

**Over 110 years of Quality,
Performance and Service**





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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.

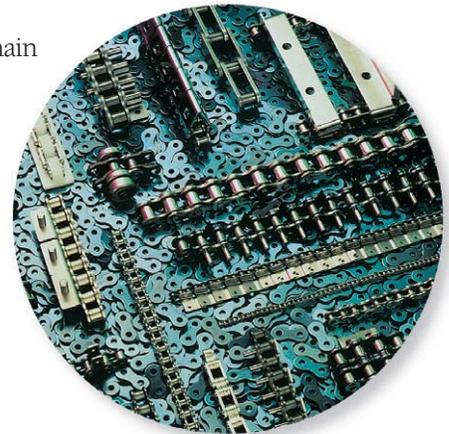
From December 17, 1903, when Diamond chain was used on the Wright brothers' first flying machine, to the present, Diamond Chain has been a major supplier of chain for aircraft, motorcycles, engines and various other uses.

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.



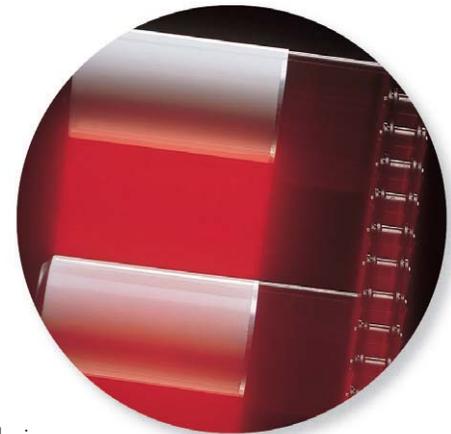
ISO 9001
CERTIFIED

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."

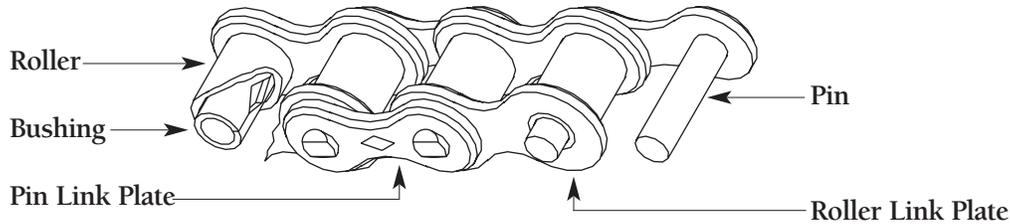


*Marked by the
unique beveled
link plates,
Diamond's Press-
Fit Multiple Strand
chain is a common
sight on oil rigs
throughout the
world.*



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.

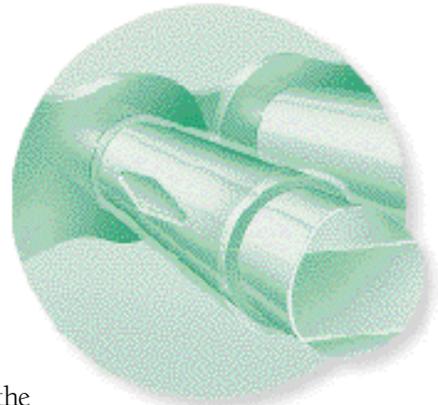


link plates are left with a small “breakout” area. To minimize the effects of this, Diamond provides a unique identifying feature on our $\frac{3}{4}$ " through 2- $\frac{1}{4}$ " pitch, standard and heavy series chains. This identifying feature, a beveled edge, is unique to Diamond, and we use it to orient and assemble the link plates in a direction which minimizes negative effects of the breakout.

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.

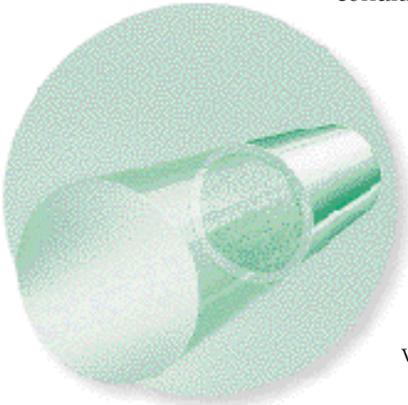
Diamond also developed processes which orient the chain bushings to position the seam away from the load bearing surface. Positioning the bushings results in a smoother, more uniform bearing surface and helps to reduce chain length variation. In $\frac{1}{4}$ " through 1- $\frac{3}{4}$ " pitch chains, 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.



Bushing Orientation

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.



Case Hardened Pins

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.

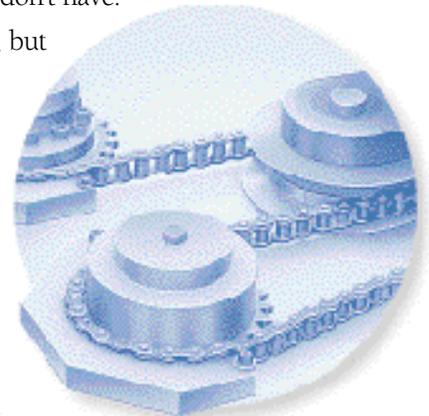
The attention to detail that goes into the fabrication of component parts is not forgotten when assembly operations begin. During the assembly of every pitch of Diamond chain, four key components (pin, bushing, pin link plates and roller link plates) are examined carefully. These four parts are critical 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.



Shot Peening

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.

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.



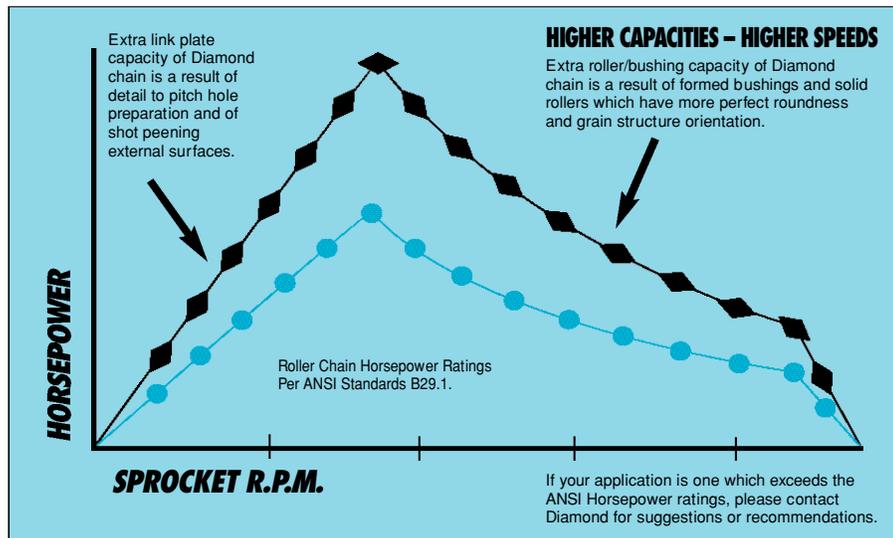
Preloading

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

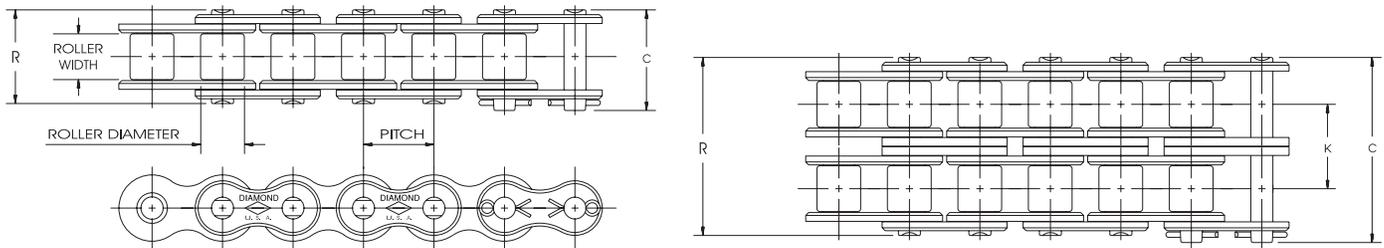
	BARGAIN CHAIN	DIAMOND CHAIN
A. Unit cost of new chain (\$/chain-Ft):	_____	_____
B. Length required for application (chain-Ft):	_____	_____
C. Chain cost per application, A x B (\$/chain):	_____	_____
D. Chains used per year (chains/Yr):	_____	_____
E. Annual cost of chains, C x D (\$/Yr):	_____	_____
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

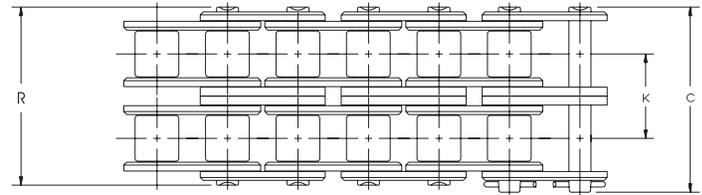
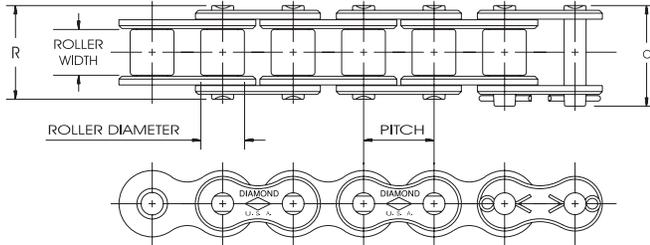
* Chains are rollerless — dimension shown is bushing diameter.

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



Dimensions in Inches and Pounds

Chart continued from previous page.

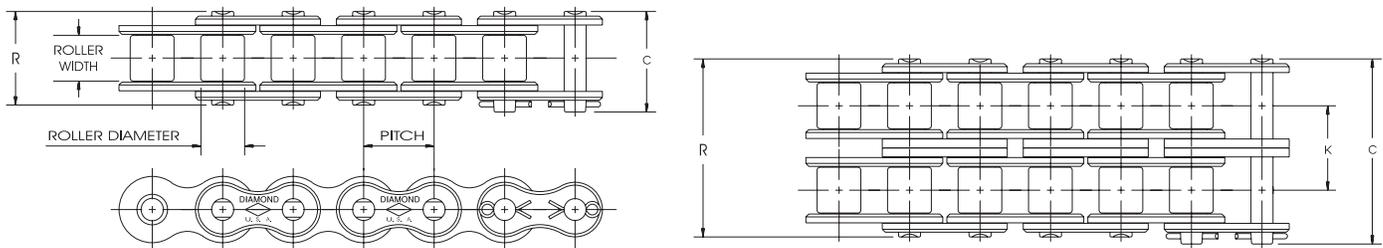
ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
80	1	5/8	.625	.312	.125	1.44	1.32	....	1.73	14500
80-2	1	5/8	.625	.312	.125	2.59	2.47	1.153	3.37	29000
80-3	1	5/8	.625	.312	.125	3.74	3.62	1.153	5.02	43500
80-4	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.

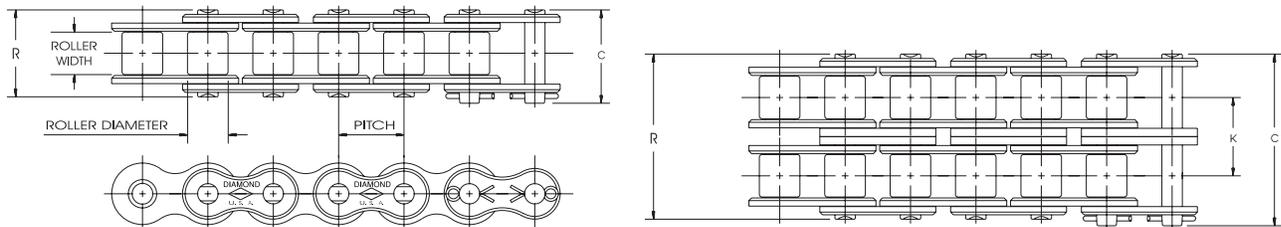
NON-STANDARD SERIES CHAIN

Chain Descriptions and Dimensions



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.



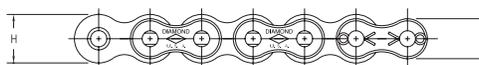
Dimensions in Inches and Pounds

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	

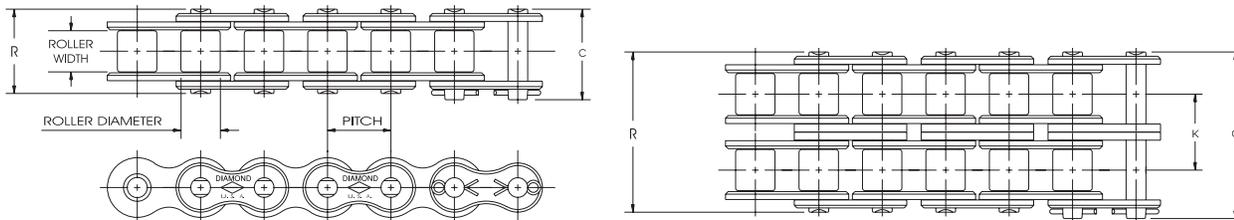
* Nominal values are shown. For information on specific models contact Diamond.

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

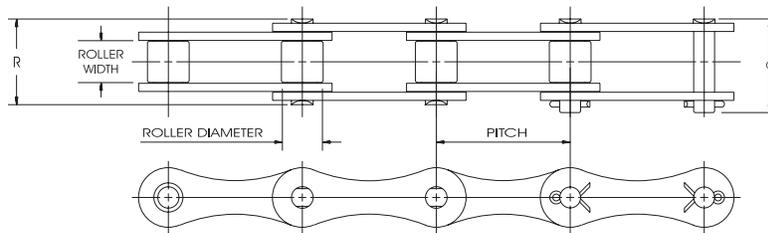
Diamond Number	Other ID	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
88	05B-1	8mm	1/8	.197	.090	.030	.37	.34	....	.12	1300
61 x 1/4		1	1/4	.306	.141	.050	.61	.57	....	.26	1900
65 x 3/16		1/2	3/16	.306	.141	.040	.47	.43	....	.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.

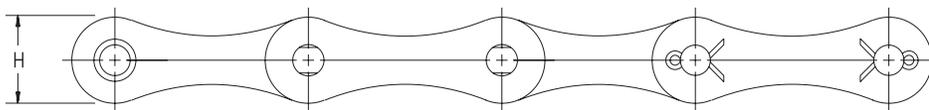


Dimensions in Inches and Pounds

ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate 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

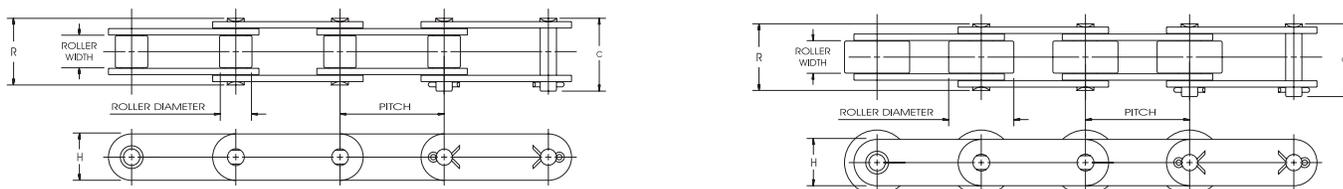
* Nominal values are shown. For information on specific models contact Diamond.

DOUBLE-PITCH CONVEYOR ROLLER CHAIN

Chain Descriptions and Dimensions

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

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 ($10\text{ft.} \times .006"/\text{ft.} = .060"$). 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.

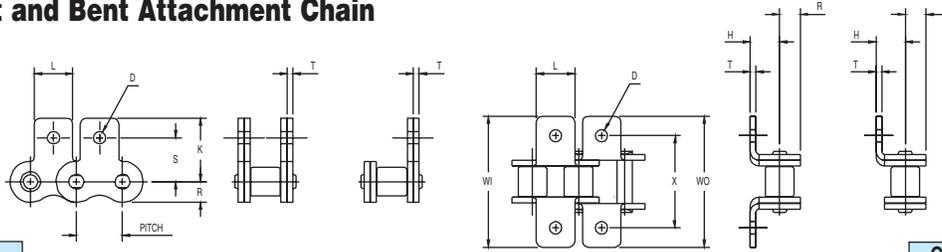
Class II - A Class II match is much more stringent and assures that the longest and the shortest chain in a given set will not vary in overall length by more than .002"/ft. Applying this new tolerance to the above example, the length of two #80 chains 120 pitches long will not vary by more than .020" in overall length ($10\text{ft.} \times .002"/\text{ft.} = .020"$). 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)

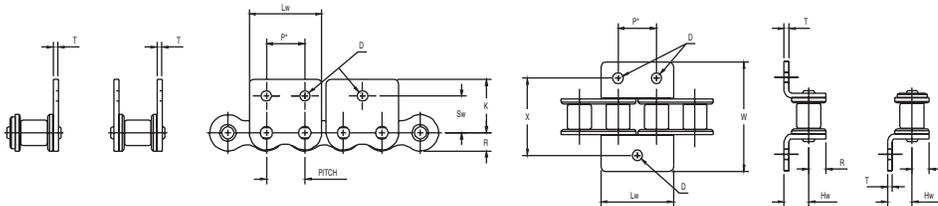
Others	Diamond
A1	B1 (one hole)
K1	B2 (one hole)

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

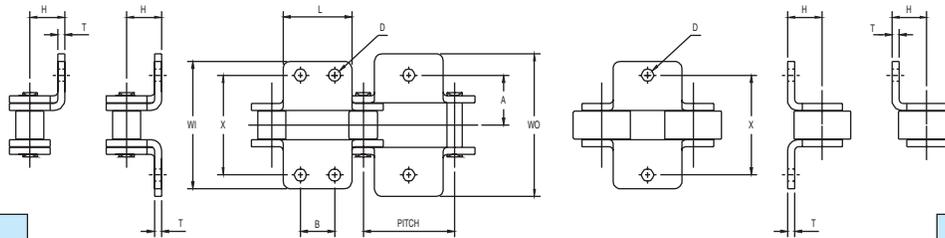
* Attachment available on pin link plate only.
 † These items not available with 48-hour delivery.

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

STANDARD ATTACHMENT ROLLER 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)

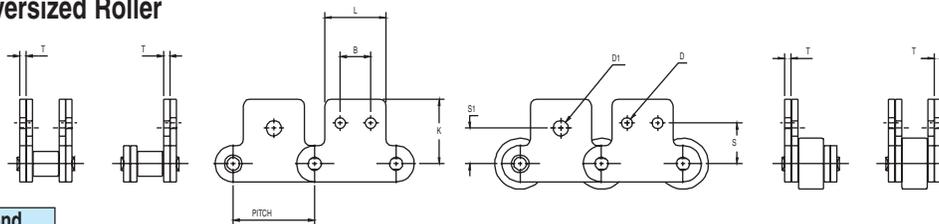
Others	Diamond
K1	B2 (one hole)
K2	B2 (two holes)

Dimensions in Inches

Standard Roller		Pitch Inches	A	B	D	H	L	T	WI	WO	X	Large Roller	
ASME/ANSI #	Roller Diam.											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

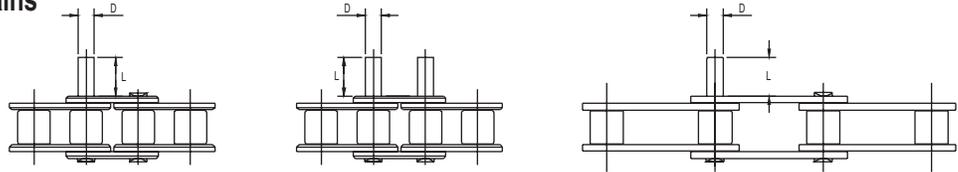
Standard Roller		Pitch Inches	With Two* Attachment Holes			K	L	T	With One Attachment Hole		Large Roller	
ASME/ANSI #	Roller Diam.		B	D	S				D1	S1	ASME/ANSI #	Roller Diam.
*C2040	.312	1.00	.375	.141	.531	.773	.750	.060	.188	.438	C-2042	.625
*C2050	.400	1.25	.469	.203	.625	.971	.937	.080	.250	.563	C-2052	.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"	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
								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
Wide Contour Lugs	SK2, M-2	S2 two holes	Straight attachment, both sides, two holes
	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
Extended Pins	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
	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.

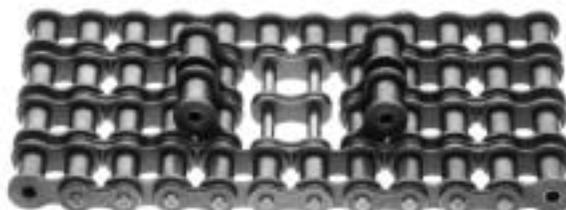
Slip-fit center plate: Slip-fit center plate multiple strand chains have been used for decades and are most suitable for drives of moderate severity. These chains are designed for ease of disassembly throughout the entire length of chain. The chains can be shortened or sections can be added quickly with 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

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 $\frac{5}{8}$ " through 2- $\frac{1}{2}$ " 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.



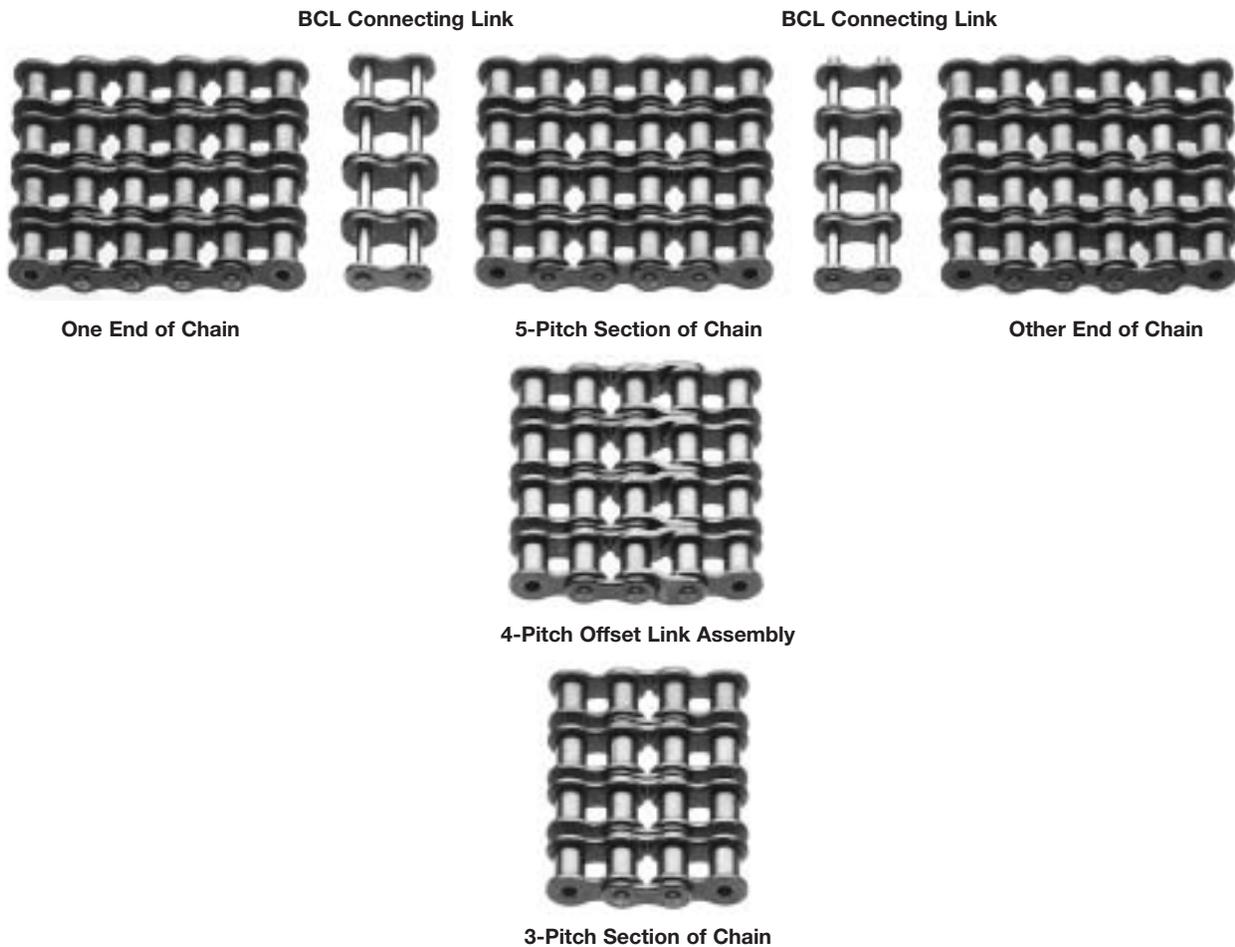
Bushed Center Plate Assembly

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



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.

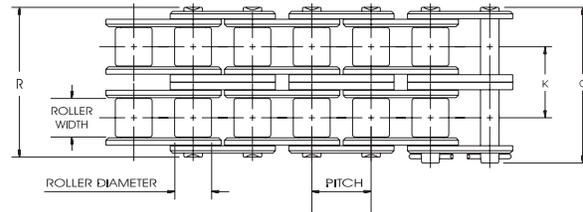
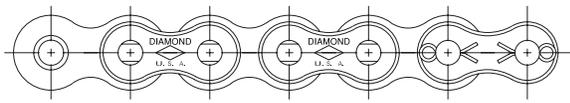
When subsequent wear-elongation is sufficient to allow the removal of another pitch of chain, the **four-pitch offset link assembly should be replaced by a three-pitch section** of press-fit center plate chain.

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



Dimensions in Inches and Pounds

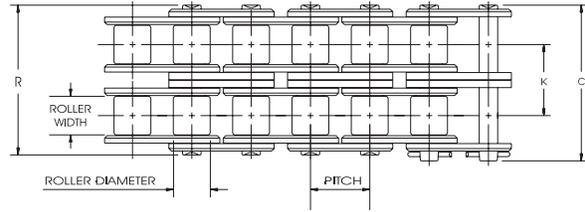
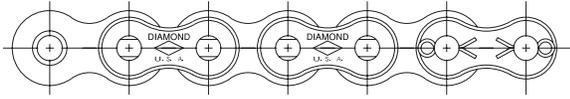
ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
25-2	1/4	1/8	*.130	.090	.030	.63	.59	.252	.163	1750
25-3	1/4	1/8	*.130	.090	.030	.88	.84	.252	.246	2625
35-2	3/8	3/16	*.200	.141	.050	.96	.90	.399	.450	4200
35-3	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	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.

HIGH STRENGTH/LIFT CHAIN

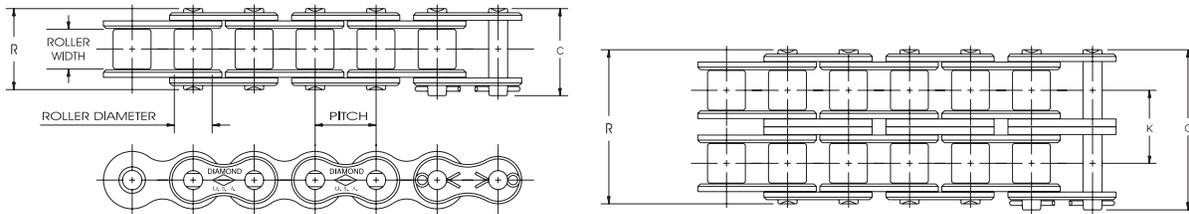
Chain Descriptions and Dimensions

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.

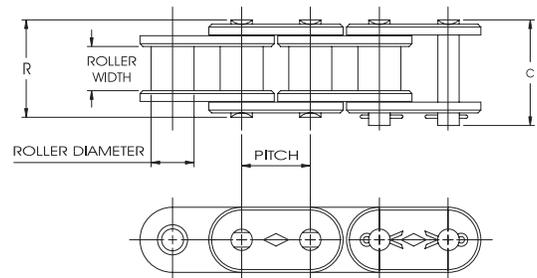


Dimensions in Inches and Pounds

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	1⅜ 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

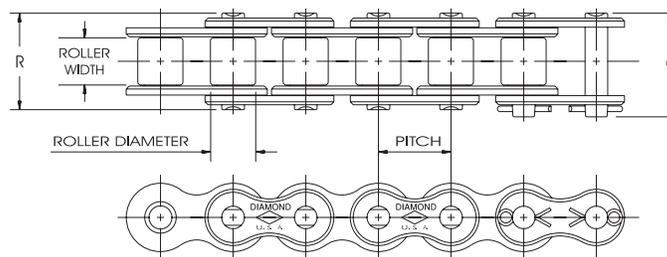
Chain Descriptions and Dimensions



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.



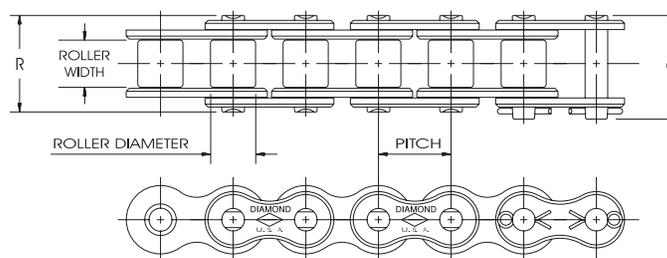
Dimensions in Inches and Pounds

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

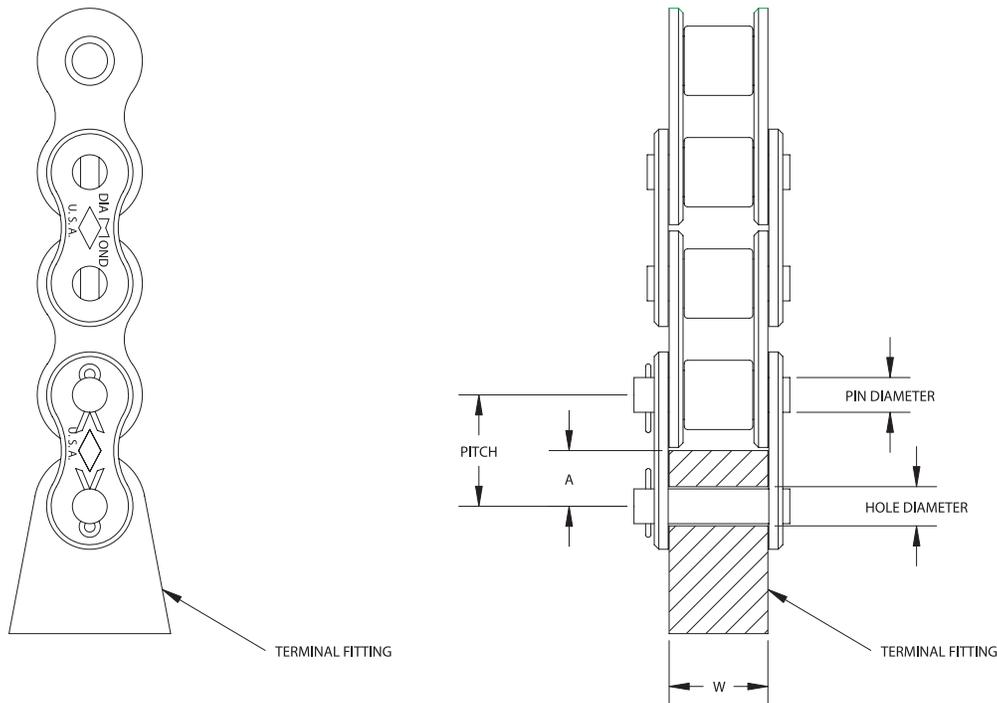
* Chains are rollerless — dimension shown is bushing diameter.
 † Numbers 55S and 65S are assembled with medium carbon through-hardened pins.

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	3/4	.764	.234	.237	.375
80 H or HS	1	.955	.312	.315	.500
100 H or HS	1 1/4	1.141	.375	.378	.625
120 H or HS	1 1/2	1.458	.437	.440	.750
140 H or HS	1 3/4	1.523	.500	.503	.875
160 H or HS	2	1.838	.562	.565	1.000
180 H or HS	2 1/4	2.058	.687	.690	1.125
200 H or HS	2 1/2	2.285	.781	.784	1.250
625	5/8	.542	.200	.203	.312
750	3/4	.696	.234	.237	.375
55 S*	5/8	.542	.200	.203	.312
65 S*	3/4	.696	.234	.237	.375
85*	1	.886	.312	.315	.500
105*	1 1/4	1.076	.375	.378	.625
125*	1 1/2	1.390	.437	.440	.750

* Chains are roller less.

OIL FIELD CHAIN

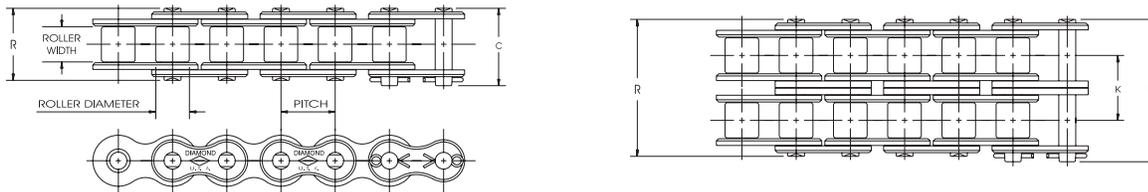
Chain Descriptions and Dimensions

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.



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

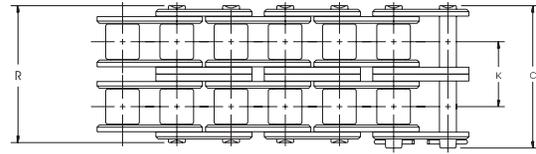
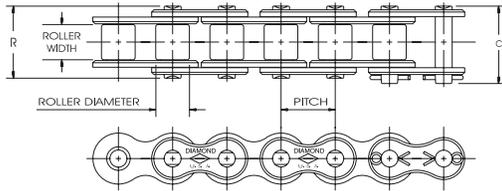
ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
40	1/2	5/16	.312	.156	.060	.72	.67	—	.41	4000
40-2	1/2	5/16	.312	.156	.060	1.29	1.24	.566	.80	8000
40-3	1/2	5/16	.312	.156	.060	1.85	1.80	.566	1.20	12000
40-4	1/2	5/16	.312	.156	.060	2.42	2.37	.566	1.60	16000
40-6	1/2	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	3/4	1/2	.469	.234	.094	1.11	1.04	—	.99	8500
60H	3/4	1/2	.469	.234	.125	1.24	1.17	—	1.18	8500
60-2	3/4	1/2	.469	.234	.094	2.01	1.94	.897	1.95	17000
60H-2	3/4	1/2	.469	.234	.125	2.27	2.20	1.028	2.33	17000
60-3	3/4	1/2	.469	.234	.094	2.91	2.84	.897	2.88	25500
60H-3	3/4	1/2	.469	.234	.125	3.31	3.24	1.028	3.47	25500
60-4	3/4	1/2	.469	.234	.094	3.81	3.74	.897	3.90	34000
60H-4	3/4	1/2	.469	.234	.125	4.34	4.26	1.028	4.61	34000
60-5	3/4	1/2	.469	.234	.094	4.71	4.64	.897	4.97	42500
60-6	3/4	1/2	.469	.234	.094	5.60	5.53	.897	5.96	51000
60-8	3/4	1/2	.469	.234	.094	7.40	7.33	.897	7.94	68000
60-10	3/4	1/2	.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



Dimensions in Inches and Pounds

Chart continued from previous page.

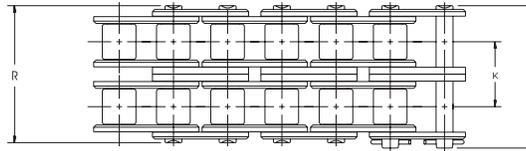
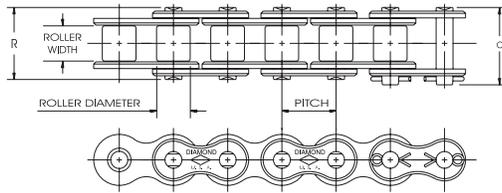
ASME/ANSI Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
80	1	5/8	.625	.312	.125	1.44	1.32	—	1.73	14500
80H	1	5/8	.625	.312	.156	1.57	1.45	—	2.02	14500
80-2	1	5/8	.625	.312	.125	2.59	2.47	1.153	3.37	29000
80H-2	1	5/8	.625	.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



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	1¼	1.125	.562	.250	2.73	2.54	—	6.53	58000
160H	2	1¼	1.125	.562	.281	2.86	2.68	—	7.03	58000
160-2	2	1¼	1.125	.562	.250	5.04	4.85	2.305	12.83	116000
160H-2	2	1¼	1.125	.562	.281	5.30	5.12	2.436	13.88	116000
160-3	2	1¼	1.125	.562	.250	7.35	7.16	2.305	19.03	174000
160H-3	2	1¼	1.125	.562	.281	7.75	7.56	2.436	20.68	174000
160-4	2	1¼	1.125	.562	.250	9.66	9.47	2.305	25.60	232000
160H-4	2	1¼	1.125	.562	.281	10.17	10.00	2.436	27.62	232000
160-6	2	1¼	1.125	.562	.250	14.27	14.09	2.305	37.78	348000
180	2¼	1 ¹³ / ₃₂	1.406	.687	.281	3.15	2.88	—	9.06	76000
180H	2¼	1 ¹³ / ₃₂	1.406	.687	.312	3.28	3.01	—	9.59	76000
180-2	2¼	1 ¹³ / ₃₂	1.406	.687	.281	5.75	5.48	2.592	17.67	152000
180H-2	2¼	1 ¹³ / ₃₂	1.406	.687	.312	6.00	5.73	2.723	18.86	152000
180-3	2¼	1 ¹³ / ₃₂	1.406	.687	.281	8.34	8.07	2.592	26.20	228000
180H-3	2¼	1 ¹³ / ₃₂	1.406	.687	.312	8.73	8.46	2.723	28.14	228000
200	2½	1½	1.562	.781	.312	3.44	3.12	—	10.65	95000
200H	2½	1½	1.562	.781	.375	3.71	3.39	—	13.38	110000
200-2	2½	1½	1.562	.781	.312	6.26	5.94	2.817	21.50	190000
200H-2	2½	1½	1.562	.781	.375	6.79	6.48	3.083	26.38	220000
200-3	2½	1½	1.562	.781	.312	9.08	8.76	2.817	32.30	285000
200H-3	2½	1½	1.562	.781	.375	9.88	9.56	3.083	40.85	330000
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	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

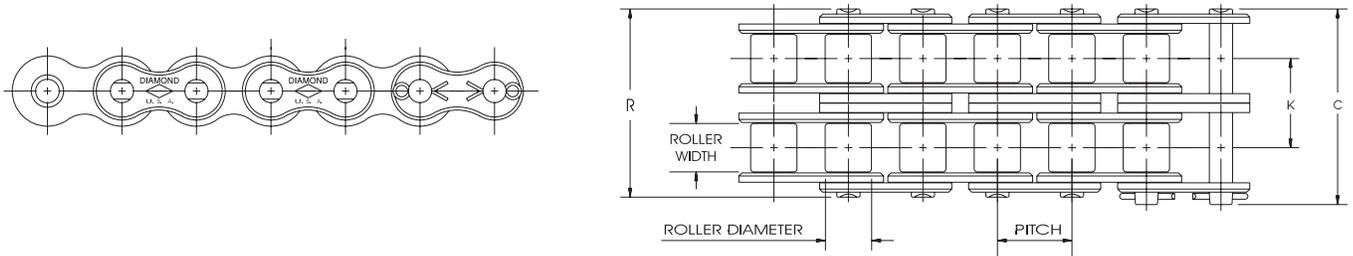
ASME/ANSI 60 and larger chains are available as cottered or riveted type design. Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

OIL FIELD CHAIN

Chain Descriptions and Dimensions



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.

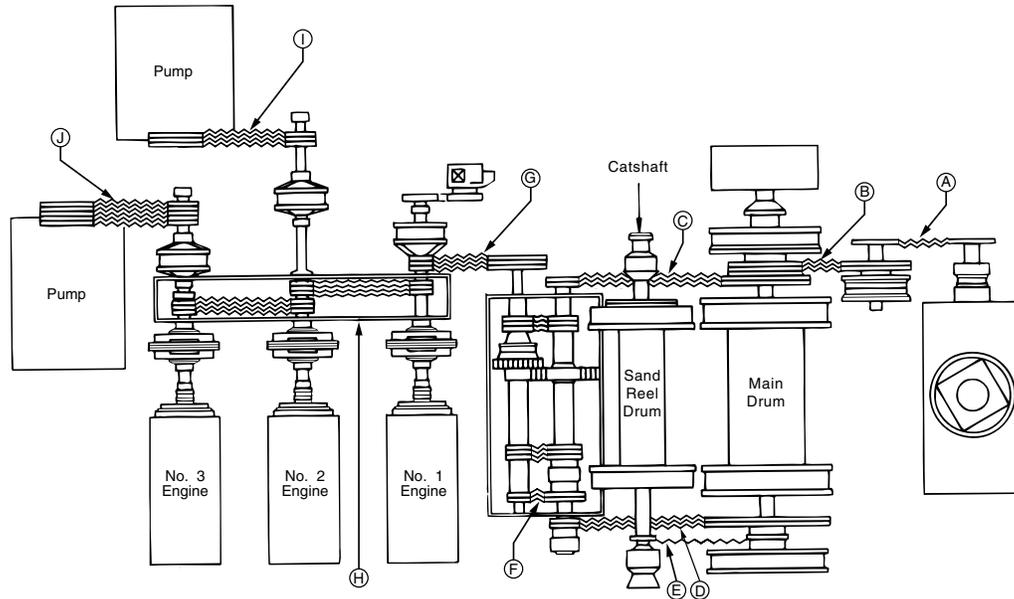


Dimensions in Inches and Pounds

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

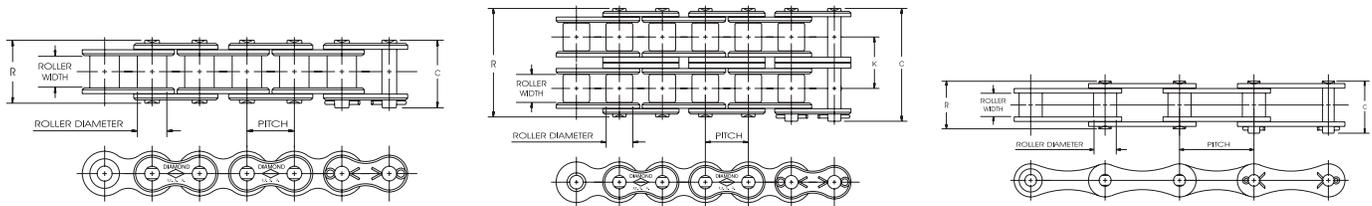
SPECIAL LUBRICATED CHAIN

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

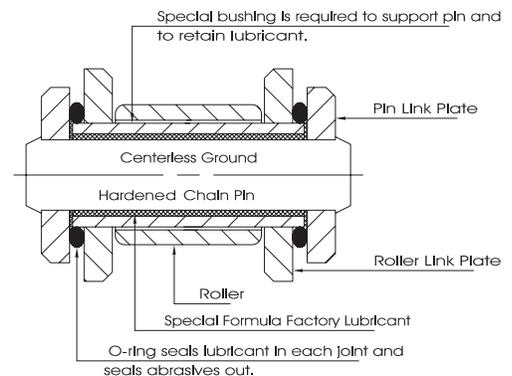


RING LEADER® O-ring Chain

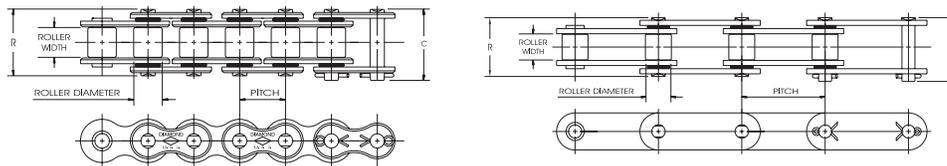
Diamond's RING LEADER O-ring chain is specifically designed for applications that don't permit regular lubrication, requiring the chain to depend entirely upon initial factory lubrication throughout its service life. Depending upon the specific conditions, RING LEADER can provide up to ten times the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

For 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 specialized 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 Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength	Max. Speed ft/min
40XDLO	1/2	5/16	.312	.156	.060	.78	.73	.43	3300	1300
50XDLO	5/8	3/8	.400	.200	.080	.95	.59	.68	5200	1000
60XDLO	3/4	1/2	.469	.234	.094	1.21	1.13	.95	7400	850
80XDLO	1	5/8	.625	.312	.125	1.51	1.41	1.59	13000	650

CORROSION/MOISTURE RESISTANT CHAIN

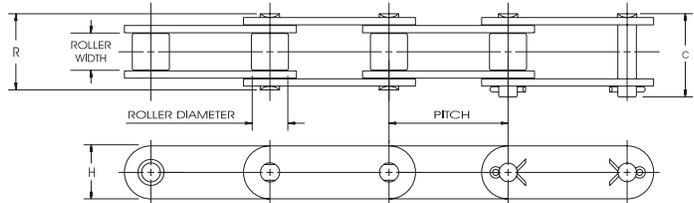
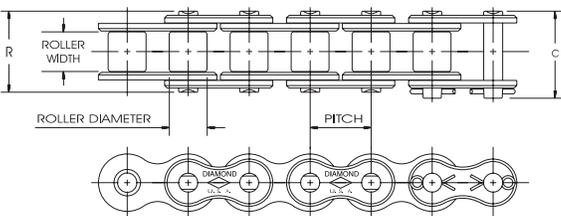
Chain Descriptions and Dimensions

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 ACE®

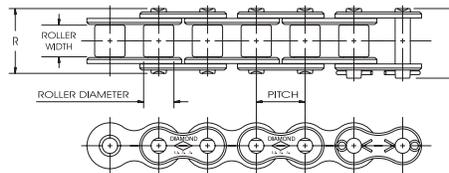
Diamond ACE (Anti-Corrosion Exterior) chain is uniquely designed and incorporates an electrochemically bonded, protected exterior coating that is applied to the component parts prior to assembly. Pre-assembly coating ensures all component parts are thoroughly treated, which prevents internal rust from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

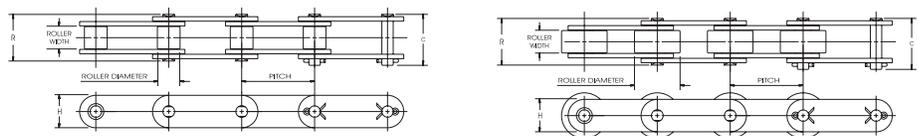


Dimensions in Inches and Pounds

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

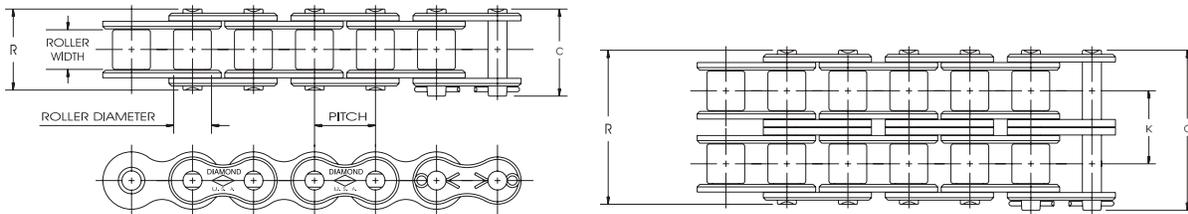
Diamond produces a wide range of Single-Pitch Drive and Double-Pitch Conveyor chains manufactured in four combinations of stainless steel depending upon the specific application.

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

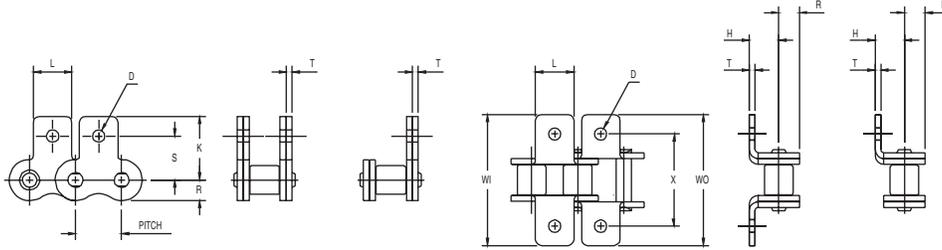
Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	LinkPlate Thickness	C	R	K	Weight Per Foot	Average Tensile Strength
47SS	.1475	.072	*.090	.062	.015	.25	.22	.....	.035	180
25SS	1/4	1/8	*.130	.090	.030	.37	.34	.....	.084	700
25-2SS	1/4	1/8	*.130	.090	.030	.63	.59	.252	.163	1400
35SS	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

Standard Straight and Bent Attachment Stainless Steel Chain



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

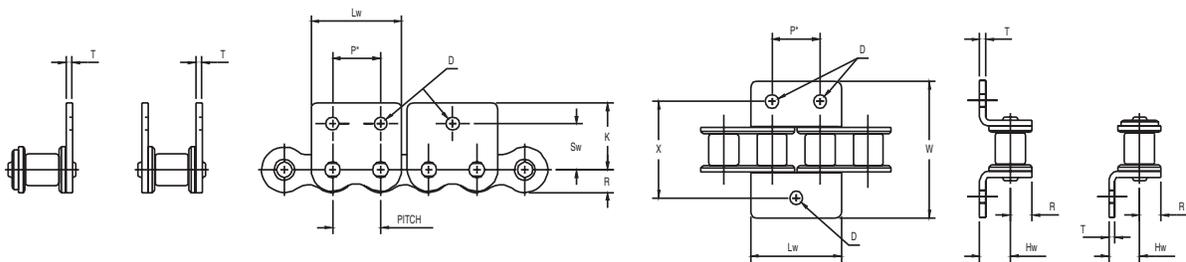
Others	Diamond
A1	B1 (one hole)
K1	B2 (one hole)

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	Others	Diamond
WM-35	WCS1 (one hole)	WM-1	WCS2 (one hole)
WM-35-2	WCS1 (two holes)	WM-2	WCS2 (two holes)

Others	Diamond	Others	Diamond
WA-1	WCB1 (one hole)	WK-1	WCB2 (one hole)
WA-2, A2	WCB1 (two holes)	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

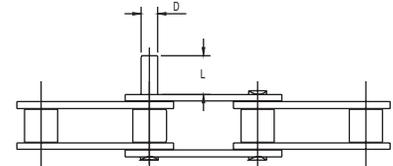
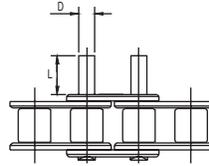
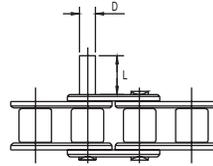
Contact Diamond Chain for available attachments on roller links (wide contour).
 Above attachments available for multiple strand chain.

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)

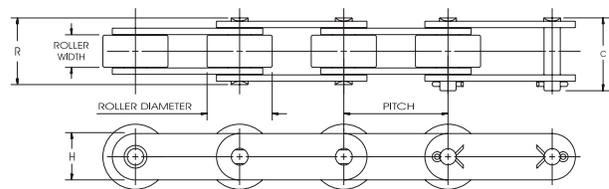
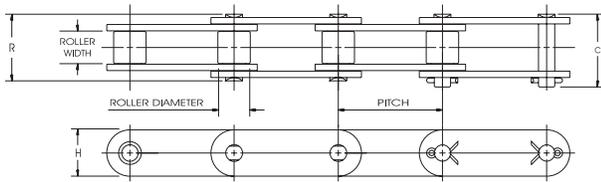


Dimensions in Inches

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

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	1 1/4	3/8	.400	.200	.080	.92	.84	.56	4700
C-2060SS	1 1/2	1/2	.469	.234	.094	1.11	1.05	.81	6750
C-2080SS	2	5/8	.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

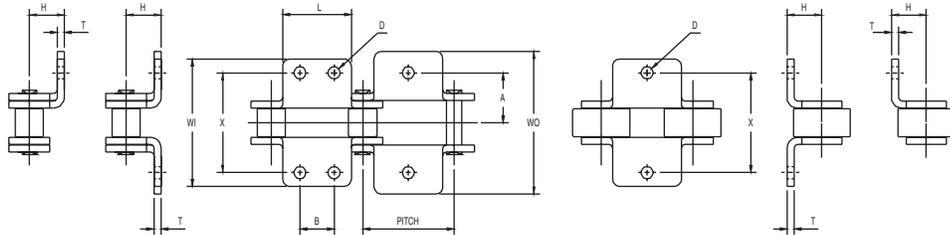
Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
C-2042SS	1	5/16	.625	.156	.060	.76	.68	.55	3000
C-2052SS	1 1/4	3/8	.750	.200	.080	.92	.84	.86	4700
C-2062SS	1 1/2	1/2	.875	.234	.094	1.11	1.05	1.27	6750
C-2082SS	2	5/8	1.125	.312	.125	1.44	1.32	2.06	12000

CORROSION/MOISTURE RESISTANT CHAIN



Chain Descriptions and Dimensions

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



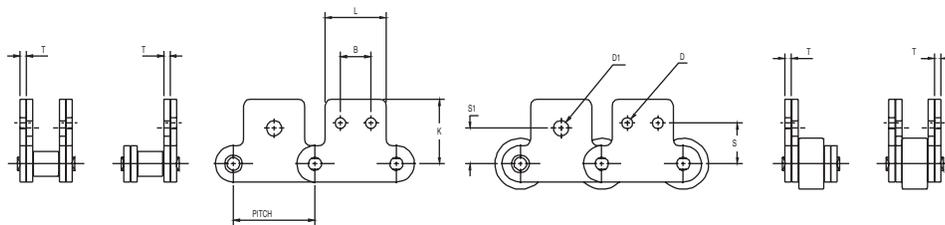
Others	Diamond
A1	B1 (one hole)
A2	B1 (two holes)

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

Dimensions in Inches

Standard Roller		Pitch Inches	A	B	D	H	L	T	WI	WO	X	Large Roller	
Diamond Number	Roller Diameter											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		Pitch Inches	2 Attachment Holes			K	L	T	1 Attachment Hole		Large Roller	
Diamond Number	Roller Diameter		B	D	S				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

SR = Satisfactory Resistance

PR = Partial Resistance

NR = Not Recommended

Corrosion Resistance of Stainless Steel Chains

	AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®		AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Acetic Acid					Bichloride of Mercury				
Dilute 70°F	TR	TR	PR	NR	less than 0.1%	TR	TR	----	NR
Dilute Boiling	TR	PR	PR	NR	greater than 0.7%-cold	SR	SR	----	NR
Conc. 70°F	TR	TR	PR	NR	greater than 0.7%-hot	PR	PR	----	----
Conc. Boiling	PR	SR	PR	NR	Calcium Hypochloride	PR	PR	PR	NR
Acetic Anhydride	TR	TR	SR	NR	Blood (Meat Juices)	TR	TR	TR	NR
Acetic Vapors	TR	PR	----	NR	Blue Vitriol (Copper Sulfate)				
Acetone	TR	TR	SR	NR	5%-70°F	TR	TR	TR	NR
Alcohol (Methyl, Ethyl, Propyl, and Butyl)	TR	TR	TR	NR	Saturated Solution-Boiling	TR	TR	----	NR
Aluminum Acetate	TR	TR	----	NR	Borax	TR	TR	TR	NR
Aluminum Chloride	PR	PR	PR	NR	Boric Acid	TR	TR	TR	NR
Aluminum Sulfate					Bromine	NR	NR	NR	NR
70°F	SR	TR	----	NR	Buttermilk	TR	TR	TR	NR
Boiling	SR	SR	----	NR	Butyric Acid	SR	TR	TR	NR
Aluminum Potassium Sulfate					Calcium Chloride (Alkaline)				
70°F	TR	TR	PR	NR	Boiling	TR	TR	----	NR
Boiling	SR	SR	----	NR	Boiling, 300 lbs. Pressure	NR	PR	----	NR
Ammonia					Calcium Carbonate	TR	TR	TR	NR
(Ammonium Hydroxide)	TR	TR	TR	NR	Calcium Oxychloride	PR	PR	----	NR
Ammonium Bicarbonate	TR	TR	TR	NR	Calcium Sulfate	TR	TR	----	NR
Ammonium Chloride					Carbolic Acid	TR	TR	TR	NR
70°F	TR	TR	SR	NR	Carbon Disulfide	TR	TR	TR	NR
Boiling	NR	SR	----	NR	Carbon Monoxide	TR	TR	TR	NR
Ammonium Nitrate	TR	TR	TR	NR	Carbon Tetrachloride (Pure)	TR	TR	TR	NR
Ammonium Oxalate	TR	TR	TR	NR	Carnallite (Potassium, Magnesium Chloride)	SR	SR	----	NR
Ammonium Persulfate	TR	TR	----	NR	Caustic Lime, Potash or Soda (Calcium, Potassium, or So- dium Hydroxide), Lye				
Ammonium Sulfate					70°F	TR	TR	TR	NR
70°F	TR	TR	SR	NR	Boiling	SR	SR	SR	NR
plus 0.5% H ₂ SO ₄	TR	TR	----	NR	Cellulose	TR	TR	----	NR
plus 5.0% H ₂ SO ₄	TR	PR	----	NR	Chlorine Gas				
Ammonium Stannichloride					Dry	NR	PR	PR	NR
70°F	SR	SR	----	NR	Moist	NR	NR	NR	NR
120°F	NR	NR	----	NR	Chlorinated Water	NR	PR	TR	NR
Aniline	TR	TR	TR	NR	Chlorobenzene	TR	TR	----	NR
Aniline Hydrochloride	PR	PR	----	NR	Chloroform	TR	TR	----	NR
Antimony, Molten, 1100°F	NR	NR	NR	NR	Chromic Acid				
Baking Soda (Sodium Bicarbonate)	TR	TR	TR	NR	70°F	TR	SR	PR	NR
Barium Carbonate	TR	TR	TR	NR	Boiling	PR	PR	----	NR
Barium Chloride					with SO ₃ , Boiling	NR	NR	NR	NR
70°F	TR	TR	SR	NR	Chrome Aluminum	TR	TR	----	NR
Hot	SR	SR	----	NR	Boiling	NR	NR	----	NR
Barium Nitrate	TR	TR	----	NR	Citric Acid-10%				
Barium Sulfate	TR	TR	----	NR	70°F	TR	TR	TR	NR
Beer	TR	TR	TR	NR	Boiling	PR	PR	NR	NR
Beet Juice	TR	TR	TR	NR	Cola Syrup	TR	TR	SR	NR
Benzene (Benzol)	TR	TR	TR	NR	Copperas (Ferrous Sulfate)	SR	SR	SR	NR
Benzine	TR	TR	TR	NR	Copper Acetate	TR	TR	----	NR
Benzoic 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®		AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Copper Carbonate	TR	TR	TR	NR	Lactic Acid				
Copper Chloride					70°F	SR	TR	SR	NR
70°F	PR	PR	PR	NR	150°F	PR	PR	PR	NR
Boiling	NR	NR	NR	NR	Lard	TR	TR	---	NR
Copper Cyanide	TR	TR	TR	NR	Lead, Molten, 1200°F	SR	SR	PR	NR
Copper Nitrate	TR	TR	TR	NR	Linseed Oil	SR	TR	SR	NR
Copper Sulfate	TR	TR	TR	NR	Lye (Sodium or Potassium Hydroxide)				
Creosote	TR	TR	TR	NR	70°F	TR	TR	TR	NR
Cyanogen Gas	TR	TR	---	NR	Boiling	SR	SR	SR	NR
Dichloro-ethane (Ethylidene Chloride, Ethylene Chloride, Dutch Liquor)	TR	TR	---	NR	Lysol	TR	TR	PR	NR
Dyewood Liquor	TR	TR	---	NR	Magnesium Chloride				
Epsom Salts (Magnesium Sulfate)	TR	TR	SR	NR	70°F	SR	SR	SR	NR
Ether	TR	TR	TR	NR	Hot	PR	PR	PR	NR
Ferric Hydroxide	TR	TR	TR	NR	Magnesium Oxychloride	PR	PR	---	NR
Ferric Chloride	PR	PR	PR	NR	Magnesium Sulfate (Epsom Salt)	TR	TR	SR	NR
Ferric Nitrate	TR	TR	TR	NR	Malic Acid	TR	TR	SR	NR
Ferric or Ferrous Sulfate	SR	SR	SR	NR	Manganese Chloride	TR	TR	---	NR
Formaldehyde (Formalin)	TR	TR	TR	NR	Marsh Gas (Illuminating Gas)	TR	TR	---	NR
Formic Acid	PR	SR	PR	NR	Mash, Hot	TR	TR	---	NR
Fruit Juices	SR	TR	PR	NR	Mayonnaise	TR	SR	PR	NR
Fuel Oil	TR	TR	---	NR	Mercury	TR	TR	---	NR
Fuel Oil Containing Sulfuric Acid	PR	PR	---	NR	Methyl Aldehyde	TR	TR	---	NR
Gallic Acid	TR	TR	TR	NR	Milk-Sweet or Sour	TR	TR	TR	NR
Gasoline	TR	TR	TR	NR	Mine Water, Acid	TR	TR	TR	NR
Glauber's Salt (Sodium Sulfate)	TR	TR	TR	NR	Mixed Acids				
Glue acidified	SR	SR	---	NR	a. 50% H ₂ SO ₄ 50% HNO ₃				
Glycerine	TR	TR	TR	NR	70°F	SR	SR	SR	NR
Grape Juice	SR	TR	TR	NR	Boiling	PR	PR	PR	NR
Gypsum (Calcium Sulfate)	TR	TR	---	NR	b. 75% H ₂ SO ₄ 25% HNO ₃				
Hydrogen Peroxide	SR	SR	SR	NR	70°F	SR	SR	SR	NR
Hydrobromic Acid	PR	PR	PR	NR	Boiling	PR	PR	PR	NR
Hydrochloric Acid (Muriatic)					c. 5% H ₂ SO ₄ 5% HNO ₃				
70°F	NR	PR	PR	NR	80% H ₂ O				
Boiling	NR	NR	NR	NR	70°F	SR	SR	SR	NR
Fumes-70°F	NR	PR	PR	NR	Boiling	SR	SR	---	NR
Hydrocyanic Acid (Prussic Acid)	TR	TR	PR	NR	d. Chromic and Sulfuric	PR	PR	---	NR
Hydrofluoric Acid Fumes	PR	PR	---	NR	Molasses	TR	TR	---	NR
Hydrafluosilic Acid	PR	PR	---	NR	Mustard (Prepared)	TR	TR	NR	NR
Hydrofluosilic Acid Fumes	NR	NR	NR	NR	Naphtha, Pure or Crude	TR	TR	TR	NR
Hyposulfite of Soda (Hypo, Sodium Thiosulfate)	TR	TR	SR	NR	Nickel Chloride	SR	SR	---	NR
Hydrogen Sulfide					Nickel Sulfate	TR	TR	---	NR
Dry	TR	TR	---	NR	Nitre (Potassium Nitrate)	TR	TR	TR	NR
Moist, H ₂ SO ₄ Present	NR	PR	---	NR	Nitric Acid				
Inks					70°F	SR	TR	TR	NR
Alkaline	TR	TR	---	NR	Concentrated, Boiling	SR	SR	NR	NR
Acid	SR	SR	---	NR	Fuming, Concentrated, Boiling	PR	PR	NR	NR
Iodine					Nitrous Acid	SR	TR	SR	NR
Dry	NR	TR	---	NR	Oleic Acid	TR	SR	SR	NR
Moist	NR	NR	NR	NR	Oils, Mineral or Vegetable				
Iodotorm	TR	TR	---	NR	Refined	TR	TR	TR	NR
Kerosene	TR	TR	TR	NR	Crude	SR	SR	SR	NR
Ketchup	TR	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®		AP & 600 Series Stainless	300 Series Stainless	400 Series Stainless	NP or ACE®
Petroleum	TR	TR	TR	NR	Sodium Nitrate (Chili				
Petroleum Ether	TR	TR	TR	NR	Saltpeter, Soda Nitre)	TR	TR	TR	NR
Phosphoric Acid, Technical	TR	SR	PR	NR	Molten, 600°F	SR	SR	---	NR
Boiling Crude	NR	NR	NR	NR	Sodium Peroxide	TR	TR	---	NR
Picric Acid	TR	TR	TR	NR	Sodium Salicylate	TR	TR	TR	NR
Plaster of Paris (Sulfate of					Sodium Sulfate (Glauber's Salt)	TR	TR	TR	NR
Lime, Gypsum)	TR	TR	---	NR	Sodium Sulfide	SR	SR	SR	NR
Potash (Potassium Carbonate)	TR	TR	TR	NR	Sodium Thiosulfate (Hypo)	TR	TR	SR	NR
Potassium Bitartrate	SR	SR	---	NR	Stannic Chloride				
Potassium Bichromate	TR	TR	TR	NR	(Tetrachloride of Tin)	NR	NR	NR	NR
Potassium Bromide	SR	SR	PR	NR	Stannous Chloride	PR	PR	NR	NR
Potassium Chlorate	TR	TR	TR	NR	Starch	TR	TR	---	NR
Potassium Chloride	SR	SR	SR	NR	Strontium Hydroxide	TR	TR	---	NR
Potassium Cyanide	TR	TR	TR	NR	Strontium Nitrate	TR	TR	---	NR
Potassium Hydroxide					Sugar or Cane Juice	TR	TR	---	NR
Boiling	SR	SR	SR	NR	Sulfur, Dry				
Molten, 650°F	NR	NR	NR	NR	Molten, 260°F	TR	TR	---	NR
Potassium Hypochlorite	SR	SR	---	NR	Molten, 750°F	PR	PR	---	NR
Potassium Iodide	TR	TR	---	NR	Sulfur Monochloride				
Potassium Nitrate					(Rubber Vulcanizing)	TR	TR	---	NR
(Nitre, Saltpeter)	TR	TR	TR	NR	Sulfur Dioxide Gas, Moist	NR	SR	---	NR
Potassium Oxylate	TR	TR	SR	NR	Sulfurous Acid Water Solution				
Potassium Permanganate	TR	TR	TR	NR	Atmospheric Pressure	TR	TR	---	NR
Potassium Sulfate	TR	TR	TR	NR	Over 60 lbs. Pressure	PR	PR	---	NR
Potassium Sulfide	TR	TR	---	NR	Sulfuric Acid				
Pyrogallic Acid	TR	TR	TR	NR	70°F	SR	SR	---	NR
Prussic Acid					Boiling	NR	NR	NR	NR
(Hydrocyanic Acid)	TR	TR	PR	NR	Fuming	PR	PR	---	NR
Quinine Sulfate	TR	TR	SR	NR	Vapor (Battery Room)	SR	SR	---	NR
Quinine Bisulfate	SR	SR	PR	NR	Tannic Acid	TR	TR	SR	NR
Rosin, Molten	TR	TR	TR	NR	Tanning Liquor	TR	TR	---	NR
Salt (Sodium Chloride, Salt Brine)					Tartaric Acid	TR	TR	SR	NR
70°F	SR	SR	PR	NR	Tetrachloride of Tin	NR	NR	NR	NR
150°F	SR	SR	PR	NR	Tin, Molten, 1100°F	NR	NR	NR	NR
Sea Water	SR	SR	PR	NR	Trichloroethylene	SR	SR	SR	NR
Sewage, Sulfuric Acid Present	SR	SR	---	NR	Uric Acid	TR	TR	TR	NR
Silver Bromide	SR	SR	SR	NR	Varnish	TR	TR	TR	NR
Silver Nitrate	TR	TR	TR	NR	Vegetables	TR	TR	TR	NR
Soda Ash (Sodium Carbonate)	TR	TR	TR	NR	Vinegar (Acetic Acid)	TR	TR	PR	NR
Sodium Acetate	TR	TR	TR	NR	Whiskey	TR	TR	---	NR
Sodium Bicarbonate (Baking Soda)	TR	TR	TR	NR	Wood Pulp	TR	TR	---	NR
Sodium Bisulfate, Dilute	TR	TR	---	NR	Yeast	TR	TR	---	NR
Sodium Bisulfate	TR	TR	---	NR	Zinc, Molten, 1100°F	NR	NR	NR	NR
Sodium Citrate	TR	TR	TR	NR	Zinc Chloride				
Sodium Chlorate	TR	TR	TR	NR	100°F	TR	TR	PR	NR
Sodium Chloride (Salt, Salt Brine)					Boiling	PR	PR	---	NR
70°F	SR	SR	PR	NR	Zinc Cyanide	TR	TR	---	NR
150°F	SR	SR	PR	NR	Zinc Nitrate	TR	TR	---	NR
Sodium Cyanide	TR	TR	---	NR	Zinc Sulfate (White Vitriol)	SR	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					

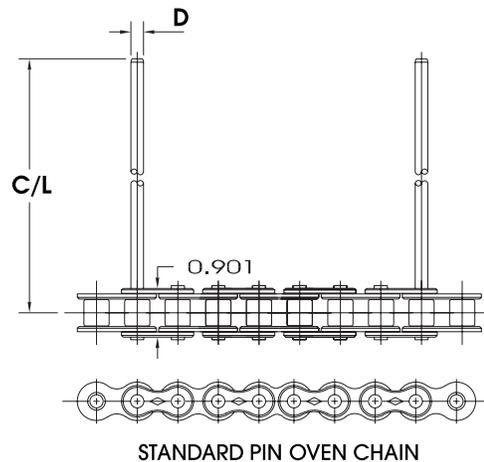
SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

Pin Oven Chain

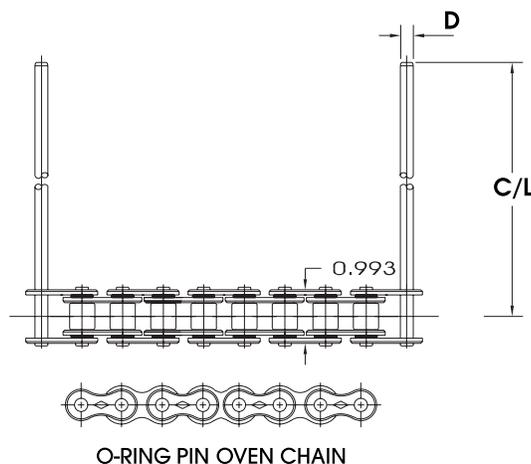
Long lasting, true running, high quality Pin Oven chain is critical for two-piece metal decorating operations that transfer and cure literally thousands of cans per minute. Diamond Chain is the world leader, producing the highest quality and best performing chain for this important and very demanding 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 $\frac{3}{4}$ " 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.



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.



SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions

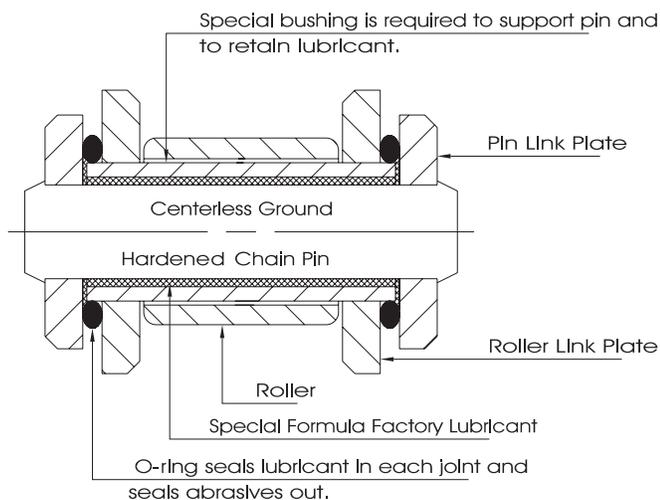


RING LEADER® O-ring Pin Oven chain resulted from state-of-the-art Diamond engineering and is specially adapted for use in the high temperature atmosphere of decorating ovens. Consistent lubrication in each chain joint, along with Diamond's O-ring technology, allows O-ring Pin Oven chain to resist contaminants,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

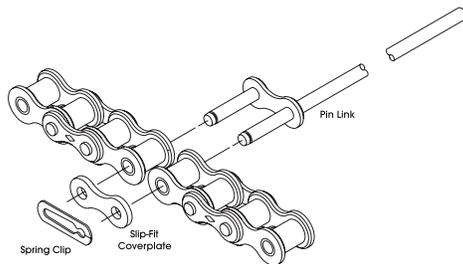
Note: When using O-ring Pin Oven chain for the first time it is important to remove or reposition cleaning devices such as wire brushes so they do not damage the O-rings.



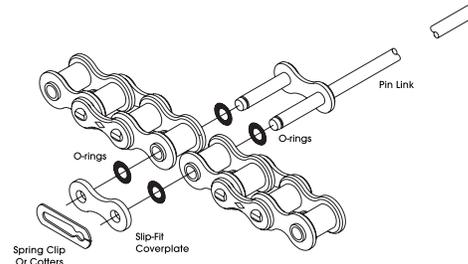
SPECIAL APPLICATION CHAIN

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.



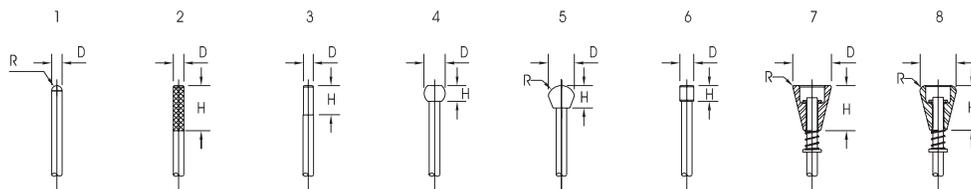
STANDARD PIN OVEN CHAIN



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.

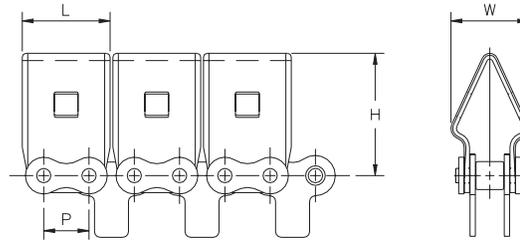
SPECIAL APPLICATION CHAIN

Chain Descriptions and Dimensions



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."

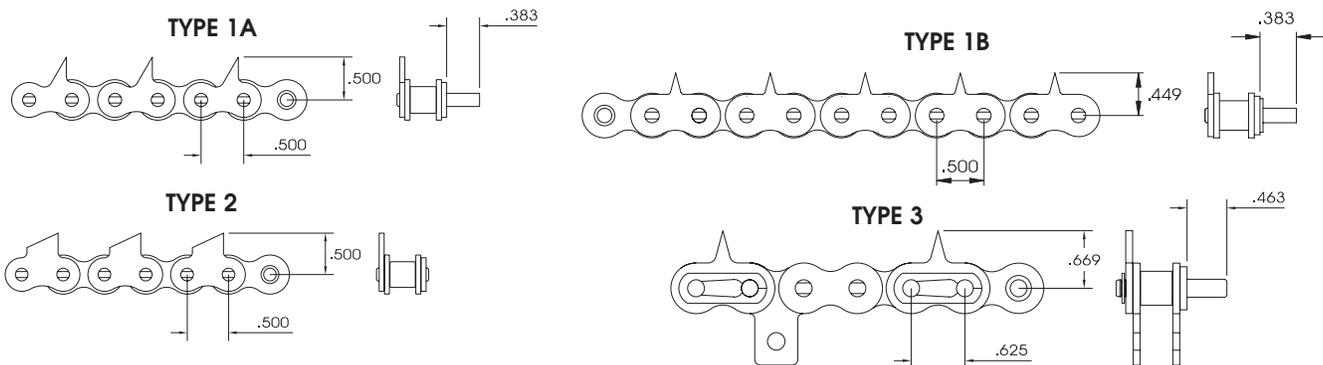


Dimensions in Inches

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

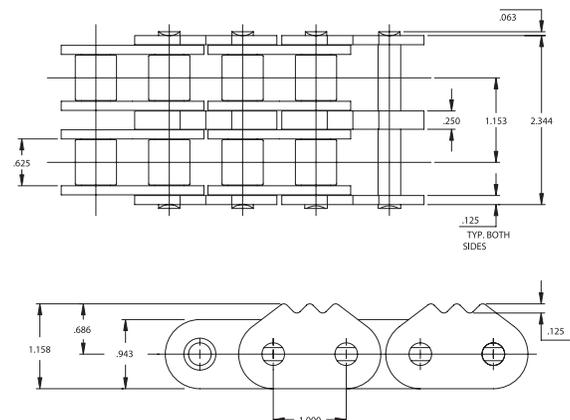
Plastic Film Feeder Chain

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.



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

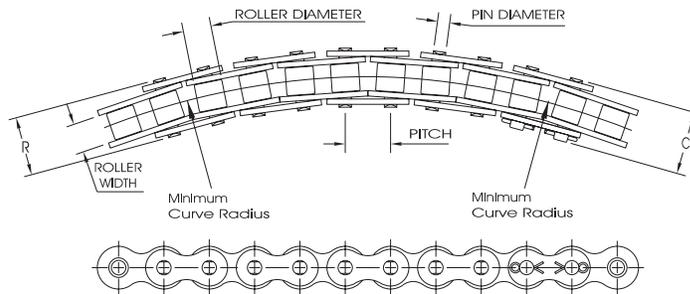
Chain Descriptions and Dimensions

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

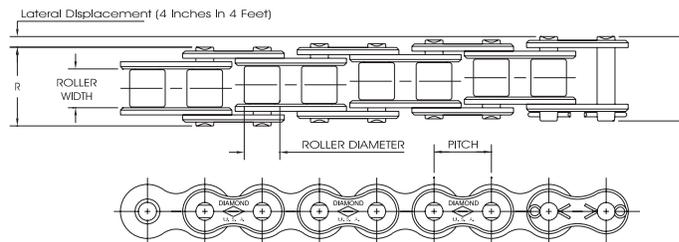
Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Min. Lateral Radius	Weight Per Foot	Average Tensile Strength
40LG	1/2	5/16	.312	.136	.060	.77	.69	14	.39	2400
50LG	5/8	3/8	.400	.172	.080	.90	.86	16	.66	4600
60LG	3/4	1/2	.469	.200	.094	1.14	1.07	22	.94	6100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

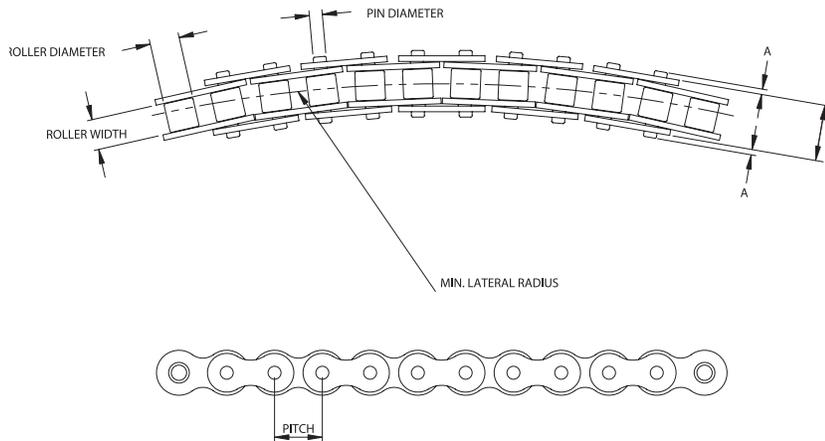


Straight Running and Side-Flexing Roller Chain

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

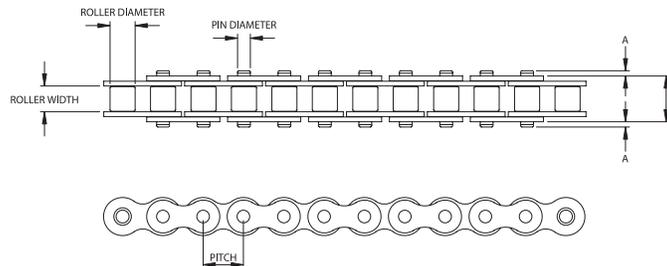


Dimensions in Inches and Pounds

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

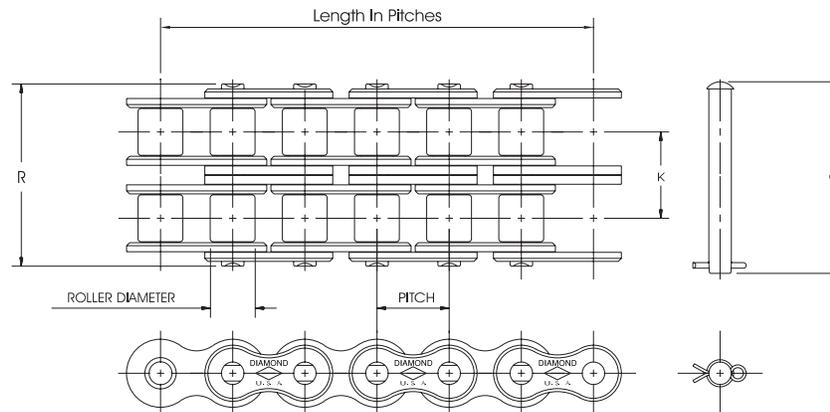
Chain is also available in stainless steel. Diamond 43 SS and 63 SS.

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

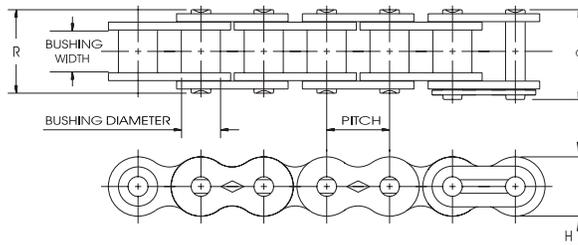
Chain Descriptions and Dimensions



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.

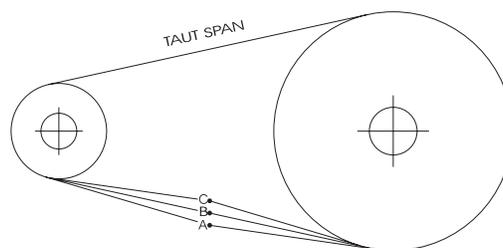
** Chain uses oval contour sideplates and is supplied riveted endless.

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 normally 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	¼	.250
100	.312	⅝	.312
120	.375	¾	.375
140	.438	7/16	.438
160	.500	½	.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	¼	.250
C2100H	.328	⅝	.312
C2120H	.391	¾	.375
C2160H	.516	½	.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



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.

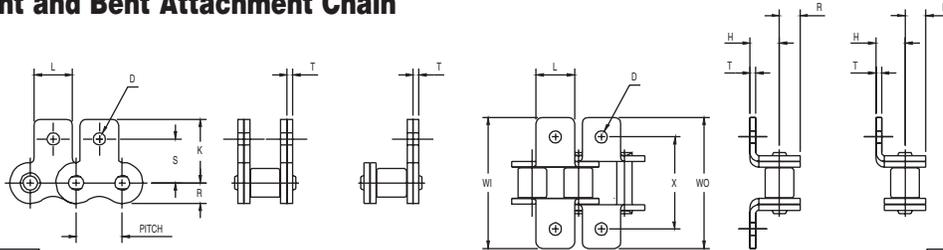
Differences - It is important to remember that matched chains still fall under the overall length limitations imposed by either ASME/ANSI or the manufacturer. Matching *does not* assure the user of chains with a finite overall length, only that the chains in the set have a controlled relationship to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

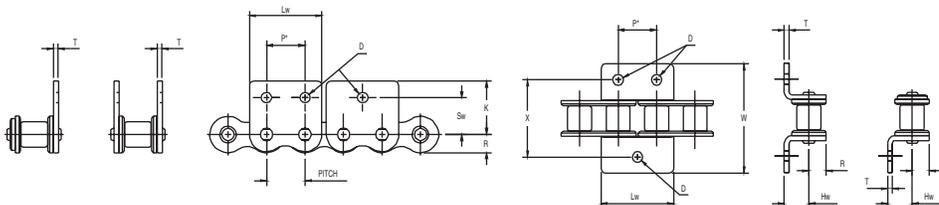
Others	Diamond
A1	B1 (one hole)
K1	B2 (one hole)

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 multiple strand chain.

Wide Contour Straight and Bent Attachment Chain



Others	Diamond	Others	Diamond
WM-35	WCS1 (one hole)	WM-1	WCS2 (one hole)
WM-35-2	WCS1 (two holes)	WM-2	WCS2 (two holes)

Others	Diamond	Others	Diamond
WA-1	WCB1 (one hole)	WK-1	WCB2 (one hole)
WA-2, A2	WCB1 (two holes)	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

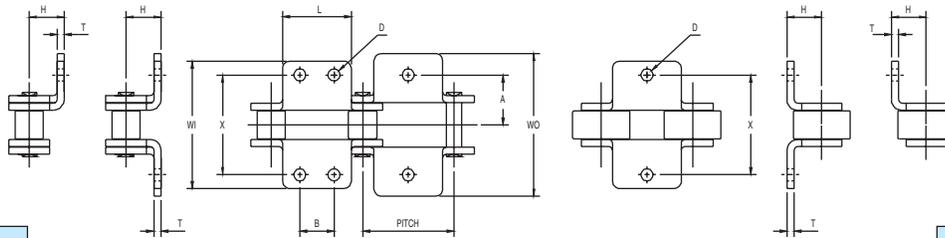
* Attachment available on pin link plate only.
 † These items not available with 48-hour delivery.

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

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

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)

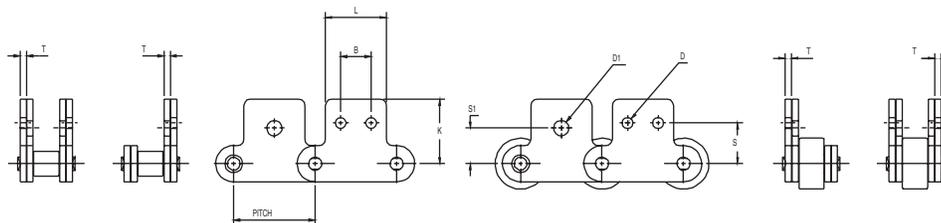
Others	Diamond
K1	B2 (one hole)
K2	B2 (two holes)

Dimensions in Inches

Standard Roller		Pitch Inches	A	B	D	H	L	T	WI	WO	X	Large Roller	
ASME/ANSI #	Roller Diam.											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

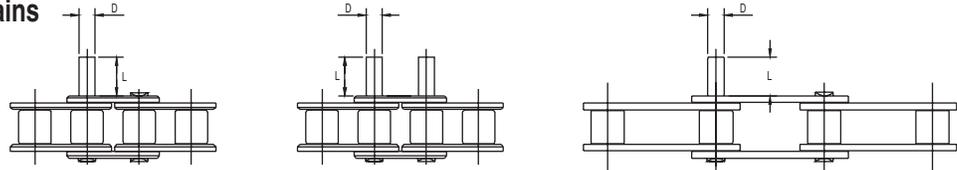
Standard Roller		Pitch Inches	With Two* Attachment Holes			K	L	T	With One Attachment Hole		Large Roller	
ASME/ANSI #	Roller Diam.		B	D	S				D1	S1	ASME/ANSI #	Roller Diam.
*C2040	.312	1.00	.375	.141	.531	.773	.750	.060	.188	.438	C-2042	.625
*C2050	.400	1.25	.469	.203	.625	.971	.937	.080	.250	.563	C-2052	.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.

SPECIALTY/MADE-TO-ORDER ATTACHMENTS

Chain Descriptions and Dimensions

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

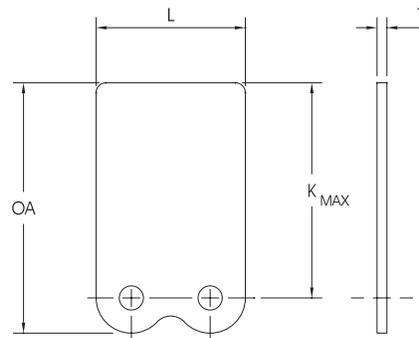


Others	Diamond
D1	E1 (one extended pin)
D3	E2 (two extended pins)

Dimensions in Inches

ASME/ANSI #	Pitch Inches	D \pm .0005"	L \pm .010"	ASME/ANSI #	Pitch Inches	D \pm .0005"	L \pm .010"	ASME/ANSI #	Pitch Inches	D \pm .0005"	L \pm .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-Tail Lugs



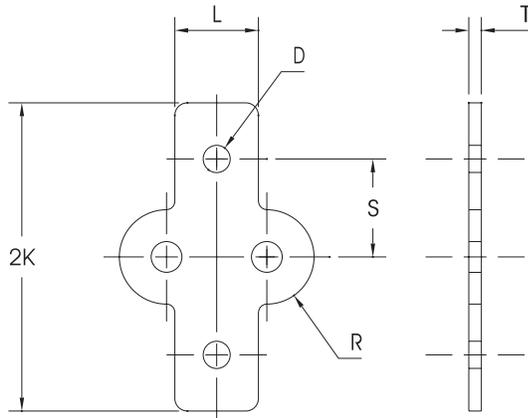
Dimensions in Inches

ASME/ANSI #	Pitch Inches	K (max.)	L	OA	T
35	$\frac{3}{8}$	1.290	.713	1.459	.050
40	$\frac{1}{2}$	1.560	.971	1.796	.060
41	$\frac{1}{2}$	1.560	.878	1.749	.050
50	$\frac{5}{8}$	1.810	1.209	2.103	.080
60	$\frac{3}{4}$	2.049	1.420	2.384	.094
80	1	2.485	1.885	2.930	.125
100	$1\frac{1}{4}$	2.927	2.362	3.483	.156

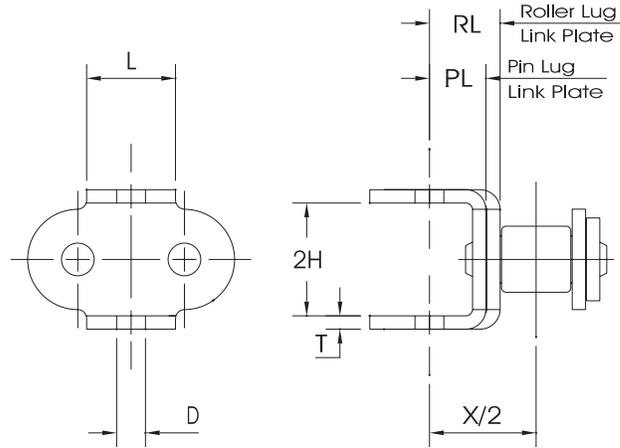
SPECIALTY/MADE-TO-ORDER ATTACHMENTS

Chain Descriptions and Dimensions

Double Straight Lugs



Double Bent Lugs



Dimensions in Inches

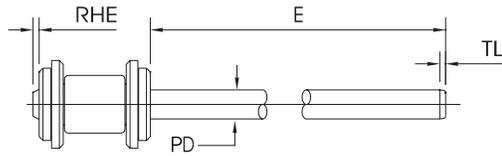
ASME/ ANSI #	Pitch Inches	D	2H	2K	L	PL	RL	R	S	T	X/2
40	1/2	.133	.524	1.567	.375	.219	.281	.236	.502	.060	.500
41	1/2	.133	.453	1.478	.375	.237	.291	.189	.476	.050	.469
50	5/8	.164	.660	1.962	.500	.268	.354	.293	.626	.080	.625
60	3/4	.203	.794	2.306	.625	.303	.401	.353	.733	.094	.750
80	1	.257	1.016	3.142	.750	.424	.556	.445	.991	.123	1.000
100	1 1/4	.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 availability.

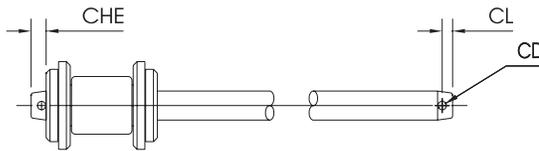
SPECIALTY/MADE-TO-ORDER ATTACHMENTS

Chain Descriptions and Dimensions

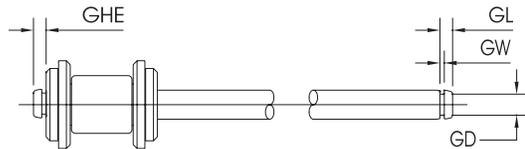
Extended Pins



Standard Design
Plain End Extended



Available
Made-to-Order



Available
Made-to-Order

Medium Carbon Steel

Dimensions in Inches

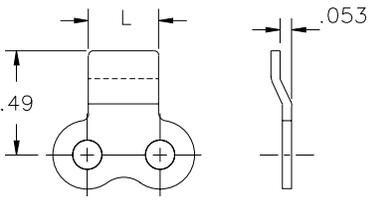
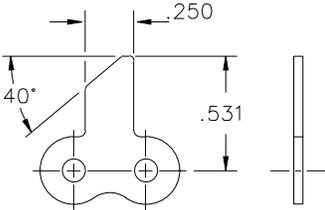
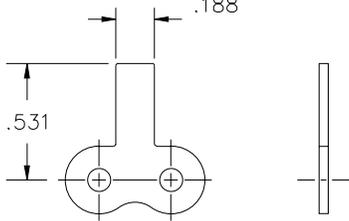
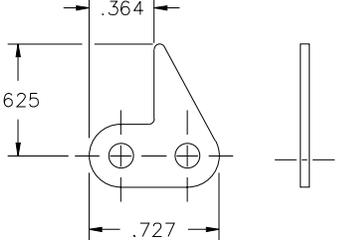
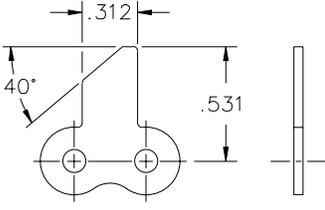
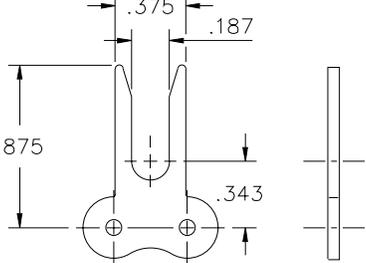
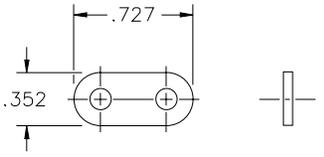
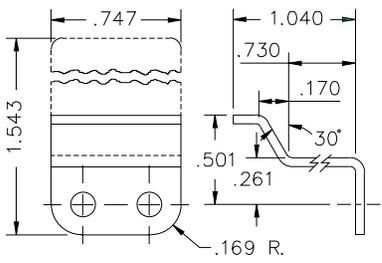
ASME/ANSI Number	Pitch Inches	CD	CHE	CL	E MAX.	E STD.	GD	GHE	GL	GW	PD	RHE	TL
25	1/4	....	....	....	.83	.250	.065	.055	.055	.027	.090	.022	.027
35	3/8	.060	.108	.078	2.56	.375	.105	.072	.072	.032	.141	.032	.029
40	1/2	.060	.108	.078	2.88	.383	.121	.083	.083	.034	.156	.032	.029
41	1/2	.060	.108	.078	2.50	.370	.108	.076	.076	.034	.141	.032	.029
50	5/8	.067	.116	.082	6.50	.468	.146	.096	.096	.036	.200	.040	.032
60	3/4	.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	1 1/4	.115	.204	.132	10.00	.937	....	....	....	....	.375	.081	.079
120	1 1/2	.127	.225	.153	16.00	1.125	....	....	....	....	.437	.085	.083
140	1 3/4	.141	.254	.168	13.80	1.312	....	....	....	....	.500	.099	.085
160	2	.157	.283	.189	11.63	1.500	....	....	....	....	.562	.105	.093
200	2 1/2	.250	.450	.320	6.57	1.875	....	....	....	....	.781	.133	.120
C2060H	1 1/2	.067	.121	.084	9.75	.562	....	....	....	....	.234	.050	.042
C2080H	2	.103	.182	.131	10.00	.750	....	....	....	....	.312	.063	.055

Stainless

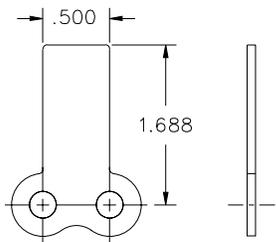
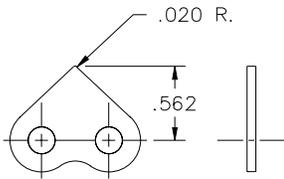
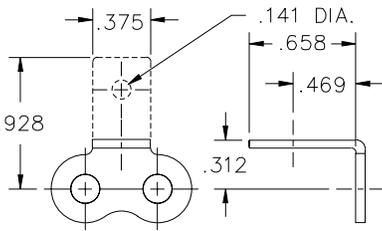
Dimensions in Inches

Diamond Number	Pitch Inches	CD	CHE	CL	E. MAX.	E. STD.	GD	GHE	GL	GW	PD	RHE	TL
25 SS	1/4	....	....	....	.52	.250	.064	.055	.055	.028	.090	.022	.016
35 SS	3/8	.052	.093	.067	.90	.375	.103	.076	.076	.034	.141	.032	.029
40 SS	1/2	.067	.112	.078	1.25	.383	.121	.083	.083	.034	.156	.032	.031
41 SS	1/2	.052	.093	.067	.85	.375	.103	.076	.076	.034	.141	.032	.029
50 SS	5/8	.067	.112	.078	1.50	.468	.600	.096	.096	.036	.200	.040	.040
60 SS	3/4	.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

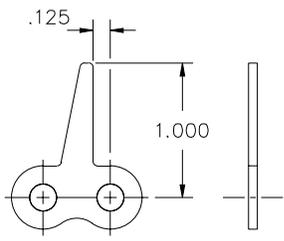
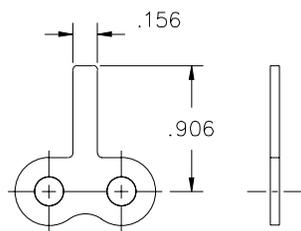
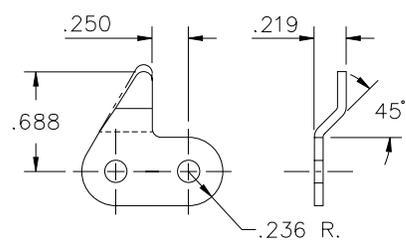
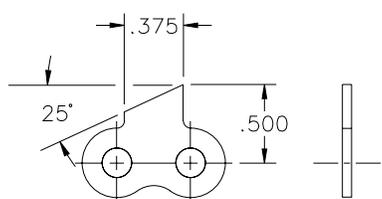
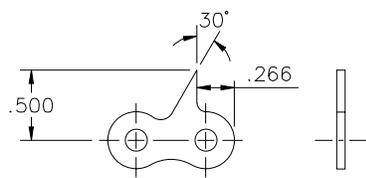
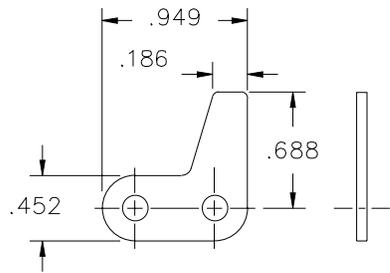
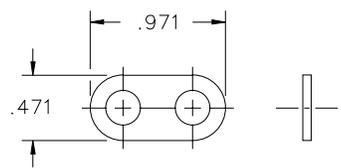
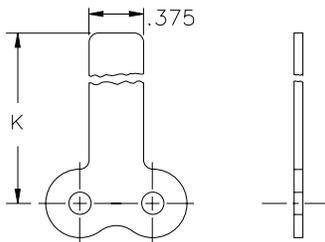
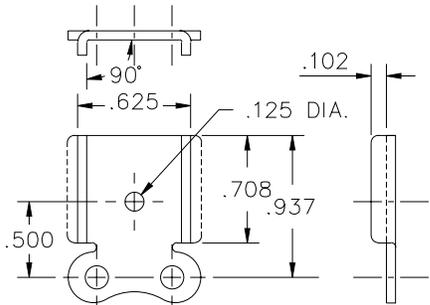
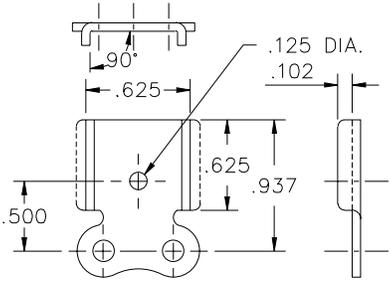
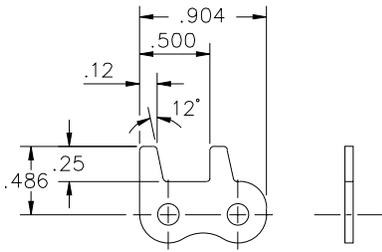
ANSI 35 $\frac{3}{8}$ " PITCH .050 LINK PLATE THICKNESS UNLESS NOTED

<p>PART NO. 293063 L = .437 AVAILABLE ROLLER LINK PLATE NOTE: OFFSET TO ALIGN WITH PIN LINK PLATE</p> 	<p>PART NO. 1913697 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 193064 AVAILABLE PIN LINK PLATE</p> 
<p>PART NO. 1912605 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 1913612 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 198139 AVAILABLE PIN & ROLLER LINK PLATE</p> 
<p>PART NO. 2811330 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 1912623 AVAILABLE PIN LINK PLATE</p> 	

ANSI 40 $\frac{1}{2}$ " PITCH .060 LINK PLATE THICKNESS UNLESS NOTED

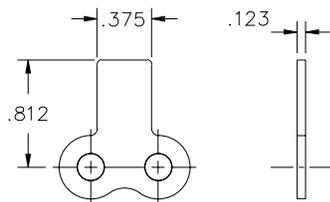
<p>PART NO. 196347 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 193008 AVAILABLE PIN LINK PLATE</p> 	<p>PART NO. 195696 AVAILABLE PIN LINK PLATE</p> 
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ANSI 40 1/2" PITCH .060 LINK PLATE THICKNESS UNLESS NOTED

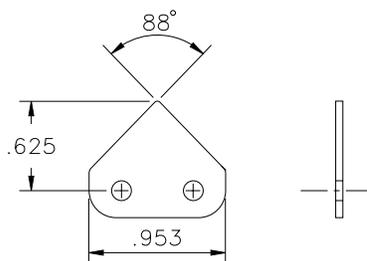
<p>PART NO. 1910820 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 1911729 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 1913316 – RH or LH AVAILABLE PIN LINK PLATE</p> 
<p>PART NO. 1910560 AVAILABLE PIN LINK PLATE</p> 	<p>PART NO. 1912756 AVAILABLE PIN LINK PLATE</p> 	<p>PART NO. 195862 AVAILABLE PIN LINK PLATE</p> 
<p>PART NO. 289302 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 194446 K = 1.500 PART NO. 1913210 K = 2.312 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 197306 AVAILABLE PIN LINK PLATE</p> 
<p>PART NO. 195487 AVAILABLE PIN LINK PLATE</p> 	<p>PART NO. 1912506 AVAILABLE PIN LINK PLATE</p> 	

ANSI 41 1/2" PITCH .050 LINK PLATE THICKNESS UNLESS NOTED

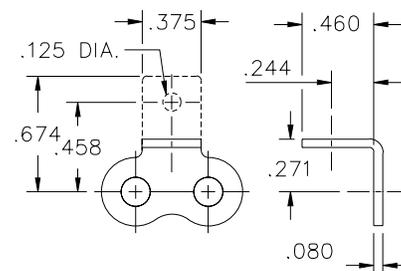
PART NO. 199973
AVAILABLE PIN LINK PLATE
NOTE: LONGER PIN REQUIRED FOR THICKER LINK PLATE



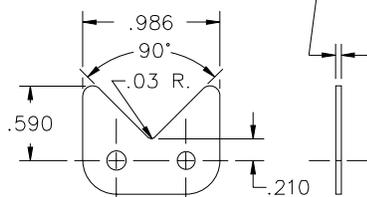
PART NO. 1913228
AVAILABLE PIN LINK PLATE



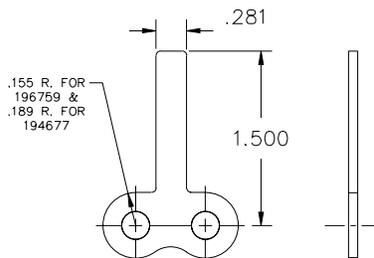
PART NO. 194691
AVAILABLE PIN LINK PLATE
NOTE: LONGER PIN REQUIRED FOR THICKER LINK PLATE



PART NO. 194677 OR 196759
AVAILABLE PIN & ROLLER LINK PLATE
.040 (NO. 65) OR .050 (NO. 41)
LINK PLATE THICKNESS AVAILABLE

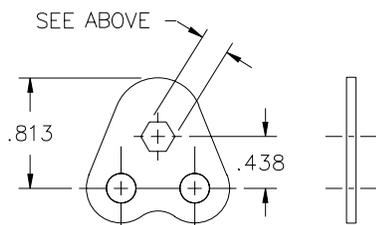


PART NO. 197283
AVAILABLE PIN LINK PLATE

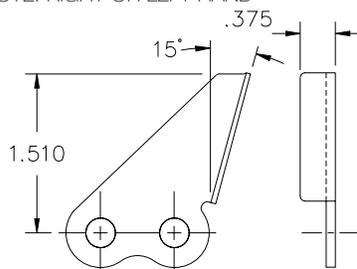


ANSI 50 5/8" PITCH .080 LINK PLATE THICKNESS UNLESS NOTED

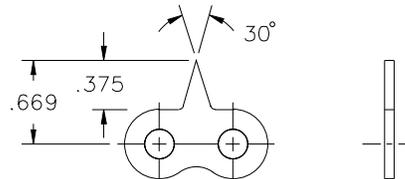
PART NO. 194230 (.315 ACROSS FLATS)
AVAILABLE PIN LINK PLATE



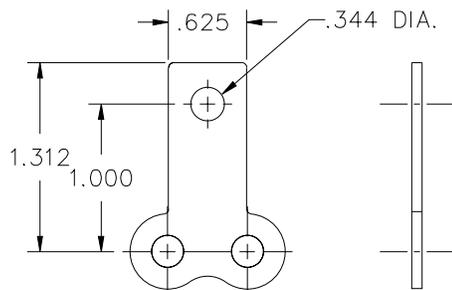
PART NO. 194830
AVAILABLE PIN LINK PLATE
NOTE: RIGHT OR LEFT HAND



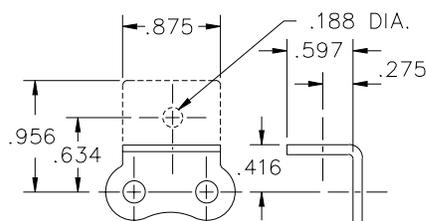
PART NO. 199309
AVAILABLE PIN LINK PLATE



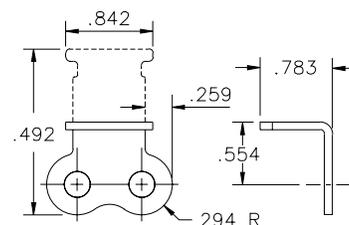
PART NO. 1910987
AVAILABLE PIN LINK PLATE



PART NO. 192029
AVAILABLE PIN LINK PLATE

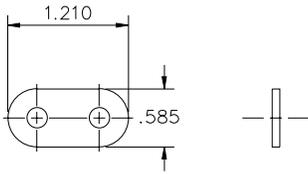


PART NO. 1913400
AVAILABLE PIN LINK PLATE

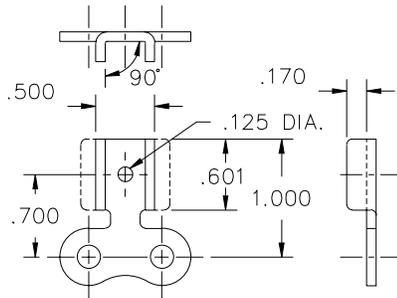


ANSI 50 $\frac{5}{8}$ " PITCH .080 LINK PLATE THICKNESS UNLESS NOTED

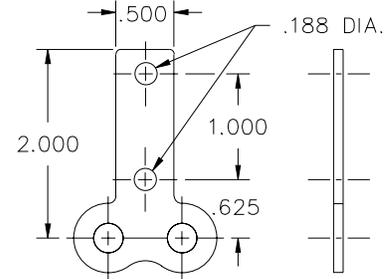
PART NO. 1913551
AVAILABLE PIN & ROLLER LINK PLATE



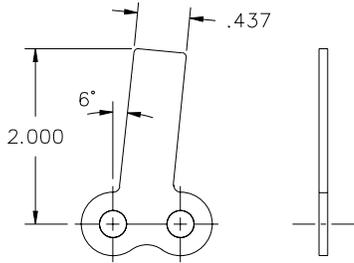
PART NO. 1912828
AVAILABLE PIN LINK PLATE



PART NO. 199384
AVAILABLE PIN & ROLLER LINK PLATE

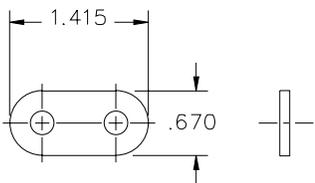


PART NO. 194017
AVAILABLE PIN & ROLLER LINK PLATE

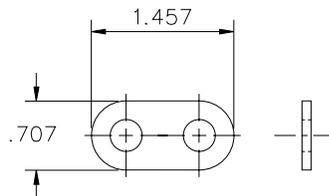


ANSI 60 $\frac{3}{4}$ " PITCH .094 LINK PLATE THICKNESS UNLESS NOTED

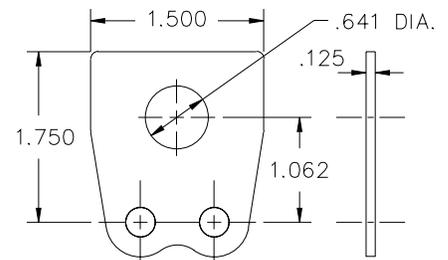
PART NO. 182802
AVAILABLE PIN & ROLLER LINK PLATE



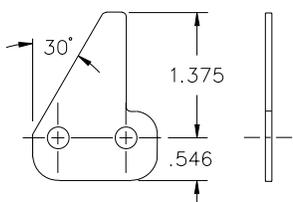
PART NO. 289918
AVAILABLE PIN & ROLLER LINK PLATE



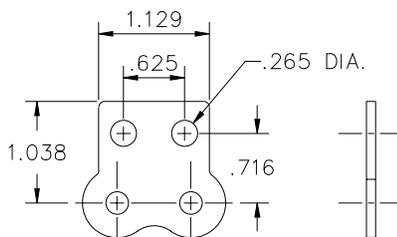
PART NO. 199588
AVAILABLE PIN LINK PLATE
NOTE: LONGER PIN REQUIRED FOR THICKER LINK PLATE



PART NO. 598699
AVAILABLE PIN & ROLLER LINK PLATE

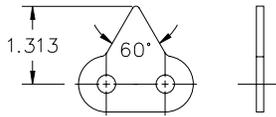


PART NO. 1613369
AVAILABLE PIN LINK PLATE

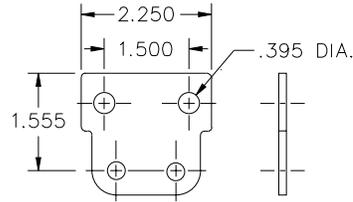


ANSI 80 1" PITCH .125 LINK PLATE THICKNESS UNLESS NOTED

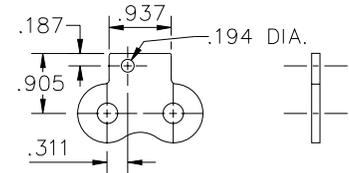
PART NO. 5913242
AVAILABLE PIN LINK PLATE



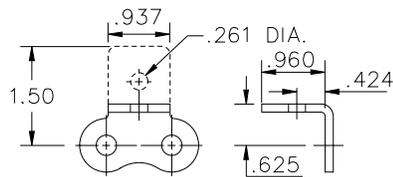
PART NO. 1611028
AVAILABLE PIN LINK PLATE



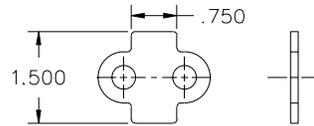
PART NO. 184368
AVAILABLE PIN & ROLLER LINK PLATE



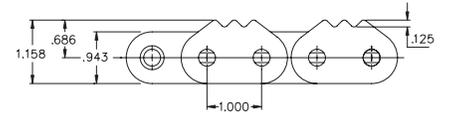
PART NO. 1913096
AVAILABLE PIN LINK PLATE



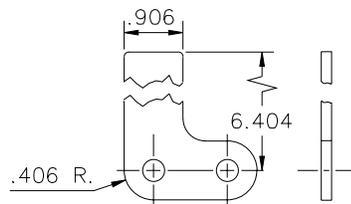
PART NO. 2913362
AVAILABLE ROLLER LINK PLATE



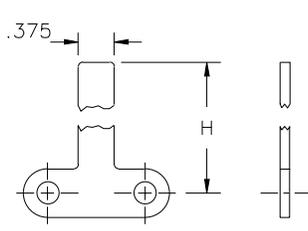
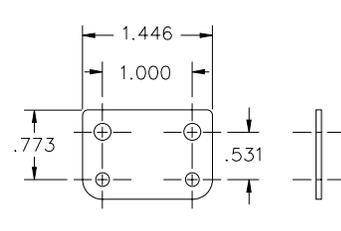
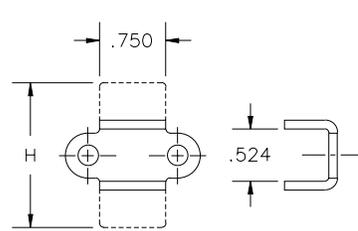
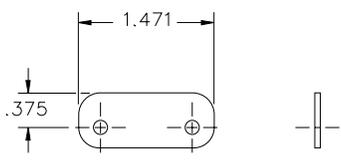
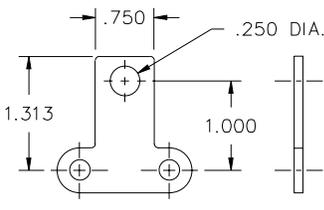
PART NO. 1915229
AVAILABLE PIN LINK PLATE



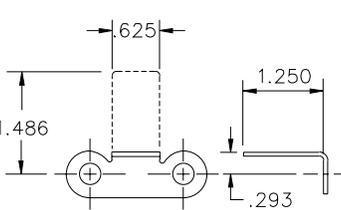
PART NO. 198709
AVAILABLE PIN & ROLLER LINK PLAT



ANSI C-2040 1" PITCH (1/2" DOUBLE-PITCH) .060 LINK PLATE THICKNESS UNLESS NOTED

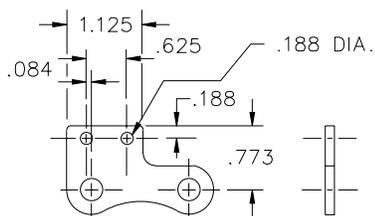
<p>PART NO. 197781 H = 2.000 PART NO. 199460 H = 2.750 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 163852 AVAILABLE PIN & ROLLER LINK PLATE</p> 	<p>PART NO. 188653 H = 1.567 AVAILABLE PIN & ROLLER LINK PLATE</p> 
<p>PART NO. 1912235 AVAILABLE PIN LINK PLATE</p> 	<p>PART NO. 194060 AVAILABLE PIN LINK PLATE</p> 	

ANSI C-2050 1 1/4" PITCH (5/8" DOUBLE-PITCH) .080 LINK PLATE THICKNESS UNLESS NOTED

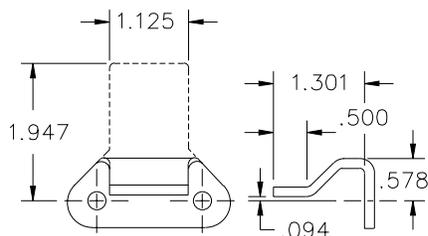
<p>PART NO. 198195 AVAILABLE PIN & ROLLER LINK PLATE</p> 		
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ANSI C-2060 1½" PITCH (¾" DOUBLE-PITCH) .094 LINK PLATE THICKNESS UNLESS NOTED

PART NO. 191789
AVAILABLE PIN & ROLLER LINK PLATE

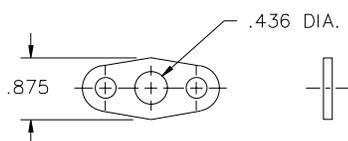


PART NO. 1911162
AVAILABLE PIN LINK PLATE

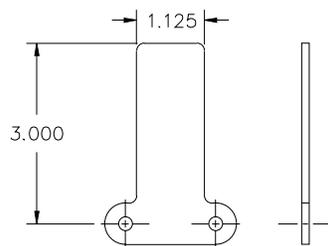


ANSI C-2060H 1½" PITCH (¾" DOUBLE-PITCH) .125 LINK PLATE THICKNESS UNLESS NOTED

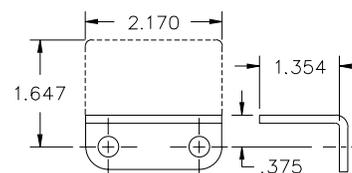
PART NO. 294725
AVAILABLE ROLLER LINK PLATE



PART NO. 192869
AVAILABLE PIN & ROLLER LINK PLATE

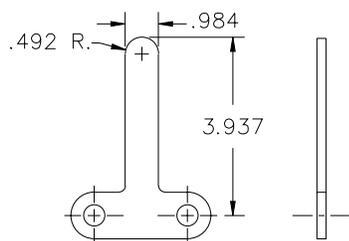


PART NO. 184860
AVAILABLE PIN & ROLLER LINK PLATE

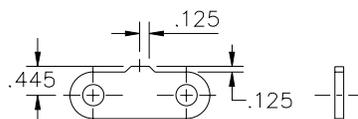


ANSI C-2080H 2" PITCH (1" DOUBLE-PITCH) .156 LINK PLATE THICKNESS UNLESS NOTED

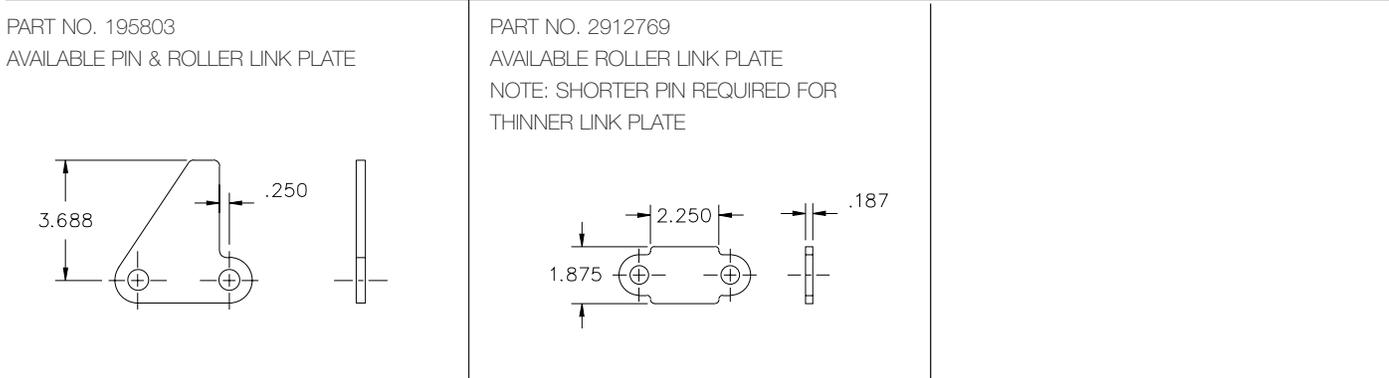
PART NO. 199873
AVAILABLE PIN & ROLLER LINK PLATE



PART NO. 195064
AVAILABLE PIN & ROLLER LINK PLATE



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



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



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.



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.

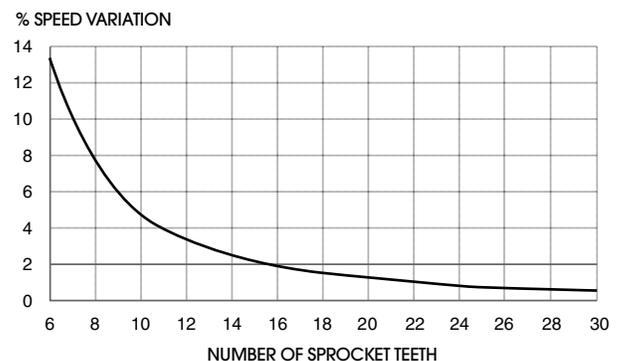
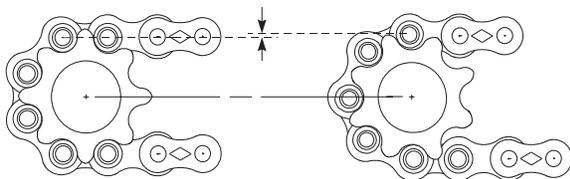
Minimum Ultimate Tensile Strength: Minimum Ultimate Tensile Strength, MUTS, is the static load required to break the chain. Tensile strength values shown in this catalog are *not* allowable working loads. Load or tension applied to the chain in service should never exceed $\frac{1}{6}$ th of the UTS. 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

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.

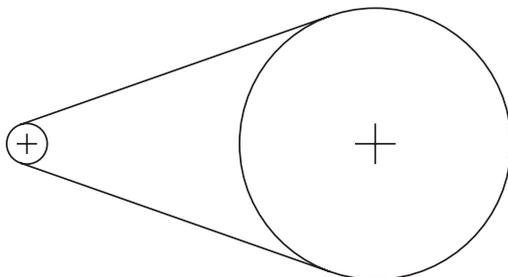
Hardened Teeth: Tooth loading *increases* as the number of teeth in the sprocket *decreases*. Hardening of sprocket teeth is recommended when the number of teeth is 25 or less and/or the sprocket will operate in:

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

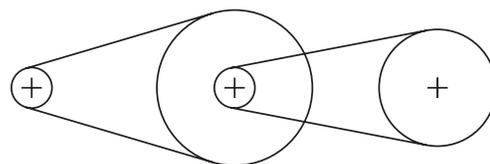
Chain Wrap: The recommended minimum wrap angle on the smallest sprocket in the drive is 120° . Wrap angle can be reduced to 90° , if good chain tension adjustment is maintained. If chain tension is not closely maintained with less than 120° wrap, the chain can jump teeth, resulting in damage to itself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

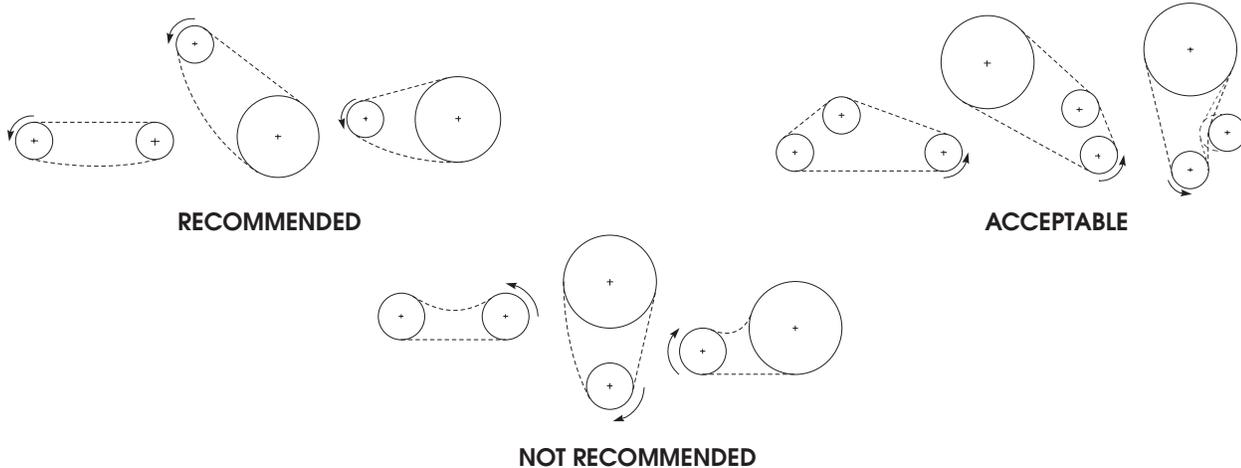


7:1 RATIO (TWO DRIVES)

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.



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%.



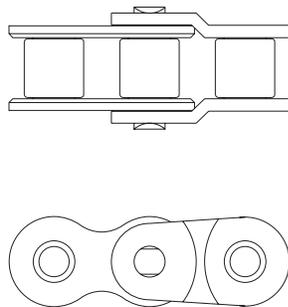
TECHNICAL ENGINEERING

General Drive Considerations



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.



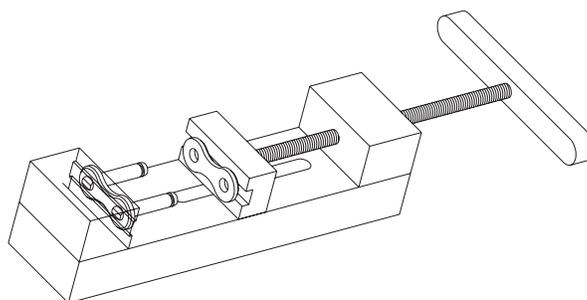
Connecting Links

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.

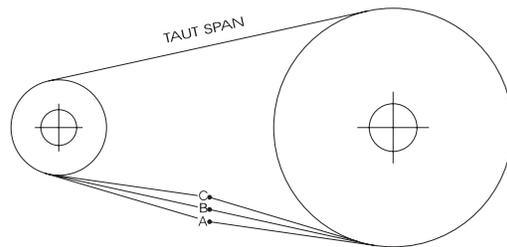


"C-CLAMP"-TYPE DEVICE

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.

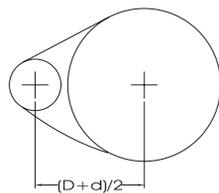


Recommended Possible Mid-Span Movement, A-C, of Slack Span

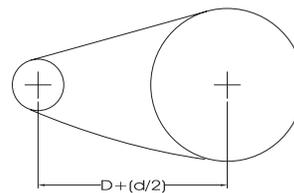
Dimensions in Inches

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.



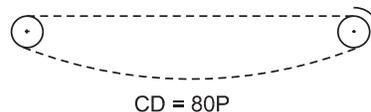
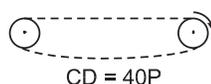
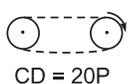
ABSOLUTE MINIMUM CENTER DISTANCE



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.

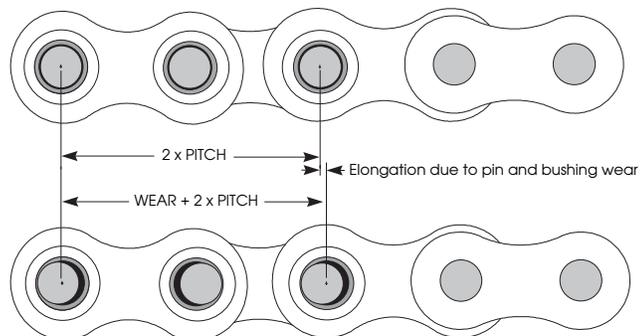


TECHNICAL ENGINEERING

General Drive Considerations

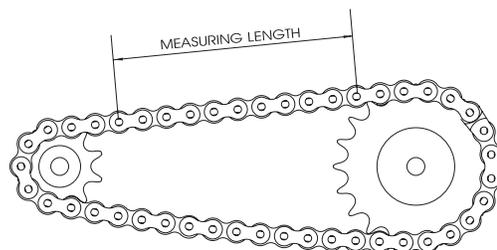
Fixed Centers: When adjustable centers or idlers cannot be used, the exact center distance must be calculated and built into the drive. Drives with fixed centers should be conservatively selected and well lubricated to minimize the rate of chain wear. Adjustment for wear elongation in fixed center distance 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 gauge to assist you with this procedure, contact your nearest Diamond Chain distributor, or call 1-800-US-CHAIN. See page 138 of this catalog.

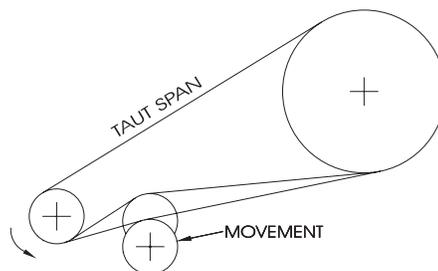
General Drive Considerations

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



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 0° and 350° F. For temperatures between 350° and 500° 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 0° or above 500° F.

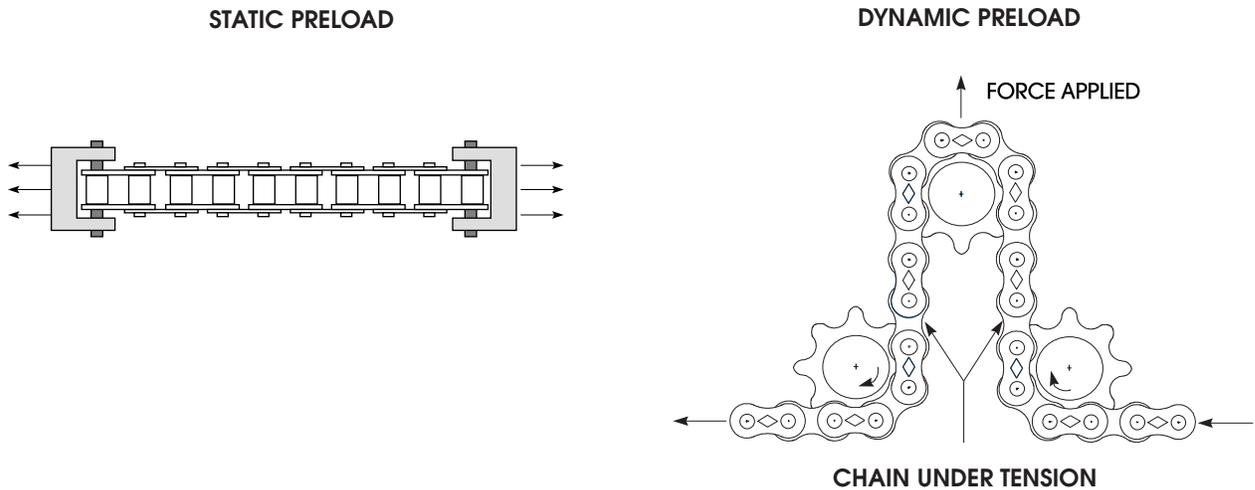
RING LEADER® O-ring chain can be routinely used at temperatures up to 150° F. If temperatures exceed this value, contact Diamond for alternate O-ring materials which may be serviceable up to 450° F.

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

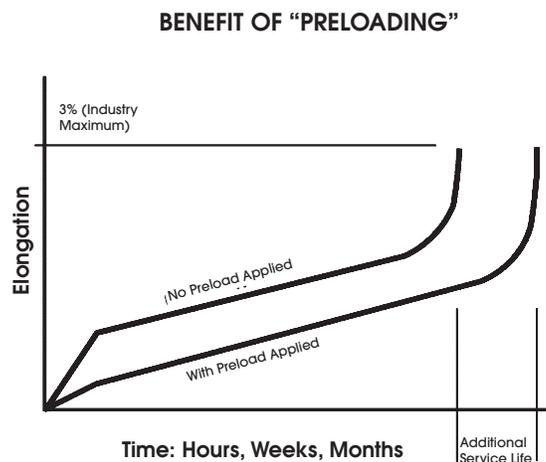
DUST STOPPER™ roller chains are generally limited to ambient temperatures of 120° F.

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 1/4" 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.



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.



TECHNICAL ENGINEERING

Chain Selection



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			Type of Driven Equipment	Power Source Type		
	A	B	C		A	B	C
Agitators for Liquid	1.0	1.0	1.2	Food Processing – Slicers, dough mixers, grinders	1.2	1.3	1.4
Beaters	1.2	1.3	1.4	Kilns & Dryers	1.2	1.3	1.4
Blowers & Fans, Centrifugal	1.0	1.0	1.2	Machine Tools – Drills, grinders, lathes	1.0	1.0	1.2
Boat Propellers	1.2	1.3	1.4	Boring mills, milling machines	1.2	1.3	1.4
Compressors – Centrifugal & lobe	1.2	1.3	1.4	Punch presses, shears	1.4	1.5	1.7
Reciprocating, 3+ cylinders	1.2	1.3	1.4	Machinery, General – Uniform load, non-reversing	1.0	1.0	1.2
Reciprocating, 1 & 2 cylinders	1.4	1.5	1.7	Moderate shock load, non-reversing	1.2	1.3	1.4
Conveyors – Belt or chain, smoothly loaded	1.0	1.0	1.2	Severe shock load, reversing	1.4	1.5	1.7
Heavy duty, not uniformly loaded	1.2	1.3	1.4	Mills – Ball, pebble, tube	1.2	1.3	1.4
Clay Working Machinery – Pug mills	1.2	1.3	1.4	Hammer, rolling	1.4	1.5	1.7
Brick presses, briquetting machinery	1.4	1.5	1.7	Pumps – Centrifugal	1.0	1.0	1.2
Cranes & Hoists	Consult Diamond			Reciprocating, 3+ cylinders	1.2	1.3	1.4
Crushers	1.4	1.5	1.7	Reciprocating, 1 & 2 cylinders	1.4	1.5	1.7
Dredges – Cable, reel, & conveyor drives	1.2	1.3	1.4	Paper Industry – Pulp grinders	1.2	1.3	1.4
Cutter head, jig, & screen drives	1.4	1.5	1.7	Calendars, mixers, sheeters	1.4	1.5	1.7
Elevators, Bucket – Smoothly loaded or fed	1.0	1.0	1.2	Printing Presses, Magazine & Newspaper	1.4	1.5	1.7
Not uniformly loaded or fed	1.2	1.3	1.4	Textile Industry – Calendars, mangles, nappers	1.2	1.3	1.4
Feeders – Rotary table	1.0	1.0	1.2	Carding machinery	1.4	1.5	1.7
Apron, screw, rotary vane	1.2	1.3	1.4	Woodworking Machinery	1.2	1.3	1.4
Reciprocating	1.4	1.5	1.7				

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.

$$\text{Design Horsepower} = \text{Input HP} \times \text{Service Factor}$$

TECHNICAL ENGINEERING

Chain Selection



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.

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.

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

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.

$$\text{Output RPM} = \text{Input RPM} \div \text{Desired Ratio or,}$$

$$\text{Large Sprocket \# of Teeth} = \text{Small Sprocket \# of Teeth} \times \text{Desired Ratio}$$

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



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.

$$\text{Chain Length} = (2 \times \text{Center Distance, in pitches}) + \text{the Number of Teeth on One Sprocket}$$

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.

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

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,

$$\text{Design Horsepower} = \text{Input HP} \times \text{Service Factor or,}$$

$$\text{Design Horsepower} = 25 \times 1.7 = 42.5$$

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.

Sprocket Teeth	Revolutions Per Minute - Small Sprocket															
	10	25	50	75	100	150	200	300	400	500	600	700	800	900	1000	1200
11	0.44	1.14	2.27	3.35	4.56	6.03	7.61	11.55	15.23	19.87	22.48	26.07	27.41	32.94	33.81	44.92
12	0.48	1.18	2.26	3.33	3.80	4.39	6.54	12.81	16.62	20.59	24.53	28.44	31.23	35.77	37.36	47.00
13	0.52	1.26	2.45	3.61	4.21	4.76	6.26	13.66	18.00	22.31	26.57	30.81	33.62	39.81	41.20	51.17
14	0.56	1.35	2.63	3.89	4.53	5.12	6.67	14.71	19.39	24.02	28.62	33.18	35.72	42.88	44.16	54.57
15	0.60	1.45	2.82	4.16	4.86	5.49	7.18	15.76	20.77	25.74	30.68	35.55	38.41	46.58	47.76	58.57
16	0.64	1.55	3.01	4.44	5.19	5.86	7.61	16.81	22.16	27.45	32.78	37.92	40.11	49.30	50.38	61.57
17	0.68	1.64	3.20	4.72	5.50	6.22	8.01	17.86	23.54	29.17	34.75	40.29	42.89	52.10	53.08	64.57
18	0.72	1.74	3.39	5.00	5.83	6.59	8.41	18.91	24.93	30.88	36.79	42.66	45.33	54.55	55.43	67.57
19	0.76	1.84	3.57	5.29	6.15	6.95	8.83	19.96	26.31	32.00	38.04	44.03	46.78	56.00	56.88	69.57
20	0.80	1.93	3.76	5.55	6.47	7.32	9.24	21.01	27.70	33.32	40.08	46.18	48.93	58.15	59.03	71.57

TECHNICAL ENGINEERING

Chain Selection



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 2-1/4" 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 $17 \times 3 = 51$ 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	Outside Diam. for Even Teeth & Caliper Diam. for Odd Teeth
6	2.960	2.33	1.375
7	3.265	2.68	1.622
8	3.613	3.01	1.868
9	3.924	3.35	2.154
10	3.236	3.68	2.611
11	3.550	4.01	2.868
12	3.864	4.33	3.229
13	4.179	4.66	3.523
14	4.494	4.98	3.869
15	4.810	5.30	4.158
16	5.126	5.62	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	14.019	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

Chain Selection

Slow Speed Drives Selection

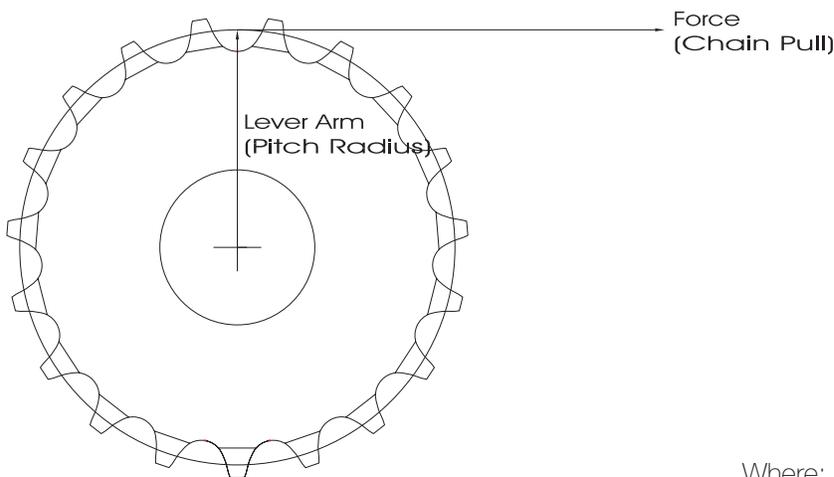
For drives operating at speeds lower than those shown in the horsepower ratings, chains may be selected on the basis of chain pull.

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



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

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

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

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

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

TECHNICAL ENGINEERING

Chain Selection



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- $\frac{1}{4}$ inches
Driving shaft speed	-	9 rpm
Driven shaft size	-	2- $\frac{1}{4}$ 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 $F \times d$ 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:

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

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

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.

$$\begin{aligned}\text{Working load} &= \text{chain tensile strength} \times \frac{1}{9} \\ &= 14,500 \text{ pounds} \times \frac{1}{9} \\ &= 1,611 \text{ pounds}\end{aligned}$$

Since $q = F \times d$, then $14,006 = 1,611 \times d$ 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
89	28.335	28.92	27.704

Excerpt from Sprocket Diameters - USA Standard #80 Roller Chain

TECHNICAL ENGINEERING

Chain Selection



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 $\frac{1}{9}$ 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 $q = F \times d$ 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



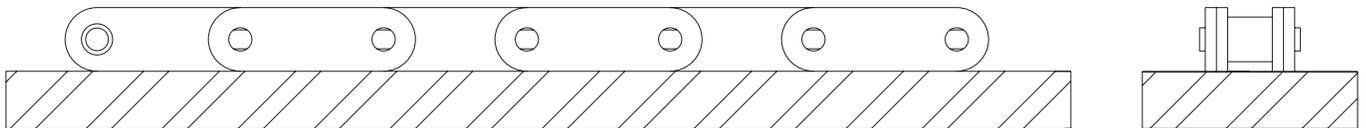
Conveyor Chains

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.

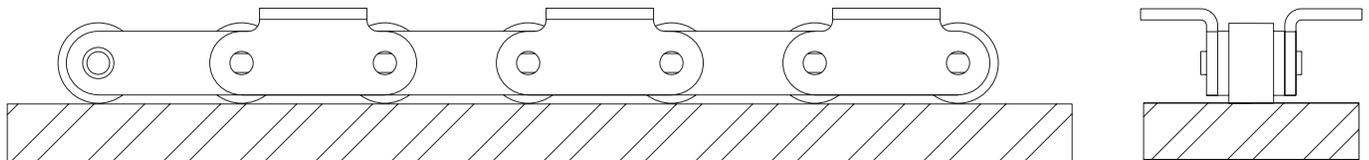
Standard Series, single-pitch roller chain built in accordance with ASME/ANSI B29.1, is available with a variety of attachments. These attachments, and details about the chains' configurations, can be found in either the Attachment Chain section or Made-To-Order section of this guide. Standard Series chains range in size from $\frac{1}{4}$ " 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.

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.

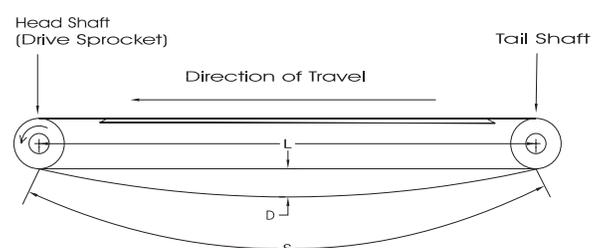
Chain Length Matching

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.



TECHNICAL ENGINEERING

Chain Selection



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

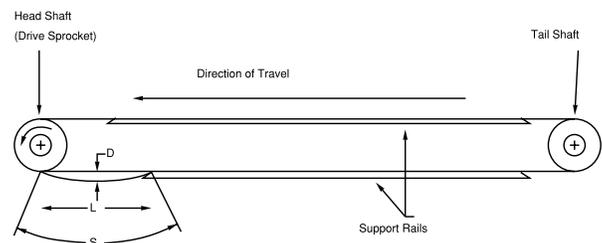
W = Weight of chain in pounds per foot

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.

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.

TECHNICAL ENGINEERING

Chain Selection



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

1. For horizontal conveyors:

$$P = [(W_m + 2W_c) \times L \times F_x] + W_m \times L \times F_m$$

2. For inclined conveyors:

$$P = [(W_m \times 2W_c) \times L \times F_x] + (W_m + W_c) \times H + W_m \times L \times F_m$$

3. For vertical conveyors:

$$P = (W_m + W_c) H$$

Where:

P = Chain pull, in pounds

W_m = Weight of conveyed material in pounds per foot

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

F_x = 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).

F_m = 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

W_c = Weight of chain and attachments in pounds per foot

TECHNICAL ENGINEERING

Chain Selection

Rolling Coefficients of Friction

Chain Number	Static		Rolling	
	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



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	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	....	C2040	.3400	.0068	.0019
35	.2100	.0019	.0015	C2042	.5000	.0068	.0019
41	.2600	.0033	.0015	C2050	.5800	.0130	.0037
40	.4100	.0030	.0020	C2052	.8100	.0130	.0037
50	.6800	.0090	.0037	C2060H	1.0500	.0310	.0062
60	.9900	.0120	.0062	C2062H	1.4200	.0310	.0062
80	1.7300	.0250	.0150	C2080H	1.4000	.0680	.0150
100	2.5100	.0650	.0250	C2082H	2.1300	.0680	.0150
120	3.6900	.1000	.0450	C2100H	2.4800	.1180	.0250
140	5.0000	.1800	.0670	C2102H	3.5100	.1180	.0250
160	6.5300	.2500	.0960	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:

$$L = \text{Number of teeth on one sprocket} + (2 \times \text{center distance in pitches})$$

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:

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

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:

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

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

TECHNICAL ENGINEERING

Chain Selection



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.

Chain Selection

Step 2: Calculate preliminary chain pull.

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

$$P = [(40 + 2 \times 0) \times 75 \times 0.1] + 40 \times 75 \times .5 = 1800 \text{ pounds}$$

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.

$$P = \text{preliminary chain pull calculation} \times \text{speed factor}$$

$$P = 1800 \text{ pounds} \times 1.5 = 2700 \text{ pounds}$$

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.

$$\text{Single Strand Pull} = \text{Chain pull} / \text{number of chains in drive}$$

$$P = 2700 / 2 = 1350 \text{ pounds.}$$

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.

TECHNICAL ENGINEERING

Chain Selection



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:

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

$$P = [(40 + 2 \times 2.266) \times 75 \times 0.08] + 40 \times 75 \times .5 = 1767 \text{ pounds}$$

Multiplying this by the speed factor of 1.5 gives results in $1767 \times 1.5 = 2650$ 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:

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

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

$$D = 96.17 \text{ inches}$$

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

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

$$T = 219.41 \text{ pounds tension due to the catenary}$$

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

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:

$$Lc = \text{Number of teeth (itches) on one sprocket} + (2 \times \text{center distance in pitches})$$

$$Lc = 15 + [2 \times (75 \times 6)] = 915 \text{ pitches}$$

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:

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

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

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



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 Cotters

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: 1-800-672-4246
Or write: Diamond Chain Company
P.O. Box 7045
Indianapolis, Indiana 46207-7045
317/638-6431
FAX 317/633-2243

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

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.

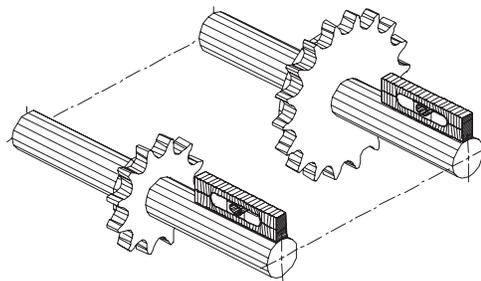
Chain Inspection: When reinstalling an existing chain, care should be taken to ensure that it is free of grit and dirt. If necessary, wash the chain in an approved solvent, paying particular attention to flexing the chain's joints while submerged, as this will allow contaminants within the chain's joints 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

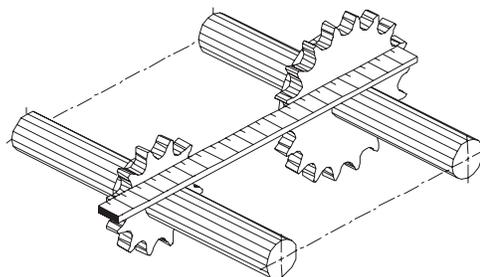
Misalignment results in uneven loading across the width of the chain and may cause damage ranging from roller link plate and sprocket tooth wear up to and including premature failure from link plate fatigue. Proper drive alignment can be divided into two categories: parallel shafts and parallel sprockets.

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.

TECHNICAL ENGINEERING

Roller Chain Installation



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:

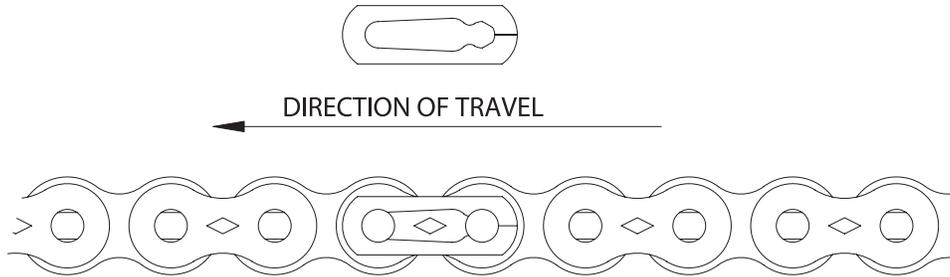
1. Insert the "Master Link," the portion of the link that contains the pins, into the chain.
2. Slide the plate over the pin ends to a location which clears either the spring clip groove or cotter hole.
3. Install the retaining device, either spring clip or cotter.

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

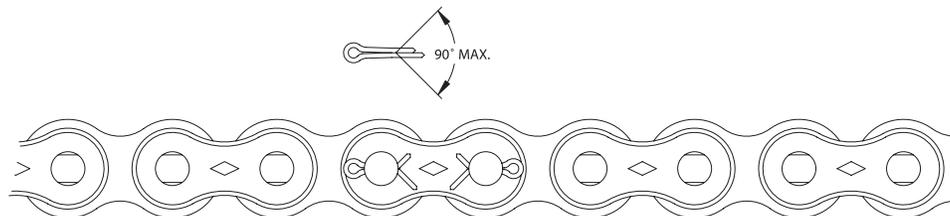
Roller Chain Installation

Retaining Devices

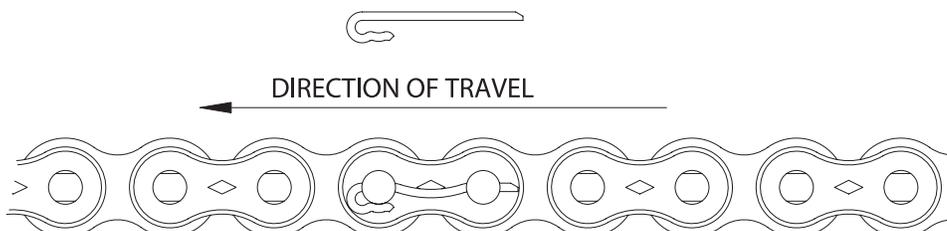
Spring clips are provided for chain models #25-#60 and provide a quick and easy method for securing the cover plate. Installation is performed by first determining the direction of chain travel and locating the closed end of the clip over the leading pin's groove. Final installation is performed by "snapping" 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.



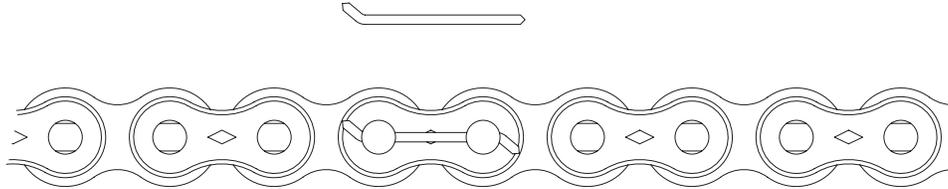
TECHNICAL ENGINEERING

Roller Chain Installation



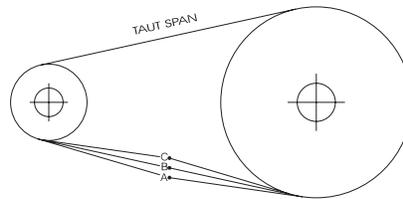
Retaining Devices

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

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.

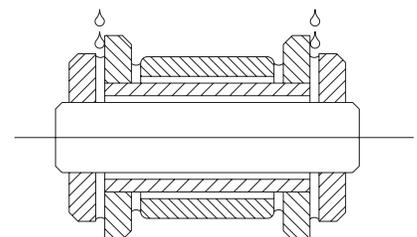
The viscosity of the lubricant greatly affects its ability to flow into the internal areas; therefore, the highest viscosity oil which will flow between the chain link plates and fill the pin-bushing areas will provide the greatest film thickness and best wear life.

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.



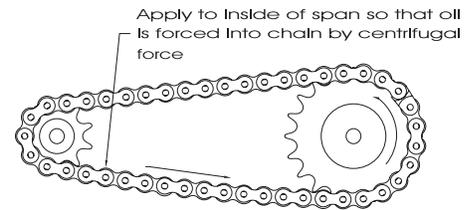
LUBRICANT FLOW INTO THE CHAIN JOINT

TECHNICAL ENGINEERING

Roller Chain Lubrication



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.

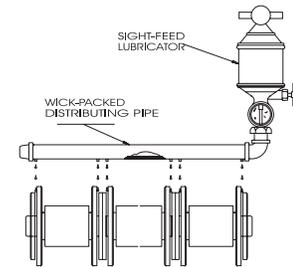


APPLICATION OF LUBRICANT TO CHAIN

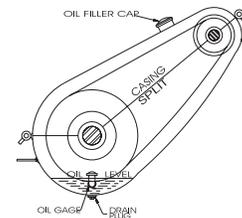
Methods of Lubrication

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.

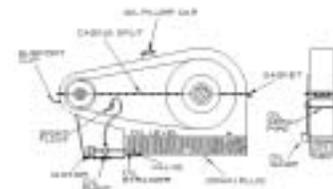
Manual or Drip Lubrication (Type A): Lubricant applied manually with an oil can or brush is acceptable for slow speed drives, generally not over 600 feet per minute. When lubrication must be accomplished with a minimum amount of oil, it is advisable to equip the system with either felt pads or brushes 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.)

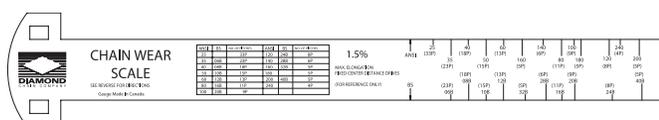
With bath or pump lubrication, check oil level and add oil if needed. Check oil for contamination and change oil as needed. It is recommended to change the oil after the first 100 hours of operation and each 500 hours thereafter. If pump lubrication is used, check each orifice to be sure it is clear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



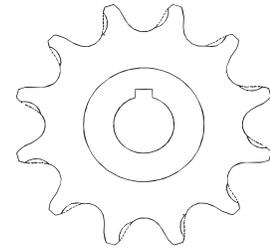
Contact Diamond Chain for your free wear gauge.

TECHNICAL ENGINEERING

Roller Chain Maintenance

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



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 5/8" through 1-1/4" 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	4.38						
	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



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	1.90	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



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	7.90		
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	40.16						
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



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	46.32						
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	74.99							
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	149.79									
	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	10.48		
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	43.20						
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	66.51							
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	102.39								
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	57.90								
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	56.01						
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



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	17.70		
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	26.62			
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



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



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	7.79					
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



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



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

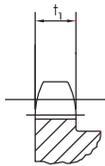
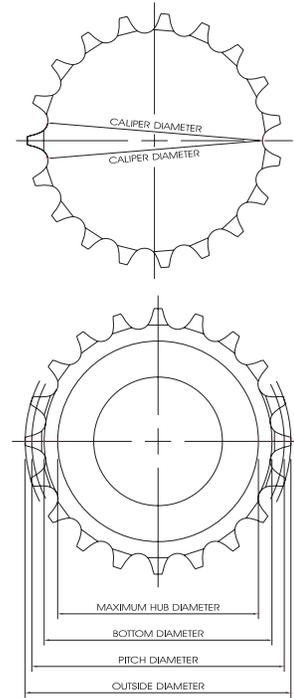
Sprocket Information

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.

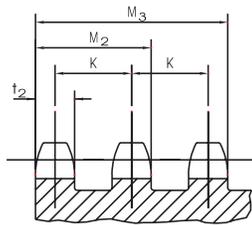
Bottom Diameter: The bottom diameter of a sprocket is the diameter of a circle tangent to the bottoms of the tooth spaces. The tolerance on the bottom diameter must be entirely negative to ensure that the chain will mesh properly with the sprocket teeth.

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.

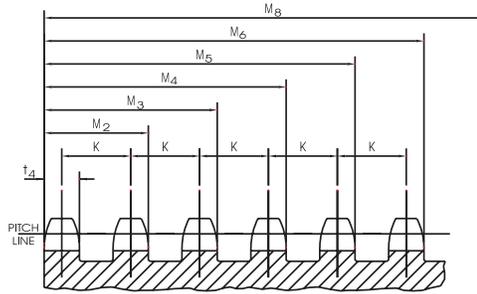
Outside Diameter: The outside diameter of a sprocket is comparatively unimportant as the tooth length is not vital to proper meshing with the chain. The outside diameter will vary depending on the type of cutter used.



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

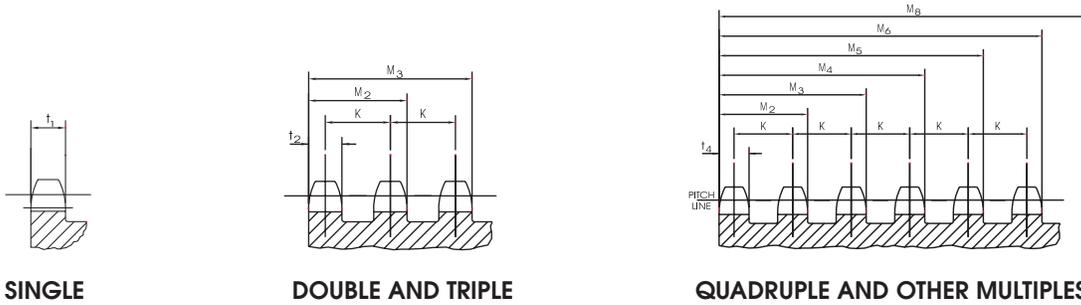
*K dimensions apply to double and triple strands also.

TECHNICAL SECTION

Sprocket Information



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



Heavy Series Sprockets

Chain Data for All Sprockets				Single Strand t_1	Double and Triple Strand			For 4 or more Strands								Matching Tolerance on "F" and "M"	Hot Rolled Tolerance on "F" 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	-0.11	-0.036
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	-0.012	-0.040
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	-0.014	-0.046
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	-0.016	-0.057
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	-0.016	-0.057
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	-0.019	-0.062
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	-0.020	-0.068
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	-0.021	-0.072

*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	54	4.300	4.442	4.170	102	8.118	8.264	7.988
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	7.867	7.591	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	11.778	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	54	6.449	6.66	6.249	102	12.177	12.40	11.977
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	1.465	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	13.728	13.95	13.528
20	2.397	2.59	2.197	68	8.120	8.34	7.920	116	13.847	14.07	13.648
21	2.516	2.71	2.309	69	8.239	8.46	8.037	117	13.966	14.19	13.767
22	2.635	2.83	2.435	70	8.358	8.58	8.158	118	14.085	14.31	13.887
23	2.754	2.95	2.547	71	8.478	8.69	8.276	119	14.204	14.43	14.005
24	2.873	3.07	2.673	72	8.597	8.81	8.397	120	14.322	14.55	14.126
25	2.992	3.19	2.786	73	8.716	8.93	8.514	121	14.441	14.67	14.244
26	3.111	3.31	2.911	74	8.836	9.05	8.636	122	14.560	14.78	14.364
27	3.230	3.43	3.025	75	8.955	9.17	8.753	123	14.679	14.90	14.482
28	3.349	3.55	3.149	76	9.074	9.29	8.874	124	14.798	15.02	14.603
29	3.468	3.67	3.263	77	9.194	9.41	8.992	125	14.917	15.14	14.722
30	3.588	3.79	3.388	78	9.313	9.53	9.113	126	15.036	15.26	14.842
31	3.707	3.91	3.502	79	9.432	9.65	9.230	127	15.155	15.38	14.960
32	3.826	4.03	3.626	80	9.552	9.77	9.352	128	15.274	15.50	15.080
33	3.945	4.15	3.741	81	9.671	9.89	9.469	129	15.393	15.62	15.199
34	4.064	4.27	3.864	82	9.790	10.01	9.590	130	15.512	15.74	15.319
35	4.183	4.39	3.979	83	9.910	10.13	9.708	131	15.631	15.86	15.437
36	4.303	4.51	4.103	84	10.029	10.25	9.829	132	15.750	15.98	15.558
37	4.422	4.63	4.218	85	10.148	10.37	9.946	133	15.869	16.10	15.676
38	4.541	4.75	4.341	86	10.268	10.49	10.068	134	15.988	16.22	15.797
39	4.660	4.87	4.456	87	10.387	10.61	10.185	135	16.107	16.34	15.915
40	4.780	4.99	4.580	88	10.506	10.73	10.306	136	16.226	16.46	16.035
41	4.899	5.11	4.695	89	10.626	10.84	10.424	137	16.345	16.58	16.154
42	5.018	5.23	4.818	90	10.745	10.96	10.545	138	16.464	16.70	16.274
43	5.137	5.35	4.934	91	10.864	11.08	10.662	139	16.583	16.81	16.394
44	5.257	5.47	5.057	92	10.984	11.20	10.784	140	16.702	16.93	16.513
45	5.376	5.59	5.173	93	11.103	11.32	10.901	141	16.821	17.05	16.631
46	5.495	5.71	5.295	94	11.222	11.44	11.022	142	16.940	17.17	16.751
47	5.614	5.83	5.411	95	11.342	11.56	11.140	143	17.059	17.29	16.870
48	5.734	5.95	5.534	96	11.461	11.68	11.261	144	17.178	17.41	16.990
49	5.853	6.07	5.650	97	11.580	11.80	11.378	145	17.297	17.53	17.108
50	5.972	6.19	5.772	98	11.700	11.92	11.500	146	17.416	17.65	17.229
51	6.091	6.31	5.888	99	11.819	12.04	11.617	147	17.535	17.77	17.347
52	6.211	6.43	6.011	100	11.938	12.16	11.738	148	17.654	17.89	17.468
53	6.330	6.54	6.127	101	12.058	12.28	11.856	149	17.773	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	54	8.599	8.890	8.287	102	16.236	16.530	15.924
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	0.935	56	8.917	9.200	8.605	104	16.555	16.850	16.240
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	17.039
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	17.668	17.960	17.355
16	2.563	2.810	2.251	64	10.190	10.480	9.878	112	17.827	18.120	17.513
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



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
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	17.200
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	20.702
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	23.397	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
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	29.043
53	10.550	10.91	10.146		101	20.096	20.46	19.694		149	29.645	30.01	

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	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
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	2.922		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	

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	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
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	28.6						

TECHNICAL SECTION

Sprocket Information



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	54	21.498	22.21	20.748	102	40.591	41.32	39.841
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	22.689	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	12.395	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	54	25.798	26.65	24.923	102	48.709	49.59	47.834
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	50.141	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	58.255	59.14	57.381
27	12.921	13.73	12.024	75	35.820	36.69	34.937	123	58.732	59.62	57.854
28	13.397	14.21	12.522	76	36.298	37.17	35.423	124	59.209	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	43.459	44.33	42.576	139	66.373	67.26	65.494
44	21.026	21.87	20.151	92	43.938	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.					

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	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	
6	3.500	4.08	2.500		54	30.097	31.10	29.097		102	56.827	57.85	55.827		103	57.384	58.41	56.377
7	4.033	4.68	2.932	55	30.654	31.65	29.641	104	57.941	58.97	56.941	105	58.498	59.52	57.491
8	4.573	5.28	3.373	56	31.211	32.21	30.211	106	59.055	60.08	58.055	107	59.612	60.64	58.605
9	5.117	5.86	4.042	57	31.768	32.77	30.755	108	60.169	61.19	59.169	109	60.726	61.75	59.719
10	5.663	6.44	4.663	58	32.324	33.33	31.324	110	61.283	62.31	60.283	111	61.840	62.87	60.833
11	6.212	7.01	5.148	59	32.881	33.89	31.869	112	62.397	63.42	61.397	113	62.954	63.98	61.948
12	6.762	7.58	5.762	60	33.438	34.44	32.438	114	63.511	64.54	62.511	115	64.068	65.09	63.062
13	7.313	8.15	6.259	61	33.995	35.00	32.983	116	64.625	65.65	63.625	117	65.182	66.21	64.176
14	7.864	8.72	6.864	62	34.551	35.56	33.551	118	65.739	66.77	64.739	119	66.296	67.32	65.290
15	8.417	9.28	7.371	63	35.108	36.11	34.097	120	66.853	67.88	65.853	121	67.410	68.44	66.404
16	8.970	9.85	7.970	64	35.665	36.67	34.665	122	67.967	68.99	66.967	123	68.524	69.55	67.518
17	9.524	10.41	8.483	65	36.222	37.23	35.211	124	69.081	70.11	68.081	125	69.639	70.67	68.633
18	10.078	10.98	9.078	66	36.779	37.79	35.779	126	70.195	71.22	69.195	127	70.752	71.78	69.746
19	10.632	11.54	9.596	67	37.336	38.35	36.325	128	71.308	72.34	70.308	129	71.866	72.90	70.860
20	11.187	12.10	10.187	68	37.892	38.90	36.892	130	72.423	73.45	71.423	131	72.980	74.01	71.974
21	11.742	12.66	10.709	69	38.449	39.46	37.439	132	73.537	74.57	72.537	133	74.094	75.12	73.088
22	12.297	13.22	11.297	70	39.006	40.02	38.006	134	74.650	75.68	73.650	135	75.207	76.24	74.202
23	12.852	13.78	11.822	71	39.563	40.57	38.553	136	75.765	76.79	74.765	137	76.322	77.35	75.316
24	13.407	14.34	12.407	72	40.120	41.13	39.120	138	76.879	77.91	75.879	139	77.435	78.47	76.431
25	13.963	14.90	12.935	73	40.677	41.69	39.667	140	77.992	79.02	76.992	141	78.549	79.58	77.545
26	14.518	15.46	13.518	74	41.233	42.25	40.233	142	79.106	80.14	78.106	143	79.166	80.69	78.659
27	15.074	16.02	14.049	75	41.790	42.80	40.781	144	80.220	81.25	79.220	145	80.777	81.81	79.773
28	15.630	16.58	14.630	76	42.347	43.36	41.347	146	81.334	82.37	80.334	147	81.891	82.92	80.887
29	16.186	17.14	15.162	77	42.904	43.92	41.895	148	82.448	83.48	81.448	149	83.005	84.04	82.001
30	16.742	17.70	15.742	78	43.461	44.48	42.461								
31	17.298	18.26	16.276	79	44.018	45.03	43.009								
32	17.854	18.82	16.854	80	44.575	45.59	43.575								
33	18.410	19.38	17.389	81	45.132	46.15	44.132								
34	18.966	19.94	17.966	82	45.689	46.71	44.689								
35	19.523	20.49	18.503	83	46.246	47.26	45.237								
36	20.079	21.05	19.079	84	46.802	47.82	45.802								
37	20.635	21.61	19.617	85	47.359	48.38	46.350								
38	21.192	22.17	20.192	86	47.915	48.93	46.915								
39	21.748	22.73	20.731	87	48.472	49.49	47.464								
40	22.305	23.29	21.305	88	49.029	50.05	48.029								
41	22.861	23.84	21.845	89	49.586	50.61	48.578								
42	23.418	24.40	22.418	90	50.144	51.16	49.144								
43	23.974	24.96	22.958	91	50.700	51.72	49.692								
44	24.531	25.52	23.531	92	51.257	52.28	50.257								
45	25.087	26.08	24.072	93	51.814	52.83	50.806								
46	25.644	26.63	24.644	94	52.371	53.39	51.371								
47	26.201	27.19	25.196	95	52.928	53.95	51.920								
48	26.757	27.75	25.757	96	53.485	54.51	52.485								
49	27.314	28.31	26.300	97	54.042	55.06	53.034								
50	27.871	28.87	26.871	98	54.599	55.62	53.599								
51	28.427	29.42	27.414	99	55.156	56.18	54.149								
52	28.984	29.98	27.984	100	55.713	56.74	54.713								
53	29.541	30.54	28.528	101	56.270	57.29	55.263								

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	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	
6	4.000	4.66	2.875		54	34.397	35.54	33.272		102	64.945	66.11	63.820		103	65.582	66.75	64.449
7	4.610	5.35	3.369	55	35.033	36.18	33.894	104	66.218	67.39	65.093	105	66.855	68.03	65.722
8	5.226	6.03	4.101	56	35.669	36.81	34.544	106	67.491	68.66	66.366	107	68.128	69.30	66.995
9	5.848	6.70	4.634	57	36.306	37.45	35.167	108	68.765	69.94	67.638	109	69.401	70.57	68.268
10	6.472	7.36	5.347	58	36.942	38.09	35.817	110	70.038	71.21	68.913	111	70.674	71.85	69.541
11	7.099	8.01	5.902	59	37.578	38.73	36.440	112	71.311	72.48	70.186	113	71.948	73.12	71.815
12	7.727	8.66	6.602	60	38.215	39.36	37.090	114	72.585	73.76	71.460	115	73.221	74.39	72.089
13	8.357	9.31	7.171	61	38.851	40.00	37.713	116	73.552	75.03	72.733	117	74.189	75.67	73.362
14	8.988	9.96	7.863	62	39.487	40.64	38.362	118	74.494	76.30	74.005	119	75.767	77.94	74.635
15	9.620	10.61	8.442	63	40.124	41.27	38.986	120	76.403	77.58	75.278	121	77.039	78.21	75.908
16	10.252	11.26	9.127	64	40.760	41.91	39.635	122	77.676	78.85	76.551	123	78.313	79.49	77.181
17	10.885	11.90	9.713	65	41.396	42.55	40.259	124	78.950	80.12	77.825	125	79.587	80.76	78.455
18	11.518	12.54	10.393	66	42.033	43.19	40.908	126	80.222	81.40	79.097	127	80.859	82.03	79.728
19	12.151	13.19	10.985	67	42.669	43.82	41.532	128	81.495	82.67	80.370	129	82.132	83.31	81.001
20	12.785	13.83	11.600	68	43.306	44.46	42.181	130	82.769	83.94	81.644	131	83.405	84.58	82.274
21	13.419	14.47	12.256	69	43.942	45.10	42.805	132	84.042	85.22	82.917	133	84.678	85.85	83.547
22	14.053	15.11	12.928	70	44.578	45.73	43.453	134	85.315	86.49	84.190	135	85.951	87.13	84.821
23	14.688	15.75	13.528	71	45.215	46.37	44.078	136	86.588	87.76	85.463	137	87.225	88.40	86.094
24	15.323	16.39	14.198	72	45.851	47.01	44.726	138	87.861	89.04	86.736	139	88.498	89.68	87.367
25	15.958	17.03	14.801	73	46.488	47.64	45.352	140	89.134	90.31	88.009	141	89.771	90.95	88.640
26	16.593	17.67	15.468	74	47.124	48.28	45.999	142	90.407	91.59	89.282	143	91.044	92.22	89.913
27	17.228	18.31	16.073	75	47.760	48.92	46.625	144	91.680	92.86	90.555	145	92.317	93.50	91.187
28	17.863	18.95	16.738	76	48.397	49.56	47.272	146	92.954	94.13	91.829	147	93.590	94.77	92.460
29	18.498	19.59	17.346	77	49.033	50.19	47.898	148	94.227	95.41	93.102	149	94.863	96.04	93.733
30	19.134	20.23	18.009	78	49.670	50.83	48.545								
31	19.769	20.87	18.619	79	50.306	51.47	49.171								
32	20.405	21.51	19.280	80	50.943	52.10	49.818								
33	21.040	22.15	19.892	81	51.579	52.74	50.444								
34	21.676	22.78	20.551	8											

TECHNICAL SECTION

Sprocket Information



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	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
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	77.366			
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	50.890	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	23.689	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			

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	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.	No. of Teeth	Pitch Diameter	Outside Diameter	Bottom Diam. for Even Teeth Caliper Diam. for Odd Teeth	Machining tolerances on bottom diameters and caliper diameters should be in the minus direction. Tolerances on outside diameters are not critical.
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	89.01	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	50.976	114	90.730	92.20	89.166			
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	92.320	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	63.700	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	33.493	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			

Odd tooth "bottom diameters" equal pitch minus 1.562".

ORDERING INFORMATION

Important Address and Phone Numbers

Diamond Chain Company:

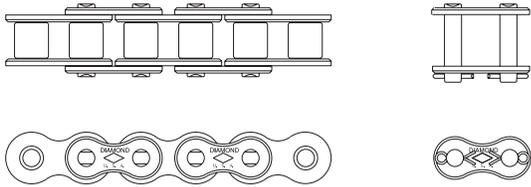
Mailing: P.O. Box 7045
 Indianapolis, IN 46207
 317-638-6431
 800-872-4246
 317-633-2243 (fax)
 Shipping: 402 Kentucky Avenue
 Indianapolis, IN 46225

Service Centers:

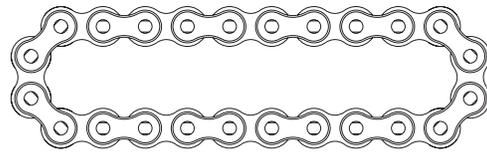
Dallas, TX
 877-453-9128 (toll free)
 214-631-2374 (fax)
 Sacramento, CA
 877-453-9127 (toll free)
 317-633-2243 (fax)
 New Castle, UK
 44-(0)191-414-8822
 44-(0)191-414-8877 (fax)
 Brampton, Ontario Canada
 905-455-6969
 905-455-6061 (fax)
 Saltillo, Coah. Mexico
 011-(0)52-844-430-2957

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.

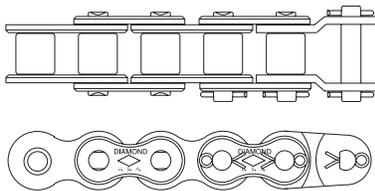
Chain-6 pitches long, including connecting link.



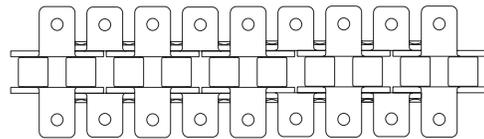
Chain-24 pitches long, riveted endless with no connecting link.



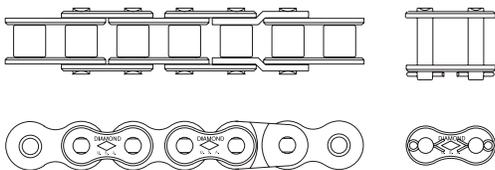
Chain-5 pitches long, including connecting link and one-pitch offset.



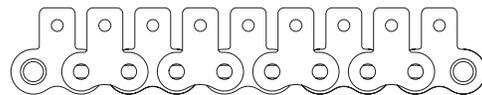
Chain-9 pitches long, with bent attachments, both sides of chain, every pitch.



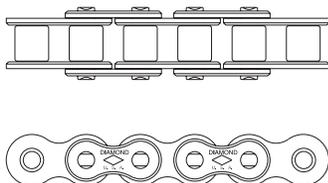
Chain-7 pitches long, including two-pitch offset and connecting link.



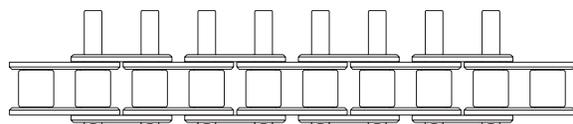
Chain-9 pitches long, with straight attachments, every pitch.



Chain-5 pitches long, roller link each end.



Chain-9 pitches long, with all pins extended.



ORDERING INFORMATION



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 1-³/₄" 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 2-¹/₄" 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	¹ / ₄	10	1.0	5.4	11.0	—	24.0	57.0
35	³ / ₈	10	2.2	13.0	23.0	—	—	118.0
41	¹ / ₂	10	3.0	16.0	29.0	—	—	154.0
40	¹ / ₂	10	4.0	22.0	43.0	—	114.0	—
50	⁵ / ₈	10	7.0	37.0	71.0	146.0	—	—
60	³ / ₄	10	10.0	51.0	112.0	—	—	—
80	1	10	17.0	97.0	169.7	—	—	—
100	1 ¹ / ₄	10	25.0	126.0	251.6	—	—	—
120	1 ¹ / ₂	10	37.0	—	—	—	—	—
140	1 ³ / ₄	122 ¹ / ₂ "	51.0	—	—	—	—	—
160	2	10	66.0	—	—	—	—	—
180	2 ¹ / ₄	121 ¹ / ₂ "	87.0	—	—	—	—	—
200	2 ¹ / ₂	10	105.0	—	—	—	—	—

Non-standard Chains

65 x ¹ / ₈	¹ / ₂	10	2.0	—	—	—	—	—
867 x ⁵ / ₁₆	¹ / ₂	10	4.3	—	—	—	—	—
148 x ¹ / ₄	⁵ / ₈	10	6.1	—	—	—	—	—
148 x ⁵ / ₁₆	⁵ / ₈	10	6.6	—	—	—	—	—
435 x ¹ / ₂	1	10	13.0	—	—	—	—	—

ORDERING INFORMATION



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
	Quantity per box	Weight (Lbs.)	Quantity per box	Weight (Lbs.)					

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.



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.



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.



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.



Single-Pitch Offset Link Slip-Fit Type

This link is furnished with slip-fit unassembled in the offset link plates. The flat milled on one end of the pin prevents it from turning in the link plate.



BCL Connecting Link Bushed Centerplate Link

Standard for all press-fit type multiple strand chains of $\frac{5}{8}$ " 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.



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.

ORDERING INFORMATION

Chain Length in Pitches to Feet Conversion Table



Chain Length in Pitches Converted to Feet

No. of Pitches	Chain Pitch—Inches												
	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										

ORDERING INFORMATION

Terms and Conditions

1. 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 majeure, 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



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.