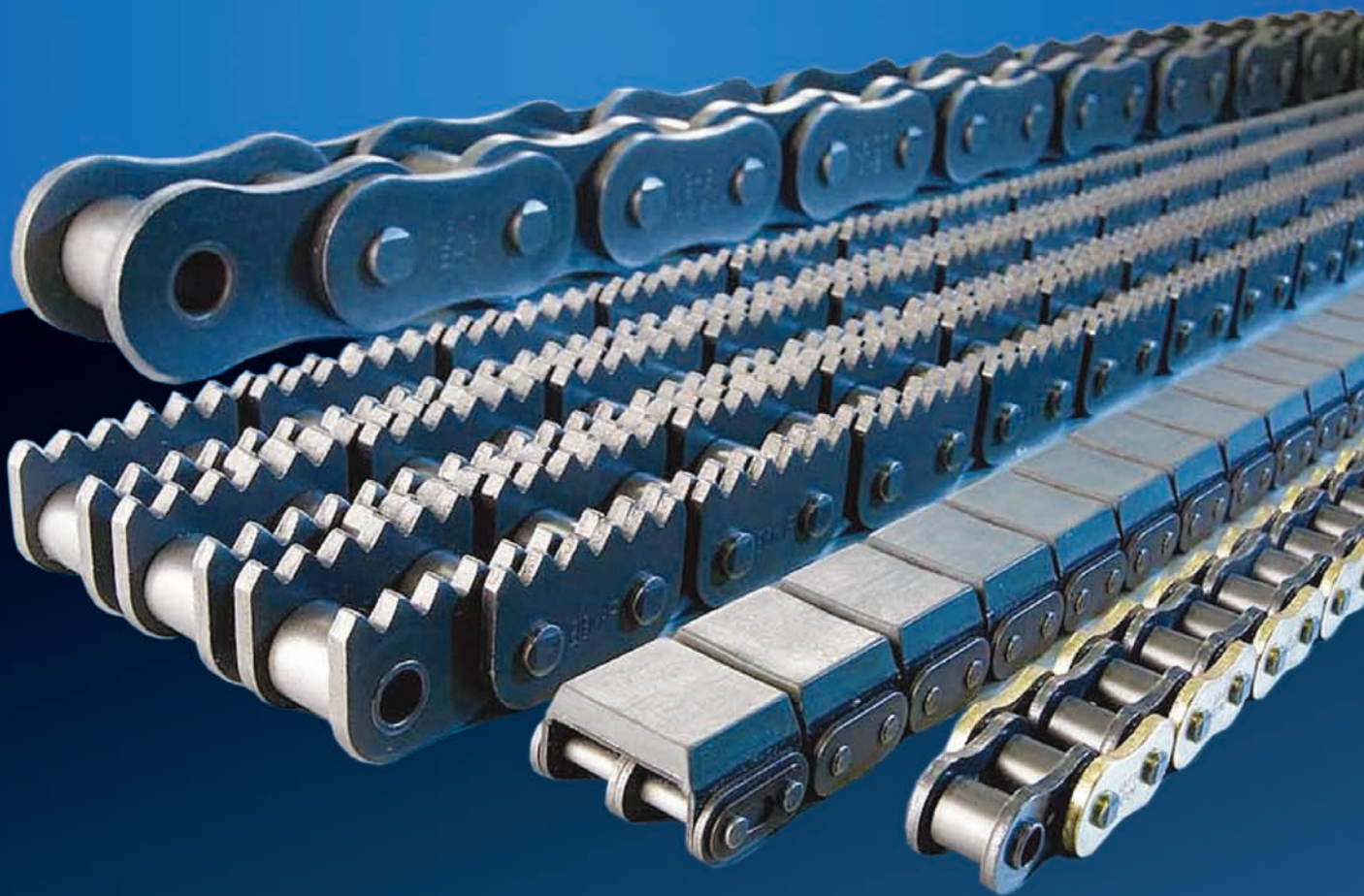


Chains and Components



Chain Components

Connecting Link Spring Lock Type

Available in 05B - 16B models.

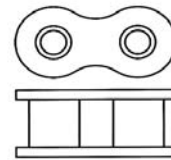
Two pins and one link plate are furnished assembled. The standard coverplate is designed for a slip-fit on the pins. It is held in place by a flat spring-steel lock, split at one end to permit installation in grooves at the end of each pin.



Roller Link

Available in most chain models.

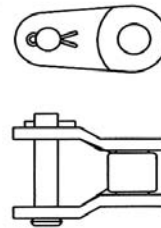
Standard for all sizes of roller chains. They are furnished as complete roller link assemblies. The two bushings are press-fit in each of the link plates. The same roller links are used for single and multiple strand chains.



Single-Pitch Offset Link Slip-Fit Type

Available in simplex, duplex and triplex models

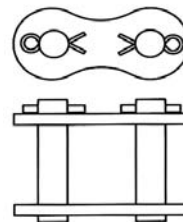
This link is furnished with slip fit pin unassembled in the offset link plates. The flat milled on one end of the pin prevents it from turning in the link plate.



Connecting Link Cotter Pin Type

Available in 20B - 32B models.

The two pins and one link plate are furnished assembled. The coverplate is slip-fit on the pins. Press-fit connecting links are available upon special request.



Chain Performance

You could look at two different brands of roller chains 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.

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 strength than Diamond could easily have much lower working load capacities.

Why use Roller Chain?

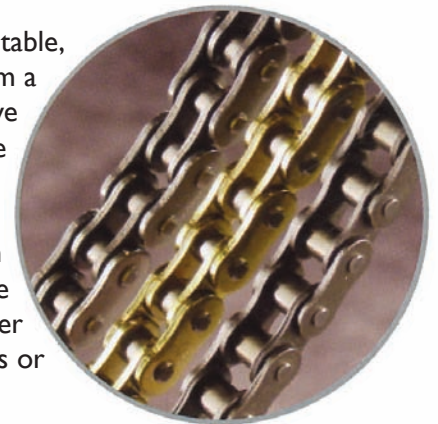
DURABILITY - Roller chain drives long service life because the chain load is distributed over several sprocket teeth, keeping bearing pressures relatively low for the power transmitted.

RUGGEDNESS - The proportions, parts heat treatment and press-fit construction of roller chains help them with stand 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.



A chain is only worth its weakest link

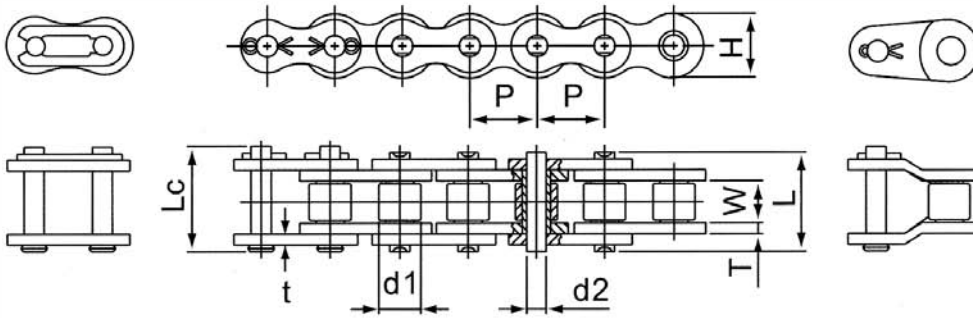
Let's face it, there are less expensive chains out there, but are they worth it? Probably not in the long run. In most cases, cheap chains doesn't last as long so you have to replace it more often. That means downtime and all of the costs associated with it: idle workers, lost production, repair/replacement 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 chains. Please take time with your Diamond Chain 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 definantly worth it 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 (R/chain-Ft): | | |
| B. Length required for application (chain-Ft): | | |
| C. Chain cost per application, A x B (R/chain): | | |
| D. Chains used per year (chains/Yr): | | |
| E. Annual cost of chains, C x D (R/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 repair labour, lost efficiency, lost profits, etc. (R/downtime-Hr): | | |
| I. Annual downtime costs, F x G x H (R/Yr): | | |
| J. Total annual costs incurred, E + I (R/Yr): | | |

British Standard Simplex Roller Chain

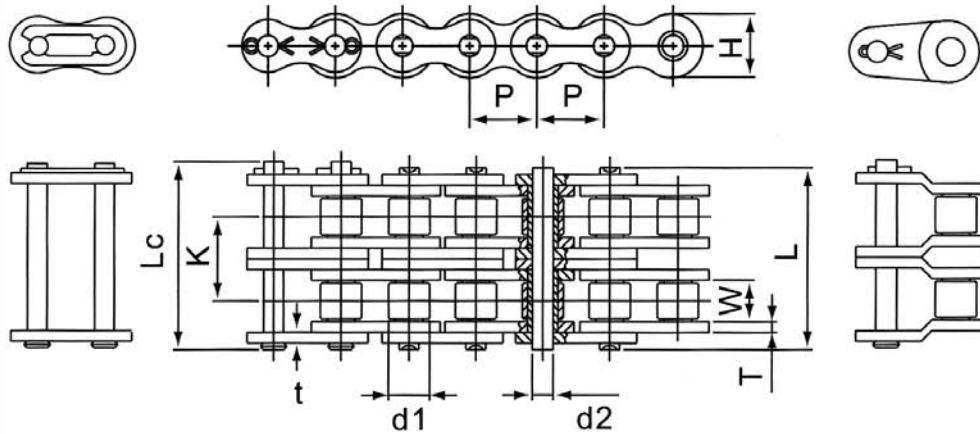
Single Strand Roller chain



| Diamond Number | Pitch P mm | Roller | | Pin Outer Diameter d2 max mm | Pin Length | | Link Plate Height H max mm | Link Plate Thickness T/t mm | Average Tensile Strength N |
|----------------|------------------|-------------|--------------|------------------------------------|-------------|--------------|----------------------------------|-----------------------------------|-------------------------------|
| | | W min mm | d1 max mm | | L max mm | Lc max mm | | | |
| 05B-1 | 8.00 | 3.00 | 5.00 | 2.31 | 8.6 | 11.7 | 7.1 | 0.9 | 5884 |
| 06B-1 | 9.53 | 5.72 | 6.35 | 3.28 | 13.5 | 16.8 | 8.2 | 1.4 / 1.1 | 10787 |
| 08B-1 | 12.70 | 7.75 | 8.51 | 4.45 | 17.0 | 20.7 | 11.8 | 1.5 | 19123 |
| 10B-1 | 15.88 | 9.65 | 10.16 | 5.08 | 19.6 | 23.7 | 14.7 | 1.7 | 27459 |
| 12B-1 | 19.05 | 11.68 | 12.07 | 5.72 | 22.7 | 27.3 | 16.1 | 1.8 | 32852 |
| 16B-1 | 25.40 | 17.02 | 15.88 | 8.28 | 36.1 | 41.5 | 21.0 | 4.0 / 3.2 | 73550 |
| 20B-1 | 31.75 | 19.56 | 19.05 | 10.19 | 43.2 | 49.3 | 26.4 | 4.7 | 106402 |
| 24B-1 | 38.10 | 25.40 | 25.40 | 14.63 | 53.4 | 60.0 | 33.4 | 6.3 | 178481 |
| 28B-1 | 44.45 | 30.99 | 27.94 | 15.90 | 65.1 | 72.5 | 37.0 | 7.8 | 225553 |
| 32B-1 | 50.80 | 30.99 | 29.21 | 17.81 | 67.4 | 75.3 | 42.2 | 7.3 | 279490 |

British Standard Duplex Roller Chain

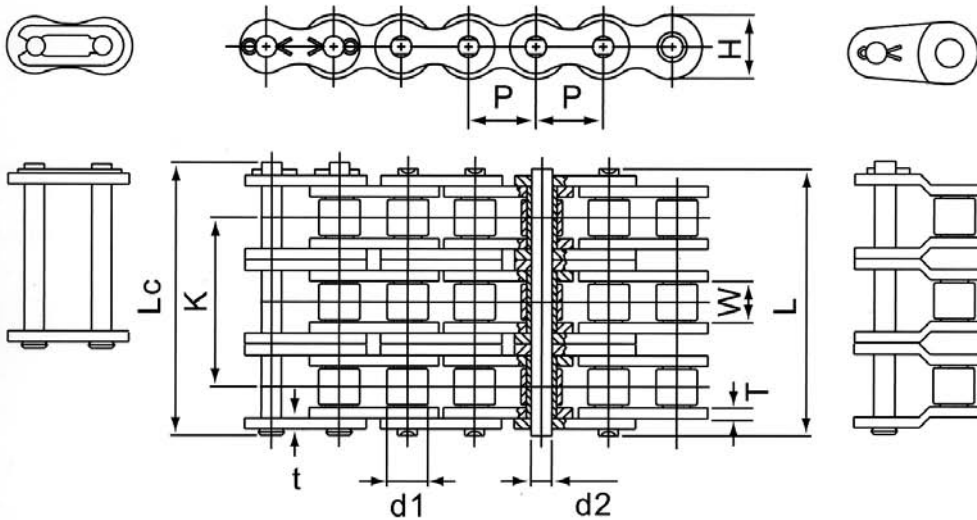
Double Strand Roller chain



| Diamond Number | Pitch P mm | Roller | | Pin Outer Diameter | | Pin Length | | K mm | Link Plate Height H max mm | Link Plate Thickness T/t mm | Average Tensile Strength N |
|----------------|------------------|-------------|--------------|--------------------|-------------|--------------|-------|---------|----------------------------------|-----------------------------------|-------------------------------|
| | | W min mm | d1 max mm | d2 max mm | L max mm | Lc max mm | | | | | |
| 06B-2 | 9.53 | 5.72 | 6.35 | 3.28 | 23.8 | 27.1 | 10.24 | 8.2 | 1.4 / 1.1 | 18633 | |
| 08B-2 | 12.70 | 7.75 | 8.51 | 4.45 | 31.0 | 34.9 | 13.92 | 11.8 | 1.5 | 37756 | |
| 10B-2 | 15.88 | 9.65 | 10.16 | 5.08 | 36.2 | 40.3 | 16.59 | 14.7 | 1.7 | 54917 | |
| 12B-2 | 19.05 | 11.68 | 12.07 | 5.72 | 42.2 | 46.8 | 19.46 | 16.1 | 1.8 | 63743 | |
| 16B-2 | 25.40 | 17.02 | 15.88 | 8.28 | 68.0 | 73.4 | 31.88 | 21.0 | 4.0 / 3.2 | 147100 | |
| 20B-2 | 31.75 | 19.56 | 19.05 | 10.19 | 79.0 | 85.1 | 36.45 | 26.4 | 4.7 | 212804 | |
| 24B-2 | 38.10 | 25.40 | 25.40 | 14.63 | 101.0 | 107.6 | 48.36 | 33.4 | 6.3 | 356962 | |
| 28B-2 | 44.45 | 30.99 | 27.94 | 15.90 | 124.0 | 131.4 | 59.56 | 37.0 | 7.8 | 451106 | |
| 32B-2 | 50.80 | 30.99 | 29.21 | 17.81 | 126.0 | 133.9 | 58.55 | 42.2 | 7.3 | 558979 | |

British Standard Triplex Roller Chain

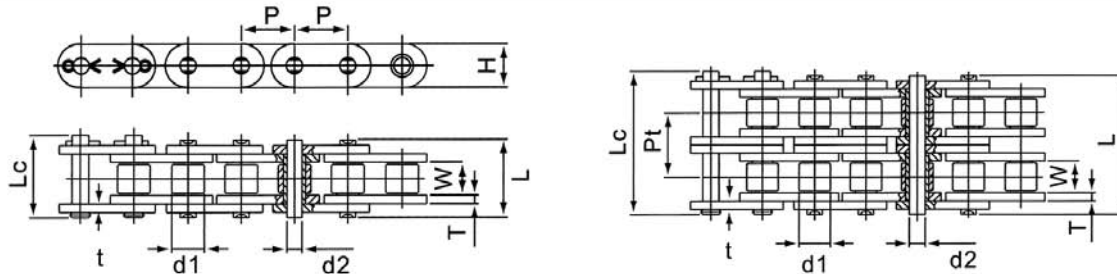
Triple Strand Roller chain



| Diamond Number | Pitch P mm | Roller | | Pin Outer Diameter | | Pin Length | | K mm | Link Plate Height H max mm | Link Plate Thickness T/t mm | Minimum Tensile Strength N |
|----------------|------------------|-------------|--------------|--------------------|-------------|--------------|--------|---------|----------------------------------|-----------------------------------|-------------------------------|
| | | W min mm | d1 max mm | d2 max mm | L max mm | Lc max mm | | | | | |
| 06B-3 | 9.53 | 5.72 | 6.35 | 3.28 | 34.1 | 35.1 | 20.48 | 8.2 | 1.4 / 1.1 | 25007 | |
| 08B-3 | 12.70 | 7.75 | 8.51 | 4.45 | 44.9 | 46.3 | 27.84 | 11.8 | 1.5 | 45111 | |
| 10B-3 | 15.88 | 9.65 | 10.16 | 5.08 | 54.0 | 55.4 | 33.18 | 14.7 | 1.7 | 67666 | |
| 12B-3 | 19.05 | 11.68 | 12.07 | 5.72 | 62.1 | 64.4 | 38.92 | 16.1 | 1.8 | 88260 | |
| 16B-3 | 25.40 | 17.02 | 15.88 | 8.28 | 99.5 | 102.7 | 63.76 | 21.1 | 4.0 / 3.0 | 166713 | |
| 20B-3 | 31.75 | 19.56 | 19.05 | 10.19 | 113.7 | 116.7 | 72.90 | 26.4 | 4.5 / 3.5 | 254973 | |
| 24B-3 | 38.10 | 25.40 | 25.40 | 14.63 | 150.1 | 153.0 | 96.72 | 33.4 | 6.0 / 5.0 | 431493 | |
| 28B-3 | 44.45 | 30.99 | 27.94 | 15.90 | 184.3 | 188.9 | 119.12 | 37.0 | 7.4 / 6.4 | 534462 | |
| 32B-3 | 50.80 | 30.99 | 29.21 | 17.81 | 181.8 | 186.4 | 117.10 | 42.2 | 7.0 / 6.0 | 686466 | |

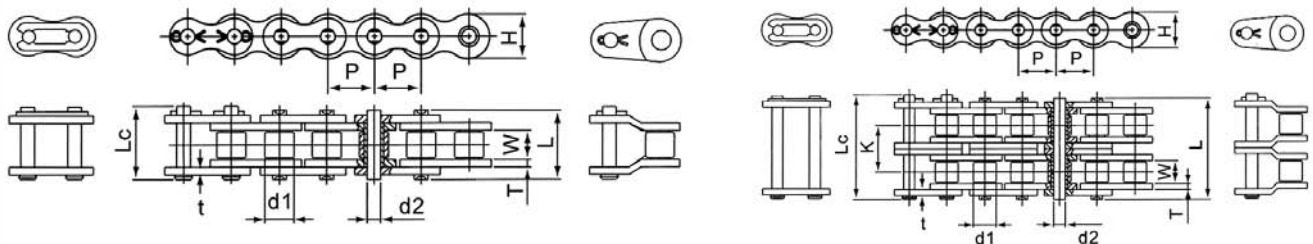
British Standard Roller Chain

Oval Contour Side Plate Chain - European Series



| Diamond Number | Pitch P mm | Roller | | | Pin Length | | K mm | Link Plate Height H max mm | Link Plate Thickness T/t mm | Average Tensile Strength N |
|----------------|------------------|-------------|--------------|--------------|-------------|--------------|---------|----------------------------------|-----------------------------------|-------------------------------|
| | | W min mm | d1 max mm | d2 max mm | L max mm | Lc max mm | | | | |
| 08BOC | 12.70 | 7.75 | 8.51 | 4.45 | 17.0 | 20.7 | - | 11.8 | 1.5 | 19123 |
| 08BOC-2 | 12.70 | 7.75 | 8.51 | 4.45 | 31.0 | 34.9 | 13.92 | 11.8 | 1.5 | 37756 |
| 10BOC | 15.88 | 9.65 | 10.16 | 5.08 | 19.6 | 23.7 | - | 14.7 | 1.7 | 27459 |
| 10BOC-2 | 15.88 | 9.65 | 10.16 | 5.08 | 36.2 | 40.3 | 16.59 | 14.7 | 1.7 | 54917 |
| 12BOC | 19.05 | 11.68 | 12.07 | 5.72 | 22.7 | 27.3 | - | 16.1 | 1.8 | 31872 |
| 16BOC | 25.40 | 17.02 | 15.88 | 8.28 | 36.1 | 41.5 | - | 21.0 | 4.0 / 3.2 | 73550 |

Stainless Steel Chain - 300 Series



| Diamond Number | Pitch P mm | Roller | | | Pin Length | | K mm | Link Plate Height H max mm | Link Plate Thickness T/t mm | Average Tensile Strength N |
|----------------|------------------|-------------|--------------|--------------|-------------|--------------|---------|----------------------------------|-----------------------------------|-------------------------------|
| | | W min mm | d1 max mm | d2 max mm | L max mm | Lc max mm | | | | |
| 06BSS | 9.53 | 5.72 | 6.35 | 3.28 | 13.5 | 16.8 | - | 8.2 | 1.4 / 1.1 | 7453 |
| 08BSS | 12.70 | 7.75 | 8.51 | 4.45 | 17.0 | 20.7 | - | 11.8 | 1.5 | 14710 |
| 10BSS | 15.88 | 9.65 | 10.16 | 5.08 | 19.6 | 23.7 | - | 14.7 | 1.7 | 19613 |
| 10BSS-2 | 15.88 | 9.65 | 10.16 | 5.08 | 36.2 | 40.3 | 16.59 | 14.7 | 1.7 | 38245 |
| 12BSS | 19.05 | 11.68 | 12.07 | 5.72 | 22.7 | 27.3 | - | 16.1 | 1.8 | 24517 |
| 16BSS | 25.40 | 17.02 | 15.88 | 8.28 | 36.1 | 41.5 | - | 21.0 | 4.0 / 3.2 | 52956 |

Other Available Products

Along with the British Standard chains featured in this publication, Diamond Chain Company offers a full line of U.S. manufactured ASME/ANSI roller chains. This product offering includes:

ASME/ANSI Standard & Heavy Series Roller Chains

Though these are referred to as “standard chains”, they are anything but. Diamond’s standard and heavy series roller 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 and Heavy Series chains are designed to last longer than any other manufacturer’s roller chain.

ASME/ANSI High Strength (HS) Drive Chain

HS Series Drive chains are built in accordance with ASME/ANSI B29.1 standards 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.

ASME/ANSI Oilfield Chain

Roller chains used in the oil and 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 “Oilfield” chains can be either single strand or multiple strand and are typically constructed using Heavy Series components. We produce our Oilfield 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. For more information, please reference our Oilfield Roller Chain Brochure or the Diamond Product Guide 1004.



ASME/ANSI Corrosion/Moisture Resistant Roller Chain

Diamond Chain produces a full line of corrosion/moisture resistant chains for a variety of uses in environments where the chains are exposed to moisture or corrosive materials. Standard attachments are available with quick delivery.

Diamond Nickel-Plated Chain is different from many rust-resistant chains because Diamond electroless nickel plates all of the components are plated, which prevents internal rust from seeping out and causing contamination. Common uses for Nickel-Plated chains include roller chain applications exposed to the weather, high humidity or those on machines that are frequently washed down with water:

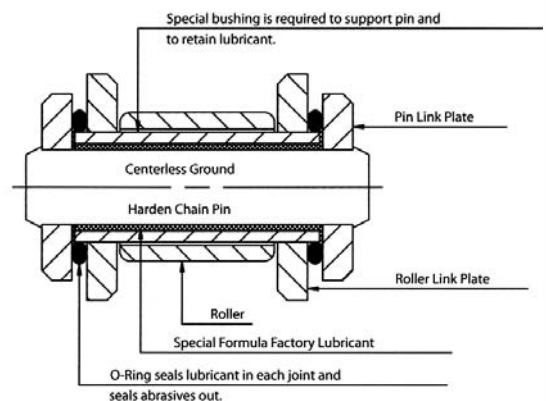
Diamond produces a wide range of Single-Pitch Drive and Double Pitch Conveyor chains manufactured in four combinations of stainless steel depending upon the specific application. *AP Stainless Chain* is assembled using 300 Series (austenitic stainless) link plates, bushings and rollers along with a precipitation-hardened 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 U.S. Food and Drug Administration. AP Stainless will be supplied unless otherwise specified. To learn more about the various resistance levels of these chains against certain substances, please consult the Diamond Corrosion/Moisture Resistant Chain Brochure or the Diamond Product Guide 1004.

ASME/ANSI Special Lubricated Chains

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.
- **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 a standard chains.

Industries such as agriculture, food processing, packaging, printing, textile and chemical processing can introduce contaminants that damage a standard chain. Dirt, mud, food particles, paper fines, dust and moisture can cause buildup on the chain and clog the openings on a standard roller chain where lubrications enters the pin/bushing area. These contaminants can even get inside the chain, actually damaging the surface of pins and bushings. Because the RING LEADER chain lasts up to ten times longer than a 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 a RING LEADER chain can be dramatically less than for a standard chain in certain applications which translates into a longer lasting roller chain and a real cost saving.



- **Dust Stopper Chain** - For applications which require the combination 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 chains seal dust, dirt and debris out and seals lubrication in. Very minimal, if any secondary lubrication is required with this chain thereby improving wear resistance and toughness.

ASME/ANSI Attachment Chain

Single-Pitch and Double-Pitch chains are available assembled with either attachment link plates or extended pins. Diamond's standard attachment hole sizes are designed to accommodate most common screw sizes. If your application requires a unique hole size, please contact Diamond as many alternate lug holes are available as special order items and some may be available from stock. Contact Diamond application engineers if you have any questions when designing or specifying attachment chains. Please reference the Diamond Product Guide 1004 for additional details. *Attachment chains available in ANSI models only.*

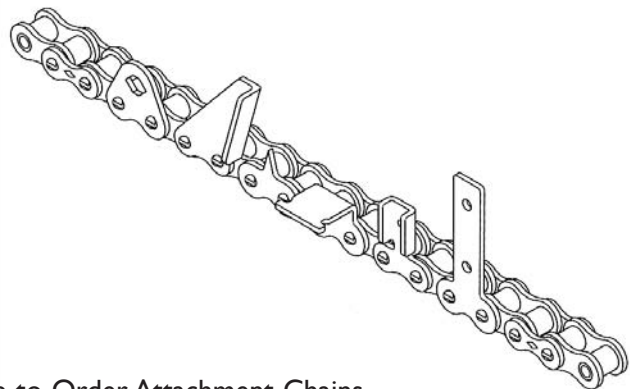
ASME/ANSI Double-Pitch Roller Chain

- *Double Pitch Power Transmission Roller Chain* - These chains, produced to ASME/ANSI B29.3 standards, have figure-eight stule link plates. Their dimensions are similar to Standard Series chains with the exception of the pitch, which is twice that of the Standard Series chains. 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 agricultural machinery.
- *Double Pitch Conveyor Roller Chain* - Produced to ASME/ANSI B29.4 standards, 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 convvay products.

ASME/ANSI / Made-to-Order Roller Chains

Can't find a standard series cahin or standard attachment to fit your application needs? Give us a call. Our application engineers stand ready to assist you in designing or selecting the Diamond chain to best suit your application. Some but not all of the special application chanis available include:

- Pin Oven Chains
- RING LEADER[®] O-ring Attachment Chains
- Bindery Chains
- Plastic Film Feeder Chains
- Serrated Top Chains
- POWER CURVE[®] Chains
- TUF-FLEX[®] Chains
- Straight Running and Side-Flexing Roller Chains
- Coupling Chains
- Micropitch[®] Chains
- Powersports Chains
- plus many custom-designed attachments for Made-to-Order Attachment Chains



Chain Tools

Roller chain connecting tools and pin extractor tools come in a variety of sizes to fit your application and help make chain repair or replacement safe and easy.

Pin Extractor Tools come in 3 varieties:

- small - PEI13 for chain models 25/05B - 60H/12B;
- large - PEI35 for chain models 80/16B - 100H/20B; and
- extra large - PERE157 for chain models 120/24B - 160/32B

Chain Connecting Tools come in 3 varieties as well:

- small - CT35 for chain models 35/06B - 60H/12B;
- large CT80 for chain models 80/16B - 160/32B; and
- large cable style - CT80-CABLE for chain models 80/16B and larger.

