

**DRIVES<sup>®</sup>**

CHAIN BY TIMKEN



**DRIVES<sup>®</sup> CHAIN PRODUCT**



## ABOUT DRIVES

Drives, the world leader in manufactured chain products, offers a broad line of superior quality precision roller chains, attachment chains and engineered conveyor chains for the world's toughest applications. Providing the most comprehensive line of quality chain products, Drives delivers leading edge solutions with nearly 60 years of advanced engineering knowledge and experience. Committed to manufacturing world class products, outstanding engineering and manufacturing support and total customer service, Drives utilizes the highest quality materials, technologies, equipment and craftsmanship to produce quality products. Drives manufacturing facility is located in Fulton, Illinois.



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## CHAINS ENGINEERED TO ENHANCE PERFORMANCE

From corrosive environments to heavy shock loads, we engineer the optimum precision roller chain for your application to help increase uptime and reduce maintenance costs. Our entire range of American National Standards Institute (ANSI) standard roller chains, specialty chains and attachment chains meet or exceed ANSI/ASME standard B29.1. Our oil field chains meet or exceed the American Petroleum Institute's (API) 7F8 requirements, and our engineered class chains are manufactured utilizing state-of-the-art equipment. We are ISO 9001: 2000 registered and are an API Quality registered firm.

Updates are made periodically to this catalog. Visit [www.timken.com](http://www.timken.com) for the most current version of the Drives – Chain Products catalog.

## HIGH-PERFORMANCE ROLLER CHAIN IN STOCK AND WAITING FOR YOU TO PUT IT TO THE TEST

Drives roller chain is manufactured in Fulton, Ill., to meet or exceed ANSI/ASME standard B29.1 and the American Petroleum Institute's 7F8 requirements. Drives is a leader in the industry that produces roller chain products for some of the world's toughest industries:

- Oil and Gas
- Forest Products
- Food and Beverage
- Paper
- Packaging
- Mining
- Metal Processing



## ROLLER CHAIN FEATURES

### WIDE WAIST

The wide-waist design of 60H and larger chains is manufactured with maximized ball heights from special alloy steels for added strength. The wide link plate profile improves stress distribution, leading to improved fatigue resistance and enhanced performance.



### SOLID ROLLERS

We use solid rollers on all carbon roller chains. The solid roller allows for smooth rotation on the bushing, reducing the impact load as the chain engages the sprocket tooth.



### FACTORY PRELOADED AT 50 PERCENT MUTS

Our chain is preloaded to 50 percent of minimum ultimate tensile strength (MUTS), which is especially important for applications involving fixed center-to-center sprockets without take-ups. Applications can withstand shock loads up to 50 percent of the chain's MUTS without premature elongation.



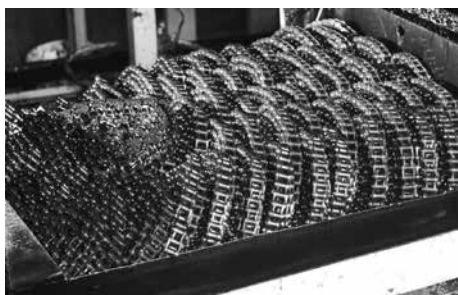
## HEAT TREATMENT

Rigorous process controls and state-of-the-art heat-treating furnaces provide consistent quality in all our chain components. This results in optimum toughness and resistance to wear.



## PRELUBRICATION

After final assembly, we hot-dip the roller chain in a spec lubricant. This process ensures that all the load-bearing surfaces are initially protected from metal-to-metal contact, improving the wear life of the chain.



## AUTOMATED ASSEMBLY

Our roller chain assembly methods ensure consistent processes and proper assembly of chain components.



## SHOT PEENED PARTS

All precision roller chain rollers and link plates are shot peened for greater fatigue strength.

## CONNECTING LINKS

Standard connecting links are used when roller chain is operating under normal conditions. For severe applications, press fit connecting links are suggested. Spring-clip style connecting links are used for sizes 60H and smaller. Sizes 80 – 180H use a special hardened hook cotter. Coated T-pins are used on 200, 264 and 240.



Close style spring clip.

Hook cotter connecting link.



Coated T-pins used on the connecting links.

## OFFSET LINKS

Offset links are used when the chain length is an odd number of pitches; however, their fatigue strength is lower than standard chain links. Using offsets should be avoided when possible.



Offset link.

## HOW TO USE THIS CATALOG

We designed this catalog to help you find the Drives chain product that is best suited to your specifications.

Drives offers an extensive range of chain and accessories. For your convenience, size ranges are indicated in inches and millimeters. Contact your Drives engineer to learn more about our complete line for the special needs of your application.

This publication contains dimensions, tolerances and load ratings, as well as technical sections for chain selection for both drive and conveyor systems. It provides valuable assistance in the initial consideration of the type and characteristics of chain that may best suit your particular needs.



## STORAGE

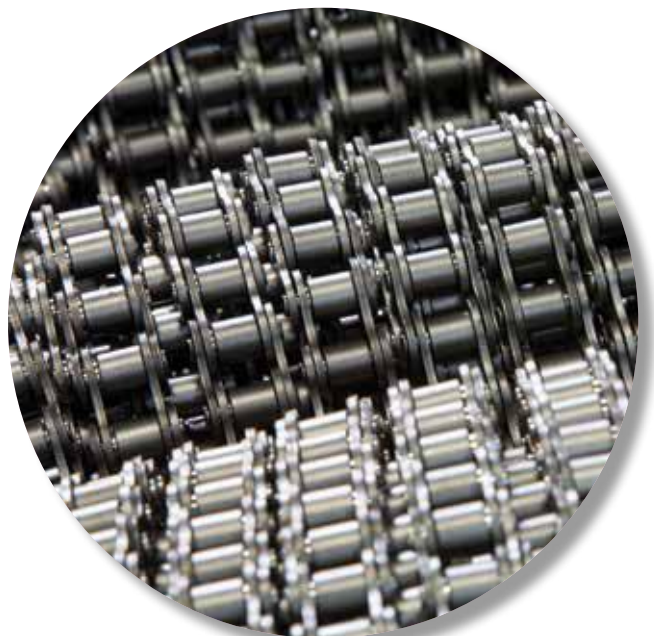
Drives suggests the following storage guidelines for our chain products:

- Unless directed otherwise by Drives, products should be kept in their original packaging until they are ready to be placed into service.
- Do not remove or alter any labels or stencil markings on the packaging.
- Products should be stored in such a way that the packaging is not pierced, crushed or otherwise damaged.
- The relative humidity should be maintained below 60 percent and the surfaces should be dry.
- The storage area should be kept free from airborne contaminants such as, but not limited to, dust, dirt, harmful vapors, etc.

Due to the fact that Drives is not familiar with your particular storage conditions, we strongly suggest following these guidelines. However, you may be required by circumstances or applicable government requirements to adhere to stricter storage requirements.

When you receive the chain shipment, do not remove products from their packaging until they are ready for use so they do not become corroded or contaminated.

Store the chain in an appropriate atmosphere so they remain protected for the intended period.





### DISCLAIMER

*This catalog is provided solely to give you analysis tools and data to assist you in your product selection. Product performance is affected by many factors beyond the control of Drives. Therefore, you must validate the suitability and feasibility of all product selections for your applications.*

*Drives products are sold subject to Timken terms and conditions of sale, which include our limited warranty and remedy. You can find these at <http://www.timken.com/en-us/purchase/Pages/TermsandConditionsofSale.aspx>.*

*Please consult with your Drives engineer for more information and assistance.*

*Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.*

*All metric information is a conversion from imperial data.*

#### **⚠ WARNING**

***Failure to observe the following warnings could create a risk of death or serious injury.***

Proper maintenance and handling practices are critical.

Always follow installation instructions and maintain proper lubrication.

#### **⚠ WARNING**

***Failure to observe the following warnings could create a risk of death or serious injury.***

Follow your lock-out tag-out and power off procedures before lubricating or servicing a chain system.

#### **CAUTION**

***Failure to follow these cautions may result in property damage.***

Use only new subassemblies for assembling chain strands.

Do not use individual chain components and do not mix subassemblies from different chain manufacturers.

Do not reuse sections from damaged chains. Damage from overloading or yielding may be present though not apparent.

Do not use worn chain or install new chain on worn sprockets.

**Warnings for this product line are included in this catalog and posted on [www.timken.com/warnings](http://www.timken.com/warnings).**

#### **For More Information:**

Phone: 1-800-435-0782

Fax: 1-815-589-4420

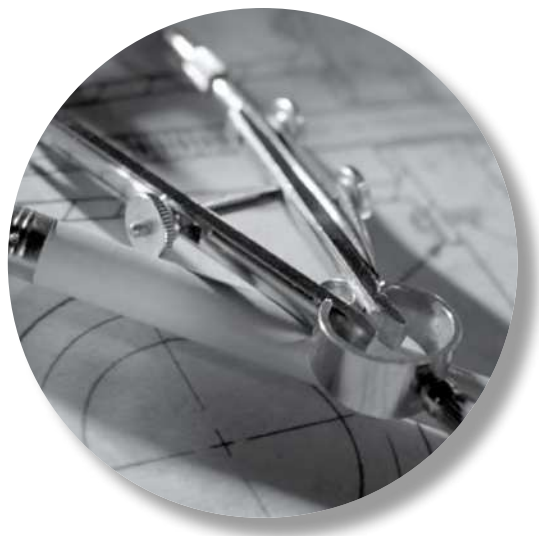
[www.timken.com/drives](http://www.timken.com/drives)

#### **NOTE**

*All formulas and table data listed in this catalog are based on Imperial Units. All metric information provided is based on the conversion of that data.*







**TECHNICAL**

This section contains information on chain selection. Please contact your Drives representative with questions.

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## CHAIN SELECTION HORSEPOWER RATING

The horsepower or kilowatt rating in figs. 1 or 2 on page 11 and 12 are based on the following conditions:

- Chains are operated under ordinary conditions. The ambient temperature range must be between 15° F (-9.5° C) and 140° F (60° C). They should not be used in an atmosphere in which abrasive dust or corrosive gas is present or where the humidity is high.
- Two transmission shafts are in a horizontal position and the chains are properly installed.
- Suggested lubrication system and oil are used.
- Load does not change significantly during transmission. The service factors given in table 3 on page 10 should be taken into account when the chains are used under various operating conditions. The load conditions will affect the life of the chain.
- To estimate the service life of a multiple-strand chain, the multiple-strand factor given in table 1 must be used. When the chain length is 100 pitches and the above conditions are met, a service life of approximately 15,000 hours can be expected.

### NOTE

*All formulas and table data listed in this catalog are based on Imperial Units. All metric information provided is based on the conversion of that data.*

## PROCEDURES FOR SELECTING ROLLER CHAIN

1. The following factors must be considered when selecting roller chain:
  - Source of input power.
  - Drive machine type of driven equipment.
  - Horsepower to be transmitted.
  - Revolutions per minute (RPM) of driving and driven shafts.
  - Diameter of driving and driven shafts.
  - Center distance of the shafts.
2. Use table 3 on page 10 to obtain the service factor.
3. Multiply the horsepower or kilowatt value by the service factor to obtain the design horsepower or kilowatt value.
4. Use figs. 1 or 2 on pages 11 and 12 and the horsepower or kilowatt tables to obtain the appropriate chain number of teeth for small sprockets. Refer to the number of revolutions of the high-speed shaft (the driving shaft when the speed is reduced; the driven shaft when the speed is increased) and the design horsepower or kilowatt value. For smoother chain drive, a small pitch chain is suggested. If a single-strand chain does not satisfy the transmission requirements, use a multiple-strand chain. If there are space limitations, a multiple-strand roller chain with a smaller pitch may be used.
5. After determining the number of teeth necessary for the small sprocket, be sure the sprocket diameter satisfies the space limitations.
6. The number of teeth for the large sprocket is determined by multiplying the number of teeth for the small sprocket by the speed ratio. More than 15 teeth on the small sprocket is suggested. The number of teeth for the large sprocket should be less than 120. By reducing the number of teeth for the small sprocket, the number of teeth for the large sprocket can be reduced.

**TABLE 1. MULTIPLE-STRAND FACTOR**

Number of Roller Chain Strands	Multiple-Strand Factor
2	1.7
3	2.5
4	3.3
5	3.9
6	4.6

## POWER, CHAIN PULL, TORQUE AND CHAIN LENGTH EQUATIONS

### BASIC FORMULA FOR CHAIN DRIVE

#### Inch

$$H = \frac{P \times S}{33,000} \quad H = \frac{T_{ft} \times n}{5,252} \quad H = \frac{T_{in} \times n}{63,025}$$

$$P = \frac{H \times 33,000}{S} \quad P = \frac{H \times 396,000}{C \times N_s \times n} \quad P = \frac{H \times 126,050}{D \times n} \quad P = \frac{T_{ft} \times 24}{D} \quad P = \frac{T_{in} \times 2}{D}$$

$$T_{ft} = \frac{H \times 5,252}{n} \quad T_{in} = \frac{H \times 63,025}{n}$$

$$S = \frac{C \times N_s \times n}{12}$$

#### Metric

$$H_M = \frac{P_M \times S_M}{60} \quad H_M = \frac{T_{M,n} \times n}{9,544}$$

$$P_M = \frac{H_M \times 60}{S_M} \quad P_M = \frac{H_M \times 60,000}{C_M \times N_s \times n} \quad P_M = \frac{H_M \times 19,088}{D_M \times n} \quad P_M = \frac{T_{M,m} \times 2000}{D_M}$$

$$T_{Mm} = \frac{H_M \times 9,544}{n} \quad T_{M,mm} = \frac{H_M \times 9,544}{n}$$

$$S_M = \frac{C_M \times N_s \times n}{1000}$$

#### Inch & Metric

$$L = \frac{N_s + N_L}{2} + (2 \times C_D) + \frac{((N_L - N_s)/6.28)^2}{C_D}$$

(\*)Any fraction of L is counted as one pitch

(\*\*)Subscript M denotes metric units.

TABLE 2. NOMENCLATURE KEY

Nomenclature	Units	Description
H	[HP, kW]	Power
P	[lb, kN]	Chain Pull
S	[ft/min, m/min]	Chain Speed
T <sub>ft</sub>	[ft-lb, m-kN]	Torque
T <sub>in</sub>	[in-lb, mm-kN]	Torque
n	[rpm]	Sprocket Speed
C	[in, mm]	Chain Pitch
D	[in, mm]	Small Sprocket Pitch Diameter
C <sub>0</sub>	[pitches]	Center Distance Between Sprockets
L	[pitches]	Total Chain Length
N <sub>s</sub>		Small Sprocket No. of Teeth
N <sub>L</sub>		Large Sprocket No. of Teeth

**TABLE 3. SERVICE FACTORS FOR ROLLER CHAIN DRIVES**

Types of Driven Load	Load Classifications	Type of Input Power		
		Internal Combustion Engine with Hydraulic Drive	Electric Drive Motor	Internal Combustion Engine with Mechanical Drive
Smooth Load	Agitators – Pure liquid	1.0	1.0	1.2
	Conveyors – Uniformly loaded or fed (apron, assembly, belt, flight, oven, screw)			
	Fans – Centrifugal and light, small diameter			
	Machines – All types with uniform, non-reversing loads			
Moderate Shock	Clay-Working Machinery – Pug mills	1.2	1.3	1.4
	Conveyors – Heavy duty and NOT uniformly loaded (apron, assembly, belt, flight, oven, screw)			
	Food Industry – Beet slicers, dough mixers, meat grinders			
	Grinding Machine – All types with moderate shock and non-reversing loads			
Heavy Shock	Textile Industry – Calendars, dyeing machinery, mangles, nappers, soapers, spinners, tenter frames	1.4	1.5	1.7
	Clay-Working Machinery – Brick press, briquetting machinery			
	Conveyors – Reciprocating and shaker			
	Hammer Mills			
	Machine Tools – Punch press, shears, plate planers			
	Mills (Rotary Type) – Ball, cement kilns, rod mills, tumbling mills			
Textile Industry – Carding machinery				

## SELECTION OF CHAIN AND SMALL SPROCKET

### CHAIN PITCH

The smallest applicable pitch is desirable for quiet operation and high speed.

### NUMBER OF SPROCKET TEETH

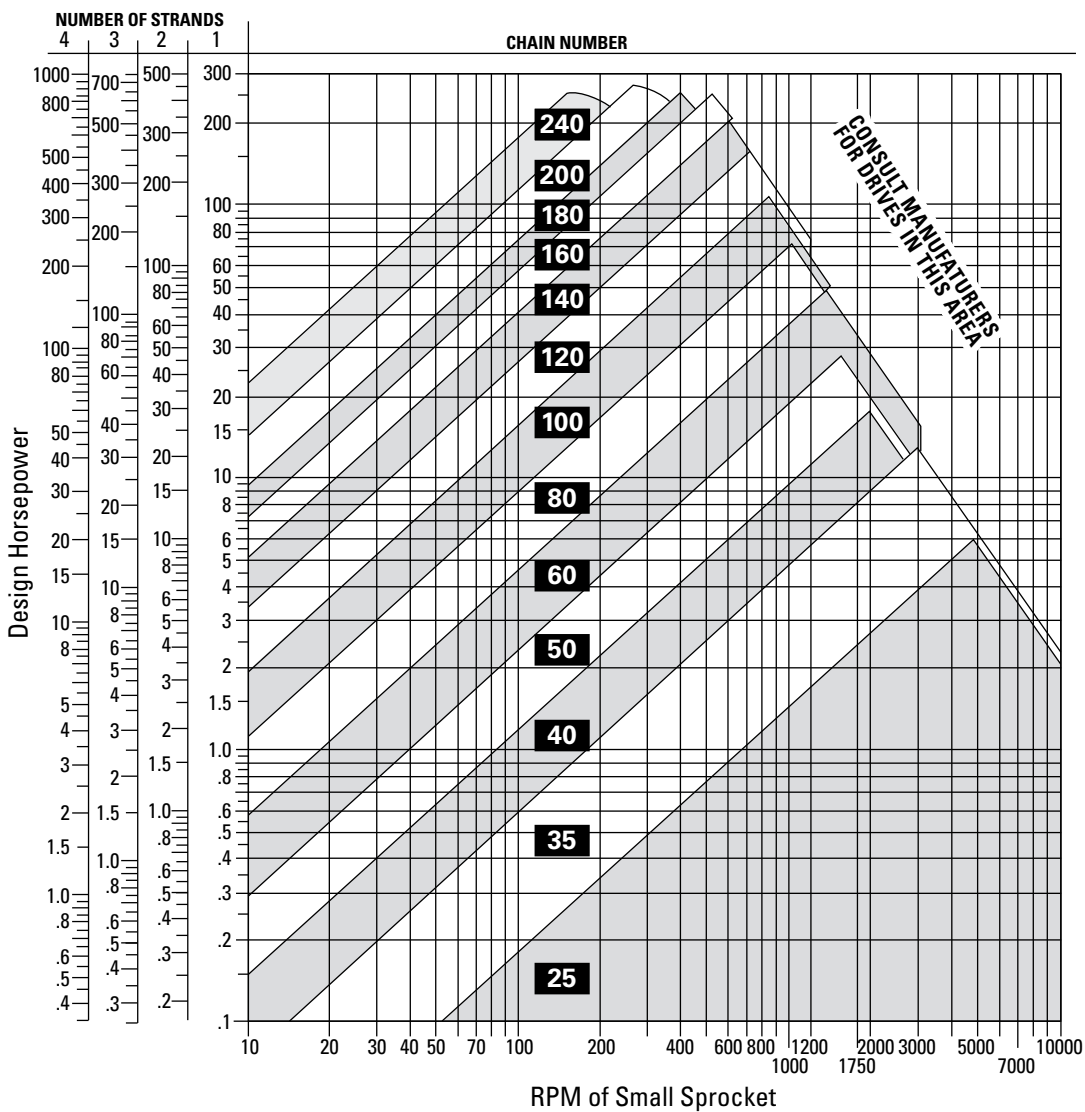
For a given chain pitch and shaft to transmit a given horsepower, the effect of increasing the number of teeth in the sprocket is to increase the chain linear speed and decrease the chain pull proportionally. This results in a decrease of the chordal action, which results in a quiet drive with less impact.

Usually, large sprockets should not exceed 120 teeth although many successful drives use sprockets with 150 teeth and more.

### SELECTION OF LARGE SPROCKET

After the small sprocket has been selected, the number of teeth in the large sprocket is determined by the specified ratio of the shaft speeds.

HORSEPOWER VS. RPM TABLE

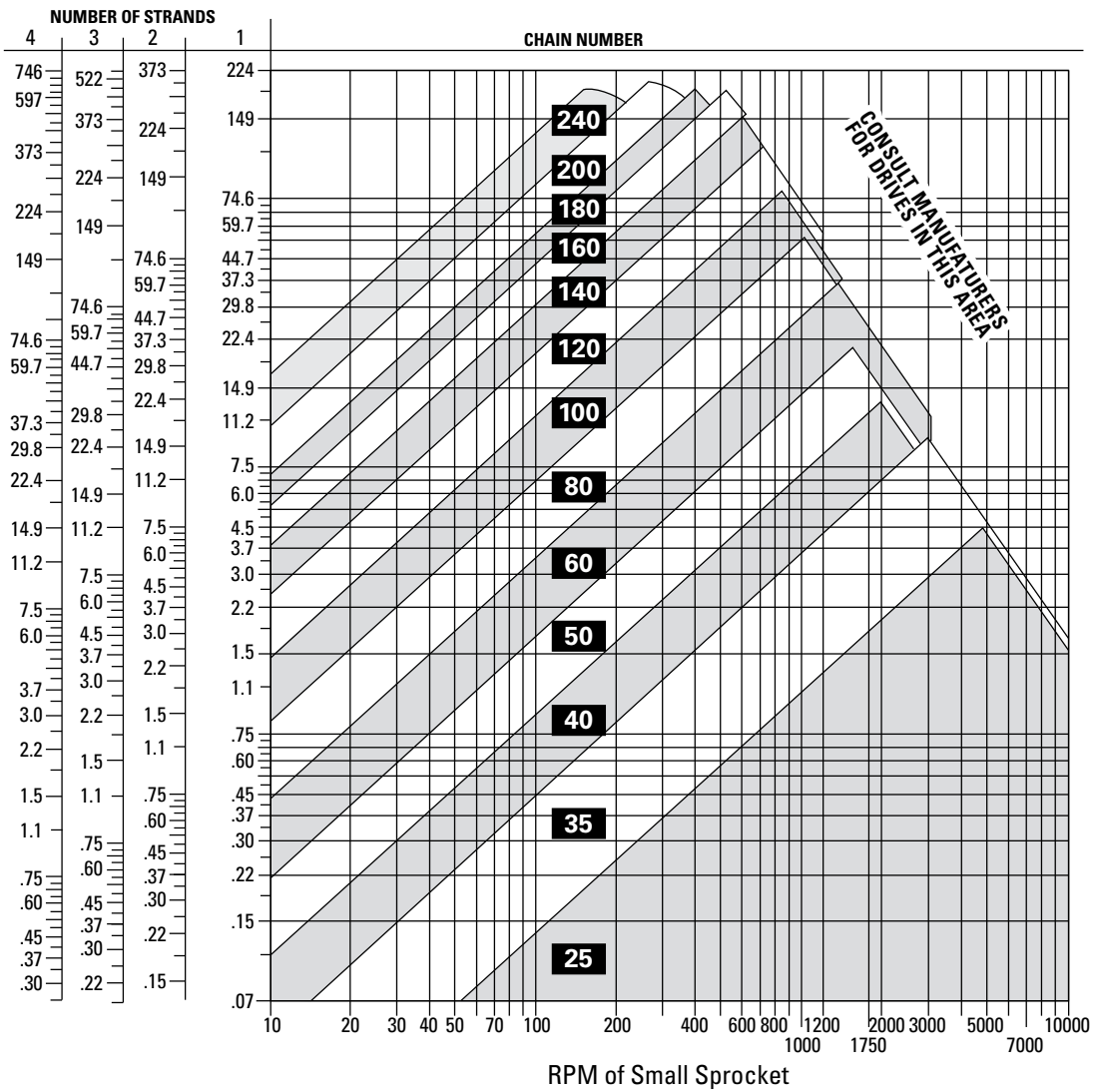


NOTE: The maximum horsepower rating specified in each of the strand columns is not limiting for chain drives. Consult your Drives representative on those applications that are above the horsepower range of the chart.

NOTE: All measures are based on imperial measurements. Metric measurements are conversions.

Fig. 1. Roller chain pitch selection.

KILOWATT VS. RPM TABLE



NOTE: The maximum horsepower rating specified in each of the strand columns is not limiting for chain drives. Consult your Drives representative on those applications that are above the horsepower range of the chart.

NOTE: All measures are based on imperial measurements. Metric measurements are conversions.

Fig. 2. Roller chain pitch selection.

## DRIVE SELECTION PROCEDURE

### Selection Example (1)

**Question 1:** A conveyor with 50 HP (40 kW) is driven by a 100 RPM electric motor. How should you select the chain and sprockets?

**Answer:**

1. Seek the service factor, 1.0, from table 3 on page 10.

$$\begin{aligned} \text{Power to be transmitted} \times \text{service factor} &= \frac{\text{design}}{\text{horsepower}} \\ 50 \text{ HP} \times 1.0 &= 50 \text{ HP} & 37.3 \text{ kW} \times 1.0 &= 37.3 \text{ kW} \end{aligned}$$

2. Refer to figs. 1 or 2 on pages 11 and 12 for 100 RPM 50 HP (40 kW) and 160 chain with sprocket 18T to 22T is obtained.
3. Check horsepower (kilowatt) tables for chain 160, and as you see, the horsepower ratings of 160-19T with speed of 100 RPM is 50.48 HP (37.64 kW), which is satisfactory.
4. The following are selected:

Chain no. 160 small sprocket 160-19T.

### Selection Example (2)

**Question 2:** The number of revolutions for a drive is 500 RPM and the power to be transmitted is 13 HP (9.69 kW). The RPM is reduced to 125 (1/4). The center distance should be 11.00 in. (279.4 mm) with a space limitation of 19.00 in. (482.6 mm), and a uniform load. How should you select the chain and sprocket for this application?

**Answer:**

1. Design horsepower (kilowatt) is computed as follows:  
 Design horsepower: 13 HP X 1.0 = 13 HP  
 Design kilowatt: 9.69 kW x 1.0 = 9.69 kW
2. Select the chain and the number of teeth for the sprocket by referring to figs. 1 or 2 on pages 11 and 12.  
 60-18T has been selected.
3. Speed reduction ratio is  $0.25 = \frac{125 \text{ RPM}}{500 \text{ RPM}}$

Therefore, the number of teeth in the large sprocket is

$$72T = \frac{18 T}{0.25}$$

4. The outside diameter of the 18T is 4.685 in. (119 mm) and the 72T is 17.60 in. (447.04 mm).

The space required for this arrangement is:

$$\frac{4.685 \text{ in.} + 17.60 \text{ in.}}{2} + 11 \text{ in.} = 22.14 \text{ in.}$$

$$\frac{119 \text{ mm} + 447.04 \text{ mm}}{2} + 279.4 \text{ mm} = 562.42 \text{ mm}$$

which can not be contained in the 19 in. (482.6 mm).

5. Multiple-strand chain is selected. 50-2 16T to 20T is selected using fig. 1. (fig. 2.).

$$\frac{10 \text{ HP} \times 1.0}{1.7} = 5.88 \text{ HP}$$

$$\frac{7.46 \text{ kW} \times 1.0}{1.7} = 4.39 \text{ kW}$$

(1.7 is multiple strand factor)

Refer to the horsepower tables. 50-2, 18T is obtained. Its outside diameter is 3.90 in. (99.1 mm). The large sprocket is:

$$72T = \frac{18 T}{0.25} \text{ outside diameter } 14.69 \text{ in. (373.13 mm)}$$

However, this selection cannot be contained in the space.

6. Triple-strand chain is selected in the same manner as above 50-3, 13T and 52T are obtained. The outside diameter of sprockets is 2.87 in. (72.99 mm), and 10.67 in. (271.02 mm) respectively.

$$\frac{2.87 \text{ in.} + 10.67 \text{ in.}}{2} + 11 \text{ in.} = 17.77 \text{ in.}$$

$$\frac{72.99 \text{ mm} + 271.02 \text{ mm}}{2} + 279.4 \text{ mm} = 451.41 \text{ mm}$$

can be contained in the space required.

The chain and sprockets selected are 50-3, 13T and 52T.

### SLOW SPEED CALCULATION

When the chain speed (S) is less than 160 ft/min, select a roller chain size smaller than the chain chosen from the horsepower rating method mentioned above.

Estimate chain size: If horsepower is not known use the following formulas to determine HP:

$$H = \frac{P \times S}{33,000}$$

$$H_M = \frac{P_M \times S_{Mm}}{60}$$

$$H = \frac{T_{ft} \times n}{5,252}$$

$$H_M = \frac{T_{Mm} \times n}{9,544}$$

$$H = \frac{T_{in} \times n}{63,025}$$

$$H_M = \frac{T_{Mmm} \times n}{9,544}$$

Once the HP is known, use figs. 1 or 2 on pages 11 and 12 to estimate the chain size. If the RPM is less than 10 RPM than use 10 RPM as starting point.

If the chain pull is not known directly, please use one of the basic equations shown.

$$P = \frac{H \times 33,000}{S}$$

$$P_M = \frac{H_M \times 60}{S_M}$$

$$P = \frac{H \times 396,000}{C \times N_s \times n}$$

$$P_M = \frac{H_M \times 60,000}{C_M \times N_s \times n}$$

$$P = \frac{H \times 126,050}{D \times n}$$

$$P_M = \frac{H_M \times 19,088}{D_M \times n}$$

$$P = \frac{T_{ft} \times 24}{D}$$

$$P_M = \frac{T_{Mm} \times 2,000}{D_M}$$

$$P = \frac{T_{in} \times 2}{D}$$

### Chain Selection Process

- Calculate Chain Pull (P<sub>c</sub>) using one of the following formulas.
- Calculate the chain speed (S)  

$$S = \frac{C \times N_s \times n}{12}$$
- Adjust the P<sub>c</sub> chain for speed

TABLE 4. CHAIN SPEED

Chain speed	Speed Coefficient
Less than 50 ft./min. (15.24 M/min.)	1.0
51 to 100 ft./min. (15.54 to 30.48 M/min.)	1.2
101 to 160 ft./min. (30.78 to 48.77 M/min.)	1.4

- Compare the adjusted P<sub>c</sub> to the average tensile strength of the selected chain by multiplying the adjusted chain pull by 8.

$$P_c \times 8 \leq \text{ATS (Average Tensile Strength)}$$

#### Example:

- Given: RPM = 10  
 Torque = 7,000 in-lbs (0.791 M-kN)  
 Maximum sprocket diameter = 10 inches (254 mm)

- Calculations:

$$H = \frac{T_{in} \times n}{63,025} \quad H = \frac{7,000 \times 10}{63,025} \quad H = 1.11\text{HP}$$

$$H_M = \frac{T_{mm} \times n}{9,544} \quad H_M = \frac{0.791 \times 10}{9,544} \quad H_M = 0.83\text{kW}$$

- Based on the horsepower, the estimated chain selection should be an 80 chain.
- Based on maximum sprocket diameter of 10 inches (254 mm) use table 28 on pages 28 through 30 or table 51 on pages 43 through 45 and select a 30 tooth sprocket which has a pitch diameter of 9.567 inches (243 mm).

- Calculate chain pull

$$P = \frac{T_{in} \times 2}{D} \quad P = \frac{7,000 \times 2}{9.567} \quad P = 1,463 \text{ lb}$$

$$P_M = \frac{T_{mm} \times 2,000}{D} \quad P_M = \frac{0.791 \times 2,000}{243} \quad P_M = 6.51 \text{ kN}$$

- Calculate chain speed

$$S = \frac{C \times N_s \times n}{12} \quad S = \frac{1 \times 30 \times 10}{12} \quad S = 25 \text{ feet per minute}$$

$$S_M = \frac{C_M \times N_s \times n}{1,000} \quad S_M = \frac{25.1 \times 30 \times 10}{1,000} \quad S_M = 7.53 \text{ meters per minute}$$

- Adjust chain pull for speed adjustment:

$$P_c = \text{Speed coefficient} \times P$$

$$P_c = 1 \times 1,463 \quad P_c = 1,463$$

$$P_{Mc} = 1 \times 7.53 \text{ M/min.} \quad P_{Mc} = 7.53 \text{ M/min.}$$

- Compare against average tensile strength of the chain:

$$P_c \times 8 \leq \text{ATS (Average Tensile Strength)}$$

$$1,463 \times 8 \leq 14,500 \text{ lb} \quad 11,704 \leq 14,500 \text{ lb}$$

$$P_{Mc} = 7.53 \times 8 \leq 64.5 \text{ kN} \quad P_{Mc} = 60.24 \leq 64.5 \text{ kN}$$

- 80-1 chain with a 30 tooth sprocket is a selection.



## SELECTION OF HIGH TEMPERATURES

Our chains are made from heat-treated carbon steel. When exposed to high temperatures, the mechanical properties of the heat-treated chain components are impaired.

1. The hardness and, therefore, the wear resistance of pins and bushings is reduced.
2. At temperatures above 390° F (199° C), the rollers and plates may lose some of their hardness and strength.

Standard roller chain can be used up to 500° F (260° C) with the adjustments shown in table 5.

**TABLE 5. TEMPERATURE EFFECT ON CHAIN**

Temperature	Percentage of Catalog Capacity Rating
Up to 340° F (171° C)	100 percent
390° F (199° C)	75 percent
500° F (260° C)	50 percent











180 – 2.250 INCH PITCH

TABLE 16. 180 – 2.250 INCH PITCH HORSEPOWER

Table with 22 columns for RPM (2-2000) and 24 rows for teeth (11-45). Includes lubrication type indicators at the bottom: Type I Manual or Drip Lubrication, Type II Bath or Disc Lubrication, and Type III Oil Stream Lubrication.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.

200 – 2.500 INCH PITCH

TABLE 17. 200 – 2.500 INCH PITCH HORSEPOWER

Table with 18 columns for RPM (2-1800) and 24 rows for teeth (11-26). Includes lubrication type indicators at the bottom: Type I Manual or Drip Lubrication, Type II Bath or Disc Lubrication, and Type III Oil Stream Lubrication.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.

240 – 3.000 INCH PITCH

TABLE 18. 240 – 3.000 INCH PITCH HORSEPOWER

No. of Teeth	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	0.00	
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	0.00	
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	0.00		
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	0.00			
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	0.00				
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	0.00				
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	0.00					
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	0.00					
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	0.00					
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	0.00						
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	0.00						
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	0.00							
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	0.00							
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	0.00							
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	0.00							
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	0.00								
	Type I Manual or Drip Lubrication					Type II Bath or Disc Lubrication								Type III Oil Stream Lubrication											

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.





HEAVY SERIES 100H – 1.250 INCH PITCH

TABLE 21. HORSEPOWER RATINGS – SINGLE STRAND ROLLER CHAIN NO. 100H

Table with 30 columns for speed (min-1, Small Sprocket) from 5 to 3600 and 20 rows for teeth from 11 to 45. Includes lubrication type labels at the bottom: Type I Manual or Drip Lubrication, Type II Bath or Disc Lubrication, Type III Oil Stream Lubrication.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.

HEAVY SERIES 120H – 1.500 INCH PITCH

TABLE 22. HORSEPOWER RATINGS – SINGLE STRAND ROLLER CHAIN NO. 120H

Table with 29 columns for speed (min-1, Small Sprocket) from 5 to 3000 and 20 rows for teeth from 11 to 45. Includes lubrication type labels at the bottom: Type I Manual or Drip Lubrication, Type II Bath or Disc Lubrication, Type III Oil Stream Lubrication.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.





HEAVY SERIES 240H – 3.000 INCH PITCH

TABLE 27. HORSEPOWER RATINGS – SINGLE STRAND ROLLER CHAIN NO. 240H

No. of Teeth	Speed, min-1, Small Sprocket																									
	2	5	10	25	27	50	75	100	150	200	250	300	350	400	450	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	228.10	186.70	156.46	133.59	101.63	80.65	66.01	55.32	47.23	40.94	35.93	31.87	28.51	0.00
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	259.91	212.73	178.28	152.22	115.80	91.89	75.21	63.03	53.82	46.65	40.94	36.31	0.00	
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	293.06	239.87	201.02	171.64	130.57	103.61	84.81	71.07	60.68	52.60	46.16	0.00		
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	327.52	268.07	224.66	191.82	145.92	115.80	94.78	79.43	67.82	58.78	18.18	0.00		
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	363.23	297.30	249.15	212.73	161.83	128.42	105.11	88.09	75.21	65.19	0.00			
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	400.15	327.52	274.48	234.35	178.28	141.47	115.80	97.04	82.86	0.00				
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	438.25	358.70	300.61	256.66	195.25	154.94	126.82	106.28	90.74	0.00				
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	477.48	390.81	327.52	279.64	212.73	168.81	138.17	115.80	16.92	0.00				
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	517.81	423.82	355.19	303.26	230.70	183.08	149.84	125.58	0.00					
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	559.23	457.72	383.59	327.52	249.15	197.72	161.83	98.33	0.00					
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	601.69	492.48	412.72	352.39	268.07	212.73	174.12	0.00						
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	645.18	528.07	442.55	377.85	287.44	228.10	186.70	0.00						
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	689.66	564.48	473.06	403.91	307.26	243.83	153.53	0.00						
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	723.78	601.69	504.25	430.53	327.52	259.91	48.97	0.00						
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	753.94	639.68	536.09	457.72	348.20	276.32	0.00							
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	784.10	678.45	568.57	485.46	369.30	293.06	0.00							
	Type I Manual or Drip Lubrication					Type II Bath or Disc Lubrication					Type III Oil Stream Lubrication															

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.





*Continued from previous page.*

No. of Teeth	35 0.375" Pitch		40, 41 0.50" Pitch		50 0.625" Pitch		60 0.75" Pitch		80 1.0" Pitch		100 1.25" Pitch		120 1.5" Pitch		140 1.75" Pitch		160 2.0" Pitch		180 2.25" Pitch		200 2.5" Pitch		240 3.0" Pitch	
	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.
99	11.819	12.038	15.759	16.051	19.699	20.064	23.638	24.076	31.518	32.102	39.397	40.128	47.277	48.153	55.156	56.179	63.035	64.204	–	–	78.795	80.255	94.554	96.306
100	11.939	12.158	15.918	16.210	19.898	20.262	23.877	24.315	31.836	32.420	39.795	40.525	47.754	48.630	55.713	56.735	63.672	64.840	–	–	79.590	81.050	95.509	97.263
101	12.058	12.277	16.077	16.370	20.097	20.462	24.116	24.554	32.154	32.739	40.193	40.924	48.232	49.109	56.270	57.294	64.309	65.478	–	–	80.385	81.847	96.464	98.217
102	12.177	12.396	16.236	16.529	20.295	20.661	24.355	24.793	32.473	33.058	40.591	41.322	48.709	49.586	56.827	57.851	64.945	66.115	–	–	81.182	82.642	97.418	99.171
103	12.297	12.516	16.395	16.688	20.494	20.860	24.593	25.032	32.791	33.376	40.989	41.720	49.187	50.064	57.384	58.408	65.582	66.752	–	–	81.977	83.440	98.373	100.128
104	12.416	12.635	16.555	16.847	20.693	21.059	24.832	25.271	33.109	33.695	41.387	42.118	49.664	50.542	57.941	58.966	66.218	67.389	–	–	82.772	84.235	99.328	101.082
105	12.535	12.755	16.714	17.006	20.892	21.258	25.071	25.510	33.428	34.013	41.784	42.517	50.141	51.020	58.498	59.523	66.855	68.027	–	–	83.567	85.030	100.283	102.039
106	12.655	12.874	16.873	17.166	21.091	21.457	25.309	25.749	33.746	34.332	42.182	42.915	50.619	51.498	59.055	60.081	67.492	68.664	–	–	84.365	85.827	101.238	102.993
107	12.774	12.994	17.032	17.325	21.290	21.656	25.548	25.987	34.064	34.650	42.580	43.312	51.096	51.975	59.612	60.637	68.128	69.299	–	–	85.160	86.622	102.192	103.947
108	12.893	13.113	17.191	17.484	21.489	21.854	25.787	26.226	34.382	34.968	42.978	43.710	51.574	52.452	60.169	61.194	68.765	69.936	–	–	85.955	87.420	103.147	104.904
109	13.013	13.232	17.350	17.643	21.688	22.054	26.025	26.465	34.701	35.287	43.376	44.108	52.051	52.930	60.726	61.751	69.401	70.573	–	–	86.752	88.215	104.102	105.858
110	13.132	13.352	17.509	17.803	21.887	22.253	26.264	26.704	35.019	35.605	43.774	44.506	52.528	53.408	61.283	62.309	70.038	71.210	–	–	87.547	89.012	105.056	106.815
111	13.251	13.471	17.669	17.962	22.086	22.452	26.503	26.943	35.337	35.924	44.171	44.905	53.006	53.886	61.840	62.867	70.674	71.848	–	–	88.342	89.807	106.011	107.769
112	13.371	13.591	17.828	18.122	22.285	22.651	26.742	27.182	35.655	36.243	44.569	45.304	53.483	54.364	62.397	63.425	71.311	72.486	–	–	89.137	90.602	106.967	108.723
113	13.490	13.710	17.987	18.280	22.484	22.850	26.980	27.421	35.974	36.561	44.967	45.701	53.960	54.841	62.954	63.982	71.948	73.122	–	–	89.935	91.400	107.921	109.680
114	13.609	13.830	18.146	18.440	22.682	23.049	27.219	27.660	36.292	36.879	45.365	46.099	54.438	55.319	63.511	64.539	72.584	73.759	–	–	90.730	92.195	108.876	110.634
115	13.729	13.948	18.305	18.597	22.881	23.246	27.458	27.896	36.610	37.194	45.763	46.493	54.915	55.792	64.068	65.090	73.220	74.388	–	–	91.525	92.992	109.831	111.591
116	13.848	14.068	18.464	18.757	23.080	23.447	27.696	28.136	36.929	37.515	46.161	46.893	55.393	56.272	64.625	65.651	73.857	75.030	–	–	92.322	93.787	110.786	112.545
117	13.968	14.187	18.623	18.917	23.279	23.647	27.935	28.376	37.247	37.835	46.558	47.293	55.870	56.752	65.182	66.210	74.494	75.669	–	–	93.117	94.582	111.740	113.499
118	14.087	14.307	18.783	19.077	23.478	23.846	28.174	28.615	37.565	38.135	46.956	47.691	56.348	57.230	65.739	66.768	75.130	76.306	–	–	93.912	95.380	112.695	114.456
119	14.206	14.427	18.942	19.235	23.677	24.045	28.413	28.853	37.883	38.471	47.354	48.089	56.825	57.707	66.296	67.325	75.767	76.943	–	–	94.707	96.175	113.650	115.410
120	14.326	14.545	19.101	19.394	23.876	24.243	28.651	29.091	38.202	38.789	47.752	48.486	57.302	58.183	66.583	67.880	76.403	77.577	–	–	95.502	96.970	114.605	116.364











140 – 44.450 mm (1.750 in.) PITCH KILOWATTS

TABLE 37. 140 – 44.450 mm (1.750 in.) PITCH KILOWATTS

Table with 25 columns for RPM and 10 rows for chain sizes (11-45 teeth). It includes sub-headers for 'Revolutions Per Minute – Small Sprocket' and 'Type I Manual or Drip Lubrication', 'Type II Bath or Disc Lubrication', and 'Type III Oil Stream Lubrication'.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.

160 – 50.800 mm (2.000 in.) PITCH KILOWATTS

TABLE 38. 160 – 50.800 mm (2.000 in.) PITCH KILOWATTS

Table with 21 columns for RPM and 15 rows for chain sizes (11-45 teeth). It includes sub-headers for 'Revolutions Per Minute – Small Sprocket' and 'Type I Manual or Drip Lubrication', 'Type II Bath or Disc Lubrication', and 'Type III Oil Stream Lubrication'.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.



240 – 76.200 mm (3.000 in.) PITCH KILOWATTS

TABLE 41. 240 – 76.200 mm (3.000 in.) PITCH KILOWATTS

No. of Teeth	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	1.51	3.62	7.05	17.01	24.13	33.08	48.82	64.35	94.98	125.19	155.10	184.76	139.22	99.62	75.79	60.14	49.22	41.25	35.22	30.53	26.79	23.77	21.26	0.00
12	1.64	3.96	7.70	18.55	26.33	36.09	53.27	70.21	103.62	136.57	169.19	201.56	158.63	113.51	86.35	68.52	56.08	47.00	40.13	34.79	30.53	27.08	1.57	0.00
13	1.78	4.29	8.34	20.10	28.52	39.10	57.70	76.05	112.25	147.95	183.29	218.36	178.87	127.99	97.37	77.26	63.24	53.00	45.25	39.22	34.42	28.43	0.00	
14	1.92	4.62	8.98	21.64	30.72	42.10	62.14	81.91	120.89	159.33	197.39	235.15	199.90	143.04	108.81	86.35	70.68	59.23	50.57	43.83	38.47	0.00		
15	2.05	4.94	9.62	23.19	32.91	45.11	66.58	87.75	129.51	170.71	211.50	251.95	221.70	158.63	120.68	95.76	78.38	65.69	56.08	48.61	0.00			
16	2.19	5.28	10.26	24.73	35.11	48.12	71.02	93.61	138.15	182.09	225.60	268.74	244.23	174.75	132.94	105.49	86.35	72.36	61.79	53.56	0.00			
17	2.33	5.61	10.90	26.28	37.30	51.13	75.46	99.45	146.78	193.47	239.69	285.54	267.48	191.39	145.60	115.54	94.57	79.25	67.66	0.00				
18	2.46	5.94	11.54	27.83	39.49	54.13	79.89	105.31	155.42	204.85	253.79	302.34	291.43	208.53	158.63	125.88	103.03	86.35	73.73	0.00				
19	2.60	6.26	12.18	29.37	41.68	57.14	84.33	111.15	164.05	216.24	267.89	319.14	316.04	226.14	172.03	136.52	111.74	93.65	2.39	0.00				
20	2.74	6.59	12.83	30.92	43.88	60.15	88.77	117.01	172.69	227.62	281.99	335.93	341.32	244.23	185.79	147.44	120.68	101.13	0.00					
21	2.87	6.93	13.47	32.47	46.08	63.15	93.21	122.86	181.32	239.00	296.10	352.73	367.24	262.78	199.90	158.63	129.84	81.92	0.00					
22	3.01	7.26	14.12	34.01	48.27	66.17	97.65	128.71	189.96	250.38	310.19	369.52	393.78	281.76	214.34	170.09	139.22	0.00						
23	3.15	7.58	14.76	35.55	50.46	69.17	102.09	134.56	198.59	261.76	324.29	386.32	420.93	301.20	229.12	181.82	148.82	0.00						
24	3.28	7.91	15.40	37.11	52.65	72.18	106.52	140.41	207.22	273.14	338.39	403.12	448.68	321.05	244.23	193.81	140.42	0.00						
25	3.42	8.25	16.04	38.65	54.85	75.19	110.97	146.26	215.86	284.52	352.49	419.92	477.01	341.32	259.65	206.05	140.42	0.00						
26	3.56	8.58	16.68	40.19	57.05	78.19	115.40	152.11	224.49	295.90	366.59	436.71	505.92	362.01	275.39	218.53	0.00							
	Type I Manual or Drip Lubrication					Type II Bath or Disc Lubrication							Type III Oil Stream Lubrication											

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.







HEAVY SERIES 140H – 44.450 mm (1.750 in.) PITCH KILOWATTS

TABLE 46. KILOWATTS RATINGS – SINGLE STRAND ROLLER CHAIN NO. 140H

Table with 22 columns for speed (5 to 2700 min-1) and 19 rows for chain types (11 to 45). Includes lubrication type indicators (Type I, II, III) and shaded areas for RPM limits.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.

HEAVY SERIES 160H – 50.800 mm (2.000 in.) PITCH KILOWATTS

TABLE 47. KILOWATTS RATINGS – SINGLE STRAND ROLLER CHAIN NO. 160H

Table with 22 columns for speed (2 to 2200 min-1) and 19 rows for chain types (11 to 45). Includes lubrication type indicators (Type I, II, III) and shaded areas for RPM limits.

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.



HEAVY SERIES 240H – 76.200 mm (3.000 in.) PITCH KILOWATTS

TABLE 50. KILOWATTS RATINGS – SINGLE STRAND ROLLER CHAIN NO. 240H

No. of Teeth	Speed, min-1, Small Sprocket																									
	2	5	10	25	27	50	75	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	1500
11	1.74	4.19	8.15	19.64	21.14	38.20	56.38	74.31	109.67	144.56	179.09	213.35	170.10	139.22	116.68	99.62	75.78	60.14	49.22	41.25	35.22	30.53	26.79	23.76	21.26	0.00
12	1.90	4.57	8.89	21.42	23.06	41.67	61.50	81.07	119.64	157.70	195.37	232.74	193.81	158.63	132.94	113.51	86.35	68.52	56.09	47.00	40.13	34.79	30.53	27.07	0.00	
13	2.05	4.95	9.63	23.21	24.99	45.15	66.63	87.82	129.61	170.84	211.65	252.14	218.54	178.87	149.90	127.99	97.36	77.26	63.24	53.00	45.25	39.22	34.42	0.00		
14	2.21	5.33	10.37	24.99	26.91	48.62	71.75	94.58	139.58	183.98	227.93	271.53	244.23	199.90	167.53	143.04	108.81	86.35	70.68	59.23	50.57	43.83	13.56	0.00		
15	2.37	5.71	11.11	26.78	28.83	52.09	76.88	101.33	149.55	197.12	244.21	290.93	270.86	221.70	185.79	158.63	120.68	95.76	78.38	65.69	56.09	48.61	0.00			
16	2.53	6.09	11.85	28.56	30.75	55.56	82.00	108.09	159.52	210.26	260.49	310.32	298.39	244.23	204.68	174.76	132.94	105.50	86.35	72.36	61.79	0.00				
17	2.69	6.47	12.59	30.35	32.67	59.04	87.13	114.84	169.49	223.41	276.78	329.72	326.80	267.48	224.16	191.39	145.60	115.54	94.57	79.25	67.67	0.00				
18	2.84	6.85	13.33	32.13	34.60	62.51	92.25	121.60	179.46	236.55	293.06	349.11	356.05	291.43	244.23	208.53	158.63	125.88	103.03	86.35	12.62	0.00				
19	3.00	7.23	14.07	33.92	36.52	65.98	97.38	128.35	189.43	249.69	309.34	368.51	386.13	316.05	264.86	226.14	172.03	136.52	111.74	93.64	0.00					
20	3.16	7.62	14.81	35.70	38.44	69.45	102.50	135.11	199.40	262.83	325.62	387.90	417.02	341.32	286.05	244.23	185.79	147.44	120.68	73.32	0.00					
21	3.32	8.00	15.56	37.49	40.36	72.93	107.63	141.87	209.37	275.97	341.90	407.30	448.68	367.24	307.77	262.77	199.90	158.63	129.84	0.00						
22	3.48	8.38	16.30	39.27	42.29	76.40	112.76	148.62	219.34	289.11	358.18	426.69	481.11	393.78	330.01	281.77	214.35	170.10	139.22	0.00						
24	3.79	9.14	17.78	42.84	46.13	83.34	123.01	162.13	239.28	315.40	390.74	465.48	539.73	448.68	376.02	321.05	244.23	193.81	36.52	0.00						
25	3.95	9.52	18.52	44.63	48.05	86.82	128.13	168.89	249.25	328.54	407.02	484.88	562.21	477.01	399.76	341.32	259.65	206.05	0.00							
26	4.11	9.90	19.26	46.41	49.97	90.29	133.26	175.64	259.23	341.68	423.30	504.27	584.70	505.92	423.99	362.01	275.39	218.54	0.00							
	Type I Manual or Drip Lubrication					Type II Bath or Disc Lubrication					Type III Oil Stream Lubrication															

NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 8 for multiple-strand factors.





Continued from previous page.

No. of Teeth	35 9.53 mm Pitch		40, 41 12.7 mm Pitch		50 15.88 mm Pitch		60 19.05 mm Pitch		80 25.4 mm Pitch		100 31.75 mm Pitch		120 38.10 mm Pitch		140 44.45 mm Pitch		160 50.80 mm Pitch		180 57.15 mm Pitch		200 63.50 mm Pitch		240 76.20 mm Pitch	
	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.	Pitch Dia.	O.D.
99	300.203	305.765	400.279	407.695	500.355	509.626	600.405	611.530	800.557	815.391	1000.684	1019.251	1200.836	1223.086	1400.962	1426.947	1601.089	1630.782	-	-	2001.393	2038.477	2401.672	2446.172
100	303.251	308.813	404.317	411.734	505.409	514.655	606.476	617.601	808.634	823.468	1010.793	1029.335	1212.952	1235.202	1415.110	1441.069	1617.269	1646.936	-	-	2021.586	2058.670	2425.929	2470.480
101	306.273	311.836	408.356	415.798	510.464	519.735	612.546	623.672	816.712	831.571	1020.902	1039.470	1225.093	1247.369	1429.258	1455.268	1633.449	1663.141	-	-	2041.779	2078.914	2450.186	2494.712
102	309.296	314.858	412.394	419.837	515.493	524.789	618.617	629.742	824.814	839.673	1031.011	1049.579	1237.209	1259.484	1443.406	1469.415	1649.603	1679.321	-	-	2062.023	2099.107	2474.417	2518.943
103	312.344	317.906	416.433	423.875	520.548	529.844	624.662	635.813	832.891	847.750	1041.121	1059.688	1249.350	1271.626	1457.554	1483.563	1665.783	1695.501	-	-	2082.216	2119.376	2498.674	2543.251
104	315.366	320.929	420.497	427.914	525.602	534.899	630.733	641.883	840.969	855.853	1051.230	1069.797	1261.466	1283.767	1471.701	1497.736	1681.937	1711.681	-	-	2102.409	2139.569	2522.931	2567.483
105	318.389	323.977	424.536	431.952	530.657	539.953	636.803	647.954	849.071	863.930	1061.314	1079.932	1273.581	1295.908	1485.849	1511.884	1698.117	1727.886	-	-	2122.602	2159.762	2547.188	2591.791
106	321.437	327.000	428.574	436.016	535.711	545.008	642.849	654.025	857.148	872.033	1071.423	1090.041	1285.723	1308.049	1499.997	1526.057	1714.297	1744.066	-	-	2142.871	2180.006	2571.445	2616.022
107	324.460	330.048	432.613	440.055	540.766	550.062	648.919	660.070	865.226	880.110	1081.532	1100.125	1297.838	1320.165	1514.145	1540.180	1730.451	1760.195	-	-	2163.064	2200.199	2595.677	2640.254
108	327.482	333.070	436.651	444.094	545.821	555.092	654.990	666.140	873.303	888.187	1091.641	1110.234	1309.980	1332.281	1528.293	1554.328	1746.631	1776.374	-	-	2183.257	2220.468	2619.934	2664.562
109	330.530	336.093	440.690	448.132	550.875	560.172	661.035	672.211	881.405	896.290	1101.750	1120.343	1322.095	1344.422	1542.440	1568.475	1762.785	1792.554	-	-	2203.501	2240.661	2644.191	2688.793
110	333.553	339.141	444.729	452.196	555.930	565.226	667.106	678.282	889.483	904.367	1111.860	1130.452	1334.211	1356.563	1556.588	1582.649	1778.965	1808.734	-	-	2223.694	2260.905	2668.422	2713.101
111	336.575	342.163	448.793	456.235	560.984	570.281	673.176	684.352	897.560	912.470	1121.943	1140.587	1346.352	1368.704	1570.736	1596.822	1795.120	1824.939	-	-	2243.887	2281.098	2692.679	2737.333
112	339.623	345.211	452.831	460.299	566.039	575.335	679.247	690.423	905.637	920.572	1132.053	1150.722	1358.468	1380.846	1584.884	1610.995	1811.299	1841.144	-	-	2264.080	2301.291	2716.962	2761.564
113	342.646	348.234	456.870	464.312	571.094	580.390	685.292	696.493	913.740	928.649	1142.162	1160.805	1370.584	1392.961	1599.032	1625.143	1827.479	1857.299	-	-	2284.349	2321.560	2741.193	2785.872
114	345.669	351.282	460.908	468.376	576.123	585.445	691.363	702.564	921.817	936.727	1152.271	1170.915	1382.725	1405.103	1613.179	1639.291	1843.634	1873.479	-	-	2304.542	2341.753	2765.450	2810.104
115	348.717	354.279	464.947	472.364	581.177	590.448	697.433	708.558	929.894	944.728	1162.380	1180.922	1394.841	1417.117	1627.327	1653.286	1859.788	1889.455	-	-	2324.735	2361.997	2789.707	2834.411
116	351.739	357.327	468.986	476.428	586.232	595.554	703.478	714.654	937.997	952.881	1172.489	1191.082	1406.982	1429.309	1641.475	1667.535	1875.968	1905.762	-	-	2344.979	2382.190	2813.964	2858.643
117	354.787	360.350	473.024	480.492	591.287	600.634	709.549	720.750	946.074	961.009	1182.573	1201.242	1419.098	1441.501	1655.623	1681.734	1892.148	1921.993	-	-	2365.172	2402.383	2838.196	2882.875
118	357.810	363.398	477.088	484.556	596.341	605.688	715.620	726.821	954.151	968.629	1192.682	1211.351	1431.239	1453.642	1669.771	1695.907	1908.302	1938.172	-	-	2385.365	2422.652	2862.453	2907.182
119	360.832	366.446	481.127	488.569	601.396	610.743	721.690	732.866	962.228	977.163	1202.792	1221.461	1443.355	1465.758	1683.918	1710.055	1924.482	1954.352	-	-	2405.558	2442.845	2886.710	2931.414
120	363.880	369.443	485.165	492.608	606.450	615.772	727.735	738.911	970.331	985.241	1212.901	1231.544	1455.471	1477.848	1691.208	1724.152	1940.636	1970.456	-	-	2425.751	2463.038	2910.967	2955.646

## ***CORROSION RESISTANT CHAIN PRODUCT SELECTION GUIDE***

### **STAINLESS STEEL MATERIAL SELECTION**

#### **304 PS SERIES STAINLESS STEEL CHAIN**

The primary use of 304 PS series stainless steel chain is in corrosive and/or high-temperature environments, which shortens the life of standard carbon steel roller chain. The 304 PS series stainless steel chain gives excellent resistance to corrosion and high temperatures. 304 PS series stainless steel is generally considered non-magnetic.

#### **316 NS SERIES STAINLESS STEEL CHAIN**

The primary use of 316 NS series stainless steel chain is in highly corrosive and/or extreme temperatures, which shorten the life of 304 PS series stainless steel chain.

**TABLE 53. MATERIALS OF COMPONENT PARTS**

Abbrev.	Material	Link Plate	Pin	Bushing	Roller
PS	304 Series	AISI 304	AISI 304	AISI 304	AISI 304
NS	316 Series	AISI 316	AISI 316	AISI 316	AISI 316
AS	600 Series	AISI 300	600 PH <sup>(1)</sup>	600 PH <sup>(1)</sup>	600 PH <sup>(1)</sup>

<sup>(1)</sup>PH: precipitation hardened.

#### **600 AS SERIES STAINLESS STEEL CHAIN**

The primary use of 600 AS series stainless steel chain is in corrosive and/or high-temperature environments, which shortens the life of standard carbon steel chain. The 600 AS series stainless steel chain has less corrosion resistance than 304 PS series stainless steel, but the hardened round parts are designed to provide for better wear life than 304 PS series stainless steel chain.

**TABLE 52. PERFORMANCE OF ANTI-CORROSIVE CHAINS**

Abbrev.	Chain	Corrosion Resistance	Temperature Resistance	Magnetism	Wear Resistance
NP	NP Chain	Acceptable for outdoor and decorative applications	14° F - 140° F (-10° C - 60° C) (Never use below -4° F or above 300° F)	Magnetic	Excellent
CR®	Silver Shield	Acceptable for wet outdoor environments including seawater	14° F - 140° F (-10° C - 60° C) (Never use below -4° F or above 300° F)	Magnetic	Excellent
AS	600 Series	Good for general acid, alkali and water	-40° F ~ 750° F <sup>(1)</sup> (-40° C - 400° C) [Never use above 930° F (500° C)]	Magnetic	Very Good
PS	304 Series	Good for general acid, alkali and water	-40° F ~ 750° F <sup>(1)</sup> (-40° C - 400° C) [Never use below -270° F (-150° C) or above 1300° F (700° C)]	Non-magnetic	Fair
NS	316 Series	Superior to the other stainless material	-40° F ~ 750° F <sup>(1)</sup> (-40° C - 400° C) [Never use below -270° F (-150° C) or above 1500° F (815° C)]	Non-magnetic	Fair

<sup>(1)</sup>Contact your Drives representative for temperatures below -20° F (29° C) or above 500° F (260° C).



## CHAIN SELECTION

General selection is based on bearing pressure between the pin and bushing. Anti-corrosive roller chains are normally intended to be used at slow speed without lubrication. Chain selection should be made based on the bearing pressure, as shown below.

**TABLE 54. ALLOWABLE BEARING PRESSURE**

Chain	Max. Allowable Bearing Pressure Between Pin and Bushing	Maximum Operating Speed
304 and 316 Chain	1,420 psi (9.79 N/mm <sup>2</sup> )	230 ft./min. (70 m/min.)
600 Chain	2,130 psi (14.68 N/mm <sup>2</sup> )	230 ft./min. (70 m/min.)

The chain's maximum allowable load can be obtained by the formula:

$$\text{Maximum allowable load} = \text{Maximum allowable bearing pressure} \times \text{Bearing area between pin and bushing}$$

**TABLE 55. SERVICE FACTOR**

Type of Impact	Service Factor
Smooth transmission	1.0
Transmission with some impact	1.3
Transmission with large impact	1.5

**TABLE 56. SPEED COEFFICIENT**

Chain Speed	Speed Coefficient
0 ~ 50 ft./min. (0 - 15 m/min.)	1.0
50 ~ 100 ft./min. (15 - 30 m/min.)	1.2
100 ~ 160 ft./min. (30 - 49 m/min.)	1.4
160 ~ 230 ft./min. (49 - 70 m/min.)	1.6

**TABLE 57. MAXIMUM ALLOWABLE LOAD**

Chain No.	304SS (PS) and 316SS (NS)	600SS (AS)
	lbs. kN	lbs. kN
40	100 0.44	155 0.69
50	165 0.73	230 1.02
60	231 1.03	350 1.56
80	396 1.76	600 2.67
100	568 2.53	850 3.78
120	850 3.78	1278 5.68
140	1005 4.47	1535 6.83
160	1400 6.23	2100 9.34
C2040	100 0.44	155 0.69
C2050	165 0.73	230 1.02
C2060H	250 1.11	375 1.67
C2080H	415 1.85	625 2.78
C2100H	600 2.67	900 4.00
C2120H	895 3.98	1340 5.96
C2160H	1450 6.45	2170 9.65

**TABLE 58. TEMPERATURE FACTOR**

Temperature	304 Series	316 Series	600 Series
~ -270° F (-168° C)	X	X	X
-270° F ~ -40° F (-168° C - -40° C)	1.0	1.0	X
-40° F ~ 750° F (-40° C - 400° C)	1.0	1.0	1.0
750° F ~ 930° F (400° C - 500° C)	1.2	1.0	1.8
930° F ~ 1,100° F (500° C - 593° C)	1.5	1.2	X
1,100° F ~ 1,300° F (593° C - 704° C)	1.8	1.5	X
1,300° F ~ 1,500° F (704° C - 815° C)	X	2.0	X
1,500° F ~ (815° C)	X	X	X

X = Not suggested.

Chain selection can be made using the following formula:

$$\text{Maximum Chain Tension} \times \text{Service Factor} \times \text{Speed Coefficient} \times \text{Temperature Factor} \leq \text{Maximum Allowable Load}$$

Maximum allowable load or maximum bearing pressure as shown above can be doubled only when the chain is used in group A of the Corrosion Resistance Guide on page 48 and properly lubricated.

**TABLE 59. CORROSION RESISTANCE GUIDE FOR STAINLESS STEEL**

Substance	Concentration	Temp. °F	600 SS	304 SS	316 SS
Acetic Acid	10%	68	A	A	A
Acetone		68	A	A	A
Alcohol		68	A	A	A
Aluminum Sulfate	Saturation	68	D	A	A
Ammonia Water		68	A	A	A
Ammonium Nitrate		68	A	A	A
Ammonium Sulfate	Saturation	Boiling	B	A	A
Beer		68	A	A	A
Benzene		68	A	A	A
Boric Acid	50%	Boiling	A	A	A
Butyric Acid		68	A	A	A
Calcium Chloride	Saturation	68	D	B	A
Calcium Hydroxide	20%	Boiling	A	A	A
Calcium Hypochlorite	11 – 14%	68	C	A	A
Carbon Tetrachlorite		68	A	A	A
Chlorinated Water			D	D	A
Chlorine Gas		68	D	D	B
Chromic Acid	5%	68	B	A	A
Citric Acid	50%	68	A	A	A
Coffee		Boiling	A	A	A
Creosote		68	A	A	A
Detergent – Synthetic			A	A	A
Developing Solution		68	B	A	A
Ethyl Ether		68	A	A	A
Ferric Acid	50%	68	A	A	A
Ferric Chloride	5%	68	D	B	B
Formalin	40%	68	A	A	A
Formic Acid	100%	Boiling	C	C	A
Fruit Juice		68	B	A	A
Gasoline		68	A	A	A
Glycerol		68	A	A	A
Heavy Nitric Acid	85%	68	D	A	A
Heavy Nitric Acid	65%	68	D	B	B
Honey			A	A	A
Hydrogen Peroxide	30%	68	B	A	A
Hydrogen Sulfide (dry)			A	A	A
Hydrogen Sulfide (wet)			D	D	D
Hydroxibenzene		68	A	A	A
Kerosene		68	A	A	A
Ketchup		68	A	A	A
Lactic Acid	10%	68	B	A	A
Lard			A	A	A
Linseed Oil	100%	68	B	A	A
Malic Acid	50%	Boiling	A	A	A
Mayonnaise		68	B	A	A
Milk		68	A	A	A
Nitric Acid	Saturation	Boiling	B	A	A

Substance	Concentration	Temp. °F	600 SS	304 SS	316 SS
Oil (Plant, Mineral)		68	A	A	A
Oleic Acid		68	A	A	A
Oxalic Acid	10%	68	B	A	A
Paraffin		68	A	A	A
Petroleum		68	A	A	A
Phosphate			A	A	A
Phosphoric Acid	5%	68	B	A	A
Phosphoric Acid	10%	68	B	B	B
Picric Acid	Saturation	68	A	A	A
Potassium Bichromate	10%	68	A	A	A
Potassium Chloride	Saturation	68	B	A	A
Potassium Hydroxide	20%	68	A	A	A
Potassium Nitrate	25%	68	A	A	A
Potassium Nitrate	25%	Boiling	D	A	A
Potassium Permanganate	Saturation	68	A	A	A
Sal Ammoniac	50%	Boiling	C	B	A
Seawater		68	C	B	A
Soap and Water Solution		68	A	A	A
Sodium Carbonate	Saturation	Boiling	A	A	A
Sodium Chloride	5%	68	B	A	A
Sodium Cyanide		68	D	A	A
Sodium Hydrocarbonate		68	A	A	A
Sodium Hydroxide	25%	68	A	A	A
Sodium Hypochlorite	10%	68	D	D	A
Sodium Perchlorate	10%	Boiling	D	A	A
Sodium Sulfate	Saturation	68	A	A	A
Sodium Thiosulfate	25%	Boiling	A	A	A
Soft Drink		68	A	A	A
Sugar Solution		68	A	A	A
Sulfur Dioxide		68	C	A	A
Sulfuric Acid	5%	68	D	D	A
Syrup			A	A	A
Tartaric Acid	6%	68	A	A	A
Turpentine		95	A	A	A
Varnish			A	A	A
Vegetable Juice		68	A	A	A
Vinegar		68	C	B	A
Water			A	A	A
Whiskey		68	A	A	A
Wine		68	A	A	A
Zinc Chloride	50%	68	D	B	B
Zinc Sulfate	25%	68	A	A	A

A = High resistance  
 B = Partial resistance  
 C = Satisfactory resistance  
 D = Not suggested

## CONVEYOR CHAIN SELECTION GUIDE STEPS

The ANSI single- and double-pitch roller chain is widely used for conveyor service.

The following procedure is useful for economical and quick chain selection.

**STEP 1:** Confirm the operating conditions of the conveyor.

**STEP 2:** Tentatively select the chain size.

**STEP 3:** Calculate the design chain tension (actual chain tension).

**STEP 4:** Calculate the required power.

**STEP 5:** Verify the chain load.

**STEP 6:** Verify the allowable roller load.

### STEP 1: CONFIRM THE OPERATING CONDITIONS OF THE CONVEYOR

The following information is needed to design a chain conveyor.

- Type of conveyor (slat conveyor, bucket elevator, etc.).
- Method of chain travel (horizontal, inclined or vertical conveyor).
- Type, weight and size of materials to be conveyed.
- Weight of materials to be transported per foot of conveyor length.
- Conveyor speed.
- Conveyor length.
- Lubrication.
- Considerations for special environments.

### STEP 2: TENTATIVELY SELECT THE CHAIN SIZE

To tentatively select the chain size, estimate the chain tension (P) by the following formula. A chain with an allowable load equal to or over the below calculated chain tension may be tentatively selected.

$$P \text{ (lbs.)} = M_T \times f \times k_1 \qquad P_M \text{ (kN)} = \frac{9.81 \times M_{MT} \times f \times k_1}{1,000}$$

Where:

P = Chain pull (lbs., kN)

M<sub>T</sub> = Total weight of material conveyed (lbs. or Kg)

f = Coefficient of friction, sliding and/or rolling  
(F<sub>R</sub> f<sub>s</sub> tables 60, 61, 62 and 64 on page 51)

k<sub>1</sub> = Chain speed coefficient (table 66 on page 52)

### STEP 3: CALCULATE DESIGN CHAIN TENSION

Next, the chain tension should be calculated using the actual weight of the conveyor chain and material conveyed.

#### CONVEYOR CHAIN PULL FORMULAS

##### Horizontal

**Material is fully supported by the chain**

Inch  $P = (2.1W + M)f_M C$   
 Metric  $P = (2.1W + M)f_M C / 1,000$

**Material is moved but not supported by the chain**

Inch  $P = [(2.1Wf_M + Mf_w) C + J]$   
 Metric  $P = [(2.1Wf_M + Mf_w) C + J] / 1,000$

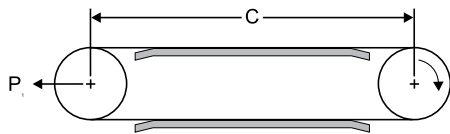


Fig. 3. Horizontal - return side supported illustration.

##### Vertical

Inch  $P = (W + M)C + T$   
 Metric  $P = [(W + M)C + T] / 1,000$

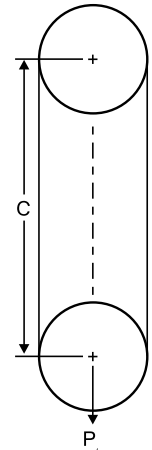


Fig. 4. Vertical.

##### Inclined

**Material is fully supported by the chain**

Inch  $P = (2.1W + M)f_M \cos\alpha C + (C M \sin\alpha) + J$   
 Metric  $P = [(2.1W + M)f_M \cos\alpha C + (C M \sin\alpha) + J] / 1,000$

NOTE: When  $(Wf_r \cos\alpha - W \sin\alpha) C$  is positive, multiply quantity by 1.1 to account for tail shaft friction.

**Material is moved but not supported by the chain**

Inch  $P = [(f_M W + f_w M) \cos\alpha + (W + M) \sin\alpha] C + (W f_M \cos\alpha - W \sin\alpha) C + J$   
 Metric  $P = \{[(f_M W + f_w M) \cos\alpha + (W + M) \sin\alpha] C + (W f_M \cos\alpha - W \sin\alpha) C + J\} / 1,000$

**Additional chain pull material sliding against sideboards**

Inch & Metric  $J = Ch^2/R$

Where:

- P = Total conveyor pull (lbs, kN)
- W = Weight of chain, attachment, slats, etc. per foot or meter (lbs/ft, kg/m)
- M = Weight of material per foot or meter on the conveyor (lbs/ft, kg/m)
- $f_M$  = Friction coefficient for chain (it may be either  $f_r$  or  $f_s$  whichever applies)
- $f_w$  = Friction coefficient for material sliding
- $f_r$  = Friction coefficient of chain rolling
- $f_s$  = Friction coefficient of chain sliding on supports
- C = Length of conveyor (ft, m)
- T = Take-up force (lbs, kg)
- J = Additional chain pull (lbs, kg)
- h = Height of material (in, cm)
- R = Variable factor for different materials

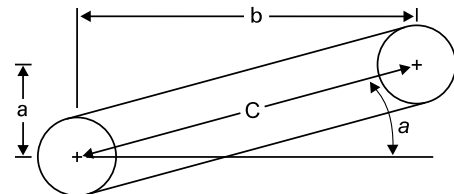


Fig. 5. Inclined - return side supported illustration.

**TABLE 60. COEFFICIENT OF ROLLING FRICTION (f<sub>R</sub>)**

Type of Roller	Dry	Lubricated
Oversized Roller	0.12	0.08
Standard Roller	0.21	0.14

Where:  $f_R = f_s \frac{d_a}{d_r}$

d<sub>a</sub> = bushing outside diameter

d<sub>r</sub> = roller outside diameter

**TABLE 61. METAL ROLLERS**

	Dry	Lubricated
Cast Rollers	0.5	0.4
Steel Rollers	0.4	0.3

**TABLE 62. COEFFICIENT OF SLIDING FRICTION (f<sub>s</sub>)**

Material	Coefficient	
	Dry	Lubricated
Steel on steel	0.33	0.20
Cast iron or cast steel on same surface	0.50	0.40
Steel on bronze	–	0.15
Steel on hardwood	0.35	0.25
Cast iron or cast steel on hardwood	0.44	–

**TABLE 64. COEFFICIENT OF SLIDING FRICTION OF CONVEYED MATERIAL (f<sub>s</sub>)**

Material	Coefficient	
	Dry	Lubricated
Coal on steel	0.55	–
Crushed stone or sand on steel	0.70	–
Cement on steel	0.80	–
Wood on wood	0.55	–
Corn on steel	0.30	–
Soybeans on steel	0.41	–
Oats on steel	0.35	–
Wheat on steel	0.43	–
Salt on steel	0.70	–

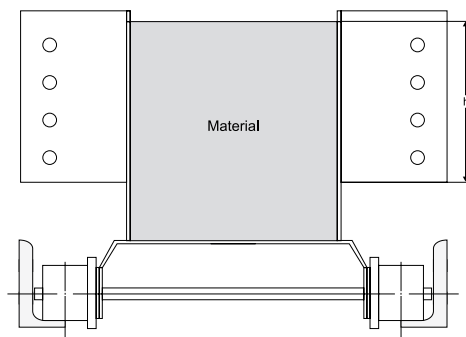
**TABLE 65. R FACTOR VALUES**

Material	"R" Imperial	"R" Metric
Coal	14.0	60.7
Coke	35.0	151.7
Limestone	7.5	32.5
Gravel	7.0	30.3
Sand	5.5	23.8
Ashes	14.0	60.7

**Additional pull on conveyor (J) material sliding against sideboards**

**TABLE 63. VARIABLE FACTOR FOR DIFFERENT MATERIALS**

Material	R
Coal	14.0
Coke	35.0
Limestone	7.5
Gravel	7.0
Sand	5.5
Ashes	35.0



$J = Ch^2/R$

Where:

h = Height of material in inches

R = Variable factor for different materials (see table 63)

C = Length of conveyor in feet

**Fig. 6. CROSS-SECTION OF MATERIAL CONVEYED IN A TROUGH**

## STEP 4: CALCULATE THE REQUIRED POWER

Calculate the required power to drive the conveyor from the following formula.

### HORIZONTAL AND/OR INCLINED CONVEYOR

$$H = \frac{P \times S}{33,000} \quad H_M = \frac{P_M \times S_M}{60}$$

### VERTICAL CONVEYOR

$$H = \frac{M \times C \times S}{33,000} \quad H_M = \frac{M_M \times C_M \times S_M}{60}$$

Where:  $S = \frac{C \times N_s \times n}{12}$  (ft./min.)  $S_M = \frac{C_M \times N_s \times n}{1,000}$  (M/min.)

H = Horsepower

S = Chain speed (ft./min., M/min.)

M = Material weight (lbs./ft., kg/M)

C = Sprocket center distance (in., mm)

n = Small sprocket speed (RPM)

N<sub>s</sub> = Number of teeth – small sprocket

C = Chain pitch (in., mm)

P = Chain pull (lbs., kN)

## STEP 5: VERIFY THE CHAIN

Multiply the chain tension (P) by the chain speed coefficient (k<sub>1</sub>) listed in table 66, and verify the following formula.

$$P \times k_1 \leq \text{Max. allowable load of the chain}$$

When the design chain tension (P x k<sub>1</sub>) is over the allowable load or much less than it, try the same steps again for the next bigger or smaller chain size to select a more suitable chain.

TABLE 66. CHAIN SPEED COEFFICIENT (k<sub>1</sub>)

Chain Speed ft./min. (m/min.)	Speed Factor (k <sub>1</sub> )
0 ~ 50 (0 - 15)	1.0
50 ~ 100 (15 - 30)	1.2
100 ~ 160 (30 - 50)	1.4
160 ~ 230 (50 - 70)	1.6
230 ~ 300 (70 - 90)	2.2
300 ~ 360 (90 - 110)	2.8
360 ~ 400 (110 - 120)	3.2

## STEP 6: VERIFY THE ALLOWABLE ROLLER LOAD

When the load is carried on the rollers, the total weight of the chain and load per roller should not exceed the allowable roller load shown in table 67.

TABLE 67. ALLOWABLE ROLLER LOAD [LBS./ROLLER (KG/ROLLER), CARBON STEEL ONLY]

Chain	Size	Large Roller	Standard Roller
C2040	40	143 (65)	33 (15)
C2050	50	220 (100)	44 (20)
C2060H	60	350 (160)	66 (30)
C2080H	80	590 (268)	120 (54)
C2100H	100	880 (400)	180 (82)
C2120H	120	1320 (600)	260 (118)
C2160H	160	2160 (980)	430 (195)

NOTE: Large rollers are available only for double-pitch roller chain.

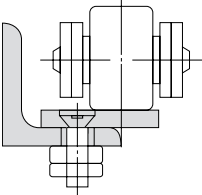
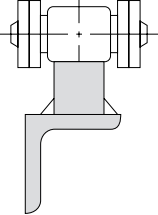
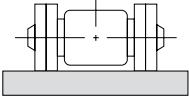
## POINTS TO CONSIDER

- For long conveyors, use take-up devices to eliminate chain slack.

$$\text{Take-up stroke} = \frac{\text{center distance between sprockets} \times 0.02}{\text{catenary sag allowance}}$$

- Chain must always be engaged with at least three sprocket teeth.
- When two or more strands of conveyor chain operate together, all the sprocket teeth on the head shaft should be aligned. The chain may be matched at the factory for uniform length and attachment alignment for accurate multiple-strand operation.

TABLE 68. CHAIN AND ROLLER FEATURES THAT MAY HELP IN SELECTION

Oversize R Roller Type	Standard S Roller Type	
Chain Rolling (Horizontal or Vertical)	Chain Rolling	Chain Sliding (Double-Pitch Chain)
		
<ul style="list-style-type: none"> <li>• Heavy in chain weight</li> <li>• Greater allowable roller load</li> <li>• Less roller wear</li> <li>• Smooth operation</li> <li>• Less vibration</li> <li>• Lower friction and less power required</li> <li>• Generally used for:                             <ul style="list-style-type: none"> <li>• Conveyor lengths more than 35 ft. (11 m).</li> <li>• Conveyor speeds more than 70 ft./min. (21 m/m).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Lightweight</li> <li>• Lower allowable roller load</li> </ul> <ul style="list-style-type: none"> <li>• Generally used for:                             <ul style="list-style-type: none"> <li>• Conveyor lengths more than 35 ft. (11 m).</li> <li>• Conveyor speeds more than 70 ft./min. (21 m/m).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Suitable for impact and dirty conditions</li> <li>• Economical</li> <li>• Impact resistant</li> <li>• Greater power required</li> </ul>

## MATCHING AND TAGGING OF CHAINS

### Class 1 – Tag

Chains are not measured, but the chains (strands, sections or both) will be tagged: LH, RH, Lead End, etc., and/or tied together as requested.

### Class 2 – Measure, Match & Tag

All chain strands<sup>(1)</sup> are assembled as multiple sections of 10 feet or less<sup>(2)</sup>, measured, and tagged with that measurement. These sections are arranged to incorporate a parallel and consecutive match.

- **Parallel:** The sections are assembled such that sections directly across from each other have a difference of less than 0.030 in.
- **Consecutive:** The chains are arranged such that a “short” section is not directly assembled to a “long” section. This results in having a difference between matched strands (for any given total lengths) of less than 0.030 in.

### Class 3 – Measure, Match & Tag (Customer Specified Match)

All chain strands<sup>(1)</sup> are assembled as multiple sections of 10 feet or less<sup>(2)</sup>, measured, and tagged with that measurement. These sections are arranged to incorporate a parallel and consecutive match.

- **Parallel:** The sections are arranged such that sections directly across from each other have a difference of less than a Class 2 match.
- **Consecutive:** The chains are arranged such that a “short” section is not directly assembled to a “long” section. This results in having a difference between matched strands (for any given total lengths) of less than a Class 2 match.

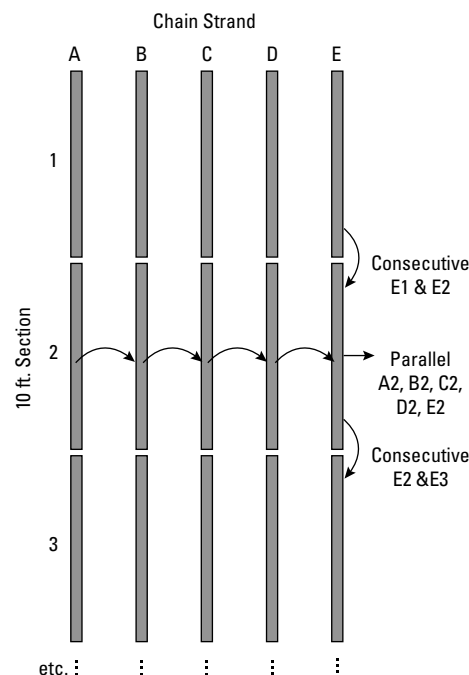


Fig. 7. Matching and tagging of chains.

All match/tag chains are within ANSI standard length tolerances. Matching measured sections (10 feet or shorter sections) ensures that attachments are aligned across the parallel chain strands. This optimized match also results in parallel strand lengths being extremely close to one another.

All match/tag chains are built using same batch parts to ensure the least amount of variance between strands. Reference to “short” or “long” sections simply refers to the minimum and maximum side of that particular batch length range.

<sup>(1)</sup> Strand: total chain length

<sup>(2)</sup> Section: part of the total chain length – 10 ft. long or less

<sup>(3)</sup> Customer specified

## INSTALLATION AND MAINTENANCE

### SPEED RATIO AND CHAIN WRAP

The speed ratio of roller chain can range up to 7:1 under normal operating conditions. However, a speed ratio of 10:1 is possible if the speed is very slow. Chain wrap on the small sprocket must be at least 120 degrees.

### DISTANCE BETWEEN SHAFTS

Sprockets can be separated by any distance as long as their teeth do not touch. Optimum distance is 30 to 50 times the pitch of the chain being used, except when there is a pulsating load. In such cases, the distance should be up to 20 times the pitch of the chain used.

### POSITION

Roller chain is ideally installed in a horizontal position. If the chain drive must be in a vertical position, the wear life of the chain will likely be reduced because of the effect of gravity.

### SLACK

Generally, the slack of a roller chain should be on the lower side (see fig. 8). Adequate slack (SS) is about 4 percent of the span for normal drives. In the following cases, the slack should be about 2 percent of the span:

- Vertical drive or close to vertical drive.
- Center distance between two shafts is greater than 3 ft.
- Chain is operated under heavy load and high frequency of on and off drive.
- Direction of the drive is often changed.

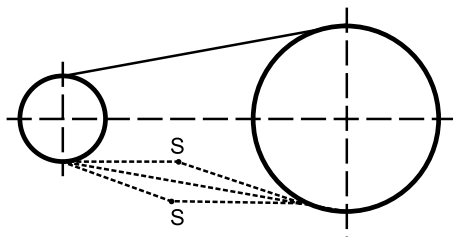


Fig. 8. Chain tension.

### POSITION OF SPROCKET

The two shafts should be parallel and preferably in a horizontal position. Sprockets should be firmly installed. See figs. 9 and 10.

Use a straight edge to check that the two sprockets are installed along the same horizontal plane.

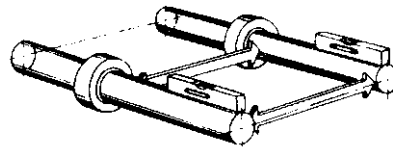


Fig. 9. Aligning shaft.

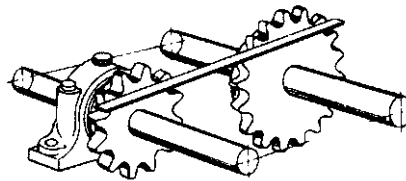


Fig. 10. Aligning sprockets.

TABLE 69. SUGGESTED POSSIBLE MID-SPAN MOVEMENT

Drive Center-Line	Tangent Length Between Sprockets in in. (cm)					
	10 (25)	20 (51)	30 (76)	50 (127)	70 (178)	100 (254)
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
Horizontal to 45°	0.4-0.6 (10-15)	0.8-1.2 (20-30)	1.2-1.8 (30-46)	2.0-3.0 (51-76)	2.8-4.2 (71-107)	4.0-6.0 (102-152)
45° to vertical	0.2-0.3 (5-8)	0.4-0.6 (10-15)	0.6-0.9 (15-23)	1.0-1.5 (25-38)	1.4-2.1 (36-53)	2.0-3.0 (51-76)



# ARRANGEMENTS

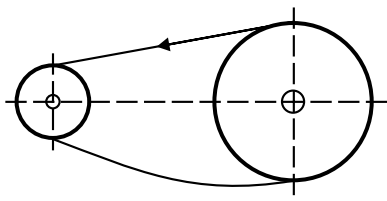


Fig. 11. Satisfactory arrangement for drives with short centers.

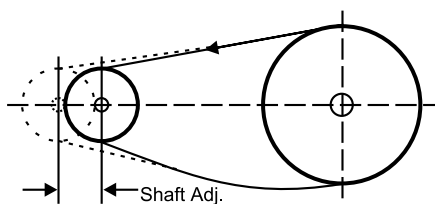


Fig. 12. It is best to have one shaft adjustable, as shown directly above, or use a chain tightener, as shown in lower arrangement.

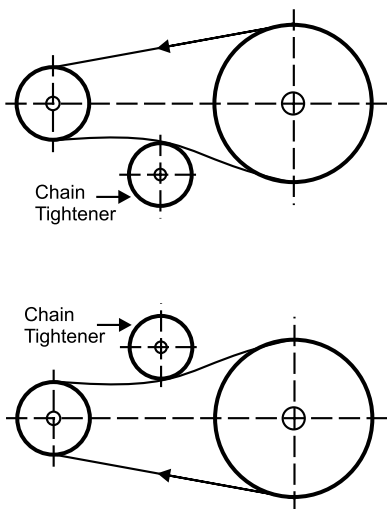


Fig. 13. When the slack side is on top, some means must be provided to adjust the slack-side tension.

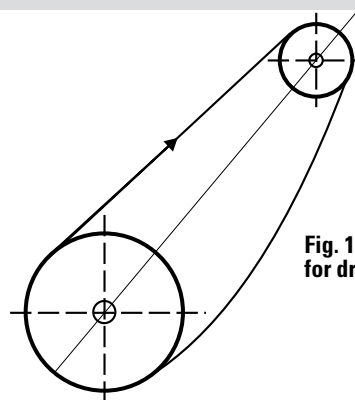


Fig. 14. Satisfactory arrangement for drives with short centers.

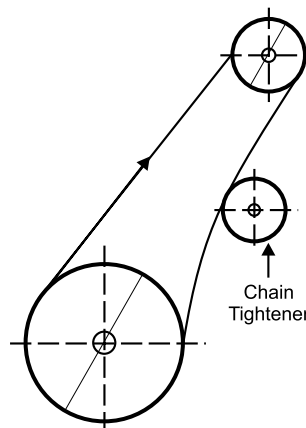


Fig. 15. When the slack side is on top, some means must be provided to adjust the slack-side tension.

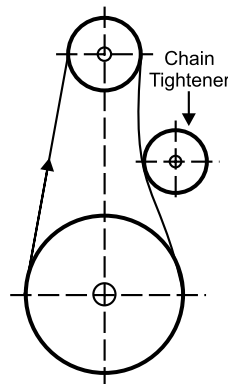


Fig. 16. The best arrangement for vertical drives where means for adjusting slack is possible.

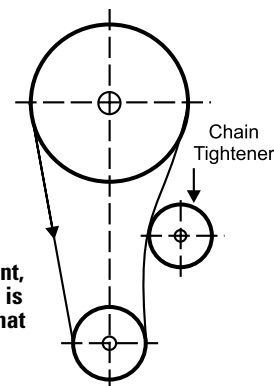


Fig. 17. This arrangement, while sometimes used, is not as satisfactory as that shown above.

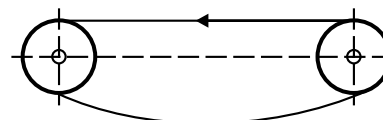


Fig. 18. Unsatisfactory arrangement (no adjustment is provided).

## LUBRICATION

One of the most important factors in getting the best possible performance out of your roller chain is proper lubrication. Each joint in a roller chain is a journal bearing, so it is essential that it receives an adequate amount of proper lubricant to achieve maximum wear life. No matter how well a transmission system is designed, if it is not properly lubricated, its service life will be shortened.

Wear between the pin and bushing causes the roller chain to elongate. These parts should, therefore, be well lubricated. The gap between the pin link plate and the roller link plate on the slack side of the chain should be filled with oil. This oil forms a film that reduces wear on the pin and bushing, thus increasing the chain's service life. It also reduces noise and acts as a coolant when the chain runs at high speeds.

## SUGGESTED LUBRICANTS

Only high-quality oil should be used to lubricate the roller chain. Neither heavy oil nor grease is suitable. The viscosity of the oil used will depend on the chain size, chain speed and ambient temperature. The lubricants suggested for specific temperature ranges are given in the table to the right.

The number of supply holes should equal  $Z+1$  where  $Z$  is the number of strands of chain. The amount of oil supplied to each hole is constant.

Regardless of the lubricating system used, the roller chain must be cleaned periodically. Examine the pin and bushing after removing the chain. Any damage or reddish-brown color on their surfaces could indicate that the system is not being adequately lubricated.

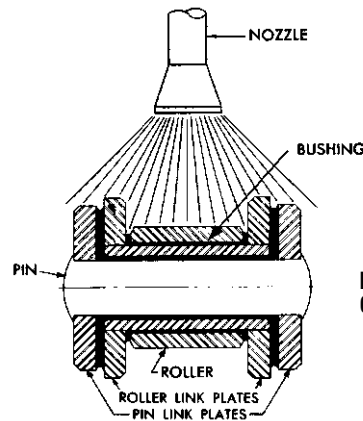


Fig. 19. Chain lubrication.

TABLE 70. TEMPERATURE AND LUBRICATION

Temperature Degree °F (°C)	Suggested Lubricant
-20 – +20 (-29 to -7)	SAE 10
20 – 40 (-7 to 5)	SAE 20
40 – 100 (5 to 38)	SAE 30
100 – 120 (38 to 49)	SAE 40
120 – 140 (49 to 60)	SAE 50

TABLE 71. SPEED AND LUBRICATION

Chain Speed ft/min. M/min.	Chain Number			
	60 and under	80 – 100	120 – 140	160 and over
	gal./min. liter/min.	gal./min. liter/min.	gal./min. liter/min.	gal./min. liter/min.
1,600 ~ 2,600 490 ~ 800	0.26 1.0	0.40 1.5	0.53 2.0	0.66 2.5
2,600 ~ 3,600 800 ~ 1,100	0.53 2.0	0.66 2.5	0.79 3.0	0.92 3.5
3,600 ~ 4,600 1,100 ~ 1,400	0.79 3.0	0.92 3.5	1.06 4.0	1.19 4.5

## LUBRICATION SYSTEMS

We recommend one of the following five lubricating systems:

### MANUAL LUBRICATION

Oil is applied with an oil filler or brush in the gap between the pin link and roller link on the slack side of the chain. It should be applied about every eight hours or as often as necessary to prevent the bearing area of the chain from becoming dry.

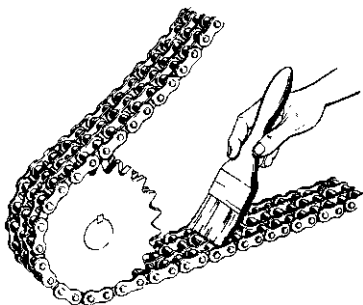


Fig. 20. Manual lubrication.

### DRIP LUBRICATION

Use a simple casing. The oil is supplied by drip feed. Each strand of chain should ordinarily receive five to 20 drops of oil per minute, according to increases in the chain speed.

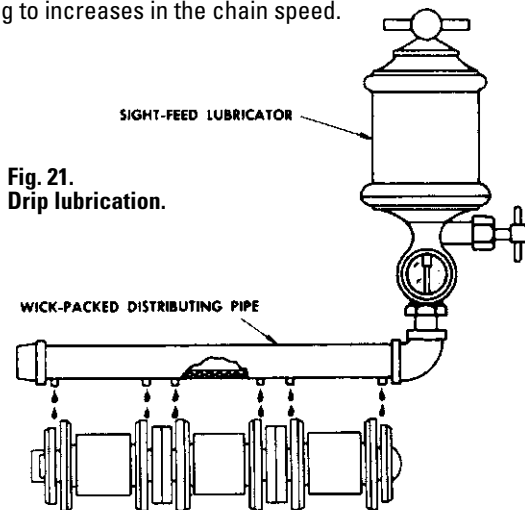


Fig. 21. Drip lubrication.

**⚠ WARNING**  
*Failure to observe the following warnings could create a risk of death or serious injury.*

Follow your lock-out tag-out and power off procedures before lubricating or servicing a chain system.

### OIL BATH LUBRICATION

Use a leak-proof casing. The chain dips into the oil at the bottom of the casing. The sprocket should dip into the oil approximately 1/2 in. If the sprocket is immersed more than 1/2 in., too much heat is generated.

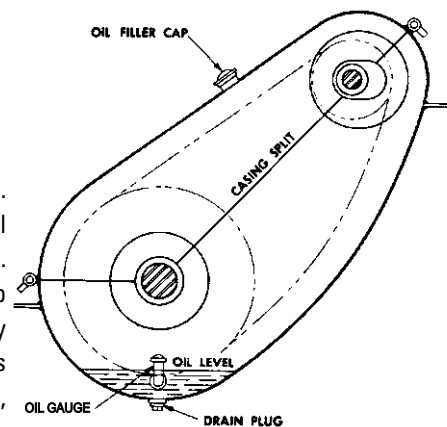


Fig. 22. Oil bath lubrication.

### LUBRICATION BY SLINGER DISC

Use a leak-proof casing. The chain does not need to dip into the oil at the bottom of the casing. The slinger disc should dip into the oil from 1/2 in. to 1 in.

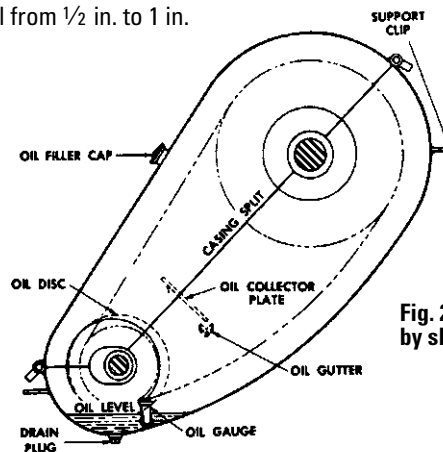


Fig. 23. Lubrication by slinger disc.

### LUBRICATION USING A PUMP

Use a leak-free casing. A pump is used to circulate the oil, which is then cooled. See table 71 on page 56 for lubrication supply holes.

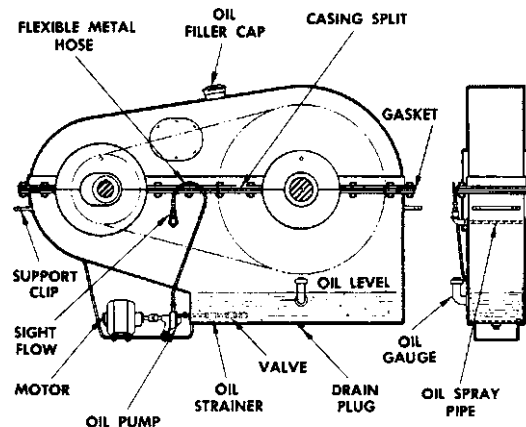


Fig. 24. Lubrication using a pump.

# LUBRICATION

## INTERLUBE A TIMKEN BRAND ROTALUBE SYSTEM

The Rotalube chain lubrication system is a unique and precise method of applying consistent amounts of oil on a chain as it is in production. The Rotalube is a controlled applicator that maintains needed lubrication whatever the condition of the chain.

Automatic lubrication systems are designed to apply regular and consistent amounts of oil to single or multiple Rotalubes in diverse industrial applications such as:

- Food industry
- Automobile industry
- Steel industry
- Fiberglass industry
- Cement industry
- Agricultural
- Packaging machinery

## Standard Rotalube Applications

At present, common systems used to lubricate chains are:

- Drip feed
- Manual application
- Brush application
- Spit/spray

Any system that delivers lubrication is better than none at all, but the Rotalube system can extend chain life and help reduce maintenance costs, which is an important benefit for industrial applications in the competitive global marketplace.

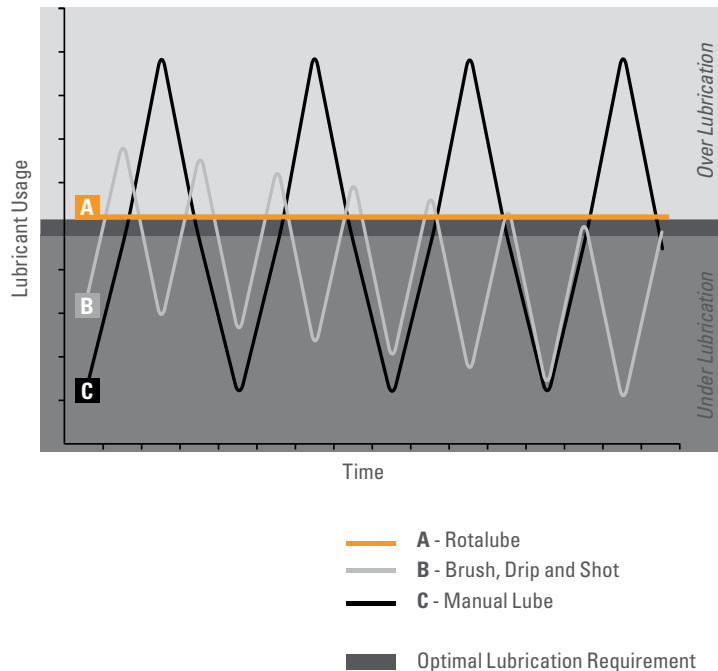


Fig. 25. Effectiveness of oil applications.

Contact Rotalube to learn more at 1-888-488-5823 or <http://www.interlubesystems.co.uk/contact.php>.

**Specifications**

Lubricant Viscosity: Max 120 Cst and Min 68 Cst

Material: Steel Nickel Plated Hub and Nylatron Sprocket

Max Speed: 50 m (164 feet) per min.

Air Pressure: 5 to 20 PSI

Temp Max: 70° C (158° F)

Temp Min: -20° C (-68° F)

Inlets: 1/8 in. NPT (F) x 2. Lubricant can be fed from both sides or just one side, this is installation specific.



Fig. 26.

**TABLE 72. STANDARD ROTALUBE APPLICATORS (SIMPLEX) WITH BRASS INSERTS**

Part No	Size	BS	ANSI	A	B	C
RL-08B1	1/2 in.	✓		26.9	48.8	89.2
RL-10B1	5/8 in.	✓		28.3	51.5	91.4
RL-12B1	3/4 in.	✓		29.5	54.0	91.6
RL-16B1	1 in.	✓		35.9	66.8	98.1
RL-ASA40-1	1/2 in.		✓	27.2	49.3	89.2
RL-ASA50-1	5/8 in.		✓	29.0	53.0	91.4
RL-ASA60-1	3/4 in.		✓	31.4	57.7	91.6
RL-ASA80-1	1 in.		✓	34.6	64.2	98.1
RL-ASA100-1 1 1/4 in.	1 1/4 in.		✓	37.65	70.15	102.7
RL-ASA120-1 1 1/2 in.	1 1/2 in.		✓	43.5	82.15	111.4

Note: BS = British Standard, ANSI = American National Standards Institute  
A, B and C dimensions are in millimeters.

**TABLE 73. STANDARD ROTALUBE APPLICATORS (SIMPLEX) WITHOUT BRASS INSERTS**

Part No	Size	BS	ANSI	A	B	C
RL-08B1W	1/2 in.	✓		26.9	48.8	89.2
RL-10B1W	5/8 in.	✓		28.3	51.5	91.4
RL-12B1W	3/4 in.	✓		29.5	54.0	91.6
RL-16B1W	1 in.	✓		35.9	66.8	98.1
RL-ASA40-1W	1/2 in.		✓	27.2	49.3	89.2
RL-ASA50-1W	5/8 in.		✓	29.0	53.0	91.4
RL-ASA60-1W	3/4 in.		✓	31.4	57.7	91.6
RL-ASA80-1W	1 in.		✓	34.6	64.2	98.1
RL-ASA100-1W 1 1/4 in.	1 1/4 in.		✓	37.65	70.15	102.7
RL-ASA120-1W 1 1/2 in.	1 1/2 in.		✓	43.5	82.15	111.4

Note: BS = British Standard, ANSI = American National Standards Institute  
A, B and C dimensions are in millimeters.

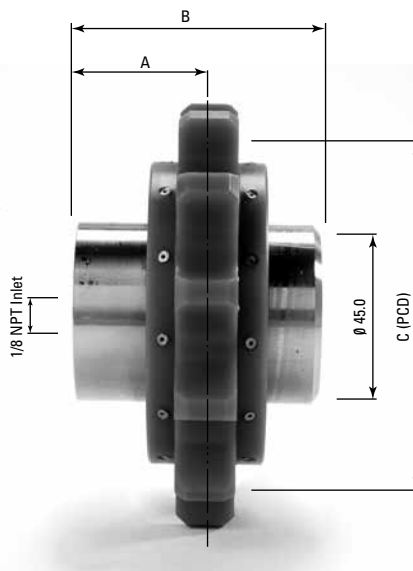
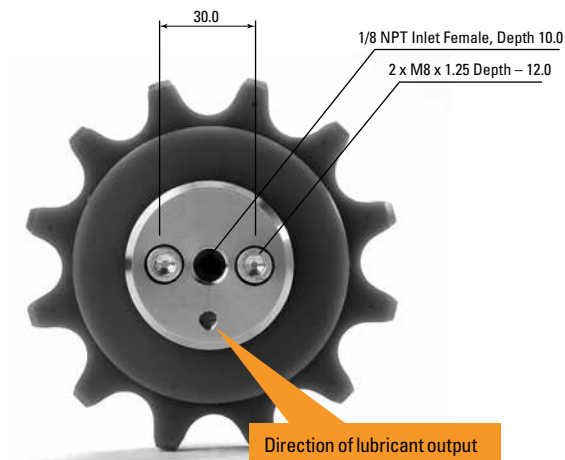
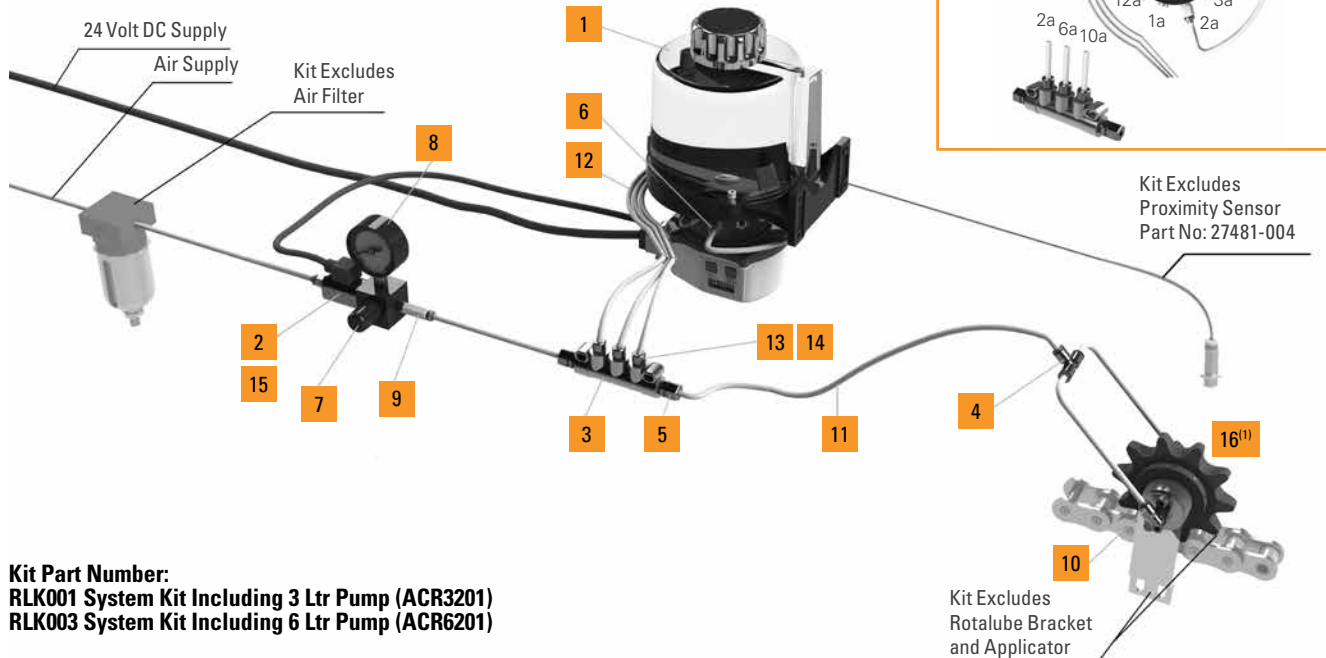


Fig. 27.

Contact Rotalube to learn more at 1-888-488-5823 or <http://www.interlubesystems.co.uk/contact.php>.

# ROTALUBE LUBRICATION KIT FOR ONE STANDARD ROTALUBE



**Kit Part Number:**  
**RLK001 System Kit Including 3 Ltr Pump (ACR3201)**  
**RLK003 System Kit Including 6 Ltr Pump (ACR6201)**

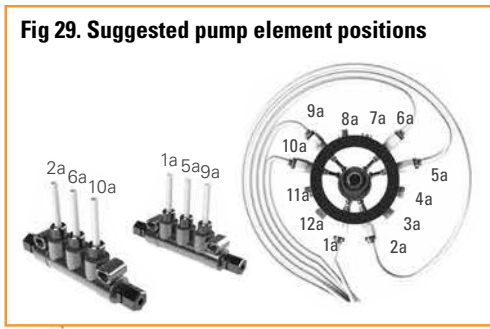
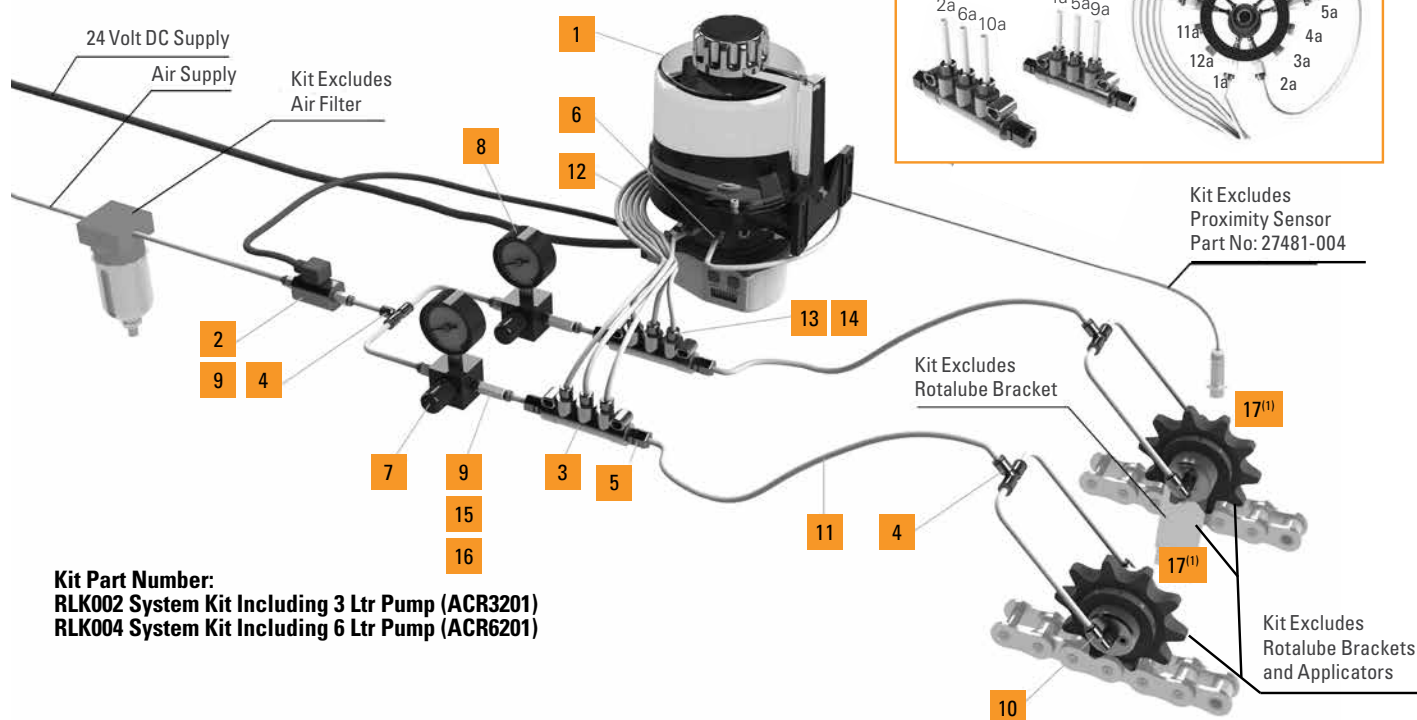
**TABLE 74. ROTALUBE LUBRICATION KITS FOR ONE STANDARD ROTALUBE**

Item	Part No	Description	Qty
1a	ACR3021	3 L Rotalube Pump fitted with 3 pump elements and 9 plugs as standard – 24v DC -or- 6 L Rotalube Pump fitted with 3 pump elements and 9 plugs as standard – 24v DC	1
1b	ACR6021		
2	83416-452	Solenoid Valve	1
3	MMS5	Manifold	1
4	25478-101	6 mm O.D. Equal Tee	1
5	25477-926	6 mm O.D. Straight Conn M8x1	2
6	78036	0.040 cc Pumping Unit	3
7	25851-200	Air Reg 1/4 in. BSPF + Bracket	1
8	25873-220	1/8 in. BSPT 0-40PSI Pressure Gauge	1
9	25477-767	6 mm O.D. Straight Connector 1/4 in. BSP	1
10	25478-171	6 mm O.D. Swivel 1/8 in. NPT	2
11	25210-410	6 mm O.D. Nylon Tube Unfilled	10mtr
12	25210-411	4 mm O.D. Nylon Tube Unfilled	3mtr
13	LM304	4 mm O.D. Sleeve Nut	3
14	LM204	4 mm O.D. Cone	3
15	25471-121	1/4 in. BSP Male Male Nipple	1
16	25227-590	Blanking Plug 1/8 in. NPT	1

<sup>(1)</sup>Blanking plug required only if one of the inlets is inaccessible

Contact Rotalube to learn more at 1-888-488-5823 or <http://www.interlubesystems.co.uk/contact.php>.

### ROTALUBE LUBRICATION KIT FOR TWO STANDARD ROTALUBE



**Kit Part Number:**  
**RLK002 System Kit Including 3 Ltr Pump (ACR3201)**  
**RLK004 System Kit Including 6 Ltr Pump (ACR6201)**

**TABLE 75. ROTALUBE LUBRICATION KITS FOR TWO STANDARD ROTALUBES**

Item	Part No	Description	Qty
1a	ACR3021	3 L Rotalube Pump fitted with 3 pump elements and 9 plugs as standard – 24v DC -or- 6 L Rotalube Pump fitted with 3 pump elements and 9 plugs as standard – 24v DC	1
1b	ACR6021		
2	83416-452	Solenoid Valve	1
3	MMS5	Manifold	2
4	25478-101	6 mm O.D. Equal Tee	3
5	25477-926	6 mm O.D. Straight Conn M8x1	4
6	78036	0.040 cc Pumping Unit	6
7	25851-200	Air Reg 1/4 in. BSPF + Bracket	2
8	25873-220	1/8 in. BSPT 0-40PSI Pressure Gauge	2
9	25477-767	6 mm O.D. Straight Connector 1/4 in. BSP	5
10	25478-171	6 mm O.D. Swivel 1/8 in. NPT	4
11	25210-410	6 mm O.D. Nylon Tube Unfilled	20mtr
12	25210-411	4 mm O.D. Nylon Tube Unfilled	6mtr
13	LM304	4 mm O.D. Sleeve Nut	6
14	LM204	4 mm O.D. Cone	6
15	25471-121	1/4 in. BSP Male Male Nipple	2
16	25857-105	1/4 in. BSP Female Female Check Valve	2
17	25227-590	Blanking Plug 1/8 in. NPT	2

<sup>(1)</sup>Blanking plug required only if one of the inlets is inaccessible

Contact Rotalube to learn more at 1-888-488-5823 or <http://www.interlubesystems.co.uk/contact.php>.

**STANDARD SYSTEM OPERATION**

The ACR Rotalube pump has an adjustable controller to control both the 'RUN' and 'DELAY' periods of the pump and solenoid, with both the periods being defined either in terms of time or pulses.

The 'RUN' period in time mode can be set between one minute and 99 minutes in one-minute steps. In pulse mode, the run period can be set between 10 and 9990 pulses in steps of 10 pulses.

The 'DELAY' period in time mode can be set between one-minute and 100 hours in one minute steps. In pulse mode the delay period can be set between 10 and 9990 pulses in steps of 10 pulses.

The controller energizes the solenoid output five seconds before starting the pump and this output remains energized for five seconds after the pump has finished running.

The pump has two alarm modes. The first is triggered if the controller senses that the motor has failed. The second is triggered when the run time is set to pulse mode and the controller does not see the full number of pulses specified within 110 minutes. This alarm can be reset by pressing the manual override button.

**ACR Rotalube Pump**

The ACR lubrication pump is specifically designed to apply small and consistent amounts of oil to the Rotalube. Fully adjustable run and dwell functions.

**Specifications**

Pump Voltage: 24v DC

IP Rating: IP 67

Current: 2 Amp Max

Reservoir: 3 and 6 Litre Reservoirs

Maximum Outlets:

12 – Standard ACR pump for single rotalube system is fitted with 3x elements (78036).

Standard ACR pump for double kits fitted with 6x elements as standard (78036).

Maximum Viscosity: 120 Cst

Minimum Viscosity: 68 Cst

Maximum Ambient Temp: +65° C (149° F)

Minimum Ambient Temp: -35° C (-31° F)




**Fig. 30. ACR6 Pump**



**Fig. 31. ACR3 Pump**

**TABLE 76. PUMP ELEMENTS**

Profile	Color	Stroke Output (cc)	Part No (Ø4 Tube)
 <p>Color Indicator</p>	Red	0.010	78033
	Green	0.015	78034
	Yellow	0.025	78035
	Blue	0.040	78036
	Grey	0.060	78037
	Black	0.100	78038

The three blue elements give an output of 0.12 cc per minute. This can be altered to increase or decrease the lubricant output.

Contact Rotalube to learn more at 1-888-488-5823 or <http://www.interlubesystems.co.uk/contact.php>.



## ROTALUBE APPLICATIONS STANDARD AND CUSTOM

### Standard Rotalubes

Standard Rotalubes are detailed on page 58.

These applicators have a hard-wearing Nylatron sprocket. Standard Rotalubes can be fed by lubrication kits detailed on pages 60 and 61 or by similar lubrication systems.

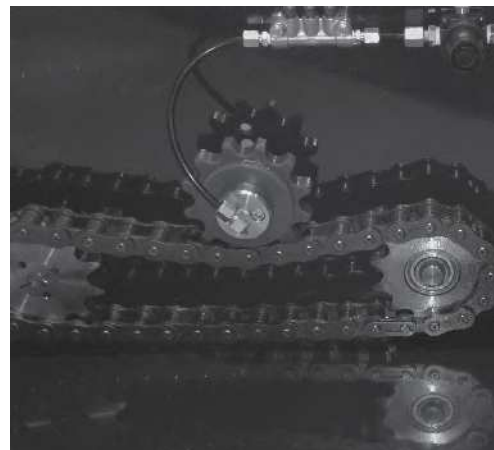


Fig. 32. Standard rotalubes.

### Custom Applications

Custom Rotalubes are available for large pitch chain; in some cases, chain with greater than 9-inch pitch.

High-temperature Rotalubes are also available for oven chain.

Custom Rotalubes are specifically designed for each application, together with the appropriate lubrication system to automatically feed the applicators with lubricant.

For further information, or to request a quote on custom applications, please contact your nearest Timken ILS Representative.

You may also contact Timken ILS for the latest custom Rotalube catalog.

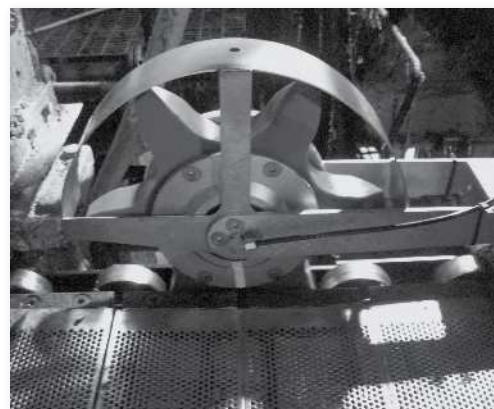


Fig. 33. Custom applications.



Fig. 34. Duplex and triplex chain.



Fig. 35. Vertical mounted applicators.

Contact Rotalube to learn more at 1-888-488-5823 or <http://www.interlubesystems.co.uk/contact.php>.

# TROUBLESHOOTING GUIDE

**TABLE 77. TROUBLESHOOTING GUIDE FOR CHAIN**

Problem	Possible Causes	What to Do
Excessive noise	<ul style="list-style-type: none"> <li>• Misalignment of sprockets</li> <li>• Loose casings or bearings</li> <li>• Too little or too much slack</li> <li>• Chain and/or sprocket wear</li> <li>• Inadequate lubrication or no lubrication</li> <li>• Chain pitch size too large</li> </ul>	<ul style="list-style-type: none"> <li>• Realign sprockets and shafts</li> <li>• Tighten set-bolts</li> <li>• Adjust centers or idler take-up</li> <li>• Replace chain and/or sprocket</li> <li>• Lubricate properly</li> <li>• Check chain drive selection</li> </ul>
Chain vibration	<ul style="list-style-type: none"> <li>• Resonance to the vibration cycle of machine to be installed</li> <li>• High load fluctuation</li> </ul>	<ul style="list-style-type: none"> <li>• Change vibration cycle of chain or machine</li> <li>• Use torque converter or fluid coupling</li> </ul>
Wear on inside of link plate and one side of sprocket teeth.	<ul style="list-style-type: none"> <li>• Misalignment</li> </ul>	<ul style="list-style-type: none"> <li>• Realign sprockets and shafts</li> </ul>
Chain climbs sprockets	<ul style="list-style-type: none"> <li>• Excessive chain wear</li> <li>• Excessive chain slack</li> <li>• Heavy overload</li> </ul>	<ul style="list-style-type: none"> <li>• Replace chain</li> <li>• Adjust centers or idler take-up</li> <li>• Reduce load or install stronger chain</li> </ul>
Broken pins, bushings or rollers	<ul style="list-style-type: none"> <li>• Chain speed is too high for pitch and sprocket size</li> <li>• Heavy shock or suddenly applied loads</li> <li>• Material build-up in sprocket tooth pockets</li> <li>• Inadequate lubrication</li> <li>• Chain or sprocket corrosion</li> </ul>	<ul style="list-style-type: none"> <li>• Use shorter pitch chain or install larger diameter sprockets</li> <li>• Reduce shock load or install stronger chain</li> <li>• Remove material build-up or install side-gashed sprockets (mud relief)</li> <li>• Lubricate properly</li> <li>• Install anti-corrosive chain or sprockets</li> </ul>
Chain clings to sprocket	<ul style="list-style-type: none"> <li>• Center distance too long or high load fluctuation</li> <li>• Excessive chain slack</li> <li>• Excessive chain wear</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust the center distance or install idler take-up</li> <li>• Replace chain</li> </ul>
Chain gets stiff	<ul style="list-style-type: none"> <li>• Misalignment</li> <li>• Inadequate lubrication</li> <li>• Corrosion</li> <li>• Excessive load</li> <li>• Material build-up in chain joint</li> <li>• Peening of link plate edges</li> </ul>	<ul style="list-style-type: none"> <li>• Realign sprockets and shafts</li> <li>• Lubricate properly</li> <li>• Replace with anti-corrosive chain</li> <li>• Reduce load or replace with chain of suitable strength</li> <li>• Shield drive from foreign matter</li> <li>• Check for chain interference</li> </ul>
Breakage of link plate	<ul style="list-style-type: none"> <li>• Subjected to shock load</li> <li>• Vibration</li> <li>• Moment of load inertia is too large</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce shock (e.g., install a shock absorber)</li> <li>• Install a device to absorb vibration (e.g., tensioner idler wheel)</li> <li>• Chain section should be checked (increase number of strands or select next larger size chain)</li> </ul>

## CHAIN TOOLS

### EZ BREAKER®

#### CUT YOUR CHAIN BREAKING JOBS DOWN TO SIZE

EZ BREAKER® is a compact, easy-to-use tool for cutting roller chain. This simple, rugged piece of equipment can stand up to the abuses of the shop, farm or industrial environment.

EZ BREAKER will cut ANSI roller chain sizes 35 through 100H, 40-2 through 80-2, 2040 through 2060H, and 550 through 557 with a simple pull of the handle. No more grinding off pin heads. No more hammers and punches.

EZ BREAKER uses powerful cam action to push both chain pins through the link plates with an easy pull of the handle. Breaking different chain sizes is easy.

Precision die sets for each chain size are easily interchangeable. Changing from one die set to another can be accomplished in a few seconds. The time-consuming, tedious job of breaking chain is now accomplished with a single pull of the handle. EZ BREAKER links price and value.

***EZ BREAKER has interchangeable die sets that make it easy to switch from one size chain to another.***

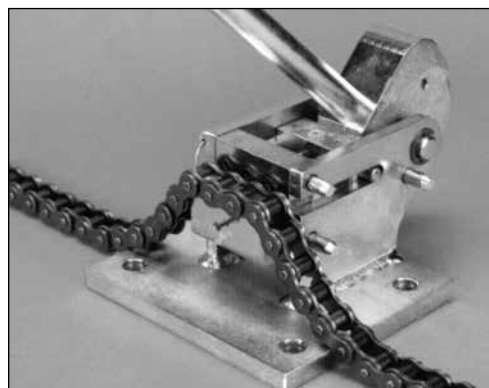
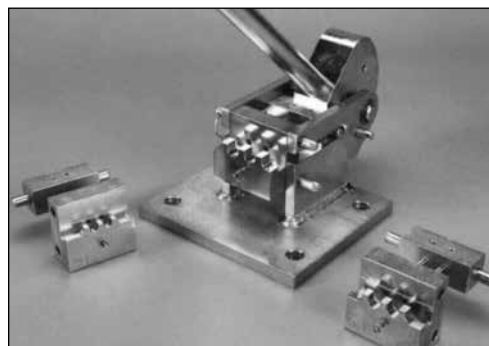


Fig. 36. EZ BREAKER®.

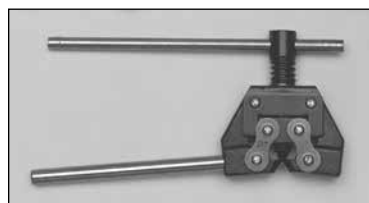


Fig. 37. Chain breakers.

TABLE 78. CHAIN BREAKERS

Part No.	1254	40952	40953
Chain No.	35 – 50	60 – 100	120 – 160

TABLE 79. CHAIN PULLERS

Part No.	36887
Chain No.	40 – 60

Replacement tips and screw assemblies available.



Fig. 38. Chain puller.

## EZ CHAIN WEAR GAUGE®

Accurately checks up to nine sizes of American Standard roller chain and up to seven sizes of British Standard roller chain. Quick and easy to use, the go or no-go gauge system gives immediate feedback. Gauge will fit into limited spaces and quickly lets the user know if the chain is worn out.

- Precision-ground, pre-hardened tool steel.
- Convenient grip handle with pre-drilled holes for hanging, to keep you organized.
- Available in three chain gauge sizes:
  - #35 chain – #100 chain = Part #60637.
  - #06B chain – #24B chain = Part #61904.  
(Actual gauge dimensions:  
8.75 in. L x 0.625 in. W x 0.188 in. H)
  - #80 chain – #240 chain = Part #60638.  
(Actual gauge dimensions:  
18 in. L x 1.5 in. W x 0.250 in. H)
- Gauges are designed for 3 percent elongation.
  - Sprockets for roller chain are designed to accept up to 3 percent elongation.



Fig. 39. EZ CHAIN WEAR GAUGE®.

- Single chain size gauges are available upon request for applications which limit elongation other than chain and sprocket interaction.

## EZ CHAIN RACK®

Using the EZ CHAIN RACK® is simple. Learn how, in three easy steps, you can make it easy to store and cut our brand of precision roller chain. The EZ CHAIN RACK is versatile, allowing four positions to hold 50-foot reels of chain.

- High-quality welded construction.
- Stand-alone base.
- 31 in. x 31 in. x 51 in. (rough dimensions).
- Individually clutched to prevent chain from uncoiling.
- Four stations.
- Will hold two 50-foot reels of #40 or #50 chain per station.
- OR holds one 50-foot reel of #60, #60H or #80 chain per station.
- Allows easy switch from size to size.
- Rotates in both directions.

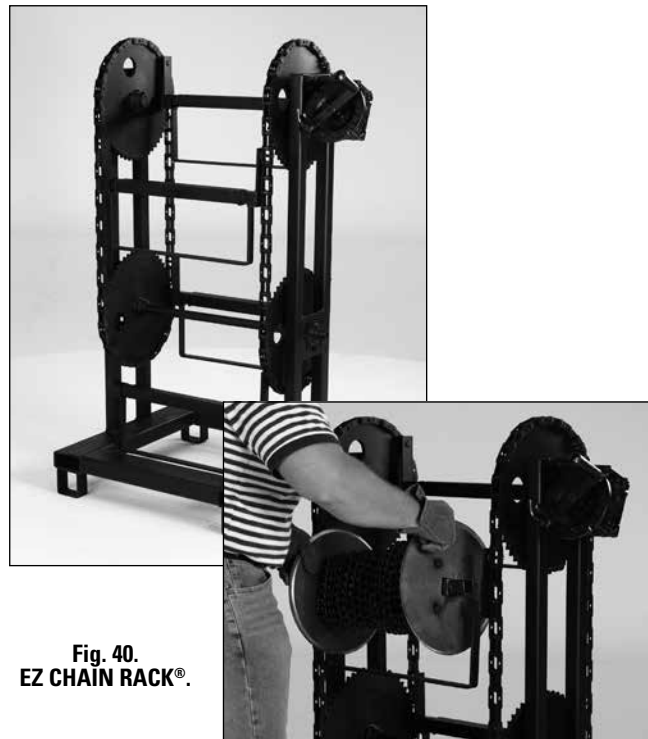


Fig. 40. EZ CHAIN RACK®.

**⚠ WARNING**

**Failure to observe the following warnings could create a risk of death or serious injury.**

Follow your lock-out tag-out and power off procedures before lubricating or servicing a chain system.

U.S. Patent Number D598, 307 and 7,654,149, D596,512 and D665492.

# ENGINEERING CONVERSIONS

## BUSHELs – bu

x 1.2445 = Cubic feet (ft.<sup>3</sup>)

## CENTIMETERS – cm

x 0.3937 = Inches (in.)

## CENTIMETERS PER SECOND – cm/s

x 1.9685 = Feet per minute (ft./min.)  
 x 0.03291 = Feet per second (ft./s)  
 x 0.03600 = Kilometers per hour (km/h)  
 x 0.6000 = Meters per minute (m/min.)  
 x 0.02237 = Miles per hour (mph)

## CUBIC CENTIMETERS – cm<sup>3</sup>

x 3.5315 x 10<sup>-5</sup> = Cubic feet (ft.<sup>3</sup>)  
 x 6.1024 x 10<sup>-2</sup> = Cubic inches (in.<sup>3</sup>)  
 x 1.308 x 10<sup>-6</sup> = Cubic yards (yd.<sup>3</sup>)  
 x 2.642 x 10<sup>-4</sup> = U.S. gallons (U.S. gal.)  
 x 1.000 x 10<sup>-3</sup> = Liters (l)

## CUBIC FEET – ft<sup>3</sup>

x 0.02832 = Cubic meters (m<sup>3</sup>)  
 x 2.832 x 10<sup>4</sup> = Cubic centimeters (cm<sup>3</sup>)  
 x 1728 = Cubic inches (in.<sup>3</sup>)  
 x 0.03704 = Cubic yards (yd.<sup>3</sup>)  
 x 7.481 = U.S. gallons (U.S. gal.)  
 x 6.229 = Imperial gallons (imp gal)  
 x 28.32 = Liters (l)

## CUBIC INCHES – in.<sup>3</sup>

x 1.6387 x 10<sup>-5</sup> = Cubic meters (m<sup>3</sup>)  
 x 16.387 = Cubic centimeters (cm<sup>3</sup>)  
 x 0.016387 = Liters (l)  
 x 5.787 x 10<sup>-4</sup> = Cubic feet (ft.<sup>3</sup>)  
 x 2.143 x 10<sup>-5</sup> = Cubic yards (yd.<sup>3</sup>)  
 x 4.329 x 10<sup>-3</sup> = U.S. gallons (U.S. gal.)  
 x 3.605 x 10<sup>-3</sup> = Imperial gallons (imp gal)

## CUBIC METERS – m<sup>3</sup>

x 1000 = Liters (l)  
 x 35.315 = Cubic feet (ft.<sup>3</sup>)  
 x 61.024 x 10<sup>3</sup> = Cubic inches (in.<sup>3</sup>)  
 x 1.3080 = Cubic yards (yd.<sup>3</sup>)  
 x 264.2 = U.S. gallons (U.S. gal.)

## CUBIC YARDS – yd<sup>3</sup>

x 0.7646 = Cubic meters (m<sup>3</sup>)  
 x 764.6 = Liters (l)  
 x 7.646 x 10<sup>5</sup> = Cubic centimeters (cm<sup>3</sup>)  
 x 27 = Cubic feet (ft.<sup>3</sup>)  
 x 46.656 = Cubic inches (in.<sup>3</sup>)  
 x 201.97 = U.S. gallons (U.S. gal.)

## DEGREES, ANGULAR (°)

x 0.017453 = Radians (rad)  
 x 60 = Minutes (′)  
 x 3600 = Seconds (″)  
 x 1.111 = Grade (gon)

## DEGREES PER SECOND, ANGULAR (°/s)

x 0.017453 = Radians per second (rad/s)  
 x 0.16667 = Revolutions per minute (r/min.)  
 x 2.7778 x 10<sup>-3</sup> = Revolutions per second (r/s)

## FEET – ft

x 0.3048 = Meters (m)  
 x 30.480 = Centimeters (cm)  
 x 12 = Inches (in.)  
 x 0.3333 = Yards (yd.)

## FEET PER MINUTE – ft./min.

x 0.5080 = Centimeters per second (cm/sec.)  
 x 0.01829 = Kilometers per hour (km/h)  
 x 0.3048 = Meters per minute (m/min.)  
 x 0.016667 = Feet per second (ft/sec.)  
 x 0.01136 = Miles per hour (mph)

## FOOT-POUNDS-FORCE – ft.-lbs.

x 1.356 = Joules (J)  
 x 1.285 x 10<sup>-3</sup> = British thermal units (Btu)  
 x 3.239 x 10<sup>-4</sup> = Kilocalories (kcal)  
 x 0.13825 = Kilogram-force-meters (kgf.m)  
 x 5.050 x 10<sup>-7</sup> = Horsepower-hours (hp.h)  
 x 3.766 x 10<sup>-7</sup> = Kilowatt-hours (kW.h)

## GALLONS, U.S. – U.S. gal.

x 3.785.4 = Cubic centimeters (cm<sup>3</sup>)  
 x 3.7854 = Liters (l)  
 x 3.7854 x 10<sup>-3</sup> = Cubic meters (m<sup>3</sup>)  
 x 231 = Cubic inches (in.<sup>3</sup>)  
 x 0.13368 = Cubic feet (ft.<sup>3</sup>)  
 x 4.951 x 10<sup>-3</sup> = Cubic yards (yd.<sup>3</sup>)

## GRAMS – g

x 15.432 = Grains (gr)  
 x 0.035274 = Ounces (oz.) av.  
 x 0.032151 = Ounces (oz.) troy  
 x 2.2046 x 10<sup>-3</sup> = Pounds (lbs.)

## GRAMS-FORCE – gf

x 9.807 x 10<sup>-3</sup> = Newtons (N)

## HORSEPOWER – hp

x 745.7 = Watts (W)  
 x 0.7457 = Kilowatts (kW)  
 x 1.0139 = Horsepower (metric)

### INCHES – in.

x 2.540	= Centimeters (cm)
x 25.4	= Millimeters (mm)

### KILOGRAMS – kg

x 2.2046	= Pounds (lbs.)
x 1.102 x 10 <sup>-3</sup>	= Tons (ton) short

### KILOGRAMS-FORCE – kgf

x 9.807	= Newtons (N)
x 2.205	= Pounds-force (lbf.)

### KILOWATTS – kW

x 1.3410	= Horsepower (hp)
----------	-------------------

### LITERS – l

x 1000	= Cubic centimeters (cm <sup>3</sup> )
x 0.035315	= Cubic feet (ft. <sup>3</sup> )
x 61.024	= Cubic inches (in. <sup>3</sup> )
x 1.308 x 10 <sup>-3</sup>	= Cubic yards (yd. <sup>3</sup> )
x 0.2642	= U.S. gallons (U.S. gal.)

### METERS – m

x 3.281	= Feet (ft.)
x 39.37	= Inches (in.)
x 1.0936	= Yards (yd.)

### METERS PER MINUTE – μm m/min.

x 1.6667	= Centimeters per second (cm/s)
x 3.281	= Feet per minute (ft/min)
x 0.05468	= Feet per second (ft/s)
x 0.03728	= Miles per hour (mph)

### MILES – mi.

x 1.6093 x 10 <sup>3</sup>	= Meters (m)
x 1.6093	= Kilometers (km)
x 5280	= Feet (ft.)
x 1760	= Yards (yd.)

### MILES PER HOUR – mph

x 44.70	= Centimeters per second (cm/s)
x 1.6093	= Kilometers per hour (km/h)
x 26.82	= Meters per minute (m/min.)
x 88	= Feet per minute (ft./min.)
x 1.4667	= Feet per second (ft./sec.)

### MILES PER MINUTE – mi/min.

x 1.6093	= Kilometers per minute (km/min)
x 2682	= Centimeters per second (cm/sec.)
x 88	= Feet per second (ft./sec.)
x 60	= Miles per hour (mph)

### MINUTES, ANGULAR – (')

x 2.909 x 10 <sup>-4</sup>	= Radians (rad)
----------------------------	-----------------

### NEWTONS – N

x 0.10197	= Kilograms-force (kgf)
x 0.2248	= Pounds-force (lbf.)

### POUNDS-FORCE – lbf av.

x 4.448	= Newton (N)
x 0.4536	= Kilograms-force (kgf)

### POUNDS – lbs. av.

x 453.6	= Grams (g)
---------	-------------

### RADIANS – rad

x 57.30	= Degrees (°) angular
---------	-----------------------

### TONS-MASS – tonm long

x 1016	= Kilograms (kg)
x 2240	= Pounds (lbs.) avg.
x 1.1200	= Tons (ton) short

### TONS – ton short

x 907.2	= Kilograms (kg)
x 0.9072	= Metric tons (t)
x 2000	= Pounds (lbs.) avg.
x 0.8929	= Tons (ton) long

**GLOSSARY**

**A**

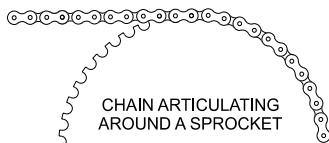
**Angle of Flex:** The total angle of chain joint articulation as a chain enters or leaves a sprocket or wheel. The angle is equal to 360 degrees divided by the number of teeth in the sprocket.

**ANSI/ASME:** The abbreviation for “American National Standards Institute” and “American Society of Mechanical Engineers” – the organizations that sets the standards by which chains should be manufactured.

**API:** American Petroleum Institute and represents all aspects of the US petroleum and natural gas industry.

**API 7F:** American Petroleum Institute chain standard.

**Articulation (v, “Articulate”):** The action of a chain joint flexing from straight, to an angle and back to straight as the joint enters and leaves the sprocket or other path, causing it to flex.



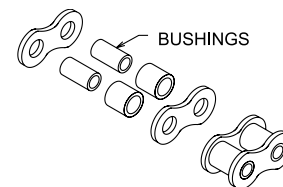
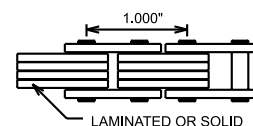
**B**

**Backlash:** Movement (if any) of the chain along the pitch line of the sprocket when the direction of chain travel is reversed.

**Block Chain:** An alternative name used by some manufacturers for bar-link chain or for certain styles of leaf chain.

**Bottom Diameter:** The diameter of a circle measured between one tooth gap and the opposite gap for a sprocket with even an number of teeth.

**Bushing:** Internal component in a roller chain that the pin articulates around and the roller rotates on.



**C**

**Cable Chain:** See Leaf Chain.

**Caliper Diameter:** The distance measured between one tooth gap and the nearest opposite gap for a sprocket with an odd number of teeth.

**Caterpillar Drive Chain:** Chain with pushers that is used to drive drop forged chain.

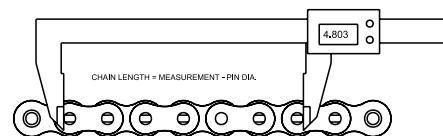
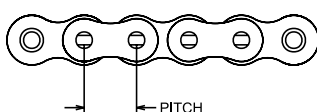
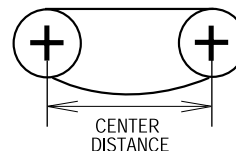
**Center Distance:** The distance between the centers of the shafts of a chain drive.

**Chain Casing:** An oil-retaining safety enclosure around a chain drive.

**Chain Guard:** An open guard of sheet metal, expanded metal or similar construction around a chain drive.

**Chain Length:** The actual chain length between the joint centers at each end of a taut chain strand. This distance is usually expressed in feet and/or inches or in pitches.

**Chain Pitch (Nominal):** The average distance between the joints (except for staggered pitch chain) of an assembled chain. In some cases, “joint,” as defined here, will be a center of flexure not specifically identified with individual parts of the chain.



**Chain Pitch Elongation or Chain Elongation:** Increase in measured length due to wear or excessive load. Normally expressed in percent of length.

**Chain Take-up:** A mechanical device that takes-up chain slack. This could be an idler sprocket or similar device mounted on an adjustable bracket to adjust the slack in a chain installation.

**Chain Width:** Defined somewhat differently for various chains, but usually the inside width of the chain between the roller link plates.

**Chordal Effect (Chordal Action):** The effect produced by the chain joint centers being forced to follow arcs instead of chords of the sprocket pitch circle.

**Clevis Connector:** A connector used to connect a strand of leaf chain that has an inner-link end to a clevis block that has an inner-link configuration.

**Clevis Pin:** A pin used to connect a strand of leaf chain that has an inner link end to a clevis block that has an outer-link configuration. The clevis manufacturer should supply this part to help ensure that it will be compatible with the clevis block.

**Compressive Stresses:** Stresses that act to compress a material and place the material in compression.

**Connecting Link:** For a roller chain, a pin link made with one link plate that is easily detachable to facilitate connecting or disconnecting the chain.

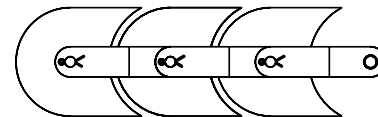
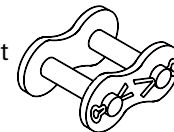
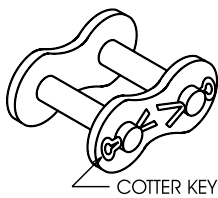
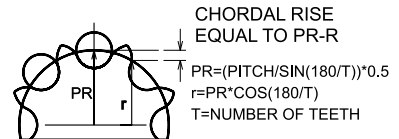
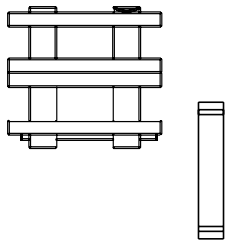
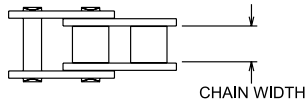
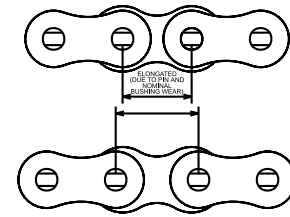
**Cotter Key:** The retaining pin for a connecting link.

**Creep:** The flow of plastic deformation of metals held for long periods of time at stresses lower than the normal yield strength. The effect is particularly important if the temperature of stressing is in the vicinity of the re-crystallization temperature of the metal.

**Crescent Chain:** Standard chain with a crescent-shaped top plate.

**Curve Chain:** Chain designed to bend around curves in the horizontal position.

**Cycle:** Change in load level as a chain completes a cycle around a system. Usually the change is from negligible load to a load peak on a regular basis as the chain undergoes a complete operation cycle.



**D**

**Deep Link Conveyor Chain:** Chain design with a carrier roller that protrudes down below the side bar but does not protrude above the side bar.

**Design Horsepower:** The specified horsepower for a chain drive multiplied by a service factor. It is the value used to select the chain size for the drive.

**Double-Pitch Roller Chain:** A roller chain having double the pitch of a standard roller chain, but otherwise having standard pins and bushings, and standard or over-size rollers.

**Duplex Roller Chain:** Double strand chain (80-2) (double strand).



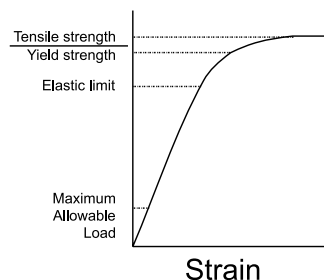




**E**

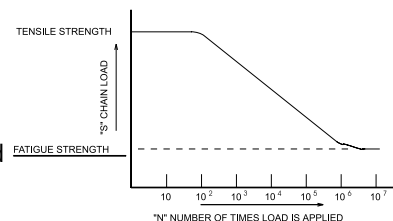
**Elastic Limit:** The highest load a part (e.g. chain strand) can sustain without incurring a permanent change in length.

**Embrittlement:** Reduction in ductility of materials due to exposure to certain environments or temperatures.



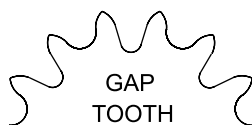
**F**

**Fatigue Strength:** Fatigue is the phenomenon leading to fracture under repeated fluctuating stresses having a maximum value less than the yield strength of material. Fatigue strength is the maximum stress that can be sustained for a specified number of cycles (10E7) without failure.



**G**

**Galling:** A condition on the load-bearing surface of a pin or bushing of a chain where excessive friction between high spots results in localized welding with subsequent tearing and a further roughening of the contact surfaces.



**Gap Tooth Sprocket:** An even-number tooth sprocket designed with clearance for a through rod or saddle. D-5 or GK1 attachment chains are used on this style sprocket.

**H**

**Hardness:** Chain hardness is typically measured in Vickers, Brinell or Rockwell.

**Hoist Chain:** Chain manufactured strictly for a lifting application.

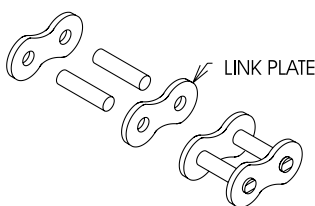
**Hollow Pin Roller Chain:** Chain manufactured using a bushing as the pin holding the pin link plates. This chain is generally used in pairs with the two strands running parallel and a through rod tying them together.

**J**

**Joining Link:** See Connecting Link.

**L**

**Leaf Chain:** A chain consisting of interlacing side plates and riveted pins. This chain is manufactured in accordance with ANSI/ASME standard B29.8. This chain is typically used in lifting and/or tensioning applications.



**Length Tolerance:** The length new chain must be within when measured under a given load.

**Link Plate:** One of the side plates of either a pin link or a roller link in a roller chain.

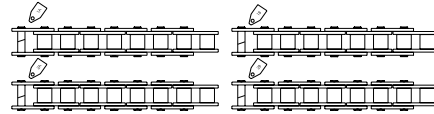
**Load Classification:** A classification of drive loads based on the intensity of shock that is imposed on the drive.

**Loading Frequency (Time):** Loading frequency is the number of times per unit of time that the chain is exposed to a complete cycle of loading. A complete loading cycle normally occurs when a particular link moves completely around the system and returns to its starting point.

**M**

**Master Link:** See Connecting Link.

**Matching and Tagging:** When chains are required for multiple-strand operation, it is important to specify to

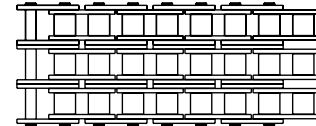


the manufacturer “matched and tagged chain” together with the number of strands required. The chains will then be measured at the factory and a number tag attached to each strand. Each matching group of strands is tagged with the same number and, whenever possible, will be wired and shipped together. The tags should not be removed until the chain is assembled. The strands must be coupled so that those with the same number are installed side by side. All standard chains must meet standard length tolerances. Matching chain strands ensures that sections of chain with lengths at opposite ends of the tolerance range are not placed together in the conveyor.

**Maximum Allowable Load:** The maximum tension a chain may safely be subjected to. This value should never be exceeded by actual design load factored by speed, temperature, and dynamic adjustments as applicable.

**Measuring Load:** The specified standard load under which a chain is to be measured for length (1 percent of tensile strength).

**Multiple-Strand Chain:** In multiple strand, two or more chains are assembled side by side on common pins that maintain the alignment of the rollers in the several strands.



In multiple strands, center plates are located between the strands of roller links. Center plates may be slip-fit or press-fit on the pin as agreed between the chain manufacturer and user. The hyphenated number suffix in the chain number denotes the number of strands: 2 a double strand; 3 a triple strand; 4 a quadruple strand chain; etc.

**Multiple Strand Factor:** A factor by which the horsepower rating of a single-strand chain is multiplied to obtain the horsepower capacity of a chain with two or more strands.

Number of Roller Chain Strands	Multiple Strand Factor
2	1.7
3	2.5
4	3.3
5	3.9
6	4.6

**O**

**Offset Link:** A special offset link, as termed in roller chain descriptions, made for use in straight link chain when an uneven number of links in the total strand is required.

**Offset Section:** For a roller chain, a factory-assembled section, made up of a roller link and an offset link. Offset sections are used to connect strands of chain having an odd number of pitches.

**Overchaining:** A drive is overchained when it incorporates a chain of substantially higher rating than that indicated by normal selection procedures to have been necessary.

**P**

**Pin Oven Chain:** A chain used to convey cans through a drying oven. Typically 60 chain with an extended pin every 7th pitch is used.

**Pitch:** See Chain Pitch; Pitch Diameter.

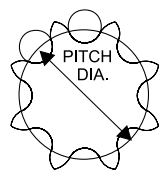
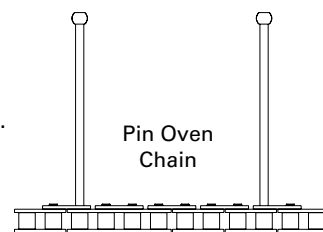
**Pitch Diameter:** The diameter of the sprocket pitch circle.

**Press Fit:** Standard designed interference fit between side-plate pitch hole and pin/bushing.

**Prestressing (Dynamic):** Dynamic prestressing is the process of subjecting chain to a load as it is articulated or wrapped around multiple sprockets. Dynamic prestressing is done to seat the chain components and to reduce initial (break-in) elongation in chain drives.

**Prestressing (Static):** Static prestressing is the process of subjecting chain to a load at a minimum of 20 percent of the ultimate strength. The chain is pulled in a straight line. Static prestressing is done to seat the chain components and to minimize the variation in strand lengths of attachment chain used in pairs.

**Pulsation:** Fluctuations of a cyclic nature in load or speed (See Chordal Action).

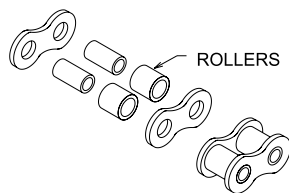


**R**

**Rollers:** The component on the chain which engages the sprocket. The roller allows the chain to roll into the sprocket. The roller rotates on the bushing.

**Root Diameter:** The theoretical bottom diameter of a sprocket, equal to the pitch diameter minus the chain roller or barrel diameter (See Bottom Diameter).

**Run-In:** The initial period of operation of any mechanism, during which the component parts seat themselves.



**S**

**Scoring:** Marring or scratching of a pin or bushing caused by metallic debris being picked up in the contact surfaces on one of the parts.

**Seating Curve:** A specific term for the pocket curve of a roller chain sprocket.

**Seizing:** Stiffening (or freezing) of a chain joint as a result of roughness and high friction caused by galling. This occurs between the pin and bushing and/or link plates.

**Semi-Press Fit (Tap Fit):** Minimum interference fit between side plate and pin.

**Service Factor:** A factor by which the specified horsepower or working load of a chain is multiplied to compensate for operating conditions.

**Sheave:** A grooved wheel or pulley. Typically used with leaf chain to change its direction.

**Shot Peening:** Process which is used on the side plates to improve fatigue strength.

**Sidebar:** Another name for Link Plate.

**Side Bow Chain:** See Curve Chain.

**Simplex Roller Chain:** Single-strand chain (80) (single strand).

**Sinter Bushing:** Bushing made from powdered metal and then oil impregnated.

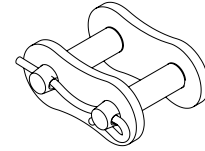
**Skip Tooth:** A sprocket designed such that the chain engages only every other tooth on the sprocket. Typically used with staggered pitch chain.



**Slip-Fit:** No interference fit between side plate and pin.

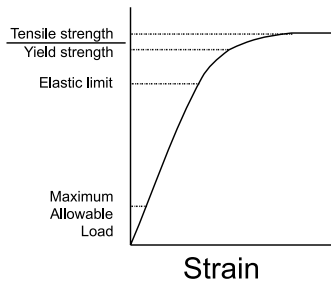
**Slip Stick:** Slip stick occurs when the motor drives continually and the sprocket rotates, but the chain moves ahead by stopping and starting at intervals. This could be caused by the following:

- Fluctuations in the coefficient of friction between bushing and rollers (i.e. rotating, sticking, rotating, sticking).
- Insufficient chain hardness on conveyor lines.
- Insufficient drive equipment or frame hardness.



**Special Hook Cotter:** The retaining pin for cotter-style chain and connecting links.

**Staggered Pitch Chain:** A chain with alternate links of differing pitches, one usually being considerably greater than the other.

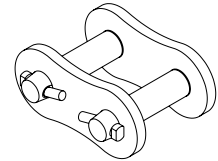


**T**

**Tensile Strength:** See Ultimate Strength.

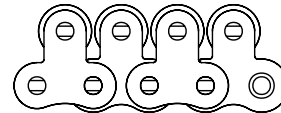
**Tension Linkage:** A chain application primarily transmitting motion back and forth or up and down at low speeds. A typical example is a forklift reciprocating system.

**T-Pin/T-Head:** The retaining pin for cotter-style chain and connecting links.



**Tight Joint or Stiff Joint:** Chain joint that does not articulate freely.

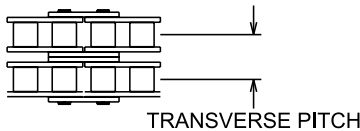
**Top Roller Chain:** Chain which has a roller on top to allow for accumulation of product on top of chain while the chain is moving.



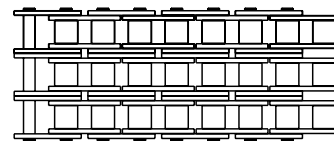
**Torque:** Torsional force, expressed in inch-pounds in chain calculations, which is the product of chain pull and one-half the sprocket pitch diameter.

**Transverse Clearance:** Clearance between roller link plate and pin link plate.

**Transverse Pitch:** The lateral distance between the centerlines of each strand of multiple strand chain, or between the tooth profiles on a sprocket for a multiple strand chain.



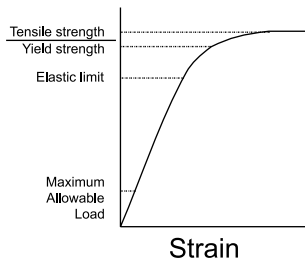
**Triplex Roller Chain:** Triple strand chain (80-3) (triple strand).



**U**

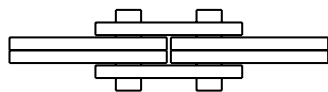
**Ultimate Strength:** The ultimate strength of a chain is the single maximum load that breaks the chain. Typically specified as either average or minimum.

**Underchaining:** A drive is underchained when it incorporates a chain of substantially lower rating than that indicated to be needed from normal selection procedures.



## W

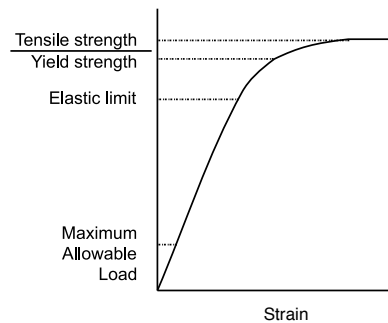
**Working Load:** An allowable suggested chain load used on conveyors, drives with nonstandard chains, or other applications of lower relative speed.



**Wrench Chain:** Wrench chains are leaf chains with pins extending beyond both sides of the chain. It serves as a tension linkage for holding pipe securely in pipe wrenches. The extended pins permit this chain to support a load not in line with the chain without danger of pulling the link plates off the pins. The pins are used to lock onto a mechanism to accommodate various pipe sizes.

## Y

**Yield Strength:** The elastic limit or yield strength of a chain is the load that causes permanent elongation of the chain.







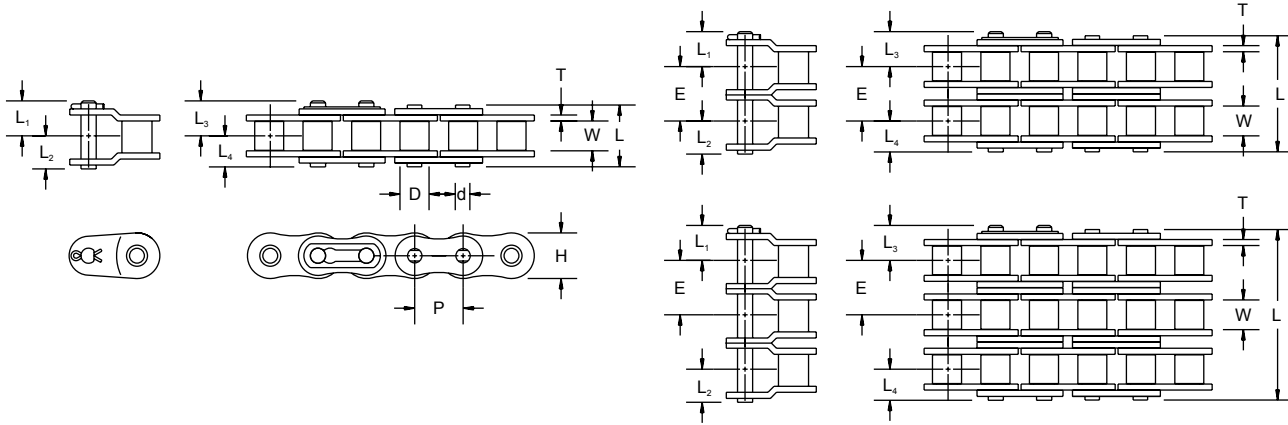
**PRECISION  
ROLLER CHAIN  
PRODUCT CHARTS**

Our precision roller chain products are manufactured to meet or exceed ANSI standards. They excel in tough, high-performance applications. We can even custom manufacture product to your specifications.

- Carbon Steel ..... 78
- Heavy Series Roller Chain Products..... 92
- Oil Field Roller Chain ..... 94
- Extended Life CHP® Series Chain ..... 103
- Corrosion Resistant Chains ..... 104
- Specialty Chains..... 109

**PRECISION ROLLER CHAIN PRODUCT CHARTS**  
**CARBON STEEL**

- Cut-to-length chain available.
- Chain size 80 and larger supplied with cottered connection links.



**TABLE 80. CARBON STEEL CHAIN DIMENSIONS**

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Weight
	P	W	D	H	T	d	E	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	
35	0.375 9.53	0.189 4.80	0.200 5.08	0.355 9.02	0.049 1.24	0.141 3.58	0.398 10.11	0.480 12.19	0.264 6.71	0.252 6.40	0.264 6.71	0.240 6.10	0.210 0.313
41	0.500 12.70	0.252 6.40	0.306 7.77	0.382 9.70	0.049 1.24	0.141 3.58	-	0.536 13.61	0.315 8.00	0.268 6.81	0.315 8.00	0.268 6.81	0.273 0.406
40	0.500 12.70	0.313 7.95	0.313 7.95	0.472 11.99	0.060 1.52	0.156 3.96	0.567 14.40	0.630 16.00	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	0.420 0.625
50	0.625 15.88	0.376 9.55	0.400 10.16	0.590 14.99	0.080 2.03	0.200 5.08	0.713 18.11	0.795 20.19	0.489 12.42	0.399 10.13	0.489 12.42	0.398 10.11	0.713 1.061
60	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.898 22.81	0.996 25.30	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	1.067 1.588
80	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	1.283 32.59	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	1.868 2.780
100	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	1.595 40.51	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	2.801 4.168
120	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.289 32.74	1.955 49.66	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	4.135 6.154
140	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	2.136 54.25	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	5.136 7.643
160	2.000 50.80	1.250 31.75	1.125 28.58	1.899 48.23	0.250 6.35	0.562 14.27	2.305 58.55	2.538 64.47	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	6.603 9.826
180	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	2.592 65.84	2.780 70.61	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	9.100 13.542
200	2.500 63.50	1.490 37.85	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	2.817 71.55	3.088 78.44	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	10.900 16.221
240	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	3.458 87.83	3.708 94.18	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	16.400 24.406

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

NOTE: See pages 92 and 93, and table 81 on page 79 and tables 116 and 117 on pages 120-121 for available heavy series and double-pitch roller chain sizes.

NOTE: See pages 80-91 for multi-strand dimensions.



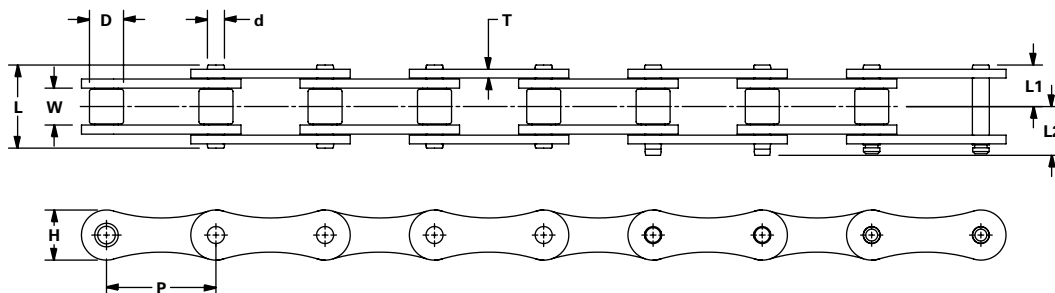


TABLE 81. SMALL ROLLER CARBON STEEL CHAIN DIMENSIONS

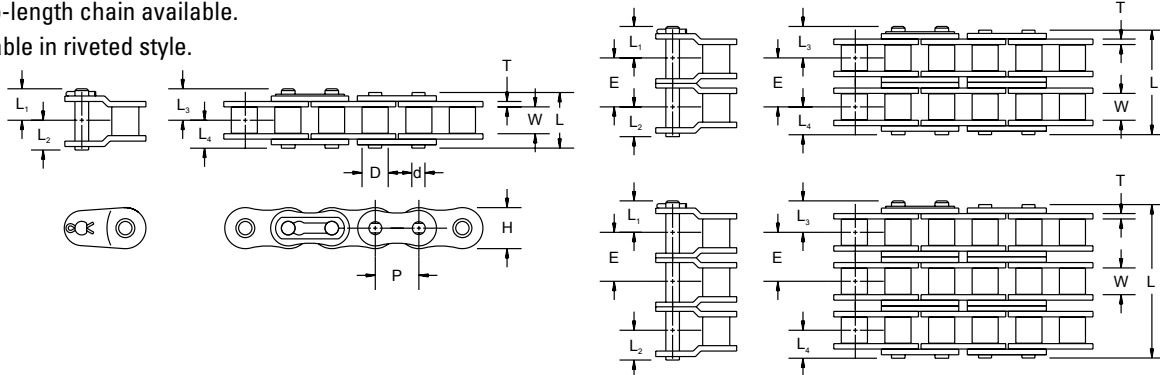
Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Pin			Average Weight
	P	W	D	H	T	d	L	L <sub>1</sub>	L <sub>2</sub>	
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs./ft. kg/m
A2040	<b>1.000</b> 25.40	<b>0.312</b> 7.92	<b>0.312</b> 7.92	<b>0.472</b> 11.99	<b>0.060</b> 1.52	<b>0.156</b> 3.96	<b>0.638</b> 16.21	<b>0.319</b> 8.10	<b>0.382</b> 9.70	<b>0.270</b> 0.402
A2050	<b>1.250</b> 31.75	<b>0.376</b> 9.55	<b>0.400</b> 10.16	<b>0.590</b> 14.99	<b>0.080</b> 2.03	<b>0.200</b> 5.08	<b>0.795</b> 20.19	<b>0.398</b> 10.11	<b>0.489</b> 12.42	<b>0.450</b> 0.670
A2060	<b>1.500</b> 38.10	<b>0.500</b> 12.70	<b>0.469</b> 11.91	<b>0.705</b> 17.91	<b>0.094</b> 2.39	<b>0.234</b> 5.94	<b>0.996</b> 25.30	<b>0.498</b> 12.65	<b>0.648</b> 16.46	<b>0.630</b> 0.938

# PRECISION ROLLER CHAIN PRODUCT CHARTS

## CARBON STEEL

### 35 – 0.375 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.



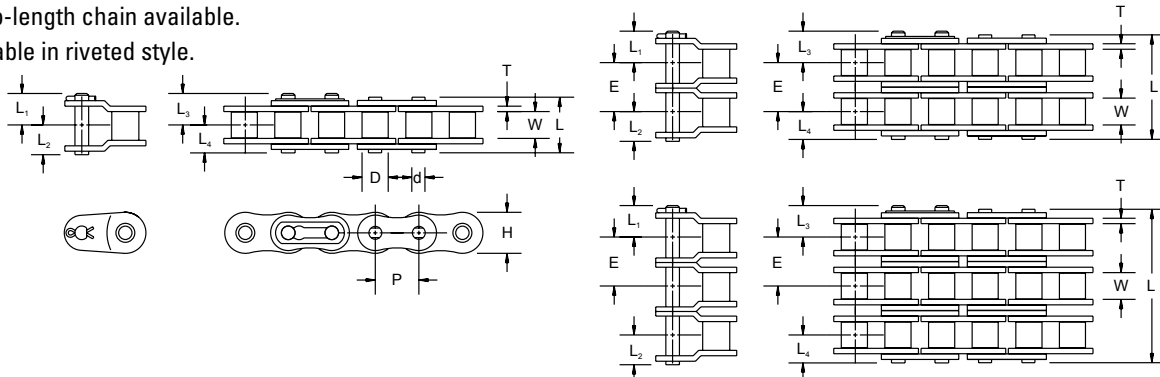
**TABLE 82. 35 – 0.375 in. (9.525 mm) PITCH CHAIN DIMENSIONS**

Chain No.	Pitch	Min. Roller Link Inside Width	Bushing Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight
	P	W	D	H	T	d	E	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm			
35-1	0.375 9.53	0.189 4.80	0.200 5.08	0.355 9.02	0.049 1.24	0.141 3.58	– –	0.480 12.19	0.264 6.71	0.252 6.40	0.264 6.71	0.240 6.10	2,100 9.34	0.210 0.313
35-2	0.375 9.53	0.189 4.80	0.200 5.08	0.355 9.02	0.049 1.24	0.141 3.58	0.398 10.11	0.878 22.30	0.264 6.71	0.252 6.40	0.264 6.71	0.240 6.10	4,200 18.68	0.410 0.610
35-3	0.375 9.53	0.189 4.80	0.200 5.08	0.355 9.02	0.049 1.24	0.141 3.58	0.398 10.11	1.276 32.41	0.264 6.71	0.252 6.40	0.264 6.71	0.240 6.10	6,300 28.02	0.620 0.923

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

### 41 – 0.500 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.



**TABLE 83. 41 – 0.500 in. (12.7 mm) PITCH CHAIN DIMENSIONS**

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight
	P	W	D	H	T	d	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm			
41-1	0.500 12.70	0.252 6.40	0.306 7.77	0.382 9.70	0.049 1.24	0.141 3.58	0.536 13.61	0.315 8.00	0.268 6.81	0.315 8.00	0.268 6.81	2,400 10.68	0.273 0.406

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

40 – 0.500 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.

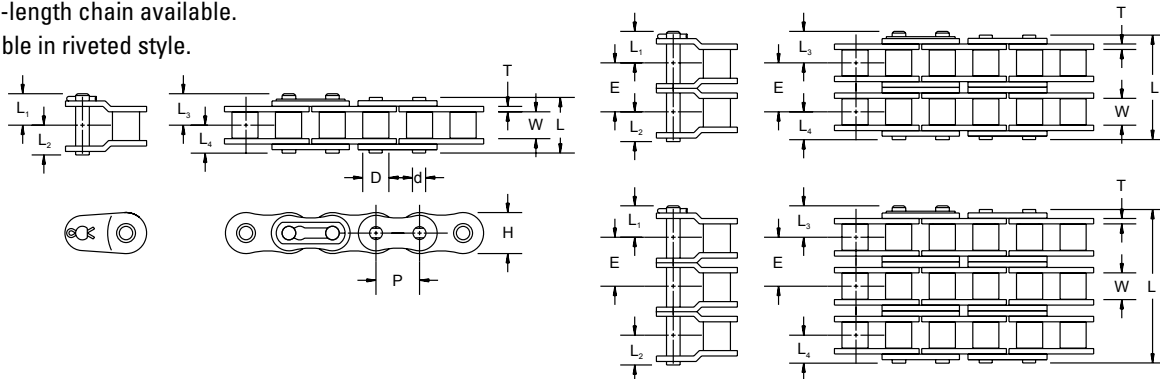


TABLE 84. 40 – 0.500 in. (12.7 mm) PITCH CHAIN DIMENSIONS

Chain No. <small>NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103).</small>	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Weight					
				P	W			D	H	T	d	E			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
				in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm
40-1 40NP-1, 40CR-1 40CH-1	0.500 12.70	0.313 7.95	0.313 7.95	0.472 11.99	0.060 1.52	0.156 3.96	– –	0.630 16.00	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	4,200 18.68	0.420 0.625					
40-2 40NP-2, 40CR-2 40CH-2	0.500 12.70	0.313 7.95	0.313 7.95	0.472 11.99	0.060 1.52	0.156 3.96	0.567 14.40	1.195 30.35	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	8,400 37.37	0.810 1.205					
40-3 40NP-3, 40CR-3	0.500 12.70	0.313 7.95	0.313 7.95	0.472 11.99	0.060 1.52	0.156 3.96	0.567 14.40	1.773 45.03	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	12,600 56.05	1.210 1.801					
40-4 40NP-4, 40CR-4	0.500 12.70	0.313 7.95	0.313 7.95	0.472 11.99	0.060 1.52	0.156 3.96	0.567 14.40	2.331 59.21	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	16,800 74.73	1.610 2.396					

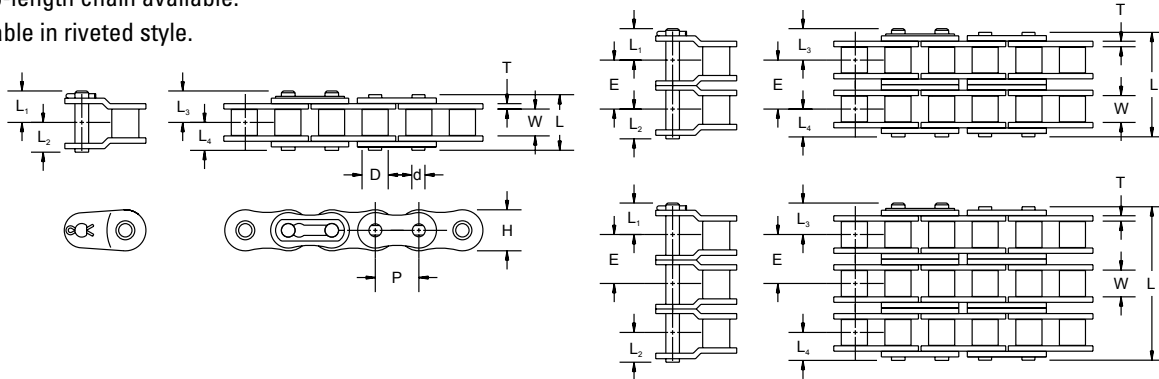
NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

# PRECISION ROLLER CHAIN PRODUCT CHARTS

## CARBON STEEL

### 50 – 0.625 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.



**TABLE 85. 50 – 0.625 in. (15.31 mm) PITCH CHAIN DIMENSIONS**

Chain No. NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103).		Pitch P	Min. Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin Dia. d	Transverse Pitch E	Pin					Average Tensile Strength (Case-Hardened Pin) lbs. kN	Average Weight lbs./ft. kg/m
					H	T			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>		
					in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm		
50-1	50NP-1, 50CR-1, 50CH-1	0.625 15.31	0.376 9.21	0.400 9.80	0.590 14.46	0.080 1.96	0.200 4.90	– –	0.795 19.48	0.489 11.98	0.399 9.78	0.489 11.98	0.398 9.75	6,600 29.36	0.713 1.061
50-2	50NP-2, 50CR-2, 50CH-2	0.625 15.31	0.376 9.21	0.400 9.80	0.590 14.46	0.080 1.96	0.200 4.90	0.713 17.47	1.511 37.02	0.489 11.98	0.399 9.78	0.489 11.98	0.398 9.75	13,200 58.72	1.406 2.092
50-3	50NP-3, 50CR-3	0.625 15.31	0.376 9.21	0.400 9.80	0.590 14.46	0.080 1.96	0.200 4.90	0.713 17.47	2.230 54.64	0.489 11.98	0.399 9.78	0.489 11.98	0.398 9.75	19,800 88.07	2.099 3.124
50-4	50NP-4, 50CR-4	0.625 15.31	0.376 9.21	0.400 9.80	0.590 14.46	0.080 1.96	0.200 4.90	0.713 17.47	2.943 72.10	0.489 11.98	0.399 9.78	0.489 11.98	0.398 9.75	26,400 117.43	2.790 4.152
50-5	50NP-5, 50CR-5	0.625 15.31	0.376 9.21	0.400 9.80	0.590 14.46	0.080 1.96	0.200 4.90	0.713 17.47	3.656 89.57	0.489 11.98	0.399 9.78	0.489 11.98	0.398 9.75	33,000 146.79	3.830 5.700

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

60 – 0.750 INCH PITCH

- Cut-to-length chain available.

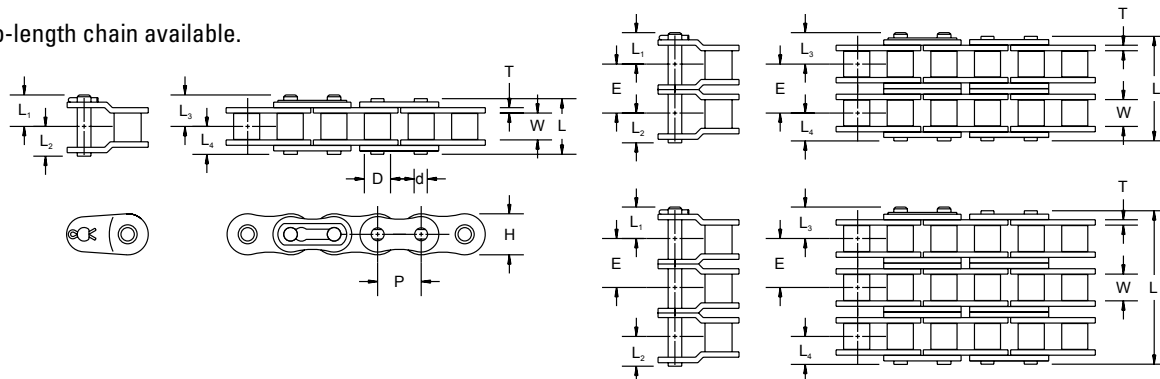


TABLE 86. 60 – 0.750 in. (19.05 mm) PITCH CHAIN DIMENSIONS

Chain No. NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103).		Pitch P	Min. Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin Dia. d	Transverse Pitch E	Pin					Average Tensile Strength (Case-Hardened Pin) lbs. kN	Average Weight lbs./ft. kg/m
					H	T			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>		
					in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm		
60-1	60NP-1, 60CR-1 60CH-1	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	– –	0.996 25.30	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	8,500 37.81	1.067 1.588
60-2	60NP-2, 60CR-2 60CH-2	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.898 22.81	1.896 48.16	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	17,000 75.62	2.068 3.078
60-3	60NP-3, 60CR-3	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.898 22.81	2.794 70.97	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	25,500 113.43	3.069 4.567
60-4	60NP-4, 60CR-4	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.898 22.81	3.690 93.73	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	34,000 151.24	4.070 6.057
60-5	60NP-5, 60CR-5	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.898 22.81	4.588 116.54	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	42,500 189.05	5.071 7.545
60-6	60NP-6, 60CR-6	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.898 22.81	5.486 139.34	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	51,000 226.86	6.072 9.036

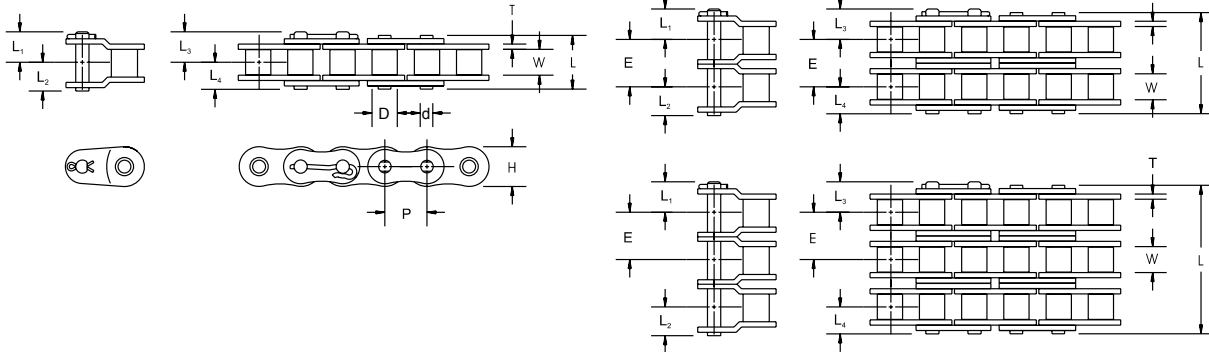
NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

# PRECISION ROLLER CHAIN PRODUCT CHARTS

## CARBON STEEL

### 80 – 1.000 INCH PITCH

- Cut-to-length chain available.



**TABLE 87. 80 – 1.000 in. (25.4 mm) PITCH CHAIN DIMENSIONS**

Chain No.	Pitch P	Min. Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin Dia. d	Transverse Pitch E	Pin					Average Tensile Strength (Case-Hardened Pin) lbs. kN	Average Tensile Strength (Through-Hardened Pin) lbs. kN	Average Weight lbs./ft. kg/m
				H	T			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>			
				in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm			
80-1 80NP-1, 80CR-1, 80CH-1, 80Z-1	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	– –	1.283 32.59	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	14,500 64.50	21,500 95.64	1.87 2.783
80-2 80NP-2, 80CR-2, 80CH-2, 80Z-2	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	2.439 61.95	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	29,000 129.00	43,000 191.27	3.74 5.566
80-3 80NP-3, 80CR-3, 80Z-3	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	3.594 91.29	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	43,500 193.50	64,500 382.55	5.60 8.334
80-4 80NP-4, 80CR-4, 80Z-4	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	4.749 120.62	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	58,000 258.00	86,000 382.55	7.44 11.072
80-5 80NP-5, 80CR-5, 80Z-5	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	5.904 149.96	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	72,500 322.50	107,500 478.18	9.03 13.438
80-6 80NP-6, 80CR-6, 80Z-6	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	7.059 179.30	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	87,000 387.00	129,000 573.82	10.82 16.102
80-8 80NP-8, 80CR-8, 80Z-8	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	9.369 237.97	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	116,000 515.99	172,000 765.09	14.43 21.474

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

100 – 1.250 IN. PITCH

- Cut-to-length chain available.

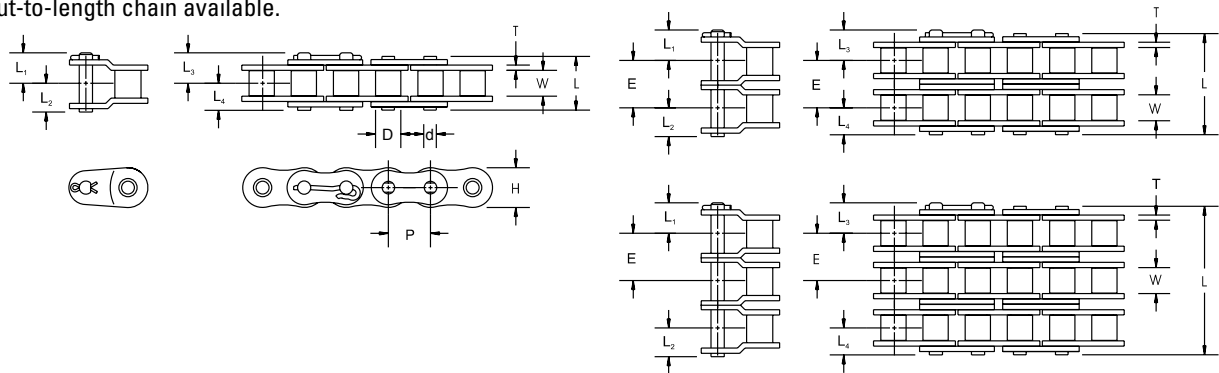


TABLE 88. 100 – 1.250 in. (31.75 mm) PITCH CHAIN DIMENSIONS

Chain No. NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103). Z = High Strength – Through-Hardened Pin with Ballized plate (see page 93).	Pitch P	Min. Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin Dia. d	Transverse Pitch E	Pin					Average Tensile Strength (Case-Hardened Pin) lbs. kN	Average Tensile Strength (Through-Hardened Pin) lbs. kN	Average Weight lbs./ft. kg/m
				H	T			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>			
				in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm			
100-1 100NP-1, 100CR-1, 100CH-1, 100Z-1	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	– –	1.595 40.51	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	24,000 106.76	33,000 146.79	2.80 4.167
100-2 100NP-2, 100CR-2, 100CH-2, 100Z-2	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	2.981 75.72	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	48,000 213.51	66,000 293.58	5.60 8.334
100-3 100NP-3, 100CR-3, 100Z-3	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	4.392 111.56	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	72,000 320.27	99,000 440.37	8.47 12.605
100-4 100NP-4, 100CR-4, 100Z-4	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	5.803 147.40	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	96,000 427.03	132,000 587.17	11.11 16.534
100-5 100NP-5, 100CR-5, 100Z-5	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	7.214 183.24	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	120,000 533.79	165,000 733.96	13.97 20.790
100-6 100NP-6, 100CR-6, 100Z-6	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	8.625 219.08	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	144,000 640.54	198,000 880.75	16.72 24.882
100-8 100NP-8, 100CR-8, 100Z-8	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	11.447 290.75	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	192,000 854.06	264,000 1174.33	22.29 33.171

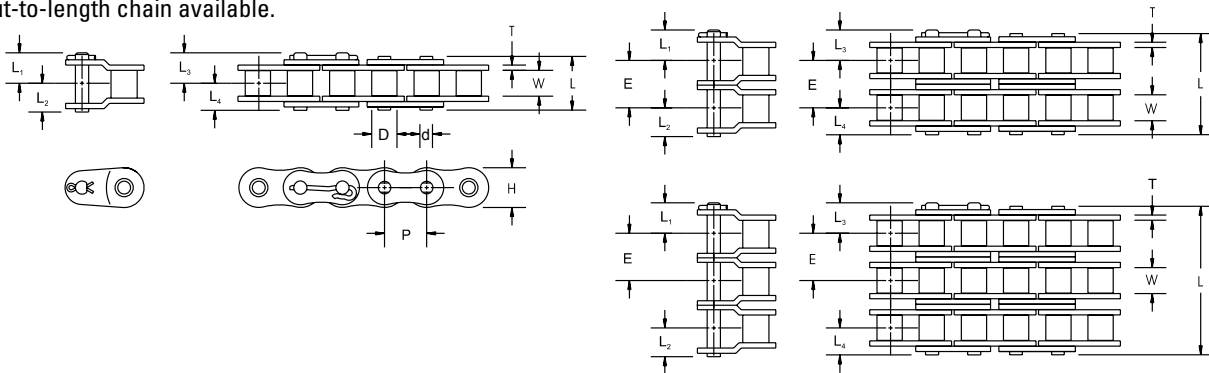
NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

# PRECISION ROLLER CHAIN PRODUCT CHARTS

## CARBON STEEL

### 120 – 1.500 IN. PITCH

- Cut-to-length chain available.



**TABLE 89. 120 – 1.500 in. (38.1 mm) PITCH CHAIN DIMENSIONS**

Chain No. <small>NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103). Z = High Strength – Through-Hardened Pin with Ballized plate (see page 93).</small>		Pitch P	Min. Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin Dia. d	Transverse Pitch E	Pin					Average Tensile Strength (Case-Hardened Pin) lbs. kN	Average Tensile Strength (Through-Hardened Pin) lbs. kN	Average Weight lbs./ft. kg/m	
					H	T			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>				
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
120-1	120NP-1, 120CR-1, 120CH-1, 120Z-1	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	– –	1.955 49.66	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	34,000 151.24	45,100 200.61	4.14 6.161	
120-2	120NP-2, 120CR-2, 120CH-2, 120Z-2	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	3.767 95.68	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	68,000 302.48	90,200 401.23	8.27 12.307	
120-3	120NP-3, 120CR-3, 120Z-3	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	5.556 141.12	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	102,000 453.72	135,300 601.84	12.10 18.007	
120-4	120NP-4, 120CR-4, 120Z-4	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	7.345 186.56	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	136,000 604.96	180,400 802.46	16.17 24.064	
120-5	120NP-5, 120CR-5, 120Z-5	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	9.134 232.00	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	170,000 756.20	225,500 1003.07	20.24 30.120	
120-6	120NP-6, 120CR-6, 120Z-6	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	10.923 277.44	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	204,000 907.44	270,600 1203.69	24.20 36.014	
120-8	120NP-8, 120CR-8, 120Z-8	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	14.501 368.33	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	272,000 1209.92	360,800 1604.92	32.27 48.023	

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.



140 – 1.750 IN. PITCH

- Cut-to-length chain available.
- Multiple strand 140-3 through 140-8 only available with through-hardened pin in riveted and cottered styles.

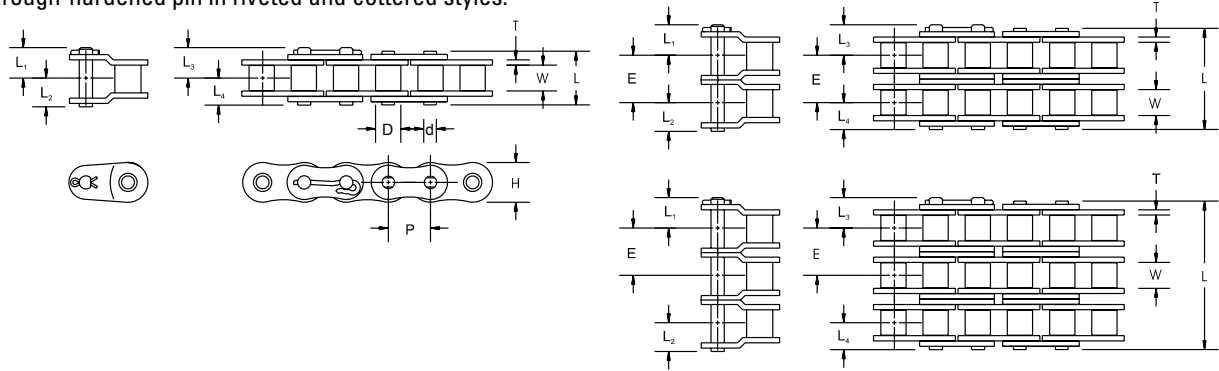


TABLE 90. 140 – 1.750 in. (44.45 mm) PITCH CHAIN DIMENSIONS

Chain No. <small>NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103). Z = High Strength – Through-Hardened Pin with Ballized plate (see page 93).</small>		Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Tensile Strength (Through-Hardened Pin)	Average Weight					
					P	W			D	H	T	d	E				L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
					in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm				in. mm	in. mm	in. mm	in. mm	in. mm
140-1	140NP-1, 140CR-1, 140CH-1, 140Z-1	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	– –	2.136 54.25	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	46,000 204.62	57,450 255.55	5.14 7.649					
140-2	140NP-2, 140CR-2, 140CH-2, 140Z-2	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	4.060 103.12	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	92,000 409.24	114,900 511.10	10.27 15.283					
140-3	140NP-3, 140CR-3, 140Z-3	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	5.984 151.99	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	138,000 613.85	172,350 766.65	15.29 22.754					
140-4	140NP-4, 140CR-4, 140Z-4	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	7.908 200.86	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	184,000 818.47	229,800 1022.20	20.46 30.448					
140-5	140NP-5, 140CR-5, 140Z-5	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	9.832 249.73	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	230,000 1023.09	287,250 1277.75	25.52 37.978					
140-6	140NP-6, 140CR-6, 140Z-6	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	11.756 298.60	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	276,000 1227.71	344,700 1533.30	30.69 45.672					
140-8	140NP-8, 140CR-8, 140Z-8	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	15.604 396.34	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	368,000 1636.95	459,600 2044.40	40.92 60.896					

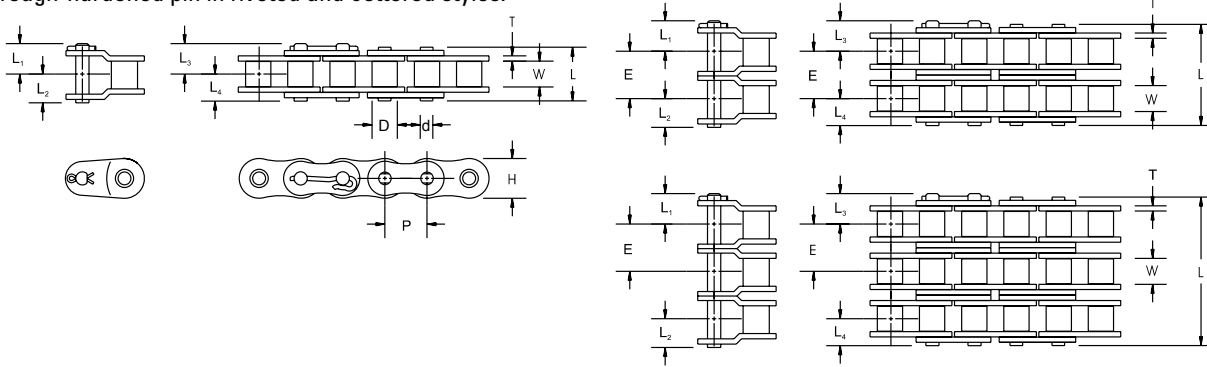
NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

# PRECISION ROLLER CHAIN PRODUCT CHARTS

## CARBON STEEL

### 160 – 2.000 IN. PITCH

- Cut-to-length chain available.
- Multiple strand 160-3 through 160-8 only available with through-hardened pin in riveted and cottered styles.



**TABLE 91. 160 – 2.000 in. (50.8 mm) PITCH CHAIN DIMENSIONS**

Chain No. NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103). Z = High Strength – Through-Hardened Pin with Ballized plate (see page 93).		Pitch P	Min. Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin Dia. d	Transverse Pitch E	Pin					Average Tensile Strength (Case-Hardened Pin) lbs. kN	Average Tensile Strength (Through-Hardened Pin) lbs. kN	Average Weight lbs./ft. kg/m
					H	T			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>			
160-1	160NP-1, 160CR-1, 160CH-1, 160Z-1	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	– –	2.538 64.47	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	58,000 258.00	72,800 323.83	6.60 9.822
160-2	160NP-2, 160CR-2, 160CH-2, 160Z-2	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	4.843 123.01	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	116,000 515.99	145,600 647.66	13.21 19.659
160-3	160NP-3, 160CR-3, 160Z-3	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	7.148 181.56	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	174,000 773.99	218,400 971.49	20.79 30.939
160-4	160NP-4, 160CR-4, 160Z-4	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	9.453 240.11	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	232,000 1031.99	291,200 1295.32	27.83 41.416
160-5	160NP-5, 160CR-5, 160Z-5	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	11.758 298.65	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	290,000 1289.98	364,000 1619.15	34.76 51.729
160-6	160NP-6, 160CR-6, 160Z-6	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	14.063 357.20	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	348,000 1547.98	436,800 1942.98	41.69 62.042
160-8	160NP-8, 160CR-8, 160Z-8	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	18.673 474.29	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	406,000 1805.98	582,400 2590.64	55.50 82.593

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

180 – 2.250 IN. PITCH

- Cut-to-length chain available.

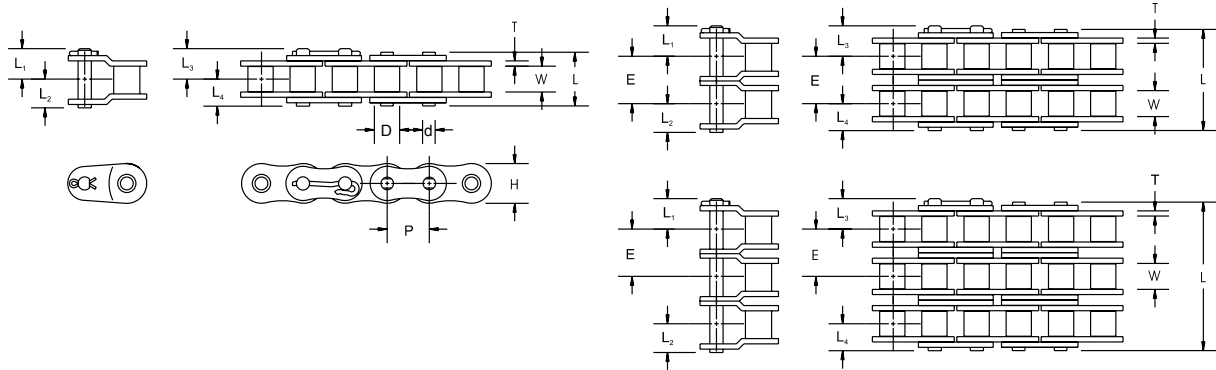


TABLE 92. 180 – 2.250 in. (57.15 mm) PITCH CHAIN DIMENSIONS

Chain No. <small>NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103). Z = High Strength – Through-Hardened Pin with Ballized plate (see page 93).</small>		Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight					
					P	W			D	H	T	d	E			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
					in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm
180-1	180NP-1, 180CR-1, 180CH-1, 180Z-1	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	– –	2.780 70.61	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	95,000 422.58	9.10 13.542					
180-2	180NP-2, 180CR-2, 180CH-2, 180Z-2	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	2.592 65.84	5.372 136.45	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	190,000 845.16	18.10 26.936					
180-3	180NP-3, 180CR-3, 180Z-3	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	2.592 65.84	7.964 202.29	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	285,000 1267.74	27.01 40.195					
180-4	180NP-4, 180CR-4, 180Z-4	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	2.592 65.84	10.556 268.12	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	380,000 1690.32	35.91 53.440					

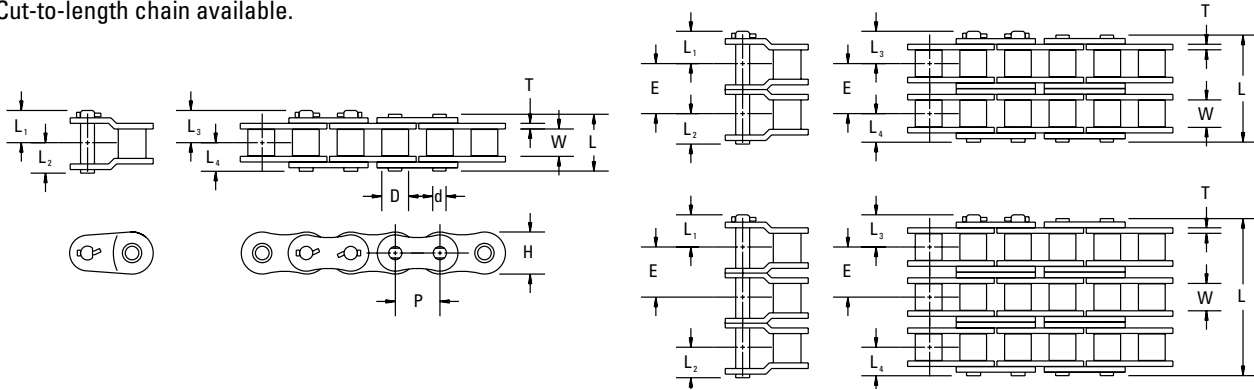
NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

# PRECISION ROLLER CHAIN PRODUCT CHARTS

## CARBON STEEL

### 200 – 2.500 IN. PITCH

- Cut-to-length chain available.



**TABLE 93. 200 – 2.500 in. (63.5 mm) PITCH CHAIN DIMENSIONS**

Chain No. <small>NP = Nickel Plated (see page 106). CR = Silver Shield® (see page 107). CH = Extended Life CHP® (see page 103). Z = High Strength – Through-Hardened Pin with Ballized plate (see page 93).</small>		Pitch P	Min. Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin Dia. d	Trans- verse Pitch E	Pin					Average Tensile Strength (Through- Hardened Pin) lbs. kN	Average Weight lbs./ft. kg/m
					H	T			L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>		
					in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm		
200-1	200NP-1, 200CR-1, 200CH-1, 200Z-1	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	– –	3.088 78.44	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	100,000 444.82	10.90 16.221
200-2	200NP-2, 200CR-2, 200CH-2, 200Z-2	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	2.817 71.55	5.905 149.99	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	200,000 889.64	21.00 31.251
200-3	200NP-3, 200CR-3, 200Z-3	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	2.817 71.55	8.722 221.54	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	300,000 1334.47	31.50 46.877
200-4	200NP-4, 200CR-4, 200Z-4	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	2.817 71.55	11.539 293.09	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	400,000 1779.29	42.10 62.652

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

240 – 3.000 IN. PITCH

- Cut-to-length chain available.

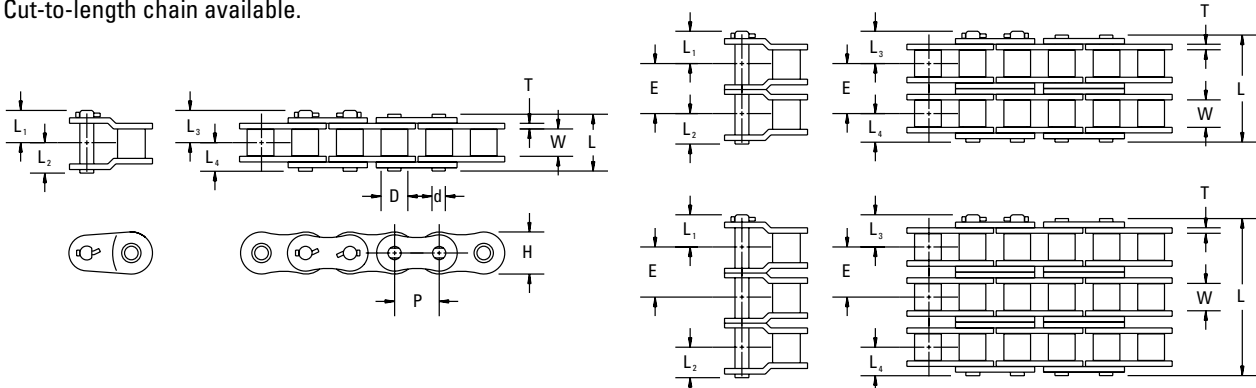


TABLE 94. 3.000 in. (76.2 mm) PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width		Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight			
		P	W		D	H			T	d	E	L	L <sub>1</sub>			L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
		in. mm	in. mm		in. mm	in. mm			in. mm	in. mm	in. mm	in. mm	in. mm			in. mm	in. mm	in. mm
240-1 240NP-1, 240CR-1, 240CH-1, 240Z-1	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	–	–	3.708 94.18	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	157,800 701.93	16.40 24.406			
240-2 240NP-2, 240CR-2, 240CH-2, 240Z-2	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	3.458 87.83	7.166 182.02	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	315,600 1,403.86	32.20 47.919				
240-3 240NP-3, 240CR-3, 240Z-3	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	3.458 87.83	10.624 269.85	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	473,400 2,105.79	49.40 73.515				
240-4 240NP-4, 240CR-4, 240Z-4	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	3.458 87.83	14.082 357.68	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	631,200 2,807.72	65.70 97.772				

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

NOTE: 35, 41, 40 and 50 are riveted only, 60 - 240 are available in riveted and cottered.

# HEAVY SERIES ROLLER CHAIN PRODUCTS

## HR RIVETED SERIES CHAIN

### Case-hardened Pins

- Offset links available.
- Cut-to-length chain available.
- 60H slip-fit spring clip connector standard. Cotter available upon request.
- 80H – 120H slip-fit, hook-style cotter connecting link standard. Press-fit available upon request.
- Other multiple-wide sizes available.
- Cotter style available upon request.

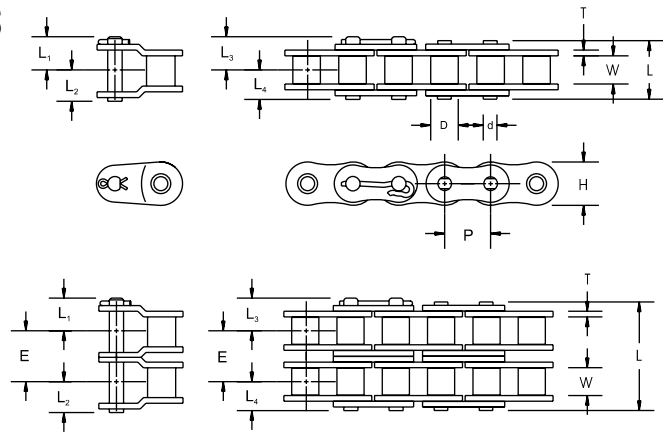


TABLE 95. HR RIVETED SERIES CHAIN DIMENSIONS

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Weight
	P	W	D	H	T	d	E	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		
60H-1R	0.750 19.05	0.500 12.70	0.469 11.91	0.709 18.01	0.125 3.18	0.234 5.94	– –	1.140 28.96	0.650 16.51	0.570 14.48	0.650 16.51	0.570 14.48	8,500 37.81	1.265 1.883
60H-2R	0.750 19.05	0.500 12.70	0.469 11.91	0.709 18.01	0.125 3.18	0.234 5.94	1.028 26.11	2.160 54.86	0.650 16.51	0.570 14.48	0.650 16.51	0.570 14.48	17,000 75.62	2.637 3.924
60H-3R	0.750 19.05	0.500 12.70	0.469 11.91	0.709 18.01	0.125 3.18	0.234 5.94	1.028 26.11	3.196 81.18	0.650 16.51	0.570 14.48	0.650 16.51	0.570 14.48	25,500 113.43	4.010 5.968
80H-1R	1.000 25.40	0.625 15.88	0.625 15.88	0.949 24.10	0.156 3.96	0.312 7.92	– –	1.413 35.89	0.839 21.31	0.707 17.96	0.839 21.31	0.707 17.96	14,500 64.50	2.462 3.664
80H-2R	1.000 25.40	0.625 15.88	0.625 15.88	0.949 24.10	0.156 3.96	0.312 7.92	1.283 32.59	2.694 68.43	0.839 21.31	0.707 17.96	0.839 21.31	0.707 17.96	29,000 129.00	4.344 6.465
80H-3R	1.000 25.40	0.625 15.88	0.625 15.88	0.949 24.10	0.156 3.96	0.312 7.92	1.283 32.59	3.977 101.02	0.839 21.31	0.707 17.96	0.839 21.31	0.707 17.96	43,500 193.50	6.569 9.776
100H-1R	1.250 31.75	0.750 19.05	0.750 19.05	1.186 30.12	0.187 4.75	0.375 9.53	– –	1.725 43.82	0.993 25.22	0.863 21.92	0.993 25.22	0.863 21.92	24,000 106.76	3.223 4.796
100H-2R	1.250 31.75	0.750 19.05	0.750 19.05	1.186 30.12	0.187 4.75	0.375 9.53	1.539 39.09	3.260 82.80	0.993 25.22	0.863 21.92	0.993 25.22	0.863 21.92	48,000 213.51	6.356 9.459
100H-3R	1.250 31.75	0.750 19.05	0.750 19.05	1.186 30.12	0.187 4.75	0.375 9.53	1.539 39.09	4.799 121.89	0.993 25.22	0.863 21.92	0.993 25.22	0.863 21.92	72,000 320.27	9.579 14.255
120H-1R	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.219 5.56	0.437 11.10	– –	2.085 52.96	1.186 30.12	1.043 26.49	1.186 30.12	1.043 26.49	34,000 151.24	4.614 6.866
120H-2R	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.219 5.56	0.437 11.10	1.924 48.87	4.010 101.85	1.186 30.12	1.043 26.49	1.186 30.12	1.043 26.49	68,000 302.48	9.161 13.633
120H-3R	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.219 5.56	0.437 11.10	1.924 48.87	5.934 150.72	1.186 30.12	1.043 26.49	1.186 30.12	1.043 26.49	102,000 453.72	13.650 20.313

NOTE: Dimensions subject to change. Contact your Drives representative to obtain certified prints for design and construction.

## HZ RIVETED AND COTTERED SERIES CHAIN

### Through-hardened Pins

HZ series chain features include:

- Through-hardened pins are used for higher working load capacity and additional resistance to fatigue in heavy load application.
- Ballized pin-plate, middle-bar and bushing-plate holes made to precision tolerances provide increased bearing area and press fits, improving fatigue life and working loads.
- Wide-waisted link plates are manufactured with maximized ball height from special alloy steels for added strength. The wide link plate profile improves stress distribution, leading to improved fatigue resistance and enhanced performance.

HZ series chain has the same dimensions as ANSI-standard heavy series chain.

- Multiple-strand widths available in all pitch sizes listed below.
- Riveted endless construction standard/suggested for certain applications.
- Size 264 chain is produced with a heavy series side plate (0.375 in. thick plate material) and a larger diameter pin, which provides greater bearing area and improved wear life. 264 chain will fit on the same sprockets as 200H.
- Please consult your Drives representative for maximum allowable loads.

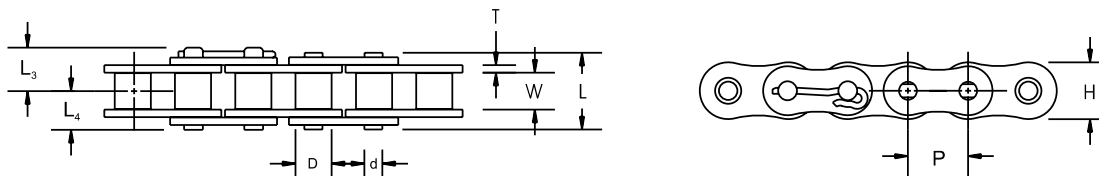


TABLE 96. HZ RIVETED AND COTTERED SERIES CHAIN DIMENSIONS

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin			Average Tensile Strength (Through-Hardened Pins)	Average Weight
	P	W	D	H	T	d		L	L <sub>3</sub>	L <sub>4</sub>		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
60HZ-1R	0.750 19.05	0.500 12.70	0.469 11.91	0.709 18.01	0.125 3.18	0.234 5.94	1.028 26.11	1.140 28.96	0.650 16.51	0.570 14.48	12,500 55.60	1.265 1.883
80HZ-1R	1.000 25.40	0.625 15.88	0.625 15.88	0.949 24.10	0.156 3.96	0.312 7.92	1.283 32.59	1.413 35.89	0.839 21.31	0.707 17.96	21,500 95.64	2.243 3.338
100HZ-1R	1.250 31.75	0.750 19.05	0.750 19.05	1.186 30.12	0.187 4.75	0.375 9.53	1.539 39.09	1.725 43.82	0.993 25.22	0.863 21.92	33,000 146.79	3.277 4.877
120HZ-1R	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.219 5.56	0.437 11.10	1.925 48.90	2.085 52.96	1.186 30.12	1.043 26.49	45,100 200.61	4.605 6.853
140HZ-1R	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.250 6.35	0.500 12.70	2.055 52.20	2.260 57.40	1.313 33.35	1.130 28.70	57,450 255.55	5.801 8.633
160HZ-1R	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.283 7.19	0.563 14.30	2.437 61.90	2.673 67.89	1.520 38.61	1.339 34.01	72,800 323.83	7.548 11.233
180HZ-1R	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.312 7.92	0.687 17.45	2.716 68.99	2.968 75.39	1.641 41.68	1.484 37.69	95,000 422.58	10.250 15.254
200HZ-1R	2.50 63.50	1.490 37.85	1.562 39.67	2.375 60.33	0.375 9.53	0.781 19.84	3.083 78.31	3.344 84.94	2.015 51.18	1.672 42.47	136,000 604.96	12.4 18.45
264HZ-1R	2.500 63.50	1.490 37.85	1.562 39.67	2.375 60.33	0.375 9.53	0.875 22.23	3.083 78.31	3.344 84.94	2.015 51.18	1.672 42.47	135,000 600.51	12.400 18.453
240HZ-1R	3.000 76.20	1.875 47.63	1.875 47.63	2.850 72.39	0.500 12.70	0.937 23.80	3.984 101.19	4.265 108.33	2.453 62.31	2.157 54.79	217,000 965.26	19.570 29.123

NOTE: Dimensions subject to change. Contact your Drives representative to obtain certified prints for design and construction.

## OIL FIELD ROLLER CHAIN PRODUCTS FEATURES AND BENEFITS FATIGUE/WEAR

### ALL BALLIZED PLATES

Ballized pin-plate, middle-bar and bushing-plate holes made to precision tolerances provide increased bearing area and press fits, improving fatigue life and working loads.



Fig. 41.  
All ballized plates.

### WIDE-WAISTED LINK PLATES

Wide-waisted link plates are manufactured with maximized ball heights from special alloy steels for added strength. The wide link plate profile improves stress distribution, leading to improved fatigue resistance and enhanced performance.



Fig. 42.  
Wide-waisted link plates.

### THROUGH-HARDENED SHOT PEENED PINS

Through-hardened pins are hardened and shot peened, designed to provide maximum performance in demanding applications. These pins increase the fatigue strength of the chain for protection from unpredictable overloads.



Fig. 43.  
Through-hardened shot peened pins.

### SPECIAL HOOK COTTER

A full-hardened hook cotter provides greater link-plate support and up to twice the shear strength of conventional short split cotters. The easily installed hardened hook cotter is designed to retain position in high-vibration applications.



Fig. 44. Special hook cotter.

### COATED T-PIN

High-shear T-pins are designed to resist corrosion and retain position in the most extreme applications. Sizes 200, 264 and 240.



Fig. 45. Coated T-pin.

### SOLID ROLLERS

The solid roller allows for smooth rotation on the bushing, reducing the impact load as the chain engages the sprocket tooth.

### FACTORY PRELOADED AT 50 PERCENT MUTS

Our chain is preloaded to 50 percent of minimum ultimate tensile strength (MUTS), which is especially important for applications involving fixed center-to-center sprockets without take-ups. Applications can withstand shock loads up to 50 percent of the chain's MUTS without premature elongation.

### PRELUBRICATION

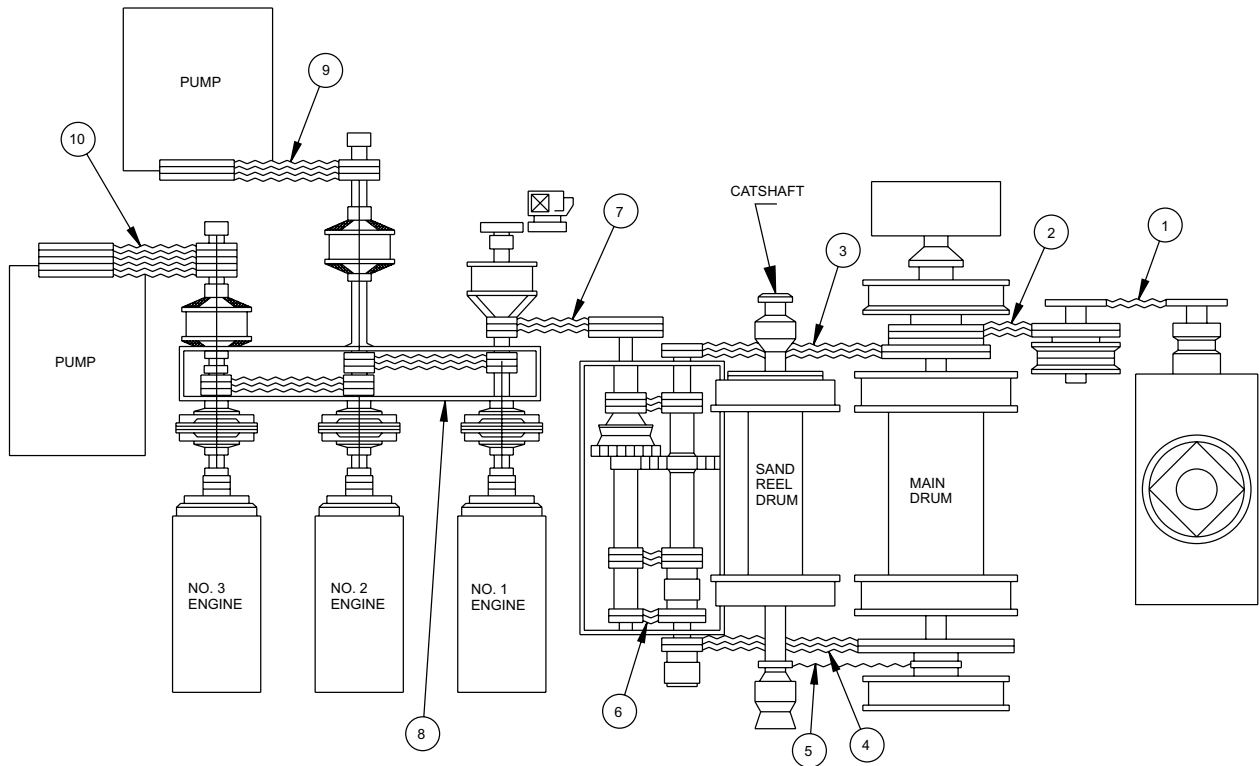
After final assembly, we hot-dip roller chain in a special lubricant. This process ensures that all the load-bearing surfaces are initially protected from metal-to-metal contact, improving the wear life of the chain.

NOTE: We suggest changing out the sprockets each time the chain is replaced.



# PREMIUM OIL FIELD ROLLER CHAIN PRODUCTS

## Typical chain locations on an oil rig



**TABLE 97. DRIVES CHAIN TABLE**

Chain Drive	Rig Horsepower (Kilowatt)						
	4000 (2983)	3000 (2237)	2000 (1491)	1500 (1119)	1000 (746)	750 (559)	500 (373)
1. Rotary Table	160-2	160-2 264-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1
2. Rotary Countershaft	160-2	160-2 264-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1
3. High Drum	240-3	264-3	160-4	160-3	140-3 160-2	160-2 140-2	120-3 140-2
4. Low Drum	240-3	264-3	160-4	160-3	140-3 160-2	160-2 140-3	120-3 140-2
5. Cat Shaft	160-2	160-2 264-1	160-2	160-1 140-2	160-1 140-2	160-1 140-2	140-1 120-1
6. Transmission	140-8	160-4 264-3	160-4 160-3	160-3	160-2 140-3	140-2	120-2 100-3
7. Drawworks Input	140-8	120-8	120-6	120-4	120-3 120-4	100-4	100-3 100-4
8. Compound	140-8	120-8	120-6	120-4	120-3 120-4	100-4	100-3
9. & 10. 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

NOTE: Size 264 roller chain provides greater tensile strength/working load and replaces 200H chain.

# OIL FIELD ROLLER CHAIN PRODUCT SPECIFICATIONS

## 80-1 THROUGH 240-1

- Cut-to-length chain available.
- Corrosion resistant finishes for components available upon request.
- Offsets not suggested. Please contact your Drives representative.
- T-pin cotters used on sizes 200, 264, and 240 oil field chain.
- Heavy-chain series available/MTO.
- 121 series replaces 472 series.
- Size 264 chain provides greater tensile strength/working load utilizing larger diameter pin and replaces 200H chain.

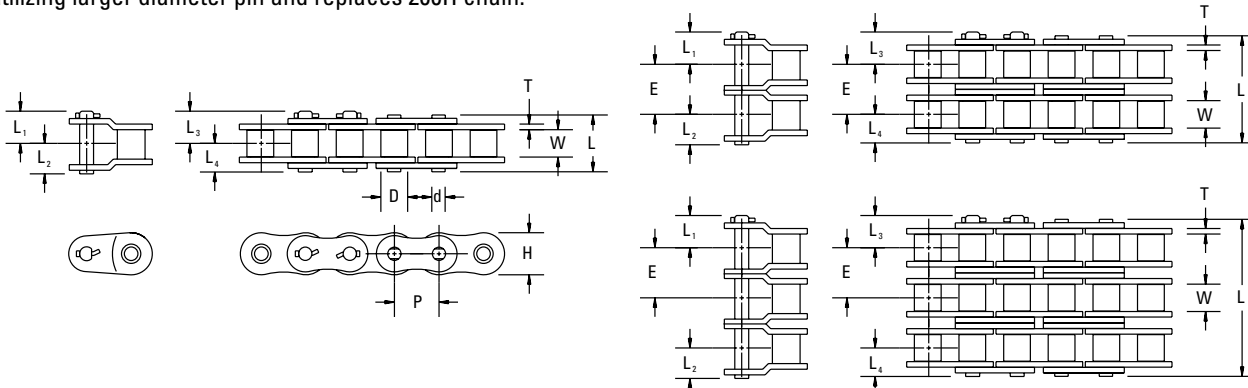


TABLE 98. API 7F OIL FIELD ROLLER CHAIN PRODUCTS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight
	P	W	D	H	T	d	E	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		
<b>80-1 through 80-8</b>														
80-1	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	– –	1.283 32.59	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	21,500 95.64	1.87 2.783
80-2	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	2.439 61.95	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	43,000 191.27	3.74 5.566
80-3	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	3.594 91.29	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	64,500 286.91	5.60 8.334
80-4	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	4.749 120.62	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	86,000 382.55	7.44 11.072
80-5	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	5.904 149.96	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	107,500 478.18	9.03 13.438
80-6	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	7.059 179.30	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	129,000 573.82	10.82 16.102
80-8	1.000 25.40	0.627 15.93	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.155 29.34	9.369 237.97	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	172,000 765.09	14.43 21.474

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.  
NOTE: Oil field is always cottered.

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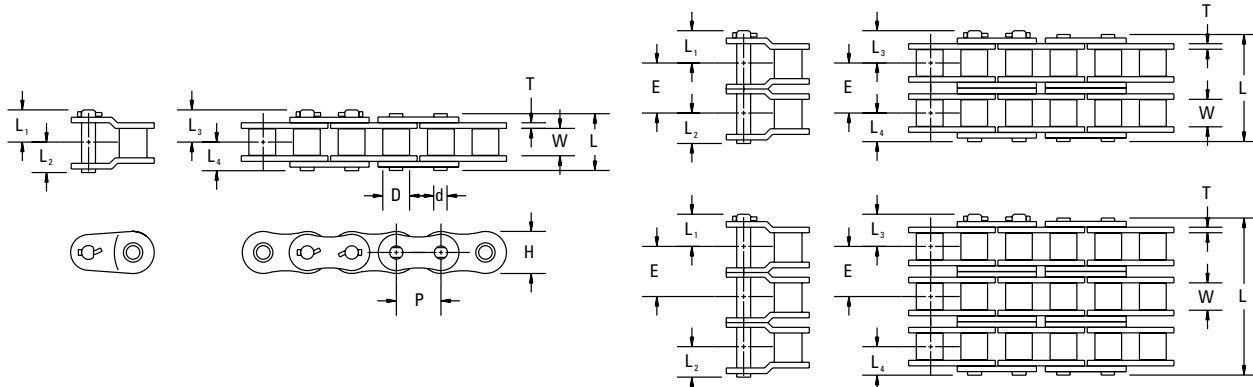
Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight
	P	W	D	H	T	d	E	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		
<b>100-1 through 100-8</b>														
100-1	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	– –	1.595 40.51	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	33,000 146.79	2.80 4.167
100-2	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	2.981 75.72	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	66,000 293.58	5.60 8.334
100-3	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	4.392 111.56	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	99,000 440.37	8.47 12.605
100-4	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	5.803 147.40	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	132,000 587.17	11.11 16.534
100-5	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	7.214 183.24	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	165,000 733.96	13.97 20.790
100-6	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	8.625 219.08	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	198,000 880.75	16.72 24.882
100-8	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.411 35.84	11.447 290.75	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	264,000 1174.33	22.29 33.171
<b>120-1 through 120-8</b>														
120-1	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	– –	1.955 49.66	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	45,100 200.61	4.14 6.161
120-2	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	3.767 95.68	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	90,200 401.23	8.27 12.307
120-3	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	5.556 141.12	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	135,300 601.84	12.10 18.007
120-4	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	7.345 186.56	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	180,400 802.46	16.17 24.064
120-5	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	9.134 232.00	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	225,500 1003.07	20.24 30.120
120-6	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	10.923 277.44	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	270,600 1203.69	24.20 36.014
120-8	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.789 45.44	14.501 368.33	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	360,800 1604.92	32.27 48.023
<b>121-1 through 121-3</b>														
121-1	1.500 38.10	0.750 19.05	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	– –	1.955 49.66	– –	– –	0.994 25.25	0.864 21.95	45,100 200.61	3.30 4.911
121-2	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.546 39.27	3.274 83.16	– –	– –	0.994 25.25	0.864 21.95	90,200 401.23	6.76 10.060
121-3	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.546 39.27	4.820 122.43	– –	– –	0.994 25.25	0.864 21.95	135,300 601.84	10.08 15.001

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.  
NOTE: Oil field is always cottered.

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# PRECISION ROLLER CHAIN PRODUCT CHARTS

## OIL FIELD ROLLER CHAIN



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Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight
	P	W	D	H	T	d	E	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		
<b>140-1 through 140-8</b>														
140-1	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	— —	2.136 54.25	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	57,450 255.55	5.14 7.649
140-2	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	4.060 103.12	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	114,900 511.10	10.27 15.283
140-3	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	5.984 151.99	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	172,350 766.65	15.29 22.754
140-4	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	7.908 200.86	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	229,800 1022.20	20.46 30.448
140-5	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	9.832 249.73	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	287,250 1277.75	25.52 37.978
140-6	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	11.756 298.60	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	344,700 1533.30	30.69 45.672
140-8	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	1.924 48.87	15.604 396.34	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	459,600 2044.40	40.92 60.896
<b>160-1 through 160-8</b>														
160-1	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	— —	2.538 64.47	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	72,800 323.83	6.60 9.822
160-2	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	4.843 123.01	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	145,600 647.66	13.21 19.659
160-3	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	7.148 181.56	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	218,400 971.49	20.79 30.939
160-4	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	9.453 240.11	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	291,200 1295.32	27.83 41.416
160-5	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	11.758 298.65	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	364,000 1619.15	34.76 51.729
160-6	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	14.063 357.20	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	436,800 1942.98	41.69 62.042
160-8	2.000 50.80	1.250 31.75	1.126 28.60	1.899 48.23	0.252 6.40	0.563 14.30	2.305 58.55	18.673 474.29	1.454 36.93	1.370 34.80	1.454 36.93	1.269 32.23	582,400 2590.64	55.50 82.593

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.  
NOTE: Oil field is always cottered.

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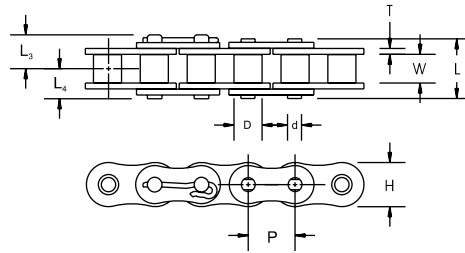
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Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Through-Hardened Pin)	Average Weight
	P	W	D	H	T	d	E	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		
<b>180-1 through 180-4</b>														
180-1	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	– –	2.780 70.61	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	95,000 422.58	9.10 13.542
180-2	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	2.592 65.84	5.372 136.45	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	190,000 845.16	18.10 26.936
180-3	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	2.592 65.84	7.964 202.29	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	285,000 1267.74	27.01 40.195
180-4	2.250 57.15	1.400 35.56	1.406 35.71	2.132 54.15	0.281 7.14	0.687 17.45	2.592 65.84	10.556 268.12	1.561 39.65	1.390 35.31	1.561 39.65	1.390 35.31	380,000 1690.32	35.91 53.440
<b>200-1 through 200-4</b>														
200-1	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	– –	3.088 78.44	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	100,000 444.82	10.90 16.221
200-2	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	2.817 71.55	5.905 149.99	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	200,000 889.64	21.00 31.251
200-3	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	2.817 71.55	8.722 221.54	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	300,000 1334.47	31.50 46.877
200-4	2.500 63.50	1.500 38.10	1.562 39.67	2.312 58.72	0.312 7.92	0.781 19.84	2.817 71.55	11.539 293.09	1.889 47.98	1.544 39.22	1.889 47.98	1.544 39.22	400,000 1779.29	42.10 62.652
<b>264-1 through 264-4</b>														
264-1	2.500 63.50	1.490 37.85	1.562 39.67	2.375 60.33	0.375 9.53	0.875 22.23	– –	3.687 93.65	2.015 51.18	1.672 42.47	2.015 51.18	0.672 17.07	135,000 600.51	12.40 18.453
264-2	2.500 63.50	1.490 37.85	1.562 39.67	2.375 60.33	0.375 9.53	0.875 22.23	3.083 78.31	6.770 171.96	2.015 51.18	1.672 42.47	2.015 51.18	1.672 42.47	270,000 1201.02	24.90 37.055
264-3	2.500 63.50	1.490 37.85	1.562 39.67	2.375 60.33	0.375 9.53	0.875 22.23	3.083 78.31	9.853 250.27	2.015 51.18	1.672 42.47	2.015 51.18	1.672 42.47	405,000 1801.53	37.30 55.509
264-4	2.500 63.50	1.490 37.85	1.562 39.67	2.375 60.33	0.375 9.53	0.875 22.23	3.083 78.31	12.936 328.57	2.015 51.18	1.672 42.47	2.015 51.18	1.672 42.47	540,000 2402.04	49.80 74.111
<b>240-1 through 240-4</b>														
240-1	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	– –	3.708 94.18	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	157,800 701.93	16.40 24.406
240-2	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	3.458 87.83	7.166 182.02	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	315,600 1,403.86	32.20 47.919
240-3	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	3.458 87.83	10.624 70.61	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	473,400 2,105.79	49.40 73.515
240-4	3.000 76.20	1.864 47.35	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	3.458 87.83	14.082 182.02	2.212 56.18	1.854 47.09	2.212 56.18	1.854 47.09	631,200 2,807.72	65.70 97.772
<b>241-1</b>														
241-1	3.000 76.20	1.250 31.75	1.875 47.63	2.812 71.42	0.375 9.53	0.937 23.80	– –	3.094 78.59	– –	– –	1.905 48.39	1.547 39.29	152,200 677.02	16.20 24.108

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.  
NOTE: Oil field is always cottered.

### API 7F HEAVY SERIES OIL FIELD ROLLER CHAIN PRODUCTS

- Connecting link available in cottered/press fit or slip fit.
- Please consult Drives engineering for maximum allowable loads.
- Size 264 chain is produced with a heavy series side plate (0.375 in. thick plate material) and a larger diameter pin, which provides greater bearing area and improved wear life. 264 chain will fit on the same sprockets as 200H.



**TABLE 99. A.P.I. 7F HEAVY SERIES OIL FIELD ROLLER CHAIN PRODUCTS**

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin			Average Tensile Strength Through-Hardened Pins	Average Weight
	P			H	T			L	L <sub>3</sub>	L <sub>4</sub>		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m	
60HZ-1	<b>0.750</b> 19.05	<b>0.500</b> 12.70	<b>0.469</b> 11.91	<b>0.709</b> 18.01	<b>0.125</b> 3.18	<b>0.234</b> 5.94	<b>1.028</b> 26.11	<b>1.140</b> 28.96	<b>0.650</b> 16.51	<b>0.570</b> 14.48	<b>12,500</b> 55.60	<b>1.27</b> 1.890
80HZ-1	<b>1.000</b> 25.40	<b>0.625</b> 15.88	<b>0.625</b> 15.88	<b>0.949</b> 24.10	<b>0.156</b> 3.96	<b>0.312</b> 7.92	<b>1.283</b> 32.59	<b>1.413</b> 35.89	<b>0.839</b> 21.31	<b>0.707</b> 17.96	<b>21,500</b> 95.64	<b>2.24</b> 3.333
100HZ-1	<b>1.250</b> 31.75	<b>0.750</b> 19.05	<b>0.750</b> 19.05	<b>1.186</b> 30.12	<b>0.187</b> 4.75	<b>0.375</b> 9.53	<b>1.539</b> 39.09	<b>1.725</b> 43.82	<b>0.993</b> 25.22	<b>0.863</b> 21.92	<b>33,000</b> 146.79	<b>3.28</b> 4.881
120HZ-1	<b>1.500</b> 38.10	<b>1.000</b> 25.40	<b>0.875</b> 22.23	<b>1.425</b> 36.20	<b>0.219</b> 5.56	<b>0.437</b> 11.10	<b>1.925</b> 48.90	<b>2.085</b> 52.96	<b>1.186</b> 30.12	<b>1.043</b> 26.49	<b>45,100</b> 200.61	<b>4.61</b> 6.860
140HZ-1	<b>1.750</b> 44.45	<b>1.000</b> 25.40	<b>1.000</b> 25.40	<b>1.663</b> 42.24	<b>0.250</b> 6.35	<b>0.500</b> 12.70	<b>2.055</b> 52.20	<b>2.260</b> 57.40	<b>1.313</b> 33.35	<b>1.130</b> 28.70	<b>57,450</b> 255.55	<b>5.80</b> 8.631
160HZ-1	<b>2.000</b> 50.80	<b>1.250</b> 31.75	<b>1.126</b> 28.60	<b>1.899</b> 48.23	<b>0.283</b> 7.19	<b>0.563</b> 14.30	<b>2.437</b> 61.90	<b>2.673</b> 67.89	<b>1.520</b> 38.61	<b>1.339</b> 34.01	<b>72,800</b> 323.83	<b>7.55</b> 11.236
180HZ-1	<b>2.250</b> 57.15	<b>1.400</b> 35.56	<b>1.406</b> 35.71	<b>2.132</b> 54.15	<b>0.312</b> 7.92	<b>0.687</b> 17.45	<b>2.716</b> 68.99	<b>2.968</b> 75.39	<b>1.641</b> 41.68	<b>1.484</b> 37.69	<b>95,000</b> 422.58	<b>10.25</b> 15.254
200HZ-1	<b>2.50</b> 63.50	<b>1.490</b> 37.85	<b>1.562</b> 39.67	<b>2.375</b> 60.33	<b>0.375</b> 9.53	<b>0.781</b> 19.84	<b>3.083</b> 78.31	<b>3.344</b> 84.94	<b>2.015</b> 51.18	<b>1.672</b> 42.47	<b>136,000</b> 604.96	<b>12.4</b> 18.45
264Z-1	<b>2.500</b> 63.50	<b>1.490</b> 37.85	<b>1.562</b> 39.67	<b>2.375</b> 60.33	<b>0.375</b> 9.53	<b>0.875</b> 22.23	<b>3.083</b> 78.31	<b>3.344</b> 84.94	<b>2.015</b> 51.18	<b>1.672</b> 42.47	<b>135,000</b> 600.51	<b>12.40</b> 18.453
240HZ-1	<b>3.000</b> 76.20	<b>1.875</b> 47.63	<b>1.875</b> 47.63	<b>2.850</b> 72.39	<b>0.500</b> 12.70	<b>0.937</b> 23.80	<b>3.984</b> 101.19	<b>4.265</b> 108.33	<b>2.453</b> 62.31	<b>2.157</b> 54.79	<b>217,000</b> 965.26	<b>19.57</b> 29.123

Dimensions are subject to change. Contact Drives to obtain certified prints for design and construction.

## POWER TONG CHAIN

Power tongs are used to spin and tighten drill pipe, casing, tubing or other types of pipe. In some instances they also are used to apply the final makeup torque. The chain used on the power tongs is designed to grip the pipe. We supply individual boxes of power tong chains that are cut to the specified length required for the power tong you have. Please contact your Drives representative for availability of your power tong chain.

## COIL TUBING INJECTOR CHAIN

As chain interacts with the injector sprockets, positioned gripper blocks secure the tubing to advance or retract the coil within the well. Special chain pins manufactured from alloy steel are through-hardened for ductility and fatigue resistance. Use Drives coil tubing injector chain kits with OEM Carrier/Gripper blocks. Contact Drives for additional kits.

### Coil Tubing Injector Chain to Fit OEM Gripper Blocks

Primary oil field chain features include:

- All ballized plates.
- Wide-waisted link plates.
- Through-hardened shot peened pins
- Special hook cotter.
- Coated T-pin.

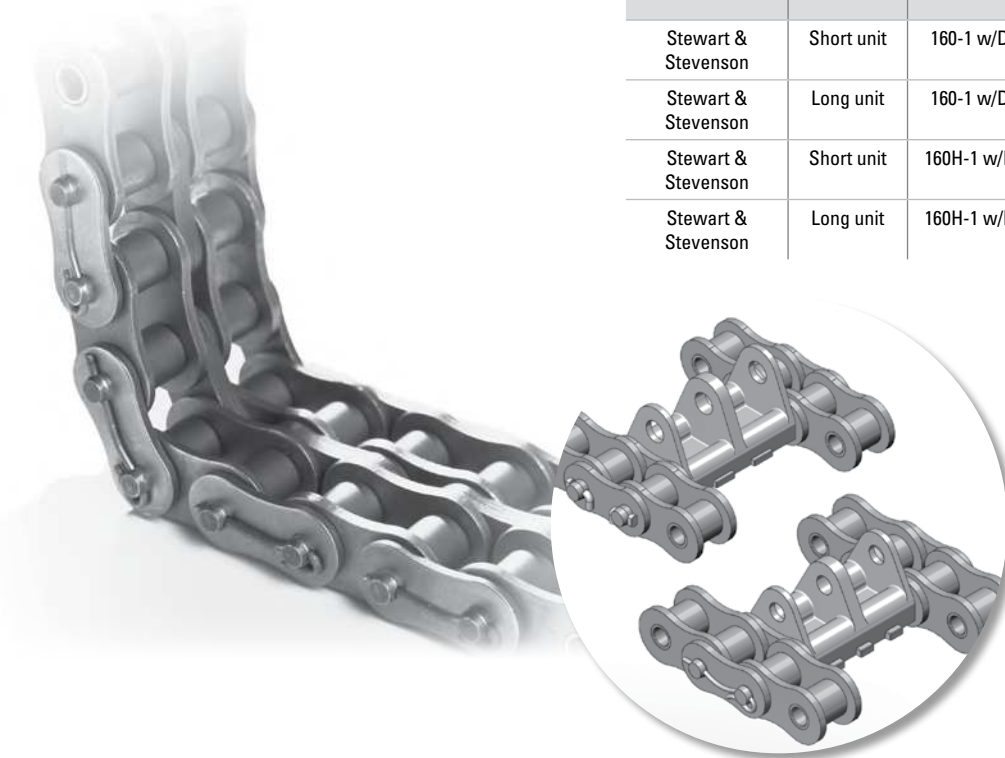
**TABLE 100. COIL TUBE CHAIN KITS AVAILABLE**

Manufacturer	Coiled Tube Unit Model	Chain Size
National Oilwell	RT10	120-3
National Oilwell	RT20	120-3
National Oilwell	RT30	120-3
National Oilwell	RT3238	120-3
National Oilwell	RT25	120-3
National Oilwell	RT60	160-4
National Oilwell	RT100	160-4
Hydra Rig	HR560/660	180-4
Hydra Rig	HR580/680	200-4
Hydra Rig	HR440	180-3
Hydra Rig	HR480	200-3
Hydra Rig	HR5100	180-6
Hydra Rig	HR635	140-5

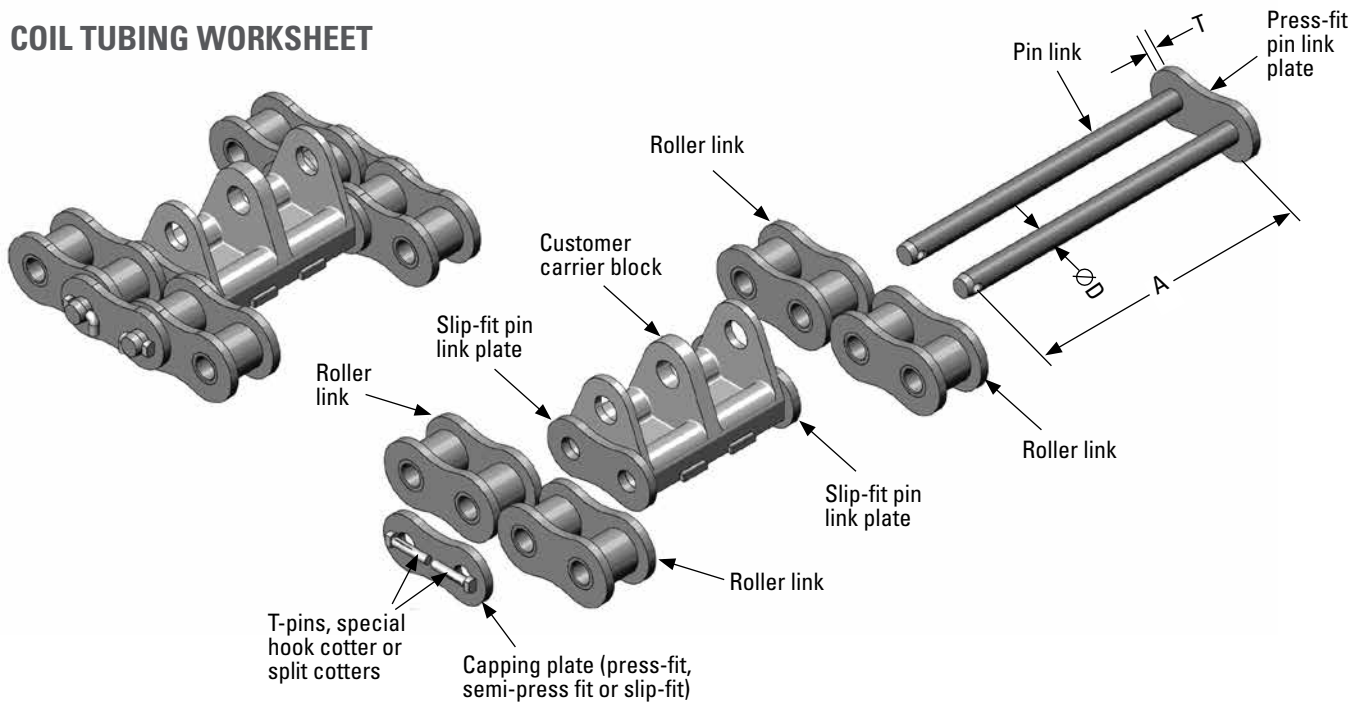
We suggest that you change out the sprockets each time you replace the roller chain.

**TABLE 101. COIL TUBE CHAIN ASSEMBLIES AVAILABLE**

Manufacturer	Coiled Tube Unit Model	Chain Size	Strand	Number of Strands Required
Stewart & Stevenson	Short unit	160-1 w/D3	14 pitch	8
Stewart & Stevenson	Long unit	160-1 w/D3	14 pitch	10
Stewart & Stevenson	Short unit	160H-1 w/D3	14 pitch	8
Stewart & Stevenson	Long unit	160H-1 w/D3	14 pitch	10



**COIL TUBING WORKSHEET**



COMPANY \_\_\_\_\_ CONTACT \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TELEPHONE \_\_\_\_\_ FAX \_\_\_\_\_

NOTES \_\_\_\_\_

Use this form to identify the chain and attachments you need. If you have any questions, please contact Drives engineering at 800-435-0782.

**Note:**

1. Semi press-fit plates are available on chain sizes 160, 180 and 200.
2. Hook cotters will be supplied on chain sizes 120-180.
3. T-pins will be supplied on chain sizes 200 and 240.

Description	No.	A	D	T
		in.	in.	in.
ANSI Chain Number				
Pin				
Sidebar				

Kit Components	Quantity
Partial Pin Links	
Roller Links	
Middle Slip-Fit Plates	

Capping Plates	Quantity
Full Press-Fit	
Semi Press-Fit	
Slip-Fit	

Kit Components	Quantity
Hook Cotters	
T-Pins	
Split Cotters	

ADDITIONAL INFORMATION \_\_\_\_\_



## EXTENDED LIFE CHP® SERIES CHAIN

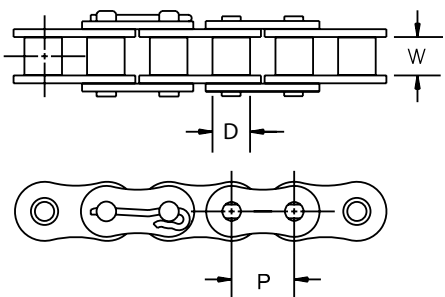


Fig. 46. Extended Life CHP® series chain.

- Directly interchangeable with standard ANSI chain.
- Outstanding wear and shock-load performance, even at elevated temperatures.
- No reduction in working loads or operating speeds.
- Exceptional pin wear resistance reduces chain elongation and can increase wear life up to three times more than conventional premium chains (fig. 37).
- Full range of ANSI standard attachments available.
- Extended Life CHP offsets available on a made-to-order basis. Two pitch riveted offsets are required.
- Cotter-type connecting links standard for Extended Life CHP® chain.
  - 40 through 60 pitch dual cotter key.
  - 80 through 180 pitch hardened hook cotter.
  - 200 through 240 pitch coated T-pin.
- Available in single- and double-strand sizes – #40 to #240.
- Riveted or cotted pins available depending on size.
- Corrosion resistant finishes available upon request for side bars, bushings and rollers.
- We suggest operating roller chain with periodic lubrication and maintenance. Various lubricants are available, including food grade and no-stain, depending on application.
- **Extended Life CHP also can be applied to carbon steel heavy series chain and other specialty chains, silver shield, stainless steel and engineered class chain. Please consult with your Drives representative.**
- Chain is available with:
  - Hot dip lubricant for optimal chain wear life.
  - Rust inhibitor for those customers who do not require hot dip lubricant.

TABLE 102. EXTENDED LIFE CHP® SERIES CHAIN SPECIFICATIONS

Chain No.	Pitch	Width Between L.P.	Roller Diameter	Average Weight
	P	W	D	
	in. mm	in. mm	in. mm	lbs/ft kg/m
40	0.500 12.700	0.313 7.950	0.313 7.950	0.42 0.63
50	0.625 15.875	0.376 9.550	0.400 10.160	0.71 1.06
60	0.750 19.050	0.500 12.700	0.469 11.913	1.07 1.59
80	1.000 25.400	0.627 15.926	0.625 15.875	1.87 2.78
100	1.250 31.750	0.755 19.177	0.750 19.050	2.80 4.17
120	1.500 38.100	1.000 25.400	0.875 22.225	4.14 6.15
140	1.750 44.450	1.000 25.400	1.000 25.400	5.14 7.64
160	2.000 50.800	1.250 31.750	1.126 28.600	6.60 9.83
180	2.250 57.150	1.400 35.560	1.406 35.712	9.10 13.54
200	2.500 63.500	1.490 37.846	1.562 39.675	10.90 16.22
240	3.000 76.200	1.864 47.346	1.875 47.625	16.40 24.41
C2040	1.000 25.400	0.312 7.925	0.312 7.925	0.34 0.51
C2050	1.250 31.750	0.376 9.550	0.400 10.160	0.58 0.86
C2060H	1.500 38.100	0.500 12.700	0.470 11.938	1.01 1.50
C2080H	2.000 50.800	0.625 15.875	0.625 15.875	1.20 1.79

NOTE: Product specifications are subject to change without notice.  
NOTE: Contact your Drives representative to obtain certified prints for design and construction.

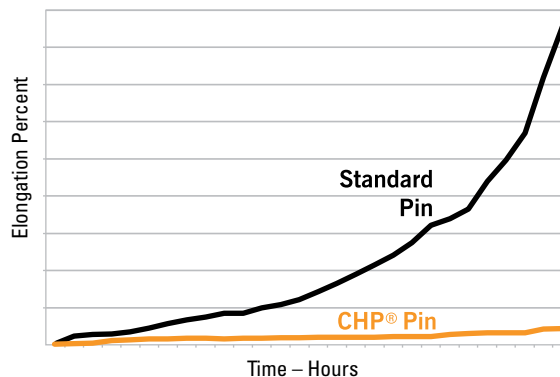


Fig. 47. Elongation vs. time.

### CORROSION RESISTANT CHAINS

If your power-transmission or conveyor-chain application requires resistance to moisture, mild or aggressive corrosive agents, or extreme temperatures, look to us for the corrosion resistant chain products that best fit your needs. The chain you receive will help provide the dependability, reliability and productivity that makes us a leader in the production of power transmission and conveyor chains.



#### NICKEL-PLATED CHAIN

Nickel-plated chain is designed to resist incidental contact or exposure to water or water-based washdown operations. We apply an electroless nickel plating to the component parts prior to assembly to provide initial coverage of all exposed carbon material. Special attention is placed on the after-plating processes to help remove the possibility of hydrogen embrittlement – a common occurrence in lesser-quality chain.

#### SILVER SHIELD CR® CHAIN

Silver Shield CR® chain is available for applications that may be subjected to mildly caustic or acidic environments. Silver Shield CR® chain consist of our standard carbon steel components, specially coated with a zinc-aluminum compound. This compound, combined with a polymer-based resin, tightly adheres to the components during a high-temperature baking process. This combination-quality carbon steel components and environmental-resistant coating – provides one of the best alternatives to stainless in applications where stainless has historically been the only option.

#### 600 AS SERIES STAINLESS STEEL CHAIN

The primary use of 600 AS series stainless steel chain is in corrosive and/or high-temperature environments, which shorten the life of a standard carbon steel chain. The hardened round parts provide up to a 50 percent higher working load and better wear life than 304 PS series stainless steel chain. This chain is designed for drive applications that normally have a high number of articulations.

#### 304 PS SERIES STAINLESS STEEL CHAIN

The primary use of 304 PS series stainless steel chain is in corrosive and/or high-temperature environments, which shorten the life of standard carbon steel roller chain. The 304 PS series stainless steel chain provides excellent resistance to corrosion and high temperatures. 304 PS series stainless steel is generally considered non-magnetic.

#### 316 NS SERIES STAINLESS STEEL CHAIN

The primary use of 316 NS series stainless steel chain is in highly corrosive and/or extreme-temperature environments which shorten the life of 304 PS series stainless steel chain.

#### **⚠ CAUTION**

***Failure to follow these cautions may result in property damage.***

Do not weld or torch-cut nickel plated or Silver Shield CR® coated chains. Consult your Drives representative for application information.

## SELECTION INFORMATION

We offer stainless, Silver Shield CR and nickel-plated (NP) materials and coatings in commonly used sizes. They're available in standard packaged lengths or cut-to-length as required. Additionally, attachment link plates and extended pins are readily available for the most commonly requested ANSI power-transmission and extended pitch conveyor chains. Contact your Drives representative for the specific availability of the size and configuration your application requires.

The overall application requirements are important when selecting the correct type of roller or conveyor chain. The factors that most often define what chain combination should be used are resistance to the environment, wear life/strength and total operational cost.

The following are some characteristics to consider when selecting the chain that best suits your application.

## ENVIRONMENT RESISTANCE

The chain selected should be capable of resisting the majority of the chemical and/or temperature requirements. If it's an ambient-temperature environment, then you need to only address the chemical presence. Our stainless, nickel-plated or Silver Shield CR® chains may be considered depending upon the severity of the chemical environment. If the environment is one that is elevated or sub-zero, stainless steel chain will most often provide the best overall operation.

## WEAR LIFE/STRENGTH

If satisfactory chain life is defined as extended wear, then carbon steel based products are best suited. Our nickel-plated or Silver Shield CR® chains are constructed from carbon steel components that have the highest level of wear resistance and strength.

Chain strength is normally defined by its allowable working load. This value is one at which the chain can be expected to operate at or below for an indefinite period of time. Remember, allowable working loads are significantly less than ultimate tensile strength. Chains can have different allowable working loads but have similar ultimate tensile strengths.

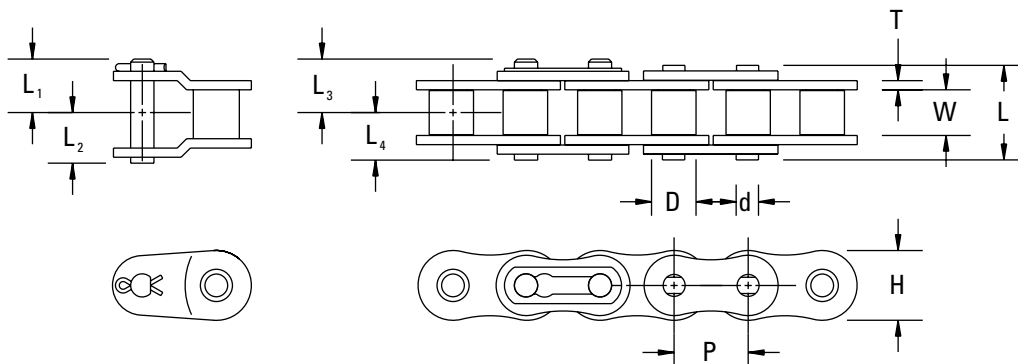
## COST

Cost normally depends on the material used to produce the chain. Stainless steel chain is considerably more costly to produce than carbon-based chain. However, if the environment requires a chain with exceptional corrosion resistance, a carbon steel based chain may provide the user with a lower-priced product, but may incur a higher cost of operation.

### NICKEL-PLATED CHAIN

We produce nickel-plated chain to withstand the effects of exposure to moisture, outdoor conditions and incidental washdown applications. All components are identical to our carbon steel components with the addition of electroless nickel plating applied prior to assembly, which provides initial coverage of all exposed carbon material.

- Equal in strength and wear life to carbon steel chain.
- Electroless nickel-plated parts provide uniform and comprehensive protection.
- Resists rust from incidental exposure to water or water vapor.
- Nickel plating applied prior to assembly.



**TABLE 103. NICKEL-PLATED ATTACHMENT CHAIN – ANSI WITH STANDARD ATTACHMENTS**

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Average Weight
	P	W	D	H	T	d	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs./ft. kg/m
40NP	<b>0.500</b> 12.70	<b>0.312</b> 7.92	<b>0.312</b> 7.92	<b>0.472</b> 11.99	<b>0.060</b> 1.52	<b>0.156</b> 3.96	<b>0.630</b> 16.00	<b>0.404</b> 10.26	<b>0.317</b> 8.05	<b>0.377</b> 9.58	<b>0.315</b> 8.00	<b>0.420</b> 0.625
50NP	<b>0.625</b> 15.88	<b>0.376</b> 9.55	<b>0.400</b> 10.16	<b>0.590</b> 14.99	<b>0.080</b> 2.03	<b>0.200</b> 5.08	<b>0.795</b> 20.19	<b>0.489</b> 12.42	<b>0.399</b> 10.13	<b>0.489</b> 12.42	<b>0.398</b> 10.11	<b>0.713</b> 1.061
60NP	<b>0.750</b> 19.05	<b>0.500</b> 12.70	<b>0.469</b> 11.91	<b>0.705</b> 17.91	<b>0.094</b> 2.39	<b>0.234</b> 5.94	<b>0.996</b> 25.30	<b>0.600</b> 15.24	<b>0.498</b> 12.65	<b>0.648</b> 16.46	<b>0.498</b> 12.65	<b>1.067</b> 1.588
80NP	<b>1.000</b> 25.40	<b>0.626</b> 15.90	<b>0.625</b> 15.88	<b>0.943</b> 23.95	<b>0.125</b> 3.18	<b>0.313</b> 7.95	<b>1.283</b> 32.59	<b>0.768</b> 19.51	<b>0.638</b> 16.21	<b>0.857</b> 21.77	<b>0.642</b> 16.31	<b>1.868</b> 2.780
100NP	<b>1.250</b> 31.75	<b>0.755</b> 19.18	<b>0.750</b> 19.05	<b>1.180</b> 29.97	<b>0.156</b> 3.96	<b>0.375</b> 9.53	<b>1.595</b> 40.51	<b>0.908</b> 23.06	<b>0.785</b> 19.94	<b>0.912</b> 23.16	<b>0.785</b> 19.94	<b>2.680</b> 3.988
120NP	<b>1.500</b> 38.10	<b>1.000</b> 25.40	<b>0.875</b> 22.23	<b>1.425</b> 36.20	<b>0.187</b> 4.75	<b>0.437</b> 11.10	<b>1.955</b> 49.66	<b>1.119</b> 28.42	<b>1.071</b> 27.20	<b>1.119</b> 28.42	<b>0.989</b> 25.12	<b>3.980</b> 5.923
160NP	<b>2.000</b> 50.80	<b>1.250</b> 31.75	<b>1.125</b> 28.58	<b>1.899</b> 48.23	<b>0.250</b> 6.35	<b>0.562</b> 14.27	<b>2.538</b> 64.47	<b>1.454</b> 36.93	<b>1.370</b> 34.80	<b>1.454</b> 36.93	<b>1.209</b> 30.71	<b>6.790</b> 10.105

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

### SILVER SHIELD CR® ROLLER CHAIN

Many industry applications require a roller chain option that provides the strength of carbon steel combined with some degree of corrosion resistance. For this reason, we engineered Silver Shield CR. Silver Shield CR is constructed using our standard high-quality carbon components that have been specially coated using a zinc-aluminum compound. After coating, a protective polymer resin is applied and baked on to provide resistance to abrasion and flaking. Silver Shield CR is specifically designed to resist mild acidic or caustic environments.

- Equal in strength and wear resistance to carbon steel chain.
- Protective coating is applied to all parts for uniform and comprehensive protection.
- Silver Shield CR coating developed specifically for corrosion resistance in caustic or acidic environments.

**⚠ WARNING**  
*Failure to observe the following warnings could create a risk of death or serious injury.*

Do not weld to Silver Shield CR® chain as it will release toxic fumes.

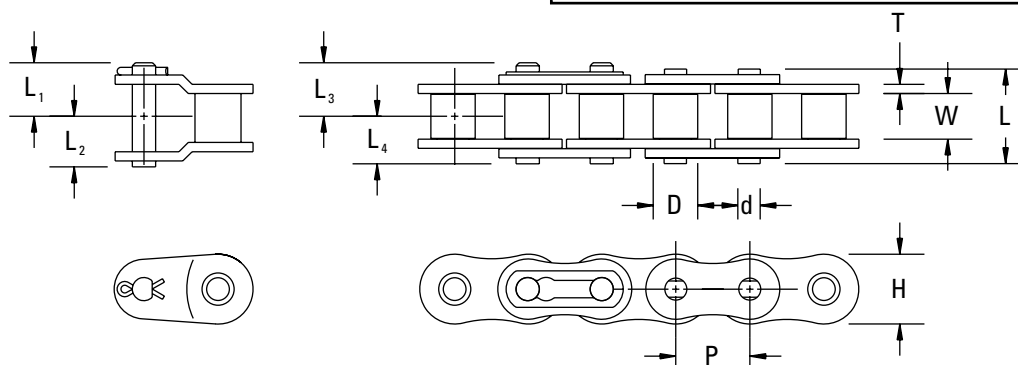


TABLE 104. SILVER SHIELD CR® CHAIN

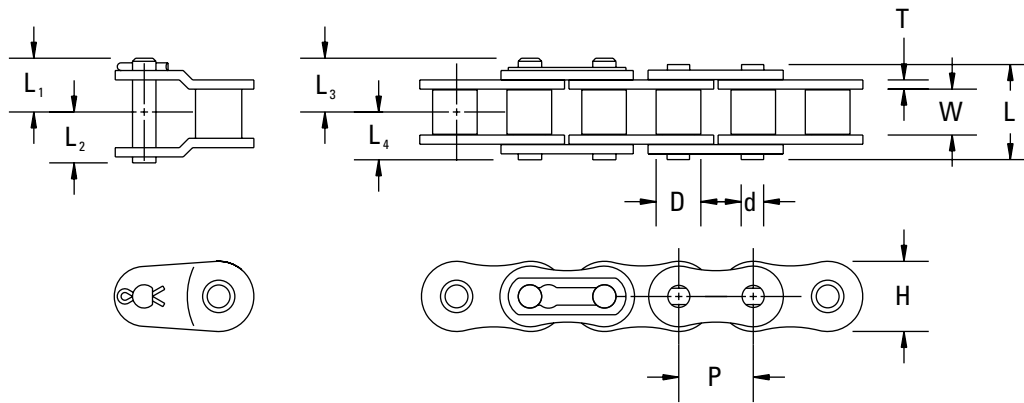
Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Average Weight
	P	W	D	H	T	d	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs./ft. kg/m
40CR	0.500 12.70	0.312 7.92	0.312 7.92	0.472 11.99	0.060 1.52	0.156 3.96	0.630 16.00	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	0.420 2.625
50CR	0.625 15.88	0.376 9.55	0.400 10.16	0.590 14.99	0.080 2.03	0.200 5.08	0.795 20.19	0.489 12.42	0.399 10.13	0.489 12.42	0.398 10.11	0.713 1.061
60CR	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.996 25.30	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	1.067 1.588
80CR	1.000 25.40	0.626 15.90	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.283 32.59	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	1.868 2.780
100CR	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.595 40.51	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	2.680 3.988
120CR	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.955 49.66	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	3.980 5.923
140CR	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	2.136 54.25	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	5.030 7.485
160CR	2.000 50.80	1.250 31.75	1.125 28.58	1.889 48.23	0.250 6.35	0.562 14.27	2.538 64.47	1.454 36.93	1.370 34.80	1.454 36.93	1.209 30.71	6.790 10.105

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.  
 NOTE: Solutions used in washdown applications may not be compatible with Silver Shield CR® coating. Contact your Drives representative for more information.

# PRECISION ROLLER CHAIN PRODUCT CHARTS

## CORROSION RESISTANT CHAINS

### STAINLESS STEEL ANSI CHAIN SIZES



**TABLE 105. STAINLESS STEEL**

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Max. Allowable Load		Average Weight
	P	W	D	H	T	d	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	PS(304SS) NS(316SS)	AS(600SS)	
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. k/N	lbs./ft. kg/m	
40 AS, PS or NS	0.500 12.70	0.312 7.92	0.312 7.92	0.472 11.99	0.060 1.52	0.156 3.96	0.630 16.00	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	100 0.44	155 230.67	0.420 0.625
50 AS, PS or NS	0.625 15.88	0.376 9.55	0.400 10.16	0.590 14.99	0.080 2.03	0.200 5.08	0.795 20.19	0.489 12.42	0.399 10.13	0.489 12.42	0.398 10.11	165 0.73	230 342.28	0.713 1.061
60 AS, PS or NS	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.996 25.30	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	231 1.03	350 520.86	1.067 1.588
80 AS, PS or NS	1.000 25.40	0.626 15.90	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.283 32.59	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	396 1.76	600 892.90	1.868 2.780
100 AS, PS or NS	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.595 40.51	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	568 2.53	850 1264.94	2.680 3.988
120 AS, PS or NS	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.955 49.66	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	850 3.78	1,278 1901.87	3.980 5.923
140 AS, PS or NS	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	2.136 54.25	1.253 31.83	1.150 29.21	1.263 32.08	1.068 27.13	1,025 4.56	1,535 2284.33	5.030 7.485
160 AS, PS or NS	2.000 44.45	1.250 25.40	1.125 25.40	1.899 42.24	0.250 5.59	0.562 12.70	2.538 54.25	1.454 31.83	1.370 29.21	1.454 32.08	1.209 27.13	1,400 4.56	2,108 2284.33	6.790 7.485

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

**TABLE 106. STAINLESS MATERIAL**

Abbrev.	Material	Link Plate	Pin	Bushing	Roller
PS	304 Series	AISI 304	AISI 304	AISI 304	AISI 304
NS	316 Series	AISI 316	AISI 316	AISI 316	AISI 316
AS	600 Series	AISI 300	600 PH <sup>(1)</sup>	600 PH <sup>(1)</sup>	600 PH <sup>(1)</sup>

<sup>(1)</sup>Contact your Drives representative for temperatures below -20° F (29° C) or above 500° F (260° C).

## SPECIALTY CHAINS

### EXTRA CLEARANCE EXC® CONVEYOR CHAIN

Extra Clearance EXC® conveyor chain is produced with extra clearance to compensate for steel expansion at temperatures up to 500° F and to permit free joint-action at oven temperatures. Extra Clearance chain may be used with ANSI chain sprockets. Consult your Drives representative for application and available sizes.

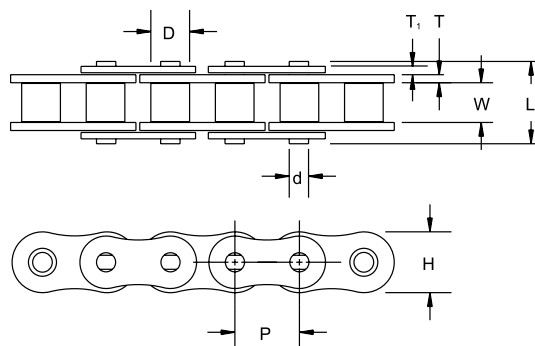


TABLE 107. EXTRA CLEARANCE EXC® CONVEYOR CHAIN

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate			Pin		Average Tensile Strength (Through-Hardened Pin)	Average Weight	Riveted	Cottered
	P	W	D	H	T	T <sub>1</sub>	d	L				
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm				
80 EXC	<b>1.000</b>	<b>0.625</b>	<b>0.625</b>	<b>0.949</b>	<b>0.156</b>	<b>0.120</b>	<b>0.312</b>	<b>1.413</b>	<b>21,500</b> 31995.525	<b>2.200</b> 0.01	STD	MTO
	25.40	15.88	15.88	24.10	3.96	3.05	7.92	35.89				

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

### E-SERIES CHAIN

- Available in riveted style.
- Cut-to-length chain available.
- E-series suggested for heavy-duty transfer systems.

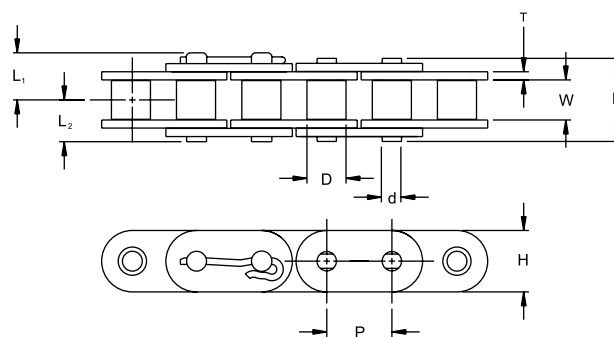


TABLE 108. E-SERIES CHAIN

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Pin			Average Weight
	P	W	D	H	T	d	L	L <sub>1</sub>	L <sub>2</sub>	
	in. mm	in. mm	in. mm	in. mm	in. mm.	in. mm	in. mm	in. mm	in. mm	
C60E	<b>0.750</b>	<b>0.500</b>	<b>0.469</b>	<b>0.705</b>	<b>0.094</b>	<b>0.234</b>	<b>0.996</b>	<b>0.648</b>	<b>0.498</b>	<b>1.173</b> 1.746
	19.05	12.70	11.91	17.91	2.39	5.94	25.30	16.46	12.65	
C80E	<b>1.000</b>	<b>0.627</b>	<b>0.625</b>	<b>0.943</b>	<b>0.125</b>	<b>0.312</b>	<b>1.283</b>	<b>0.857</b>	<b>0.642</b>	<b>2.054</b> 3.057
	25.40	15.93	15.88	23.95	3.18	7.92	32.59	21.77	16.31	
C100E	<b>1.250</b>	<b>0.755</b>	<b>0.750</b>	<b>1.180</b>	<b>0.156</b>	<b>0.375</b>	<b>1.595</b>	<b>0.912</b>	<b>0.785</b>	<b>3.081</b> 4.585
	31.75	19.18	19.05	29.97	3.96	9.53	40.51	23.16	19.94	
C120E	<b>1.500</b>	<b>1.000</b>	<b>0.875</b>	<b>1.425</b>	<b>0.187</b>	<b>0.437</b>	<b>1.955</b>	<b>1.119</b>	<b>0.989</b>	<b>4.588</b> 6.828
	38.10	25.40	22.23	36.20	4.75	11.10	49.66	28.42	25.12	
C140E	<b>1.750</b>	<b>1.000</b>	<b>1.000</b>	<b>1.663</b>	<b>0.220</b>	<b>0.500</b>	<b>2.136</b>	<b>1.253</b>	<b>1.068</b>	<b>5.878</b> 8.747
	44.45	25.40	25.40	42.24	5.59	12.70	54.25	31.83	27.13	
C160E	<b>2.000</b>	<b>1.250</b>	<b>1.126</b>	<b>1.899</b>	<b>0.252</b>	<b>0.563</b>	<b>2.538</b>	<b>1.454</b>	<b>1.269</b>	<b>7.787</b> 11.588
	50.80	31.75	28.60	48.23	6.40	14.30	64.47	36.93	32.23	

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

### COUPLING CHAIN

We manufacture coupling chain in accordance with ANSI/ASME B29.1. These duplex chains utilize a standard duplex connecting link for easy installation.

**TABLE 109. COUPLING CHAIN**

Chain No.	Pitch	Length Pitches	Weight
	<b>in.</b> <b>mm</b>	<b>in.</b> <b>mm</b>	<b>lb.</b> <b>kg</b>
40	<b>0.500</b> 12.700	<b>12</b> 12	<b>0.41</b> 0.19
40	<b>0.500</b> 12.700	<b>16</b> 16	<b>0.55</b> 0.25
50	<b>0.625</b> 15.875	<b>16</b> 16	<b>1.17</b> 0.53
50	<b>0.625</b> 15.875	<b>18</b> 18	<b>1.32</b> 0.60
60	<b>0.750</b> 19.050	<b>18</b> 18	<b>2.33</b> 1.06
60	<b>0.750</b> 19.050	<b>20</b> 20	<b>2.59</b> 1.17
60	<b>0.750</b> 19.050	<b>22</b> 22	<b>2.84</b> 1.29
80	<b>1.000</b> 25.400	<b>18</b> 18	<b>5.60</b> 2.54
80	<b>1.000</b> 25.400	<b>20</b> 20	<b>6.23</b> 2.83
100	<b>1.250</b> 31.750	<b>18</b> 18	<b>10.51</b> 4.77
100	<b>1.250</b> 31.750	<b>20</b> 20	<b>11.67</b> 5.29
120	<b>1.500</b> 38.100	<b>18</b> 18	<b>18.61</b> 8.44
120	<b>1.500</b> 38.100	<b>22</b> 22	<b>22.74</b> 10.31



### LEAF CHAIN

Drives leaf chain is designed and manufactured in accordance to ANSI standard B29.8.

- Alloy steel pins are through-hardened for ductility at low temperatures while maintaining hardness for wear life.
- Through-hardened plates with ballized holes are used for improved fatigue strength.
- When ordering, specify your requirements. Strands with an odd number of pitches, inner links at both ends will be provided as standard.

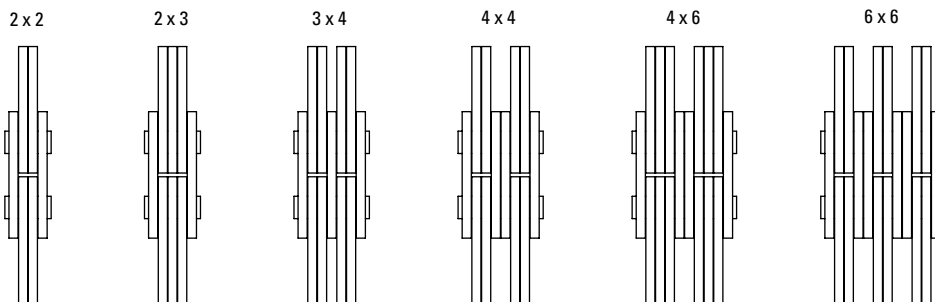
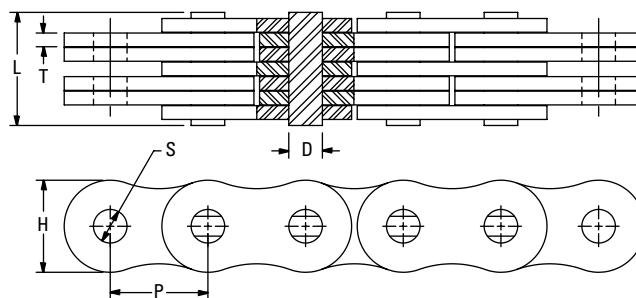


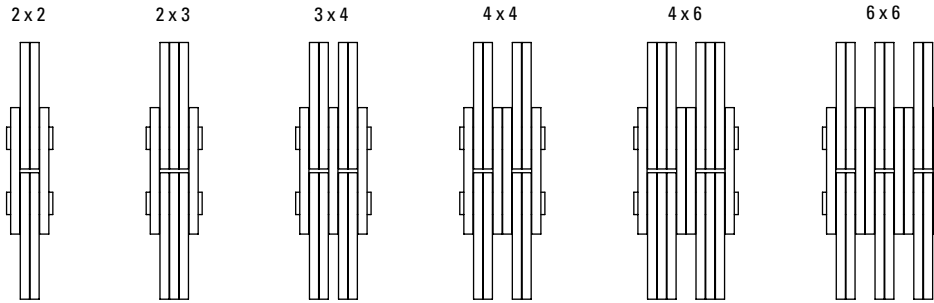
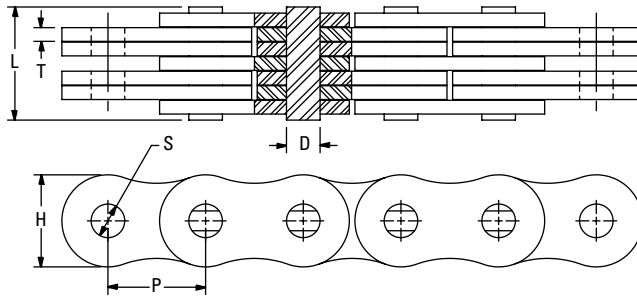
TABLE 110. LEAF CHAIN

Chain Sizes	Pitch	Lacing	Min. Tensile Strength	D	L	T	H	Hole Dia. (Min.)	Approx. Weight
	P							S	
	in. mm		lbs. kN	in. mm	in. mm	in. mm	in. mm	in. mm	lbs./ft. kg/m
BL1222	1.500 38.100	2X2	41,800 186	0.500 12.700	1.11 28.19	0.220 5.588	1.425 36.195	0.502 12.741	3.25 4.84
BL1223	1.500 38.100	2X3	41,800 186	0.500 12.700	1.34 34.04	0.220 5.588	1.425 36.195	0.502 12.741	4.39 6.53
BL1234	1.500 38.100	3X4	67,200 299	0.500 12.700	1.78 45.21	0.220 5.588	1.425 36.195	0.502 12.741	6.11 9.09
BL1244	1.500 38.100	4X4	83,600 372	0.500 12.700	2.00 50.80	0.220 5.588	1.425 36.195	0.502 12.741	6.98 10.39
BL1246	1.500 38.100	4X6	83,600 372	0.500 12.700	2.46 62.48	0.220 5.588	1.425 36.195	0.502 12.741	8.07 12.01
BL1266	1.500 38.100	6X6	125,600 559	0.500 12.700	2.92 74.17	0.220 5.588	1.425 36.195	0.502 12.741	9.80 14.58
BL1422	1.750 44.450	2X2	52,900 235	0.562 14.275	1.26 32.00	0.252 6.401	1.661 42.189	0.564 14.321	4.91 7.31
BL1423	1.750 44.450	2X3	52,900 235	0.562 14.275	1.52 38.61	0.252 6.401	1.661 42.189	0.564 14.321	6.09 9.06
BL1434	1.750 44.450	3X4	87,000 387	0.562 14.275	2.04 51.82	0.252 6.401	1.661 42.189	0.564 14.321	7.61 11.33
BL1444	1.750 44.450	4X4	105,800 471	0.562 14.275	2.30 58.42	0.252 6.401	1.661 42.189	0.564 14.321	8.71 12.96
BL1446	1.750 44.450	4X6	105,800 471	0.562 14.275	2.80 71.12	0.252 6.401	1.661 42.189	0.564 14.321	12.10 18.01
BL1466	1.750 44.450	6X6	158,700 706	0.562 14.275	3.32 84.33	0.252 6.401	1.661 42.189	0.564 14.321	15.13 22.52

Continued on next page.

# PRECISION ROLLER CHAIN PRODUCTS

## SPECIALTY CHAINS



Continued from previous page.

Chain Sizes	Pitch P	Lacing	Min. Tensile Strength	D	L	T	H	Hole Dia. (Min.) S	Approx. Weight
	in. mm							lbs. kN	
BL1622	2.000 50.800	2X2	79,300 353	0.687 17.450	1.42 36.07	0.281 7.137	1.898 48.209	0.689 17.490	6.61 9.84
BL1623	2.000 50.800	2X3	79,300 353	0.687 17.450	1.72 43.69	0.281 7.137	1.898 48.209	0.689 17.490	8.17 12.16
BL1634	2.000 50.800	3X4	124,500 554	0.687 17.450	2.30 58.39	0.281 7.137	1.898 48.209	0.689 17.490	11.39 16.95
BL1644	2.000 50.800	4X4	158,600 705	0.687 17.450	2.61 66.29	0.281 7.137	1.898 48.209	0.689 17.490	12.75 18.97
BL1646	2.000 50.800	4X6	158,600 705	0.687 17.450	3.21 81.53	0.281 7.137	1.898 48.209	0.689 17.490	16.19 24.09
BL1666	2.000 50.800	6X6	238,300 1,060	0.687 17.450	3.81 96.77	0.281 7.137	1.898 48.209	0.689 17.490	19.31 28.74
BL1688	2.000 50.800	8X8	263,100 1,157	0.687 17.450	4.75 120.65	0.281 7.137	1.898 48.209	0.689 17.490	23.18 35.00
BL2022	2.500 63.500	2X2	119,000 529	0.937 23.800	1.86 47.24	0.375 9.525	2.312 58.725	0.940 23.876	10.62 15.80
BL2023	2.500 63.500	2X3	119,000 529	0.937 23.800	2.25 57.15	0.375 9.525	2.312 58.725	0.940 23.876	13.31 19.81
BL2034	2.500 63.500	3X4	178,800 795	0.937 23.800	3.03 76.96	0.375 9.525	2.312 58.725	0.940 23.876	18.62 27.71
BL2044	2.500 63.500	4X4	238,500 1,061	0.937 23.800	3.43 87.12	0.375 9.525	2.312 58.725	0.940 23.876	21.24 31.61
BL2046	2.500 63.500	4X6	238,500 1,061	0.937 23.800	4.21 106.93	0.375 9.525	2.312 58.725	0.940 23.876	26.55 39.51
BL2066	2.500 63.500	6X6	357,800 1,591	0.937 23.800	4.99 126.75	0.375 9.525	2.312 58.725	0.940 23.876	31.85 47.40

50WR WRENCH CHAIN

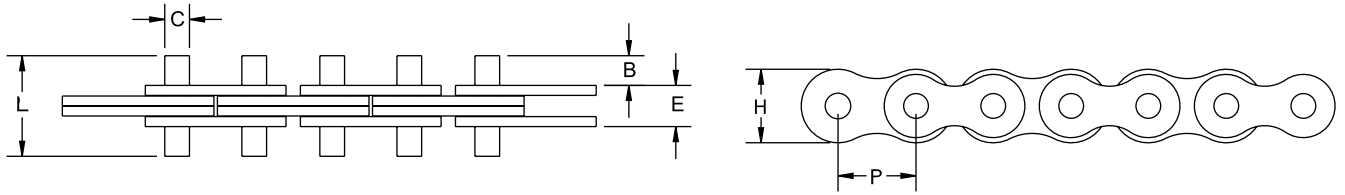


TABLE 111. 50WR WRENCH CHAIN

Chain No.	Pitch	Lacing	Pin Dia.	Pin Over All Length	Pin Projection	Link Plate	Width Over Link Plate	Average Tensile Strength Case-Hardened Pin	Average Weight
	P		C	L	B	H	E		
	in. mm		in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
50WR	0.625 15.88	2X2	0.2 5.08	0.806 20.47	0.238 6.05	0.59 14.99	0.33 8.38	6,000 26.69	0.50 0.744

D16B SPECIAL CHAIN

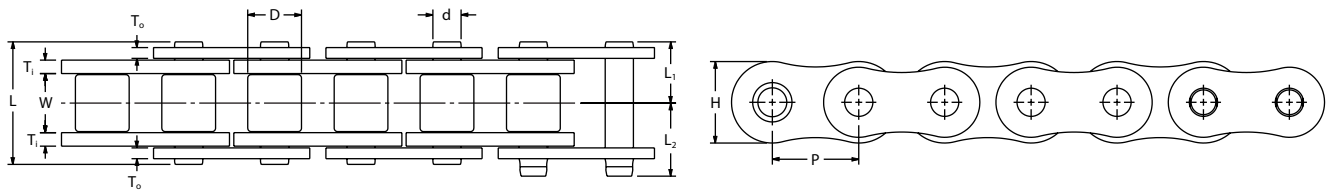


TABLE 112. D16B SPECIAL CHAIN

Chain No.	Pitch	Width Between Link Plate	Roller Dia.	Link Plate			Pin Dimensions				Working Load	Average Weight	
	P			W	D	H	T <sub>1</sub>	T <sub>0</sub>	d	L			L <sub>1</sub>
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
D16B SS	1.000 25.40	0.670 17.02	0.625 15.88	0.945 24.00	0.156 3.96	0.125 3.18	0.326 8.28	1.400 35.56	0.700 17.78	0.830 21.08	455 2.02	2.00 2.98	



## ***ATTACHMENT ROLLER CHAINS***

We deliver what customers need, when they need it, supplying attachment roller chains to get equipment running again.

We offer attachment roller chains in carbon steel, Extended Life CHP® series chain, Silver Shield CR, Silver Shield CR with Extended Life CHP pins, and stainless steel.

Our Drives representatives are available to help you select the right chain for your equipment.



### ATTACHMENT ROLLER CHAINS TYPES OF ATTACHMENT ROLLER CHAINS

Drives attachment roller chains are available in carbon steel, Silver Shield CR® coating, Extended Life CHP®, Silver Shield CR® plus Extended Life CHP®, and stainless steel.

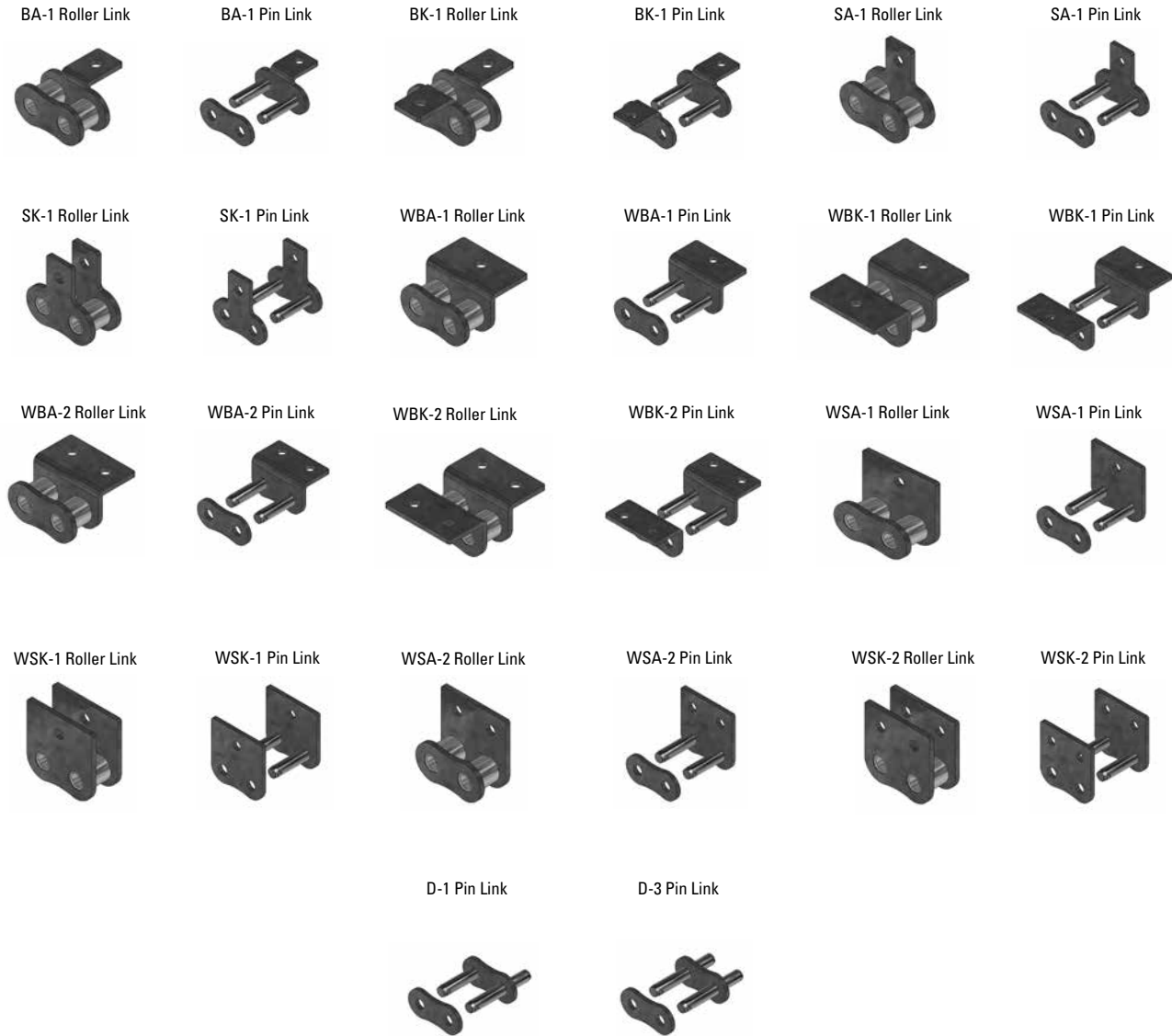


Fig. 48. Carbon steel attachment selection shown here.

CHAIN SIZES AVAILABLE WITH STANDARD ATTACHMENTS

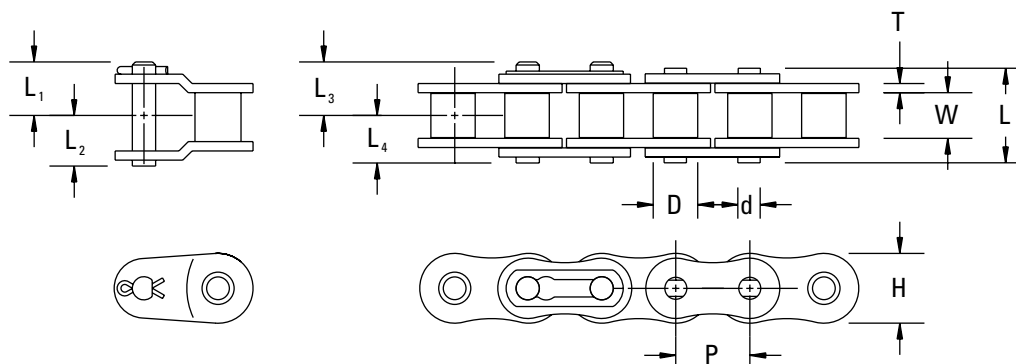


TABLE 113. DIMENSIONS FOR BASE CHAIN

Chain No.	Pitch P	Main Roller Link Inside Width W	Roller Dia. D	Link Plate		Pin						Max. Allowable Load		Average Weight lbs./ft. kg/m
				H	T	d	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	Carbon Steel	AS (600SS)	
				in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	
40 40AS	0.500 12.70	0.312 7.92	0.312 7.92	0.472 11.99	0.060 1.52	0.156 3.96	0.630 16.00	0.404 10.26	0.317 8.05	0.377 9.58	0.315 8.00	615.00 2.74	155.00 0.69	0.420 0.625
50 50AS	0.625 15.88	0.376 9.55	0.400 10.16	0.590 14.99	0.080 2.03	0.200 5.08	0.795 20.19	0.489 12.42	0.399 10.13	0.489 12.42	0.398 10.11	1010.00 4.49	230.00 1.02	0.713 1.061
60 60AS	0.750 19.05	0.500 12.70	0.469 11.91	0.705 17.91	0.094 2.39	0.234 5.94	0.996 25.30	0.600 15.24	0.498 12.65	0.648 16.46	0.498 12.65	1410.00 6.27	350.00 1.56	1.067 1.588
80 80AS	1.000 25.40	0.626 15.90	0.625 15.88	0.943 23.95	0.125 3.18	0.313 7.95	1.283 32.59	0.768 19.51	0.638 16.21	0.857 21.77	0.642 16.31	2350.00 10.45	600.00 2.67	1.868 2.780
100 100AS	1.250 31.75	0.755 19.18	0.750 19.05	1.180 29.97	0.156 3.96	0.375 9.53	1.595 40.51	0.908 23.06	0.785 19.94	0.912 23.16	0.785 19.94	3800.00 16.90	850.00 3.78	2.680 3.988
120 120AS	1.500 38.10	1.000 25.40	0.875 22.23	1.425 36.20	0.187 4.75	0.437 11.10	1.955 49.66	1.119 28.42	1.071 27.20	1.119 28.42	0.989 25.12	5380.00 23.93	1278.00 5.68	3.980 5.923
140 140AS	1.750 44.45	1.000 25.40	1.000 25.40	1.663 42.24	0.220 5.59	0.500 12.70	2.136 54.25	1.253 31.83	1.150 29.21	1.253 31.83	1.068 27.13	7280.00 32.38	1535.00 6.83	5.030 7.485
160 160AS	2.000 50.80	1.250 31.75	1.125 28.58	1.899 48.23	0.250 6.35	0.562 14.27	2.538 64.47	1.454 36.93	1.370 34.80	1.454 36.93	1.209 30.71	9190.00 40.88	2100.00 9.34	6.790 10.105

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

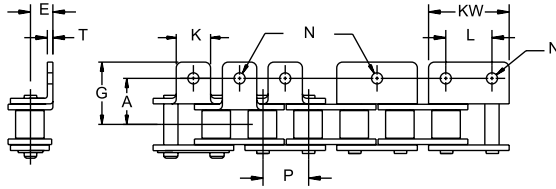
NOTE: 304SS (PS) or 316SS (NS) chains are available upon request.

NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

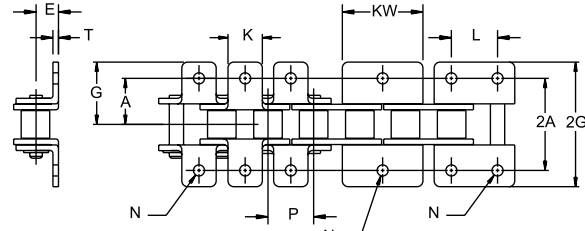
# ATTACHMENT ROLLER CHAIN PRODUCT CHARTS

## ATTACHMENT ROLLER CHAIN

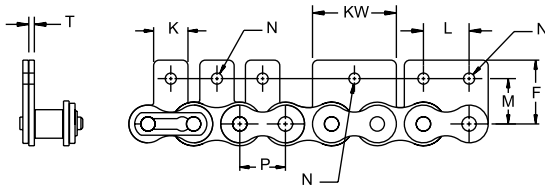
### STANDARD ROLLER CHAIN ATTACHMENTS – BA, SA, BK, SK



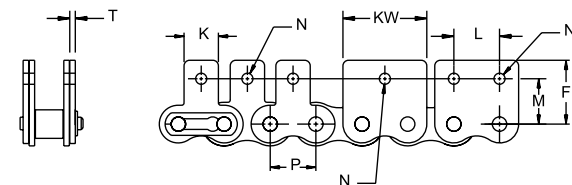
**BA-1**



**BK-1**



**SA-1**



**SK-1**

**TABLE 114. DIMENSIONS FOR STANDARD – BA, SA, BK, SK**

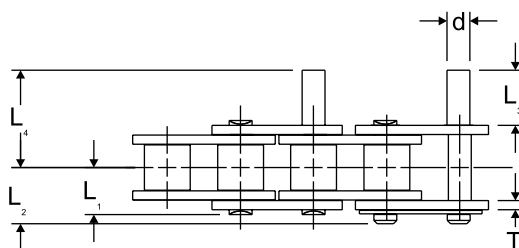
Chain No.	BA, SA, BK, SK Type Attachment													Additional Weight Per Attachment	
	P	T	K	KW	L	N	A	E	G	2A	2G	M	F	BA-SA	BK-SK
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN
40 40AS	0.500 12.70	0.060 1.52	0.374 9.50	0.970 24.64	0.500 12.70	0.142 3.61	0.500 12.70	0.311 7.90	0.681 17.30	1.000 25.40	1.362 34.59	0.500 12.70	0.685 17.40	0.0044 0.002	0.0088 0.004
50 50AS	0.625 15.88	0.080 2.03	0.500 12.70	1.210 30.73	0.625 15.88	0.205 5.21	0.625 15.88	0.406 10.31	0.917 23.29	1.250 31.75	1.834 46.58	0.625 15.88	0.906 23.01	0.0066 0.003	0.0132 0.006
60 60AS	0.750 19.05	0.094 2.39	0.625 15.88	1.460 37.08	0.750 19.05	0.205 5.21	0.750 19.05	0.469 11.91	1.106 28.09	1.500 38.10	2.212 56.18	0.720 18.29	1.051 26.70	0.0154 0.007	0.0308 0.014
80 80AS	1.000 25.40	0.125 3.18	0.750 19.05	1.940 49.28	1.000 25.40	0.268 6.81	1.000 25.40	0.625 15.88	1.413 35.89	2.000 50.80	2.826 71.78	0.969 24.61	1.358 34.49	0.0287 0.013	0.0574 0.026
100 100AS	1.250 31.75	0.156 3.96	1.000 25.40	– –	– –	0.343 8.71	1.250 31.75	0.780 19.81	1.768 44.91	2.500 63.50	3.536 89.81	1.252 31.80	1.732 43.99	0.0572 0.026	0.1144 0.052
120 120AS	1.500 38.10	0.187 4.75	1.250 31.75	– –	– –	0.386 9.80	1.500 38.10	0.906 23.01	2.197 55.80	3.000 76.20	4.394 111.61	1.437 36.50	2.081 52.86	0.0968 0.044	0.1935 0.088
140 140AS	1.750 44.45	0.221 5.61	1.375 34.93	– –	– –	0.448 11.38	1.750 44.45	1.125 28.58	2.484 63.09	3.500 88.90	4.968 126.19	1.750 44.45	2.500 63.50	0.1562 0.071	0.3124 0.142
160 160AS	2.000 50.80	0.250 6.35	1.500 38.10	– –	– –	0.516 13.11	2.000 50.80	1.252 31.80	2.827 71.81	4.000 101.60	5.654 143.61	2.000 50.80	2.760 70.10	0.2134 0.097	0.4268 0.194

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

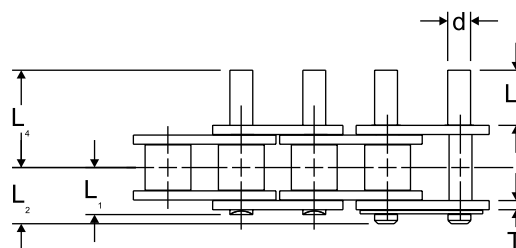
NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).



STANDARD ROLLER CHAIN ATTACHMENTS – D-1, D-3



D-1



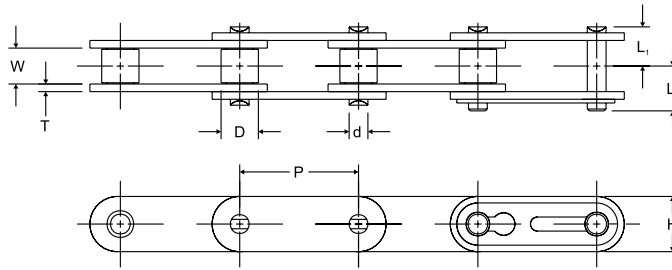
D-3

TABLE 115. CARBON STEEL – ANSI ROLLER CHAIN WITH ATTACHMENTS – D-1, D-3

Chain No.	P	T	d	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	Additional Weight Per Attachment	
								D-1	D-3
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN
40 40AS	0.500 12.70	0.060 1.52	0.156 3.96	0.317 8.05	0.377 9.58	0.374 9.50	0.661 16.79	0.002 0.001	0.004 0.002
50 50AS	0.625 15.88	0.080 2.03	0.200 5.08	0.399 10.13	0.489 12.42	0.469 11.91	0.827 21.01	0.004 0.002	0.008 0.004
60 60AS	0.750 19.05	0.094 2.39	0.234 5.94	0.498 12.65	0.648 16.46	0.563 14.30	1.018 25.86	0.006 0.003	0.012 0.005
80 80AS	1.000 25.40	0.125 3.18	0.313 7.95	0.638 16.21	0.857 21.77	0.752 19.10	1.335 33.91	0.020 0.009	0.040 0.018
100 100AS	1.250 31.75	0.156 3.96	0.325 8.26	0.785 19.94	0.912 23.16	0.937 23.80	1.698 43.13	0.027 0.012	0.054 0.024
120 120AS	1.500 38.10	0.187 4.75	0.437 11.10	0.989 25.12	1.119 28.42	1.126 28.60	2.024 51.41	0.044 0.020	0.088 0.040
140 140AS	1.750 44.45	0.220 5.59	0.500 12.70	1.068 27.13	1.253 31.83	1.311 33.30	2.264 57.51	0.066 0.030	0.132 0.060
160 160AS	2.000 50.80	0.250 6.35	0.562 14.27	1.263 32.08	1.454 36.93	1.500 38.10	2.654 67.41	0.099 0.045	0.198 0.090

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.  
 NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

### DOUBLE-PITCH CONVEYOR CHAIN SIZES AVAILABLE WITH STANDARD ATTACHMENTS



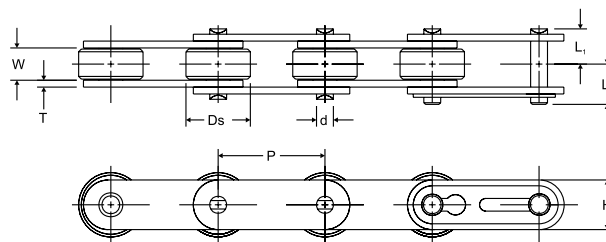
Small roller

TABLE 116. DIMENSIONS FOR BASE CHAIN – STANDARD ROLLER

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin			Max. Allowable Load		Average Weight
	P	W	D	H	T	d	L <sub>1</sub>	L <sub>2</sub>	Carbon Steel	AS (600SS)	
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	
C2040 C2040AS	<b>1.000</b> 25.40	<b>0.312</b> 7.92	<b>0.312</b> 7.92	<b>0.472</b> 11.99	<b>0.060</b> 1.52	<b>0.156</b> 3.96	<b>0.319</b> 8.10	<b>0.382</b> 9.70	<b>615</b> 2.74	<b>155</b> 0.69	<b>0.340</b> 0.506
C2050 C2050AS	<b>1.250</b> 31.75	<b>0.376</b> 9.55	<b>0.400</b> 10.16	<b>0.590</b> 14.99	<b>0.080</b> 2.03	<b>0.200</b> 5.08	<b>0.409</b> 10.39	<b>0.477</b> 12.12	<b>1,010</b> 4.49	<b>230</b> 1.02	<b>0.580</b> 0.863
C2060H C2060HAS	<b>1.500</b> 38.10	<b>0.500</b> 12.70	<b>0.469</b> 11.91	<b>0.687</b> 17.45	<b>0.125</b> 3.18	<b>0.234</b> 5.94	<b>0.590</b> 14.99	<b>0.660</b> 16.76	<b>1,410</b> 6.27	<b>375</b> 1.67	<b>1.010</b> 1.503
C2080H C2080HAS	<b>2.000</b> 50.80	<b>0.626</b> 15.90	<b>0.625</b> 15.88	<b>0.943</b> 23.95	<b>0.156</b> 3.96	<b>0.312</b> 7.92	<b>0.745</b> 18.92	<b>0.845</b> 21.46	<b>2,350</b> 10.45	<b>625</b> 2.78	<b>1.770</b> 2.634
C2100H C2100HAS	<b>2.500</b> 63.50	<b>0.750</b> 19.05	<b>0.750</b> 19.05	<b>1.150</b> 29.21	<b>0.187</b> 4.75	<b>0.375</b> 9.53	<b>0.830</b> 21.08	<b>0.980</b> 24.89	<b>3,800</b> 16.90	<b>900</b> 4.00	<b>2.380</b> 3.542
C2120H C2120HAS	<b>3.000</b> 76.20	<b>1.000</b> 25.40	<b>0.875</b> 22.23	<b>1.370</b> 34.80	<b>0.219</b> 5.56	<b>0.437</b> 11.10	<b>1.030</b> 26.16	<b>1.210</b> 30.73	<b>5,380</b> 23.93	<b>1,340</b> 5.96	<b>3.410</b> 5.075
C2160H C2160HAS	<b>4.000</b> 101.60	<b>1.250</b> 31.75	<b>1.125</b> 28.58	<b>1.870</b> 47.50	<b>0.281</b> 7.14	<b>0.563</b> 14.30	<b>1.337</b> 33.96	<b>1.514</b> 38.46	<b>9,190</b> 40.88	<b>2,170</b> 9.65	<b>6.020</b> 8.959

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).



**Carrier roller**

**TABLE 117. DIMENSIONS FOR BASE CHAIN – CARRIER ROLLER**

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin			Max. Allowable Load		Average Weight
	P			W	H	T	d	L <sub>1</sub>	L <sub>2</sub>	Carbon Steel	
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
C2042 C2042AS	<b>1.000</b> 25.40	<b>0.312</b> 7.92	<b>0.625</b> 15.88	<b>0.472</b> 11.99	<b>0.060</b> 1.52	<b>0.156</b> 3.96	<b>0.319</b> 8.10	<b>0.382</b> 9.70	<b>615</b> 2.74	<b>155</b> 0.69	<b>0.580</b> 0.863
C2052 C2052AS	<b>1.250</b> 31.75	<b>0.376</b> 9.55	<b>0.750</b> 19.05	<b>0.590</b> 14.99	<b>0.080</b> 2.03	<b>0.200</b> 5.08	<b>0.409</b> 10.39	<b>0.477</b> 12.12	<b>1,010</b> 4.49	<b>230</b> 1.02	<b>0.900</b> 1.339
C2062H C2062HAS	<b>1.500</b> 38.10	<b>0.500</b> 12.70	<b>0.875</b> 22.23	<b>0.687</b> 17.45	<b>0.125</b> 3.18	<b>0.234</b> 5.94	<b>0.590</b> 14.99	<b>0.660</b> 16.76	<b>1,410</b> 6.27	<b>375</b> 1.67	<b>1.461</b> 2.174
C2082H C2082HAS	<b>2.000</b> 50.80	<b>0.626</b> 15.90	<b>1.125</b> 28.58	<b>0.943</b> 23.95	<b>0.156</b> 3.96	<b>0.312</b> 7.92	<b>0.745</b> 18.92	<b>0.845</b> 21.46	<b>2,350</b> 10.45	<b>625</b> 2.78	<b>2.450</b> 3.646
C2102H C2102HAS	<b>2.500</b> 63.50	<b>0.750</b> 19.05	<b>1.562</b> 39.67	<b>1.150</b> 29.21	<b>0.187</b> 4.75	<b>0.375</b> 9.53	<b>0.830</b> 21.08	<b>0.980</b> 24.89	<b>3,800</b> 16.90	<b>900</b> 4.00	<b>3.90</b> 5.804
C2122H C2122HAS	<b>3.000</b> 76.20	<b>1.000</b> 25.40	<b>1.750</b> 44.45	<b>1.370</b> 34.80	<b>0.219</b> 5.56	<b>0.437</b> 11.10	<b>1.030</b> 26.16	<b>1.210</b> 30.73	<b>5,380</b> 23.93	<b>1,340</b> 5.96	<b>5.40</b> 8.036
C2162H C2162HAS	<b>4.000</b> 101.60	<b>1.250</b> 31.75	<b>2.250</b> 57.15	<b>1.870</b> 47.50	<b>0.281</b> 7.14	<b>0.563</b> 14.30	<b>1.337</b> 33.96	<b>1.514</b> 38.46	<b>9,190</b> 40.88	<b>2,170</b> 9.65	<b>9.21</b> 13.706

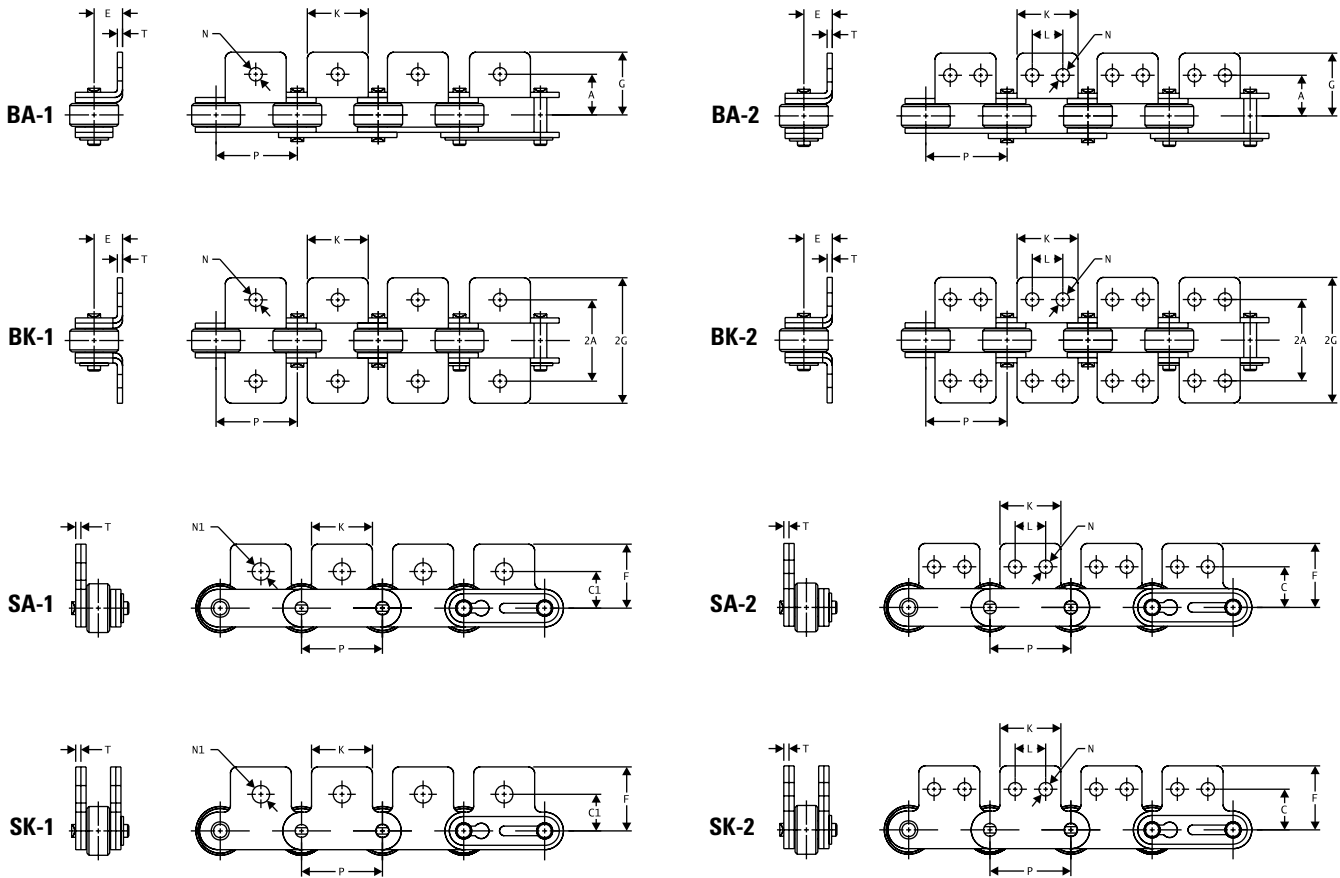
NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

# ATTACHMENT ROLLER CHAIN PRODUCT CHARTS

## ATTACHMENT ROLLER CHAIN

### STANDARD DOUBLE-PITCH CONVEYOR ATTACHMENTS – BA, SA, BK, SK



**TABLE 118. DIMENSIONS FOR STANDARD ATTACHMENTS – BA, SA, BK, SK**

Chain No.	Pitch P	Link Plate T	BA, SA, BK, SK Type Attachment												Additional Weight Per Attachment	
			K	N	L	A	E	G	2A	2G	C	F	C1	N1	BA-SA	BK-SK
			in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN
C2040, C2042, C2040AS, C2042AS	1.000 25.40	0.060 1.52	0.750 19.05	0.142 3.61	0.374 9.50	0.500 12.70	0.358 9.09	0.750 19.05	1.000 25.40	1.500 38.10	0.531 13.49	0.780 19.81	0.437 11.10	0.205 5.21	0.006 0.003	0.013 0.006
C2050, C2052, C2050AS, C2052AS	1.250 31.75	0.080 2.03	0.937 23.80	0.205 5.21	0.469 11.91	0.625 15.88	0.437 11.10	0.953 24.21	1.252 31.80	1.906 48.41	0.625 15.88	0.969 24.61	0.563 14.30	0.268 6.81	0.013 0.006	0.026 0.012
C2060H, C2062H, C2060HAS, C2062HAS	1.500 38.10	0.125 3.18	1.126 28.60	0.205 5.21	0.563 14.30	0.844 21.44	0.579 14.71	1.230 31.24	1.688 42.88	2.460 62.48	0.750 19.05	1.205 30.61	0.689 17.50	0.346 8.79	0.037 0.017	0.075 0.034
C2080H, C2082H, C2080HAS, C2082HAS	2.000 50.80	0.156 3.96	1.500 38.10	0.268 6.81	0.752 19.10	1.094 27.79	0.750 19.05	1.598 40.59	2.188 55.58	3.196 81.18	1.000 25.40	1.583 40.21	0.874 22.20	0.406 10.31	0.082 0.037	0.163 0.074
C2100H, C2102H, C2100HAS, C2102HAS	2.500 63.50	0.189 4.80	1.875 47.63	0.323 8.20	0.937 23.80	1.312 33.32	0.922 23.42	1.950 49.53	2.624 66.65	3.900 99.06	1.250 31.75	1.984 50.39	1.125 28.58	0.516 13.11	0.132 0.060	0.265 0.120
C2120H, C2122H, C2120HAS, C2122HAS	3.000 76.20	0.219 5.56	2.250 57.15	0.386 9.80	1.125 28.58	1.562 39.67	1.093 27.76	2.390 60.71	3.124 79.35	4.780 121.41	1.470 37.34	2.361 59.97	1.319 33.50	0.578 14.68	0.221 0.100	0.441 0.200
C2160H, C2162H, C2160HAS, C2162HAS	4.000 101.60	0.281 7.14	3.060 77.72	0.516 13.11	1.500 38.10	2.062 52.37	1.437 36.50	3.060 77.72	4.125 104.78	6.120 155.45	2.000 50.80	3.093 78.56	1.75 44.45	0.771 19.58	0.468 0.212	0.895 0.406

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.  
NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

STANDARD DOUBLE-PITCH CONVEYOR ATTACHMENTS – D-1, D-3

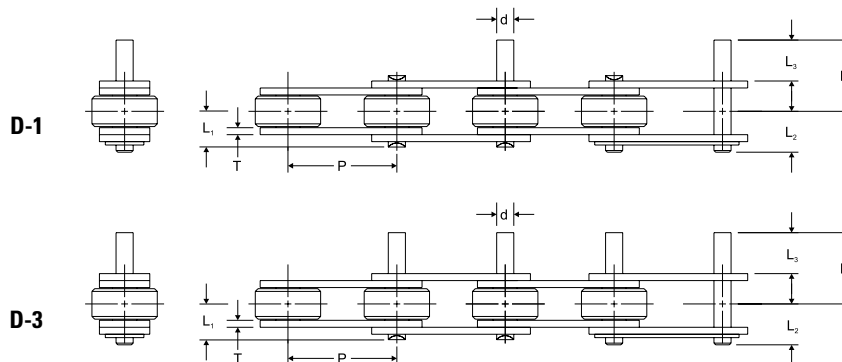


TABLE 119. DIMENSIONS FOR STANDARD DOUBLE-PITCH CONVEYOR ATTACHMENTS – D-1, D-3

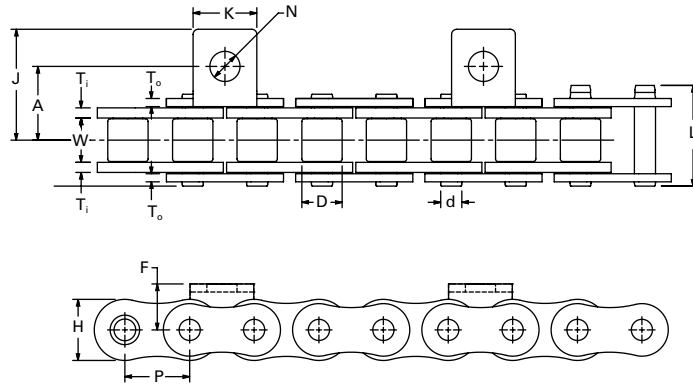
Chain No.	P	T	d	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	Additional Weight Per Attachment	
								D-1	D-3
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN
C2040, C2042, C2040AS, C2042AS	<b>1.000</b> 25.40	<b>0.060</b> 1.52	<b>0.156</b> 3.96	<b>0.317</b> 8.05	<b>0.377</b> 9.58	<b>0.374</b> 9.50	<b>0.661</b> 16.79	<b>0.002</b> 0.001	<b>0.004</b> 0.002
C2050, C2052, C2050AS, C2052AS	<b>1.250</b> 31.75	<b>0.080</b> 2.03	<b>0.200</b> 5.08	<b>0.399</b> 10.13	<b>0.489</b> 12.42	<b>0.469</b> 11.91	<b>0.827</b> 21.01	<b>0.004</b> 0.002	<b>0.008</b> 0.004
C2060H, C2062H, C2060HAS, C2062HAS	<b>1.500</b> 38.10	<b>0.125</b> 3.18	<b>0.234</b> 5.94	<b>0.590</b> 14.99	<b>0.660</b> 16.76	<b>0.563</b> 14.30	<b>1.083</b> 27.51	<b>0.006</b> 0.003	<b>0.012</b> 0.005
C2080H, C2082H, C2080HAS, C2082HAS	<b>2.000</b> 50.80	<b>0.156</b> 3.96	<b>0.313</b> 7.95	<b>0.745</b> 18.92	<b>0.845</b> 21.46	<b>0.752</b> 19.10	<b>1.401</b> 35.59	<b>0.020</b> 0.009	<b>0.040</b> 0.018
C2100H, C2102H, C2100HAS, C2102HAS	<b>2.500</b> 63.50	<b>0.187</b> 4.75	<b>0.375</b> 9.53	<b>0.830</b> 21.08	<b>0.980</b> 24.89	<b>0.937</b> 23.80	<b>1.687</b> 42.85	<b>0.027</b> 0.012	<b>0.054</b> 0.024
C-2120H, C2122H, C-2120HAS, C2122HAS	<b>3.000</b> 76.20	<b>0.219</b> 5.56	<b>0.437</b> 11.10	<b>1.030</b> 26.16	<b>1.210</b> 30.73	<b>1.125</b> 28.58	<b>2.062</b> 52.37	<b>0.044</b> 0.020	<b>0.088</b> 0.040
C-2160H, C2164H, C-2160HAS, C2164HAS	<b>4.000</b> 101.60	<b>0.281</b> 7.14	<b>0.562</b> 14.27	<b>1.337</b> 33.96	<b>1.514</b> 38.46	<b>1.500</b> 38.10	<b>2.718</b> 69.04	<b>0.099</b> 0.045	<b>0.198</b> 0.090

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

### SPECIALTY DRIVE AND CONVEYOR CHAIN

#### 16B STAINLESS STEEL



**TABLE 120. 16B STAINLESS STEEL SPECIFICATIONS**

Chain No.	Pitch	Minimum Inside Width	Pin	Roller	Sidebar			Pin Length	Maximum Recommended Working Load	Weight
	P	W	d	D	T <sub>i</sub>	T <sub>o</sub>	H	L		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		
D16B	<b>1.000</b> 25.400	<b>0.670</b> 17.12	<b>0.326</b> 8.28	<b>0.625</b> 15.88	<b>0.156</b> 3.96	<b>0.125</b> 3.18	<b>0.945</b> 24.00	<b>1.530</b> 38.86	<b>455</b> 2.02	<b>2.000</b> 2.98

NOTE: H dimension does not meet BS Standard BS228.

NOTE: Dimensions are subject to change. Contact Drives to obtain certified prints for design and construction.

NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

**TABLE 121. 16B STAINLESS STEEL CONVEYOR CHAIN ATTACHMENTS**

Chain No.	Pitch P	Dimensions				
		A	J	K	F	N
		in. mm	in. mm	in. mm	in. mm	in. mm
BA1	16B	<b>1.000</b> 25.40	<b>1.120</b> 28.45	<b>1.680</b> 42.67	<b>0.720</b> 18.29	<b>0.470</b> 11.94

NOTE: Some chain products or attachments shown are proprietary.

NOTE: Dimensions are subject to change. Contact Drives to obtain certified prints for design and construction.

NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

**ENGINEERED CLASS**

Engineered Class chain is designed for your industries and unique applications. Drives Engineers work with customers on chain selections for new applications and evaluating existing applications to determine if there is a way to increase up time.

Drives state of art component and assembly tooling in junction within house heat treatment provides for high quality Engineered Class Chain designed to provide for increased up time.

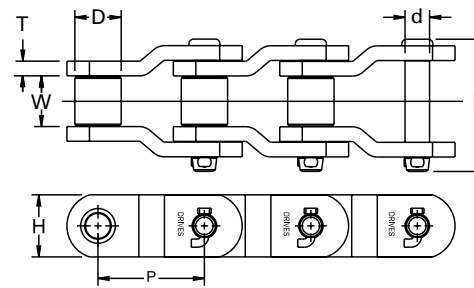
All high quality chains must start with material selected and Drives uses alloy steel and appropriate heat treatment specifications for the components which will optimize the performance of our Engineered Class chain in these demanding applications.



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### ENGINEERED CLASS CHAIN – GENERAL CARBON STEEL ROLLER CONVEYOR CHAIN

Carbon steel roller chain is designed with a free-rotating roller for conveyor applications.



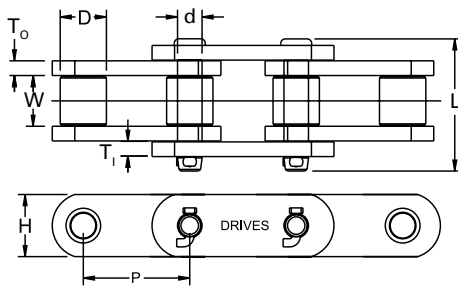
Offset style

TABLE 122. CARBON STEEL ROLLER CONVEYOR CHAIN

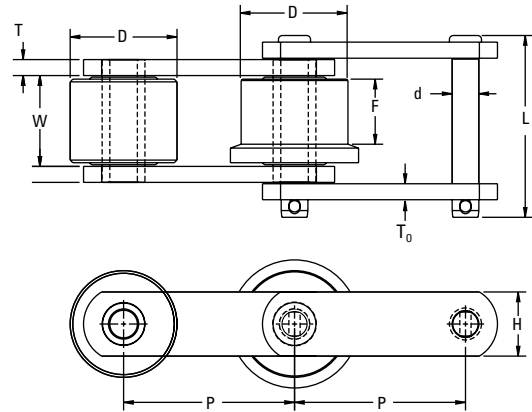
Chain No.	Pitch	Inside Width	Pin Dia.	Roller Dia.	Roller Face Width	Roller Style	Outside Link Plate	Inside Link Plate	Link Plate Height	Overall Pin Length	Chain Style	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	F		T <sub>0</sub>	T <sub>I</sub>	H	L		lbs. kN	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm		in. mm	in. mm	in. mm	in. mm				
CA550	1.630 41.40	0.797 20.24	0.281 7.14	0.656 16.66		Small	0.105 2.67	0.105 2.67	0.750 19.05	1.562 39.67	Straight	11,250 50.04	1,400 6.23	1.279 1.90
CA550HD	1.630 41.40	0.767 19.48	0.326 8.28	0.656 16.66		Small	0.120 3.05	0.120 3.05	0.780 19.81	1.586 40.28	Straight	11,500 51.15	1,700 7.56	1.409 2.10
CA555	1.630 41.40	0.500 12.70	0.281 7.14	0.656 16.66		Small	0.120 3.05	0.120 3.05	0.750 19.05	1.302 33.07	Straight	11,250 50.04	1,100 4.89	1.238 1.84
CA557	1.630 41.40	0.797 20.24	0.315 8.00	0.700 17.78		Small	0.120 3.05	0.120 3.05	0.906 23.01	1.593 40.46	Straight	16,500 73.39	1,700 7.56	1.719 2.56
CA960	1.630 41.40	0.890 22.61	0.350 8.89	0.700 17.78		Small	0.120 3.05	0.120 3.05	0.910 23.11	1.580 40.13	Straight	15,500 68.94	2,050 9.12	1.809 2.69
CA620	1.654 42.01	0.987 25.07	0.281 7.14	0.696 17.68		Small	0.120 3.05	0.120 3.05	0.750 19.05	1.841 46.76	Straight	12,000 53.38	1,700 7.56	1.609 2.39
378R	1.654 42.01	1.000 25.40	0.437 11.10	0.875 22.23		Small	0.187 4.75	0.187 4.75	1.125 28.58	2.280 57.91	Straight	13,000 57.82	2,100 9.34	3.700 5.51
378RX	1.654 42.01	1.000 25.40	0.437 11.10	0.875 22.23		Small	0.187 4.75	0.187 4.75	1.125 28.58	2.280 57.91	Straight	20,000 88.96	2,100 9.34	3.700 5.51
61X	1.654 42.01	1.060 26.92	0.437 11.10	0.906 23.01		Small	0.310 7.87	0.310 7.87	1.332 33.83	2.763 70.18	Straight	42,000 186.82	3,700 16.46	4.600 6.85
D20002	2.000 50.80	1.250 31.75	0.560 14.22	1.121 28.47		Small	0.250 6.35	0.250 6.35	1.500 38.10	2.810 71.37	Straight	21,000 93.41	3,500 15.57	6.200 9.23
D64S	2.500 63.50	1.500 38.10	0.875 22.23	1.560 39.62		Small	0.375 9.53	0.375 9.53	2.130 54.10	3.190 81.03	Straight	125,000 556.00	6,891 30.65	13.100 19.50
81X	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01		Small	0.155 3.94	0.155 3.94	1.125 28.58	1.930 49.02	Straight	24,000 106.75	3,000 13.34	2.500 3.72
81XH	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01		Small	0.220 5.59	0.310 7.87	1.332 33.83	2.577 65.46	Straight	42,000 186.82	3,700 16.46	4.120 6.13
81XHT	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01		Small	0.220 5.59	0.220 5.59	1.125 28.58	2.577 65.46	Straight	34,000 151.23	3,300 14.68	3.800 5.66
81XHH	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01		Small	0.310 7.87	0.310 7.87	1.332 33.83	2.763 70.18	Straight	42,000 186.82	3,700 16.46	4.600 6.85
81XKD	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01		Small	0.155 3.94	0.155 3.94	1.125 28.58	1.930 49.02	Straight	24,000 106.75	3,000 13.34	2.500 3.72
81XHKD	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01		Small	0.220 5.59	0.310 7.87	1.332 33.83	2.370 60.20	Straight	42,000 186.82	3,700 16.46	4.120 6.13
3000HKD	3.000 76.20	1.312 33.32	0.750 19.05	1.500 38.10		Small	0.375 9.53	0.375 9.53	2.000 50.80	3.220 81.79	Straight	70,000 311.36	7,100 31.58	10.700 15.92

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**Straight style small roller**



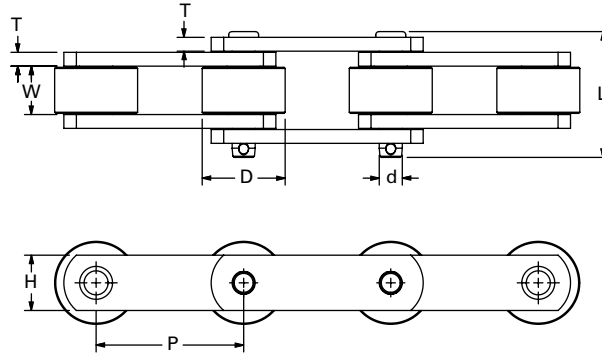
**Straight style large roller**

Continued from previous page.

Chain No.	Pitch	Inside Width	Pin Dia.	Roller Dia.	Roller Face Width	Roller Style	Outside Link Plate	Inside Link Plate	Link Plate Height	Overall Pin Length	Chain Style	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	F		T <sub>o</sub>	T <sub>i</sub>	H	L		lbs. kN	lbs. kN	
	in. mm	in. mm	in. mm	in. mm	in. mm		in. mm	in. mm	in. mm	in. mm		lbs. kN	lbs. kN	lbs./ft. kg/m
53R	3.000 76.20	1.000 25.40	0.437 11.10	1.500 38.10		Large	0.187 4.75	0.187 4.75	1.125 28.58	2.280 57.91	Straight	13,000 57.82	2,100 9.34	3,900 5.80
3160	3.000 76.20	1.25 31.75	0.56 14.22	1.12 28.45		Small	0.25 6.35	0.25 6.35	1.50 38.10	2.87 72.90	Straight	47,000 209.06	3,445 15.32	5.14 7.64
3162	3.000 76.20	1.250 31.75	0.560 14.22	2.250 57.15		Large	0.250 6.35	0.250 6.35	1.500 38.10	2.870 72.90	Straight	47,000 209.06	3,445 15.32	7.420 11.04
3162	3.000 76.20	1.250 31.75	0.560 14.22	1.575 40.01	0.953 24.21	Flange	0.250 6.35	0.250 6.35	1.500 38.10	2.870 72.90	Straight	47,000 209.06	3,445 15.32	11.810 17.58
4160	4.000 101.60	1.27 32.26	0.56 14.22	1.12 28.45		Small	0.31 7.92	0.31 7.92	1.88 47.63	3.12 79.25	Straight	47,000 209.06	3,712 16.51	6.13 9.13
88R	4.000 101.60	0.876 22.25	0.625 15.88	2.000 50.80		Large	0.250 6.35	0.250 6.35	1.500 38.10	2.468 62.69	Straight	25,140 111.82	3,000 13.34	6,054 9.01
89R	4.000 101.60	1.312 33.32	0.625 15.88	2.250 57.15		Large	0.375 9.53	0.375 9.53	1.500 38.10	3.470 88.14	Straight	28,000 124.54	4,500 20.02	10,600 15.77
95R	4.000 101.60	1.000 25.40	0.440 11.18	1.500 38.10		Large	0.190 4.83	0.190 4.83	1.125 28.58	2.280 57.91	Straight	13,000 57.82	2,100 9.34	3,400 5.06
2184R	6.000 152.40	1.380 35.05	0.880 22.35	3.000 76.20		Large	0.380 9.65	0.380 9.65	2.000 50.80	3.750 95.25	Offset	43,000 191.26	6,500 28.91	12,300 18.30
2184R	6.000 152.40	1.380 35.05	0.880 22.35	3.000 76.20	1.180 29.97	Flange	0.380 9.65	0.380 9.65	2.000 50.80	3.750 95.25	Offset	43,000 191.26	6,500 28.91	12,300 18.30
2184RX	6.000 152.40	1.380 35.05	0.880 22.35	3.000 76.20		Large	0.380 9.65	0.380 9.65	2.000 50.80	3.750 95.25	Offset	75,000 333.60	6,500 28.91	12,300 18.30
2184RX	6.000 152.40	1.380 35.05	0.880 22.35	3.000 76.20	1.180 29.97	Flange	0.380 9.65	0.380 9.65	2.000 50.80	3.750 95.25	Offset	75,000 333.60	6,500 28.91	12,300 18.30
2198RX	6.000 152.40	1.50 38.10	0.88 22.35	2.75 69.85	0.00	Large	0.50 12.70	0.50 12.70	2.25 57.15	4.07 103.38	Straight	100,000 444.80	7,700 34.25	1.30 1.93
3939	8.000 203.20	1.060 26.92	0.432 10.97	0.906 23.01		Small	0.155 3.94	0.155 3.94	1.125 28.58	1.930 49.02	Straight	24,000 106.75	3,000 13.34	1,550 2.31
1203	12.000 304.80	3.040 77.22	1.000 25.40	2.230 56.64		Small	0.380 9.65	0.380 9.65	3.000 76.20	4.500 114.30	Offset	91,000 404.77	10,600 47.15	24,000 35.72
12230	12.000 304.80	4.100 104.14	1.500 38.10	3.500 88.90		Small	0.625 15.88	0.625 15.88	4.000 101.60	7.600 193.04	Offset	280,000 1,245.44	36,300 161.46	39,200 58.34

### STAINLESS STEEL ROLLER CONVEYOR CHAIN

Direct contact with food, corrosive environments and extreme temperature requires stainless steel chains. Drives has the engineering expertise to select the correct stainless material and chain construction for your application. The following chains are just a sample of some of the stainless steel Engineered Class chain that we manufacture.



**TABLE 123. STAINLESS STEEL ROLLER CONVEYOR CHAIN**

Material: Side plates are 300SS and round parts are 17-4PH											
Chain No.	Pitch	Inside Width	Pin Dia.	Roller Dia.	Roller Style	Outside Link Plate	Link Plate Height	Overall Pin Length	Chain Style	Maximum Recommended Working Load	Weight
	P	W	d	D		T	H	L		lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm		in. mm	in. mm	in. mm			
D3625	3.625 92.08	1.030 26.16	0.440 11.18	1.750 44.45	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	5.420 8.07
D4375	4.375 111.13	1.300 33.02	0.440 11.18	2.000 50.80	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,300 5.78	5.050 7.52
D5125 w/1.75" Roller	5.125 130.18	1.300 33.02	0.440 11.18	1.750 44.45	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	4.800 7.14
D5125 w/2.0" Roller	5.125 130.18	1.300 33.02	0.440 11.18	2.000 50.80	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	5.350 7.96
D5125 w/2.25" Roller	5.125 130.18	1.300 33.02	0.440 11.18	2.250 57.15	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	4.800 7.14

## CARBON STEEL BUSHED CONVEYOR CHAIN

Carbon steel bushed conveyor chains are designed without a free- rotating roller for applications in which the chain will be exposed to an environment that would cause a roller conveyor chain's roller to seize or in applications that are such a roller has no advantage like in bucket elevators.

All high-quality chains must start with material selected and Drives uses alloy steel and appropriate heat treatment specifications for the components which will optimize the performance of our Engineered Class chain in these demanding applications.

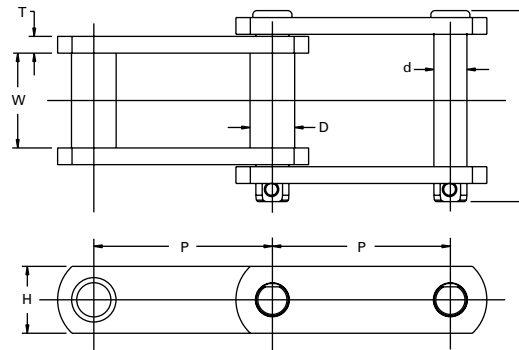


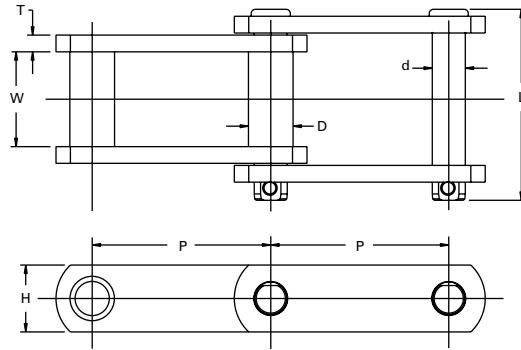
TABLE 124. CARBON STEEL BUSHED CONVEYOR CHAIN

Chain No.	Pitch	Inside Width	Pin Dia.	Bushing Dia.	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
CA551X	1.630 41.40	0.797 20.24	0.437 11.10	0.656 16.66	0.155 3.94	1.125 28.58	1.813 46.05	20,000 88.96	2,400 10.68	2.424 3.61
D2	2.000 50.80	1.250 31.75	0.720 18.29	1.130 28.70	0.310 7.87	1.880 47.75	3.380 85.85	90,000 400.32	4,920 21.88	8.300 12.35
D1240	12.400 314.96	2.660 67.56	1.410 35.81	1.970 50.04	0.500 12.70	3.500 88.90	5.530 140.46	190,822 848.78	23,223 103.30	17.940 26.70

### STAINLESS STEEL BUSHED CONVEYOR CHAINS

Stainless steel bushed conveyor chains are designed without a free-rotating roller for those applications in which the chain will be exposed to an environment that would cause a roller conveyor chain's roller to seize or in applications that are such a roller has no advantage like in bucket elevators.

Direct contact with food, corrosive environments, and extreme temperature requires stainless steel chains and Drives has the Engineering expertise to select the correct stainless material and chain construction for your application. The following chains are just a sample of some of the stainless steel Engineered Class chain that we manufacture.



**TABLE 125. STAINLESS STEEL BUSHED CONVEYOR CHAIN**

Material: Side plates are 300SS and round parts are 17-4PH									
Chain No.	Pitch P	Inside Width W	Pin Dia. d	Bushing Dia. D	Link Plate Thickness T	Link Plate Height H	Overall Pin Length L	Maximum Recommended Working Load	Weight
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
188SS	2.609 66.27	1.062 26.97	0.500 12.70	0.880 22.35	0.250 6.35	1.125 28.58	2.690 68.33	1,664 7.40	3.600 5.36
102BSS	4.000 101.60	2.130 54.10	0.625 15.88	1.000 25.40	0.375 9.53	1.500 38.10	4.310 109.47	3,834 17.05	6.900 10.27

## BAR AND PIN CHAIN

Bar and Pin chain are used in a variety of applications, from conveyors like stacker reclaimers to tensioning linkages. These chains are manufactured with an inner block and two outer bars. They will have a pressed-in bushing into the inner block for improved wear life between the pin and inner block. In some cases the pins are induction-hardened for improved wear life. The edges of the inner block and outer bars can be induction-hardened for improved wear life since the chains are dragged on the guides.

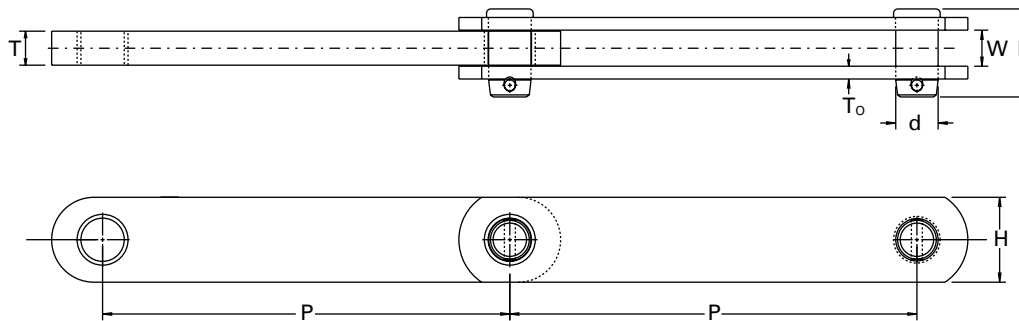


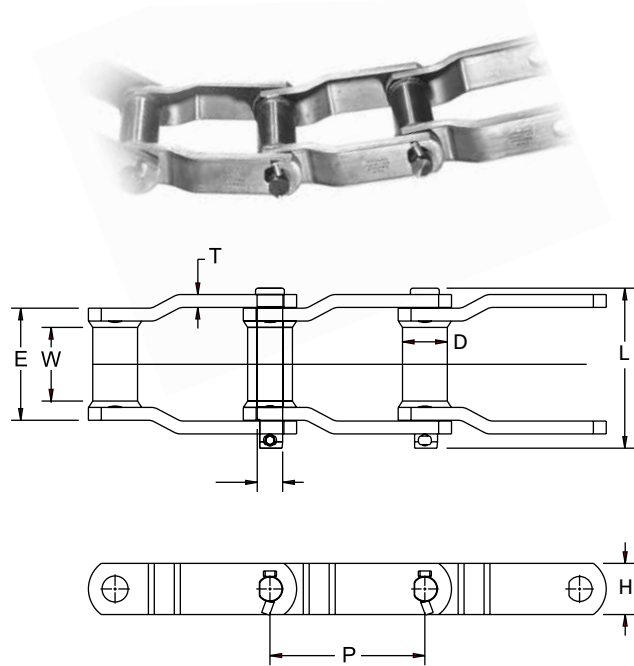
TABLE 126. STEEL BAR AND PIN CHAIN

Chain No.	Pitch	Inside Width	Pin Dia.	Outside Link Plate Thickness	Inside Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	T <sub>o</sub>	T <sub>i</sub>	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
D1201	12.000 304.80	1.062 26.97	1.250 31.75	0.380 9.65	1.000 25.40	1.160 29.46	2.600 66.04	108,000 480.38	5,625 25.02	12.740 18.96
D1202	12.000 304.80	1.562 39.67	1.500 38.10	0.500 12.70	1.500 38.10	1.590 40.39	3.500 88.90	170,000 756.16	10,125 45.04	19.430 28.92

### STAINLESS WELDED STEEL CHAIN

Drives produces the Stainless Welded Steel Chain for horizontal, incline and vertical conveying applications that operate in a corrosive environment. The side bars and barrels are manufactured from 300 series stainless steel material for optimum corrosion resistance. The pins are manufactured from 17-4PH (precipitation hardened) stainless steel. This special pin material provides corrosion resistance and a hard surface to maximize the wear life of the chain.

- Chain numbers WSX124, WSXH124 and WSX132 are made-to-order in stainless steel with riveted or cottered construction with minimum order quantities.
- These stainless steel chains also can be provided with electroless nickel-plated pins for less-corrosive environments. Contact Drives engineering for application information.



**TABLE 127. STAINLESS WELDED STEEL CHAIN**

Material: Side plates and barrel are 300ss and pins are 17-4ph

Chain No.	Pitch	Inside Width	Pin Diameter	Bushing Diameter	Bushing Length	Link Plate Thickness	Link Plate Height	Overall Pin Length	Maximum Recommended Working Load	Weight
	P	W	d	D	E	T	H	L		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
WSX78	2.609 66.27	1.120 28.45	0.500 12.70	0.880 22.35	2.010 51.05	0.250 6.35	1.120 28.45	3.340 84.84	2,140 9.52	4.30 6.40
WCSX78	2.609 66.27	1.120 28.45	0.500 12.70	0.880 22.35	2.010 51.05	0.250 6.35	1.120 28.45	3.340 84.84	2,140 9.52	5.00 7.44
WSX124	4.000 101.60	1.630 41.40	0.750 19.05	1.250 31.75	2.750 69.85	0.380 9.65	1.500 38.10	4.250 107.95	4,400 19.57	8.00 11.91
WCSX124	4.000 101.60	1.630 41.40	0.750 19.05	1.250 31.75	2.750 69.85	0.380 9.65	1.500 38.10	4.250 107.95	4,400 19.57	9.00 13.39
WSX132	6.050 153.67	2.880 73.15	1.000 25.40	1.750 44.45	4.380 111.25	0.500 12.70	2.000 50.80	6.250 158.75	9,330 41.50	14.00 20.83
WCSX132	6.050 153.67	2.880 73.15	1.000 25.40	1.750 44.45	4.380 111.25	0.500 12.70	2.000 50.80	6.250 158.75	9,330 41.50	15.40 22.92
WSX157	6.050 153.67	2.750 69.85	1.125 28.58	1.750 44.45	4.670 118.62	0.625 15.88	2.500 63.50	7.060 179.32	11,200 49.82	20.00 29.76
WCSX157	6.050 153.67	2.750 69.85	1.125 28.58	1.750 44.45	4.670 118.62	0.625 15.88	2.500 63.50	7.060 179.32	11,200 49.82	21.20 31.55
WSX157H	6.050 153.67	3.000 76.20	1.125 28.58	1.750 44.45	4.825 122.56	0.750 19.05	2.500 63.50	7.188 182.58	11,500 51.15	21.40 31.85
WCSX157H	6.050 153.67	3.000 76.20	1.125 28.58	1.750 44.45	4.825 122.56	0.750 19.05	2.500 63.50	7.188 182.58	11,500 51.15	22.40 33.34

### HOLLOW PIN CHAIN

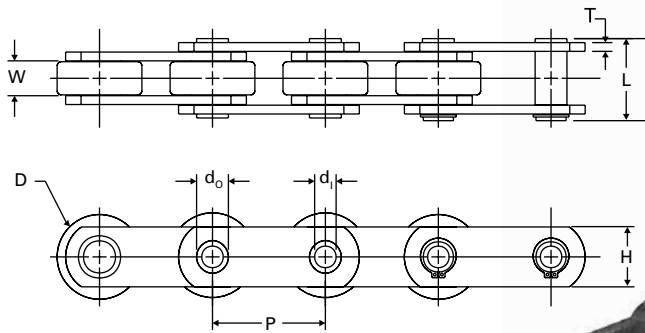
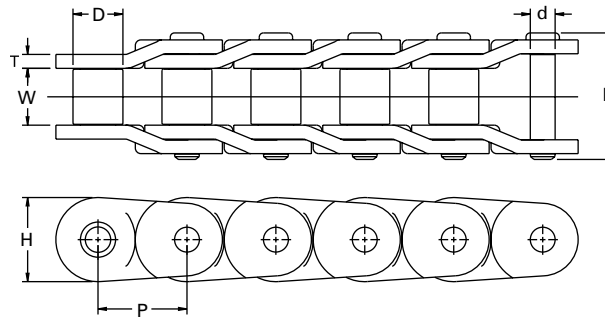


TABLE 128. HOLLOW PIN CHAIN

Chain No.	Pitch	Inside Width	Hollow Pin Inside Diameter	Hollow Pin Outside Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Allowable Working Load	Weight
	P	W	d <sub>i</sub>	d <sub>o</sub>	D	T	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
HP200	<b>2.000</b> 50.80	<b>0.617</b> 15.67	<b>0.382</b> 9.70	<b>0.564</b> 14.33	<b>1.500</b> 38.10	<b>0.156</b> 3.96	<b>1.060</b> 26.92	<b>1.453</b> 36.91	<b>15,000</b> 66.72	<b>2,600</b> 11.56	<b>2,500</b> 3.72

**ENGINEERED CLASS DRIVE CHAIN**



**TABLE 129. ENGINEERED CLASS DRIVE CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Allowable Working Load	Weight
	P	W	d	D	T	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm			
D03120	<b>1.500</b> 38.10	<b>1.000</b> 25.40	<b>0.437</b> 11.10	<b>0.875</b> 22.23	<b>0.187</b> 4.75	<b>1.425</b> 36.20	<b>2.190</b> 55.63	<b>34,000</b> 151.23	<b>2,100</b> 9.34	<b>4.100</b> 6.10
D03140	<b>0.175</b> 4.45	<b>1.000</b> 25.40	<b>0.500</b> 12.70	<b>1.000</b> 25.40	<b>0.220</b> 5.59	<b>1.663</b> 42.24	<b>2.506</b> 63.65	<b>46,000</b> 204.61	<b>2,520</b> 11.21	<b>5.100</b> 7.59
D03160	<b>2.000</b> 50.80	<b>1.250</b> 31.75	<b>0.562</b> 14.27	<b>1.125</b> 28.58	<b>0.250</b> 6.35	<b>1.899</b> 48.23	<b>2.824</b> 71.73	<b>58,000</b> 257.98	<b>3,450</b> 15.35	<b>6.700</b> 9.97
D03180	<b>2.250</b> 57.15	<b>1.406</b> 35.71	<b>0.687</b> 17.45	<b>1.406</b> 35.71	<b>0.281</b> 7.14	<b>2.132</b> 54.15	<b>2.951</b> 74.96	<b>80,000</b> 355.84	<b>4,800</b> 21.35	<b>9.600</b> 14.29
D03200	<b>2.500</b> 63.50	<b>1.500</b> 38.10	<b>0.781</b> 19.84	<b>1.562</b> 39.67	<b>0.312</b> 7.92	<b>2.312</b> 58.72	<b>3.433</b> 87.20	<b>95,000</b> 422.56	<b>5,800</b> 25.80	<b>11.100</b> 16.52
D03264	<b>2.500</b> 63.50	<b>1.500</b> 38.10	<b>0.875</b> 22.23	<b>1.562</b> 39.67	<b>0.375</b> 9.53	<b>2.375</b> 60.33	<b>3.687</b> 93.65	<b>135,000</b> 600.48	<b>6,900</b> 30.69	<b>12.600</b> 18.75
D03240	<b>3.000</b> 76.20	<b>1.875</b> 47.63	<b>0.937</b> 23.80	<b>1.875</b> 47.63	<b>0.375</b> 9.53	<b>2.812</b> 71.42	<b>4.066</b> 103.28	<b>152,200</b> 676.99	<b>8,600</b> 38.25	<b>16.700</b> 24.85
D1245	<b>4.073</b> 103.45	<b>1.940</b> 49.28	<b>0.937</b> 23.80	<b>1.775</b> 45.09	<b>0.562</b> 14.27	<b>2.375</b> 60.33	<b>5.130</b> 130.30	<b>170,000</b> 756.16	<b>10,100</b> 44.92	<b>18.000</b> 26.79



## ENGINEERED CLASS PINTLE CHAIN

Pintle chain is used in applications that convey bulk product like salt and sand spreaders, manure spreaders or live bed trucks. This chain is manufactured with an open-back design, which allows product to be pushed out of the chain joint to prevent stiff joints.

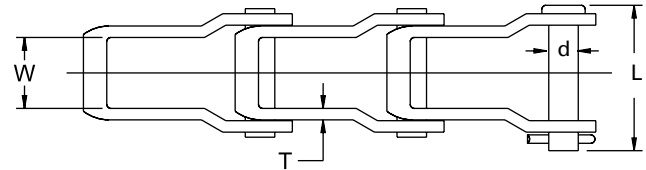
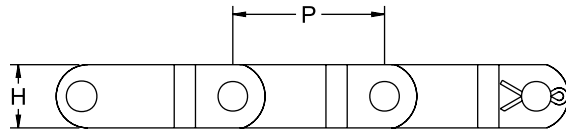


TABLE 130. ENGINEERED CLASS PINTLE CHAIN

Chain No.	Pitch	Inside Width	Pin Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
D205	1.250 31.75	0.375 9.53	0.200 5.08	0.080 2.03	0.470 11.94	0.922 23.42	4,900 21.80	560 2.49	0.390 0.58
D662	1.664 42.27	0.906 23.01	0.281 7.14	0.125 3.18	0.720 18.29	1.672 42.47	11,200 49.82	1,700 7.56	1.050 1.56
D667H	2.313 58.75	1.000 25.40	0.312 7.92	0.125 3.18	0.875 22.23	1.906 48.41	12,900 57.38	1,900 8.45	1.170 1.74
D667X	2.250 57.15	1.063 27.00	0.437 11.10	0.170 4.32	0.937 23.80	2.172 55.17	21,700 96.52	3,000 13.34	1.860 2.77
D667K	2.250 57.15	1.078 27.38	0.437 11.10	0.200 5.08	1.062 26.97	2.359 59.92	29,700 132.11	4,000 17.79	2.440 3.63
D88K	2.609 66.27	1.078 27.38	0.437 11.10	0.200 5.08	1.062 26.97	2.359 59.92	26,900 119.65	4,000 17.79	2.300 3.42

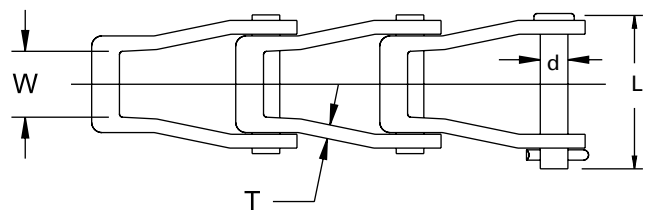
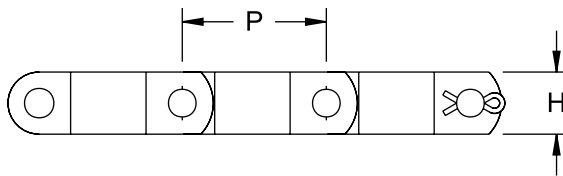
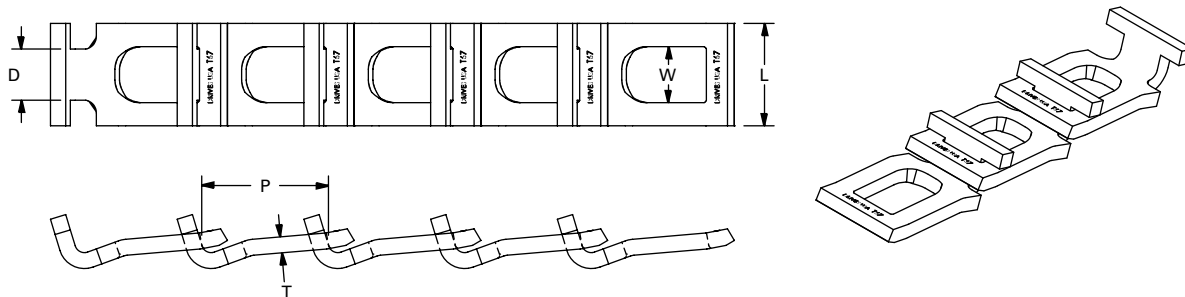


TABLE 131. ENGINEERED CLASS COMPRESSION FORMED PINTLE CHAIN

Chain No.	Pitch	Inside Width	Pin Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
D667XC	2.250 57.15	1.063 27.00	0.437 11.10	0.170 4.32	0.937 23.80	2.172 55.17	25,100 111.64	3,600 16.01	2.100 3.13
D667KC	2.250 57.15	1.078 27.38	0.437 11.10	0.200 5.08	1.062 26.97	2.359 59.92	30,900 137.44	4,800 21.35	2.560 3.81
D88C	2.609 66.27	1.250 31.75	0.500 12.70	0.250 6.35	1.125 28.58	2.847 72.31	38,000 169.02	6,000 26.69	3.470 5.16
D308C	3.075 78.11	1.281 32.54	0.625 15.88	0.312 7.92	1.500 38.10	3.188 80.98	50,000 222.40	8,000 35.58	5.630 8.38

### ENGINEERED CLASS “T” BAR CHAIN

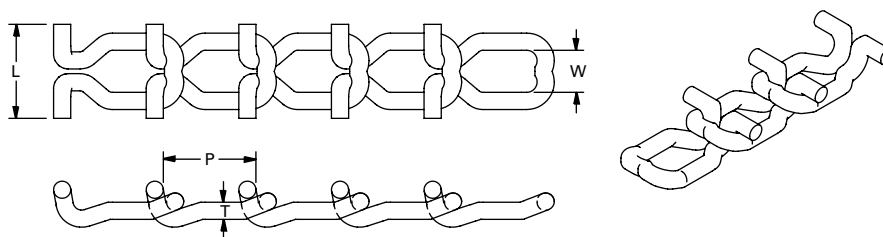
This chain is well-suited for conveyor operations where speeds are moderate and constant. Simplicity of design results in a rugged, uncomplicated chain that will work under most hostile conditions. Further, links may be replaced by hand to keep the chain in constant working order, or to shorten or lengthen the chain.



**TABLE 132. ENGINEERED CLASS “T” BAR CHAIN**

Chain No.	Pitch	Inside Width	Tab Width	Link Plate Thickness	Overall Width	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	D	T	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
T67	2.550 64.77	1.094 27.79	1.000 25.40	0.312 7.92	2.000 50.80	16,000 71.17	2,285 10.16	1.977 2.94

### ENGINEERED CLASS “T” ROD CHAIN



**TABLE 133. ENGINEERED CLASS “T” ROD CHAIN**

Chain No.	Pitch	Inside Width	Rod Thickness	Overall Width	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	T	L			
	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
67 T-Rod	2.388 60.66	1.125 28.58	0.437 11.10	2.500 63.50	16,000 71.17	2,285.000 10.16	2.010 2.99

**ENGINEERED  
CLASS CHAIN –  
BY INDUSTRY**

Drives supplies Engineered Class chain to many different industries the following includes a sampling of those industries:



Automotive .....	138
Material Handling .....	139
Food Processing .....	143
Forest and Paper .....	147
Metal Processing .....	157
Mining Industry .....	161
Sugar Mill Chain .....	163
Agricultural Conveyor Chain Products .....	167



## ENGINEERED CLASS CHAIN – BY INDUSTRY AUTOMOTIVE INDUSTRY

### CATERPILLAR DRIVE CHAIN

Drives Caterpillar Drive Chain is essential in driving drop forged chain conveyors. It provides high fatigue life and is designed to perform flawlessly with forged rivetless chains.

Drives Caterpillar Drive Chain features all ballized plates to ensure maximum bearing area for optimum press fits. This improves fatigue life and working loads. We use wide waist link plates with maximized ball heights to improve stress distribution that also increases fatigue strength and reduces vibration.

The use of through-hardened pins that are micro ground and shotpeened provides maximum pin-to-bushing surface contact for extended wear and protection from unpredictable overload. Hardened hook cotters are used to resist shearing and hold their place in the most rigorous applications.

Our one-piece forged drive dog is induction-hardened in the chain contact bearing area for wear resistance. The balance of the drive dog is through-hardened for strength and durability. The entire assembly is designed to operate in combination with the drop forged rivetless chain.

Special hardened hook cotter key comes standard.

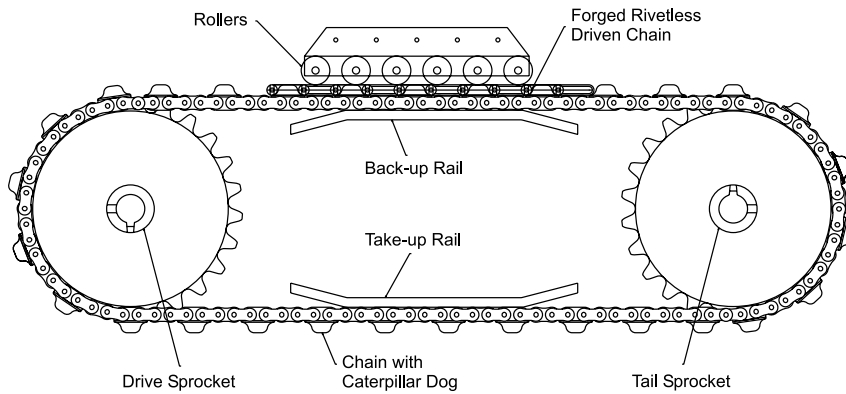
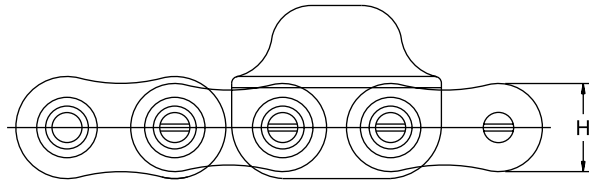
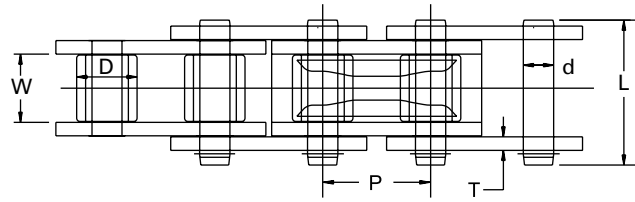


TABLE 134. AUTOMOTIVE INDUSTRY DRIVE CHAIN

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Drive Dog Pitch Spacing	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L				
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		lbs. kN	lbs. kN	lbs./ft. kg/m
160/348	2.000 50.80	1.250 31.75	0.563 14.30	1.126 28.60	0.250 6.35	1.899 48.23	2.723 69.16	3rd or 6th	58,000 257.98	9,190 40.88	8.300 12.35
160/458	2.00 50.80	1.250 31.75	0.563 14.30	1.126 28.60	0.250 6.35	1.899 48.23	2.723 69.16	4th or 6th	58,000 257.98	9,190 40.88	10.00 14.88
160/678	2.000 50.80	1.250 31.75	0.563 14.30	1.126 28.60	0.250 6.35	1.899 48.23	2.723 69.16	6th	58,000 257.98	9,190 40.88	9.800 14.58

## MATERIAL HANDLING

Drives material handling chain is commonly found in heavy industrial processes that transfer large storage piles of bulk material.

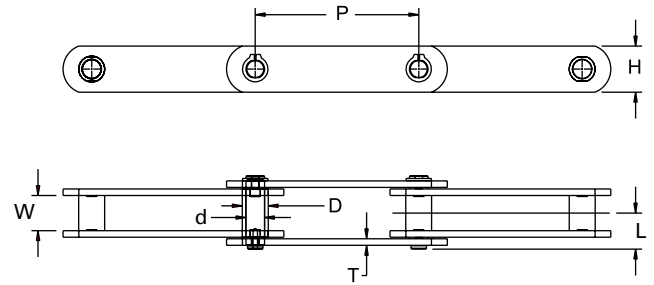


TABLE 135. MATERIAL HANDLING DRIVE CHAIN

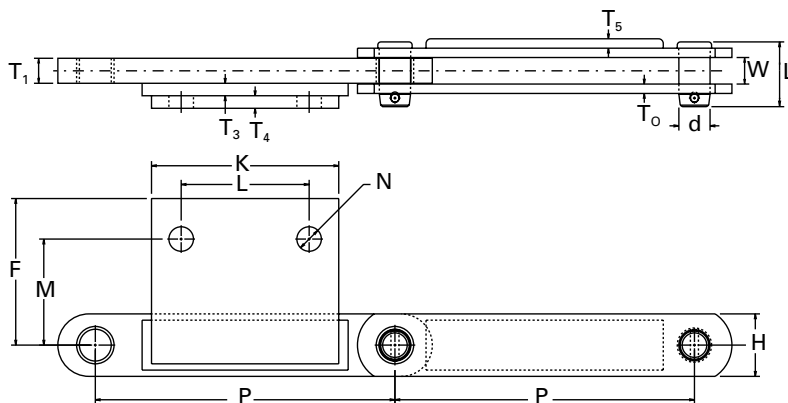
Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
D1240	12.400 314.96	2.660 67.56	1.410 35.81	1.970 50.04	0.500 12.70	3.500 88.90	5.530 140.46	190,822 848.78	23,223 103.30	17.940 26.70

### STACKER RECLAIMERS

Stacker reclaimers are used in heavy industrial processes that transfer large storage piles of bulk material. Reclaimer chain and flight assemblies function like scraper conveyors, with flight blades that push material toward a belt-feeding system. The reclaimer conveyor's chain, with digging flights, is supported by rails and structure that span over or across the pile being reclaimed for transfer to other plant locations.

Drives stacker chain features maximum bearing areas, high hardness and case depths made to provide optimum performance.

Reclaimer chain is manufactured on a made-to-order basis with minimum order quantities. Contact Drives for additional information.



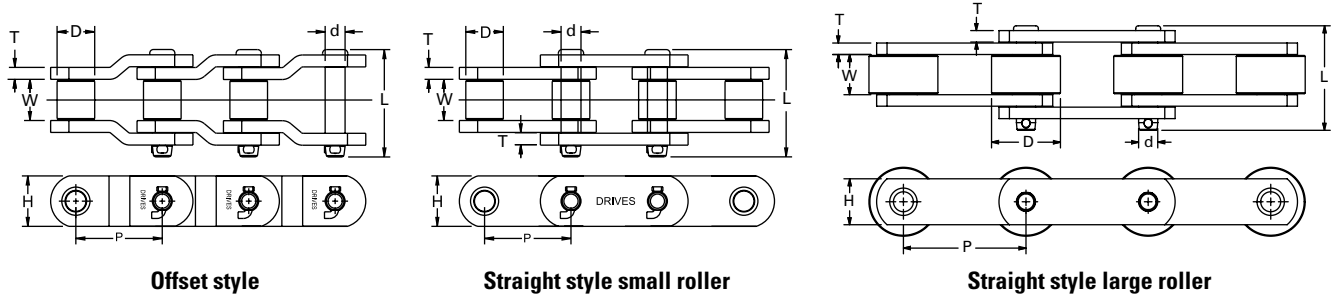
**TABLE 136. STACKER RECLAIMER CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Outside Link Plate Thickness	Inside Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	T <sub>0</sub>	T <sub>1</sub>	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
D1201	<b>12.000</b> 304.80	<b>1.062</b> 26.97	<b>1.250</b> 31.75	<b>0.380</b> 9.65	<b>1.000</b> 25.40	<b>1.160</b> 29.46	<b>2.600</b> 66.04	<b>108,000</b> 480.38	<b>5,625</b> 25.02	<b>12.740</b> 18.96
D1202	<b>12.000</b> 304.80	<b>1.562</b> 39.67	<b>1.500</b> 38.10	<b>0.500</b> 12.70	<b>1.500</b> 38.10	<b>1.590</b> 40.39	<b>3.500</b> 88.90	<b>170,000</b> 756.16	<b>10,125</b> 45.04	<b>19.430</b> 28.92

**TABLE 137. STACKER RECLAIMER ATTACHMENT**

Chain no.	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>	M	F	K	L	N
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
D1201	<b>0.500</b> 12.70	<b>0.500</b> 12.70	<b>0.380</b> 9.65	<b>4.250</b> 107.95	<b>5.875</b> 149.23	<b>7.500</b> 190.50	<b>5.125</b> 130.18	<b>0.980</b> 24.89
D1202	<b>0.630</b> 16.00	<b>0.500</b> 12.70	<b>0.500</b> 12.70	<b>4.250</b> 107.95	<b>5.875</b> 149.23	<b>7.500</b> 190.50	<b>5.125</b> 130.18	<b>0.980</b> 24.89

### STANDARD ROLLER CONVEYOR CHAIN



**TABLE 138. STANDARD ROLLER CONVEYOR CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Roller Style	Link Plate Thickness	Link Plate Height	Overall Pin Length	Chain Style	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D		T	H	L		lbs. kN	lbs. kN	
	in. mm	in. mm	in. mm	in. mm		in. mm	in. mm	in. mm		lbs. kN	lbs. kN	lbs./ft. kg/m
378R	1.654 42.01	1.000 25.40	0.437 11.10	0.875 22.23	Small	0.187 4.75	1.125 28.58	2.280 57.91	Straight	13,000 57.82	2,100 9.34	3.700 5.51
378RX	1.654 42.01	1.000 25.40	0.437 11.10	0.875 22.23	Small	0.187 4.75	1.125 28.58	2.280 57.91	Straight	20,000 88.96	2,100 9.34	3.700 5.51
53R	3.000 76.20	1.000 25.40	0.437 11.10	1.500 38.10	Large	0.187 4.75	1.125 28.58	2.280 57.91	Straight	13,000 57.82	2,100 9.34	3.900 5.80
3162	3.000 76.20	1.250 31.75	0.562 14.27	2.250 57.15	Large	0.250 6.35	1.500 38.10	2.870 72.90	Straight	47,000 209.06	3,445 15.32	7.420 11.04
88R	4.000 101.60	0.876 22.25	0.625 15.88	2.000 50.80	Large	0.250 6.35	1.500 38.10	2.468 62.69	Straight	25,140 111.82	3,000 13.34	6.054 9.01
89R	4.000 101.60	1.312 33.32	0.625 15.88	2.250 57.15	Large	0.375 9.53	1.500 38.10	3.470 88.14	Straight	28,000 124.54	4,500 20.02	10.600 15.77
12230	12.000 304.80	4.100 104.14	1.500 38.10	3.500 88.90	Small	0.625 15.88	4.000 101.60	7.600 193.04	Offset	280,000 1,245.44	36,300 161.46	39.200 58.34

### STAINLESS STEEL BUSHED CONVEYOR CHAIN



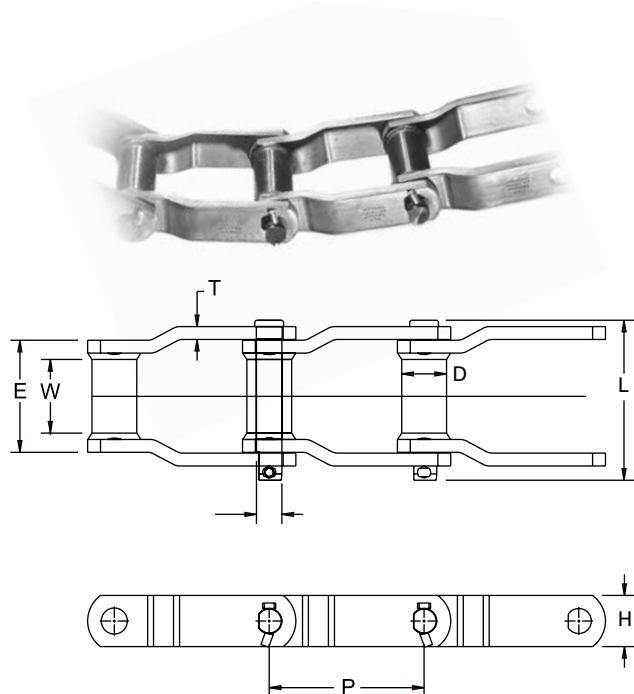
**TABLE 139. STAINLESS STEEL BUSHED CONVEYOR CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Bushing Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
188SS	2.609 66.27	1.062 26.97	0.500 12.70	0.880 22.35	0.250 6.35	1.125 28.58	2.690 68.33	1,664 7.40	3.600 5.36
102BSS	4.000 101.60	2.130 54.10	0.625 15.88	1.000 25.40	0.375 9.53	1.500 38.10	4.310 109.47	3,834 17.05	6.900 10.27

### STAINLESS WELDED STEEL CHAIN

Drives produces the Stainless Welded Steel Chain for horizontal, incline and vertical conveying applications that operate in corrosive environments. The side bars and barrel are manufactured from 300 series stainless steel material for optimum corrosion resistance. The pins are manufactured from 17-4PH (precipitation hardened) stainless steel. This special pin material provides corrosion resistance and a hard surface to maximize the wear life of the chain.

- Chain numbers WSX124, WSXH124 and WSX132 are made-to-order in stainless steel with riveted or cottered construction with minimum order quantities.
- This stainless steel chain also can be provided with electroless nickel-plated pins for less corrosive environments. Contact Drives engineering for application information.



**TABLE 140. STAINLESS WELDED STEEL CHAIN**

Material: Side plates and barrel are 300ss and pins are 17-4ph										
Chain no.	Pitch	Inside Width	Pin Diameter	Bushing Diameter	Bushing Length	Link Plate Thickness	Link Plate Height	Overall Pin Length	Maximum Recommended Working Load	Weight
	P	W	d	D	E	T	H	L		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
WSX78	2.609 66.27	1.120 28.45	0.500 12.70	0.880 22.35	2.010 51.05	0.250 6.35	1.120 28.45	3.340 84.84	2,140 9.52	4.30 6.40
WCSX78	2.609 66.27	1.120 28.45	0.500 12.70	0.880 22.35	2.010 51.05	0.250 6.35	1.120 28.45	3.340 84.84	2,140 9.52	5.00 7.44
WSX124	4.000 101.60	1.630 41.40	0.750 19.05	1.250 31.75	2.750 69.85	0.380 9.65	1.500 38.10	4.250 107.95	4,400 19.57	8.00 11.91
WCSX124	4.000 101.60	1.630 41.40	0.750 19.05	1.250 31.75	2.750 69.85	0.380 9.65	1.500 38.10	4.250 107.95	4,400 19.57	9.00 13.39
WSX132	6.050 153.67	2.880 73.15	1.000 25.40	1.750 44.45	4.380 111.25	0.500 12.70	2.000 50.80	6.250 158.75	9,330 41.50	14.00 20.83
WCSX132	6.050 153.67	2.880 73.15	1.000 25.40	1.750 44.45	4.380 111.25	0.500 12.70	2.000 50.80	6.250 158.75	9,330 41.50	15.40 22.92
WSX157	6.050 153.67	2.750 69.85	1.125 28.58	1.750 44.45	4.670 118.62	0.625 15.88	2.500 63.50	7.060 179.32	11,200 49.82	20.00 29.76
WCSX157	6.050 153.67	2.750 69.85	1.125 28.58	1.750 44.45	4.670 118.62	0.625 15.88	2.500 63.50	7.060 179.32	11,200 49.82	21.20 31.55
WSX157H	6.050 153.67	3.000 76.20	1.125 28.58	1.750 44.45	4.825 122.56	0.750 19.05	2.500 63.50	7.188 182.58	11,500 51.15	21.40 31.85
WCSX157H	6.050 153.67	3.000 76.20	1.125 28.58	1.750 44.45	4.825 122.56	0.750 19.05	2.500 63.50	7.188 182.58	11,500 51.15	22.40 33.34



## ***FOOD PROCESSING***

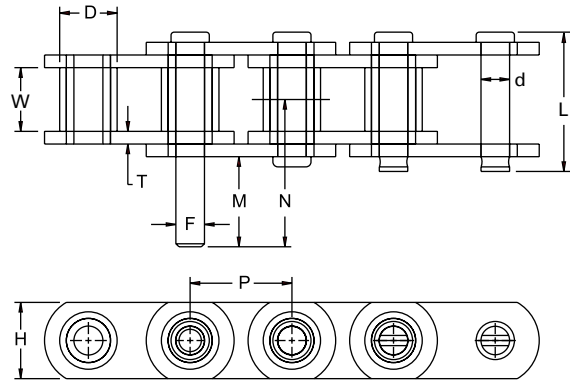
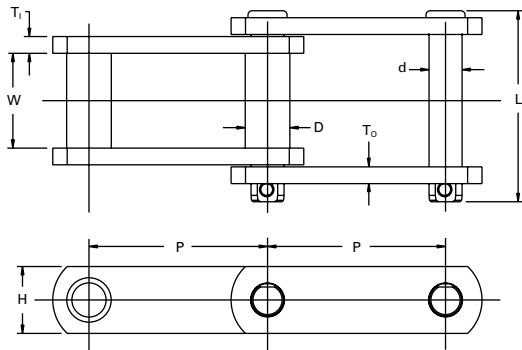
Food processing is a large industry with subcategories, and each has special needs and requirements. Some carry heavy loads, some are subjected to high temperatures, and others endure frequent washdowns. Each requires reliable chain to move product quickly and efficiently. The types of chain vary, depending on the application.



### FOOD PROCESSING

#### PROOFER CHAIN

Drives chain is made with high-temperature alloy steel. Component heat treatment and clearances are selected to improve wear life and minimize the risk of stiff joints. Consult Drives engineering for additional application information.



**TABLE 141. PROOFER CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Roller Face Width	Outside Link Plate	Inside Link Plate	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	F	T <sub>o</sub>	T <sub>i</sub>	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
D20002	<b>2.000</b> 50.80	<b>1.250</b> 31.75	<b>0.560</b> 14.22	<b>1.121</b> 28.47	– –	<b>0.250</b> 6.35	<b>0.250</b> 6.35	<b>1.500</b> 38.10	<b>2.810</b> 71.37	<b>21,000</b> 93.41	<b>3,500</b> 15.57	<b>6.200</b> 9.23
102BSS (304SS)	<b>4.000</b> 101.60	<b>2.130</b> 54.10	<b>0.625</b> 15.88	<b>1.000</b> 25.40	<b>1.000*</b> 25.40	<b>0.375</b> 9.53	<b>0.375</b> 9.53	<b>1.500</b> 38.10	<b>4.310</b> 109.47	– –	<b>3,834</b> 17.05	<b>6.900</b> 10.27

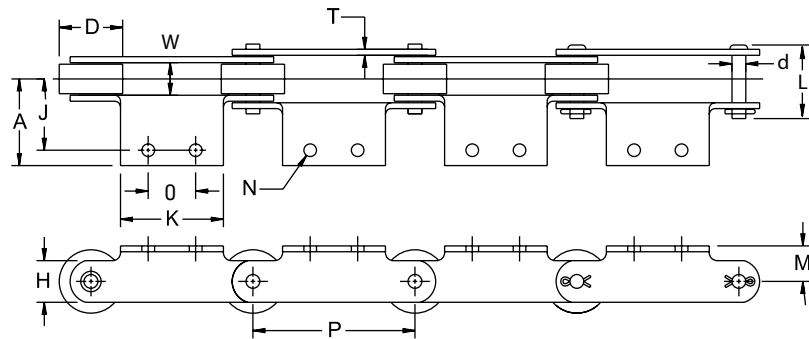
\* Bushing diameter.

**TABLE 142. PROOFER CHAIN ATTACHMENTS**

Chain No.	Pin Diameter	Pin Length	
	F	M	N
D20002	<b>0.570</b> 14.48	<b>1.750</b> 44.45	<b>2.910</b> 73.91

**OVEN CHAIN**

Drives oven chain is comprised of specially designed 300 series sidebars with 17-4PH (precipitation hardened) pin, bushing and roller. The combination of material, in conjunction with increased clearances, allows this chain to handle the high temperatures and corrosive environment of an oven.



**TABLE 143. STAINLESS STEEL ROLLER CONVEYOR CHAIN**

**Material: Side plates are 300SS and round parts are 17-4PH**

Chain No.	Pitch	Inside Width	Pin Dia.	Roller Dia.	Roller Style	Outside Link Plate	Link Plate Height	Overall Pin Length	Chain Style	Maximum Recommended Working Load	Weight
	P	W	d	D		T	H	L			
	in. mm	in. mm	in. mm	in. mm		in. mm	in. mm	in. mm			
D3625	3.625 92.08	1.030 26.16	0.440 11.18	1.750 44.45	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	5,420 8.07
D4375	4.375 111.13	1.300 33.02	0.440 11.18	2.000 50.80	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,300 5.78	5,050 7.52
D5125 w/1.75" Roller	5.125 130.18	1.300 33.02	0.440 11.18	1.750 44.45	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	4,800 7.14
D5125 w/2.0" Roller	5.125 130.18	1.300 33.02	0.440 11.18	2.000 50.80	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	5,350 7.96
D5125 w/2.25" Roller	5.125 130.18	1.300 33.02	0.440 11.18	2.250 57.15	Large	0.190 4.83	1.310 33.27	2.330 59.18	Straight	1,318 5.86	4,800 7.14

**TABLE 144. A2 ATTACHMENT SPECIFICATIONS**

Chain No.	A	J	K	O	M	N
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
D3625	1.930 49.02	1.380 35.05	3.000 76.20	1.500 38.10	1.130 28.70	0.400 10.16
D4375	1.030 26.16	0.440 11.18	2.000 50.80	0.190 4.83	1.310 33.27	0.400 10.16
D5125 w/1.75" Roller	2.740 69.60	2.250 57.15	3.250 82.55	1.500 38.10	1.130 28.70	0.400 10.16
D5125 w/2.0" Roller	2.740 69.60	2.250 57.15	3.250 82.55	1.500 38.10	1.130 28.70	0.400 10.16
D5125 w/2.25" Roller	2.740 69.60	2.250 57.15	3.250 82.55	1.500 38.10	1.130 28.70	0.400 10.16



## FOREST AND PAPER INDUSTRY

Drives produces industry leading Engineered Class conveyor chains for the forest and paper industry. These tough applications require chains that are built to the strictest quality standards ever established. Drives' advanced engineering knowledge and experience ensures maximum strength and performance while setting the standard for quality in this industry.



## FOREST AND PAPER INDUSTRY

### 81X CHAIN

- Manufactured with premium quality alloy steels.
- Heat treated and tempered for extended service life.

#### Solid Rollers

- Smoother engagement with sprockets.
- Rollers rotate freely reducing pulsation in conveyors.

#### Curled Bushings

- Drives' new computer controlled curling equipment provides a high quality concentric bushing.
- These bushings allow for minimum initial wear.

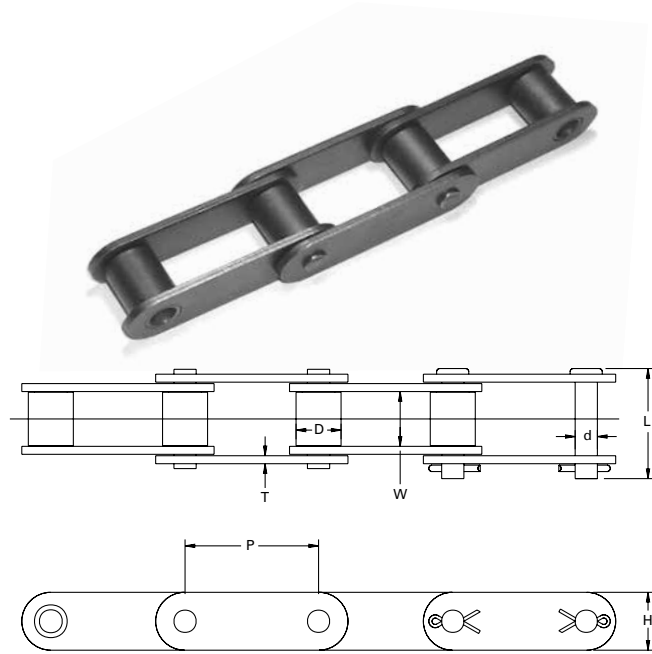


TABLE 145. 81X ROLLER CONVEYOR CHAIN

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
81X	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01	0.155 3.94	1.125 28.58	1.930 49.02	24,000 106.75	3,000 13.34	2.500 3.72
81X DFC	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01	0.155 3.94	1.125 28.58	1.930 49.02	24,000 106.75	3,000 13.34	2.500 3.72

### 81X EXTENDED LIFE DFC SERIES

DFC hard-chrome-plated pins possess standard steel's metallurgical properties for toughness and strength while delivering an extremely hard wear-resistant pin surface. DFC chain pins resist wear longer than standard heat-treated pins, even in dry and abrasive environments.

- The chain bushing has a baked on dry-film lubricant. This gives the chain joint a lubricating film in the bearing area.
- Outstanding wear and shock load performance at the same temperature ranges as standard carbon steel chain.
- No reduction in working loads or operating speeds.
- Exceptional pin wear resistance, in conjunction with the dry-film lubricant on the bushing, reduces chain elongation and can increase wear life up to three times over conventional premium chains under like conditions.

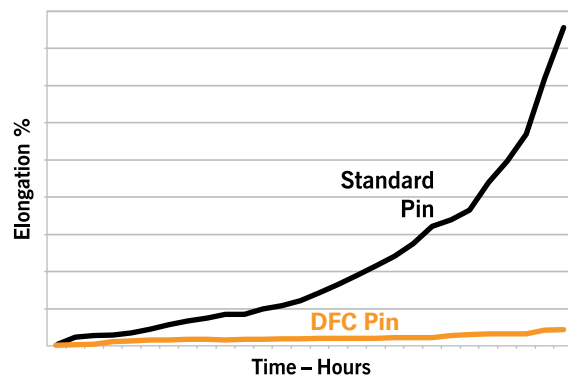


Fig. 49. Elongation vs. time.

### 81XH, 81XHT, 81XHH CHAIN

#### Heavier Sidebars

- 23 percent more bearing surface for conveying product.
- Increased sidebar thickness on the roller link plate allows for welding to the inner link plate.

#### Through-Hardened Pins

- 20 percent higher tensile strength and resists bending under high shock loads.

#### Solid Rollers

- Smoother engagement with sprockets.
- Rollers rotate freely reducing pulsation in conveyors.

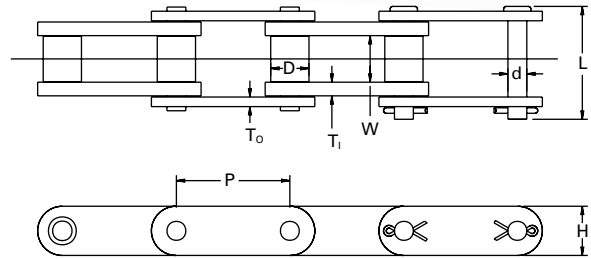
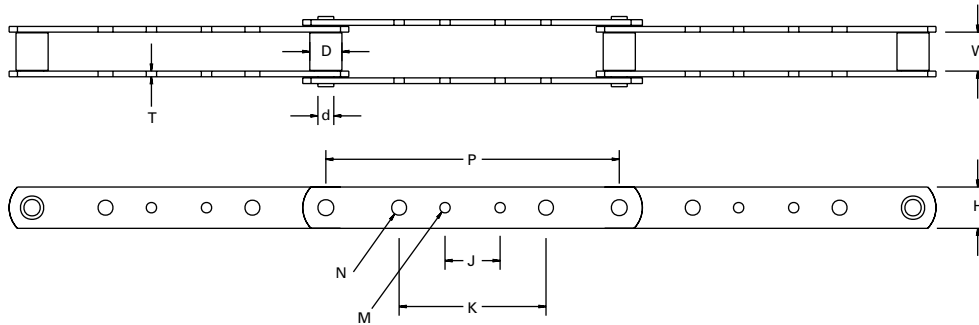


TABLE 146. 81X HEAVY SERIES ROLLER CONVEYOR CHAIN

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Outside Link Plate	Inside Link Plate	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T <sub>0</sub>	T <sub>1</sub>	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
81XH	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01	0.220 5.59	0.310 7.87	1.332 33.83	2.577 65.46	42,000 186.82	3,700 16.46	4.120 6.13
81XHT	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01	0.220 5.59	0.220 5.59	1.125 28.58	2.577 65.46	34,000 151.23	3,300 14.68	3.800 5.66
81XHH	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01	0.310 7.87	0.310 7.87	1.332 33.83	2.763 70.18	42,000 186.82	3,700 16.46	4.600 6.85

### 3939 (8.000 PITCH)



**TABLE 147. 3939 ROLLER CONVEYOR CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
3939	8.000 203.20	1.060 26.92	0.432 10.97	0.906 23.01	0.155 3.94	1.125 28.58	1.930 49.02	24,000 106.75	3,000 13.34	1.550 2.31

**TABLE 148. 3939 ATTACHMENT DIMENSIONS**

Chain No.	J	K	M	N
	in. mm	in. mm	in. mm	in. mm
3939-B4	1.500 38.10	4.000 101.60	0.281 7.14	0.281 7.14
3939-B23	–	3.625 92.08	–	0.406 10.31
3939-B24	–	4.000 101.60	–	0.281 7.14
3939-B40	–	4.000 101.60	–	0.406 10.31
3939-B43	2.000 50.80	3.625 92.08	0.343 8.71	0.406 10.31
3939-B44	1.500 38.10	4.000 101.60	0.281 7.14	0.406 10.31



81X ATTACHMENTS

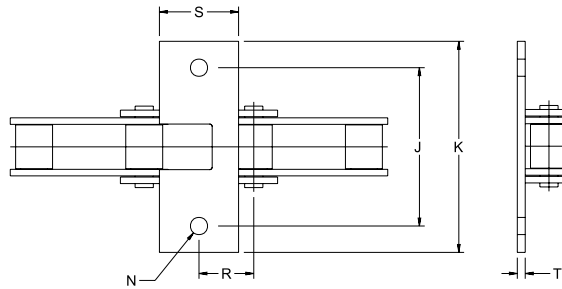


TABLE 149. K1C 81X ATTACHMENT

Attachment	Chain No.	J	K	M	N	M	N
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K1C	81X	3.750 95.25	5.000 127.00	0.406 10.31	1.300 33.02	1.875 47.63	0.187 4.75

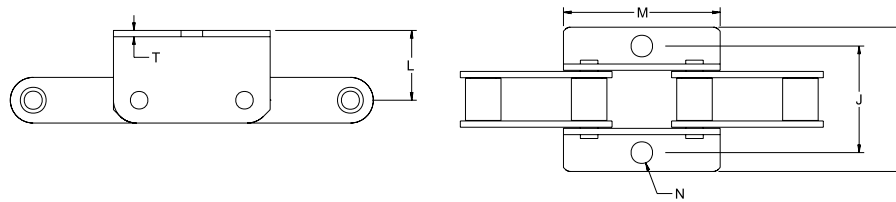
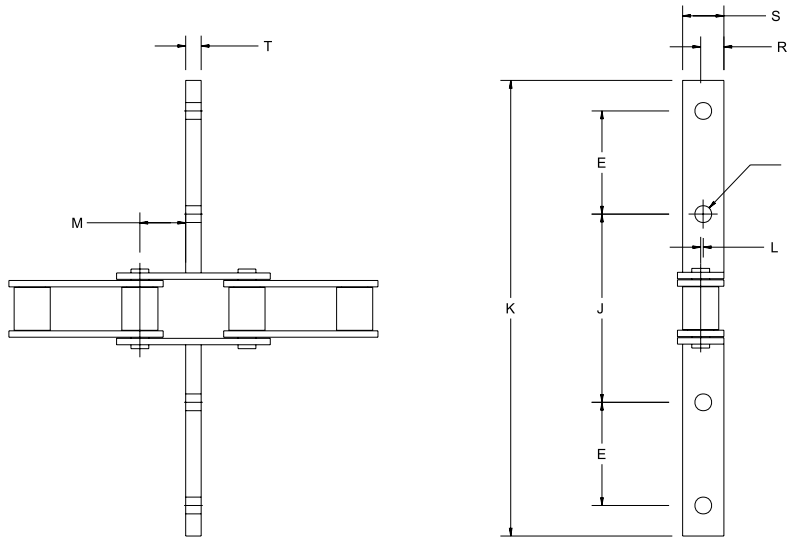


TABLE 150. K3 81X ATTACHMENT

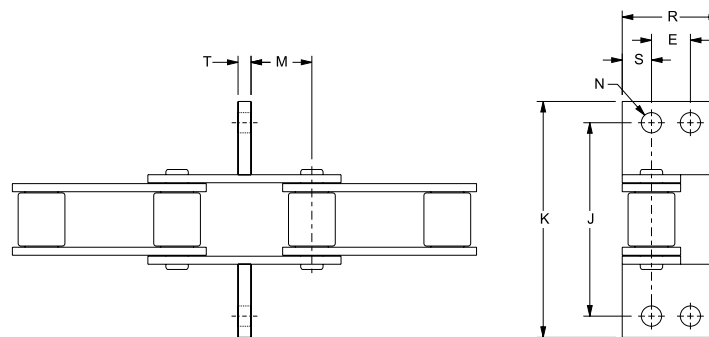
Attachment	Chain No.	J	K	M	N	M	N
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K3	81X	2.625 66.68	3.500 88.90	0.531 13.49	1.718 43.64	3.860 98.04	0.155 3.94

### 81X ATTACHMENTS – *continued*



**TABLE 151. FS7, FG9, SF22 81X ATTACHMENT**

Attachment	Chain No.	J	K	E	N	S	R	L	T	M
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
FS1	81X	3.000 76.20	7.000 177.80	1.250 31.75	0.406 10.31	0.750 19.05	0.375 9.53	0.188 4.78	0.375 9.53	1.110 28.19
FG9	81X	3.50 88.90	7.25 184.15	1.25 31.75	0.34 8.71	1.13 28.58	0.56 14.30	–	0.250 6.35	1.187 30.15
SF22	81X	4.560 115.82	11.040 280.42	2.500 63.50	0.406 10.31	1.000 25.40	0.500 12.70	–	0.375 9.53	1.110 28.19



**TABLE 152. GT22 81X ATTACHMENT**

Attachment	Chain No.	J	K	E	N	S	R	T	M
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
GT22	81X	3.750 95.25	4.562 115.87	0.750 19.05	0.375 9.53	0.562 14.27	1.875 47.63	0.250 6.35	1.170 29.72

81X ATTACHMENTS – *continued*

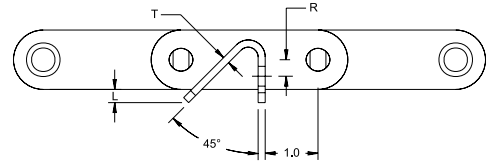
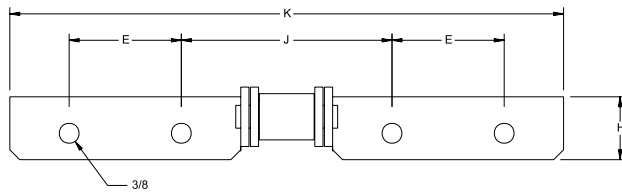


TABLE 153. SF1 AND SF1M1 FOR 81X

Attachment	Chain No.	J	K	E	T	R	H	L
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
SF1	81X	3.990 101.35	10.490 266.45	2.125 53.98	0.134 3.40	0.313 7.95	1.191 30.25	0.250 6.35
SF1M1	81X	3.990 101.35	13.490 342.65	3.625 92.08	0.134 3.40	0.188 4.78	1.063 27.00	– –

NOTE: Attachment available only on pin link.

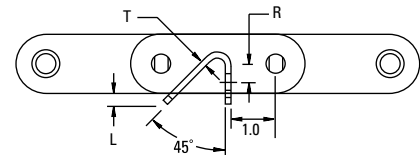
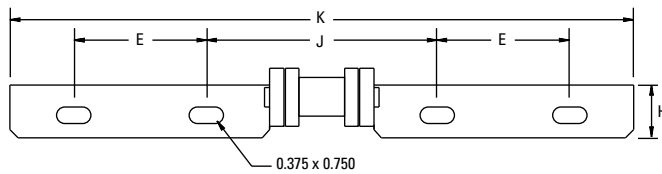
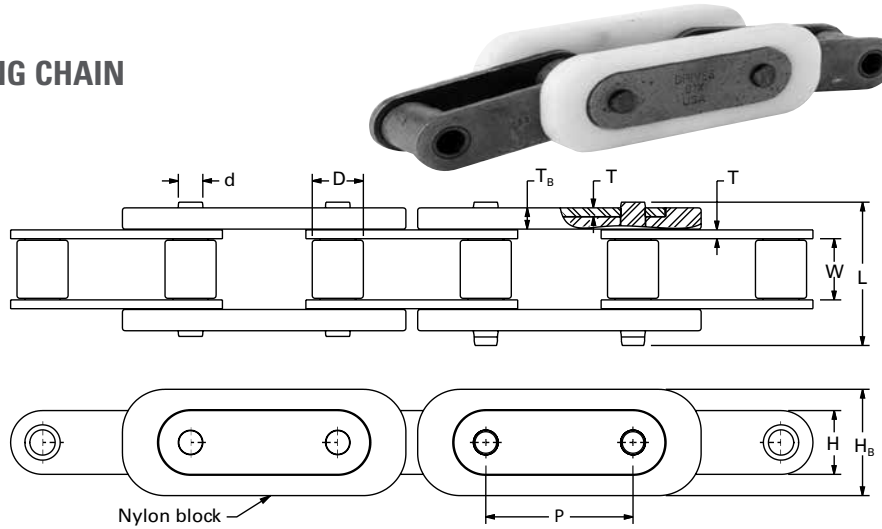


TABLE 154. SF1 FOR 81XHH AND SF1A FOR 81X

Attachment	Chain No.	J	K	E	T	R	H	L
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
SF1	81XHH	5.250 133.35	14.128 358.85	3.000 76.20	0.134 3.40	0.416 10.57	1.191 30.25	0.250 6.35
SF1A	81X	5.250 133.35	14.125 358.78	3.000 76.20	0.134 3.40	0.313 7.95	1.191 30.25	0.250 6.35

NOTE: Attachment available only on pin link.

**BOARD HANDLING CHAIN**



**TABLE 155. BOARD HANDLING CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Plastic Block Thickness	Plastic Block Height
	P	W	d	D	T	H	L	T <sub>B</sub>	H <sub>B</sub>
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
81XBH	2.609 66.27	1.060 26.92	0.437 11.10	0.906 23.01	0.155 3.94	1.125 28.58	2.370 60.20	0.375 9.53	1.875 47.63

**SAMPLE OF SPECIAL 81X PUSHER ATTACHMENTS AVAILABLE UPON REQUEST.**



### KILN DRYER CHAINS

#### 81X KD

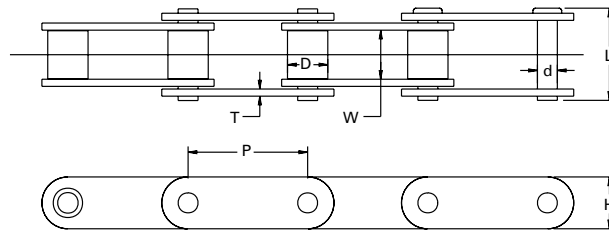


TABLE 156. 81X KD

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
81XKD	<b>2.609</b> 66.27	<b>1.060</b> 26.92	<b>0.437</b> 11.10	<b>0.906</b> 23.01	<b>0.155</b> 3.94	<b>1.125</b> 28.58	<b>1.930</b> 49.02	<b>24,000</b> 106.75	<b>3,000</b> 13.34	<b>2.500</b> 3.72

#### 81XH KD

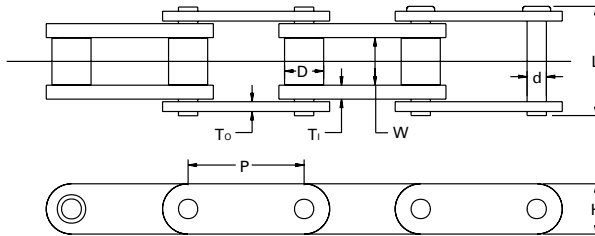


TABLE 157. 81XH KD

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Outside Link Plate	Inside Link Plate	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T <sub>o</sub>	T <sub>i</sub>	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
81XHKD	<b>2.609</b> 66.27	<b>1.060</b> 26.92	<b>0.437</b> 11.10	<b>0.906</b> 23.01	<b>0.220</b> 5.59	<b>0.310</b> 7.87	<b>1.332</b> 33.83	<b>2.577</b> 65.46	<b>42,000</b> 186.82	<b>3,700</b> 16.46	<b>4.120</b> 6.13

#### 378RX

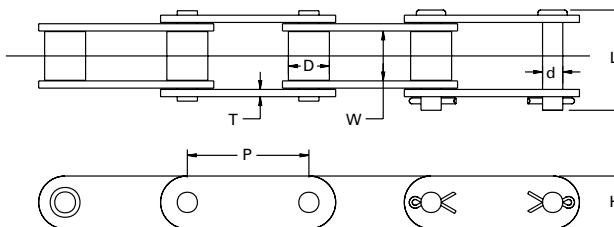


TABLE 158. 378RX

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
378RX	<b>1.654</b> 42.01	<b>1.000</b> 25.40	<b>0.437</b> 11.10	<b>0.875</b> 22.23	<b>0.187</b> 4.75	<b>1.125</b> 28.58	<b>2.280</b> 57.91	<b>20,000</b> 88.96	<b>2,100</b> 9.34	<b>3.700</b> 5.51

Note: KD series manufactured with increased clearance between sidebars to prevent stiff joints under elevated temperatures. Special no-stain lubricants available.

### 3000H KD

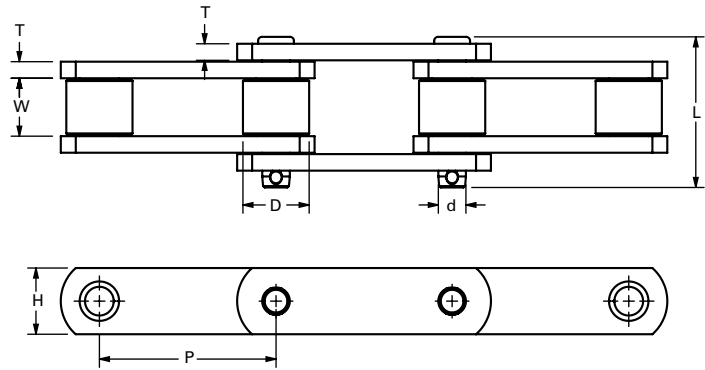


TABLE 159. 3000H KD

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
3000HKD	3.000 76.20	1.312 33.32	0.750 19.05	1.500 38.10	0.375 9.53	2.000 50.80	3.220 81.79	70,000 311.36	7,100 31.58	10.700 15.92

Note: KD series manufactured with increased clearance between sidebars to prevent stiff joints under elevated temperatures. Special no-stain lubricants available.

## KILN DRYER SERIES CHAIN

### Technical Specification/Performance

KD series chain is produced with the following features:

- Minimum twist in each direction is 4 degrees and the maximum difference in twist from one side to the other is 12 degrees.
- Minimum camber in each direction is 2 in. and the maximum difference in camber from one side to the other is 4 in.
- Special alloy pin material with nominal hardness at 45 HRc (provides strength in higher temperature operations and greater wear life performance) for wallboard/dryer applications.
- Alloy bushing material (provides strength, durability and wear life) for wallboard/dryer applications.
- Nominal lateral plate clearance at 0.06 in. (with increased pin length requirement) provides tolerance for heat expansion/contraction and accommodates for misalignment of the hangers. Delivers non-binding chain operations in higher temperatures/longer cycle wall board systems.
- KD series manufactured with increased clearance between sidebars to prevent stiff joints under elevated temperatures. Special rust inhibitors available.

### Installation/ Service Factors

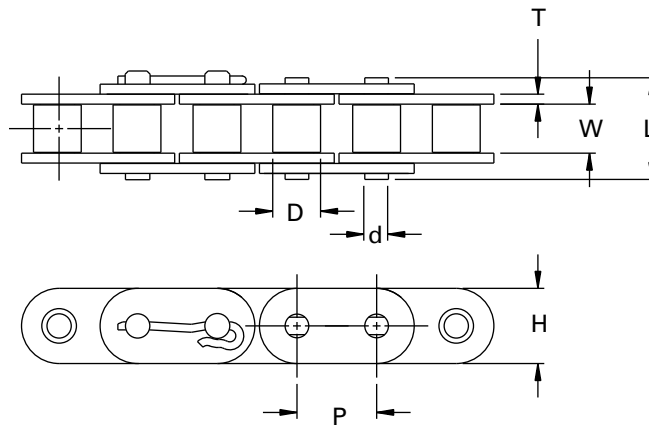
- J-style designed connectors can be specified for superior retention and service access.
- 25 ft. or 50 ft. coils available, on pallets/crates for efficient installation.
- No hassle, non-return reels available:
  - 200 foot for 81X or 81XKD
  - 125 foot for 81XH, 81XHT, 81XHKD
- Steel returnable reels available:
  - 600 foot for 81X or 81XKD
  - 500 foot for 81XH, 81XHT, 81XHKD

## **METAL PROCESSING**

Extreme conditions within the metal processing industry demand chains that are designed to withstand the enormous weight of the materials being conveyed, high temperatures and the distance that the material must be conveyed.



### METAL PROCESSING CHAIN



**TABLE 160. E-SERIES CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L	lbs. kN	lbs. kN	lbs./ft. kg/m
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
C60E	<b>0.750</b> 19.05	<b>0.500</b> 12.70	<b>0.234</b> 5.94	<b>0.469</b> 11.91	<b>0.094</b> 2.39	<b>0.705</b> 17.91	<b>0.996</b> 25.30	<b>8500.00</b> 37.81	<b>2095.00</b> 9.32	<b>1.173</b> 1.75
C80E	<b>1.000</b> 25.40	<b>0.627</b> 15.93	<b>0.312</b> 7.92	<b>0.625</b> 15.88	<b>0.125</b> 3.18	<b>0.943</b> 23.95	<b>1.283</b> 32.59	<b>14500.00</b> 64.50	<b>3300.00</b> 14.68	<b>2.054</b> 3.06
C100E	<b>1.250</b> 31.75	<b>0.755</b> 19.18	<b>0.375</b> 9.53	<b>0.750</b> 19.05	<b>0.156</b> 3.96	<b>1.180</b> 29.97	<b>1.595</b> 40.51	<b>24000.00</b> 106.75	<b>5100.00</b> 22.68	<b>3.081</b> 4.59
C120E	<b>1.500</b> 38.10	<b>1.000</b> 25.40	<b>0.437</b> 11.10	<b>0.875</b> 22.23	<b>0.187</b> 4.75	<b>1.425</b> 36.20	<b>1.955</b> 49.66	<b>34000.00</b> 151.23	<b>6800.00</b> 30.25	<b>4.588</b> 6.83
C140E	<b>1.750</b> 44.45	<b>1.000</b> 25.40	<b>0.500</b> 12.70	<b>1.000</b> 25.40	<b>0.220</b> 5.59	<b>1.663</b> 42.24	<b>2.136</b> 54.25	<b>46000.00</b> 204.61	<b>9000.00</b> 40.03	<b>5.878</b> 8.75
C160E	<b>2.000</b> 50.80	<b>1.250</b> 31.75	<b>0.563</b> 14.30	<b>1.126</b> 28.60	<b>0.252</b> 6.40	<b>1.899</b> 48.23	<b>2.538</b> 64.47	<b>58000.00</b> 257.98	<b>12000.00</b> 53.38	<b>7.787</b> 11.59



METAL PIN TRANSFER CHAIN

3162 TP

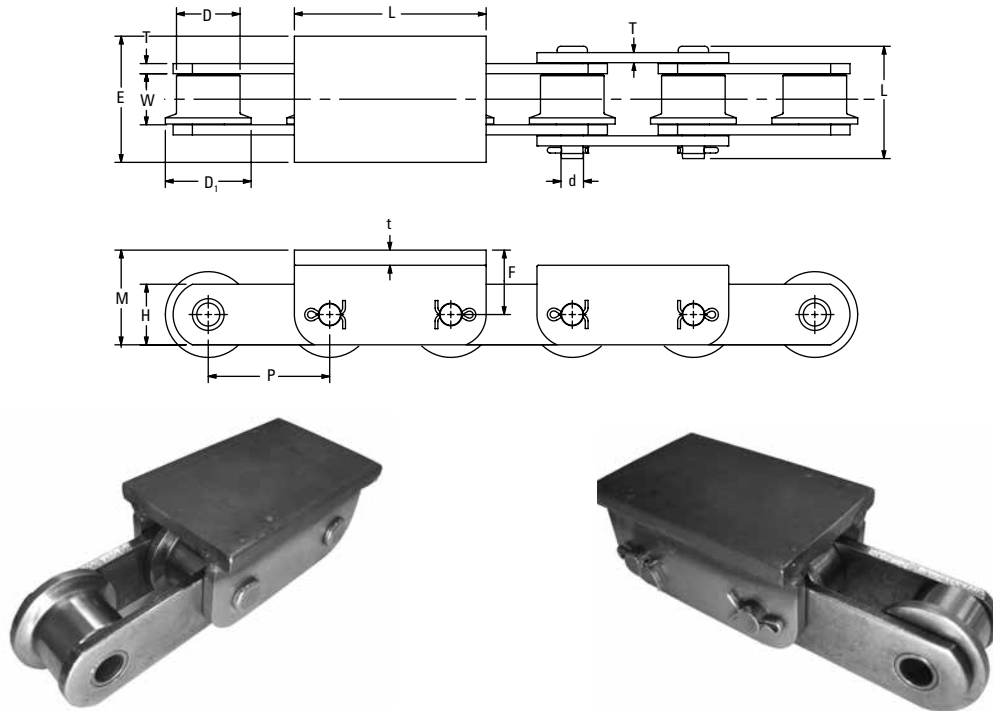


TABLE 161. METAL PIN TRANSFER CHAIN

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Roller Face Width	Roller Style	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	F		T	H				
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
3162	3.000 76.20	1.250 31.75	0.560 14.22	1.575 40.01	0.953 24.21	Flange	0.250 6.35	1.500 38.10	2.870 72.90	47,000 209.06	3,445 15.32	11.810 17.58

TABLE 162. METAL PIN TRANSFER CHAIN ATTACHMENT

Attachment	Chain No.	t	M	P	L
		in. mm	in. mm	in. mm	in. mm
TP	3162	0.380 9.65	1.600 40.64	3.130 79.50	4.750 120.65

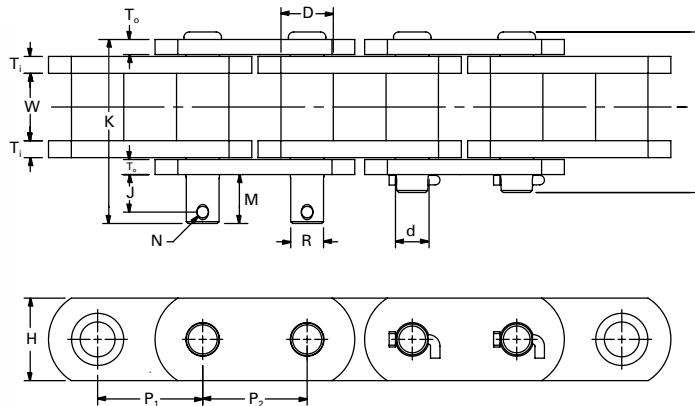


## MINING INDUSTRY

Drives manufactures mining chains that take into consideration the harsh mining environment above ground or underground. Drives mining chains are built to precise specifications for strength and maximum wear life.



**MINING INDUSTRY**  
**FEEDER BREAKER CHAIN**



**TABLE 163. FEEDER BREAKER CHAIN**

Chain No.	Pitch	Pitch	Inside Width W	Pin Diameter d	Bushing Diameter F	Outside Link Plate T <sub>0</sub>	Inside Link Plate T <sub>1</sub>	Link Plate Height H	Overall Pin Length L	Average Tensile Strength lbs. kN	Maximum Recommended Working Load lbs. kN	Weight lbs./ft. kg/m
	P <sub>1</sub>	P <sub>2</sub>										
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
3X4 Feeder Breaker Chain	<b>3.000</b> 76.20	<b>4.000</b> 101.60	<b>1.880</b> 47.75	<b>0.990</b> 25.15	<b>1.500</b> 38.10	<b>0.500</b> 12.70	<b>0.560</b> 14.22	<b>2.500</b> 63.50	<b>5.000</b> 127.00	<b>170,000</b> 756.16	<b>13,433</b> 59.75	<b>19.570</b> 29.12
4X4 Feeder Breaker Chain	<b>4.000</b> 101.60	<b>4.000</b> 101.60	<b>1.880</b> 47.75	<b>0.990</b> 25.15	<b>1.500</b> 38.10	<b>0.500</b> 12.70	<b>0.560</b> 14.22	<b>2.500</b> 63.50	<b>5.000</b> 127.00	<b>170,000</b> 756.16	<b>13,433</b> 59.75	<b>20.170</b> 30.02
3501	<b>3.500</b> 88.90	<b>3.500</b> 88.90	<b>2.250</b> 57.15	<b>1.120</b> 28.45	<b>1.750</b> 44.45	<b>0.500</b> 12.70	<b>0.560</b> 14.22	<b>2.750</b> 69.85	<b>5.410</b> 137.41	<b>170,000</b> 756.16	<b>17,000</b> 75.62	<b>24.300</b> 36.16
3751	<b>3.750</b> 95.25	<b>3.750</b> 95.25	<b>2.250</b> 57.15	<b>1.120</b> 28.45	<b>1.750</b> 44.45	<b>0.500</b> 12.70	<b>0.560</b> 14.22	<b>2.750</b> 69.85	<b>5.410</b> 137.41	<b>170,000</b> 756.16	<b>17,000</b> 75.62	<b>24.960</b> 37.15

**TABLE 164. FEEDER BREAKER CHAIN ATTACHMENT**

Chain No.	J	M	K	N	R
	in. mm	in. mm	in. mm	in. mm	in. mm
3X4 Feeder Breaker Chain	<b>1.120</b> 28.45	<b>1.500</b> 38.10	<b>5.580</b> 141.73	<b>0.928</b> 23.57	<b>0.377</b> 9.58
4X4 Feeder Breaker Chain	<b>1.120</b> 28.45	<b>1.500</b> 38.10	<b>5.580</b> 141.73	<b>0.928</b> 23.57	<b>0.377</b> 9.58
3501	<b>1.250</b> 31.75	<b>1.610</b> 40.89	<b>6.130</b> 155.70	<b>1.090</b> 27.69	<b>0.377</b> 9.58
3751	<b>1.750</b> 44.45	<b>2.110</b> 53.59	<b>6.680</b> 169.67	<b>1.090</b> 27.69	<b>0.377</b> 9.58

## SUGAR MILL CHAIN

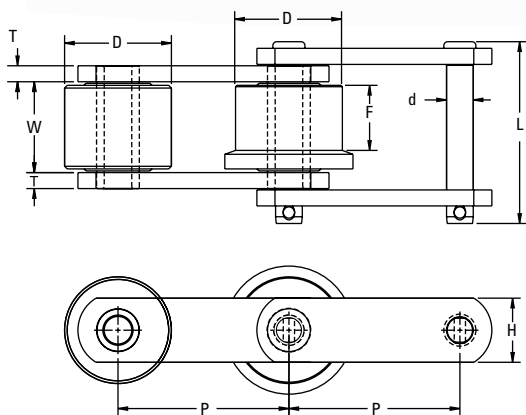
Sugar mills provide a rugged test for chains as they convey the cane through the refining process. Drives produces several chains for this challenging application, including roller conveyor chain, bagasse carrier chain, main cane carrier chain and drive chain. Drives chains are designed and engineered for top performance in the 24/7 demand of the harvest season. Drives uses a combination of carbon and alloy steels to achieve the optimum chain life and offers stainless steel, chrome plating, and nickel plating for specialized service.



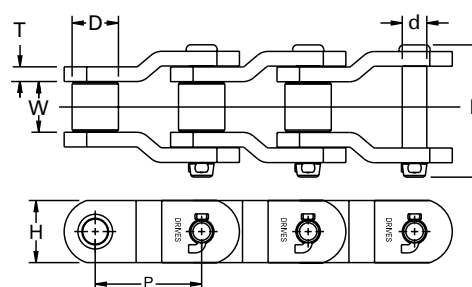
### SUGAR MILL CHAIN

Drives chain components are heat treated in modern furnaces that are controlled by PLC (Programmable Logic Controllers) technology in Fulton, Ill. Drives not only performs standard hardness tests, but also bending and crush tests to ensure that all parts have the proper balance of strength and ductility.

To achieve the proper press fits, Drives utilizes state-of-the-art manufacturing processes and in-house tooling designers to ensure round holes with maximum contact between mating surfaces. Drives precision assembly equipment is used to manufacture the chain with equal twist and camber so the chain will run straight and true. Drives' advanced quality assurance processes verify that the chains are equal to or exceed ANSI standards, assuring that you, our customers, have an industry leading chain available for your application.



**Straight style large roller**



**Offset style**

**TABLE 165. SUGAR MILL CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Roller Face Width	Roller Style	Link Plate Thickness	Link Plate Height	Overall Pin Length	Chain Style	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	F		T	H	L		lbs. kN	lbs. kN	
	in. mm	in. mm	in. mm	in. mm	in. mm		in. mm	in. mm	in. mm		lbs. kN	lbs. kN	lbs./ft. kg/m
53R	3.000 76.20	1.000 25.40	0.437 11.10	1.500 38.10	– –	Large	0.187 4.75	1.125 28.58	2.280 57.91	Straight	13,000 57.82	2,100 9.34	3,900 5.80
95R	4.000 101.60	1.000 25.40	0.440 11.18	1.500 38.10	– –	Large	0.190 4.83	1.125 28.58	2.280 57.91	Straight	13,000 57.82	2,100 9.34	3,400 5.06
2184R	6.000 152.40	1.380 35.05	0.875 22.23	3.000 76.20	– –	Large	0.380 9.65	2.000 50.80	3.750 95.25	Offset	43,000 191.26	6,500 28.91	12,300 18.30
2184R	6.000 152.40	1.380 35.05	0.875 22.23	3.000 76.20	1.180 29.97	Flange	0.380 9.65	2.000 50.80	3.750 95.25	Offset	43,000 191.26	6,500 28.91	12,300 18.30
2184RX	6.000 152.40	1.380 35.05	0.875 22.23	3.000 76.20	– –	Large	0.380 9.65	2.000 50.80	3.750 95.25	Offset	75,000 333.60	6,500 28.91	12,300 18.30
2184RX	6.000 152.40	1.380 35.05	0.875 22.23	3.000 76.20	1.180 29.97	Flange	0.380 9.65	2.000 50.80	3.750 95.25	Offset	75,000 333.60	6,500 28.91	12,300 18.30
12230	12.000 304.80	4.100 104.14	1.500 38.10	3.500 88.90	– –	Small	0.625 15.88	4.000 101.60	7.600 193.04	Offset	280,000 1,245.44	36,300 161.46	39,200 58.34

BAGASSE CARRIER CHAIN

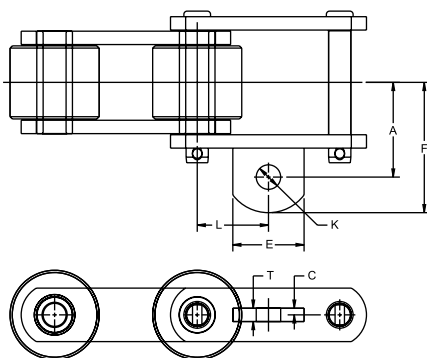


TABLE 166. BAGASSE CARRIER CHAIN ATTACHMENTS

Attachment	Chain No.	A	C	E	F	K	L	T	Weight
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs./ft. kg/mmm
A42	53R	1.560 39.62	0.130 3.30	1.000 25.40	2.000 50.80	0.380 9.65	2.000 50.80	0.250 6.35	4.200 6.25
A42	95R	1.630 41.40	0.190 4.83	1.250 31.75	2.130 54.10	0.380 9.65	3.000 76.20	0.380 9.65	3.600 5.36
A42	2184RX	2.630 66.80	0.250 6.35	2.000 50.80	3.630 92.20	0.630 16.00	3.000 76.20	0.500 12.70	13.600 20.24
A42	2184RX	2.630 66.80	0.250 6.35	2.000 50.80	3.630 92.20	0.630 16.00	3.000 76.20	0.625 15.88	13.600 20.24

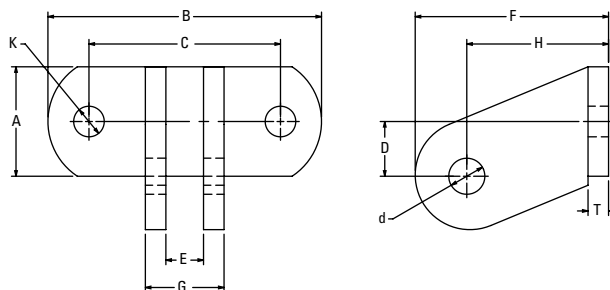
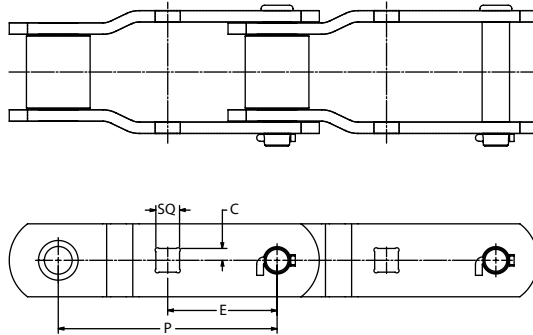


TABLE 167. BAGASSE CARRIER CHAIN ATTACHMENT

Bucket Wing Style	Attachment	A	B	C	D	E	F	G	H	K	d	T	Approx. Weight
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs./ft. kg/mmm
Style C	2C	2.00 50.80	5.00 127.00	3.50 88.90	1.00 25.40	0.69 17.48	3.54 89.79	1.44 36.53	2.24 56.90	0.50 12.70	0.66 16.76	0.38 9.53	2.80 1.27

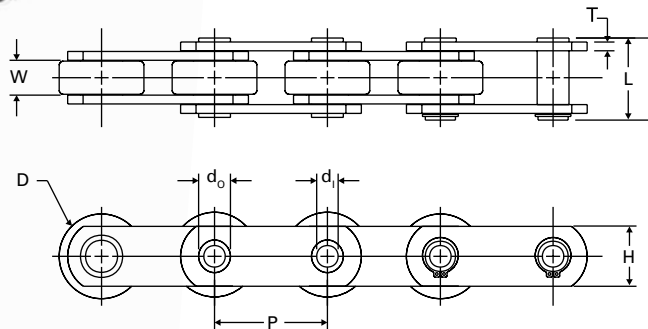
### MAIN CANE CARRIER CHAIN



**TABLE 168. MAIN CANE CARRIER CHAIN**

Attachment	Chain No.	SQ	C	E	P
		in. mm	in. mm	in. mm	in. mm
GK1	12230	<b>1.250</b> 31.75	<b>0.625</b> 15.88	<b>6.000</b> 152.40	<b>12.000</b> 304.80

### HOLLOW PIN CHAIN



**TABLE 169. HOLLOW PIN CHAIN**

Chain No.	Pitch	Inside Width	Hollow Pin Inside Diameter	Hollow Pin Outside Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d <sub>i</sub>	d <sub>o</sub>	D	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
HP200	<b>2.000</b> 50.80	<b>0.617</b> 15.67	<b>0.382</b> 9.70	<b>0.564</b> 14.33	<b>1.500</b> 38.10	<b>0.156</b> 3.96	<b>1.060</b> 26.92	<b>1.453</b> 36.91	<b>15,000</b> 66.72	<b>2,600</b> 11.56	<b>2,500</b> 3.72



## AGRICULTURAL CONVEYOR CHAIN PRODUCTS

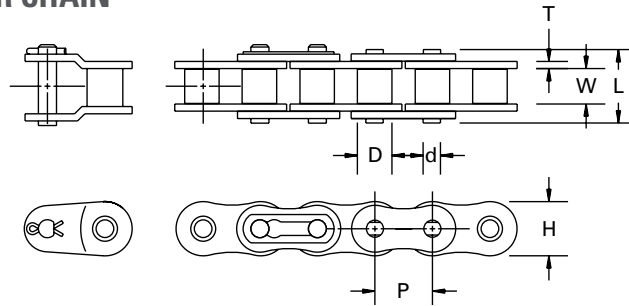
Drives manufactures a complete line of agriculture chain that go on combines, spreaders, etc. Drives chains are manufactured to the OEM specifications for maximum strength and wear life.

- Standard
- Heavy
- Double Pitch
- Attachments



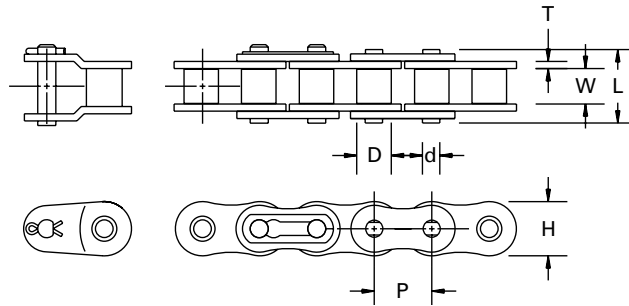
**AGRICULTURAL CONVEYOR CHAIN PRODUCTS**

**PRECISION DRIVE ROLLER CHAIN**



**TABLE 170. PRECISION DRIVE ROLLER CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Weight
	P	W	d	D	T	H	L		
	<b>in.</b> <b>mm</b>	<b>in.</b> <b>mm</b>	<b>in.</b> <b>mm</b>	<b>in.</b> <b>mm</b>	<b>in.</b> <b>mm</b>	<b>in.</b> <b>mm</b>	<b>in.</b> <b>mm</b>	<b>lbs.</b> <b>kN</b>	<b>lbs./ft.</b> <b>kg/m</b>
35	<b>0.375</b> 9.53	<b>0.189</b> 4.80	<b>0.141</b> 3.58	<b>0.200</b> 5.08	<b>0.049</b> 1.24	<b>0.355</b> 9.02	<b>0.461</b> 11.71	<b>2,100</b> 9.34	<b>0.210</b> 0.31
41	<b>0.500</b> 12.70	<b>0.252</b> 6.40	<b>0.141</b> 3.58	<b>0.306</b> 7.77	<b>0.049</b> 1.24	<b>0.382</b> 9.70	<b>0.524</b> 13.31	<b>2,400</b> 10.68	<b>0.273</b> 0.41
40	<b>0.500</b> 12.70	<b>0.313</b> 7.95	<b>0.156</b> 3.96	<b>0.313</b> 7.95	<b>0.060</b> 1.52	<b>0.472</b> 11.99	<b>0.630</b> 16.00	<b>3,700</b> 16.46	<b>0.420</b> 0.63
50	<b>0.625</b> 15.88	<b>0.376</b> 9.55	<b>0.200</b> 5.08	<b>0.400</b> 10.16	<b>0.080</b> 2.03	<b>0.590</b> 14.99	<b>0.795</b> 20.19	<b>6,100</b> 27.13	<b>0.713</b> 1.06
60	<b>0.750</b> 19.05	<b>0.500</b> 12.70	<b>0.234</b> 5.94	<b>0.469</b> 11.91	<b>0.094</b> 2.39	<b>0.705</b> 17.91	<b>0.996</b> 25.30	<b>8,500</b> 37.81	<b>1.067</b> 1.59
80	<b>1.000</b> 25.40	<b>0.627</b> 15.93	<b>0.313</b> 7.95	<b>0.625</b> 15.88	<b>0.125</b> 3.18	<b>0.943</b> 23.95	<b>1.283</b> 32.59	<b>14,500</b> 64.50	<b>1.868</b> 2.78
100	<b>1.250</b> 31.75	<b>0.755</b> 19.18	<b>0.375</b> 9.53	<b>0.750</b> 19.05	<b>0.156</b> 3.96	<b>1.180</b> 29.97	<b>1.595</b> 40.51	<b>24,000</b> 106.75	<b>2.801</b> 4.17
120	<b>1.500</b> 38.10	<b>1.000</b> 25.40	<b>0.437</b> 11.10	<b>0.875</b> 22.23	<b>0.187</b> 4.75	<b>1.425</b> 36.20	<b>1.955</b> 49.66	<b>34,000</b> 151.23	<b>4.135</b> 6.15
140	<b>1.750</b> 44.45	<b>1.000</b> 25.40	<b>0.500</b> 12.70	<b>1.000</b> 25.40	<b>0.220</b> 5.59	<b>1.663</b> 42.24	<b>2.136</b> 54.25	<b>46,000</b> 204.61	<b>5.136</b> 7.64
160	<b>2.000</b> 50.80	<b>1.250</b> 31.75	<b>0.562</b> 14.27	<b>1.125</b> 28.58	<b>0.250</b> 6.35	<b>1.899</b> 48.23	<b>2.538</b> 64.47	<b>58,000</b> 257.98	<b>6.603</b> 9.83
180	<b>2.250</b> 57.15	<b>1.400</b> 35.56	<b>0.687</b> 17.45	<b>1.406</b> 35.71	<b>0.281</b> 7.14	<b>2.132</b> 54.15	<b>2.780</b> 70.61	<b>95,000</b> 422.56	<b>9.100</b> 13.54
200	<b>2.500</b> 63.50	<b>1.490</b> 37.85	<b>0.781</b> 19.84	<b>1.562</b> 39.67	<b>0.312</b> 7.92	<b>2.312</b> 58.72	<b>3.088</b> 78.44	<b>100,000</b> 444.80	<b>10.900</b> 16.22
240	<b>3.000</b> 76.20	<b>1.864</b> 47.35	<b>0.937</b> 23.80	<b>1.875</b> 47.63	<b>0.375</b> 9.53	<b>2.812</b> 71.42	<b>3.708</b> 94.18	<b>152,000</b> 676.10	<b>16.400</b> 24.41



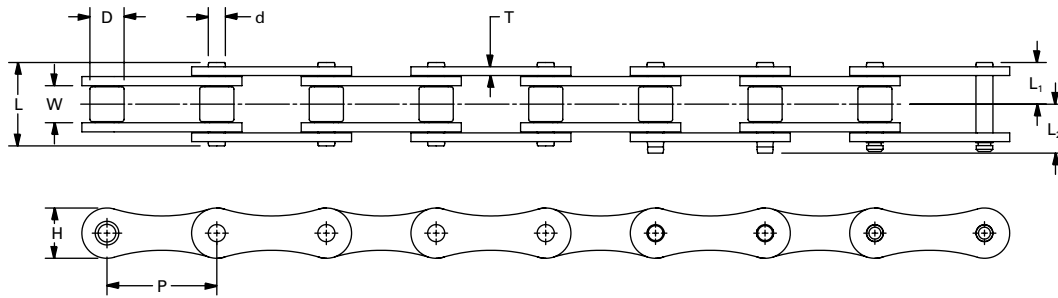
**TABLE 171. PRECISION HEAVY DRIVE ROLLER CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Roller Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Weight
	P	W	d	D	T	H	L		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
60H-1R	<b>0.750</b> 19.05	<b>0.500</b> 12.70	<b>0.234</b> 5.94	<b>0.469</b> 11.91	<b>0.125</b> 3.18	<b>0.709</b> 18.01	<b>1.140</b> 28.96	<b>8,500</b> 37.81	<b>1.265</b> 1.88
80H-1R	<b>1.000</b> 25.40	<b>0.625</b> 15.88	<b>0.312</b> 7.92	<b>0.625</b> 15.88	<b>0.156</b> 3.96	<b>0.949</b> 24.10	<b>1.413</b> 35.89	<b>14,500</b> 64.50	<b>2.462</b> 3.66
100H-1R	<b>1.250</b> 31.75	<b>0.750</b> 19.05	<b>0.375</b> 9.53	<b>0.750</b> 19.05	<b>0.187</b> 4.75	<b>1.186</b> 30.12	<b>1.725</b> 43.82	<b>24,000</b> 106.75	<b>3.223</b> 4.80
120H-1R	<b>1.500</b> 38.10	<b>1.000</b> 25.40	<b>0.437</b> 11.10	<b>0.875</b> 22.23	<b>0.219</b> 5.56	<b>1.425</b> 36.20	<b>2.085</b> 52.96	<b>34,000</b> 151.23	<b>4.614</b> 6.87

# ENGINEERED CHAIN PRODUCT CHARTS

## ENGINEERED CLASS CHAIN – BY INDUSTRY • AGRICULTURAL

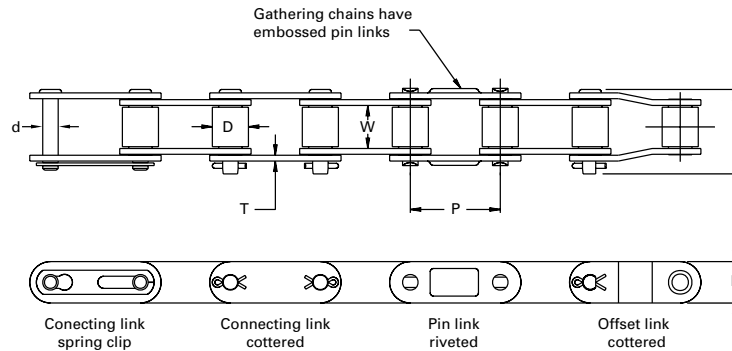
### A SERIES DOUBLE PITCH



**TABLE 172. PRECISION HEAVY SERIES DRIVE ROLLER CHAIN**

Chain No.	Pitch	Width Between Link Plates W	Roller Diameter D	Link Plate		Pin Diameter d	Pin			Average Weight lbs./ft. kg/m
	P			H	T		L	L <sub>1</sub>	L <sub>2</sub>	
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	
A2040	<b>1.000</b> 25.40	<b>0.312</b> 7.92	<b>0.312</b> 7.92	<b>0.060</b> 1.52	<b>0.156</b> 3.96	<b>0.472</b> 11.99	<b>0.638</b> 16.21	<b>0.638</b> 16.21	<b>0.638</b> 16.21	<b>0.270</b> 0.40
A2050	<b>1.250</b> 31.75	<b>0.376</b> 9.55	<b>0.400</b> 10.16	<b>0.080</b> 2.03	<b>0.200</b> 5.08	<b>0.590</b> 14.99	<b>0.795</b> 20.19	<b>0.795</b> 20.19	<b>0.795</b> 20.19	<b>0.450</b> 0.67
A2060	<b>1.500</b> 38.10	<b>0.500</b> 12.70	<b>0.469</b> 11.91	<b>0.094</b> 2.39	<b>0.234</b> 5.94	<b>0.705</b> 17.91	<b>0.996</b> 25.30	<b>0.996</b> 25.30	<b>0.996</b> 25.30	<b>0.630</b> 0.94

### CONVEYOR SERIES CA



**TABLE 173. CARBON STEEL ROLLER CONVEYOR CHAIN**

Chain No.	Pitch	Inside Width W	Pin Diameter d	Roller Diameter D	Link Plate Thickness T	Link Plate Height H	Overall Pin Length L	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P									
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
CA550	<b>1.630</b> 41.40	<b>0.797</b> 20.24	<b>0.281</b> 7.14	<b>0.656</b> 16.66	<b>0.105</b> 2.67	<b>0.750</b> 19.05	<b>1.562</b> 39.67	<b>11,250</b> 50.04	<b>1,400</b> 6.23	<b>1.279</b> 1.90
CA550HD	<b>1.630</b> 41.40	<b>0.767</b> 19.48	<b>0.326</b> 8.28	<b>0.656</b> 16.66	<b>0.120</b> 3.05	<b>0.780</b> 19.81	<b>1.586</b> 40.28	<b>11,500</b> 51.15	<b>1,700</b> 7.56	<b>1.409</b> 2.10
CA555	<b>1.630</b> 41.40	<b>0.500</b> 12.70	<b>0.281</b> 7.14	<b>0.656</b> 16.66	<b>0.120</b> 3.05	<b>0.750</b> 19.05	<b>1.302</b> 33.07	<b>11,250</b> 50.04	<b>1,100</b> 4.89	<b>1.238</b> 1.84
CA557	<b>1.630</b> 41.40	<b>0.797</b> 20.24	<b>0.315</b> 8.00	<b>0.700</b> 17.78	<b>0.120</b> 3.05	<b>0.906</b> 23.01	<b>1.593</b> 40.46	<b>16,500</b> 73.39	<b>1,700</b> 7.56	<b>1.719</b> 2.56
CA960	<b>1.630</b> 41.40	<b>0.890</b> 22.61	<b>0.350</b> 8.89	<b>0.700</b> 17.78	<b>0.120</b> 3.05	<b>0.910</b> 23.11	<b>1.580</b> 40.13	<b>15,500</b> 68.94	<b>2,050</b> 9.12	<b>1.809</b> 2.69
CA620	<b>1.654</b> 42.01	<b>0.987</b> 25.07	<b>0.281</b> 7.14	<b>0.696</b> 17.68	<b>0.120</b> 3.05	<b>0.750</b> 19.05	<b>1.841</b> 46.76	<b>12,000</b> 53.38	<b>1,700</b> 7.56	<b>1.609</b> 2.39

## DRIVES ROLLER CHAIN PRODUCTS

### CA551X

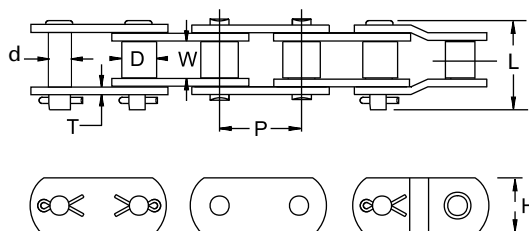


TABLE 174. CARBON STEEL BUSHED CONVEYOR CHAIN

Chain No.	Pitch	Inside Width	Pin Diameter	Bushing Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	D	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
CA551X	1.630 41.40	0.797 20.24	0.437 11.10	0.656 16.66	0.155 3.94	1.125 28.58	1.813 46.05	20,000 88.96	2,400 10.68	2.424 3.61

## DOUBLE PITCH CONVEYOR

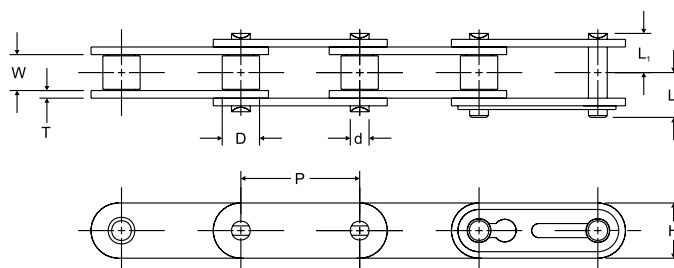


TABLE 175. PRECISION CONVEYOR ROLLER CHAIN

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin			Maximum Allowable Load Carbon Steel	Average Weight
	P	W	D	H	T	d	L <sub>1</sub>	L <sub>2</sub>		
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs./ft. kg/m
C2040	1.000 25.40	0.312 7.92	0.312 7.92	0.472 11.99	0.060 1.52	0.156 3.96	0.319 8.10	0.382 9.70	615 2.74	0.340 0.506
C2050	1.250 31.75	0.376 9.55	0.400 10.16	0.590 14.99	0.080 2.03	0.200 5.08	0.409 10.39	0.477 12.12	1,010 4.49	0.580 0.863
C2060H	1.500 38.10	0.500 12.70	0.469 11.91	0.687 17.45	0.125 3.18	0.234 5.94	0.590 14.99	0.660 16.76	1,410 6.27	1.010 1.503
C2080H	2.000 50.80	0.626 15.90	0.625 15.88	0.943 23.95	0.156 3.96	0.312 7.92	0.745 18.92	0.845 21.46	2,350 10.45	1.770 2.634
C2100H	2.500 63.50	0.750 19.05	0.750 19.05	1.150 29.21	0.187 4.75	0.375 9.53	0.830 21.08	0.980 24.89	3,800 16.90	2.380 3.542
C2120H	3.000 76.20	1.000 25.40	0.875 22.23	1.370 34.80	0.219 5.56	0.437 11.10	1.030 26.16	1.210 30.73	5,380 23.93	3.410 5.075
C2160H	4.000 101.60	1.250 31.75	1.125 28.58	1.870 47.50	0.281 7.14	0.563 14.30	1.337 33.96	1.514 38.46	9,190 40.88	6.020 8.959

NOTE: Dimensions are subject to change. Contact your Drives representative to obtain certified prints for design and construction.

NOTE: Refer to the Drives Chain Configurator at [cad.timken.com/configurator](http://cad.timken.com/configurator).

## AGRICULTURAL CONVEYOR PRECISION ROLLER CHAIN ATTACHMENTS

A1, A1S

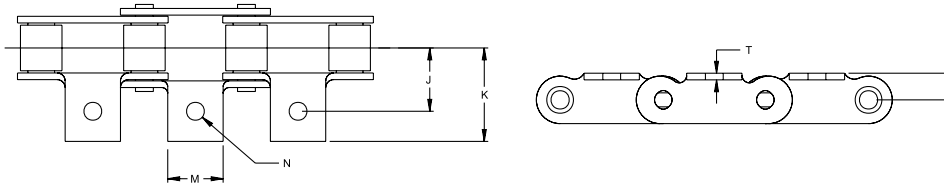


TABLE 176. A1 AND A1S PRECISION CHAIN ATTACHMENTS

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
A1	CA550	1.000 25.40	1.484 37.69	0.281 7.14	0.875 22.23	0.422 10.72	0.105 2.67
A1	CA620	1.234 31.34	1.578 40.08	0.281 7.14	0.875 22.23	0.453 11.51	0.125 3.18
A1S	CA620	1.234 31.34	1.578 40.08	0.343 8.71	0.875 22.23	0.453 11.51	0.125 3.18

A1, A1S, A11, A4, A19, A25, A26

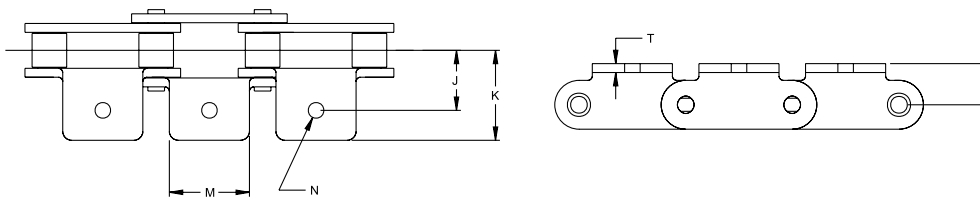
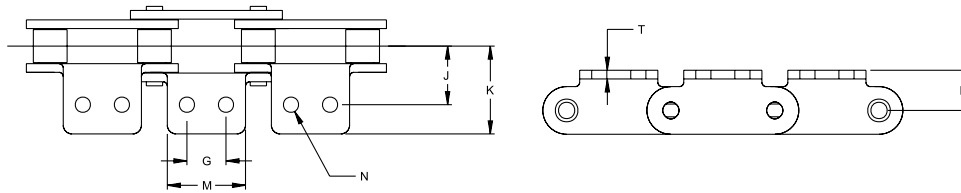


TABLE 177. A1, A1S, A11, A4, A19, A25 AND A26 PRECISION CHAIN ATTACHMENTS

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
A1	CA551X	1.250 31.75	2.093 53.16	0.437 11.10	1.500 38.10	0.812 20.62	0.155 3.94
A1S	C2060H	0.844 21.44	1.250 31.75	0.262 6.65	1.125 28.58	0.578 14.68	0.125 3.18
A11	C2060H	0.844 21.44	1.250 31.75	0.343 8.71	1.125 28.58	0.578 14.68	0.125 3.18
A4 On pin link only	CA550	1.469 37.31	2.093 53.16	0.391 9.93	1.500 38.10	0.625 15.88	0.185 4.70
A4 On pin link only	CA557	1.487 37.77	2.114 53.70	0.403 10.24	1.500 38.10	0.625 15.88	0.185 4.70
A19	CA557	1.000 25.40	1.420 36.07	0.281 7.14	1.125 28.58	0.562 14.27	0.125 3.18
A25	CA557	1.000 25.40	1.420 36.07	0.343 8.71	1.125 28.58	0.562 14.27	0.125 3.18
A26	C2060H	0.844 21.44	1.250 31.75	0.406 10.31	1.125 28.58	0.578 14.68	0.125 3.18

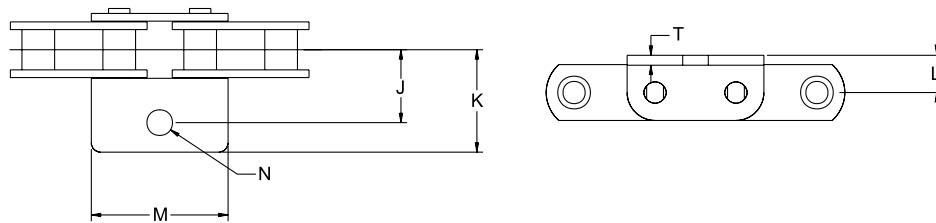
### A2, A2S



**TABLE 178. A2 AND A2S PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	G	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
A2S	C2060H	<b>0.844</b> 21.44	<b>1.250</b> 31.75	<b>0.562</b> 14.27	<b>0.281</b> 7.14	<b>1.125</b> 28.58	<b>0.578</b> 14.68	<b>0.125</b> 3.18

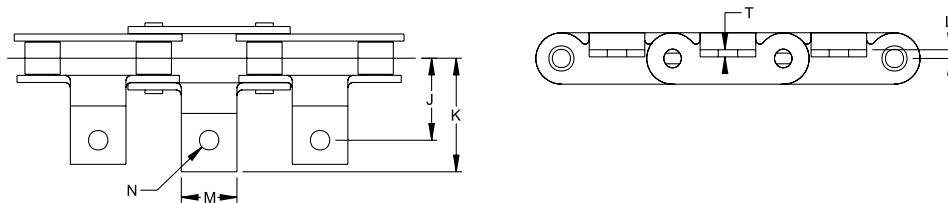
### A4, A1W, A24



**TABLE 179. A4, A1W AND A24 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
A4	CA551X	<b>1.469</b> 37.31	<b>2.062</b> 52.37	<b>0.516</b> 13.11	<b>2.750</b> 69.85	<b>0.750</b> 19.05	<b>0.200</b> 5.08
A1W	CA620	<b>1.609</b> 40.87	<b>2.125</b> 53.98	<b>0.390</b> 9.91	<b>2.350</b> 59.69	<b>0.562</b> 14.27	<b>0.120</b> 3.05
A24	CA620	<b>1.352</b> 34.34	<b>1.781</b> 45.24	<b>0.400</b> 10.16	<b>2.494</b> 63.35	<b>0.656</b> 16.66	<b>0.185</b> 4.70

### A6



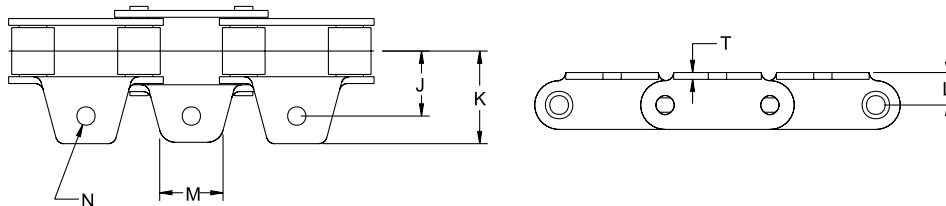
**TABLE 180. A6 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
A6	C2050	<b>0.922</b> 23.42	<b>1.290</b> 32.77	<b>0.281</b> 7.14	<b>0.625</b> 15.88	<b>0.100</b> 2.54	<b>0.080</b> 2.03

# ENGINEERED CHAIN PRODUCT CHARTS

## ENGINEERED CLASS CHAIN – BY INDUSTRY • AGRICULTURAL

**A18, A19, A25,  
A27S, A29**

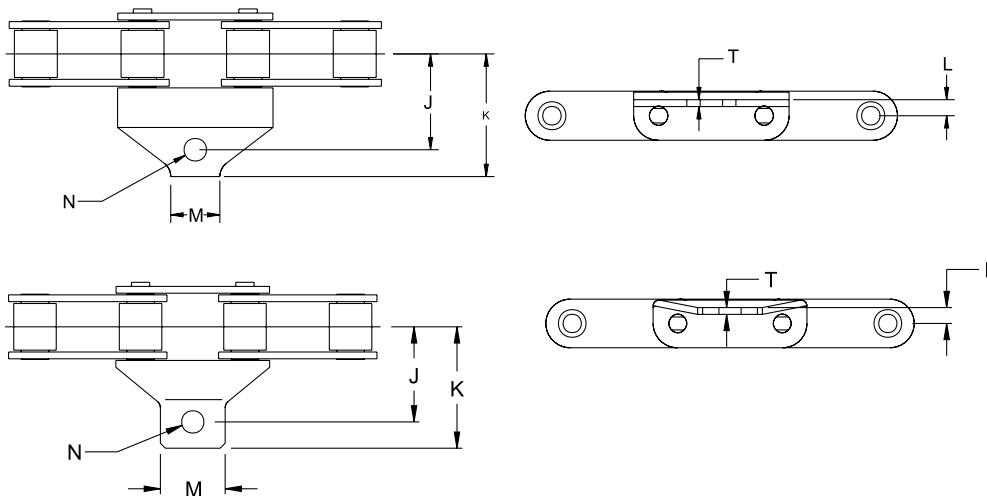


**TABLE 181. A18, A19, A25, A27S AND A29 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
A18	CA550	<b>1.062</b> 26.97	<b>1.406</b> 35.71	<b>0.281</b> 7.14	<b>0.875</b> 22.23	<b>0.500</b> 12.70	<b>0.105</b> 2.67
A19	CA550	<b>1.000</b> 25.40	<b>1.406</b> 35.71	<b>0.281</b> 7.14	<b>0.875</b> 22.23	<b>0.500</b> 12.70	<b>0.105</b> 2.67
A19 On pin link only	CA550HD <sup>(1)</sup>	<b>1.006</b> 25.55	<b>1.487</b> 37.77	<b>0.328</b> 8.33	<b>1.070</b> 27.18	<b>0.650</b> 16.51	<b>0.120</b> 3.05
A25	CA550	<b>1.000</b> 25.40	<b>1.406</b> 35.71	<b>0.343</b> 8.71	<b>0.875</b> 22.23	<b>0.500</b> 12.70	<b>0.105</b> 2.67
A27	CA550	<b>1.062</b> 26.97	<b>1.406</b> 35.71	<b>0.343</b> 8.71	<b>0.875</b> 22.23	<b>0.500</b> 12.70	<b>0.105</b> 2.67
A27S	CA550	<b>1.062</b> 26.97	<b>1.406</b> 35.71	<b>0.406</b> 10.31	<b>0.875</b> 22.23	<b>0.500</b> 12.70	<b>0.105</b> 2.67
A29	CA550	<b>1.000</b> 25.40	<b>1.406</b> 35.71	<b>0.406</b> 10.31	<b>0.875</b> 22.23	<b>0.500</b> 12.70	<b>0.105</b> 2.67

<sup>(1)</sup>Attachment available only on pin link.

**AH, AHM**

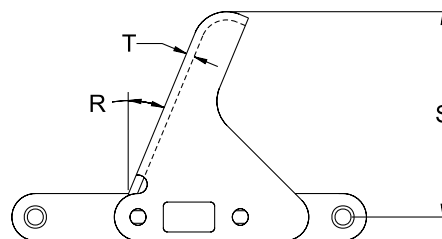
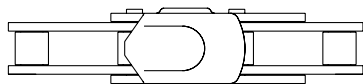


**TABLE 182. AH AND AHM PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
AH	CA550	<b>1.469</b> 37.31	<b>1.875</b> 47.63	<b>0.344</b> 8.74	<b>0.750</b> 19.05	<b>0.245</b> 6.22	<b>0.105</b> 2.67
AHM	CA550	<b>1.469</b> 37.31	<b>1.875</b> 47.63	<b>0.244</b> 6.20	<b>1.000</b> 25.40	<b>0.245</b> 6.22	<b>0.105</b> 2.67



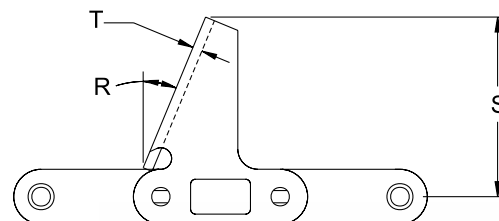
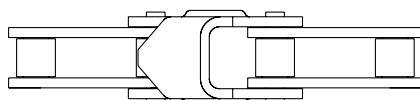
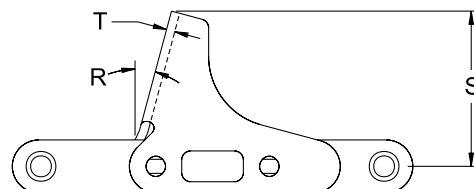
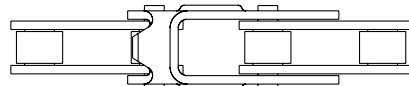
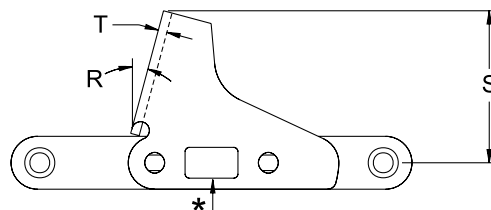
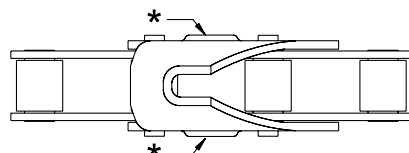
C2E



**TABLE 183. C2E PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C2E	C2060H	22.500 1.676	3.000 76.20	0.120 3.05

C5E

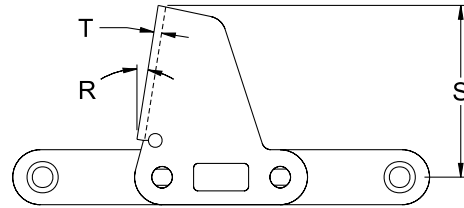
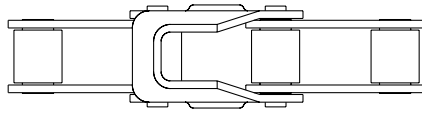


**TABLE 184. C5E AND C5 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C5E	CA550	15.0 0.261	2.156 54.76	0.105 2.67
C5E	CA555	15.0 0.261	2.250 57.15	0.120 3.05
C5E	C2060H	22.5 0.392	2.250 57.15	0.120 3.05
C5 *No embossment	CA550	15.0 0.261	2.156 54.76	0.120 3.05



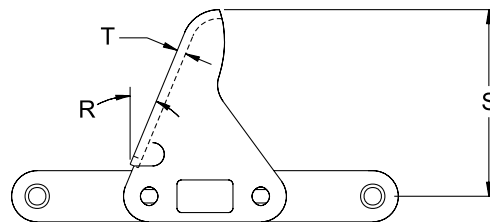
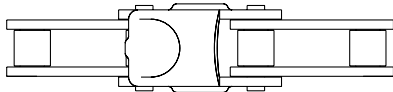
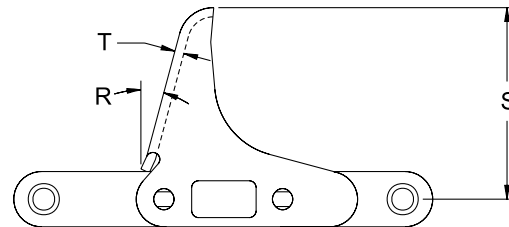
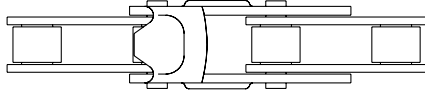
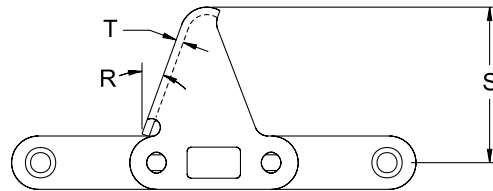
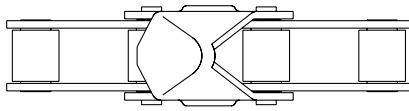
**C12E**



**TABLE 185. C12E PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		<b>Degree</b> Radians	<b>in.</b> mm	<b>in.</b> mm
C12E	CA550	<b>9.000</b> 0.157	<b>2.343</b> 59.51	<b>0.105</b> 2.67

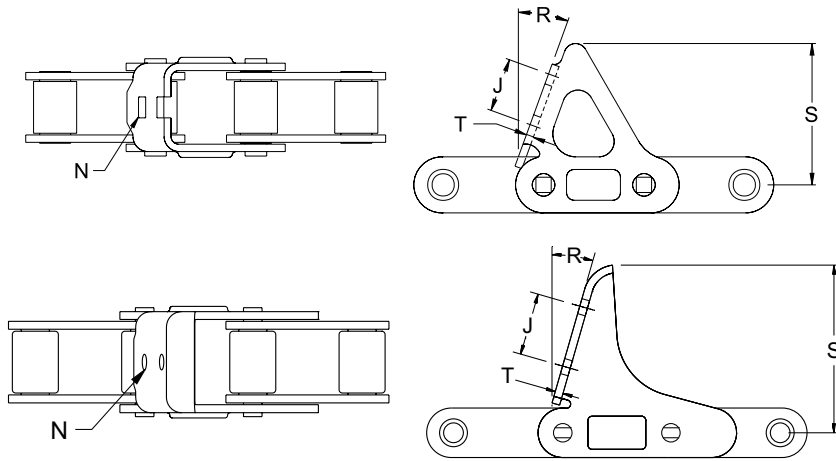
**C6E, C6EJ**



**TABLE 186. C6E AND C6EJ PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	R	S	T
		<b>Degree</b> Radians	<b>in.</b> mm	<b>in.</b> mm
C6E	CA550	<b>20.0</b> 0.349	<b>2.188</b> 55.58	<b>0.105</b> 2.67
C6EJ	CA555	<b>15.0</b> 0.262	<b>2.600</b> 66.04	<b>0.120</b> 3.05
C6E	C2060H	<b>22.5</b> 0.393	<b>2.500</b> 63.50	<b>0.120</b> 3.05

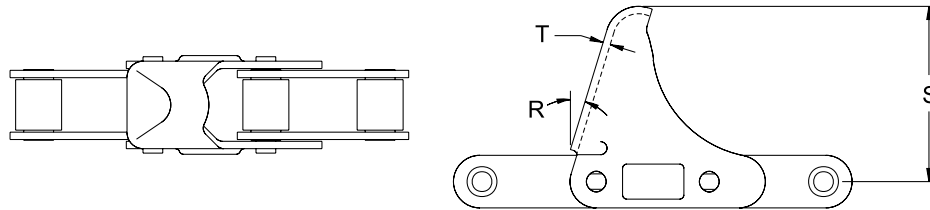
**C6E**



**TABLE 187. C6E PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	N	R	S	T
		in. mm	in. mm	Degree Radians	in. mm	in. mm
C6E	CA960	0.875 22.23	0.34 SQ 8.63 SQ	20.0 0.349	2.290 58.17	0.120 3.05
C6E	CA620	0.945 24.00	0.236 5.99	15.0 0.262	2.598 65.99	0.120 3.05

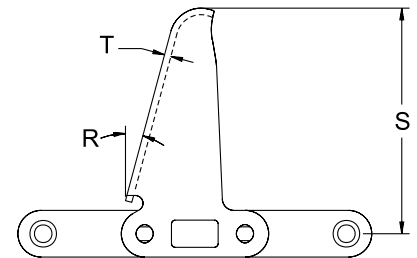
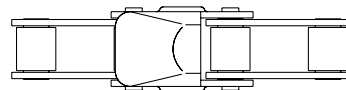
**C11E**



**TABLE 188. C11E PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C11E	CA550	17.0 0.297	2.500 63.50	0.105 2.67

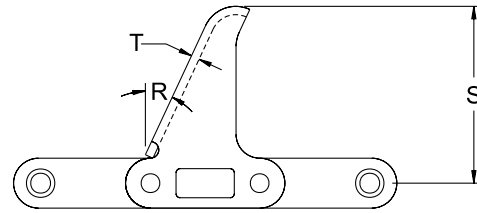
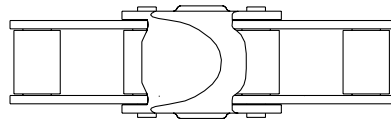
**C13E**



**TABLE 189. C13E PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C13E	CA550	15.0 0.262	3.625 92.08	0.105 2.67
C13E	CA620	15.0 0.262	3.625 92.08	0.125 3.18

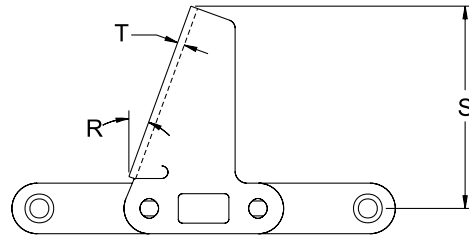
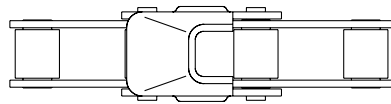
### C14E



**TABLE 190. C14E PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C14E	CA620	25.0 0.436	2.656 67.46	0.125 3.18

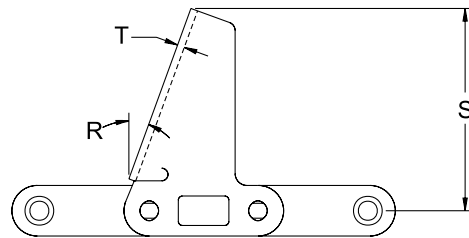
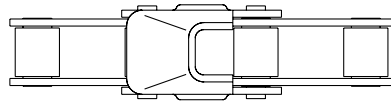
### C17E



**TABLE 191. C17E PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C17E	CA550	20.0 0.349	3.000 76.20	0.105 2.67

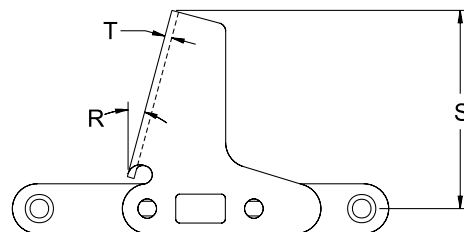
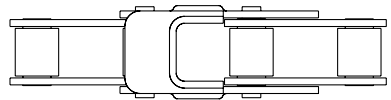
### C18E



**TABLE 192. C18E PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C18E	CA550HD	18.0 0.314	2.500 63.50	0.120 3.05

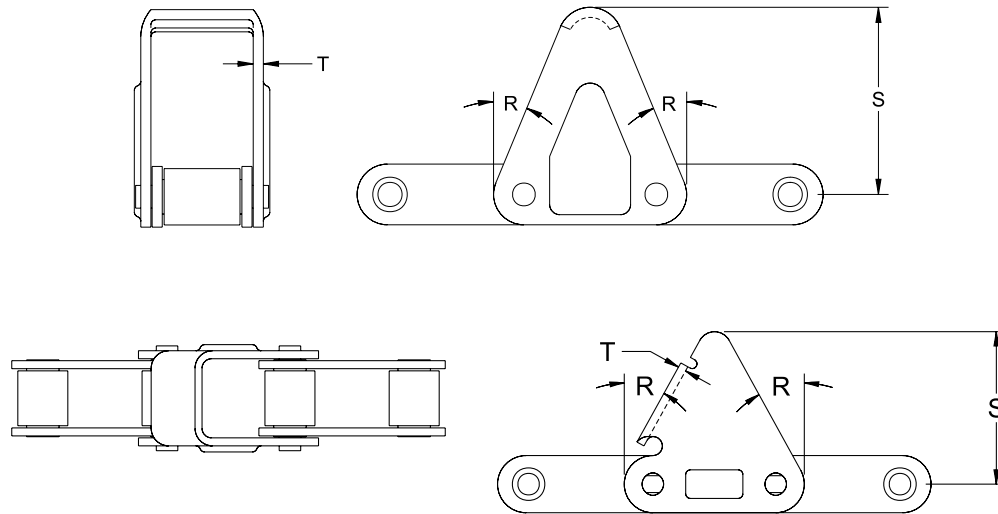
### C25E



**TABLE 193. C25E PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C25E	CA550	15.0 0.262	3.000 76.20	0.105 2.67

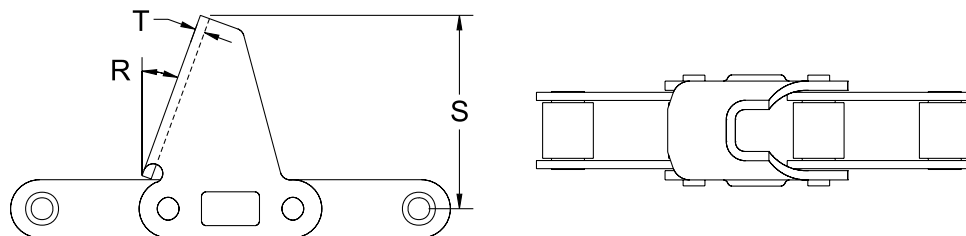
**C30E**



**TABLE 194. C30E PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
C30E	CA620	22.5 0.393	2.312 58.72	0.125 3.18
C30E	CA550	29.0 0.506	2.000 50.80	0.105 2.67

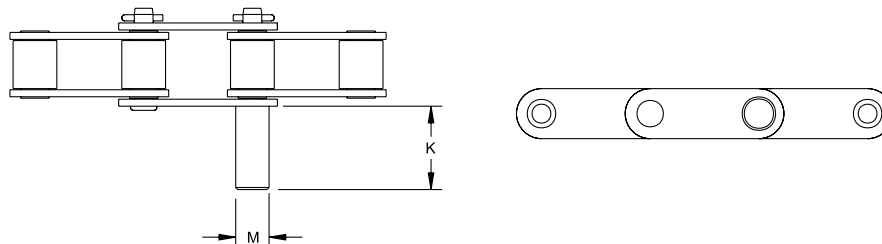
**CPE**



**TABLE 195. CPE PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	T
		Degree Radians	in. mm	in. mm
CPE	CA550	20.0 0.349	2.500 63.50	0.105 2.67

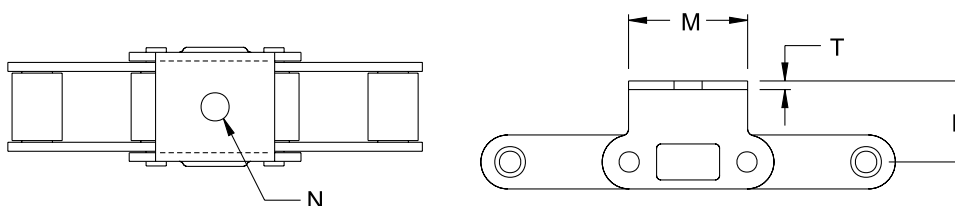
### D1EP, D1EP2, D1EP5, D1EPS



**TABLE 196. D1EP, D1EP2, D1EP5, D1EPS  
PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	K	M
		in. mm	in. mm
D1EP	CA550	1.250 31.75	0.500 12.70
D1EP	CA620	1.750 44.45	0.500 12.70
D1EP2	CA550	2.000 50.80	0.500 12.70
D1EP5	CA620	1.500 38.10	0.500 12.70
D1EPS	CA620	1.500 38.10	0.562 14.27

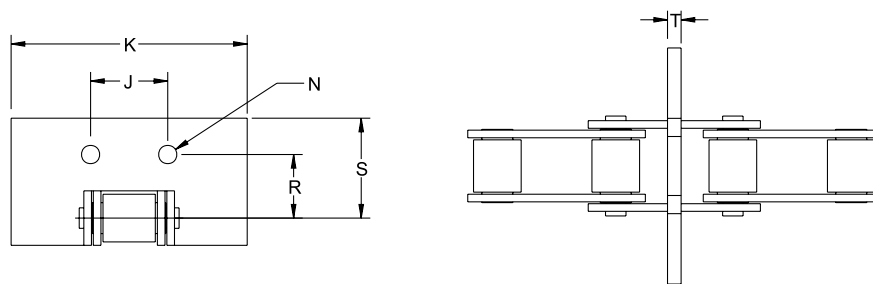
### E1



**TABLE 197. E1 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	L	M	N	T
		in. mm	in. mm	in. mm	in. mm
E1	CA620	1.125 28.58	1.654 42.01	0.390 9.91	0.120 3.05

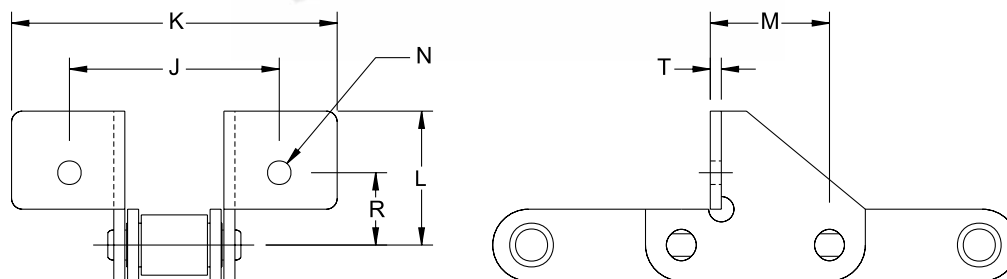
F2



**TABLE 198. F2 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
F2	CA550	1.062 26.97	3.250 82.55	0.250 6.35	0.875 22.23	1.375 34.93	0.187 4.75

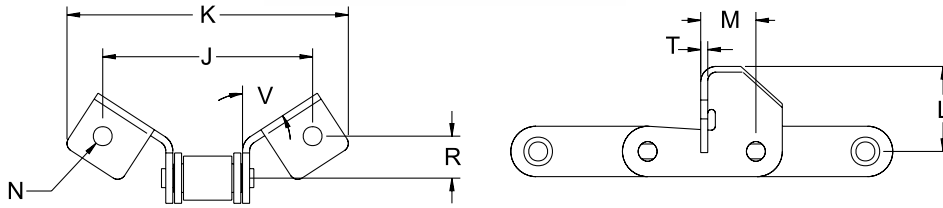
F1, F4, F4A



**TABLE 199. F1, F4, F4A PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	R	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
F1 Contour/Sidebar	CA550	2.441	3.307	0.340	1.279	0.787	1.260	0.105
		62.00	84.00	8.64	32.49	19.99	32.00	2.67
F4	CA550	1.875	2.811	0.340	1.453	1.219	1.688	0.105
		47.63	71.40	8.64	36.91	30.96	42.88	2.67
F4	CA550HD	2.283	3.540	0.256	1.297	0.787	1.460	0.120
		57.99	89.92	6.50	32.94	19.99	37.08	3.05
F4A	CA550HD	2.283	3.540	0.340	1.297	0.787	1.460	0.120
		57.99	89.92	8.64	32.94	19.99	37.08	3.05

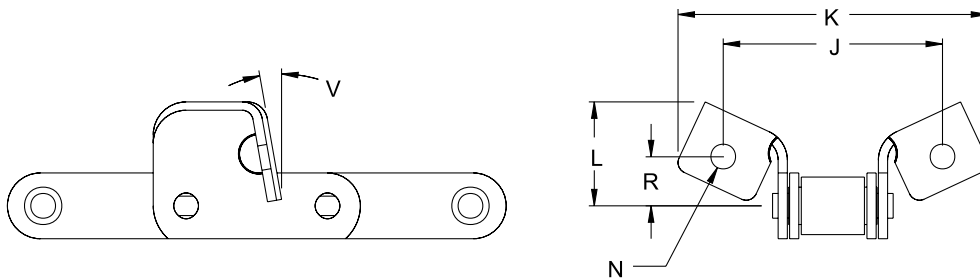
### F5, F17, SE, SHE, SF, SFD



**TABLE 200. F5, F17, SE, SHE, SF, SFD PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	R	L	T	V
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	Degree Radians
F5	CA550	3.125 79.38	4.196 106.58	0.281 7.14	0.840 21.34	0.625 15.88	1.250 31.75	0.105 2.67	57.0 0.995
F17	CA550	4.500 114.30	5.553 141.05	0.390 9.91	1.000 25.40	0.811 20.60	1.641 41.68	0.105 2.67	60.0 1.047
SE	CA550	3.125 79.38	4.196 106.58	0.340 8.64	0.840 21.34	0.625 15.88	1.250 31.75	0.105 2.67	57.0 0.995
SHE	CA550	3.125 79.38	4.196 106.58	0.343 8.71	0.840 21.34	0.625 15.88	1.250 31.75	0.125 3.18	57.0 0.995
SF	CA550	3.125 79.38	4.196 106.58	0.406 10.31	0.840 21.34	0.625 15.88	1.250 31.75	0.105 2.67	57.0 0.995
SFD	CA550HD	3.125 79.38	4.320 109.73	0.328 8.33	0.956 24.28	1.125 28.58	1.973 50.11	0.120 3.05	22.0 0.384

### F16

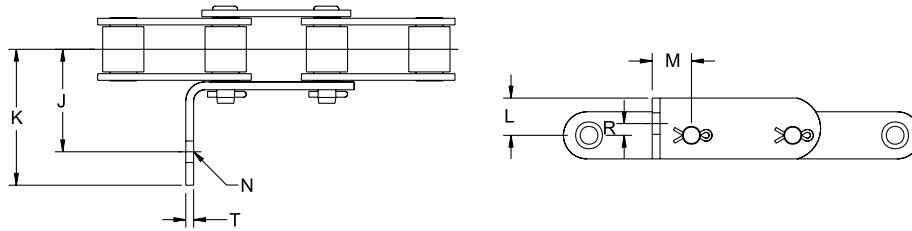


**TABLE 201. F16 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	L	R	V
		in. mm	in. mm	in. mm	in. mm	in. mm	Degree Radians
F16	CA550	2.500 63.50	3.531 89.69	0.281 7.14	1.188 30.18	0.563 14.30	10.0 0.175



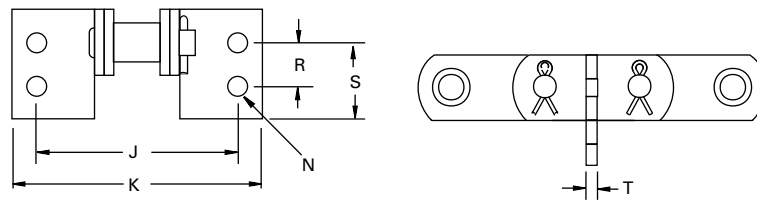
### G27S



**TABLE 202. G27S PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	L	R	T	V
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G27S	CA550	1.641 41.68	2.172 55.17	0.343 8.71	0.625 15.88	0.594 15.09	0.188 4.78	0.125 3.18

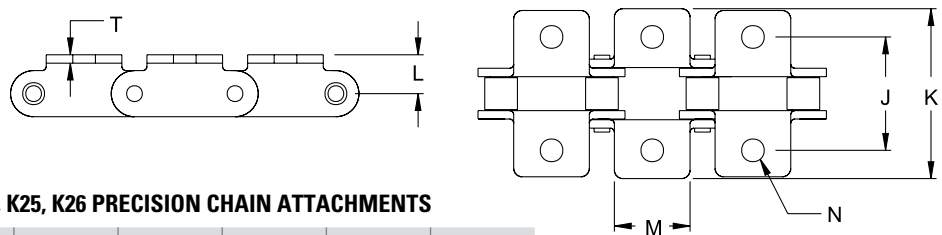
### GT2



**TABLE 203. GT2 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
GT2	CA551X	3.463 87.96	4.281 108.74	0.343 8.71	0.750 19.05	1.312 33.32	0.187 4.75

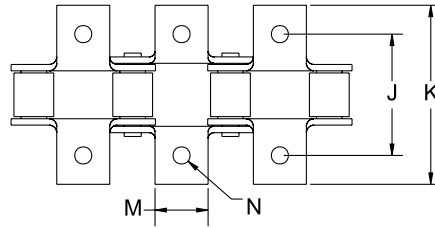
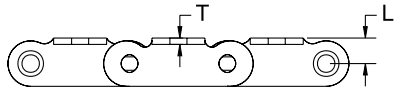
### K1, K1S, K11, K19, K25, K26



**TABLE 204. K1, K1S, K11, K19, K25, K26 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K1	CA551X	2.500 63.50	4.187 106.35	0.437 11.10	1.500 38.10	0.812 20.62	0.155 3.94
K1S	C2060H	1.687 63.50	2.500 6.73	0.265 28.58	1.125 14.68	0.578 3.18	0.125 3.18
K11	C2060H	1.687 42.85	2.500 63.50	0.343 8.71	1.125 28.58	0.578 14.68	0.125 3.18
K19	CA557	2.000 50.80	2.840 72.14	0.281 7.14	1.125 28.58	0.562 14.27	0.125 3.18
K25 On pin link only	CA557	2.000 50.80	2.840 72.14	0.343 8.71	1.125 28.58	0.562 14.27	0.125 3.18
K26	C2060H	1.687 63.50	2.500 10.31	0.406 28.58	1.125 14.68	0.578 3.18	0.125 3.18

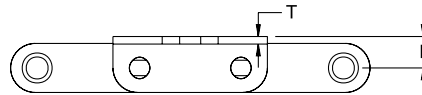
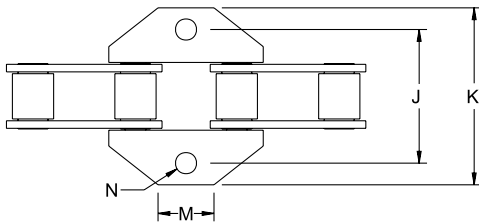
**K1, K1S**



**TABLE 205. K1, K1S PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K1	CA550	2.000 50.80	2.969 75.41	0.281 7.14	0.875 22.23	0.422 10.72	0.105 2.67
K1	CA620	2.469 62.71	3.156 80.16	0.281 7.14	0.875 22.23	0.453 11.51	0.125 3.18
K1S	CA620	2.469 62.71	3.156 80.16	0.343 8.71	0.875 22.23	0.453 11.51	0.125 3.18

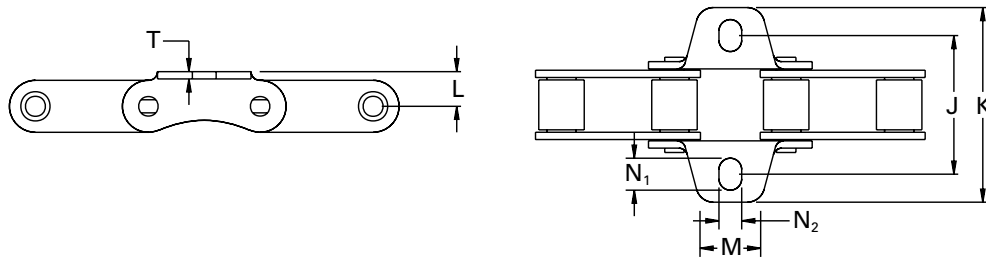
**K1, AK27S**



**TABLE 206. K1, AK27S PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K1	CA550HD	2.126 54.00	2.815 71.50	0.335 8.51	0.890 22.61	0.500 12.70	0.120 3.05
AK27S Contour/Sidebar	CA557	2.250 57.15	3.117 79.17	0.516 13.11	1.125 28.58	0.545 13.84	0.120 3.05
K1S	CA620	2.469 62.71	3.156 80.16	0.343 8.71	0.875 22.23	0.453 11.51	0.125 3.18

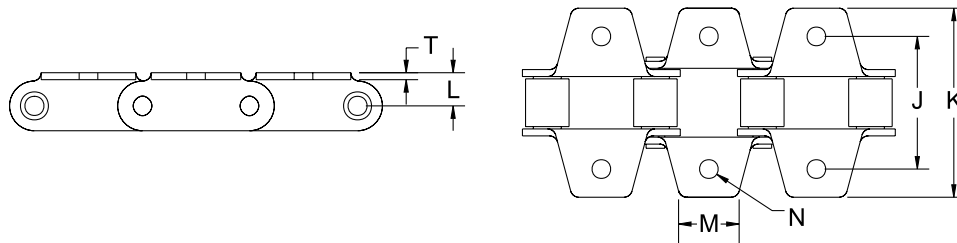
### AK25F



**TABLE 207. AK25F PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N <sub>1</sub>	N <sub>2</sub>	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
AK25F	CA550	2.000 50.80	2.808 71.32	0.461 11.71	0.328 8.33	0.875 22.23	0.500 12.70	0.105 2.67

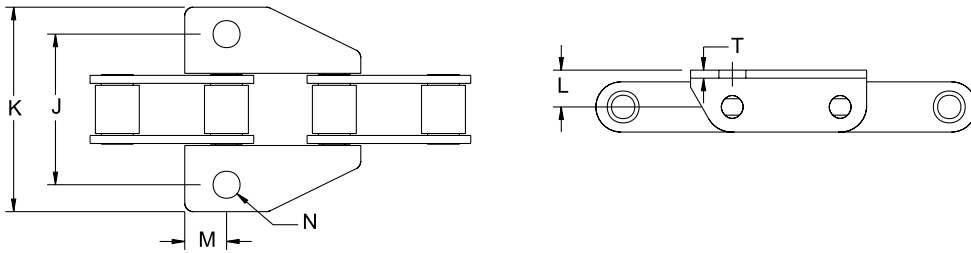
### K18, K19, K25, K27, K27S, K29, AK25M, AK29M



**TABLE 208. K18, K19, K25, K27S, K29, AK25M, AK29M PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K18	CA550	2.125 53.98	2.812 71.42	0.281 7.14	0.875 22.23	0.500 12.70	0.105 2.67
K19	CA550	2.000 50.80	2.812 71.42	0.281 7.14	0.875 22.23	0.500 12.70	0.105 2.67
K19	CA550HD	2.008 51.00	2.974 75.54	0.328 8.33	1.070 27.18	0.650 16.51	0.120 3.05
K25	CA550	2.000 50.80	2.812 71.42	0.343 8.71	0.875 22.23	0.500 12.70	0.105 2.67
K27	CA550	2.125 53.98	2.812 71.42	0.343 8.71	0.875 22.23	0.500 12.70	0.105 2.67
K27S	CA550	2.125 53.98	2.182 55.42	0.406 10.31	0.875 22.23	0.500 12.70	0.105 2.67
K29	CA550	2.000 50.80	2.812 71.42	0.406 10.31	0.875 22.23	0.500 12.70	0.105 2.67
AK25M 1. Contour/Sidebar 2. On pin link only	CA550	2.970 75.44	2.808 71.32	0.330 8.38	1.031 26.19	0.650 16.51	0.105 2.67
AK25M 1. Contour/Sidebar 2. On pin link only	CA550	2.000 50.80	2.970 75.44	0.403 10.24	1.031 26.19	0.650 16.51	0.105 2.67
K26	C2060H	1.687 63.50	2.500 10.31	0.406 28.58	1.125 14.68	0.578 3.18	0.578 3.18

### K35, K35M, AK39, K39, K39M, AK39M, AK29S



**TABLE 209. K35, K35M, AK39, K39M, AK39M, AK29S PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K35	CA557	2.000 50.80	2.890 73.41	0.343 8.71	0.625 15.88	0.545 13.84	0.120 3.05
K35M	CA557	2.000 50.80	2.890 73.41	0.406 10.31	0.625 15.88	0.545 13.84	0.120 3.05
AK39 Contour sidebar	CA550	2.000 50.80	2.812 71.42	0.340 8.64	0.625 15.88	0.500 12.70	0.105 2.67
K39	CA557	2.250 57.15	2.896 73.56	0.343 8.71	0.625 15.88	0.545 13.84	0.120 3.05
K39M	CA550HD	2.250 57.15	3.054 77.57	0.403 10.24	0.625 15.88	0.550 13.97	0.120 3.05
AK39M Contour sidebar	CA550	2.000 50.80	2.812 71.42	0.406 10.31	0.625 15.88	0.500 12.70	0.105 2.67
AK39S Contour sidebar	CA550	2.000 50.80	2.812 71.42	0.340 8.64	0.375 9.53	0.500 12.70	0.105 2.67

M1W

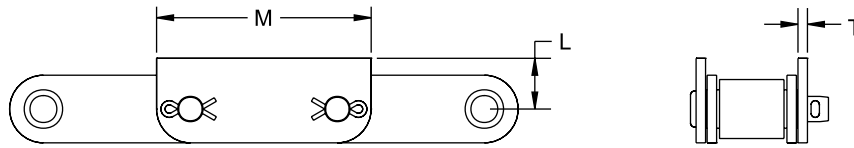


TABLE 210. M1W PRECISION CHAIN ATTACHMENT

Attachment	Chain No.	M	L	T
		in. mm	in. mm	in. mm
M1W	CA550	2.375 60.33	0.562 14.27	0.105 2.67

M19

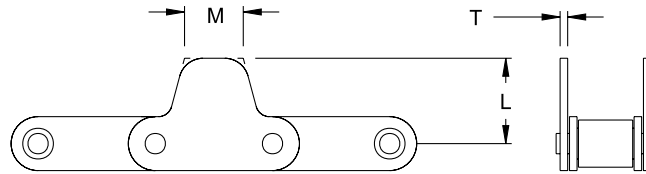


TABLE 211. M19 PRECISION CHAIN ATTACHMENT

Attachment	Chain No.	M	L	T
		in. mm	in. mm	in. mm
M19	CA550	0.875 22.23	1.187 30.15	0.105 2.67

MS

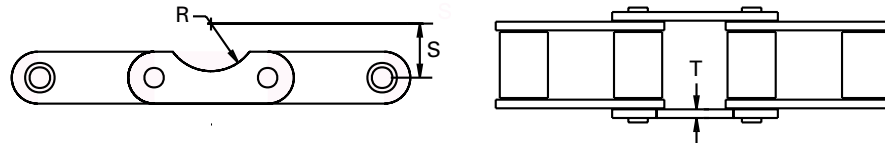
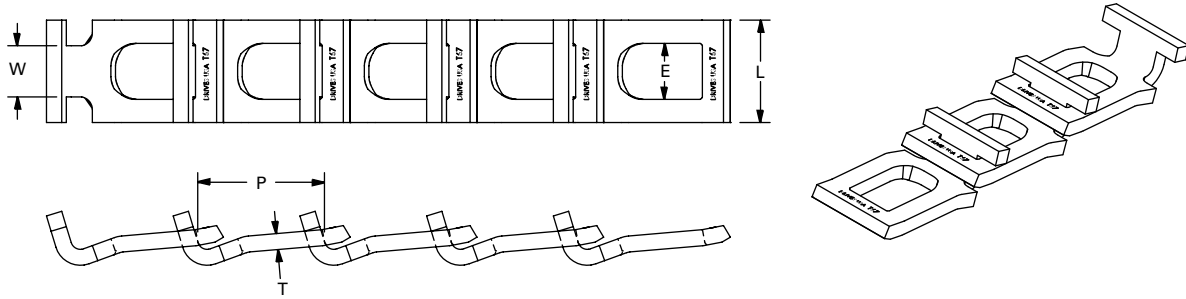


TABLE 212. MS PRECISION CHAIN ATTACHMENT

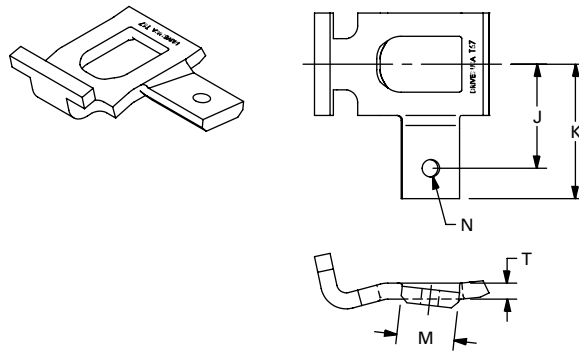
Attachment	Chain No.	R	S	T
		in. mm	in. mm	in. mm
MS	CA620	0.750 19.05	0.843 21.41	0.120 3.05

### T-BAR PRODUCT



**TABLE 213. ENGINEERED CLASS “T” BAR CHAIN**

Chain No.	Pitch	Inside Width	Tab Width	Link Plate Thickness	Overall Width	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	E	W	T	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
T67	2.550 64.77	1.094 27.79	1.000 25.40	0.312 7.92	2.000 50.80	16,000 71.17	2,285 10.16	1.977 2.94



**TABLE 214. AS, A1, A2 T-BAR ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	T
		in. mm	in. mm	in. mm	in. mm	in. mm
AS	T67	2.031 51.59	3.750 95.25	0.328 8.33	1.125 28.58	0.312 7.92
A1	T67	2.031 51.59	3.750 95.25	0.391 9.93	1.125 28.58	0.312 7.92
A2	T67	2.031 51.59	3.750 95.25	0.453 11.51	1.125 28.58	0.312 7.92

T-ROD PRODUCT

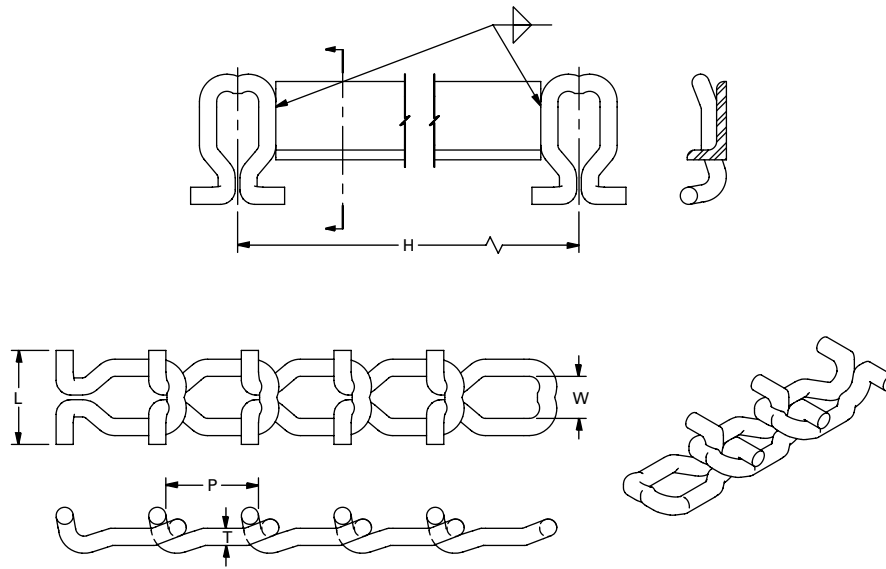
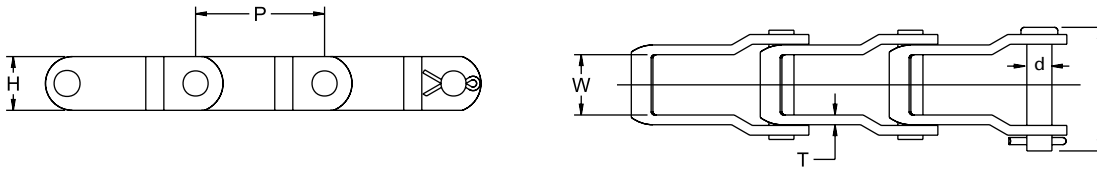


TABLE 215. T-ROD CHAIN

Chain No.	Pitch	Inside Width	Rod Thickness	Overall Width	Width Center to Center	Average Tensile Strength	Maximum Recommended Working Load	Weight
	$P_1$	W	T	L	H			
	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
67 T-Rod	2.388 60.66	1.125 28.58	0.437 11.10	2.500 63.50	Slat Per Customer	16,000 71.17	2285.000 10.16	2.010 2.99

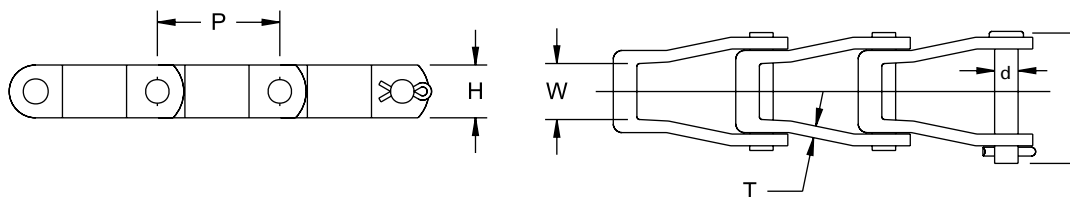
### PINTLE CHAIN

#### DRIVES STEEL PINTLE



**TABLE 216. PINTLE CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
D205	1.250 31.75	0.375 9.53	0.200 5.08	0.080 2.03	0.470 11.94	0.922 23.42	4,900 21.80	560 2.49	0.390 0.58
D662	1.664 42.27	0.906 23.01	0.281 7.14	0.125 3.18	0.720 18.29	1.672 42.47	11,200 49.82	1,700 7.56	1.050 1.56
D667H	2.313 58.75	1.000 25.40	0.312 7.92	0.125 3.18	0.875 22.23	1.906 48.41	12,900 57.38	1,900 8.45	1.170 1.74
D667X	2.250 57.15	1.063 27.00	0.437 11.10	0.170 4.32	0.937 23.80	2.172 55.17	21,700 96.52	3,000 13.34	1.860 2.77
D667K	2.250 57.15	1.078 27.38	0.437 11.10	0.200 5.08	1.062 26.97	2.359 59.92	29,700 132.11	4,000 17.79	2.440 3.63
D88K	2.609 66.27	1.078 27.38	0.437 11.10	0.200 5.08	1.062 26.97	2.359 59.92	26,900 119.65	4,000 17.79	2.300 3.42

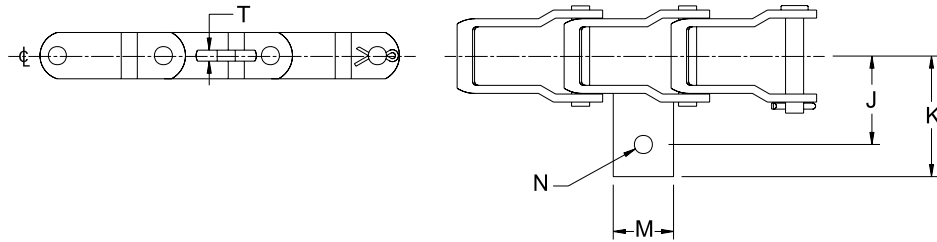


**TABLE 217. COMPRESSION FORMED PINTLE CHAIN**

Chain No.	Pitch	Inside Width	Pin Diameter	Link Plate Thickness	Link Plate Height	Overall Pin Length	Average Tensile Strength	Maximum Recommended Working Load	Weight
	P	W	d	T	H	L			
	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kN	lbs. kN	lbs./ft. kg/m
D667XC	2.250 57.15	1.063 27.00	0.437 11.10	0.170 4.32	0.937 23.80	2.172 55.17	25,100 111.64	3,600 16.01	2.100 3.13
D667KC	2.250 57.15	1.078 27.38	0.437 11.10	0.200 5.08	1.062 26.97	2.359 59.92	30,900 137.44	4,800 21.35	2.560 3.81
D88C	2.609 66.27	1.250 31.75	0.500 12.70	0.250 6.35	1.125 28.58	2.847 72.31	38,000 169.02	6,000 26.69	3.470 5.16
D308C	3.075 78.11	1.281 32.54	0.625 15.88	0.312 7.92	1.500 38.10	3.188 80.98	50,000 222.40	8,000 35.58	5.630 8.38



### AS, ASS, AS2



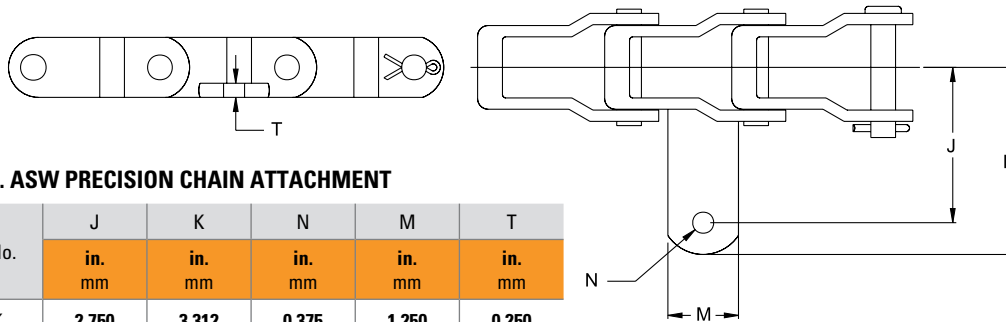
**TABLE 218. AS, ASS, AS2 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	T
		in. mm	in. mm	in. mm	in. mm	in. mm
AS	D662	<b>1.375</b> 34.93	<b>1.906</b> 48.41	<b>0.282</b> 7.16	<b>0.938</b> 23.83	<b>0.171</b> 4.34
AS	D667H	<b>2.031</b> 51.59	<b>2.625</b> 66.68	<b>0.343</b> 8.71	<b>1.125</b> 28.58	<b>0.250</b> 6.35
AS	D667X	<b>2.031</b> 51.59	<b>2.703</b> 68.66	<b>0.343</b> 8.71	<b>1.125</b> 28.58	<b>0.312</b> 7.92
AS	D667XC	<b>2.031</b> 51.59	<b>2.703</b> 68.66	<b>0.343</b> 8.71	<b>1.125</b> 28.58	<b>0.312</b> 7.92
AS	D667K	<b>2.031</b> 51.59	<b>2.812</b> 71.42	<b>0.406</b> 10.31	<b>1.250</b> 31.75	<b>0.375</b> 9.53
AS	D667KC	<b>2.031</b> 51.59	<b>2.812</b> 71.42	<b>0.406</b> 10.31	<b>1.250</b> 31.75	<b>0.375</b> 9.53
AS	D88K	<b>2.031</b> 51.59	<b>2.812</b> 71.42	<b>0.406</b> 10.31	<b>1.250</b> 31.75	<b>0.375</b> 9.53
AS	D88C	<b>2.750</b> 69.85	<b>3.690</b> 93.73	<b>0.437</b> 11.10	<b>1.500</b> 38.10	<b>0.375</b> 9.53
ASS	D662	<b>1.375</b> 34.93	<b>1.906</b> 48.41	<b>0.343</b> 8.71	<b>0.938</b> 23.83	<b>0.171</b> 4.34
ASS	D667H	<b>2.031</b> 51.59	<b>2.625</b> 66.68	<b>0.406</b> 10.31	<b>1.125</b> 28.58	<b>0.250</b> 6.35
ASS	D667X	<b>2.031</b> 51.59	<b>2.703</b> 68.66	<b>0.406</b> 10.31	<b>1.125</b> 28.58	<b>0.312</b> 7.92
ASS	D667XC	<b>2.031</b> 51.59	<b>2.703</b> 68.66	<b>0.406</b> 10.31	<b>1.125</b> 28.58	<b>0.312</b> 7.92
ASS	D667K	<b>2.031</b> 51.59	<b>2.812</b> 71.42	<b>0.468</b> 11.89	<b>1.250</b> 31.75	<b>0.375</b> 9.53
ASS	D667KC	<b>2.031</b> 51.59	<b>2.812</b> 71.42	<b>0.468</b> 11.89	<b>1.250</b> 31.75	<b>0.375</b> 9.53
ASS	D88K	<b>2.031</b> 51.59	<b>2.812</b> 71.42	<b>0.468</b> 11.89	<b>1.250</b> 31.75	<b>0.375</b> 9.53
AS2	D667H	<b>2.031</b> 51.59	<b>2.594</b> 65.89	<b>0.468</b> 11.89	<b>1.125</b> 28.58	<b>0.250</b> 6.35
AS2	D667X	<b>2.031</b> 51.59	<b>2.703</b> 68.66	<b>0.468</b> 11.89	<b>1.125</b> 28.58	<b>0.312</b> 7.92
AS2	D667XC	<b>2.031</b> 51.59	<b>2.703</b> 68.66	<b>0.468</b> 11.89	<b>1.125</b> 28.58	<b>0.312</b> 7.92

# ENGINEERED CHAIN PRODUCT CHARTS

## ENGINEERED CLASS CHAIN – BY INDUSTRY • AGRICULTURAL

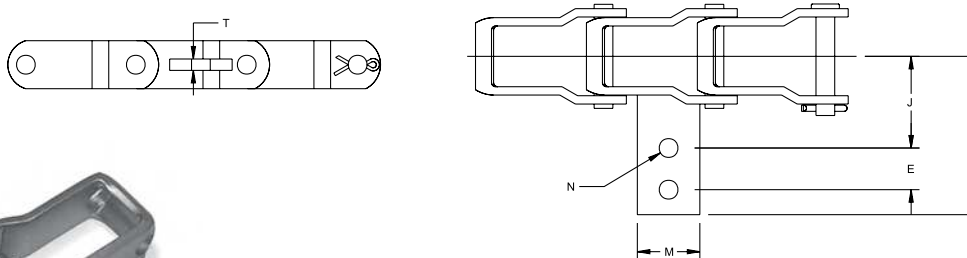
### ASW



**TABLE 219. ASW PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	M	T
		in. mm	in. mm	in. mm	in. mm	in. mm
ASW	D667K	2.750 69.85	3.312 84.12	0.375 9.53	1.250 31.75	0.250 6.35
ASW	D667KC	2.750 69.85	3.312 84.12	0.375 9.53	1.250 31.75	0.250 6.35

### A22

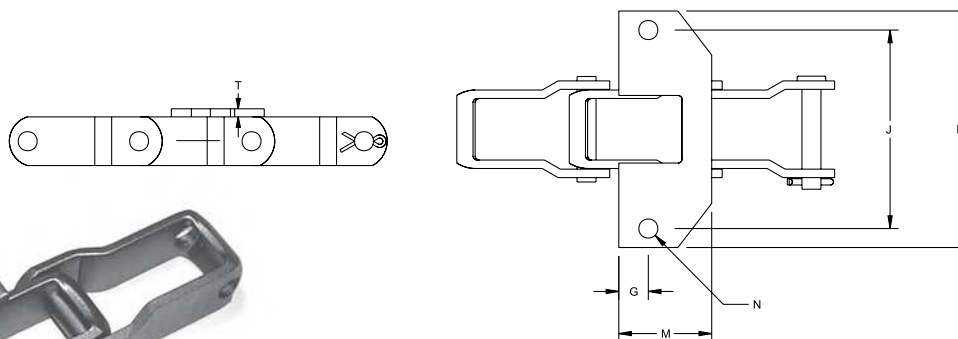


**TABLE 220. A22 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	E	N	M	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
A22	D662	1.375 34.93	3.312 84.12	0.625 15.88	0.281 7.14	0.938 23.83	0.171 4.34
A22	D88K	2.125 53.98	5.375 136.53	2.500 63.50	0.406 10.31	1.500 38.10	0.375 9.53



### AK1

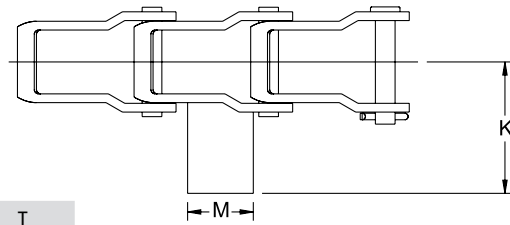
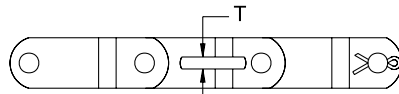


**TABLE 221. AK1 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	M	G	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
AK1	D662	2.938 74.63	3.500 88.90	0.281 7.14	1.375 34.93	0.438 11.13	0.120 3.05



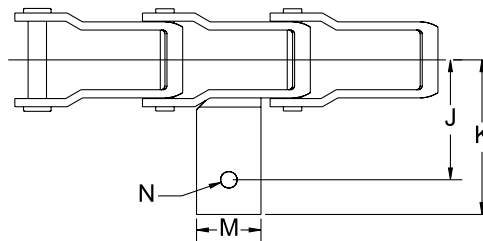
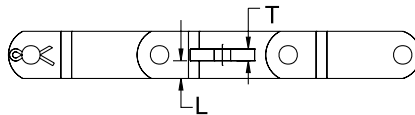
**AN**



**TABLE 222. AN PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	K	M	T
		in. mm	in. mm	in. mm
AN	D662	1.875 47.63	0.938 23.83	0.171 4.34
AN	D667H	2.719 69.06	1.250 31.75	0.312 7.92
AN	D667X	2.688 68.28	1.125 28.58	0.312 7.92
AN	D667XC	2.688 68.28	1.125 28.58	0.312 7.92
AN	D667K	2.812 71.42	1.250 31.75	0.375 9.53
AN	D667KC	2.812 71.42	1.250 31.75	0.375 9.53
AN	D88K	2.812 71.42	1.250 31.75	0.375 9.53

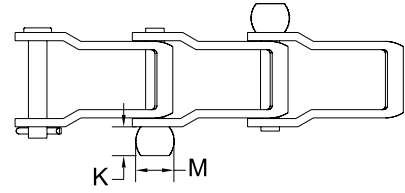
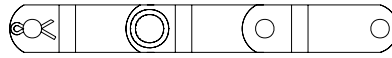
**ASO, ASSO, AST**



**TABLE 223. ASO, ASSO, AST PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	L	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
ASO	D667X	2.031 51.59	2.688 68.28	0.343 8.71	1.125 28.58	0.219 5.56	0.312 7.92
ASO	D667XC	2.031 51.59	2.688 68.28	0.343 8.71	1.125 28.58	0.219 5.56	0.312 7.92
ASSO	D667H	2.031 51.59	2.894 73.51	0.406 10.31	1.125 28.58	0.188 4.78	0.250 6.35
ASSO	D667X	2.031 51.59	2.688 68.28	0.406 10.31	1.125 28.58	0.219 5.56	0.312 7.92
ASSO	D667XC	2.031 51.59	2.688 68.28	0.406 10.31	1.125 28.58	0.219 5.56	0.312 7.92
ASSO	D667X	2.078 52.78	0.281 7.14	0.406 10.31	1.250 31.75	0.312 7.92	0.312 7.92
ASSO	D667XC	2.078 52.78	0.281 7.14	0.406 10.31	1.250 31.75	0.312 7.92	0.312 7.92
AST	D88C	2.031 51.59	2.812 71.42	0.343 8.71	1.500 38.10	0.204 5.18	0.375 9.53

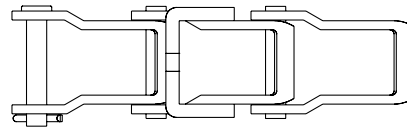
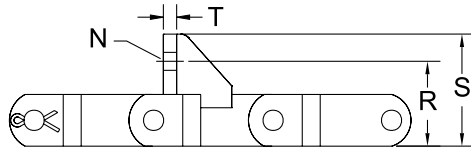
### BRH



**TABLE 224. BRH PRECISION CHAIN ATTACHMENT**

Pin Attachment	Chain No.	K	M
		in. mm	in. mm
CW	D88K	<b>0.609</b> 15.47	<b>0.812</b> 20.62

### C1, C11

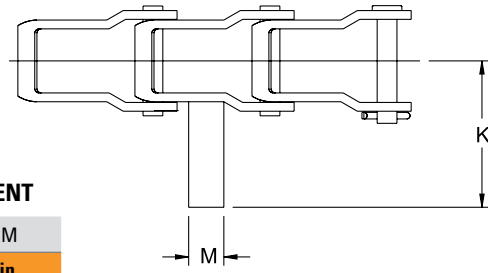


**TABLE 225. C1, C11 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	R	S	N	T
		in. mm	in. mm	in. mm	in. mm
C1	D662	<b>1.281</b> 32.54	<b>1.781</b> 45.24	<b>0.281</b> 7.14	<b>0.105</b> 2.67
C1	D667X	<b>1.500</b> 38.10	<b>1.937</b> 49.20	<b>0.281</b> 7.14	<b>0.187</b> 4.75
C11	D662	<b>1.281</b> 32.54	<b>1.781</b> 45.24	<b>0.343</b> 8.71	<b>0.105</b> 2.67



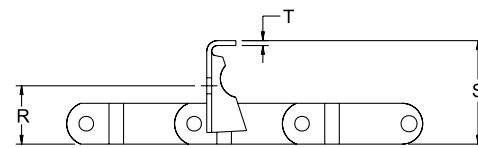
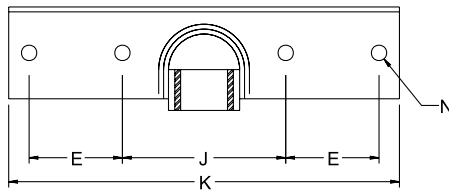
**D1**



**TABLE 226. D1 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	K	M
		in. mm	in. mm
D1	D662	<b>2.078</b> 52.78	<b>0.500</b> 12.70

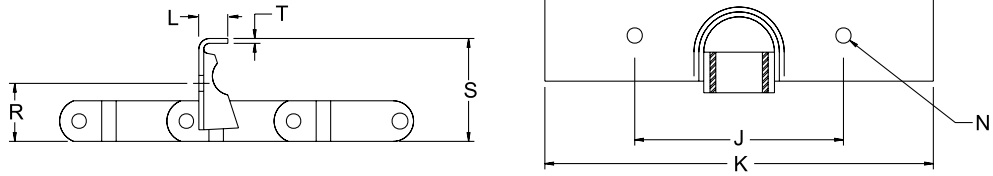
**F12, F12H**



**TABLE 227. F12, F12H PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	E	K	N	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
F12	D667H	<b>3.500</b> 88.90	<b>2.000</b> 50.80	<b>8.375</b> 212.73	<b>0.343</b> 8.71	<b>1.250</b> 31.75	<b>2.219</b> 56.36	<b>0.105</b> 2.67
F12H	D667H	<b>3.500</b> 88.90	<b>2.000</b> 50.80	<b>8.375</b> 212.73	<b>0.343</b> 8.71	<b>1.250</b> 31.75	<b>2.219</b> 56.36	<b>0.134</b> 3.40

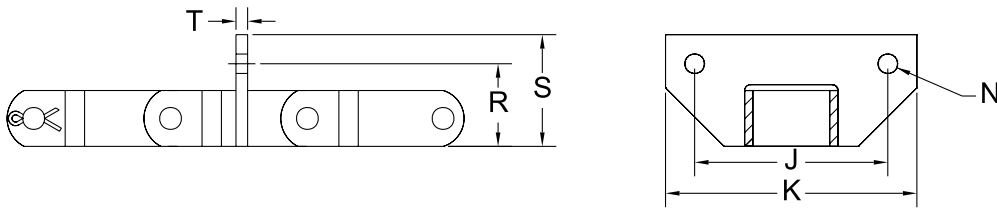
### F10, F10L, F11



**TABLE 228. F10, F10L, F11 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	R	S	T	L
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
F10	D662	3.500 88.90	5.375 136.53	0.343 8.71	1.000 25.40	1.969 50.01	0.105 2.67	0.562 14.27
F10	D667H	3.500 88.90	5.375 136.53	0.343 8.71	1.250 31.75	2.219 56.36	0.105 2.67	0.625 15.88
F10L	D667H	3.500 88.90	5.375 136.53	0.343 8.71	1.250 31.75	1.969 50.01	0.105 2.67	0.875 22.23
F11	D662	3.500 88.90	3.500 88.90	0.343 8.71	1.000 25.40	1.969 50.01	0.105 2.67	0.562 14.27
F11	D667H	3.500 88.90	3.500 88.90	0.343 8.71	1.250 31.75	2.219 56.36	0.105 2.67	0.625 15.88

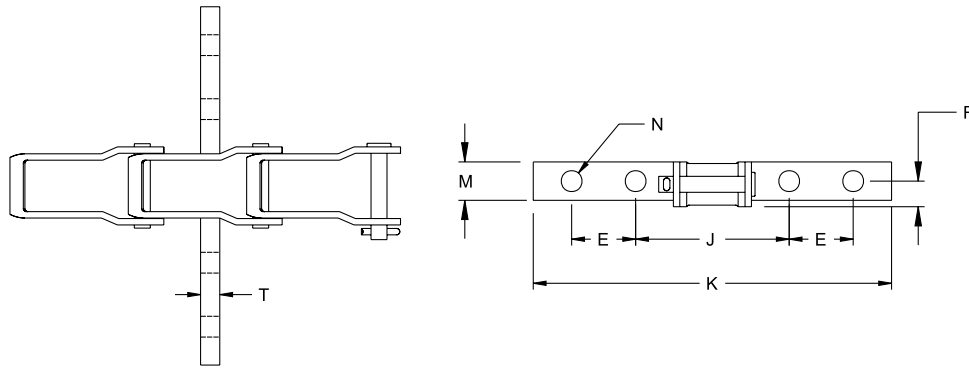
### FS



**TABLE 229. FS PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
FS	D667X	3.000 76.20	4.000 101.60	0.343 8.71	1.438 36.53	1.875 47.63	0.187 4.75
FS	D667XC	3.000 76.20	4.000 101.60	0.343 8.71	1.438 36.53	1.875 47.63	0.187 4.75

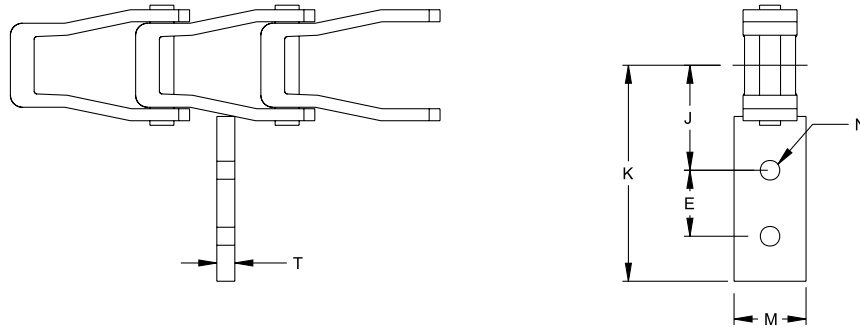
### FS7, FS15



**TABLE 230. FS7, FS15 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	E	M	N	T	R
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
FS7	D667H	3.000 76.20	7.000 177.80	1.250 31.75	0.750 19.05	0.406 10.31	0.375 9.53	0.500 12.70
FS7	D667X	3.000 76.20	7.000 177.80	1.250 31.75	0.750 19.05	0.406 10.31	0.375 9.53	0.625 15.88
FS15	D88K	3.800 96.52	11.830 300.48	3.000 76.20	1.000 25.40	0.343 8.71	0.250 6.35	0.531 13.49

### G2, G9



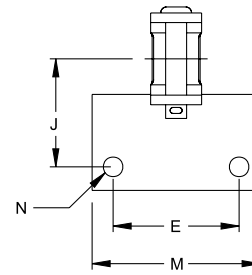
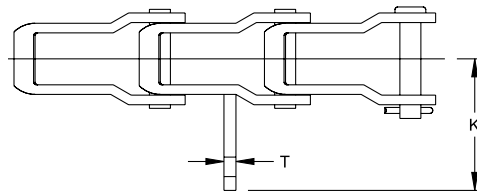
**TABLE 231. G2, G9 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	E	M	N	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G2	D88K	2.250 57.15	3.500 88.90	0.750 19.05	1.000 25.40	0.375 9.53	0.250 6.35
G2	D88C	2.250 57.15	3.500 88.90	0.750 19.05	1.000 25.40	0.375 9.53	0.250 6.35
G9	D88C	2.187 55.55	4.500 114.30	1.375 34.93	1.500 38.10	0.343 8.71	0.375 9.53

# ENGINEERED CHAIN PRODUCT CHARTS

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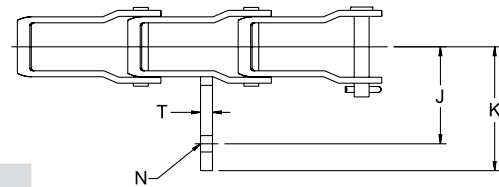
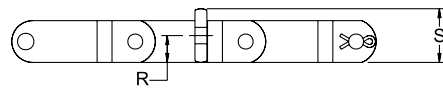
### G19



**TABLE 232. G19 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	E	M	N	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G19	D88K	<b>2.250</b> 57.15	<b>2.750</b> 69.85	<b>2.625</b> 66.68	<b>3.500</b> 88.90	<b>0.406</b> 10.31	<b>0.250</b> 6.35

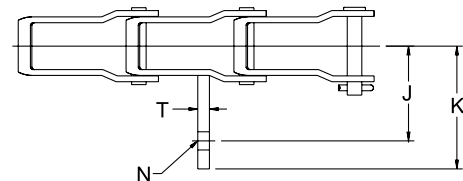
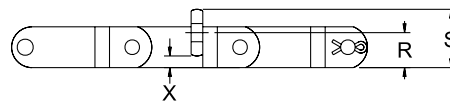
### G27, G27T



**TABLE 233. G27, G27T PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G27	D667H	<b>2.031</b> 51.59	<b>2.594</b> 65.89	<b>0.343</b> 8.71	<b>0.562</b> 14.27	<b>1.125</b> 28.58	<b>0.250</b> 6.35
G27	D667X	<b>2.031</b> 51.59	<b>2.688</b> 68.28	<b>0.343</b> 8.71	<b>0.562</b> 14.27	<b>1.250</b> 31.75	<b>0.312</b> 7.92
G27	D667XC	<b>2.031</b> 51.59	<b>2.688</b> 68.28	<b>0.343</b> 8.71	<b>0.562</b> 14.27	<b>1.250</b> 31.75	<b>0.312</b> 7.92
G27T	D667H	<b>2.031</b> 51.59	<b>2.625</b> 66.68	<b>0.281</b> 7.14	<b>0.812</b> 20.62	<b>1.375</b> 34.93	<b>0.250</b> 6.35
G27T	D667X	<b>2.031</b> 51.59	<b>2.688</b> 68.28	<b>0.343</b> 8.71	<b>0.812</b> 20.62	<b>1.375</b> 34.93	<b>0.312</b> 7.92
G27T	D667XC	<b>2.031</b> 51.59	<b>2.688</b> 68.28	<b>0.343</b> 8.71	<b>0.812</b> 20.62	<b>1.375</b> 34.93	<b>0.312</b> 7.92

### G28

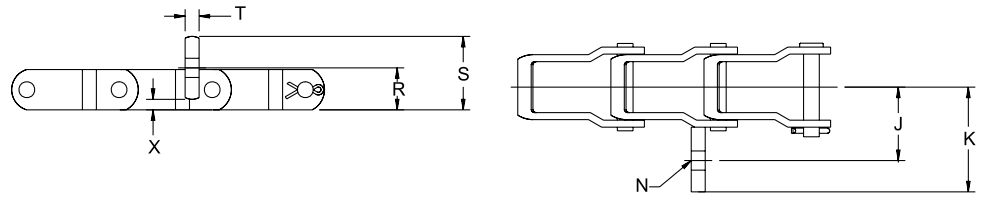


**TABLE 234. G28 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	R	S	T	X
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G28	D662	<b>1.250</b> 31.75	<b>1.719</b> 43.66	<b>0.281</b> 7.14	<b>0.812</b> 20.62	<b>1.312</b> 33.32	<b>0.250</b> 6.35	<b>0.188</b> 4.78



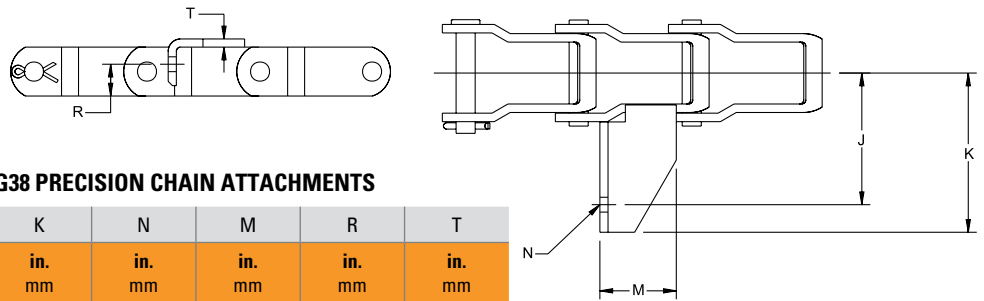
### G30



**TABLE 235. G30 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	R	S	T	X
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G30	D662	1.312 33.32	1.875 47.63	0.343 8.71	0.750 19.05	1.312 33.32	0.250 6.35	0.188 4.78

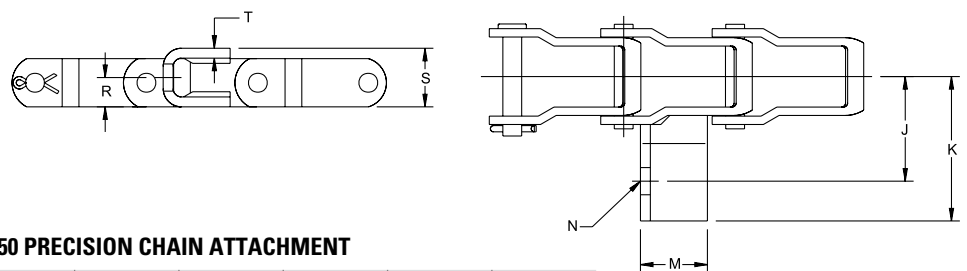
### G37, G37S, G38



**TABLE 236. G37, G37S, G38 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	R	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G37	D662	1.938 49.23	2.344 59.54	0.218 5.54	1.125 28.58	0.469 11.91	0.120 3.05
G37S	D662	1.938 49.23	2.344 59.54	0.281 7.14	1.125 28.58	0.469 11.91	0.120 3.05
G38	D662	1.938 49.23	2.344 59.54	0.343 8.71	1.125 28.58	0.469 11.91	0.120 3.05

### G50



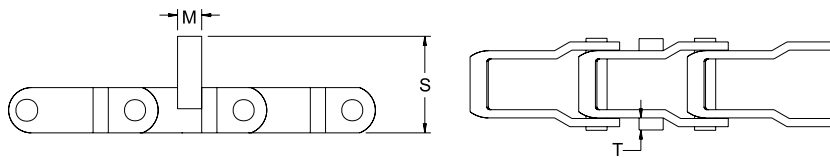
**TABLE 237. G50 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	M	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
G50	D662	1.562 39.67	2.256 57.30	0.406 10.31	1.000 25.40	0.438 11.13	0.875 22.23	0.134 3.40
G50	D667H	1.625 41.28	2.188 55.58	0.406 10.31	1.000 25.40	0.438 11.13	0.875 22.23	0.134 3.40

# ENGINEERED CHAIN PRODUCT CHARTS

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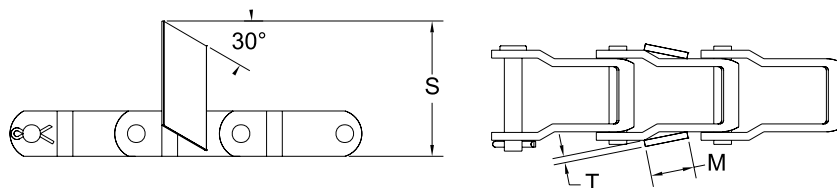
## HB1



**TABLE 238. HB1 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	M	S	T
		in. mm	in. mm	in. mm
HB1	D667X	0.500 12.70	2.000 50.80	0.250 6.35
HB1	D667XC	0.500 12.70	2.000 50.80	0.250 6.35

## HB4, HB4S

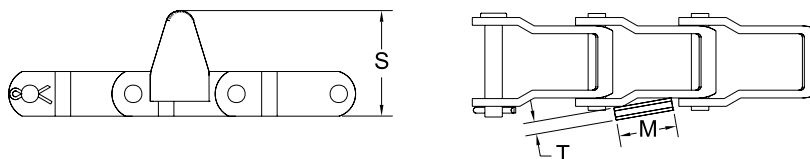


**TABLE 239. HB4, HB4S PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	M	S	T
		in. mm	in. mm	in. mm
HB4	D662	0.720 18.29	2.344 59.54	0.125 3.18
HB4	D667H	0.720 18.29	2.344 59.54	0.125 3.18
HB4	D667X	0.720 18.29	2.344 59.54	0.125 3.18
HB4	D667XC	0.720 18.29	2.344 59.54	0.125 3.18
HB4	D662	0.754 19.15	1.750 44.45	0.120 3.05



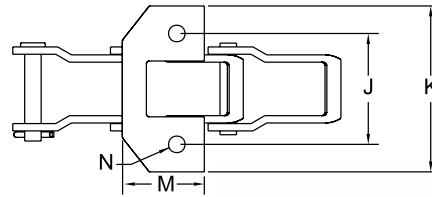
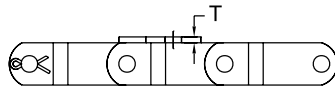
## HB10



**TABLE 240. HB10 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	M	S	T
		in. mm	in. mm	in. mm
HB10	D662	1.000 25.40	1.703 43.26	0.187 4.75

### K1, K19

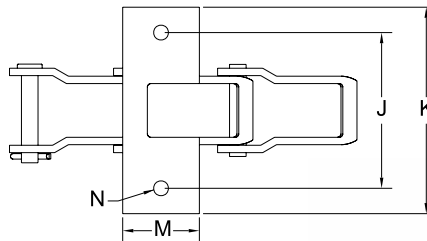
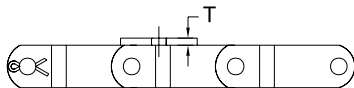


**TABLE 241. K1, K19 PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	T
		in. mm	in. mm	in. mm	in. mm	in. mm
K1	D662	2.469 62.71	3.250 82.55	0.281 7.14	1.375 34.93	0.120 3.05
K1	D667H	2.469 62.71	3.250 82.55	0.281 7.14	1.375 34.93	0.120 3.05
K1	D667X	2.469 62.71	3.250 82.55	0.281 7.14	1.375 34.93	0.120 3.05
K1	D667XC	2.469 62.71	3.250 82.55	0.281 7.14	1.375 34.93	0.120 3.05
K19	D662	2.000 50.80	2.812 71.42	0.281 7.14	1.375 34.93	0.120 3.05



### K1C



**TABLE 242. K1C PRECISION CHAIN ATTACHMENT**

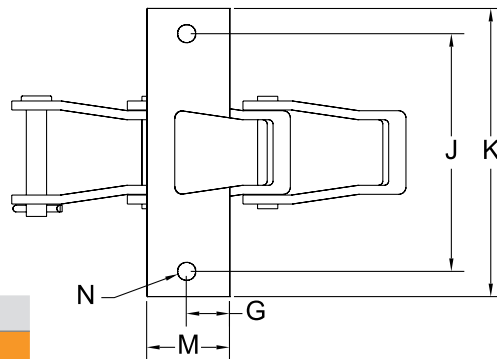
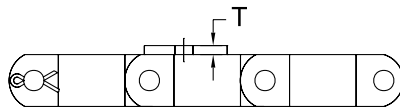
Attachment	Chain No.	J	K	N	M	T
		in. mm	in. mm	in. mm	in. mm	in. mm
K1C	D88K	3.750 95.25	5.000 127.00	0.406 10.31	1.875 47.63	0.187 4.75



# ENGINEERED CHAIN PRODUCT CHARTS

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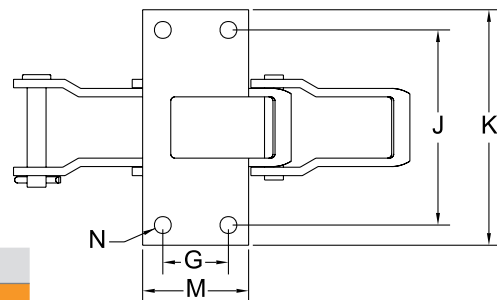
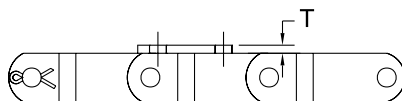
### K1, K1S



**TABLE 243. K1, K1S PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	G	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K1	D88C	<b>4.000</b> 101.60	<b>5.000</b> 127.00	0.406 10.31	1.875 47.63	<b>1.000</b> 25.40	<b>0.187</b> 4.75
K1S	D88C	<b>3.750</b> 95.25	<b>5.000</b> 127.00	<b>0.453</b> 11.51	<b>1.875</b> 47.63	<b>1.000</b> 25.40	<b>0.250</b> 6.35

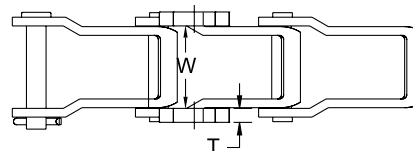
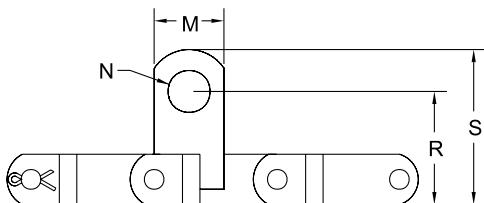
### K2C, K2M, K2P



**TABLE 244. K2C, K2M, K2P PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	G	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
K2C	D88C	<b>4.188</b> 106.38	<b>5.000</b> 127.00	<b>0.343</b> 8.71	<b>2.250</b> 57.15	<b>1.250</b> 31.75	<b>0.187</b> 4.75
K2M	D88C	<b>4.000</b> 101.60	<b>5.000</b> 127.00	<b>0.406</b> 10.31	<b>2.250</b> 57.15	<b>1.125</b> 28.58	<b>0.187</b> 4.75
K2P	D88C	<b>3.625</b> 92.08	<b>5.000</b> 127.00	<b>0.343</b> 8.71	<b>2.250</b> 57.15	<b>1.250</b> 31.75	<b>0.187</b> 4.75

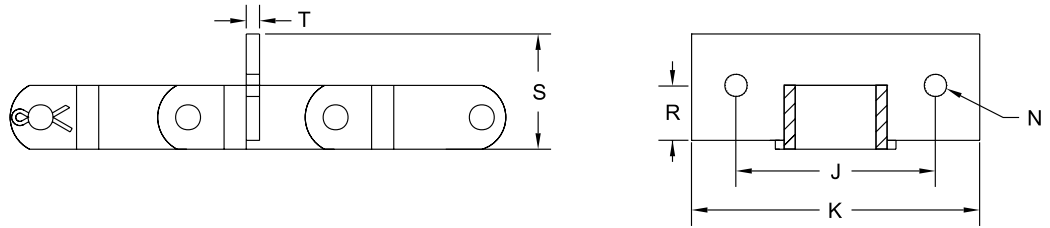
### M2



**TABLE 245. M2 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	R	S	N	M	T	W
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
M2	D667X	<b>2.281</b> 57.94	<b>3.156</b> 80.16	<b>0.875</b> 22.23	<b>1.500</b> 38.10	<b>0.312</b> 7.92	<b>1.500</b> 38.10
M2	D667XC	<b>2.281</b> 57.94	<b>3.156</b> 80.16	<b>0.875</b> 22.23	<b>1.500</b> 38.10	<b>0.312</b> 7.92	<b>1.500</b> 38.10
M2	D88K	<b>2.406</b> 61.11	<b>3.281</b> 83.34	<b>0.875</b> 22.23	<b>1.500</b> 38.10	<b>0.312</b> 7.92	<b>1.500</b> 38.10
M2	D308C	<b>2.843</b> 72.21	<b>3.718</b> 94.44	<b>0.875</b> 22.23	<b>1.500</b> 38.10	<b>0.312</b> 7.92	<b>1.937</b> 49.20

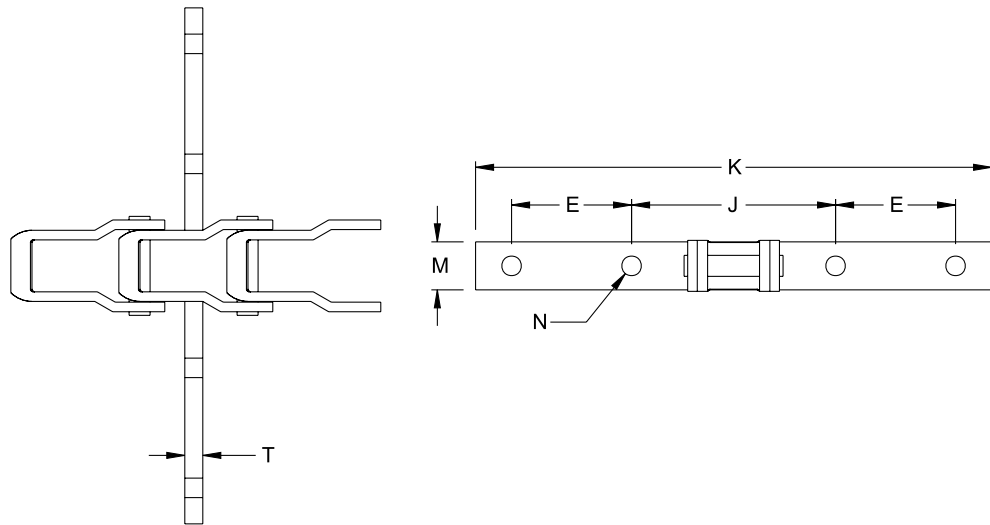
### SD, MSD



**TABLE 246. SD, MSD PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
SD	D667H	– –	<b>5.250</b> 133.35	– –	– –	<b>1.500</b> 38.10	<b>0.250</b> 6.35
MSD	D662	<b>2.500</b> 63.50	<b>3.250</b> 82.55	<b>0.281</b> 7.14	<b>0.781</b> 19.84	<b>1.344</b> 34.14	<b>0.134</b> 3.40

### SF22



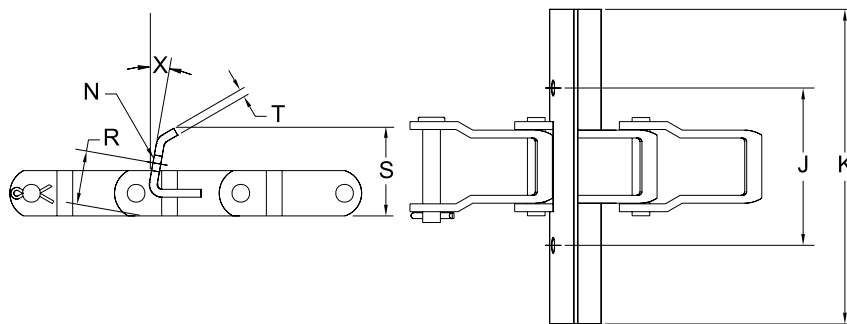
**TABLE 247. SF22 PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	E	M	N	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
SF22	D667K	<b>4.250</b> 107.95	<b>10.750</b> 273.05	<b>2.500</b> 63.50	<b>1.000</b> 25.40	<b>0.406</b> 10.31	<b>0.375</b> 9.53
SF22	D667KC	<b>4.250</b> 107.95	<b>10.750</b> 273.05	<b>2.500</b> 63.50	<b>1.000</b> 25.40	<b>0.406</b> 10.31	<b>0.375</b> 9.53

# ENGINEERED CHAIN PRODUCT CHARTS

## ENGINEERED CLASS CHAIN – BY INDUSTRY • AGRICULTURAL

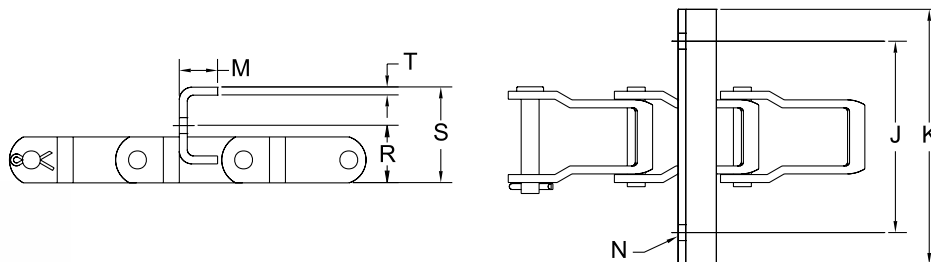
### SHB



**TABLE 248. SHB PRECISION CHAIN ATTACHMENT**

Attachment	Chain No.	J	K	N	R	S	T	X
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	Degree Radians
SHB	D662	2.500 63.50	5.250 133.35	0.281 7.14	0.875 22.23	1.500 38.10	0.120 3.05	10.0 0.175
SH	D667H	3.125 79.38	4.000 101.60	0.281 7.14	0.625 15.88	1.188 30.18	1.750 44.45	0.120 3.05
SE	D662	3.125 79.38	4.000 101.60	0.343 8.71	0.625 15.88	1.000 25.40	1.562 39.67	0.120 3.05
SE	D667H	3.125 79.38	4.000 101.60	0.343 8.71	0.625 15.88	1.188 30.18	1.750 44.45	0.120 3.05

### SH, SE



**TABLE 249. SH, SE PRECISION CHAIN ATTACHMENTS**

Attachment	Chain No.	J	K	N	M	R	S	T
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
SH	D662	3.125 79.38	4.000 101.60	0.281 7.14	0.625 15.88	1.000 25.40	1.562 39.67	0.120 3.05
SH	D667H	3.125 79.38	4.000 101.60	0.281 7.14	0.625 15.88	1.188 30.18	1.750 44.45	0.120 3.05
SE	D662	3.125 79.38	4.000 101.60	0.343 8.71	0.625 15.88	1.000 25.40	1.562 39.67	0.120 3.05
SE	D667H	3.125 79.38	4.000 101.60	0.343 8.71	0.625 15.88	1.188 30.18	1.750 44.45	0.120 3.05

# STEEL PINTLE SPROCKET

## PINTLE SPROCKET FEATURES

- Premium quality steel sprockets
- Made to ANSI specifications
- Design includes annular ring
- Design includes mud clearance
- Plain bore or keyway and two set screws
- Hubs are precision machined

## ANNULAR RING AND MUD CLEARANCE

The annular ring contacts the bottom edge of the pintle chain link, relieving the chain barrel and sprocket tooth face of the chain load. This extends the service life of both the chain and the sprockets.

The mud clearance feature consists of narrowing the bottom diameter of the sprocket in between the tooth where it contacts the chain barrel. This allows debris to escape and prevents sprocket tooth build-up.

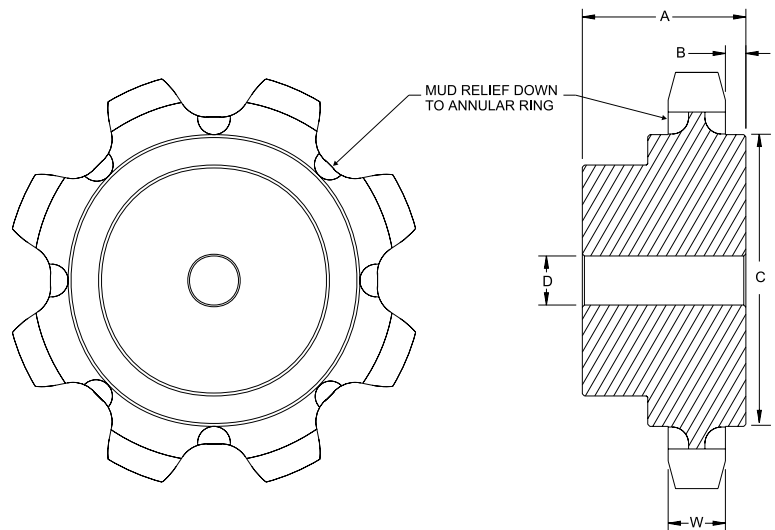


TABLE 250. STEEL PINTLE SPROCKET

Chain No.	Number of Teeth	Bore D	W	A	B	C	Key Size
		in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
D662	6	0.750 19.05	0.750 19.05	2.000 50.80	0.250 6.35	2.130 54.10	– –
D662	6	0.875 22.23	0.750 19.05	2.000 50.80	0.250 6.35	2.130 54.10	0.187 4.75
D667X	6	0.750 19.05	0.875 22.23	2.280 57.91	0.312 7.92	2.920 74.17	– –
D667X	6	1.500 38.10	0.875 22.23	2.280 57.91	0.312 7.92	2.920 74.17	0.375 9.53
D667X	8	0.750 19.05	0.875 22.23	2.530 64.26	0.312 7.92	4.450 113.03	– –
D667X	8	1.500 38.10	0.875 22.23	2.530 64.26	0.312 7.92	4.450 113.03	0.375 9.53
D667X	8	2.000 50.80	0.875 22.23	2.530 64.26	0.312 7.92	4.450 113.03	0.500 12.70
D667H	6	– –	0.900	– –	0.050	3.116	– –
D667H	8	– –	0.900	– –	0.050	4.694	– –
D308C	6	– –	1.125	– –	0.063	3.795	– –
D308C	8	– –	1.125	– –	0.063	4.694	– –
D88C	6	– –	1.080	– –	0.060	3.379	– –
D88C	8	– –	1.080	– –	0.060	5.159	– –
D88K	6	– –	0.900	– –	0.050	3.439	– –
D88K	8	– 19.05	0.900 22.23	– 64.26	0.050 7.92	5.219 113.03	– –











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