

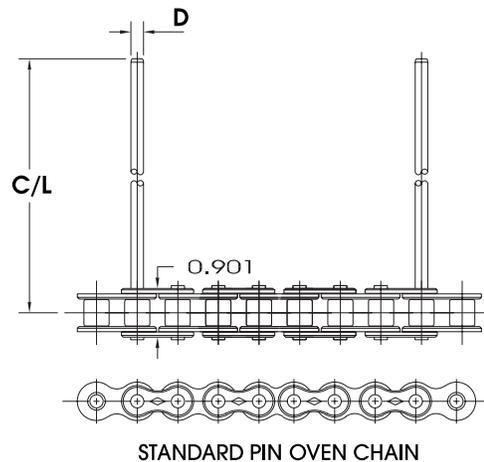
# SPECIAL APPLICATION CHAIN

## Chain Descriptions and Dimensions

### Pin Oven Chain

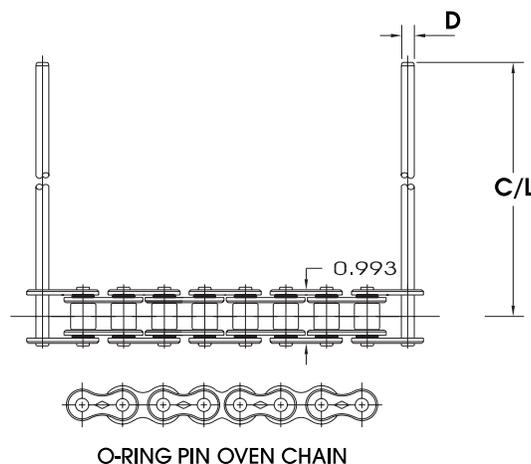
Long lasting, true running, high quality Pin Oven chain is critical for two-piece metal decorating operations that transfer and cure literally thousands of cans per minute. Diamond Chain is the world leader, producing the highest quality and best performing chain for this important and very demanding application. Depending upon your needs, we offer two styles of base chain that can help you to be the most productive and cost effective.

**Standard Pin Oven Chain:** Our Standard Pin Oven chain begins its life as  $\frac{3}{4}$ " pitch ANSI chain but that's where the "standard" part ends. We improve this chain's ability to perform in the harshest of environments by providing the components with the same superior qualities as our industrial drive chains such as: raw material selection and closely controlled heat treatment. Then we incorporate some additional clearances to accommodate the high temperatures of the drying ovens and allow more access for lubricant to enter the critical pin/bushing joint.



**RING LEADER® O-ring Pin Oven Chain:** High temperatures, contaminants and higher line speeds place ever increasing demands on Pin Oven chain. Malfunctioning or rapidly wearing Pin Oven chain can be very costly due to replacement cost, downtime, and lost production.

Now there is an Pin Oven chain that may make all others obsolete... Diamond RING LEADER O-ring Pin Oven chain, a special version of Diamond's industrial RING LEADER O-ring chain.



# SPECIAL APPLICATION CHAIN

## Chain Descriptions and Dimensions

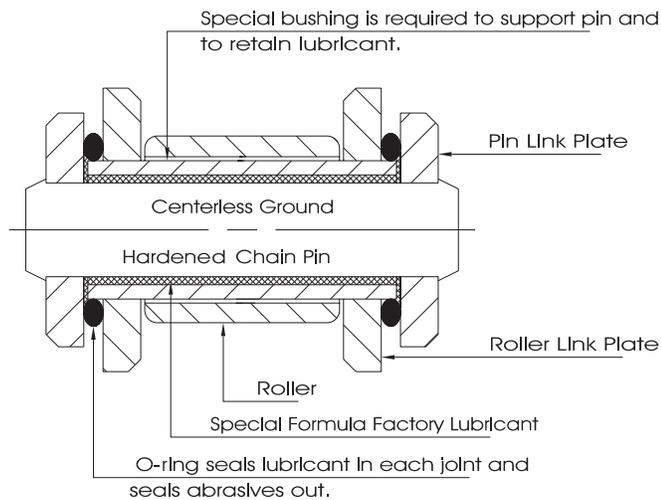


RING LEADER® O-ring Pin Oven chain resulted from state-of-the-art Diamond engineering and is specially adapted for use in the high temperature atmosphere of decorating ovens. Consistent lubrication in each chain joint, along with Diamond's O-ring technology, allows O-ring Pin Oven chain to resist contaminants,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

The same through-pin design that has proven superior in our standard Pin Oven chains makes for smoother running with less vibration even at high line speeds. And because O-ring Pin Oven chain wears more evenly and consistently you'll experience less downtime, fewer wrecks, fewer jams and more consistent production capacity.

Diamond O-ring Pin Oven chain employs specially compounded O-rings that seal out contaminants and seal in a lubricant that functions at chain temperatures up to 450°F. The consistent, sealed-in lubrication in RING LEADER O-ring Pin Oven chain means less external lubrication need be applied which can reduce the chance of can contamination from excess lubrication.

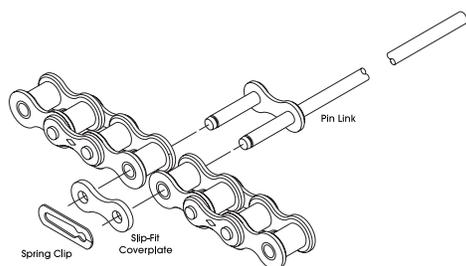
Note: When using O-ring Pin Oven chain for the first time it is important to remove or reposition cleaning devices such as wire brushes so they do not damage the O-rings.



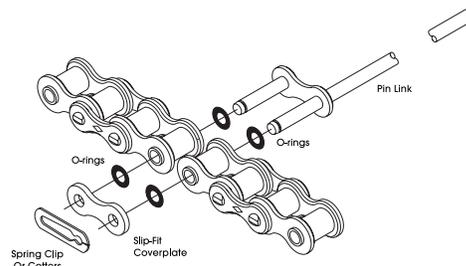
# SPECIAL APPLICATION CHAIN

## Chain Descriptions and Dimensions

**Extended pins:** Diamond chains are designed so the carrier pins are the actual chain pins, not just an add-on attachment. This “through pin” design assures the user that the chain is of the highest strength and integrity. All Pin Oven chains are normally assembled with through-hardened medium carbon (bendable) extended carrier pins, but stainless steel or case-hardened low carbon (break away) pins are also available upon request. Standard bendable pins are heat treated to produce a tough, ductile pin, capable of withstanding incidental contact with jammed product or interference with machine framework. If the obstruction is minor and the extended pins become bent they can be easily straightened back to their original position in a matter of seconds and production is back on line. For those rare occasions where the obstruction is significant enough to break the pins, the failed joint can be replaced using a repair link shown below.



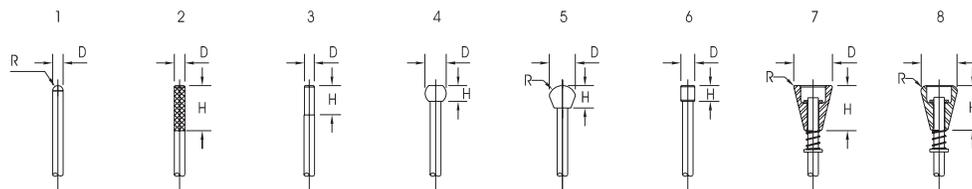
**STANDARD PIN OVEN CHAIN**



**RING LEADER O-RING PIN OVEN CHAIN**

In fact, we construct our chains so well that we’ve even omitted the sidemash on these chains so that if there is a need to repair a link, you won’t even need to grind a pin. Just remove the air pressure from the tension device, clamp the chain in position, use a pin extractor to remove the failed pin link and install the repair link just like a normal connecting link. Reverse the procedure with the clamp and line pressure and begin production. The strength, integrity and smoother operating characteristics of our through pin design will make themselves apparent early on in the chain’s service life.

**Tips and pin extensions:** At Diamond, we learned a long time ago that there are a lot of optional tips and pin extensions that users like. To date, we’ve produced dozens of different combinations. The most common extension/tip combination is our spring-loaded pin tip assembled with a side plate to end-of-tip dimension of seven inches. But that’s not to say that your oven or the cans you’re producing don’t need something a little different. And if that’s the case, let us know. We know how important your particular configuration is and we’ll certainly do whatever we can to get it to you. The following table shows the most common tips that are currently available. Depending upon the design, the tips can be manufactured from steel, aluminum, heat stabilized nylon, or high temperature PEEK™. The tip’s design, material, and pin extension of your choice can be combined to provide you with the optimum chain for your specific application. If your tip isn’t here, then give our application engineers a call and we’ll get right to work.



Dimensions in Inches

	1	2	3	4	5	6	7	8
D	.234	.247	.215	.468	.575	.352	.875	.820
H	N/A	1.000	.650	.350	.472	.350	1.000	1.000
R	.117	N/A	N/A	N/A	.300	N/A	45 deg.	.125

**Ordering instructions:** Use the above drawing showing available tips and specify whether Standard or RING LEADER base chain is desired, type of pin material (bendable, breakable or stainless), type of tip configuration and the extension from the *centerline* of the chain to the end of the pin including the tip.

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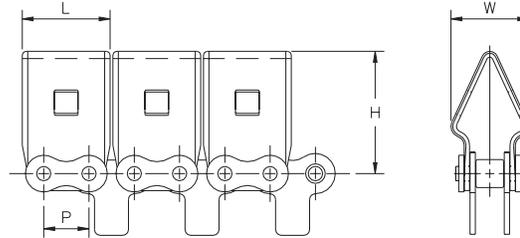
# SPECIAL APPLICATION CHAIN

## Chain Descriptions and Dimensions



### Bindery Chain

Diamond's Bindery chains are specifically designed for long life and smooth operations in the book binding industry. These #40 base chains are used in the saddle binding machinery to convey sorted and collated book pages for stitching and trimming. The specific book's size is easily accommodated by inserting the user's attachments into the square holes of the "saddle lug."

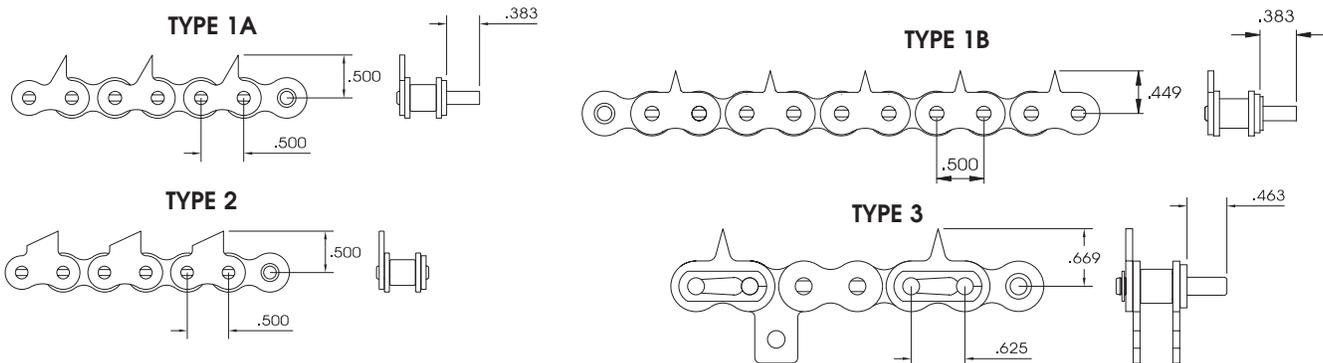


Dimensions in Inches

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

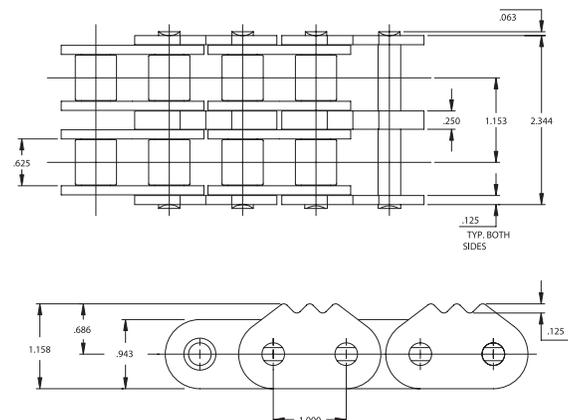
### Plastic Film Feeder Chain

These special chains are designed for thermoforming applications and unusual conveying applications such as creating polystyrene plates, shrink wrap, blister packs and many other plastic items. The chain features precise, pointed link plates combined with extended pins or straight attachments (for additional rigidity in operation) which make them ideal for conveying plastic film into thermoforming operations. Several models are available for your conveying needs.



### Serrated Top Chain

Serrated top chains are designed for lumber industry applications such as edge finishing. This chain features specially designed link plates to maximize grip while minimizing wood damage. When lubricated properly, Diamond Serrated Top chain offers superior performance, longer service life and reduced downtime due to elongation and fatigue failures. Serrated Top chain 80-2 is stocked and offers features such as double thickness serrated top centerplates for shock loading advantages and superior chain lubricant for smoother running and tracking. Single and other multiple strand versions may be ordered to meet your conveying needs. Our engineering staff can help determine the Diamond chain that best suits your operating conditions of frequency and depth of shock loading, as well as abrasion factors, temperature and humidity factors.



# SPECIAL APPLICATION CHAIN

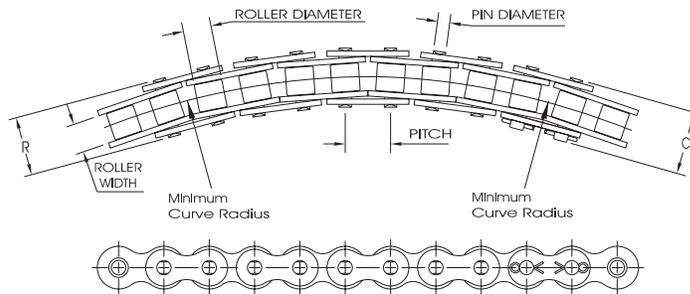
## Chain Descriptions and Dimensions

### Additional Clearance Chain

Diamond produces two types of chain specifically designed to allow for lateral deviations that standard chains can't handle. Depending upon the application, either of these should be quite suitable.

### POWER CURVE® Chain

This chain is manufactured using a pin which is both smaller in diameter and slightly longer than its Standard Series version. This design allows for extra clearance between both the pin and the bushing and in overall chain width as well.



Dimensions in Inches and Pounds

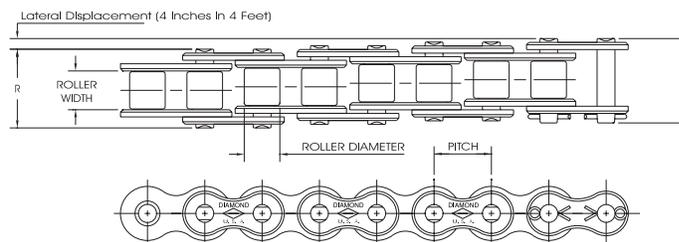
Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Min. Lateral Radius	Weight Per Foot	Average Tensile Strength
40LG	1/2	5/16	.312	.136	.060	.77	.69	14	.39	2400
50LG	5/8	3/8	.400	.172	.080	.90	.86	16	.66	4600
60LG	3/4	1/2	.469	.200	.094	1.14	1.07	22	.94	6100
80LG	1	5/8	.625	.281	.125	1.47	1.35	36	1.60	11500

Consult Diamond for standard attachment availability.

### TUF-FLEX® Chain

TUF-FLEX chain is designed to handle shaft or sprocket misalignment more than lateral turns. TUF-FLEX chains can handle up to four inches of lateral displacement in every four feet of chain length and up to eight degrees of axial twist.

TUF-FLEX is a rugged power transmission chain especially engineered to provide extra durability and unusual flexibility to meet the strenuous service demanded by heavy-duty construction machinery.



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	C	R	Weight Per Foot	Average Tensile Strength
120-C	1 1/2	1	.875	.437	.187	2.16	2.02	3.69	34000
140-C	1 3/4	1	1.000	.500	.219	2.33	2.16	5.00	46000
160-HC	2	1 1/4	1.125	.562	.281	2.86	2.68	7.09	70000
200-C	2 1/2	1 1/2	1.562	.781	.312	3.45	3.14	10.65	95000

# SPECIAL APPLICATION CHAIN

## Chain Descriptions and Dimensions

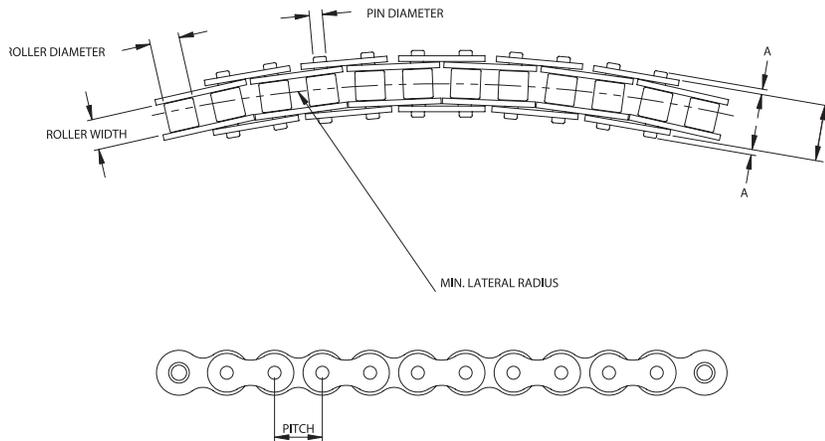


### Straight Running and Side-Flexing Roller Chain

Base chains are designed with specially extended pins to retain plastic “snap on” flat top plates. Diamond offers chains for both straight running and side-flexing applications. These chains can be used with standard ASME/ANSI 40 and ASME/ANSI 60 sprockets. Chains are available both in carbon steel and stainless steel material.

Note: Diamond does not offer the plastic flat top plates.

### #43 SB and #63 SB Side-Flexing Roller Chain For Plastic “Snap On” Flat Top Chains

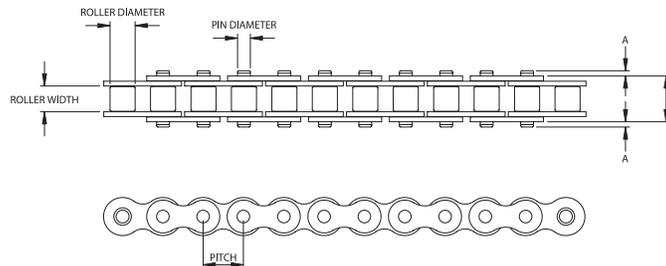


Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	A	B	Min. Lateral Radius	Weight Per Foot	Average Tensile Strength
43 SB	1/2	5/16	.312	.136	.060	.056	.588	14	.390	2400
63 SB	3/4	1/2	.469	.200	.094	.120	.900	22	.940	6100

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

### #43 and #63 Straight Running Roller Chain For Plastic “Snap On” Plastic Chains



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Roller Width	Roller Diameter	Pin Diameter	Link Plate Thickness	A	B	Weight Per Foot	Average Tensile Strength
43	1/2	5/16	.312	.156	.060	.065	.568	.410	4000
63	3/4	1/2	.469	.234	.094	.105	.898	.990	8500

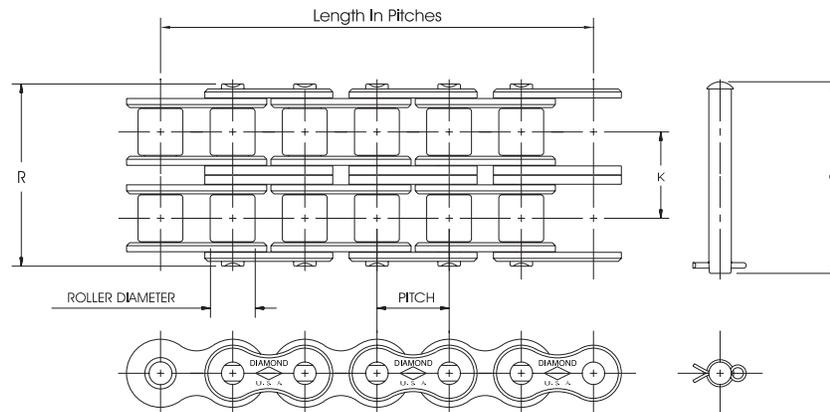
Chain is also available in stainless steel. Diamond 43 SS and 63 SS.

# SPECIAL APPLICATION CHAIN

## Chain Descriptions and Dimensions

### Coupling Chain

These chains are specifically designed to work in concert with drive couplings to provide near-seamless power transmission. The chain's file-hard components develop a high-capacity unit durable enough to deliver long after other chains fail.



Dimensions in Inches and Pounds

Diamond Number	Pitch	Roller Width	Roller Diameter	C	R	K	Length Pitches	Weight Per Chain
D4012	1/2	0.312	0.312	1.297	1.24	0.566	12	0.41
D4016	1/2	0.312	0.312	1.297	1.24	0.566	16	0.55
D5016	5/8	0.375	0.400	1.592	1.55	0.713	16	1.12
D5018	5/8	0.375	0.400	1.592	1.55	0.713	18	1.26
D6018	3/4	0.500	0.469	1.980	1.94	0.897	18	2.16
D6020	3/4	0.500	0.469	1.980	1.94	0.897	20	2.40
D6022	3/4	0.500	0.469	1.980	1.94	0.897	22	2.64
D8018	1	0.625	0.625	2.567	2.47	1.153	18	5.00
D8020	1	0.625	0.625	2.567	2.47	1.153	20	5.56
D10018	1 1/4	0.750	0.750	3.162	3.02	1.408	18	9.24
D10020	1 1/4	0.750	0.750	3.162	3.02	1.408	20	10.30
D12018	1 1/2	1.000	0.875	3.977	3.79	1.789	18	16.20
D12022	1 1/2	1.000	0.875	3.977	3.79	1.789	22	19.80

# SPECIAL APPLICATION CHAIN

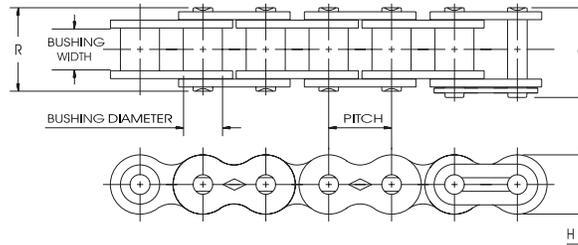
## Chain Descriptions and Dimensions



### Micropitch® Chain

Micropitch chain, originally developed for use in electronic equipment for the aircraft industry, is made using standard bushing type construction which offers a large joint bearing area. This larger area permits greater loads and speeds. Micropitch chain is constructed entirely of non-magnetic stainless steel and is well suited for precision applications such as instrumentation devices and printers/plotters.

Micropitch chain is applied on the basis of maximum working loads imposed in the drive. For chain speed less than 100 feet per minute, maximum working load should not exceed 20 pounds. For speeds greater than 100 feet per minute, the maximum working load should be reduced depending upon the specifics of the drive. As a general rule, working loads should not exceed 12 pounds for chain speed greater than 500 feet per minute. Contact Diamond's applications engineering department for more information.



Dimensions in Inches and Pounds

Diamond Number	Pitch Inches	Bushing Width	Bushing Diameter	Pin Diameter	Link Plate Thickness	H	C	R	Average Tensile Strength
47SS	.147	.072	.090	.062	.015	.138	.250	.220	180

### Powersports Chain

Diamond's Powersports chains are designed to meet the individual needs of the powersports enthusiast for ATVs, go-karts, motorcycles and snowmobiles. Multi-Service chains, Duralube® chains and RING LEADER® O-ring chains each offer specific functional advantages for your street, farm, track or trail applications.

**MULTI-SERVICE** chains – though referred to as standard chain – are anything but. Multi-Service chains offer Diamond's superior manufacturing parts processing technology which includes material selection, precise component fabrication, exacting heat treatment and assembly techniques.

**DURALUBE**® chains eliminate "hit or miss" lubrication. This chain is constructed using a one-piece powdered metal bushing/roller combination which has lubricant drawn in under vacuum. In service, this lubricant is released and provides supplemental lubrication to the pin/bushing joint between regularly scheduled maintenance.

**RING LEADER**® O-ring chains are top of the line chains offering allowable working loads that provide extra load carrying capability and up to four times the service life of regular chains. O-ring lubrication system seals in lubricant and seals out foreign contaminants. Appearance options on some models include:

**Brass Plated** chains for the flashy high-end "gold look" shine and rust resistant finish.

**Nickel Plated** chains for the classy "chrome or silver look" shine and rust resistant finish.

**Standard** steel chains for the "back to basics look."