution. In practice, either a larger sprocket or using a smaller multiple strand chain could have resulted in an acceptable solution as well.

The selection of the driven sprocket is done in the same manner as the general drive selection by multiplying the drive ratio by the small sprocket's number of teeth. In this case, the desired ratio is 3:1 so the driven sprocket size will be 3 x 12 teeth or 36 teeth.

Center distance is calculated as before using 20 pitches as an acceptable minimum. 20 pitches x 1.75 inches per pitch = 35.00 inches. Verifying that the sprockets selected will fit into that envelope, using the formula, minimum center distance equals D + d/2; 21.05 + 7.58/2 = 24.84 inches. So, 20 pitches should be fine for center distance.

The required chain length can again be calculated using the chain length equation presented earlier for a resulting chain length of 65 pitches. This length would require the use of an offset link which should be avoided whenever possible. Incorporating enough center distance adjustment into the design, permitting the use of a chain either 64 or 66 pitches long, would result in a more desirable design.

TECHNICAL ENGINEERING

Chain Selection

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

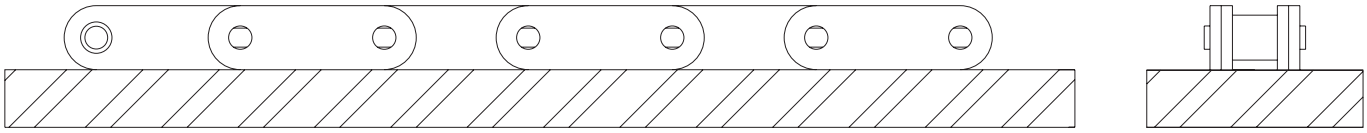
Conveyor Chains

Conveyor designers will find the attributes of precision roller chain valuable in the design and application of a broad spectrum of conveyor or material handling systems. High strength-to-weight ratios combine with precision machined and hardened parts to provide excellent performance, long life and minimized power requirements, all resulting in lower cost/high productivity operations.

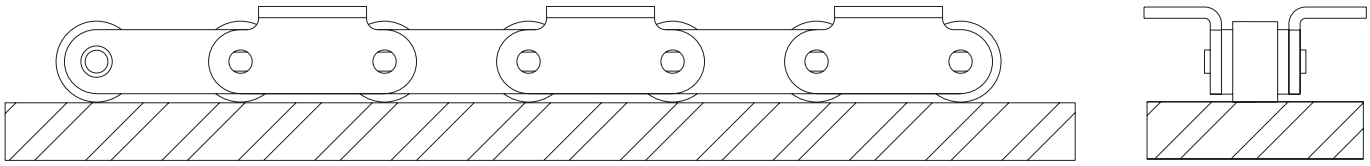
Standard Series, single-pitch roller chain built in accordance with ASME/ANSI B29.1, is available with a variety of attachments. These attachments, and details about the chains' configurations, can be found in either the Attachment Chain section or Made-To-Order section of this guide. Standard Series chains range in size from ¼" pitch up to 2" pitch and are commonly used where speeds are relatively high and smooth operation is required. Standard Series chains are very versatile in that attachments with almost any desired spacing can be provided. Stainless steel chains, in many sizes, are also available for installations requiring corrosion resistance or for operation in extreme temperatures.

Double-Pitch Conveyor chains, built in accordance with ASME/ANSI B29.4, are available in sizes ranging from 1" pitch up to 4" pitch. Double-Pitch chains are most often used when speeds are slow to moderate, as their operation is generally not as smooth as single-pitch chains. Additionally, when relatively long shaft centers are present, double-pitch chains can be less costly because their construction requires only half as many components.

Double-Pitch Conveyor chains can be supplied with standard diameter rollers when the design calls for the chain to transport the conveyed product with the chain sliding on the edges of the oval contour link plates.



Double-Pitch Conveyor chains can be supplied with oversized carrier rollers when the load is to rest on an attachment but be supported by the rollers. Chains with oversized rollers are recommended when it is necessary to reduce friction by "rolling" rather than "dragging" the product. This type of design can dramatically reduce the power required to operate the conveyor.



Double-Pitch Conveyor chains are available with a wide variety of standard or made-to-order attachments. Details on attachments and the chains' configurations can be found in either the Standard Attachment Chain section or Made-To-Order section of this guide. Additionally, depending on the model of conveyor chain required, many are available in stainless steel if the environment requires corrosion resistance or when operating temperatures are extreme.

In conveyor applications, roller chains are usually applied at lower speeds and with fewer joint articulations than in power transmission "drive" applications. Therefore, different design considerations and selection procedures are used in selecting conveyor chains.

TECHNICAL ENGINEERING

Chain Selection

Sprockets

Size: Sprockets for conveyors are usually the same size for the head shaft and tail shaft. Sprockets having the largest practical number of teeth are desirable to reduce chordal action, provide for smooth operation and obtain maximum chain wear life. It is recommended that sprockets have a minimum of 15 effective teeth. The number of effective teeth is the number of teeth engaged by the chain rollers in one revolution of the sprocket. If a single-pitch conveyor chain is used the effective teeth equals the number of sprocket teeth. When using double-pitch chain, use single-pitch sprockets only when more than 15 effective (30 actual) teeth are designed in. For drives with less than 30 actual (15 effective) teeth, use special cut double-pitch sprockets for maximum chain and sprocket life. Additionally, if a single-pitch sprocket is used on a double-pitch chain conveyor, an odd number of teeth in the sprocket is desirable. This allows for the chain to engage alternate teeth each revolution, thus distributing the tooth wear more evenly throughout the life of the chain and sprocket.

Hardness: The guidelines for hardening conveyor sprocket teeth are similar to those of power transmission drive sprocket teeth. For drives which are heavily loaded, drives that possess sprockets with a minimum number of teeth, or drives that are exposed to abrasives such as dirt or paper dust, consideration should be given to hardening the sprocket teeth to prolong both chain and sprocket life.

Alignment: Head and tail shafts as well as sprockets should always be aligned using procedures outlined in the Installation section of this guide. Additionally, because the majority of conveyors are designed and operate with two or more strands of chain operating in parallel, head shaft sprockets should be keyed to a common shaft so that the teeth of each sprocket are in alignment to assure equal load distribution on all chains in the conveyor. When chains in a conveyor are connected together with cross-members such as rolls or slats, it is suggested that the tail shaft sprockets also be keyed to the shaft to assure alignment of the sprocket teeth.

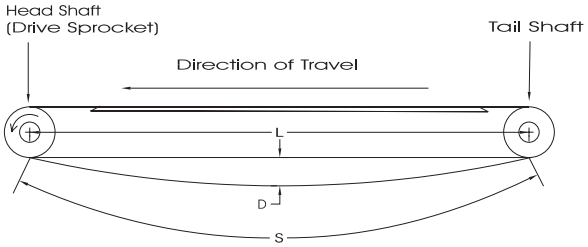
Chain Length Matching

With most conveyor applications, chains are expected to operate in parallel and their relationship to one another is critical. Information provided in either the Standard Attachment Chain section or the Made-To-Order section of this guide will describe Diamond's ability to control length uniformity. Please review either of these sections prior to ordering chain.

Take-ups: Take-ups are used to adjust or compensate for the chain's elongation in service. The maximum allowable wear elongation, based upon sprocket design, for most single-pitch chain is approximately 3%. The maximum allowable wear elongation, based on sprocket design, for most double-pitch conveyor chain is approximately 1.5%. Therefore, the amount of take-up required should be either of the above values, depending on the base chain used, or the design should incorporate the ability to remove an entire attachment "cycle" from the chain(s) if necessary to accommodate wear elongation.

Screw-type take-ups are ordinarily used and are located on the tail shaft end of the conveyor if possible. Chain should not be operated with both top and bottom strands taut because lubricant is never allowed to "flow" within the pin/bushing joint, re-establishing a barrier against wear. However, where constant tension is required, such as on conveyors subjected to wide temperature variations, spring- or gravity-type take-ups are acceptable, recognizing that some reduced wear life may result.

An alternate method of maintaining chain tension and allowing for wear elongation is to incorporate a catenary in the design. The most common design allows the chain to be unsupported in the return span of the conveyor. As the chain wears during service the excess lineal length is allowed to "sag" and thus no physical take-up is necessary.



DIAMOND CHAIN COMPANY
317-638-6431
1-800-US-CHAIN

This type of design can have some negative effects on the operation of the conveyor. First, there may not be sufficient clearance between the conveyor and floor to accommodate the excess chain. This is particularly true if the conveyor is long. Second, there may be a considerable amount of catenary tension. This tension is distributed throughout the entire chain and is added to the working tension. In some cases, it may be great enough to exceed the working load of the chain defined initially in the selection process. Catenary tension must be considered when calculating chain working loads, bearing loads and shaft diameters, but is not a factor in determining the horsepower required to operate the conveyor.

The values for depth of sag as well as catenary tension can be approximated from the following equations:

$$\text{Depth of Sag, } D = \frac{\sqrt{3S^2 - 3L^2}}{4}$$

Where:

D = Depth of chain sag in inches

L = Straight line between points of support, normally shaft centers, in inches

S = Actual amount of chain in return strand in inches
(number of links between points of support x chain pitch)

$$\text{Catenary tension, } T = \frac{W}{12}\left[\frac{S^2}{8D} + \frac{D}{2}\right]$$

Where:

T = Catenary tension in pounds

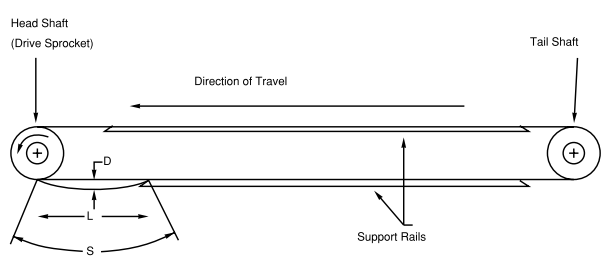
W = Weight of chain in pounds per foot

S = Actual amount of chain in return strand in inches
(number of links between points of support x chain pitch)

D = Depth of chain sag in inches

If the depth of sag or the amount of catenary tension exceeds the capacity of the machine's design or the chain's working load then a support rail can often be installed under the return span to direct the chain sag or to reduce the magnitude of catenary tension.

It is normal practice not to support the entire return span but to leave a short unsupported section for accumulation of chain slack.



Input Power

It is recommended that the drive sprocket be located on the head shaft so that only the span transporting product will be under maximum tension.

Temperature Limits

For operating limits of conveyor chains, refer to the General Design Considerations section of this guide.

TECHNICAL ENGINEERING

Chain Selection

Lubrication: To attain maximum service life, all chains should be kept clean, free from grit, and well-lubricated. Conveyors commonly operate at slow speed with light loads and as such, lubrication application is not defined as with power transmission drive chains. Generally, lubricant applied to the chain by either manual or drip-type lubrication systems will be satisfactory. The specific grade of lubricant may depend upon the temperature and construction of the conveyor. For extremely high or low temperatures, special lubricants such as synthetic oils or molybdenum disulfide-based lubricants may be required. More information on lubricants and lubrication can be found in the Lubrication section of this guide.

If lubrication is not possible or the chain must operate in a contaminated environment, consideration should be given to either DURALUBE® or RING LEADER® O-ring chain. Information on these products is located in the Special Lubricated section of this guide.

Conveyor Chain Selection

Conveyor chains usually are selected for specific operating conditions on the basis of the maximum anticipated chain pull. However, the spacing of attachments, if required, may be the determining factor in selecting the size of the chain.

The following steps outline the selection of most commonly designed conveyor drives:

1. Obtain required information.
2. Calculate preliminary chain pull.
3. Adjust preliminary chain pull for conveyor speed.
4. Make preliminary chain selection.
5. Finalize chain size selection.
6. Select required sprocket sizes.
7. Calculate total chain length.
8. Determine required horsepower.
9. Determine required lubrication system.

Step 1 - Obtain Required Information: The following information is necessary to properly select most conveyor chains:

1. Conveyor arrangement, i.e., horizontal, vertical or inclined.
2. Required speed in feet per minute.
3. Weight of conveyed material in pounds per foot of conveyor length.
4. Material being conveyed, i.e., wooden pallet, paper box, etc.
5. Weight of attachments or “flights” per foot, if applicable.
6. Size of sprockets.
7. Shaft center distance in feet.
8. Type of operating environment, i.e., clean, dirty, corrosive, etc.
9. Available or allowable lubrication.

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Step 2 - Calculate Preliminary Chain Pull: The preliminary required chain pull may be calculated from the following:

1 . For horizontal conveyors:

$$P = [(Wm + 2Wc) \times L \times Fx] + Wm \times L \times Fm$$

2. For inclined conveyors:

$$P = [(Wm \times 2Wc) \times L \times Fx] + (Wm + Wc) \times H + Wm \times L \times Fm$$

3. For vertical conveyors:

$$P = (Wm + Wc)\ H$$

Where:

P = Chain pull, in pounds

Wm = Weight of conveyed material in pounds per foot

L = Conveyor length, commonly shaft center distance, in feet

Fx = Coefficient of friction between chain and conveyor obtained from the Coefficients of Sliding Friction table (if chain is expected to convey the material by sliding on the edges of the link plates) or, from the Coefficients of Rolling Friction table (if the chain is expected to convey the material by rolling on oversized carrier rollers).

Fm = Coefficient of friction between chain and conveyed material. This value can vary significantly and therefore, it is recommended to refer to an engineering handbook for the appropriate value.

L = Horizontal length of conveyor, in feet

H = Vertical height of conveyor, in feet

Wc = Weight of chain and attachments in pounds per foot

TECHNICAL ENGINEERING

Chain Selection

Rolling Coefficients of Friction

	Static		Rolling	
Chain Number	Dry	Lubricated	Dry	Lubricated
C-2042	0.17	0.12	0.14	0.10
C-2052	0.16	0.11	0.13	0.09
C-2062H	0.16	0.11	0.13	0.09
C-2082	0.15	0.10	0.12	0.08
C-2102H	0.14	0.09	0.11	0.07
C-2122H	0.14	0.09	0.11	0.07
C-2162H	0.13	0.08	0.10	0.07

Sliding Coefficients of Friction

	Dry	Lubricated
Static	0.33	0.24
Sliding	0.27	0.21

In the preliminary calculations of chain pull, ignore (Wc) because the required chain size has not been established.

When the conveyed load is supported on the chain rollers, large diameter rollers are recommended.

For multiple strand conveyors, assuming each chain is equally loaded, divide the total chain pull calculated by the number of chains in the conveyor to obtain the equivalent single strand chain pull.

Step 3 - Adjust the Preliminary Chain Pull Based Upon Conveyor Speed: Multiply the calculated single strand chain pull by the load factor for the conveyor chain speed from the Load Factors for Conveyor Speed table.

Load Factors for Conveyor Speed

Chain Speed (feet per minute)	Load Factor	Chain Speed (feet per minute)	Load Factor
Up to 50	1.00	200 to 300	2.2
50 to 100	1.15	300 to 400	3.2
100 to 200	1.50	400 to 500	4.6

Step 4 - Make Preliminary Chain Selection: Using the preliminary chain pull, adjusted for conveyor speed, select a chain with an adequate working load from the Working Loads for Conveyor Chains table. If the conveyor operates in an abrasive or corrosive environment, consider using RING LEADER® O-ring or Stainless Steel chain. Remember that the preliminary chain pull calculations still ignored the weight of the chain and attachments.

Working Loads for Conveyor Chains

ASME/ANSI Chain Number	Pitch (Inches)	Carbon Steel	Heat Treated Stainless	Non-Heat Treated Stainless
25	1/4	125	....	30
35	3/8	300	150	75
40	1/2	530	260	130
41	1/2	260	130	65
50	5/8	870	430	215
60	3/4	1210	600	300
80	1	2070	1030	515
100	1 1/4	3420	....	....
120	1 1/2	4850	....	....
140	1 3/4	6570	....	....
160	2	8580	....	....
C2040, C2042	1	530	260	130
C2050, C2052	1 1/4	870	430	215
C2060, C2062	1 1/2	....	600	300
C2080, C2082	2	....	1030	515
C2060H, C2062H	1 1/2	1210	....	....
C2080H, C2082H	2	2070	....	....
C2100H, C2102H	2 1/2	3420	....	....
C2120H, C2122H	3	4850	....	....
C2160H, C2162H	4	8580	....	....

TECHNICAL ENGINEERING

Chain Selection

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Step 5 - Finalize Chain Size Selection: After a preliminary chain has been selected, recalculate the chain pull including the weight of the chain, including attachments, per foot. Nominal values for chain weight and attachment weight can be obtained from the Chain and Attachment Weight table below.

Chain and Attachment Weight

ASME/ANSI or Diamond Number	Weight per Foot Base Chain	Weight for each Straight or Bent Attachment	Weight for each Extended Pin Attachment
25	.0840	.0007	....
35	.2100	.0019	.0015
41	.2600	.0033	.0015
40	.4100	.0030	.0020
50	.6800	.0090	.0037
60	.9900	.0120	.0062
80	1.7300	.0250	.0150
100	2.5100	.0650	.0250
120	3.6900	.1000	.0450
140	5.0000	.1800	.0670
160	6.5300	.2500	.0960

ASME/ANSI or Diamond Number	Weight per Foot Base Chain	Weight for each Straight or Bent Attachment	Weight for each Extended Pin Attachment
C2040	.3400	.0068	.0019
C2042	.5000	.0068	.0019
C2050	.5800	.0130	.0037
C2052	.8100	.0130	.0037
C2060H	1.0500	.0310	.0062
C2062H	1.4200	.0310	.0062
C2080H	1.4000	.0680	.0150
C2082H	2.1300	.0680	.0150
C2100H	2.4800	.1180	.0250
C2102H	3.5100	.1180	.0250
C2120H	3.6000	.1860	.0450
C2122H	5.4800	.1860	.0450
C2160H	6.1800	.4700	.0960
C2162H	9.3400	.4700	.0960

Calculate the catenary tension from the formula previously shown. Confirm that the catenary tension does not exceed the working load of the preliminary chain selection's chain. If it does exceed the capability of the preliminary selection either increase the size of the selected chain, recalculate catenary tension and compare again or consider installing support rails to minimize the amount of chain in the unsupported span.

Step 6 - Select Required Sprocket Sizes: Select the sprockets for the conveyor using the guidelines previously listed in this section.

Step 7a - Calculate Required Chain Length: If both the headshaft and tailshaft sprockets have the same number of teeth, the total chain length can be calculated from the formula:

L = Number of teeth on one sprocket + (2 x center distance in pitches)

Where:

L = total chain length required, in pitches.

Chain length should be an even number of pitches. The total chain length must be exactly divisible by the attachment spacing. For example, if the attachments are located every fourth pitch then the total chain length must be divisible by four.

TECHNICAL ENGINEERING

Chain Selection

Step 7b - Calculate Required Chain Length: If the headshaft and tailshaft sprockets are of unequal size, total chain length can be calculated from the formula:

$$L = 2C + \frac{N + n}{2} + \frac{.1013\,(N - n)^2}{4C}$$

or substituting A for $\frac{.1013\,(N - n)^2}{4}$,

$$L = 2C + \frac{N + n}{2} + \frac{A}{C}$$

Where: L= Total chain length in pitches
n = Number of teeth on smaller sprocket
N = Number of teeth on larger sprocket
C = Center distance between shafts **in pitches**

Values of A For Chain Length Calculation

N - n	A	N - n	A	N - n	A	N - n	A
1	0.03	26	17.12	51	65.88	76	146.31
2	0.10	27	18.47	52	68.49	77	150.18
3	0.23	28	19.86	53	71.15	78	154.11
4	0.41	29	21.30	54	73.86	79	158.09
5	0.63	30	22.80	55	76.62	80	162.11
6	0.91	31	24.34	56	79.44	81	166.19
7	1.24	32	25.94	57	82.30	82	170.32
8	1.62	33	27.58	58	85.21	83	174.50
9	2.05	34	29.28	59	88.17	84	178.73
10	2.53	35	31.03	60	91.19	85	183.01
11	3.06	36	32.83	61	94.25	86	187.34
12	3.65	37	34.68	62	97.37	87	191.73
13	4.28	38	36.58	63	100.39	88	196.10
14	4.96	39	38.53	64	103.75	89	200.64
15	5.70	40	40.53	65	107.02	90	205.18
16	6.48	41	42.58	66	110.34	91	209.76
17	7.32	42	44.68	67	113.71	92	214.40
18	8.21	43	46.84	68	117.13	93	219.08
19	9.14	44	49.04	69	120.60	94	223.82
20	10.13	45	51.29	70	124.12	95	228.61
21	11.17	46	53.60	71	127.69	96	233.44
22	12.26	47	55.95	72	131.31	97	238.33
23	13.40	48	58.36	73	134.99	98	243.27
24	14.59	49	60.82	74	138.71	99	248.26
25	15.83	50	63.33	75	142.48	100	253.30

Again, the total chain length must be exactly divisible by the attachment spacing. For example, if the attachments are located every fourth pitch then the total chain length must be divisible by four.

Step 8 - Determine the Required Input Horsepower: The required input horsepower can be calculated from the formula:

$$HP = \frac{\text{chain pull x \# of chains x conveyor speed in feet per minute}}{33{,}000}$$

Step 9 - Determine the Required Lubrication System: Refer to the guidelines for conveyor lubrication provided earlier in this section.

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Example Conveyor Chain Selection

Given

A horizontal conveyor transports machine components on wooden pallets at 56 feet per minute using two parallel roller chains joined every 12 inches by a steel flight weighing 0.75 pounds each. The maximum weight of a pallet, including the machine components, is 120 pounds. The overall size of the pallet is 36 inches x 36 inches. The length of the conveyor, from center of headshaft to center of tailshaft is 75 feet, allowing a maximum of 25 pallets to be transported at one time. It is desired to utilize a roller chain constructed with oversized carrier rollers. There is no take-up currently designed for the conveyor as the excess chain will be accumulated using a catenary between head and tail shafts.

Determine

Size of roller chain required

Size of sprockets

Recommended method of lubrication

Required input horsepower

Step 1: Obtain the required information. From the given information, we know the following:

Horizontal conveyor.

Speed is to be **56 feet per minute.**

Shaft centers are located **75 feet apart.**

Weight of **conveyed material** is 120 pounds over a 36 inch span, or **40 pounds per foot** of conveyor length.

Conveyed material is a wooden pallet.

The drive is intended to have **two chains** connected with metal flights weighing .75 pounds each, every 12 inches. So, the **weight of the flights is .75 pounds per foot** of conveyor length.

The flights will be attached to the chains every 12 inches. Therefore the **attachments will be spaced every 12 inches.**

No specific sprockets have been defined but must be recommended.

TECHNICAL ENGINEERING

Chain Selection

Step 2: Calculate preliminary chain pull.

Using the equation, P = [(Wm + 2Wc) x L x Fx] + Wm x L x Fm, and the known information, the preliminary chain pull is:

P=[(40 + 2 x 0) x 75 x 0.1] + 40 x 75 x .5 = 1800 pounds

Remember we omit the weight of the chain, Wc, in the preliminary chain pull calculation. Additionally, because the given information requested a roller chain having oversized carrier rollers, we selected an average Fx of .1 from the Coefficients of Rolling Resistance table. Because there is a possibility that the pallets may "accumulate," forcing the chain to "slide" along the bottom surface of the pallets, an approximate coefficient of friction between wood and steel of 0.5 was selected from an engineering handbook.

Step 3: Adjust the preliminary chain pull for conveyor speed. Using the values in the Load Factors for Conveyor Speed table, we would use the factor 1.5, as the given information tells us that the conveyor's speed will be 56 feet per minute.

P= preliminary chain pull calculation x speed factor

P= 1800 pounds x 1.5 = 2700 pounds

Step 4: Make preliminary chain selection. To arrive at the single strand chain pull, we divide the total chain pull by the number of strands employed. In the example it was stated that the conveyor was to have two chains connected by flights. Therefore, the total chain pull of 2700 pounds can be divided by two to arrive at the single strand chain pull.

Single Strand Pull = Chain pull/number of chains in drive

P= 2700/2 = 1350 pounds.

Using this value we can select a chain size from the Working Loads for Conveyor Chains table. In this example, no specific environment was defined so we can assume carbon steel chains will be acceptable. Based upon the 1350 pound single strand chain pull calculated above, a C2082H chain would be acceptable based on its recommended working load of 2070 pounds.

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Step 5: Finalize chain selection. Now we include the weight of the selected chain and attachments along with the correct coefficient of rolling resistance for C2080H in the chain pull equation to verify that our selection is acceptable. We will assume that the design calls for bent attachments on both sides of the chain at 6-6 spacing (6 pitches of C2082H = 12 inches). Using the equation:

P = [(Wm + 2Wc) x L x Fx] + Wm x L x Fm along with information extracted from the Chain and Attachment Weight table, and the given information, the finalized chain pull is:

P=[(40 + 2 x 2.266) x 75 x 0.08] + 40 x 75 x .5 = 1767 pounds

Multiplying this by the speed factor of 1.5 gives results in 1767 x 1.5 = 2650 pounds.

But, because this drive is to be composed of two parallel chains, the single strand chain pull is 2650/2 or 1325 pounds. This is still well within the limitations for C2082H conveyor chain.

Because there is no take-up designed into the drive other than a catenary under the conveyor, depth of sag and catenary tension must be calculated and considered in the drive's selection.

Using the equations for both sag and tension, and considering the maximum allowable elongation of 1.5% (approximately 27.00 inches), the following values are determined:

Depth of Sag, $D = \frac{\sqrt{3S^2 - 3L^2}}{4}$

$$D = \frac{\sqrt{3(927)^2 - 3(900)^2}}{4}$$

D = 96.17 inches

Catenary tension, $T = \frac{W}{12}\left[\frac{S^2}{8D} + \frac{D}{2}\right]$

$$T = \frac{2.26}{12}\left[\frac{927^2}{8D} + \frac{96.17}{2}\right]$$

T= 219.41 pounds tension due to the catenary

219.41 pounds is well within the capabilities of C2082H's working load. Therefore C2082H can be selected for use on this drive.

TECHNICAL ENGINEERING

Chain Selection

Step 6: Select required sprocket sizes. Using information provided earlier in this section, sprockets having at least 15 effective teeth should be acceptable.

Step 7: Calculate chain length. Both head and tail shafts will have sprockets of equal size. Therefore, chain length can be calculated using the formula:

Lc = Number of teeth (pitches) on one sprocket + (2 x center distance in pitches)

Lc = 15 + [2 x (75 x 6)] = 915 pitches

Chain length must be a.) an even number of pitches and b.) evenly divisible by the spacing of the attachments. Therefore, 918 pitches is required as the spacing must be evenly divisible by 6.

It is possible to recalculate the depth of sag, D, and the catenary tension, T, using the new chain length, but it would not significantly affect the existing calculations.

Step 8: Determine the required input horsepower. Using the equation:

$$HP = \frac{\text{chain pull x \# of chains x conveyor speed in feet per minute}}{33{,}000}$$

$$HP = \frac{1325 \times 2 \times 56}{33{,}000} = 4.49 \text{ HP}$$

Step 9: Determine the required lubrication. As stated earlier, the majority of conveyor systems will provide satisfactory service life when lubricated using manual or drip lube systems. Therefore, unless the conveyor is operating in an unusually harsh or contaminated environment, type A or manual lubrication should serve satisfactorily.

TECHNICAL ENGINEERING

Roller Chain Installation

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Roller chain, properly selected, installed and maintained, is an extremely versatile means of power transmission. It is possible, however, to greatly reduce a chain's life and even induce failure if the chain is abused through improper installation, operation, or maintenance procedures. In certain applications, chain failure can lead to personal injury or property damage.

A chain's installation, lubrication and maintenance are generally quite simple but as with most similar systems, proper preparation will add greatly to the overall ease and effectiveness of the task.

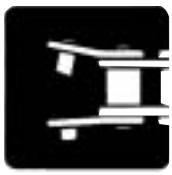
Areas to be considered prior to, as well as after installation are:

1. Safety.
2. Chain, sprockets, and other drive components.
3. Shaft and sprocket alignment.
4. Chain and connecting link installation.
5. Initial correct tension and provisions for adjustment during service.
6. Provision for adequate lubrication.
7. Appropriate protective guarding.

Safety: When installing or connecting/disconnecting a roller chain:

1. Always lock out equipment power switch before removing or installing chains.
2. ALWAYS USE SAFETY GLASSES to protect your eyes.
3. Wear protective clothing, gloves and safety shoes as appropriate.
4. Support the equipment to prevent uncontrolled movement of chain and parts.
5. Use of pressing equipment is recommended to remove or install press-fit-type connecting/pin links. Tooling must be in good condition and properly used.
6. Do not attempt to connect or disconnect chain unless you know the chain's construction, including the correct direction for connecting link removal or insertion.

WARNING



Chain will break if misused or abused.

Serious injury or property damage can result.

Select, install, guard and maintain chain in accordance with equipment manufacturer and Diamond Chain Company's recommendations.

Read assembly instructions with carton before installation. For further information request DCC Bulletin 1067 or other literature related to your particular application.

DIAMOND CHAIN COMPANY

402 Kentucky Avenue, Indianapolis, Indiana 46225-1174 • 1-800-U.S. CHAIN

INSTRUCTIONS

WHEN DISASSEMBLING OR ASSEMBLING CHAINS:

WARNING — The components of a chain are hardened parts. Striking these parts may cause metal chips to break off from the chain or the tools used resulting in personal injury. During all stages of chain disassembly and assembly, wear safety glasses to prevent metal parts or chips from entering your eyes and have personnel in the immediate area do likewise.

A. Pin Removal

1) If chain is of cotterpin-type construction, remove cotters.
2) If chain is riveted-type construction, grind pin heads off so pin ends are flush with the link plate.
3) Drive pins out of link plate using a Diamond pin extractor Model #113 or 135. Some multiple strand chains or large pitch models will require a hammer and punch or a press to remove the pins.

B. Installation of Coversides

Diamond coversides are manufactured three different ways: (1) Slip-Fit, (2) Modified Press-Fit, and (3) Full Press-Fit. Modified and Full Press-Fits require some patience and tools to assemble and/or disassemble.

C. Installation of Spring Locks and Cotterpins

After coversides have been installed, install spring locks or cotters (depending on chain design). Avoid using bent or worn cotters or spring locks. After spring locks (or cotters) are installed, lightly tap pin ends to position these parts snug against the coverside for additional support.

WHEN INSTALLING CHAIN DRIVES ON EQUIPMENT:

WARNING — You may be seriously injured if you attempt to install chain on equipment under power. Shut off power and lock out gears and sprockets before attempting installation.

Once installed, the chain drive must be guarded to prevent personal injury or property damage in the event the chain separates during operation. If chain drive is not guarded, contact equipment manufacturer for recommendations on guarding before using equipment.

Knowing more about how the chain is constructed may help in assembly and disassembly. Further information may be obtained by calling or writing Diamond Chain Company:

Call toll free: 1-800-872-4246
Or write: Diamond Chain Company
P.O. Box 7045
Indianapolis, Indiana 46207-7045
317/638-6431
FAX 317/633-2243

ONE OF THE Amsted INDUSTRIES

Note: These instructions are available in 30 languages. Call us.

TECHNICAL ENGINEERING

Roller Chain Installation

Condition of Components: Shafts, sprockets, bearings, and any other relevant machine framing should be thoroughly examined. Any evidence of damage or wear should be repaired prior to the chain's installation.

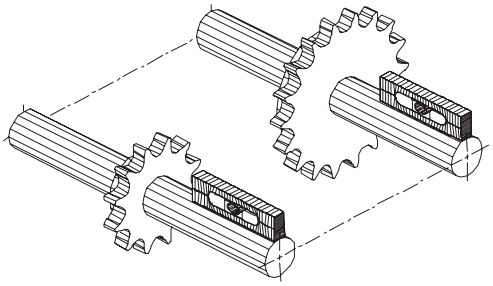
Chain Inspection: When reinstalling an existing chain, care should be taken to ensure that it is free of grit and dirt. If necessary, wash the chain in an approved solvent, paying particular attention to flexing the chain's joints while submerged, as this will allow contaminants within the chain's joints to be rinsed away. The chain should be allowed to thoroughly dry, removing any solvents that could reduce the operating lubricant's ability to protect the internal wear surfaces. Once dry, it is critical that the chain be relubricated prior to installation. Suggested lubricants can be determined from a list located later in this section.

When installing a new chain, the manufacturer's lubricant should not be removed. These lubricants were applied under special conditions to provide the best balance between initial wear resistance and surface protection.

Drive Alignment

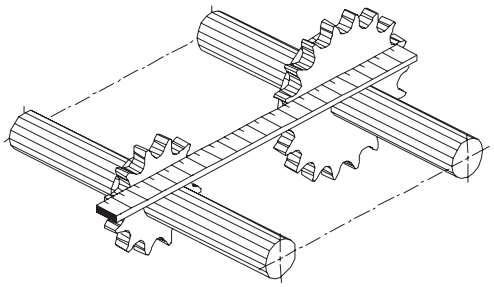
Misalignment results in uneven loading across the width of the chain and may cause damage ranging from roller link plate and sprocket tooth wear up to and including premature failure from link plate fatigue. Proper drive alignment can be divided into two categories: parallel shafts and parallel sprockets.

Aligning Shafts: Shafts should be parallel and level. This condition may be checked by the use of a feeler bar and a level.



Aligning Sprockets: Sprocket axial alignment can be checked with a straight edge which will extend across the finished sides of the two sprockets. Normally, it is good practice to align the sprockets as close to the shaft bearings as possible. For long center distances, use a taut cord or wire long enough to extend beyond each of the sprockets.

Note: When shafts have appreciable "end float," sprockets should be aligned for the normal running position. Recheck after short running period for any signs of wear on inner faces of roller link plates.



Recheck all preceding adjustments and be certain all sprocket set-screws, as well as any additional hardware, are secure.

Chain and Connecting Link Installation

Installing the Chain: Fit chain around the sprockets in the drive and bring the free ends together, normally on one of the sprockets, for final connection. If the ends cannot be brought together on a common sprocket, the use of Diamond's chain connecting tool may be employed. Refer to the Chain Tools section of this guide for more detailed information on the connecting tool.

Installing the Connecting Link: The connecting link, depending upon the size and type of chain, may employ either a slip-fit or press-fit cover plate, combined with either a spring clip or cotters as the final retainer.

Press-fit cover plates, discussed in the General Drive Considerations section, are those which have an interference fit on the pins and provide integrity equal to the base chain itself. They do, however, present their own unique degree of difficulty at assembly.

To assemble the press-fit cover plates:

1. Insert the "Master Link," the portion of the link that contains the pins, and provide support or backing to resist the forces needed to drive the cover plate on.
2. Place the press-fit cover plate over the exposed pin ends and ensure that it is aligned properly.
3. Drive the cover plate on until it is flush with the ends of the pins.
4. Obtain a hollow punch (perhaps a small piece of pipe or a discarded chain's roller) and locate it over/around the flush pin end.
5. Alternately from one pitch hole to the other, continue to drive the ends of the link plate onto the pins until it is clear of the spring clip groove or cotter hole. Care should be taken not to drive the plate on so far as to squeeze against or pinch the roller links. This will result in stiff or binding joints.
6. Install the retaining device, either spring clip or cotter.

Caution: Never drill out or enlarge the pitch holes of a press-fit cover plate to make the installation easier. This will lower the integrity of the link.

Slip-fit cover plates, discussed in the General Drive Considerations section, are those which have a clearance fit on the pins. These connecting links are far easier to install but reduce the working load capacity of the chain.

To assemble the slip-fit cover plate:

1. Insert the "Master Link," the portion of the link that contains the pins, into the chain.
2. Slide the plate over the pin ends to a location which clears either the spring clip groove or cotter hole.
3. Install the retaining device, either spring clip or cotter.

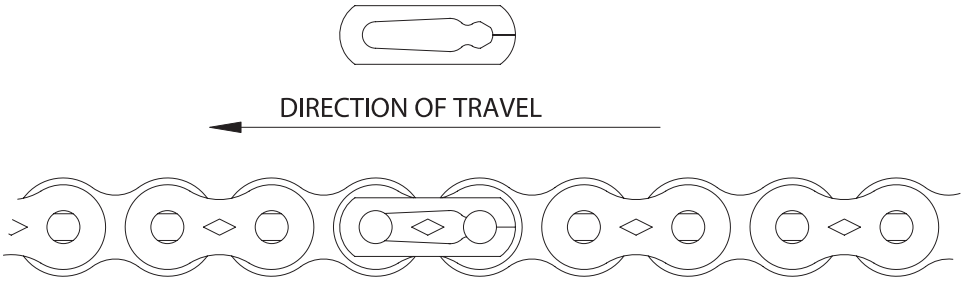
Note: When a slip-fit cover plate is used, a chain's working capacity can be reduced as much as 30%.

TECHNICAL ENGINEERING

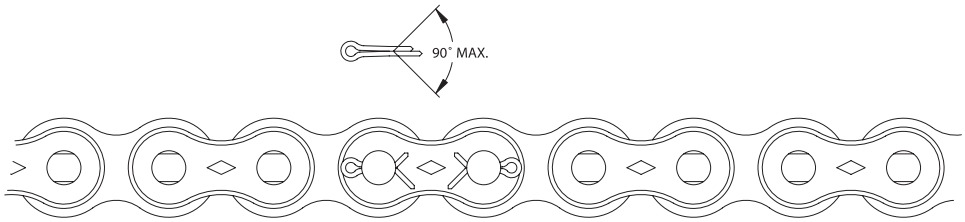
Roller Chain Installation

Retaining Devices

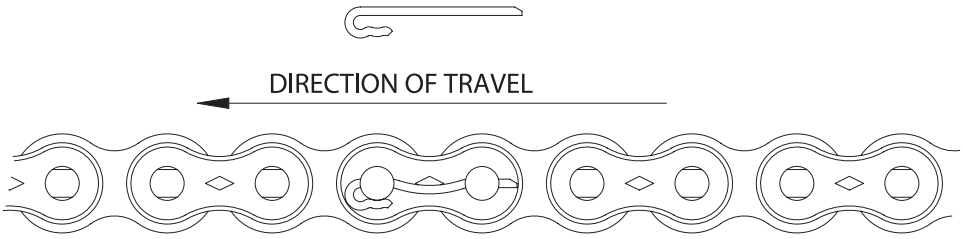
Spring clips are provided for chain models #25-#60 and provide a quick and easy method for securing the cover plate. Installation is performed by first determining the direction of chain travel and locating the closed end of the clip over the leading pin's groove. Final installation is performed by "snapping" the clip over the trailing pin locking it into the groove. Care should be taken not to bend or deform the clip during installation as this may cause it to come loose during operation.



Staggered-leg cotters are normally provided on #80 and larger models' connecting links as the method of retaining the cover plate. Diamond manufactures cotters and specially heat treats them to obtain specific properties which are beneficial in service. After insertion, the legs should not be spread in excess of 90° (included angle) and if removed should not be reused. It is not recommended to use commercial cotters as they may not provide satisfactory performance in severe applications.



Shepherd's crooks are available upon request for chain models #120-#160. These retaining devices secure the cover plate by passing through both pins of a connecting link with just a single pin. To install, first determine the direction of chain travel and then orient such that the hook-end of the device snaps onto the leading pin of the connecting link. The shepherd's crook should then be crimped slightly in the middle to minimize fretting.



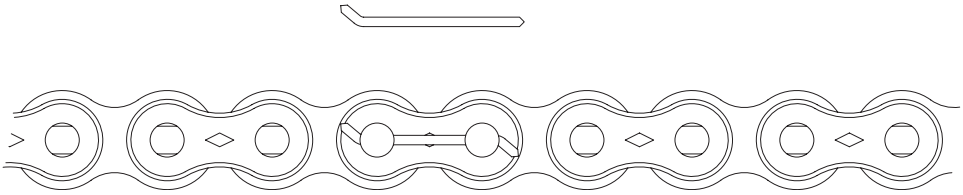
TECHNICAL ENGINEERING

Roller Chain Installation

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

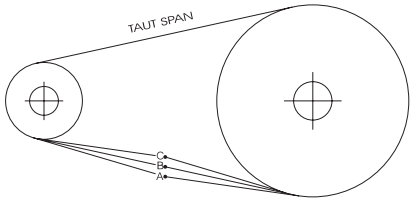
Retaining Devices

Z-pin cotters are available upon request for chain models #120-#200. These retaining devices are another single-pin method of securing the cover plate. The pins are supplied bent on one end. To retain the cover plate, simply install the z-pin cotter through both pins of a connecting link until the bend stops insertion, then bend the leading end in the opposite direction.



Proper Chain Tension: It should be expected that new chains will elongate slightly more during the first few days of service than in the months of subsequent operation. This is due to the "running-in" of the chain which removes minute imperfections from the surfaces of the pins and bushings. Diamond chains are pre-stressed prior to shipment to remove the majority of this "run-in" but some slight amount should still be expected. Because of this, it is good practice to establish and adjust center distances or idlers for an initially snug-fitting chain. After the initial run-in period, the drive should always be adjusted so that there is some degree of slack in the unloaded section of chain. This slack is very important as it allows the pin/bushing joint to relubricate itself prior to entering the working or loaded portion of the drive.

The following represents recommended mid-span movements for a properly tensioned drive.



Recommended Possible Mid-Span Movement, A-C, of Slack Span

Dimensions in Inches

Drive Center-Line	Tangent Length Between Sprockets								
	5	10	15	20	30	40	60	80	100
Horizontal to 45	0.25	0.50	0.75	1.00	1.50	2.00	3.00	4.00	5.00
Vertical to 45	0.12	0.25	0.38	0.50	0.75	1.00	1.50	2.00	2.50

TECHNICAL ENGINEERING

Roller Chain Lubrication

Roller chain drives suffer more harm from faulty lubrication than from years of normal service!!!
A roller chain consists of a series of connected journal bearings which must be properly lubricated to obtain the maximum service life. Although many slow speed drives operate successfully with little or no lubrication beyond that initially applied at the time of manufacture, continued proper lubrication will greatly extend the useful life of every chain drive.

Chain drives require lubrication for six primary purposes:

1. Resist wear of the pin-bushing joint.
2. Cushion impact loads.
3. Dissipate heat.
4. Flush away foreign materials.
5. Lubricate chain-sprocket contact surfaces.
6. Prevent rust or corrosion.

In selecting a lubricant, a good grade of clean petroleum oil without additives is most commonly recommended. Certain additives in oil can leave a varnish or gum buildup which will prevent additional lubricant from entering chain joints.

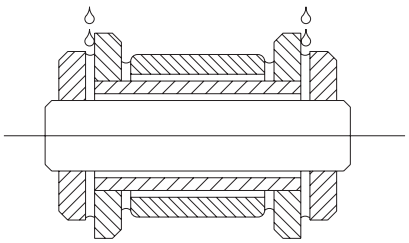
The viscosity of the lubricant greatly affects its ability to flow into the internal areas; therefore, the highest viscosity oil which will flow between the chain link plates and fill the pin-bushing areas will provide the greatest film thickness and best wear life.

Greases, applied to the exterior of the chain, serve no purpose with the exception of protecting the external surfaces from rust or corrosion and should not be relied upon to provide any internal lubricating benefits.

The following table provides a guideline for selecting the proper lubricant viscosity at various ambient temperatures:

Ambient Temperature Degrees F	Recommended Lubricants				
	SUS Viscosity 100 F	SAE Engine Oil	SAE Gear Oil	ISO	AGMA
20-40	200-400	20	80W	46 or 68	1 or 2
40-100	400-650	30	85W	100	3
100-120	650-950	40	90	150	4
120-140	950-1450	50	90	220	5

The elongation of roller chain is the result of wear caused by friction between the pins and bushings and regardless of the size or type of chain, in order for any lubricant to reach the critical pin/bushing area it should be applied to the upper edges of link plates in the slack span. Lubricant applied only to the chain's rollers will not provide an adequate supply to the internal wearing surfaces. However, the chain's rollers will receive adequate lubrication due to spillage over the link plate edges when lubricant is properly applied.



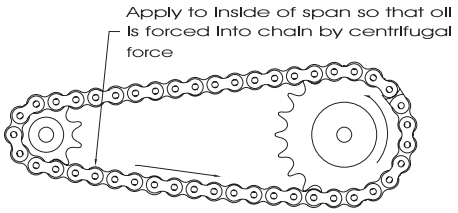
LUBRICANT FLOW INTO THE CHAIN JOINT

TECHNICAL ENGINEERING

Roller Chain Lubrication

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Note: When applying lubricant to multiple strand chain, it is important that lubricant be directed to each row of chain link plates, not just the outermost rows; and, in conveying applications, oil should be directed between the rollers and bushings as well as between the chain link plates, as significant wear can result from external loading.

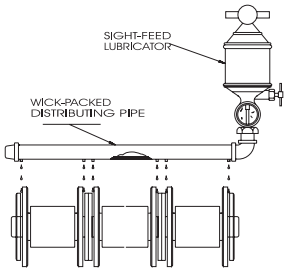


APPLICATION OF LUBRICANT TO CHAIN

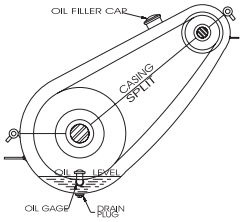
Methods of Lubrication

There are three basic methods of lubrication for roller chain drives. Close adherence to these recommended types of lubrication is essential in obtaining the maximum service life of a chain drive. These recommended types of lubrication, as shown in the horsepower rating tables, are determined by the chain speed and the amount of power transmitted.

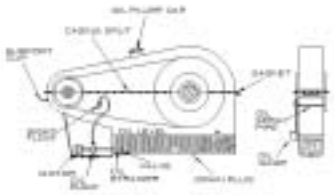
Manual or Drip Lubrication (Type A): Lubricant applied manually with an oil can or brush is acceptable for slow speed drives, generally not over 600 feet per minute. When lubrication must be accomplished with a minimum amount of oil, it is advisable to equip the system with either felt pads or brushes which are fed by lubricant from a reservoir and carefully positioned to direct oil into the clearances between each row of link plates in the slack span of chain.



Bath Lubrication (Type B): Lubricant is applied to the chain by allowing the oil level within an enclosed casing to cover the chain at approximately the pitch line at its lowest point of operation. This is by far the most desirable method for chains operating at up to approximately 1500 feet per minute.



Forced or Circulating Lubrication (Type C): This is similar to bath lubrication with the exception that the lubricant is pumped onto the chain under pressure. The oil should be delivered to the upper edges of each row of link plates across the lower span of chain just prior to the chain's entry into one of the sprockets.



The following table can be used as a guide for determining the type of lubricating system based upon the speed of the chain in feet per minute. The final selection should, however, be based upon the type of lubrication system recommended in the horsepower rating tables for the specific chain, sprocket, speed and horsepower transmitted.

Chain Speed in Feet/Minute

Chain No.	35	40	50	60	80	100	120	140	160	200
Type A	350	300	250	215	165	145	125	110	100	80
Type B	2650	2200	1900	1750	1475	1250	1170	1050	1000	865
Type C	Use for speeds higher than Type B limits									

TECHNICAL ENGINEERING

Roller Chain Maintenance

All chain drives should receive regular maintenance. Each drive should be inspected after the initial 100 hours of operation. Thereafter, most drives may be inspected at 500-hour intervals. However, drives subjected to shock loads or severe operating conditions should be inspected at more frequent intervals. This section will provide guidance as to what items should be evaluated during regular inspection intervals.

Drive Guarding

The strongest chain, built to the highest quality standards, still can break in normal service due to the effects of wear, fatigue, or unexpected overloads. Therefore, a roller chain drive should have adequate guarding to prevent personal injury or property damage.

If a roller chain breaks on a drive while operating at speed, the chain can be thrown off the sprockets with considerable force. The user should either provide adequate guarding to contain a broken chain, or prevent personnel from entering an area where a broken chain could strike them.

There are applications where a broken chain could release a load and cause personal injury or property damage. Provisions for a brake or other restraining device which will stop and hold the load in the event of a broken chain should be incorporated into the machinery's design.

Regular Inspections: At each inspection, the following items should be checked, the condition corrected, or the chain replaced as necessary:

1. **Check Lubrication**

   On slow speed drives, be sure the lubrication schedule is being followed and if the chain is covered with dirt and debris, clean the chain with an approved solvent and relubricate it. If drip lubrication is used, check for adequate oil flow and be sure it is being applied at the proper location on the chain. (Refer to the Lubrication section.)

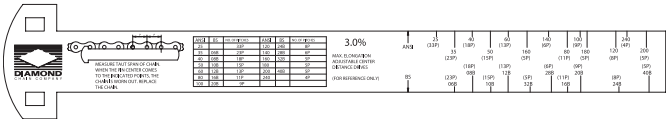
   With bath or pump lubrication, check oil level and add oil if needed. Check oil for contamination and change oil as needed. It is recommended to change the oil after the first 100 hours of operation and each 500 hours thereafter. If pump lubrication is used, check each orifice to be sure it is clear and is directing oil onto the chain properly.

2. **Check Chain Tension**

   Refer to the Installation section and check chain tension. Adjust the drive as needed to maintain the proper sag in the slack span. If elongation exceeds the available adjustment, remove two pitches of chain and reconnect.

3. **Check Chain Wear**

   Roller chains should be replaced promptly when worn (elongated beyond 3%) or when the chain rollers begin to "ride high" near the tips of the teeth on relatively large sprockets. If the chain is worn excessively, replace the entire chain. Do not connect or splice a new section to a worn chain. Do not continue to run a chain, worn in excess of 3% (or less in some applications), because the chain will not engage the sprockets properly and increased damage to the sprockets may occur.

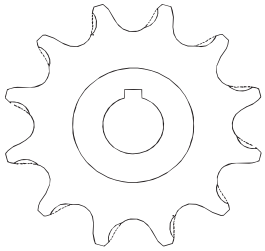


Contact Diamond Chain for your free wear guage.

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

4. Check Sprocket Tooth Wear

Check for roughness or binding when the chain engages or disengages from the sprocket. Inspect the sprocket teeth for reduced tooth section and "hooked" tooth tips. If these conditions are present, the sprocket teeth are excessively worn and the sprocket should be replaced. Do not run new chain on worn sprockets as it will cause the new chain to wear rapidly. Conversely, do not run a worn chain on new sprockets as it will cause the new sprockets to wear rapidly. As a *general* rule, replace the sprockets with every third chain replacement.



TOOTH FORM ALTERED DUE TO WEAR

5. Check Sprocket Alignment

If there is noticeable wear on the inside surfaces of the chain roller link plates, the sprockets may be misaligned. Realign the sprockets as outlined in the Installation section to prevent further abnormal chain and sprocket wear.

6. Check for Drive Interference

Check for interference between the drive and other parts of the equipment. If there is any, correct it immediately. Interference can cause abnormal and potentially destructive wear on the chain or the interfering part. If the edges of the chain link plates impact against a rigid part, link plate fatigue and chain failure can result.

Check for and eliminate any buildup of debris or foreign material between the chain and sprockets. A relatively small amount of debris in the sprocket roll seat can cause tensile loads great enough to break the chain if forced through the drive.

7. Check for Failure

Inspect the chain for cracked, broken, or deformed parts. If any of these conditions are found, **replace the entire chain.** Even though portions of the chain may appear to be in good condition, in all likelihood, the entire chain has been damaged.

Warning: Roller chains that have been damaged under excessive loading due to an accident, or otherwise, should be completely replaced because the chain, as well as the damaged component, has been loaded to a degree that has impaired its ability to transmit normal loading.

8. Evidence of Lubrication

One of the first indications that a roller chain is not receiving adequate lubrication is that the external areas around the joints will most likely have a reddish/brown (rusty) color. The inadequate lubrication can be confirmed by removing a link (most commonly the connecting link) and examining the surface of the pins. The color of the pins will generally be dark brown, even blue, if the chain has been running with inadequate lubrication. Additionally, the surface of poorly lubricated pins will be rough, grooved, or even show evidence of galling.

Properly lubricated chains will not exhibit the rusty color at the joints, and the pins of the connecting links, when removed, will be generally smooth, shiny and have an obvious coating of lubricant on the surface.

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

The Horsepower Rating Tables found on the following pages cover Standard Series, Heavy Series and Double-Pitch roller chains. Additionally, Horsepower Rating Tables for Diamond's RING LEADER® O-ring chains, from ⅝" through 1-¼" pitch are also included.

The power transmission capacity rating listed in the following tables are based upon these conditions:

1. A service factor of one.
2. Chain length of 100 pitches.
3. The use of recommended methods of lubrication.
4. A two-sprocket drive, properly aligned and mounted on parallel horizontal shafts.
5. A non-abrasive environment.

Under the above conditions, a service life of approximately 15,000 hours can be expected.

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 25

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	50	100	300	365	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	7000	8000	9000	10000	11000	12000
11	0.03	0.06	0.19	0.22	0.30	0.42	0.53	0.70	0.87	1.03	1.20	1.42	1.69	1.69	1.38	1.16	0.99	0.86	0.75	0.60	0.49	0.41	0.35	0.30	0.27
12	0.04	0.07	0.20	0.24	0.33	0.46	0.58	0.76	0.95	1.13	1.31	1.55	1.84	1.92	1.57	1.32	1.12	0.97	0.86	0.68	0.56	0.47	0.40	0.34	0.30
13	0.04	0.08	0.22	0.26	0.36	0.49	0.63	0.83	1.03	1.22	1.42	1.67	1.99	2.17	1.77	1.49	1.27	1.10	0.96	0.77	0.63	0.53	0.45	0.39	0.34
14	0.04	0.08	0.24	0.28	0.38	0.53	0.68	0.89	1.10	1.32	1.52	1.80	2.15	2.42	1.98	1.66	1.42	1.23	1.08	0.86	0.70	0.59	0.50	0.43	0.38
15	0.05	0.09	0.25	0.30	0.41	0.57	0.72	0.95	1.18	1.41	1.63	1.93	2.30	2.67	2.20	1.84	1.57	1.36	1.20	0.95	0.78	0.65	0.56	0.48	0.42
16	0.05	0.09	0.27	0.32	0.44	0.61	0.77	1.02	1.26	1.50	1.74	2.06	2.45	2.85	2.42	2.03	1.73	1.50	1.32	1.05	0.86	0.72	0.61	0.53	0.47
17	0.05	0.10	0.29	0.35	0.47	0.64	0.82	1.08	1.34	1.60	1.85	2.19	2.61	3.02	2.65	2.22	1.90	1.64	1.44	1.14	0.94	0.79	0.67	0.58	0.51
18	0.05	0.11	0.30	0.37	0.49	0.68	0.87	1.15	1.42	1.69	1.96	2.32	2.76	3.20	2.89	2.42	2.07	1.79	1.57	1.25	1.02	0.86	0.73	0.63	0.56
19	0.06	0.11	0.32	0.39	0.52	0.72	0.92	1.21	1.50	1.78	2.07	2.45	2.91	3.38	3.13	2.62	2.24	1.94	1.70	1.35	1.11	0.93	0.79	0.69	
20	0.06	0.12	0.34	0.41	0.55	0.76	0.97	1.27	1.58	1.88	2.18	2.58	3.07	3.56	3.38	2.83	2.42	2.10	1.84	1.46	1.20	1.00	0.86	0.74	
21	0.06	0.12	0.35	0.43	0.58	0.80	1.01	1.34	1.66	1.97	2.29	2.70	3.22	3.74	3.64	3.05	2.60	2.26	1.98	1.57	1.29	1.08	0.92		
22	0.07	0.13	0.37	0.45	0.60	0.83	1.06	1.40	1.73	2.07	2.40	2.83	3.37	3.91	3.90	3.27	2.79	2.42	2.12	1.69	1.38	1.16	0.99		
23	0.07	0.13	0.39	0.47	0.63	0.87	1.11	1.46	1.81	2.16	2.51	2.96	3.53	4.09	4.17	3.50	2.98	2.59	2.27	1.80	1.47	1.24	1.04		
24	0.07	0.14	0.40	0.49	0.66	0.91	1.16	1.53	1.89	2.25	2.61	3.09	3.68	4.27	4.45	3.73	3.18	2.76	2.42	1.92	1.57	1.32	0.22		
25	0.08	0.15	0.42	0.51	0.69	0.95	1.21	1.59	1.97	2.35	2.72	3.22	3.84	4.45	4.73	3.96	3.38	2.93	2.57	2.04	1.67	1.40			
26	0.08	0.15	0.44	0.53	0.71	0.99	1.26	1.65	2.05	2.44	2.83	3.35	3.99	4.62	5.01	4.20	3.59	3.11	2.73	2.17	1.77	1.49			
28	0.08	0.16	0.47	0.57	0.77	1.06	1.35	1.78	2.21	2.63	3.05	3.61	4.30	4.98	5.60	4.70	4.01	3.47	3.05	2.42	1.98				
30	0.09	0.18	0.50	0.61	0.82	1.14	1.45	1.91	2.37	2.82	3.27	3.86	4.60	5.34	6.07	5.21	4.45	3.85	3.38	2.68	1.98				
32	0.10	0.19	0.54	0.65	0.88	1.21	1.55	2.04	2.52	3.01	3.49	4.12	4.91	5.69	6.47	5.74	4.90	4.25	3.73	2.96	0.35				
35	0.11	0.21	0.59	0.71	0.96	1.33	1.69	2.23	2.76	3.29	3.81	4.51	5.37	6.23	7.08	6.56	5.60	4.86	4.26	2.76					
40	0.12	0.23	0.67	0.81	1.10	1.52	1.93	2.55	3.15	3.76	4.36	5.15	6.14	7.11	8.09	8.02	6.85	5.93	4.91						
45	0.14	0.26	0.76	0.91	1.24	1.71	2.17	2.86	3.55	4.23	4.90	5.79	6.90	8.00	9.10	9.57	8.17	5.23	1.38						
	TYPE A LUBRICATION				TYPE B LUBRICATION									TYPE C LUBRICATION											

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 35

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	50	100	200	240	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	9000	10000
11	0.11	0.22	0.42	0.50	1.02	1.41	1.80	2.37	2.93	3.49	4.05	3.86	2.94	2.33	1.91	1.60	1.37	1.18	1.04	0.92	0.82	0.74	0.67	0.57	0.48
12	0.12	0.24	0.46	0.55	1.11	1.54	1.96	2.58	3.20	3.81	4.42	4.40	3.35	2.66	2.17	1.82	1.56	1.35	1.18	1.05	0.94	0.85	0.77	0.64	0.55
13	0.13	0.26	0.50	0.60	1.21	1.67	2.12	2.80	3.47	4.13	4.79	4.96	3.77	3.00	2.45	2.05	1.75	1.52	1.33	1.18	1.06	0.95	0.87	0.73	0.62
14	0.14	0.28	0.54	0.64	1.30	1.80	2.29	3.01	3.73	4.45	5.15	5.55	4.22	3.35	2.74	2.30	1.96	1.70	1.49	1.32	1.18	1.07	0.97	0.81	0.10
15	0.15	0.30	0.58	0.69	1.39	1.92	2.45	3.23	4.00	4.76	5.52	6.15	4.68	3.71	3.04	2.55	2.17	1.88	1.65	1.47	1.31	1.18	1.07	0.90	
16	0.16	0.32	0.62	0.73	1.49	2.05	2.61	3.44	4.26	5.08	5.89	6.77	5.15	4.09	3.35	2.81	2.40	2.08	1.82	1.62	1.45	1.30	1.18	0.44	
17	0.17	0.34	0.65	0.78	1.58	2.18	2.77	3.66	4.53	5.40	6.26	7.40	5.64	4.48	3.67	3.07	2.62	2.27	2.00	1.77	1.58	1.43	1.30		
18	0.18	0.36	0.69	0.83	1.67	2.31	2.94	3.87	4.80	5.72	6.63	7.83	6.15	4.88	3.99	3.35	2.86	2.48	2.17	1.93	1.73	1.56	1.41		
19	0.19	0.38	0.73	0.87	1.76	2.44	3.10	4.09	5.06	6.03	7.00	8.27	6.67	5.29	4.33	3.63	3.10	2.69	2.36	2.09	1.87	1.69	0.05		
20	0.20	0.40	0.77	0.92	1.86	2.56	3.26	4.30	5.33	6.35	7.36	8.71	7.20	5.72	4.68	3.92	3.35	2.90	2.55	2.26	2.02	1.42			
21	0.21	0.42	0.81	0.96	1.95	2.69	3.43	4.52	5.60	6.67	7.73	9.14	7.75	6.15	5.03	4.22	3.60	3.12	2.74	2.43	2.17				
22	0.22	0.44	0.85	1.01	2.04	2.82	3.59	4.73	5.86	6.99	8.10	9.58	8.31	6.59	5.40	4.52	3.86	3.35	2.94	2.61	1.42				
23	0.23	0.46	0.89	1.06	2.14	2.95	3.75	4.95	6.13	7.30	8.47	10.01	8.88	7.05	5.77	4.83	4.13	3.58	3.14	2.79					
24	0.24	0.48	0.92	1.10	2.23	3.08	3.92	5.16	6.40	7.62	8.84	10.45	9.47	7.51	6.15	5.15	4.40	3.81	3.35	2.04					
25	0.25	0.50	0.96	1.15	2.32	3.21	4.08	5.38	6.66	7.94	9.20	10.88	10.07	7.99	6.54	5.48	4.68	4.05	3.56	0.12					
26	0.26	0.51	1.00	1.19	2.41	3.33	4.24	5.59	6.93	8.26	9.57	11.32	10.68	8.47	6.93	5.81	4.96	4.30	3.40						
28	0.29	0.55	1.08	1.28	2.60	3.59	4.57	6.02	7.46	8.89	10.31	12.19	11.93	9.47	7.75	6.49	5.55	4.81							
30	0.31	0.59	1.16	1.38	2.79	3.85	4.90	6.45	8.00	9.53	11.05	13.06	13.23	10.50	8.59	7.20	6.15	2.24							
32	0.33	0.63	1.23	1.47	2.97	4.10	5.22	6.88	8.53	10.16	11.78	13.93	14.58	11.57	9.47	7.93	5.76								
35	0.36	0.69	1.35	1.61	3.25	4.49	5.71	7.53	9.33	11.11	12.89	15.23	16.67	13.23	10.83	8.85	0.34								
40	0.41	0.79	1.54	1.84	3.71	5.13	6.53	8.61	10.66	12.70	14.73	17.41	20.37	16.17	11.04	0.34									
45	0.46	0.89	1.73	2.07	4.18	5.77	7.35	9.68	11.99	14.29	16.57	19.59	23.33	15.56	3.11										
	TYPE A LUBE			TYPE B LUBRICATION							TYPE C LUBRICATION														

Horsepower Ratings – Single Strand Roller Chain No. 40

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	10	25	50	100	180	200	300	500	700	900	1000	1200	1400	1600	1800	2100	2500	3000	3500	4000	5000	6000	7000	8000	9000
11	0.06	0.14	0.27	0.52	0.91	1.00	1.48	2.42	3.34	4.25	4.70	5.60	6.49	5.57	4.66	3.70	2.85	2.17	1.72	1.41	1.01	0.77	0.61	0.50	
12	0.06	0.15	0.29	0.56	0.99	1.09	1.61	2.64	3.64	4.64	5.13	6.11	7.09	6.34	5.31	4.22	3.25	2.47	1.96	1.60	1.15	0.87	0.69	0.57	
13	0.07	0.16	0.31	0.61	1.07	1.19	1.75	2.86	3.95	5.02	5.56	6.62	7.68	7.15	5.99	4.76	3.66	2.79	2.21	1.81	1.29	0.98	0.78		
14	0.07	0.17	0.34	0.66	1.15	1.28	1.88	3.08	4.25	5.41	5.98	7.13	8.27	7.99	6.70	5.31	4.09	3.11	2.47	2.02	1.45	1.10	0.87		
15	0.08	0.19	0.36	0.70	1.24	1.37	2.02	3.30	4.55	5.80	6.41	7.64	8.86	8.86	7.43	5.89	4.54	3.45	2.74	2.24	1.60	1.22	0.97		
16	0.08	0.20	0.39	0.75	1.32	1.46	2.15	3.52	4.86	6.18	6.84	8.15	9.45	9.76	8.18	6.49	5.00	3.80	3.02	2.47	1.77	1.34			
17	0.09	0.21	0.41	0.80	1.40	1.55	2.29	3.74	5.16	6.57	7.27	8.66	10.04	10.69	8.96	7.11	5.48	4.17	3.31	2.71	1.94	1.47			
18	0.09	0.22	0.43	0.84	1.48	1.64	2.42	3.96	5.46	6.95	7.69	9.17	10.63	11.65	9.76	7.75	5.97	4.54	3.60	2.95	2.11	1.60			
19	0.10	0.24	0.46	0.89	1.57	1.73	2.56	4.18	5.77	7.34	8.12	9.68	11.22	12.64	10.59	8.40	6.47	4.92	3.91	3.20	2.29	0.09			
20	0.10	0.25	0.48	0.94	1.65	1.82	2.69	4.39	6.07	7.73	8.55	10.18	11.81	13.42	11.44	9.07	6.99	5.31	4.22	3.45	2.47				
21	0.11	0.26	0.51	0.98	1.73	1.91	2.83	4.61	6.37	8.11	8.98	10.69	12.40	14.10	12.30	9.76	7.52	5.72	4.54	3.71	2.66				
22	0.11	0.27	0.53	1.03	1.81	2.01	2.96	4.83	6.68	8.50	9.40	11.20	12.99	14.77	13.19	10.47	8.06	6.13	4.87	3.98	2.85				
23	0.12	0.28	0.55	1.08	1.90	2.10	3.10	5.05	6.98	8.89	9.83	11.71	13.58	15.44	14.10	11.19	8.62	6.55	5.20	4.26	3.05				
24	0.12	0.30	0.58	1.12	1.98	2.19	3.23	5.27	7.28	9.27	10.26	12.22	14.17	16.11	15.03	11.93	9.18	6.99	5.54	4.54	0.87				
25	0.13	0.31	0.60	1.17	2.06	2.28	3.36	5.49	7.59	9.66	10.69	12.73	14.76	16.78	15.98	12.68	9.76	7.43	5.89	4.82					
26	0.13	0.32	0.63	1.22	2.14	2.37	3.50	5.71	7.89	10.04	11.11	13.24	15.35	17.45	16.95	13.45	10.36	7.88	6.25	5.12					
28	0.14	0.35	0.67	1.31	2.31	2.55	3.77	6.15	8.50	10.82	11.97	14.26	16.53	18.79	18.94	15.03	11.57	8.80	6.99	5.72					
30	0.15	0.37	0.72	1.41	2.47	2.74	4.04	6.59	9.11	11.59	12.82	15.28	17.71	20.14	21.01	16.67	12.84	9.76	7.75	6.34					
32	0.16	0.40	0.77	1.50	2.64	2.92	4.31	7.03	9.71	12.36	13.68	16.30	18.89	21.48	23.14	18.37	14.14	10.76	8.54	1.41					
35	0.18	0.43	0.84	1.64	2.88	3.19	4.71	7.69	10.62	13.52	14.96	17.82	20.67	23.49	26.30	21.01	16.17	12.30	9.76						
40	0.21	0.50	0.96	1.87	3.30	3.65	5.38	8.79	12.14	15.45	17.10	20.37	23.62	26.85	30.06	25.67	19.76	15.03							
45	0.23	0.56	1.08	2.11	3.71	4.10	6.06	9.89	13.66	17.39	19.24	22.92	26.57	30.20	33.82	30.63	23.58	5.53							
	TYPE A LUBE				TYPE B LUBRICATION									TYPE C LUBRICATION											

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 41

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	10	25	50	100	180	200	300	500	700	900	1000	1200	1400	1600	1800	2100	2500	3000	3500	4000	5000	6000	7000	8000	9000
11	0.03	0.07	0.15	0.28	0.50	0.55	0.81	1.33	1.84	2.34	2.25	1.71	1.36	1.11	0.93	0.74	0.57	0.43	0.34	0.28	0.20	0.15	0.12	0.10	
12	0.03	0.08	0.16	0.31	0.54	0.60	0.89	1.45	2.00	2.55	2.57	1.95	1.55	1.27	1.06	0.84	0.65	0.49	0.39	0.32	0.23	0.17	0.14	0.11	
13	0.04	0.09	0.17	0.34	0.59	0.65	0.96	1.57	2.17	2.76	2.89	2.20	1.75	1.43	1.20	0.95	0.73	0.56	0.44	0.36	0.26	0.20	0.16		
14	0.04	0.10	0.19	0.36	0.63	0.70	1.04	1.69	2.34	2.97	3.23	2.46	1.95	1.60	1.34	1.06	0.82	0.62	0.49	0.40	0.29	0.22	0.17		
15	0.04	0.10	0.20	0.39	0.68	0.75	1.11	1.81	2.50	3.19	3.53	2.73	2.17	1.77	1.49	1.18	0.91	0.69	0.55	0.45	0.32	0.24	0.19		
16	0.05	0.11	0.21	0.41	0.73	0.80	1.18	1.93	2.67	3.40	3.76	3.01	2.39	1.95	1.64	1.30	1.00	0.76	0.60	0.49	0.35	0.27			
17	0.05	0.12	0.23	0.44	0.77	0.85	1.26	2.05	2.84	3.61	4.00	3.29	2.61	2.14	1.79	1.42	1.10	0.83	0.66	0.54	0.39	0.29			
18	0.05	0.12	0.24	0.46	0.82	0.90	1.33	2.18	3.00	3.82	4.23	3.59	2.85	2.33	1.95	1.55	1.19	0.91	0.72	0.59	0.42	0.32			
19	0.05	0.13	0.25	0.49	0.86	0.95	1.41	2.30	3.17	4.04	4.47	3.89	3.09	2.53	2.12	1.68	1.29	0.98	0.78	0.64	0.46	0.09			
20	0.06	0.14	0.27	0.52	0.91	1.00	1.48	2.42	3.34	4.25	4.70	4.20	3.33	2.73	2.29	1.81	1.40	1.06	0.84	0.69	0.49				
21	0.06	0.14	0.28	0.54	0.95	1.05	1.55	2.54	3.51	4.46	4.94	4.52	3.59	2.94	2.46	1.95	1.50	1.14	0.91	0.74	0.53				
22	0.06	0.15	0.29	0.57	1.00	1.10	1.63	2.66	3.67	4.67	5.17	4.85	3.85	3.15	2.64	2.09	1.61	1.23	0.97	0.80	0.57				
23	0.07	0.16	0.30	0.59	1.04	1.15	1.70	2.78	3.84	4.89	5.41	5.18	4.11	3.37	2.82	2.24	1.72	1.31	1.04	0.85	0.61				
24	0.07	0.16	0.32	0.62	1.09	1.20	1.78	2.90	4.01	5.10	5.64	5.52	4.38	3.59	3.01	2.39	1.84	1.40	1.11	0.91	0.65				
25	0.07	0.17	0.33	0.64	1.13	1.25	1.85	3.02	4.17	5.31	5.88	5.87	4.66	3.81	3.20	2.54	1.95	1.49	1.18	0.96					
26	0.07	0.18	0.34	0.67	1.18	1.30	1.92	3.14	4.34	5.52	6.11	6.23	4.94	4.05	3.39	2.69	2.07	1.58	1.25	1.02					
28	0.08	0.19	0.37	0.72	1.27	1.40	2.07	3.38	4.67	5.95	6.58	6.96	5.52	4.52	3.79	3.01	2.31	1.76	1.40	1.14					
30	0.08	0.20	0.40	0.77	1.36	1.50	2.22	3.63	5.01	6.37	7.05	7.72	6.13	5.01	4.20	3.33	2.57	1.95	1.55	1.27					
32	0.09	0.22	0.42	0.82	1.45	1.60	2.37	3.87	5.34	6.80	7.52	8.50	6.75	5.52	4.63	3.67	2.83	2.15	1.71	1.40					
35	0.10	0.24	0.46	0.90	1.59	1.76	2.59	4.23	5.84	7.44	8.23	9.80	7.72	6.32	5.29	4.20	3.23	2.46	1.95						
40	0.11	0.27	0.53	1.03	1.81	2.01	2.96	4.83	6.68	8.50	9.40	11.20	9.43	7.72	6.47	5.13	3.95	3.01							
45	0.13	0.31	0.60	1.16	2.04	2.26	3.33	5.44	7.51	9.56	10.58	12.60	11.25	9.21	7.72	6.13	4.72	3.59							
	TYPE A LUBRICATION				TYPE B LUBRICATION									TYPE C LUBRICATION											

Horsepower Ratings – Single Strand Roller Chain No. 50

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	10	25	50	100	140	200	300	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
11	0.11	0.27	0.52	1.00	1.39	1.95	2.88	4.70	6.50	8.27	10.24	7.33	5.58	4.42	3.41	2.59	2.06	1.68	1.41	1.20	1.04	0.92	0.81	0.73	
12	0.12	0.29	0.56	1.09	1.51	2.13	3.14	5.13	7.09	9.02	11.67	8.35	6.35	5.04	3.88	2.95	2.34	1.92	1.61	1.37	1.19	1.04	0.93		
13	0.13	0.31	0.61	1.19	1.64	2.31	3.40	5.56	7.68	9.77	12.88	9.42	7.16	5.69	4.38	3.33	2.64	2.16	1.81	1.55	1.34	1.18			
14	0.14	0.34	0.66	1.28	1.76	2.48	3.67	5.99	8.27	10.53	13.87	10.52	8.01	6.35	4.89	3.72	2.95	2.42	2.03	1.73	1.50	0.28			
15	0.15	0.36	0.70	1.37	1.89	2.66	3.93	6.41	8.86	11.28	14.86	11.67	8.88	7.05	5.42	4.13	3.27	2.68	2.25	1.92	1.66				
16	0.16	0.39	0.75	1.46	2.02	2.84	4.19	6.84	9.45	12.03	15.85	12.86	9.78	7.76	5.98	4.55	3.61	2.95	2.47	2.11					
17	0.17	0.41	0.80	1.55	2.14	3.02	4.45	7.27	10.04	12.78	16.85	14.08	10.71	8.50	6.55	4.98	3.95	3.23	2.71	2.31					
18	0.18	0.43	0.84	1.64	2.27	3.19	4.71	7.70	10.63	13.53	17.84	15.34	11.67	9.26	7.13	5.42	4.30	3.52	2.95	0.05					
19	0.19	0.46	0.89	1.73	2.39	3.37	4.98	8.12	11.22	14.28	18.83	16.64	12.66	10.05	7.73	5.88	4.67	3.82	3.20						
20	0.20	0.48	0.94	1.82	2.52	3.55	5.24	8.55	11.81	15.04	19.82	17.97	13.67	10.85	8.35	6.35	5.04	4.13	3.46						
21	0.21	0.51	0.98	1.92	2.65	3.73	5.50	8.98	12.40	15.79	20.81	19.34	14.71	11.67	8.99	6.84	5.42	4.44							
22	0.22	0.53	1.03	2.01	2.77	3.90	5.76	9.41	12.99	16.54	21.80	20.73	15.77	12.52	9.64	7.33	5.82	4.76							
23	0.23	0.55	1.08	2.10	2.90	4.08	6.02	9.83	13.58	17.29	22.79	22.16	16.86	13.38	10.30	7.84	6.22	5.09							
24	0.24	0.58	1.13	2.19	3.02	4.26	6.28	10.26	14.18	18.04	23.78	23.62	17.97	14.26	10.98	8.35	6.63	1.36							
25	0.25	0.60	1.17	2.28	3.15	4.44	6.55	10.69	14.77	18.79	24.77	25.11	19.11	15.16	11.67	8.88	7.05								
26	0.26	0.63	1.22	2.37	3.28	4.61	6.81	11.12	15.36	19.55	25.76	26.64	20.26	16.08	12.38	9.42	7.47								
28	0.28	0.67	1.31	2.55	3.53	4.97	7.33	11.97	16.54	21.05	27.75	29.77	22.65	17.97	13.84	10.52	4.74								
30	0.30	0.72	1.41	2.74	3.78	5.32	7.86	12.83	17.72	22.55	29.73	33.01	25.11	19.93	15.34	11.67									
32	0.32	0.77	1.50	2.92	4.03	5.68	8.38	13.68	18.90	24.06	31.71	36.37	27.67	21.96	16.90	12.86									
35	0.35	0.84	1.64	3.19	4.41	6.21	9.16	14.97	20.67	26.31	34.68	41.60	31.65	25.11	19.34	0.94									
40	0.40	0.96	1.88	3.65	5.04	7.10	10.47	17.10	23.63	30.07	39.64	49.11	38.67	30.68	23.62										
45	0.45	1.08	2.11	4.10	5.67	7.98	11.78	19.24	26.58	33.83	44.59	55.24	46.14	36.61	8.64										
	TYPE A LUBRICATION				TYPE B LUBRICATION						TYPE C LUBRICATION														

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 60

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	10	25	50	100	120	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500	5000	5500	6000
11	0.19	0.46	0.89	1.72	2.05	3.35	4.95	6.52	8.08	9.63	12.69	15.58	11.85	9.41	7.70	6.45	5.51	3.94	3.00	2.38	1.95	1.63	1.39	1.21	
12	0.21	0.50	0.97	1.88	2.24	3.66	5.40	7.12	8.82	10.51	13.85	17.15	13.51	10.72	8.77	7.35	6.28	4.49	3.42	2.71	2.22	1.86	1.59	1.38	
13	0.22	0.54	1.05	2.04	2.43	3.96	5.85	7.71	9.55	11.38	15.00	18.58	15.23	12.08	9.89	8.29	7.08	5.06	3.85	3.06	2.50	2.10	1.79		
14	0.24	0.58	1.13	2.19	2.61	4.27	6.30	8.30	10.29	12.26	16.15	20.01	17.02	13.51	11.05	9.26	7.91	5.66	4.31	3.42	2.80	2.34	0.41		
15	0.26	0.62	1.21	2.35	2.80	4.57	6.75	8.90	11.02	13.13	17.31	21.44	18.87	14.98	12.26	10.27	8.77	6.28	4.77	3.79	3.10	2.60			
16	0.27	0.66	1.29	2.51	2.99	4.88	7.20	9.49	11.76	14.01	18.46	22.87	20.79	16.50	13.51	11.32	9.66	6.91	5.26	4.17	3.42	1.78			
17	0.29	0.70	1.37	2.66	3.17	5.18	7.65	10.08	12.49	14.88	19.62	24.30	22.77	18.07	14.79	12.40	10.58	7.57	5.76	4.57	3.74				
18	0.31	0.75	1.45	2.82	3.36	5.49	8.10	10.68	13.23	15.76	20.77	25.73	24.81	19.69	16.11	13.51	11.53	8.25	6.28	4.98	4.08				
19	0.33	0.79	1.53	2.98	3.55	5.79	8.55	11.27	13.96	16.63	21.92	27.16	26.91	21.35	17.48	14.65	12.50	8.95	6.81	5.40	0.20				
20	0.34	0.83	1.61	3.13	3.73	6.10	9.00	11.86	14.70	17.51	23.08	28.59	29.06	23.06	18.87	15.82	13.51	9.66	7.35	5.83					
21	0.36	0.87	1.69	3.29	3.92	6.40	9.45	12.46	15.43	18.38	24.23	30.02	31.26	24.81	20.31	17.02	14.53	10.40	7.91	6.28					
22	0.38	0.91	1.77	3.45	4.11	6.71	9.90	13.05	16.17	19.26	25.39	31.45	33.52	26.60	21.77	18.25	15.58	11.15	8.48						
23	0.40	0.95	1.85	3.61	4.29	7.01	10.35	13.64	16.90	20.13	26.54	32.88	35.84	28.44	23.28	19.51	16.66	11.92	9.07						
24	0.41	0.99	1.93	3.76	4.48	7.32	10.80	14.24	17.64	21.01	27.69	34.31	38.20	30.31	24.81	20.79	17.75	12.70	9.66						
25	0.43	1.04	2.01	3.92	4.67	7.62	11.25	14.83	18.37	21.89	28.85	35.74	40.61	32.23	26.38	22.11	18.87	13.51	10.27						
26	0.45	1.08	2.09	4.08	4.85	7.93	11.70	15.42	19.11	22.76	30.00	37.17	43.07	34.18	27.98	23.44	20.02	14.32	10.90						
28	0.48	1.16	2.26	4.39	5.23	8.54	12.60	16.61	20.58	24.51	32.31	40.03	47.68	38.20	31.26	26.20	22.37	16.01							
30	0.52	1.24	2.42	4.70	5.60	9.15	13.50	17.79	22.05	26.26	34.62	42.89	51.09	42.36	34.67	29.06	24.81	17.75							
32	0.55	1.33	2.58	5.02	5.98	9.76	14.40	18.98	23.52	28.01	36.92	45.75	54.50	46.67	38.20	32.01	27.33	19.56							
35	0.60	1.45	2.82	5.49	6.54	10.67	15.75	20.76	25.72	30.64	40.39	50.03	59.60	53.38	43.69	36.62	31.26	1.35							
40	0.69	1.66	3.22	6.27	7.47	12.20	18.00	23.73	29.39	35.02	46.16	57.18	68.12	65.22	53.38	44.74	38.20								
45	0.77	1.86	3.63	7.05	8.40	13.72	20.25	26.69	33.07	39.39	51.92	64.33	76.63	77.83	63.70	53.38	12.45								
	TYPE A LUBRICATION				TYPE B LUBRICATION							TYPE C LUBRICATION													

Horsepower Ratings – Single Strand Roller Chain No. 60H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	10	25	50	90	100	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500	5000	5500	6000
11	0.22	0.53	1.02	1.80	1.99	3.87	5.72	7.53	9.33	11.12	14.66	15.58	11.85	9.41	7.70	6.45	5.51	3.94	3.00	2.38	1.95	1.63	1.39	1.21	
12	0.24	0.57	1.12	1.96	2.17	4.23	6.24	8.22	10.18	12.13	15.99	17.75	13.51	10.72	8.77	7.35	6.28	4.49	3.42	2.71	2.22	1.86	1.59		
13	0.26	0.62	1.21	2.13	2.35	4.58	6.76	8.90	11.03	13.14	17.32	20.02	15.23	12.08	9.89	8.29	7.08	5.06	3.85	3.06	2.50	2.10	1.79		
14	0.28	0.67	1.30	2.29	2.53	4.93	7.27	9.59	11.88	14.15	18.65	22.37	17.02	13.51	11.05	9.26	7.91	5.66	4.31	3.42	2.80	2.34			
15	0.30	0.72	1.40	2.45	2.71	5.28	7.79	10.27	12.73	15.16	19.99	24.76	18.87	14.98	12.26	10.27	8.77	6.28	4.77	3.79	3.10	2.60			
16	0.32	0.77	1.49	2.62	2.90	5.63	8.31	10.96	13.58	16.17	21.32	26.41	20.79	16.50	13.51	11.32	9.66	6.91	5.26	4.17	3.42				
17	0.34	0.81	1.58	2.78	3.08	5.99	8.83	11.64	14.43	17.18	22.65	28.06	22.77	18.07	14.79	12.40	10.58	7.57	5.76	4.57	3.74				
18	0.36	0.86	1.67	2.94	3.26	6.34	9.35	12.33	15.27	18.20	23.98	29.71	24.81	19.69	16.11	13.51	11.53	8.25	6.28	4.98	1.06				
19	0.38	0.91	1.77	3.11	3.44	6.69	9.87	13.01	16.12	19.21	25.32	31.36	26.91	21.35	17.48	14.65	12.50	8.95	6.81	5.40					
20	0.40	0.96	1.86	3.27	3.62	7.04	10.39	13.70	16.97	20.22	26.65	33.01	29.06	23.06	18.87	15.82	13.51	9.66	7.35	5.83					
21	0.42	1.00	1.95	3.44	3.80	7.39	10.91	14.38	17.82	21.23	27.98	34.66	31.26	24.81	20.31	17.02	14.53	10.40	7.91	4.87					
22	0.44	1.05	2.05	3.60	3.98	7.75	11.43	15.07	18.67	22.24	29.31	36.32	33.52	26.60	21.77	18.25	15.58	11.15	8.48						
23	0.46	1.10	2.14	3.76	4.16	8.10	11.95	15.75	19.52	23.25	30.65	37.97	35.84	28.44	23.28	19.51	16.66	11.92	9.07						
24	0.48	1.15	2.23	3.93	4.34	8.45	12.47	16.44	20.37	24.26	31.98	39.62	38.20	30.31	24.81	20.79	17.75	12.70	9.66						
25	0.50	1.20	2.33	4.09	4.52	8.80	12.99	17.12	21.21	25.27	33.31	41.27	40.61	32.23	26.38	22.11	18.87	13.51	10.27						
26	0.52	1.24	2.42	4.25	4.71	9.15	13.51	17.81	22.06	26.28	34.64	42.92	43.07	34.18	27.98	23.44	20.02	14.32	4.17						
28	0.56	1.34	2.61	4.58	5.07	9.86	14.55	19.18	23.76	28.30	37.31	46.22	48.14	38.20	31.26	26.20	22.37	16.01							
30	0.60	1.43	2.79	4.91	5.43	10.56	15.59	20.55	25.46	30.33	39.97	49.52	53.38	42.36	34.67	29.06	24.81	17.75							
32	0.64	1.53	2.98	5.23	5.79	11.27	16.63	21.92	27.15	32.35	42.64	52.82	58.81	46.67	38.20	32.01	27.33	11.45							
35	0.69	1.67	3.26	5.73	6.33	12.32	18.19	23.97	29.70	35.38	46.63	57.77	67.27	53.38	43.69	36.62	31.26								
40	0.79	1.91	3.72	6.54	7.24	14.08	20.79	27.40	33.94	40.43	53.30	66.03	78.66	65.22	53.38	44.74	29.65								
45	0.89	2.15	4.19	7.36	8.14	15.84	23.38	30.82	38.18	45.49	59.96	74.28	88.49	77.83	63.70	37.00									
	TYPE A LUBE				TYPE B LUBRICATION							TYPE C LUBRICATION													

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 80

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	10	25	50	75	88	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500
11	0.44	1.06	2.07	3.05	3.56	4.03	7.83	11.56	15.23	18.87	22.48	26.07	27.41	22.97	19.61	14.92	11.84	9.69	8.12	6.93	4.96	3.77	3.00	2.45	
12	0.48	1.16	2.26	3.33	3.88	4.39	8.54	12.61	16.62	20.59	24.53	28.44	31.23	26.17	22.35	17.00	13.49	11.04	9.25	7.90	5.65	4.30	3.41	2.79	
13	0.52	1.26	2.45	3.61	4.21	4.76	9.26	13.66	18.00	22.31	26.57	30.81	35.02	29.51	25.20	19.17	15.21	12.45	10.43	8.91	6.37	4.85	3.85	3.15	
14	0.56	1.35	2.63	3.89	4.53	5.12	9.97	14.71	19.39	24.02	28.62	33.18	37.72	32.98	28.16	21.42	17.00	13.91	11.66	9.96	7.12	5.42	4.30	3.52	
15	0.60	1.45	2.82	4.16	4.86	5.49	10.68	15.76	20.77	25.74	30.66	35.55	40.41	36.58	31.23	23.76	18.85	15.43	12.93	11.04	7.90	6.01	4.77		
16	0.64	1.55	3.01	4.44	5.18	5.86	11.39	16.81	22.16	27.45	32.70	37.92	43.11	40.30	34.41	26.17	20.77	17.00	14.25	12.16	8.70	6.62	5.25		
17	0.68	1.64	3.20	4.72	5.50	6.22	12.10	17.86	23.54	29.17	34.75	40.29	45.80	44.13	37.68	28.66	22.75	18.62	15.60	13.32	9.53	7.25			
18	0.72	1.74	3.39	5.00	5.83	6.59	12.81	18.91	24.93	30.88	36.79	42.66	48.49	48.08	41.05	31.23	24.78	20.29	17.00	14.51	10.39	7.90			
19	0.76	1.84	3.57	5.28	6.15	6.95	13.53	19.96	26.31	32.60	38.84	45.03	51.19	52.15	44.52	33.87	26.88	22.00	18.44	15.74	11.26	0.36			
20	0.80	1.93	3.76	5.55	6.47	7.32	14.24	21.01	27.70	34.32	40.88	47.40	53.88	56.32	48.08	36.58	29.03	23.76	19.91	17.00	12.16				
21	0.84	2.03	3.95	5.83	6.80	7.69	14.95	22.07	29.08	36.03	42.92	49.77	56.58	60.59	51.73	39.36	31.23	25.56	21.42	18.29	13.09				
22	0.88	2.13	4.14	6.11	7.12	8.05	15.66	23.12	30.47	37.75	44.97	52.14	59.27	64.97	55.47	42.20	33.49	27.41	22.97	19.61	14.03				
23	0.92	2.22	4.33	6.39	7.45	8.42	16.37	24.17	31.85	39.46	47.01	54.51	61.97	69.38	59.30	45.11	35.80	29.30	24.55	20.97	15.00				
24	0.96	2.32	4.52	6.66	7.77	8.78	17.09	25.22	33.24	41.18	49.06	56.88	64.66	72.40	63.21	48.08	38.16	31.23	26.17	22.35	15.99				
25	1.00	2.42	4.70	6.94	8.09	9.15	17.80	26.27	34.62	42.89	51.10	59.25	67.35	75.42	67.20	51.12	40.57	33.20	27.83	23.76	8.16				
26	1.04	2.51	4.89	7.22	8.42	9.52	18.51	27.32	36.01	44.61	53.14	61.62	70.05	78.43	71.27	54.22	43.02	35.22	29.51	25.20					
28	1.12	2.71	5.27	7.77	9.06	10.25	19.93	29.42	38.78	48.04	57.23	66.36	75.44	84.47	79.65	60.59	48.08	39.36	32.98	28.16					
30	1.20	2.90	5.64	8.33	9.71	10.98	21.36	31.52	41.55	51.47	61.32	71.10	80.82	90.50	88.33	67.20	53.33	43.65	36.58	31.23					
32	1.28	3.09	6.02	8.89	10.36	11.71	22.78	33.62	44.32	54.91	65.41	75.84	86.21	96.53	97.31	74.03	58.75	48.08	40.30	5.65					
35	1.40	3.38	6.58	9.72	11.33	12.81	24.92	36.78	48.47	60.05	71.54	82.95	94.29	105.58	111.31	84.68	67.20	55.00	28.15						
40	1.61	3.87	7.53	11.11	12.95	14.64	28.48	42.03	55.40	68.63	81.76	94.80	107.77	120.67	133.51	103.46	82.10	40.16							
45	1.81	4.35	8.47	12.49	14.57	16.47	32.04	47.28	62.32	77.21	91.98	106.65	121.24	135.75	150.20	123.45	72.28								*
	TYPE A LUBRICATION				TYPE B LUBRICATION								TYPE C LUBRICATION												

Horsepower Ratings – Single Strand Roller Chain No. 80H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	10	25	50	70	100	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500
11	0.49	1.19	2.31	3.19	4.50	8.75	12.91	17.02	21.08	25.12	29.12	27.41	22.97	19.61	17.00	14.92	11.84	9.69	8.12	6.93	4.96	3.77	3.00	2.45	
12	0.54	1.30	2.52	3.48	4.91	9.54	14.09	18.57	23.00	27.40	31.77	31.23	26.17	22.35	19.37	17.00	13.49	11.04	9.25	7.90	5.65	4.30	3.41	2.79	
13	0.58	1.40	2.73	3.77	5.31	10.34	15.26	20.11	24.92	29.68	34.42	35.22	29.51	25.20	21.84	19.17	15.21	12.45	10.43	8.91	6.37	4.85	3.85	3.15	
14	0.63	1.51	2.94	4.06	5.72	11.13	16.43	21.66	26.83	31.97	37.07	39.36	32.98	28.16	24.41	21.42	17.00	13.91	11.66	9.96	7.12	5.42	4.30	2.02	
15	0.67	1.62	3.15	4.35	6.13	11.93	17.61	23.21	28.75	34.25	39.71	43.65	36.58	31.23	27.07	23.76	18.85	15.43	12.93	11.04	7.90	6.01	4.77		
16	0.72	1.73	3.36	4.64	6.54	12.73	18.78	24.75	30.67	36.53	42.36	48.08	40.30	34.41	29.82	26.17	20.77	17.00	14.25	12.16	8.70	6.62			
17	0.76	1.84	3.57	4.94	6.95	13.52	19.95	26.30	32.59	38.82	45.01	51.17	44.13	37.68	32.66	28.66	22.75	18.62	15.60	13.32	9.53	7.25			
18	0.81	1.94	3.78	5.23	7.36	14.32	21.13	27.85	34.50	41.10	47.66	54.17	48.08	41.05	35.59	31.23	24.78	20.29	17.00	14.51	10.39	1.88			
19	0.85	2.05	3.99	5.52	7.77	15.11	22.30	29.40	36.42	43.38	50.30	57.18	52.15	44.52	38.59	33.87	26.88	22.00	18.44	15.74	11.26				
20	0.90	2.16	4.20	5.81	8.18	15.91	23.48	30.94	38.34	45.67	52.95	60.19	56.32	48.08	41.68	36.58	29.03	23.76	19.91	17.00	12.16				
21	0.94	2.27	4.41	6.10	8.59	16.70	24.65	32.49	40.25	47.95	55.60	63.20	60.59	51.73	44.84	39.36	31.23	25.56	21.42	18.29					
22	0.99	2.38	4.62	6.39	8.99	17.50	25.82	34.04	42.17	50.24	58.25	66.21	64.97	55.47	48.08	42.20	33.49	27.41	22.97	19.61					
23	1.03	2.48	4.83	6.68	9.40	18.29	27.00	35.58	44.09	52.52	60.89	69.22	69.45	59.30	51.40	45.11	35.80	29.30	24.55	20.97					
24	1.08	2.59	5.04	6.97	9.81	19.09	28.17	37.13	46.00	54.80	63.54	72.23	74.03	63.21	54.79	48.08	38.16	31.23	26.17	22.35					
25	1.12	2.70	5.25	7.26	10.22	19.88	29.35	38.68	47.92	57.09	66.19	75.24	78.70	67.20	58.25	51.12	40.57	33.20	27.83	23.76					
26	1.17	2.81	5.46	7.55	10.63	20.68	30.52	40.23	49.84	59.37	68.84	78.25	83.47	71.27	61.78	54.22	43.02	35.22	29.51	25.20					
28	1.26	3.03	5.88	8.13	11.45	22.27	32.87	43.32	53.67	63.94	74.13	84.27	93.29	79.65	69.04	60.59	48.08	39.36	32.98	28.16					
30	1.34	3.24	6.31	8.71	12.27	23.86	35.21	46.41	57.50	68.50	79.43	90.29	101.10	88.33	76.57	67.20	53.33	43.65	36.58	12.26					
32	1.43	3.46	6.73	9.29	13.08	25.45	37.56	49.51	61.34	73.07	84.72	96.31	107.84	97.31	84.35	74.03	58.75	48.08	39.43						
35	1.57	3.78	7.36	10.16	14.31	27.84	41.08	54.15	67.09	79.92	92.67	105.34	117.95	111.31	96.49	84.68	67.20	55.00	5.58						
40	1.79	4.32	8.41	11.61	16.35	31.81	46.95	61.89	76.67	91.34	105.90	120.39	134.80	136.00	117.88	103.46	82.10	14.36							
45	2.02	4.86	9.46	13.06	18.40	35.79	52.82	69.62	86.25	102.75	119.14	135.44	151.65	162.28	140.66	123.45	43.25								*
	TYPE A LUBE				TYPE B LUBRICATION								TYPE C LUBRICATION												

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 100

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																									
	10	25	50	71	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2500	3000	3500	4000	
11	0.85	2.04	3.96	5.55	7.71	11.38	15.00	22.14	29.18	36.15	43.06	40.03	32.77	27.46	23.45	20.32	17.84	14.15	11.58	9.71	8.29	5.93	4.51	3.58		
12	0.92	2.22	4.32	6.05	8.41	12.41	16.36	24.15	31.83	39.44	46.98	45.61	37.33	31.29	26.71	23.16	20.32	16.13	13.20	11.06	9.45	6.76	5.14			
13	1.00	2.41	4.68	6.56	9.11	13.45	17.73	26.16	34.48	42.72	50.89	51.43	42.10	35.28	30.12	26.11	22.92	18.18	14.88	12.47	10.65	7.62	5.80			
14	1.08	2.59	5.04	7.06	9.81	14.48	19.09	28.18	37.14	46.01	54.81	57.48	47.05	39.43	33.66	29.18	25.61	20.32	16.63	13.94	11.90	8.52	1.13			
15	1.15	2.78	5.41	7.57	10.51	15.52	20.45	30.19	39.79	49.30	58.72	63.75	52.18	43.73	37.33	32.36	28.40	22.54	18.45	15.46	13.20	9.45				
16	1.23	2.96	5.77	8.07	11.22	16.55	21.82	32.20	42.44	52.58	62.64	70.23	57.48	48.17	41.13	35.65	31.29	24.83	20.32	17.03	14.54	10.41				
17	1.31	3.15	6.13	8.58	11.92	17.59	23.18	34.21	45.10	55.87	66.55	76.91	62.95	52.76	45.05	39.04	34.27	27.19	22.26	18.65	15.93	11.40				
18	1.38	3.33	6.49	9.08	12.62	18.62	24.55	36.23	47.75	59.15	70.47	81.71	68.59	57.48	49.08	42.54	37.33	29.63	24.25	20.32	17.35	0.18				
19	1.46	3.52	6.85	9.59	13.32	19.66	25.91	38.24	50.40	62.44	74.38	86.25	74.38	62.34	53.22	46.13	40.49	32.13	26.30	22.04	18.82					
20	1.54	3.70	7.21	10.09	14.02	20.69	27.27	40.25	53.05	65.73	78.30	90.79	80.33	67.32	57.48	49.82	43.73	34.70	28.40	23.80	20.32					
21	1.61	3.89	7.57	10.60	14.72	21.73	28.64	42.26	55.71	69.01	82.21	95.33	86.43	72.43	61.85	53.61	47.05	37.33	30.56	25.61	21.87					
22	1.69	4.08	7.93	11.10	15.42	22.76	30.00	44.28	58.36	72.30	86.13	99.87	92.68	77.67	66.31	57.48	50.45	40.03	32.77	27.46	23.45					
23	1.77	4.26	8.29	11.60	16.12	23.79	31.36	46.29	61.01	75.59	90.04	104.41	99.07	83.02	70.89	61.44	53.93	42.79	35.03	29.35	25.06					
24	1.84	4.45	8.65	12.11	16.82	24.83	32.73	48.30	63.66	78.87	93.96	108.95	105.60	88.50	75.56	65.49	57.48	45.61	37.33	31.29	5.43					
25	1.92	4.63	9.01	12.61	17.52	25.86	34.09	50.31	66.32	82.16	97.87	113.48	112.27	94.09	80.33	69.63	61.11	48.49	39.69	33.26						
26	2.00	4.82	9.37	13.12	18.23	26.90	35.45	52.33	68.97	85.45	101.79	118.02	119.07	99.79	85.20	73.85	64.81	51.43	42.10	35.28						
28	2.15	5.19	10.09	14.13	19.63	28.97	38.18	56.35	74.27	92.02	109.62	127.10	133.07	111.52	95.22	82.53	72.43	57.48	47.05							
30	2.31	5.56	10.81	15.14	21.03	31.04	40.91	60.38	79.58	98.59	117.45	136.18	147.58	123.68	105.60	91.53	80.33	63.75	49.40							
32	2.46	5.93	11.53	16.15	22.43	33.11	43.64	64.40	84.88	105.16	125.28	145.26	162.58	136.25	116.33	100.84	88.50	70.23	8.82							
35	2.69	6.48	12.61	17.66	24.53	36.21	47.73	70.44	92.84	115.02	137.02	158.88	180.61	155.85	133.07	115.34	101.23	69.02								
40	3.07	7.41	14.41	20.18	28.04	41.38	54.54	80.50	106.11	131.45	156.60	181.58	206.41	190.42	162.58	140.92	122.68									
45	3.46	8.34	16.22	22.71	31.54	46.55	61.36	90.56	119.37	147.89	176.17	204.27	232.21	227.21	194.00	168.15	34.58									*
	TYPE A LUBE			TYPE B LUBRICATION							TYPE C LUBRICATION															

Horsepower Ratings – Single Strand Roller Chain No. 100H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																									
	10	25	50	58	100	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2700	3000	3500	
11	0.93	2.23	4.34	5.01	8.45	16.43	24.25	31.96	39.60	47.18	40.03	32.77	27.46	23.45	20.32	17.84	14.15	11.58	9.71	8.29	7.19	6.31	5.28	4.51		
12	1.01	2.44	4.74	5.46	9.21	17.93	26.46	34.87	43.20	51.46	45.61	37.33	31.29	26.71	23.16	20.32	16.13	13.20	11.06	9.45	8.19	7.19	6.02	5.14		
13	1.09	2.64	5.13	5.92	9.98	19.42	28.66	37.78	46.80	55.75	51.43	42.10	35.28	30.12	26.11	22.92	18.18	14.88	12.47	10.65	9.23	8.10	6.79	5.80		
14	1.18	2.84	5.53	6.37	10.75	20.91	30.86	40.68	50.40	60.04	57.48	47.05	39.43	33.66	29.18	25.61	20.32	16.63	13.94	11.90	10.32	9.05	7.59			
15	1.26	3.04	5.92	6.83	11.52	22.41	33.07	43.59	54.00	64.33	63.75	52.18	43.73	37.33	32.36	28.40	22.54	18.45	15.46	13.20	11.44	10.04	8.42			
16	1.35	3.25	6.32	7.28	12.29	23.90	35.27	46.49	57.60	68.62	70.23	57.48	48.17	41.13	35.65	31.29	24.83	20.32	17.03	14.54	12.60	11.06				
17	1.43	3.45	6.71	7.74	13.05	25.39	37.48	49.40	61.20	72.91	76.91	62.95	52.76	45.05	39.04	34.27	27.19	22.26	18.65	15.93	13.80	12.12				
18	1.52	3.65	7.11	8.19	13.82	26.89	39.68	52.31	64.80	77.20	83.80	68.59	57.48	49.08	42.54	37.33	29.63	24.25	20.32	17.35	15.04	2.94				
19	1.60	3.86	7.50	8.65	14.59	28.38	41.89	55.21	68.40	81.48	90.88	74.38	62.34	53.22	46.13	40.49	32.13	26.30	22.04	18.82	16.31					
20	1.68	4.06	7.89	9.10	15.36	29.88	44.09	58.12	72.00	85.77	98.15	80.33	67.32	57.48	49.82	43.73	34.70	28.40	23.80	20.32	7.77					
21	1.77	4.26	8.29	9.56	16.13	31.37	46.30	61.02	75.60	90.06	104.43	86.43	72.43	61.85	53.61	47.05	37.33	30.56	25.61	21.87						
22	1.85	4.46	8.68	10.01	16.89	32.86	48.50	63.93	79.20	94.35	109.40	92.68	77.67	66.31	57.48	50.45	40.03	32.77	27.46	21.67						
23	1.94	4.67	9.08	10.47	17.66	34.36	50.71	66.83	82.80	98.64	114.37	99.07	83.02	70.89	61.44	53.93	42.79	35.03	29.35	2.94						
24	2.02	4.87	9.47	10.92	18.43	35.85	52.91	69.74	86.40	102.93	119.34	105.60	88.50	75.56	65.49	57.48	45.61	37.33	31.29							
25	2.10	5.07	9.87	11.38	19.20	37.34	55.12	72.65	90.00	107.22	124.32	112.27	94.09	80.33	69.63	61.11	48.49	39.69	29.68							
26	2.19	5.28	10.26	11.83	19.97	38.84	57.32	75.55	93.60	111.51	129.29	119.07	99.79	85.20	73.85	64.81	51.43	42.10	11.58							
28	2.36	5.68	11.05	12.75	21.50	41.83	61.73	81.36	100.80	120.08	139.24	133.07	111.52	95.22	82.53	72.43	57.48	47.05								
30	2.53	6.09	11.84	13.66	23.04	44.81	66.14	87.18	108.00	128.66	149.18	147.58	123.68	105.60	91.53	80.33	63.75	19.16								
32	2.69	6.49	12.63	14.57	24.57	47.80	70.55	92.99	115.20	137.24	159.13	162.58	136.25	116.33	100.84	88.50	70.23									
35	2.95	7.10	13.82	15.93	26.88	52.28	77.16	101.71	126.00	150.10	174.04	185.97	155.85	133.07	115.34	101.23	33.74									
40	3.37	8.12	15.79	18.21	30.72	59.75	88.18	116.23	144.00	171.55	198.91	226.11	190.42	162.58	140.92	82.37										
45	3.79	9.13	17.76	20.48	34.55	67.22	99.21	130.76	162.00	192.99	223.77	254.38	227.21	194.00	85.51											*
	TYPE A LUBE			TYPE B LUBRICATION						TYPE C LUBRICATION																

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 120

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																									
	10	25	50	60	75	100	150	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2700	3000	
11	1.43	3.44	6.69	7.97	9.88	13.02	19.22	25.33	37.38	49.27	61.04	58.37	46.32	37.91	31.77	27.13	20.64	16.38	13.40	11.23	9.59	8.31	7.30	6.11		
12	1.56	3.75	7.30	8.70	10.78	14.20	20.96	27.63	40.78	53.75	66.59	66.51	52.78	43.20	36.20	30.91	23.51	18.66	15.27	12.80	10.93	9.47	8.31	6.97		
13	1.69	4.07	7.91	9.42	11.67	15.39	22.71	29.93	44.18	58.23	72.14	74.99	59.51	48.71	40.82	34.85	26.51	21.04	17.22	14.43	12.32	10.68	9.37			
14	1.82	4.38	8.52	10.15	12.57	16.57	24.46	32.24	47.58	62.71	77.69	83.81	66.51	54.44	45.62	38.95	29.63	23.51	19.25	16.13	13.77	11.94	10.48			
15	1.95	4.69	9.13	10.87	13.47	17.76	26.20	34.54	50.98	67.19	83.24	92.95	73.76	60.37	50.59	43.20	32.86	26.08	21.34	17.89	15.27	13.24				
16	2.08	5.00	9.74	11.60	14.37	18.94	27.95	36.84	54.37	71.67	88.79	102.39	81.26	66.51	55.74	47.59	36.20	28.73	23.51	19.71	16.83	14.58				
17	2.21	5.32	10.34	12.32	15.27	20.12	29.70	39.14	57.77	76.15	94.34	112.14	88.99	72.84	61.04	52.12	39.65	31.46	25.75	21.58	18.43					
18	2.34	5.63	10.95	13.05	16.16	21.31	31.45	41.45	61.17	80.63	99.89	119.00	96.96	79.36	66.51	56.78	43.20	34.28	28.06	23.51	20.08					
19	2.47	5.94	11.56	13.77	17.06	22.49	33.19	43.75	64.57	85.11	105.44	125.61	105.15	86.06	72.13	61.58	46.85	37.18	30.43	25.50	0.80					
20	2.60	6.26	12.17	14.50	17.96	23.67	34.94	46.05	67.97	89.59	110.99	132.22	113.56	92.95	77.89	66.51	50.59	40.15	32.86	27.54						
21	2.73	6.57	12.78	15.22	18.86	24.86	36.69	48.36	71.37	94.07	116.54	138.83	122.18	100.00	83.81	71.56	54.44	43.20	35.36	27.46						
22	2.86	6.88	13.39	15.95	19.76	26.04	38.43	50.66	74.76	98.55	122.09	145.44	131.01	107.23	89.87	76.73	58.37	46.32	37.91							
23	2.99	7.19	14.00	16.67	20.65	27.22	40.18	52.96	78.16	103.02	127.64	152.05	140.04	114.62	96.06	82.02	62.39	49.51	40.53							
24	3.11	7.51	14.60	17.40	21.55	28.41	41.93	55.26	81.56	107.50	133.19	158.66	149.28	122.18	102.39	87.43	66.51	52.78	43.20							
25	3.24	7.82	15.21	18.12	22.45	29.59	43.67	57.57	84.96	111.98	138.74	165.27	158.70	129.90	108.86	92.95	70.71	56.11	18.37							
26	3.37	8.13	15.82	18.85	23.35	30.78	45.42	59.87	88.36	116.46	144.29	171.88	168.32	137.77	115.46	98.58	74.99	59.51								
28	3.63	8.76	17.04	20.30	25.15	33.14	48.92	64.47	95.15	125.42	155.38	185.11	188.11	153.97	129.03	110.17	83.81	66.51								
30	3.89	9.38	18.25	21.75	26.94	35.51	52.41	69.08	101.95	134.38	166.48	198.33	208.62	170.75	143.10	122.18	92.95	13.70								
32	4.15	10.01	19.47	23.20	28.74	37.88	55.90	73.68	108.75	143.34	177.58	211.55	229.83	188.11	157.65	134.60	102.39									
35	4.54	10.95	21.30	25.37	31.43	41.43	61.14	80.59	118.94	156.78	194.23	231.38	262.89	215.17	180.33	153.97	117.13									
40	5.19	12.51	24.34	28.99	35.92	47.35	69.88	92.11	135.94	179.17	221.98	264.44	306.61	262.89	220.32	176.66										
45	5.84	14.08	27.38	32.62	40.41	53.27	78.61	103.62	152.93	201.57	249.72	297.49	344.94	313.69	213.33	49.79										*
	TYPE A LUBE			TYPE B LUBRICATION								TYPE C LUBRICATION														

Horsepower Ratings – Single Strand Roller Chain No. 120H

# of teeth in small sprocket				Revolutions Per Minute – Small Sprocket																						
	5	10	25	50	75	100	150	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2700	3000	
11	0.79	1.54	3.72	7.23	10.67	14.06	20.76	27.36	40.38	53.22	65.93	58.37	46.32	37.91	31.77	27.13	20.64	16.38	13.40	11.23	9.59	8.31	7.30	6.11		
12	0.86	1.68	4.05	7.89	11.64	15.34	22.64	29.85	44.05	58.06	71.93	66.51	52.78	43.20	36.20	30.91	23.51	18.66	15.27	12.80	10.93	9.47	8.31	1.06		
13	0.94	1.82	4.39	8.54	12.61	16.62	24.53	32.33	47.72	62.90	77.92	74.99	59.51	48.71	40.82	34.85	26.51	21.04	17.22	14.43	12.32	10.68	9.37			
14	1.01	1.96	4.73	9.20	13.58	17.90	26.42	34.82	51.39	67.73	83.92	83.81	66.51	54.44	45.62	38.95	29.63	23.51	19.25	16.13	13.77	11.94	4.55			
15	1.08	2.10	5.07	9.86	14.55	19.18	28.30	37.31	55.06	72.57	89.91	92.95	73.76	60.37	50.59	43.20	32.86	26.08	21.34	17.89	15.27	13.24				
16	1.15	2.24	5.41	10.52	15.52	20.46	30.19	39.79	58.73	77.41	95.90	102.39	81.26	66.51	55.74	47.59	36.20	28.73	23.51	19.71	16.83					
17	1.23	2.38	5.74	11.17	16.49	21.73	32.08	42.28	62.40	82.25	101.90	112.14	88.99	72.84	61.04	52.12	39.65	31.46	25.75	21.58	18.43					
18	1.30	2.52	6.08	11.83	17.46	23.01	33.96	44.77	66.07	87.09	107.89	122.18	96.96	79.36	66.51	56.78	43.20	34.28	28.06	23.51	4.23					
19	1.37	2.66	6.42	12.49	18.43	24.29	35.85	47.26	69.74	91.93	113.89	132.50	105.15	86.06	72.13	61.58	46.85	37.18	30.43	25.50						
20	1.44	2.80	6.76	13.14	19.40	25.57	37.74	49.74	73.41	96.76	119.88	142.81	113.56	92.95	77.89	66.51	50.59	40.15	32.86	24.58						
21	1.51	2.94	7.09	13.80	20.37	26.85	39.63	52.23	77.08	101.60	125.87	149.95	122.18	100.00	83.81	71.56	54.44	43.20	35.36							
22	1.59	3.08	7.43	14.46	21.34	28.13	41.51	54.72	80.75	106.44	131.87	157.09	131.01	107.23	89.87	76.73	58.37	46.32	37.91							
23	1.66	3.22	7.77	15.12	22.31	29.41	43.40	57.20	84.42	111.28	137.86	164.23	140.04	114.62	96.06	82.02	62.39	49.51	38.38							
24	1.73	3.36	8.11	15.77	23.28	30.68	45.29	59.69	88.10	116.12	143.86	171.37	149.28	122.18	102.39	87.43	66.51	52.78	12.24							
25	1.80	3.50	8.45	16.43	24.25	31.96	47.17	62.18	91.77	120.96	149.85	178.51	158.70	129.90	108.86	92.95	70.71	56.11								
26	1.87	3.64	8.78	17.09	25.22	33.24	49.06	64.66	95.44	125.79	155.84	185.65	168.32	137.77	115.46	98.58	74.99	59.51								
28	2.02	3.93	9.46	18.40	27.16	35.80	52.83	69.64	102.78	135.47	167.83	199.94	188.11	153.97	129.03	110.17	83.81	30.35								
30	2.16	4.21	10.14	19.72	29.10	38.36	56.61	74.61	110.12	145.15	179.82	214.22	208.62	170.75	143.10	122.18	92.95									
32	2.31	4.49	10.81	21.03	31.04	40.91	60.38	79.59	117.46	154.82	191.81	228.50	229.83	188.11	157.65	134.60	88.71									
35	2.52	4.91	11.82	23.00	33.95	44.75	66.04	87.05	128.47	169.34	209.79	249.92	262.89	215.17	180.33	153.97	12.54									
40	2.88	5.61	13.51	26.29	38.80	51.14	75.48	99.48	146.83	193.53	239.76	285.62	321.19	262.89	220.32	118.61										
45	3.24	6.31	15.20	29.58	43.65	57.53	84.91	111.92	165.18	217.72	269.73	321.32	372.57	278.98	148.03											*
	TYPE A LUBE			TYPE B LUBRICATION							TYPE C LUBRICATION															

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 140

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	5	10	25	50	53	75	100	150	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2700
11	1.14	2.21	5.32	10.36	10.95	15.28	20.15	29.73	39.19	57.84	76.24	86.80	66.03	52.40	42.89	35.94	30.69	23.35	18.53	15.16	12.71	10.85	9.40	8.25	
12	1.24	2.41	5.81	11.30	11.95	16.67	21.98	32.44	42.75	63.10	83.17	98.90	75.24	59.70	48.87	40.95	34.97	26.60	21.11	17.28	14.48	12.36	10.72	0.72	
13	1.34	2.61	6.29	12.24	12.94	18.06	23.81	35.14	46.32	68.36	90.10	111.52	84.83	67.32	55.10	46.18	39.43	29.99	23.80	19.48	16.33	13.94	12.08		
14	1.45	2.81	6.78	13.18	13.94	19.45	25.64	37.84	49.88	73.61	97.03	120.21	94.81	75.24	61.58	51.61	44.06	33.52	26.60	21.77	18.25	15.58			
15	1.55	3.01	7.26	14.12	14.93	20.84	27.47	40.54	53.44	78.87	103.96	128.79	105.15	83.44	68.29	57.23	48.87	37.17	29.50	24.15	20.24	17.28			
16	1.65	3.21	7.74	15.06	15.93	22.23	29.30	43.25	57.00	84.13	110.89	137.38	115.83	91.92	75.24	63.05	53.83	40.95	32.50	26.60	22.29				
17	1.75	3.41	8.23	16.00	16.93	23.62	31.13	45.95	60.57	89.39	117.82	145.97	126.86	100.67	82.40	69.05	58.96	44.85	35.59	29.13	24.41				
18	1.86	3.61	8.71	16.95	17.92	25.01	32.97	48.65	64.13	94.65	124.75	154.55	138.22	109.68	89.77	75.24	64.24	48.87	38.78	31.74					
19	1.96	3.82	9.20	17.89	18.92	26.40	34.80	51.36	67.69	99.90	131.68	163.14	149.89	118.95	97.36	81.59	69.66	53.00	42.06	34.42					
20	2.06	4.02	9.68	18.83	19.91	27.79	36.63	54.06	71.25	105.16	138.61	171.73	161.88	128.46	105.15	88.12	75.24	57.23	45.42	35.82					
21	2.17	4.22	10.16	19.77	20.91	29.18	38.46	56.76	74.82	110.42	145.54	180.31	174.17	138.22	113.13	94.81	80.95	61.58	48.87						
22	2.27	4.42	10.65	20.71	21.90	30.57	40.29	59.47	78.38	115.68	152.47	188.90	186.76	148.21	121.30	101.66	86.80	66.03	52.40						
23	2.37	4.62	11.13	21.65	22.90	31.96	42.12	62.17	81.94	120.94	159.40	197.48	199.64	158.43	129.67	108.67	92.78	70.58	56.01						
24	2.48	4.82	11.62	22.60	23.90	33.35	43.95	64.87	85.51	126.20	166.33	206.07	212.80	168.87	138.22	115.83	98.90	75.24	37.90						
25	2.58	5.02	12.10	23.54	24.89	34.74	45.79	67.57	89.07	131.45	173.27	214.66	226.24	179.53	146.94	123.15	105.15	79.99							
26	2.68	5.22	12.58	24.48	25.89	36.13	47.62	70.28	92.63	136.71	180.20	223.24	239.95	190.41	155.85	130.61	111.52	84.83							
28	2.89	5.62	13.55	26.36	27.88	38.91	51.28	75.68	99.76	147.23	194.06	240.42	268.16	212.80	174.17	145.97	124.63	94.81							
30	3.10	6.02	14.52	28.24	29.87	41.68	54.94	81.09	106.88	157.74	207.92	257.59	297.40	236.00	193.16	161.88	138.22	18.64							
32	3.30	6.43	15.49	30.13	31.86	44.46	58.61	86.50	114.01	168.26	221.78	274.76	327.63	259.99	212.80	178.34	152.27								
35	3.61	7.03	16.94	32.95	34.85	48.63	64.10	94.60	124.70	184.03	242.57	300.52	358.00	297.40	243.41	203.99	135.27								
40	4.13	8.03	19.36	37.66	39.83	55.58	73.26	108.12	142.51	210.33	277.22	343.45	409.15	363.35	297.40	153.78									*
45	4.65	9.04	21.78	42.37	44.80	62.53	82.42	121.63	160.32	236.62	311.88	386.38	460.29	433.56	221.34										
	TYPE A LUBRICATION				TYPE B LUBRICATION							TYPE C LUBRICATION													

Horsepower Ratings – Single Strand Roller Chain No. 140H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	5	10	25	44	50	75	100	150	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2700
11	1.21	2.36	5.69	9.79	11.07	16.34	21.54	31.79	41.90	61.84	81.50	86.80	66.03	52.40	42.89	35.94	30.69	23.35	18.53	15.16	12.71	10.85	9.40	8.25	
12	1.32	2.58	6.21	10.68	12.08	17.83	23.50	34.68	45.71	67.46	88.91	98.90	75.24	59.70	48.87	40.95	34.97	26.60	21.11	17.28	14.48	12.36	10.72		
13	1.43	2.79	6.73	11.57	13.08	19.31	25.45	37.57	49.52	73.08	96.32	111.52	84.83	67.32	55.10	46.18	39.43	29.99	23.80	19.48	16.33	13.94			
14	1.55	3.01	7.24	12.46	14.09	20.80	27.41	40.46	53.32	78.70	103.73	124.63	94.81	75.24	61.58	51.61	44.06	33.52	26.60	21.77	18.25	15.58			
15	1.66	3.22	7.76	13.35	15.10	22.28	29.37	43.35	57.13	84.32	111.14	137.69	105.15	83.44	68.29	57.23	48.87	37.17	29.50	24.15	20.24				
16	1.77	3.44	8.28	14.24	16.10	23.77	31.33	46.24	60.94	89.94	118.55	146.87	115.83	91.92	75.24	63.05	53.83	40.95	32.50	26.60	22.29				
17	1.88	3.65	8.80	15.13	17.11	25.25	33.29	49.13	64.75	95.56	125.96	156.05	126.86	100.67	82.40	69.05	58.96	44.85	35.59	29.13					
18	1.99	3.86	9.31	16.02	18.12	26.74	35.24	52.02	68.56	101.19	133.37	165.23	138.22	109.68	89.77	75.24	64.24	48.87	38.78	31.74					
19	2.10	4.08	9.83	16.92	19.12	28.22	37.20	54.90	72.37	106.81	140.78	174.41	149.89	118.95	97.36	81.59	69.66	53.00	42.06	33.55					
20	2.21	4.29	10.35	17.81	20.13	29.71	39.16	57.79	76.18	112.43	148.19	183.59	161.88	128.46	105.15	88.12	75.24	57.23	45.42						
21	2.32	4.51	10.87	18.70	21.14	31.20	41.12	60.68	79.99	118.05	155.60	192.77	174.17	138.22	113.13	94.81	80.95	61.58	48.87						
22	2.43	4.72	11.38	19.59	22.14	32.68	43.08	63.57	83.80	123.67	163.01	201.95	186.76	148.21	121.30	101.66	86.80	66.03	52.40						
23	2.54	4.94	11.90	20.48	23.15	34.17	45.03	66.46	87.60	129.29	170.42	211.13	199.64	158.43	129.67	108.67	92.78	70.58	29.48						
24	2.65	5.15	12.42	21.37	24.16	35.65	46.99	69.35	91.41	134.91	177.83	220.31	212.80	168.87	138.22	115.83	98.90	75.24							
25	2.76	5.37	12.94	22.26	25.16	37.14	48.95	72.24	95.22	140.54	185.24	229.49	226.24	179.53	146.94	123.15	105.15	79.99							
26	2.87	5.58	13.45	23.15	26.17	38.62	50.91	75.13	99.03	146.16	192.65	238.67	239.95	190.41	155.85	130.61	111.52	84.83							
28	3.09	6.01	14.49	24.93	28.18	41.59	54.82	80.91	106.65	157.40	207.47	257.03	268.16	212.80	174.17	145.97	124.63	41.32							
30	3.31	6.44	15.52	26.71	30.20	44.56	58.74	86.69	114.27	168.64	222.28	275.39	297.40	236.00	193.16	161.88	138.22								
32	3.53	6.87	16.56	28.49	32.21	47.54	62.66	92.47	121.88	179.89	237.10	293.74	327.63	259.99	212.80	178.34	152.27								
35	3.86	7.51	18.11	31.16	35.23	51.99	68.53	101.14	133.31	196.75	259.33	321.28	374.76	297.40	243.41	203.99	66.13								
40	4.41	8.59	20.70	35.61	40.26	59.42	78.32	115.59	152.36	224.86	296.38	367.18	437.42	363.35	264.26	74.76									*
45	4.97	9.66	23.28	40.06	45.29	66.85	88.11	130.04	171.40	252.96	333.43	413.08	492.09	352.89	132.45										
	TYPE A LUBE				TYPE B LUBRICATION							TYPE C LUBRICATION													

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 160

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	5	10	25	47	50	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400
11	1.65	3.20	7.72	14.16	15.02	22.17	29.23	43.14	56.86	83.91	110.60	96.58	73.47	58.31	47.72	39.99	34.15	29.60	25.98	20.61	16.87	14.14	12.07	10.46	
12	1.80	3.50	8.43	15.45	16.39	24.19	31.88	47.06	62.03	91.54	120.66	110.05	83.72	66.44	54.38	45.57	38.91	33.73	29.60	23.49	19.22	16.11	13.76		
13	1.95	3.79	9.13	16.73	17.76	26.21	34.54	50.98	67.19	99.17	130.71	124.09	94.40	74.91	61.31	51.38	43.87	38.03	33.37	26.48	21.68	18.17			
14	2.10	4.08	9.83	18.02	19.12	28.22	37.20	54.90	72.36	106.80	140.77	138.68	105.50	83.72	68.52	57.43	49.03	42.50	37.30	29.60	24.23	20.30			
15	2.25	4.37	10.53	19.31	20.49	30.24	39.86	58.82	77.53	114.43	150.82	153.80	117.00	92.85	75.99	63.69	54.38	47.13	41.37	32.83	26.87				
16	2.40	4.66	11.23	20.59	21.85	32.25	42.51	62.74	82.70	122.05	160.88	169.43	128.89	102.28	83.72	70.16	59.90	51.92	45.57	36.16	29.60				
17	2.55	4.95	11.94	21.88	23.22	34.27	45.17	66.66	87.87	129.68	170.93	185.56	141.16	112.02	91.69	76.84	65.61	56.87	49.91	39.61	24.21				
18	2.70	5.24	12.64	23.17	24.59	36.29	47.83	70.59	93.04	137.31	180.99	202.17	153.80	122.05	99.90	83.72	71.48	61.96	54.38	43.15					
19	2.85	5.54	13.34	24.45	25.95	38.30	50.48	74.51	98.21	144.94	191.04	219.25	166.79	132.36	108.33	90.79	77.52	67.19	58.97	46.80					
20	3.00	5.83	14.04	25.74	27.32	40.32	53.14	78.43	103.38	152.57	201.10	236.79	180.13	142.95	117.00	98.05	83.72	72.57	63.69	46.79					
21	3.15	6.12	14.74	27.03	28.68	42.33	55.80	82.35	108.54	160.20	211.15	254.77	193.81	153.80	125.88	105.50	90.07	78.08	68.52						
22	3.29	6.41	15.45	28.32	30.05	44.35	58.45	86.27	113.71	167.83	221.21	273.18	207.82	164.91	134.98	113.12	96.58	83.72	73.47						
23	3.44	6.70	16.15	29.60	31.42	46.36	61.11	90.19	118.88	175.45	231.26	286.51	222.15	176.29	144.29	120.92	103.24	89.49	78.54						
24	3.59	6.99	16.85	30.89	32.78	48.38	63.77	94.11	124.05	183.08	241.32	298.97	236.79	187.91	153.80	128.89	110.05	95.39	83.72						
25	3.74	7.28	17.55	32.18	34.15	50.40	66.43	98.04	129.22	190.71	251.37	311.42	251.74	199.77	163.51	137.03	117.00	101.41	32.66						
26	3.89	7.57	18.26	33.46	35.51	52.41	69.08	101.96	134.39	198.34	261.43	323.88	267.00	211.88	173.42	145.33	124.09	107.56							
28	4.19	8.16	19.66	36.04	38.24	56.44	74.40	109.80	144.73	213.60	281.54	348.79	298.39	236.79	193.81	162.42	138.68	36.88							
30	4.49	8.74	21.06	38.61	40.98	60.48	79.71	117.64	155.06	228.85	301.65	373.71	330.92	262.61	214.94	180.13	126.46								
32	4.79	9.32	22.47	41.19	43.71	64.51	85.03	125.49	165.40	244.11	321.76	398.62	364.56	289.30	236.79	198.44	22.58								
35	5.24	10.20	24.57	45.05	47.81	70.55	93.00	137.25	180.91	266.99	351.92	435.99	417.01	330.92	270.86	112.60									
40	5.99	11.65	28.09	51.48	54.63	80.63	106.28	156.86	206.75	305.14	402.19	498.28	509.49	404.31	160.63										*
45	6.74	13.11	31.60	57.92	61.46	90.71	119.57	176.47	232.59	343.28	452.47	560.56	607.95	289.10											
	TYPE A LUBE			TYPE B LUBRICATION							TYPE C LUBRICATION														

Horsepower Ratings – Single Strand Roller Chain No. 160H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	40	50	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200
11	0.73	1.75	3.40	8.19	12.86	15.94	23.52	31.00	45.75	60.31	89.00	117.32	96.58	73.47	58.31	47.72	39.99	34.15	29.60	25.98	20.61	16.87	14.14	12.07	
12	0.79	1.91	3.71	8.94	14.03	17.39	25.66	33.82	49.91	65.79	97.10	127.98	110.05	83.72	66.44	54.38	45.57	38.91	33.73	29.60	23.49	19.22	16.11	12.02	
13	0.86	2.07	4.02	9.68	15.20	18.83	27.80	36.64	54.07	71.27	105.19	138.65	124.09	94.40	74.91	61.31	51.38	43.87	38.03	33.37	26.48	21.68	18.17		
14	0.92	2.22	4.33	10.43	16.37	20.28	29.93	39.46	58.23	76.75	113.28	149.31	138.68	105.50	83.72	68.52	57.43	49.03	42.50	37.30	29.60	24.23	8.08		
15	0.99	2.38	4.64	11.17	17.54	21.73	32.07	42.27	62.39	82.24	121.37	159.98	153.80	117.00	92.85	75.99	63.69	54.38	47.13	41.37	32.83	26.87			
16	1.05	2.54	4.94	11.92	18.71	23.18	34.21	45.09	66.55	87.72	129.46	170.64	169.43	128.89	102.28	83.72	70.16	59.90	51.92	45.57	36.16	29.60			
17	1.12	2.70	5.25	12.66	19.88	24.63	36.35	47.91	70.71	93.20	137.55	181.31	185.56	141.16	112.02	91.69	76.84	65.61	56.87	49.91	39.61				
18	1.19	2.86	5.56	13.41	21.05	26.08	38.49	50.73	74.87	98.68	145.64	191.97	202.17	153.80	122.05	99.90	83.72	71.48	61.96	54.38	43.15				
19	1.25	3.02	5.87	14.15	22.22	27.53	40.63	53.55	79.03	104.17	153.74	202.64	219.25	166.79	132.36	108.33	90.79	77.52	67.19	58.97	43.82				
20	1.32	3.18	6.18	14.89	23.39	28.98	42.76	56.37	83.19	109.65	161.83	213.30	236.79	180.13	142.95	117.00	98.05	83.72	72.57	63.69					
21	1.38	3.34	6.49	15.64	24.56	30.42	44.90	59.18	87.35	115.13	169.92	223.97	254.77	193.81	153.80	125.88	105.50	90.07	78.08	68.52					
22	1.45	3.49	6.80	16.38	25.73	31.87	47.04	62.00	91.51	120.61	178.01	234.63	273.18	207.82	164.91	134.98	113.12	96.58	83.72	73.47					
23	1.52	3.65	7.11	17.13	26.90	33.32	49.18	64.82	95.67	126.10	186.10	245.30	292.02	222.15	176.29	144.29	120.92	103.24	89.49	68.24					
24	1.58	3.81	7.42	17.87	28.07	34.77	51.32	67.64	99.83	131.58	194.19	255.96	311.27	236.79	187.91	153.80	128.89	110.05	95.39	21.76					
25	1.65	3.97	7.73	18.62	29.23	36.22	53.45	70.46	103.99	137.06	202.28	266.63	330.32	251.74	199.77	163.51	137.03	117.00	101.41						
26	1.71	4.13	8.03	19.36	30.40	37.67	55.59	73.28	108.14	142.54	210.37	277.29	343.53	267.00	211.88	173.42	145.33	124.09	67.09						
28	1.85	4.45	8.65	20.85	32.74	40.57	59.87	78.91	116.46	153.51	226.56	298.62	369.96	298.39	236.79	193.81	162.42	135.17							
30	1.98	4.77	9.27	22.34	35.08	43.46	64.15	84.55	124.78	164.47	242.74	319.95	396.38	330.92	262.61	214.94	180.13	49.06							
32	2.11	5.08	9.89	23.83	37.42	46.36	68.42	90.18	133.10	175.44	258.92	341.28	422.81	364.56	289.30	236.79	157.70								
35	2.31	5.56	10.82	26.07	40.93	50.71	74.84	98.64	145.58	191.88	283.20	373.28	462.45	417.01	330.92	270.86	22.30								
40	2.64	6.35	12.36	29.79	46.78	57.95	85.53	112.73	166.38	219.30	323.65	426.60	528.51	509.49	345.15	57.42									*
45	2.97	7.15	13.91	33.51	52.62	65.19	96.22	126.82	187.17	246.71	364.11	479.93	594.58	495.96	173.00										
	TYPE A LUBRICATION				TYPE B LUBRICATION							TYPE C LUBRICATION													

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 180

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	43	50	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	4500
11	0.94	2.27	4.43	10.66	17.95	20.75	30.62	40.36	59.56	78.51	115.87	148.32	106.13	80.73	64.07	52.44	43.95	37.52	32.52	28.54	22.65	18.54	15.54		
12	1.03	2.48	4.83	11.63	19.58	22.63	33.40	44.03	64.98	85.64	126.40	166.61	120.92	91.99	73.00	59.75	50.07	42.75	37.06	32.52	25.81	21.12	17.70		
13	1.12	2.69	5.23	12.60	21.21	24.52	36.19	47.70	70.39	92.78	136.93	180.49	136.35	103.72	82.31	67.37	56.46	48.21	41.79	36.67	29.10	23.82			
14	1.20	2.90	5.63	13.57	22.84	26.40	38.97	51.36	75.81	99.92	147.47	194.37	152.38	115.92	91.99	75.29	63.10	53.87	46.70	40.98	32.52	26.62			
15	1.29	3.10	6.03	14.54	24.48	28.29	41.75	55.03	81.22	107.06	158.00	208.26	169.00	128.56	102.02	83.50	69.98	59.75	51.79	45.45	36.07				
16	1.37	3.31	6.44	15.51	26.11	30.18	44.54	58.70	86.64	114.19	168.53	222.14	186.17	141.63	112.39	91.99	77.09	65.82	57.05	50.07	39.74				
17	1.46	3.52	6.84	16.48	27.74	32.06	47.32	62.37	92.05	121.33	179.07	236.02	203.90	155.11	123.09	100.75	84.43	72.09	62.49	54.84	43.52				
18	1.54	3.72	7.24	17.45	29.37	33.95	50.10	66.04	97.47	128.47	189.60	249.91	222.15	169.00	134.11	109.77	91.99	78.54	68.08	59.75					
19	1.63	3.93	7.64	18.42	31.00	35.83	52.89	69.71	102.88	135.60	200.13	263.79	240.92	183.27	145.44	119.04	99.76	85.18	73.83	64.80					
20	1.72	4.14	8.05	19.39	32.64	37.72	55.67	73.38	108.30	142.74	210.67	277.68	260.19	197.93	157.07	128.56	107.74	91.99	79.74	69.98					
21	1.80	4.34	8.45	20.36	34.27	39.61	58.45	77.05	113.71	149.88	221.20	291.56	279.94	212.96	169.00	138.32	115.92	98.97	85.79	75.29					
22	1.89	4.55	8.85	21.33	35.90	41.49	61.24	80.71	119.12	157.02	231.73	305.44	300.17	228.35	181.21	148.32	124.30	106.13	91.99						
23	1.97	4.76	9.25	22.30	37.53	43.38	64.02	84.38	124.54	164.15	242.27	319.33	320.87	244.10	193.70	158.54	132.87	113.45	98.33						
24	2.06	4.96	9.65	23.27	39.16	45.26	66.80	88.05	129.95	171.29	252.80	333.21	342.02	260.19	206.47	169.00	141.63	120.92	40.34						
25	2.15	5.17	10.06	24.24	40.79	47.15	69.59	91.72	135.37	178.43	263.33	347.10	363.62	276.62	219.51	179.67	150.57	128.56							
26	2.23	5.38	10.46	25.21	42.43	49.04	72.37	95.39	140.78	185.56	273.87	360.98	385.66	293.38	232.81	190.55	159.69	122.43							
28	2.40	5.79	11.26	27.15	45.69	52.81	77.94	102.73	151.61	199.84	294.93	388.75	431.00	327.87	260.19	212.96	178.47								
30	2.57	6.20	12.07	29.09	48.95	56.58	83.50	110.07	162.44	214.11	316.00	416.51	477.99	363.62	288.56	236.18	128.92								
32	2.75	6.62	12.87	31.02	52.22	60.35	89.07	117.40	173.27	228.39	337.07	444.28	526.58	400.58	317.89	260.19									
35	3.00	7.24	14.08	33.93	57.11	66.01	97.42	128.41	189.52	249.80	368.67	485.93	602.34	458.22	363.62	142.51									
40	3.43	8.27	16.09	38.78	65.27	75.44	111.34	146.75	216.59	285.48	421.34	555.35	688.02	559.83	254.20										*
45	3.86	9.31	18.10	43.63	73.43	84.87	125.26	165.10	243.66	321.17	474.00	624.77	774.03	480.00											
	TYPE A LUBRICATION				TYPE B LUBRICATION							TYPE C LUBRICATION													

Horsepower Ratings – Single Strand Roller Chain No. 180H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	37	50	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	4500
11	0.99	2.40	4.66	11.24	16.38	21.87	32.27	42.54	62.78	82.75	122.13	148.32	106.13	80.73	64.07	52.44	43.95	37.52	32.52	28.54	22.65	18.54	15.54		
12	1.09	2.62	5.09	12.26	17.87	23.86	35.21	46.41	68.49	90.28	133.24	169.00	120.92	91.99	73.00	59.75	50.07	42.75	37.06	32.52	25.81	21.12	2.40		
13	1.18	2.83	5.51	13.29	19.36	25.84	38.14	50.28	74.20	97.80	144.34	190.25	136.35	103.72	82.31	67.37	56.46	48.21	41.79	36.67	29.10	23.82			
14	1.27	3.05	5.94	14.31	20.85	27.83	41.08	54.14	79.91	105.32	155.44	204.89	152.38	115.92	91.99	75.29	63.10	53.87	46.70	40.98	32.52	10.23			
15	1.36	3.27	6.36	15.33	22.33	29.82	44.01	58.01	85.61	112.85	166.55	219.52	169.00	128.56	102.02	83.50	69.98	59.75	51.79	45.45	36.07				
16	1.45	3.49	6.78	16.35	23.82	31.81	46.94	61.88	91.32	120.37	177.65	234.16	186.17	141.63	112.39	91.99	77.09	65.82	57.05	50.07	39.74				
17	1.54	3.71	7.21	17.37	25.31	33.80	49.88	65.74	97.03	127.89	188.75	248.79	203.90	155.11	123.09	100.75	84.43	72.09	62.49	54.84					
18	1.63	3.92	7.63	18.40	26.80	35.78	52.81	69.61	102.74	135.42	199.86	263.43	222.15	169.00	134.11	109.77	91.99	78.54	68.08	59.75					
19	1.72	4.14	8.06	19.42	28.29	37.77	55.75	73.48	108.45	142.94	210.96	278.06	240.92	183.27	145.44	119.04	99.76	85.18	73.83	64.80					
20	1.81	4.36	8.48	20.44	29.78	39.76	58.68	77.35	114.15	150.46	222.06	292.70	260.19	197.93	157.07	128.56	107.74	91.99	79.74	55.31					
21	1.90	4.58	8.90	21.46	31.27	41.75	61.62	81.21	119.86	157.99	233.17	307.33	279.94	212.96	169.00	138.32	115.92	98.97	85.79						
22	1.99	4.80	9.33	22.48	32.76	43.74	64.55	85.08	125.57	165.51	244.27	321.97	300.17	228.35	181.21	148.32	124.30	106.13	87.35						
23	2.08	5.01	9.75	23.50	34.25	45.72	67.48	88.95	131.28	173.03	255.37	336.60	320.87	244.10	193.70	158.54	132.87	113.45	29.32						
24	2.17	5.23	10.18	24.53	35.74	47.71	70.42	92.82	136.98	180.56	266.48	351.24	342.02	260.19	206.47	169.00	141.63	120.92							
25	2.26	5.45	10.60	25.55	37.22	49.70	73.35	96.68	142.69	188.08	277.58	365.87	363.62	276.62	219.51	179.67	150.57	96.16							
26	2.35	5.67	11.03	26.57	38.71	51.69	76.29	100.55	148.40	195.60	288.68	380.51	385.66	293.38	232.81	190.55	159.69	37.53							
28	2.53	6.10	11.87	28.61	41.69	55.66	82.15	108.28	159.81	210.65	310.89	409.77	431.00	327.87	260.19	212.96	146.32								
30	2.71	6.54	12.72	30.66	44.67	59.64	88.02	116.02	171.23	225.69	333.09	439.04	477.99	363.62	288.56	236.18	30.96								
32	2.89	6.98	13.57	32.70	47.65	63.62	93.89	123.75	182.64	240.74	355.30	468.31	526.58	400.58	317.89	199.60									
35	3.17	7.63	14.84	35.77	52.11	69.58	102.69	135.36	199.77	263.31	388.61	512.22	602.34	458.22	363.62	28.22									
40	3.62	8.72	16.96	40.88	59.56	79.52	117.36	154.69	228.31	300.93	444.13	585.39	725.24	559.83	123.60										*
45	4.07	9.81	19.08	45.99	67.00	89.46	132.03	174.03	256.84	338.54	499.64	658.57	750.00	333.00											
	TYPE A LUBRICATION				TYPE B LUBRICATION							TYPE C LUBRICATION													

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 200

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	40	50	75	100	150	200	250	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	4500
11	1.25	3.02	5.88	14.16	22.23	27.54	40.65	53.58	79.08	104.24	129.14	153.84	161.36	115.46	87.83	69.70	57.05	47.81	40.82	35.38	31.05	24.64	20.17		
12	1.37	3.29	6.41	15.45	24.25	30.05	44.35	58.45	86.27	113.71	140.88	167.82	183.86	131.56	100.08	79.42	65.00	54.48	46.51	40.32	35.38	28.08	22.98		
13	1.48	3.57	6.94	16.73	26.28	32.55	48.04	63.33	93.46	123.19	152.62	181.81	207.31	148.34	112.85	89.55	73.30	61.43	52.45	45.46	39.90	31.66			
14	1.59	3.84	7.48	18.02	28.30	35.06	51.74	68.20	100.65	132.66	164.36	195.79	231.69	165.78	126.11	100.08	81.91	68.65	58.61	50.80	44.59	35.38			
15	1.71	4.12	8.01	19.31	30.32	37.56	55.43	73.07	107.84	142.14	176.09	209.78	256.95	183.86	139.87	110.99	90.85	76.13	65.00	56.34	49.45	37.46			
16	1.82	4.39	8.55	20.60	32.34	40.06	59.13	77.94	115.03	151.61	187.83	223.76	283.07	202.55	154.08	122.27	100.08	83.87	71.61	62.07	54.48				
17	1.94	4.67	9.08	21.88	34.36	42.57	62.83	82.81	122.22	161.09	199.57	237.75	310.02	221.83	168.75	133.91	109.61	91.86	78.43	67.98	59.66				
18	2.05	4.94	9.61	23.17	36.38	45.07	66.52	87.68	129.41	170.57	211.31	251.73	331.81	241.69	183.86	145.90	119.42	100.08	85.45	74.07	65.00				
19	2.16	5.22	10.15	24.46	38.40	47.58	70.22	92.55	136.59	180.04	223.05	265.72	350.24	262.11	199.39	158.23	129.51	108.53	92.67	80.32	2.22				
20	2.28	5.49	10.68	25.74	40.42	50.08	73.91	97.42	143.78	189.52	234.79	279.70	368.67	283.07	215.34	170.88	139.87	117.21	100.08	86.75					
21	2.39	5.77	11.22	27.03	42.45	52.59	77.61	102.29	150.97	198.99	246.53	293.69	387.11	304.56	231.69	183.86	150.49	126.11	107.68	32.68					
22	2.51	6.04	11.75	28.32	44.47	55.09	81.30	107.17	158.16	208.47	258.27	307.68	405.54	326.57	248.43	197.15	161.36	135.23	115.46						
23	2.62	6.31	12.28	29.61	46.49	57.59	85.00	112.04	165.35	217.95	270.01	321.66	423.97	349.09	265.56	210.74	172.49	144.55	104.48						
24	2.73	6.59	12.82	30.89	48.51	60.10	88.70	116.91	172.54	227.42	281.75	335.65	442.41	372.10	283.07	224.63	183.86	154.08	21.71						
25	2.85	6.86	13.35	32.18	50.53	62.60	92.39	121.78	179.73	236.90	293.49	349.63	460.84	395.60	300.94	238.82	195.47	163.81							
26	2.96	7.14	13.89	33.47	52.55	65.11	96.09	126.65	186.92	246.37	305.23	363.62	479.27	419.57	319.18	253.29	207.31	151.14							*
	TYPE A LUBRICATION				TYPE B LUBRICATION								TYPE C LUBRICATION												

Horsepower Ratings – Single Strand Roller Chain No. 200H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	33	50	75	100	150	200	250	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	4500
11	1.37	3.31	6.44	15.51	20.25	30.17	44.53	58.70	86.63	114.18	141.46	168.52	161.36	115.46	87.83	69.70	57.05	47.81	40.82	35.38	31.05	24.64	20.17		
12	1.50	3.61	7.02	16.92	22.09	32.92	48.58	64.03	94.51	124.57	154.32	183.84	183.86	131.56	100.08	79.42	65.00	54.48	46.51	40.32	35.38	28.08	18.78		
13	1.62	3.91	7.61	18.33	23.93	35.66	52.63	69.37	102.38	134.95	167.18	199.16	207.31	148.34	112.85	89.55	73.30	61.43	52.45	45.46	39.90	31.66			
14	1.75	4.21	8.19	19.74	25.77	38.40	56.68	74.71	110.26	145.33	180.04	214.48	231.69	165.78	126.11	100.08	81.91	68.65	58.61	50.80	44.59	35.38			
15	1.87	4.51	8.78	21.15	27.61	41.15	60.73	80.04	118.13	155.71	192.90	229.80	256.95	183.86	139.87	110.99	90.85	76.13	65.00	56.34	49.45				
16	2.00	4.81	9.36	22.56	29.45	43.89	64.77	85.38	126.01	166.09	205.76	245.12	283.07	202.55	154.08	122.27	100.08	83.87	71.61	62.07	54.48				
17	2.12	5.11	9.95	23.97	31.29	46.63	68.82	90.71	133.88	176.47	218.62	260.44	310.02	221.83	168.75	133.91	109.61	91.86	78.43	67.98	59.66				
18	2.25	5.41	10.53	25.38	33.13	49.38	72.87	96.05	141.76	186.85	231.48	275.76	337.77	241.69	183.86	145.90	119.42	100.08	85.45	74.07	11.75				
19	2.37	5.71	11.12	26.79	34.97	52.12	76.92	101.39	149.63	197.23	244.35	291.08	366.30	262.11	199.39	158.23	129.51	108.53	92.67	80.32					
20	2.50	6.02	11.70	28.20	36.82	54.86	80.97	106.72	157.51	207.61	257.21	306.40	395.60	283.07	215.34	170.88	139.87	117.21	100.08	31.07					
21	2.62	6.32	12.29	29.61	38.66	57.60	85.02	112.06	165.38	217.99	270.07	321.72	425.64	304.56	231.69	183.86	150.49	126.11	107.68						
22	2.75	6.62	12.87	31.02	40.50	60.35	89.07	117.40	173.26	228.37	282.93	337.04	456.40	326.57	248.43	197.15	161.36	135.23	86.70						
23	2.87	6.92	13.46	32.43	42.34	63.09	93.11	122.73	181.14	238.75	295.79	352.36	464.44	349.09	265.56	210.74	172.49	144.55	11.76						
24	3.00	7.22	14.04	33.84	44.18	65.83	97.16	128.07	189.01	249.13	308.65	367.68	484.64	372.10	283.07	224.63	183.86	154.08							
25	3.12	7.52	14.63	35.25	46.02	68.58	101.21	133.40	196.89	259.51	321.51	383.00	504.83	395.60	300.94	238.82	195.47	118.72							
26	3.24	7.82	15.21	36.66	47.86	71.32	105.26	138.74	204.76	269.89	334.37	398.32	525.02	419.57	319.18	253.29	207.31	46.33							*
	TYPE A LUBRICATION				TYPE B LUBRICATION								TYPE C LUBRICATION												

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Standard and Heavy Series Power Transmission Roller Chains

Horsepower Ratings – Single Strand Roller Chain No. 240

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	36	50	75	100	150	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
11	2.02	4.86	9.46	22.81	32.36	44.36	65.47	86.30	127.37	167.88	207.99	247.77	186.70	133.59	101.63	80.65	66.01	55.32	47.23	40.94	35.93	31.87	28.51		
12	2.20	5.31	10.32	24.88	35.31	48.40	71.43	94.15	138.95	183.14	226.89	270.30	212.73	152.22	115.80	91.89	75.21	63.03	53.82	46.65	40.94	36.31	2.11		
13	2.39	5.75	11.18	26.95	38.25	52.43	77.38	101.99	150.53	198.41	245.80	292.82	239.87	171.64	130.57	103.61	84.81	71.07	60.68	52.60	46.16	38.13			
14	2.57	6.19	12.04	29.02	41.19	56.46	83.33	109.84	162.11	213.67	264.71	315.34	268.07	191.82	145.92	115.80	94.78	79.43	67.82	58.78	51.59				
15	2.75	6.63	12.90	31.10	44.13	60.50	89.28	117.68	173.68	228.93	283.62	337.87	297.30	212.73	161.83	128.42	105.11	88.09	75.21	65.19					
16	2.94	7.08	13.76	33.17	47.08	64.53	95.24	125.53	185.26	244.19	302.53	360.39	327.52	234.35	178.28	141.47	115.80	97.04	82.86	71.82					
17	3.12	7.52	14.62	35.24	50.02	68.56	101.19	133.37	196.84	259.45	321.43	382.92	358.70	256.66	195.25	154.94	126.82	106.28	90.74						
18	3.30	7.96	15.48	37.32	52.96	72.59	107.14	141.22	208.42	274.71	340.34	405.44	390.81	279.64	212.73	168.81	138.17	115.80	98.87						
19	3.49	8.40	16.34	39.39	55.90	76.63	113.09	149.06	220.00	289.98	359.25	427.97	423.82	303.26	230.70	183.08	149.84	125.58	3.20						
20	3.67	8.84	17.20	41.46	58.84	80.66	119.04	156.91	231.58	305.24	378.16	450.49	457.72	327.52	249.15	197.72	161.83	135.62							
21	3.85	9.29	18.07	43.54	61.79	84.69	125.00	164.76	243.16	320.50	397.07	473.02	492.48	352.39	268.07	212.73	174.12	109.86							
22	4.04	9.73	18.93	45.61	64.73	88.73	130.95	172.60	254.74	335.76	415.97	495.54	528.07	377.85	287.44	228.10	186.70								
23	4.22	10.17	19.79	47.68	67.67	92.76	136.90	180.45	266.32	351.02	434.88	518.07	564.48	403.91	307.26	243.83	199.57								
24	4.40	10.61	20.65	49.76	70.61	96.79	142.85	188.29	277.89	366.29	453.79	540.59	601.69	430.53	327.52	259.91	188.30								
25	4.59	11.06	21.51	51.83	73.55	100.83	148.81	196.14	289.47	381.55	472.70	563.12	639.68	457.72	348.20	276.32	73.47								
26	4.77	11.50	22.37	53.90	76.50	104.86	154.76	203.98	301.05	396.81	491.61	585.64	678.45	485.46	369.30	293.06									*
	TYPE A LUBRICATION				TYPE B LUBRICATION								TYPE C LUBRICATION												

Horsepower Ratings – Single Strand Roller Chain No. 240H

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	27	50	75	100	150	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
11	2.33	5.62	10.93	26.33	28.35	51.23	75.60	99.65	147.07	193.85	240.16	286.10	186.70	133.59	101.63	80.65	66.01	55.32	47.23	40.94	35.93	31.87	28.51		
12	2.54	6.13	11.92	28.73	30.93	55.88	82.48	108.71	160.44	211.48	262.00	312.11	212.73	152.22	115.80	91.89	75.21	63.03	53.82	46.65	40.94	36.31			
13	2.75	6.64	12.91	31.12	33.51	60.54	89.35	117.77	173.81	229.10	283.83	338.12	239.87	171.64	130.57	103.61	84.81	71.07	60.68	52.60	46.16				
14	2.97	7.15	13.91	33.52	36.09	65.20	96.22	126.83	187.18	246.72	305.66	364.13	268.07	191.82	145.92	115.80	94.78	79.43	67.82	58.78	18.18				
15	3.18	7.66	14.90	35.91	38.66	69.85	103.10	135.89	200.55	264.35	327.50	390.14	297.30	212.73	161.83	128.42	105.11	88.09	75.21	65.19					
16	3.39	8.17	15.89	38.30	41.24	74.51	109.97	144.95	213.92	281.97	349.33	416.15	327.52	234.35	178.28	141.47	115.80	97.04	82.86						
17	3.60	8.68	16.89	40.70	43.82	79.17	116.84	154.01	227.29	299.59	371.16	442.16	358.70	256.66	195.25	154.94	126.82	106.28	90.74						
18	3.81	9.19	17.88	43.09	46.40	83.83	123.72	163.07	240.66	317.21	392.99	468.17	390.81	279.64	212.73	168.81	138.17	115.80	16.92						
19	4.03	9.70	18.87	45.48	48.97	88.48	130.59	172.13	254.03	334.84	414.83	494.18	423.82	303.26	230.70	183.08	149.84	125.58							
20	4.24	10.21	19.87	47.88	51.55	93.14	137.46	181.18	267.40	352.46	436.66	520.19	457.72	327.52	249.15	197.72	161.83	98.33							
21	4.45	10.72	20.86	50.27	54.13	97.80	144.33	190.24	280.78	370.08	458.49	546.19	492.48	352.39	268.07	212.73	174.12								
22	4.66	11.23	21.85	52.67	56.71	102.45	151.21	199.30	294.15	387.71	480.33	572.20	528.07	377.85	287.44	228.10	186.70								
23	4.87	11.74	22.85	55.06	59.28	107.11	158.08	208.36	307.52	405.33	502.16	598.21	564.48	403.91	307.26	243.83	153.53								
24	5.09	12.26	23.84	57.45	61.86	111.77	164.95	217.42	320.89	422.95	523.99	624.22	601.69	430.53	327.52	259.91	48.97								
25	5.30	12.77	24.83	59.85	64.44	116.42	171.83	226.48	334.26	440.58	545.83	650.23	639.68	457.72	348.20	276.32									
26	5.51	13.28	25.83	62.24	67.02	121.08	178.70	235.54	347.63	458.20	567.66	676.24	678.45	485.46	369.30	293.06									*
	TYPE A LUBRICATION				TYPE B LUBRICATION							TYPE C LUBRICATION													

TYPE A LUBRICATION – MANUAL OR DRIP
TYPE B LUBRICATION – OIL BATH OR SLINGER
TYPE C LUBRICATION – OIL PUMP

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

* For optimum results, consult Diamond Chain for drives operating in the shaded area.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Double-Pitch Power Transmission Roller Chains

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Horsepower Ratings – Double-Pitch Chain No. 2040

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																			
	25	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300
6	0.10	0.17																		
7	0.12	0.21	0.36	0.47	0.55															
8	0.14	0.26	0.45	0.64	0.73	0.82	0.90													
9	0.16	0.30	0.53	0.72	0.89	1.03	1.14	1.24	1.32											
10	0.18	0.34	0.61	0.84	1.04	1.22	1.37	1.50	1.62	1.71	1.79	1.86								
11	0.20	0.38	0.69	0.96	1.19	1.40	1.59	1.76	1.90	2.03	2.14	2.24	2.32							
12	0.22	0.42	0.77	1.07	1.34	1.58	1.80	2.00	2.17	2.33	2.47	2.60	2.70	2.88						
13	0.24	0.46	0.84	1.18	1.48	1.76	2.01	2.23	2.44	2.62	2.79	2.94	3.07	3.30	3.47					
14	0.26	0.50	0.92	1.29	1.62	1.93	2.20	2.46	2.69	2.90	3.09	3.27	3.43	3.70	3.91	4.07				
15	0.28	0.54	0.99	1.39	1.76	2.09	2.40	2.68	2.94	3.17	3.39	3.59	3.77	4.08	4.33	4.52	4.66			
16	0.30	0.57	1.06	1.50	1.89	2.25	2.59	2.89	3.17	3.43	3.67	3.89	4.09	4.44	4.73	4.96	5.13			
17	0.32	0.61	1.13	1.60	2.02	2.41	2.77	3.10	3.41	3.69	3.95	4.19	4.41	4.79	5.11	5.37	5.57	5.72		
18	0.34	0.65	1.20	1.70	2.15	2.57	2.95	3.30	3.63	3.93	4.21	4.47	4.71	5.13	5.48	5.77	5.99	6.16		
19	0.36	0.68	1.27	1.80	2.28	2.72	3.12	3.50	3.85	4.17	4.47	4.75	5.01	5.46	5.83	6.14	6.39	6.58	6.71	
20	0.38	0.72	1.34	1.89	2.40	2.87	3.30	3.70	4.07	4.41	4.73	5.02	5.29	5.77	6.17	6.51	6.77	6.97	7.11	
21	0.40	0.76	1.41	1.99	2.52	3.01	3.47	3.89	4.28	4.64	4.97	5.28	5.57	6.07	6.50	6.85	7.13	7.35	7.50	
22	0.42	0.79	1.47	2.09	2.64	3.16	3.63	4.07	4.48	4.86	5.21	5.53	5.83	6.37	6.81	7.18	7.48	7.70	7.87	
23	0.44	0.83	1.54	2.18	2.76	3.30	3.80	4.26	4.68	5.08	5.44	5.78	6.09	6.60	7.12	7.50	7.81	8.04	8.21	8.31
24	0.46	0.87	1.61	2.27	2.88	3.44	3.96	4.43	4.88	5.29	5.67	6.02	6.35	6.92	7.41	7.80	8.12	8.36	8.53	8.64
25	0.48	0.90	1.67	2.36	3.00	3.58	4.11	4.61	5.07	5.50	5.89	6.26	6.59	7.19	7.69	8.10	8.42	8.67	8.84	8.94
30	0.57	1.08	1.99	2.81	3.56	4.24	4.87	5.45	5.98	6.47	6.93	7.34	7.80	8.39	8.94	9.39	9.72	9.96	10.11	10.10
35	0.66	1.25	2.30	3.24	4.09	4.86	5.57	6.21	6.81	7.35	7.85	8.30	8.72	9.43	9.99	10.43	10.73	10.93	11.01	
40	0.75	1.41	2.60	3.65	4.59	5.44	6.22	6.93	7.57	8.15	8.68	9.16	9.59	10.31	10.86	11.20	11.50	11.61		
45	0.84	1.58	2.89	4.04	5.07	6.00	6.83	7.59	8.27	8.88	9.43	9.92	10.30	11.00	11.56	11.88	12.03			
50	0.93	1.74	3.17	4.42	5.53	6.52	7.41	8.20	8.91	9.54	10.10	10.59	11.01	11.67	12.11	12.33				
55	1.01	1.90	3.44	4.79	5.97	7.02	7.95	8.77	9.50	10.20	10.70	11.17	11.58	12.18						
60	1.10	2.05	3.71	5.14	6.39	7.49	8.46	9.31	10.00	10.68	11.23	11.69	12.06							
	TYPE A LUBRICATION			TYPE B LUBRICATION				TYPE C LUBRICATION												

TYPE A LUBRICATION – MANUAL DRIP (4-10 DROPS PER MINUTE) OR OIL BATH
TYPE B LUBRICATION – RAPID DRIP (20 DROPS PER MINUTE MINIMUM), OIL BATH OR OIL SLINGER
TYPE C LUBRICATION – CONTINUOUS WITH OIL SLINGER OR OIL STREAM

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

TECHNICAL ENGINEERING

Horsepower Rating Tables

Double-Pitch Power Transmission Roller Chains

Horsepower Ratings – Double-Pitch Chain No. 2050

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																			
	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950
6	0.18	0.31																		
7	0.22	0.40	0.66																	
8	0.27	0.48	0.83	1.09	1.29															
9	0.31	0.56	0.99	1.33	1.60	1.83	2.00													
10	0.35	0.64	1.14	1.56	1.90	2.20	2.44	2.64	2.80											
11	0.39	0.72	1.29	1.78	2.19	2.55	2.86	3.12	3.34	3.53										
12	0.43	0.80	1.44	1.99	2.47	2.89	3.26	3.58	3.86	4.10	4.30									
13	0.47	0.87	1.59	2.20	2.75	3.23	3.65	4.03	4.36	4.65	4.90	5.11	5.29							
14	0.51	0.95	1.73	2.41	3.01	3.55	4.03	4.45	4.83	5.17	5.47	5.73	5.95	6.09						
15	0.54	1.02	1.87	2.61	3.27	3.86	4.39	4.87	5.29	5.68	6.02	6.32	6.58	6.75	6.94					
16	0.58	1.09	2.01	2.81	3.52	4.16	4.74	5.27	5.74	6.16	6.54	6.88	7.18	7.39	7.61	779				
17	0.62	1.17	2.14	3.00	3.77	4.46	5.09	5.65	6.17	6.63	7.05	7.42	7.75	7.99	8.24	8.46	8.62			
18	0.66	1.24	2.27	3.19	4.01	4.75	5.42	6.03	6.58	7.09	7.54	7.94	8.31	8.56	8.84	9.08	9.28			
19	0.69	1.31	2.41	3.38	4.25	5.03	5.75	6.40	6.99	7.52	8.01	8.45	8.84	9.12	9.42	9.68	9.90	10.08		
20	0.73	1.38	2.54	3.56	4.48	5.31	6.07	6.76	7.38	7.95	8.47	8.93	9.35	9.65	9.97	10.25	10.49	10.69		
21	0.77	1.45	2.67	3.74	4.71	5.59	6.38	7.11	7.77	8.37	8.91	9.40	9.84	10.16	10.50	10.80	11.06	11.28	11.44	
22	0.81	1.52	2.79	3.92	4.93	5.85	6.69	7.45	8.14	8.77	9.34	9.85	10.31	10.65	11.01	11.32	11.59	11.83	12.00	
23	0.84	1.59	2.92	4.10	5.16	6.12	6.99	7.78	8.50	9.16	9.75	10.29	10.77	11.12	11.50	11.82	12.10	12.35	12.53	
24	0.88	1.66	3.04	4.27	5.37	6.37	7.28	8.11	8.86	9.54	10.16	10.71	11.21	11.57	11.97	12.30	12.59	12.85	13.03	
25	0.91	1.72	3.17	4.44	5.59	6.63	7.57	8.43	9.20	9.91	10.55	11.12	11.64	12.01	12.42	12.75	13.05	13.33	13.50	13.57
30	1.09	2.06	3.77	5.28	6.62	7.84	8.93	9.93	10.82	11.63	12.35	13.00	13.57	13.96	14.39	14.76	15.06	15.30	15.48	
35	1.27	2.38	4.35	6.07	7.59	8.96	10.18	11.28	12.27	13.14	13.92	14.60	15.20	15.58	16.00	16.35	16.62	16.82	16.94	
40	1.44	2.70	4.90	6.82	8.51	10.01	11.34	12.52	13.56	14.48	15.29	15.98	16.56	16.92	17.29	17.58	17.78			
45	1.61	3.00	5.44	7.54	9.37	10.98	12.40	13.65	14.73	15.67	16.47	17.15	17.70	17.96	18.29	18.49				
50	1.78	3.31	5.96	8.23	10.19	11.90	13.39	14.67	15.78	16.71	17.49	18.08	18.62	18.80						
55	1.95	3.60	6.45	8.90	10.95	12.75	14.30	15.60	16.67	17.57	18.37	18.91								
60	2.11	3.90	6.95	9.52	11.70	13.55	15.12	16.45	17.54											
	TYPE A LUBE		TYPE B LUBRICATION				TYPE C LUBRICATION													

TYPE A LUBRICATION – MANUAL DRIP (4-10 DROPS PER MINUTE) OR OIL BATH
TYPE B LUBRICATION – RAPID DRIP (20 DROPS PER MINUTE MINIMUM), OIL BATH OR OIL SLINGER
TYPE C LUBRICATION – CONTINUOUS WITH OIL SLINGER OR OIL STREAM

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Double-Pitch Power Transmission Roller Chains

Horsepower Ratings – Double-Pitch Chain No. 2060

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																			
	25	50	75	100	125	150	175	200	225	250	275	300	350	400	450	500	550	600	650	700
6	0.30																			
7	0.38	0.66	0.88	1.06																
8	0.45	0.80	1.10	1.35	1.57	1.75	1.90													
9	0.52	0.94	1.31	1.63	1.91	2.16	2.38	2.57	2.74											
10	0.59	1.08	1.51	1.90	2.24	2.55	2.83	3.09	3.31	3.51	3.69	3.85								
11	0.66	1.22	1.71	2.16	2.56	2.93	3.27	3.58	3.86	4.12	4.35	4.57	4.93							
12	0.73	1.35	1.90	2.41	2.87	3.30	3.69	4.05	4.39	4.70	4.98	5.25	5.71	6.09						
13	0.79	1.48	2.09	2.65	3.17	3.65	4.10	4.51	4.90	5.26	5.59	5.90	6.45	6.92	7.25					
14	0.86	1.60	2.28	2.90	3.47	4.00	4.50	4.96	5.39	5.80	6.18	6.53	7.16	7.71	8.10	8.51				
15	0.93	1.73	2.46	3.13	3.76	4.34	4.88	5.39	5.87	6.32	6.74	7.14	7.85	8.48	8.92	9.40				
16	0.99	1.85	2.64	3.37	4.04	4.67	5.26	5.82	6.34	6.83	7.29	7.73	8.52	9.21	9.71	10.25	10.70			
17	1.06	1.98	2.82	3.59	4.32	5.00	5.63	6.23	6.79	7.33	7.83	8.30	9.16	9.92	10.47	11.06	11.59	11.99		
18	1.12	2.10	2.99	3.82	4.59	5.32	6.00	6.64	7.24	7.81	8.34	8.85	9.78	10.60	11.21	11.84	12.42	12.88		
19	1.18	2.22	3.17	4.04	4.86	5.63	6.35	7.03	7.67	8.28	8.85	9.39	10.38	11.26	11.93	12.60	13.22	13.73	14.14	
20	1.25	2.34	3.34	4.26	5.09	5.94	6.70	7.42	8.10	8.74	9.35	9.92	10.97	11.86	12.62	13.34	13.99	14.54	14.99	
21	1.31	2.46	3.51	4.48	5.39	6.24	7.04	7.80	8.51	9.19	9.83	10.43	11.54	12.47	13.28	14.05	14.73	15.31	15.80	
22	1.37	2.57	3.67	4.69	5.65	6.54	7.38	8.17	8.92	9.63	10.30	10.93	12.09	13.06	13.92	14.73	15.44	16.05	16.57	
23	1.44	2.69	3.84	4.90	5.90	6.83	7.71	8.54	9.32	10.06	10.76	11.42	12.63	13.63	14.54	15.39	16.12	16.76	17.30	17.78
24	1.50	2.81	4.00	5.11	6.15	7.12	8.04	8.90	9.72	10.49	11.21	11.90	13.16	14.18	15.15	16.03	16.77	17.44	18.00	18.40
25	1.56	2.92	4.17	5.32	6.36	7.41	8.36	9.26	10.10	10.90	11.65	12.37	13.58	14.72	15.75	16.65	17.40	18.09	18.67	19.09
30	1.86	3.48	4.96	6.33	7.60	8.79	9.86	10.95	11.85	12.76	13.74	14.56	15.98	17.28	18.40	19.40	20.22	20.92	21.32	22.00
35	2.16	4.03	5.72	7.29	8.73	10.08	11.29	12.53	13.59	14.67	15.64	16.54	18.09	19.49	20.67	21.73	22.55	23.20	23.78	
40	2.45	4.56	6.46	8.21	9.82	11.31	12.65	14.00	15.16	16.33	17.37	18.34	19.95	21.42	22.62	23.68	24.42	25.08		
45	2.74	5.08	7.18	9.09	10.85	12.48	13.93	15.38	16.62	17.86	18.92	19.98	21.60	23.12	24.29	25.28	25.90			
50	3.02	5.58	7.87	9.95	11.80	13.59	15.13	16.67	17.98	19.28	20.37	21.47	23.12	24.59	25.69					
55	3.30	6.08	8.54	10.77	12.72	14.65	16.26	17.89	19.23	20.59	21.70	22.82	24.45	25.82						
60	3.57	6.56	9.20	11.57	13.60	15.66	17.34	19.03	20.41	21.80	22.92	24.04								
	TYPE A LUBRICATION			TYPE B LUBRICATION					TYPE C LUBRICATION											

Horsepower Ratings – Double-Pitch Chain No. 2080

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket																			
	10	20	30	40	50	60	70	80	90	100	125	150	175	200	225	250	300	350	400	450
6	0.32	0.56	0.77																	
7	0.39	0.71	0.98	1.23	1.44	1.64	1.81													
8	0.46	0.84	1.19	1.50	1.79	2.05	2.29	2.51	2.71	2.90										
9	0.53	0.98	1.39	1.77	2.12	2.45	2.75	3.04	3.30	3.55	4.11	4.57								
10	0.59	1.11	1.59	2.03	2.44	2.83	3.20	3.54	3.87	4.18	4.88	5.48	6.01							
11	0.66	1.24	1.78	2.28	2.76	3.20	3.63	4.03	4.41	4.78	5.62	6.36	7.02	7.56	8.07					
12	0.72	1.37	1.97	2.53	3.06	3.57	4.05	4.51	4.94	5.36	6.33	7.21	7.95	8.66	9.27	9.82				
13	0.79	1.50	2.16	2.78	3.36	3.92	4.46	4.97	5.46	5.93	7.03	8.02	8.89	9.75	10.42	11.08				
14	0.85	1.62	2.34	3.02	3.66	4.28	4.86	5.43	5.97	6.49	7.71	8.82	9.83	10.76	11.53	12.29	13.60			
15	0.92	1.75	2.52	3.26	3.95	4.62	5.26	5.87	6.46	7.03	8.37	9.59	10.71	11.74	12.60	13.46	14.94			
16	0.98	1.87	2.70	3.49	4.24	4.96	5.65	6.31	6.95	7.56	9.01	10.34	11.57	12.69	13.63	14.59	16.24	17.65		
17	1.05	1.99	2.88	3.72	4.52	5.29	6.03	6.74	7.43	8.09	9.64	11.08	12.36	13.62	14.63	15.69	17.50	19.04		
18	1.11	2.11	3.06	3.95	4.80	5.62	6.41	7.17	7.90	8.60	10.26	11.80	13.21	14.52	15.60	16.76	18.72	20.38	21.77	
19	1.17	2.23	3.23	4.18	5.08	5.95	6.78	7.58	8.36	9.11	10.87	12.50	14.01	15.40	16.55	17.80	19.90	21.67	23.18	
20	1.23	2.35	3.40	4.40	5.36	6.27	7.15	8.00	8.81	9.60	11.47	13.19	14.78	16.26	17.48	18.81	21.04	22.91	24.52	
21	1.30	2.47	3.58	4.63	5.63	6.59	7.51	8.40	9.26	10.09	12.05	13.87	15.54	17.10	18.39	19.79	22.14	24.11	25.80	
22	1.36	2.59	3.75	4.85	5.90	6.90	7.87	8.81	9.67	10.58	12.63	14.53	16.29	17.92	19.28	20.74	23.20	25.27	27.03	
23	1.42	2.71	3.92	5.07	6.16	7.21	8.19	9.20	10.10	11.05	13.20	15.18	17.02	18.72	20.15	21.66	24.23	26.40	28.22	
24	1.48	2.82	4.05	5.28	6.43	7.52	8.54	9.59	10.53	11.52	13.76	15.83	17.74	19.51	21.01	22.55	25.23	27.50	29.38	30.98
25	1.54	2.94	4.20	5.50	6.69	7.83	8.89	9.94	10.95	11.99	14.31	16.46	18.44	20.28	21.86	23.42	26.20	28.57	30.52	32.16
30	1.84	3.51	5.02	6.55	7.97	9.32	10.62	11.74	12.97	14.23	16.96	19.47	21.78	23.92	25.73	27.52	30.70	33.56	35.52	37.26
35	2.14	4.07	5.82	7.58	9.20	10.75	12.23	13.48	14.92	16.35	19.44	22.27	24.86	27.24	29.24	31.21	34.65	37.57	39.66	
40	2.44	4.62	6.60	8.57	10.39	12.09	13.79	15.17	16.80	18.36	21.78	24.88	27.71	30.28	32.42	34.52	38.09	40.96	43.07	
45	2.73	5.16	7.37	9.54	11.55	13.46	15.25	16.82	18.61	20.29	23.99	27.33	30.35	33.07	35.30	37.50	41.10	43.81		
50	3.01	5.69	8.13	10.49	12.68	14.76	16.69	18.43	20.35	22.12	26.09	29.64	32.81	35.65	37.92	40.16	43.70			
55	3.30	6.21	8.90	11.41	13.78	16.01	18.08	20.00	22.02	23.88	28.08	31.80	35.10	38.01	40.30	42.52				
60	3.58	6.73	9.62	12.32	14.85	17.24	19.43	21.53	23.65	25.57	29.97	33.83	37.22	40.14						
	TYPE A LUBRICATION						TYPE B LUBRICATION						TYPE C LUBRICATION							

TYPE A LUBRICATION – MANUAL DRIP (4-10 DROPS PER MINUTE) OR OIL BATH
TYPE B LUBRICATION – RAPID DRIP (20 DROPS PER MINUTE MINIMUM), OIL BATH OR OIL SLINGER
TYPE C LUBRICATION – CONTINUOUS WITH OIL SLINGER OR OIL STREAM

See Lubrication Instructions in the Roller Chain Installation section.
Ratings shown are for standard steel chain. See the General Drive Selection section for service factors, selection factors and multiple strand factors.

TECHNICAL ENGINEERING

Horsepower Rating Tables

RING LEADER® O-ring Chains

Horsepower Ratings – Single Strand No. 50 RING LEADER O-ring Chain

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket											
	50	100	200	300	400	500	700	900	1200	1400	1800	2000
9	0.36	0.67	1.26	1.81	2.35	2.87	3.89	4.88	6.32	6.02	4.13	3.52
10	0.41	0.76	1.41	2.03	2.63	3.22	4.36	5.46	7.08	7.05	4.83	4.13
11	0.45	0.84	1.56	2.25	2.92	3.57	4.83	6.06	7.85	8.13	5.58	4.76
12	0.49	0.92	1.72	2.47	3.21	3.92	5.31	6.65	8.62	9.26	6.35	5.42
13	0.54	1.00	1.87	2.70	3.50	4.27	5.78	7.25	9.40	10.44	7.16	6.12
14	0.58	1.09	2.03	2.92	3.79	4.63	6.27	7.86	10.18	11.67	8.01	6.84
15	0.63	1.17	2.19	3.15	4.08	4.99	6.75	8.47	10.97	12.60	8.88	7.58
16	0.67	1.26	2.34	3.38	4.37	5.35	7.24	9.08	11.76	13.51	9.78	8.35
17	0.72	1.34	2.50	3.61	4.67	5.71	7.73	9.69	12.55	14.42	10.71	
18	0.76	1.43	2.66	3.83	4.97	6.07	8.22	10.31	13.35	15.34	11.67	
19	0.81	1.51	2.82	4.07	5.27	6.44	8.72	10.93	14.16	16.26	12.66	
20	0.86	1.60	2.98	4.30	5.57	6.80	9.21	11.55	14.96	17.19	13.67	
21	0.90	1.69	3.14	4.53	5.87	7.17	9.71	12.17	15.77	18.12	14.71	
22	0.95	1.77	3.31	4.76	6.17	7.54	10.21	12.80	16.58	19.05		
23	1.00	1.86	3.47	5.00	6.47	7.91	10.71	13.43	17.40	19.99		
24	1.04	1.95	3.63	5.23	6.78	8.29	11.22	14.06	18.22	20.93		
25	1.09	2.03	3.80	5.47	7.08	8.66	11.72	14.70	19.04	21.87		
26	1.14	2.12	3.96	5.70	7.39	9.03	12.23	15.33	19.86	22.82		
28	1.23	2.30	4.29	6.18	8.01	9.79	13.25	16.61	21.52			
30	1.33	2.48	4.62	6.66	8.63	10.54	14.27	17.90	23.18			
32	1.42	2.66	4.96	7.14	9.25	11.30	15.30	19.19	24.86			
35	1.57	2.93	5.46	7.86	10.19	12.45	16.86	21.14				
40	1.81	3.38	6.31	9.08	11.77	14.39	19.47	24.42				
45	2.06	3.84	7.16	10.32	13.36	16.34	22.12					

Horsepower Ratings – Single Strand No. 60 RING LEADER® O-ring Chain

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket													
	50	100	150	200	300	400	500	600	700	900	1000	1200	1400	1500
9	0.62	1.16	1.67	2.16	3.12	4.04	4.94	5.82	6.68	8.38	9.21	8.77	6.96	6.28
10	0.70	1.30	1.87	2.43	3.49	4.53	5.53	6.52	7.49	9.39	10.32	10.27	8.15	7.35
11	0.77	1.44	2.07	2.69	3.87	5.02	6.13	7.23	8.30	10.41	11.44	11.85	9.41	8.48
12	0.85	1.58	2.28	2.95	4.25	5.51	6.74	7.94	9.12	11.43	12.57	13.51	10.72	9.66
13	0.92	1.73	2.49	3.22	4.64	6.01	7.34	8.65	9.94	12.46	13.70	15.23	12.08	10.90
14	1.00	1.87	2.69	3.49	5.02	6.51	7.96	9.37	10.77	13.50	14.85	17.02	13.51	12.18
15	1.08	2.01	2.90	3.76	5.41	7.01	8.57	10.10	11.60	14.55	15.99	18.85	14.98	13.51
16	1.16	2.16	3.11	4.03	5.80	7.52	9.19	10.83	12.44	15.60	17.15	20.21	16.50	14.88
17	1.24	2.31	3.32	4.30	6.20	8.03	9.81	11.56	13.28	16.65	18.31	21.58	18.07	
18	1.31	2.45	3.53	4.58	6.59	8.54	10.44	12.30	14.13	17.71	19.48	22.95	19.69	
19	1.39	2.60	3.74	4.85	6.99	9.05	11.06	13.04	14.98	18.78	20.65	24.33	21.35	
20	1.47	2.75	3.96	5.13	7.38	9.57	11.69	13.78	15.83	19.85	21.82	25.71	23.06	
21	1.55	2.90	4.17	5.40	7.78	10.08	12.33	14.53	16.69	20.92	23.00	27.11		
22	1.63	3.05	4.39	5.68	8.19	10.60	12.96	15.27	17.55	22.00	24.19	28.50		
23	1.71	3.19	4.60	5.96	8.59	11.13	13.60	16.03	18.41	23.08	25.38	29.90		
24	1.79	3.35	4.82	6.24	8.99	11.65	14.24	16.78	19.28	24.17	26.57	31.31		
25	1.87	3.50	5.04	6.52	9.40	12.17	14.88	17.54	20.14	25.26	27.77			
26	1.95	3.65	5.25	6.81	9.80	12.70	15.53	18.29	21.02	26.35	28.97			
28	2.12	3.95	5.69	7.37	10.62	13.76	16.82	19.82	22.77	28.55	31.39			
30	2.28	4.26	6.13	7.94	11.44	14.82	18.12	21.35	24.53	30.75				
32	2.45	4.56	6.57	8.52	12.27	15.89	19.43	22.89	26.30	32.97				
35	2.69	5.03	7.24	9.38	13.50	17.50	21.40	25.20	29.00					
40	3.11	5.81	8.37	10.80	15.60	20.20	24.70	29.10	33.50					
45	3.53	6.60	9.50	12.30	17.70	23.00	28.10	33.10						

TECHNICAL ENGINEERING

Horsepower Rating Tables

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

RING LEADER® O-ring Chains

Horsepower Ratings – Single Strand No. 80 RING LEADER O-ring Chain

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket										
	50	100	150	200	300	400	500	700	900	1000	1100
9	1.45	2.71	3.90	5.05	7.28	9.43	11.53	15.60	17.00	14.51	12.58
10	1.63	3.03	4.37	5.66	8.16	10.57	12.92	17.48	19.91	17.00	14.74
11	1.80	3.36	4.84	6.28	9.04	11.71	14.32	19.38	22.97	19.61	17.00
12	1.98	3.69	5.32	6.89	9.93	12.87	15.73	21.29	26.17	22.35	19.37
13	2.16	4.03	5.80	7.52	10.83	14.03	17.15	23.21	29.10	25.20	21.84
14	2.34	4.36	6.29	8.14	11.73	15.20	18.58	25.15	31.53	28.16	24.41
15	2.52	4.70	6.77	8.77	12.64	16.37	20.01	27.09	33.97	31.23	27.07
16	2.70	5.04	7.26	9.41	13.55	17.55	21.46	29.05	36.42	34.41	
17	2.88	5.38	7.75	10.04	14.47	18.74	22.91	31.01	38.88	37.68	
18	3.07	5.72	8.25	10.68	15.39	19.93	24.37	32.99	41.36	41.05	
19	3.25	6.07	8.74	11.33	16.31	21.13	25.83	34.97	43.85		
20	3.44	6.41	9.24	11.97	17.24	22.34	27.31	36.96	46.34		
21	3.62	6.76	9.74	12.62	18.17	23.55	28.78	38.96			
22	3.81	7.11	10.24	13.27	19.11	24.76	30.27	40.97			
23	4.00	7.46	10.75	13.92	20.05	25.98	31.75	42.98			
24	4.19	7.81	11.25	14.58	20.99	27.20	33.25	45.01			
25	4.37	8.16	11.76	15.23	21.94	28.42	34.75	47.04			
26	4.56	8.52	12.27	15.89	22.89	29.65	36.25				
28	4.94	9.23	13.29	17.22	24.80	32.13	39.27				
30	5.33	9.94	14.32	18.55	26.72	34.61	42.31				
32	5.71	10.66	15.35	19.89	28.64	37.11	45.36				
35	6.29	11.74	16.91	21.91	31.55	40.88	49.97				
40	7.27	13.56	19.53	25.31	36.45	47.22					
45	8.25	15.40	22.18	28.74	41.39	53.63					

Horsepower Ratings – Single Strand No. 100 RING LEADER O-ring Chain

# of teeth in small sprocket	Revolutions Per Minute – Small Sprocket									
	25	50	100	150	200	300	400	500	600	700
9	1.49	2.78	5.19	7.47	9.68	13.94	18.06	22.08	26.02	29.63
10	1.67	3.11	5.81	8.37	10.85	15.62	20.24	24.74	29.15	33.49
11	1.85	3.45	6.44	9.28	12.02	17.32	22.43	27.42	32.31	37.12
12	2.03	3.79	7.08	10.19	13.21	19.02	24.64	30.12	35.49	40.78
13	2.22	4.13	7.72	11.11	14.40	20.74	26.87	32.84	38.70	44.46
14	2.40	4.48	8.36	12.04	15.60	22.47	29.11	35.58	41.92	48.16
15	2.59	4.83	9.01	12.97	16.80	24.20	31.36	38.33	45.17	51.89
16	2.77	5.17	9.66	13.91	18.02	25.95	33.62	41.10	48.43	55.64
17	2.96	5.52	10.31	14.85	19.24	27.71	35.90	43.88	51.70	59.40
18	3.15	5.88	10.96	15.79	20.46	29.47	38.18	46.67	55.00	
19	3.34	6.23	11.62	16.74	21.69	31.24	40.48	49.48	58.30	
20	3.53	6.58	12.29	17.70	22.93	33.02	42.78	52.30	61.63	
21	3.72	6.94	12.95	18.65	24.17	34.81	45.10	55.13		
22	3.91	7.30	13.62	19.62	25.41	36.60	47.42	57.97		
23	4.10	7.66	14.29	20.58	26.66	38.40	49.75	60.82		
24	4.30	8.02	14.96	21.55	27.92	40.21	52.09	63.68		
25	4.49	8.38	15.63	22.52	29.18	42.02	54.44			
26	4.68	8.74	16.31	23.49	30.44	43.84	56.80			
28	5.07	9.47	17.67	25.45	32.97	47.50	61.53			
30	5.47	10.20	19.04	27.42	35.52	51.17	66.29			
32	5.86	10.94	20.41	29.40	38.09	54.86				
35	6.46	12.05	22.49	32.39	41.96	60.44				
40	7.46	13.92	25.97	37.41	48.47	69.81				
45	8.47	15.81	29.50	42.49	55.04					

TECHNICAL SECTION

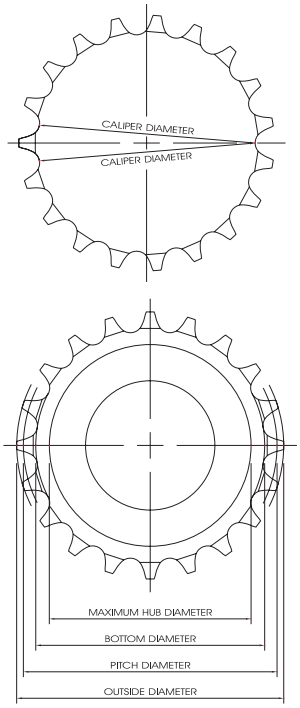
Sprocket Information

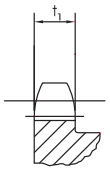
Pitch Diameter: The pitch diameter of a sprocket is the diameter of a circle followed by the centers of the chain pins as the sprocket revolves in mesh with the chain, and is a function of the chain pitch and of the number of teeth in the sprocket. This is a theoretical dimension, not directly measurable but for chain load calculations, one half the pitch diameter is equal to the "distance" in the (force x distance) formula.

Bottom Diameter: The bottom diameter of a sprocket is the diameter of a circle tangent to the bottoms of the tooth spaces. The tolerance on the bottom diameter must be entirely negative to ensure that the chain will mesh properly with the sprocket teeth.

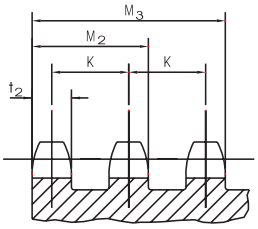
Caliper Diameter: Since the bottom diameter of a sprocket with an odd number of teeth cannot readily be measured directly, the following tables list caliper diameters which enable calculating the dimensions across the bottoms of tooth spaces most nearly opposite. As is true of bottom diameters, tolerances on caliper diameters must be entirely negative.

Outside Diameter: The outside diameter of a sprocket is comparatively unimportant as the tooth length is not vital to proper meshing with the chain. The outside diameter will vary depending on the type of cutter used.

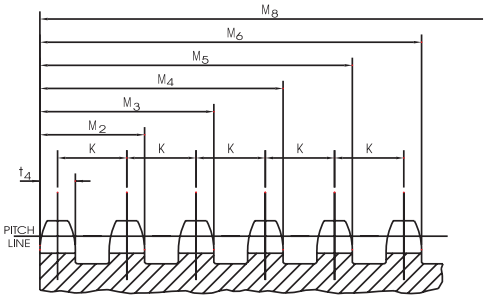




SINGLE



DOUBLE AND TRIPLE



QUADRUPLE AND OTHER MULTIPLES

Standard Series Sprockets

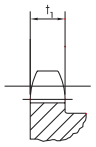
Chain Data for All Sprockets				Single Strand t_1	Double and Triple Strand			For 4 or more Strands								Matching Tolerance on "t" and "M"	Hot Rolled Tolerance on "t" and "M"
ASME/ANSI & Diamond No.	Pitch P	Roller Width W	Roller Diam.		t_2	M_2	M_3	t_4	M_2	M_3	M_4	M_5	M_6	M_8	*K		
25	0.250	0.125	0.130	0.110	0.107	0.359	0.611	0.096	0.348	0.600	0.852	1.104	1.356	1.860	0.252	-0.007	-0.021
35	0.375	0.188	0.200	0.168	0.162	0.561	0.960	0.149	0.548	0.947	1.346	1.745	2.144	2.942	0.399	-0.008	-0.027
41	0.500	0.250	0.306	0.227	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-0.009	-0.032
40	0.500	0.312	0.312	0.284	0.275	0.841	1.407	0.256	0.822	1.388	1.954	2.520	3.086	4.218	0.566	-0.009	-0.035
50	0.625	0.375	0.400	0.343	0.332	1.045	1.758	0.311	1.024	1.737	2.450	3.163	3.876	5.302	0.713	-0.010	-0.036
60	0.750	0.500	0.469	0.459	0.444	1.341	2.238	0.418	1.315	2.212	3.109	4.006	4.903	6.697	0.897	-0.011	-0.036
80	1.000	0.625	0.625	0.575	0.557	1.710	2.863	0.526	1.679	2.832	3.985	5.138	6.291	8.597	1.153	-0.012	-0.040
100	1.250	0.750	0.750	0.692	0.669	2.077	3.485	0.633	2.041	3.449	4.857	6.265	7.673	10.489	1.408	-0.014	-0.046
120	1.500	1.000	0.875	0.924	0.894	2.683	4.472	0.848	2.637	4.426	6.215	8.004	9.793	13.371	1.789	-0.016	-0.057
140	1.750	1.000	1.000	0.924	0.894	2.818	4.742	0.848	2.772	4.696	6.620	8.544	10.468	14.316	1.924	-0.016	-0.057
160	2.000	1.250	1.125	1.156	1.119	3.424	5.729	1.063	3.368	5.673	7.978	10.283	12.588	17.198	2.305	-0.019	-0.062
180	2.250	1.406	1.406	1.301	1.259	3.851	6.443	1.197	3.789	6.381	8.973	11.565	14.157	19.341	2.592	-0.020	-0.068
200	2.500	1.500	1.562	1.389	1.344	4.161	6.978	1.278	4.095	6.912	9.729	12.546	15.363	20.997	2.817	-0.021	-0.072

*K dimensions apply to double and triple strands also.

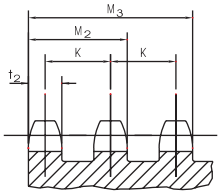
TECHNICAL SECTION

Sprocket Information

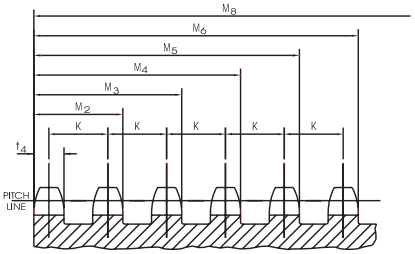
DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN



SINGLE



DOUBLE AND TRIPLE



QUADRUPLE AND OTHER MULTIPLES

Heavy Series Sprockets

Chain Data for All Sprockets				Single Strand t_1	Double and Triple Strand			For 4 or more Strands								Matching Tolerance on "t" and "M"	Hot Rolled Tolerance on "t" and "M"
ASME/ANSI & Diamond No.	Pitch P	Roller Width W	Roller Diam.		t_2	M_2	M_3	t_4	M_2	M_3	M_4	M_5	M_6	M_8	*K		
60H	0.750	0.500	0.469	0.459	0.444	1.472	2.500	0.418	1.446	2.474	3.502	4.530	5.558	7.614	1.028	-.011	-.036
80H	1.000	0.625	0.625	0.575	0.557	1.840	3.123	0.526	1.809	3.092	4.375	5.568	6.941	9.507	1.283	-.012	-.040
100H	1.250	0.750	0.750	0.692	0.669	2.208	3.747	0.633	2.172	3.711	5.250	6.789	8.328	11.406	1.539	-.014	-.046
120H	1.500	1.000	0.875	0.924	0.894	2.818	4.742	0.848	2.772	4.696	6.620	8.544	10.468	14.316	1.924	-.016	-.057
140H	1.750	1.000	1.000	0.924	0.894	2.949	5.004	0.848	2.903	4.958	7.013	9.068	11.123	15.233	2.055	-.016	-.057
160H	2.000	1.250	1.125	1.156	1.119	3.555	5.991	1.063	3.499	5.935	8.371	10.807	13.243	18.115	2.436	-.019	-.062
180H	2.250	1.406	1.406	1.301	1.259	3.982	6.705	1.197	3.920	6.643	9.366	12.089	14.812	20.258	2.723	-.020	-.068
200H	2.500	1.500	1.562	1.389	1.344	4.427	7.510	1.278	4.361	7.444	10.527	13.610	16.693	22.859	3.083	-.021	-.072

*K dimensions apply to double and triple strands also.

The following tables list the basic dimensions most common to sprockets. For verification of these values or more detailed information please contact a reputable sprocket manufacturer.

Sprocket Diameters – U.S.A. Std. No. 25 Bushing Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	
6	0.500	0.583	0.370	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	54	4.300	4.442	4.170	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	102	8.118	8.264	7.988	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
7	0.576	0.669	0.432		55	4.379	4.522	4.247		103	8.198	8.344	8.067	
8	0.653	0.754	0.523		56	4.459	4.602	4.329		104	8.277	8.424	8.147	
9	0.731	0.837	0.591		57	4.538	4.681	4.407		105	8.357	8.503	8.226	
10	0.809	0.919	0.679		58	4.618	4.761	4.488		106	8.437	8.583	8.307	
11	0.887	1.002	0.748		59	4.697	4.841	4.566		107	8.516	8.662	8.385	
12	0.966	1.083	0.836		60	4.777	4.920	4.647		108	8.596	8.742	8.466	
13	1.045	1.167	0.907		61	4.857	5.000	4.725		109	8.675	8.822	8.544	
14	1.124	1.246	0.994		62	4.936	5.080	4.806		110	8.755	8.901	8.625	
15	1.203	1.326	1.066		63	5.016	5.159	4.884		111	8.834	8.981	8.703	
16	1.282	1.407	1.152		64	5.095	5.239	4.965		112	8.914	9.060	8.784	
17	1.361	1.487	1.225		65	5.175	5.319	5.044		113	8.994	9.140	8.863	
18	1.440	1.568	1.310		66	5.254	5.398	5.124		114	9.073	9.220	8.943	
19	1.519	1.648	1.383		67	5.334	5.478	5.203		115	9.153	9.299	9.022	
20	1.598	1.729	1.468		68	5.413	5.558	5.283		116	9.232	9.379	9.102	
21	1.678	1.809	1.543		69	5.493	5.637	5.362		117	9.312	9.458	9.181	
22	1.757	1.889	1.627		70	5.572	5.717	5.442		118	9.391	9.538	9.261	
23	1.836	1.969	1.702		71	5.652	5.796	5.521		119	9.471	9.618	9.340	
24	1.915	2.049	1.785		72	5.732	5.876	5.602		120	9.550	9.697	9.420	
25	1.995	2.129	1.861		73	5.811	5.956	5.680		121	9.630	9.777	9.499	
26	2.074	2.209	1.944		74	5.891	6.035	5.761		122	9.709	9.856	9.579	
27	2.154	2.289	2.020		75	5.970	6.115	5.839		123	9.789	9.936	9.658	
28	2.233	2.369	2.103		76	6.050	6.195	5.920		124	9.869	10.016	9.739	
29	2.312	2.449	2.179		77	6.129	6.274	5.998		125	9.949	10.095	9.818	
30	2.392	2.529	2.262		78	6.209	6.354	6.079		126	10.028	10.175	9.898	
31	2.471	2.609	2.338		79	6.288	6.433	6.157		127	10.108	10.255	9.977	
32	2.551	2.688	2.421		80	6.368	6.513	6.238		128	10.187	10.334	10.057	
33	2.630	2.768	2.497		81	6.448	6.593	6.317		129	10.267	10.414	10.136	
34	2.710	2.848	2.580		82	6.527	6.672	6.397		130	10.346	10.493	10.216	
35	2.789	2.928	2.656		83	6.607	6.752	6.476		131	10.426	10.573	10.295	
36	2.869	3.008	2.739		84	6.686	6.832	6.556		132	10.505	10.652	10.375	
37	2.948	3.087	2.815		85	6.766	6.911	6.635		133	10.585	10.732	10.454	
38	3.028	3.167	2.898		86	6.845	6.991	6.715		134	10.664	10.811	10.534	
39	3.107	3.247	2.975		87	6.925	7.070	6.794		135	10.744	10.891	10.613	
40	3.187	3.327	3.057		88	7.004	7.150	6.874		136	10.823	10.970	10.693	
41	3.266	3.406	3.134		89	7.084	7.230	6.953		137	10.903	11.050	10.772	
42	3.346	3.486	3.216		90	7.164	7.309	7.034		138	10.983	11.130	10.853	
43	3.425	3.566	3.293		91	7.243	7.389	7.112		139	11.062	11.209	10.932	
44	3.505	3.646	3.375		92	7.323	7.468	7.193		140	11.142	11.289	11.012	
45	3.584	3.725	3.452		93	7.402	7.548	7.271		141	11.221	11.369	11.091	
46	3.664	3.805	3.534		94	7.482	7.628	7.352		142	11.301	11.448	11.171	
47	3.743	3.885	3.611		95	7.561	7.707	7.430		143	11.380	11.528	11.250	
48	3.823	3.964	3.693		96	7.641	7.787	7.511		144	11.460	11.607	11.330	
49	3.902	4.044	3.770		97	7.720	7.866	7.589		145	11.540	11.687	11.409	
50	3.982	4.124	3.852		98	7.800	7.946	7.670		146	11.619	11.767	11.489	
51	4.061	4.203	3.929		99	7.880	8.026	7.749		147	11.699	11.846	11.567	
52	4.141	4.283	4.011		100	7.959	8.105	7.829		148	11.773	11.926	11.649	
53	4.220	4.363	4.088		101	8.039	8.185	7.908		149	11.858	12.005	11.727	

Odd tooth "bottom diameters" equal pitch minus .130″.

TECHNICAL SECTION

Sprocket Information

Sprocket Diameters – U.S.A. Std. No. 35 Bushing Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	
6	0.750	0.88	0.550	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	54	6.449	6.66	6.249	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	102	12.177	12.40	11.977	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
7	0.864	1.00	0.642		55	6.569	6.78	6.366		103	12.297	12.52	12.095	
8	0.980	1.13	0.780		56	6.688	6.90	6.488		104	12.416	12.64	12.216	
9	1.096	1.26	0.879		57	6.807	7.02	6.604		105	12.535	12.76	12.334	
10	1.214	1.38	1.014		58	6.927	7.14	6.727		106	12.655	12.87	12.455	
11	1.331	1.50	1.117		59	7.046	7.26	6.844		107	12.774	12.99	12.573	
12	1.449	1.63	1.249		60	7.165	7.38	6.965		108	12.893	13.11	12.693	
13	1.567	1.75	1.356		61	7.284	7.50	7.082		109	13.013	13.23	12.812	
14	1.685	1.87	1.485		62	7.404	7.62	7.204		110	13.132	13.35	12.932	
15	1.804	1.99	1.594		63	7.523	7.74	7.321		111	13.251	13.47	13.050	
16	1.922	2.11	1.722		64	7.642	7.86	7.442		112	13.371	13.59	13.171	
17	2.041	2.23	1.832		65	7.762	7.98	7.560		113	13.490	13.71	13.289	
18	2.159	2.35	1.959		66	7.881	8.10	7.681		114	13.609	13.83	13.409	
19	2.278	2.47	2.070		67	8.000	8.22	7.798		115	13.729	13.95	13.528	
20	2.397	2.59	2.197		68	8.120	8.34	7.920		116	13.848	14.07	13.648	
21	2.516	2.71	2.309		69	8.239	8.46	8.037		117	13.968	14.19	13.767	
22	2.635	2.83	2.435		70	8.358	8.58	8.158		118	14.087	14.31	13.887	
23	2.754	2.95	2.547		71	8.478	8.69	8.276		119	14.206	14.43	14.005	
24	2.873	3.07	2.673		72	8.597	8.81	8.397		120	14.326	14.55	14.126	
25	2.992	3.19	2.786		73	8.716	8.93	8.514		121	14.445	14.67	14.244	
26	3.111	3.31	2.911		74	8.836	9.05	8.636		122	14.564	14.78	14.364	
27	3.230	3.43	3.025		75	8.955	9.17	8.753		123	14.683	14.90	14.482	
28	3.349	3.55	3.149		76	9.074	9.29	8.874		124	14.803	15.02	14.603	
29	3.468	3.67	3.263		77	9.194	9.41	8.992		125	14.923	15.14	14.722	
30	3.588	3.79	3.388		78	9.313	9.53	9.113		126	15.042	15.26	14.842	
31	3.707	3.91	3.502		79	9.432	9.65	9.230		127	15.161	15.38	14.960	
32	3.826	4.03	3.626		80	9.552	9.77	9.352		128	15.280	15.50	15.080	
33	3.945	4.15	3.741		81	9.671	9.89	9.469		129	15.400	15.62	15.199	
34	4.064	4.27	3.864		82	9.790	10.01	9.590		130	15.519	15.74	15.319	
35	4.183	4.39	3.979		83	9.910	10.13	9.708		131	15.638	15.86	15.437	
36	4.303	4.51	4.103		84	10.029	10.25	9.829		132	15.758	15.98	15.558	
37	4.422	4.63	4.218		85	10.148	10.37	9.946		133	15.877	16.10	15.676	
38	4.541	4.75	4.341		86	10.268	10.49	10.068		134	15.997	16.22	15.797	
39	4.660	4.87	4.456		87	10.387	10.61	10.185		135	16.116	16.34	15.915	
40	4.780	4.99	4.580		88	10.506	10.73	10.306		136	16.235	16.46	16.035	
41	4.899	5.11	4.695		89	10.626	10.84	10.424		137	16.355	16.58	16.154	
42	5.018	5.23	4.818		90	10.745	10.96	10.545		138	16.474	16.70	16.274	
43	5.137	5.35	4.934		91	10.864	11.08	10.662		139	16.593	16.81	16.392	
44	5.257	5.47	5.057		92	10.984	11.20	10.784		140	16.713	16.93	16.513	
45	5.376	5.59	5.173		93	11.103	11.32	10.901		141	16.832	17.05	16.631	
46	5.495	5.71	5.295		94	11.222	11.44	11.022		142	16.951	17.17	16.751	
47	5.614	5.83	5.411		95	11.342	11.56	11.140		143	17.071	17.29	16.870	
48	5.734	5.95	5.534		96	11.461	11.68	11.261		144	17.190	17.41	16.990	
49	5.853	6.07	5.650		97	11.580	11.80	11.378		145	17.309	17.53	17.108	
50	5.972	6.19	5.772		98	11.700	11.92	11.500		146	17.429	17.65	17.229	
51	6.091	6.31	5.888		99	11.819	12.04	11.617		147	17.548	17.77	17.347	
52	6.211	6.43	6.011		100	11.938	12.16	11.738		148	17.668	17.89	17.468	
53	6.330	6.54	6.127		101	12.058	12.28	11.856		149	17.787	18.01	17.586	

Odd tooth "bottom diameters" equal pitch minus .200″.

Sprocket Diameters – U.S.A. Std. No. 40 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	
6	1.000	1.170	0.688	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	54	8.599	8.890	8.287	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	102	16.236	16.530	15.924	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
7	1.152	1.340	0.811		55	8.758	9.040	8.443		103	16.395	16.690	16.081	
8	1.307	1.510	0.995		56	8.917	9.200	8.605		104	16.555	16.850	16.243	
9	1.462	1.670	1.128		57	9.076	9.360	8.761		105	16.714	17.010	16.400	
10	1.618	1.840	1.306		58	9.236	9.520	8.924		106	16.873	17.170	16.561	
11	1.775	2.000	1.445		59	9.395	9.680	9.080		107	17.032	17.330	16.718	
12	1.932	2.170	1.620		60	9.554	9.840	9.242		108	17.191	17.480	16.879	
13	2.089	2.330	1.762		61	9.713	10.000	9.398		109	17.350	17.640	17.036	
14	2.247	2.490	1.935		62	9.872	10.160	9.560		110	17.509	17.800	17.197	
15	2.405	2.650	2.080		63	10.031	10.320	9.716		111	17.669	17.960	17.355	
16	2.563	2.810	2.251		64	10.190	10.480	9.878		112	17.828	18.120	17.516	
17	2.721	2.980	2.397		65	10.349	10.640	10.034		113	17.987	18.280	17.673	
18	2.879	3.140	2.567		66	10.508	10.800	10.196		114	18.146	18.440	17.834	
19	3.038	3.300	2.716		67	10.667	10.960	10.352		115	18.305	18.600	17.991	
20	3.196	3.460	2.884		68	10.826	11.120	10.514		116	18.464	18.760	18.152	
21	3.355	3.620	3.034		69	10.986	11.270	10.670		117	18.623	18.920	18.309	
22	3.513	3.780	3.201		70	11.145	11.430	10.833		118	18.783	19.080	18.471	
23	3.672	3.940	3.351		71	11.304	11.590	10.989		119	18.942	19.240	18.628	
24	3.831	4.100	3.519		72	11.463	11.750	11.151		120	19.101	19.390	18.789	
25	3.989	4.260	3.669		73	11.622	11.910	11.307		121	19.260	19.550	18.946	
26	4.148	4.420	3.836		74	11.781	12.070	11.469		122	19.419	19.710	19.107	
27	4.307	4.580	3.988		75	11.940	12.230	11.625		123	19.578	19.870	19.264	
28	4.466	4.740	4.154		76	12.099	12.390	11.787		124	19.737	20.030	19.425	
29	4.625	4.900	4.306		77	12.258	12.550	11.943		125	19.897	20.190	19.583	
30	4.783	5.060	4.471		78	12.417	12.710	12.105		126	20.056	20.350	19.744	
31	4.942	5.220	4.624		79	12.577	12.870	12.262		127	20.215	20.510	19.899	
32	5.101	5.380	4.789		80	12.736	13.030	12.424		128	20.374	20.670	20.062	
33	5.260	5.540	4.942		81	12.895	13.190	12.581		129	20.533	20.830	20.220	
34	5.419	5.700	5.107		82	13.054	13.340	12.742		130	20.692	20.990	20.380	
35	5.578	5.860	5.260		83	13.213	13.500	12.899		131	20.851	21.150	20.538	
36	5.737	6.020	5.425		84	13.372	13.660	13.060		132	21.011	21.310	20.699	
37	5.896	6.180	5.579		85	13.531	13.820	13.217		133	21.170	21.460	20.856	
38	6.055	6.330	5.743		86	13.690	13.980	13.378		134	21.329	21.620	21.017	
39	6.214	6.490	5.897		87	13.849	14.140	13.535		135	21.488	21.780	21.174	
40	6.373	6.650	6.061		88	14.008	14.300	13.696		136	21.647	21.940	21.335	
41	6.532	6.810	6.215		89	14.168	14.460	13.854		137	21.806	22.100	21.493	
42	6.691	6.970	6.379		90	14.327	14.620	14.015		138	21.965	22.260	21.653	
43	6.850	7.130	6.534		91	14.486	14.780	14.172		139	22.124	22.420	21.811	
44	7.009	7.290	6.697		92	14.645	14.940	14.333		140	22.284	22.580	21.972	
45	7.168	7.450	6.852		93	14.804	15.100	14.490		141	22.443	22.740	22.129	
46	7.327	7.610	7.015		94	14.963	15.260	14.651		142	22.602	22.900	22.290	
47	7.486	7.770	7.170		95	15.122	15.410	14.808		143	22.761	23.060	22.448	
48	7.645	7.930	7.333		96	15.281	15.570	14.969		144	22.920	23.220	22.608	
49	7.804	8.090	7.488		97	15.440	15.730	15.126		145	23.079	23.370	22.766	
50	7.963	8.250	7.651		98	15.600	15.890	15.288		146	23.238	23.530	22.926	
51	8.122	8.410	7.806		99	15.759	16.050	15.445		147	23.398	23.690	23.084	
52	8.281	8.570	7.969		100	15.918	16.210	15.606		148	23.557	23.850	23.245	
53	8.440	8.730	8.124		101	16.077	16.370	15.763		149	23.716	24.010	23.403	

Odd tooth "bottom diameters" equal pitch minus .306″.

TECHNICAL SECTION

Sprocket Information

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Sprocket Diameters – U.S.A. Std. No. 41 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	
6	1.000	1.17	0.694	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	54	8.599	8.89	8.293	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	102	16.236	16.53	15.930	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
7	1.152	1.34	0.817		55	8.758	9.04	8.449		103	16.395	16.69	16.087	
8	1.307	1.51	1.001		56	8.917	9.20	8.611		104	16.555	16.85	16.249	
9	1.462	1.67	1.134		57	9.076	9.36	8.767		105	16.714	17.01	16.406	
10	1.618	1.84	1.312		58	9.236	9.52	8.930		106	16.873	17.17	16.567	
11	1.775	2.00	1.451		59	9.395	9.68	9.086		107	17.032	17.33	16.724	
12	1.932	2.17	1.626		60	9.554	9.84	9.248		108	17.191	17.48	16.885	
13	2.089	2.33	1.768		61	9.713	10.00	9.404		109	17.350	17.64	17.042	
14	2.247	2.49	1.941		62	9.872	10.16	9.566		110	17.509	17.80	17.203	
15	2.405	2.65	2.086		63	10.031	10.32	9.722		111	17.669	17.96	17.361	
16	2.563	2.81	2.257		64	10.190	10.48	9.884		112	17.828	18.12	17.522	
17	2.721	2.98	2.403		65	10.349	10.64	10.040		113	17.987	18.28	17.679	
18	2.879	3.14	2.573		66	10.508	10.80	10.202		114	18.146	18.44	17.840	
19	3.038	3.30	2.722		67	10.667	10.96	10.358		115	18.305	18.60	17.997	
20	3.196	3.46	2.890		68	10.826	11.12	10.520		116	18.464	18.76	18.158	
21	3.355	3.62	3.040		69	10.986	11.27	10.676		117	18.623	18.92	18.315	
22	3.513	3.78	3.207		70	11.145	11.43	10.839		118	18.783	19.08	18.477	
23	3.672	3.94	3.357		71	11.304	11.59	10.995		119	18.942	19.24	18.634	
24	3.831	4.10	3.525		72	11.463	11.75	11.157		120	19.101	19.39	18.795	
25	3.989	4.26	3.675		73	11.622	11.91	11.313		121	19.260	19.55	18.952	
26	4.148	4.42	3.842		74	11.781	12.07	11.475		122	19.419	19.71	19.113	
27	4.307	4.58	3.994		75	11.940	12.23	11.631		123	19.578	19.87	19.270	
28	4.466	4.74	4.160		76	12.099	12.39	11.793		124	19.737	20.03	19.431	
29	4.625	4.90	4.312		77	12.258	12.55	11.949		125	19.897	20.19	19.589	
30	4.783	5.06	4.477		78	12.417	12.71	12.111		126	20.056	20.35	19.750	
31	4.942	5.22	4.630		79	12.577	12.87	12.268		127	20.215	20.51	19.907	
32	5.101	5.38	4.795		80	12.736	13.03	12.430		128	20.374	20.67	20.068	
33	5.260	5.54	4.948		81	12.895	13.19	12.587		129	20.533	20.83	20.226	
34	5.419	5.70	5.113		82	13.054	13.34	12.748		130	20.692	20.99	20.386	
35	5.578	5.86	5.266		83	13.213	13.50	12.905		131	20.851	21.15	20.544	
36	5.737	6.02	5.431		84	13.372	13.66	13.066		132	21.011	21.31	20.750	
37	5.896	6.18	5.585		85	13.531	13.82	13.223		133	21.170	21.46	20.862	
38	6.055	6.33	5.749		86	13.690	13.98	13.384		134	21.329	21.62	21.023	
39	6.214	6.49	5.903		87	13.849	14.14	13.541		135	21.488	21.78	21.180	
40	6.373	6.65	6.067		88	14.008	14.30	13.702		136	21.647	21.94	21.341	
41	6.532	6.81	6.221		89	14.168	14.46	13.860		137	21.806	22.10	21.499	
42	6.691	6.97	6.385		90	14.327	14.62	14.021		138	21.965	22.26	21.659	
43	6.850	7.13	6.540		91	14.486	14.78	14.178		139	22.124	22.42	21.817	
44	7.009	7.29	6.703		92	14.645	14.94	14.339		140	22.284	22.58	21.978	
45	7.168	7.45	6.858		93	14.804	15.10	14.496		141	22.443	22.74	22.135	
46	7.327	7.61	7.021		94	14.963	15.26	14.657		142	22.602	22.90	22.296	
47	7.486	7.77	7.176		95	15.122	15.41	14.814		143	22.761	23.06	22.454	
48	7.645	7.93	7.339		96	15.281	15.57	14.975		144	22.920	23.22	22.614	
49	7.804	8.09	7.494		97	15.440	15.73	15.132		145	23.079	23.37	22.772	
50	7.963	8.25	7.657		98	15.600	15.89	15.294		146	23.238	23.53	22.932	
51	8.122	8.41	7.812		99	15.759	16.05	15.451		147	23.398	23.69	23.090	
52	8.281	8.57	7.975		100	15.918	16.21	15.612		148	23.557	23.85	23.251	
53	8.440	8.73	8.130		101	16.077	16.37	15.769		149	23.716	24.01	23.409	

Odd tooth "bottom diameters" equal pitch minus .312″.

Sprocket Diameters – U.S.A. Std. No. 50 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	
6	1.250	1.46	0.850	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	54	10.749	11.11	10.349	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	102	20.295	20.66	19.895	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
7	1.441	1.67	1.004		55	10.948	11.31	10.544		103	20.494	20.86	20.092	
8	1.633	1.88	1.233		56	11.147	11.50	10.747		104	20.693	21.06	20.293	
9	1.827	2.09	1.399		57	11.346	11.70	10.942		105	20.892	21.26	20.490	
10	2.023	2.30	1.623		58	11.544	11.90	11.144		106	21.091	21.46	20.691	
11	2.219	2.50	1.796		59	11.743	12.10	11.339		107	21.290	21.66	20.888	
12	2.415	2.71	2.015		60	11.942	12.30	11.542		108	21.489	21.86	21.089	
13	2.612	2.91	2.193		61	12.141	12.50	11.737		109	21.688	22.05	21.286	
14	2.809	3.11	2.409		62	12.340	12.70	11.940		110	21.887	22.25	21.487	
15	3.006	3.32	2.589		63	12.539	12.90	12.135		111	22.086	22.45	21.684	
16	3.204	3.52	2.804		64	12.738	13.10	12.338		112	22.285	22.65	21.885	
17	3.401	3.72	2.987		65	12.936	13.30	12.532		113	22.484	22.85	22.082	
18	3.599	3.92	3.199		66	13.135	13.50	12.735		114	22.683	23.05	22.283	
19	3.797	4.12	3.384		67	13.334	13.69	12.930		115	22.881	23.25	22.479	
20	3.995	4.32	3.595		68	13.533	13.89	13.133		116	23.080	23.45	22.680	
21	4.194	4.52	3.782		69	13.732	14.09	13.328		117	23.279	23.65	22.877	
22	4.392	4.72	3.992		70	13.931	14.29	13.531		118	23.478	23.85	23.078	
23	4.590	4.92	4.179		71	14.130	14.49	13.726		119	23.677	24.04	23.275	
24	4.788	5.12	4.388		72	14.329	14.69	13.929		120	23.876	24.24	23.476	
25	4.987	5.32	4.577		73	14.527	14.89	14.124		121	24.075	24.44	23.672	
26	5.185	5.52	4.785		74	14.726	15.09	14.326		122	24.273	24.64	23.873	
27	5.384	5.72	4.975		75	14.925	15.29	14.522		123	24.472	24.84	24.070	
28	5.582	5.92	5.182		76	15.124	15.49	14.724		124	24.671	25.04	24.271	
29	5.781	6.12	5.372		77	15.323	15.69	14.920		125	24.870	25.24	24.468	
30	5.979	6.32	5.579		78	15.522	15.88	15.122		126	25.070	25.44	24.670	
31	6.178	6.52	5.770		79	15.721	16.08	15.318		127	25.268	25.64	24.866	
32	6.376	6.72	5.976		80	15.920	16.28	15.520		128	25.467	25.84	25.067	
33	6.575	6.92	6.168		81	16.118	16.48	15.716		129	25.666	26.03	25.264	
34	6.774	7.12	6.374		82	16.317	16.68	15.917		130	25.865	26.23	25.465	
35	6.972	7.32	6.565		83	16.516	16.88	16.113		131	26.063	26.43	25.661	
36	7.171	7.52	6.771		84	16.715	17.08	16.315		132	26.262	26.63	25.862	
37	7.370	7.72	6.963		85	16.914	17.28	16.511		133	26.461	26.83	26.059	
38	7.569	7.92	7.169		86	17.113	17.48	16.713		134	26.660	27.03	26.260	
39	7.767	8.12	7.361		87	17.312	17.68	16.909		135	26.859	27.23	26.457	
40	7.966	8.32	7.566		88	17.511	17.87	17.111		136	27.058	27.43	26.658	
41	8.165	8.52	7.759		89	17.710	18.07	17.307		137	27.257	27.62	26.855	
42	8.363	8.72	7.963		90	17.909	18.27	17.509		138	27.456	27.82	27.056	
43	8.562	8.91	8.157		91	18.107	18.47	17.704		139	27.655	28.02	27.253	
44	8.761	9.11	8.361		92	18.306	18.67	17.906		140	27.854	28.22	27.454	
45	8.960	9.31	8.555		93	18.505	18.87	18.102		141	28.053	28.42	27.651	
46	9.159	9.51	8.759		94	18.704	19.07	18.304		142	28.252	28.62	27.852	
47	9.357	9.71	8.952		95	18.903	19.27	18.500		143	28.451	28.82	28.049	
48	9.556	9.91	9.156		96	19.102	19.47	18.702		144	28.650	29.02	28.250	
49	9.755	10.11	9.350		97	19.301	19.67	18.898		145	28.849	29.22	28.447	
50	9.954	10.31	9.554		98	19.500	19.87	19.100		146	29.048	29.42	28.648	
51	10.153	10.51	9.748		99	19.699	20.06	19.296		147	29.247	29.62	28.845	
52	10.351	10.71	9.951		100	19.898	20.26	19.498		148	29.446	29.81	29.046	
53	10.550	10.91	10.146		101	20.096	20.46	19.694		149	29.645	30.01	29.243	

Odd tooth "bottom diameters" equal pitch minus .400″.

TECHNICAL SECTION

Sprocket Information

Sprocket Diameters – U.S.A. Std. No. 60 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
6	1.500	1.75	1.031	54	12.899	13.33	12.430	102	24.354	24.79	23.885
7	1.729	2.01	1.217	55	13.137	13.57	12.663	103	24.593	25.03	24.121
8	1.960	2.26	1.491	56	13.376	13.81	12.907	104	24.832	25.27	24.363
9	2.193	2.51	1.691	57	13.615	14.04	13.141	105	25.071	25.51	24.599
10	2.427	2.76	1.958	58	13.853	14.28	13.385	106	25.309	25.75	24.840
11	2.662	3.00	2.166	59	14.092	14.52	13.618	107	25.548	25.99	25.076
12	2.898	3.25	2.429	60	14.331	14.76	13.862	108	25.787	26.23	25.318
13	3.134	3.49	2.642	61	14.569	15.00	14.096	109	26.025	26.46	25.553
14	3.371	3.74	2.902	62	14.808	15.24	14.339	110	26.264	26.70	25.795
15	3.607	3.98	3.119	63	15.046	15.48	14.573	111	26.503	26.94	26.031
16	3.844	4.22	3.376	64	15.285	15.72	14.816	112	26.742	27.18	26.273
17	4.082	4.46	3.595	65	15.524	15.96	15.050	113	26.980	27.42	26.508
18	4.319	4.70	3.850	66	15.762	16.19	15.293	114	27.219	27.66	26.750
19	4.557	4.95	4.072	67	16.001	16.43	15.528	115	27.458	27.90	26.986
20	4.794	5.19	4.326	68	16.240	16.67	15.771	116	27.697	28.14	27.228
21	5.032	5.43	4.549	69	16.478	16.91	16.005	117	27.936	28.38	27.464
22	5.270	5.67	4.801	70	16.717	17.15	16.248	118	28.174	28.61	27.705
23	5.508	5.91	5.026	71	16.956	17.39	16.483	119	28.413	28.85	27.941
24	5.746	6.15	5.277	72	17.194	17.63	16.725	120	28.651	29.09	28.182
25	5.984	6.39	5.503	73	17.433	17.87	16.960	121	28.889	29.33	28.418
26	6.222	6.63	5.753	74	17.671	18.11	17.203	122	29.128	29.57	28.659
27	6.460	6.87	5.981	75	17.910	18.34	17.437	123	29.367	29.81	28.895
28	6.699	7.11	6.230	76	18.149	18.58	17.680	124	29.606	30.05	29.137
29	6.937	7.35	6.458	77	18.387	18.82	17.914	125	29.845	30.29	29.373
30	7.175	7.59	6.706	78	18.626	19.06	18.157	126	30.083	30.52	29.614
31	7.413	7.83	6.935	79	18.865	19.30	18.392	127	30.322	30.76	29.851
32	7.652	8.07	7.183	80	19.103	19.54	18.635	128	30.561	31.00	30.092
33	7.890	8.30	7.412	81	19.342	19.78	18.870	129	30.800	31.24	30.328
34	8.129	8.54	7.660	82	19.581	20.02	19.112	130	31.038	31.48	30.569
35	8.367	8.78	7.890	83	19.819	20.26	19.347	131	31.277	31.72	30.806
36	8.605	9.02	8.137	84	20.058	20.49	19.589	132	31.516	31.96	31.047
37	8.844	9.26	8.367	85	20.297	20.73	19.825	133	31.754	32.20	31.283
38	9.082	9.50	8.613	86	20.536	20.97	20.067	134	31.993	32.44	31.524
39	9.321	9.74	8.845	87	20.774	21.21	20.302	135	32.232	32.67	31.761
40	9.559	9.98	9.090	88	21.013	21.45	20.544	136	32.471	32.91	32.002
41	9.798	10.22	9.322	89	21.252	21.69	20.780	137	32.709	33.15	32.238
42	10.036	10.46	9.567	90	21.490	21.93	21.021	138	32.948	33.39	32.479
43	10.275	10.70	9.799	91	21.729	22.17	21.257	139	33.187	33.63	32.716
44	10.513	10.94	10.044	92	21.968	22.41	21.499	140	33.425	33.87	32.956
45	10.752	11.18	10.276	93	22.206	22.64	21.734	141	33.664	34.11	33.193
46	10.990	11.42	10.522	94	22.445	22.88	21.976	142	33.903	34.35	33.434
47	11.229	11.65	10.754	95	22.683	23.12	22.211	143	34.142	34.58	33.670
48	11.467	11.89	10.999	96	22.922	23.36	22.453	144	34.380	34.82	33.911
49	11.706	12.13	11.231	97	23.161	23.60	22.689	145	34.619	35.06	34.148
50	11.945	12.37	11.476	98	23.400	23.84	22.931	146	34.858	35.30	34.389
51	12.183	12.61	11.708	99	23.638	24.08	23.166	147	35.096	35.54	34.625
52	12.422	12.85	11.953	100	23.877	24.32	23.408	148	35.335	35.78	34.866
53	12.660	13.09	12.186	101	24.116	24.55	23.644	149	35.574	36.02	35.103

Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.

Odd tooth "bottom diameters" equal pitch minus .469″.

Sprocket Diameters – U.S.A. Std. No. 80 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
6	2.000	2.33	1.375	54	17.198	17.77	16.573	102	32.473	33.06	31.848
7	2.305	2.68	1.622	55	17.517	18.09	16.884	103	32.791	33.38	32.162
8	2.613	3.01	1.988	56	17.835	18.41	17.210	104	33.109	33.69	32.484
9	2.924	3.35	2.254	57	18.153	18.73	17.521	105	33.428	34.01	32.799
10	3.236	3.68	2.611	58	18.471	19.04	17.846	106	33.746	34.33	33.121
11	3.550	4.01	2.888	59	18.789	19.36	18.158	107	34.064	34.65	33.435
12	3.864	4.33	3.239	60	19.107	19.68	18.482	108	34.382	34.97	33.757
13	4.179	4.66	3.523	61	19.426	20.00	18.794	109	34.701	35.29	34.072
14	4.494	4.98	3.869	62	19.744	20.32	19.119	110	35.019	35.61	34.394
15	4.810	5.30	4.158	63	20.062	20.64	19.431	111	35.337	35.92	34.709
16	5.126	5.63	4.501	64	20.380	20.96	19.755	112	35.655	36.24	35.030
17	5.442	5.95	4.794	65	20.698	21.27	20.067	113	35.974	36.56	35.345
18	5.759	6.27	5.134	66	21.016	21.59	20.391	114	36.292	36.88	35.667
19	6.076	6.59	5.430	67	21.335	21.91	20.704	115	36.610	37.20	35.982
20	6.392	6.91	5.767	68	21.653	22.23	21.028	116	36.929	37.52	36.304
21	6.710	7.24	6.066	69	21.971	22.55	21.340	117	37.247	37.83	36.618
22	7.027	7.56	6.402	70	22.289	22.87	21.664	118	37.565	38.15	36.940
23	7.344	7.88	6.702	71	22.607	23.19	21.977	119	37.883	38.47	37.255
24	7.661	8.20	7.036	72	22.926	23.50	22.301	120	38.202	38.79	37.577
25	7.979	8.52	7.338	73	23.244	23.82	22.613	121	38.520	39.11	37.892
26	8.296	8.84	7.671	74	23.562	24.14	22.937	122	38.838	39.43	38.213
27	8.614	9.16	7.974	75	23.880	24.46	23.250	123	39.156	39.74	38.528
28	8.931	9.48	8.306	76	24.198	24.78	23.573	124	39.475	40.06	38.850
29	9.249	9.80	8.611	77	24.517	25.10	23.887	125	39.793	40.38	39.165
30	9.567	10.11	8.942	78	24.835	25.42	24.210	126	40.111	40.70	39.486
31	9.985	10.43	9.247	79	25.153	25.73	24.523	127	40.430	41.02	39.801
32	10.202	10.75	9.577	80	25.471	26.05	24.846	128	40.748	41.34	40.123
33	10.520	11.07	9.883	81	25.790	26.37	25.160	129	41.066	41.65	40.438
34	10.838	11.39	10.213	82	26.108	26.69	25.483	130	41.384	41.97	40.759
35	11.156	11.71	10.520	83	26.426	27.01	25.796	131	41.703	42.29	41.075
36	11.474	12.03	10.849	84	26.744	27.33	26.119	132	42.021	42.61	41.396
37	11.792	12.35	11.156	85	27.063	27.64	26.433	133	42.339	42.93	41.711
38	12.110	12.67	11.485	86	27.381	27.96	26.756	134	42.657	43.25	42.032
39	12.428	12.99	11.792	87	27.699	28.28	27.070	135	42.976	43.56	42.348
40	12.746	13.31	12.121	88	28.017	28.60	27.392	136	43.294	43.88	42.669
41	13.064	13.63	12.429	89	28.335	28.92	27.706	137	43.612	44.20	42.984
42	13.382	13.94	12.757	90	28.654	29.24	28.029	138	43.931	44.52	43.306
43	13.700	14.26	13.065	91	28.972	29.56	28.343	139	44.249	44.84	43.621
44	14.018	14.58	13.393	92	29.290	29.87	28.665	140	44.567	45.16	43.942
45	14.336	14.90	13.702	93	29.608	30.19	28.979	141	44.885	45.47	44.258
46	14.654	15.22	14.029	94	29.927	30.51	29.302	142	45.204	45.79	44.579
47	14.972	15.54	14.338	95	30.245	30.83	29.616	143	45.522	46.11	44.894
48	15.290	15.86	14.665	96	30.563	31.15	29.938	144	45.840	46.43	45.215
49	15.608	16.18	14.975	97	30.882	31.47	30.252	145	46.159	46.75	45.531
50	15.926	16.50	15.301	98	31.200	31.78	30.573	146	46.477	47.07	45.852
51	16.244	16.81	15.611	99	31.518	32.10	30.889	147	46.795	47.38	46.167
52	16.562	17.13	15.937	100	31.836	32.42	31.211	148	47.113	47.70	46.488
53	16.880	17.45	16.248	101	32.155	32.74	31.526	149	47.432	48.02	46.804

Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.

Odd tooth "bottom diameters" equal pitch minus .625″.

TECHNICAL SECTION

Sprocket Information

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Sprocket Diameters – U.S.A. Std. No. 100 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	
6	2.500	2.92	1.750	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	54	21.498	22.21	20.748	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	102	40.591	41.32	39.841	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
7	2.881	3.35	2.059		55	21.896	22.61	21.137		103	40.989	41.72	40.234	
8	3.266	3.77	2.516		56	22.293	23.01	21.543		104	41.386	42.12	40.636	
9	3.655	4.18	2.850		57	22.691	23.41	21.932		105	41.784	42.52	41.030	
10	4.045	4.60	3.295		58	23.089	23.81	22.339		106	42.182	42.91	41.432	
11	4.437	5.01	3.642		59	23.486	24.20	22.728		107	42.580	43.31	41.825	
12	4.830	5.42	4.080		60	23.884	24.60	23.134		108	42.978	43.71	42.228	
13	5.223	5.82	4.435		61	24.282	25.00	23.524		109	43.376	44.11	42.621	
14	5.617	6.23	4.867		62	24.680	25.40	23.930		110	43.774	44.51	43.024	
15	6.012	6.63	5.229		63	25.077	25.80	24.320		111	44.171	44.90	43.417	
16	6.407	7.03	5.657		64	25.475	26.19	24.725		112	44.569	45.30	43.819	
17	6.803	7.44	6.024		65	25.873	26.59	25.115		113	44.967	45.70	44.213	
18	7.198	7.84	6.448		66	26.271	26.99	25.521		114	45.365	46.10	44.615	
19	7.595	8.24	6.819		67	26.668	27.39	25.911		115	45.763	46.50	45.009	
20	7.991	8.64	7.241		68	27.066	27.79	26.316		116	46.161	46.89	45.411	
21	8.387	9.04	7.614		69	27.464	28.19	26.707		117	46.559	47.29	45.804	
22	8.783	9.44	8.033		70	27.862	28.58	27.112		118	46.957	47.69	46.207	
23	9.180	9.84	8.409		71	28.259	28.98	27.502		119	47.354	48.09	46.600	
24	9.577	10.25	8.827		72	28.657	29.38	27.907		120	47.752	48.49	47.002	
25	9.973	10.65	9.204		73	29.055	29.78	28.298		121	48.149	48.88	47.395	
26	10.370	11.05	9.620		74	29.453	30.18	28.703		122	48.547	49.28	47.797	
27	10.767	11.44	9.999		75	29.850	30.57	29.093		123	48.945	49.68	48.191	
28	11.164	11.84	10.414		76	30.248	30.97	29.498		124	49.343	50.08	48.593	
29	11.561	12.24	10.795		77	30.646	31.37	29.889		125	49.741	50.48	48.987	
30	11.958	12.64	11.208		78	31.044	31.77	30.294		126	50.139	50.87	49.389	
31	12.356	13.04	11.590		79	31.441	32.17	30.685		127	50.537	51.27	49.783	
32	12.753	13.44	12.003		80	31.839	32.57	31.089		128	50.935	51.67	50.185	
33	13.150	13.84	12.385		81	32.237	32.96	31.481		129	51.333	52.07	50.579	
34	13.547	14.24	12.797		82	32.635	33.36	31.885		130	51.730	52.47	50.980	
35	13.945	14.64	13.181		83	33.033	33.76	32.277		131	52.128	52.86	51.375	
36	14.342	15.04	13.592		84	33.430	34.16	32.680		132	52.526	53.26	51.776	
37	14.740	15.44	13.976		85	33.828	34.56	33.072		133	52.924	53.66	52.170	
38	15.137	15.84	14.387		86	34.226	34.95	33.476		134	53.322	54.06	52.572	
39	15.534	16.23	14.772		87	34.624	35.35	33.868		135	53.720	54.46	52.966	
40	15.932	16.63	15.182		88	35.021	35.75	34.271		136	54.118	54.85	53.368	
41	16.329	17.03	15.568		89	35.419	36.15	34.663		137	54.515	55.25	53.762	
42	16.727	17.43	15.977		90	35.817	36.55	35.067		138	54.913	55.65	54.163	
43	17.124	17.83	16.363		91	36.215	36.94	35.459		139	55.311	56.05	54.558	
44	17.522	18.23	16.772		92	36.612	37.34	35.862		140	55.709	56.45	54.959	
45	17.920	18.63	17.159		93	37.010	37.74	36.255		141	56.107	56.84	55.353	
46	18.317	19.02	17.567		94	37.408	38.14	36.658		142	56.505	57.24	55.755	
47	18.715	19.42	17.954		95	37.806	38.54	37.050		143	56.903	57.64	56.149	
48	19.112	19.82	18.362		96	38.203	38.93	37.453		144	57.300	58.04	56.550	
49	19.510	20.22	18.750		97	38.601	39.33	37.846		145	57.698	58.44	56.945	
50	19.908	20.62	19.158		98	38.999	39.73	38.249		146	58.096	58.83	57.346	
51	20.305	21.02	19.545		99	39.397	40.13	38.642		147	58.494	59.23	57.741	
52	20.703	21.42	19.953		100	39.795	40.53	39.045		148	58.892	59.63	58.142	
53	21.100	21.81	20.341		101	40.193	40.92	39.438		149	59.290	60.03	58.537	

Odd tooth "bottom diameters" equal pitch minus .750″.

Sprocket Diameters – U.S.A. Std. No. 120 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth		No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	
6	3.000	3.50	2.125	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	54	25.798	26.65	24.923	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	102	48.709	49.59	47.834	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
7	3.457	4.02	2.495		55	26.275	27.13	25.389		103	49.186	50.06	48.305	
8	3.920	4.52	3.045		56	26.752	27.61	25.877		104	49.664	50.54	48.789	
9	4.386	5.02	3.444		57	27.229	28.09	26.344		105	50.410	51.02	49.260	
10	4.854	5.52	3.979		58	27.707	28.57	26.832		106	50.619	51.50	49.744	
11	5.324	6.01	4.395		59	28.184	29.04	27.299		107	51.096	51.97	50.215	
12	5.796	6.50	4.921		60	28.661	29.52	27.786		108	51.573	52.45	50.698	
13	6.268	6.99	5.347		61	29.138	30.00	28.263		109	52.051	52.93	51.169	
14	6.741	7.47	5.866		62	29.616	30.48	28.741		110	52.528	53.41	51.653	
15	7.215	7.96	6.300		63	30.093	30.96	29.208		111	53.005	53.88	52.124	
16	7.689	8.44	6.814		64	30.570	31.43	29.695		112	53.483	54.36	52.608	
17	8.163	8.92	7.253		65	31.047	31.91	30.163		113	53.961	54.84	53.080	
18	8.638	9.41	7.763		66	31.525	32.39	30.650		114	54.438	55.32	53.563	
19	9.113	9.89	8.207		67	32.002	32.87	31.118		115	54.915	55.80	54.034	
20	9.589	10.37	8.714		68	32.479	33.34	31.604		116	55.393	56.27	54.518	
21	10.064	10.85	9.161		69	32.957	33.82	32.073		117	55.870	56.75	54.989	
22	10.540	11.33	9.665		70	33.434	34.30	32.559		118	56.347	57.23	55.472	
23	11.016	11.81	10.115		71	33.911	34.78	33.028		119	56.824	57.71	55.944	
24	11.492	12.29	10.617		72	34.388	35.26	33.513		120	57.301	58.18	56.426	
25	11.968	12.77	11.070		73	34.866	35.73	33.983		121	57.778	58.66	56.899	
26	12.444	13.25	11.569		74	35.343	36.21	34.468		122	58.256	59.14	57.381	
27	12.921	13.73	12.024		75	35.820	36.69	34.937		123	58.734	59.62	57.854	
28	13.397	14.21	12.522		76	36.298	37.17	35.423		124	59.212	60.09	58.337	
29	13.874	14.69	12.978		77	36.775	37.64	35.892		125	59.690	60.57	58.809	
30	14.350	15.17	13.475		78	37.252	38.12	36.377		126	60.167	61.05	59.292	
31	14.827	15.65	13.933		79	37.730	38.60	36.847		127	60.644	61.53	59.765	
32	15.303	16.13	14.428		80	38.207	39.08	37.332		128	61.122	62.00	60.247	
33	15.780	16.61	14.887		81	38.684	39.56	37.802		129	61.599	62.48	60.720	
34	16.257	17.09	15.382		82	39.162	40.03	38.287		130	62.076	62.96	61.201	
35	16.734	17.57	15.842		83	39.639	40.51	38.757		131	62.554	63.44	61.674	
36	17.211	18.05	16.336		84	40.116	40.99	39.241		132	63.031	63.91	62.156	
37	17.687	18.52	16.796		85	40.594	41.47	39.712		133	63.509	64.39	62.629	
38	18.164	19.00	17.289		86	41.071	41.94	40.196		134	63.986	64.87	63.111	
39	18.641	19.48	17.751		87	41.548	42.42	40.666		135	64.464	65.35	63.584	
40	19.118	19.96	18.243		88	42.026	42.90	41.151		136	64.941	65.82	64.066	
41	19.595	20.44	18.706		89	42.503	43.38	41.621		137	65.418	66.30	64.539	
42	20.072	20.92	19.197		90	42.981	43.85	42.106		138	65.896	66.78	65.021	
43	20.549	21.39	19.661		91	43.458	44.33	42.576		139	66.373	67.26	65.494	
44	21.026	21.87	20.151		92	43.935	44.81	43.060		140	66.851	67.73	65.976	
45	21.503	22.35	20.615		93	44.412	45.29	43.530		141	67.328	68.21	66.449	
46	21.980	22.83	21.105		94	44.889	45.77	44.014		142	67.806	68.69	66.931	
47	22.458	23.31	21.570		95	45.367	46.24	44.485		143	68.283	69.17	67.404	
48	22.935	23.79	22.060		96	45.844	46.72	44.969		144	68.760	69.64	67.885	
49	23.412	24.26	22.525		97	46.321	47.20	45.440		145	69.238	70.12	68.359	
50	23.889	24.74	23.014		98	46.799	47.68	45.924		146	69.715	70.60	68.840	
51	24.366	25.22	23.479		99	47.277	48.15	46.395		147	70.193	71.08	69.314	
52	24.843	25.70	23.968		100	47.754	48.63	46.879		148	70.670	71.56	69.795	
53	25.320	26.18	24.434		101	48.231	49.11	47.350		149	71.148	72.03	70.269	

Odd tooth "bottom diameters" equal pitch minus .875″.

TECHNICAL SECTION

Sprocket Information

Sprocket Diameters – U.S.A. Std. No. 140 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
6	3.500	4.08	2.500	54	30.097	31.10	29.097	102	56.827	57.85	55.827
7	4.033	4.68	2.932	55	30.654	31.65	29.641	103	57.384	58.41	56.377
8	4.573	5.28	3.573	56	31.211	32.21	30.211	104	57.941	58.96	56.941
9	5.117	5.86	4.042	57	31.768	32.77	30.755	105	58.498	59.52	57.491
10	5.663	6.44	4.663	58	32.324	33.33	31.324	106	59.055	60.08	58.055
11	6.212	7.01	5.148	59	32.881	33.89	31.869	107	59.612	60.64	58.605
12	6.762	7.58	5.762	60	33.438	34.44	32.438	108	60.169	61.19	59.169
13	7.313	8.15	6.259	61	33.995	35.00	32.983	109	60.726	61.75	59.719
14	7.864	8.72	6.864	62	34.551	35.56	33.551	110	61.283	62.31	60.283
15	8.417	9.28	7.371	63	35.108	36.11	34.097	111	61.840	62.87	60.833
16	8.970	9.85	7.970	64	35.665	36.67	34.665	112	62.397	63.42	61.397
17	9.524	10.41	8.483	65	36.222	37.23	35.211	113	62.954	63.98	61.948
18	10.078	10.98	9.078	66	36.779	37.79	35.779	114	63.511	64.54	62.511
19	10.632	11.54	9.596	67	37.336	38.35	36.325	115	64.068	65.09	63.062
20	11.187	12.10	10.187	68	37.892	38.90	36.892	116	64.625	65.65	63.625
21	11.742	12.66	10.709	69	38.449	39.46	37.439	117	65.182	66.21	64.176
22	12.297	13.22	11.297	70	39.006	40.02	38.006	118	65.739	66.77	64.739
23	12.852	13.78	11.822	71	39.563	40.57	38.553	119	66.296	67.32	65.290
24	13.407	14.34	12.407	72	40.120	41.13	39.120	120	66.853	67.88	65.853
25	13.963	14.90	12.935	73	40.677	41.69	39.667	121	67.410	68.44	66.404
26	14.518	15.46	13.518	74	41.233	42.25	40.233	122	67.967	68.99	66.967
27	15.074	16.02	14.049	75	41.790	42.80	40.781	123	68.524	69.55	67.518
28	15.630	16.58	14.630	76	42.347	43.36	41.347	124	69.081	70.11	68.081
29	16.186	17.14	15.162	77	42.904	43.92	41.895	125	69.639	70.67	68.633
30	16.742	17.70	15.742	78	43.461	44.48	42.461	126	70.195	71.22	69.195
31	17.298	18.26	16.276	79	44.018	45.03	43.009	127	70.752	71.78	69.746
32	17.854	18.82	16.854	80	44.575	45.59	43.575	128	71.308	72.34	70.308
33	18.410	19.38	17.389	81	45.132	46.15	44.123	129	71.866	72.90	70.860
34	18.966	19.94	17.966	82	45.689	46.71	44.689	130	72.423	73.45	71.423
35	19.523	20.49	18.503	83	46.246	47.26	45.237	131	72.980	74.01	71.974
36	20.079	21.05	19.079	84	46.802	47.82	45.802	132	73.537	74.57	72.537
37	20.635	21.61	19.617	85	47.359	48.38	46.350	133	74.094	75.12	73.088
38	21.192	22.17	20.192	86	47.915	48.93	46.915	134	74.650	75.68	73.650
39	21.748	22.73	20.731	87	48.472	49.49	47.464	135	75.207	76.24	74.202
40	22.305	23.29	21.305	88	49.029	50.05	48.029	136	75.765	76.79	74.765
41	22.861	23.84	21.845	89	49.586	50.61	48.578	137	76.322	77.35	75.316
42	23.418	24.40	22.418	90	50.144	51.16	49.144	138	76.879	77.91	75.879
43	23.974	24.96	22.958	91	50.700	51.72	49.692	139	77.435	78.47	76.431
44	24.531	25.52	23.531	92	51.257	52.28	50.257	140	77.992	79.02	76.992
45	25.087	26.08	24.072	93	51.814	52.83	50.806	141	78.549	79.58	77.545
46	25.644	26.63	24.644	94	52.371	53.39	51.371	142	79.106	80.14	78.106
47	26.201	27.19	25.196	95	52.928	53.95	51.920	143	79.664	80.69	78.659
48	26.757	27.75	25.757	96	53.485	54.51	52.485	144	80.220	81.25	79.220
49	27.314	28.31	26.300	97	54.042	55.06	53.034	145	80.777	81.81	79.773
50	27.871	28.87	26.871	98	54.599	55.62	53.599	146	81.334	82.37	80.334
51	28.427	29.42	27.414	99	55.156	56.18	54.149	147	81.891	82.92	80.887
52	28.984	29.98	27.984	100	55.713	56.74	54.713	148	82.448	83.48	81.448
53	29.541	30.54	28.528	101	56.270	57.29	55.263	149	83.005	84.04	82.001

Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.

Odd tooth "bottom diameters" equal pitch minus 1.000″.

Sprocket Diameters – U.S.A. Std. No. 160 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
6	4.000	4.66	2.875	54	34.397	35.54	33.272	102	64.945	66.11	63.820
7	4.610	5.35	3.369	55	35.033	36.18	33.894	103	65.582	66.75	64.449
8	5.226	6.03	4.101	56	35.669	36.81	34.544	104	66.218	67.39	65.093
9	5.848	6.70	4.634	57	36.306	37.45	35.167	105	66.855	68.03	65.722
10	6.472	7.36	5.347	58	36.942	38.09	35.817	106	67.491	68.66	66.366
11	7.099	8.01	5.902	59	37.578	38.73	36.440	107	68.128	69.30	66.995
12	7.727	8.66	6.602	60	38.215	39.36	37.090	108	68.765	69.94	67.638
13	8.357	9.31	7.171	61	38.851	40.00	37.713	109	69.401	70.57	68.268
14	8.988	9.96	7.863	62	39.487	40.64	38.362	110	70.038	71.21	68.913
15	9.620	10.61	8.442	63	40.124	41.27	38.986	111	70.674	71.85	69.541
16	10.252	11.26	9.127	64	40.760	41.91	39.635	112	71.311	72.48	70.186
17	10.885	11.90	9.713	65	41.396	42.55	40.259	113	71.948	73.12	71.815
18	11.518	12.54	10.393	66	42.033	43.19	40.908	114	72.585	73.76	71.460
19	12.151	13.19	10.985	67	42.669	43.82	41.532	115	73.221	74.39	72.089
20	12.785	13.83	11.660	68	43.306	44.46	42.181	116	73.858	75.03	72.733
21	13.419	14.47	12.256	69	43.942	45.10	42.805	117	74.494	75.67	73.362
22	14.053	15.11	12.928	70	44.578	45.73	43.453	118	75.130	76.30	74.005
23	14.688	15.75	13.528	71	45.215	46.37	44.078	119	75.767	76.94	74.635
24	15.323	16.39	14.198	72	45.851	47.01	44.726	120	76.403	77.58	75.278
25	15.958	17.03	14.801	73	46.488	47.64	45.352	121	77.039	78.21	75.908
26	16.593	17.67	15.468	74	47.124	48.28	45.999	122	77.676	78.85	76.551
27	17.228	18.31	16.073	75	47.760	48.92	46.625	123	78.313	79.49	77.181
28	17.863	18.95	16.738	76	48.397	49.56	47.272	124	78.950	80.12	77.825
29	18.498	19.59	17.346	77	49.033	50.19	47.898	125	79.587	80.76	78.455
30	19.134	20.23	18.009	78	49.670	50.83	48.545	126	80.222	81.40	79.097
31	19.769	20.87	18.619	79	50.306	51.47	49.171	127	80.859	82.03	79.728
32	20.405	21.51	19.280	80	50.943	52.10	49.818	128	81.495	82.67	80.370
33	21.040	22.15	19.892	81	51.579	52.74	50.444	129	82.132	83.31	81.001
34	21.676	22.78	20.551	82	52.216	53.38	51.091	130	82.769	83.94	81.644
35	22.312	23.42	21.164	83	52.852	54.01	51.717	131	83.405	84.58	82.274
36	22.947	24.06	21.822	84	53.489	54.65	52.364	132	84.042	85.22	82.917
37	23.583	24.70	22.437	85	54.125	55.29	52.991	133	84.678	85.85	83.547
38	24.219	25.34	23.094	86	54.761	55.92	53.637	134	85.315	86.49	84.190
39	24.855	25.98	23.710	87	55.398	56.56	54.264	135	85.951	87.13	84.821
40	25.491	26.61	24.366	88	56.034	57.20	54.909	136	86.588	87.76	85.463
41	26.127	27.25	24.983	89	56.671	57.84	55.538	137	87.225	88.40	86.094
42	26.763	27.89	25.638	90	57.307	58.47	56.182	138	87.861	89.04	86.736
43	27.399	28.53	26.256	91	57.944	59.11	56.810	139	88.498	89.68	87.367
44	28.035	29.16	26.910	92	58.580	59.75	57.455	140	89.134	90.31	88.009
45	28.671	29.80	27.529	93	59.216	60.38	58.083	141	89.771	90.95	88.640
46	29.307	30.44	28.182	94	59.853	61.02	58.728	142	90.407	91.59	89.282
47	29.943	31.08	28.802	95	60.489	61.66	59.356	143	91.044	92.22	89.913
48	30.580	31.71	29.455	96	61.126	62.29	60.001	144	91.680	92.86	90.555
49	31.216	32.35	30.075	97	61.762	62.93	60.629	145	92.317	93.50	91.187
50	31.852	32.99	30.727	98	62.399	63.57	61.274	146	92.954	94.13	91.829
51	32.488	33.63	31.348	99	63.035	64.20	61.903	147	93.590	94.77	92.460
52	33.124	34.26	31.999	100	63.672	64.84	62.547	148	94.227	95.41	93.102
53	33.761	34.90	32.621	101	64.309	65.48	63.176	149	94.863	96.04	93.733

Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.

Odd tooth "bottom diameters" equal pitch minus 1.125″.

TECHNICAL SECTION

Sprocket Information

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Sprocket Diameters – U.S.A. Std. No. 180 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
5	3.828	4.45	2.235	45	32.255	33.53	30.830	85	60.891	62.20	59.474
6	4.500	5.25	3.094	46	32.971	34.24	31.565	86	61.607	62.92	60.201
7	5.186	6.02	3.650	47	33.686	34.96	32.262	87	62.323	63.63	60.907
8	5.879	6.78	4.473	48	34.402	35.68	32.996	88	63.039	64.35	61.633
9	6.579	7.53	5.073	49	35.118	36.40	33.694	89	63.755	65.07	62.339
10	7.281	8.28	5.875	50	35.834	37.11	34.428	90	64.471	65.78	63.065
11	7.986	9.01	6.499	51	36.549	37.83	35.126	91	65.187	66.50	63.771
12	8.693	9.75	7.287	52	37.265	38.55	35.859	92	65.903	67.21	64.497
13	9.402	10.48	7.927	53	37.981	39.27	36.558	93	66.619	67.93	65.203
14	10.112	11.21	8.706	54	38.696	39.98	37.290	94	67.335	68.65	65.929
15	10.822	11.93	9.357	55	39.412	40.70	37.990	95	68.051	69.36	66.636
16	11.533	12.66	10.127	56	40.128	41.42	38.722	96	68.767	70.08	67.361
17	12.245	13.39	10.787	57	40.844	42.13	39.422	97	69.483	70.80	68.068
18	12.957	14.11	11.551	58	41.560	42.85	40.154	98	70.199	71.51	68.793
19	13.670	14.83	12.217	59	42.276	43.57	40.855	99	70.916	72.23	69.501
20	14.383	15.56	12.977	60	42.991	44.28	41.585	100	71.631	72.95	70.225
21	15.096	16.28	13.648	61	43.707	45.00	42.287	101	72.348	73.66	70.933
22	15.810	17.00	14.404	62	44.423	45.72	43.017	102	73.064	74.38	71.658
23	16.524	17.72	15.079	63	45.139	46.43	43.719	103	73.780	75.10	72.365
24	17.238	18.44	15.832	64	45.855	47.15	44.449	104	74.496	75.81	73.090
25	17.952	19.16	16.511	65	46.571	47.87	45.151	105	75.212	76.53	73.798
26	18.666	19.88	17.260	66	47.287	48.58	45.881	106	75.928	77.25	74.522
27	19.381	20.60	17.942	67	48.003	49.30	46.584	107	76.644	77.96	75.230
28	20.096	21.32	18.690	68	48.719	50.02	47.313	108	77.360	78.68	75.954
29	20.810	22.04	19.374	69	49.435	50.73	48.016	109	78.076	79.39	76.662
30	21.525	22.76	20.119	70	50.151	51.45	48.745	110	78.792	80.11	77.386
31	22.240	23.48	20.806	71	50.867	52.17	49.448	111	79.508	80.83	78.095
32	22.955	24.19	21.549	72	51.583	52.88	50.177	112	80.225	81.54	78.819
33	23.670	24.91	22.237	73	52.299	53.60	50.880	113	80.941	82.26	79.527
34	24.385	25.63	22.979	74	53.015	54.32	51.609	114	81.657	82.98	80.251
35	25.101	26.35	23.669	75	53.730	55.03	52.313	115	82.373	83.69	80.959
36	25.816	27.07	24.410	76	54.446	55.75	53.040	116	83.089	84.41	81.683
37	26.531	27.79	25.101	77	55.162	56.47	53.745	117	83.805	85.12	82.392
38	27.246	28.50	25.840	78	55.879	57.18	54.473	118	84.521	85.84	83.115
39	27.962	29.22	26.533	79	56.594	57.90	55.177	119	85.237	86.56	83.824
40	28.677	29.94	27.271	80	57.310	58.62	55.904	120	85.953	87.27	84.547
41	29.393	30.66	27.965	81	58.027	59.33	56.610	121	86.670	87.99	85.256
42	30.108	31.37	28.702	82	58.743	60.05	57.337	122	87.386	88.71	85.980
43	30.824	32.09	29.397	83	59.459	60.77	58.042	123	88.102	89.42	86.689
44	31.539	32.81	30.133	84	60.175	61.48	58.769	124	88.818	90.14	87.412

Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.

Odd tooth "bottom diameters" equal pitch minus 1.406″.

Sprocket Diameters – U.S.A. Std. No. 200 Roller Chain

No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth
6	5.000	5.83	3.438	54	42.995	44.42	41.433	102	81.182	82.64	79.620
7	5.762	6.69	4.055	55	43.792	45.22	42.212	103	81.977	83.44	80.406
8	6.532	7.54	4.970	56	44.587	46.02	43.025	104	82.772	84.24	81.210
9	7.310	8.37	5.637	57	45.382	46.81	43.802	105	83.567	85.03	81.996
10	8.090	9.20	6.528	58	46.177	47.61	44.615	106	84.365	85.83	82.803
11	8.872	10.02	7.219	59	46.972	48.41	45.393	107	85.160	86.62	83.589
12	9.660	10.83	8.098	60	47.767	49.20	46.205	108	85.955	87.42	84.393
13	10.447	11.64	8.808	61	48.565	50.00	46.987	109	86.752	88.22	85.181
14	11.235	12.46	9.673	62	49.360	50.80	47.798	110	87.547	99.01	85.985
15	12.025	13.26	10.397	63	50.155	51.59	48.577	111	88.342	89.81	86.771
16	12.815	14.07	11.253	64	50.950	52.39	49.388	112	89.137	90.60	87.575
17	13.605	14.87	11.985	65	51.745	53.19	50.168	113	89.935	91.40	88.364
18	14.397	15.68	12.835	66	52.540	53.98	50.978	114	90.730	92.20	89.168
19	15.190	16.48	13.576	67	53.337	54.78	51.760	115	91.525	92.99	89.954
20	15.982	17.29	14.420	68	54.132	55.58	52.570	116	92.322	93.79	90.760
21	16.775	18.09	15.166	69	54.927	56.37	53.351	117	93.117	94.58	91.547
22	17.567	18.89	16.005	70	55.722	57.17	54.160	118	93.912	95.38	92.350
23	18.360	19.69	16.755	71	56.517	57.96	54.941	119	94.707	96.18	93.137
24	19.152	20.49	17.590	72	57.315	58.76	55.753	120	95.502	96.97	93.940
25	19.947	21.29	18.346	73	58.110	59.56	56.535	121	96.297	97.77	94.727
26	20.740	22.09	19.178	74	58.905	60.35	57.343	122	97.092	98.56	95.530
27	21.535	22.89	19.937	75	59.700	61.15	58.125	123	97.890	99.36	96.320
28	22.330	23.69	20.768	76	60.495	61.95	58.933	124	98.687	100.16	97.125
29	23.122	24.49	21.526	77	61.292	62.74	59.717	125	99.482	100.95	97.909
30	23.917	25.29	22.355	78	62.087	63.54	60.525	126	100.278	101.75	98.716
31	24.712	26.09	23.118	79	62.882	64.33	61.308	127	101.074	102.54	99.504
32	25.505	26.88	23.943	80	63.677	65.13	62.115	128	101.869	103.34	100.307
33	26.300	27.68	24.708	81	64.475	65.93	62.901	129	102.665	104.14	101.095
34	27.095	28.48	25.533	82	65.270	66.72	63.708	130	103.461	104.93	101.899
35	27.890	29.28	26.300	83	66.065	67.52	64.491	131	104.257	105.73	102.687
36	28.685	30.08	27.123	84	66.860	68.32	65.298	132	105.052	106.52	103.490
37	29.480	30.87	27.891	85	67.657	69.11	66.083	133	105.848	107.32	104.278
38	30.275	31.67	28.713	86	68.452	69.91	66.890	134	106.644	108.12	105.082
39	31.070	32.47	29.483	87	69.247	70.70	67.674	135	107.439	108.91	105.870
40	31.865	33.27	30.303	88	70.042	71.50	68.480	136	108.235	109.71	106.673
41	32.660	34.06	31.074	89	70.837	72.30	69.264	137	109.031	110.50	107.461
42	33.455	34.86	31.893	90	71.635	73.09	70.073	138	109.827	111.30	108.265
43	34.250	35.66	32.665	91	72.430	73.89	70.857	139	110.622	112.10	109.053
44	35.045	36.46	33.483	92	73.225	74.68	71.663	140	111.418	112.89	109.856
45	35.840	37.25	34.256	93	74.020	75.48	72.447	141	112.214	113.69	110.644
46	36.635	38.05	35.073	94	74.815	76.28	73.253	142	113.009	114.48	111.447
47	37.430	38.85	35.847	95	75.612	77.07	74.040	143	113.805	115.28	112.236
48	38.225	39.64	36.663	96	76.407	77.87	74.845	144	114.601	116.07	113.039
49	39.020	40.44	37.438	97	77.202	78.66	75.626	145	115.396	116.87	113.827
50	39.815	41.24	38.253	98	77.997	79.46	76.435	146	116.192	117.67	114.630
51	40.610	42.03	39.029	99	78.795	80.26	77.223	147	116.988	118.46	115.419
52	41.405	42.83	39.843	100	79.590	81.05	78.028	148	117.784	119.26	116.222
53	42.200	43.63	40.619	101	80.385	81.85	78.813	149	118.579	120.05	117.010

Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.

Odd tooth "bottom diameters" equal pitch minus 1.562″.

ORDERING INFORMATION

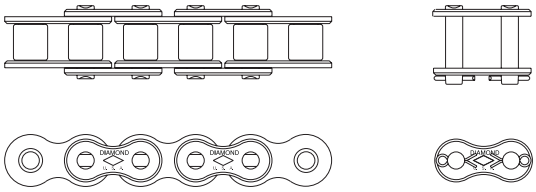
Important Address and Phone Numbers

Diamond Chain Company:
Mailing: P.O. Box 7045
Indianapolis, IN 46207
317-638-6431
800-872-4246
317-633-2243 (fax)
Shipping: 402 Kentucky Avenue
Indianapolis, IN 46225

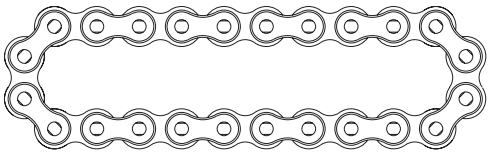
Service Centers:
Dallas, TX
877-453-9128 (toll free)
214-631-2374 (fax)
Sacramento, CA
877-453-9127 (toll free)
317-633-2243 (fax)
New Castle, UK
44-(0)191-414-8822
44-(0)191-414-8877 (fax)
Brampton, Ontario Canada
905-455-6969
905-455-6061 (fax)
Saltillo, Coah. Mexico
011-(0)52-844-430-2957

Quantity; catalog number; type; riveted or cottered when optional; and chain length is the basic information needed to order all chain. For multiple strand chain, the construction, press-fit or slip-fit if optional, must be specified. When ordering attachment chain, refer to the attachment chain section of this guide for details on types and spacing of attachments.

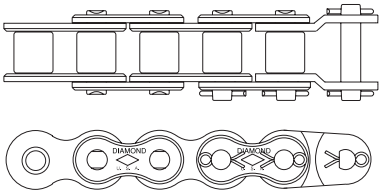
Chain-6 pitches long, including connecting link.



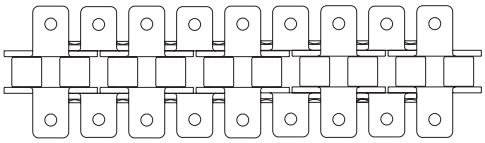
Chain-24 pitches long, riveted endless with no connecting link.



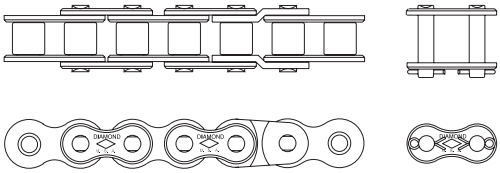
Chain-5 pitches long, including connecting link and one-pitch offset.



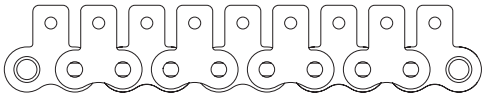
Chain-9 pitches long, with bent attachments, both sides of chain, every pitch.



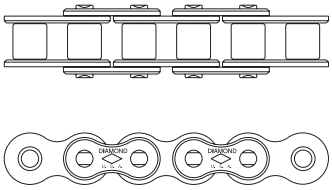
Chain-7 pitches long, including two-pitch offset and connecting link.



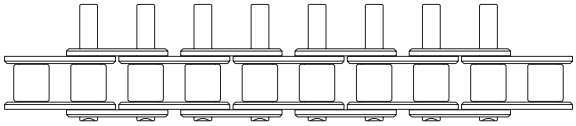
Chain-9 pitches long, with straight attachments, every pitch.



Chain-5 pitches long, roller link each end.



Chain-9 pitches long, with all pins extended.



ORDERING INFORMATION

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

EXAMPLES:

10 - #60-2 riveted chains, press-fit center plates, 168 pitches long including connecting link.

18 - #35 riveted chains, 100 foot reels.

23 - #60 cottered chains, 56 pitches long including connecting link.

6 - #50 riveted chains, 57 pitches long including two-pitch offset and connecting link.

2 - #80 riveted chains, 36 pitches long, with straight attachments, one side of the chain on the pin links at four-pitch spacing, matched as a pair, Class I.

Answers to frequently asked questions:

- Spring clip, slip-fit, connecting links are standard for ASME/ANSI #60 and smaller.
- Cottered, slip-fit, connecting links are standard for ASME/ANSI #80 and larger.
- Double-Pitch Conveyor Roller Chains with over-sized rollers use connecting links for the same chain having standard series rollers. (Example: C2042 chains use connecting links for C2040.)
- DURALUBE® chains use connecting links for Standard Series chains. (#40DL chain uses #40 connecting links.)
- ANSI #140 1-¾" pitch chain, having 6.857 pitches per foot, makes it impossible to supply an exact length of 10 feet. Therefore, this chain model is supplied in 10.21-foot lengths (70 pitches).
- ANSI #180 2-¼" pitch chain, having 5.333 pitches per foot, makes it impossible to supply an exact length of 10 feet. Therefore, this chain model is supplied in 10.13-foot lengths (54 pitches).

Standard Packaged Roller Chain Lengths

Packaged Diamond roller chains and parts protect the product against damage and dirt, provide the utmost convenience in storage and handling, and maintain the chain and the initial lubricant in factory fresh condition. The contents of each package are clearly identified. In addition to packaged chain, for the user who desires chain supplied to an exact length, Diamond can supply all models cut to any length.

ASME/ANSI or Diamond Number	Pitch (Inches)	BOXES		REEL LENGTHS				
		Length (Feet)	Weight (Lbs.)	50 Ft. Weight (Lbs.)	100 Ft. Weight (Lbs.)	200 Ft. Weight (Lbs.)	250 Ft. Weight (Lbs.)	500 Ft. Weight (Lbs.)
Single Strand Chain								
Micropitch®	.1475	10	0.4	2.0	–	8.0	–	–
25	¼	10	1.0	5.4	11.0	–	24.0	57.0
35	⅜	10	2.2	13.0	23.0	–	–	118.0
41	½	10	3.0	16.0	29.0	–	–	154.0
40	½	10	4.0	22.0	43.0	–	114.0	–
50	⅝	10	7.0	37.0	71.0	146.0	–	–
60	¾	10	10.0	51.0	112.0	–	–	–
80	1	10	17.0	97.0	169.7	–	–	–
100	1¼	10	25.0	126.0	251.6	–	–	–
120	1½	10	37.0	–	–	–	–	–
140	1¾	122½"	51.0	–	–	–	–	–
160	2	10	66.0	–	–	–	–	–
180	2¼	121½"	87.0	–	–	–	–	–
200	2½	10	105.0	–	–	–	–	–
Non-standard Chains								
65 x ⅛	½	10	2.0	–	–	–	–	–
867 x 5/16	½	10	4.3	–	–	–	–	–
148 x ¼	⅝	10	6.1	–	–	–	–	–
148 x 5/16	⅝	10	6.6	–	–	–	–	–
435 x ½	1	10	13.0	–	–	–	–	–

ORDERING INFORMATION

Standard Packaged Roller Chain Lengths (Continued)

Double Strand Chain

ASME/ ANSI or Diamond Number	Pitch (Inches)	BOXES		REEL LENGTHS			
		Length (Feet)	Weight (Lbs.)	50 Ft. Weight (Lbs.)	100 Ft. Weight (Lbs.)	150 Ft. Weight (Lbs.)	250 Ft. Weight (Lbs.)
25-2	¼	–	–	–	–	–	45.0
35-2	⅜	10	4.5	23.0	–	–	–
40-2	½	10	8.1	41.0	82.7	123.0	–
50-2	⅝	10	13.5	67.0	135.0	–	–
60-2	¾	10	20.0	100.0	–	–	–
80-2	1	10	34.0	163.0	–	–	–
100-2	1¼	10	51.0	–	–	–	–
120-2	1½	10	75.0	–	–	–	–
140-2	1¾	122½"	100.0	–	–	–	–
160-2	2	10	132.0	–	–	–	–
180-2	2¼	121½"	180.0	–	–	–	–
200-2	2½	10	215.0	–	–	–	–

Triple Strand Chain

ASME/ ANSI or Diamond Number	Pitch (Inches)	BOXES	
		Length (Feet)	Weight (Lbs.)
–	–	–	–
35-3	⅜	10	7.0
40-3	½	10	12.0
50-3	⅝	10	20.0
60-3	¾	10	29.0
80-3	1	10	51.0
100-3	1¼	10	76.0
120-3	1½	10	112.0
140-3	1¾	122½"	148.0
160-3	2	10	192.0
180-3	2¼	121½"	265.0
200-3	2½	10	323.0

Quad. Strand Chain

ASME/ ANSI or Diamond Number	Pitch (Inches)	BOXES	
		Length (Feet)	Weight (Lbs.)
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
60-4	¾	10	40.0
80-4	1	10	66.0
100-4	1¼	10	100.0
120-4	1½	10	148.0
140-4	1¾	122½"	195.0
160-4	2	10	258.0
–	–	–	–
–	–	–	–

Heavy Series, Stainless Steel, DURALUBE® and TUF-FLEX® chains of comparable sizes are packaged in the same lengths as shown above.

Double-Pitch Single Strand Chain

ASME/ ANSI or Diamond Number	Pitch (Inches)	BOXES		REEL LENGTHS		ASME/ ANSI Diamond Number	Pitch (Inches)	BOXES		REEL LENGTHS		ASME/ ANSI or Diamond Number	Pitch (Inches)	BOXES	
		Length (Feet)	Weight (Lbs.)	Length (Feet)	Weight (Lbs.)			Length (Feet)	Weight (Lbs.)	Length (Feet)	Weight (Lbs.)			Length (Feet)	Weight (Lbs.)
2040	1	10	3.0	200	58.0	C-2050	1¼	10	6.0	150	89.0	C-2080H	2	10	14.5
C-2040	1	10	3.2	200	70.0	2060	1½	10	7.5	100	74.0				
2050	1¼	10	5.0	175	86.0	C-2060H	1½	10	11.0	100	107.0				

Standard Packaged Roller Chain Parts

ASME/ ANSI or Diamond Number	CONNECTING LINKS				ROLLER LINKS		OFFSET LINKS		SPRING LOCKS
	Spring Clip Type		Cotter Pin Type						
	Quantity per box	Weight (Lbs.)	Quantity per box	Weight (Lbs.)	Quantity per box	Weight (Lbs.)	Quantity per box	Weight (Lbs.)	Quantity per box
Single Strand Chain									
Micropitch®	50†	0.3	–	–	50	0.3	Not Made	–	100
25	50†	0.3	–	–	50	0.3	50	0.5	100
35	50†	0.8	–	–	50	0.8	50	0.8	100
41	50†	0.8	–	–	50	0.8	50	0.8	100
40	50†	1.0	–	–	50	1.3	50	1.3	100
50	50†	2.0	–	–	50	2.5	50	2.5	100
60	50	3.0	50	3.0	50	4.0	25	2.0	100
80	50	7.5	50	7.5	50	9.0	25	4.5	100
100	–	–	1	0.3	1	0.3	1	0.3	–
120	–	–	1	0.4	1	0.5	1	0.5	–
140	–	–	1	0.6	1	0.8	1	0.8	–
160	–	–	1	0.9	1	1.3	1	1.3	–
180	–	–	1	1.5	1	2.0	1	2.0	–
200	–	–	1	1.9	1	2.5	1	2.4	–
65 x ⅛	50†	0.8	–	–	50	0.8	50	0.8	100
867 x 5/16	20	0.4	–	–	20	0.5	20	0.5	100

†NOTE: One connecting link per poly bag in box of 50.

ORDERING INFORMATION

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Standard Packaged Roller Chain Parts (Continued)

ASME/ ANSI or Diamond Number	CONNECTING LINKS				ROLLER LINKS		OFFSET LINKS		SPRING LOCKS
	Spring Clip Type		Cotter Pin Type						
	Quantity per box	Weight (Lbs.)	Quantity per box	Weight (Lbs.)	Quantity per box	Weight (Lbs.)	Quantity per box	Weight (Lbs.)	Quantity per box
Double-Pitch Chain									
2040	50†	1.3	50†	1.3	50	1.3	50	1.3	–
C-2040	50†	1.3	50†	1.3	–	–	50	1.3	–
2050	50†	2.5	50†	2.5	50	2.5	50	2.5	–
C-2050	50†	3.0	50†	3.0	–	–	50	3.0	–
2060	25	2.0	25	2.0	50	4.5	25	2.0	–
C-2060H	25	3.3	25	3.3	–	–	25	3.3	–
Double Strand Chain									
25-2	50†	0.5	–	–	–	–	1	0.1	–
35-2	50†	0.5	–	–	–	–	1	0.1	–
40-2	50†	1.5	–	–	–	–	1	0.1	–
50-2	50†	3.0	–	–	–	–	1	0.1	–
60-2	–	–	25	2.5	–	–	1	0.2	–
80-2	–	–	25	5.5	–	–	1	0.3	–
100-2	–	–	1	0.5	–	–	1	0.6	–
120-2	–	–	1	0.8	–	–	1	1.0	–
140-2	–	–	1	1.2	–	–	1	1.6	–
160-2	–	–	1	1.8	–	–	1	2.4	–
180-2	–	–	1	2.8	–	–	1	3.6	–
200-2	–	–	1	3.7	–	–	1	4.7	–
Triple Strand Chain									
35-3	1	0.02	–	–	–	–	1	0.1	–
40-3	1	0.04	–	–	–	–	1	0.1	–
50-3	1	0.10	–	–	–	–	1	0.1	–
60-3	–	–	1	0.2	–	–	1	0.2	–
80-3	–	–	1	0.4	–	–	1	0.4	–
100-3	–	–	1	0.7	–	–	1	0.9	–
120-3	–	–	1	1.1	–	–	1	1.5	–
140-3	–	–	1	1.8	–	–	1	3.6	–
200-3	–	–	1	5.4	–	–	1	7.0	–
Quadruple Strand Chain									
35-4	1	0.03	–	–	–	–	1§	0.1	–
40-4	1	0.10	–	–	–	–	1	0.1	–
50-4	1	0.10	–	–	–	–	1	0.2	–
60-4	–	–	1	0.2	–	–	1	0.3	–
80-4	–	–	1	0.4	–	–	1	0.6	–
100-4	–	–	1	0.9	–	–	1	1.1	–
120-4	–	–	1	1.5	–	–	1	2.0	–
140-4	–	–	1	2.4	–	–	1	3.1	–
160-4	–	–	1	3.5	–	–	1	4.8	–

†NOTE: One connecting link per poly bag in box of 50.

§Four-Pitch Type

Parts for Heavy Series, Stainless Steel, DURALUBE®, RING LEADER® and TUF-FLEX® chain are packaged in same quantities as shown above for standard chains.

ORDERING INFORMATION

Chain Components

Connecting Link Spring Lock Type

The two pins and one link plate are furnished assembled. The standard coverplate is designed for a slip-fit on the pins. It is held in place by a flat spring-steel lock, split at one end to permit installation in grooves at the end of each pin. Press-fit coverplates are also available and are recommended for heavy duty applications.

Roller Link

Standard for all sizes of roller chains. They are furnished as complete roller link assemblies. The two bushings are press-fit in each of the link plates. The same roller links are used for single and multiple strand chains.

Single-Pitch Offset Link Slip-Fit Type

This link is furnished with slip-fit pin unassembled in the offset link plates. The flat milled on one end of the pin prevents it from turning in the link plate.

Four-Pitch Offset Link Assembly Press-Fit Type For Multiple Strand Chain Only

Pins are press-fit in offset link pitch holes. Four-pitch length permits the use of BCL connecting links on either end, giving maximum capacity of chain assembly.

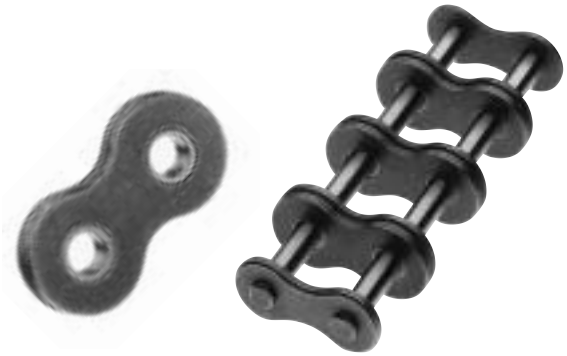
Connecting Link Cotter Pin Type

The two pins and one link plate are furnished assembled. The coverplate may be either press-fit or slip-fit on the pins. Press-fit connecting links are recommended for heavy duty applications. Press-fit coverplates are standard on multiple strand oil field chains.

Two-Pitch Offset Link Assembly Press-Fit Type For Single Strand Chain Only

This type of assembly is available for all sizes of standard single strand chains, and consists of an offset link and a roller link assembled together. The pin is press-fit in the offset link plates and is riveted.

The press-fit construction of this assembly greatly increases its structural rigidity, reliability, and durability. For these reasons, the two-pitch offset assembly is recommended in preference to the single-pitch offset link.



BCL Connecting Link Bushed Centerplate Link

Standard for all press-fit type multiple strand chains of ⅝" pitch and larger. Bushings are a heavy press-fit in the centerplate pitch holes, but are a close slip-fit on the pins. BCL connecting links are easily installed and removed as ordinary connecting links, but have the increased fatigue strength of press-fit center plate chain. The coverplate is press-fit on the pins.

ORDERING INFORMATION

Chain Length in Pitches to Feet Conversion Table

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

Chain Length in Pitches Converted to Feet

	Chain Pitch—Inches												
No. of Pitches	¼	⅜	½	⅝	¾	1	1¼	1½	1¾	2	2¼	2½	3
	Chain Length—Feet												
1	0.02	0.03	0.04	0.05	0.06	0.08	0.10	0.13	0.15	0.17	0.19	0.21	0.25
2	0.04	0.06	0.08	0.10	0.13	0.17	0.21	0.25	0.29	0.33	0.38	0.42	0.50
3	0.06	0.09	0.13	0.16	0.19	0.25	0.31	0.38	0.44	0.50	0.56	0.63	0.75
4	0.08	0.13	0.17	0.21	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.83	1.00
5	0.10	0.16	0.21	0.26	0.31	0.42	0.52	0.63	0.73	0.83	0.94	1.04	1.25
6	0.13	0.19	0.25	0.31	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.50
7	0.15	0.22	0.29	0.36	0.44	0.58	0.73	0.88	1.02	1.17	1.31	1.46	1.75
8	0.17	0.25	0.33	0.42	0.50	0.67	0.83	1.00	1.17	1.33	1.50	1.67	2.00
9	0.19	0.28	0.38	0.47	0.56	0.75	0.94	1.13	1.31	1.50	1.69	1.88	2.25
10	0.21	0.31	0.42	0.52	0.63	0.83	1.04	1.25	1.46	1.67	1.88	2.08	2.50
11	0.23	0.34	0.46	0.57	0.69	0.92	1.15	1.38	1.60	1.83	2.06	2.29	2.75
12	0.25	0.38	0.50	0.63	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	3.00
13	0.27	0.41	0.54	0.68	0.81	1.08	1.35	1.63	1.90	2.17	2.44	2.71	3.25
14	0.29	0.44	0.58	0.73	0.88	1.17	1.46	1.75	2.04	2.33	2.63	2.92	3.50
15	0.31	0.47	0.63	0.78	0.94	1.25	1.56	1.88	2.19	2.50	2.81	3.13	3.75
16	0.33	0.50	0.67	0.83	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	4.00
17	0.35	0.53	0.71	0.89	1.06	1.42	1.77	2.13	2.48	2.83	3.19	3.54	4.25
18	0.38	0.56	0.75	0.94	1.13	1.50	1.88	2.25	2.63	3.00	3.38	3.75	4.50
19	0.40	0.59	0.79	0.99	1.19	1.58	1.98	2.38	2.77	3.17	3.56	3.96	4.75
20	0.42	0.63	0.83	1.04	1.25	1.67	2.08	2.50	2.92	3.33	3.75	4.17	5.00
21	0.44	0.66	0.88	1.09	1.31	1.75	2.19	2.63	3.06	3.50	3.94	4.38	5.25
22	0.46	0.69	0.92	1.15	1.38	1.83	2.29	2.75	3.21	3.67	4.13	4.58	5.50
23	0.48	0.72	0.96	1.20	1.44	1.92	2.40	2.88	3.35	3.83	4.31	4.79	5.75
24	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	6.00
25	0.52	0.78	1.04	1.30	1.56	2.08	2.60	3.13	3.65	4.17	4.69	5.21	6.25
26	0.54	0.81	1.08	1.35	1.63	2.17	2.71	3.25	3.79	4.33	4.88	5.42	6.50
27	0.56	0.84	1.13	1.41	1.69	2.25	2.81	3.38	3.94	4.50	5.06	5.63	6.75
28	0.58	0.88	1.17	1.46	1.75	2.33	2.92	3.50	4.08	4.67	5.25	5.83	7.00
29	0.60	0.91	1.21	1.51	1.81	2.42	3.02	3.63	4.23	4.83	5.44	6.04	7.25
30	0.63	0.94	1.25	1.56	1.88	2.50	3.13	3.75	4.38	5.00	5.63	6.25	7.50
31	0.65	0.97	1.29	1.61	1.94	2.58	3.23	3.88	4.52	5.17	5.81	6.46	7.75
32	0.67	1.00	1.33	1.67	2.00	2.67	3.33	4.00	4.67	5.33	6.00	6.67	8.00
33	0.69	1.03	1.38	1.72	2.06	2.75	3.44	4.13	4.81	5.50	6.19	6.88	8.25
34	0.71	1.06	1.42	1.77	2.13	2.83	3.54	4.25	4.96	5.67	6.38	7.08	8.50
35	0.73	1.09	1.46	1.82	2.19	2.92	3.65	4.38	5.10	5.83	6.56	7.29	8.75
36	0.75	1.13	1.50	1.88	2.25	3.00	3.75	4.50	5.25	6.00	6.75	7.50	9.00
37	0.77	1.16	1.54	1.93	2.31	3.08	3.85	4.63	5.40	6.17	6.94	7.71	9.25
38	0.79	1.19	1.58	1.98	2.38	3.17	3.96	4.75	5.54	6.33	7.13	7.92	9.50
39	0.81	1.22	1.63	2.03	2.44	3.25	4.06	4.88	5.69	6.50	7.31	8.13	9.75
40	0.83	1.25	1.67	2.08	2.50	3.33	4.17	5.00	5.83	6.67	7.50	8.33	10.00
41	0.85	1.28	1.71	2.14	2.56	3.42	4.27	5.13	5.98	6.83	7.69	8.54	10.25
42	0.88	1.31	1.75	2.19	2.63	3.50	4.38	5.25	6.13	7.00	7.88	8.75	10.50
43	0.90	1.34	1.79	2.24	2.69	3.58	4.48	5.38	6.27	7.17	8.06	8.96	10.75
44	0.92	1.38	1.83	2.29	2.75	3.67	4.58	5.50	6.42	7.33	8.25	9.17	11.00
45	0.94	1.41	1.88	2.34	2.81	3.75	4.69	5.63	6.56	7.50	8.44	9.38	11.25
46	0.96	1.44	1.92	2.40	2.88	3.83	4.79	5.75	6.71	7.67	8.63	9.58	11.50
47	0.98	1.47	1.96	2.45	2.94	3.92	4.90	5.88	6.85	7.83	8.81	9.79	11.75
48	1.00	1.50	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	12.00
49	1.02	1.53	2.04	2.55	3.06	4.08	5.10	6.13	7.15	8.17	9.19	10.21	12.25
50	1.04	1.56	2.08	2.60	3.13	4.17	5.21	6.25	7.29	8.33	9.38	10.42	12.50
51	1.06	1.59	2.13	2.66	3.19	4.25	5.31	6.38	7.44	8.50	9.56	10.63	12.75
52	1.08	1.63	2.17	2.71	3.25	4.33	5.42	6.50	7.58	8.67	9.75	10.83	13.00
53	1.10	1.66	2.21	2.76	3.31	4.42	5.52	6.63	7.73	8.83	9.94	11.04	13.25
54	1.13	1.69	2.25	2.81	3.38	4.50	5.63	6.75	7.88	9.00	10.13	11.25	13.50
55	1.15	1.72	2.29	2.86	3.44	4.58	5.73	6.88	8.02	9.17	10.31	11.46	13.75
56	1.17	1.75	2.33	2.92	3.50	4.67	5.83	7.00	8.17	9.33	10.50	11.67	14.00
57	1.19	1.78	2.38	2.97	3.56	4.75	5.94	7.13	8.31	9.50	10.69	11.88	14.25
58	1.21	1.81	2.42	3.02	3.63	4.83	6.04	7.25	8.46	9.67	10.88	12.08	14.50
59	1.23	1.84	2.46	3.07	3.69	4.92	6.15	7.38	8.60	9.83	11.06	12.29	14.75
60	1.25	1.88	2.50	3.13	3.75	5.00	6.25	7.50	8.75	10.00	11.25	12.50	15.00
61	1.27	1.91	2.54	3.18	3.81	5.08	6.35	7.63	8.90	10.17	11.44	12.71	15.25
62	1.29	1.94	2.58	3.23	3.88	5.17	6.46	7.75	9.04	10.33	11.63	12.92	15.50
63	1.31	1.97	2.63	3.28	3.94	5.25	6.56	7.88	9.19	10.50	11.81	13.13	15.75
64	1.33	2.00	2.67	3.33	4.00	5.33	6.67	8.00	9.33	10.67	12.00	13.33	16.00
65	1.35	2.03	2.71	3.39	4.06	5.42	6.77	8.13	9.48	10.83	12.19	13.54	16.25
66	1.38	2.06	2.75	3.44	4.13	5.50	6.88	8.25	9.63	11.00	12.38	13.75	16.50
67	1.40	2.09	2.79	3.49	4.19	5.58	6.98	8.38	9.77	11.17	12.56	13.96	16.75
68	1.42	2.13	2.83	3.54	4.25	5.67	7.08	8.50	9.92	11.33	12.75	14.17	17.00
69	1.44	2.16	2.88	3.59	4.31	5.75	7.19	8.63	10.06	11.50	12.94	14.38	17.25
70	1.46	2.19	2.92	3.65	4.38	5.83	7.29	8.75	10.21	11.67	13.13	14.58	17.50
71	1.48	2.22	2.96	3.70	4.44	5.92	7.40	8.88	10.35	11.83	13.31	14.79	17.75
72	1.50	2.25	3.00	3.75	4.50	6.00	7.50	9.00	10.50	12.00	13.50	15.00	18.00
73	1.52	2.28	3.04	3.80	4.56	6.08	7.60	9.13	10.65	12.17	13.69	15.21	18.25
74	1.54	2.31	3.08	3.85	4.63	6.17	7.71	9.25	10.79	12.33	13.88	15.42	18.50
75	1.56	2.34	3.13	3.91	4.69	6.25	7.81	9.38	10.94	12.50	14.06	15.63	18.75
76	1.58	2.38	3.17	3.96	4.75	6.33	7.92	9.50	11.08	12.67	14.25	15.83	19.00
77	1.60	2.41	3.21	4.01	4.81	6.42	8.02	9.63	11.23	12.83	14.44	16.04	19.25
78	1.63	2.44	3.25	4.06	4.88	6.50	8.13	9.75	11.38	13.00	14.63	16.25	19.50
79	1.65	2.47	3.29	4.11	4.94	6.58	8.23	9.88	11.52	13.17	14.81	16.46	19.75
80	1.67	2.50	3.33	4.17	5.00	6.67	8.33	10.00	11.67	13.33	15.00	16.67	20.00
81	1.69	2.53	3.38	4.22	5.06	6.75	8.44	10.13	11.81	13.50	15.19	16.88	20.25
82	1.71	2.56	3.42	4.27	5.13	6.83	8.54	10.25	11.96	13.67	15.38	17.08	20.50
83	1.73	2.59	3.46	4.32	5.19	6.92	8.65	10.38	12.10	13.83	15.56	17.29	20.75
84	1.75	2.63	3.50	4.38	5.25	7.00	8.75	10.50	12.25	14.00	15.75	17.50	21.00
85	1.77	2.66	3.54	4.43	5.31	7.08	8.85	10.63	12.40	14.17	15.94	17.71	21.25
86	1.79	2.69	3.58	4.48	5.38	7.17	8.96	10.75	12.54	14.33	16.13	17.92	21.50
87	1.81	2.72	3.63	4.53	5.44	7.25	9.06	10.88	12.69	14.50	16.31	18.13	21.75
88	1.83	2.75	3.67	4.58	5.50	7.33	9.17	11.00	12.83	14.67	16.50	18.33	22.00
89	1.85	2.78	3.71	4.64	5.56	7.42	9.27	11.13	12.98	14.83	16.69	18.54	22.25
90	1.88	2.81	3.75	4.69	5.63	7.50	9.38	11.25	13.13	15.00	16.88	18.75	22.50
91	1.90	2.84	3.79	4.74	5.69	7.58	9.48	11.38	13.27	15.17	17.06	18.96	22.75
92	1.92	2.88	3.83	4.79	5.75	7.67	9.58	11.50	13.42	15.33	17.25	19.17	23.00
93	1.94	2.91	3.88	4.84	5.81	7.75	9.69	11.63	13.56	15.50	17.44	19.38	23.25
94	1.96	2.94	3.92	4.90	5.88	7.83	9.79	11.75	13.71	15.67	17.63	19.58	23.50
95	1.98	2.97	3.96	4.95	5.94	7.92	9.90	11.88	13.85	15.83	17.81	19.79	23.75
96	2.00	3.00	4.00	5.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	24.00
97	2.02	3.03	4.04	5.05	6.06	8.08	10.10	12.13	14.15	16.17	18.19	20.21	24.25
98	2.04	3.06	4.08	5.10	6.13	8.17	10.21	12.25	14.29	16.33	18.38	20.42	24.50
99	2.06	3.09	4.13	5.16	6.19	8.25	10.31	12.38	14.44	16.50	18.56	20.63	24.75
100	2.08	3.13	4.17	5.21	6.25	8.33	10.42	12.50	14.58	16.67	18.75	20.83	25.00

ORDERING INFORMATION

Terms and Conditions

I. Unless otherwise shown hereon, all terms are f.o.b. Seller's plant and net 30 days at Seller's prices in effect on the date of shipment. Shipments and deliveries shall at all times be subject to approval of the Seller's Credit Department. If Buyer shall fail to make any payments in accordance with the terms hereof, Seller may cancel this order as to any undelivered items, and in addition to its other rights and remedies, but not in limitation thereof, at Seller's option, defer or withhold shipments or deliveries hereunder (or under any other contract with Buyer) except upon Seller's receipt of cash before shipment or such security as Seller deems satisfactory.

2. Unless otherwise shown as included in the price, such price does not include any freight rate increases and/or added expense resulting from compliance with Buyer's shipping instructions whether or not reflected in Buyer's order; the expense of intra-city delivery to rail siding on shipments by rail; any applicable manufacturer's sales, use or value added taxes; import or export duties; the expense of special preparation for export including export packaging, consular invoices, export declarations, certificates of origin, insurance in transit or similar items; and examination or inspection charges incident to inspection by other than Seller's employees or agents. Buyer will be invoiced for those items where applicable; import licenses, foreign exchange and customs approval required in connection with the purchase, delivery or payment of goods, materials and products (hereinafter referred to as "goods") are to be obtained by and provided at Buyer's expense. In no event shall Buyer's shipping instructions waive any term or condition as to delivery herein.

3. Starting costs cover in part tools, dies, and fixtures complementing equipment peculiar to the Seller's facility and would ordinarily have little use elsewhere. Title to such tooling remains with the Seller.

4. Because of manufacturing allowances essential in the production of made-to-order items, the Seller reserves the right to ship and Buyer agrees to accept an overrun of any quantity up to and including 10% when made-to-order items are ordered.

5. Deliveries shall be considered made when the goods hereunder, or any part thereof, are either loaded on inland carriers evidenced by transportation receipts or placed in storage, whichever shall be earlier in time. At that time title to and risk of loss of the goods shall pass to Buyer. Seller shall not be responsible for delay in or failure of deliveries resulting from any cause beyond Seller's control, including without limitation: fire, act of God or force majesture, riot, civil demonstrations, insurrection, war or national emergency, strike or labor dispute, freight embargo or transportation delay, shortage of labor, inability to secure fuel, material, supplies or power at current prices or on account of shortage thereof, demands exceeding Seller's manufacturing or delivery capacity, or any governmental law, act, order, rule or regulation issued by any official or governmental agency (local, state, federal or foreign) affecting the conduct of Seller's business and with which Seller in its judgment or discretion deems it advisable to comply whether or not it may have any legal duty to do so. Buyer agrees to inspect at Buyer's expense and risk all goods before acceptance, and to refuse acceptance unless any loss or damage in transit is fully noted on the delivery bills and receipts. Seller assumes no responsibility for damage to or loss of goods occurring during shipment or delivery, and Buyer agrees to make all claims for any such damage or loss.

6. Cancellation or change in any order by Buyer shall not be effective without notice received, agreed to, and confirmed in writing by Seller. In the event Seller in its discretion approves Buyer's cancellation or change of an order, Buyer agrees to pay a reasonable cancellation or inventory carrying charge. Seller's prior written consent must be obtained before returning any goods.

ORDERING INFORMATION

Terms and Conditions

DIAMOND CHAIN COMPANY
MADE IN THE USA
317-638-6431
1-800-US-CHAIN

7. SELLER EXPRESSLY EXCLUDES ALL WARRANTIES, GUARANTEES AND REPRESENTATIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, MATERIALS, WORKMANSHIP, DESIGN AND SUITABILITY FOR A SPECIFIED OR INTENDED PURPOSE. In lieu thereof, any goods which upon Seller's determination are defective due to faulty material or workmanship or of Seller's design and are unsuitable for Buyer's specified or ordinarily intended use, as determined by Seller, will be repaired, or replaced, f.o.b. point of origin, or the unit purchase price refunded, at Seller's option; provided that the goods are returned (upon Seller's written consent first being given), or the same are rejected, in either event within six (6) months of their sale; except that as to goods purchased by Seller from others and resold to Buyer or incorporated in Seller's goods, Buyer shall have whatever warranty is available from Seller's supplier which shall be Buyer's sole recourse. Seller shall not be liable for Buyer's loss of profit or any special or consequential damage or loss, nor for any cost incurred by Buyer for alteration, field modification, repair or work done on the goods without Seller's express approval in writing prior to any such alteration, field modifications, repair or work. Seller's total liability shall in no event exceed the purchase price of the material specified herein.

8. Unless specifically stated to the contrary on the face of the order, the Buyer represents that none of the materials supplied hereunder are to be used in a motor vehicle in such a manner as to be subject to the safety standards adopted under the National Traffic and Motor Vehicle Safety Act of 1966, and Buyer agrees to indemnify the Seller against any liability under said Act if such representation is not correct. If the materials are to be subject to such standards and the Buyer specifically so states, the Seller, if it accepts the order, warrants that the material complies with all applicable standards under said Act.

9. Seller's prior written consent must be obtained before returning goods for replacement or credit.

10. Any action by Buyer under or for breach of this agreement must be commenced within two (2) years after the cause of action has accrued.

11. Buyer's order is accepted on the terms and conditions stated herein and Seller's acceptance of Buyer's order is expressly made conditioned upon Buyer's assent to such terms and conditions. No agreement or understanding, oral or written, shall be binding on Seller (whether contained in Buyer's purchase forms or otherwise), other than set forth herein, if such shall in any way modify or waive the terms or conditions herein, unless hereafter made in writing and signed by Seller's authorized representative. Waiver by Seller of any default hereunder shall not be deemed a waiver by Seller of any other or subsequent default which may thereafter occur.

12. These terms and conditions shall be construed in accordance with the laws of the State of Illinois.