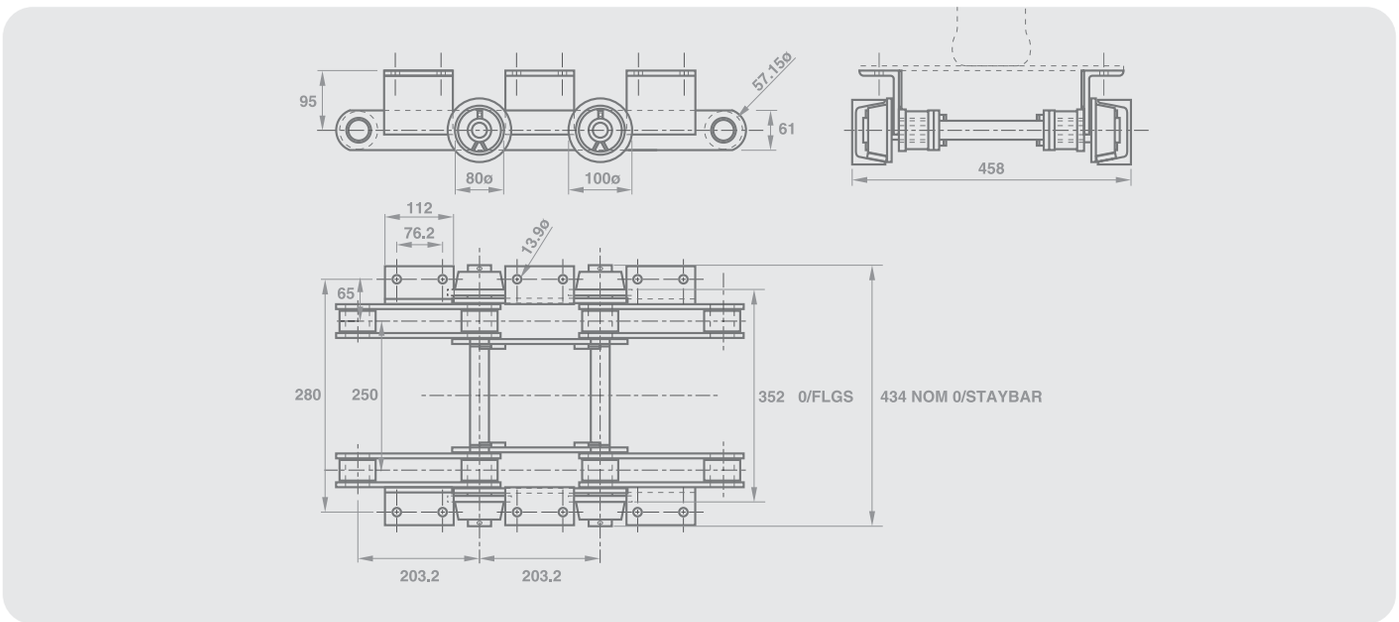
Section 5

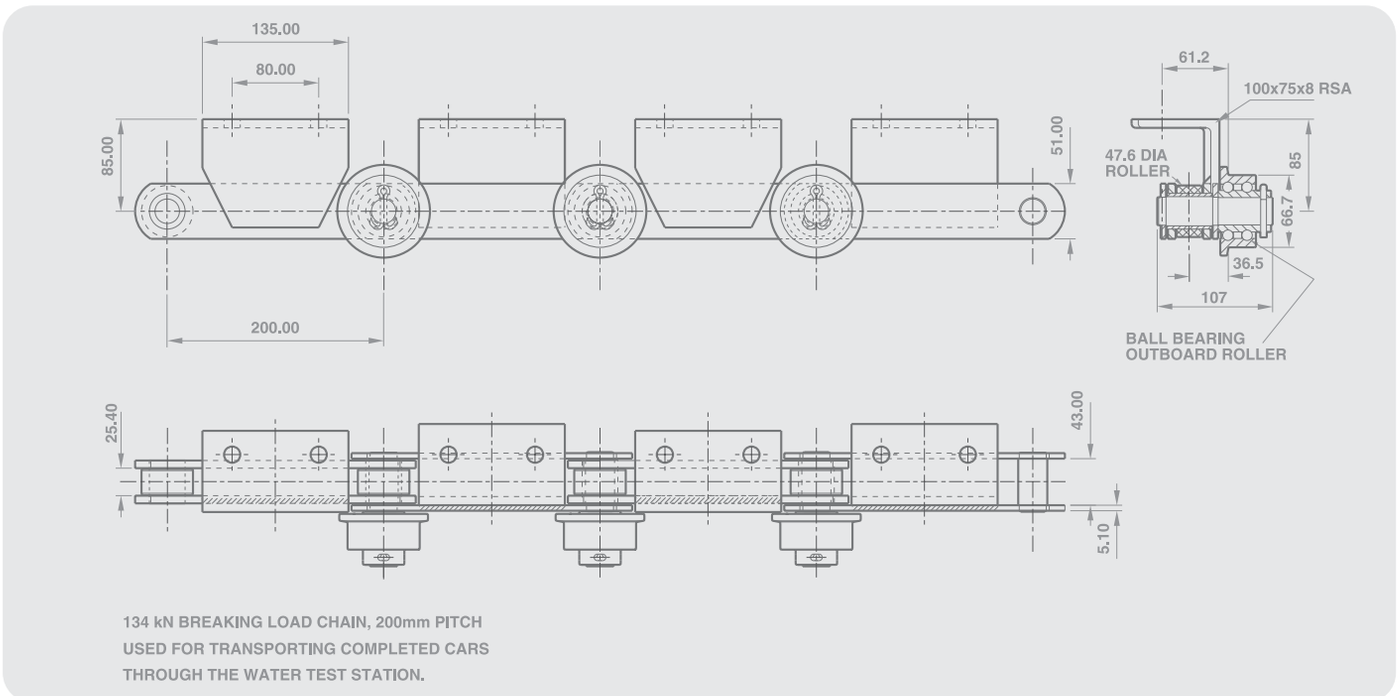
Industrial Applications & Special Engineered Chain

Automotive Manufacturing Industry

Final Assembly Conveyor



Water Test Station Conveyor

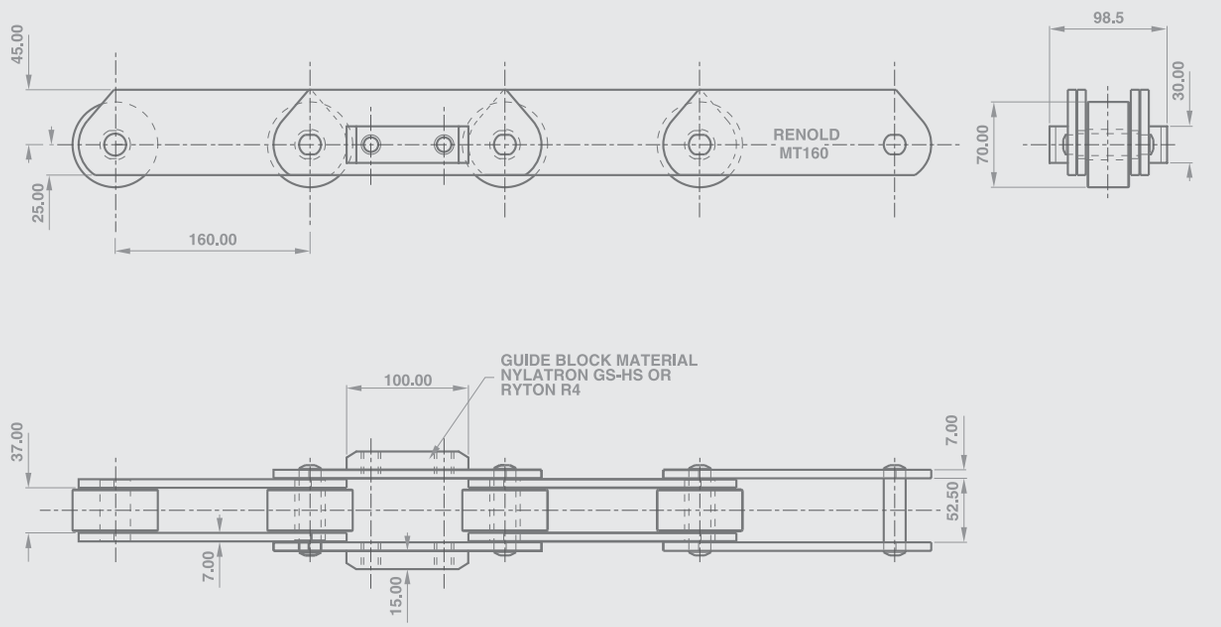


Renold currently manufacture a range of chains that have been tailored for the specific needs of the automative manufacturing industry. The chains used range from the British Standard and ISO Standards, adapted standard chains and in some cases chains specifically designed for particular applications.

The special environments range from assembly conveyors - some incorporating assembly jigs - to water test and oven chains for the drying of body coatings.

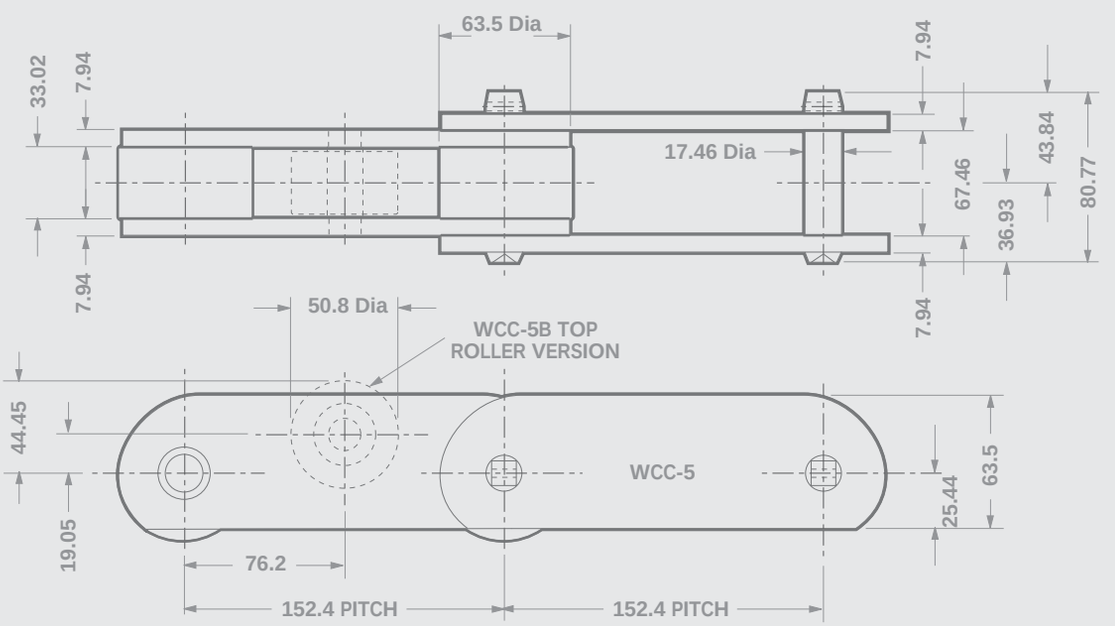
Automotive Manufacturing Industry

Assembly or Drying Oven Conveyor



160 mm PITCH 160 kN BREAKING LOAD I.S.O. CHAIN
USED FOR CAR BODY MOVEMENT THROUGH ASSEMBLY
OR THROUGH DRYING OVENS

Assembly or Drying Oven Conveyor

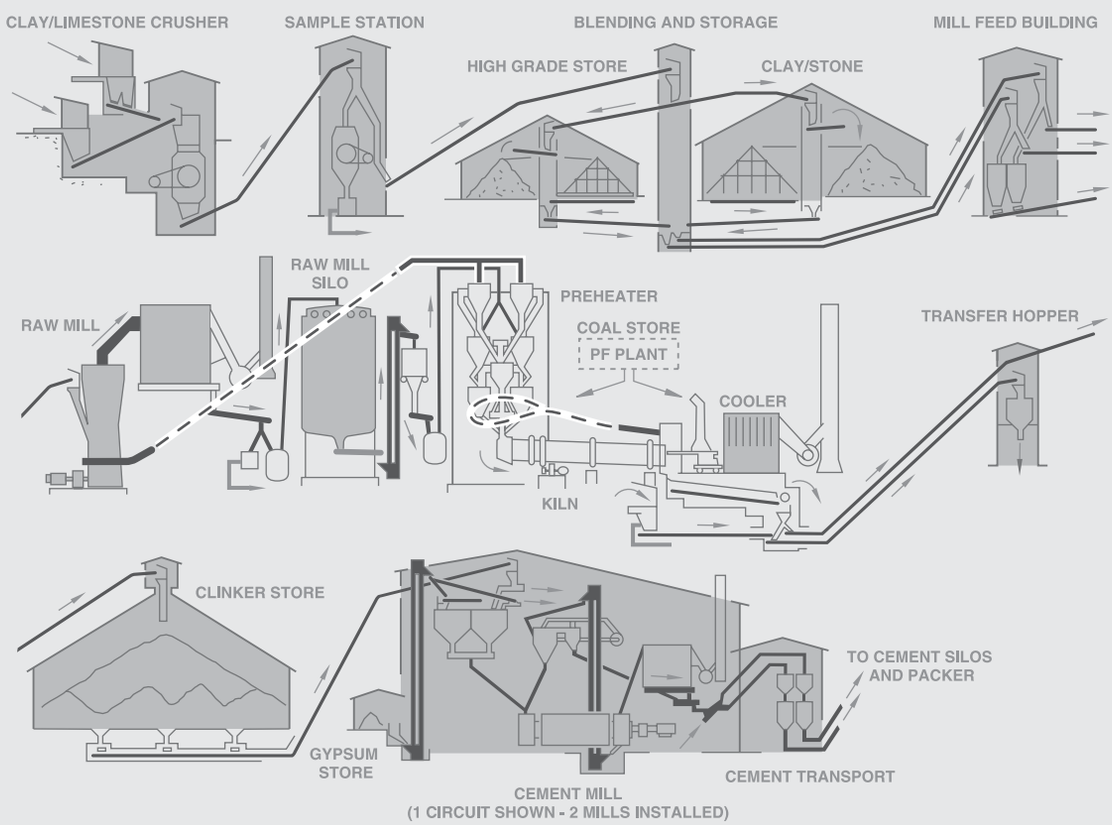


Section 5

Cement Industry

Special Double Strand Conveyor Chain is designed to give an enhanced chain life in the hot and dusty conditions of a Cement Clinker.

Flow Chart - Cement Works



Cement Industry

Raw Material Reclaim Conveyors

These are situated in the raw material store. Their function is to move the raw material to a distribution conveyor, which is usually a belt conveyor.

The raw material stores are either circular buildings around which the material is piled, or long rectangular areas down which piles of material are kept.

The reclaimer conveyor is usually a twin strand scraper conveyor with the bottom strand used to scrape the raw material from the pile to a collection point. Because of the arduous duty these chains are usually quite high breaking load (i.e. 500 KN +). The chains used are either to ISO or German DIN standards.

Clay/Limestone Store showing stacker and reclaimer. Max. capacity 43000 tonnes, rail dia. 88m.

Apron Feeder Conveyors

These conveyors are usually situated under hoppers, and are used to control feed material from the hopper for process i.e. to a crusher.

Apron feeders are frequently called on to handle heavy bulk material in large pieces, often abrasive in character, such as limestone rock. Material can be loaded into the bunker from an appreciable height straight onto the conveyor, i.e. from a 60 ton dumper truck, and in large pieces up to 5 tons. In these circumstances all components, particularly the chains, have to be of extremely robust construction.

Usually a layer of material is left on the conveyor so that when a further load is dropped, the original material acts as a cushion for the conveyor.

The conveyor consists of two or more strands of solid bearing pin chain bolted to heavy cast or fabricated apron slats. They are driven at a very slow speed intermittently to ensure regulation of material flow.

Escalator Chain

Renold has manufactured and supplied several hundred thousand metres of escalator chain to manufacturers and end users of this precision product. With over 40 years' experience of supplying the industry, product quality monitored to ISO9002 / BS5750 standards and statistical process control (SPC), Renold is recognised as one of the world's leading manufacturers of escalator chain.

Chain Life

With safety factors that meet or exceed the standard, Renold step chain is designed for extended trouble-free life to meet the demands of the industry.

Chain Performance

The optimum combination of materials, heat treatment and maximum bearing surfaces is used to produce a durable and reliable chain for most operating environments.

Step Pitch Accuracy

Renold escalator step chains are manufactured to exact specifications. Computer controlled matching and pairing ensures better gearing, lower friction, reduced wear and low levels of noise, resulting in a longer chain life.

Lubrication

All step chains are lubricated and protected against corrosion, ready for assembly into new or existing escalators. Specific customer requirements for factory lubrication, both grease and oil, can be included in the chain specification.

Packaging

Whether for on-site replacement or factory assembly, all step chains can be packaged to allow for special storage or unusual transport arrangements, with the chains clearly identified in paired handling lengths ready for installation.

Product Range

The extensive Renold step chain product range covers low rise stores types, medium to high rise public service escalators and moving walkways. For specific design details on new or existing applications, contact our technical sales staff.

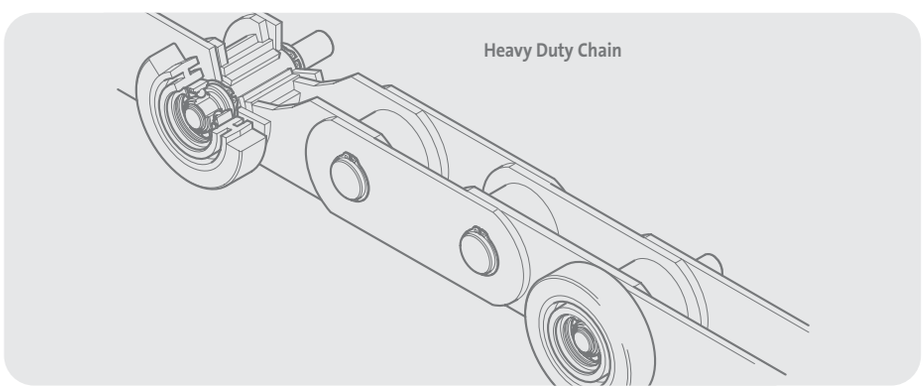
Shown here are some examples of Renold step chains.

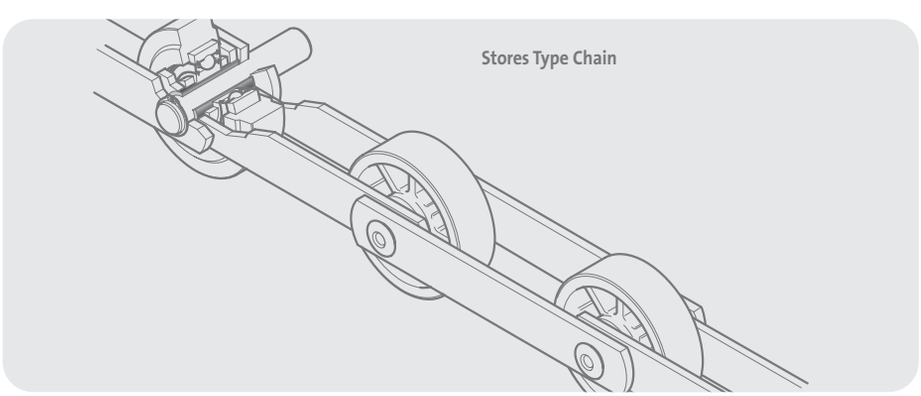
Transmission Chain

Renold transmission chains, fitted as original equipment on many escalators, also available to both British or American standards.

Product Development

Escalators in airports, train stations, metro links, bus terminals and ferry ports are conveying an ever increasing number of people. The introduction of large shopping malls, ever larger office blocks and leisure complexes set new standards for the escalator manufacturer with reduced opportunities for maintenance. Renold escalator chains have been designed using advanced CAD techniques to meet these new demands. Reduced maintenance options are available for some of these chains.


Heavy Duty Chain


Stores Type Chain

BS 5750/ISO 9002 approved

Supplier to major European escalator manufacturers

Proven performance

Technical innovation and product development

Applicational back-up

Worldwide distribution

Renolube - Escalator Step Chain

Renolube Escalator Chain has been developed as a result of extensive prototype testing in arduous applications to exceed the industry's ever increasing demand for lower service costs and longer lifetime operation. Renold is recognised, with over 40 years' experience, as one of the world's leading manufacturers of escalator chains. The Renolube composite polymer bush, in conjunction with a specially designed bearing pin, has been formulated to ensure maximum lifetime operation. The principle advantages are:-

- Substantially lower life cycle costs with development and field tests indicating a life in excess of 40 years.
- Cleaner environment because of reduced free grease lubrication.
- Significantly lower service costs in that periodic grease lubrication is not required.
- Stable and predictable wear rates are a particular feature of Renolube when compared to conventionally greased chains which are prone to random failure.

Economy

Renolube offers a fully cost effective solution when replacing grease lubrication systems by considerably reducing expensive maintenance and life cycle costs.

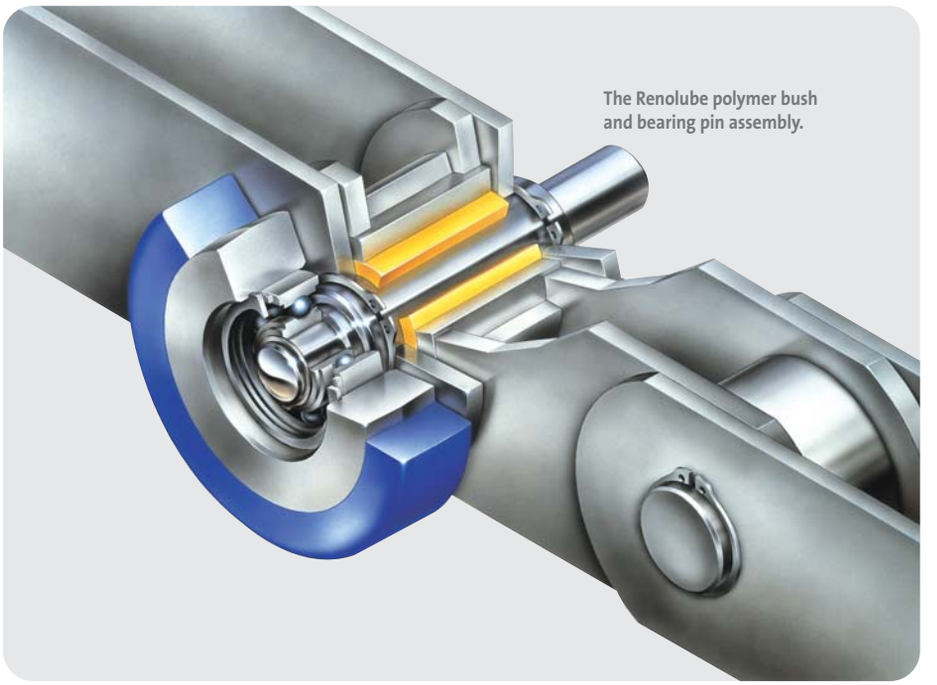
Endurance

Renolube Escalator Chain in the public service environment has proven to be extremely wear resistant. Installation of the Renolube Escalator Chain provides lifetime confidence with a chain design life of over 40 years.

Environment and Safety

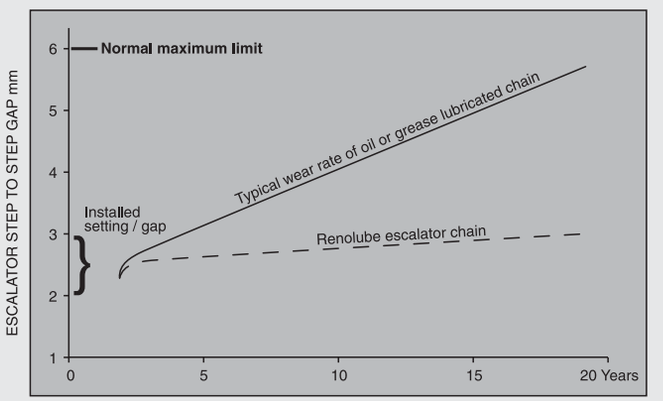
The elimination of copious amounts of lubricating oils and grease creates a cleaner and safer environment, thereby reducing fire risk.

RENOLUBE

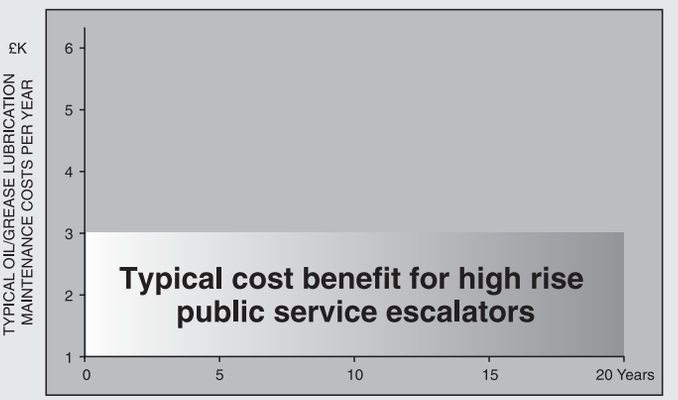


The Renolube polymer bush and bearing pin assembly.

TYPICAL WEAR/LIFE



REDUCED MAINTENANCE - WHOLE LIFE COST BENEFIT



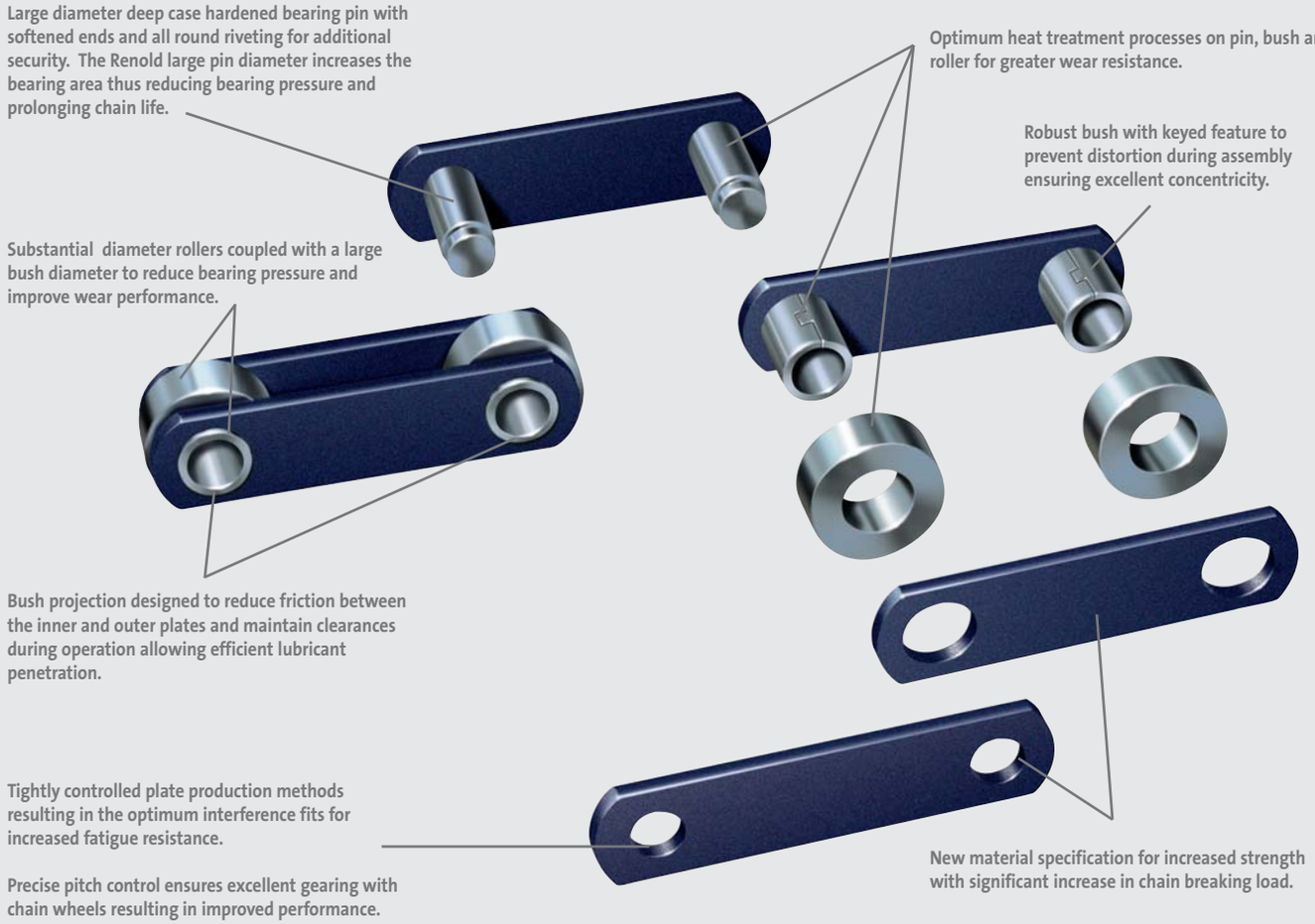
Palm Oil Industry

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.

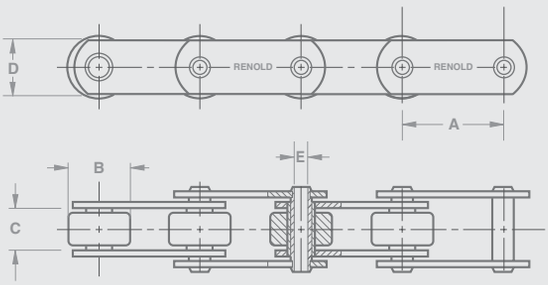
Special Design Features

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.

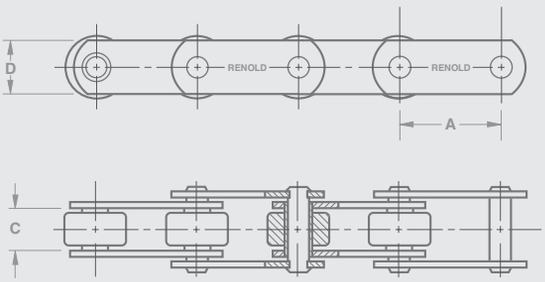


Palm Oil Industry

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	3.500	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.

Steel Industry

Tube Manufacture

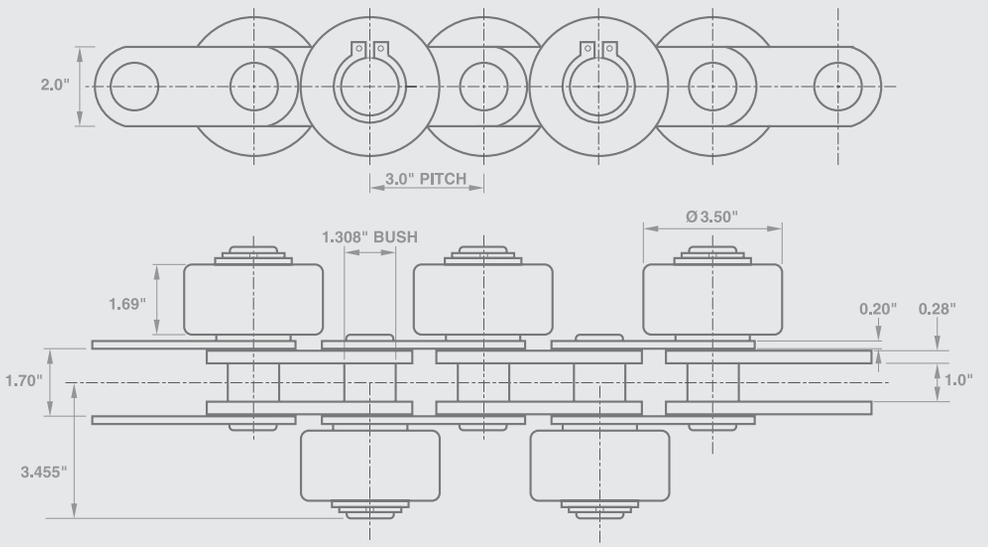
- A conveyor for delivering spun cast iron pipes after normalising bore grinding and inspecting. Two strands of conveyor chain fitted with combination cradle and pusher attachments are used.
- 6.0" pitch, 45,000 lbf, breaking load conveyor chains.
- Tube bore sizes from 80 - 300mm can be accommodated.
- Earlier in the system a similar chain handles the tubes as they pass through the bore grinding process.

Raw Material Processing

- PRODUCT No. 179936
- A bucket elevator type bush chain 7.0" pitch, 200,000 lbf breaking load integral K3 attachment plates. Headed pin design to enable detachability flatted pins and bushes for security.
- Conveys raw material.

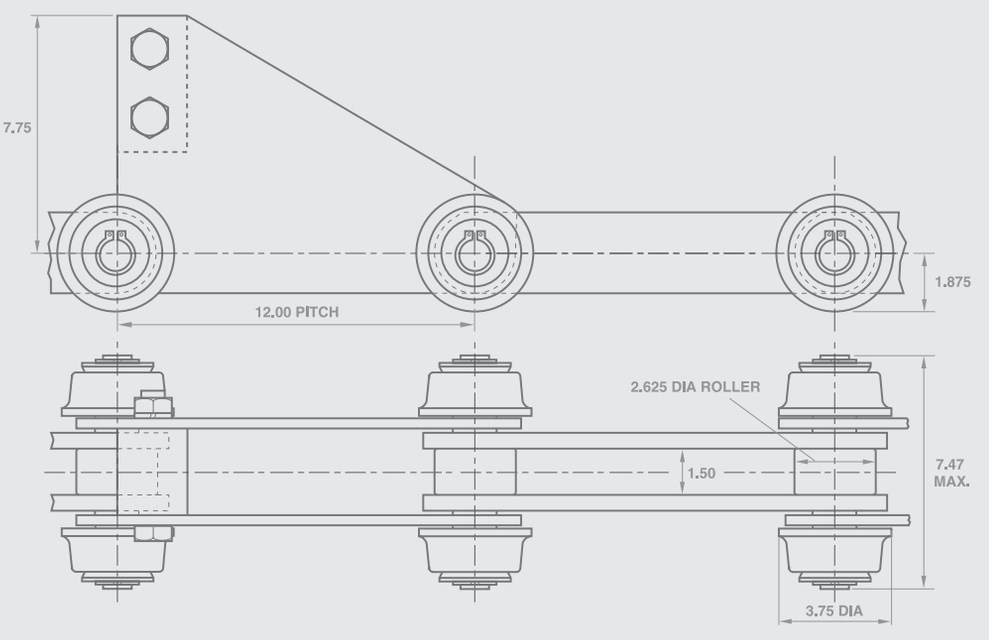
Steel Industry

Coil Handling



- PRODUCT NO. 178289
- Base chain 3" pitch, 30,000 lbf breaking load bush chain fitted with large diameter plain outboard rollers on alternate sides.
- Steel coils on skids are handled on a twin strand system moving on the outboard rollers at twice the speed of chain.

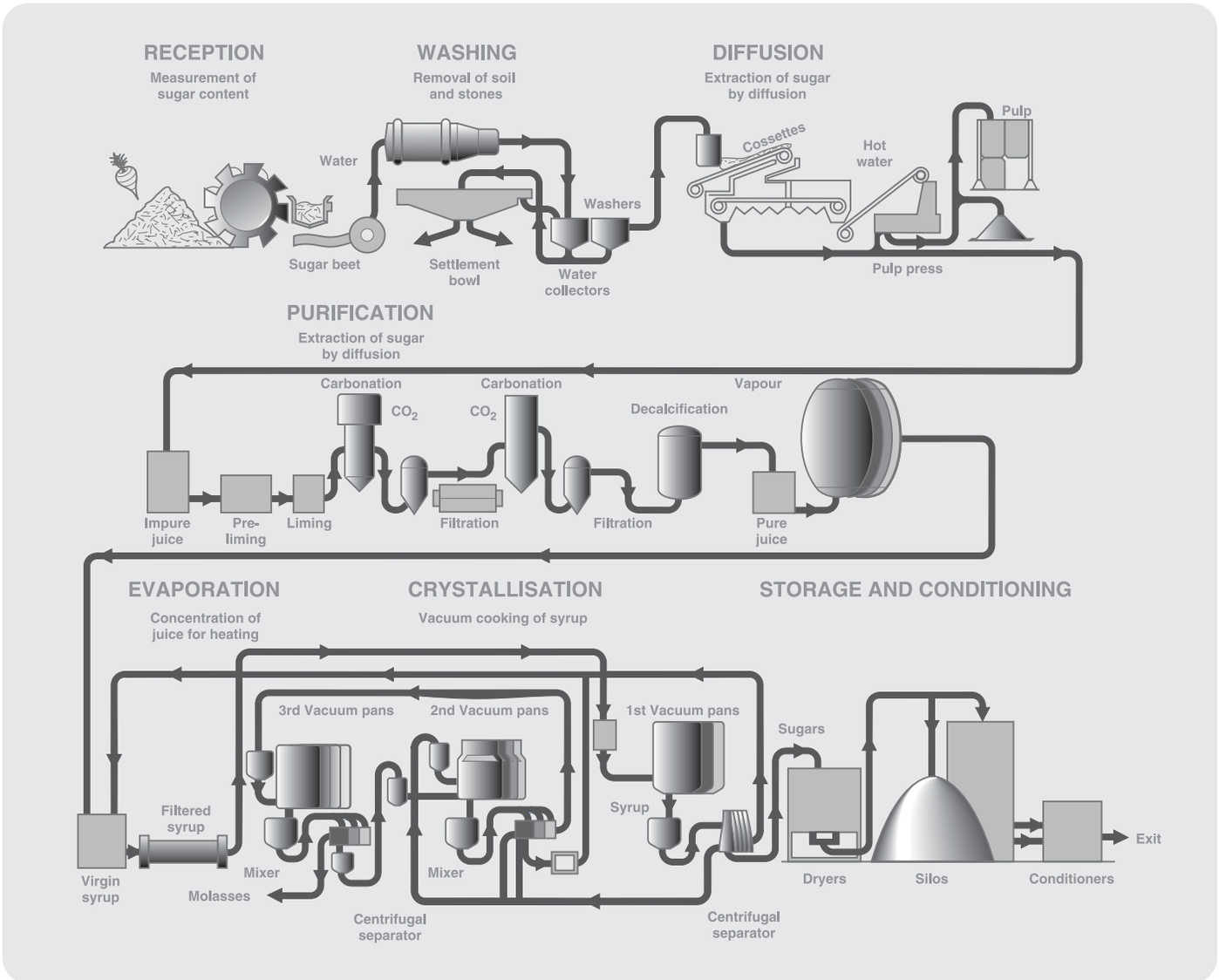
Transfer Chain for Steel Mill Use



- CHAIN NO: 179 701/90
- PITCH: 12.0 IN
- BREAKING LOAD: 90,000 LBF (400000 N)
- Chain equipped with flanged outboard rollers both sides at every pitch to run in channel support rails. Special pusher attachment plates at suitable spacings to push steel sections along skidder bars or plates.

Sugar Beet Industry

Technical Data



Chains for the Sugar Beet Industry

The sugar beet industry, like the more widely known sugar cane industry, uses many different chains in the manufacture of crystallised sugar used in most households around the world. Chain is found in reception, washing and diffuser processes within a sugar beet plant. Within these areas there are around eight different conveyor chains currently in use and these are detailed later. When visiting a sugar beet plant, drives of different sizes are also found driving these conveyors. Renold have supplied large volumes of 3/4" pitch standard transmission chain for sugar beet harvesting machine OEMs following intensive field trials. Due to the arduous nature of the application they are changed after every season.

Product Description

Chain for this industry are specially engineered to suit the conveyor application within each manufacturing process. The pitch size is normally in millimetres and the chains incorporate a number of different attachments, fixing holes and special pins.

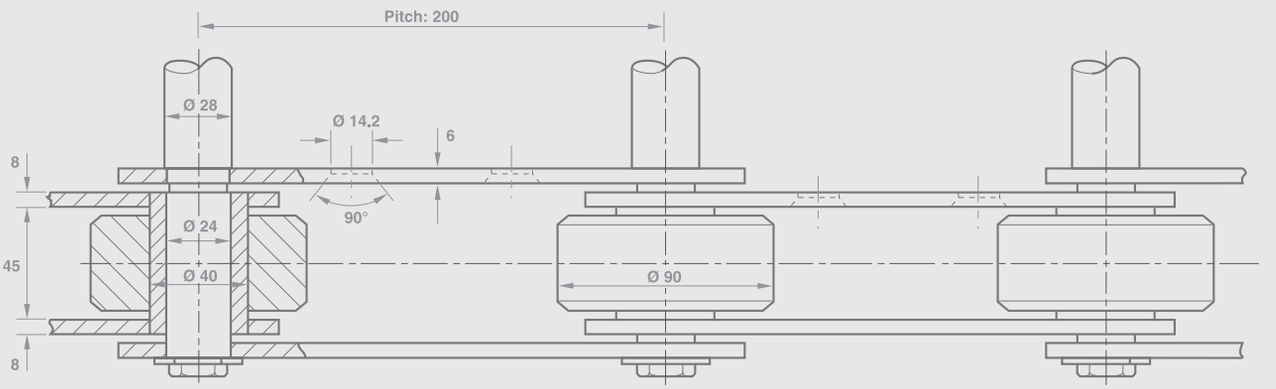
Renold manufacture a wide range of special conveyor chains for this industry.

Our technical staff can help with the identification or advise on the interchangeability of a Renold chain within a sugar plant.

A typical sugar beet processing plant is shown above.

Sugar Beet Industry

Beet Conveyor

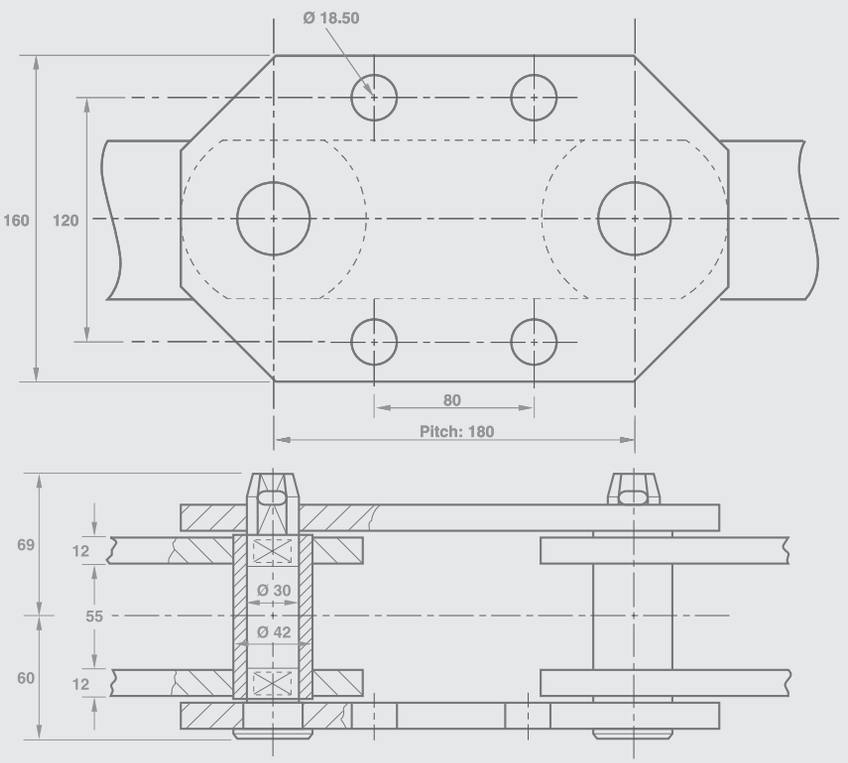


Reception area:

An inclined conveyor which carries the beet from the beet slab to the beet washer.

The chain is an integral component within conveyor.

Rock Catcher

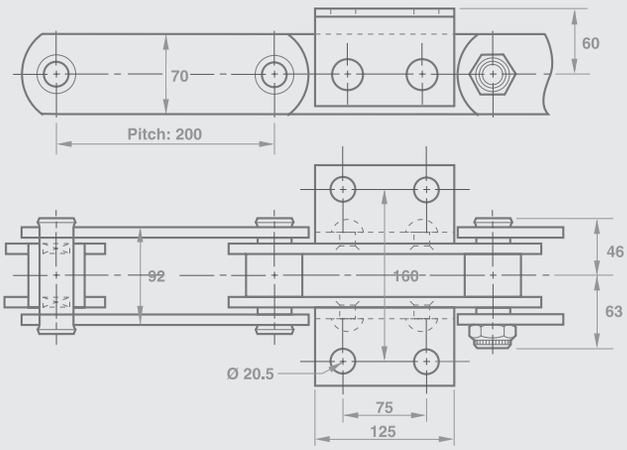


Washing area:

This chain is used to carry away stones removed during the washing of the sugar beet.

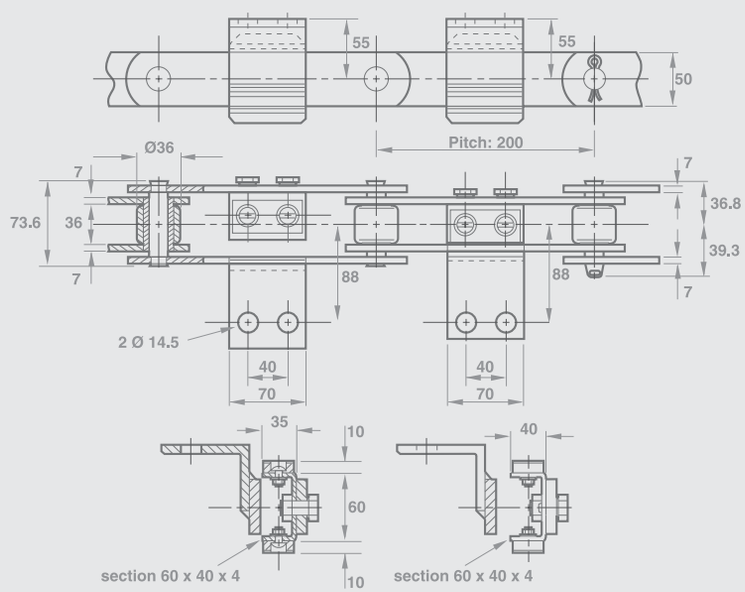
Sugar Beet Industry

Cossette Conveyor



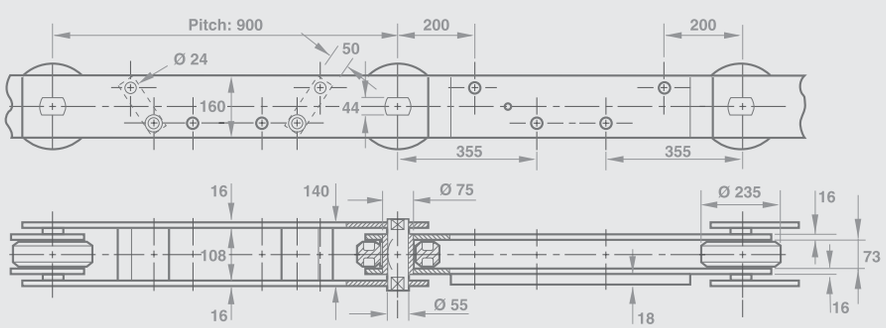
Diffuser area: These chains are fitted with rakes and run in inclined conveyors, scraping the beet pulp to the scalding tub.

Scalding Tub



Diffuser area

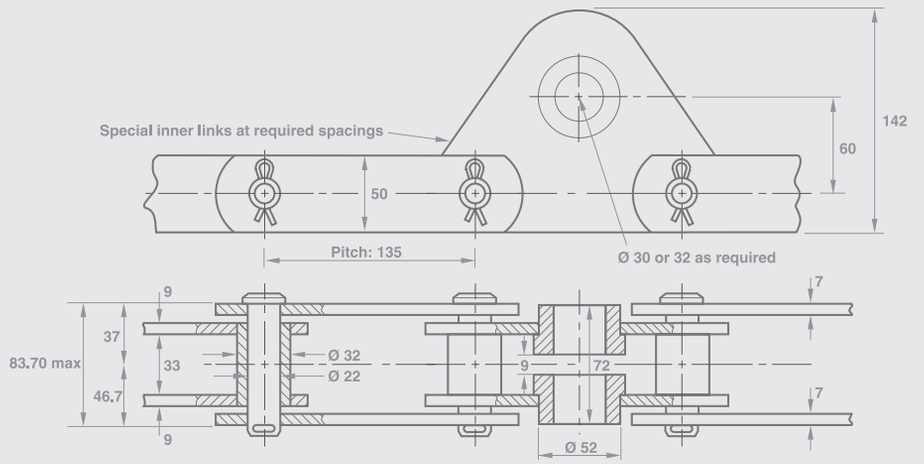
Sugar Beet Diffuser



Diffuser area: Used on a continuous sugar beet diffuser. Two chains run in parallel connected by perforated steel slats forming a continuous apron.

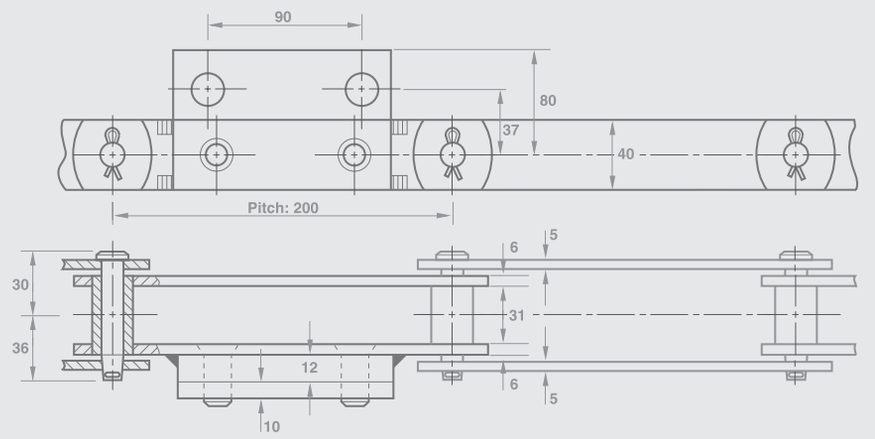
Sugar Beet Industry

Trash Catcher



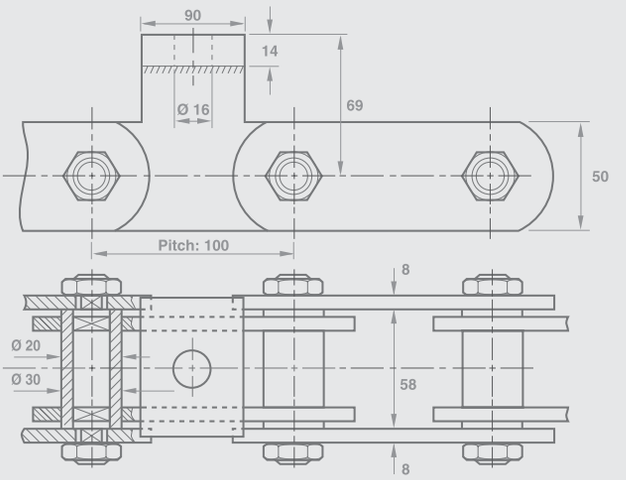
Washing area: Within the washer a water flume carries away grass washed from the sugar beet. The chain, fitted with rakes, removes this trash from the water and the washer.

Hydro Trash Catcher



Washing area: This chain is used to convey the beet through a washer.

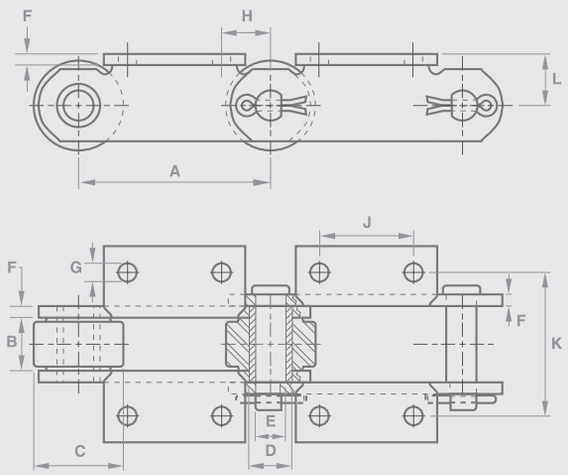
Feed Conveyor



Diffusion area: This chain carries beet pulp to the drying kilns.

Sugar Cane Industry

Technical Data



Cane Carrier Chains

Cane Carrier Chain is used in the second operation within a sugar mill. The cane is fed onto the conveyor which is usually sized to match the mill roller width and operates as a corrugated overlapping slat conveyor.

Two or three strands of chain are normal in such conveyors with the corrugated slats bolted on to the K attachments with angle cleats at intervals to prevent cane slippage.

The chopping of the cane on these conveyors can cause problems, in that juice and chopped cane, together with contamination from sand etc, attack the chain by corrosion and abrasion.

Product Description

This chain is interchangeable in all respects with corresponding products supplied to the Cane Sugar Industry by other established manufacturers. It is estimated that this range covers up to 80% of main and auxiliary carriers worldwide. Breaking loads range from 31,800 kgf to 63,500 kgf (70,000-140,000 lbf).

The advantage Renold has over all other competitors is experience. As the originators of the bush roller chain in 1879 and being the first company to incorporate these features for cane carrier applications during the 1920's, we are uniquely placed to offer the finest products for carrying cane from the yard to the first mill.

Materials, heat treatment and design have been developed to ensure optimum chain life and maximum value for modest cost.

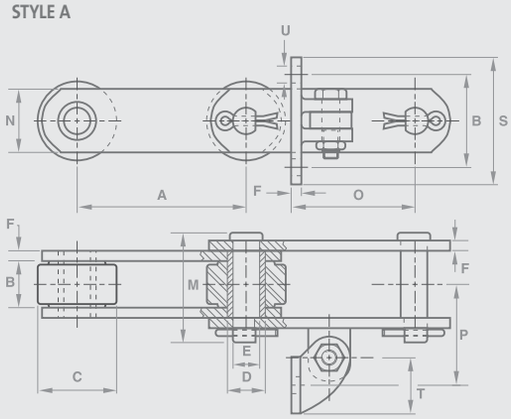
Grease gun lubrication through the chain pin is available on request and heat treated stainless steel pins, bushes and rollers can be supplied.

Renold Chain No. Metric	Average breaking load Newtons	Pitch mm.	Width between inner plates mm.	Roller dia. mm.	Bush dia. mm.	Connecting pin dia. mm.	Plate thickness mm.	Attachment hole dia. mm.	Distance from pitch point mm.	Hole centres mm.	Hole transverse centres mm.	Platform height mm.	Approx. mass (weight) kg/m.
		A	B	C	D	E	F	G	H	J	K	L	
R.9060	312000	152.4	38.1	69.85	28.58	19.05	9.53	13.87	38.1	76.2	111.13	41.28	24.7
R.9061	379000	152.4	38.1	69.85	28.58	19.05	9.53	13.87	38.1	76.2	111.13	41.28	25.3
R.1796	445000	152.4	38.1	69.85	31.75	22.23	9.53	13.87	38.1	76.2	111.13	41.28	26.2
R.9063	623000	152.4	38.1	76.20	31.75	23.83	10.31	13.87	38.1	76.2	111.13	44.45	27.5

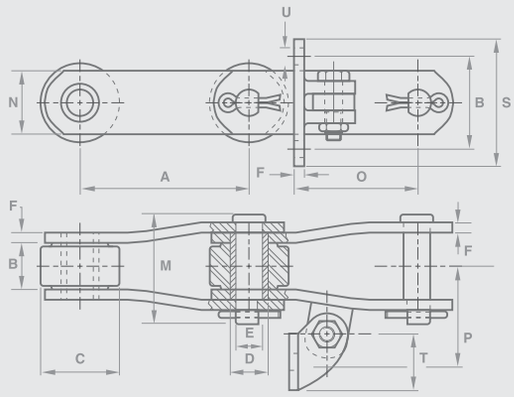
Sugar Cane Industry

Technical Data

STYLE A



STYLE B



Average breaking loads and dimensions A to F inclusive are common with Cane Carrier Chains:- See page 125.

Bagasse Carrier Chain

Bagasse (the residue of milled cane) has a small amount of sugar left in it, contains approximately 50% moisture and is a substance that will easily burn. This residue is used as a fuel for the sugar mill boilers to make steam to drive turbines producing the mill's electricity.

The Bagasse conveyors are usually of a scraper construction carrying away the bagasse directly to the boiler input chutes or into a separate bagasse store. In some cases the conveyor will also double up as a bagasse return conveyor. If not, a separate return conveyor will have been installed.

Product Description

Using the same round components as the cane carrier range, these chains provide the capacity to meet the majority of bagasse conveying requirements. They are available with straight plates, STYLE A, or cranked plates, STYLE B, EXCEPT R.9063 which is produced in STYLE A only.

Although two standard roller sizes are available, other diameters are available on request. Additionally, stainless pins, bushes and rollers can be supplied. The lug and flight attachments are spaced according to individual requirements.

All the chain components are replaceable.

Renold Chain No. Metric	Average Breaking Load Newtons	Pitch mm.	Connecting pin length mm.	Plate depth mm.	Flight face from pitch point mm.	Flight hole centre to chain centre mm.	Flight hole vertical centres mm.	Flight depth (nominal) mm.	Flight width (nominal) mm.	Bolt dia. mm.	Approx. mass (weight) plain chain kg/m.
		A	M	N	O	P	R	S	T	U	
R.9060	312000	152.4	95.25	50.80	111.12	88.90	82.55	114.30	50.80	12.70	16.7
R.9061	379000	152.4	95.25	57.15	111.12	88.90	82.55	114.30	50.80	12.70	16.7
R.1796	445000	152.4	100.08	57.15	111.12	88.90	82.55	114.30	50.80	12.70	18.2
R.9063#	623000	152.4	101.60	63.50	111.12	89.66	82.55	114.30	50.80	12.70	20.2

Weight of lug, fulcrum bolt and flight complete - 1.36kg. (3.0lb.)
STYLE A ONLY

Sugar Industry Conveyor Sprocket Details

Sugar Industry Sprockets

General Description

The normal function of a chain sprocket is not only to drive or be driven by the chain, but also to guide and support it in its intended path.

Sprockets can be manufactured from good quality cast iron or fabricated steel. For arduous duty, it may be necessary to use steel sprockets having a 0.4% carbon content. For extremely arduous duty the tooth flanks should be flame hardened. There are other materials which may be specified for particular requirements. Stainless steel for example is used in high temperature or corrosive conditions.

Table 1 gives a guide to the material required.

Table 1

Normal Conditions	Moderate Shock Loading	Heavy Shock Loading	Abrasion, No Shock Loading	Abrasion and Heavy Shock Loading
Cast Iron or Fabricated Steel	Cast Iron or Fabricated Steel	0.4% Carbon Steel	Cast Iron	0.4% Carbon Steel with hardened teeth

The vast majority of sprockets in use are of the one piece cast iron or fabricated steel design and are usually parallel or taper keyed to a through shaft. In this case it is necessary to remove the complete shaft to be able to remove the sprockets.

Fig. 1

If quick detachability is necessary without dismantling shafts or bearings, then sprockets may be of the split type. These are made in two half sections and the mating faces machined to allow accurate assembly with the shaft in place.

This type of sprocket is particularly useful on multi-strand conveyors where long through-shafts are used. Considerable expense can be saved in sprocket replacement time.

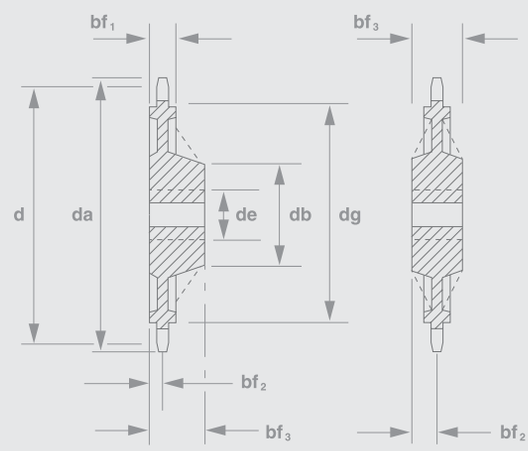
Sprockets with removable tooth segments are particularly useful where sprocket tooth wear is much more rapid than chain wear. With this type of sprocket, segments of teeth can be replaced one at a time without having to disconnect or remove the chain, thus considerable expense and downtime can be saved.

Shafts, whether they are through shafts or of the stub type, should be of such proportions and strength that sprocket alignment remains unimpaired under load. Shaft sizes should be selected taking into account combined bending and torsional moments.

Sprocket dimensions

Salient sprocket dimensions are shown in fig. 2.

Fig. 2

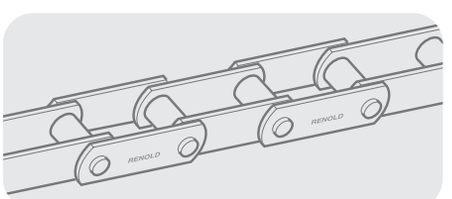


d	=	Pitch circle diameter
da	=	Top diameter
db	=	Boss diameter
de	=	Bore diameter
dg	=	Shroud diameter
bf1	=	Shroud width
bf2	=	Face to sprocket centreline
bf3	=	Distance through boss

Note: Please consult Renold for details on standard sprockets or designs to meet individual requirements.

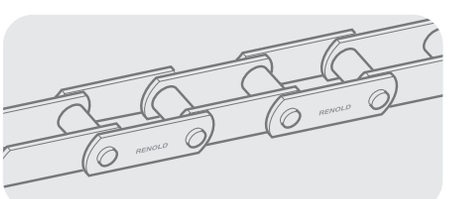
Theme Park

Renold Roller Coaster Chain



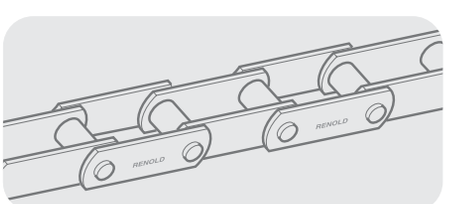
Chain Product No:
◀ 171123. Bush chain.

Description:
4.76" pitch 100,000 lbf (446 KN) Solid pin.



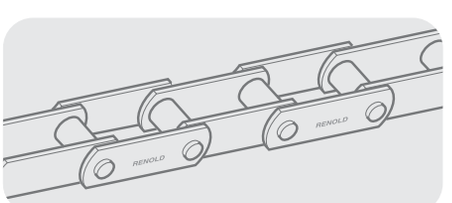
Chain Product No:
◀ 171360. Roller chain.

Description:
4.063" pitch 100,000 lbf (446 KN) Solid pin. Replaces WH126 4.063" pitch Welded Bush Chain.



Chain Product No:
◀ 171649. Solid pin.

Description:
4.063" pitch 100,000 lbf (446 KN) Solid pin. Replaces WH124 4.063" pitch Welded Bush Chain.

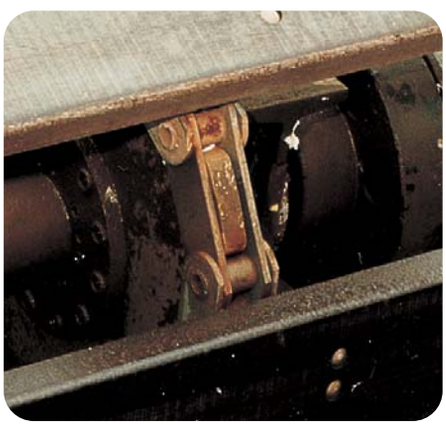


Chain Product No:
◀ 197740. Bush chain.

Description:
4.04" pitch 85,000 lbf (380 KN).

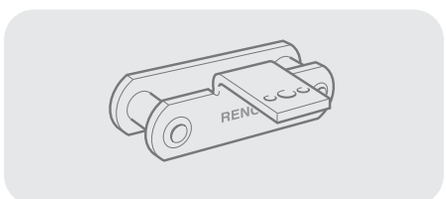
Theme Park

Renold Water Ride Chain



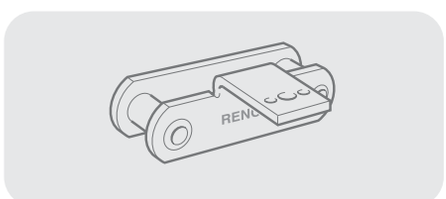
Renold has developed a range of special corrosion resistant chain for water ride applications giving increased service life and reduced maintenance costs.

Please consult Renold for other special engineered designs.



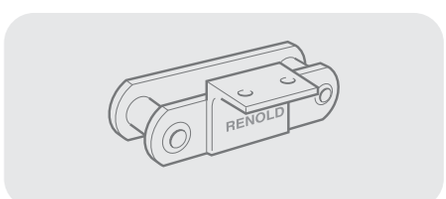
Chain Product No:
◄ 176499. Bush chain.

Description: 4" pitch 15000 lbf (67000 N) Solid Bearing Pin Chain with K3 attachments one side every outer. Zinc plated throughout plus a special lubricant.



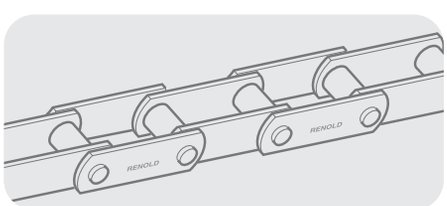
Chain Product No:
◄ 178388. Bush chain.

Description: 4" pitch 30000 lbf (134000 N) Solid Bearing Pin Chain with K2 attachments one side every outer. Zinc plated throughout plus a special lubricant.



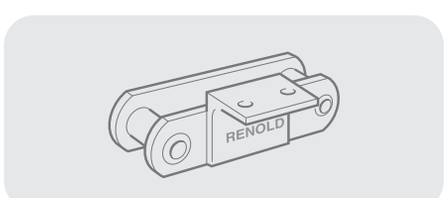
Chain Product No:
◄ 179362. Bush chain.

Description: 6" pitch 45000 lbf (200000 N) Solid Bearing Pin Chain with K2 attachments one side every outer. Zinc plated throughout plus a special lubricant.



Chain Product No:
◄ 171749. Bush chain.

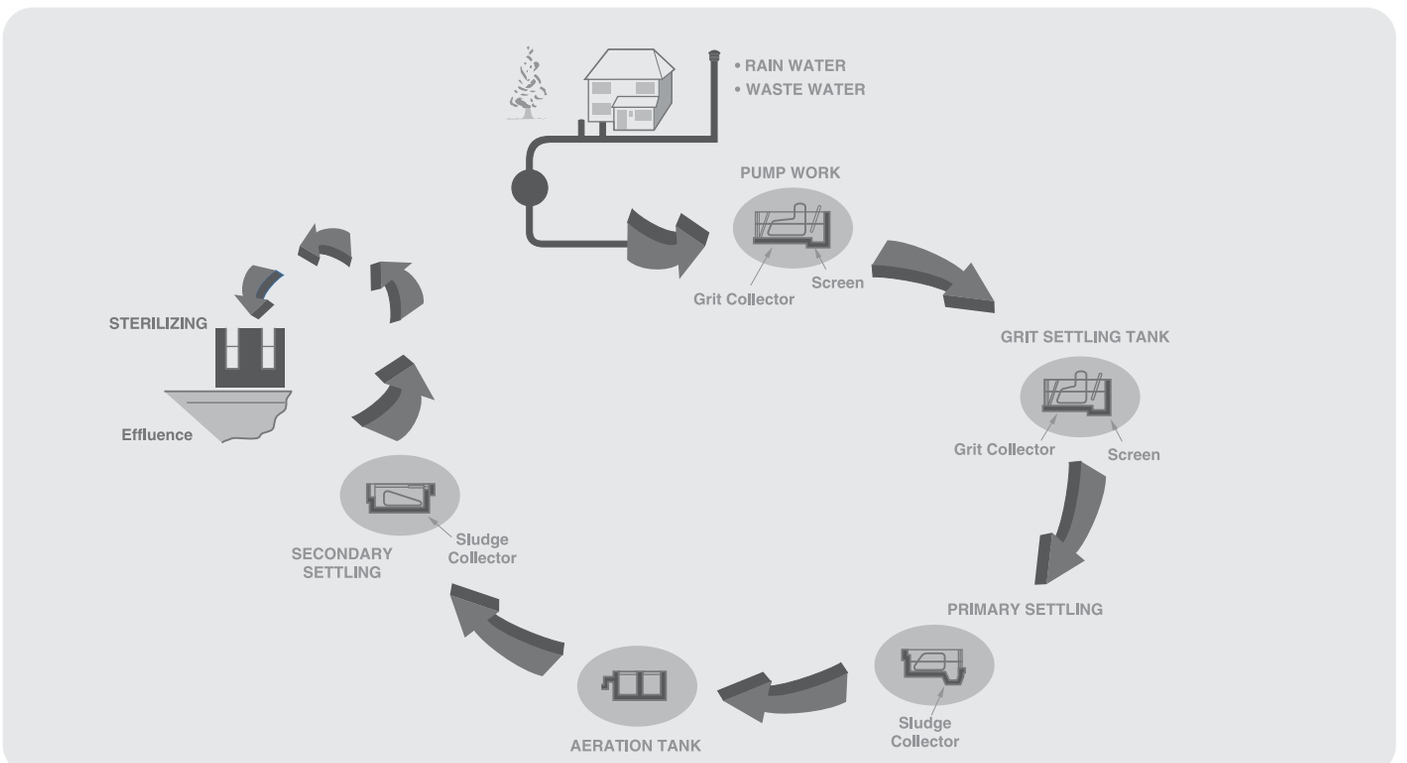
Description:
6" pitch 125000 lbf (550 KN) Solid Pin. No attachments.
Hydro - Service plus special lubricant.



Chain Product No:
◄ 179840. Bush chain.

Description:
6" pitch 90000 lbf (400000 N) with K2 attachments one side every outer. Zinc plated plus special lubricant.

Water Treatment Chain



Renold manufacture a wide range of Water Treatment Chain for use in sewage and industrial waste water treatment plants.

Renold has been developed to withstand the hostile environments associated with the water industry.

Typical applications are in environments which are corrosive, such as primary settlement tanks, or abrasive such as sludge collector tanks.

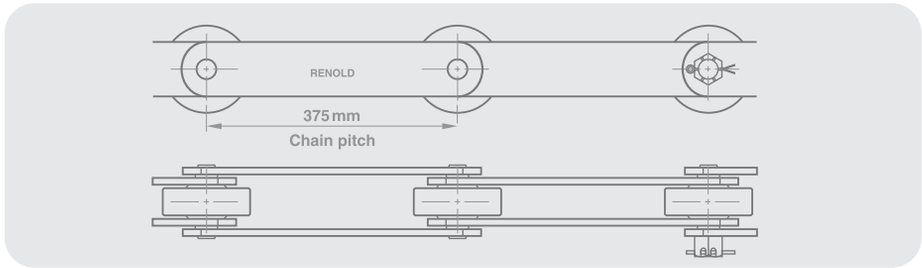
Several specifications of chain are available including special alloy chain, stainless steel chain and special engineered chain.

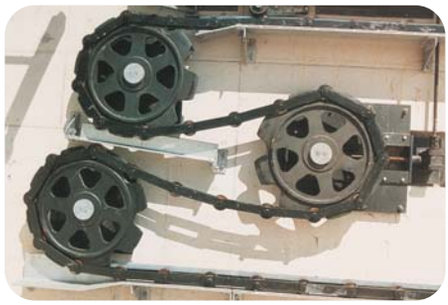
Water Treatment Chain

Scraper Chain for Primary Settlement Tank

Renold chain fitted to primary settlement tanks is designed to operate fully immersed with the minimum of attention and lubrication.

- Product No: 797000. Galvanised Plates with Stainless Steel round parts and Cast Iron rollers





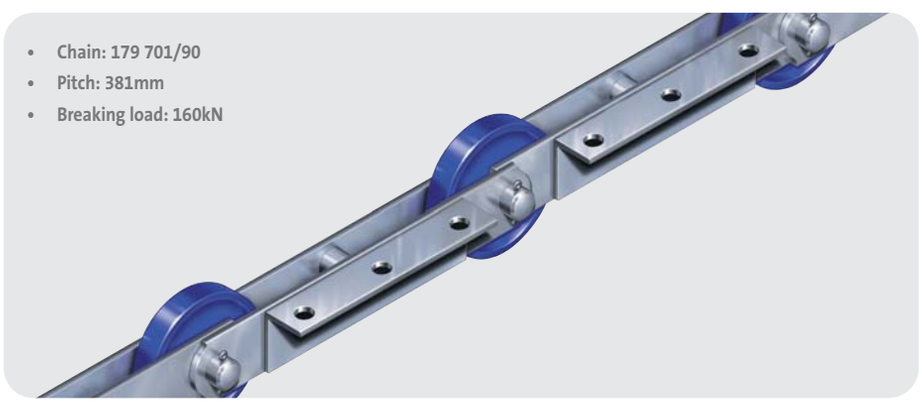
Fresh Water Screening Chain

These chains run as pairs and drive mesh screens acting as filters to remove river and sewage debris.

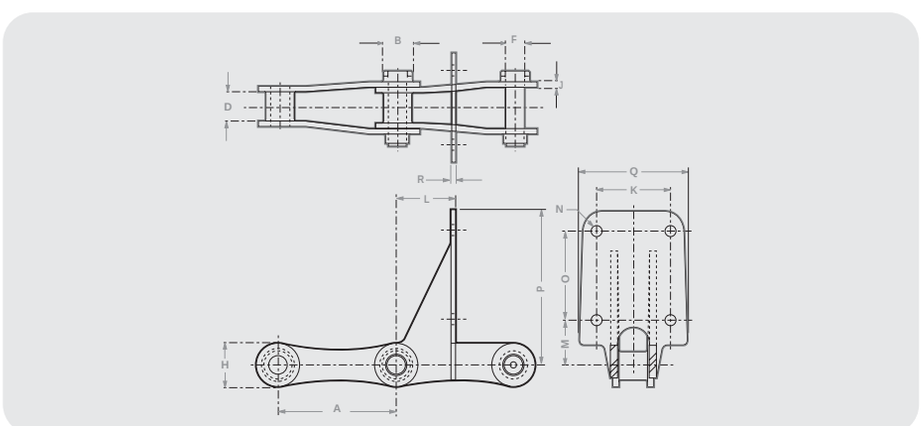
Chain and sprocket life are optimised by the rigid control of pitch accuracy, resulting in excellent gearing, lower friction, reduced wear and a reduction in noise levels during operation.

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.

- **Chain: 179 701/90**
- **Pitch: 381mm**
- **Breaking load: 160kN**



Non-Metallic Chain



Renold Chain No.	Attachment No.	Mass kg/m								
			A	B	C	D	E	H	S	T
JCCNCS 720S	F22-6	2.084	95.250	76.2000	85.725	14.288	66.675	157.163	139.700	6.350
JCCNCS 720S	F22-8	2.232	95.250	76.200	85.725	14.288	114.300	200.025	139.700	6.350

Lumber industry

81X-81XH Lumber Chain

Part Number:

171306 (81X) 171312 (81XH) 171770 (81XHH)

Application:

These roller chains are specially designed for the rugged and hostile environment found in the lumber industry. These chains are used as an integral part of lumber conveyors for such applications as board ovens, veneer dryers, sorters, unscramblers, trimmer saws, stackers and transfer conveyors.

As well as the lumber industry, these chains can now be found in such applications as grainhandling, plaster and fibre board manufacture. The chain has excellent conveying properties suitable for other hostile applications such as quarrying or the manufacture of concrete products.

Product Description

Renold 81X series chains have identical gearing dimensions and will run on the same sprocket within a given application. The 81XH and 81XHH chains are used on heavy duty conveyor applications where space is limited. Both chains are designed with maximum chain life as the prime objective. Renold standard specification includes:

- Very accurate pitch control that lowers friction resulting in reduced wear.
- Heat-treated side plates for increased wear and fatigue life.
- Rollers designed to cope with this hostile application.
- All chains are pre-lubricated to enhance initial chain life and or protection whilst in storage.
- A material with excellent weldable properties, the standard method of fixing attachments within the industry.

Lubrication

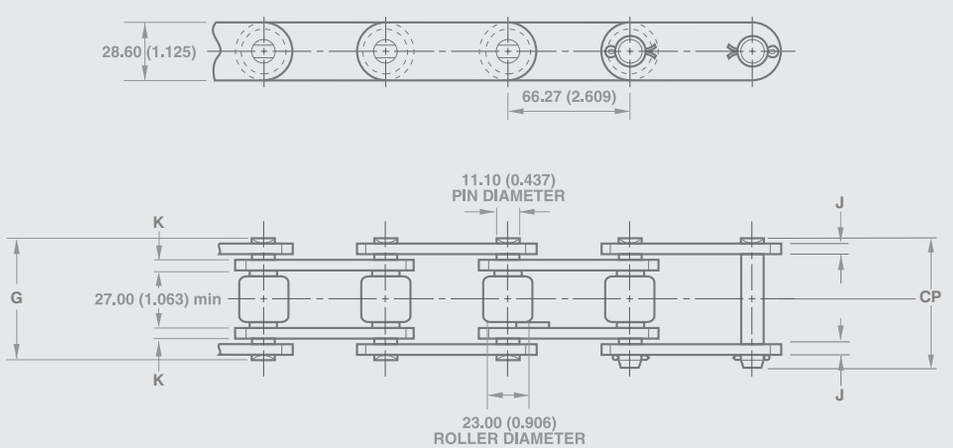
Chains should be protected against dirt/moisture and be lubricated with good quality, non-detergent, petroleum based oil. Renold chains are pre-lubricated before despatch, but like all chains, need regular re-lubrication during their working life.

Specialist advice should be sought for each application to ensure that the lubricant used does not degrade or contaminate the timber product carried.

If you require further information, please consult your local Renold representative or consult the Installation and Maintenance section.

Technical Data

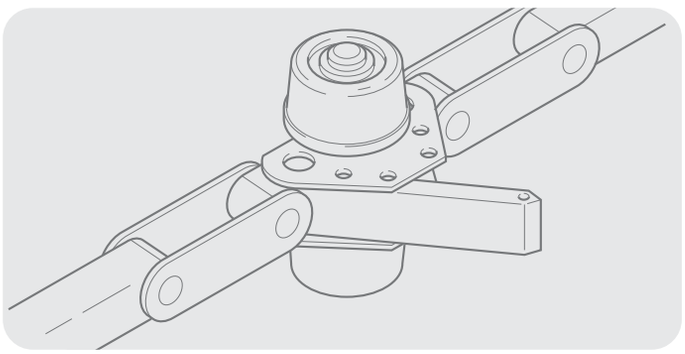
DIMENSIONS mm
(INCHES)



Chain Number	Renold Chain Number	Pin Length (max)	Con Pin Length (max)	Height	Link Plates Thickness (Inner)	Thickness (Outer)	Minimum Breaking Load kN	Minimum Breaking Load (lbf)	Number of Links (3.05 m)	Average Chain Weight kg/m
		G	CP	H	K	J				
81X	171306	49.30 (1.94)	53.65 (2.11)	28.60 (1.125)	4.00 (0.157)	4.00 (0.157)	107	(24000)	46	3.56
81XH	171312	60.25 (2.37)	64.85 (2.55)	32.15 (1.266)	8.00 (0.315)	5.60 (0.22)	196	(44000)	46	5.22
81XHH	171770	65.18 (2.57)	69.65 (2.74)	32.15 (1.266)	8.00 (0.315)	8.00 (0.315)	205	(46000)	46	6.86

Special Engineered Chain

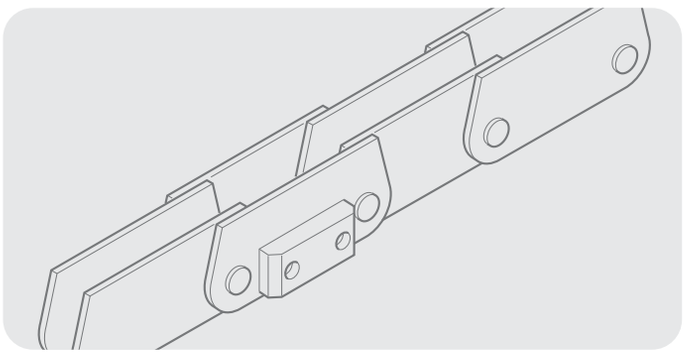
Abattoir chain



• Chain: 176 493 • Pitch: 254mm • Breaking load: 67kN.

Zinc plated bi-planar chain used to carry carcasses through a slaughter house.

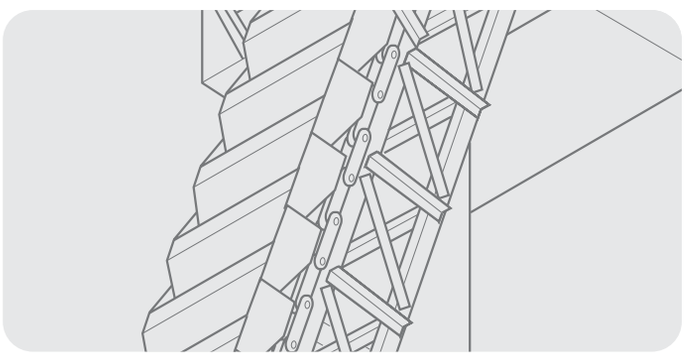
Car conveyor chain



• Chain: 795 034 • Pitch: 152.4mm • Breaking load: 160kN.

Deep link chain fitted with Nylatron wear pads, carries car bodies through assembly and paint spray lines.

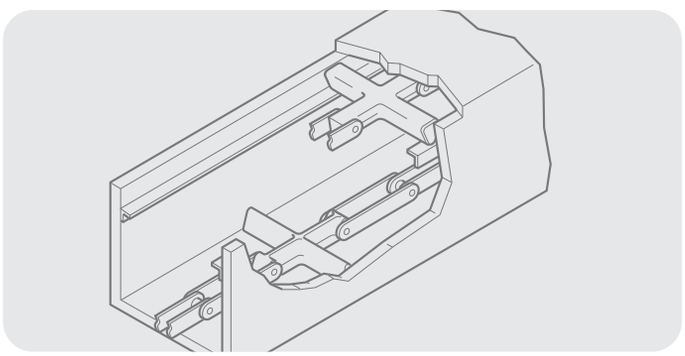
Bucket conveyor or elevator



• Chains selected to suit each application.

These have buckets fixed to one or two strands of chain. The buckets are so shaped that when passing over the headwheel, the back of each bucket acts as a chute for the material discharged from the following bucket. Feeding of the elevator is achieved by a loading leg or chute. Such elevators are suitable for handling lumpy, friable or abrasive materials.

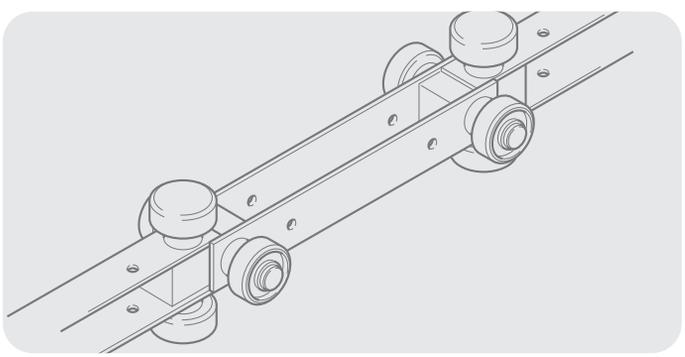
Box scraper conveyor



• Chains selected to suit each application.

Carrying bulk non-abrasive materials, horizontally or up a small incline, these conveyors feature a closed box. The chains scrape the floor of the box and return on guide rails at the top of the box. With a single chain, scraper flights of integral malleable steel or in the form of L attachments protrude on each side to span the box. With two strands of chain, the scraper flight is carried between strands.

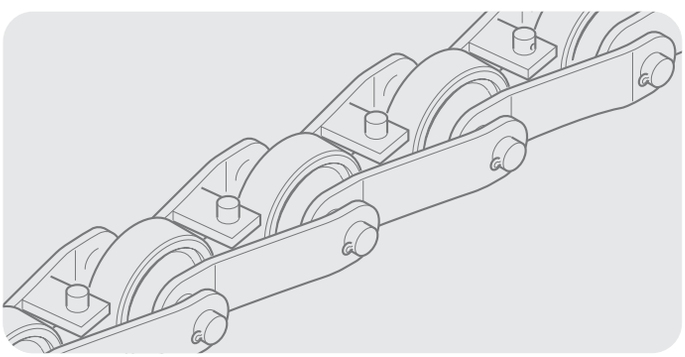
Bi-planar chain



• Chain: 171 044 • Pitch: 280mm • Breaking load: 96kN.

Overhead chain fitted with outboard rollers typically used in the packaging industry.

Cranked link bakery chain

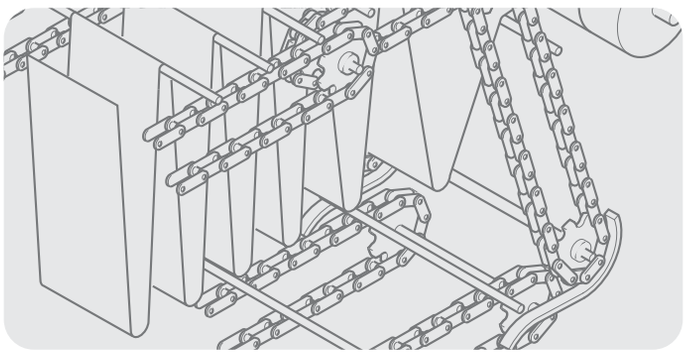


• Chain: 171260/90 • Pitch: 177.8mm • Breaking load: 285kN.

Matched in pairs, all round parts coated in manganese phosphate for conveying bread through provers, ovens and coolers.

Special Engineered Chain

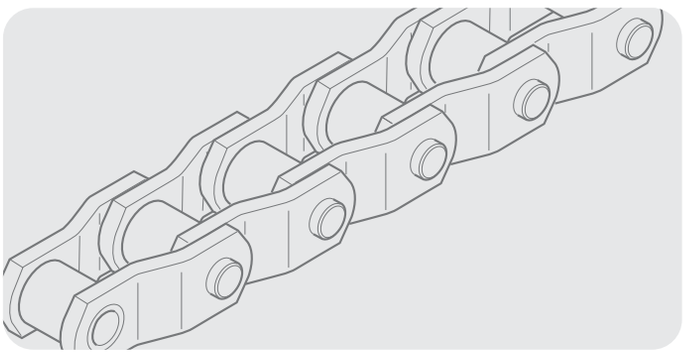
Festoon conveyor



• Chains selected to suit each application.

Generally used to convey paper or linoleum between manufacturing processes when the material must hang for drying without touching. The bars which support the material may be fixed staybars or rollers which are free to rotate. Alternatively, loose crossbars may be used, as shown.

Roller coaster ride - cranked link chain

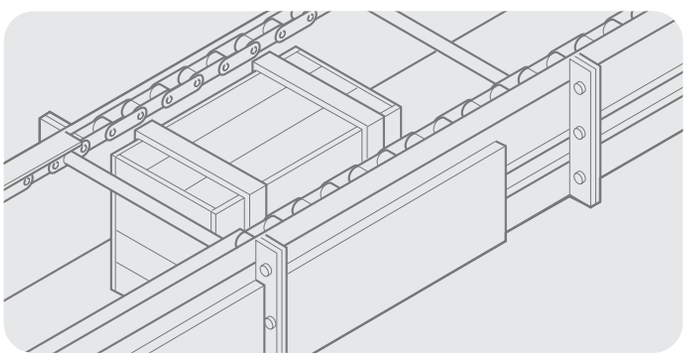


• 588 506 • 103.2mm pitch • Breaking load 667kN.

New design of cranked link chain for roller coaster rides.

Pulls carriages up incline, releasing them onto the ride.

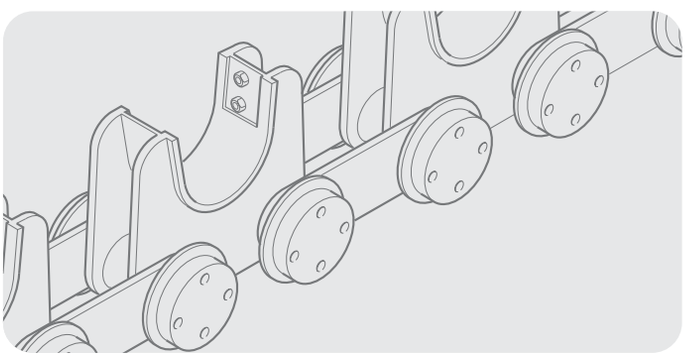
Pusher conveyor



• Chains selected to suit each application.

Used to convey rigid packages or unit loads having an even base by pushing them over a fixed bedplate. The pushers, positioned above the bedplate and spaced at appropriate intervals, are often staybars or angles bolted across a pair of chains. These conveyors operate horizontally or on inclines up to 40°.

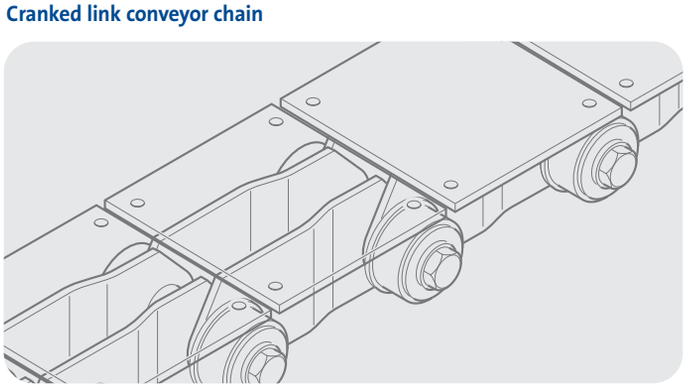
Pipe curing conveyor chain



• 199232/90 • 190 mm pitch • Breaking load 712kN.

These chains cradle newly spun concrete pipes through curing ovens.

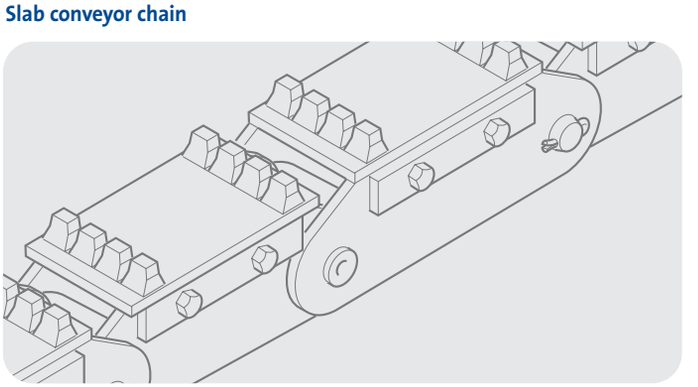
Cranked link conveyor chain



• Chains selected to suit each application.

Commonly known as gull wing chain. Its heavy duty characteristics allow it to cope with the arduous operating conditions encountered in aluminium processing.

Slab conveyor chain

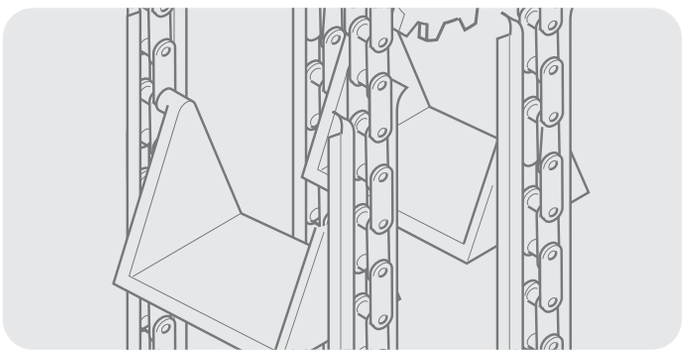


• 600mm pitch • Breaking load 3924kN.

Seven chains running parallel. Steel slabs are carried across the chains.

Special Engineered Chain

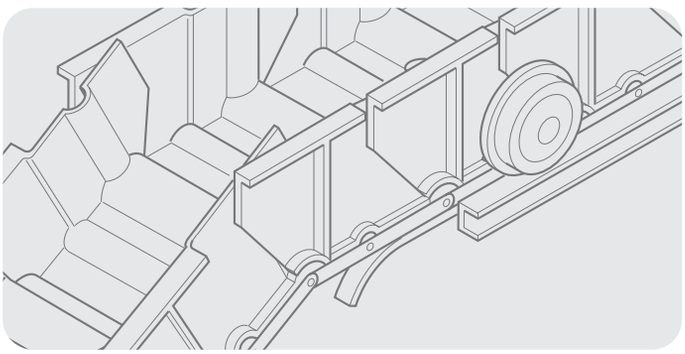
Swing tray elevator



• Chains selected to suit each application.

Swing tray elevators are suitable for elevating any type of package, box or sack. A pair of chains fitted with spigot pins allows the trays to pivot freely, the centre of gravity of the tray and load must be below the spigot pin to eliminate risk of tipping. By fitting finger-type trays, loading and unloading can be automatic.

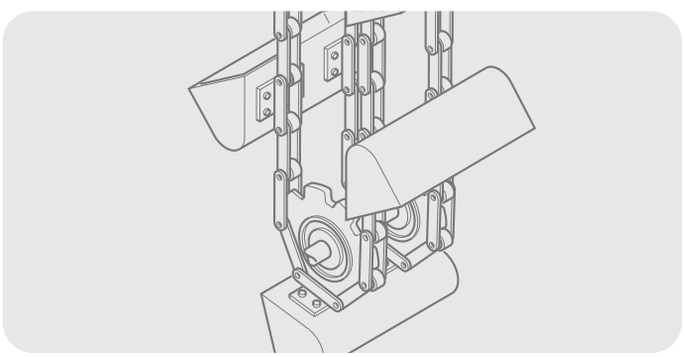
Steel apron / overlapping slats



• Chains selected to suit each application.

A continuous slat conveyor with a series of flat or formed steel slats carried between a pair of conveyor chains on K attachments. Slats may incorporate upturned ends or may run between skirt boards to prevent spillage. This type of conveyor may be used on inclines.

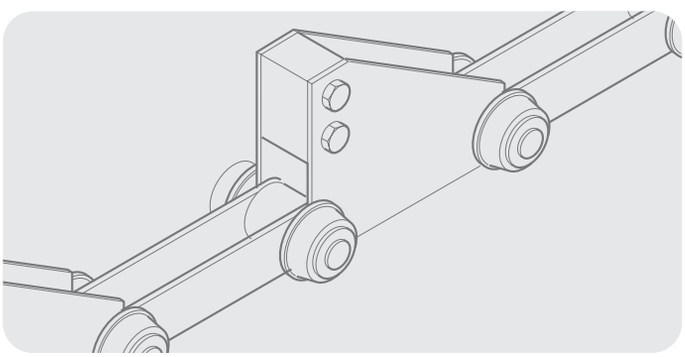
Spaced bucket elevator



• Chains selected to suit each application.

Buckets are fixed at intervals to one or more chains. Bulk materials are fed into the elevator boot and pick-up is by the buckets scooping or dredging. Discharge of material relies on the speed of the bucket around the headwheel to impart a centrifugal force to the material so that it is thrown clear of the preceding bucket.

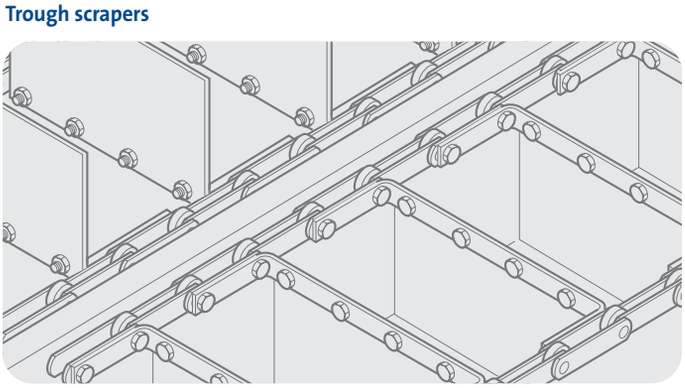
Transfer chain



• 179701/90 • 304.8 mm pitch • Breaking load 400kN.

Pusher attachments drives steel sections in steel mills.

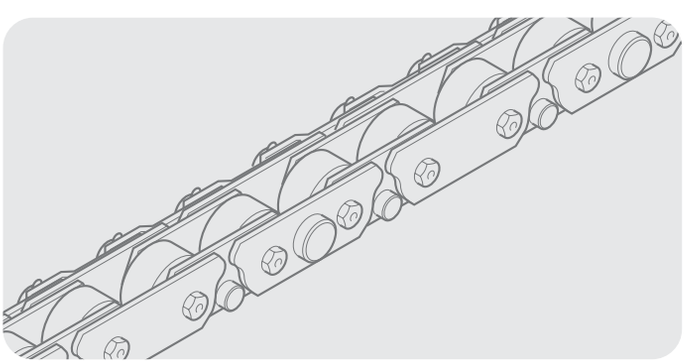
Trough scrapers



• Chains selected to suit each application.

Trough scraper conveyors are designed to move bulk materials along a trough by means of scraper plates fixed at intervals between a pair of conveyor chains, by F or L attachments. The material is normally fed into the trough by a gravity feed and discharged through an opening in the floor of the trough.

Steriliser chain



• 171 320/90 • 88.9mm pitch • Breaking load 178kN.

Chains are matched to run in pairs within canned food steriliser systems.