

# *Conveyor Chain*



**RENOLD**  
*Superior Chain Technology*

# Conveyor Chain

## Renold Ultimate Performance

### Renold Ultimate Performance

- The performance of Renold Conveyor Chain is ensured by a programme of continuous testing and quality control of component dimensions, fits and material properties.
- Specially formulated lubricants reduce initial wear, provide corrosion protection and long storage life.
- Breaking loads exceed the minimum international standards.
- Correct chain selection is essential for optimum performance. Renold's experienced design team are always available to freely advise on particular products and applications.

### Renold Ultimate Specification

The Renold specification has taken many years in design and development to achieve the optimum product. In order to ensure this is translated into product performance, we strictly control:

- Materials
- Heat Treatment
- Processes
- Fits
- Attachment Assembly
- Lubrication

Fatigue life is improved by maintaining precise fits and tolerances between the pins, bushes and side plates.



Chain and sprocket life are optimised by the rigid control of pitch accuracy, resulting in excellent gearing, lower friction, reduced wear and a reduction in noise levels during operation.

Exact control of bush projection through the chain side plate maintains precise clearances between the chain's inner and outer links. This feature reduces the risk of wear during operation, allows space for lubricant penetration, and greatly reduces the possibility of chain seizure in dusty/abrasive environments.

Bush and roller life are maximised by controlling the concentricity of these components and careful selection and control of the heat treatment process.

Down time in hostile environments is minimised by strict control of inner and outer plate clearances, ensuring effective lubricant penetration to the bearing surfaces.

### Renold Ultimate Reliability

- The key to Renold chain reliability is consistency in design and manufacture.
- Maximum chain strength and resistance to wear are achieved by strict control of the material specification and by using state of the art heat treatment processes.
- The consistent overall tolerances of Renold chain make it ideal for conveying systems requiring precise alignment on multi-strand chain layouts.

# Conveyor Chain Details

## Conveyor Chain Types

Precision conveyor chain, like transmission chain, consists of a series of journal bearings held in precise relationship to each other by constraining link plates.

Each bearing consists of a bearing pin and bush on which the chain roller revolves. The bearing pin and bush are case-hardened to allow articulation under high pressures, and to contend with the load carrying pressure and gearing action imparted via the chain rollers.

There is, for each strength of conveyor chain, a range of pitches; the minimum pitch being governed by the need for adequate wheel tooth strength; the maximum pitch being normally dictated by plate and general chain rigidity. When required, the normal maximum pitch can be exceeded by the use of strengthening bushes between the link plates, and suitable gaps to clear the bushes must be provided in the wheel teeth.

### INTERNATIONAL STANDARDS

Conveyor chain, like transmission chain, can be manufactured to a number of different international standards. The main standards available are:

### BRITISH STANDARD - BS

This standard covers chain manufactured to suit the British market and markets where a strong British presence has dominated engineering design and purchasing. The standard is based on the original Renold Conveyor Chain design.

### ISO STANDARD

Chain manufactured to ISO Standard is not interchangeable with BS or DIN Standard Chain. This standard has a wide acceptance in the European market, except in Germany. Chain manufactured to this standard is becoming more popular and is used extensively in the Scandinavian region.

### HOLLOW BEARING PIN CHAIN

Hollow bearing pin type chain affords ready facility for fixing attachments to outer links by bolting through the hollow bearing pins and is suitable for use in all normal conditions.

The attachments may be bolted up tight or held in the hollow bearing pin in a "free" manner. Bolted attachments should only span the outer link, as a bolted attachment spanning the inner link would impair the free articulation of the chain.

### DEEP LINK CHAIN

Deep Link chain has sideplates with a greater depth than the normal chain plates; thus providing a continuous carrying edge above the roller periphery. When lateral flexing of the chain is required to negotiate horizontal bend radii, coned bearing pins are employed.

Available in Hollow or Solid Pin versions.

### SOLID BEARING PIN CHAIN

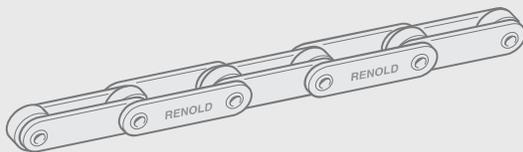
Solid bearing pin chain, while having exactly the same gearing dimensions, i.e. pitch, inside width and roller diameter as the equivalent hollow bearing pin chain, is more robust and is recommended for use where arduous conditions may be encountered.

### CHAIN ROLLERS

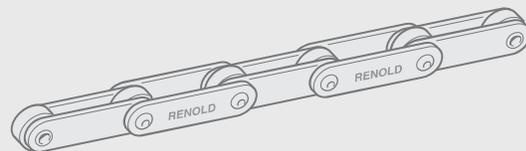
In general, the use of chain incorporating rollers is recommended, but bush chain, i.e. chain without rollers, can be used on certain applications.

Rollers of the plain or flanged type, with a choice of size and material, are listed for most chain series - size and material being dependent upon the type of application.

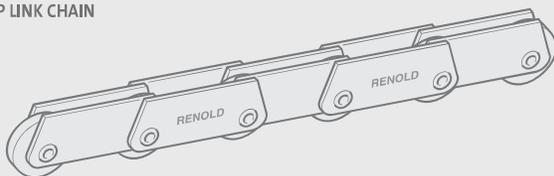
HOLLOW BEARING PIN CHAIN



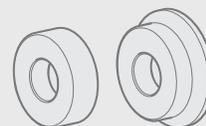
SOLID BEARING PIN CHAIN



DEEP LINK CHAIN



CHAIN ROLLERS



# Standard Attachments

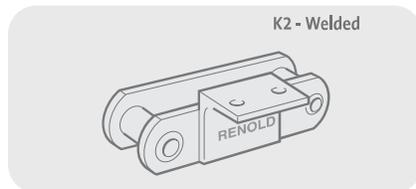
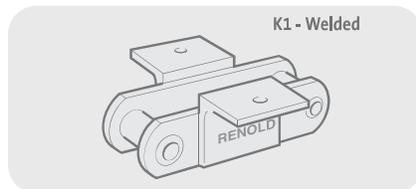
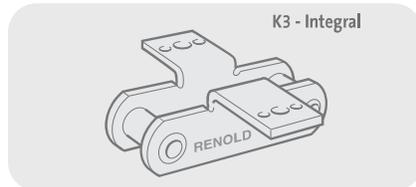
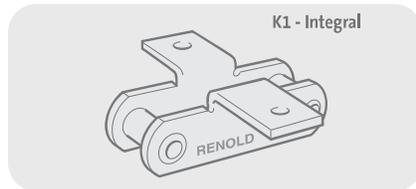
Standard attachments are parts fitted to a base chain to adapt it for a particular purpose as a conveying medium. Attachments may form an integral part of the link plate or may be built into the chain as a replacement of the normal link. Other attachments (according to type) are fixed to the chain plates by projection or fillet welding, to either one or both sides of the chain.

Standard attachments are described below:

- The letter stands for the attachment type.
- The figure stands for the number of holes within each attachment type.

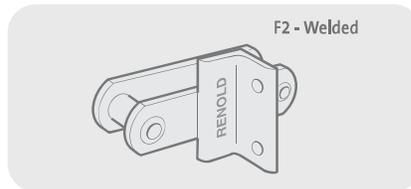
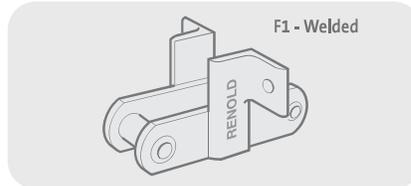
Special attachments can be manufactured, but wherever possible, standard attachments used on our preferred range of chains shown earlier will give price and delivery advantages. Consult Renold Chain for details.

## K Attachments Outer or Inner Links



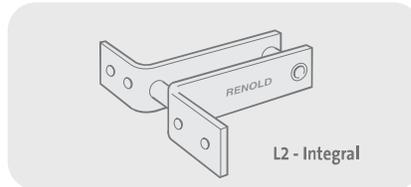
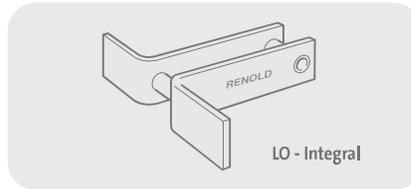
K Attachments provide a platform parallel to the chain line and bearing pin axis. They are used for securing slats, scrapers, buckets etc. to the chain.

## F Attachments Outer or Inner Links



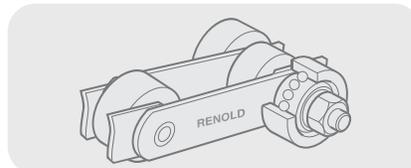
F Attachments provide a flat surface at right angles to the chain plate. They are used for securing pushers, scraper bars, etc.

## L Attachments



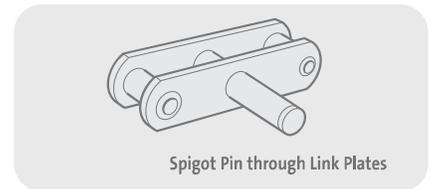
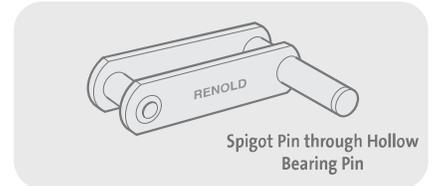
L Attachments are integral with the chain outer plates. Normally they have one or two holes (L2 preferred), but for use on scraper applications they can be supplied without holes and with various box widths (LO Type).

## Outboard Rollers For use on Hollow Bearing Pin Chain



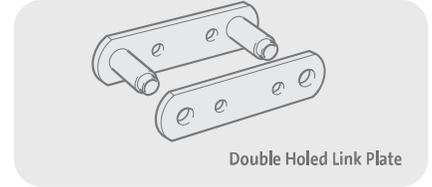
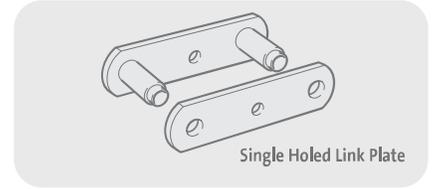
Outboard rollers have two principal advantages; as direct load carriers they enable the chain rollers to be used solely for gearing purposes and in the event of outboard roller wear, they can be replaced easily without recourse to chain replacement. They are particularly useful when attachments prevent the gearing rollers running on support tracks on the return run or where the roller loading is high.

## Spigot Pins



Spigot pins may be assembled either through hollow bearing pins or link plates and are secured by a nut and spring washer.

## Holed Link Plates



Single holing is primarily for use with spigot pins and is required on both sides of the chain. Double holing is provided for the assembly of special attachments on one or both sides of the chain. The holes in the inner plates are countersunk on the inside face to prevent the bolt heads fouling the sprocket teeth.

## Standard Sprockets

A modified rim section is required when G or inverted F2 attachments are fitted to inner links.

## Extended Bearing Pins

Extended bearing pins, one side of the chain, can be supplied hard, soft, solid or drilled and are similar to the spigot pin arrangement.

FOR ATTACHMENT SIZES AND ATTACHMENTS OTHER THAN THOSE SHOWN, CONSULT RENOLD CHAIN.

# Palm Oil Industry

## Renold - ultimate design

Renold have enhanced the specifications of its new range of chain to surpass the increasing demands of today and tomorrow. When reliability is paramount, choose Renold.

## Special Design Features

Correct chain selection is essential for optimum performance. Renold's experienced sales, production and design staff are always available to advise on particular products and applications.



Large diameter deep case hardened bearing pin with softened ends and all round riveting for additional security. The Renold large pin diameter increases the bearing area thus reducing bearing pressure and prolonging chain life.

Substantial diameter rollers coupled with a large bush diameter to reduce bearing pressure and improve wear performance.

Bush projection designed to reduce friction between the inner and outer plates and maintain clearances during operation allowing efficient lubricant penetration.

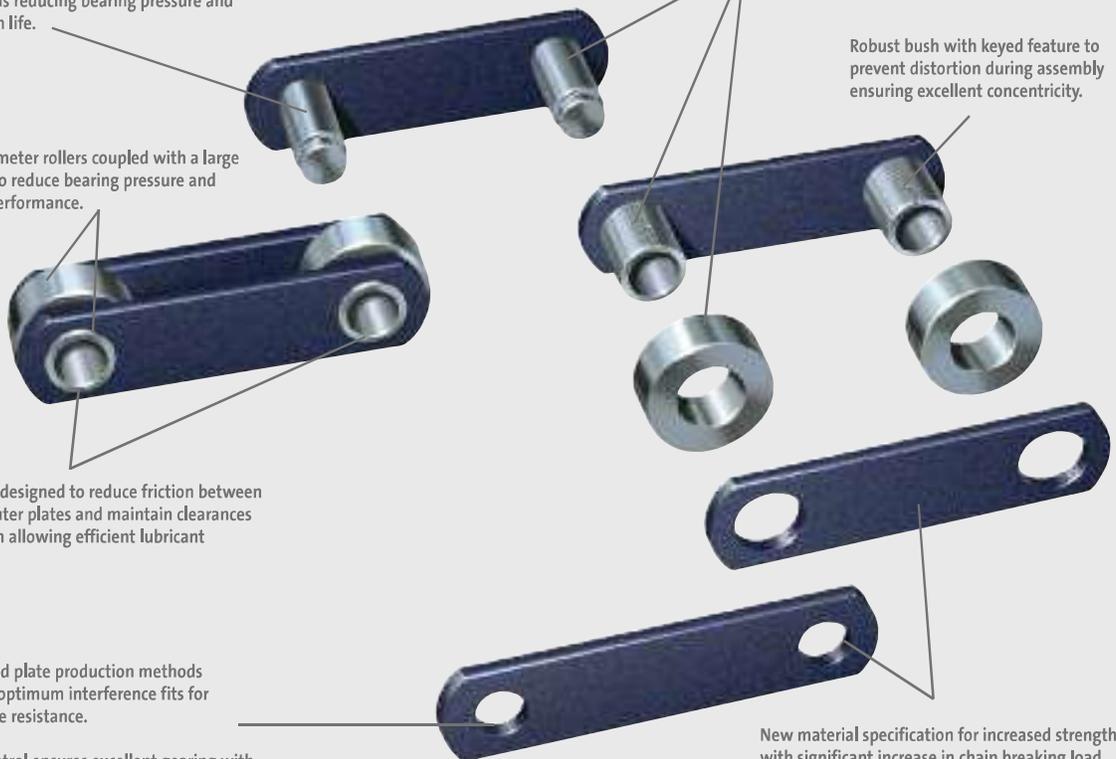
Tightly controlled plate production methods resulting in the optimum interference fits for increased fatigue resistance.

Precise pitch control ensures excellent gearing with chain wheels resulting in improved performance.

Optimum heat treatment processes on pin, bush and roller for greater wear resistance.

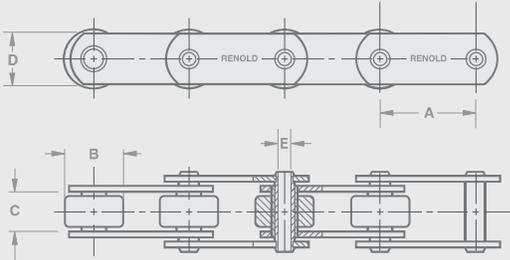
Robust bush with keyed feature to prevent distortion during assembly ensuring excellent concentricity.

New material specification for increased strength with significant increase in chain breaking load.

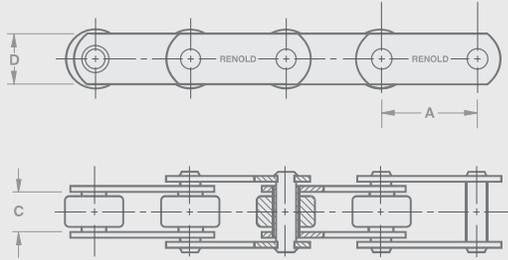


# Palm Oil Industry

HOLLOW BEARING PINS



SOLID BEARING PINS



## Standard

Chain Ref.	Pitch		Breaking Load		Roller Dia		Inside Width		Plate Depth		Hollow Pin Bore Dia		Pin/Bush Bearing Area		Mass kg/m
	inch	mm	lbf	Newtons	inch	mm	inch	mm	inch	mm	inch	mm	sq inch	sq mm	
	A	A			B	B	C	C	D	D	E	E			

### Solid Bearing Pin

S45161	4.0	101.6	18000	80000	1.875	47.6	0.75	19.0	1.50	38.1	-	-	0.94	603	6.43
S45241	6.0	152.4	18000	80000	1.875	47.6	0.75	19.0	1.50	38.1	-	-	0.94	603	5.24
S45162	4.0	101.6	32000	142000	2.625	66.7	1.00	25.4	2.00	50.8	-	-	1.75	1128	14.22
S45242	6.0	152.4	32000	142000	2.625	66.7	1.00	25.4	2.00	50.8	-	-	1.75	1128	11.18
S45243	6.0	152.4	50000	222000	3.50	88.9	1.50	38.1	2.40	61.0	-	-	2.88	1856	24.15

### Hollow Bearing Pin

S05161	4.0	101.6	15000	67000	1.875	47.6	0.75	19.0	1.50	38.1	0.52	13.2	0.94	603	5.91
S05162	4.0	101.6	26000	116000	2.625	66.7	1.00	25.4	2.00	50.8	0.79	20.1	1.75	1128	12.74
S05242	6.0	152.4	26000	116000	2.625	66.7	1.00	25.4	2.00	50.8	0.79	20.1	1.75	1128	10.91
S05243	6.0	152.4	44000	196000	3.50	88.9	1.50	38.1	2.40	61.0	0.91	23.1	2.88	1856	22.18

## Premier

Chain Ref.	Pitch		Breaking Load		Roller Dia		Inside Width		Plate Depth		Hollow Pin Bore Dia		Pin/Bush Bearing Area		Mass kg/m
	inch	mm	lbf	Newtons	inch	mm	inch	mm	inch	mm	inch	mm	sq inch	sq mm	
	A	A			B	B	C	C	D	D	E	E			

### Solid Bearing Pin

E45161	4.0	101.6	26000	116000	1.875	47.6	0.75	19.0	1.50	38.1	-	-	0.94	603	6.43
E45241	6.0	152.4	26000	116000	1.875	47.6	0.75	19.0	1.50	38.1	-	-	0.94	603	5.24
E45162	4.0	101.6	50000	222000	2.625	66.7	1.00	25.4	2.00	50.8	-	-	1.75	1128	14.22
E45242	6.0	152.4	50000	222000	2.625	66.7	1.00	25.4	2.00	50.8	-	-	1.75	1128	11.18

### Hollow Bearing Pin

E05161	4.0	101.6	17000	76000	1.875	47.6	0.75	19.0	1.50	38.1	0.52	13.2	0.94	603	5.91
E05162	4.0	101.6	36000	160000	2.625	66.7	1.00	25.4	2.00	50.8	0.79	20.1	1.75	1128	12.74
E05242	6.0	152.4	36000	160000	2.625	66.7	1.00	25.4	2.00	50.8	0.79	20.1	1.75	1128	10.91

## Premier Extra

Chain Ref.	Pitch		Breaking Load		Roller Dia		Inside Width		Plate Depth		Hollow Pin Bore Dia		Pin/Bush Bearing Area		Mass kg/m
	inch	mm	lbf	Newtons	inch	mm	inch	mm	inch	mm	inch	mm	sq inch	sq mm	
	A	A			B	B	C	C	D	D	E	E			

### Solid Bearing Pin

X62161	4.0	101.6	30000	134000	1.875	47.6	0.75	19.0	1.50	38.1	-	-	0.94	603	6.43
X62241	6.0	152.4	30000	134000	1.875	47.6	0.75	19.0	1.50	38.1	-	-	0.94	603	5.24
X62162	4.0	101.6	60000	267000	2.625	66.7	1.00	25.4	2.00	50.8	-	-	1.75	1128	14.22
X62242	6.0	152.4	60000	267000	2.625	66.7	1.00	25.4	2.00	50.8	-	-	1.75	1128	11.18

### Hollow Bearing Pin

X02161	4.0	101.6	24000	107000	2.625	66.7	1.00	25.4	2.00	50.8	0.79	20.1	1.75	1128	12.74
X02242	6.0	152.4	50000	222000	2.625	66.7	1.00	25.4	2.00	50.8	0.79	20.1	1.75	1128	10.91

For standard range of K attachments see page 14.