DRIVES®

ROLLER CHAIN PRODUCTS CATALOG

TIMKEN

ROLLER CHAIN PRODUCTS CATALOG INDEX

GROW STRONGER WITH TIMKEN

Every day, people around the world count on the strength of Timken. Our expertise in metallurgy, friction management and mechanical power transmission helps them improve their productivity and uptime.

We supply products and services that can help keep your operations moving forward, whether you need drive train kits for commercial vehicles, durable housings for bearings in dirty environments, couplings that avoid metal-to-metal contact between motors and gearboxes, repair services for bearings and gearboxes, roller chain for dry, abrasive and high-moisture applications, steel for an aircraft engine shaft, or other products and services for your applications.

When you choose Timken, you receive more than high-quality products and services: you gain a worldwide team of highly trained and experienced Timken people committed to working collaboratively with you to improve your business.

Globally, our 20,000 people provide reliable answers for a wide range of operations in manufacturing, mining, medical equipment, aerospace, transportation, oil and gas – and other diverse industries.

INCREASE YOUR EQUIPMENT UPTIME

In addition to high-quality bearings, engineered steel and mechanical power transmission components, we provide valuable integrated products and services. For example, we offer repair services and equipment monitoring equipment that can alert you to problems before they impact your uptime.

Additionally, we offer a broad selection of seals, premium lubricants, lubricators, chain and couplings to help keep your operations moving smoothly.

Our 10 technology centers in the United States, Europe and Asia help pioneer tomorrow's innovations with extensive basic and applied scientific research programs. Through internal development and strategic acquisition of innovative companies, we continue to expand our portfolio of highly engineered bearings, steel and components.

ROLLER CHAIN 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 and our oil field chains meet or exceed the American Petroleum Institute's (API) 7F8 requirements. We are ISO 9001: 2000 registered and are an API Quality registered firm.

Updates are made periodically to this catalog. Visit www.timken.com for the most current version of the Roller Chain Products Catalog.

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 Timken. Therefore, the suitability and feasibility of all products selected must be validated by you for your applications.

Timken Drives products are sold subject to Timken Drives LLC is terms and conditions of sale, including its limited warranty and remedy.

Please contact your Timken Drives representative 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.

For More Information:
Phone: 1-800-435-0782
Fax: 1-815-589-4420
www.timken.com/drives
Chain manufactured in Fulton, Illinois, USA

⚠ 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.

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.

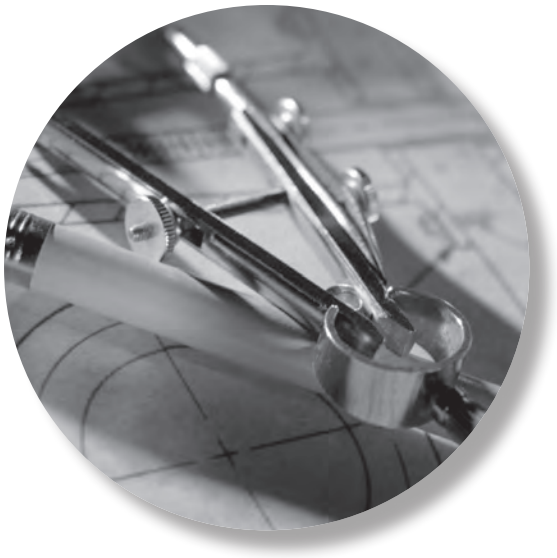
Do not reuse sections from damaged chains. Damage from overloading or yielding may be present though not apparent.

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 http://www.timken.com/en-us/products/warnings/Pages/default.aspx.

ENGINEERING

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



HORSEPOWER RATING

The horsepower rating in fig. 1 on page 7 is based on the following conditions:

- Chains are operated under ordinary conditions. The ambient temperature range must be between 15° F and 140° F. 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 2 on page 7 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.

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 2 on page 7 to obtain the service factor.
3. Multiply the horsepower value by the service factor to obtain the design horsepower value.
4. Use fig. 1 on page 7 and the horsepower 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 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.

BASIC FORMULA FOR CHAIN DRIVE

CHAIN SPEED: S

$$S = \frac{P_C \times N \times n}{12} \text{ (ft./min.)}$$

Where:
P_C = Chain pitch (in.)
N = Number of teeth of sprocket
n = RPM

CHAIN TENSION: T

$$T = \frac{33{,}000 \times HP}{S} \text{ (lbs.)}$$

Where:
S = Chain speed (ft./min.)
HP = Horsepower to be transmitted (HP)

NUMBER OF PITCHES OF CHAIN: L

$$^{(1)}L = \frac{N_1+N_2}{S} + 2C + \frac{\left(\frac{N_2 - N_1}{6.28}\right)^2}{C}$$

Where:
N_1 = Number of teeth (small sprocket)
N_2 = Number of teeth (large sprocket)
C = Center distance in pitches

(1)Any fraction of L is counted as one pitch.

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

TABLE 2. 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			
	Textile Industry – Calendars, dyeing machinery, mangles, nappers, soapers, spinners, tenter frames			
Heavy Shock	Clay-Working Machinery – Brick press, briqueting machinery	1.4	1.5	1.7
	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.

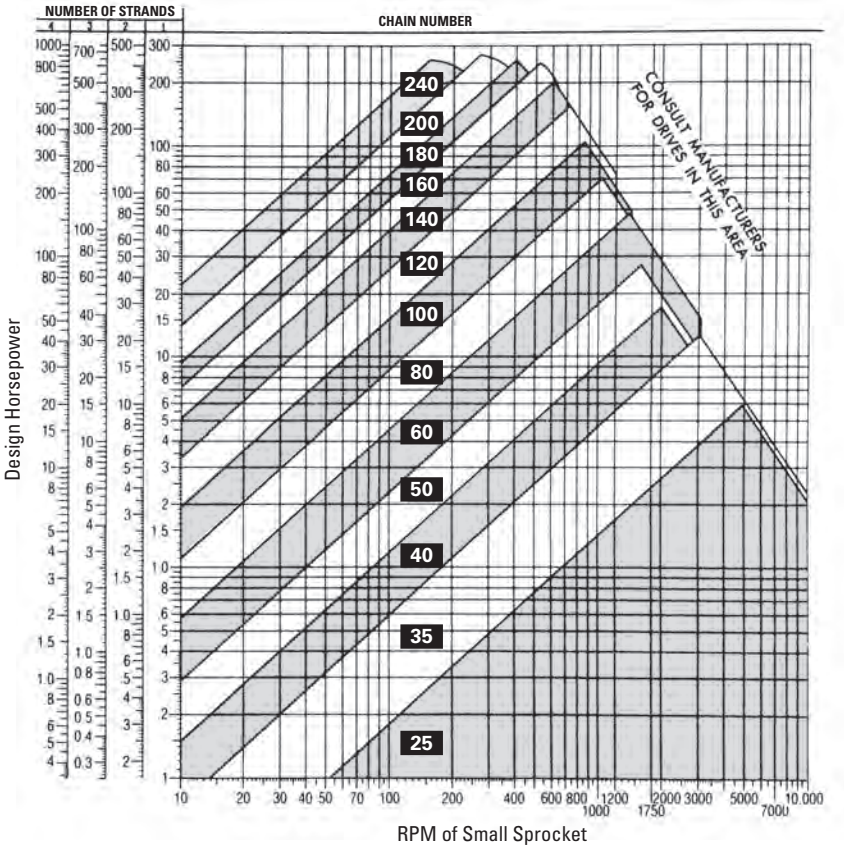
NUMBER OF SPROCKET TEETH

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.



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

Fig. 1. Roller chain pitch selection.

DRIVE SELECTION PROCEDURE

Selection Example (1)

Question 1: A conveyor with 50HP 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 2 on page 7.

   Power to be transmitted x service factor = design horsepower

   50HP X 1.0 = 50HP

2. Refer to fig. 1 for 100 RPM 50HP and 160 chain with sprocket 18T to 22T is obtained.
3. Check horsepower tables for chain 160, and as you see, the horsepower ratings of 160-19T with speed of 100 RPM is 50.48HP, 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 13HP. The RPM is reduced to 125 (1/4). The center distance should be 11.00 in. with a space limitation of 19.00 in., and a uniform load. How should you select the chain and sprocket for this application?

Answer:

1. Design horsepower is computed as follows:

   Design horsepower: 13HP X 1.0 = 13HP

2. Select the chain and the number of teeth for the sprocket by referring to fig. 1.

   60-18T has been selected.

3. Speed reduction ratio is $0.25 = \frac{125\ RPM}{500\ RPM}$

   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. and the 72T is 17.60 in.

   The space required for this arrangement is:

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

   which can not be contained in the 19 in.

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

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

   (1.7 is multiple strand factor)

   Refer to the horsepower tables. 50-2, 18T is obtained. It's outside diameter is 3.90 in. The large sprocket is:

   $$72T = \frac{18\ T}{0.25}$$ outside diameter 14.69 in.

   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., and 10.67 in. respectively.

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

   can be contained in the space required.

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

SLOW SPEED CALCULATION

Please consult your Timken Drives representative for applications 160 ft./min. or less.

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, the rollers and plates may lose some of their hardness and strength.

Standard roller chains can be used up to 500° F with the adjustments shown in table 3.

TABLE 3. TEMPERATURE EFFECT ON CHAINS

Temperature	Percentage of Catalog Capacity Rating
Up to 340˚ F	100 percent
390˚ F	75 percent
500 ˚ F	50 percent

CORROSION-RESISTANT CHAIN PRODUCT SELECTION GUIDE

STAINLESS STEEL MATERIAL SELECTION

304 STAINLESS STEEL SERIES (PS)

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

TABLE 4. 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[1]	600 PH[1]	600 PH[1]

[1]PH: precipitation hardened.

316 STAINLESS STEEL SERIES (NS)

The primary use of 316 and 317 stainless steel chains is in highly corrosive and/or extreme temperatures, which shorten the life of 304 stainless steel chains.

600 STAINLESS STEEL SERIES (AS)

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

TABLE 5. 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 (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 (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[1] (Never use above 930° F)	Magnetic	Very Good
PS	304 Series	Good for general acid, alkali and water	-40° F ~ 750° F[1] (Never use below -270° F or above 1300° F)	Non-magnetic	Fair
NS	316 Series	Superior to the other stainless material	-40° F ~ 750° F[1] (Never use below -270° F or above 1500° F)	Non-magnetic	Fair

[1]Contact your Timken Drives representative for temperatures below -20˚ F or above 500˚ F.

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 6. ALLOWABLE BEARING PRESSURE

Chain	Max. Allowable Bearing Pressure Between Pin and Bushing	Maximum Operating Speed
304 and 316 Chain	1,420 psi	230 ft./min.
600 Chain	2,130 psi	230 ft./min.

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

Maximum allowable load = Maximum allowable bearing pressure X Bearing area between pin and bushing

TABLE 7. SERVICE FACTOR

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

TABLE 8. SPEED COEFFICIENT

Chain Speed	Speed Coefficient
0 ~ 50 ft./min.	1.0
50 ~ 100 ft./min.	1.2
100 ~ 160 ft./min.	1.4
160 ~ 230 ft./min.	1.6

TABLE 9. MAXIMUM ALLOWABLE LOAD

Chain	304 and 316 Series	600 Series
40	100 lbs.	155 lbs.
50	165 lbs.	230 lbs.
60	231 lbs.	350 lbs.
80	396 lbs.	600 lbs.
100	568 lbs.	850 lbs.
120	850 lbs.	1,278 lbs.
140	1,005 lbs.	1,535 lbs.
160	1,400 lbs.	2,100 lbs.
2040	100 lbs.	155 lbs.
2050	165 lbs.	230 lbs.
2060H	250 lbs.	375 lbs.
2080H	415 lbs.	625 lbs.
2100H	600 lbs.	900 lbs.
2120H	895 lbs.	1,340 lbs.
2160H	1,450 lbs.	2,170 lbs.

TABLE 10. TEMPERATURE FACTOR

Temperature	304 Series	316 Series	600 Series
~ -270° F	X	X	X
-270° F ~ -40° F	1.0	1.0	X
-40° F ~ 750° F	1.0	1.0	1.0
750° F ~ 930° F	1.2	1.0	1.8
930° F ~ 1,100° F	1.5	1.2	X
1,100° F ~ 1,300° F	1.8	1.5	X
1,300° F ~ 1,500° F	X	2.0	X
1,500° F ~	X	X	X

X = Not suggested.

Chain selection can be made using the following formula:

Maximum Chain Tension	X	Service Factor	X	Speed Coefficient	X	Temperature Factor	≤	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 12 and properly lubricated.

TABLE 11. CORROSION-RESISTANCE GUIDE FOR STAINLESS STEEL

Substance	Concentration	Temp. ˚F	600 SS	400 SS	304 SS	316 SS
Acetic Acid	10%	68	A	A	A	A
Acetone		68	A	C	A	A
Alcohol		68	A	A	A	A
Aluminum Sulfate	Saturation	68	D	D	A	A
Ammonia Water		68	A	A	A	A
Ammonium Nitrate		68	A	A	A	A
Ammonium Sulfate	Saturation	Boiling	B	B	A	A
Beer		68	A	A	A	A
Benzene		68	A	A	A	A
Boric Acid	50%	Boiling	A	A	A	A
Butyric Acid		68	A	A	A	A
Calcium Chloride	Saturation	68	D	D	B	A
Calcium Hydroxide	20%	Boiling	A	A	A	A
Calcium Hypochlorite	11 – 14%	68	C	C	A	A
Carbon Tetrachlorite		68	A	A	A	A
Chlorinated Water			D	D	D	A
Chlorine Gas		68	D	D	D	B
Chromic Acid	5%	68	B	B	A	A
Citric Acid	50%	68	A	A	A	A
Coffee		Boiling	A	A	A	A
Creosote		68	A	A	A	A
Detergent – Synthetic			A	A	A	A
Developing Solution		68	B	B	A	A
Ethyl Ether		68	A	A	A	A
Ferric Acid	50%	68	A	A	A	A
Ferric Chloride	5%	68	D	D	B	B
Formalin	40%	68	A	A	A	A
Formic Acid	100%	Boiling	C	C	C	A
Fruit Juice		68	B	B	A	A
Gasoline		68	A	A	A	A
Glycerol		68	A	A	A	A
Heavy Nitric Acid	85%	68	D	D	A	A
Heavy Nitric Acid	65%	68	D	D	B	B
Honey			A	A	A	A
Hydrogen Peroxide	30%	68	B	B	A	A
Hydrogen Sulfide (dry)			A	A	A	A
Hydrogen Sulfide (wet)			D	D	D	D
Hydroxbensene		68	A	A	A	A
Kerosene		68	A	A	A	A
Ketchup		68	A	A	A	A
Lactic Acid	10%	68	B	B	A	A
Lard			A	A	A	A
Linseed Oil	100%	68	B	A	A	A
Malic Acid	50%	Boiling	A	A	A	A
Mayonnaise		68	B	B	A	A
Milk		68	A	A	A	A
Nitric Acid	Saturation	Boiling	B	B	A	A

Substance	Concentration	Temp. ˚F	600 SS	400 SS	304 SS	316 SS
Oil (Plant, Mineral)		68	A	A	A	A
Oleic Acid		68	A	A	A	A
Oxalic Acid	10%	68	B	B	A	A
Paraffin		68	A	A	A	A
Petroleum		68	A	A	A	A
Phosphate			A	A	A	A
Phosphoric Acid	5%	68	B	B	A	A
Phosphoric Acid	10%	68	B	B	B	B
Picric Acid	Saturation	68	A	A	A	A
Potassium Bichromate	10%	68	A	A	A	A
Potassium Chloride	Saturation	68	B	A	A	A
Potassium Hydroxide	20%	68	A	A	A	A
Potassium Nitrate	25%	68	A	A	A	A
Potassium Nitrate	25%	Boiling	D	D	A	A
Potassium Permanganate	Saturation	68	A	A	A	A
Sal Ammoniac	50%	Boiling	C	D	B	A
Seawater		68	C	C	B	A
Soap and Water Solution		68	A	A	A	A
Sodium Carbonate	Saturation	Boiling	A	A	A	A
Sodium Chloride	5%	68	B	B	A	A
Sodium Cyanide		68	–	–	A	A
Sodium Hydrocarbonate		68	A	A	A	A
Sodium Hydroxide	25%	68	A	A	A	A
Sodium Hypochlorite	10%	68	D	D	D	A
Sodium Perchlorate	10%	Boiling	D	D	A	A
Sodium Sulfate	Saturation	68	A	A	A	A
Sodium Thiosulfate	25%	Boiling	A	A	A	A
Soft Drink		68	A	A	A	A
Sugar Solution		68	A	A	A	A
Sulfur Dioxide		68	C	C	A	A
Sulfuric Acid	5%	68	D	D	D	A
Syrup			A	A	A	A
Tartaric Acid	6%	68	A	A	A	A
Turpentine		95	A	A	A	A
Varnish			A	A	A	A
Vegetable Juice		68	A	A	A	A
Vinegar		68	C	C	B	A
Water			A	A	A	A
Whiskey		68	A	A	A	A
Wine		68	A	A	A	A
Zinc Chloride	50%	68	D	D	B	B
Zinc Sulfate	25%	68	A	A	A	A

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

ATTACHMENT CHAIN SELECTION GUIDE

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.

$$P\ (\text{lbs.}) = M_T \times f \times k_1$$

Where:

M_T = Total weight of material conveyed (lbs.)

f = Coefficient of friction, sliding and/or rolling (f_r f_s tables 12, 13 or 14)

k_1 = Chain speed coefficient (table 16)

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 Carried

$P = (2.1W + M) f_r C$ (Slat)

Material Sliding

$P = (2.1 Wf_s + Mf_s) C + J$ (Drag or Scraper Conveyor)

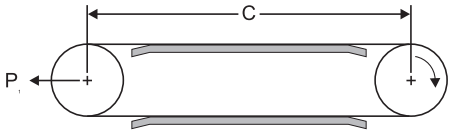


Fig. 2. Horizontal - return side supported illustration.

Vertical

Material Carried

$P = (M + W) C + P_1 / 2$

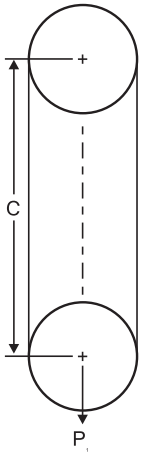


Fig. 3. Vertical.

Inclined

Material Carried

$P = [(M + W) f_r COSa + (M + W)SINa] C + (Wf_r COSa - WSINa) C$ (Slat)

Material Sliding

$P = [(Mf_s + Wf_s) COSa + (M + W) SINa] + J$ (Scraper Conveyor)

NOTE: When (WfrCOSa - WSINa) C is positive, multiply quantity by 1.1 to account for tail shaft friction.

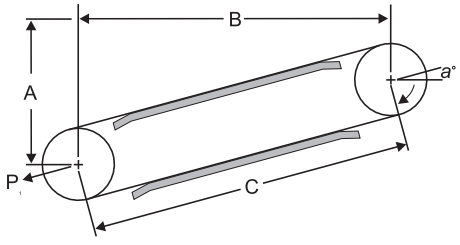


Fig. 4. Inclined - return side supported illustration.

Where:

P = Total conveyor pull (lbs.)
P_1 = Take-up force (lbs.)
W = Weight of chains, attachments, slats, etc., and other moving elements of the conveyor per ft. (lbs./ft.)
M = Weight of material per ft. on the conveyor (lbs./ft.)
f_r = Friction coefficient of chain rolling on support rail (table 12)
f_s = Sliding friction coefficient of material or chain sliding (tables 13 and 14)
C = Center distance (ft.)
J = Pull (lbs.) caused by sideboard sliding friction (table 15)

TABLE 12. COEFFICIENT OF ROLLING FRICTION (f_R)

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

TABLE 13. COEFFICIENT OF SLIDING FRICTION OF CONVEYED MATERIAL (f_S)

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	–

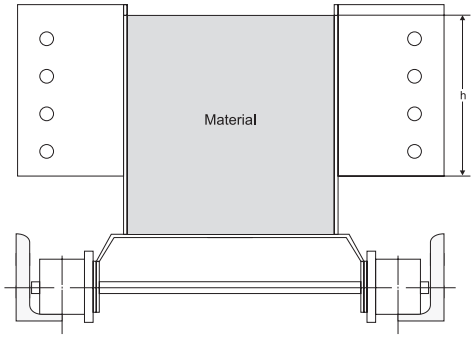
TABLE 14. COEFFICIENT OF SLIDING FRICTION (f_S)

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	–

Additional pull on conveyor (J) material sliding against sideboards

TABLE 15. 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 15)
C = Length of conveyor in feet

STEP 4: CALCULATE THE REQUIRED POWER

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

HORIZONTAL AND/OR INCLINED CONVEYOR

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

VERTICAL CONVEYOR

$$HP = \frac{M \times C \times S}{33{,}000}$$

Where: $S = \frac{P_c \times N \times n}{12}$ (ft./min.)

HP = Horsepower
S = Chain speed (ft./min.)
M = Material weight (lbs./ft.)
C = Sprocket center distance
n = Small sprocket speed (RPM)
N = Number of teeth – small sprocket
P_c = Chain pitch (in.)
P = Chain tension (lbs.)

STEP 5: VERIFY THE CHAIN

Multiply the chain tension (P) by the chain speed coefficient (k_1) listed in table 16, and verify the following formula.

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

When the design chain tension ($P \times k_1$) 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 16. CHAIN SPEED COEFFICIENT (k_1)

Chain Speed Ft./Min.	Speed Factor (k_1)
0 ~ 50	1.0
50 ~ 100	1.2
100 ~ 160	1.4
160 ~ 230	1.6
230 ~ 300	2.2
300 ~ 360	2.8
360 ~ 400	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 17.

TABLE 17. ALLOWABLE ROLLER LOAD (LBS./ROLLER, CARBON STEEL ONLY)

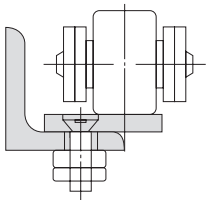
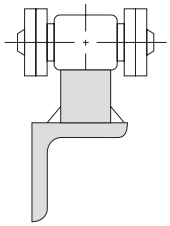
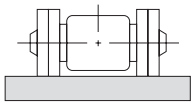
Chain	Size	Large Roller	Standard Roller
C2040	40	143	33
C2050	50	220	44
C2060H	60	350	66
C2080H	80	590	120
C2100H	100	880	180
C2120H	120	1320	260
C2160H	160	2160	430

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

POINTS TO CONSIDER

- For long conveyors, use take-up devices to eliminate chain slack.
  - Take-up stroke = (center distance between sprockets x 0.02) + 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 18. 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)
		

• Heavy in chain weight
• Greater allowable roller load
• Less roller wear
• Smooth operation
• Less vibration
• Lower friction and less power required
• Generally used for:
  • Conveyor lengths more than 35 ft.
  • Conveyor speeds more than 70 ft./min.
	• Lightweight
	• Lower allowable roller load	

	• Generally used for:
	  • Conveyor lengths less than 35 ft.
	  • Conveyor speeds less than 70 ft./min.
		• Suitable for impact and dirty conditions
		• Economical
		• Impact resistant
		• Greater power required

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 chains are 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. 5). 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.

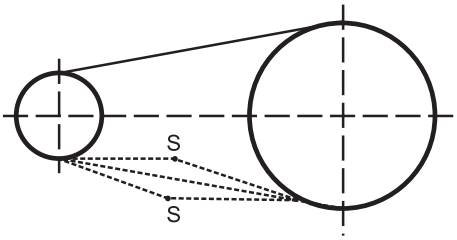


Fig. 5. Chain tension.

POSITION OF SPROCKET

The two shafts should be parallel and preferably in a horizontal position. Sprockets should be firmly installed. See figs. 6 and 7.

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

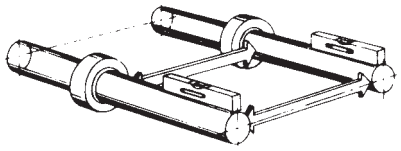


Fig. 6. Aligning shaft.

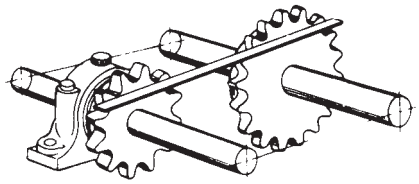


Fig. 7. Aligning sprockets.

TABLE 19. 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

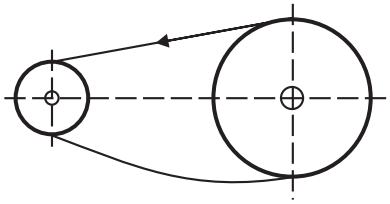


Fig. 8. Satisfactory arrangement for drives with short centers.

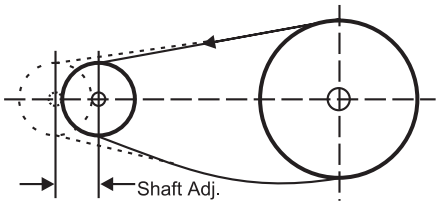
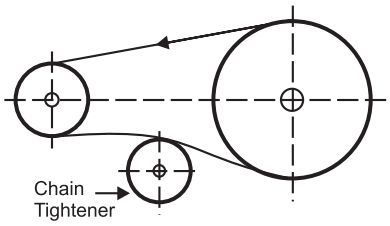


Fig. 9. It is best to have one shaft adjustable, as shown directly above, or use a chain tightener, as shown in lower arrangement.



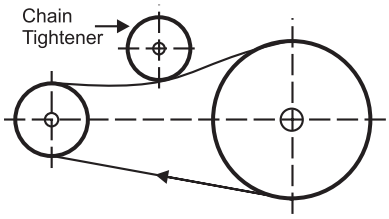


Fig. 10. When the slack side is on top, some means must be provided to adjust the slack-side tension.

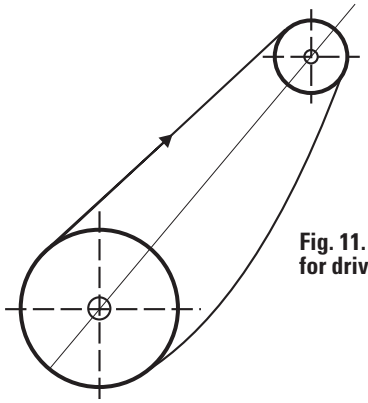


Fig. 11. Satisfactory arrangement for drives with short centers.

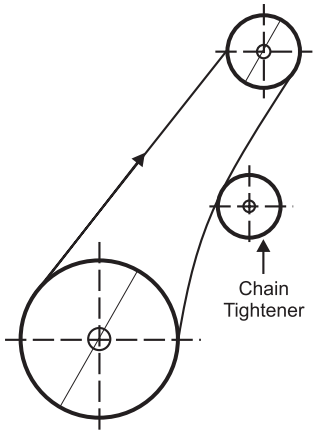


Fig. 12. When the slack side is on top, some means must be provided to adjust the slack-side tension.

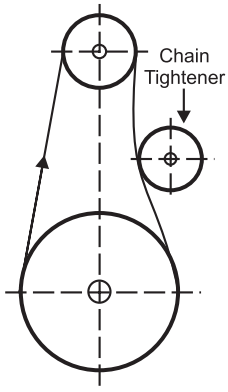


Fig. 13. The best arrangement for vertical drives where means for adjusting slack is possible.

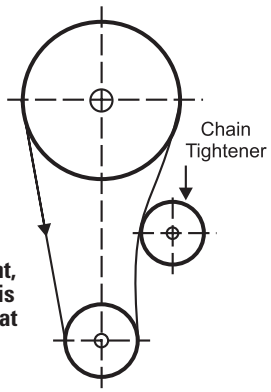


Fig. 14. This arrangement, while sometimes used, is not as satisfactory as that shown above.

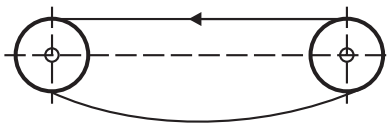


Fig. 15. Unsatisfactory arrangement (no adjustment is provided).

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, it's 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.

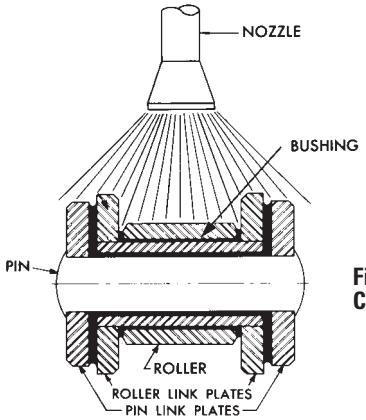


Fig. 16.
Chain lubrication.

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.

TABLE 20. TEMPERATURE AND LUBRICATION

Temperature Degrees ˚F	Suggested Lubricant
-20 – +20	SAE 10
20 – 40	SAE 20
40 – 100	SAE 30
100 – 120	SAE 40
120 – 140	SAE 50

TABLE 21. SPEED AND LUBRICATION

Chain Speed	Chain Number			
	60 and under	80 – 100	120 – 140	160 and over
ft./min.	gal./min.	gal./min.	gal./min.	gal./min.
1,600 ~ 2,600	0.26	0.40	0.53	0.66
2,600 ~ 3,600	0.53	0.66	0.79	0.92
3,600 ~ 4,600	0.79	0.92	1.06	1.19

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.

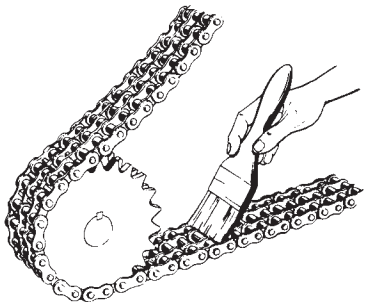


Fig. 17.
Manual lubrication.

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.

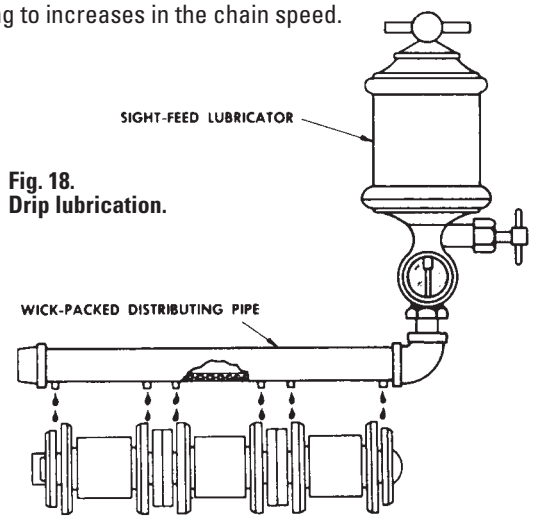


Fig. 18.
Drip lubrication.

⚠ 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 ½ in. If the sprocket is immersed more than ½ in., too much heat is generated.

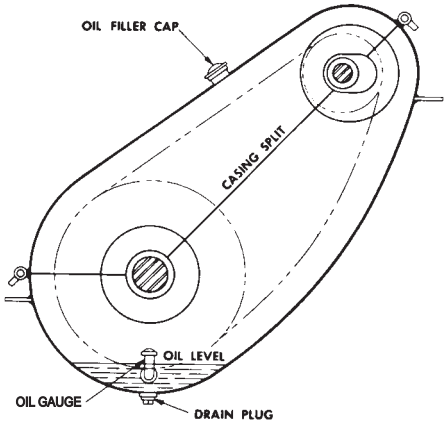


Fig. 19. Oil bath lubrication.

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 ½ in. to 1 in.

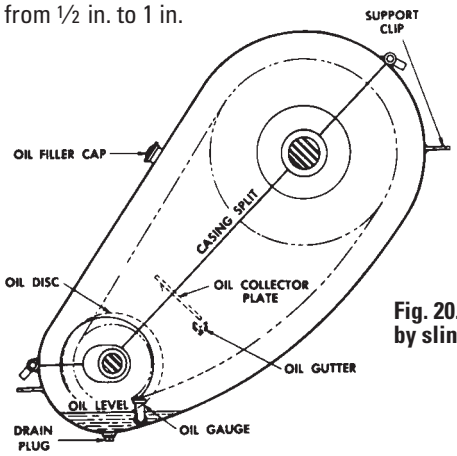


Fig. 20. Lubrication by slinger disc.

LUBRICATION USING A PUMP

Use a leak-free casing. A pump is used to circulate the oil, which is then cooled. See table 21 on page 20 for lubrication supply holes.

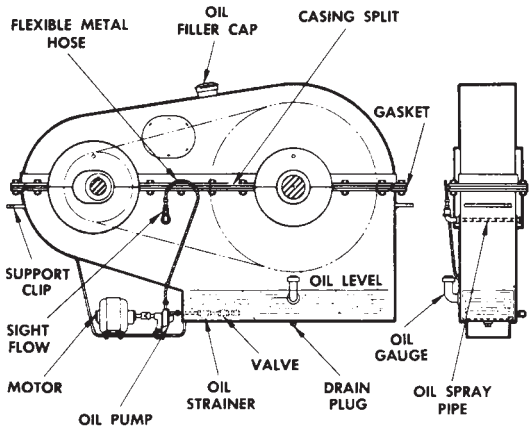


Fig. 21. Lubrication using a pump.

TROUBLESHOOTING GUIDE

TABLE 22. TROUBLESHOOTING GUIDE FOR CHAINS

Problem	Possible Causes	What to Do
Excessive noise	• Misalignment of sprockets • Loose casings or bearings • Too little or too much slack • Chain and/or sprocket wear • Inadequate lubrication or no lubrication • Chain pitch size too large	• Realign sprockets and shafts • Tighten set-bolts • Adjust centers or idler take-up • Replace chain and/or sprocket • Lubricate properly • Check chain drive selection
Chain vibration	• Resonance to the vibration cycle of machine to be installed • High load fluctuation	• Change vibration cycle of chain or machine • Use torque converter or fluid coupling
Wear on inside of link plate and one side of sprocket teeth.	• Misalignment	• Realign sprockets and shafts
Chain climbs sprockets	• Excessive chain wear • Excessive chain slack • Heavy overload	• Replace chain • Adjust centers or idler take-up • Reduce load or install stronger chain
Broken pins, bushings or rollers	• Chain speed is too high for pitch and sprocket size • Heavy shock or suddenly applied loads • Material build-up in sprocket tooth pockets • Inadequate lubrication • Chain or sprocket corrosion	• Use shorter pitch chain or install larger diameter sprockets • Reduce shock load or install stronger chain • Remove material build-up or install side-gashed sprockets (mud relief) • Lubricate properly • Install anti-corrosive chain or sprockets
Chain clings to sprocket	• Center distance too long or high load fluctuation • Excessive chain slack • Excessive chain wear	• Adjust the center distance or install idler take-up • Replace chain
Chain gets stiff	• Misalignment • Inadequate lubrication • Corrosion • Excessive load • Material build-up in chain joint • Peening of link plate edges	• Realign sprockets and shafts • Lubricate properly • Replace with anti-corrosive chain • Reduce load or replace with chain or suitable strength • Shield drive from foreign matter • Check for chain interference
Breakage of link plate	• Subjected to shock load • Vibration • Moment of load inertia is too large	• Reduce shock (e.g., install a shock absorber) • Install a device to absorb vibration (e.g., tensioner idler wheel) • Chain section should be checked (increase number of strands or select next larger size chain

CHAIN TOOLS

EZ BREAKER®

CUT YOUR CHAIN BREAKING JOBS DOWN TO SIZE

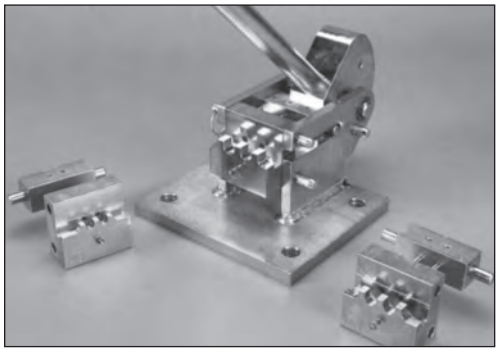
EZ BREAKER® is a compact, easy-to-use tool for cutting roller chain. This simple, rugged piece of equipment can stand up to the abuses of the shop, farm or industrial environment.

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.



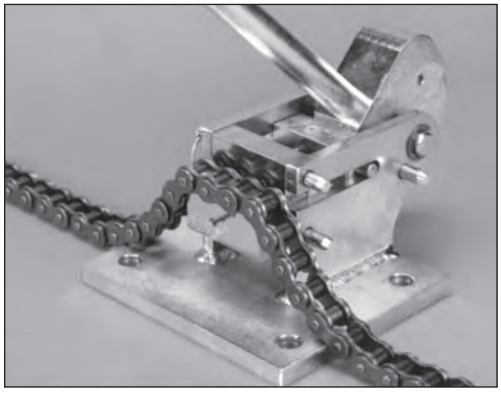
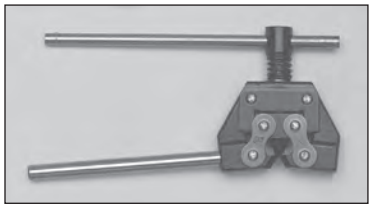
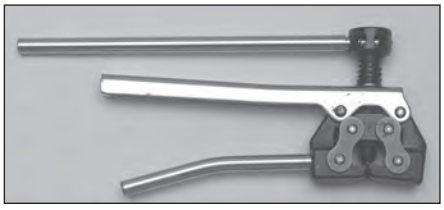


Fig. 22. EZ BREAKER®.





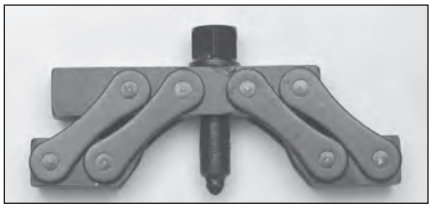


Fig. 23. Chain breakers.

TABLE 23. CHAIN BREAKERS

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

TABLE 24. CHAIN PULLERS

Part No.	36887
Chain No.	40 – 60

Replacement tips and screw assemblies available.

Fig. 24. Chain puller.

EZ CHAIN WEAR GAUGE®

Accurately checks up to nine sizes of American Standard roller chains and up to seven sizes of British Standard roller chains. 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)
- Single chain size gauges are available upon request.

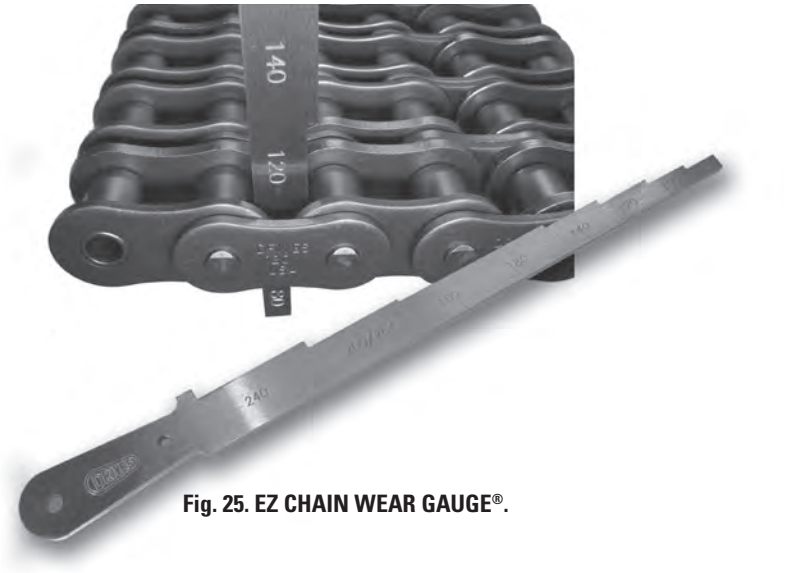


Fig. 25. EZ CHAIN WEAR GAUGE®.

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. 26.
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 ($ft.^3$)

CENTIMETRES – cm
- x 0.3937 = Inches (in.)

CENTIMETRES PER SECOND – cm/s
- x 1.9685 = Feet per minute (ft./min.)
- x 0.03291 = Feet per second (ft./s)
- x 0.03600 = Kilometres per hour (km/h)
- x 0.6000 = Metres per minute (m/min.)
- x 0.02237 = Miles per hour (mph)

CUBIC CENTIMETRES – cm^3
- x 3.5315×10^{-5} = Cubic feet ($ft.^3$)
- x 6.1024×10^{-2} = Cubic inches ($in.^3$)
- x 1.308×10^{-6} = Cubic yards ($yd.^3$)
- x 2.642×10^{-4} = U.S. gallons (U.S. gal.)
- x 1.000×10^{-3} = Litres (l)

CUBIC FEET – ft^3
- x 0.02832 = Cubic metres (m^3)
- x 2.832 x 104 = Cubic centimetres (cm^3)
- x 1728 = Cubic inches ($in.^3$)
- x 0.03704 = Cubic yards ($yd.^3$)
- x 7.481 = U.S. gallons (U.S. gal.)
- x 6.229 = Imperial gallons (imp gal)
- x 28.32 = Litres (l)

CUBIC INCHES – $in.^3$
- x 1.6387×10^{-5} = Cubic metres (m^3)
- x 16.387 = Cubic centimetres (cm^3)
- x 0.016387 = Litres (l)
- x 5.787×10^{-4} = Cubic feet (ft.3)
- x 2.143×10^{-5} = Cubic yards ($yd.^3$)
- x 4.329×10^{-3} = U.S. gallons (U.S. gal.)
- x 3.605×10^{-3} = Imperial gallons (imp gal)

CUBIC METRES – m^3
- x 1000 = Litres (l)
- x 35.315 = Cubic feet ($ft.^3$)
- x 61.024×10^3 = Cubic inches ($in.^3$)
- x 1.3080 = Cubic yards ($yd.^3$)
- x 264.2 = U.S. gallons (U.S. gal.)

CUBIC YARDS – yd^3
- x 0.7646 = Cubic metres (m^3)
- x 764.6 = Litres (l)
- x 7.646×10^5 = Cubic centimetres (cm^3)
- x 27 = Cubic feet ($ft.^3$)
- x 46.656 = Cubic inches ($in.^3$)
- 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 2.7778×10^{-3} = Revolutions per second (r/s)

FEET – ft
- x 0.3048 = Metres (m)
- x 30.480 = Centimetres (cm)
- x 12 = Inches (in.)
- x 0.3333 = Yards (yd.)

FEET PER MINUTE – ft./min.
- x 0.5080 = Centimetres per second (cm/sec.)
- x 0.01829 = Kilometres per hour (km/h)
- x 0.3048 = Metres 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 10-3 = British thermal units (Btu)
- x 3.239 x 10-4 = Kilocalories (kcal)
- x 0.13825 = Kilogram-force-metres (kgf.m)
- x 5.050 x 10-7 = Horsepower-hours (hp.h)
- x 3.766 x 10-7 = Kilowatt-hours (kW.h)

GALLONS, U.S. – U.S. gal.
- x 3.785.4 = Cubic centimetres (cm^3)
- x 3.7854 = Litres (l)
- x 3.7854×10^{-3} = Cubic metres (m^3)
- x 231 = Cubic inches ($in.^3$)
- x 0.13368 = Cubic feet ($ft.^3$)
- x 4.951×10^{-3} = Cubic yards ($yd.^3$)

GRAMS – g
- x 15.432 = Grains (gr)
- x 0.035274 = Ounces (oz.) av.
- x 0.032151 = Ounces (oz.) troy
- x 2.2046×10^{-3} = Pounds (lbs.)

GRAMS-FORCE – gf
- x 9.807×10^{-3} = Newtons (N)

HORSEPOWER – hp
- x 745.7 = Watts (W)
- x 0.7457 = Kilowatts (kW)
- x 1.0139 = Horsepower (metric)

INCHES – in.
- x 2.540 = Centimetres (cm)
- x 25.4 = Millimetres (mm)

KILOGRAMS – kg
- x 2.2046 = Pounds (lbs.)
- x 1.102 x 10-3 = Tons (ton) short

KILOGRAMS-FORCE – kgf
- x 9.807 = Newtons (N)
- x 2.205 = Pounds-force (lbf.)

KILOWATTS – kW
- x 1.3410 = Horsepower (hp)

LITRES – l
- x 1000 = Cubic centimetres (cm^3)
- x 0.035315 = Cubic feet ($ft.^3$)
- x 61.024 = Cubic inches ($in.^3$)
- x 1.308 x 10^{-3} = Cubic yards ($yd.^3$)
- x 0.2642 = U.S. gallons (U.S. gal.)

METRES – m
- x 3.281 = Feet (ft.)
- x 39.37 = Inches (in.)
- x 1.0936 = Yards (yd.)

METRES PER MINUTE – µm m/min.
- x 1.6667 = Centimetres 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 103 = Metres (m)
- x 1.6093 = Kilometres (km)
- x 5280 = Feet (ft.)
- x 1760 = Yards (yd.)

MILES PER HOUR – mph
- x 44.70 = Centimetres per second (cm/s)
- x 1.6093 = Kilometres per hour (km/h)
- x 26.82 = Metres 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 = Kilometres per minute (km/min)
- x 2682 = Centimetres per second (cm/sec.)
- x 88 = Feet per second (ft./sec.)
- x 60 = Miles per hour (mph)

MINUTES, ANGULAR – (')
- x 2.909 x 10-4 = 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

PRECISION ROLLER CHAIN PRODUCTS

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.

ROLLER CHAIN FEATURES

WIDE WAIST

The wide-waist design of 60H and larger chains 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.

SOLID ROLLERS

We utilize 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

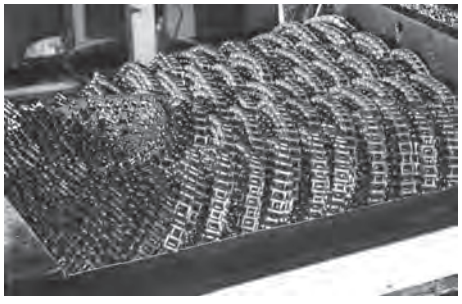
Our chains are preloaded to 50 percent of minimum ultimate tensile strength (MUTS), which is especially important for applications involving fixed center-to-center sprockets without take-ups. Applications can withstand shock loads up to 50 percent of the chain's MUTS without premature elongation.

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.

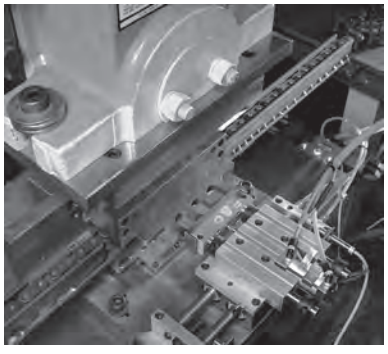
PRELUBRICATION

After final assembly, we hot-dip the roller chains 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.



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 chains are 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-pin is used on 200, 264 and 240.

Fig. 27. Spring clip.

Fig. 28. Hook cotter.

Fig. 29. 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.

Fig. 30. Offset link.

ANSI STANDARD CHAIN

CARBON STEEL

- Cut-to-length chain available.
- Chain size 80 and larger supplied with cottered connection links.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

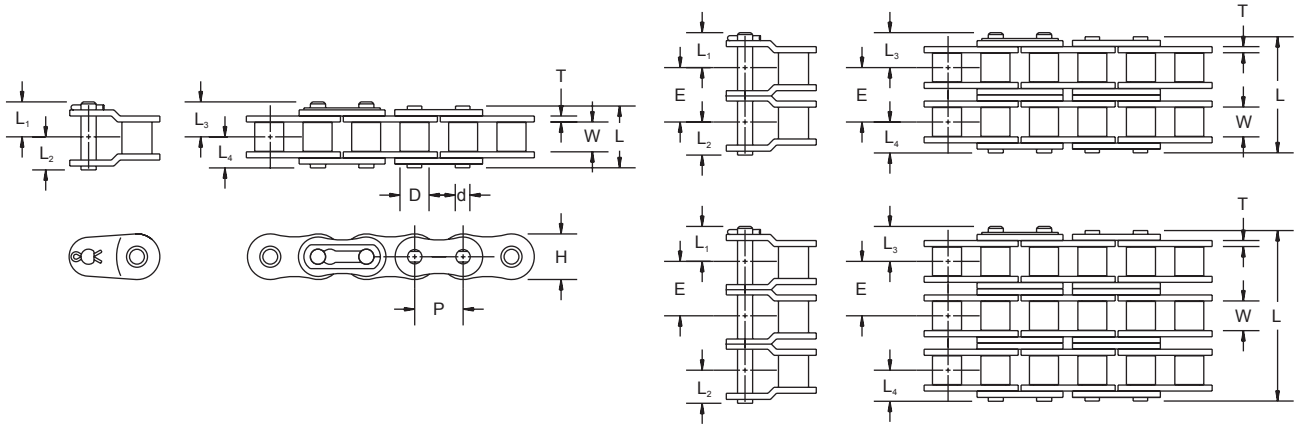
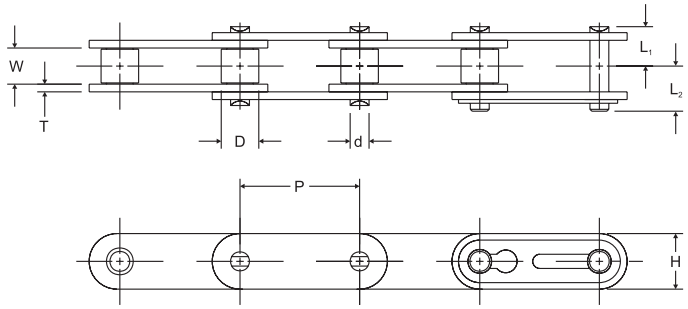


TABLE 25. CARBON STEEL CHAIN DIMENSIONS

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Trans-verse Pitch	Pin					Average Weight	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4			
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs./ft.		
35	0.375	0.189	0.200	0.355	0.049	0.141	0.398	0.461	0.264	0.252	0.264	0.240	0.210	STD	–
41	0.500	0.252	0.306	0.382	0.049	0.141	–	0.524	0.315	0.268	0.315	0.268	0.273	STD	–
40	0.500	0.313	0.313	0.472	0.060	0.156	0.867	0.630	0.404	0.317	0.377	0.315	0.420	STD	–
50	0.625	0.376	0.400	0.590	0.080	0.200	0.713	0.795	0.489	0.399	0.489	0.398	0.713	STD	–
60	0.750	0.500	0.469	0.705	0.094	0.234	0.898	0.996	0.600	0.498	0.648	0.498	1.067	STD	STD
80	1.000	0.627	0.625	0.943	0.125	0.313	1.155	1.283	0.768	0.638	0.857	0.642	1.868	STD	STD
100	1.250	0.755	0.750	1.180	0.156	0.375	1.411	1.595	0.908	0.785	0.912	0.785	2.801	STD	STD
120	1.500	1.000	0.875	1.425	0.187	0.437	1.289	1.955	1.119	1.071	1.119	0.989	4.135	STD	STD
140	1.750	1.000	1.000	1.663	0.220	0.500	1.924	2.136	1.253	1.150	1.253	1.068	5.136	STD	STD
160	2.000	1.250	1.125	1.899	0.250	0.562	2.305	2.538	1.454	1.370	1.454	1.269	6.603	STD	STD
180	2.250	1.400	1.406	2.132	0.281	0.687	2.592	2.780	1.561	1.390	1.561	1.390	9.100	STD	STD
200	2.500	1.490	1.562	2.312	0.312	0.781	2.817	3.088	1.889	1.544	1.889	1.544	10.900	STD	STD
240	3.000	1.864	1.875	2.812	0.375	0.937	3.458	3.708	2.212	1.854	2.212	1.854	16.400	STD	STD

NOTE: Dimensions are subject to change. Contact your Timken Drives representative to obtain certified prints for design and construction.
NOTE: See pages 60-61, and table 86 on page 85 for available heavy series and double-pitch roller chain sizes.
NOTE: See pages 32-57 for multi-strand dimensions.



Small roller

TABLE 26. 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_1	L_2	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs./ft.
A2040	1.000	0.312	0.312	0.472	0.060	0.156	0.638	0.319	0.382	0.270
A2050	1.250	0.376	0.400	0.590	0.080	0.200	0.795	0.398	0.489	0.450
A2060	1.500	0.500	0.469	0.705	0.094	0.234	0.996	0.498	0.648	0.630
C2040	1.000	0.312	0.312	0.472	0.060	0.156	0.638	0.319	0.382	0.340
C2050	1.250	0.376	0.400	0.591	0.079	0.200	0.795	0.409	0.477	0.580
C2060H	1.500	0.500	0.469	0.687	0.125	0.234	1.180	0.590	0.660	0.903
C2080H	2.000	0.625	0.625	0.950	0.156	0.312	1.490	0.745	0.845	1.204

NOTE: C series chains are available with carrier roller.

ROLLER CHAIN DIMENSIONS AND HORSEPOWER TABLES

35 – 0.375 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

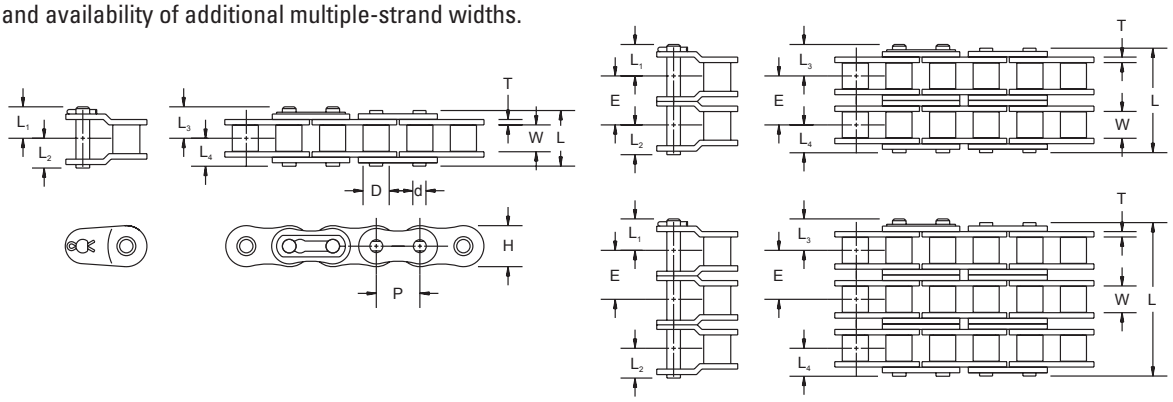


TABLE 27. 35 – 0.375 IN. PITCH CHAIN DIMENSIONS

Chain No.	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_1	L_2	L_3	L_4		
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
35-1	0.375	0.189	0.200	0.355	0.049	0.141	–	0.461	0.264	0.252	0.264	0.240	2,100	0.210
35-2	0.375	0.189	0.200	0.355	0.049	0.141	0.398	0.863	0.264	0.252	0.264	0.240	4,200	0.410
35-3	0.375	0.189	0.200	0.355	0.049	0.141	0.398	1.261	0.264	0.252	0.264	0.240	6,300	0.620

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

TABLE 28. 35 – 0.375 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																									
	50	100	200	240	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000
11	0.11	0.22	0.42	0.50	1.02	1.41	1.80	2.37	2.93	3.49	4.05	3.86	2.94	2.33	1.91	1.60	1.37	1.18	1.04	0.92	0.82	0.74	0.67	0.62	0.57	0.48
12	0.12	0.24	0.46	0.55	1.11	1.54	1.96	2.58	3.20	3.81	4.42	4.40	3.35	2.66	2.17	1.82	1.56	1.35	1.18	1.05	0.94	0.85	0.77	0.70	0.64	0.55
13	0.13	0.26	0.50	0.60	1.21	1.67	2.12	2.80	3.47	4.13	4.79	4.96	3.77	3.00	2.45	2.05	1.75	1.52	1.33	1.18	1.06	0.95	0.87	0.79	0.73	0.62
14	0.14	0.28	0.54	0.64	1.30	1.80	2.29	3.01	3.73	4.45	5.15	5.55	4.22	3.35	2.74	2.30	1.96	1.70	1.49	1.32	1.18	1.07	0.97	0.88	0.81	0.10
15	0.15	0.30	0.58	0.69	1.39	1.92	2.45	3.23	4.00	4.76	5.52	6.15	4.68	3.71	3.04	2.55	2.17	1.88	1.65	1.47	1.31	1.18	1.07	0.98	0.90	0.00
16	0.16	0.32	0.62	0.73	1.49	2.05	2.61	3.44	4.26	5.08	5.89	6.77	5.15	4.09	3.35	2.81	2.40	2.08	1.82	1.62	1.45	1.30	1.18	1.08	0.44	0.00
17	0.17	0.34	0.65	0.78	1.58	2.18	2.77	3.66	4.53	5.40	6.26	7.40	5.64	4.48	3.67	3.07	2.62	2.27	2.00	1.77	1.58	1.43	1.30	1.02	0.00	
18	0.18	0.36	0.69	0.83	1.67	2.31	2.94	3.87	4.80	5.72	6.63	7.83	6.15	4.88	3.99	3.35	2.86	2.48	2.17	1.93	1.73	1.56	1.41	0.00		
19	0.19	0.38	0.73	0.87	1.76	2.44	3.10	4.09	5.06	6.03	7.00	8.27	6.67	5.29	4.33	3.63	3.10	2.69	2.36	2.09	1.87	1.69	0.05	0.00		
20	0.20	0.40	0.77	0.92	1.86	2.56	3.26	4.30	5.33	6.35	7.36	8.71	7.20	5.72	4.68	3.92	3.35	2.90	2.55	2.26	2.02	1.42	0.00			
21	0.21	0.42	0.81	0.96	1.95	2.69	3.43	4.52	5.60	6.67	7.73	9.14	7.75	6.15	5.03	4.22	3.60	3.12	2.74	2.43	2.17	0.00				
22	0.22	0.44	0.85	1.01	2.04	2.82	3.59	4.73	5.86	6.99	8.10	9.58	8.31	6.59	5.40	4.52	3.86	3.35	2.94	2.61	1.42	0.00				
23	0.23	0.46	0.89	1.06	2.14	2.95	3.75	4.95	6.13	7.30	8.47	10.01	8.88	7.05	5.77	4.83	4.13	3.58	3.14	2.79	0.00					
24	0.24	0.48	0.92	1.10	2.23	3.08	3.92	5.16	6.40	7.62	8.84	10.45	9.47	7.51	6.15	5.15	4.40	3.81	3.35	2.04	0.00					
25	0.25	0.50	0.96	1.15	2.32	3.21	4.08	5.38	6.66	7.94	9.20	10.88	10.07	7.99	6.54	5.48	4.68	4.05	3.56	0.12	0.00					
26	0.26	0.51	1.00	1.19	2.41	3.33	4.24	5.59	6.93	8.26	9.57	11.32	10.68	8.47	6.93	5.81	4.96	4.30	3.40	0.00						
28	0.29	0.55	1.08	1.28	2.60	3.59	4.57	6.02	7.46	8.89	10.31	12.19	11.93	9.47	7.75	6.49	5.55	4.81	0.00							
30	0.31	0.59	1.16	1.38	2.79	3.85	4.90	6.45	8.00	9.53	11.05	13.06	13.23	10.50	8.59	7.20	6.15	2.24	0.00							
32	0.33	0.63	1.23	1.47	2.97	4.10	5.22	6.88	8.53	10.16	11.78	13.93	14.58	11.57	9.47	7.93	5.76	0.00								
35	0.36	0.69	1.35	1.61	3.25	4.49	5.71	7.53	9.33	11.11	12.89	15.23	16.67	13.23	10.83	8.85	0.34	0.00								
40	0.41	0.79	1.54	1.84	3.71	5.13	6.53	8.61	10.66	12.70	14.73	17.41	20.37	16.17	11.04	0.34	0.00									
45	0.46	0.89	1.73	2.07	4.18	5.77	7.35	9.68	11.99	14.29	16.57	19.59	23.33	15.56	3.11	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 6 for multiple-strand factors.

TABLE 29. SPROCKET INFORMATION FOR 35 – 3/8 IN. PITCH

No. of Teeth	35 – 3/8 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	1.096	1.256
10	1.214	1.380
11	1.331	1.502
12	1.449	1.625
13	1.567	1.747
14	1.685	1.868
15	1.804	1.990
16	1.922	2.111
17	2.041	2.231
18	2.159	2.352
19	2.278	2.473
20	2.397	2.593
21	2.516	2.713
22	2.635	2.833
23	2.754	2.954
24	2.873	3.074
25	2.992	3.194
26	3.111	3.314
27	3.230	3.434
28	3.349	3.554
29	3.468	3.673
30	3.588	3.793
31	3.707	3.913
32	3.826	4.033
33	3.945	4.152
34	4.064	4.272
35	4.183	4.392
36	4.303	4.511
37	4.422	4.631
38	4.541	4.751
39	4.660	4.871
40	4.780	4.990
41	4.899	5.110
42	5.018	5.229
43	5.137	5.349
44	5.257	5.468
45	5.376	5.588
46	5.495	5.708
47	5.614	5.827
48	5.734	5.947
49	5.853	6.066
50	5.972	6.186
51	6.091	6.305
52	6.211	6.425
53	6.330	6.544
54	6.449	6.664
55	6.569	6.783
56	6.688	6.903
57	6.807	7.022
58	6.927	7.142
59	7.046	7.261
60	7.165	7.381
61	7.284	7.500
62	7.404	7.619
63	7.523	7.739
64	7.642	7.858
65	7.762	7.978
66	7.881	8.097
67	8.000	8.217
68	8.120	8.336
69	8.239	8.456
70	8.358	8.575
71	8.478	8.694
72	8.597	8.814
73	8.716	8.933
74	8.836	9.053
75	8.995	9.172
76	9.074	9.292
77	9.194	9.411
78	9.313	9.531
79	9.432	9.650
80	9.552	9.770
81	9.671	9.889
82	9.790	10.008
83	9.190	10.128
84	10.029	10.247
85	10.148	10.367
86	10.268	10.486
87	10.387	10.605
88	10.506	10.725
89	10.626	10.844
90	10.745	10.964
91	10.864	11.083
92	10.984	11.202
93	11.103	11.322
94	11.223	11.441
95	11.342	11.561
96	11.461	11.680
97	11.581	11.799
98	11.700	11.919
99	11.819	12.038
100	11.939	12.158
101	12.058	12.277
102	12.177	12.396
103	12.297	12.516
104	12.416	12.635
105	12.535	12.755
106	12.655	12.874
107	12.774	12.994
108	12.893	13.113
109	13.013	13.232
110	13.132	13.352
111	13.251	13.471
112	13.371	13.591
113	13.490	13.710
114	13.609	13.830
115	13.729	13.948
116	13.848	14.068
117	13.968	14.187
118	14.087	14.307
119	14.206	14.427
120	14.326	14.545

41 – 0.500 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

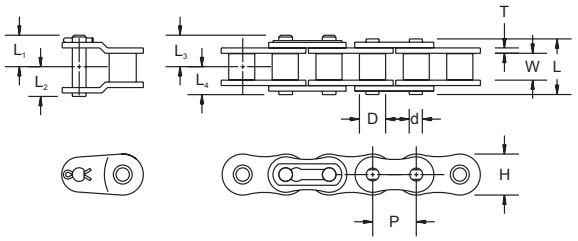


TABLE 30. 41 – 0.500 IN. PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Weight
	P	W	D	H	T	d	L	L_1	L_2	L_3	L_4		
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
41-1	0.500	0.252	0.306	0.382	0.049	0.141	0.524	0.315	0.268	0.315	0.268	2,400	0.273

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

TABLE 31. 41 – 0.500 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																										
	10	25	50	100	180	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500	4000	5000	6000	7000	8000
11	0.03	0.07	0.15	0.28	0.50	0.55	0.81	1.07	1.33	1.84	2.34	2.25	1.71	1.36	1.11	0.93	0.74	0.61	0.51	0.43	0.34	0.28	0.20	0.15	0.12	0.10
12	0.03	0.08	0.16	0.31	0.54	0.60	0.89	1.17	1.45	2.00	2.55	2.57	1.95	1.55	1.27	1.06	0.84	0.69	0.58	0.49	0.39	0.32	0.23	0.17	0.14	0.11
13	0.04	0.09	0.17	0.34	0.59	0.65	0.96	1.27	1.57	2.17	2.76	2.89	2.20	1.75	1.43	1.20	0.95	0.78	0.65	0.56	0.44	0.36	0.26	0.20	0.16	0.00
14	0.04	0.10	0.19	0.36	0.63	0.70	1.04	1.37	1.69	2.34	2.97	3.23	2.46	1.95	1.60	1.34	1.06	0.87	0.73	0.62	0.49	0.40	0.29	0.22	0.17	0.00
15	0.04	0.10	0.20	0.39	0.68	0.75	1.11	1.46	1.81	2.50	3.19	3.53	2.73	2.17	1.77	1.49	1.18	0.96	0.81	0.69	0.55	0.45	0.32	0.24	0.19	0.00
16	0.05	0.11	0.21	0.41	0.73	0.80	1.18	1.56	1.93	2.67	3.40	3.76	3.01	2.39	1.95	1.64	1.30	1.06	0.89	0.76	0.60	0.49	0.35	0.27	0.00	
17	0.05	0.12	0.23	0.44	0.77	0.85	1.26	1.66	2.05	2.84	3.61	4.00	3.29	2.61	2.14	1.79	1.42	1.16	0.98	0.83	0.66	0.54	0.39	0.29	0.00	
18	0.05	0.12	0.24	0.46	0.82	0.90	1.33	1.76	2.18	3.00	3.82	4.23	3.59	2.85	2.33	1.95	1.55	1.27	1.06	0.91	0.72	0.59	0.42	0.32	0.00	
19	0.05	0.13	0.25	0.49	0.86	0.95	1.41	1.85	2.30	3.17	4.04	4.47	3.89	3.09	2.53	2.12	1.68	1.38	1.15	0.98	0.78	0.64	0.46	0.09	0.00	
20	0.06	0.14	0.27	0.52	0.91	1.00	1.48	1.95	2.42	3.34	4.25	4.70	4.20	3.33	2.73	2.29	1.81	1.49	1.24	1.06	0.84	0.69	0.49	0.00		
21	0.06	0.14	0.28	0.54	0.95	1.05	1.55	2.05	2.54	3.51	4.46	4.94	4.52	3.59	2.94	2.46	1.95	1.60	1.34	1.14	0.91	0.74	0.53	0.00		
22	0.06	0.15	0.29	0.57	1.00	1.10	1.63	2.15	2.66	3.67	4.67	5.17	4.85	3.85	3.15	2.64	2.09	1.71	1.44	1.23	0.97	0.80	0.57	0.00		
23	0.07	0.16	0.30	0.59	1.04	1.15	1.70	2.24	2.78	3.84	4.89	5.41	5.18	4.11	3.37	2.82	2.24	1.83	1.54	1.31	1.04	0.85	0.61	0.00		
24	0.07	0.16	0.32	0.62	1.09	1.20	1.78	2.34	2.90	4.01	5.10	5.64	5.52	4.38	3.59	3.01	2.39	1.95	1.64	1.40	1.11	0.91	0.65	0.00		
25	0.07	0.17	0.33	0.64	1.13	1.25	1.85	2.44	3.02	4.17	5.31	5.88	5.87	4.66	3.81	3.20	2.54	2.08	1.74	1.49	1.18	0.96	0.00			
26	0.07	0.18	0.34	0.67	1.18	1.30	1.92	2.54	3.14	4.34	5.52	6.11	6.23	4.94	4.05	3.39	2.69	2.20	1.85	1.58	1.25	1.02	0.00			
28	0.08	0.19	0.37	0.72	1.27	1.40	2.07	2.73	3.38	4.67	5.95	6.58	6.96	5.52	4.52	3.79	3.01	2.46	2.06	1.76	1.40	1.14	0.00			
30	0.08	0.20	0.40	0.77	1.36	1.50	2.22	2.93	3.63	5.01	6.37	7.05	7.72	6.13	5.01	4.20	3.33	2.73	2.29	1.95	1.55	1.27	0.00			
32	0.09	0.22	0.42	0.82	1.45	1.60	2.37	3.12	3.87	5.34	6.80	7.52	8.50	6.75	5.52	4.63	3.67	3.01	2.52	2.15	1.71	1.40	0.00			
35	0.10	0.24	0.46	0.90	1.59	1.76	2.59	3.41	4.23	5.84	7.44	8.23	9.80	7.72	6.32	5.29	4.20	3.44	2.88	2.46	1.95	0.00				
40	0.11	0.27	0.53	1.03	1.81	2.01	2.96	3.90	4.83	6.68	8.50	9.40	11.20	9.43	7.72	6.47	5.13	4.20	3.52	3.01	0.00					
45	0.13	0.31	0.60	1.16	2.04	2.26	3.33	4.39	5.44	7.51	9.56	10.58	12.60	11.25	9.21	7.72	6.13	5.01	4.20	3.59	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 6 for multiple-strand factors.

TABLE 32. SPROCKET INFORMATION FOR 41 – 0.500 IN. PITCH

No. of Teeth	41 – ½ in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	1.462	1.674
10	1.618	1.839
11	1.775	2.003
12	1.932	2.166
13	2.089	2.329
14	2.247	2.491
15	2.405	2.652
16	2.563	2.814
17	2.721	2.975
18	2.879	3.135
19	3.038	3.296
20	3.196	3.457
21	3.355	3.617
22	3.513	3.778
23	3.672	3.938
24	3.831	4.098
25	3.989	4.258
26	4.148	4.418
27	4.307	4.578
28	4.466	4.738
29	4.625	4.897
30	4.783	5.057
31	4.942	5.217
32	5.101	5.377
33	5.260	5.536
34	5.419	5.696
35	5.578	5.855
36	5.737	6.015
37	5.896	6.175
38	6.055	6.334
39	6.214	6.494
40	6.373	6.653
41	6.532	6.813
42	6.691	6.972
43	6.850	7.131
44	7.009	7.291
45	7.168	7.451
46	7.327	7.609
47	7.486	7.769
48	7.645	7.928
49	7.804	8.088
50	7.963	8.247
51	8.122	8.407
52	8.281	8.566
53	8.440	8.725
54	8.599	8.885
55	8.758	9.044
56	8.917	9.203
57	9.076	9.363
58	9.236	9.522
59	9.395	9.681
60	9.554	9.841
61	9.713	10.000
62	9.872	10.159
63	10.031	10.318
64	10.190	10.478
65	10.349	10.637
66	10.508	10.796
67	10.667	10.956
68	10.826	11.115
69	10.986	11.274
70	11.145	11.434
71	11.304	11.593
72	11.463	11.752
73	11.622	11.911
74	11.781	12.071
75	11.940	12.229
76	12.099	12.389
77	12.258	12.548
78	12.417	12.708
79	12.577	12.867
80	12.736	13.026
81	12.895	13.185
82	13.054	13.345
83	13.213	13.504
84	13.372	13.663
85	13.531	13.822
86	13.690	13.981
87	13.849	14.141
88	14.009	14.299
89	14.168	14.459
90	14.327	14.618
91	14.486	14.777
92	14.645	14.937
93	14.804	15.096
94	14.963	15.255
95	15.122	15.414
96	15.282	15.573
97	15.441	15.733
98	15.600	15.892
99	15.759	16.051
100	15.918	16.210
101	16.077	16.370
102	16.236	16.529
103	16.395	16.688
104	16.555	16.847
105	16.714	17.006
106	16.873	17.166
107	17.032	17.325
108	17.191	17.484
109	17.350	17.643
110	17.509	17.803
111	17.669	17.962
112	17.828	18.122
113	17.987	18.280
114	18.146	18.440
115	18.305	18.597
116	18.464	18.757
117	18.623	18.917
118	18.783	19.077
119	18.942	19.235
120	19.101	19.394

40 – 0.500 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

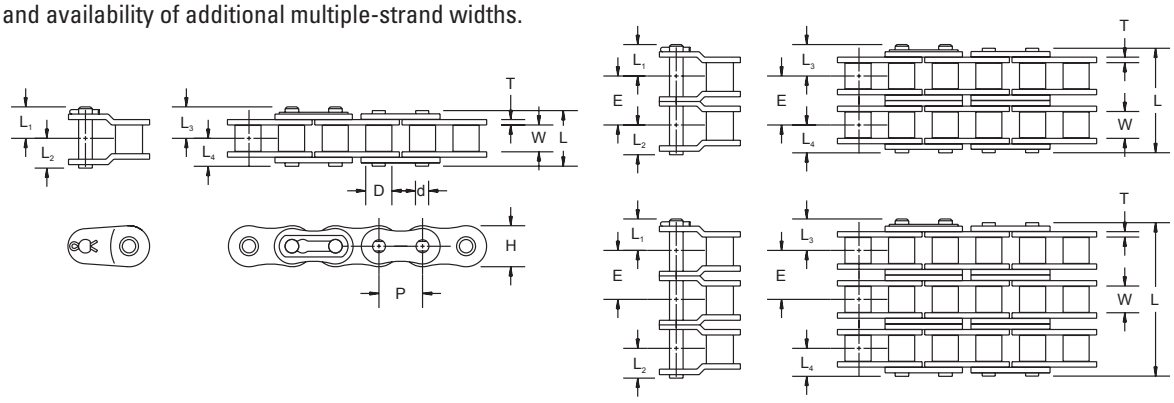


TABLE 33. 40 – 0.500 IN. PITCH CHAIN DIMENSIONS

Chain No.	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_1	L_2	L_3	L_4		
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
40-1	0.500	0.313	0.313	0.472	0.060	0.156	--	0.630	0.404	0.317	0.377	0.315	3,700	0.420
40-2	0.500	0.313	0.313	0.472	0.060	0.156	0.567	1.195	0.404	0.317	0.377	0.315	7,400	0.810
40-3	0.500	0.313	0.313	0.472	0.060	0.156	0.567	1.773	0.404	0.317	0.377	0.315	11,100	1.210
40-4	0.500	0.313	0.313	0.472	0.060	0.156	0.567	2.331	0.404	0.317	0.377	0.315	14,800	1.610

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

TABLE 34. 40 – 0.500 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																										
	10	25	50	100	180	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500	4000	5000	6000	7000	8000	8500
11	0.06	0.14	0.27	0.52	0.91	1.00	1.48	1.95	2.42	3.34	4.25	4.70	5.60	6.49	5.57	4.66	3.70	3.03	2.54	2.17	1.72	1.41	1.01	0.77	0.61	0.50	0.45
12	0.06	0.15	0.29	0.56	0.99	1.09	1.61	2.13	2.64	3.64	4.64	5.13	6.11	7.09	6.34	5.31	4.22	3.45	2.89	2.47	1.96	1.60	1.15	0.87	0.69	0.57	0.00
13	0.07	0.16	0.31	0.61	1.07	1.19	1.75	2.31	2.86	3.95	5.02	5.56	6.62	7.68	7.15	5.99	4.76	3.89	3.26	2.79	2.21	1.81	1.29	0.98	0.78	0.00	
14	0.07	0.17	0.34	0.66	1.15	1.28	1.88	2.48	3.08	4.25	5.41	5.98	7.13	8.27	7.99	6.70	5.31	4.35	3.65	3.11	2.47	2.02	1.45	1.10	0.87	0.00	
15	0.08	0.19	0.36	0.70	1.24	1.37	2.02	2.66	3.30	4.55	5.80	6.41	7.64	8.86	8.86	7.43	5.89	4.82	4.04	3.45	2.74	2.24	1.60	1.22	0.97	0.00	
16	0.08	0.20	0.39	0.75	1.32	1.46	2.15	2.84	3.52	4.86	6.18	6.84	8.15	9.45	9.76	8.18	6.49	5.31	4.45	3.80	3.02	2.47	1.77	1.34	0.00		
17	0.09	0.21	0.41	0.80	1.40	1.55	2.2	3.02	3.74	5.16	6.57	7.27	8.66	10.04	10.69	8.96	7.11	5.82	4.88	4.17	3.31	2.71	1.94	1.47	0.00		
18	0.09	0.22	0.43	0.84	1.48	1.64	2.42	3.19	3.96	5.46	6.95	7.69	9.17	10.63	11.65	9.76	7.75	6.34	5.31	4.54	3.60	2.95	2.11	1.60	0.00		
19	0.10	0.24	0.46	0.89	1.57	1.73	2.56	3.37	4.18	5.77	7.34	8.12	9.68	11.22	12.64	10.59	8.40	6.88	5.76	4.92	3.91	3.20	2.29	0.09	0.00		
20	0.10	0.25	0.48	0.94	1.65	1.82	2.69	3.55	4.39	6.07	7.73	8.55	10.18	11.81	13.42	11.44	9.07	7.43	6.22	5.31	4.22	3.45	2.47	0.00			
21	0.11	0.26	0.51	0.98	1.73	1.91	2.83	3.72	4.61	6.37	8.11	8.98	10.69	12.40	14.10	12.30	9.76	7.99	6.70	5.72	4.54	3.71	2.66	0.00			
22	0.11	0.27	0.53	1.03	1.81	2.01	2.96	3.90	4.83	6.68	8.50	9.40	11.20	12.99	14.77	13.19	10.47	8.57	7.18	6.13	4.87	3.98	2.85	0.00			
23	0.12	0.28	0.55	1.08	1.90	2.10	3.10	4.08	5.05	6.98	8.89	9.83	11.71	13.58	15.44	14.10	11.19	9.16	7.68	6.55	5.20	4.26	3.05	0.00			
24	0.12	0.30	0.58	1.12	1.98	2.19	3.23	4.26	5.27	7.28	9.27	10.26	12.22	14.17	16.11	15.03	11.93	9.76	8.18	6.99	5.54	4.54	0.87	0.00			
25	0.13	0.31	0.60	1.17	2.06	2.28	3.36	4.43	5.49	7.59	9.66	10.69	12.73	14.76	16.78	15.98	12.68	10.38	8.70	7.43	5.89	4.82	0.00				
26	0.13	0.32	0.63	1.22	2.14	2.37	3.50	4.61	5.71	7.89	10.04	11.11	13.24	15.35	17.45	16.95	13.45	11.01	9.23	7.88	6.25	5.12	0.00				
28	0.14	0.35	0.67	1.31	2.31	2.55	3.77	4.97	6.15	8.50	10.82	11.97	14.26	16.53	18.79	18.94	15.03	12.30	10.31	8.80	6.99	5.72	0.00				
30	0.15	0.37	0.72	1.41	2.47	2.74	4.04	5.32	6.59	9.11	11.59	12.82	15.28	17.71	20.14	21.01	16.67	13.65	11.44	9.76	7.75	6.34	0.00				
32	0.16	0.40	0.77	1.50	2.64	2.92	4.31	5.68	7.03	9.71	12.36	13.68	16.30	18.89	21.48	23.14	18.37	15.03	12.60	10.76	8.54	1.41					
35	0.18	0.43	0.84	1.64	2.88	3.19	4.71	6.21	7.69	10.62	13.52	14.96	17.82	20.67	23.49	26.30	21.01	17.20	14.41	12.30	9.76	0.00					
40	0.21	0.50	0.96	1.87	3.30	3.65	5.38	7.09	8.79	12.14	15.45	17.10	20.37	23.62	26.85	30.06	25.67	21.01	17.61	15.03	0.00						
45	0.23	0.56	1.08	2.11	3.71	4.10	6.06	7.98	9.89	13.66	17.39	19.24	22.92	26.57	30.20	33.82	30.63	25.07	21.01	5.53	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 6 for multiple-strand factors.

TABLE 35. SPROCKET INFORMATION FOR 40 – 0.500 IN. PITCH

No. of Teeth	40 – ½ in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	1.462	1.674
10	1.618	1.839
11	1.775	2.003
12	1.932	2.166
13	2.089	2.329
14	2.247	2.491
15	2.405	2.652
16	2.563	2.814
17	2.721	2.975
18	2.879	3.135
19	3.038	3.296
20	3.196	3.457
21	3.355	3.617
22	3.513	3.778
23	3.672	3.938
24	3.831	4.098
25	3.989	4.258
26	4.148	4.418
27	4.307	4.578
28	4.466	4.738
29	4.625	4.897
30	4.783	5.057
31	4.942	5.217
32	5.101	5.377
33	5.260	5.536
34	5.419	5.696
35	5.578	5.855
36	5.737	6.015
37	5.896	6.175
38	6.055	6.334
39	6.214	6.494
40	6.373	6.653
41	6.532	6.813
42	6.691	6.972
43	6.850	7.131
44	7.009	7.291
45	7.168	7.451
46	7.327	7.609
47	7.486	7.769
48	7.645	7.928
49	7.804	8.088
50	7.963	8.247
51	8.122	8.407
52	8.281	8.566
53	8.440	8.725
54	8.599	8.885
55	8.758	9.044
56	8.917	9.203
57	9.076	9.363
58	9.236	9.522
59	9.395	9.681
60	9.554	9.841
61	9.713	10.000
62	9.872	10.159
63	10.031	10.318
64	10.190	10.478
65	10.349	10.637
66	10.508	10.796
67	10.667	10.956
68	10.826	11.115
69	10.986	11.274
70	11.145	11.434
71	11.304	11.593
72	11.463	11.752
73	11.622	11.911
74	11.781	12.071
75	11.940	12.229
76	12.099	12.389
77	12.258	12.548
78	12.417	12.708
79	12.577	12.867
80	12.736	13.026
81	12.895	13.185
82	13.054	13.345
83	13.213	13.504
84	13.372	13.663
85	13.531	13.822
86	13.690	13.981
87	13.849	14.141
88	14.009	14.299
89	14.168	14.459
90	14.327	14.618
91	14.486	14.777
92	14.645	14.937
93	14.804	15.096
94	14.963	15.255
95	15.122	15.414
96	15.282	15.573
97	15.441	15.733
98	15.600	15.892
99	15.759	16.051
100	15.918	16.210
101	16.077	16.370
102	16.236	16.529
103	16.395	16.688
104	16.555	16.847
105	16.714	17.006
106	16.873	17.166
107	17.032	17.325
108	17.191	17.484
109	17.350	17.643
110	17.509	17.803
111	17.669	17.962
112	17.828	18.122
113	17.987	18.280
114	18.146	18.440
115	18.305	18.597
116	18.464	18.757
117	18.623	18.917
118	18.783	19.077
119	18.942	19.235
120	19.101	19.394

50 – 0.625 INCH PITCH

- Cut-to-length chain available.
- Available in riveted style.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

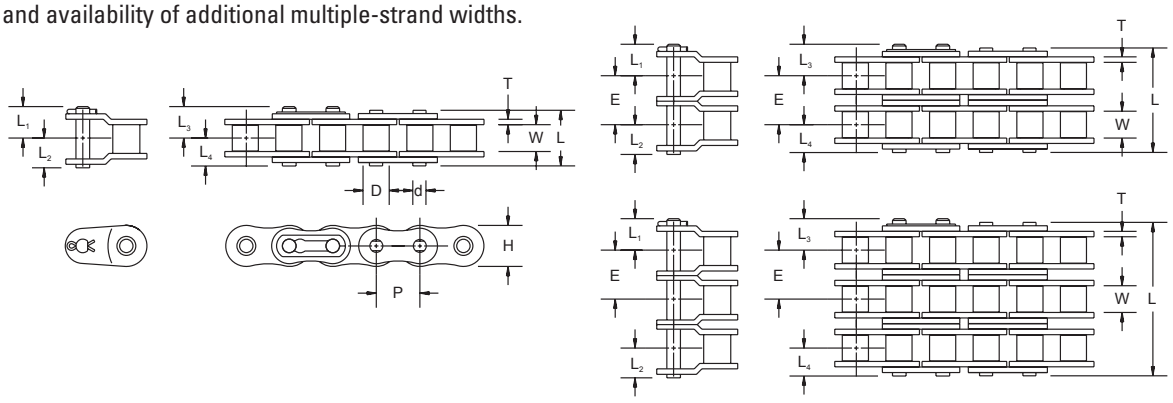


TABLE 36. 50 – 0.625 IN. PITCH CHAIN DIMENSIONS

Chain No.	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_1	L_2	L_3	L_4		
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
50-1	0.625	0.376	0.400	0.590	0.080	0.200	–	0.795	0.489	0.399	0.489	0.398	6,100	0.713
50-2	0.625	0.376	0.400	0.590	0.080	0.200	0.713	1.511	0.489	0.399	0.489	0.398	12,200	1.406
50-3	0.625	0.376	0.400	0.590	0.080	0.200	0.713	2.230	0.489	0.399	0.489	0.398	18,300	2.099
50-4	0.625	0.376	0.400	0.590	0.080	0.200	0.713	2.943	0.489	0.399	0.489	0.398	24,400	2.790
50-5	0.625	0.376	0.400	0.590	0.080	0.200	0.713	3.656	0.489	0.399	0.489	0.398	30,500	3.830

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

TABLE 37. 50 – 0.625 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																									
	10	25	50	100	140	200	300	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
11	0.11	0.27	0.52	1.00	1.39	1.95	2.88	4.70	6.50	8.27	10.24	7.33	5.58	4.42	3.41	2.59	2.06	1.68	1.41	1.20	1.04	0.92	0.81	0.73	0.00	
12	0.12	0.29	0.56	1.09	1.51	2.13	3.14	5.13	7.09	9.02	11.67	8.35	6.35	5.04	3.88	2.95	2.34	1.92	1.61	1.37	1.19	1.04	0.93	0.00		
13	0.13	0.31	0.61	1.19	1.64	2.31	3.40	5.56	7.68	9.77	12.88	9.42	7.16	5.69	4.38	3.33	2.64	2.16	1.81	1.55	1.34	1.18	0.00			
14	0.14	0.34	0.66	1.28	1.76	2.48	3.67	5.99	8.27	10.53	13.87	10.52	8.01	6.35	4.89	3.72	2.95	2.42	2.03	1.73	1.50	0.28	0.00			
15	0.15	0.36	0.70	1.37	1.89	2.66	3.93	6.41	8.86	11.28	14.86	11.67	8.88	7.05	5.42	4.13	3.27	2.68	2.25	1.92	1.66	0.00	1.60			
16	0.16	0.39	0.75	1.46	2.02	2.84	4.19	6.84	9.45	12.03	15.85	12.86	9.78	7.76	5.98	4.55	3.61	2.95	2.47	2.11	0.00					
17	0.17	0.41	0.80	1.55	2.14	3.02	4.45	7.27	10.04	12.78	16.85	14.08	10.71	8.50	6.55	4.98	3.95	3.23	2.71	2.31	0.00					
18	0.18	0.43	0.84	1.64	2.27	3.19	4.71	7.70	10.63	13.53	17.84	15.34	11.67	9.26	7.13	5.42	4.30	3.52	2.95	0.05						
19	0.19	0.46	0.89	1.73	2.39	3.37	4.98	8.12	11.22	14.28	18.83	16.64	12.66	10.05	7.73	5.88	4.67	3.82	3.20	0.00						
20	0.20	0.48	0.94	1.82	2.52	3.55	5.24	8.55	11.81	15.04	19.82	17.97	13.67	10.85	8.35	6.35	5.04	4.13	3.46	0.00						
21	0.21	0.51	0.98	1.92	2.65	3.73	5.50	8.98	12.40	15.79	20.81	19.34	14.71	11.67	8.99	6.84	5.42	4.44	0.00							
22	0.22	0.53	1.03	2.01	2.77	3.90	5.76	9.41	12.99	16.54	21.80	20.73	15.77	12.52	9.64	7.33	5.82	4.76	0.00							
23	0.23	0.55	1.08	2.10	2.90	4.08	6.02	9.83	13.58	17.29	22.79	22.16	16.86	13.38	10.30	7.84	6.22	5.09	0.00							
24	0.24	0.58	1.13	2.19	3.02	4.26	6.28	10.26	14.18	18.04	23.78	23.62	17.97	14.26	10.98	8.35	6.63	1.36	0.00							
25	0.25	0.60	1.17	2.28	3.15	4.44	6.55	10.69	14.77	18.79	24.77	25.11	19.11	15.16	11.67	8.88	7.05									
26	0.26	0.63	1.22	2.37	3.28	4.61	6.81	11.12	15.36	19.55	25.76	26.64	20.26	16.08	12.38	9.42	7.47	0.00								
28	0.28	0.67	1.31	2.55	3.53	4.97	7.33	11.97	16.54	21.05	27.75	29.77	22.65	17.97	13.84	10.52	4.74	0.00								
30	0.30	0.72	1.41	2.74	3.78	5.32	7.86	12.83	17.72	22.55	29.73	33.01	25.11	19.93	15.34	11.67	0.00									
32	0.32	0.77	1.50	2.92	4.03	5.68	8.38	13.68	18.90	24.06	31.71	36.37	27.67	21.96	16.90	12.86	0.00									
35	0.35	0.84	1.64	3.19	4.41	6.21	9.16	14.97	20.67	26.31	34.68	41.60	31.65	25.11	19.34	0.94	0.00									
40	0.40	0.96	1.88	3.65	5.04	7.10	10.47	17.10	23.63	30.07	39.64	49.11	38.67	30.68	23.62	0.00										
45	0.45	1.08	2.11	4.10	5.67	7.98	11.78	19.24	26.58	33.83	44.59	55.24	46.14	36.61	8.64											
	Type 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 6 for multiple-strand factors.

TABLE 38. SPROCKET INFORMATION FOR 50 – 0.625 IN. PITCH

No. of Teeth	50 – 5/8 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	1.827	2.092
10	2.023	2.299
11	2.219	2.504
12	2.415	2.708
13	2.612	2.911
14	2.809	3.113
15	3.006	3.315
16	3.204	3.517
17	3.401	3.719
18	3.599	3.920
19	3.797	4.120
20	3.995	4.321
21	4.193	4.522
22	4.392	4.722
23	4.590	4.922
24	4.788	5.122
25	4.987	5.322
26	5.185	5.522
27	5.384	5.722
28	5.582	5.922
29	5.781	6.122
30	5.979	6.321
31	6.178	6.521
32	6.376	6.721
33	6.575	6.920
34	6.774	7.120
35	6.972	7.319
36	7.171	7.519
37	7.370	7.718
38	7.568	7.918
39	7.767	8.117
40	7.966	8.316
41	8.165	8.516
42	8.363	8.715
43	8.562	8.914
44	8.761	9.114
45	8.960	9.313
46	9.159	9.512
47	9..357	9.711
48	9.556	9.911

No. of Teeth	50 – 5/8 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
49	9.755	10.111
50	9.954	10.309
51	10.153	10.508
52	10.351	10.707
53	10.550	10.907
54	10.749	11.106
55	10.948	11.305
56	11.147	11.504
57	11.346	11.703
58	11.544	11.902
59	11.743	12.102
60	11.942	12.301
61	12.141	12.500
62	12.340	12.699
63	12.539	12.898
64	12.738	13.097
65	12.936	13.296
66	13.135	13.495
67	13.334	13.694
68	13.533	13.893
69	13.732	14.092
70	13.931	14.292
71	14.130	14.491
72	14.328	14.690
73	14.527	14.889
74	14.726	15.088
75	14.925	15.287
76	15.124	15.486
77	15.323	15.685
78	15.522	15.884
79	15.721	16.083
80	15.920	16.282
81	16.118	16.481
82	16.317	16.681
83	16.516	16.879
84	16.715	17.079
85	16.914	17.277
86	17.113	17.476
87	17.312	17.676
88	17.511	17.874

No. of Teeth	50 – 5/8 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
89	17.710	18.074
90	17.909	18.272
91	18.107	18.471
92	18.306	18.671
93	18.505	18.869
94	18.704	19.069
95	18.903	19.267
96	19.102	19.466
97	19.301	19.666
98	19.500	19.864
99	19.699	20.064
100	19.898	20.262
101	20.097	20.462
102	20.295	20.661
103	20.494	20.860
104	20.693	21.059
105	20.892	21.258
106	21.091	21.457
107	21.290	21.656
108	21.489	21.854
109	21.688	22.054
110	21.887	22.253
111	22.086	22.452
112	22.285	22.651
113	22.484	22.850
114	22.682	23.049
115	22.881	23.246
116	23.080	23.447
117	23.279	23.647
118	23.478	23.846
119	23.677	24.045
120	23.876	24.243

60 – 0.750 INCH PITCH

- Cut-to-length chain available.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

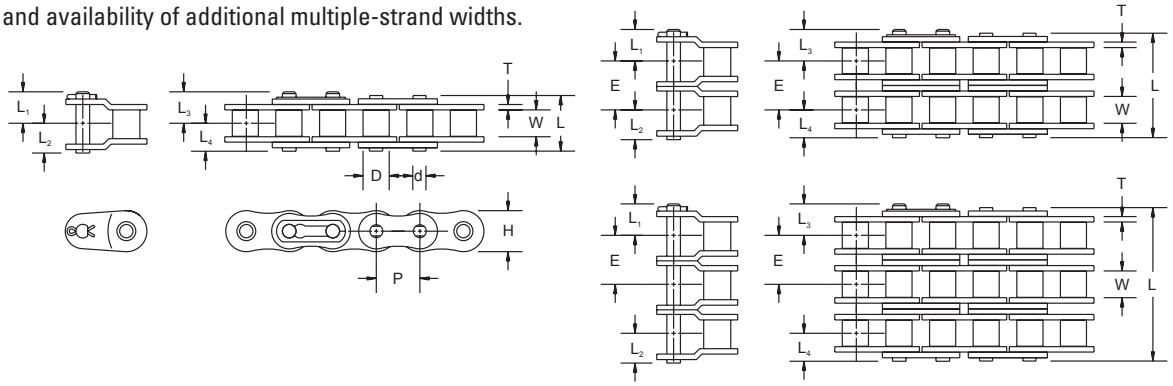


TABLE 39. 60 – 0.750 IN. PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Transverse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Weight	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4				
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.		
60-1	0.750	0.500	0.469	0.705	0.094	0.234	–	0.996	0.600	0.498	0.648	0.498	8,500	1.067	STD	MTO
60-2	0.750	0.500	0.469	0.705	0.094	0.234	0.898	1.896	0.600	0.498	0.648	0.498	17,000	2.068	STD	MTO
60-3	0.750	0.500	0.469	0.705	0.094	0.234	0.898	2.794	0.600	0.498	0.648	0.498	25,500	3.069	STD	MTO
60-4	0.750	0.500	0.469	0.705	0.094	0.234	0.898	3.690	0.600	0.498	0.648	0.498	34,000	4.070	MTO	MTO
60-5	0.750	0.500	0.469	0.705	0.094	0.234	0.898	4.588	0.600	0.498	0.648	0.498	42,500	5.071	MTO	MTO
60-6	0.750	0.500	0.469	0.705	0.094	0.234	0.898	5.486	0.600	0.498	0.648	0.498	51,000	6.072	MTO	MTO

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

TABLE 40. 60 – 0.750 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																								
	10	25	50	100	120	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500	5000	5500	6000
11	0.19	0.46	0.89	1.72	2.05	3.35	4.95	6.52	8.08	9.63	12.69	15.58	11.85	9.41	7.70	6.45	5.51	3.94	3.00	2.38	1.95	1.63	1.39	1.21	0.00
12	0.21	0.50	0.97	1.88	2.24	3.66	5.40	7.12	8.82	10.51	13.85	17.15	13.51	10.72	8.77	7.35	6.28	4.49	3.42	2.71	2.22	1.86	1.59	1.38	0.00
13	0.22	0.54	1.05	2.04	2.43	3.96	5.85	7.71	9.55	11.38	15.00	18.58	15.23	12.08	9.89	8.29	7.08	5.06	3.85	3.06	2.50	2.10	1.79	0.00	
14	0.24	0.58	1.13	2.19	2.61	4.27	6.30	8.30	10.29	12.26	16.15	20.01	17.02	13.51	11.05	9.26	7.91	5.66	4.31	3.42	2.80	2.34	0.41	0.00	
15	0.26	0.62	1.21	2.35	2.80	4.57	6.75	8.90	11.02	13.13	17.31	21.44	18.87	14.98	12.26	10.27	8.77	6.28	4.77	3.79	3.10	2.60	0.00		
16	0.27	0.66	1.29	2.51	2.99	4.88	7.20	9.49	11.76	14.01	18.46	22.87	20.79	16.50	13.51	11.32	9.66	6.91	5.26	4.17	3.42	1.78	0.00		
17	0.29	0.70	1.37	2.66	3.17	5.18	7.65	10.08	12.49	14.88	19.62	24.30	22.77	18.07	14.79	12.40	10.58	7.57	5.76	4.57	3.74	0.00			
18	0.31	0.75	1.45	2.82	3.36	5.49	8.10	10.68	13.23	15.76	20.77	25.73	24.81	19.69	16.11	13.51	11.53	8.25	6.28	4.98	4.08	0.00			
19	0.33	0.79	1.53	2.98	3.55	5.79	8.55	11.27	13.96	16.63	21.92	27.16	26.91	21.35	17.48	14.65	12.50	8.95	6.81	5.40	0.20	0.00			
20	0.34	0.83	1.61	3.13	3.73	6.10	9.00	11.86	14.70	17.51	23.08	28.59	29.06	23.06	18.87	15.82	13.51	9.66	7.35	5.83	0.00				
21	0.36	0.87	1.69	3.29	3.92	6.40	9.45	12.46	15.43	18.38	24.23	30.02	31.26	24.81	20.31	17.02	14.53	10.40	7.91	6.28	0.00				
22	0.38	0.91	1.77	3.45	4.11	6.71	9.90	13.05	16.17	19.26	25.39	31.45	33.52	26.60	21.77	18.25	15.58	11.15	8.48	0.00					
23	0.40	0.95	1.85	3.61	4.29	7.01	10.35	13.64	16.90	20.13	26.54	32.88	35.84	28.44	23.28	19.51	16.66	11.92	9.07	0.00					
24	0.41	0.99	1.93	3.76	4.48	7.32	10.80	14.24	17.64	21.01	27.69	34.31	38.20	30.31	24.81	20.79	17.75	12.70	9.66	0.00					
25	0.43	1.04	2.01	3.92	4.67	7.62	11.25	14.83	18.37	21.89	28.85	35.74	40.61	32.23	26.38	22.11	18.87	13.51	10.27	0.00					
26	0.45	1.08	2.09	4.08	4.85	7.93	11.70	15.42	19.11	22.76	30.00	37.17	43.07	34.18	27.98	23.44	20.02	14.32	10.90	0.00					
28	0.48	1.16	2.26	4.39	5.23	8.54	12.60	16.61	20.58	24.51	32.31	40.03	47.68	38.20	31.26	26.20	22.37	16.01	0.00						
30	0.52	1.24	2.42	4.70	5.60	9.15	13.50	17.79	22.05	26.26	34.62	42.89	51.09	42.36	34.67	29.06	24.81	17.75	0.00						
32	0.55	1.33	2.58	5.02	5.98	9.76	14.40	18.98	23.52	28.01	36.92	45.75	54.50	46.67	38.20	32.01	27.33	19.56	0.00						
35	0.60	1.45	2.82	5.49	6.54	10.67	15.75	20.76	25.72	30.64	40.39	50.03	59.60	53.38	43.69	36.62	31.26	1.35	0.00						
40	0.69	1.66	3.22	6.27	7.47	12.20	18.00	23.73	29.39	35.02	46.16	57.18	68.12	65.22	53.38	44.74	38.20	0.00							
45	0.77	1.86	3.63	7.05	8.40	13.72	20.25	26.69	33.07	39.39	51.92	64.33	76.63	77.83	63.70	53.38	12.45	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 6 for multiple-strand factors.

TABLE 41. SPROCKET INFORMATION FOR 60 – 0.750 IN. PITCH

No. of Teeth	60 – 3/4 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	2.193	2.511
10	2.427	2.758
11	2.662	3.004
12	2.898	3.249
13	3.134	3.493
14	3.371	3.736
15	3.607	3.979
16	3.844	4.221
17	4.082	4.462
18	4.319	4.704
19	4.557	4.945
20	4.794	5.185
21	5.032	5.426
22	5.270	5.666
23	5.508	5.907
24	5.746	6.147
25	5.984	6.387
26	6.222	6.627
27	6.460	6.867
28	6.699	7.107
29	6.937	7.346
30	7.175	7.586
31	7.413	7.825
32	7.652	8.065
33	7.890	8.304
34	8.128	8.544
35	8.367	8.783
36	8.605	9.022
37	8.844	9.262
38	9.082	9.501
39	9.321	9.740
40	9.559	9.980
41	9.798	10.219
42	10.036	10.458
43	10.275	10.697
44	10.513	10.936
45	10.752	11.176
46	10.990	11.415
47	11.229	11.654
48	11.467	11.893
49	11.706	12.132
50	11.944	12.371
51	12.183	12.610
52	12.422	12.849
53	12.660	13.088
54	12.899	13.327
55	13.137	13.566
56	13.376	13.805
57	13.615	14.044
58	13.853	14.283
59	14.092	14.522
60	14.330	14.761
61	14.569	15.000
62	14.808	15.238
63	15.046	15.477
64	15.285	15.716
65	15.524	15.955
66	15.762	16.194
67	16.001	16.433
68	16.240	16.672
69	16.478	16.911
70	16.717	17.150
71	16.956	17.388
72	17.194	17.628
73	17.433	17.866
74	17.672	18.105
75	17.910	18.344
76	18.149	18.583
77	18.387	18.822
78	18.626	19.061
79	18.865	19.299
80	19.104	19.539
81	19.342	19.777
82	19.581	20.016
83	19.820	20.255
84	20.058	20.494
85	20.297	20.733
86	20.536	20.791
87	20.774	21.210
88	21.013	21.449
89	21.252	21.688
90	21.490	21.927
91	21.729	22.165
92	21.968	22.404
93	22.206	22.643
94	22.445	22.882
95	22.684	23.121
96	22.922	23.359
97	23.161	23.598
98	23.400	23.837
99	23.638	24.076
100	23.877	24.315
101	24.116	24.554
102	24.355	24.793
103	24.593	25.032
104	24.832	25.271
105	25.071	25.510
106	25.309	25.749
107	25.548	25.987
108	25.787	26.226
109	26.025	26.465
110	26.264	26.704
111	26.503	26.943
112	26.742	27.182
113	26.980	27.421
114	27.219	27.660
115	27.458	27.896
116	27.696	28.136
117	27.935	28.376
118	28.174	28.615
119	28.413	28.853
120	28.651	29.091

80 – 1.000 INCH PITCH

- Cut-to-length chain available.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

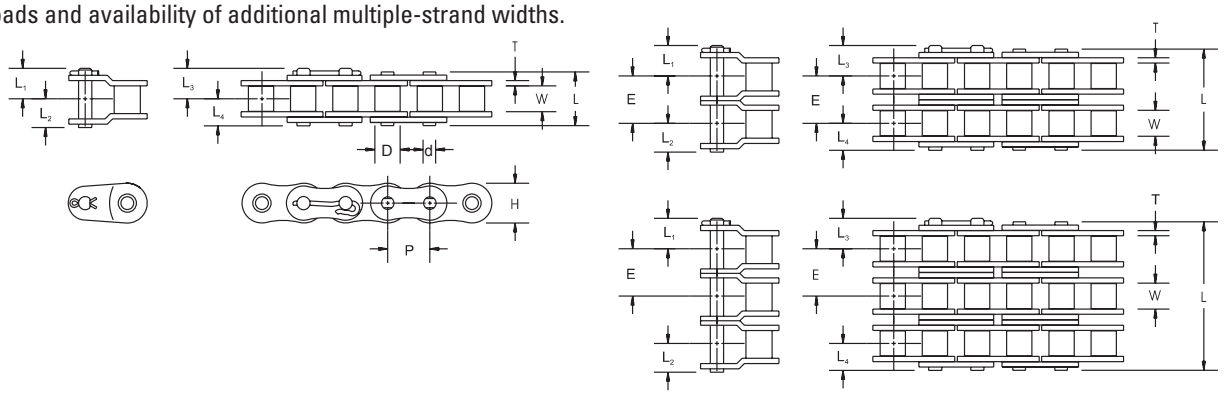


TABLE 42. 80 – 1.000 IN. PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Trans-verse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Tensile Strength (Through-Hardened Pin)	Average Weight	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4					
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.	lbs./ft.		
80-1	1.000	0.627	0.625	0.943	0.125	0.313	–	1.283	0.768	0.638	0.857	0.642	14,500	21,500	1.87	STD	STD
80-2	1.000	0.627	0.625	0.943	0.125	0.313	1.155	2.439	0.768	0.638	0.857	0.642	29,000	43,000	3.74	STD	STD
80-3	1.000	0.627	0.625	0.943	0.125	0.313	1.155	3.594	0.768	0.638	0.857	0.642	43,500	64,500	5.60	STD	STD
80-4	1.000	0.627	0.625	0.943	0.125	0.313	1.155	4.749	0.768	0.638	0.857	0.642	58,000	86,000	7.44	MTO	STD
80-5	1.000	0.627	0.625	0.943	0.125	0.313	1.155	5.904	0.768	0.638	0.857	0.642	72,500	107,500	9.03	MTO	STD
80-6	1.000	0.627	0.625	0.943	0.125	0.313	1.155	7.059	0.768	0.638	0.857	0.642	87,000	129,000	10.82	MTO	STD
80-8	1.000	0.627	0.625	0.943	0.125	0.313	1.155	9.369	0.768	0.638	0.857	0.642	116,000	172,000	14.43	MTO	STD

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

TABLE 43. 80 – 1.000 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																																
	10	25	50	75	88	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	4000	4500
11	0.44	1.06	2.07	3.05	3.56	4.03	5.94	7.83	11.56	15.23	18.87	22.48	26.07	27.41	22.97	19.61	17.00	14.92	11.84	9.69	8.12	6.93	6.01	5.27	4.42	3.77	3.27	2.87	2.45	0.00		
12	0.48	1.16	2.26	3.33	3.88	4.39	6.48	8.54	12.61	16.62	20.59	24.53	28.44	31.23	26.17	22.35	19.37	17.00	13.49	11.04	9.25	7.90	6.85	6.01	5.04	4.30	3.73	3.27	2.79	0.00		
13	0.52	1.26	2.45	3.61	4.21	4.76	7.02	9.26	13.66	18.00	22.31	26.57	30.81	35.02	29.51	25.20	21.84	19.17	15.21	12.45	10.43	8.91	7.72	6.78	5.68	4.85	4.20	3.69	0.00			
14	0.56	1.35	2.63	3.89	4.53	5.12	7.56	9.97	14.71	19.39	24.02	28.62	33.18	37.72	32.98	28.16	24.41	21.42	17.00	13.91	11.66	9.96	8.63	7.57	6.35	5.42	4.70	4.12				
15	0.60	1.45	2.82	4.16	4.86	5.49	8.10	10.68	15.76	20.77	25.74	30.66	35.55	40.41	36.58	31.23	27.07	23.76	18.85	15.43	12.93	11.04	9.57	8.40	7.04	6.01	5.21	4.57				
16	0.64	1.55	3.01	4.44	5.18	5.86	8.64	11.39	16.81	22.16	27.45	32.70	37.92	43.11	40.30	34.41	29.82	26.17	20.77	17.00	14.25	12.16	10.54	9.25	7.76	6.62	5.74	0.00				
17	0.68	1.64	3.20	4.72	5.50	6.22	9.18	12.10	17.86	23.54	29.17	34.75	40.29	45.80	44.13	37.68	32.66	28.66	22.75	18.62	15.60	13.32	11.55	10.13	8.49	7.25	0.00					
18	0.72	1.74	3.39	5.00	5.83	6.59	9.72	12.81	18.91	24.93	30.88	36.79	42.66	48.49	48.08	41.05	35.59	31.23	24.78	20.29	17.00	14.51	12.58	11.04	9.25	7.90	0.00					
19	0.76	1.84	3.57	5.28	6.15	6.95	10.26	13.53	19.96	26.31	32.60	38.84	45.03	51.19	52.15	44.52	38.59	33.87	26.88	22.00	18.44	15.74	13.64	11.97	10.04	0.36	0.00					
20	0.80	1.93	3.76	5.55	6.47	7.32	10.80	14.24	21.01	27.70	34.32	40.88	47.40	53.88	56.32	48.08	41.68	36.58	29.03	23.76	19.91	17.00	14.74	12.93	10.84	0.00						
21	0.84	2.03	3.95	5.83	6.80	7.69	11.34	14.95	22.07	29.08	36.03	42.92	49.77	56.58	60.59	51.73	44.84	39.36	31.23	25.56	21.42	18.29	15.85	13.91	11.66	0.00						
22	0.88	2.13	4.14	6.11	7.12	8.05	11.88	15.66	23.12	30.47	37.75	44.97	52.14	59.27	64.97	55.47	48.08	42.20	33.49	27.41	22.97	19.61	17.00	14.92	0.00							
23	0.92	2.22	4.33	6.39	7.45	8.42	12.42	16.37	24.17	31.85	39.46	47.01	54.51	61.97	69.38	59.30	51.40	45.11	35.80	29.30	24.55	20.97	18.17	15.95	0.00							
24	0.96	2.32	4.52	6.66	7.77	8.78	12.96	17.09	25.22	33.24	41.18	49.06	56.88	64.66	72.40	63.21	54.79	48.08	38.16	31.23	26.17	22.35	19.37	17.00	0.00							
25	1.00	2.42	4.70	6.94	8.09	9.15	13.50	17.80	26.27	34.62	42.89	51.10	59.25	67.35	75.42	67.20	58.25	51.12	40.57	33.20	27.83	23.76	20.59	8.16	0.00							
26	1.04	2.51	4.89	7.22	8.42	9.52	14.04	18.51	27.32	36.01	44.61	53.14	61.62	70.05	78.43	71.27	61.78	54.22	43.02	35.22	29.51	25.20	21.84	0.00								
28	1.12	2.71	5.27	7.77	9.06	10.25	15.12	19.93	29.42	38.78	48.04	57.23	66.36	75.44	84.47	79.65	69.04	60.59	48.08	39.36	32.98	28.16	9.22	0.00								
30	1.20	2.90	5.64	8.33	9.71	10.98	16.20	21.36	31.52	41.55	51.47	61.32	71.10	80.82	90.50	88.33	76.57	67.20	53.33	43.65	36.58	31.23	0.00									
32	1.28	3.09	6.02	8.89	10.36	11.71	17.28	22.78	33.62	44.32	54.91	65.41	75.84	86.21	96.53	97.31	84.35	74.03	58.75	48.08	40.30	5.65	0.00									
35	1.40	3.38	6.58	9.72	11.33	12.81	18.90	24.92	36.78	48.47	60.05	71.54	82.95	94.29	105.58	111.31	96.49	84.68	67.20	55.00	28.15	0.00										
40	1.61	3.87	7.53	11.11	12.95	14.64	21.61	28.48	42.03	55.40	68.63	81.76	94.80	107.77	120.67	133.51	117.88	103.46	82.10	40.16	0.00											
45	1.81	4.35	8.47	12.49	14.57	16.47	24.31	32.04	47.28	62.32	77.21	91.98	106.65	121.24	135.75	150.20	140.66	123.45	72.28	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 6 for multiple-strand factors.

TABLE 44. SPROCKET INFORMATION FOR 80 – 1.000 IN. PITCH

No. of Teeth	80 – 1 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	2.924	3.347
10	3.236	3.678
11	3.549	4.006
12	3.864	4.332
13	4.179	4.657
14	4.494	4.982
15	4.810	5.305
16	5.126	5.627
17	5.442	5.950
18	5.759	6.271
19	6.076	6.593
20	6.392	6.914
21	6.710	7.235
22	7.027	7.555
23	7.344	7.875
24	7.661	8.196
25	7.979	8.516
26	8.296	8.836
27	8.614	9.156
28	8.931	9.475
29	9.249	9.795
30	9.567	10.114
31	9.885	10.434
32	10.202	10.753
33	10.520	11.072
34	10.838	11.392
35	11.156	11.711
36	11.474	12.030
37	11.792	12.349
38	12.110	12.668
39	12.428	12.987
40	12.745	13.306
41	13.063	13.625
42	13.381	13.944
43	13.700	14.263
44	14.018	14.582
45	14.336	14.901
46	14.654	15.219
47	14.972	15.538
48	15.290	15.857
49	15.608	16.176
50	15.928	16.495
51	16.244	16.813
52	16.562	17.132
53	16.880	17.451
54	17.198	17.769
55	17.517	18.088
56	17.835	18.406
57	18.153	18.725
58	18.471	19.044
59	18.739	19.363
60	19.107	19.681
61	19.426	20.000
62	19.744	20.318
63	20.062	20.637
64	20.380	20.955
65	20.698	21.274
66	21.016	21.593
67	21.335	21.911
68	21.653	22.230
69	21.971	22.548
70	22.289	22.867
71	22.607	23.185
72	22.926	23.504
73	23.244	23.822
74	23.562	24.141
75	23.880	24.459
76	24.198	24.778
77	24.517	25.096
78	24.835	25.415
79	25.153	25.733
80	25.471	26.052
81	25.790	26.370
82	26.108	26.689
83	26.426	27.007
84	26.744	27.326
85	27.063	27.644
86	27.381	27.962
87	27.699	28.281
88	28.017	28.599
89	28.335	28.918
90	28.654	29.236
91	28.972	29.554
92	29.290	29.873
93	29.608	30.191
94	29.927	30.510
95	30.245	30.828
96	30.563	31.146
97	30.881	31.465
98	31.200	31.783
99	31.518	32.102
100	31.836	32.420
101	32.154	32.739
102	32.473	33.058
103	32.791	33.376
104	33.109	33.695
105	33.428	34.013
106	33.746	34.332
107	34.064	34.650
108	34.382	34.968
109	34.701	35.287
110	35.019	35.605
111	35.337	35.924
112	35.655	36.243
113	35.974	36.561
114	36.292	36.879
115	36.610	37.194
116	36.929	37.515
117	37.247	37.835
118	37.565	38.135
119	37.883	38.471
120	38.202	38.789

100 – 1.250 IN. PITCH

- Cut-to-length chain available.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

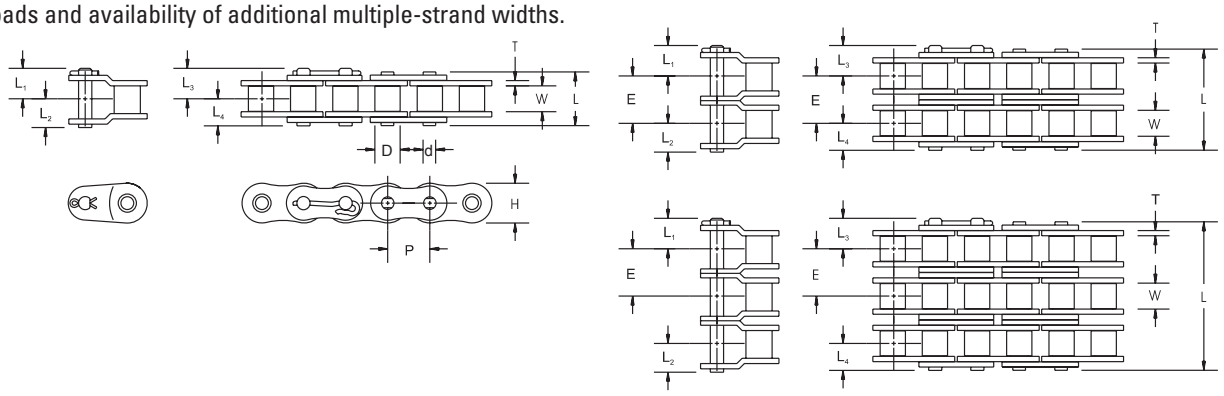


TABLE 45. 100 – 1.250 IN. PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Trans-verse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Tensile Strength (Through-Hardened Pin)	Average Weight	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4					
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.	lbs./ft.		
100-1	1.250	0.755	0.750	1.180	0.156	0.375	–	1.595	0.908	0.785	0.912	0.785	24,000	33,000	2.80	STD	STD
100-2	1.250	0.755	0.750	1.180	0.156	0.375	1.411	2.981	0.908	0.785	0.912	0.785	48,000	66,000	5.60	STD	STD
100-3	1.250	0.755	0.750	1.180	0.156	0.375	1.411	4.392	0.908	0.785	0.912	0.785	72,000	99,000	8.47	MTO	STD
100-4	1.250	0.755	0.750	1.180	0.156	0.375	1.411	5.803	0.908	0.785	0.912	0.785	96,000	132,000	11.11	MTO	STD
100-5	1.250	0.755	0.750	1.180	0.156	0.375	1.411	7.214	0.908	0.785	0.912	0.785	120,000	165,000	13.97	MTO	STD
100-6	1.250	0.755	0.750	1.180	0.156	0.375	1.411	8.625	0.908	0.785	0.912	0.785	144,000	198,000	16.72	MTO	STD
100-8	1.250	0.755	0.750	1.180	0.156	0.375	1.411	11.447	0.908	0.785	0.912	0.785	192,000	264,000	22.29	MTO	STD

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

TABLE 46. 100 – 1.250 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																														
	5	10	25	50	71	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	4500
11	0.43	0.85	2.04	3.96	5.55	5.85	7.71	11.38	15.00	22.14	29.18	36.15	43.06	40.03	32.77	27.46	23.45	20.32	17.84	14.15	11.58	9.71	8.29	7.19	6.31	5.28	4.51	3.91	0.00	0.00
12	0.47	0.92	2.22	4.32	6.05	6.38	8.41	12.41	16.36	24.15	31.83	39.44	46.98	45.61	37.33	31.29	26.71	23.16	20.32	16.13	13.20	11.06	9.45	8.19	7.19	6.02	5.14	4.46	0.00	0.00
13	0.51	1.00	2.41	4.68	6.56	6.91	9.11	13.45	17.73	26.16	34.48	42.72	50.89	51.43	42.10	35.28	30.12	26.11	22.92	18.18	14.88	12.47	10.65	9.23	8.10	6.79	5.80	0.00		
14	0.55	1.08	2.59	5.04	7.06	7.45	9.81	14.48	19.09	28.18	37.14	46.01	54.81	57.48	47.05	39.43	33.66	29.18	25.61	20.32	16.63	13.94	11.90	10.32	9.05	7.59	1.13	0.00		
15	0.59	1.15	2.78	5.41	7.57	7.98	10.51	15.52	20.45	30.19	39.79	49.30	58.72	63.75	52.18	43.73	37.33	32.36	28.40	22.54	18.45	15.46	13.20	11.44	10.04	8.42	0.00			
16	0.63	1.23	2.96	5.77	8.07	8.51	11.22	16.55	21.82	32.20	42.44	52.58	62.64	70.23	57.48	48.17	41.13	35.65	31.29	24.83	20.32	17.03	14.54	12.60	11.06	4.93	0.00			
17	0.67	1.31	3.15	6.13	8.58	9.04	11.92	17.59	23.18	34.21	45.10	55.87	66.55	76.91	62.95	52.76	45.05	39.04	34.27	27.19	22.26	18.65	15.93	13.80	12.12	0.00				
18	0.71	1.38	3.33	6.49	9.08	9.57	12.62	18.62	24.55	36.23	47.75	59.15	70.47	81.71	68.59	57.48	49.08	42.54	37.33	29.63	24.25	20.32	17.35	15.04	13.20	0.00				
19	0.75	1.46	3.52	6.85	9.59	10.10	13.32	19.66	25.91	38.24	50.40	62.44	74.38	86.25	74.38	62.34	53.22	46.13	40.49	32.13	26.30	22.04	18.82	16.31	0.56	0.00				
20	0.79	1.54	3.70	7.21	10.09	10.64	14.02	20.69	27.27	40.25	53.05	65.73	78.30	90.79	80.33	67.32	57.48	49.82	43.73	34.70	28.40	23.80	20.32	17.62	0.00					
21	0.83	1.61	3.89	7.57	10.60	11.17	14.72	21.73	28.64	42.26	55.71	69.01	82.21	95.33	86.43	72.43	61.85	53.61	47.05	37.33	30.56	25.61	21.87	8.17	0.00					
22	0.87	1.69	4.08	7.93	11.10	11.70	15.42	22.76	30.00	44.28	58.36	72.30	86.13	99.87	92.68	77.67	66.31	57.48	50.45	40.03	32.77	27.46	23.45	0.00						
23	0.91	1.77	4.26	8.29	11.60	12.23	16.12	23.79	31.36	46.29	61.01	75.59	90.04	104.41	99.07	83.02	70.89	61.44	53.93	42.79	35.03	29.35	25.06	0.00						
24	0.95	1.84	4.45	8.65	12.11	12.76	16.82	24.83	32.73	48.30	63.66	78.87	93.96	108.95	105.60	88.50	75.56	65.49	57.48	45.61	37.33	31.29	5.43	0.00						
25	0.99	1.92	4.63	9.01	12.61	13.30	17.52	25.86	34.09	50.31	66.32	82.16	97.87	113.48	112.27	94.09	80.33	69.63	61.11	48.49	39.69	33.26	0.00							
26	1.03	2.00	4.82	9.37	13.12	13.83	18.23	26.90	35.45	52.33	68.97	85.45	101.79	118.02	119.07	99.79	85.20	73.85	64.81	51.43	42.10	35.28	0.00							
28	1.11	2.15	5.19	10.09	14.13	14.89	19.63	28.97	38.18	56.35	74.27	92.02	109.62	127.10	133.07	111.52	95.22	82.53	72.43	57.48	47.05	0.00								
30	1.19	2.31	5.56	10.81	15.14	15.95	21.03	31.04	40.91	60.38	79.58	98.59	117.45	136.18	147.58	123.68	105.60	91.53	80.33	63.75	49.40	0.00								
32	1.26	2.46	5.93	11.53	16.15	17.02	22.43	33.11	43.64	64.40	84.88	105.16	125.28	145.26	162.58	136.25	116.33	100.84	88.50	70.23	8.82	0.00								
35	1.38	2.69	6.48	12.61	17.66	18.61	24.53	36.21	47.73	70.44	92.84	115.02	137.02	158.88	180.61	155.85	133.07	115.34	101.23	69.02	0.00									
40	1.58	3.07	7.41	14.41	20.18	21.27	28.04	41.38	54.54	80.50	106.11	131.45	156.60	181.58	206.41	190.42	162.58	140.92	122.68	0.00										
45	1.78	3.46	8.34	16.22	22.71	23.93	31.54	46.55	61.36	90.56	119.37	147.89	176.17	204.27	232.21	227.21	194.00	168.15	34.58	0.00										
	Type I Manual or Drip Lubrication					Type II Bath or Disc Lubrication							Type III Oil Stream Lubrication																		

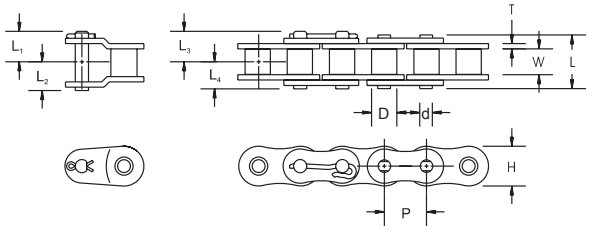
NOTE: The limiting RPM for each lubrication type is shown in the chart's shaded areas directly above the type I, II or III reference. For optimum results, it is suggested that the roller chain manufacturer be given the opportunity to evaluate the operating condition of chains in the shaded (galling range) speed area. The horsepower ratings of multiple-strand chains are greater than those for single strand chain. See table 1 on page 6 for multiple-strand factors.

TABLE 47. SPROCKET INFORMATION FOR 100 – 1.250 IN. PITCH

No. of Teeth	100 – 1 ¼ in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	3.655	4.184
10	4.045	4.597
11	4.437	5.007
12	4.830	5.415
13	5.223	5.821
14	5.617	6.227
15	6.012	6.631
16	6.407	7.034
17	6.803	7.437
18	7.198	7.839
19	7.594	8.241
20	7.991	8.642
21	8.387	9.043
22	8.783	9.444
23	9.180	9.844
24	9.577	10.245
25	9.973	10.645
26	10.370	11.045
27	10.767	11.444
28	11.164	11.844
29	11.561	12.244
30	11.958	12.643
31	12.356	13.043
32	12.753	13.442
33	13.150	13.841
34	13.547	14.240
35	13.945	14.639
36	14.342	15.038
37	14.740	15.437
38	15.157	15.840
39	15.534	16.234
40	15.932	16.633
41	16.329	17.032
42	16.727	17.430
43	17.124	17.829
44	17.522	18.227
45	17.919	18.626
46	18.317	19.024
47	18.715	19.423
48	19.112	19.821
49	19.510	20.219
50	19.908	20.618
51	20.305	21.017
52	20.703	21.415
53	21.100	21.813
54	21.498	22.212
55	21.896	22.610
56	22.293	23.008
57	22.691	23.407
58	23.089	23.805
59	23.486	24.203
60	23.884	24.601
61	24.282	25.000
62	24.680	25.397
63	25.077	25.796
64	25.475	26.194
65	25.873	26.593
66	26.271	26.991
67	26.668	27.389
68	27.066	27.787
69	27.464	28.185
70	27.862	28.584
71	28.259	28.981
72	28.657	29.380
73	29.055	29.778
74	29.453	30.176
75	29.850	30.574
76	30.248	30.973
77	30.646	31.370
78	31.044	31.769
79	31.441	32.166
80	31.839	32.565
81	32.237	32.963
82	32.635	33.361
83	33.033	33.759
84	33.430	34.158
85	33.828	34.555
86	34.226	34.953
87	34.624	35.351
88	35.022	35.749
89	35.419	36.148
90	35.817	36.545
91	36.215	36.943
92	36.613	37.341
93	37.011	37.739
94	37.408	38.138
95	37.806	38.535
96	38.204	38.933
97	38.602	39.331
98	39.000	39.729
99	39.397	40.128
100	39.795	40.525
101	40.193	40.924
102	40.591	41.322
103	40.989	41.720
104	41.387	42.118
105	41.784	42.517
106	42.182	42.915
107	42.580	43.312
108	42.978	43.710
109	43.376	44.108
110	43.774	44.506
111	44.171	44.905
112	44.569	45.304
113	44.967	45.701
114	45.365	46.099
115	45.763	46.493
116	46.161	46.893
117	46.558	47.293
118	46.956	47.691
119	47.354	48.089
120	47.752	48.486

120 – 1.500 IN. PITCH

- Cut-to-length chain available.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.



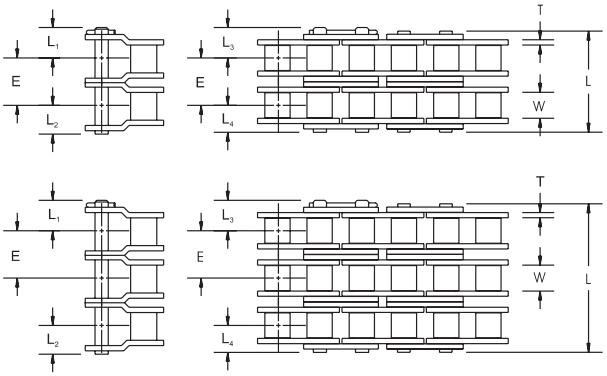


TABLE 48. 120 – 1.500 IN. PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Trans-verse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Tensile Strength (Through-Hardened Pin)	Average Weight	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4					
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.	lbs./ft.		
120-1	1.500	1.000	0.875	1.425	0.187	0.437	–	1.955	1.119	1.071	1.119	0.989	34,000	45,100	4.14	STD	STD
120-2	1.500	1.000	0.875	1.425	0.187	0.437	1.789	3.767	1.119	1.071	1.119	0.989	68,000	90,200	8.27	STD	STD
120-3	1.500	1.000	0.875	1.425	0.187	0.437	1.789	5.556	1.119	1.071	1.119	0.989	102,000	135,300	12.10	MTO	STD
120-4	1.500	1.000	0.875	1.425	0.187	0.437	1.789	7.345	1.119	1.071	1.119	0.989	136,000	180,400	16.17	MTO	STD
120-5	1.500	1.000	0.875	1.425	0.187	0.437	1.789	9.134	1.119	1.071	1.119	0.989	170,000	225,500	20.24	MTO	STD
120-6	1.500	1.000	0.875	1.425	0.187	0.437	1.789	10.923	1.119	1.071	1.119	0.989	204,000	270,600	24.20	MTO	STD
120-8	1.500	1.000	0.875	1.425	0.187	0.437	1.789	14.501	1.119	1.071	1.119	0.989	272,000	360,800	32.27	MTO	STD

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

TABLE 49. 120 – 1.500 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																												
	5	10	25	50	60	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2700	3000
11	0.73	1.43	3.44	6.69	7.97	9.88	13.02	19.22	25.33	37.38	49.27	61.04	58.37	46.32	37.91	31.77	27.13	23.51	20.64	16.38	13.40	11.23	9.59	8.31	7.30	6.11	0.00
12	0.80	1.56	3.75	7.30	8.70	10.78	14.20	20.96	27.63	40.78	53.75	66.59	66.51	52.78	43.20	36.20	30.91	26.79	23.51	18.66	15.27	12.80	10.93	9.47	8.31	6.97	0.00
13	0.87	1.69	4.07	7.91	9.42	11.67	15.39	22.71	29.93	44.18	58.23	72.14	74.99	59.51	48.71	40.82	34.85	30.21	26.51	21.04	17.22	14.43	12.32	10.68	9.37	0.00	
14	0.93	1.82	4.38	8.52	10.15	12.57	16.57	24.46	32.24	47.58	62.71	77.69	83.81	66.51	54.44	45.62	38.95	33.76	29.63	23.51	19.25	16.13	13.77	11.94	10.48	0.00	
15	1.00	1.95	4.69	9.13	10.87	13.47	17.76	26.20	34.54	50.98	67.19	83.24	92.95	73.76	60.37	50.59	43.20	37.44	32.86	26.08	21.34	17.89	15.27	13.24	0.00		
16	1.07	2.08	5.00	9.74	11.60	14.37	18.94	27.95	36.84	54.37	71.67	88.79	102.39	81.26	66.51	55.74	47.59	41.25	36.20	28.73	23.51	19.71	16.83	14.58	0.00		
17	1.13	2.21	5.32	10.34	12.32	15.27	20.12	29.70	39.14	57.77	76.15	94.34	112.14	88.99	72.84	61.04	52.12	45.18	39.65	31.46	25.75	21.58	18.43	0.00			
18	1.20	2.34	5.63	10.95	13.05	16.16	21.31	31.45	41.45	61.17	80.63	99.89	119.00	96.96	79.36	66.51	56.78	49.22	43.20	34.28	28.06	23.51	20.08	0.00			
19	1.27	2.47	5.94	11.56	13.77	17.06	22.49	33.19	43.75	64.57	85.11	105.44	125.61	105.15	86.06	72.13	61.58	53.38	46.85	37.18	30.43	25.50	0.80	0.00			
20	1.33	2.60	6.26	12.17	14.50	17.96	23.67	34.94	46.05	67.97	89.59	110.99	132.22	113.56	92.95	77.89	66.51	57.65	50.59	40.15	32.86	27.54	0.00				
21	1.40	2.73	6.57	12.78	15.22	18.86	24.86	36.69	48.36	71.37	94.07	116.54	138.83	122.18	100.00	83.81	71.56	62.02	54.44	43.20	35.36	27.46	0.00				
22	1.47	2.86	6.88	13.39	15.95	19.76	26.04	38.43	50.66	74.76	98.55	122.09	145.44	131.01	107.23	89.87	76.73	66.51	58.37	46.32	37.91	0.00					
23	1.53	2.99	7.19	14.00	16.67	20.65	27.22	40.18	52.96	78.16	103.02	127.64	152.05	140.04	114.62	96.06	82.02	71.09	62.39	49.51	40.53	0.00					
24	1.60	3.11	7.51	14.60	17.40	21.55	28.41	41.93	55.26	81.56	107.50	133.19	158.66	149.28	122.18	102.39	87.43	75.78	66.51	52.78	43.20	0.00					
25	1.67	3.24	7.82	15.21	18.12	22.45	29.59	43.67	57.57	84.96	111.98	138.74	165.27	158.70	129.90	108.86	92.95	80.56	70.71	56.11	18.37	0.00					
26	1.73	3.37	8.13	15.82	18.85	23.35	30.78	45.42	59.87	88.36	116.46	144.29	171.88	168.32	137.77	115.46	98.58	85.45	74.99	59.51	0.00						
28	1.87	3.63	8.76	17.04	20.30	25.15	33.14	48.92	64.47	95.15	125.42	155.38	185.11	188.11	153.97	129.03	110.17	95.49	83.81	66.51	0.00						
30	2.00	3.89	9.38	18.25	21.75	26.94	35.51	52.41	69.08	101.95	134.38	166.48	198.33	208.62	170.75	143.10	122.18	105.90	92.95	73.70	0.00						
32	2.14	4.15	10.01	19.47	23.20	28.74	37.88	55.90	73.68	108.75	143.34	177.58	211.55	229.83	188.11	157.65	134.60	116.67	102.39	0.00							
35	2.34	4.54	10.95	21.30	25.37	31.43	41.43	61.14	80.59	118.94	156.78	194.23	231.38	262.89	215.17	180.33	153.97	133.46	63.34	0.00							
40	2.67	5.19	12.51	24.34	28.99	35.92	47.35	69.88	92.11	135.94	179.17	221.98	264.44	306.61	262.89	220.32	176.66	42.93	0.00								
45	3.00	5.84	14.08	27.38	32.62	40.41	53.27	78.61	103.62	152.93	201.57	249.72	297.49	344.94	313.69	213.33	49.79	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 6 for multiple-strand factors.

TABLE 50. SPROCKET INFORMATION FOR 120 – 1.500 IN. PITCH

No. of Teeth	120 – 1 ½ in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	4.386	5.021
10	4.854	5.516
11	5.324	6.008
12	5.796	6.498
13	6.268	6.986
14	6.741	7.472
15	7.215	7.957
16	7.689	8.441
17	8.163	8.924
18	8.638	9.407
19	9.113	9.889
20	9.589	10.370
21	10.064	10.851
22	10.540	11.332
23	11.016	11.813
24	11.492	12.294
25	11.968	12.774
26	12.444	13.254
27	12.921	13.733
28	13.397	14.213
29	13.874	14.692
30	14.350	15.172
31	14.827	15.651
32	15.303	16.130
33	15.780	16.609
34	16.257	17.088
35	16.734	17.566
36	17.211	18.045
37	17.687	18.524
38	18.164	19.000
39	18.641	19.481
40	19.118	19.959
41	19.595	20.438
42	20.072	20.916
43	20.549	21.394
44	21.026	21.873
45	21.503	22.351
46	21.980	22.829
47	22.458	23.308
48	22.935	23.786
49	23.412	24.264
50	23.889	24.742
51	24.366	25.220
52	24.843	25.698
53	25.320	26.176
54	25.798	26.654
55	26.275	27.132
56	26.752	27.610
57	27.229	28.088
58	27.707	28.566
59	28.184	29.044
60	28.661	29.522
61	29.138	30.000
62	29.616	30.477
63	30.093	30.955
64	30.570	31.433
65	31.047	31.911
66	31.525	32.389
67	32.002	32.867
68	32.479	33.345
69	32.957	33.822
70	33.434	34.301
71	33.911	34.778
72	34.388	35.256
73	34.866	35.733
74	35.343	36.212
75	35.820	36.689
76	36.298	37.167
77	36.775	37.644
78	37.252	38.123
79	37.730	38.600
80	38.207	39.078
81	38.684	39.555
82	39.162	40.034
83	39.639	40.511
84	40.116	40.989
85	40.594	41.466
86	41.071	41.943
87	41.548	42.422
88	42.026	42.899
89	42.503	43.377
90	42.981	43.854
91	43.458	44.331
92	43.935	44.810
93	44.413	45.287
94	44.890	45.765
95	45.367	46.242
96	45.845	46.719
97	46.322	47.198
98	46.800	47.675
99	47.277	48.153
100	47.754	48.630
101	48.232	49.109
102	48.709	49.586
103	49.187	50.064
104	49.664	50.542
105	50.141	51.020
106	50.619	51.498
107	51.096	51.975`
108	51.574	52.452
109	52.051	52.930
110	52.528	53.408
111	53.006	53.886
112	53.483	54.364
113	53.960	54.841
114	54.438	55.319
115	54.915	55.792
116	55.393	56.272
117	55.870	56.752
118	56.348	57.230
119	56.825	57.707
120	57.302	58.183

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.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

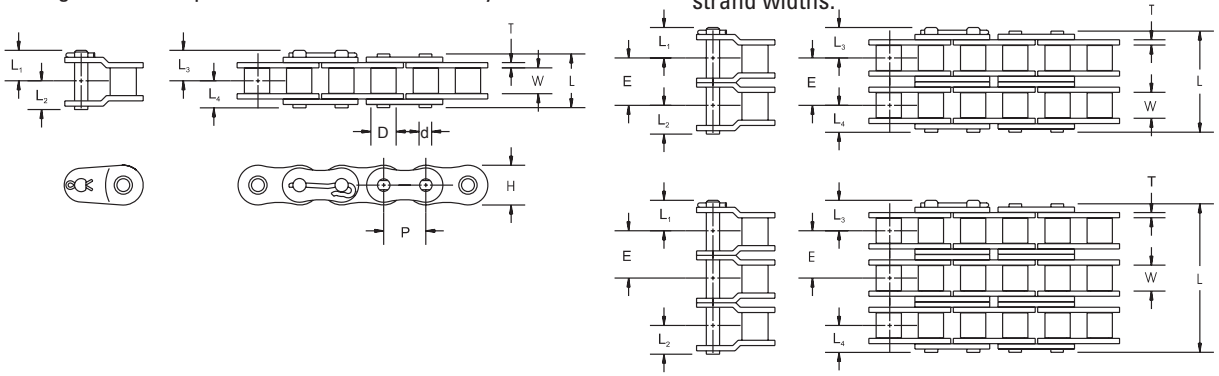


TABLE 51. 140 – 1.750 IN. PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Trans-verse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Tensile Strength (Through-Hardened Pin)	Average Weight	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4					
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.	lbs./ft.		
140-1	1.750	1.000	1.000	1.663	0.220	0.500	–	2.136	1.253	1.150	1.253	1.068	46,000	57,450	5.14	STD	STD
140-2	1.750	1.000	1.000	1.663	0.220	0.500	1.924	4.060	1.253	1.150	1.253	1.068	92,000	114,900	10.27	STD	STD
140-3	1.750	1.000	1.000	1.663	0.220	0.500	1.924	5.984	1.253	1.150	1.253	1.068	138,000	172,350	15.29	MTO	STD
140-4	1.750	1.000	1.000	1.663	0.220	0.500	1.924	7.908	1.253	1.150	1.253	1.068	184,000	229,800	20.46	MTO	STD
140-5	1.750	1.000	1.000	1.663	0.220	0.500	1.924	9.832	1.253	1.150	1.253	1.068	230,000	287,250	25.52	MTO	STD
140-6	1.750	1.000	1.000	1.663	0.220	0.500	1.924	11.756	1.253	1.150	1.253	1.068	276,000	344,700	30.69	MTO	STD
140-8	1.750	1.000	1.000	1.663	0.220	0.500	1.924	15.604	1.253	1.150	1.253	1.068	368,000	459,600	40.92	MTO	STD

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

TABLE 52. 140 – 1.750 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																										
	5	10	25	50	53	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2700
11	1.14	2.21	5.32	10.36	10.95	15.28	20.15	29.73	39.19	57.84	76.24	86.80	66.03	52.40	42.89	35.94	30.69	26.60	23.35	18.53	15.16	12.71	10.85	9.40	8.25	0.00
12	1.24	2.41	5.81	11.30	11.95	16.67	21.98	32.44	42.75	63.10	83.17	98.90	75.24	59.70	48.87	40.95	34.97	30.31	26.60	21.11	17.28	14.48	12.36	10.72	0.72	0.00
13	1.34	2.61	6.29	12.24	12.94	18.06	23.81	35.14	46.32	68.36	90.10	111.52	84.83	67.32	55.10	46.18	39.43	34.17	29.99	23.80	19.48	16.33	13.94	12.08	0.00	
14	1.45	2.81	6.78	13.18	13.94	19.45	25.64	37.84	49.88	73.61	97.03	120.21	94.81	75.24	61.58	51.61	44.06	38.19	33.52	26.60	21.77	18.25	15.58	0.00		
15	1.55	3.01	7.26	14.12	14.93	20.84	27.47	40.54	53.44	78.87	103.96	128.79	105.15	83.44	68.29	57.23	48.87	42.36	37.17	29.50	24.15	20.24	17.28	0.00		
16	1.65	3.21	7.74	15.06	15.93	22.23	29.30	43.25	57.00	84.13	110.89	137.38	115.83	91.92	75.24	63.05	53.83	46.66	40.95	32.50	26.60	22.29	0.00			
17	1.75	3.41	8.23	16.00	16.93	23.62	31.13	45.95	60.57	89.39	117.82	145.97	126.86	100.67	82.40	69.05	58.96	51.11	44.85	35.59	29.13	24.41	0.00			
18	1.86	3.61	8.71	16.95	17.92	25.01	32.97	48.65	64.13	94.65	124.75	154.55	138.22	109.68	89.77	75.24	64.24	55.68	48.87	38.78	31.74	0.00				
19	1.96	3.82	9.20	17.89	18.92	26.40	34.80	51.36	67.69	99.90	131.68	163.14	149.89	118.95	97.36	81.59	69.66	60.38	53.00	42.06	34.42	0.00				
20	2.06	4.02	9.68	18.83	19.91	27.79	36.63	54.06	71.25	105.16	138.61	171.73	161.88	128.46	105.15	88.12	75.24	65.21	57.23	45.42	35.82	0.00				
21	2.17	4.22	10.16	19.77	20.91	29.18	38.46	56.76	74.82	110.42	145.54	180.31	174.17	138.22	113.13	94.81	80.95	70.16	61.58	48.87	0.00					
22	2.27	4.42	10.65	20.71	21.90	30.57	40.29	59.47	78.38	115.68	152.47	188.90	186.76	148.21	121.30	101.66	86.80	75.24	66.03	52.40	0.00					
23	2.37	4.62	11.13	21.65	22.90	31.96	42.12	62.17	81.94	120.94	159.40	197.48	199.64	158.43	129.67	108.67	92.78	80.42	70.58	56.01	0.00					
24	2.48	4.82	11.62	22.60	23.90	33.35	43.95	64.87	85.51	126.20	166.33	206.07	212.80	168.87	138.22	115.83	98.90	85.72	75.24	37.90	0.00					
25	2.58	5.02	12.10	23.54	24.89	34.74	45.79	67.57	89.07	131.45	173.27	214.66	226.24	179.53	146.94	123.15	105.15	91.14	79.99	0.00						
26	2.68	5.22	12.58	24.48	25.89	36.13	47.62	70.28	92.63	136.71	180.20	223.24	239.95	190.41	155.85	130.61	111.52	96.66	84.83	0.00						
28	2.89	5.62	13.55	26.36	27.88	38.91	51.28	75.68	99.76	147.23	194.06	240.42	268.16	212.80	174.17	145.97	124.63	108.03	96.62	0.00						
30	3.10	6.02	14.52	28.24	29.87	41.68	54.94	81.09	106.88	157.74	207.92	257.59	297.40	236.00	193.16	161.88	138.22	119.80	18.64	0.00						
32	3.30	6.43	15.49	30.13	31.86	44.46	58.61	86.50	114.01	168.26	221.78	274.76	327.63	259.99	212.80	178.34	135.27	83.92	0.00							
35	3.61	7.03	16.94	32.95	34.85	48.63	64.10	94.60	124.70	184.03	242.57	300.52	358.00	297.40	243.41	203.99	135.27	0.00								
40	4.13	8.03	19.36	37.66	39.83	55.58	73.26	108.12	142.51	210.33	277.22	343.45	409.15	363.35	297.40	153.78	0.00									
45	4.65	9.04	21.78	42.37	44.80	62.53	82.42	121.63	160.32	236.62	311.88	386.38	460.29	433.56	221.34	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 6 for multiple-strand factors.

TABLE 53. SPROCKET INFORMATION FOR 140 – 1.750 IN. PITCH

No. of Teeth	140 – 1 3/4 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	5.117	5.858
10	5.663	6.436
11	6.212	7.010
12	6.762	7.581
13	7.313	8.150
14	7.864	8.718
15	8.417	9.283
16	8.970	9.848
17	9.524	10.411
18	10.078	10.975
19	10.632	11.537
20	11.187	12.099
21	11.742	12.660
22	12.297	13.221
23	12.852	13.782
24	13.407	14.343
25	13.963	14.903
26	14.518	15.463
27	15.074	16.022
28	15.630	16.582
29	16.186	17.141
30	16.742	17.700
31	17.298	18.259
32	17.854	18.818
33	18.410	19.377
34	18.966	19.936
35	19.523	20.494
36	20.079	21.052
37	20.635	21.611
38	21.192	22.120
39	21.748	22.728
40	22.305	23.286
41	22.861	23.844
42	23.418	23.402
43	23.974	24.960
44	24.531	25.518
45	25.087	26.076
46	25.644	26.634
47	26.201	27.192
48	26.757	27.750

No. of Teeth	140 – 1 3/4 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
49	27.314	28.308
50	27.871	28.865
51	28.427	29.423
52	28.984	29.980
53	29.541	30.538
54	30.097	31.096
55	30.654	31.654
56	31.211	32.211
57	31.768	32.769
58	32.324	33.327
59	32.881	33.885
60	33.438	34.442
61	33.995	35.000
62	34.551	35.557
63	35.108	36.114
64	35.665	36.672
65	36.222	37.229
66	36.779	37.787
67	37.336	38.345
68	37.892	38.902
69	38.449	39.459
70	39.006	40.017
71	39.563	40.574
72	40.120	41.132
73	40.677	41.689
74	41.234	42.247
75	41.790	42.803
76	42.347	43.362
77	42.904	43.918
78	43.461	44.476
79	44.018	45.033
80	44.575	45.591
81	45.132	46.148
82	45.689	46.706
83	46.246	47.262
84	46.803	47.821
85	47.359	48.377
86	47.916	48.934
87	48.473	49.492
88	49.030	50.048

No. of Teeth	140 – 1 3/4 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
89	49.587	50.607
90	50.144	51.163
91	50.701	51.720
92	51.258	52.278
93	51.814	52.834
94	52.371	53.393
95	52.928	53.949
96	53.485	54.506
97	54.042	55.064
98	54.499	55.620
99	55.156	56.179
100	55.713	56.735
101	56.270	57.294
102	56.827	57.851
103	57.384	58.408
104	57.941	58.966
105	58.498	59.523
106	59.055	60.081
107	59.612	60.637
108	60.169	61.194
109	60.726	61.751
110	61.283	62.309
111	61.840	62.867
112	62.397	63.425
113	62.954	63.982
114	63.511	64.539
115	64.068	65.090
116	64.625	65.651
117	65.182	66.210
118	65.739	66.768
119	66.296	67.325
120	66.583	67.880

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.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

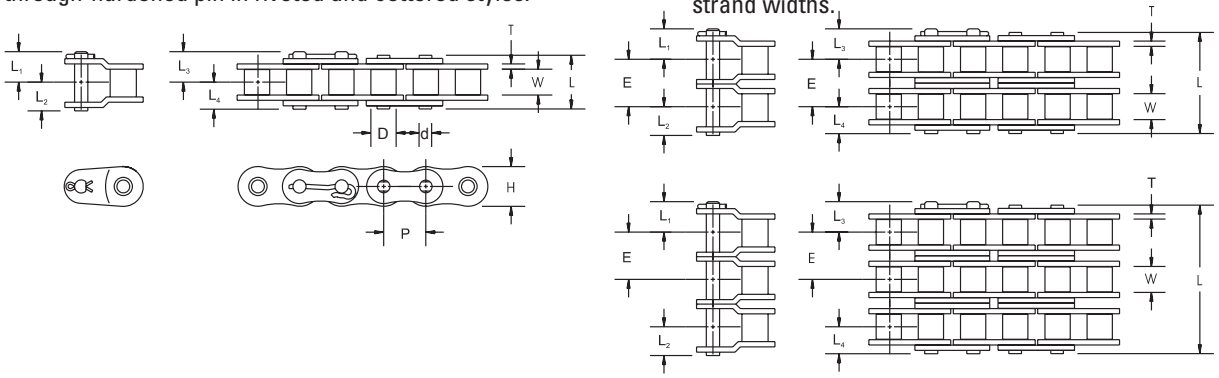


TABLE 54. 160 – 2.000 IN. PITCH CHAIN DIMENSIONS

Chain No.	Pitch	Min. Roller Link Inside Width	Roller Dia.	Link Plate		Pin Dia.	Trans-verse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Tensile Strength (Through-Hardened Pin)	Average Weight	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4					
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.	lbs./ft.		
160-1	2.000	1.250	1.126	1.899	0.252	0.563	–	2.538	1.454	1.370	1.454	1.269	58,000	72,800	6.60	STD	STD
160-2	2.000	1.250	1.126	1.899	0.252	0.563	2.305	4.843	1.454	1.370	1.454	1.269	116,000	145,600	13.21	STD	STD
160-3	2.000	1.250	1.126	1.899	0.252	0.563	2.305	7.148	1.454	1.370	1.454	1.269	174,000	218,400	20.79	MTO	STD
160-4	2.000	1.250	1.126	1.899	0.252	0.563	2.305	9.453	1.454	1.370	1.454	1.269	232,000	291,200	27.83	MTO	STD
160-5	2.000	1.250	1.126	1.899	0.252	0.563	2.305	11.758	1.454	1.370	1.454	1.269	290,000	364,000	34.76	MTO	STD
160-6	2.000	1.250	1.126	1.899	0.252	0.563	2.305	14.063	1.454	1.370	1.454	1.269	348,000	436,800	41.69	MTO	STD
160-8	2.000	1.250	1.126	1.899	0.252	0.563	2.305	18.673	1.454	1.370	1.454	1.269	406,000	582,400	55.50	MTO	STD

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

TABLE 55. 160 – 2.000 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	47	50	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400
11	0.68	1.65	3.20	7.72	14.16	15.02	22.17	29.23	43.14	56.86	83.91	110.60	96.58	73.47	58.31	47.72	39.99	34.15	29.60	25.98	20.61	16.87	14.14	12.07	10.46	0.00
12	0.75	1.80	3.50	8.43	15.45	16.39	24.19	31.88	47.06	62.03	91.54	120.66	110.05	83.72	66.44	54.38	45.57	38.91	33.73	29.60	23.49	19.22	16.11	13.76	0.00	
13	0.81	1.95	3.79	9.13	16.73	17.76	26.21	34.54	50.98	67.19	99.17	130.71	124.09	94.40	74.91	61.31	51.38	43.87	38.03	33.37	26.48	21.68	18.17	0.00		
14	0.87	2.10	4.08	9.83	18.02	19.12	28.22	37.20	54.90	72.36	106.80	140.77	138.68	105.50	83.72	68.52	57.43	49.03	42.50	37.30	29.60	24.23	20.30	0.00		
15	0.93	2.25	4.37	10.53	19.31	20.49	30.24	39.86	58.82	77.53	114.43	150.82	153.80	117.00	92.85	75.99	63.69	54.38	47.13	41.37	32.83	26.87	0.00			
16	0.99	2.40	4.66	11.23	20.59	21.85	32.25	42.51	62.74	82.70	122.05	160.88	169.43	128.89	102.28	83.72	70.16	59.90	51.92	45.57	36.16	29.60	0.00			
17	1.06	2.55	4.95	11.94	21.88	23.22	34.27	45.17	66.66	87.87	129.68	170.93	185.56	141.16	112.02	91.69	76.84	65.61	56.87	49.91	39.61	24.21	0.00			
18	1.12	2.70	5.24	12.64	23.17	24.59	36.29	47.83	70.59	93.04	137.31	180.99	202.17	153.80	122.05	99.90	83.72	71.48	61.96	54.38	43.15	0.00				
19	1.18	2.85	5.54	13.34	24.45	25.95	38.30	50.48	74.51	98.21	144.94	191.04	219.25	166.79	132.36	108.33	90.79	77.52	67.19	58.97	46.80	0.00				
20	1.24	3.00	5.83	14.04	25.74	27.32	40.32	53.14	78.43	103.38	152.57	201.10	236.79	180.13	142.95	117.00	98.05	83.72	72.57	63.69	46.79	0.00				
21	1.30	3.15	6.12	14.74	27.03	28.68	42.33	55.80	82.35	108.54	160.20	211.15	254.77	193.81	153.80	125.88	105.50	90.07	78.08	68.52	0.00					
22	1.37	3.29	6.41	15.45	28.32	30.05	44.35	58.45	86.27	113.71	167.83	221.21	273.18	207.82	164.91	134.98	113.12	96.58	83.72	73.47	0.00					
23	1.43	3.44	6.70	16.15	29.60	31.42	46.36	61.11	90.19	118.88	175.45	231.26	286.51	222.15	176.29	144.29	120.92	103.24	89.49	78.54	0.00					
24	1.49	3.59	6.99	16.85	30.89	32.78	48.38	63.77	94.11	124.05	183.08	241.32	298.97	236.79	187.91	153.80	128.89	110.05	95.39	83.72	0.00					
25	1.55	3.74	7.28	17.55	32.18	34.15	50.40	66.43	98.04	129.22	190.71	251.37	311.42	251.74	199.77	163.51	137.03	117.00	101.41	32.66	0.00					
26	1.62	3.89	7.57	18.26	33.46	35.51	52.41	69.08	101.96	134.39	198.34	261.43	323.88	267.00	211.88	173.42	145.33	124.09	107.56	0.00						
28	1.74	4.19	8.16	19.66	36.04	38.24	56.44	74.40	109.80	144.73	213.60	281.54	348.79	298.39	236.79	193.81	162.42	138.68	36.88	0.00						
30	1.86	4.49	8.74	21.06	38.61	40.98	60.48	79.71	117.64	155.06	228.85	301.65	373.71	330.92	262.61	214.94	180.13	126.46	0.00							
32	1.99	4.79	9.32	22.47	41.19	43.71	64.51	85.03	125.49	165.40	244.11	321.76	398.62	364.56	289.30	236.79	198.44	22.58	0.00							
35	2.17	5.24	10.20	24.57	45.05	47.81	70.55	93.00	137.25	180.91	266.99	351.92	435.99	417.01	330.92	270.86	112.60	0.00								
40	2.49	5.99	11.65	28.09	51.48	54.63	80.63	106.28	156.86	206.75	305.14	402.19	498.28	509.49	404.31	160.63	0.00									
45	2.80	6.74	13.11	31.60	57.92	61.46	90.71	119.57	176.47	232.59	343.28	452.47	560.56	607.95	289.10	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 6 for multiple-strand factors.

TABLE 56. SPROCKET INFORMATION FOR 160 – 2.000 IN. PITCH

No. of Teeth	160 – 2 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	5.848	6.695
10	6.472	7.355
11	7.099	8.011
12	7.727	8.664
13	8.357	9.314
14	8.988	9.963
15	9.620	10.609
16	10.252	11.255
17	10.885	11.899
18	11.518	12.543
19	12.151	13.185
20	12.785	13.828
21	13.419	14.470
22	14.053	15.110
23	14.688	15.751
24	15.323	16.392
25	15.958	17.032
26	16.593	17.671
27	17.228	18.311
28	17.863	18.951
29	18.498	19.590
30	19.134	20.229
31	19.769	20.868
32	20.405	21.506
33	21.040	22.145
34	21.676	22.784
35	22.312	23.422
36	22.947	24.060
37	23.583	24.698
38	24.219	25.340
39	24.855	25.975
40	25.491	26.613
41	26.127	27.251
42	26.763	27.888
43	27.399	28.526
44	28.035	29.164
45	28.671	29.802
46	29.307	30.439
47	29.943	31.077
48	30.580	31.714

No. of Teeth	160 – 2 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
49	31.216	32.352
50	31.852	32.989
51	32.488	33.626
52	33.124	34.263
53	33.761	34.901
54	34.397	35.539
55	35.033	36.176
56	35.669	36.813
57	36.306	37.451
58	36.942	38.088
59	37.578	38.725
60	38.215	39.362
61	38.851	39.999
62	39.487	40.636
63	40.124	41.274
64	40.760	41.911
65	41.396	42.548
66	42.033	43.185
67	42.669	43.822
68	43.306	44.459
69	43.942	45.096
70	44.578	45.734
71	45.215	46.370
72	45.851	47.008
73	46.488	47.644
74	47.124	48.282
75	47.760	48.918
76	48.397	49.556
77	49.033	50.192
78	49.670	50.830
79	50.306	51.466
80	50.943	52.104
81	51.579	52.740
82	52.216	53.378
83	52.852	54.014
84	53.489	54.652
85	54.125	55.288
86	54.761	55.924
87	55.398	55.562
88	56.034	57.198

No. of Teeth	160 – 2 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
89	56.671	57.836
90	57.307	58.472
91	57.944	59.108
92	58.580	59.746
93	59.216	60.382
94	59.853	61.020
95	60.489	61.656
96	61.126	62.292
97	61.762	62.930
98	62.399	63.566
99	63.035	64.204
100	63.672	64.840
101	64.309	65.478
102	64.945	66.115
103	65.582	66.752
104	66.218	67.389
105	66.855	68.027
106	67.492	68.664
107	68.128	69.299
108	68.765	69.936
109	69.401	70.573
110	70.038	71.210
111	70.674	71.848
112	71.311	72.486
113	71.948	73.122
114	72.584	73.759
115	73.220	74.388
116	73.857	75.030
117	74.494	75.669
118	75.130	76.306
119	75.767	76.943
120	76.403	77.577

180 – 2.250 IN. PITCH

- Cut-to-length chain available.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

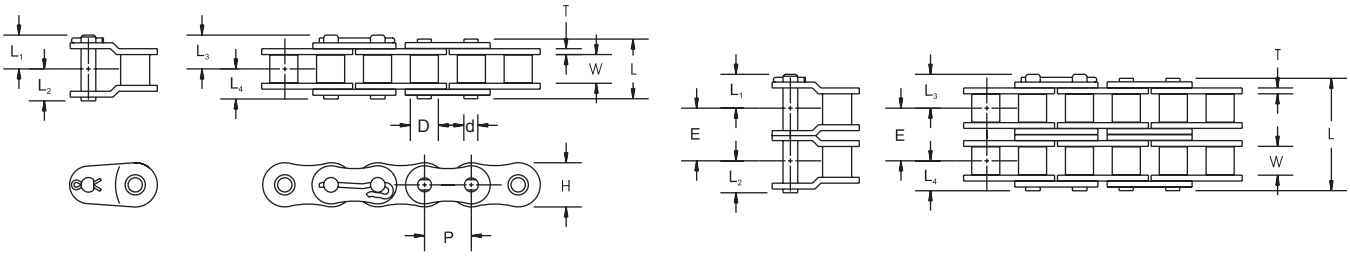


TABLE 57. 180 – 2.250 IN. PITCH CHAIN DIMENSIONS

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	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4				
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.		
180-1	2.250	1.400	1.406	2.132	0.281	0.687	–	2.780	1.561	1.390	1.561	1.390	95,000	9.10	STD	STD
180-2	2.250	1.400	1.406	2.132	0.281	0.687	2.592	5.372	1.561	1.390	1.561	1.390	190,000	18.10	STD	STD
180-3	2.250	1.400	1.406	2.132	0.281	0.687	2.592	7.964	1.561	1.390	1.561	1.390	285,000	27.01	MTO	MTO
180-4	2.250	1.400	1.406	2.132	0.281	0.687	2.592	10.556	1.561	1.390	1.561	1.390	380,000	35.91	MTO	MTO

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

TABLE 58. 180 – 2.250 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	43	50	75	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
11	0.94	2.27	4.43	10.66	17.95	20.75	30.62	40.36	59.56	78.51	115.87	148.32	106.13	80.73	64.07	52.44	43.95	37.52	32.52	28.54	22.65	18.54	15.54	0.00
12	1.03	2.48	4.83	11.63	19.58	22.63	33.40	44.03	64.98	85.64	126.40	166.61	120.92	91.99	73.00	59.75	50.07	42.75	37.06	32.52	25.81	21.12	17.70	0.00
13	1.12	2.69	5.23	12.60	21.21	24.52	36.19	47.70	70.39	92.78	136.93	180.49	136.35	103.72	82.31	67.37	56.46	48.21	41.79	36.67	29.10	23.82	0.00	
14	1.20	2.90	5.63	13.57	22.84	26.40	38.97	51.36	75.81	99.92	147.47	194.37	152.38	115.92	91.99	75.29	63.10	53.87	46.70	40.98	32.52	26.62	0.00	
15	1.29	3.10	6.03	14.54	24.48	28.29	41.75	55.03	81.22	107.06	158.00	208.26	169.00	128.56	102.02	83.50	69.98	59.75	51.79	45.45	36.07	0.00		
16	1.37	3.31	6.44	15.51	26.11	30.18	44.54	58.70	86.64	114.19	168.53	222.14	186.17	141.63	112.39	91.99	77.09	65.82	57.05	50.07	39.74	0.00		
17	1.46	3.52	6.84	16.48	27.74	32.06	47.32	62.37	92.05	121.33	179.07	236.02	203.90	155.11	123.09	100.75	84.43	72.09	62.49	54.84	43.52	0.00		
18	1.54	3.72	7.24	17.45	29.37	33.95	50.10	66.04	97.47	128.47	189.60	249.91	222.15	169.00	134.11	109.77	91.99	78.54	68.08	59.75	0.00			
19	1.63	3.93	7.64	18.42	31.00	35.83	52.89	69.71	102.88	135.60	200.13	263.79	240.92	183.27	145.44	119.04	99.76	85.18	73.83	64.80	0.00			
20	1.72	4.14	8.05	19.39	32.64	37.72	55.67	73.38	108.30	142.74	210.67	277.68	260.19	197.93	157.07	128.56	107.74	91.99	79.74	69.98	0.00			
21	1.80	4.34	8.45	20.36	34.27	39.61	58.45	77.05	113.71	149.88	221.20	291.56	279.94	212.96	169.00	138.32	115.92	98.97	85.79	75.29	0.00			
22	1.89	4.55	8.85	21.33	35.90	41.49	61.24	80.71	119.12	157.02	231.73	305.44	300.17	228.35	181.21	148.32	124.30	106.13	91.99	0.00				
23	1.97	4.76	9.25	22.30	37.53	43.38	64.02	84.38	124.54	164.15	242.27	319.33	320.87	244.10	193.70	158.54	132.87	113.45	98.33	0.00				
24	2.06	4.96	9.65	23.27	39.16	45.26	66.80	88.05	129.95	171.29	252.80	333.21	342.02	260.19	206.47	169.00	141.63	120.92	40.34	0.00				
25	2.15	5.17	10.06	24.24	40.79	47.15	69.59	91.72	135.37	178.43	263.33	347.10	363.62	276.62	219.51	179.67	150.57	128.56	0.00					
26	2.23	5.38	10.46	25.21	42.43	49.04	72.37	95.39	140.78	185.56	273.87	360.98	385.66	293.38	232.81	190.55	159.69	122.43	0.00					
28	2.40	5.79	11.26	27.15	45.69	52.81	77.94	102.73	151.61	199.84	294.93	388.75	431.00	327.87	260.19	212.96	178.47	0.00						
30	2.57	6.20	12.07	29.09	48.95	56.58	83.50	110.07	162.44	214.11	316.00	416.51	477.99	363.62	288.56	236.18	128.92	0.00						
32	2.75	6.62	12.87	31.02	52.22	60.35	89.07	117.40	173.27	228.39	337.07	444.28	526.58	400.58	317.89	260.19	0.00							
35	3.00	7.24	14.08	33.93	57.11	66.01	97.42	128.41	189.52	249.80	368.67	485.93	602.34	458.22	363.62	142.51	0.00							
40	3.43	8.27	16.09	38.78	65.27	75.44	111.34	146.75	216.59	285.48	421.34	555.35	688.02	559.83	254.20	0.00								
45	3.86	9.31	18.10	43.63	73.43	84.87	125.26	165.10	243.66	321.17	474.00	624.77	774.03	480.00	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 6 for multiple-strand factors.

TABLE 59. SPROCKET INFORMATION FOR 180 – 2.250 IN. PITCH

No. of Teeth	180 – 2 ¼ in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
11	7.986	9.010
12	8.693	9.750
13	9.402	10.480
14	10.111	11.210
15	10.822	11.940
16	11.533	12.660
17	12.245	13.390
18	12.957	14.110
19	13.670	14.830
20	14.383	15.560
21	15.096	16.280
22	15.810	17.000
23	16.524	17.720
24	17.238	18.440
25	17.952	19.160
28	20.096	21.320
30	21.525	22.760
35	25.101	26.350
40	28.677	29.940
45	32.255	33.530
54	38.696	39.980
60	42.922	44.280

200 – 2.500 IN. PITCH

- Cut-to-length chain available.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

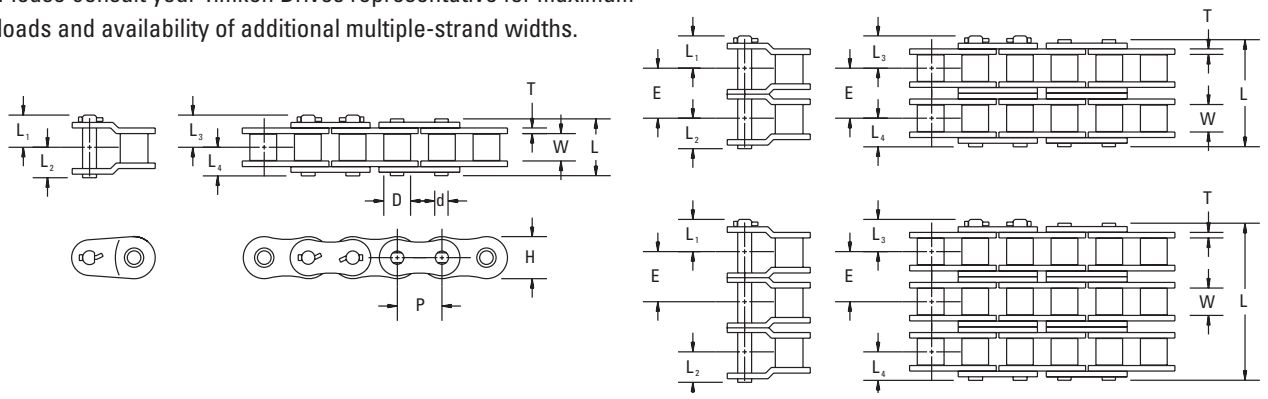


TABLE 60. 200 – 2.500 IN. PITCH CHAIN DIMENSIONS

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	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4				
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.		
200-1	2.500	1.500	1.562	2.312	0.312	0.781	–	3.088	1.889	1.544	1.889	1.544	100,000	10.90	STD	STD
200-2	2.500	1.500	1.562	2.312	0.312	0.781	2.817	5.905	1.889	1.544	1.889	1.544	200,000	21.00	STD	STD
200-3	2.500	1.500	1.562	2.312	0.312	0.781	2.817	8.722	1.889	1.544	1.889	1.544	300,000	31.50	MTO	STD
200-4	2.500	1.500	1.562	2.312	0.312	0.781	2.817	11.539	1.889	1.544	1.889	1.544	400,000	42.10	MTO	MTO

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

TABLE 61. 200 – 2.500 IN. PITCH HORSEPOWER TABLE

No. of Teeth	Revolutions Per Minute – Small Sprocket																								
	2	5	10	25	40	50	75	100	150	200	250	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800
11	1.25	3.02	5.88	14.16	22.23	27.54	40.65	53.58	79.08	104.24	129.14	153.84	161.36	115.46	87.83	69.70	57.05	47.81	40.82	35.38	31.05	24.64	20.17	0.00
12	1.37	3.29	6.41	15.45	24.25	30.05	44.35	58.45	86.27	113.71	140.88	167.82	183.86	131.56	100.08	79.42	65.00	54.48	46.51	40.32	35.38	28.08	22.98	0.00
13	1.48	3.57	6.94	16.73	26.28	32.55	48.04	63.33	93.46	123.19	152.62	181.81	207.31	148.34	112.85	89.55	73.30	61.43	52.45	45.46	39.90	31.66	0.00	
14	1.59	3.84	7.48	18.02	28.30	35.06	51.74	68.20	100.65	132.66	164.36	195.79	231.69	165.78	126.11	100.08	81.91	68.65	58.61	50.80	44.59	35.38	0.00	
15	1.71	4.12	8.01	19.31	30.32	37.56	55.43	73.07	107.84	142.14	176.09	209.78	256.95	183.86	139.87	110.99	90.85	76.13	65.00	56.34	49.45	37.46	0.00	
16	1.82	4.39	8.55	20.60	32.34	40.06	59.13	77.94	115.03	151.61	187.83	223.76	283.07	202.55	154.08	122.27	100.08	83.87	71.61	62.07	54.48	0.00		
17	1.94	4.67	9.08	21.88	34.36	42.57	62.83	82.81	122.22	161.09	199.57	237.75	310.02	221.83	168.75	133.91	109.61	91.86	78.43	67.98	59.66	0.00		
18	2.05	4.94	9.61	23.17	36.38	45.07	66.52	87.68	129.41	170.57	211.31	251.73	331.81	241.69	183.86	145.90	119.42	100.08	85.45	74.07	65.00			
19	2.16	5.22	10.15	24.46	38.40	47.58	70.22	92.55	136.59	180.04	223.05	265.72	350.24	262.11	199.39	158.23	129.51	108.53	92.67	80.32	2.22			
20	2.28	5.49	10.68	25.74	40.42	50.08	73.91	97.42	143.78	189.52	234.79	279.70	368.67	283.07	215.34	170.88	139.87	117.21	100.08	86.75	0.00			
21	2.39	5.77	11.22	27.03	42.45	52.59	77.61	102.29	150.97	198.99	246.53	293.69	387.11	304.56	231.69	183.86	150.49	126.11	107.68	32.68	0.00			
22	2.51	6.04	11.75	28.32	44.47	55.09	81.30	107.17	158.16	208.47	258.27	307.68	405.54	326.57	248.43	197.15	161.36	135.23	115.46	0.00				
23	2.62	6.31	12.28	29.61	46.49	57.59	85.00	112.04	165.35	217.95	270.01	321.66	423.97	349.09	265.56	210.74	172.49	144.55	104.48	0.00				
24	2.73	6.59	12.82	30.89	48.51	60.10	88.70	116.91	172.54	227.42	281.75	335.65	442.41	372.10	283.07	224.63	183.86	154.08	21.71	0.00				
25	2.85	6.86	13.35	32.18	50.53	62.60	92.39	121.78	179.73	236.90	293.49	349.63	460.84	395.60	300.94	238.82	195.47	163.81	0.00					
26	2.96	7.14	13.89	33.47	52.55	65.11	96.09	126.65	186.92	246.37	305.23	363.62	479.27	419.57	319.18	253.29	207.31	151.14	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 6 for multiple-strand factors.

TABLE 62. SPROCKET INFORMATION FOR 200 – 2.500 IN. PITCH

No. of Teeth	200 – 2 ½ in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	7.310	8.367
10	8.090	9.195
11	8.872	10.015
12	9.660	10.830
13	10.447	11.642
14	11.235	12.455
15	12.025	13.262
16	12.815	14.067
17	13.605	14.872
18	14.397	15.677
19	15.190	16.482
20	15.982	17.285
21	16.775	18.087
22	17.567	18.887
23	18.360	19.687
24	19.152	20.490
25	19.947	21.290
26	20.740	22.090
27	21.535	22.890
28	22.330	23.687
29	23.122	24.487
30	23.917	25.285
31	24.712	26.085
32	25.505	26.882
33	26.300	27.680
34	27.095	28.480
35	27.890	29.277
36	28.685	30.075
37	29.480	30.872
38	30.275	31.670
39	31.070	32.467
40	31.865	33.265
41	32.660	34.062
42	33.455	34.860
43	34.250	35.657
44	35.045	36.455
45	35.840	37.252
46	36.635	38.047
47	37.430	38.845
48	38.225	39.642
49	39.020	40.440
50	39.815	41.237
51	40.610	42.032
52	41.405	42.830
53	42.200	43.627
54	42.996	44.422
55	43.792	45.220
56	44.587	46.015
57	45.382	46.812
58	46.177	47.610
59	46.972	48.407
60	47.767	49.202
61	48.565	50.000
62	49.360	50.795
63	50.155	51.592
64	50.950	52.387
65	51.745	53.185
66	52.540	53.982
67	53.337	54.777
68	54.132	55.575
69	54.927	56.370
70	55.722	57.167
71	56.517	57.962
72	57.315	58.760
73	58.110	59.555
74	58.905	60.352
75	59.700	61.147
76	60.495	61.945
77	61.292	62.741
78	62.087	63.537
79	62.882	64.332
80	63.677	65.130
81	64.475	65.925
82	65.270	66.722
83	66.065	67.517
84	66.860	68.315
85	67.657	69.110
86	68.452	69.905
87	69.247	70.702
88	70.042	71.497
89	70.837	72.295
90	71.635	73.090
91	72.430	73.885
92	73.225	74.682
93	74.020	75.477
94	74.815	76.275
95	75.612	77.070
96	76.407	77.865
97	77.202	78.662
98	77.997	79.457
99	78.795	80.255
100	79.590	81.050
101	80.385	81.847
102	81.182	82.642
103	81.977	83.440
104	82.772	84.235
105	83.567	85.030
106	84.365	85.827
107	85.160	86.622
108	85.955	87.420
109	86.752	88.215
110	87.547	89.012
111	88.342	89.807
112	89.137	90.602
113	89.935	91.400
114	90.730	92.195
115	91.525	92.992
116	92.322	93.787
117	93.117	94.582
118	93.912	95.380
119	94.707	96.175
120	95.502	96.970

240 – 3.000 IN. PITCH

- Cut-to-length chain available.
- Please consult your Timken Drives representative for maximum loads and availability of additional multiple-strand widths.

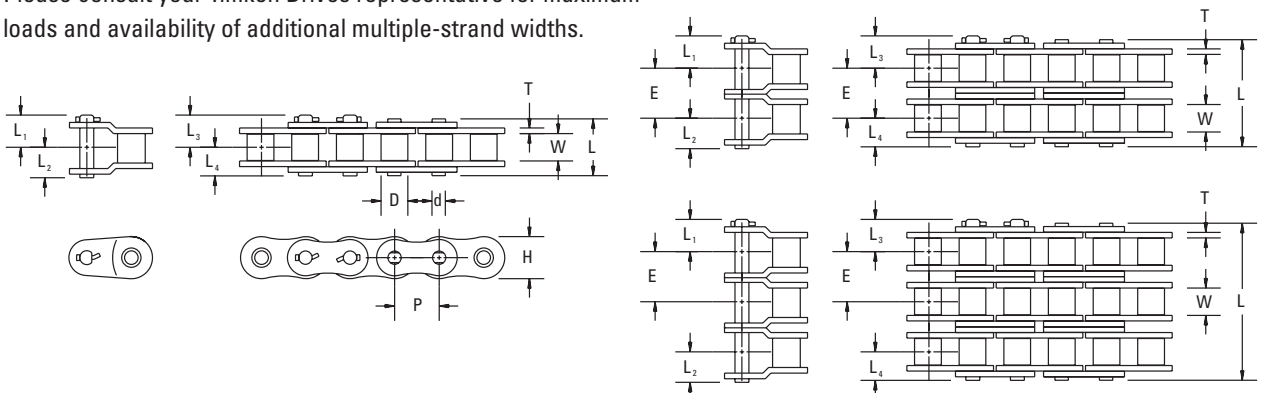


TABLE 63. 240 – 3.000 IN. PITCH CHAIN DIMENSIONS

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	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4				
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.		
240-1	3.000	1.864	1.875	2.812	0.375	0.937	–	3.708	2.212	1.854	2.212	1.854	152,200	16.40	STD	STD
240-2	3.000	1.864	1.875	2.812	0.375	0.937	3.458	7.166	2.212	1.854	2.212	1.854	304,400	32.20	MTO	STD
240-3	3.000	1.864	1.875	2.812	0.375	0.937	3.458	2.780	2.212	1.854	2.212	1.854	456,600	49.40	MTO	STD
240-4	3.000	1.864	1.875	2.812	0.375	0.937	3.458	7.166	2.212	1.854	2.212	1.854	608,800	65.70	MTO	STD

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

TABLE 64. 240 – 3.000 IN. PITCH HORSEPOWER TABLE

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 6 for multiple-strand factors.

TABLE 65. SPROCKET INFORMATION FOR 240 – 3.000 IN. PITCH

No. of Teeth	240 – 3 in. Pitch	
	Pitch Dia.	O.D.
	in.	in.
9	8.771	10.044
10	9.708	11.034
11	10.649	12.018
12	11.591	12.996
13	12.536	13.971
14	13.482	14.943
15	14.429	15.912
16	15.377	16.881
17	16.327	17.847
18	17.276	18.813
19	18.227	19.779
20	19.177	20.742
21	20.129	21.705
22	21.080	22.665
23	22.032	23.628
24	22.984	24.588
25	23.936	25.548
26	24.889	26.508
27	25.841	27.468
28	26.794	28.425
29	27.747	29.385
30	28.700	30.342
31	29.654	31.302
32	30.607	32.259
33	31.560	33.219
34	32.514	34.176
35	33.467	35.133
36	34.421	36.090
37	35.375	37.047
38	36.324	38.007
39	37.283	38.961
40	38.237	39.918
41	39.191	40.875
42	40.145	41.832
43	41.099	42.789
44	42.053	43.746
45	43.007	44.703
46	43.961	45.657
47	44.915	46.614
48	45.869	47.571
49	46.824	48.528
50	47.778	49.485
51	48.732	50.439
52	49.687	51.396
53	50.641	52.353
54	51.595	53.307
55	52.550	54.264
56	53.504	55.221
57	54.458	56.175
58	55.413	57.132
59	56.368	58.089
60	57.322	59.043
61	58.277	60.000
62	59.231	60.954
63	60.185	61.911
64	61.140	62.868
65	62.095	63.822
66	63.049	64.779
67	64.004	65.733
68	64.958	66.690
69	65.913	67.644
70	66.868	68.601
71	67.822	69.555
72	68.777	70.512
73	69.731	71.466
74	70.686	72.423
75	71.641	73.377
76	72.595	74.334
77	73.550	75.288
78	74.505	76.245
79	75.459	77.199
80	76.414	78.156
81	77.369	79.110
82	78.323	80.067
83	79.278	81.021
84	80.233	81.978
85	81.188	82.932
86	82.142	83.886
87	83.097	84.843
88	84.052	85.797
89	85.006	86.754
90	85.961	87.708
91	86.916	88.665
92	87.871	89.619
93	88.825	90.576
94	89.780	91.530
95	90.735	92.484
96	91.690	93.441
97	92.645	94.395
98	93.599	95.352
99	94.554	96.306
100	95.509	97.263
101	96.464	98.217
102	97.418	99.171
103	98.373	100.128
104	99.328	101.082
105	100.283	102.039
106	101.238	102.993
107	102.192	103.947
108	103.147	104.904
109	104.102	105.858
110	105.056	106.815
111	106.011	107.769
112	106.967	108.723
113	107.921	109.680
114	108.876	110.634
115	109.831	111.591
116	110.786	112.545
117	111.740	113.499
118	112.695	114.456
119	113.650	115.410
120	114.605	116.364

HEAVY-SERIES ROLLER CHAIN PRODUCTS

Heavy-series chains are produced with thicker link plates than standard ANSI chains designed for higher fatigue strengths and increased wear life. These chains are designed to be used in heavy shock loading applications like skid steers, drilling mixers, pallatizers, etc.

HEAVY-SERIES ROLLER CHAIN PRODUCTS

HR RIVETED SERIES CHAIN – CASE-HARDENED PINS

All HR series chains are designed with a wide waist contour and a heavy side plate to improve stress distribution, increase fatigue strength and reduce vibration. All HR riveted series chains (sizes 80HR – 120H) contain ballized plates to provide increased bearing area and press fits. This special ballizing process is after heat treatment which is a key to achieving the maximum residual compressive stress. This improves fatigue life and increases working load capacities.

- 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.
- Please consult your Timken Drives representative for maximum allowable loads.

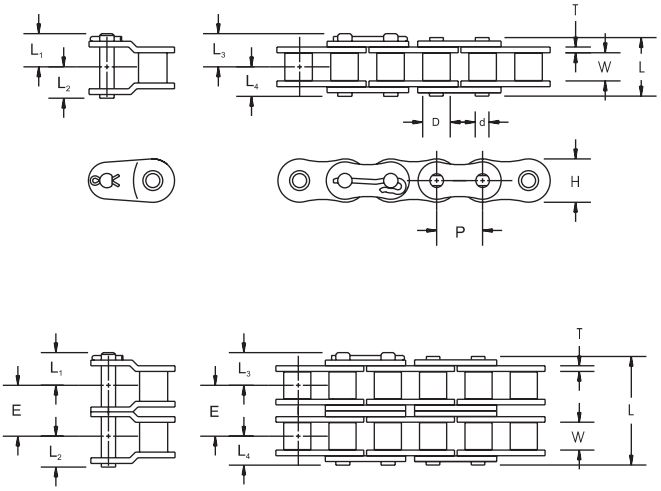


TABLE 66. HR RIVETED CHAIN DIMENSIONS

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Trans-verse Pitch	Pin					Average Tensile Strength (Case-Hardened Pin)	Average Weight	Riveted
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4			
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.	
60H-1R	0.750	0.500	0.469	0.709	0.125	0.234	–	1.140	0.650	0.570	0.650	0.570	8,500	1.265	STD
60H-2R	0.750	0.500	0.469	0.709	0.125	0.234	1.028	2.160	0.650	0.570	0.650	0.570	17,000	2.637	STD
60H-3R	0.750	0.500	0.469	0.709	0.125	0.234	1.028	3.196	0.650	0.570	0.650	0.570	25,500	4.010	MTO
80H-1R	1.000	0.625	0.625	0.949	0.156	0.312	–	1.413	0.839	0.707	0.839	0.707	14,500	2.462	STD
80H-2R	1.000	0.625	0.625	0.949	0.156	0.312	1.283	2.694	0.839	0.707	0.839	0.707	29,000	4.344	STD
80H-3R	1.000	0.625	0.625	0.949	0.156	0.312	1.283	3.977	0.839	0.707	0.839	0.707	43,500	6.569	MTO
100H-1R	1.250	0.750	0.750	1.186	0.187	0.375	–	1.725	0.993	0.863	0.993	0.863	24,000	3.223	STD
100H-2R	1.250	0.750	0.750	1.186	0.187	0.375	1.539	3.260	0.993	0.863	0.993	0.863	48,000	6.356	STD
100H-3R	1.250	0.750	0.750	1.186	0.187	0.375	1.539	4.799	0.993	0.863	0.993	0.863	72,000	9.579	MTO
120H-1R	1.500	1.000	0.875	1.425	0.219	0.437	–	2.085	1.186	1.043	1.186	1.043	34,000	4.614	STD
120H-2R	1.500	1.000	0.875	1.425	0.219	0.437	1.924	4.010	1.186	1.043	1.186	1.043	68,000	9.161	STD
120H-3R	1.500	1.000	0.875	1.425	0.219	0.437	1.924	5.934	1.186	1.043	1.186	1.043	102,000	13.650	MTO

NOTE: Dimensions subject to change. Contact your Timken 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 applications.
- 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 heights 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 chains have the same dimensions as ANSI-standard heavy-series chains.

- 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 tensile strength/working load. It's also a direct replacement for 200H chain.
- Please consult your Timken Drives representative for maximum allowable loads.

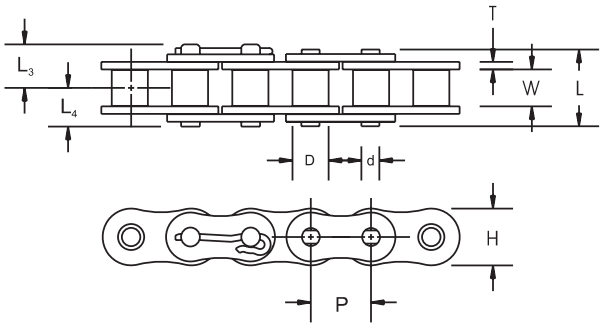
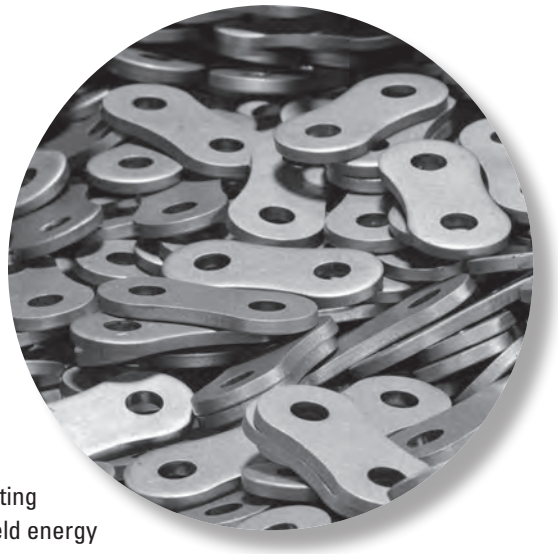


TABLE 67. HZ SERIES CHAIN DIMENSIONS

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_3	L_4		
		in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
60HZ-1R	0.750	0.500	0.469	0.709	0.125	0.234	1.028	1.140	0.650	0.570	12,500	1.265
80HZ-1R	1.000	0.625	0.625	0.949	0.156	0.312	1.283	1.413	0.839	0.707	21,500	2.243
100HZ-1R	1.250	0.750	0.750	1.186	0.187	0.375	1.539	1.725	0.993	0.863	33,000	3.277
120HZ-1R	1.500	1.000	0.875	1.425	0.219	0.437	1.925	2.085	1.186	1.043	45,100	4.605
140HZ-1R	1.750	1.000	1.000	1.663	0.250	0.500	2.055	2.260	1.313	1.130	57,450	5.801
160HZ-1R	2.000	1.250	1.126	1.899	0.283	0.563	2.437	2.673	1.520	1.339	72,800	7.548
180HZ-1R	2.250	1.400	1.406	2.132	0.312	0.687	2.716	2.968	1.641	1.484	95,000	10.250
264HZ-1R	2.500	1.490	1.562	2.375	0.375	0.875	3.083	3.344	2.015	1.672	135,000	12.400
240HZ-1R	3.000	1.875	1.875	2.850	0.500	0.937	3.984	4.265	2.453	2.157	217,000	19.570

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



PREMIUM OIL FIELD ROLLER CHAIN PRODUCTS

Roller chains used in the oil and natural gas industries are subjected to some of the highest loads and harshest operating conditions. We produce our oil field energy roller chains with the same attention to detail that goes into all of our products. But these chains also are subjected to performance testing in accordance with the latest American Petroleum Institute (API) Specification 7F.

The quality of our API roller chain is demonstrated by examining the label on our box, which carries the API monogram. Only those companies which have established API-approved-and-audited quality systems are authorized to display this symbol of excellence.

PREMIUM 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. 31.
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. 32.
Wide-wasted 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. 33.
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. 34. 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. 35. 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 chains are 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 the roller chains 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.

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

TYPICAL CHAIN LOCATIONS ON AN OIL RIG

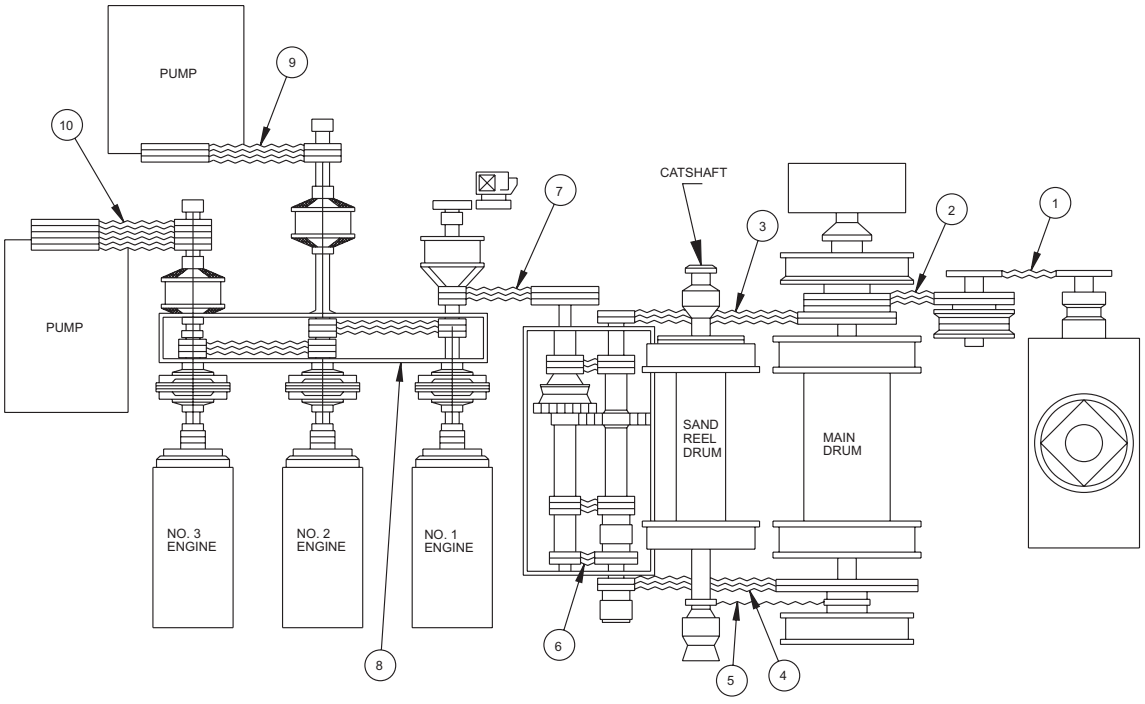


TABLE 69. SAMPLE CHAIN DRIVE SELECTION GUIDE

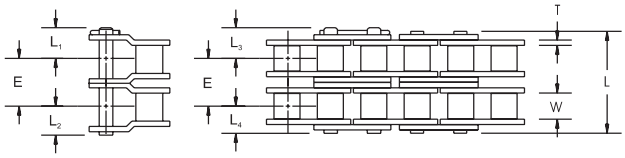
Chain Drive	Rig Horsepower						
	4000	3000	2000	1500	1000	750	500
1. Rotary Table	160-2	160-2 264-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1
2. Rotary Countershaft	160-2	160-2 264-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1
3. High Drum	240-3	264-3	160-4	160-3	140-3 160-2	160-2 140-2	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

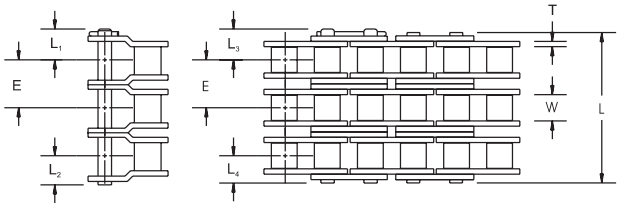
NOTE: Size 264 roller chain provides greater tensile strength/working load and replaces 200H chain.

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 Timken 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.





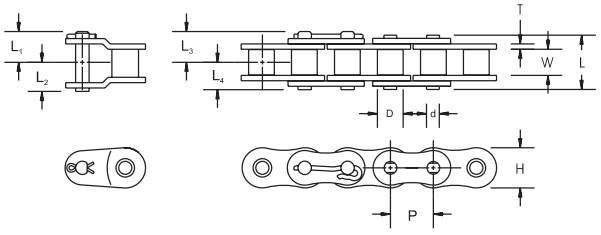


TABLE 70. API 7F OIL FIELD ROLLER CHAIN PRODUCTS

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	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4				
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbf.	lbs./ft.		
80-1 through 80-8																
80-1	1.000	0.627	0.625	0.943	0.125	0.313	–	1.283	0.768	0.638	0.857	0.642	21,500	1.87	STD	STD
80-2	1.000	0.627	0.625	0.943	0.125	0.313	1.155	2.439	0.768	0.638	0.857	0.642	43,000	3.74	STD	STD
80-3	1.000	0.627	0.625	0.943	0.125	0.313	1.155	3.594	0.768	0.638	0.857	0.642	64,500	5.60	STD	STD
80-4	1.000	0.627	0.625	0.943	0.125	0.313	1.155	4.749	0.768	0.638	0.857	0.642	86,000	7.44	MTO	STD
80-5	1.000	0.627	0.625	0.943	0.125	0.313	1.155	5.904	0.768	0.638	0.857	0.642	107,500	9.03	MTO	STD
80-6	1.000	0.627	0.625	0.943	0.125	0.313	1.155	7.059	0.768	0.638	0.857	0.642	129,000	10.82	MTO	STD
80-8	1.000	0.627	0.625	0.943	0.125	0.313	1.155	9.369	0.768	0.638	0.857	0.642	172,000	14.43	MTO	STD
100-1 through 100-8																
100-1	1.250	0.755	0.750	1.180	0.156	0.375	–	1.595	0.908	0.785	0.912	0.785	33,000	2.80	STD	STD
100-2	1.250	0.755	0.750	1.180	0.156	0.375	1.411	2.981	0.908	0.785	0.912	0.785	66,000	5.60	STD	STD
100-3	1.250	0.755	0.750	1.180	0.156	0.375	1.411	4.392	0.908	0.785	0.912	0.785	99,000	8.47	MTO	STD
100-4	1.250	0.755	0.750	1.180	0.156	0.375	1.411	5.803	0.908	0.785	0.912	0.785	132,000	11.11	MTO	STD
100-5	1.250	0.755	0.750	1.180	0.156	0.375	1.411	7.214	0.908	0.785	0.912	0.785	165,000	13.97	MTO	STD
100-6	1.250	0.755	0.750	1.180	0.156	0.375	1.411	8.625	0.908	0.785	0.912	0.785	198,000	16.72	MTO	STD
100-8	1.250	0.755	0.750	1.180	0.156	0.375	1.411	11.447	0.908	0.785	0.912	0.785	264,000	22.29	MTO	STD

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

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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	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4				
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbf.	lbs./ft.		
120-1 through 120-8																
120-1	1.500	1.000	0.875	1.425	0.187	0.437	–	1.955	1.119	1.071	1.119	0.989	45,100	4.14	STD	STD
120-2	1.500	1.000	0.875	1.425	0.187	0.437	1.789	3.767	1.119	1.071	1.119	0.989	90,200	8.27	STD	STD
120-3	1.500	1.000	0.875	1.425	0.187	0.437	1.789	5.556	1.119	1.071	1.119	0.989	135,300	12.10	MTO	STD
120-4	1.500	1.000	0.875	1.425	0.187	0.437	1.789	7.345	1.119	1.071	1.119	0.989	180,400	16.17	MTO	STD
120-5	1.500	1.000	0.875	1.425	0.187	0.437	1.789	9.134	1.119	1.071	1.119	0.989	225,500	20.24	MTO	STD
120-6	1.500	1.000	0.875	1.425	0.187	0.437	1.789	10.923	1.119	1.071	1.119	0.989	270,600	24.20	MTO	STD
120-8	1.500	1.000	0.875	1.425	0.187	0.437	1.789	14.501	1.119	1.071	1.119	0.989	360,800	32.27	MTO	STD
121-1 through 121-3																
121-1	1.500	0.750	0.875	1.425	0.187	0.437	–	1.955	–	–	0.994	0.864	45,100	3.30	STD	STD
121-2	1.250	0.755	0.750	1.180	0.156	0.375	1.546	3.274	–	–	0.994	0.864	90,200	6.76	MTO	STD
121-3	1.250	0.755	0.750	1.180	0.156	0.375	1.546	4.820	–	–	0.994	0.864	135,300	10.08	MTO	STD
140-1 through 140-8																
140-1	1.750	1.000	1.000	1.663	0.220	0.500	–	2.136	1.253	1.150	1.253	1.068	57,450	5.14	STD	STD
140-2	1.750	1.000	1.000	1.663	0.220	0.500	1.924	4.060	1.253	1.150	1.253	1.068	114,900	10.27	STD	STD
140-3	1.750	1.000	1.000	1.663	0.220	0.500	1.924	5.984	1.253	1.150	1.253	1.068	172,350	15.29	MTO	STD
140-4	1.750	1.000	1.000	1.663	0.220	0.500	1.924	7.908	1.253	1.150	1.253	1.068	229,800	20.46	MTO	STD
140-5	1.750	1.000	1.000	1.663	0.220	0.500	1.924	9.832	1.253	1.150	1.253	1.068	287,250	25.52	MTO	STD
140-6	1.750	1.000	1.000	1.663	0.220	0.500	1.924	11.756	1.253	1.150	1.253	1.068	344,700	30.69	MTO	STD
140-8	1.750	1.000	1.000	1.663	0.220	0.500	1.924	15.604	1.253	1.150	1.253	1.068	459,600	40.92	MTO	STD
160-1 through 160-8																
160-1	2.000	1.250	1.126	1.899	0.252	0.563	–	2.538	1.454	1.370	1.454	1.269	72,800	6.60	STD	STD
160-2	2.000	1.250	1.126	1.899	0.252	0.563	2.305	4.843	1.454	1.370	1.454	1.269	145,600	13.21	STD	STD
160-3	2.000	1.250	1.126	1.899	0.252	0.563	2.305	7.148	1.454	1.370	1.454	1.269	218,400	20.79	MTO	STD
160-4	2.000	1.250	1.126	1.899	0.252	0.563	2.305	9.453	1.454	1.370	1.454	1.269	291,200	27.83	MTO	STD
160-5	2.000	1.250	1.126	1.899	0.252	0.563	2.305	11.758	1.454	1.370	1.454	1.269	364,000	34.76	MTO	STD
160-6	2.000	1.250	1.126	1.899	0.252	0.563	2.305	14.063	1.454	1.370	1.454	1.269	436,800	41.69	MTO	STD
160-8	2.000	1.250	1.126	1.899	0.252	0.563	2.305	18.673	1.454	1.370	1.454	1.269	582,400	55.50	MTO	STD
180-1 through 180-4																
180-1	2.250	1.400	1.406	2.132	0.281	0.687	–	2.780	1.561	1.390	1.561	1.390	95,000	9.10	STD	STD
180-2	2.250	1.400	1.406	2.132	0.281	0.687	2.592	5.372	1.561	1.390	1.561	1.390	190,000	18.10	STD	STD
180-3	2.250	1.400	1.406	2.132	0.281	0.687	2.592	7.964	1.561	1.390	1.561	1.390	285,000	27.01	MTO	MTO
180-4	2.250	1.400	1.406	2.132	0.281	0.687	2.592	10.556	1.561	1.390	1.561	1.390	380,000	35.91	MTO	MTO

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

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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	Riveted	Cottered
	P	W	D	H	T	d	E	L	L_1	L_2	L_3	L_4				
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbf.	lbs./ft.		
200-1 through 200-4																
200-1	2.500	1.500	1.562	2.312	0.312	0.781	–	3.088	1.889	1.544	1.889	1.544	100,000	10.90	STD	STD
200-2	2.500	1.500	1.562	2.312	0.312	0.781	2.817	5.905	1.889	1.544	1.889	1.544	200,000	21.00	STD	STD
200-3	2.500	1.500	1.562	2.312	0.312	0.781	2.817	8.722	1.889	1.544	1.889	1.544	300,000	31.50	MTO	STD
200-4	2.500	1.500	1.562	2.312	0.312	0.781	2.817	11.539	1.889	1.544	1.889	1.544	400,000	42.10	MTO	MTO
264-1 through 264-4																
264-1	2.500	1.490	1.562	2.375	0.375	0.875	–	3.687	2.015	1.672	2.015	0.672	135,000	12.40	STD	STD
264-2	2.500	1.490	1.562	2.375	0.375	0.875	3.083	6.770	2.015	1.672	2.015	1.672	270,000	24.90	STD	STD
264-3	2.500	1.490	1.562	2.375	0.375	0.875	3.083	9.853	2.015	1.672	2.015	1.672	405,000	37.30	MTO	STD
264-4	2.500	1.490	1.562	2.375	0.375	0.875	3.083	12.936	2.015	1.672	2.015	1.672	540,000	49.80	MTO	STD
240-1 through 240-4																
240-1	3.000	1.864	1.875	2.812	0.375	0.937	–	3.708	2.212	1.854	2.212	1.854	152,200	16.40	STD	STD
240-2	3.000	1.864	1.875	2.812	0.375	0.937	3.458	7.166	2.212	1.854	2.212	1.854	304,400	32.20	MTO	STD
240-3	3.000	1.864	1.875	2.812	0.375	0.937	3.458	2.780	2.212	1.854	2.212	1.854	456,600	49.40	MTO	STD
240-4	3.000	1.864	1.875	2.812	0.375	0.937	3.458	7.166	2.212	1.854	2.212	1.854	608,800	65.70	MTO	STD
241-1																
241-1	3.000	1.250	1.875	2.812	0.375	0.937	–	3.094	–	–	1.905	1.547	152,200	16.20	MTO	MTO

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

POWER TONG CHAINS

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 Timken Drives representative for availability of your power tong chain.

TIMKEN SPECIALTY CHAIN PRODUCTS

Silver Shield CR® series chains are available for those applications that may be subjected to wet, caustic or acidic environments. Silver Shield CR chains consist of precision carbon-steel components, specially coated with a zinc-aluminium compound. Contact your Timken Drives representative for proper use of the Silver Shield CR chain coatings.

With a major focus on problem solving, we designed Extended Life CHP® series chain for toughness and strength. The chrome plating on the pins exceeds the hardness level commonly found in standard roller chains and provides exceptional wear resistance without giving up toughness, even in dry and abrasive environments.

Fig. 36. Specialty drive chain product.

50WR WRENCH CHAIN

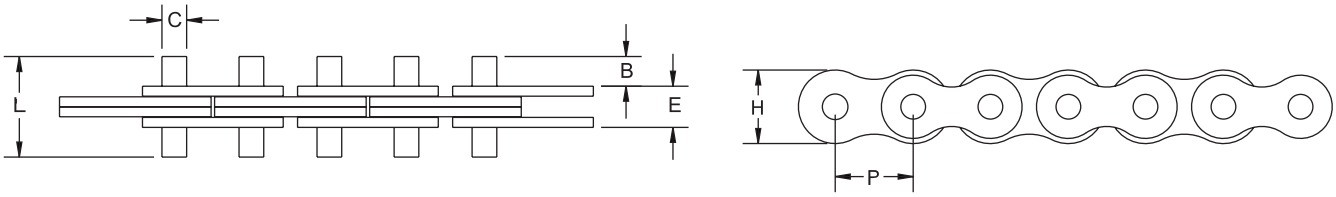


TABLE 71. 50WR WRENCH CHAIN PRODUCT SPECIFICATIONS

Chain No.	Pitch P	Lacing	Pin Dia. C	Pin Over All Length L	Pin Projection B	Link Plate H	Width Over Link Plate E	Average Tensile Strength Case-Hardened Pin	Average Weight
	in.		in.	in.	in.	in.	in.	lbf	lbs./ft.
50WR	0.625	2X2	0.2	0.806	0.238	0.59	0.33	6,000	0.50

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.

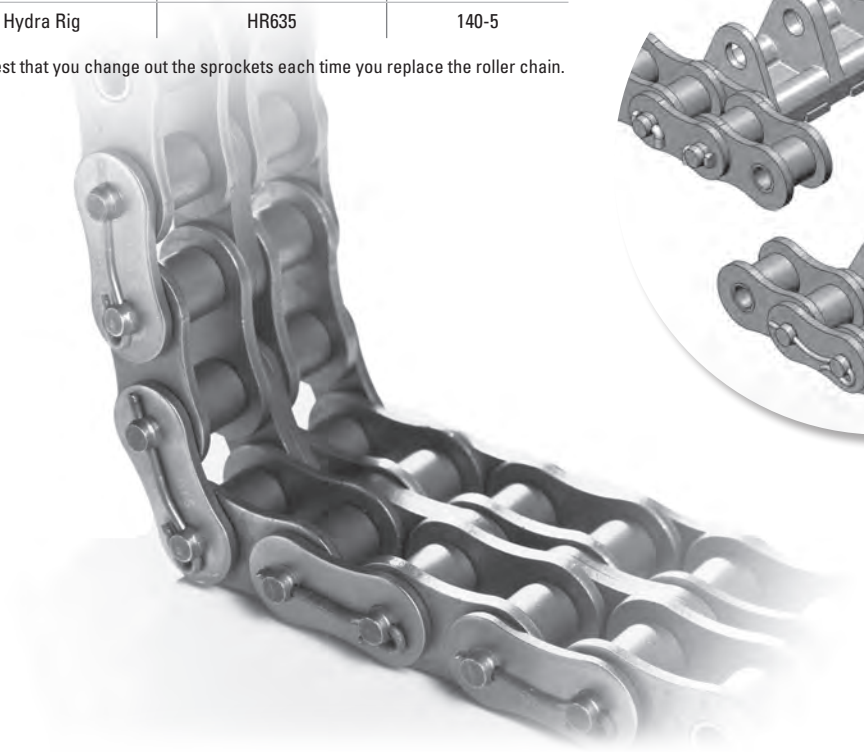
TABLE 72. COIL TUBE CHAIN KITS AVAILABLE

Manufacturer	Coiled Tube Unit Model	Chain Size
National Oilwell	RT10	120-3
National Oilwell	RT 20	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 73. 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



SPECIALTY CHAIN PRODUCTS

We offer specialty chain products to meet the challenging applications of our customers. We have Extended Life CHP® chains that increase wear life. Our Silver Shield CR® and stainless steel chains perform well in corrosive applications.

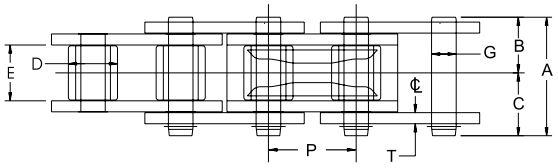
SPECIALTY CHAIN PRODUCTS
CATERPILLAR DRIVE CHAIN

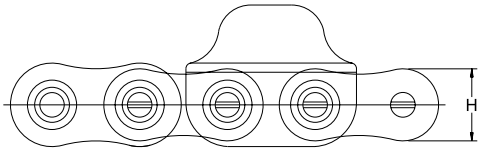
Caterpillar drive chains are essential in driving drop forged chain conveyors. Our caterpillar drive chains provide high fatigue life and are designed to perform with forged, rivetless chains.

Our caterpillar drive chains feature all ballized plates to provide increased bearing area and press fits. This improves fatigue life and working loads. We use wide-waist link plates with maximized ball heights to improve stress distribution, leading to improved fatigue resistance and enhanced performance.

Through-hardened pins are used for higher working load capacity and additional resistance to fatigue in heavy load 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.





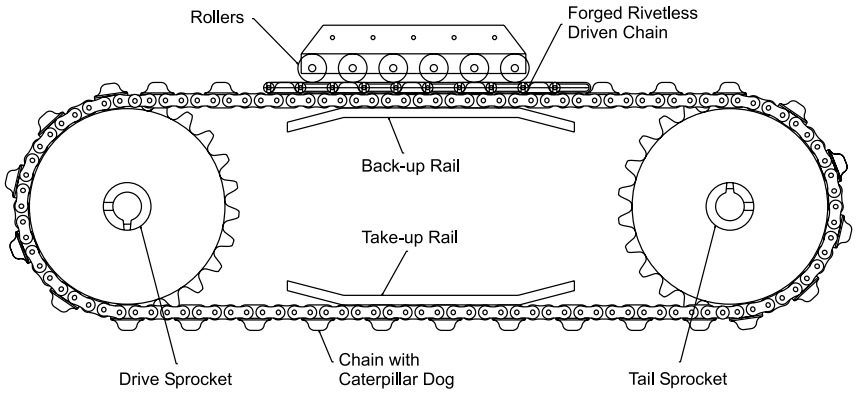


TABLE 74. CAPERPILLAR DRIVE CHAIN SPECIFICATIONS

Chain No.	Pitch	Chain Width				Diameter		Sidebars		Drive Dog Pitch Spacing	Average Ultimate Strength	Approx. Weight
		Overall	Pin Head to CL	Pin End to CL	Inside Width	Roller	Pin	Thickness	Height			
	P	A	B	C	E	D	G	T	H			
	in.	in.	in.	in.	in.	in.	in.	in.	in.		lbs.	lbs./ft.
160/348	2.000	2.723	1.269	1.454	1.250	1.126	0.563	0.250	1.899	3 or 6	58,000	8.3
160/458	2.000	2.723	1.269	1.454	1.250	1.126	0.563	0.250	1.899	4 or 6	58,000	8.3 or 10.0
160/678	2.000	2.723	1.269	1.454	1.250	1.126	0.563	0.250	1.899	6	58,000	9.8

NOTE: Dimensions are subject to change. Contact your Timken Drives representative to obtain certified prints for design and construction.
NOTE: Special hardened hook cotter is standard.

HOLLOW PIN CHAIN – 2.000 IN. PITCH

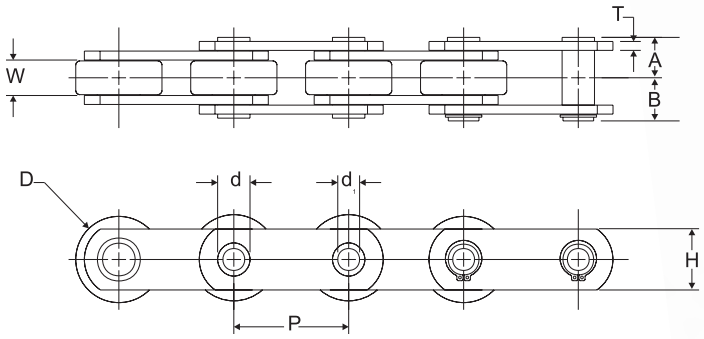


TABLE 75. HOLLOW PIN CHAIN – 2.000 IN. PITCH

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.		Pin		Average Weight	Average Tensile Strength	Maximum Suggested Working Load
	P	W	D	H	T	d	d_1	A	B			
	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs./ft.	lbs.	lbs./ft.
HP200	2.000	0.617	1.500	1.060	0.156	0.564	0.382	0.703	0.750	2.500	15,000	2,600

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

COUPLING CHAIN

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

TABLE 76. COUPLING CHAIN

Chain No.	Pitch	Length Pitches	Weight	Weight
	in.		lb./ft.	lb.
40	0.500	12	0.410	0.410
40	0.500	16	0.550	0.550
50	0.625	16	1.120	1.170
50	0.625	18	1.260	1.320
60	0.750	18	2.160	2.330
60	0.750	20	2.400	2.590
60	0.750	22	2.640	2.840
80	1.000	18	5.000	5.600
80	1.000	20	5.560	6.230
100	1.250	18	9.240	10.510
100	1.250	20	10.300	11.670
120	1.500	18	16.200	18.610
120	1.500	22	19.800	22.740

EXTRA CLEARANCE EXC® CONVEYOR CHAIN

EXC® conveyor chains are 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 Timken Drives representative for application and available sizes.

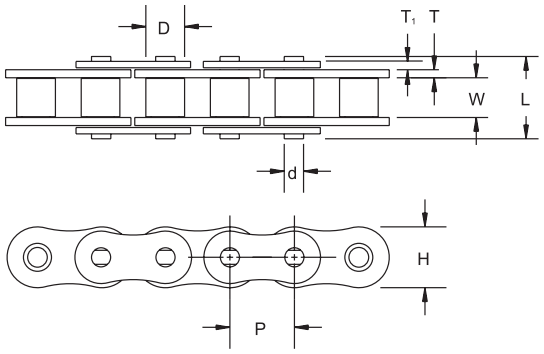


TABLE 77. EXTRA CLEARANCE EXC® CONVEYOR CHAIN

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_1	d	L				
	in.	in.	in.	in.	in.	in.	in.	in.	lbs./ft.	lbs./ft.		
80 EXC	1.000	0.625	0.625	0.949	0.156	0.120	0.312	1.413	21,500	2.200	STD	MTO

NOTE: Dimensions are subject to change. Contact your Timken 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.

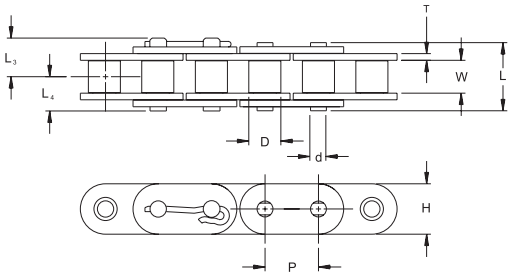


TABLE 78. E-SERIES CHAIN

Chain No.	Pitch	Width Between L.P.	Roller Dia.	Link Plate		Pin Dia.	Pin			Average Weight
	P	W	D	H	T	d	L	L_1	L_2	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs./ft.
C60E	0.750	0.500	0.469	0.705	0.094	0.234	0.996	0.648	0.498	1.173
C80E	1.000	0.627	0.625	0.943	0.125	0.312	1.283	0.857	0.642	2.054
C100E	1.250	0.755	0.750	1.180	0.156	0.375	1.595	0.912	0.785	3.081
C120E	1.500	1.000	0.875	1.425	0.187	0.437	1.955	1.119	0.989	4.588
C140E	1.750	1.000	1.000	1.663	0.220	0.500	2.136	1.253	1.068	5.878
C160E	2.000	1.250	1.126	1.899	0.252	0.563	2.538	1.454	1.269	7.787

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

EXTENDED LIFE CHP® SERIES CHAIN

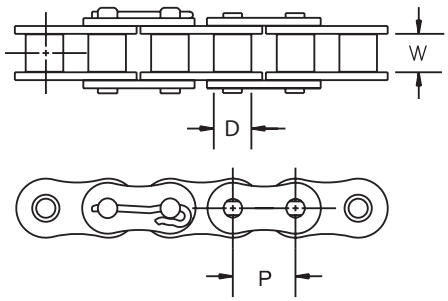


Fig. 38. Extended Life CHP® series chain.

- 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 over 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 chains
  - 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 cottered 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 review. Various lubricants are available, including food grade and no-stain, depending on application.

TABLE 79. EXTENDED LIFE CHP® CHAIN SPECIFICATIONS

Chain No.	Pitch P	Width Between L.P. W	Roller Diameter D	Average Weight
	in.		lb./ft.	lb.
40	0.500	0.313	0.313	0.420
50	0.625	0.376	0.400	0.713
60	0.750	0.500	0.469	1.067
80	1.000	0.627	0.625	1.868
100	1.250	0.755	0.750	2.801
120	1.500	1.000	0.875	4.135
140	1.750	1.000	1.000	5.136
160	2.000	1.250	1.126	6.603
180	2.250	1.400	1.406	9.100
200	2.500	1.490	1.562	10.900
240	3.000	1.864	1.875	16.400
C2040	1.000	0.312	0.312	0.340
C2050	1.250	0.376	0.400	0.580
C2060H	1.500	0.500	0.470	1.010
C2080H	2.000	0.625	0.625	1.204

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

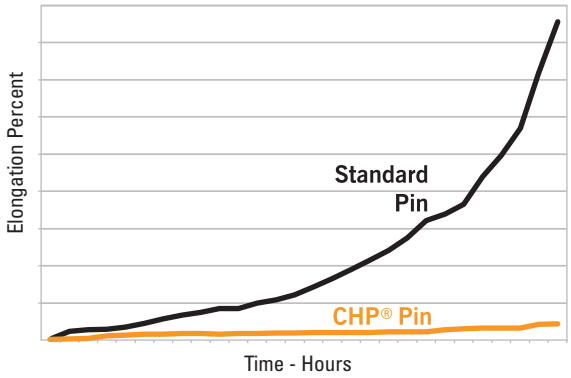


Fig. 37. Elongation vs. time.

CORROSION- AND MOISTURE-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 chains 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 chains are designed to resist incidental contact or exposure to water or water-based wash-down 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 chains.

SILVER SHIELD CR® SERIES CHAINS

Silver Shield CR series chains are available for those applications that may be subjected to mildly caustic or acidic environments. Silver Shield CR chains 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 alternative to stainless in applications where stainless has historically been the only option.

AS600 SERIES STAINLESS STEEL CHAIN

The primary use of 600 stainless steel chain is in corrosive and/or high-temperature environments, which shortens 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 stainless steel chains. These chains are designed for drive applications, that normally have a high number of articulations.

⚠ 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 Timken 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 Timken 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 the application.

ENVIRONMENT RESISTANCE

The chain selected should be capable of resisting the majority of the chemical and/or temperature requirements. If the environment is ambient in temperature, then only chemical presence needs to be addressed. 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 chains 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 having 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 very different allowable working loads but have very similar ultimate tensile strengths.

COST

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

NICKEL-PLATED ROLLER CHAINS

We produce nickel-plated chains to withstand the effects of exposure to moisture, outdoor conditions and incidental wash-down 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 chains.
- 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.

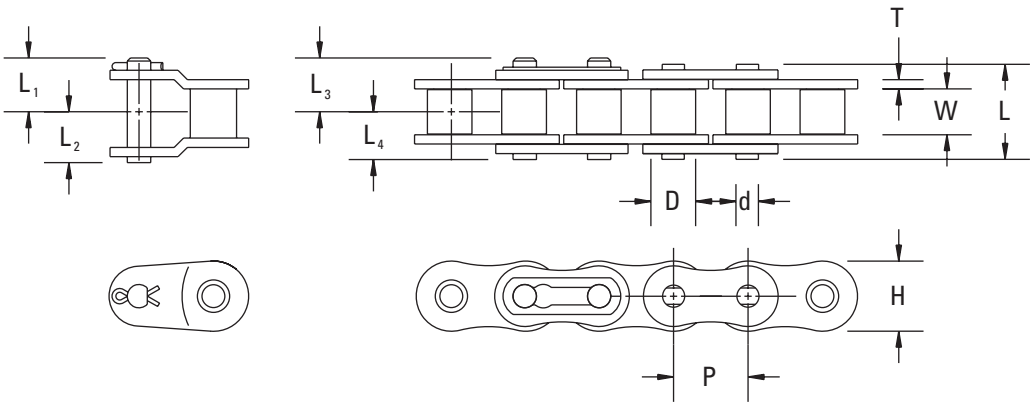


TABLE 80. NICKEL-PLATED ATTACHMENT CHAIN – ANSI WITH STANDARD ATTACHMENTS

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Average Weight
	P	W	D	H	T	d	L	L_1	L_2	L_3	L_4	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs./ft.
40NP	0.500	0.312	0.312	0.472	0.060	0.156	0.630	0.404	0.317	0.377	0.315	0.420
50NP	0.625	0.376	0.400	0.590	0.080	0.200	0.795	0.489	0.399	0.489	0.398	0.713
60NP	0.750	0.500	0.469	0.705	0.094	0.234	0.996	0.600	0.498	0.648	0.498	1.067
80NP	1.000	0.626	0.625	0.943	0.125	0.313	1.283	0.768	0.638	0.857	0.642	1.868
100NP	1.250	0.755	0.750	1.180	0.156	0.375	1.595	0.908	0.785	0.912	0.785	2.680
120NP	1.500	1.000	0.875	1.425	0.187	0.437	1.955	1.119	1.071	1.119	0.989	3.980
160NP	2.000	1.250	1.125	1.899	0.250	0.562	2.538	1.454	1.370	1.454	1.209	6.790

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

SILVER SHIELD CR ROLLER CHAINS

Many industry applications require a roller chain option that provides the strength of carbon steel combined with some degree of corrosion resistance. For these reasons, 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 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 chains.
- 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.

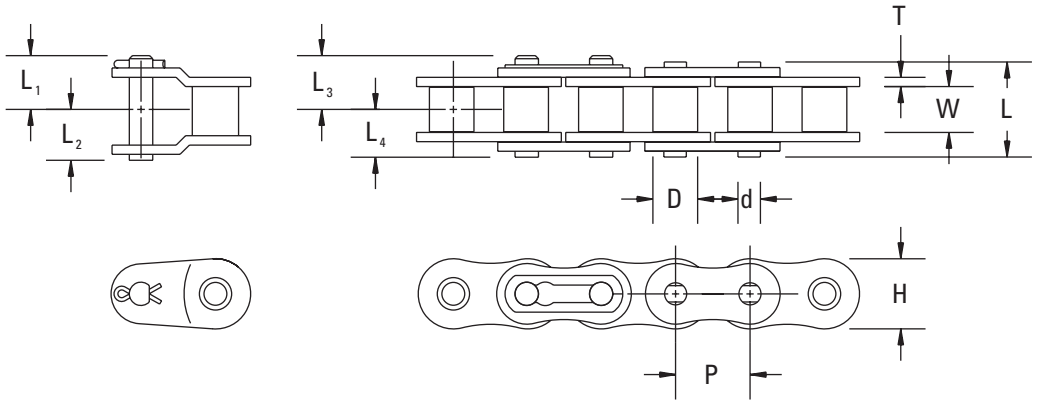


TABLE 81. SILVER SHIELD CR® CHAIN

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Average Weight
	P	W	D	H	T	d	L	L_1	L_2	L_3	L_4	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs./ft.
40CR	0.500	0.312	0.312	0.472	0.060	0.156	0.630	0.404	0.317	0.377	0.315	0.420
50CR	0.625	0.376	0.400	0.590	0.080	0.200	0.795	0.489	0.399	0.489	0.398	0.713
60CR	0.750	0.500	0.469	0.705	0.094	0.234	0.996	0.600	0.498	0.648	0.498	1.067
80CR	1.000	0.626	0.625	0.943	0.125	0.313	1.283	0.768	0.638	0.857	0.642	1.868
100CR	1.250	0.755	0.750	1.180	0.156	0.375	1.595	0.908	0.785	0.912	0.785	2.680
120CR	1.500	1.000	0.875	1.425	0.187	0.437	1.955	1.119	1.071	1.119	0.989	3.980
140CR	1.750	1.000	1.000	1.663	0.220	0.500	2.136	1.253	1.150	1.253	1.068	5.030
160CR	2.000	1.250	1.125	1.899	0.250	0.562	2.538	1.454	1.370	1.454	1.209	6.790

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

⚠ 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.

STAINLESS STEEL ANSI CHAIN SIZES

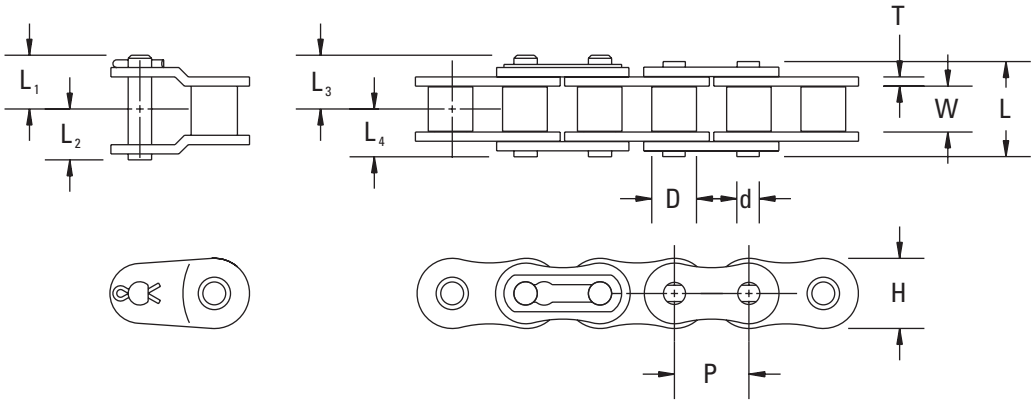


TABLE 82. STAINLESS STEEL

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_1	L_2	L_3	L_4	PS(304SS) NS(316SS)	AS(600SS)	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.		lbs./ft.
40	0.500	0.312	0.312	0.472	0.060	0.156	0.630	0.404	0.317	0.377	0.315	100	155	0.420
50	0.625	0.376	0.400	0.590	0.080	0.200	0.795	0.489	0.399	0.489	0.398	165	230	0.713
60	0.750	0.500	0.469	0.705	0.094	0.234	0.996	0.600	0.498	0.648	0.498	231	350	1.067
80	1.000	0.626	0.625	0.943	0.125	0.313	1.283	0.768	0.638	0.857	0.642	396	600	1.868
100	1.250	0.755	0.750	1.180	0.156	0.375	1.595	0.908	0.785	0.912	0.785	568	850	2.680
120	1.500	1.000	0.875	1.425	0.187	0.437	1.955	1.119	1.071	1.119	0.989	850	1,278	3.980
140	1.750	1.000	1.000	1.663	0.220	0.500	2.136	1.253	1.150	1.263	1.068	1,025	1,535	5.030
160	2.000	1.250	1.125	1.899	0.250	0.562	2.538	1.454	1.370	1.454	1.209	1,400	2,108	6.790

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

ATTACHMENT ROLLER CHAINS

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

We offer attachment chains in carbon steel, Extended Life CHP®, Silver Shield CR®, Silver Shield CR with Extended Life CHP pins or stainless.

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

CARBON STEEL ATTACHMENT CHAIN

ANSI CHAIN SIZES AVAILABLE WITH STANDARD ATTACHMENTS

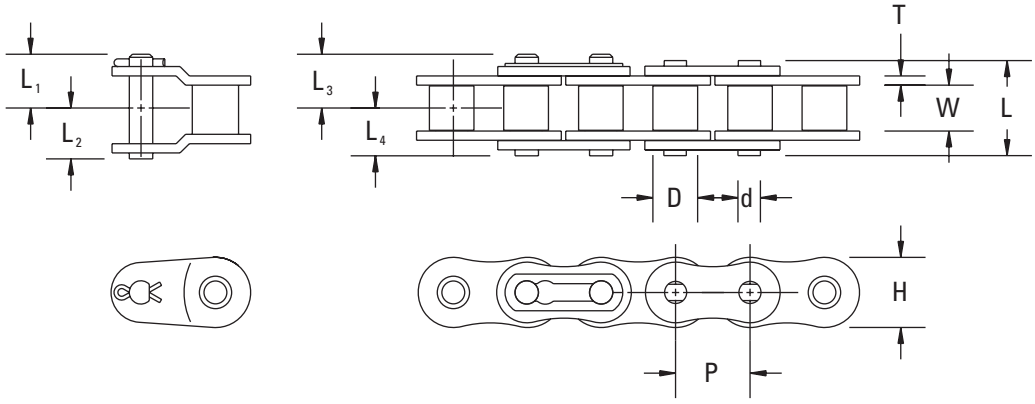
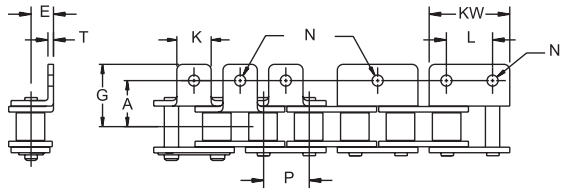


TABLE 83. CARBON STEEL ATTACHMENT CHAIN – ANSI WITH STANDARD ATTACHMENTS

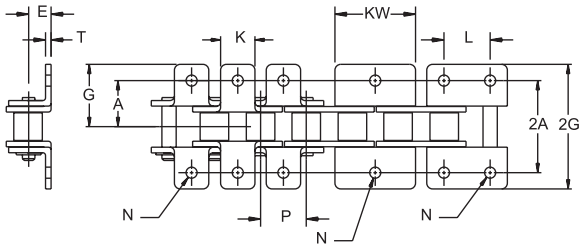
Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Max. Allowable Load	Average Weight
	P	W	D	H	T	d	L	L_1	L_2	L_3	L_4		
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
40	0.500	0.312	0.312	0.472	0.060	0.156	0.630	0.404	0.317	0.377	0.315	615	0.420
50	0.625	0.376	0.400	0.590	0.080	0.200	0.795	0.489	0.399	0.489	0.398	1,010	0.713
60	0.750	0.500	0.469	0.705	0.094	0.234	0.996	0.600	0.498	0.648	0.498	1,410	1.067
80	1.000	0.626	0.625	0.943	0.125	0.313	1.283	0.768	0.638	0.857	0.642	2,350	1.868
100	1.250	0.755	0.750	1.180	0.156	0.375	1.595	0.908	0.785	0.912	0.785	3,800	2.680
120	1.500	1.000	0.875	1.425	0.187	0.437	1.955	1.119	1.071	1.119	0.989	5,380	3.980
140	1.750	1.000	1.000	1.663	0.220	0.500	2.136	1.253	1.150	1.253	1.068	7,280	5.030
160	2.000	1.250	1.125	1.899	0.250	0.562	2.538	1.454	1.370	1.454	1.209	9,190	6.790

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

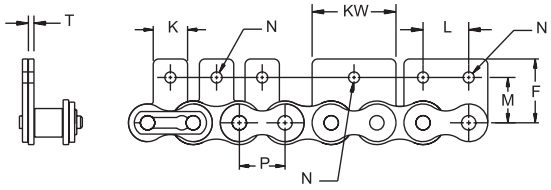
ANSI ROLLER CHAIN WITH ATTACHMENTS



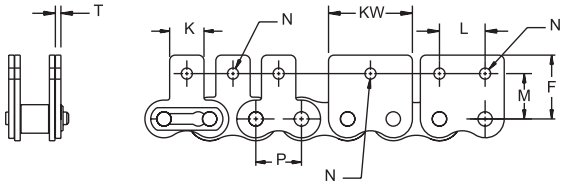
BA-1



BK-1



SA-1



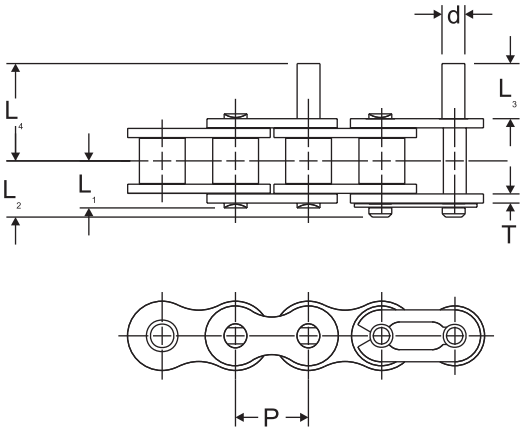
SK-1

TABLE 84. CARBON STEEL – ANSI ROLLER CHAIN WITH ATTACHMENTS

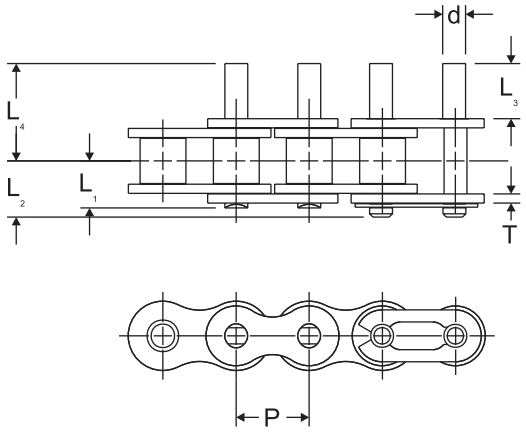
Chain No.	BA-SK-SA-SK Type Attachment													Additional Weight Per Attachment	
	P	T	K	KW	L	N	A	E	G	2A	2G	M	F	BA-SK	BK-SK
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
40	0.500	0.060	0.374	0.970	0.500	0.142	0.500	0.311	0.681	1.000	1.362	0.500	0.685	0.0044	0.0088
50	0.625	0.080	0.500	1.210	0.625	0.205	0.625	0.406	0.917	1.250	1.834	0.625	0.906	0.0066	0.0132
60	0.750	0.094	0.625	1.460	0.750	0.205	0.750	0.469	1.106	1.500	2.212	0.720	1.051	0.0154	0.0308
80	1.000	0.125	0.750	1.940	1.000	0.268	1.000	0.625	1.413	2.000	2.826	0.969	1.358	0.0287	0.0574
100	1.250	0.156	1.000	–	–	0.343	1.250	0.780	1.768	2.500	3.536	1.252	1.732	0.0572	0.1144
120	1.500	0.187	1.250	–	–	0.386	1.500	0.906	2.197	3.000	4.394	1.437	2.081	0.0968	0.1935
140	1.750	0.221	1.375	–	–	0.448	1.750	1.125	2.484	3.500	4.968	1.750	2.500	0.1562	0.3124
160	2.000	0.250	1.500	–	–	0.516	2.000	1.252	2.827	4.000	5.654	2.000	2.760	0.2134	0.4268

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

ANSI ROLLER CHAIN WITH ATTACHMENTS



D-1



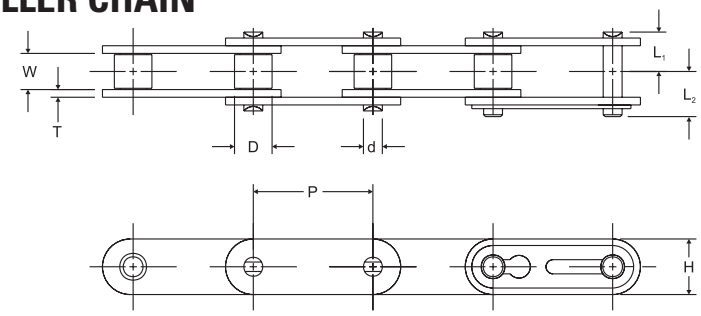
D-3

TABLE 85. CARBON STEEL – ANSI ROLLER CHAIN WITH ATTACHMENTS

Chain No.	P	T	d	L_1	L_2	L_3	L_4	Additional Weight Per Attachment	
								D-1	D-3
	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
40	0.500	0.060	0.156	0.317	0.377	0.374	0.661	0.002	0.004
50	0.625	0.080	0.200	0.399	0.489	0.469	0.827	0.004	0.008
60	0.750	0.094	0.234	0.498	0.648	0.563	1.018	0.006	0.012
80	1.000	0.125	0.313	0.638	0.857	0.752	1.335	0.020	0.040
100	1.250	0.156	0.325	0.785	0.912	0.937	1.698	0.027	0.054
120	1.500	0.187	0.437	0.989	1.119	1.126	2.024	0.044	0.088
140	1.750	0.220	0.500	1.068	1.253	1.311	2.264	0.066	0.132
160	2.000	0.250	0.562	1.263	1.454	1.500	2.654	0.099	0.198

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

DOUBLE-PITCH ROLLER CHAIN

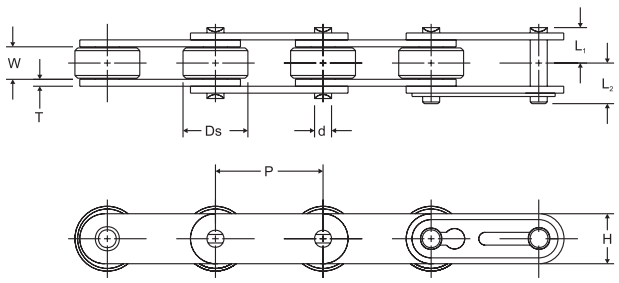


Small roller

TABLE 86. CARBON STEEL DOUBLE-PITCH ROLLER CHAIN – STANDARD ROLLER

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin			Carbon Max. Allowable Load	Average Weight
	P	W	D	H	T	d	L_1	L_2		
	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
C2040	1.000	0.312	0.312	0.472	0.060	0.156	0.319	0.382	615	0.340
C2050	1.250	0.376	0.400	0.590	0.080	0.200	0.409	0.477	1,010	0.580
C2060H	1.500	0.500	0.469	0.687	0.125	0.234	0.590	0.660	1,410	1.010
C2080H	2.000	0.626	0.625	0.943	0.156	0.312	0.745	0.845	2,350	1.770
C2100H	2.500	0.750	0.250	1.150	0.187	0.375	0.830	0.980	3,800	2.380
C2120H	3.000	1.000	0.875	1.370	0.219	0.437	1.030	1.210	5,380	3.410
C2160H	4.000	1.250	1.125	1.870	0.281	0.563	1.337	1.514	9,190	6.020

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



Large roller

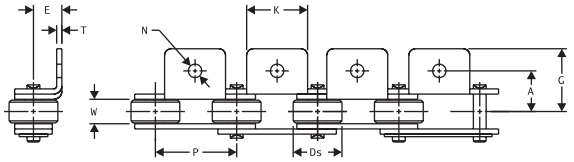
TABLE 87. CARBON STEEL DOUBLE-PITCH ROLLER CHAIN – CARRIER ROLLER

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin			Carbon Max. Allowable Load	Average Weight
	P	W	Ds	H	T	d	L_1	L_2		
	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
C2042	1.000	0.312	0.625	0.472	0.060	0.156	0.319	0.382	615	0.580
C2052	1.250	0.376	0.750	0.590	0.080	0.200	0.409	0.477	1,010	0.900
C2062H	1.500	0.500	0.875	0.687	0.125	0.234	0.590	0.660	1,410	1.461
C2082H	2.000	0.626	1.125	0.943	0.156	0.312	0.745	0.845	2,350	2.450
C2102H	2.500	0.750	1.562	1.150	0.187	0.375	0.830	0.980	3,800	3.90
C2122H	3.000	1.000	1.750	1.370	0.219	0.437	1.030	1.210	5,380	5.40
C2162H	4.000	1.250	2.250	1.870	0.281	0.563	1.337	1.514	9,190	9.21

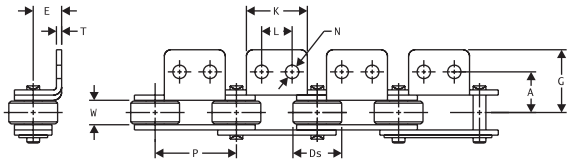
NOTE: Dimensions are subject to change. Contact your Timken Drives representative to obtain certified prints for design and construction.

DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

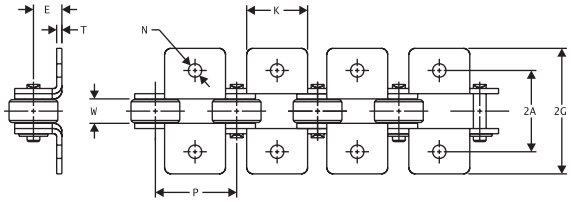
BA-1



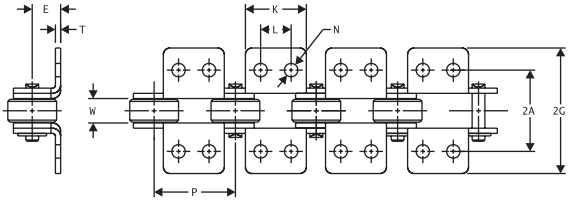
BA-2



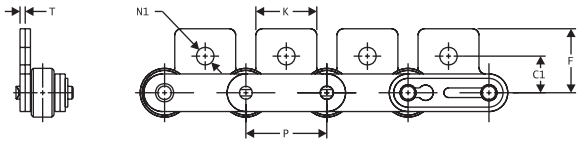
BK-1



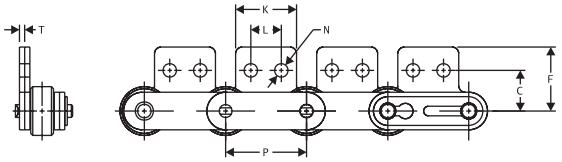
BK-2



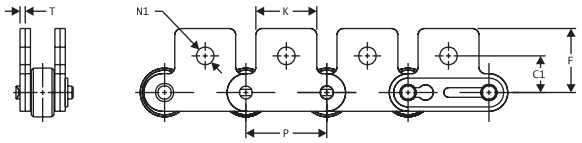
SA-1



SA-2



SK-1



SK-2

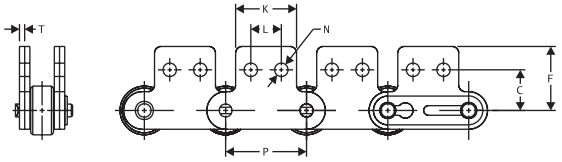


TABLE 88. CARBON STEEL – DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

Chain No.	Pitch	Link Plate	BA-SK-SA-SK Type Attachment												Additional Weight Per Attachment	
	P	T	K	N	L	A	E	G	2A	2G	C	F	C1	N1	BA-SA	BK-SK
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
C2040 C2042	1.000	0.060	0.750	0.142	0.374	0.500	0.358	0.750	1.000	1.500	0.531	0.780	0.437	0.205	0.006	0.013
C2050 C2052	1.250	0.080	0.937	0.205	0.469	0.625	0.437	0.953	1.252	1.906	0.625	0.969	0.563	0.268	0.013	0.026
C2060H C2062H	1.500	0.125	1.126	0.205	0.563	0.844	0.579	1.230	1.688	2.460	0.750	1.205	0.689	0.346	0.037	0.075
C2080H C2082H	2.000	0.156	1.500	0.268	0.752	1.094	0.750	1.598	2.188	3.196	1.000	1.583	0.874	0.406	0.082	0.163
C2100H C2102H	2.50	0.189	1.875	0.323	0.937	1.312	0.922	1.950	2.624	3.900	1.250	1.984	1.125	0.516	0.132	0.265
C2120H C2122H	3.00	0.219	2.250	0.386	1.125	1.562	1.093	2.390	3.124	4.780	1.470	2.361	1.319	0.578	0.221	0.441
C2160H C2162H	4.00	0.281	3.060	0.516	1.500	2.062	1.437	3.060	5.324	6.120	2.000	3.093	1.75	0.771	0.468	0.895

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

DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

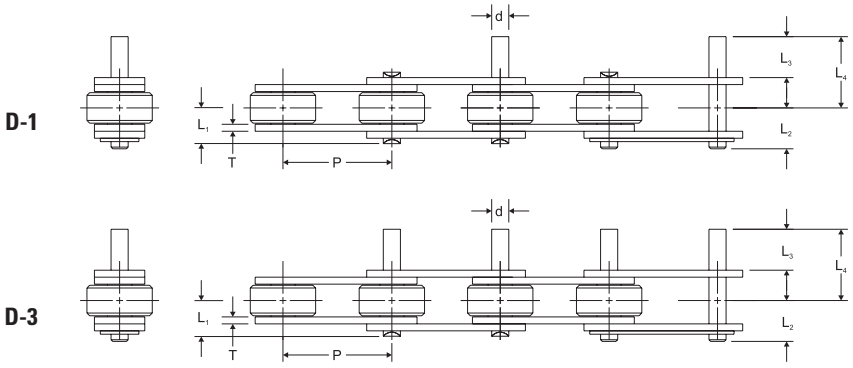


TABLE 89. CARBON STEEL – DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

Chain No.	P	T	d	L_1	L_2	L_3	L_4	Additional Weight Per Attachment	
								D-1	D-3
	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
C2040 - C2042	1.000	0.060	0.156	0.317	0.377	0.374	0.661	0.002	0.004
C2050 - C2052	1.250	0.080	0.200	0.399	0.489	0.469	0.827	0.004	0.008
C2060H - C2062H	1.500	0.125	0.234	0.590	0.660	0.563	1.083	0.006	0.012
C2080H - C2082H	2.000	0.156	0.313	0.745	0.845	0.752	1.401	0.020	0.040
C2100H-C2102H	2.500	0.187	0.375	0.830	0.980	0.937	1.687	0.027	0.054
C-2120H-C2122H	3.000	0.219	0.437	1.030	1.210	1.125	2.062	0.044	0.088
C-2160H-C2164H	4.000	0.281	0.562	1.337	1.514	1.500	2.718	0.099	0.198

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

SILVER SHIELD CR® ATTACHMENT CHAIN

We recognize that industry requires an option when the strength of carbon steel and some degree of corrosion resistance is required. For these reasons, 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 to provide resistance to abrasion and flaking. Silver Shield CR is specifically designed to resist corrosion in mildly acidic or caustic environments.

- Equal in strength and wear resistance to carbon steel chains.
- Protective coating is applied to all parts for uniform and comprehensive protection.

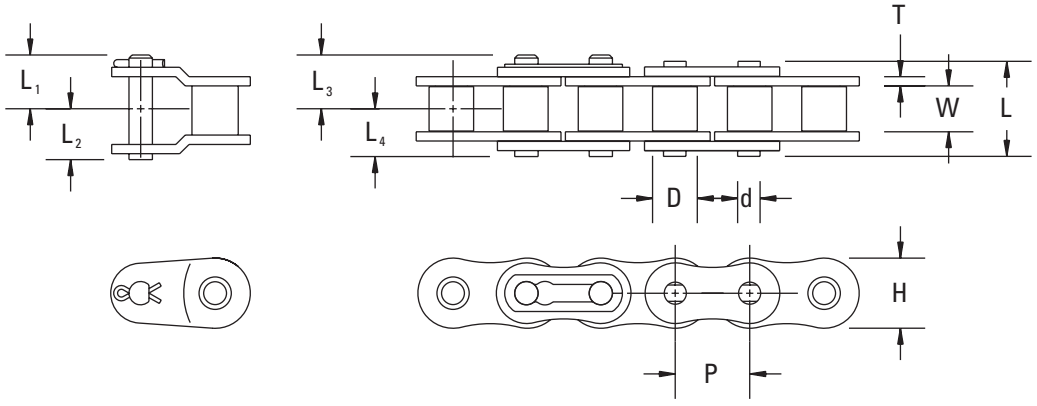


TABLE 90. SILVER SHIELD CR® COATED CHAIN – ANSI WITH STANDARD ATTACHMENTS

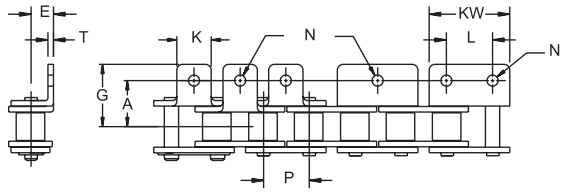
Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Max. Allowable Load	Average Weight
	P	W	D	H	T	d	L	L_1	L_2	L_3	L_4		
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
40CR	0.500	0.312	0.312	0.472	0.060	0.156	0.630	0.404	0.317	0.377	0.315	615	0.420
50CR	0.625	0.376	0.400	0.590	0.080	0.200	0.795	0.489	0.399	0.489	0.398	1,010	0.713
60CR	0.750	0.500	0.469	0.705	0.094	0.234	0.996	0.600	0.498	0.648	0.498	1,410	1.067
80CR	1.000	0.626	0.625	0.943	0.125	0.313	1.283	0.768	0.638	0.857	0.642	2,350	1.868
100CR	1.250	0.755	0.750	1.180	0.156	0.375	1.595	0.908	0.785	0.912	0.785	3,800	2.680
120CR	1.500	1.000	0.875	1.425	0.187	0.437	1.955	1.119	1.071	1.119	0.989	5,380	3.980
140CR	1.750	1.000	1.000	1.663	0.220	0.500	2.136	1.253	1.150	1.253	1.068	7,280	5.030
160CR	2.000	1.250	1.125	1.899	0.250	0.562	2.538	1.454	1.370	1.454	1.209	9,190	6.790

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

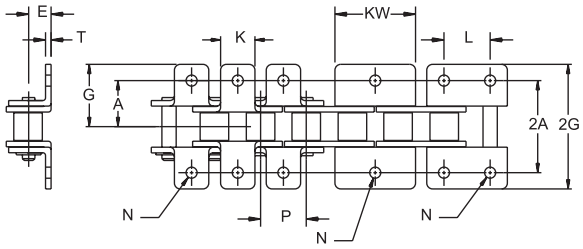
⚠ WARNING
Failure to observe the following warnings could create a risk of death or serious injury.

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

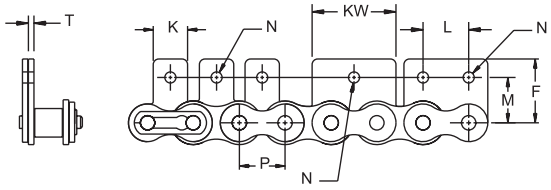
ANSI ROLLER CHAIN WITH ATTACHMENTS



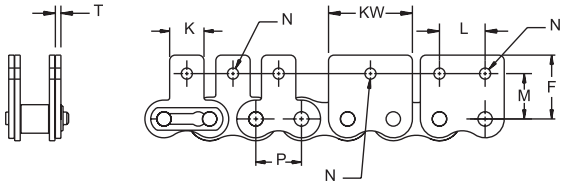
BA-1



BK-1



SA-1



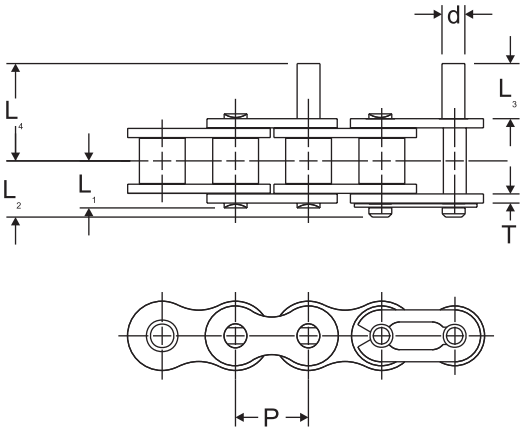
SK-1

TABLE 91. SILVER SHIELD CR COATED CHAIN – ANSI ROLLER CHAIN WITH ATTACHMENTS

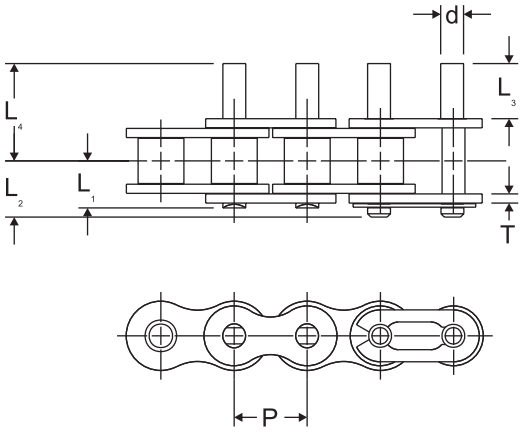
Chain No.	BA-SK-SA-SK Type Attachment													Additional Weight Per Attachment	
	P	T	K	KW	L	N	A	E	G	2A	2G	M	F	BA-SK	BK-SK
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
40CR	0.500	0.060	0.374	0.970	0.500	0.142	0.500	0.311	0.681	1.000	1.362	0.500	0.685	0.0044	0.0088
50CR	0.625	0.080	0.500	1.210	0.625	0.205	0.625	0.406	0.917	1.250	1.834	0.625	0.906	0.0066	0.0132
60CR	0.750	0.094	0.625	1.460	0.750	0.205	0.750	0.469	1.106	1.500	2.212	0.720	1.051	0.0154	0.0308
80CR	1.000	0.125	0.750	1.940	1.000	0.268	1.000	0.625	1.413	2.000	2.826	0.969	1.358	0.0287	0.0574
100CR	1.250	0.156	1.000	–	–	0.343	1.250	0.780	1.768	2.500	3.536	1.252	1.732	0.0572	0.1144
120CR	1.500	0.187	1.250	–	–	0.386	1.500	0.906	2.197	3.000	4.394	1.437	2.081	0.0968	0.1935
140CR	1.750	0.221	1.375	–	–	0.448	1.750	1.125	2.484	3.500	4.968	1.750	2.500	0.1562	0.3124
160CR	2.000	0.250	1.500	–	–	0.516	2.000	1.252	2.827	4.000	5.654	2.000	2.760	0.2134	0.4268

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

ANSI ROLLER CHAIN WITH ATTACHMENTS



D-1



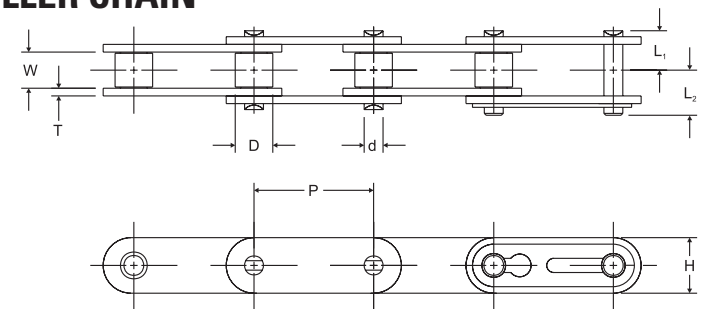
D-3

TABLE 92. SILVER SHIELD CR COATED CHAIN – ANSI ROLLER CHAIN WITH ATTACHMENTS

Chain No.	P	T	d	L_1	L_2	L_3	L_4	Additional Weight Per Attachment	
								D-1	D-3
	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
40CR	0.500	0.060	0.156	0.317	0.377	0.374	0.661	0.002	0.004
50CR	0.625	0.080	0.200	0.399	0.489	0.469	0.827	0.004	0.008
60CR	0.750	0.094	0.234	0.498	0.648	0.563	1.018	0.006	0.012
80CR	1.000	0.125	0.313	0.638	0.857	0.752	1.335	0.020	0.040
100CR	1.250	0.156	0.325	0.785	0.912	0.937	1.698	0.027	0.054
120CR	1.500	0.187	0.437	0.989	1.119	1.126	2.024	0.044	0.088
140CR	1.750	0.220	0.500	1.068	1.253	1.311	2.264	0.066	0.132
160CR	2.000	0.250	0.562	1.263	1.454	1.500	2.654	0.099	0.198

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

DOUBLE-PITCH ROLLER CHAIN

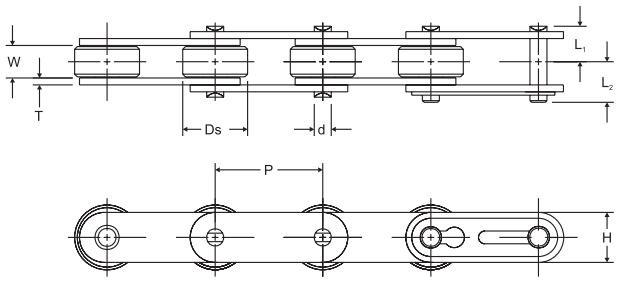


Small roller

TABLE 93. SILVER SHIELD CR COATED DOUBLE-PITCH ROLLER CHAIN – STANDARD ROLLER

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin			Carbon Max. Allowable Load	Average Weight
	P	W	D	H	T	d	L_1	L_2		
	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
C2040CR	1.000	0.312	0.312	0.472	0.060	0.156	0.319	0.382	615	0.340
C2050CR	1.250	0.376	0.400	0.590	0.080	0.200	0.409	0.477	1,010	0.580
C2060HCR	1.500	0.500	0.469	0.687	0.125	0.234	0.590	0.660	1,410	1.010
C2080HCR	2.000	0.626	0.625	0.943	0.156	0.312	0.745	0.845	2,350	1.770
C2100HCR	2.500	0.750	0.250	1.150	0.187	0.375	0.830	0.980	3,800	2.380
C2120HCR	3.000	1.000	0.875	1.370	0.219	0.437	1.030	1.210	5,380	3.410
C2160HCR	4.000	1.250	1.125	1.870	0.281	0.563	1.337	1.514	9,190	6.020

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



Large roller

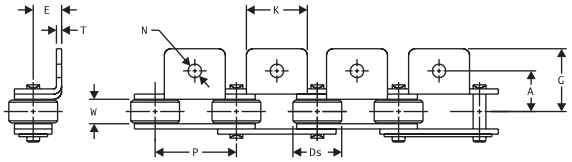
TABLE 94. SILVER SHIELD CR COATED DOUBLE-PITCH ROLLER CHAIN – CARRIER ROLLER

Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin			Carbon Max. Allowable Load	Average Weight
	P	W	Ds	H	T	d	L_1	L_2		
	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
C2042CR	1.000	0.312	0.625	0.472	0.060	0.156	0.319	0.382	615	0.580
C2052CR	1.250	0.376	0.750	0.590	0.080	0.200	0.409	0.477	1,010	0.900
C2062HCR	1.500	0.500	0.875	0.687	0.125	0.234	0.590	0.660	1,410	1.461
C2082HCR	2.000	0.626	1.125	0.943	0.156	0.312	0.745	0.845	2,350	2.450
C2102HCR	2.500	0.750	1.562	1.150	0.187	0.375	0.830	0.980	3,800	3.90
C2122HCR	3.000	1.000	1.750	1.370	0.219	0.437	1.030	1.210	5,380	5.40
C2162HCR	4.000	1.250	2.250	1.870	0.281	0.563	1.337	1.514	9,190	9.21

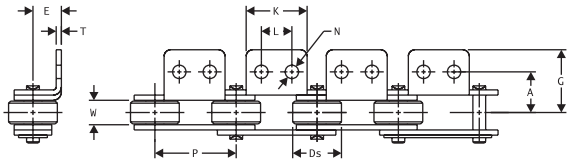
NOTE: Dimensions are subject to change. Contact your Timken Drives representative to obtain certified prints for design and construction.

DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

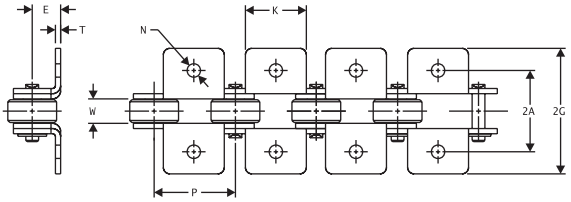
BA-1



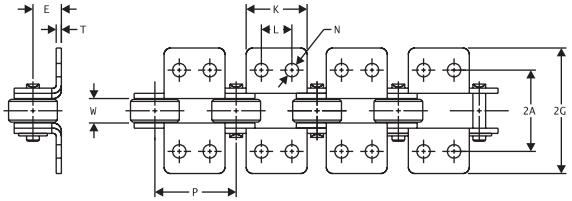
BA-2



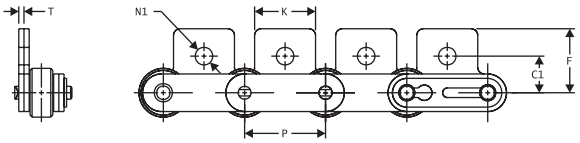
BK-1



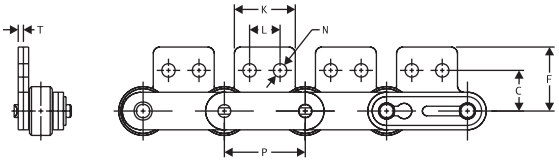
BK-2



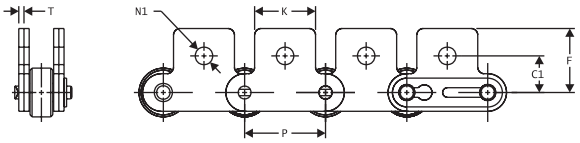
SA-1



SA-2



SK-1



SK-2

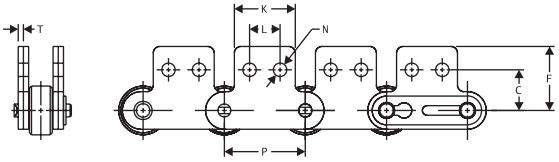


TABLE 95. SILVER SHIELD CR COATED CHAIN – DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

Chain No.	Pitch	Link Plate	BA-SK-SA-SK Type Attachment												Additional Weight Per Attachment	
	P	T	K	N	L	A	E	G	2A	2G	C	F	C1	N1	BA-SA	BK-SK
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
C2040CR C2042CR	1.000	0.060	0.750	0.142	0.374	0.500	0.358	0.750	1.000	1.500	0.531	0.780	0.437	0.205	0.006	0.013
C2050CR C2052CR	1.250	0.080	0.937	0.205	0.469	0.625	0.437	0.953	1.252	1.906	0.625	0.969	0.563	0.268	0.013	0.026
C2060HCR C2062HCR	1.500	0.125	1.126	0.205	0.563	0.844	0.579	1.230	1.688	2.460	0.750	1.205	0.689	0.346	0.037	0.075
C2080HCR C2082HCR	2.000	0.156	1.500	0.268	0.752	1.094	0.750	1.598	2.188	3.196	1.000	1.583	0.874	0.406	0.082	0.163
C2100HCR C2102HCR	2.50	0.189	1.875	0.323	0.937	1.312	0.922	1.950	2.624	3.900	1.250	1.984	1.125	0.516	0.132	0.265
C2120HCR C2122HCR	3.00	0.219	2.250	0.386	1.125	1.562	1.093	2.390	3.124	4.780	1.470	2.361	1.319	0.578	0.221	0.441
C2160HCR C2162HCR	4.00	0.281	3.060	0.516	1.500	2.062	1.437	3.060	5.324	6.120	2.000	3.093	1.75	0.771	0.468	0.895

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

DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

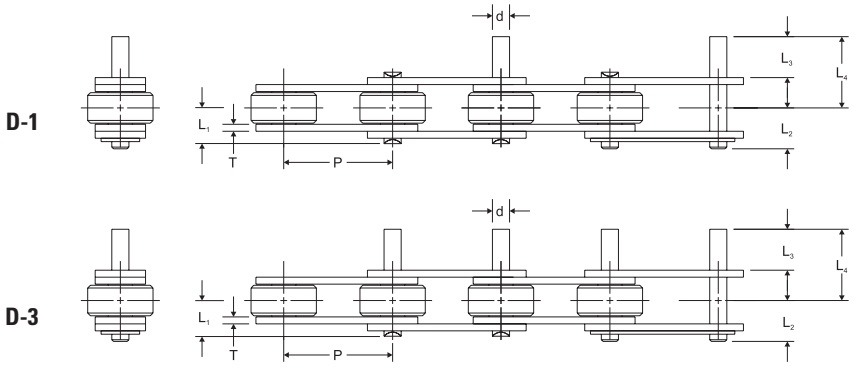


TABLE 96. SILVER SHIELD CR COATED CHAIN – DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

Chain No.	P	T	d	L_1	L_2	L_3	L_4	Additional Weight Per Attachment	
								D-1	D-3
	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
C2040 - C2042CR	1.000	0.060	0.156	0.317	0.377	0.374	0.661	0.002	0.004
C2050 - C2052CR	1.250	0.080	0.200	0.399	0.489	0.469	0.827	0.004	0.008
C2060H - C2062HCR	1.500	0.125	0.234	0.590	0.660	0.563	1.083	0.006	0.012
C2080H - C2082HCR	2.000	0.156	0.313	0.745	0.845	0.752	1.401	0.020	0.040
C2100H - C2102HCR	2.500	0.187	0.375	0.830	0.980	0.937	1.687	0.027	0.054
C-2120H - C2122HCR	3.000	0.219	0.437	1.030	1.210	1.125	2.062	0.044	0.088
C-2160H - C2162CR	4.000	0.281	0.562	1.337	1.514	1.500	2.718	0.099	0.198

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

STAINLESS STEEL ATTACHMENT CHAIN

We produce 600SS (AS) series stainless steel attachment chains that provide excellent resistance to most corrosive agents and temperature extremes beyond the capability of carbon steel chain. Chain construction uses 600SS pins, bushings and rollers with 300SS side plates.

- Provides corrosion resistance superior to either nickel-plated or coated-series chains.
- Provides for operation in temperature ranges above and below where carbon steel base chains can operate.
- Up to 50 percent higher working load compared to all 304SS chains.
- Better expected wear life compared to all 304SS chains.
- 304SS (PS) or 316SS (NS) chains are available upon request.

ANSI CHAIN SIZES AVAILABLE WITH STANDARD ATTACHMENTS

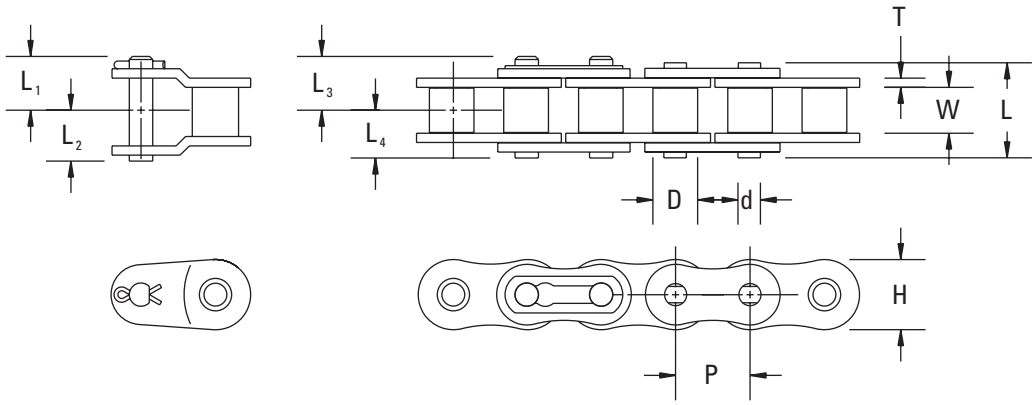
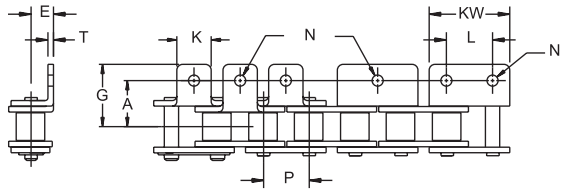


TABLE 97. STAINLESS STEEL ANSI CHAIN – AVAILABLE WITH STANDARD ATTACHMENTS

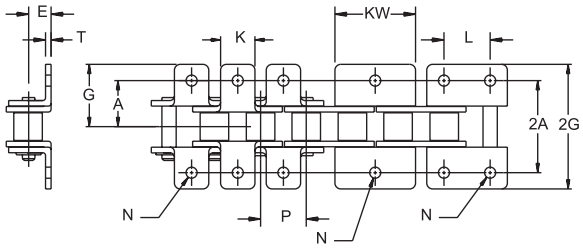
Chain No.	Pitch	Main Roller Link Inside Width	Roller Dia.	Link Plate		Pin						Max. Allowable Load	Average Weight
	P	W	D	H	T	d	L	L_1	L_2	L_3	L_4	AS(600SS)	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
40AS	0.500	0.312	0.312	0.472	0.060	0.156	0.630	0.404	0.317	0.377	0.315	155	0.420
50AS	0.625	0.376	0.400	0.590	0.080	0.200	0.795	0.489	0.399	0.489	0.398	230	0.713
60AS	0.750	0.500	0.469	0.705	0.094	0.234	0.996	0.600	0.498	0.648	0.498	350	1.067
80AS	1.000	0.626	0.625	0.943	0.125	0.313	1.283	0.768	0.638	0.857	0.642	600	1.868
100AS	1.250	0.755	0.750	1.180	0.156	0.375	1.595	0.908	0.785	0.912	0.785	850	2.680
120AS	1.500	1.000	0.875	1.425	0.187	0.437	1.955	1.119	1.071	1.119	0.989	1,278	3.980
140AS	1.750	1.000	1.000	1.663	0.220	0.500	2.136	1.253	1.150	1.253	1.068	1,535	5.030
160AS	2.000	1.250	1.125	1.899	0.250	0.562	2.538	1.454	1.370	1.454	1.209	2,100	6.790

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

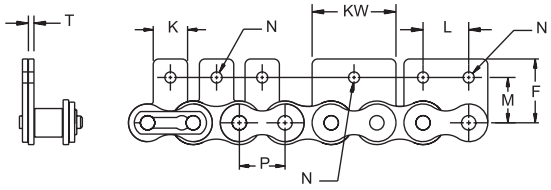
ANSI ROLLER CHAIN WITH ATTACHMENTS



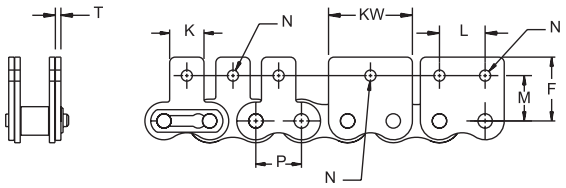
BA-1



BK-1



SA-1



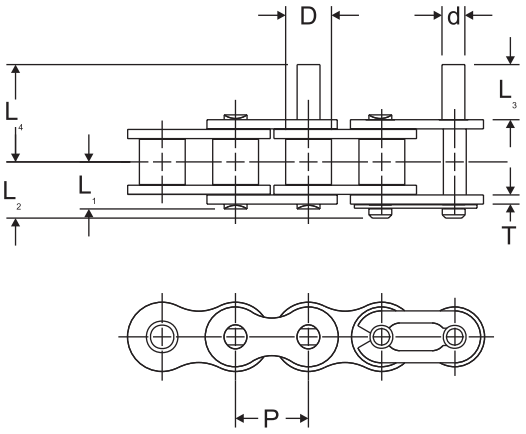
SK-1

TABLE 98. STAINLESS STEEL ANSI CHAIN WITH ATTACHMENTS

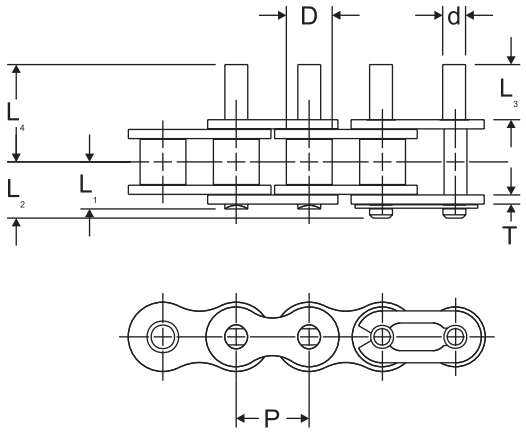
Chain No.	BA-SK-SA-SK Type Attachment													Additional Weight Per Attachment	
	P	T	K	KW	L	N	A	E	G	2A	2G	M	F	BA-SK	BK-SK
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
40AS	0.500	0.060	0.374	0.970	0.500	0.142	0.500	0.311	0.681	1.000	1.362	0.500	0.685	0.0044	0.0088
50AS	0.625	0.080	0.500	1.210	0.625	0.205	0.625	0.406	0.917	1.250	1.834	0.625	0.906	0.0066	0.0132
60AS	0.750	0.094	0.625	1.460	0.750	0.205	0.750	0.469	1.106	1.500	2.212	0.720	1.051	0.0154	0.0308
80AS	1.000	0.125	0.750	1.940	1.000	0.268	1.000	0.625	1.413	2.000	2.826	0.969	1.358	0.0287	0.0574
100AS	1.250	0.156	1.000	–	–	0.343	1.250	0.780	1.768	2.500	3.536	1.252	1.732	0.0572	0.1144
120AS	1.500	0.187	1.250	–	–	0.386	1.500	0.906	2.197	3.000	4.394	1.437	2.081	0.0968	0.1935
140AS	1.750	0.221	1.375	–	–	0.448	1.750	1.125	2.484	3.500	4.968	1.750	2.500	0.1562	0.3124
160AS	2.000	0.250	1.500	–	–	0.516	2.000	1.252	2.827	4.000	5.654	2.000	2.760	0.2134	0.4268

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

ANSI ROLLER CHAIN WITH ATTACHMENTS



D-1



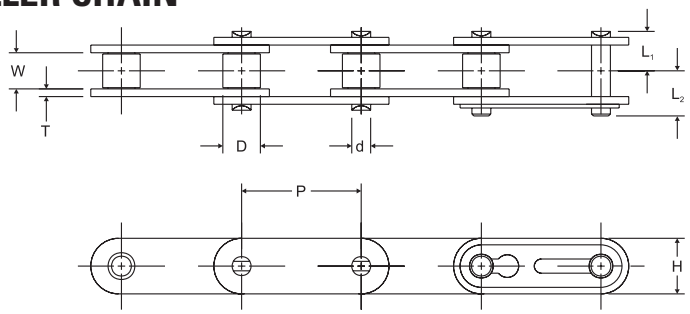
D-3

TABLE 99. STAINLESS STEEL CHAIN – ANSI ROLLER CHAIN WITH ATTACHMENTS

Chain No.	P	T	d	L_1	L_2	L_3	L_4	Additional Weight Per Attachment	
								D-1	D-3
	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
40AS	0.500	0.060	0.156	0.317	0.377	0.374	0.661	0.002	0.004
50AS	0.625	0.080	0.200	0.399	0.489	0.469	0.827	0.004	0.008
60AS	0.750	0.094	0.234	0.498	0.648	0.563	1.018	0.006	0.012
80AS	1.000	0.125	0.313	0.638	0.857	0.752	1.335	0.020	0.040
100AS	1.250	0.156	0.325	0.785	0.912	0.937	1.698	0.027	0.054
120AS	1.500	0.187	0.437	0.989	1.119	1.126	2.024	0.044	0.088
140AS	1.750	0.220	0.500	1.068	1.253	1.311	2.264	0.066	0.132
160AS	2.000	0.250	0.562	1.263	1.454	1.500	2.654	0.099	0.198

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

DOUBLE-PITCH ROLLER CHAIN

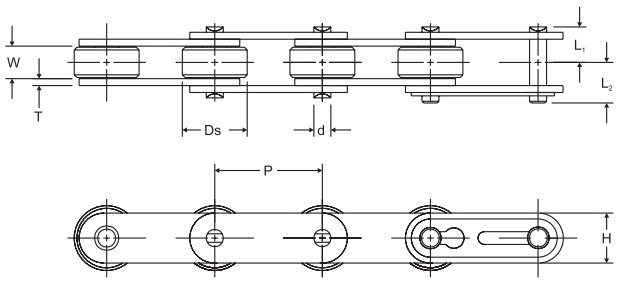


Standard roller

TABLE 100. STAINLESS STEEL DOUBLE-PITCH ROLLER 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_1	L_2	AS(600SS)	
	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
C2040AS	1.000	0.312	0.312	0.472	0.060	0.156	0.319	0.382	155	0.340
C2050AS	1.250	0.376	0.400	0.590	0.080	0.200	0.409	0.477	230	0.580
C2060HAS	1.500	0.500	0.469	0.687	0.125	0.234	0.590	0.660	375	1.010
C2080HAS	2.000	0.626	0.625	0.943	0.156	0.312	0.745	0.845	625	1.770
C2100HAS	2.500	0.750	0.250	1.150	0.187	0.375	0.830	0.980	900	2.380
C2120HAS	3.000	1.000	0.875	1.370	0.219	0.437	1.030	1.210	1,340	3.410
C2160HAS	4.000	1.250	1.125	1.870	0.281	0.563	1.337	1.514	2,170	6.020

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



Large roller

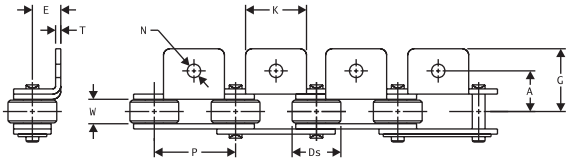
TABLE 101. STAINLESS STEEL DOUBLE-PITCH ROLLER CHAIN – CARRIER ROLLER

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_1	L_2	AS(600SS)	
	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs./ft.
C2042AS	1.000	0.312	0.625	0.472	0.060	0.156	0.319	0.382	155	0.580
C2052AS	1.250	0.376	0.750	0.590	0.080	0.200	0.409	0.477	230	0.900
C2062HAS	1.500	0.500	0.875	0.687	0.125	0.234	0.590	0.660	375	1.461
C2082HAS	2.000	0.626	1.125	0.943	0.156	0.312	0.745	0.845	625	2.450
C2100HAS	2.500	0.750	1.562	1.150	0.187	0.375	0.830	0.980	900	3.90
C2120HAS	3.000	1.000	1.750	1.370	0.219	0.437	1.030	1.210	1,340	5.40
C2160HAS	4.000	1.250	2.250	1.870	0.281	0.563	1.337	1.514	2,170	9.21

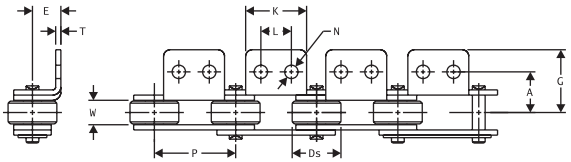
NOTE: Dimensions are subject to change. Contact your Timken Drives representative to obtain certified prints for design and construction.

DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

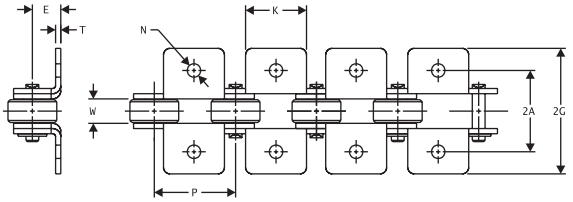
BA-1



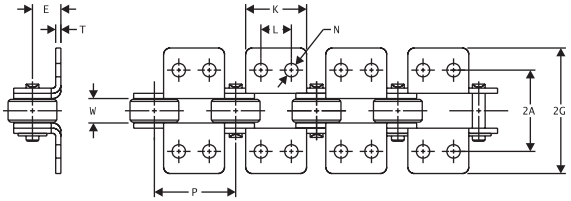
BA-2



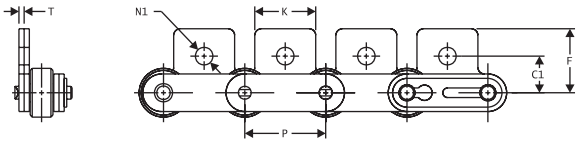
BK-1



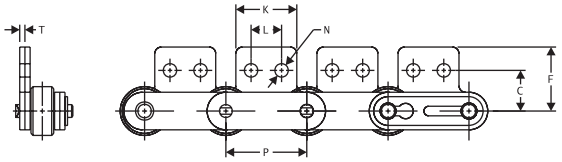
BK-2



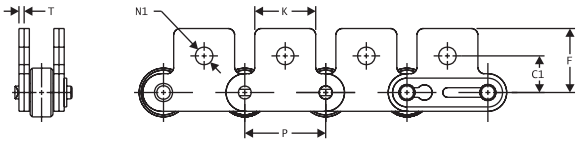
SA-1



SA-2



SK-1



SK-2

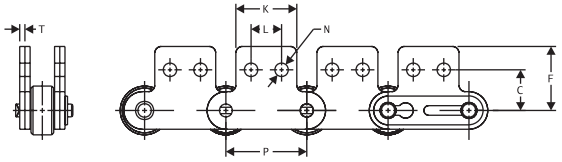


TABLE 102. STAINLESS STEEL CHAIN – DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

Chain No.	Pitch	Link Plate	BA-SK-SA-SK Type Attachment												Additional Weight Per Attachment	
	P	T	K	N	L	A	E	G	2A	2G	C	F	C1	N1	BA-SA	BK-SK
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
C2040AS C2042AS	1.000	0.060	0.750	0.142	0.374	0.500	0.358	0.750	1.000	1.500	0.531	0.780	0.437	0.205	0.006	0.013
C2050AS C2052AS	1.250	0.080	0.937	0.205	0.469	0.625	0.437	0.953	1.252	1.906	0.625	0.969	0.563	0.268	0.013	0.026
C2060HAS C2062HAS	1.500	0.125	1.126	0.205	0.563	0.844	0.579	1.230	1.688	2.460	0.750	1.205	0.689	0.346	0.037	0.075
C2080HAS C2082HAS	2.000	0.156	1.500	0.268	0.752	1.094	0.750	1.598	2.188	3.196	1.000	1.583	0.874	0.406	0.082	0.163
C2100HAS C2102HAS	2.50	0.189	1.875	0.323	0.937	1.312	0.922	1.950	2.624	3.900	1.250	1.984	1.125	0.516	0.132	0.265
C2120HAS C2122HAS	3.00	0.219	2.250	0.386	1.125	1.562	1.093	2.390	3.124	4.780	1.470	2.361	1.319	0.578	0.221	0.441
C2160HAS C2162HAS	4.00	0.281	3.060	0.516	1.500	2.062	1.437	3.060	5.324	6.120	2.000	3.093	1.75	0.771	0.468	0.895

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

DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

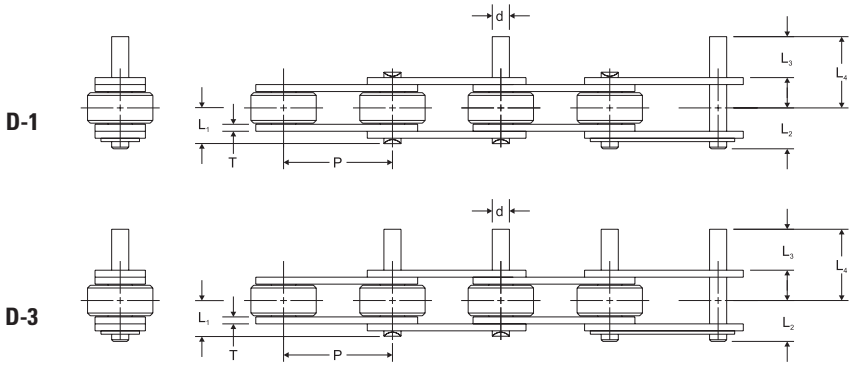


TABLE 103. STAINLESS STEEL CHAIN – DOUBLE-PITCH ROLLER CHAIN WITH ATTACHMENTS

Chain No.	P	T	d	L_1	L_2	L_3	L_4	Additional Weight Per Attachment	
								D-1	D-3
	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
C2040 - C2042AS	1.000	0.060	0.156	0.317	0.377	0.374	0.661	0.002	0.004
C2050 - C2052AS	1.250	0.080	0.200	0.399	0.489	0.469	0.827	0.004	0.008
C2060H - C2062HAS	1.500	0.125	0.234	0.590	0.660	0.563	1.083	0.006	0.012
C2080H - C2082HAS	2.000	0.156	0.313	0.745	0.845	0.752	1.401	0.020	0.040
C2100H - C2102HAS	2.500	0.187	0.375	0.830	0.980	0.937	1.687	0.027	0.054
C-2120H - C2122HAS	3.000	0.219	0.437	1.030	1.210	1.125	2.062	0.044	0.088
C-2160H - C2164HAS	4.000	0.281	0.562	1.337	1.514	1.500	2.718	0.099	0.198

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

GLOSSARY

A

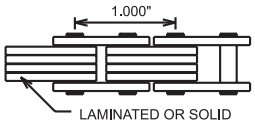
Angle of Flex: The total angle of chain joint articulation as a chain enters or leaves a sprocket or wheel. The angle is equal to 360 degrees divided by the number of teeth in the sprocket.

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

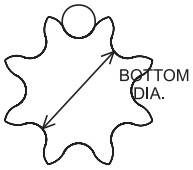
Articulation (v, "articulate"): The action of a chain joint flexing from straight, to an angle and back to straight as the joint enters and leaves the sprocket or other path, causing it to flex.

B

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

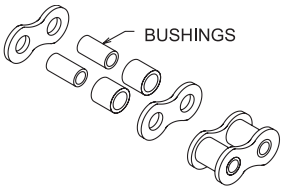


Block Chain: An alternative name used by some manufacturers for bar-link chain or for certain styles of leaf chain.



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.



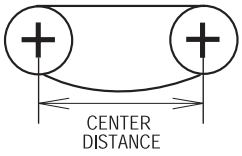
C

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.

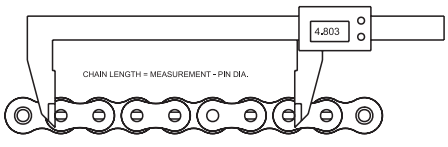
Center Distance: The distance between the centers of the shafts of a chain drive.

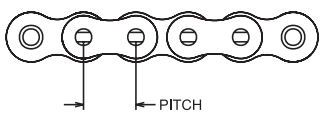


Chain Casing: An oil-retaining safety enclosure around a chain drive.

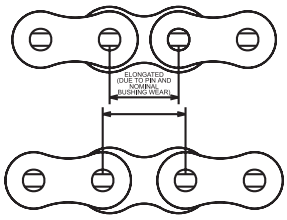
Chain Guard: An open guard of sheet metal, expanded metal or similar construction around a chain drive.

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.



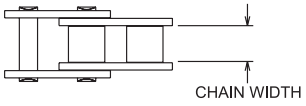


Chain Pitch (Nominal): The average distance between the joints (except for staggered pitch chains) of an assembled chain. In some cases, "joint," as defined here, will be a center of flexure not specifically identified with individual parts of the chain.

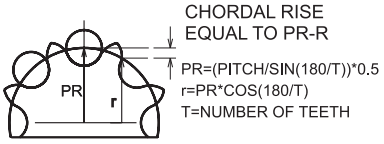


Chain Pitch Elongation or Chain Elongation: Increase in measured length due to wear or excessive load. Normally expressed in percent of length.

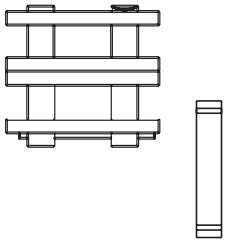
Chain Take-up: A mechanical device that takes-up chain slack. This could be an idler sprocket or similar device mounted on an adjustable bracket to adjust the slack in a chain installation.



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



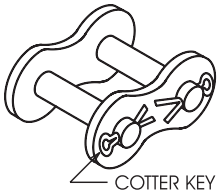
Chordal Effect (Chordal Action): The effect produced by the chain joint centers being forced to follow arcs instead of chords of the sprocket pitch circle.



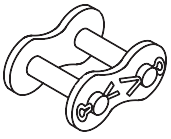
Clevis Connector: A connector used to connect a strand of leaf chain that has an inner-link end to a clevis block that has an inner-link configuration.

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.



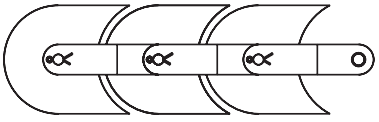
Connecting Link: For a roller chain, a pin link made with one link plate that is easily detachable to facilitate connecting or disconnecting the chain.



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.



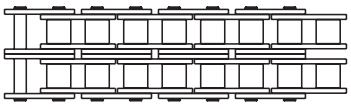
Curve Chain: Chain designed to bend around curves in the horizontal position.

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.

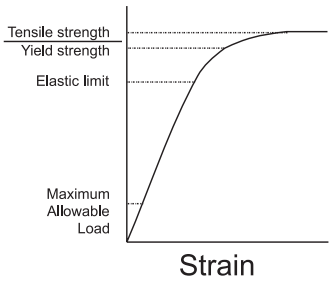
Design Horsepower: The specified horsepower for a chain drive multiplied by a service factor. It is the value used to select the chain size for the drive.



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).

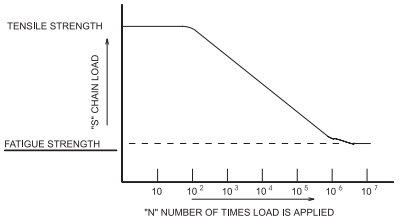
E



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.

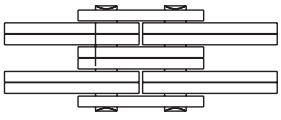
Hoist Chain: Chain manufactured strictly for a lifting application.

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.

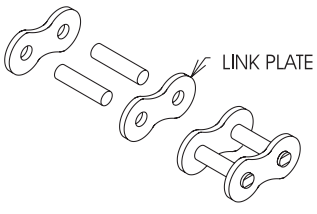
J

Joining Link: See Connecting Link.

L



Leaf Chain: A chain consisting of interlacing side plates and riveted pins. These chains are 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.

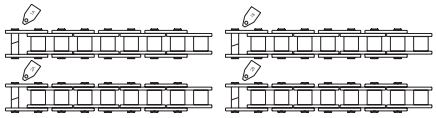
Link Plate: One of the side plates of either a pin link or a roller link in a roller chain.

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

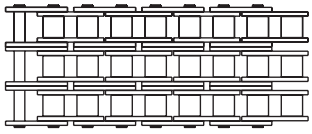
Master Link: See Connecting Link.



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.

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

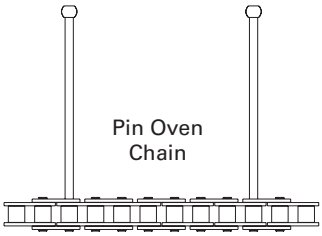
Multiple Strand Factor: A factor by which the horsepower rating of a single-strand chain is multiplied to obtain the horsepower capacity of a chain with two or more strands.

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.

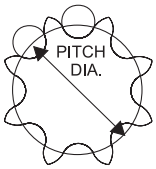
Offset Section: For a roller chain, a factory-assembled section, made up of a roller link and an offset link. Offset sections are used to connect strands of chain having an odd number of pitches.

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

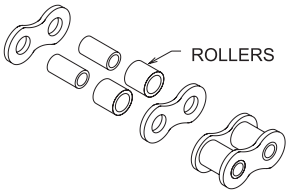
Pitch Diameter: The diameter of the sprocket pitch circle.

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).



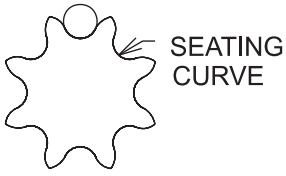
R

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.

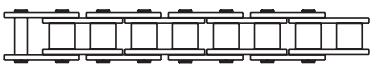
Semi-Press Fit (Tap Fit): Minimum interference fit between side plate and pin.

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).

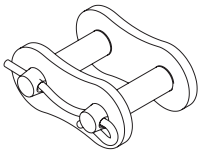
Sinter Bushing: Bushing made from powdered metal and then oil impregnated.

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.

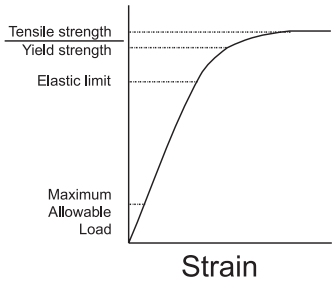
Slip Stick: Slip stick occurs when the motor drives continually and the sprocket rotates, but the chain moves ahead by stopping and starting at intervals. This could be caused by the following:

- 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.

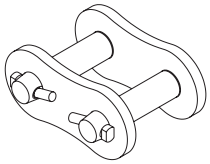
Staggered Pitch Chain: A chain with alternate links of differing pitches, one usually being considerably greater than the other.



T

Tensile Strength: See Ultimate Strength.

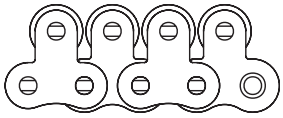
Tension Linkage: A chain application primarily transmitting motion back and forth or up and down at low speeds. A typical example is a forklift reciprocating system.



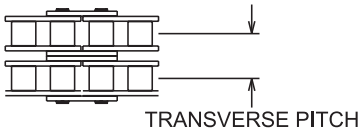
T-pin/T-head: The retaining pin for cotter-style chain and connecting links.

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.



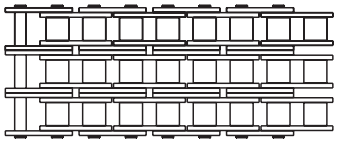
Torque: Torsional force, expressed in inch-pounds in chain calculations, which is the product of chain pull and one-half the sprocket pitch diameter.

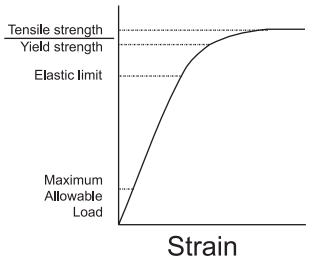


Transverse Clearance: Clearance between roller link plate and pin link plate.

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).





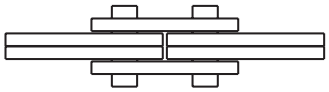
U

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

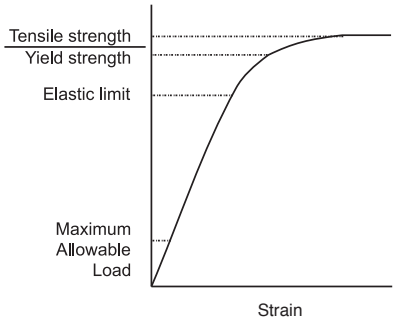
Working Load: An allowable suggested chain load used on conveyors, drives with nonstandard chains, or other applications of lower relative speed.



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.



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