SHARP
AGROTECH

LInking Futures Together

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Industrial Chain Manufacturer

Contents

Introduction

Sharp Agrotech was founded in 1994 by a Management with over 25 years experiences in the Engineering and Conveyor Chain Industries. Our Chains are designed to ensure best quality and performance. Our Sugar Chain products are as Cane carrier chain, Baggase carrier Chain, Combination chain, Welded steel chain, Rake carrier chain and Inter carrier chain etc.

By using the right and high quality of raw material (alloy steel), proper heat treatment process, Chain component are machined by means of today's best equipment and technology. Also assembly is done by means of pneumatic tools with high interference fit and consistent integrity. Thus we achieve the best and maximum performance of their product.

A group of Experst, Metallurgists, Engineers, Technicians is continuously giving their best to research better material, latest manufacturing processes and continual improvements in all our manufacturing process.

Quality Control

We at Sharp Agrotech

Are committed to design, manufacture and supply conveyor chains as per the needs and expectation of our customers. Our emphasis on implementing latest technology, on-time delivery of products, reliable quality with reasonable cost and continual improvement in all our process helps us achieve that.

Our team is guided by adherence to the '**GREAT**' principles designed by our founders which have enabled us to build meaningful and long-lasting relationships with our clients.

From resourcing materials to implementing state-of-the-art technology, using best-in-class machinery, final product examination and dispatch, all our products go though a rigorous quality check by experts. Our collaboration extends beyond delivery and our team stays connected with clients during installation and the resultant impact created by our products in the client facility.

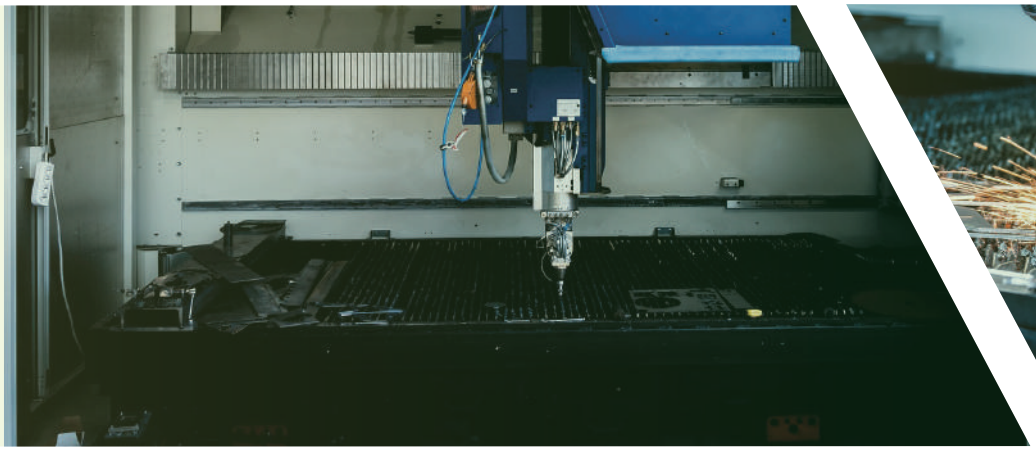
Tejas S. Kulkarni
Proprietor

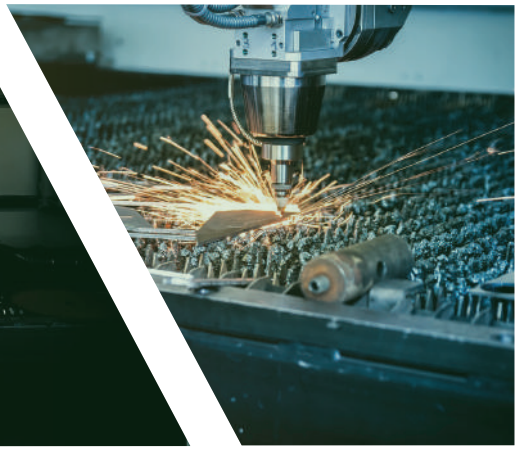
Laboratory

Chemical composition of raw material checked for the presence of carbon, manganese, silicon, chromium, nickel, molybdenum etc. and mechanical properties are tested in our own laboratory. Macro examination of raw material reveals the defects such as internal soundness, porosity and seams. Microscopic examination is carried out for estimation of non metallic inclusion in the raw material. We check case and core hardness, case depth, case carbon, case and core structure and tensile strength of heat treated parts.

Machine Shop

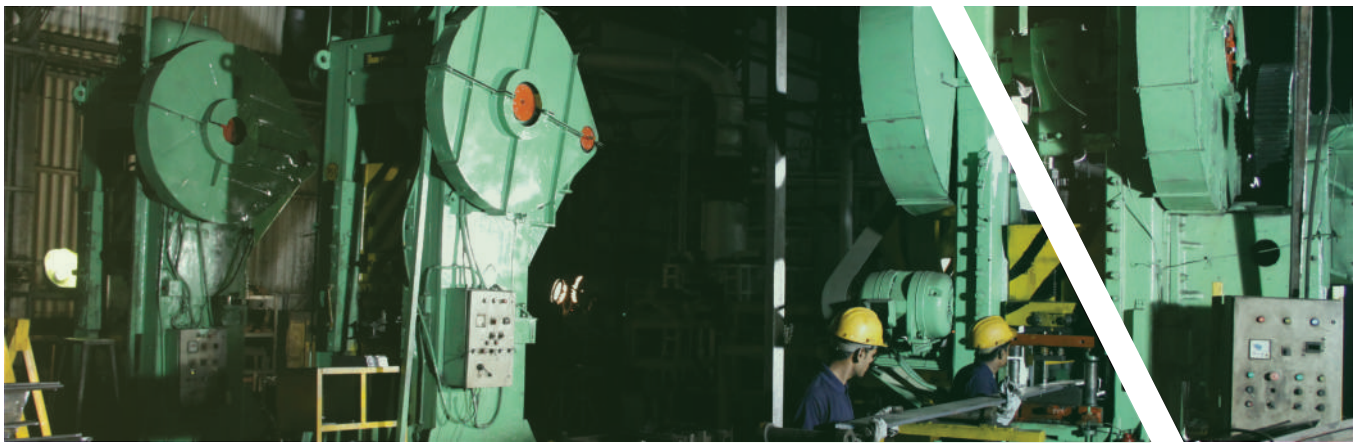
Sharp Agrotech has dedicated manufacturing line for pin, bush and rollers. With the help of precision machines and SPM's, we manufacture pin, bush and rollers in close tolerances with appropriate grinding allowance for perfect assembly. Each part is subjected to a consistent quality control by means of checking all dimensions with proper gauges. Special manufacturing techniques are developed for continuous improvement in productivity and quality.





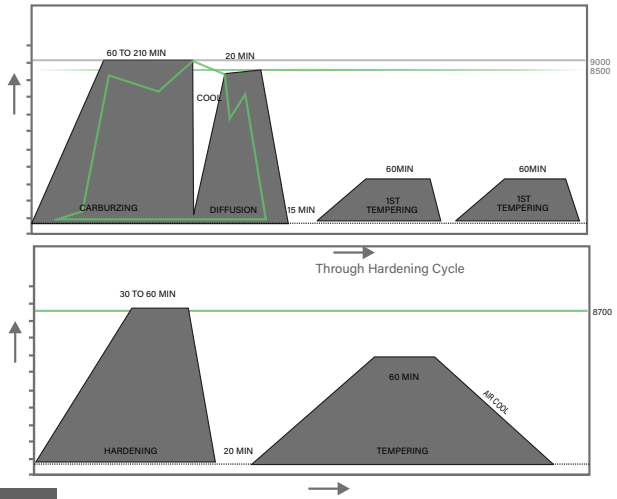
Press Shop

In Sharp Agrotech, links are manufactured by heavy duty precision presses and tools. Blanking, pre-punching, shaving, broaching and one stroke bending is carried out in the press shop. The links undergo pressing operation to provide extremely accurate diameter, then the links are subjected to shaving operation which increases bearing area for better wear resistance and less elongation. Finally shot peening of links is done to increase fatigue strength..



Heat Treatment

Pin, bush and rollers are case carburized and hardened to required level. Then multiple tempering are done to reduce retained austenite by obtaining fully tempered martensitic structure. Sharp Agrotech pin, bush and rollers are strong because of specified case and core hardness. For better corrosive and wear resistance case carbon is controlled in case carburizing cycle. chains links are supplied in toughened and shot peening condition to get more wear resistance, fatigue strength and high breaking load. In toughening process appropriate Austenitizing temperature and sudden quenching is required to reduce the free ferrite in micro structure.



Design and Drawing Service

Design and technical drawing is part of our service. We create the technical drawing directly from our site survey or work with you to create a full design brief to meet your fabrication needs.
We will support you in developing and improving the plant and equipment.

Fully Integrated Installation

Our site service team comprising experienced mechanical fitters and fabricators will install all types of mechanical handling equipment, metal fabrications and equipment at your premises in the agreed timescale with a high degree of competence whilst operating under strict safety protocol.

Product Range

Forged Rake Chain

Rake Carrier Chain

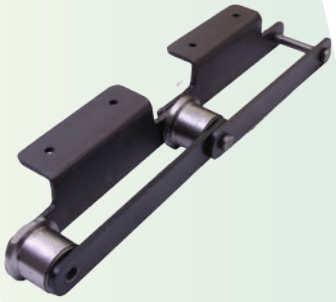
Baggase Carrier Chain

Cane Carrier Chain

Bucket Elevator

Draw Bench Chain

Gate Chain



Assemble Line Chain

Pan Conveyer Chain

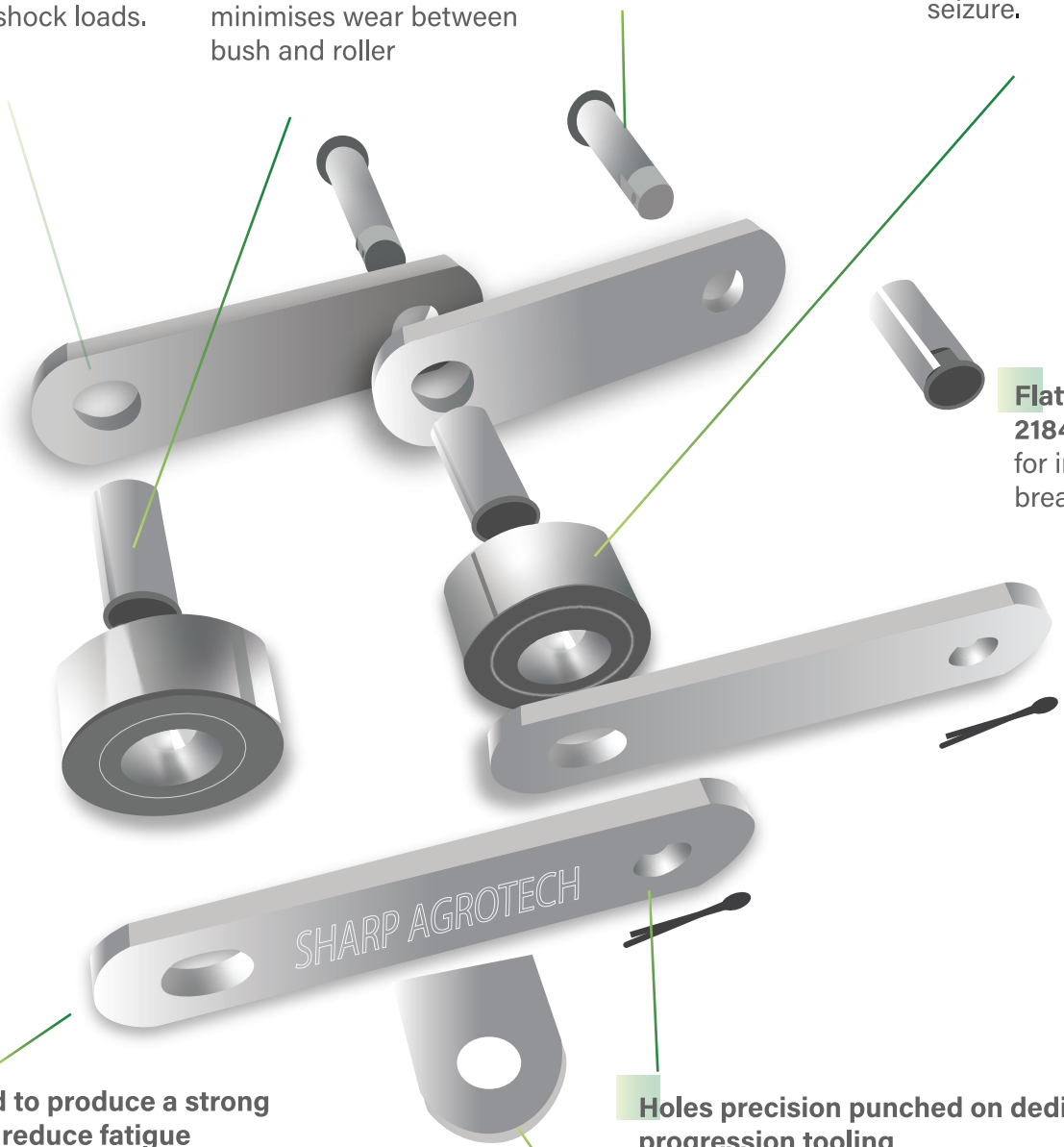
Material- High quality steels used throughout

Link plates cropped from high carbon cold drawn steel
To avoid internal stresses associated with guillotined steel, Challenge produces all plates from high tolerance, on size, cold drawn steel bars resulting in a plate better able to withstand fatigue and shock loads.

Case Hardened Alloy steel bushes precision machined from seamless tube
Ensuring minimum distortion and superior concentricity. Interference fit extends wear life by preventing bush rotation. Surface grinding minimises wear between bush and roller

Induction Hardened Pins in High Chrome Alloy Steel
Pins headed and flatted to ensure location and prevent rotation. Challenge EasyFit® pins designed with long lead in to aid on- site maintenance and assembly.

Hardened Rollers with grinding
Grinding the outer diameter gives excellent wear resistance and good load carrying qualities plus reduced wear on sprockets and better visual result. Stepped down to help prevent seizure.



Flatted bush on 2184 Hyper Chain
for increased breaking load.

Shot peened to produce a strong surface and reduce fatigue

Challenge has invested heavily in CNC controlled machinery for optimum batch component conformity.

Attachment plates jig assembled maintains position and squareness.

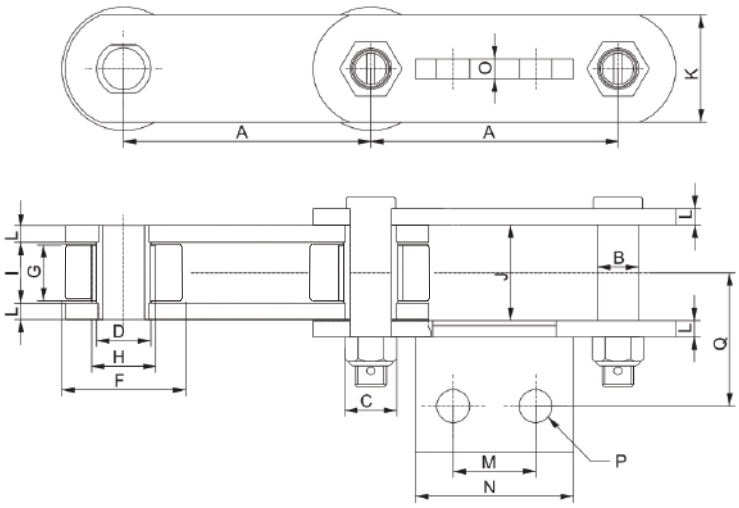
Holes precision punched on dedicated progression tooling
Guarantees consistently high tolerance pitch control and strong, fatigue resistant chain.

Robotic welding of attachment
All industry standard attachments available.

In-house design team for all special requirements.

Rake Carrier Chain

A wide variety of chains are available with tensile, strength ranging from 30,000 to 60,000 kg. Chains manufacturing is carried out on high precision presses using carbon steel for links and operations including blanking, piercing and shaving (to avoid linear elongation). Shot Pinning is done for links to improve fatigue resistance. Pin and bushes are made of Alloy Steel, Stainless Steel (Magnetic or Non-Magnetic) and precision machined, case carburized and then ground for perfect fitting. Rollers IS-226 or Carbon Steel (with stainless steel Linear Bush) are heat treated to improve wear resistance.



Pitch	Thickness or side link	Threaded Pin				Bush		Roller		Attachment Link					Split pin	Load in KG
		DIA	Length	DIA of head	Thread size	DIA	Length	DIA	Length							Proof Load
A	B	C	D	J	-	E	F	G	H	K	L	M	N	W	-	-
150	10	23	112	28	M-20	33	56	75	35	65	20	68	12	100	6.3	10,000
150	12	25	116	30	M-20	33	61	75	35	65	20	75	12	100	6.3	13,500
200	16	30	135	36	M-24	38	69	90	35	75	20	83	16	125	10	20,000

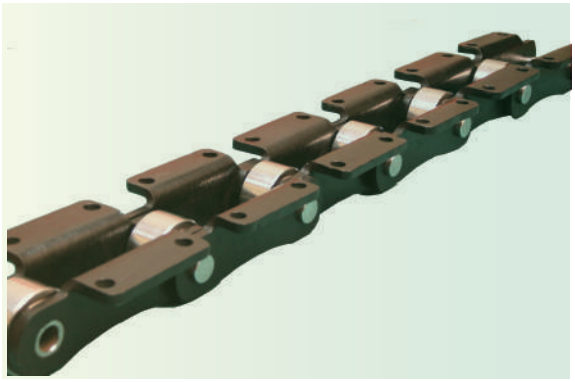
Chain Links are in hardened and tempered condition, if tensile strength is required more

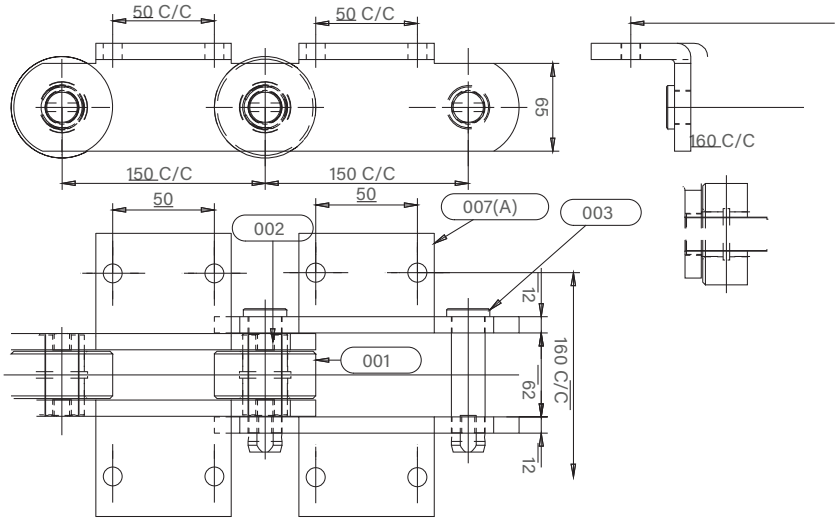
*All Dimensions are in mm

*Alternative sizes are available on request

Cane Carrier Chain

A wide variety of chains are available with tensile strength ranging from 45,000 to 80,000 kgs. Chains are manufactured using forged steel for links, precision machining to their mating parts with bush and pin. Pin and bushes are made of Stainless Steel (Magnetic or Non-Magnetic) and precision machined, through hardened (non-magnetic steels) and then ground for perfect fitting. Links are of forged steel (with stainless steel Linear Bush) and duly heat treated to improve wear resistance.





Pitch	Thickness or side link	Threaded Pin			Bush		Roller		Side Link					Slit Fitting	Split Pin	Load in KG	
		DIA	Length	DIA of head	DIA	Length	DIA	Length								Proof Load	Breaking Load
A	B	C	D	J	E	F	G	H	K	L	M	N	S	T	V	-	-	-
150	10	23	92	28	30	56	75	35	60	43.0	30.0	3	126	64	14	6.3	10,000	30,000
150	12	25	101	30	33	61	75	35	65	47.5	32.5	3	150	75	14	6.3	13,500	40,000
150	14	30	110	36	38	64	80	35	75	54.5	37.5	3	150	75	14	6.3	20,000	60,000
200	16	30	125	36	38	69	90	35	75	57.5	37.5	4	170	100	14	10	20,000	60,000
200	16	32	125	38	40	69	90	35	75	57.5	37.5	4	170	100	14	10	25,000	75,000

Chain Links are in hardened and tempered condition, if tensile strength is required more

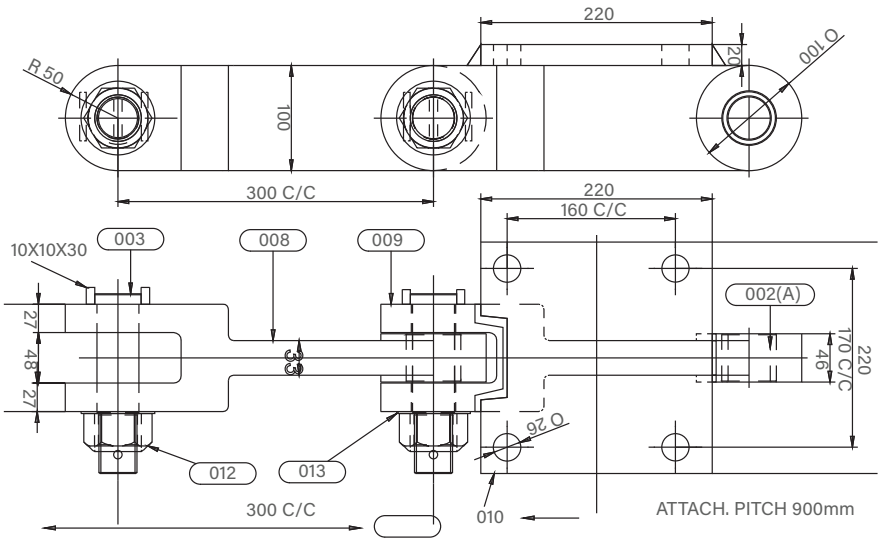
*All Dimensions are in mm

These chains are also available in a stainless steel heat treated material (PBR only)

*Alternative sizes are available on request

Forged Rake Chain /Inter Carrier Chain

A wide variety of chains are available with tensile strength ranging from 45,000 to 80,000 kgs. Chains are manufactured using forged steel for links, precision machining to their mating parts with bush and pin. Pin and Bushes are made of Stainless Steel (Magnetic or Non-Magnetic) and precision machined, through hardened (non-magnetic steels) & then ground for perfect fitting. Links are of forged steel (with stainless steel Linear Bush) and duly heat treated to improve wear resistance..



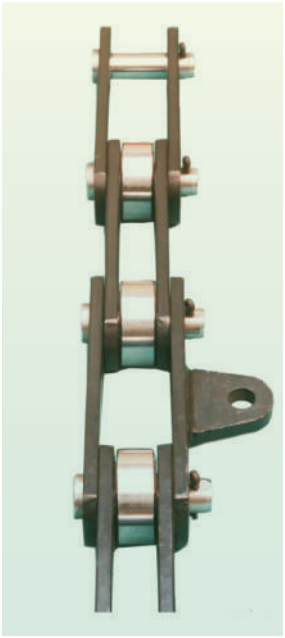
Pitch	Link	Pin	Attachment Plate	Nut	Attachment Plate	Attachment Plate

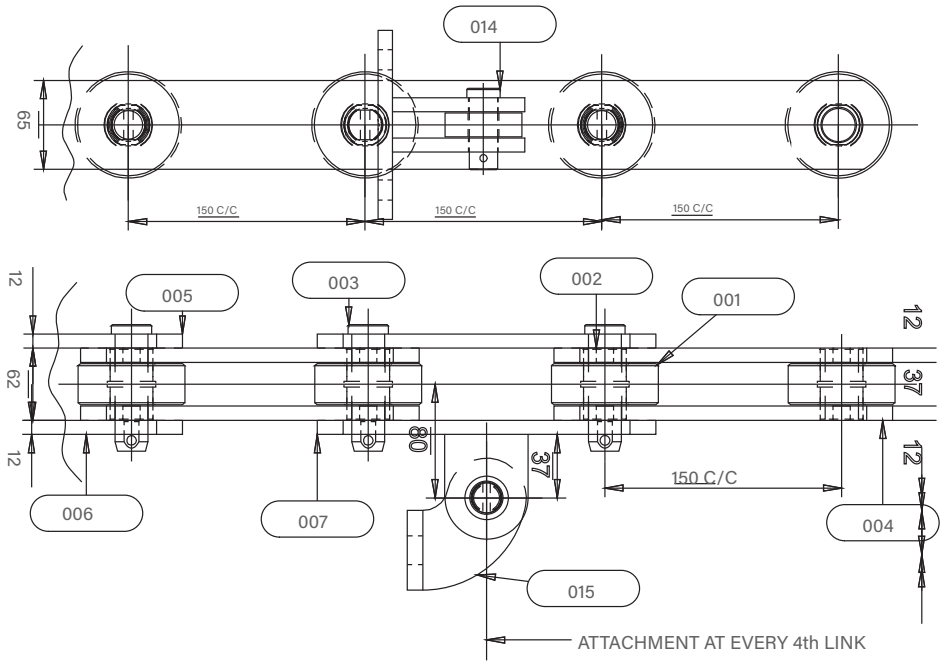
A	B	C	D	E	F	G	H	I	J	K	L			
150	50	61	14	33	32	28	110	--	100	12	18	M-24	600	45,000
200	50	61	14	33	32	30	115	--	100	12	18	M-27	800	50,000
229	57	68	16	36	35	32	112	100	80	16	18	M-30	687	60,000
300	60	85	20	45	44	38	142	100	80	18	18	M-30	900	80,000

*All Dimensions are in mm
Alternative sizes are available on request
Links are available in round & oval shape

Bagasse Carrier Chain

A wide variety of chains are avaiable with tensile stength ranging rom 20,000 to 75,000 kg. Chains are manufactured as per IS - 84681990, using Carbon 'Steel for links & operation. Blanking, Piercing & Shaving (to avoid linear elongation) are carried out on highly precision presses. Shot Pinning is done for links to improve fatigue resistence. Pin & Bushes are madeof Alloy Steel and precision machined, case carburised and then ground for perfecting. Rollers IS-226 or Carbon Steel are heat treated to improve wear resistance





Pitch	Thickness or side link	Threaded Pin			Bush		Roller		Attachment Link					Split pin	Load in KG	
		DIA	Length	DIA of head	DIA	Length	DIA	Length							Proof Load	Breaking Load
A	B	C	D	J	E	F	G	H	K	L	M	N	W	-		
150	8	23	82	28	30	52	75	35	60	14	60	10	50	6.3	6,500	20,000
150	10	23	92	28	30	56	75	35	60	16	70	12	50	6.3	10,000	20,000
150	12	25	101	30	33	61	75	35	65	20	80	16	50	6.3	13,500	40,000
200	16	30	125	36	38	69	90	35	65	20	80	25	63	10	20,000	60,000
200	16	32	25	38	40	69	90	35	75	25	108	25	63	10	25,000	75,000

Chain Links are in hardened and tempered condition, if tensile strength is required more

*All Dimensions are in mm

These chains are also available in a stainless steel heat treated material (PBR only)

Travelling Grate Chain

Heavy duty services and effective handling of shock loads, abrasive conditions with hot and dusty conditions.

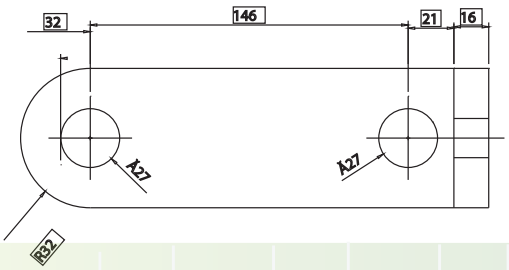
This type of chain is used in Power Plants & Sugar Power Plants.

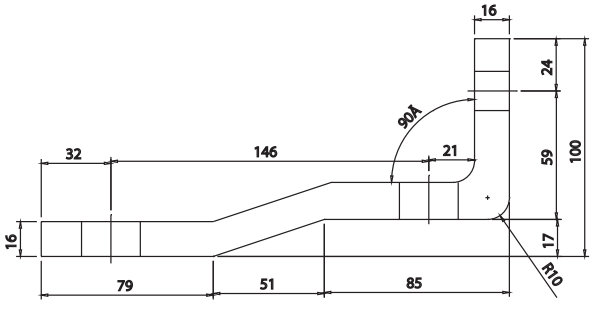
These chain links are made from Carbon Steel / Alloy Steel. They are subjected to operations like Blanking and fine Boring which are carried out on high precision machines. The link hole size and finishing is controlled to suit adequate interference fit. Further links are hardened to avoid linear elongation & to get better strength. This is followed by shot peening process to improve the fatigue life.

Special Alloy Steel is used for Pins & Bushes with adequate heat treatment like Through Hardened and Induction Hardened with optimum Case-Depth to provide maximum wear resistance.

USP

Precise alignment of chain with sprocket due to close tolerances maintained is by precision manufacturing processes.
Maximum chain strength & wear resistance is achieved by selection of right material.
Exercising of strict control on procurement of material as per specification and adopting modern heat treatment process in own in-house state of the art heat treatment plant.



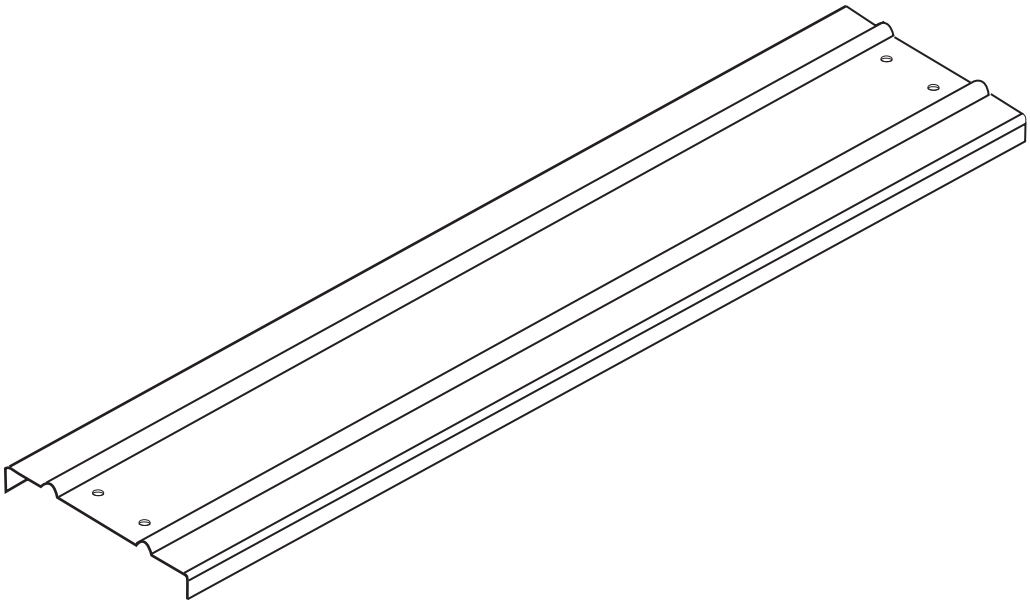


Pitch	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Breaking Load	Proof Load
Pin Dia		Pin length	Pin Split C/C	Bush Dia	Bush Length	Roller Dia	Roller Length											
146	24.65	136	114			57	32			65	16		186	230	18	40,000	13,500	
150	25	94		33	56	75	35	36	58	65	10	140			25	40,000	13,500	

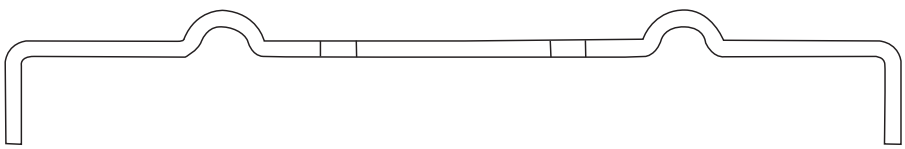
Slats

Slats are interchangeable for easy replacement. They are precision drilled for mounting on two or more strands of chains. Pressed out 3 mm to 8 mm MS plate on hydraulic press brake in one stroke gives equal formation and shape on overall length.

We specialize in the manufacturing of quality slats for canecarrier, inter carrier, bagasse carrier and all other special applications carrier slats.



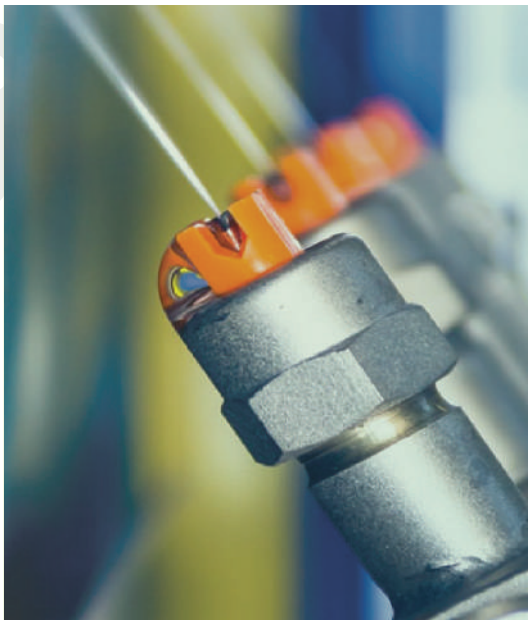
Hinged type slats are also available and can be manufactured as per requirement



Maintenance & Lubrication of Roller Chain

Maintenance and lubrication is one of the most important services that Sharp chains provides to its customers. Correctly lubricating, replacing worn sprockets or chains, checking chain tension, aligning sprockets and more, we do it all when it comes to ensuring that the product is maintained with highest possible quality.

Depending the weight being conveyed and frequency of use, chains are prone to wear and tear and possible damage. A roller chain should be inspected after first 50 hours of operation and regularly after 200 hours of being subjected to shock loads and severe operating conditions. Different experiences and tasks require longer or shorter inspecting times, but one can't stress more on a regular thorough checks. Inspect the chain for cracked, broken, deformed orcorroded parts and contact us for fixing any of these issues.



Maintenance

Mechanical Wear

Under the reasonable conditions and normal atmosphere, the mechanical wear causes bearing surface of conveyor chain to shine brightly, hence the proper lubrication assures furthe enhanced life.

Wear due to Corrosion

Conveyor chains used in applications where acidic and alkaline chemicals are present will be subjected to Corrosive as well as mechanical wear. To protect against chemical corrosion accompanying mechanical Wear, stainless steel is recommended.

Wear due to conveyed material

Material conveyed by chain also have an important factor. Wearing of the chain due to reciproca friction between material and chain can be eliminated by preventing material from falling on the chain. to enhance extra protection the chain should have higher wear resistance specifications.

Note:

Avoid steam and hot water for cleaning the chain because it will cause de lubricating the chain assembly, resulting in increased corrosion and wear of the chain parts and reduction of the chain life drastically

Lubrication

Selection of proper lubrication method & applying lubricant is necessary for prolongation of the life of chain

Method of lubrication should be adopted depending upon the chain speed.
Mineral oil SAE 40 to 60 is recommended.

Lubricants such as Oil or Grease should always be applied between inner & outer link plates and side facing of the chain wheel/sprockets during working.

Frequently check the viscosity &quality of the lubricant, in order to reduce the wear characteristics of conveyor chain

More frequent inspections and check points

Wear on sprocket's teeth and wear on link plates it appeared that means sprockets or shafts are not properly aligned. Do not depend on wear sign alone for judging shaft and sprocket alignment, since misalignment may be detected before wear become apparent. Hence the proper alignment is very much necessary to avoid any major breakdown.

The working faces of sprocket teeth should have o bright and polished appearance. The Scratches to grooves or change in tooth shape indicates some trouble i.e. the rollers may not be rotating due to inadequate lubrication.

The gradual elongation above 3% in total chain length, indicates that the chain will soon jump the sprockets. A certain increase in slack may be due to in improper lubrication, heavy shock loads or continuous over Load or axle displacement or displacement of take-ups

Link with Confidence

CONVEYOR CHAIN TROUBLESHOOTING GUIDE

Inconveniences	Causes	Remedy
Excessive Noise	Chain or Sprocket wear	Replace chain or sprocket.
Inside wearing of Linkplate	Misalignment Chain speed is too high Regarding pitch and sprocket size Suddenly applied load or shock.	Proper alignment of sprocket and shaft. Use shorter pitch chain or larger diameter sprocket. Reduce shock load or use stronger chain.
Pin Bush, Roller Breakage	No Lubrication Material Build up in sprocket tooth pockets. Corrosive chain a sprocket	Properly lubricate Remove the build up material. Use anticorrosive material.
Chain climbing sprocket teeth	Chain wear Excessive chain slack Heavy over load	Replace the chain Adjust center of idler take ups. Reduce load or install stronger chain.
Jamming in Chain	Misalignment Inadequate lubrication Corrosion Heavy load Material build up in Chain joints Peening of link plates edges.	Realign shaft and sprocket. Inadequate lubrication Lubricate properly, Use anticorrosive chain. Reduce load or use proper chain. Use compressed air to clean, Avoid stem and hot water for cleaning. Check chain interference.
Breakage of Link Plates	Shock Load Vibration Moment of load inertia is too larger.	Reduce shock Install tensioner idler wheel to absorb Vibration. Select larger size chain.