A roller chain is made up of two kinds of links: roller links and pin links alternately spaced throughout the length of the chain (see fig. 10 below). All roller chains are constructed so that the rollers are evenly spaced throughout the chain. The outstanding advantage of this type of chain is the ability of the rollers to rotate when contacting the teeth of the sprocket. These types of roller chains and their sprockets are commonly used for the transmission of power in industrial machinery, machine tools, bicycles, motorcycles, tractors and other items with similar applications.

STANDARD ROLLER CHAIN NOMENCLATURE

ROLLER LINK - An inside link consisting of two inside plates, two bushings, and two rollers. (fig.1)

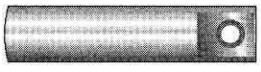
CONNECTING LINK - A pin link having one detachable side plate. (fig. 2)

OFFSET LINK - A link consisting of two offset plates assembled with a bushing and roller at one end and an offset link pin at the other. (fig. 3)

CONNECTING-LINK PLATE - The detachable pin-link plate belonging to a connecting link. It is retained by cotter pins or by a one-piece spring clip. (fig. 4)

ASSEMBLED PINS - Two pins assembled with one pin-link plate (main body of a connecting link). (fig. 5)

SPRING CLIP - Used to retain connecting link plate. Normally for chain 3/4 in. pitch and below. (fig. 6)



OFFSET LINK PIN - A pin used in offset links. (fig. 7)

COTTER PINS - Used to retain the plate on connecting links (normally for chain 1in. pitch and up) and all pitches of offset links. (fig. 8)

CHAIN PITCH - Distance in inches between centers of adjacent joint members. Other dimensions are proportional to the pitch. (fig. 9)

ROLLER CHAIN - Top view. Composed of roller links and pin links. (fig. 10)

STANDARD ROLLER CHAIN NUMBERS

The right-hand figure in the chain number is zero for roller chains of the usual proportions, 1 for a light weight chain, and 5 for a rollerless bushing chain. The number to the left of the right-hand figure denotes the number of 1/8 inches in the pitch. The letter H following the chain number denotes the heavy series; thus the number 80H denotes a 1 inch pitch heavy chain.

Heavy Series Chains are made in 3/4 inch and larger pitches, and have thicker link plates than those of the regular standard. They are designed for higher loads at lower speeds.

Std. Chain #	Pitch	Average Ultimate Strength Lbs.	Max. Roller Dia.	Width	Pin Dia.	Thickness of Link Plate	Heavy Series Thickness of Link Plate
35	3/8	2,400	.20*	3/16	.141	.05	—
40	1/2	4,000	.312	5/16	.156	.06	—
41	1/2	2,700	.306	1/4	.141	.05	—
43 (410)†	1/2	2,000	.305	1/8	.143	.039	—
50	5/8	6,600	.40	3/8	.20	.08	—
60	3/4	9,200	.469	1/2	.234	.094	.125
80	1	16,300	.625	5/8	.312	.125	.156
100	1-1/4	25,300	.75	3/4	.375	.156	.187
420†	1/2	3,900	.305	1/4	.156	.059	—
A2040‡	1	4,000	.312	5/16	.156	.059	—
A2050‡	1-1/4	6,500	.40	3/8	.20	.077	—
A2060‡	1-1/2	9,200	.469	1/2	.234	.095	—

* This size chain has no rollers † This size chain is considered non-standard
‡ This size chain is double pitch drive type chain

STANDARD ROLLER CHAIN DIMENSIONS

For standard roller chains, the following dimensions apply:

1.) Roller Diameters are approximately 5/8 pitch.
2.) The width is defined as the distance between the link plates. It is approximately 5/8 of the chain pitch.
3.) Pin diameters are approximately 5/16 pitch or 1/2 of the roller diameter.
4.) Thickness of inside and outside link plates for the standard series is approximately 1/8 pitch.
5.) Thickness of link plates for the heavy series of any pitch is approximately that of the next larger pitch standard series chain.
6.) Maximum height of roller link plates = 0.95 pitch.
7.) Maximum height of pin link plates (connecting links and pin side of offset links) = 0.82 pitch.

ROLLER CHAIN TYPES

Non Standard Roller Chains are chain sizes developed individually by various manufacturers prior to the adoption of standards. These chain sizes are similar in form and construction to standard roller chains but do not conform dimensionally to standard chains. Non standard chain can have common uses such as #43 (410) which is commonly used on bicycles and #420 which can be found on some motorbikes.

Standard Double Pitch Roller Chains are like standard roller chains except that their link plates have twice the pitch of the corresponding standard-pitch chain. Their design does conform to specifications for double pitch roller chains. They are especially useful for low speed, moderate loads or long distances from center of sprocket to center of sprocket.Light Weight Machinery Chain is designated as #41. It is 1/2 inch pitch, 1/4 inch wide, has 0.306 inch diameter rollers, and a 0.141 inch pin diameter. The average ultimate tensile strength is 2,700 pounds.