

Customized Solution Provider for Industrial Chains

 **SWAJIT**
CONVEYOR CHAINS & SLATS

www.swajit.com

Simply Strong

Precise & Perfect

Customized Commitments

Exceeding Excellence Forever



Contents

About Us	1
Mission & Vision	3
Quality Policy	4
Presence in Overseas Market	5
Product Range	6
Customer Segments	8
Sugar Industry Chains	9
Cement Industry Chains	19
Automobile Assembly Line Chains	29
Steel Industry Chains	35
Power Plant Chains	43
Heavy Duty Construction Equipment Chains	45
Material Specifications	47
State of Art	49
Construction of Swajit Chain	50
Maintenance Guide Lines	51
Salient Features of Swajit Chains	54
Infrastructure & Facilities	55
Upcoming Developments	58

About Us



It is a great pleasure to introduce ourselves, as a leading “Customized Solution Provider for Industrial Chains”. Swajit Engineering Pvt. Ltd is based at Aurangabad (M.S.) , India. Since the inception in 1992; Swajit has emerged in as the leading manufacturer of all type of Roller Chains and any types of Link, Pin and Bush Mechanism for Material Handling Systems.



Swajit is equipped with the latest technology comprising ‘state-of-art-plant’ with all Infrastructure facilities & processes, advanced metallurgical laboratory to manufacture all type of Conveyor Chains and Slats of finest quality.



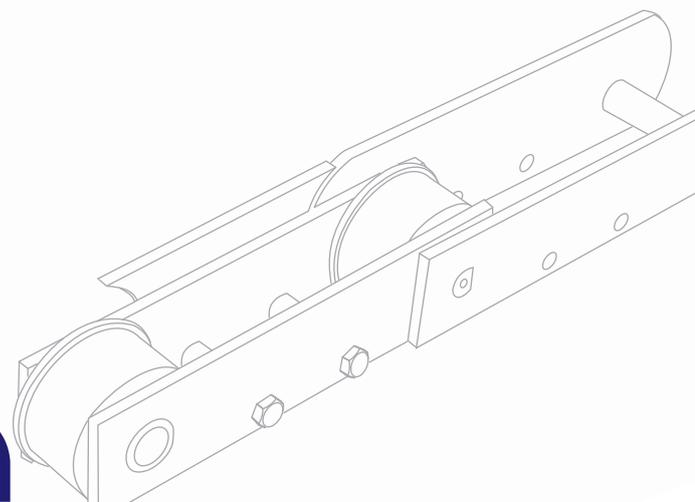
Swajit has a dedicated and technically qualified team of experienced Engineers & Metallurgists for fulfilling precisely the customer’s needs on the continuous basis. We have developed an expertise to provide a wide range of Conveyor chains and its components for diversified industry segments like **Sugar, Cement, Automobile, Steel, Solvent, Boiler & Thermal Power plant, Co-generation, Bakeries, Asphalt, Breweries, Chemical & Fertilizers, Bottling, Food Processing, Agriculture, Heavy Duty Construction Equipments, Mining, Paper and Allied Industries.**



Excellent Quality is Swajit’s inherent strength and in a journey of two decades we have strongly emerged as the unchallenged leaders in the ever-growing Indian Market and we are now looking beyond the boundaries to expand our business in the Global Market. We have attained this niche position by creating the best products to fulfill customer expectations, creating everlasting Customer Satisfaction with trust and service to generate repeated orders. We adhere to global business practices and also we are an ISO 9001: 2008 company certified by TUV NORD (Germany).



We have a list of valued clients and look forward to add your distinguished name into it, hence requesting you to solicit your enquiries. Swajit assures excellent solutions to your specified requirements supported by timely delivery. We look forward to build a technically proven & mutually beneficial relationship in future.



LABORATORY

Chemical composition of raw material is verified for the presence of Carbon, Manganese, Silicon, Chromium, Nickel, Molybdenum etc. and mechanical properties are tested in our laboratory. Macro examination of raw material reveals the defects such as Internal Soundness, Porosity & Seams. Microscopic examination is carried out for estimation of non metallic inclusion in the raw material.

The testing of case & core hardness, case depth, case carbon, case as well as core structure and tensile strength of heat treated parts is also carried out.

MACHINE SHOP

Swajit have separate manufacturing line for Pin, Bush & Rollers. With the help of precision machines and SPM, we manufacture Pin, Bush & Rollers in close tolerances with appropriate grinding allowance for perfect assembly.

Each part is subjected to verify a consistent quality control by means of checking all dimensions with proper gauges. Special manufacturing techniques are adopted for continuous improvement in productivity & quality.

PRESS SHOP

Swajit chain links are manufactured with the help of heavy duty precision presses & tools. Blanking, Pre-punching, Shaving, Broaching & one stroke bending is carried out.

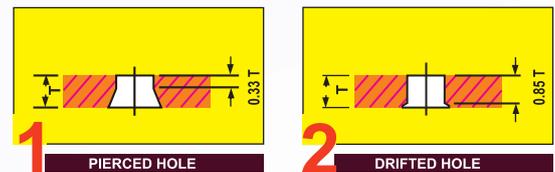
The link undergoes pressing operation to provide extremely accurate hole diameter followed by shaving operation, which increases bearing area for better wear resistance & less elongation.

HEAT TREATMENT

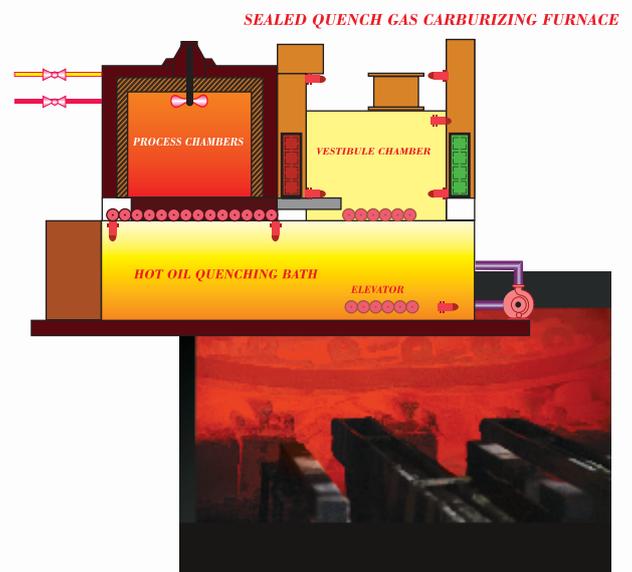
Modern setup is established for the heat treatment of Plain Carbon, Medium Carbon, Alloy Steel & 400 series Martensitic Stainless steel. Swajit chain links are manufactured in hardened & tempered (toughened) condition to get the desired hardness & microstructure, by way of setting the appropriate austenizing temperature, soaking time & sudden quenching with vigorous agitation system to reduce the free ferrite in microstructure. Shot peening of link is carried out to increase the fatigue strength & also to improve the surface finish.

Pins & Bushes are case carburized & hardened in sealed quench gas carburizing furnace with Oxygen probe & Scada system, to get controlled case carbon & case depth by reducing grain boundary oxidation. Then multiple tempering is done to reduce the retained austenite by obtaining fully tempered Martensitic structure. Case carbon is controlled in case carburizing cycle. Swajit Pin & Bush are strong because of specified case & core hardness for better corrosion & wear resistance.

In some applications, where high abrasion resistance is required, pin with medium carbon & alloying elements is used, which is induction hardened to get more armoured case depth.



Rollers are hardened & tempered in controlled atmosphere furnace to get maximum wear resistance & impact strength.



“ Customized Solution Provider for Industrial Chains ”

MISSION

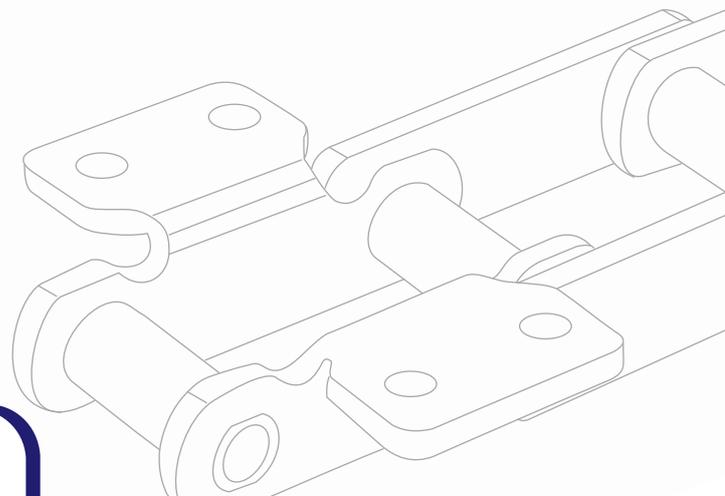
- Providing products as complete solution.
- Establishment as leading brand in global market by providing the best performance.
- Retaining ourselves as the first choice for the established trade.
- Accountability for Human Resources Development, Occupational, Health & Safety.

VISION

- Establishment of brand associated with the quality and consistency in manufacturing all kind of chains in Asia & Europe by 2020.
- Perfect Implementation Of Occupational Health and Safety Management System (OHSAS).
- Improving employee skills, involvement & Quality of Life (QOL).

VALUES

- Ethical Business Practices.
- Excellent Services.
- Continuous Customer Focus.
- Technology Enhancement.



Quality Policy

We at SWAJIT,
Encourage innovation in dealing with, Customized
Products and timely delivery of cost effective Quality
products that meets specific needs of everyone to create
everlasting trust and Customer Satisfaction through
Continuous service and Support.
We stand for consistent improvement with effective
implementation of Quality Management System (QMS).

Anil V. Chavan

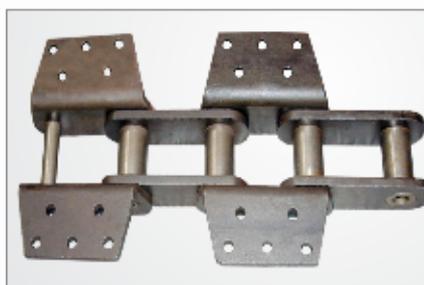
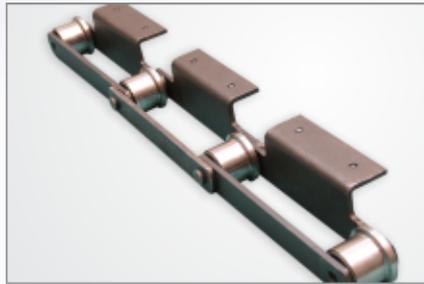
Chairman & Managing Director

Presence in Overseas Market

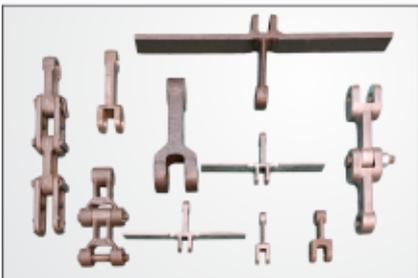
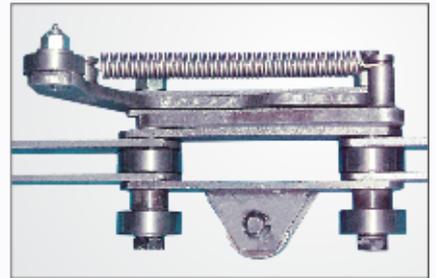
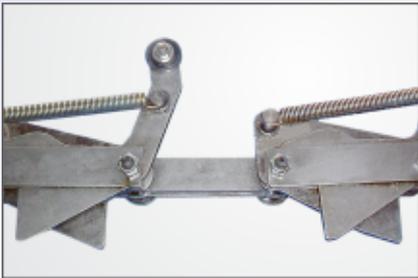


Philippines, Mauritius, Malaysia, Uganda, Kenya, Tanzania,
Zambia, Indonesia, Rwanda, Ethiopia, Spain,
Jamaica, Sudan, Nepal, Vietnam

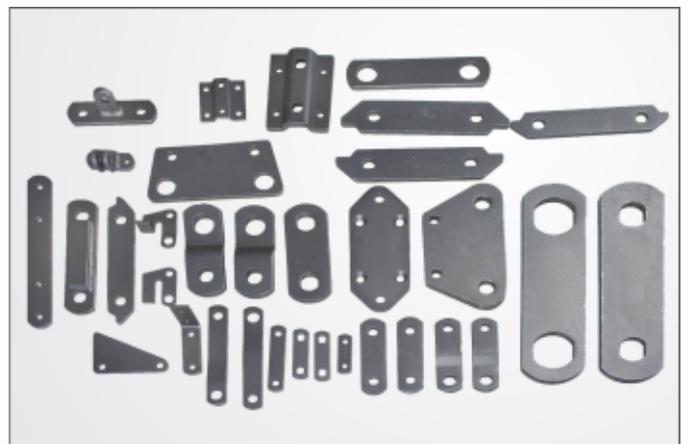
Swajit Product Range



Swajit Product Range



Product Range Links



Customer Segments

Sr.No.	Sector	Type of Chain
1	Sugar Industries	Feeder Table Chain
		Cane Carrier Chain
		Forged Rake Carrier Chain
		Bagasse Carrier Chain
		Fabricated Rake Carrier Chain
		Travelling Grate Chain
		Sugar Bag Stacker Chain
		Sugar Elevator Chain
		Drop Forged Chain
		Slats & Rakes
2	Cement Industries	Apron Feeder Chain
		Drag Chain & Flow Conveyor Chain
		Scraper Reclaimer Chain
		Bucket Elevator Chain
		Deep Bucket Chain
		Pan Conveyor Chain
		Pawl Retarder Chain
		Enmass Conveyor Chain
3	Automobile Industries	Conveyor Chain for Oven
		Conveyor Chain for Buffer Storage System
		Conveyor Chain for Car Parking
		Conveyor Chain for Shower Testing
		Conveyor Chain for Assembly Line
		Conveyor Chain for Paint Line
		Conveyor Chain for Trim Line
		Conveyor Chain for Chasis Lay Down
		Conveyor Chain for Engine Assembly
4	Steel Industries	Cooling Bed Conveyor Chain
		Transfer Bed Conveyor Chain
		Conveyor Chain for Cold Draw Bench
		Mandril Insert Chain
		Shell Pusher Chain
5	Boiler & Thermal Power Plant	Gate Chain
		Ash Handling Chain
6	Heavy Duty Construction Equipement Chain	Conveyor Chain
7	Solvent Industries	Bucket Elevator Chain
		Extractor Chain
		Drag Chain
		Flow Conveyor Chain
8	Chemical & Fertilizer	Conveyor Chain for Coal Feeding
		Feeder Breaker Chain for Collieries
		Bucket Elevator Chain
9	Other Applications	Agriculture
		Food Processing
		Bakeries
		Home Appliances
		Paper Mill
		Theme Park

Sugar Industry Chain

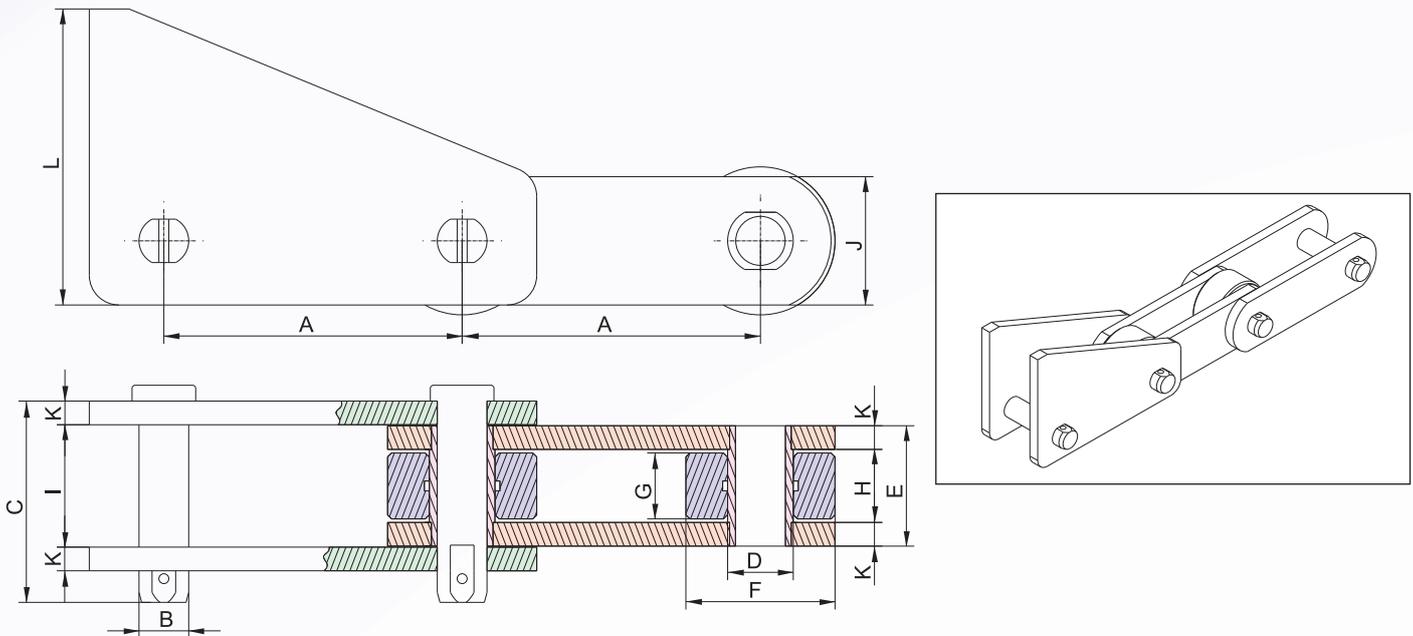
S-1 Attachment / Feeder Table Chain / Pusher Chain

The wide variety of chains are manufactured with Breaking Strength in the range from 20,000 kgf. To 60,000 kgf. These chains are commonly used in Sugar & Steel Industries.

Chain links are made from Carbon Steel. These links are subjected to operations like Blanking, Piercing & Shaving, which are carried out on highly Précised Presses. The links are Hardened & Tempered to avoid linear elongation & further to get better strength, the process followed by shot peening, to improve the fatigue strength. Pins & Bushes are made from Low Carbon Alloy Steel with precision machining. Case Carburizing, Hardening & Tempering processes are carried out to increase the Wear Resistance & Core Strength. Then ground finishing is done for perfect fitting.

Rollers are made from Medium Carbon Steel & are subjected to Heat Treatment process to improve the wear resistance.

These chains are also manufactured & supplied in heat treated Stainless Steel material.



Model No.	Pitch	Load (kgf)		Pin		Bush		Roller				Link Plain		Link Att	
		Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	H	I	Width	Thk	Width	Thk
	A			B	C	D	E	F	G			J	K	L	M
SWAJIT 1001	150	6,700	20,000	20	77	27	48	60	30	32	49	50	8	125	8
SWAJIT 1002	150	10,000	30,000	23	91	30	57	75	35	37	58	65	10	145	10
SWAJIT 1003	150	13,400	40,000	25	100	33	61	75	35	37	62	65	12	150	12
SWAJIT 1004	150	20,000	60,000	28	110	35	65	75	35	37	66	65	14	150	14

* Alternative Size are also available on request

(All Dimensions are in mm)

K-2 Attachment / Cane Carrier Chain

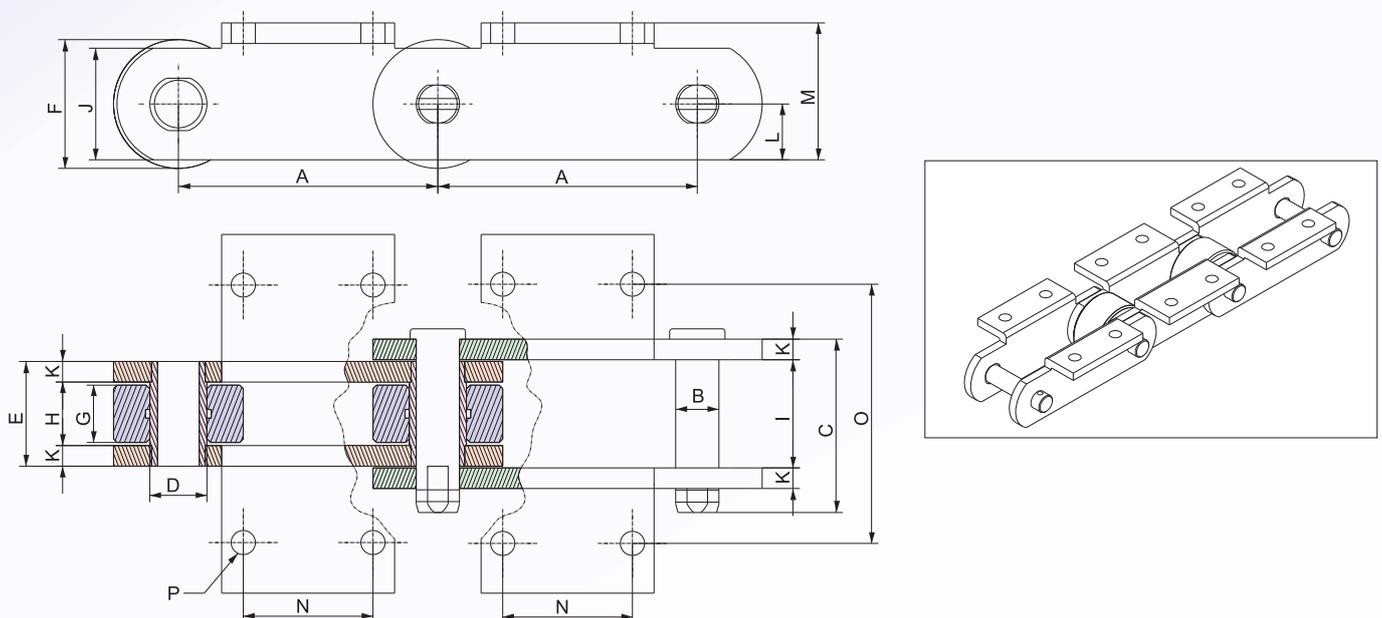
The wide variety of chains are manufactured with Breaking Strength in the range from 20,000 kgf. To 100,000 kgf. These chains are commonly used in Sugar Industries.

Chain links are made from Carbon Steel. These links are subjected to operations like Blanking, Piercing & Shaving, which are carried out on highly Précised Presses. The links are Hardened & Tempered to avoid linear elongation & further to get better strength, The Process is followed by shot peening, to improve the fatigue strength.

Pins & Bushes are made from Low Carbon Alloy Steel with precision machining. Case Carburizing, Hardening & Tempering processes are carried out to increase the Wear Resistance & Core Strength. Then ground finishing is done for perfect fitting.

Rollers are made from Medium Carbon Steel & are subjected to Heat Treatment process to improve the wear resistance.

These chains are also manufactured & supplied in heat treated Stainless Steel material.



Model No.	Pitch	Load (kgf)		Pin		Bush		Roller		Link						Slat Fitting		
		Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	Thk	Height	N	O	P				
	A			B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
SWAJIT 1101	150	6,700	20,000	20	78	27	48	60	30	32	49	50	8	25	61	60	120	12
SWAJIT 1102	150	10,000	30,000	23	91	30	57	75	35	37	58	65	10	32.5	78	64	126	14
SWAJIT 1103	150	13,500	40,000	25	101	33	61	75	35	37	62	65	12	32.5	80	60	130	14
SWAJIT 1104	150	13,500	40,000	25	101	33	61	75	35	37	62	65	12	32.5	80	75	150	14
SWAJIT 1105	150	16,700	50,000	28	101	35	61	75	35	37	62	65	12	32.5	80	60	130	14
SWAJIT 1106	150	16,700	50,000	28	101	35	61	75	35	37	62	65	12	32.5	80	75	150	14
SWAJIT 1107	150	20,000	60,000	28	110	36	65	75	35	37	66	65	14	32.5	82	75	150	14
SWAJIT 1108	150	26,700	80,000	30	118	38	69	90	35	37	70	75	16	37.5	94	75	150	14
SWAJIT 1109	200	20,000	60,000	28	101	36	61	90	35	37	62	75	12	37.5	90	75	150	14
SWAJIT 1110	200	25,000	75,000	30	110	38	65	90	35	37	66	75	14	37.5	93	80	170	14
SWAJIT 1111	200	26,700	80,000	32	120	40	69	90	35	37	70	75	16	37.5	94	80	170	18
SWAJIT 1112	200	33,400	100,000	32	120	40	69	90	35	37	70	75	16	37.5	94	100	170	18

*Alternative Sizes are also available on request

(All Dimensions are in mm)

AS2 Attachment / Bagasse Carrier Chain

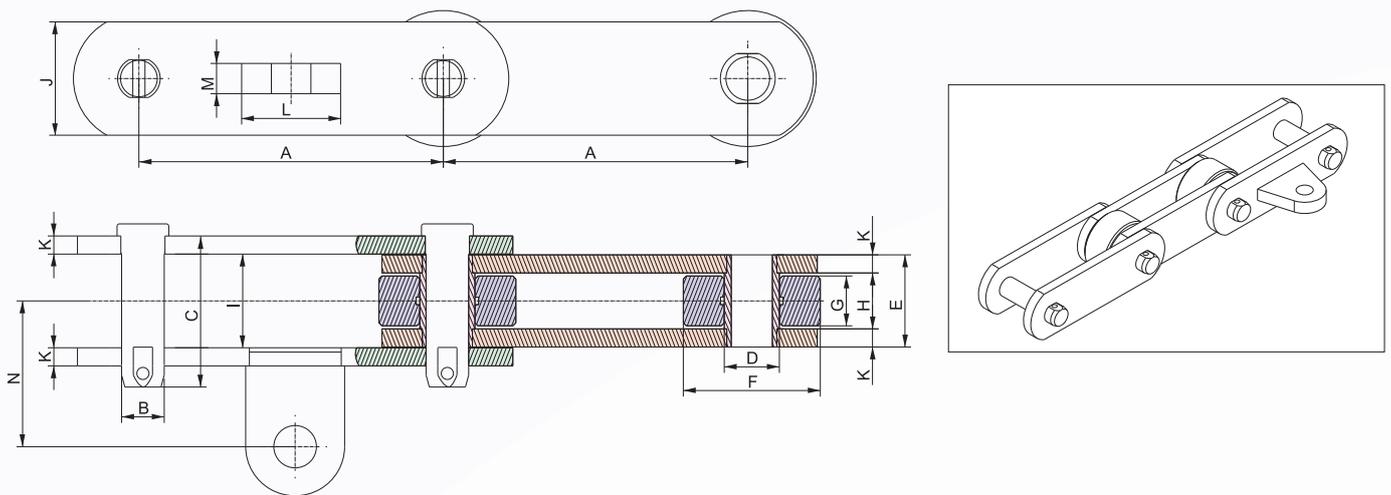
The wide variety of chains are manufactured with Breaking Strength in the range from 20,000 kgf. To 100,000 kgf. These chains are commonly used in Sugar Industries, to convey or feed Bagasse to either Boiler or to storage point. Chain links are made from Carbon Steel. These links are subjected to operations like Blanking, Piercing & Shaving, which are carried out on highly Precised Presses. The links are Hardened & Tempered to avoid linear elongation & further to get better strength, The Process followed by shot peening, to improve the fatigue strength. Pin & Bushes are made from Low Carbon Alloy Steel with precision machining. Case Carburizing, Hardening & Tempering processes are carried out to increase the Wear Resistance & Core Strength. Then ground finishing is done for perfect fitting.

Rollers are made from Medium Carbon Steel & are subjected to Heat Treatment process to improve the wear resistance.

These chains are also manufactured & supplied in heat treated Stainless Steel material, with 2C flights as per requirement & normally called as A42 or AS2 Attachment chains.

These chains are also known as

- Return Bagasse Carrier Chain (RBC)
- Main Bagasse Carrier Chain (MBC)
- Bagasse Elevator Chain (BEC)



Model No.	Pitch	Load (kgf)		Pin		Bush		Roller		Link Plain		Attachment Link				
		Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	Width	Thk					
	A			B	C	D	E	F	G	H	I	J	K	L	M	N
SWAJIT 1201	150	6,700	20,000	20	78	27	48	60	30	32	49	50	8	50	10	70
SWAJIT 1202	150	10,000	30,000	23	91	30	57	75	35	37	58	65	10	50	12	75
SWAJIT 1203	150	13,500	40,000	25	101	33	61	75	35	37	62	65	12	65	16	85
SWAJIT 1204	150	16,700	50,000	28	101	35	61	75	35	37	62	65	12	65	20	85
SWAJIT 1205	150	20,000	60,000	28	110	36	65	75	35	37	66	65	14	65	25	95
SWAJIT 1206	150	26,700	80,000	30	118	38	69	90	35	37	70	75	16	65	25	100
SWAJIT 1207	200	20,000	60,000	28	101	36	61	90	35	37	62	75	12	65	20	85
SWAJIT 1208	200	25,000	75,000	30	110	38	65	90	35	37	66	75	14	80	25	95
SWAJIT 1209	200	26,700	80,000	32	120	40	69	90	35	37	70	75	16	80	25	100
SWAJIT 1210	200	33,400	100,000	32	120	40	69	90	35	37	70	75	16	80	25	100

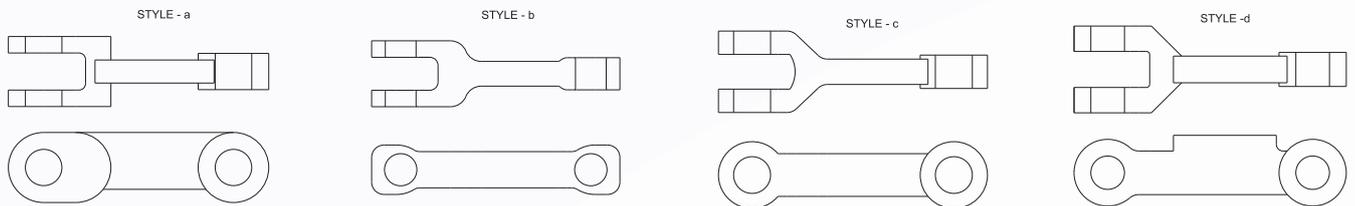
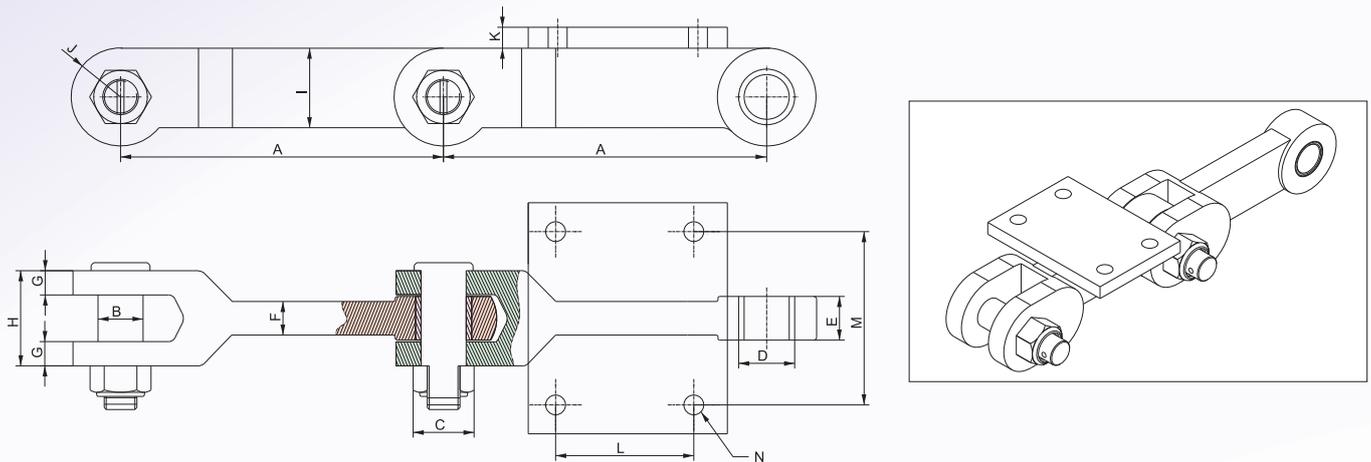
*Alternative Sizes are also available on request

(All Dimensions are in mm)

Forged Rake Elevator / Inter Carrier Chain

The wide variety of chains are manufactured with Breaking Strength in the range from 20,000 kgf. To 130,000 kgf. Chain links are made from Low Carbon & Medium Carbon Forged Steel. These links are subjected to the precision machining at their mating parts to Pin & Bush, duly heat treated to avoid linear elongation & to get better strength. Shot peening is performed to links for improving fatigue strength.

Pin & Bushes are made from Stainless Steel (Austenitic & Martensitic) with precision machining, followed by through Hardening & Tempering in case of Martensitic Stainless-Steel to increase the Wear Resistance & then ground finishing is done for perfect fitting.



Model No.	Pitch	Load (kgf)		Pin		Bush		Link					Rake att plate			
		Proof Load	Breaking Load	Dia	Length	Dia	Length	F	G	H	I	J	K	L	M	N
	A			B	C	D	E	F	G	H	I	J	K	L	M	N
SWAJIT 1301	101.6	3,400	10,000	16	M-12	22	20	15	8.5	38	26	20	10		90	17
SWAJIT 1302	101.6	5,000	15,000	18	M-16	23	25	20	14	55	28	20	10		90	17
SWAJIT 1303	150	15,000	45,000	28	M-24	34	32	20	14	61	50	30	16		100	18
SWAJIT 1304	200	13,500	40,000	26	M-24	32	28	19	13	55	46	32	12	60	80	18
SWAJIT 1305	229	20,000	60,000	32	M-30	40	33	28	18	71	57	35	16	70	110	18
SWAJIT 1306	229	23,500	70,000	32	M-30	40	34	28	20	76	65	40	16	70	120	18
SWAJIT 1307	229	26,700	80,000	34	M-30	42	40	30	22	86	68	40	16	50	145	20
SWAJIT 1308	229	33,400	100,000	35	M-30	44	40	32	24	90	65	42.5	20	70	150	20
SWAJIT 1309	300	26,700	80,000	36	M-30	44	40	32	22	86	65	42.5	25	100	108	18
SWAJIT 1310	300	30,000	90,000	36	M-30	44	44	32	25	95	62	45	20	112	120	22
SWAJIT 1311	300	33,400	100,000	45	M-39	57	50	35	30	112	64	50	20	125	125	18
SWAJIT 1312	300	40,000	120,000	45	M-36	52	50	38	35	122	64	50	20	70	100	22
SWAJIT 1313	300	43,400	130,000	45	M-42	55	51	40	38	130	65	50	20	112	108	22
SWAJIT 1314	300	43,400	130,000	45	M-42	55	51	40	38	130	65	50	20	112	108	22

*Alternative Sizes are also available on request

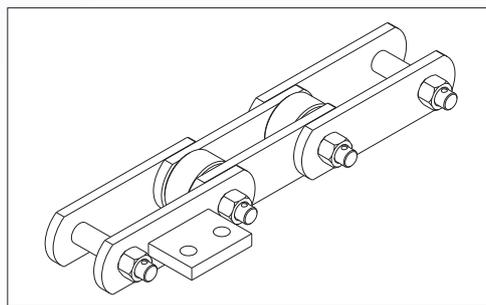
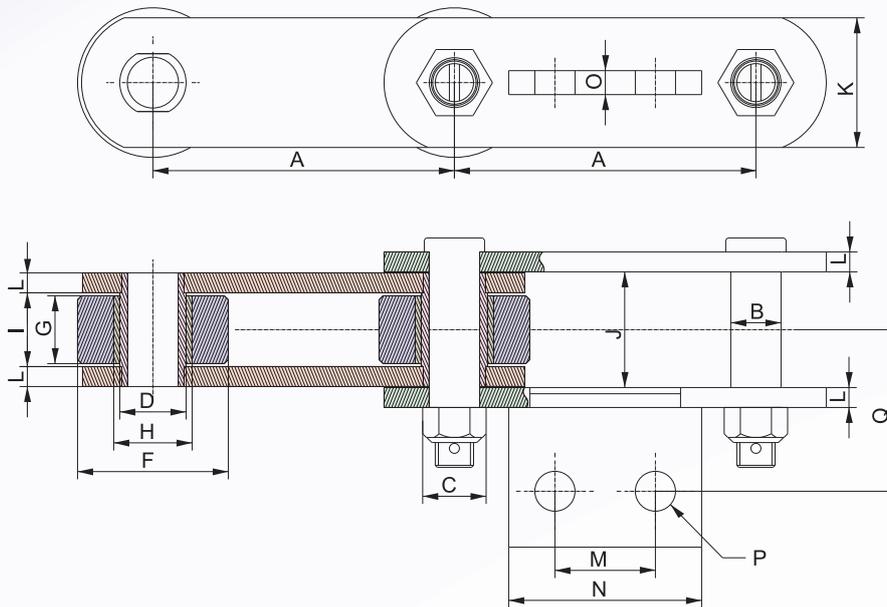
(All Dimensions are in mm)

Rake Carrier Chain (fabricated)

The wide variety of chains are manufactured with Breaking Strength in the range from 20,000 kgf. To 80,000 kgf. Chain links are made from Low Carbon & Medium Carbon Steel. These links are subjected to the precision machining with their mating parts to Pin & Bush duly heat treated to avoid linear elongation & to get better strength. Shot peening is performed for links to improve fatigue strength.

Pin & Bushes are made from Stainless Steel (Austenitic & Martensitic) with precision machining, followed by through Hardening & Tempering in case of Martensitic Stainless-Steel to increase the Wear Resistance & then ground finishing is done for perfect fitting.

Rollers are made from Medium Carbon Steel duly Heat Treated then fitted with Hardened & Tempered Liner Bush of Martensitic Stainless Steel to avoid Corrosion & to increase Wear Resistance.



Model No.	Pitch	Load (kgf)		Pin		Bush		Roller		Linear Bush		Link		Rake att plate						
		Proof Load	Breaking Load	Dia	Nut Size	Dia	Length	Dia	Length	Dia	Length	Width	Thk	M	N	O	P	Q		
	A			B	C	D	E	F	G	H	G	I	J	K	L	M	N	O	P	Q
SWAJIT 1401	150	13,500	40,000	25	M-20	33	61	75	35	40	35	37	62	65	12	50	90	16	18	85
SWAJIT 1402	150	20,000	60,000	28	M-24	36	65	76	35	44	35	37	66	65	14	50	90	16	18	85

*Alternative Sizes are also available on request

(All Dimensions are in mm)

Travelling Grate Chain

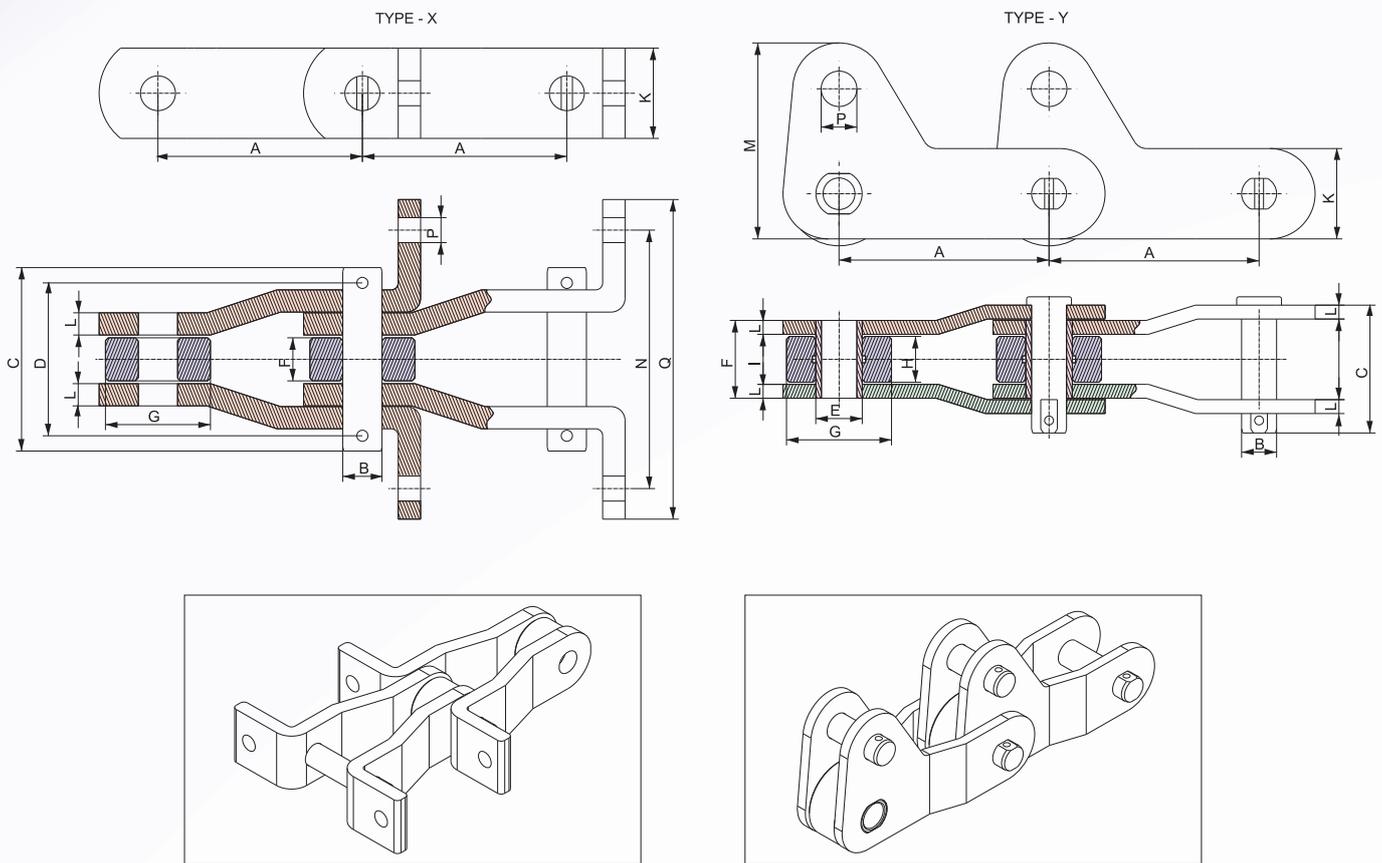
These type of chains are used in Power Plants & Co-Generation Power Plants in Sugar Industries. This chain is suitable in abrasive, higher temperature & dusty conditions.

Precised alignment of chain and sprocket with proper tolerance is maintained by precision manufacturing processes.

Maximum chain strength & wear resistance is achieved by selection of appropriate raw material. We are exercising the strict control on procurement of raw material, as per specifications & adopting the modern heat treatment in-house processes. With the result that, the components coming contact with sprocket are able to withstand the sprocket tooth impact.

Chain links are made from Medium Carbon / Alloy Steel. These links are subjected to operations like Blanking & fine boaring, which are carried out on highly precision machines. The link hole size & finishing is controlled to suit adequate clearance / interference fit. Further links are hardened & tempered to avoid linear elongation & to get better strength. followed by shot peening process to improve the fatigue strength.

Special Alloy Steel is used for Pins & Bushes with adequate heat treatment. Optimum case depth is achieved to provide maximum wear resistance & core strength.



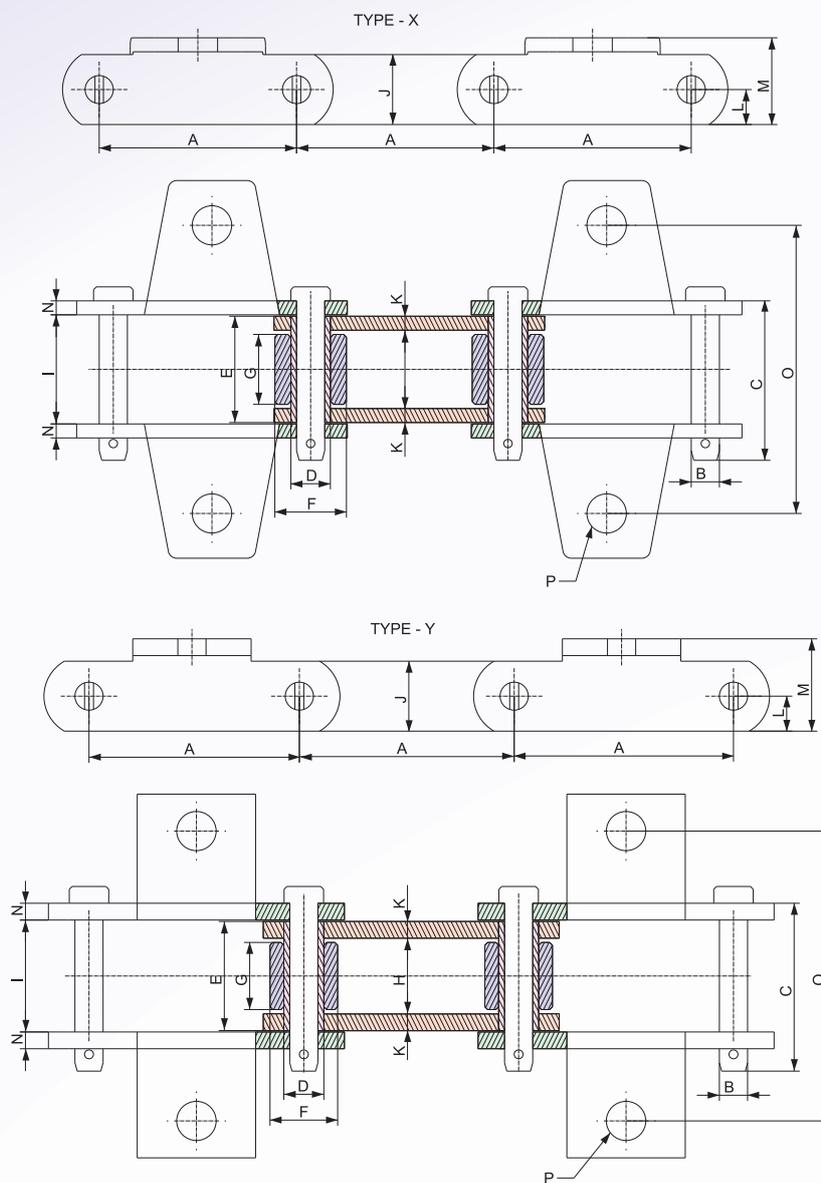
Model No.	Type	Pitch	Load (kgf)		Pin			Bush		Roller				Link					
			Proof Load	Breaking Load	Dia	Length	Split Pin C/C	Dia	Length	Dia	Length	I	J	Width	Thk	Height	N	O	P
		A			B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
SWAJIT 1501	X	146	13,500	40,000	24.65	136	114			57	32			65	16		186	230	18
SWAJIT 1502	Y	150	13,500	40,000	25	94		33	56	75	35	36	58	65	10	140			25

*Alternative Sizes are also available on request

(All Dimensions are in mm)

Sugar Bag Stacker Chain

These type of chains are used in Stacking of Sugar Bags. Different type of pitch is maintained as per stacker construction. These chains are robust in design because of its working under high speed comparatively.



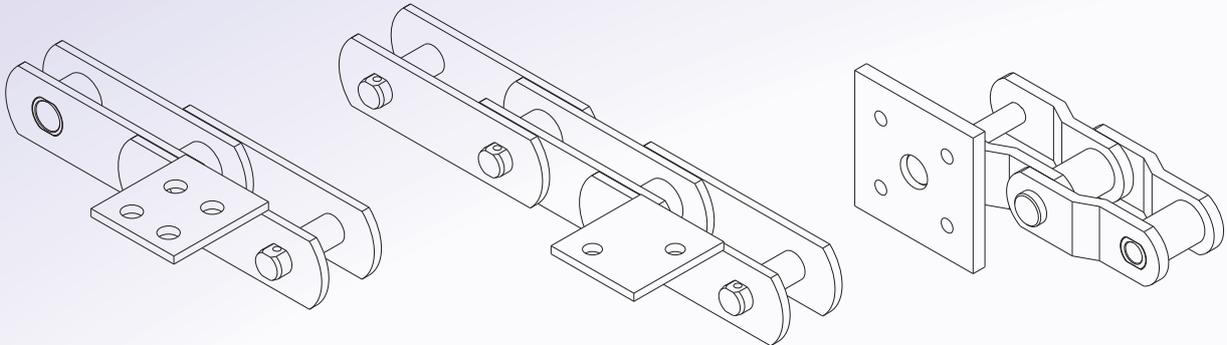
Model No.	Type	Pitch	Load (kgf)		Pin		Bush		Roller		Link								
			Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	H	I	Width	Thk	L	Height	Thk	O	P
		A			B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
SWAJIT 1601	X	66.5	3,400	10,000	10	61	14	39	24	28	29	40	25	5	12.5	31	5	100	11
SWAJIT 1602	X	70	3,400	10,000	10	61	14	39	24	28	29	40	25	5	12.5	31	5	100	11
SWAJIT 1603	Y	75	3,400	10,000	10	61	14	39	24	28	29	40	25	5	12.5	36	5	100	11
SWAJIT 1604	Y	76.2	3,400	10,000	10	61	14	39	24	28	29	40	25	5	12.5	36	5	100	11

*Alternative Sizes are also available on request

(All Dimensions are in mm)

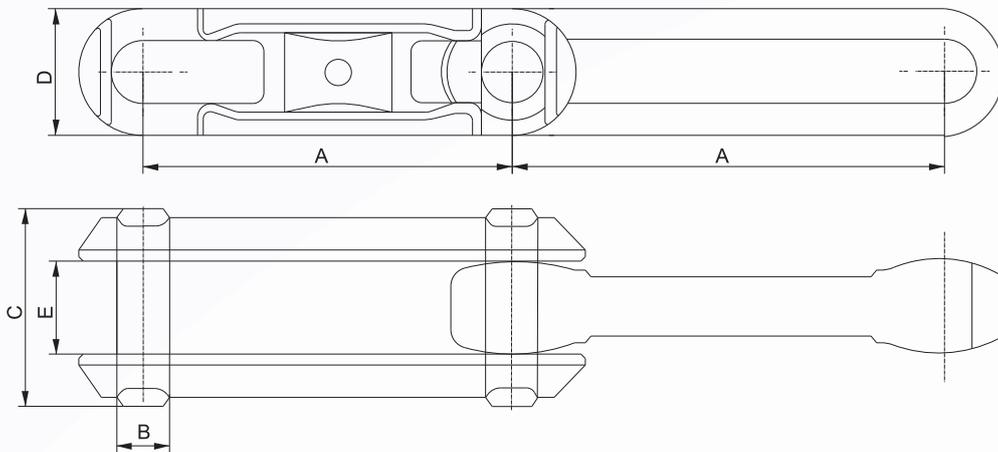
Sugar Elevator Chain

These type of chains are used for elevating Sugar to Storage system before packing. These chains are available with different type of Attachments as per Customers requirement.



Drop Forged Chain

In Sugar Industries, Drop Forged Chains are mainly used for Cane Feeding Application in Cane Washing Section. The Construction of these chains are in such a way that no tool is required for Assembly & Dismantle. Hence, it is very simple to make assembly & dismantling work at site. Also, the new sliding surface can be used by changing the position of the link after wearing the original surface. Positive locking action is provided in side links with the forged pins having a double 'T' Head on both sides. Similar to side links, warm out surface of the pin can be rotated in 180 degree to use the unworn side of pin in contact with the side bar & centre link. Thus flexibility, without disturbing original pitch, the effective life of chain is increased.



Model No.	Pitch	Load (kgf)		Pin			
		Proof Load	Breaking Load	Dia	Length	D	E
	A			B	C	D	E
SWAJIT 0348	76.2	8,000	24,000	12.7	46.99	26.92	19.05
SWAJIT 0458	102.38	16,000	48,000	15.87	57.91	34.92	25.65
SWAJIT 0678	153.18	28,333	85,000	22.22	79.5	50.8	32.76
SWAJIT 0698	153.18	45,333	136,000	28.44	95.25	68.32	39.37

(All Dimensions are in mm)

Slats

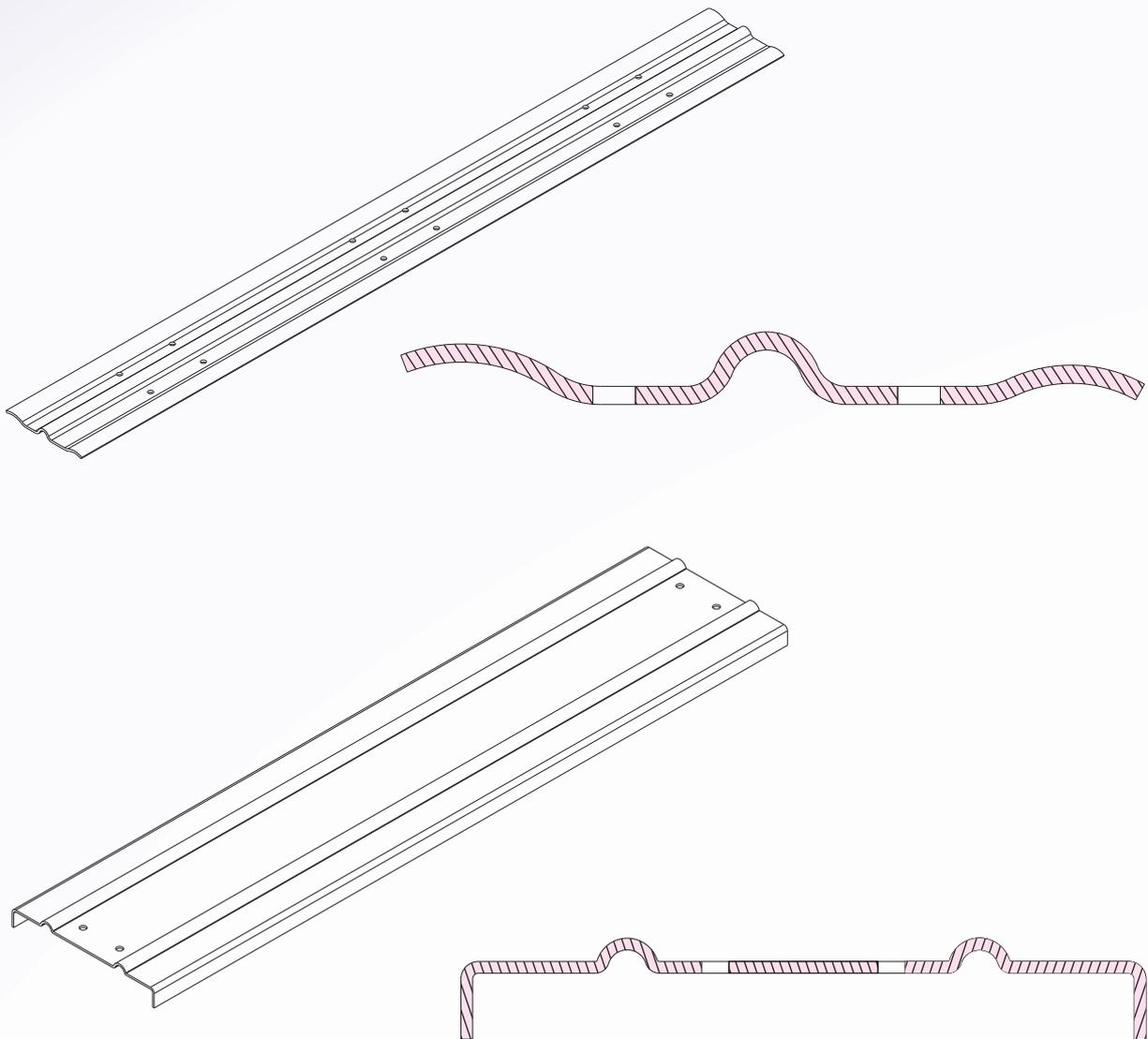
We are having specialized facilities for manufacturing the quality slats required for Cane Carrier, Inter Carrier, Bagasse Carrier & all other special applications.

Our slat profiles are accurately formed for proper overlapping on 600 ton capacity heavy duty hydraulic presses. Slats are interchangeable & easily replaceable.

Slat holes are precisely punched to suite chain attachments.

Capacity to press 3mm to 8mm thk. Mild Steel plate on hydraulic press-brake in one stroke, gives uniform shape in overall length.

***Alternative sizes are also available on request.**



Cement Industry Chain

Drag Chain / Flow Conveyor Chain

Many industries use such type of chains to maintain the constant flow of materials like Cement, Coal, Chemical, Powder & Small Wooden logs etc. for further processing work.

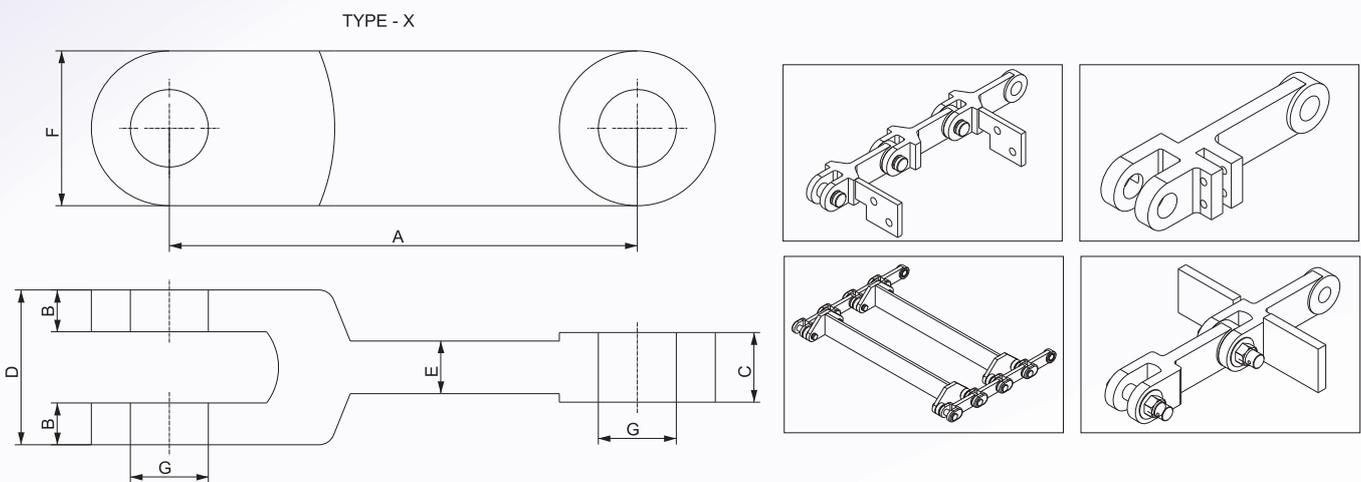
The forged links are made from Carbon Steel / Alloy Steel, duly heat treated, in the range from 100mm to 260mm Pitch.

Pins & Bushes are made from Alloy Steel, duly Heat treated.

The flat plates are either welded or bolted as per requirement to maintain the required flow.

Such types of chains are also available in flat links, Pin, Bush & Roller design along with the Scraper in single or double strand, as per requirement.

The tensile strength range from 10,000 kgf. To 80,000 kgf.



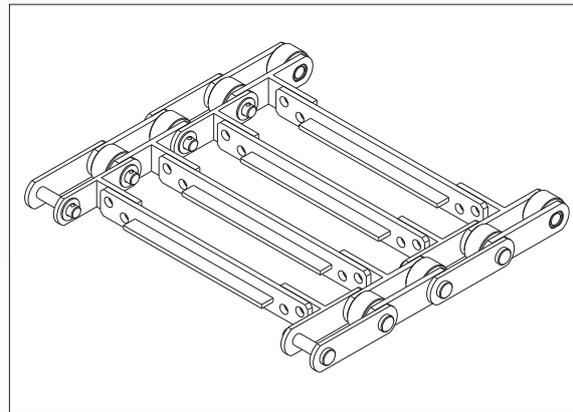
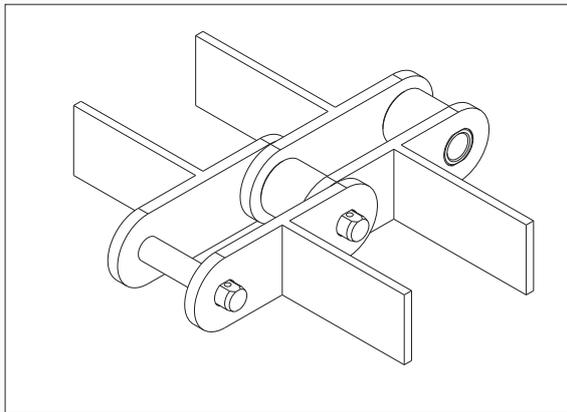
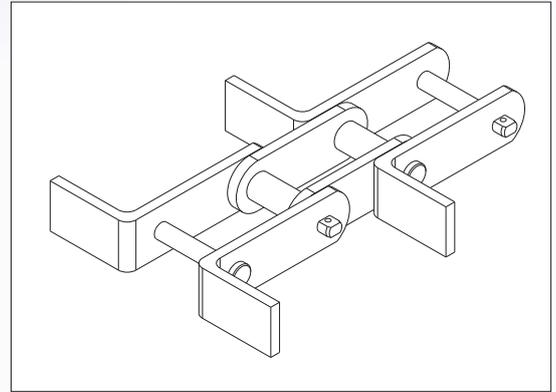
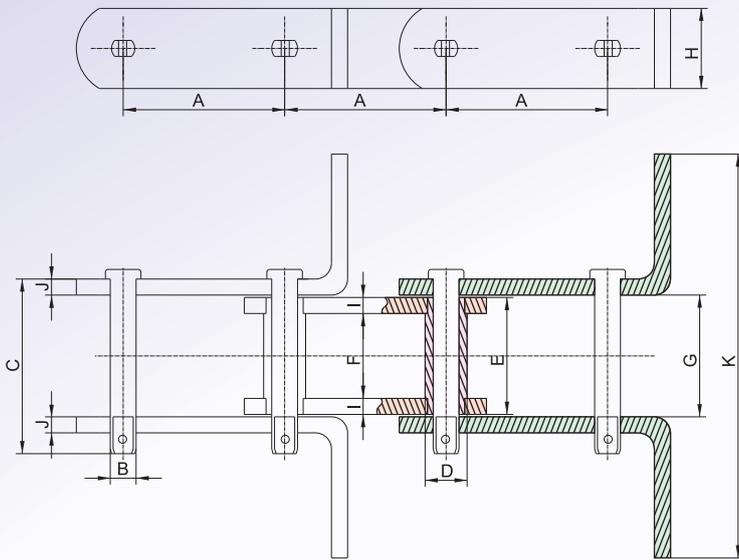
Model No.	Pitch	Load (kgf)		Link					
		Proof Load	Breaking Load	B	C	D	E	F	G
SWAJIT 2101	142	6,700	20,000	10	20	42	11	50	25
SWAJIT 2102	142	8,400	25,000	11	19	43	15	50	25
SWAJIT 2103	142	9,400	28,000	15	30	62	16	50	25
SWAJIT 2104	142	10,000	30,000	16	25	58	16	50	25
SWAJIT 2105	142	10,000	30,000	16	30	63	18	50	25
SWAJIT 2106	150	7,400	22,000	10	20	41	12	46	25
SWAJIT 2107	150	11,700	35,000	14	31	61	20	50	28
SWAJIT 2108	160	8,400	25,000	11	20	43	12	56	25
SWAJIT 2109	200	13,500	40,000	13	26	54	14	54	28
SWAJIT 2110	216	16,700	50,000	17	27	63	18	72	30
SWAJIT 2111	260	20,000	60,000	18.5	31	70	20	75	32

*Alternative Sizes are also available on request

(All Dimensions are in mm)

Drag Chain / Flow Conveyor Chain

TYPE - Y



Model No.	Pitch	Load (kgf)		Pin		Bush		Link					
		Proof Load	Breaking Load	Dia	Length	Dia	Length	F	G	Width	Thk	Thk	
	A			B	C	D	E	F	G	H	I	J	K
SWAJIT 2151	100	4,700	14,000	16	68	28	40	28	42	40	6	8	180
SWAJIT 2152	102	4,700	14,000	16	70	28	42	30	44	50	6	8	250
SWAJIT 2153	125	4,700	14,000	15	76	26	40	28	42	40	6	8	276
SWAJIT 2154	125	6,700	20,000	20	80	32	46	34	48	50	6	8	482
SWAJIT 2155	125	10,000	30,000	22	90	35	50	34	52	65	8	10	482
SWAJIT 2156	150	8,400	25,000	20	100	32	61	45	63	65	8	10	440
SWAJIT 2157	160	7,400	22,000	21	100	30	56	40	58	60	8	10	315

* Alternative Size are also available on request

(All Dimensions are in mm)

Reclaimer Chain

Crushed raw materials like Lime Stone & Coal stored in bulk on the ground under shed or Silos, are moved by Reclaimer Chain.

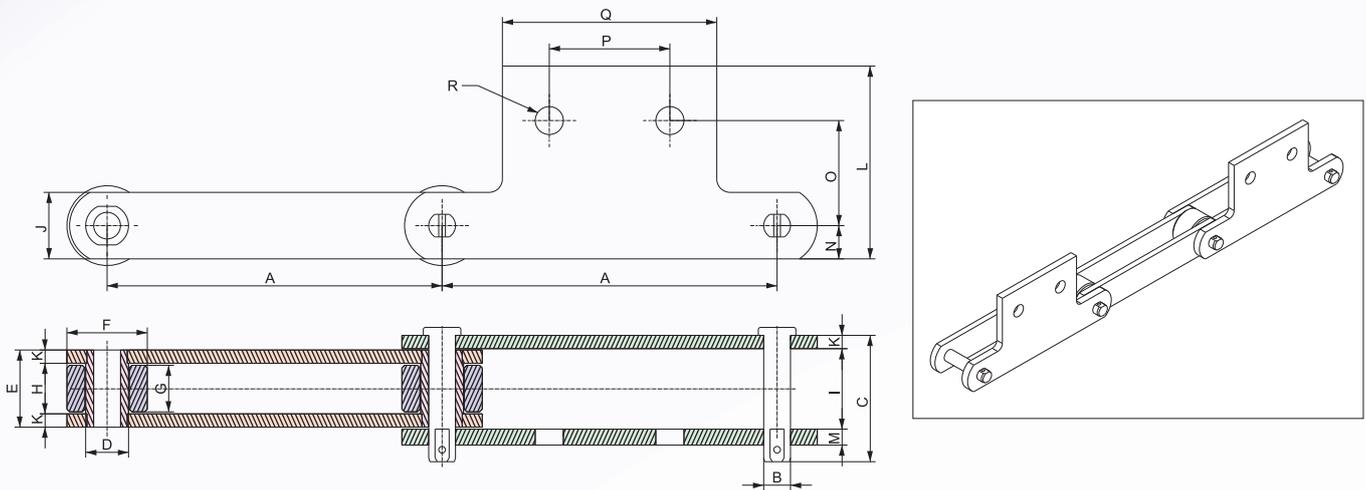
Chain links are made from Medium Carbon / Alloy Steel. These links are subjected to operations like Blanking & fine boring, which are carried out on highly precision machines. The link hole size & finishing is controlled to suit adequate interference fit. Further links are hardened & tempered to avoid linear elongation, to get better impact strength the process is followed by shot peening process to improve the fatigue strength.

Special Alloy Steel is used for Pins & Bushes with Case Carburized Hardening & Tempering process to get the maximum wear resistance & core strength.

These Chains are also manufactured with "Out-Board" type Rollers.

Roller ID & OD with through hardening & further application of Induction Hardening is provided to get proper Case Depth to achieve maximum wear life.

Suitable Attachments of various shape & size to accommodate scrapers are provided for proper scrapping of raw material.

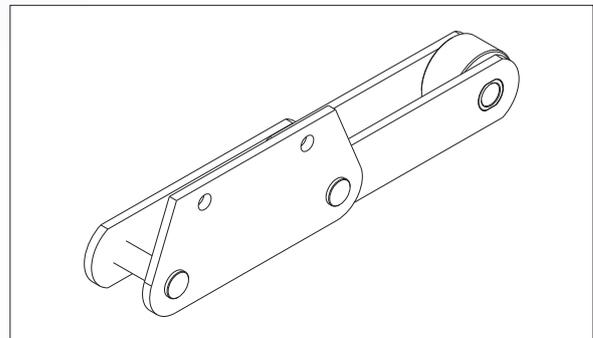
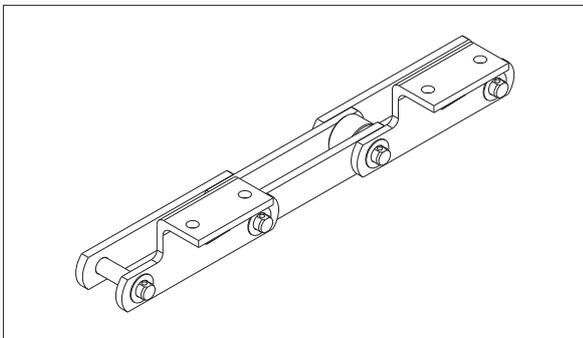
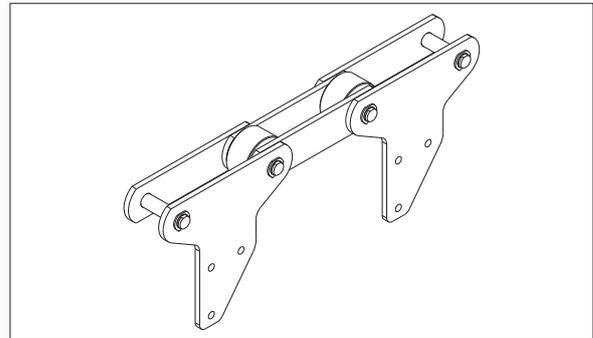
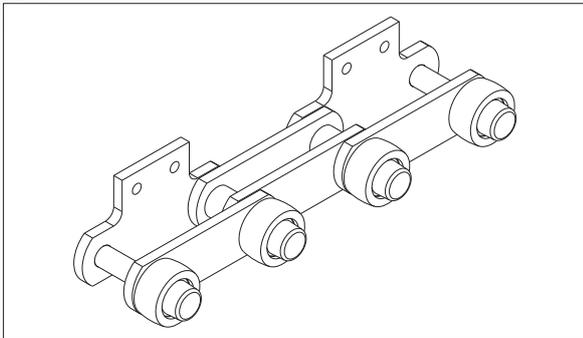
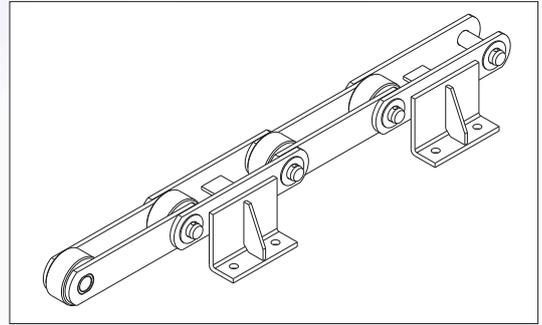
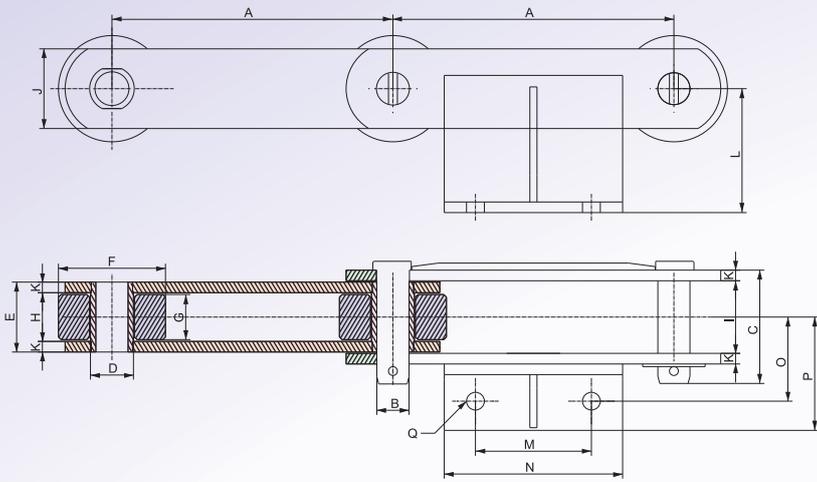


Model No.	Pitch	Load (kgf)		Pin		Bush		Roller		Link		Att Link								
		Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	Width	Thk	Width	Thk							
	A			B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
SWAJIT 2201	250	13,500	40,000	26	110	34	74	85	52	54	75	70	10	150	12	35	80	90	170	22
SWAJIT 2202	250	20,000	60,000	28	110	36	74	85	52	54	75	75	10	175	12	37.5	95	90	170	21
SWAJIT 2203	250	26,700	80,000	30	135	38	82	95	52	54	83	80	14	180	16	40	100	90	170	21
SWAJIT 2204	250	33,400	1,00,000	36	165	45	93	105	55	57	94	90	18	170	20	45	80	90	170	26
SWAJIT 2205	250	46,700	1,40,000	40	170	48	135	115	93	95	136	100	20	170	22	50	88	210	300	25
SWAJIT 2206	315	23,500	70,000	36	125	44	61	120	35	37	62	90	12	200	14	45	120	130	200	25
SWAJIT 2207	315	30,000	90,000	36	155	44	82	120	48	50	83	80	16	200	18	40	120	130	200	25

*Alternative Sizes are also available on request

(All Dimensions are in mm)

Reclaimer Chain



Model No.	Pitch	Load (kgf)		Pin		Bush		Roller		Link									
		Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	Width	Thk	L	M	N	O	P	Q		
	A			B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
SWAJIT 2251	250	6,700	20,000	18	75	25	46	64	28	30	47	50	8	130	100	160	80	133	21
SWAJIT 2252	250	13,500	40,000	25	100	33	66	100	46	48	67	70	10	110	90	140	90	126	22
SWAJIT 2253	250	26,700	80,000	33	132	42	82	95	52	54	83	75	14	157	100	150	110	160	25
SWAJIT 2254	315	20,000	60,000	36	130	44	74	120	48	50	75	80	12	140	130	190	90	125	21
SWAJIT 2255	315	36,700	1,10,000	36	155	44	100	150	68	70	101	100	16	140	130	190	117	147	25

*Alternative Sizes are also available on request

(All Dimensions are in mm)

Bucket Elevator Chain

Different designs & sizes of Bucket Elevator Chains are used in Cement, Power & Fertilizers Industries etc. to lift material depending on height & load carrying capacity.

The chain material is designed to withstand against high abrasion & dusty condition.

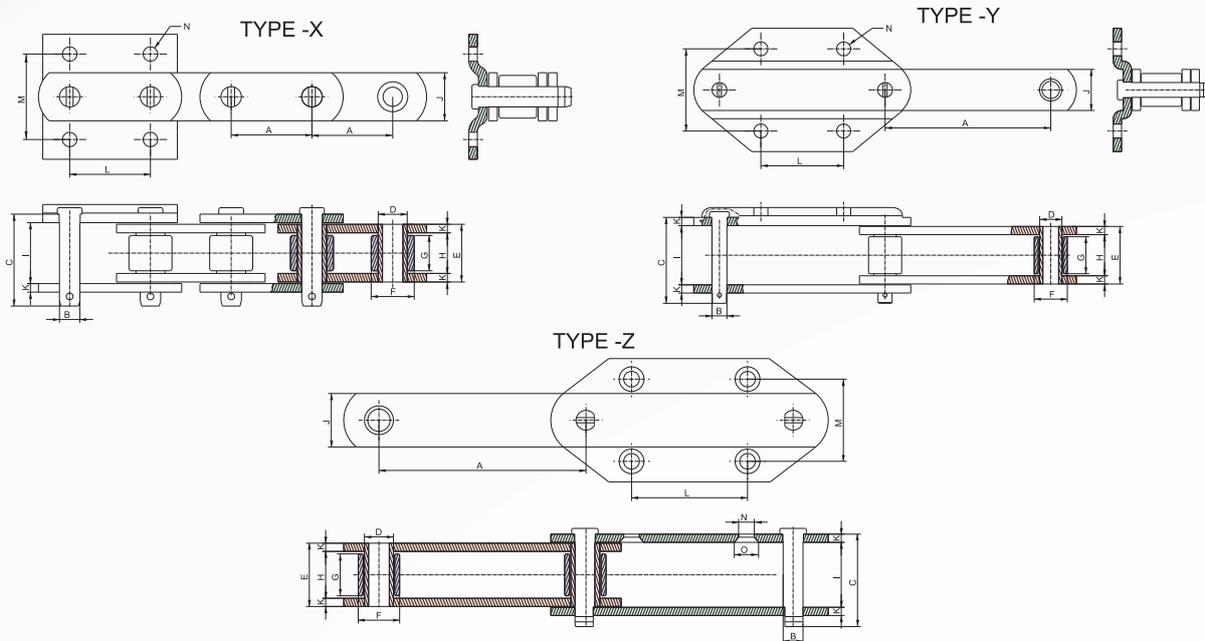
Chain links are made from Medium Carbon / Alloy Steel. These links are subjected to operations like Blanking & fine boring, which are carried out on highly precision machines. The link hole size & finishing is controlled to suit adequate interference fit. Further links are hardened & tempered to avoid linear elongation & to get better impact strength followed by shot peening process to improve the fatigue strength.

Special Alloy Steel is used for Pins with Volume Hardened & Tempered to get the maximum core strength & followed by Induction Hardening to achieve armored case depth for maximum wear resistance.

Special Alloy Steel is used for Bushes with adequate heat treatment. Optimum case depth is achieved to provide maximum wear resistance & core strength by Case Carburizing.

Medium Carbon / Alloy Steel is used for Rollers with appropriate Heat Treatment.

In Fertilizer industries, since the chains are working in highly alkaline conditions, special grade of material are selected & heat treated to with-stand in such condition. As the corrosion resistance properties are improved, better life of chain is assured.



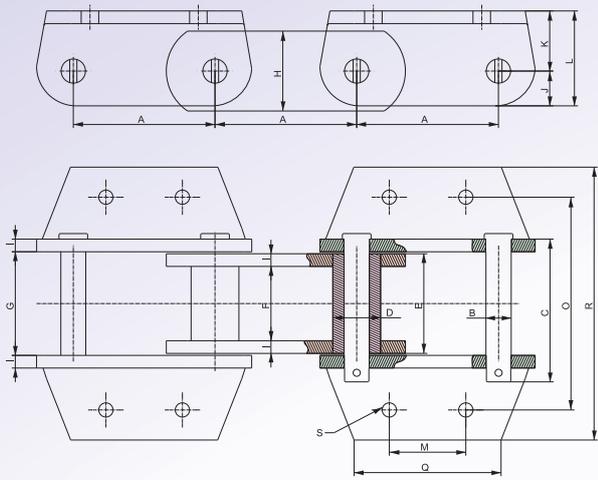
Model No.	Type	Pitch	Load (kgf)		Pin		Bush		Roller		Link		Bucket Fitting					
			Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	Width	Thk	L	M	N	O		
		A			B	C	D	E	F	G	H	I	J	K	L	M	N	O
SWAJIT 2301	X	75	6,000	18,000	14.5	66	20	43	29	28	30	44	40	6	75	80	14	
SWAJIT 2302	X	76.2	7,400	22,000	19	90	27	53	40	38	40	57	50	8	75	80	14	
SWAJIT 2303	X	125	16,700	50,000	28	134	36	92	56.8	62	66	94	75	13	125	110	18	
SWAJIT 2304	Y	150	6,000	18,000	14.5	68	20	42	29	28	30	44	38	6	75	80	14	
SWAJIT 2305	Y	200	10,000	30,000	19	107	27	72	40	50	52	73	50	10	100	100	16	
SWAJIT 2306	Z	250	10,000	30,000	19	107	27	72	40	50	52	73	50	10	140	100	19	34
SWAJIT 2307	Z	250	13,500	40,000	24	113	34	77	50.8	55	57	78	65	10	140	100	19	34
SWAJIT 2308	Z	300	13,500	40,000	24	113	34	77	50.8	55	57	78	65	10	170	100	19	34

*Alternative Sizes are also available on request

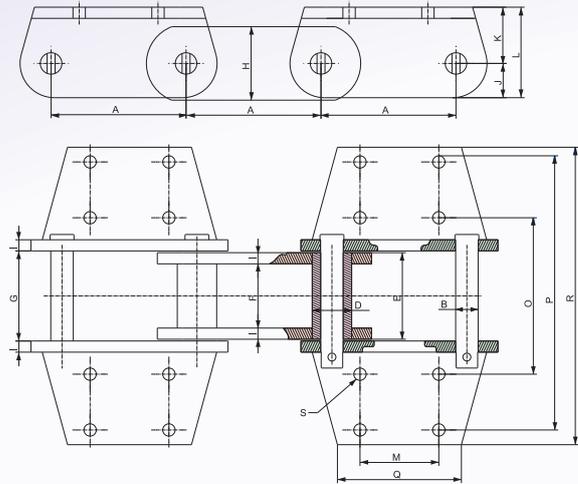
(All Dimensions are in mm)

Bucket Elevator Chain

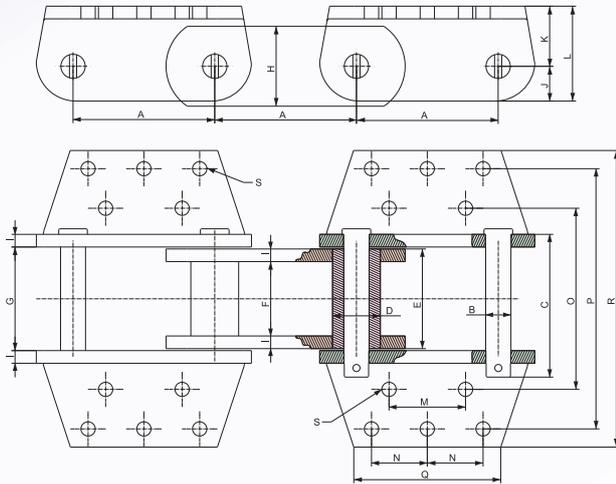
K-24



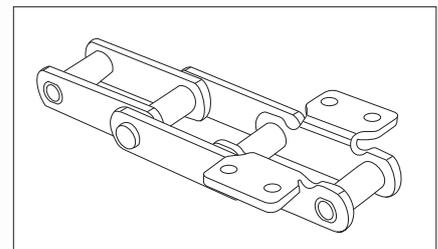
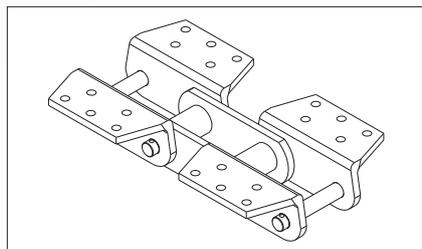
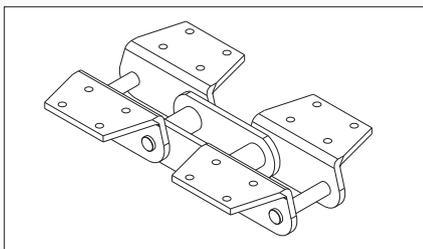
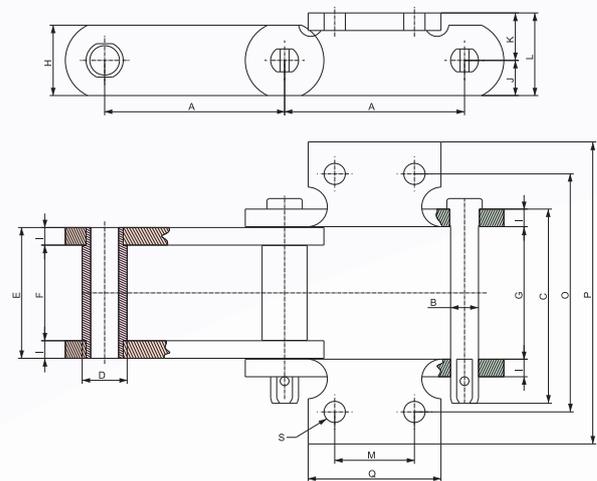
K-44



K-443



K-32



Model No.	Type	Pitch	Load (kgf)		Pin		Bush		Link		Att Link		Bucket Att Pitch									
			Proof Load	Breaking Load	Dia	Length	Dia	Length	Width	Thk	M	N	O	P	Q	R	S					
		A			B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
SWAJIT 0800	K-32	101.6	6,700	20,000	15.75	106	25.4	74	54	75	40	10	20	27	47	45	135	75	170			12
SWAJIT 0956	K-24	152.4	19,300	57,900	25.4	142	44	101.6	76.2	102.6	76.2	12.7	31.7	47.6	79.3	63.5		183.9		184.1	246.9	18
SWAJIT 0958	K-44	152.4	28,900	86,700	30	142	50.8	101.6	76.2	102.6	62.6	12.7	41.5	63.5	105	88.9		177.8	304.8	146	345	14
SWAJIT 0984	K-443	177.8	37,000	111,000	35	173	63.5	125.3	95.3	126.3	101.6	15	47.8	76.2	124	95.3	69.85	228.6	330.2	187	375	18
SWAJIT 0864	K-443	177.8	36,700	110,000	31	180	60	127	95	128	100	16	44	76	120	95	70	230	330	187	375	18

*Alternative Sizes are also available on request

(All Dimensions are in mm)

Deep Bucket Conveyor Chain

These type of chains are used in Cement Industries for handling hot clinker.

These Chains are fitted with "Out-Board" Rollers.

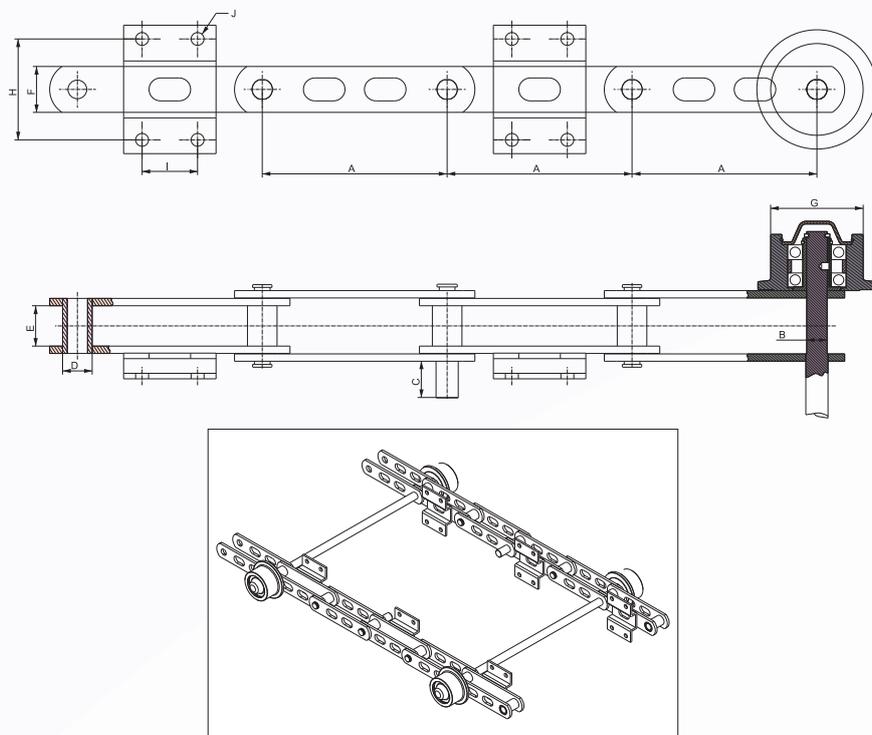
These chains are of longer pitch with double strand & are meant for Heavy duty services of high yield strength & to withstand the heavy shock loads.

Links are with locking arrangement to avoid overlapping due to long pitch. Maximum chain strength & wear resistance is achieved by selecting proper material & adequate heat-treatment processes.

Chain links are made from Medium Carbon / Alloy Steel. These links are subjected to operations like Blanking & fine boring, which are carried out on highly precision machines. The link hole size & finishing is controlled to suit adequate interference fit. Further links are hardened & tempered to avoid linear elongation and also to get better impact strength followed by shot peening process to improve the fatigue strength.

Special Alloy Steel is used for Pins & Bushes with Case Carburized Hardening & Tempering process to get the maximum wear resistance & core strength.

Medium Carbon Steel is used for Rollers with Volume Hardening & Tempering Process, further Rollers ID & OD are subjected to Induction Hardening & Tempering for proper Case Depth to achieve maximum wear life.



Model No.	Type	Load (kgf)		Pin		Bush		Link				
		Proof Load	Breaking Load	Dia		Dia		Width				
	A			B	C	D	E	F	G	H	I	J
SWAJIT 2401	250	10,500	31,500	32	50	45	65	75	140	150	80	18
SWAJIT 2402	250	13,500	40,000	36	50	50	64	80	140	152	80	18
SWAJIT 2403	250	22,500	67,500	36	50	54	80	100	140	150	80	18
SWAJIT 2404	315	6,700	20,000	26	50	36	55	65	100	170	115	18
SWAJIT 2405	315	26,700	80,000	36	50	54	80	100	140	170	115	18
SWAJIT 2406	315	31,700	95,000	38	50	60	84	106	140	170	115	18

*Alternative Sizes are also available on request

(All Dimensions are in mm)

Pan Conveyor Chain

These type of chains are used in Cement Industries for handling hot clinker.

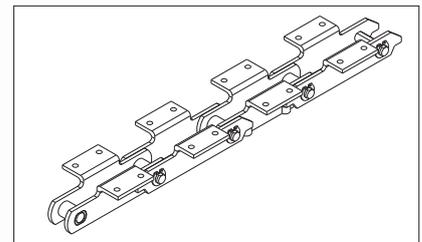
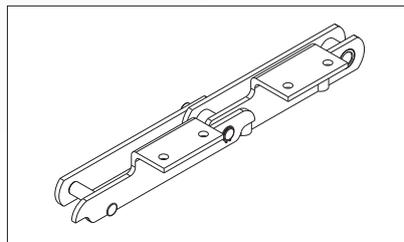
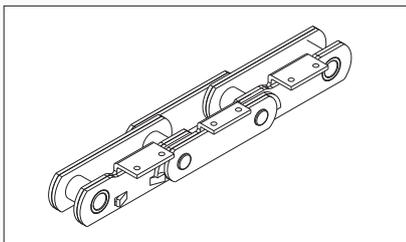
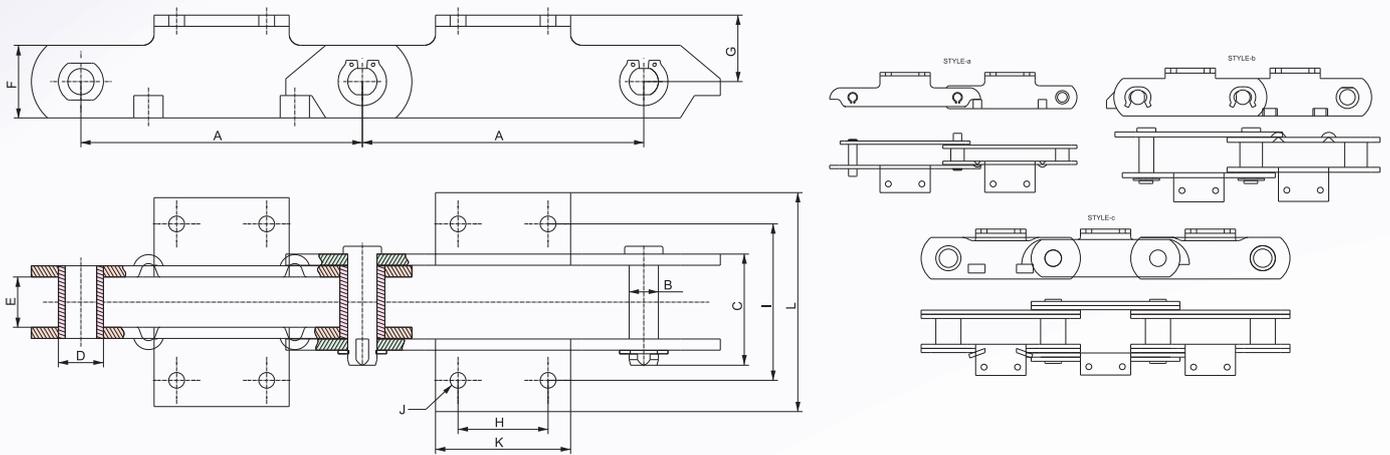
These Chains are fitted with "Out-Board" Rollers.

These chains are of longer pitch with double strand & are meant for Heavy duty services of high yield strength & to withstand the heavy shock loads.

Links are with locking arrangement to avoid overlapping due to long pitch. Maximum chain strength & wear resistance is achieved by selecting proper material & adequate heat-treatment processes.

Chain links are made from Medium Carbon / Alloy Steel. These links are subjected to operations like Blanking & fine boring, which are carried out on highly precision machines. The link hole size & finishing is controlled to suit adequate interference fit. Further links are hardened & tempered to avoid linear elongation and also to get better impact strength followed by shot peening process to improve the fatigue strength.

Special Alloy Steel is used for Pins & Bushes with Case Carburized Hardening & Tempering process to get the maximum wear resistance & core strength.

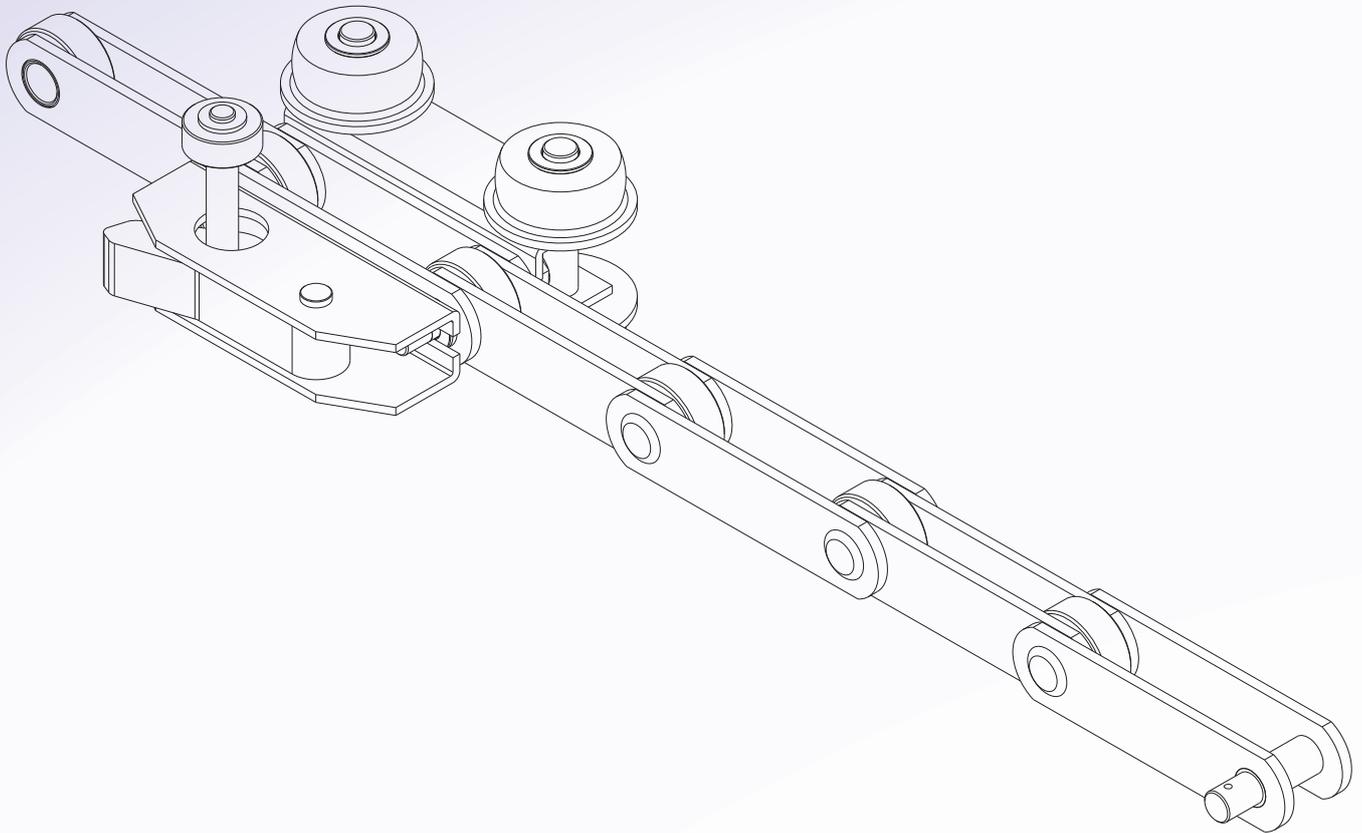


Model No.	Pitch	Load (kgf)		Pin		Bush								
		Proof Load	Breaking Load	Dia	Length	Dia								
	A			B	C	D	E	F	G	H	I	J	K	L
SWAJIT 2501	250	10,000	30,000	25	95	40	45	65	59.5	75	140	14	120	180
SWAJIT 2502	250	11,700	35,000	26	95	40	45	65	60	75	150	14	120	180
SWAJIT 2503	250	15,000	45,000	26	100	40	45	70	60	80	140	14	125	185
SWAJIT 2504	250	16,700	50,000	27	114	40	45	80	74	80	150	14	125	185
SWAJIT 2505	250	23,500	70,000	38	145	56	75	100	75	80	190	14	125	185
SWAJIT 2506	250	33,400	1,00,000	38	142	56	75	100	80	80	200	14	125	185

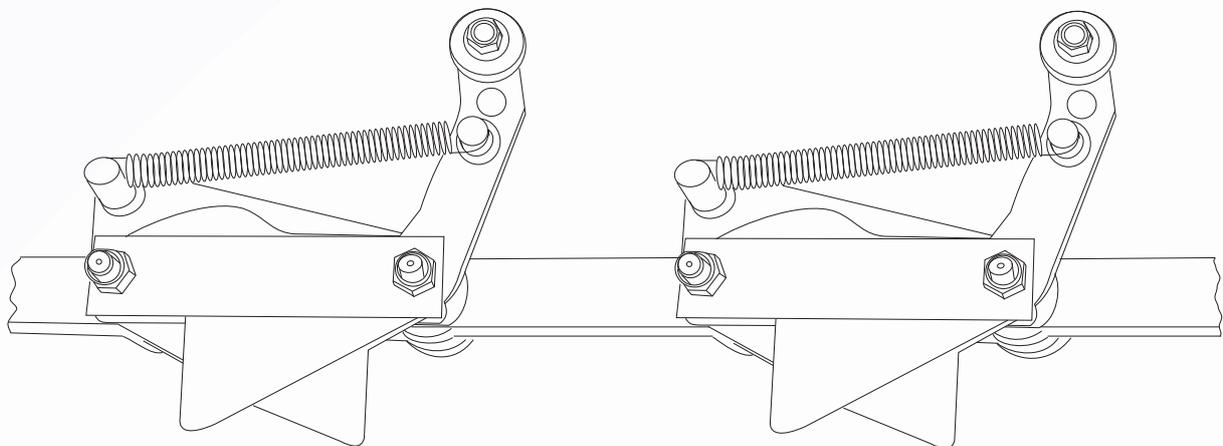
*Alternative Sizes are also available on request

(All Dimensions are in mm)

Haulege Chain



Pawl Retarder Chain



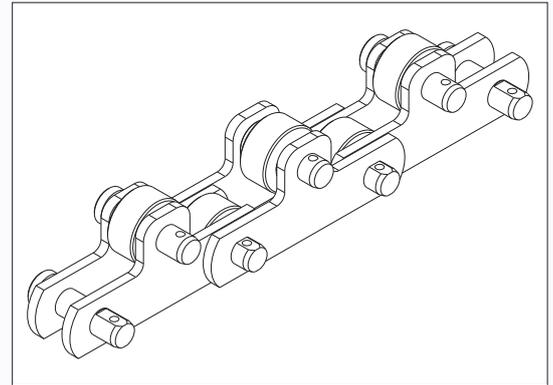
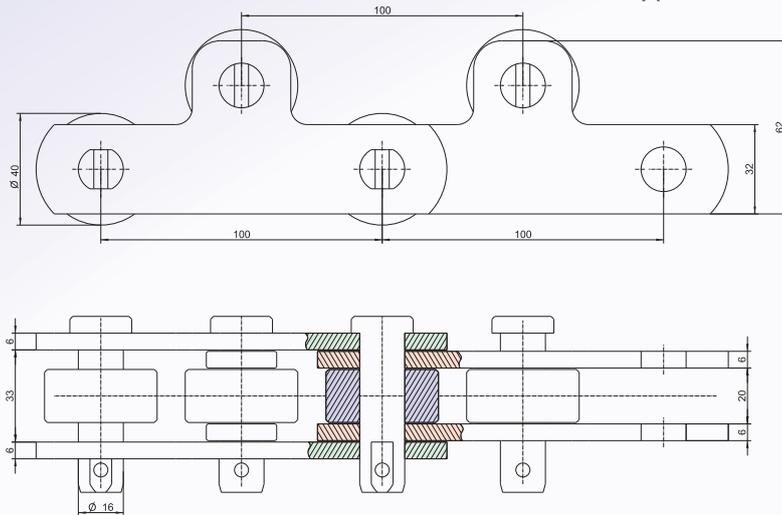
Automobile Industry Chain

Conveyor Chain

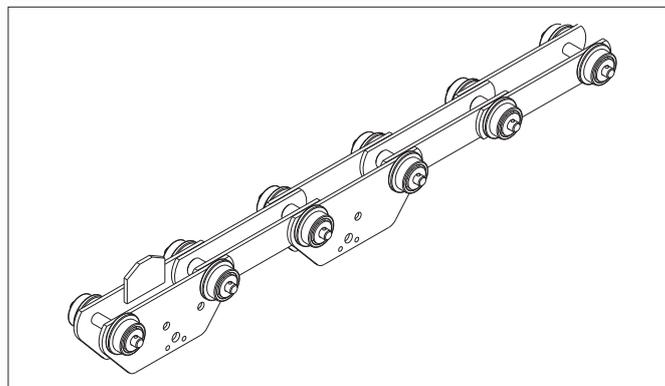
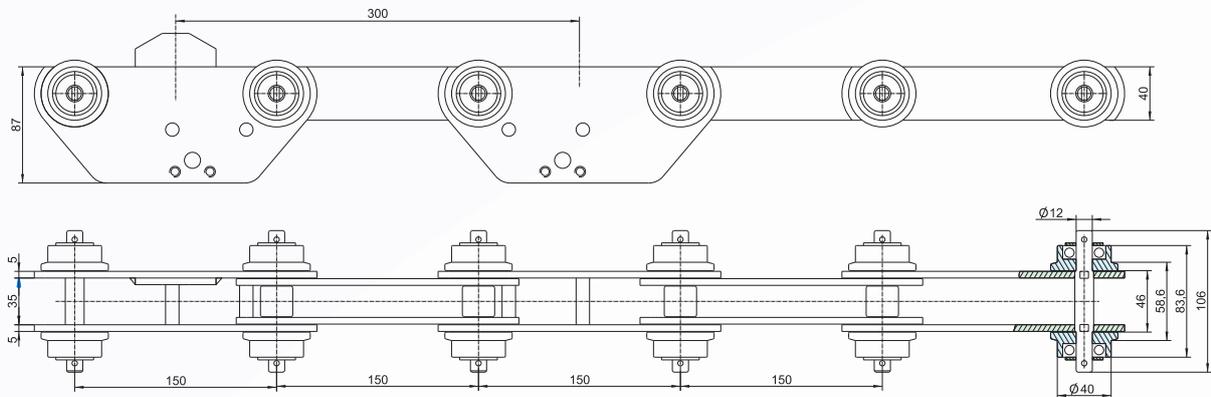
These type of chains are mainly used for Vehicle Assembly Line, Paint Line, Engine Assembly Conveyors etc. As these chains are working at very low speed & frequent stoppages at defined stages, the higher degree of accuracy is achieved with special process followed by Heat Treatment.

These chains are supplied with Rollers assembled with Bearings to have smooth functioning of chain. Pusher plates are provided for Pusher Dog mounting as per customer requirement.

Type - A



Type - B

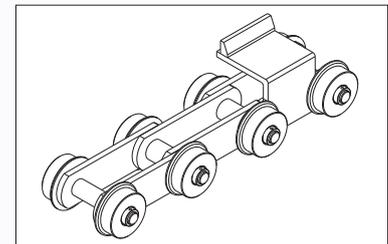
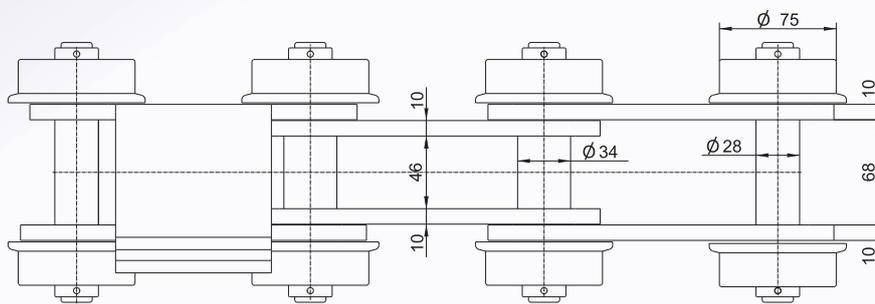
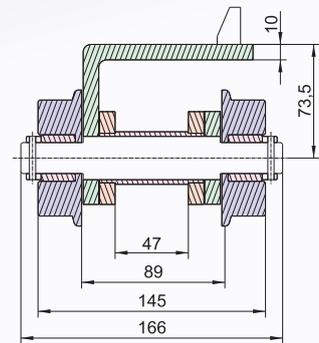
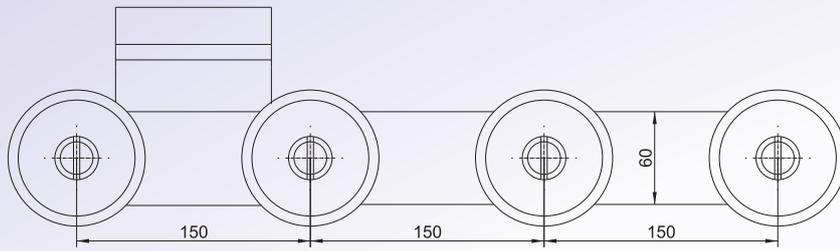


Alternative Sizes are also available on request.

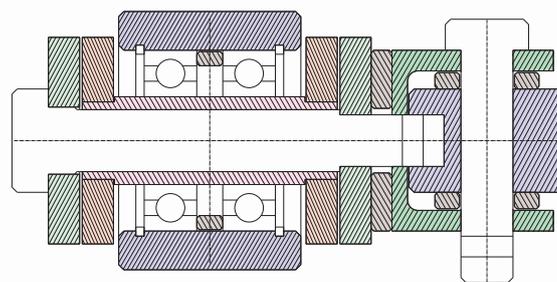
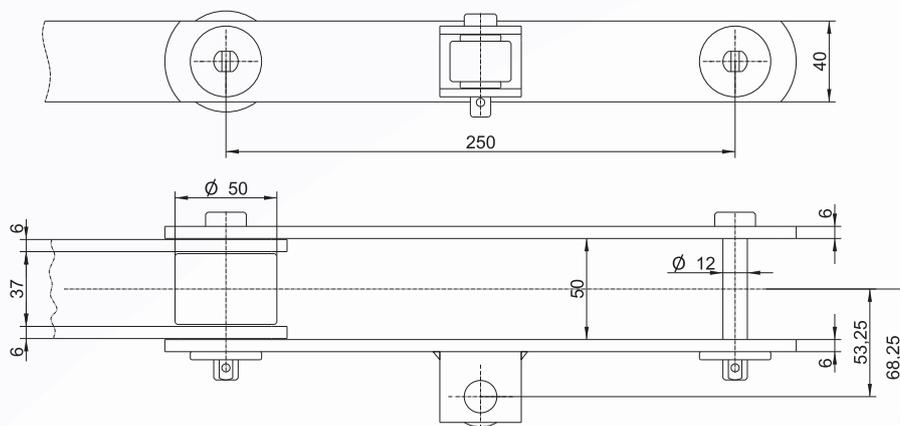
All Dimensions are in mm

Conveyor Chain

Type - C



Type - D

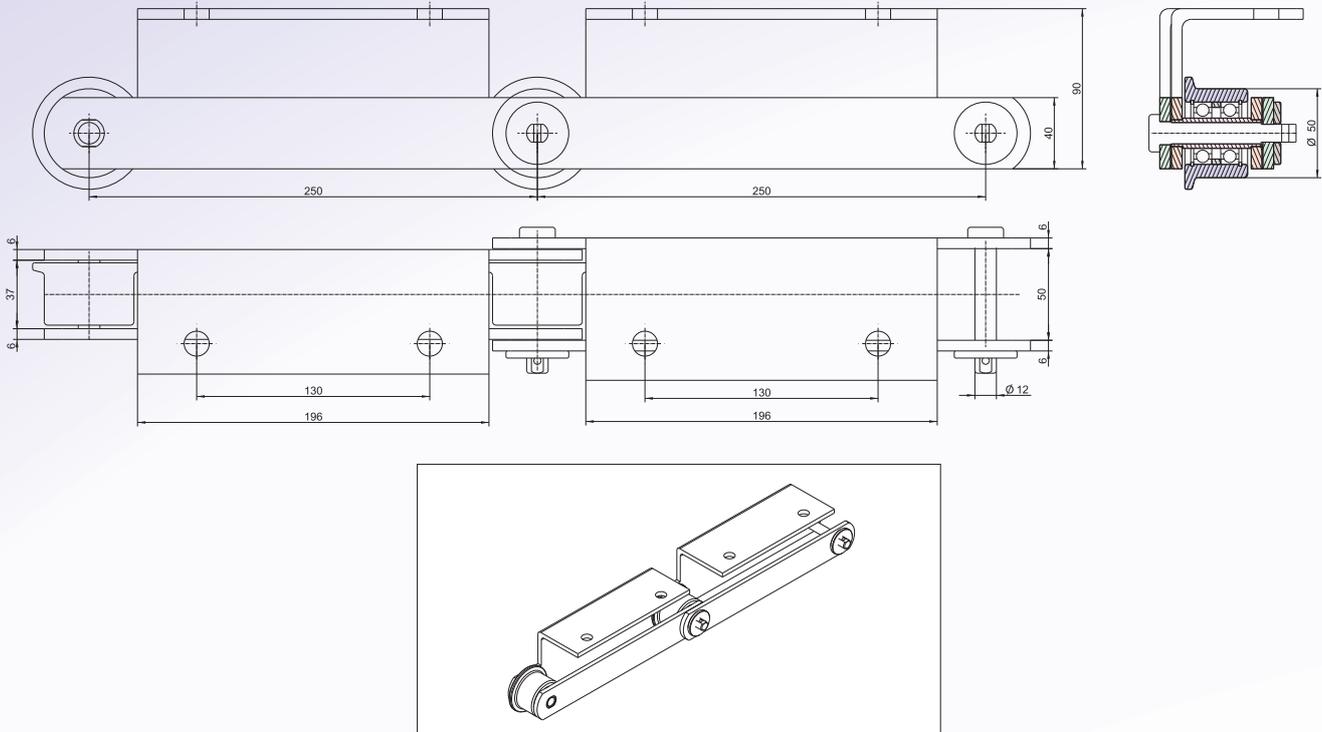


Alternative Sizes are also available on request.

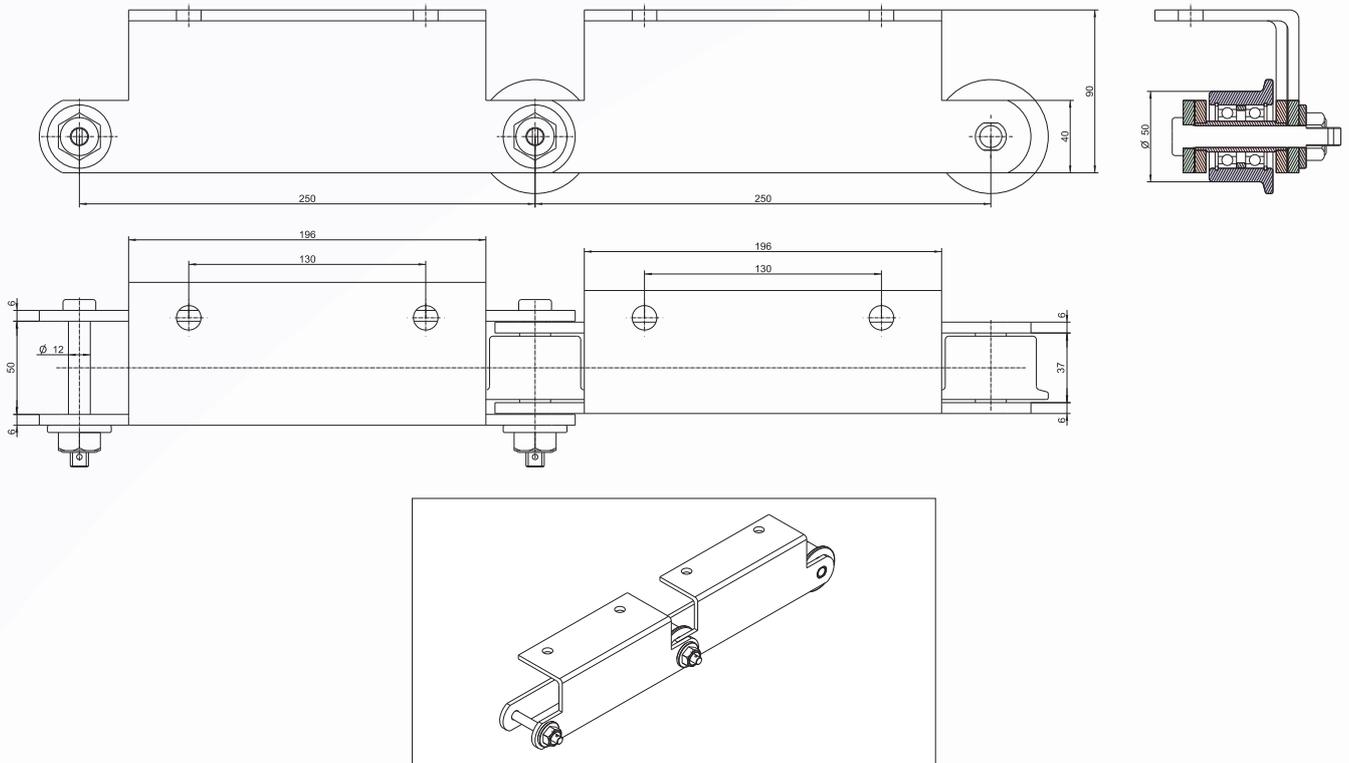
All Dimensions are in mm

Conveyor Chain

Type - E



Type - F

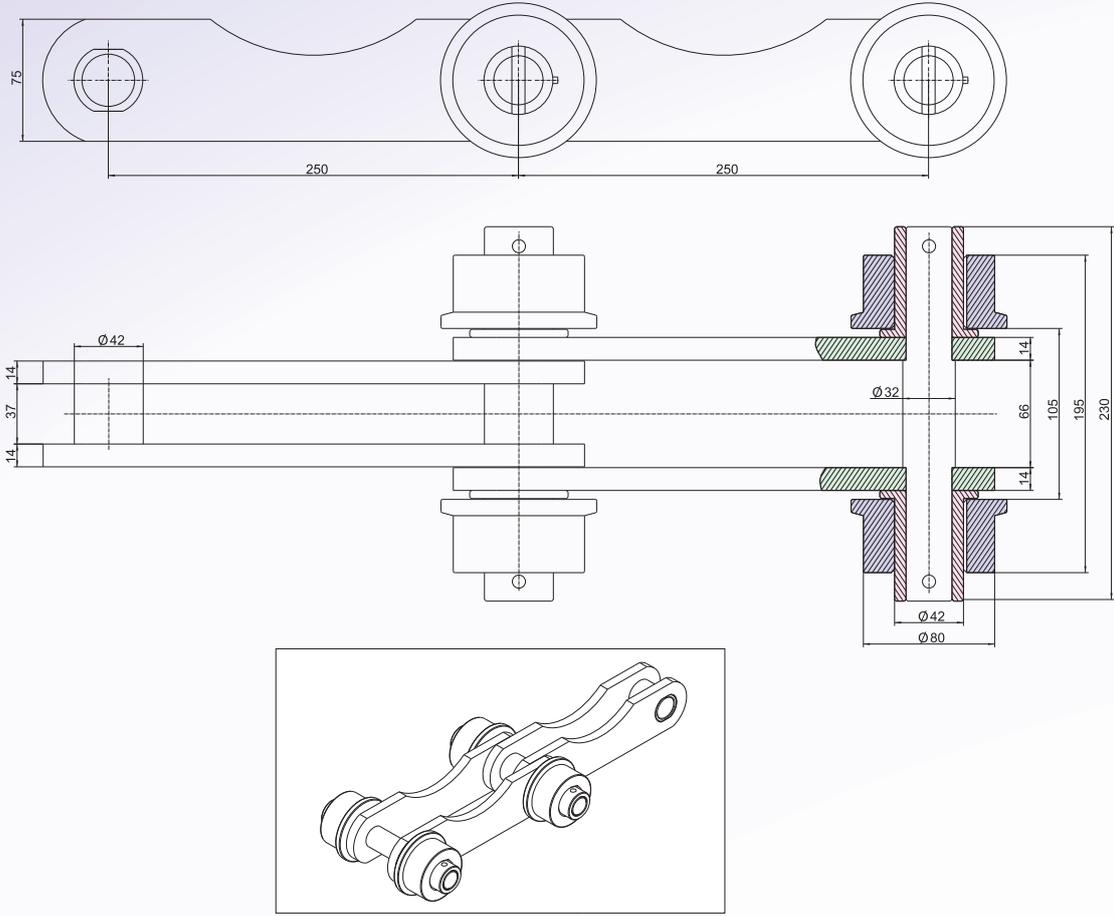


Alternative Sizes are also available on request.

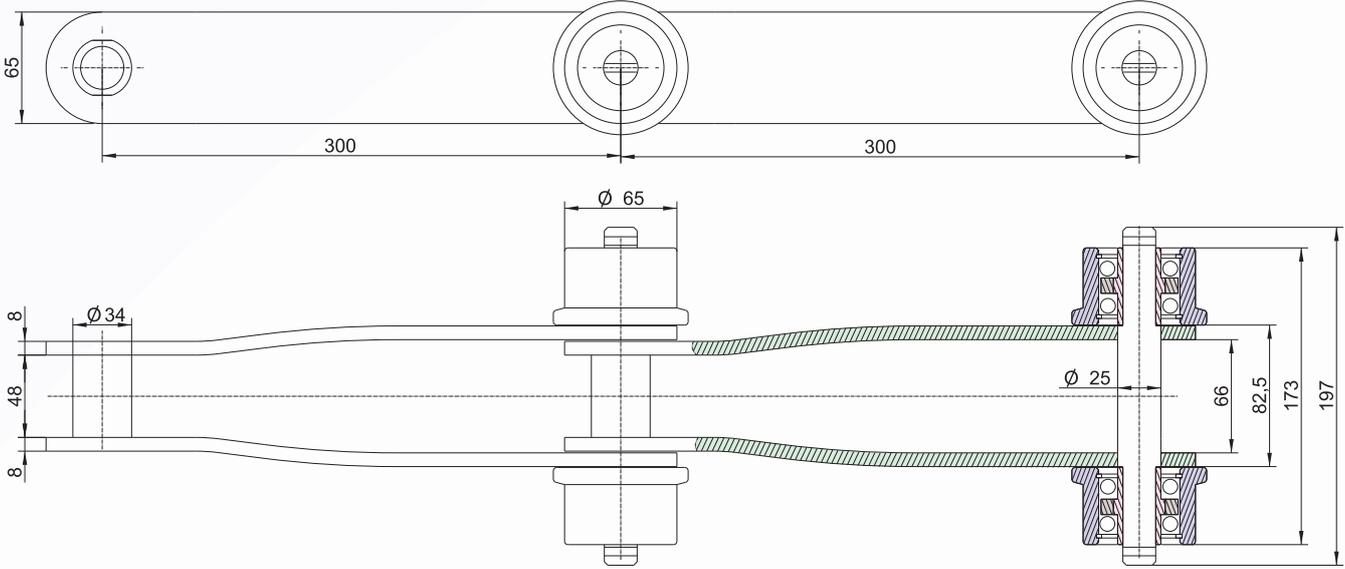
All Dimensions are in mm

Conveyor Chain

Type - G



Type - H

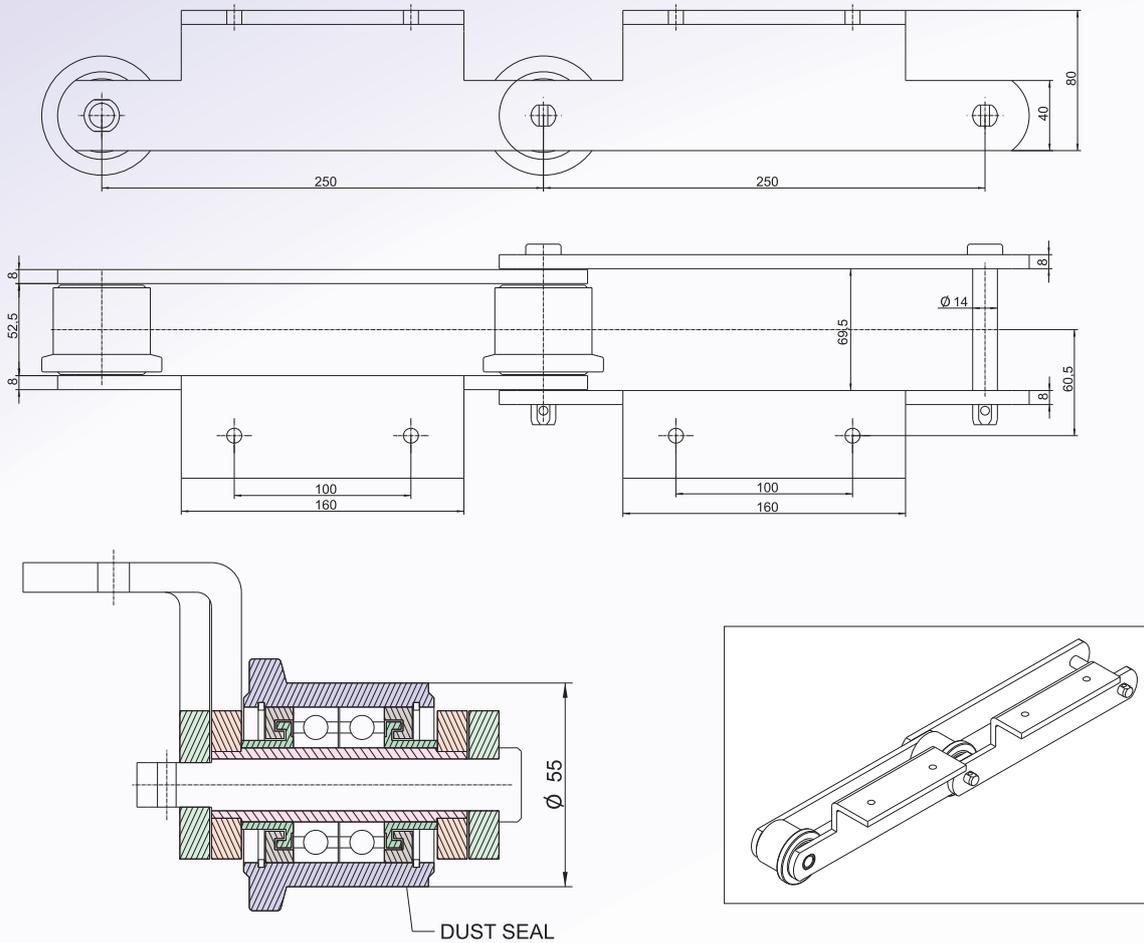


Alternative Sizes are also available on request.

All Dimensions are in mm

Conveyor Chain

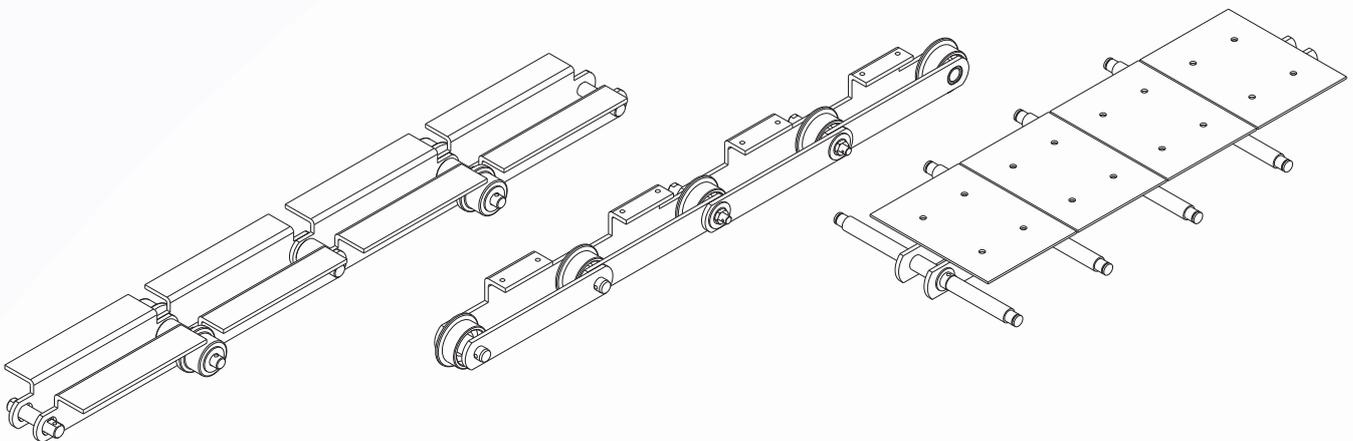
Type - I



Type - J

Type -K

Type -L



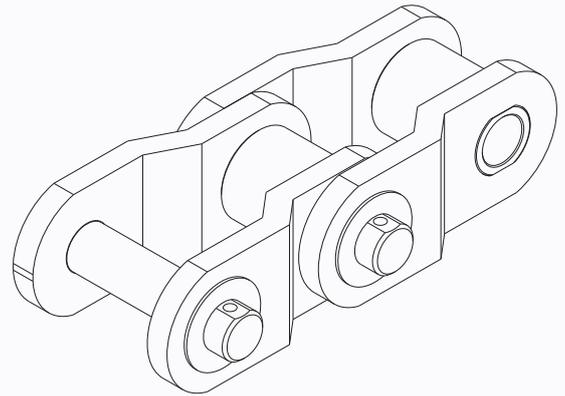
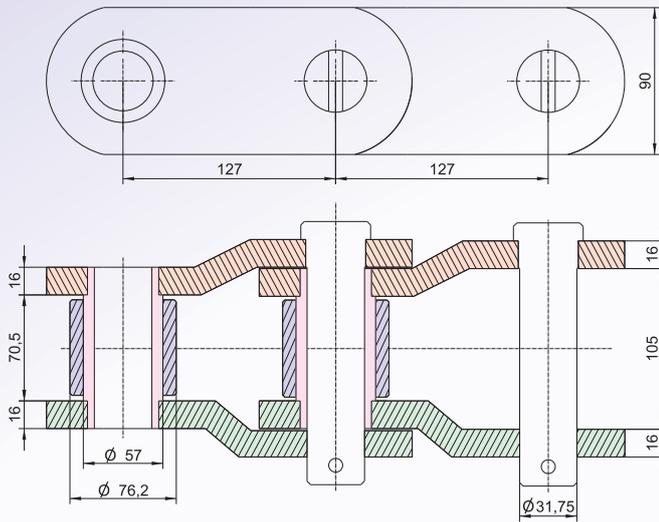
Alternative Sizes are also available on request.

All Dimensions are in mm

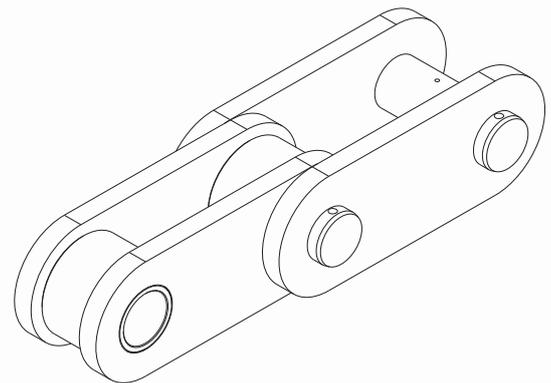
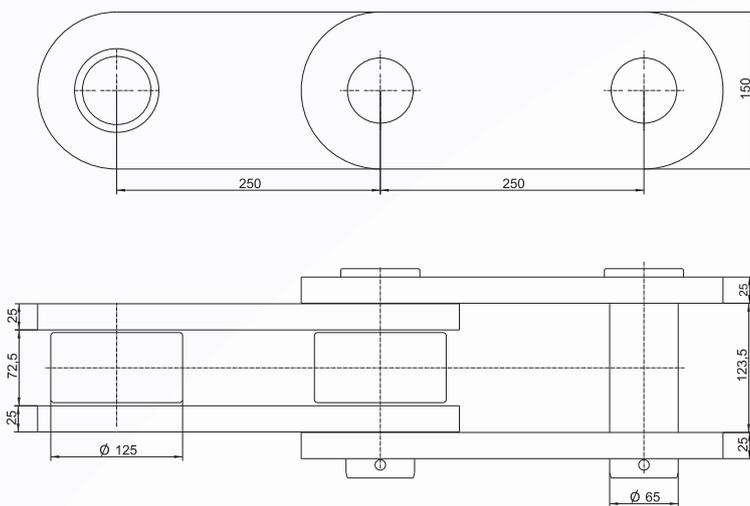
Steel Industry Chain

Draw Bench Chain

Model No. : SWAJIT 4001



Model No. : SWAJIT 4051

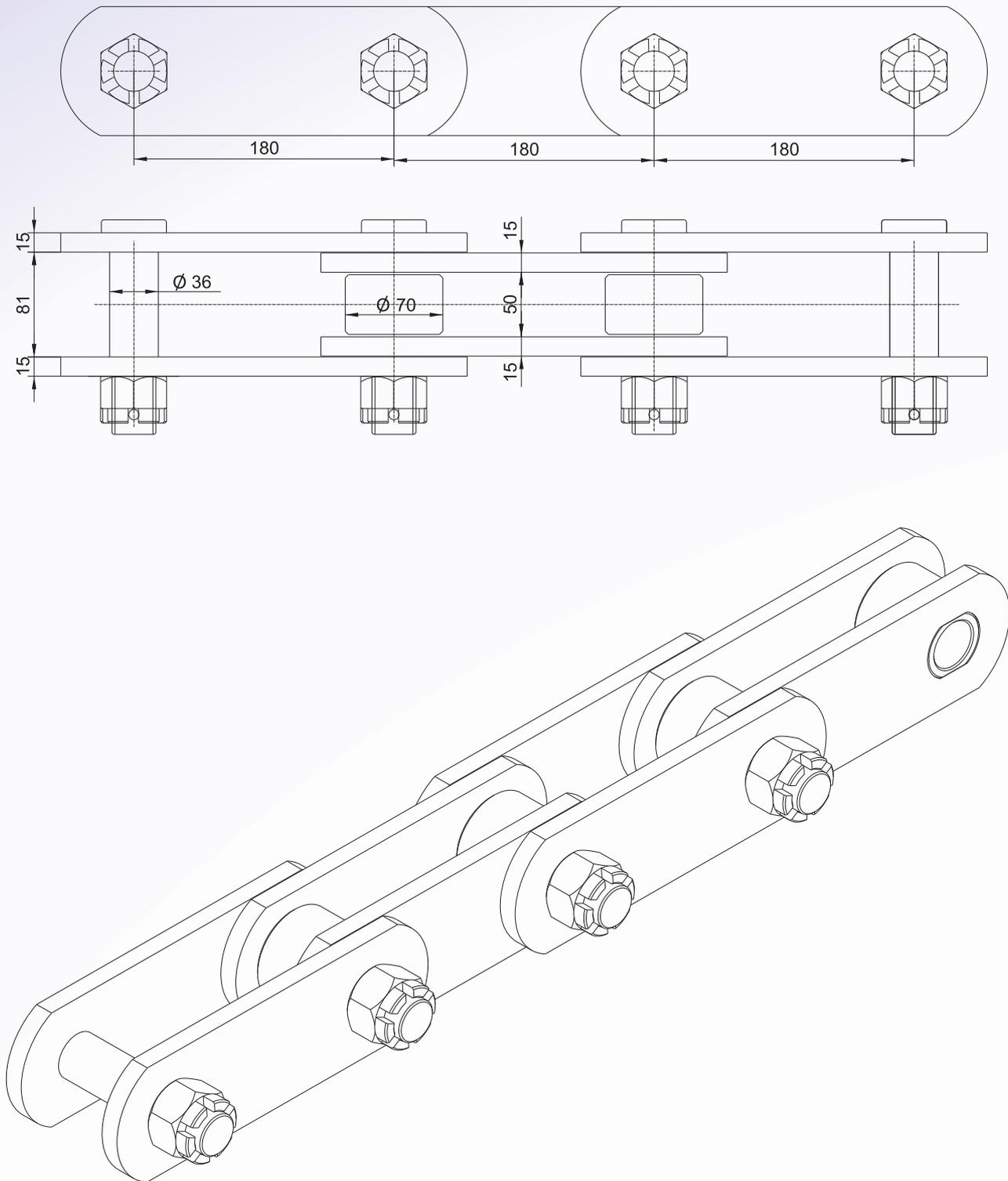


Alternative Sizes are also available on request.

All Dimensions are in mm

Shell Pusher Chain

Model No. : SWAJIT 4101

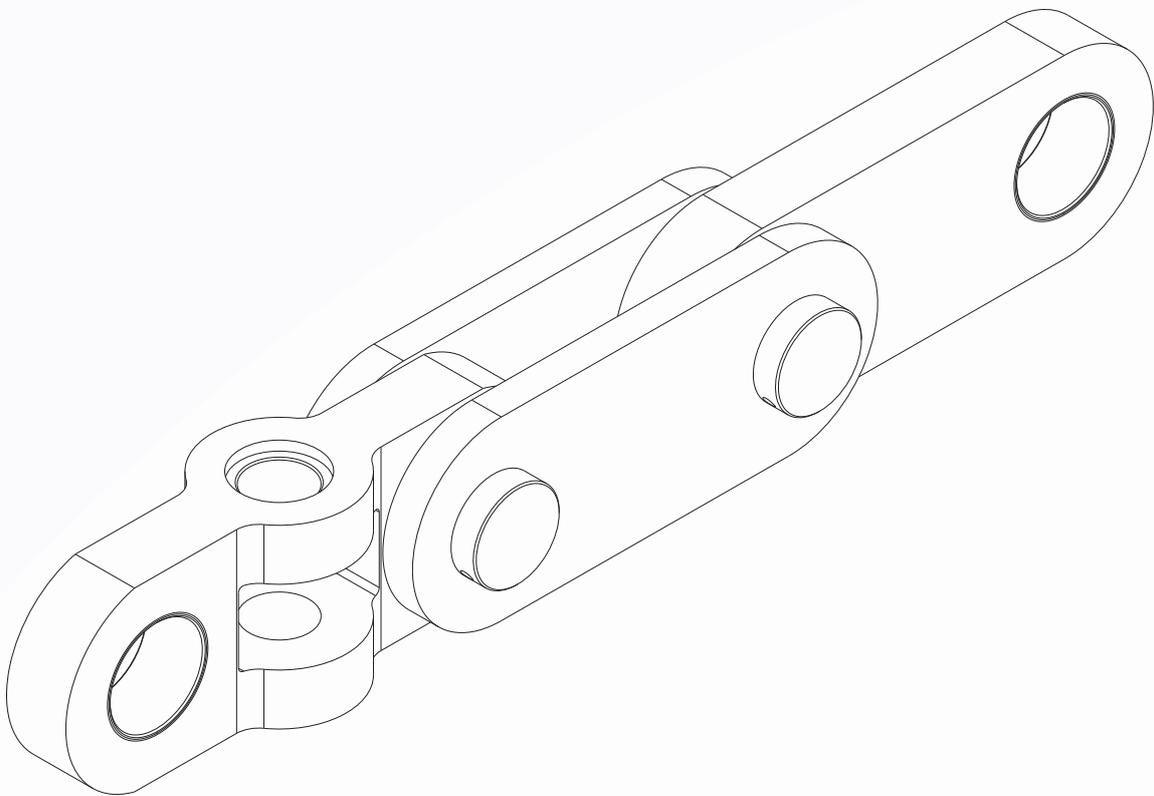
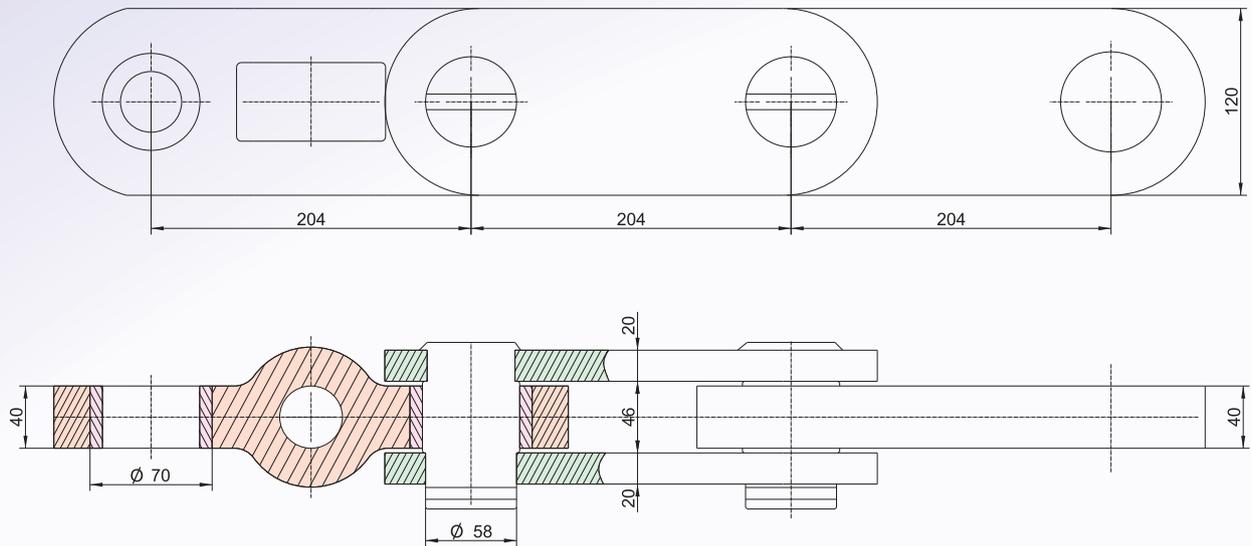


Alternative Sizes are also available on request.

All Dimensions are in mm

Mandrel Extractor Chain

Model No. : SWAJIT 4201

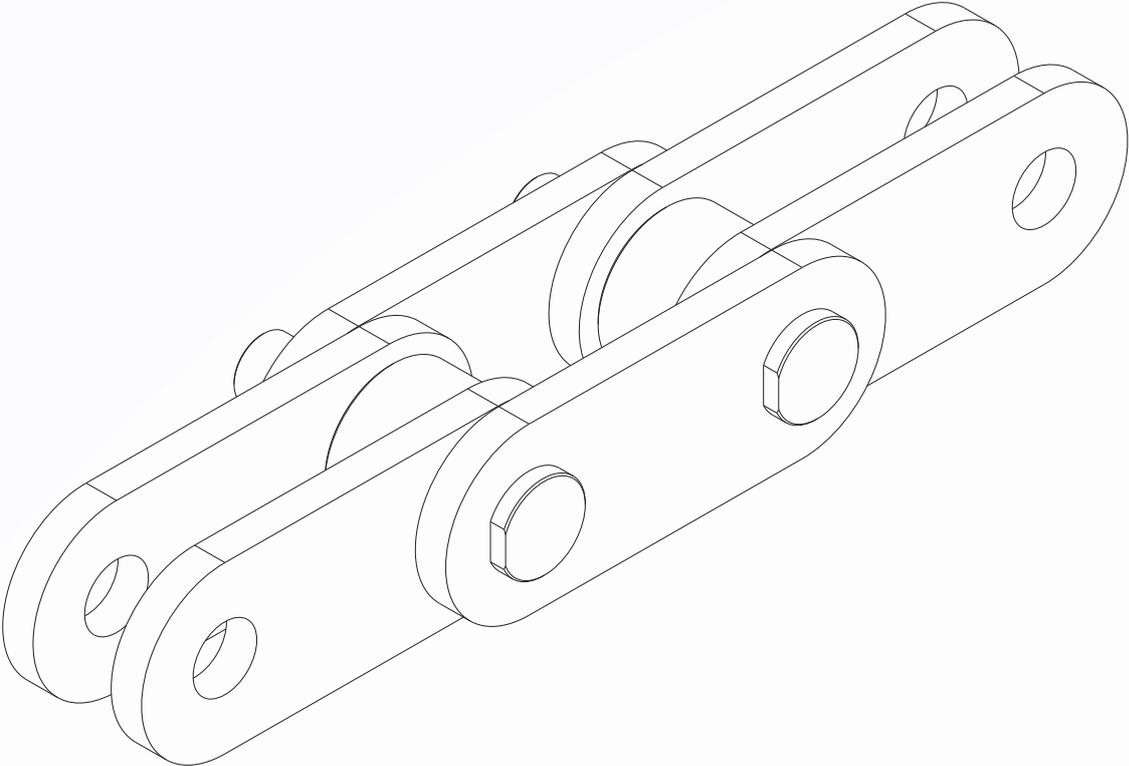
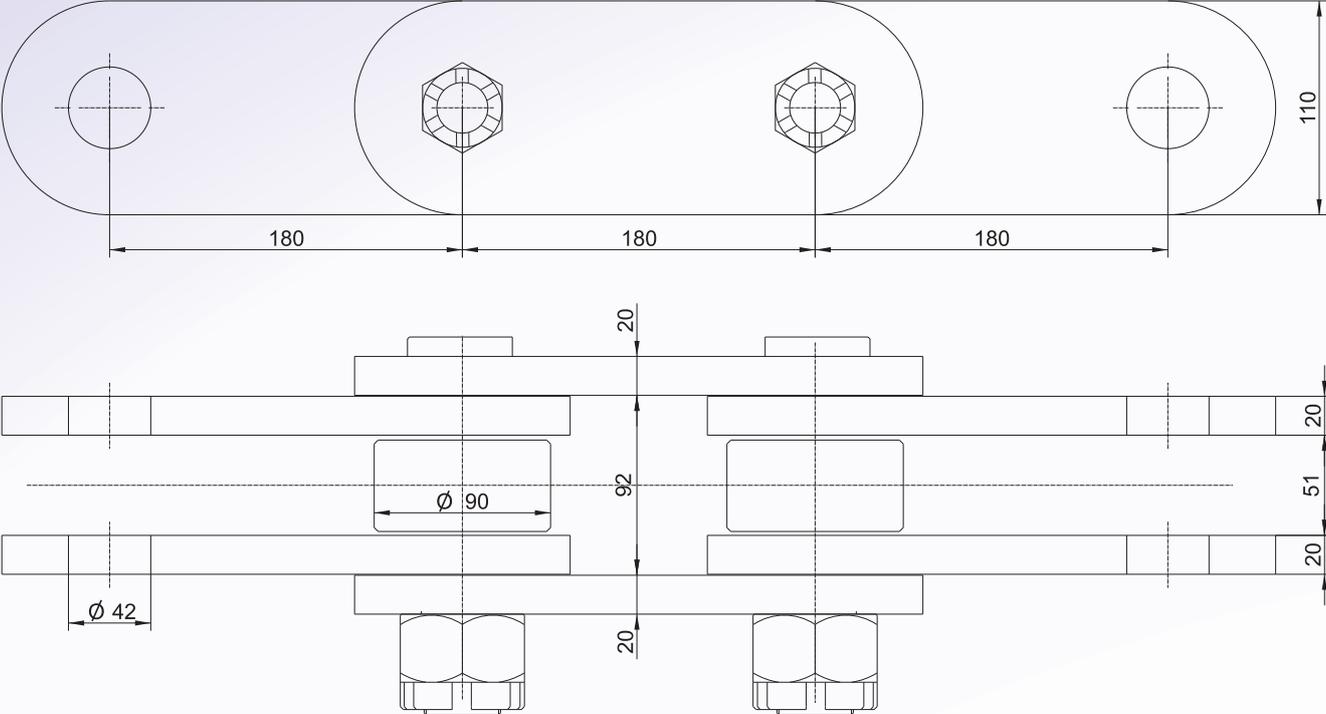


Alternative Sizes are also available on request.

All Dimensions are in mm

Mandrel Bar Inserter Chain

Model No. : SWAJIT 4301

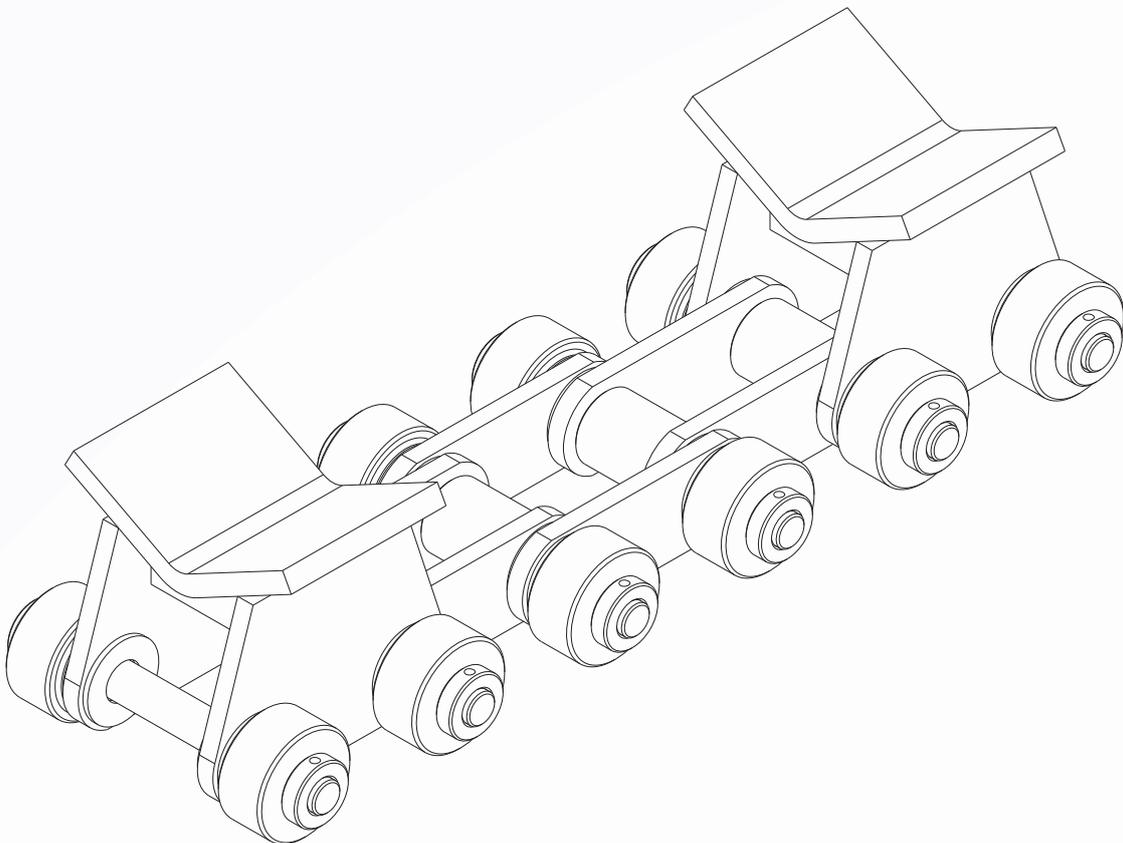
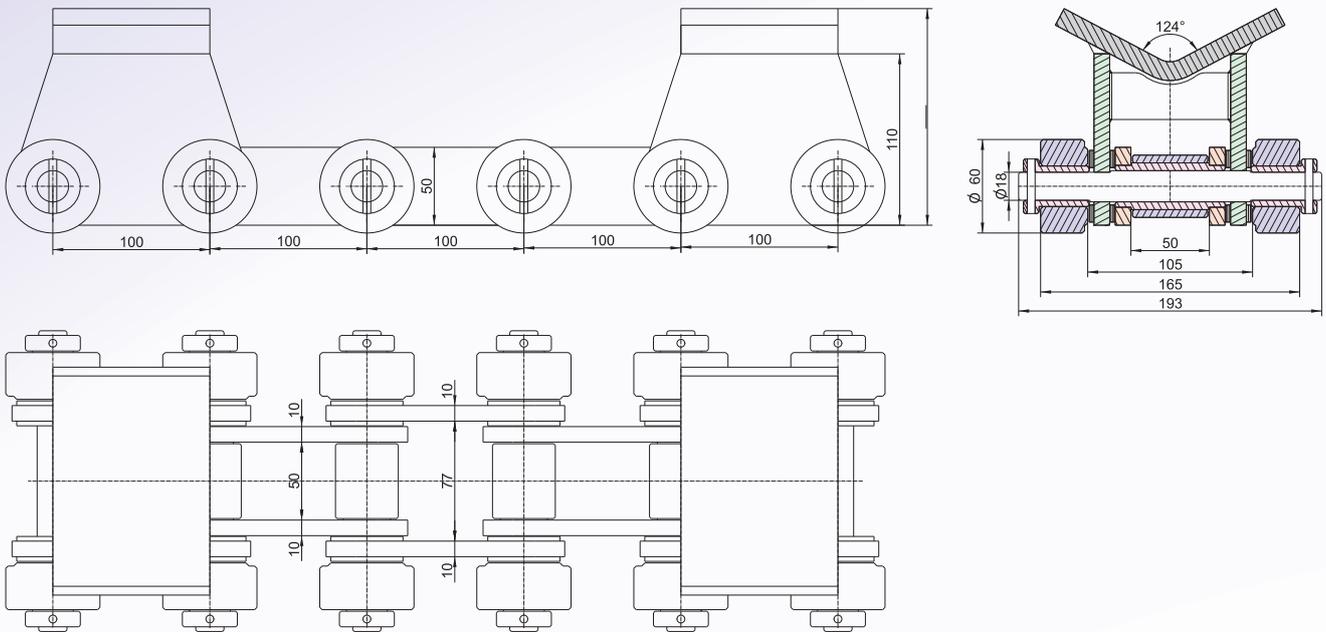


Alternative Sizes are also available on request.

All Dimensions are in mm

Conveyor Chain For Varnishing Machine

Model No. : SWAJIT 4401

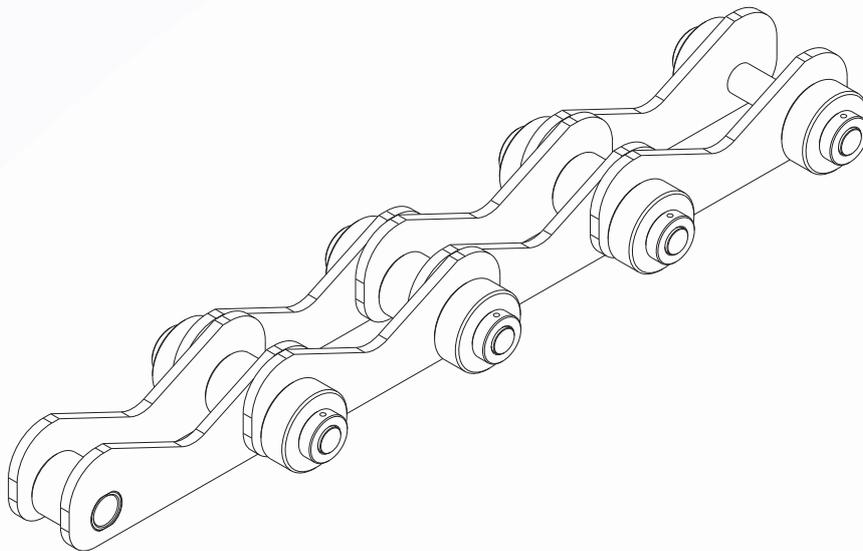
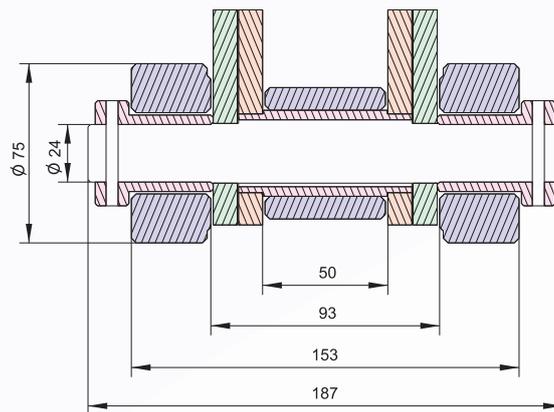
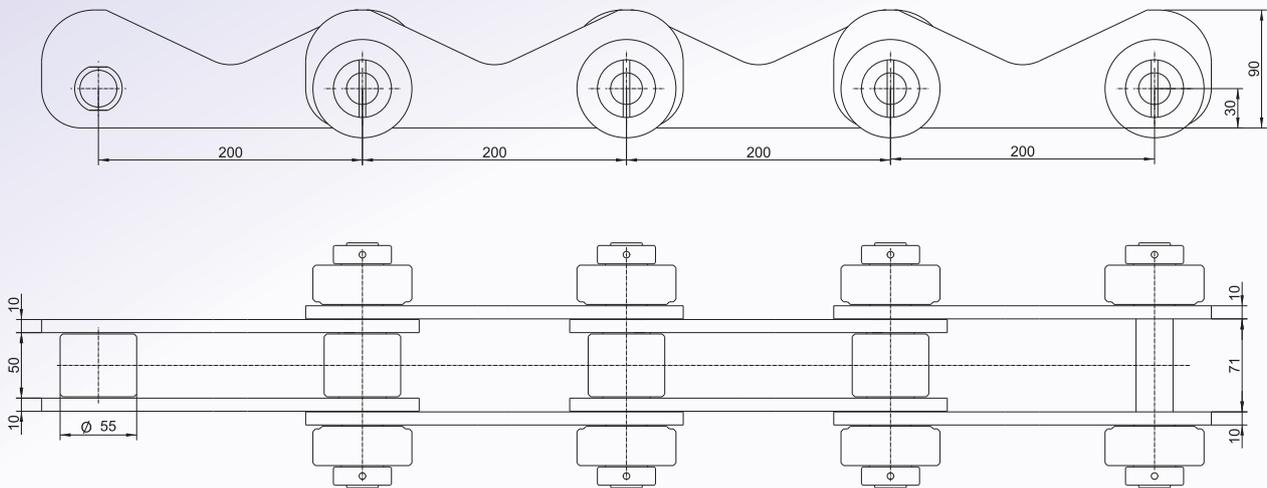


Alternative Sizes are also available on request.

All Dimensions are in mm

Cooling Bed Conveyor Chain

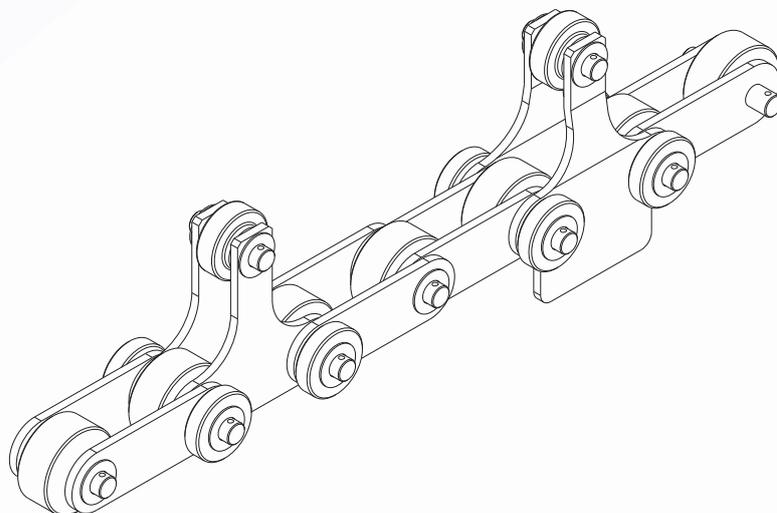
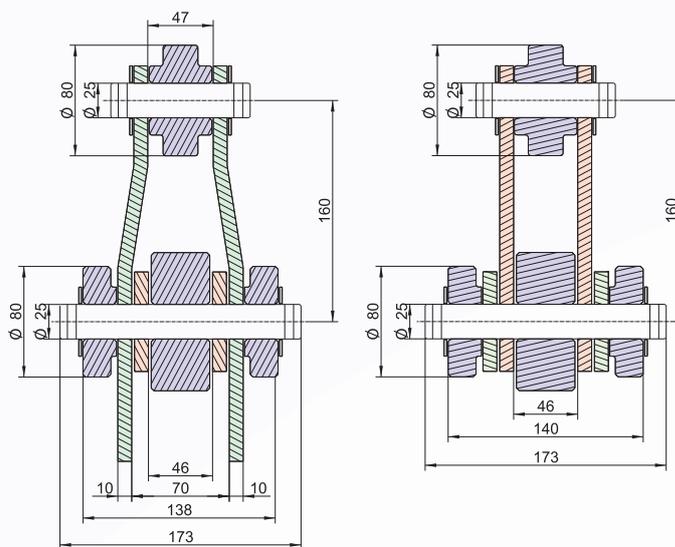
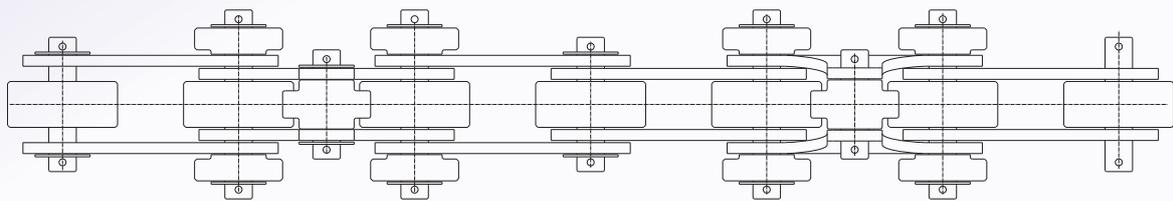
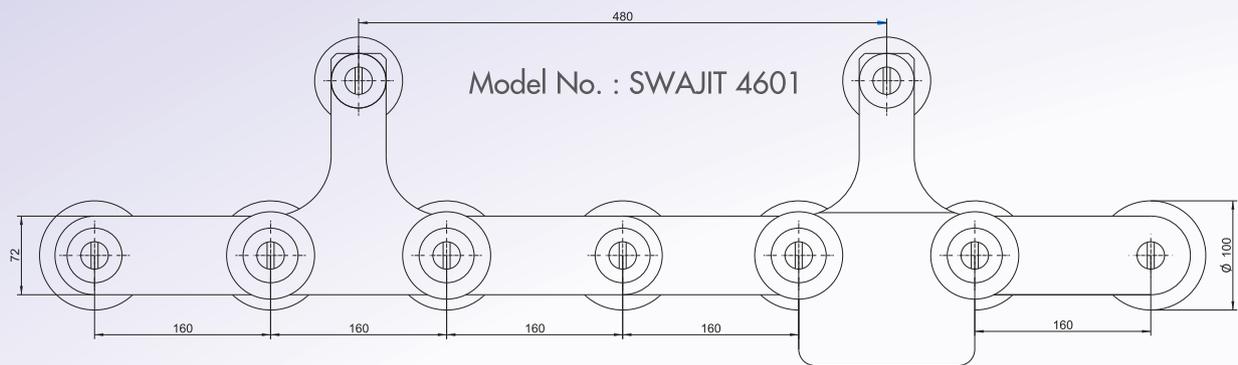
Model No. : SWAJIT 4501



Alternative Sizes are also available on request.

All Dimensions are in mm

Conveyor Chain



Alternative Sizes are also available on request.

All Dimensions are in mm

Power Plant Chain

Gate Chain For Boiler

Such type of chains are used in Power Plants. This chain is suitable in abrasive, higher temperature & dusty conditions.

Precised alignment of chain with sprocket is maintained by precision manufacturing processes.

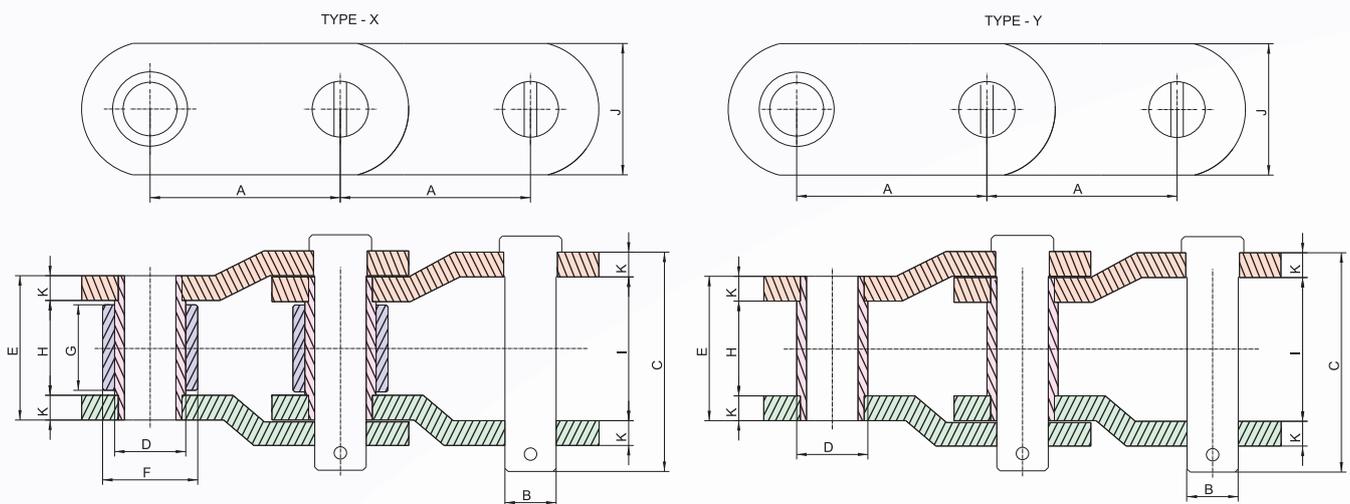
Maximum chain strength & wear resistance is achieved by selection of appropriate raw material. We are exercising the strict control on procurement of genuine raw material as per specifications & adopting modern heat treatment "in-house" processes. As a result the components are able to withstand the sprocket tooth impact.

Chain links are made from Medium Carbon / Alloy Steel. These links are subjected to operations like Blanking & fine boaring, which are carried out on highly precision machines. The link hole size & finishing is controlled to suit adequate interference fit. Further links are hardened & tempered to avoid linear elongation & also to get better impact strength followed by shot peening process to improve the fatigue strength.

Special Alloy Steel is used for Pins with Volume Hardened & Tempered to get the maximum core strength & followed by Induction Hardening to achieve armored case depth for maximum wear resistance.

Special Alloy Steel is used for Bushes with adequate heat treatment. Optimum case depth is achieved to provide maximum wear resistance & core strength by Case Carburizing.

Medium Carbon Steel is used for Rollers with appropriate Heat Treatment.



Model No.	Type	Pitch	Load (kgf)		Pin		Bush		Roller		Link			
			Proof Load	Breaking Load	Dia	Length	Dia	Length	Dia	Length	H	I	J	Thk
		A			B	C	D	E	F	G				
SWAJIT 5001	Y	78.1	3,800	11,260	14.3	70	31	44.4			31.8	45.4	31.8	6.3
SWAJIT 5002	Y	101.6	6,400	19200	19	91	36.6	59.6			41.4	60.6	38.1	9.1
SWAJIT 5003	X	152.4	58,700	176,000	38.1	174	56	115	76.2	76.2	77	119	101.6	19
SWAJIT 5004	Y	153.7	11,700	35000	25.4	141	44.4	101.6			76.2	102.6	50.8	12.7

* Alternative Size are also available on request

(All Dimensions are in mm)

Heavy Duty Construction Equipment Chain

Heavy Duty Construction Equipement Chain

Such type of chains are used in Heavy duty construction Machinery, Road Building Equipment, Power Shovels and Hoists & Oil Rigs. This chain is suitable in abrasive, higher temperature & dusty conditions.

Precised alignment of chain with sprocket is maintained by precision manufacturing processes.

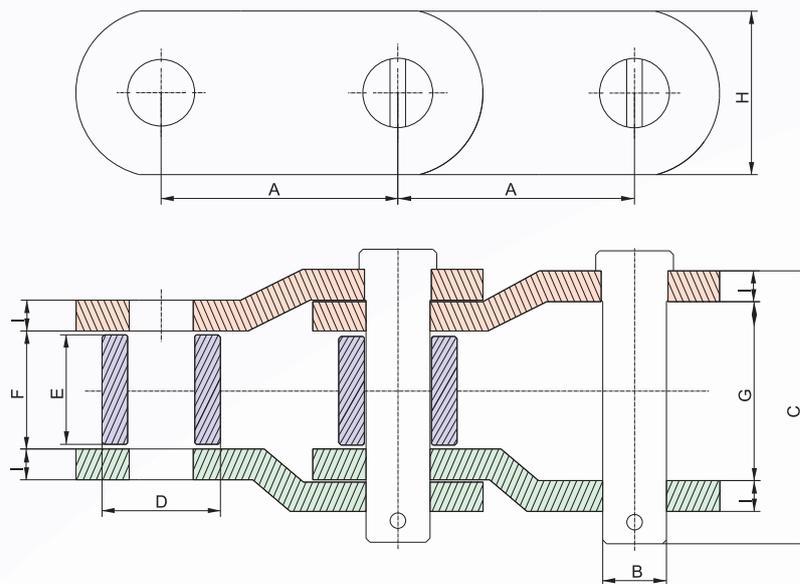
Maximum chain strength & wear resistance is achieved by selection of appropriate raw material. We are exercising the strict control on procurement of genuine raw material as per specifications & adopting modern heat treatment "in-house" processes. As a result the components subjected to sprocket are able to withstand the sprocket tooth impact.

Chain links are made from Medium Carbon / Alloy Steel. These links are subjected to operations like Blanking & fine boaring, which are carried out on highly precision machines. The link hole size & finishing is controlled to suit adequate interference fit. Further links are hardened & tempered to avoid linear elongation & to get better impact strength followed by shot peening process to improve the fatigue strength.

Special Alloy Steel is used for Pins with Volume Hardened & Tempered to get the maximum core strength & followed by Induction Hardening to achieve armored case depth for maximum wear resistance.

Special Alloy Steel is used for Bushes with adequate heat treatment. Optimum case depth is achieved to provide maximum wear resistance & core strength by Case Carburizing.

Medium Carbon Steel is used for Rollers with Appropriate Heat Treatment.



Model No.	Pitch	Load (kgf)		Pin		Bush		Link			
		Proof Load	Breaking Load	Dia	Length	Dia	Length	Width	Thk		
	A			B	C	D	E	F	G	H	I
SWAJIT 6001	78.1	13,300	39,700	15.88	88	31.75	36	38	58	41.5	9.5
SWAJIT 6002	99.21	39,400	118,000	30.16	111.6	57.15	36.4	38.4	68	82.6	14.3
SWAJIT 6003	103.2	23,000	69,000	22.23	127.2	44.45	47.2	49.2	82.2	59	16
SWAJIT 6004	103.89	28,900	86,500	25.4	121.2	47.63	47.2	49.2	79.2	70	14.5
SWAJIT 6005	152.4	58,700	176,000	38.1	169	76.2	74.3	76.3	115.3	101.6	19

* Alternative Size are also available on request

(All Dimensions are in mm)

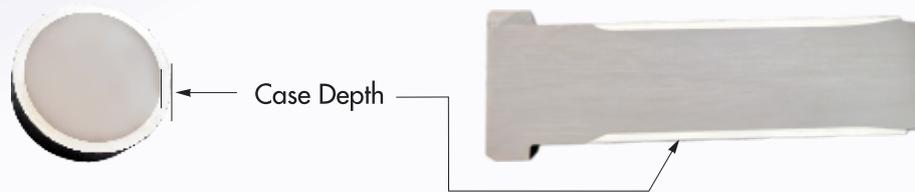
Material Specifications

Sr. No.	Grade	Rang	%C	%Mn	%Si	%S	%P	%Ni	%Cr	%Mo	%V	Rolled Hardness in BHN
Plain Carbon Steel												
1	IS2062(MS)	Min	.....	.....	.....	.....	.....	.....	.....	.....	.....	125
		Max	0.25	0.05	0.055
2	EN8	Min	0.35	0.60	0.05	.....	.....	.....	.....	.....	.....	160
		Max	0.45	1.00	0.35	0.06	0.060	~
3	C-45	Min	0.40	0.60	0.50	.....	.....	.....	.....	.....	.....	210
		Max	0.50	0.90	0.35	0.055	0.055
4	EN9	Min	0.50	0.50	0.05	.....	.....	.....	.....	.....	.....	180
		Max	0.60	0.80	0.35	0.06	0.060
Alloy Steel												
5	SAE8620	Min	0.18	0.70	0.15	.....	.....	0.40	0.40	0.15	.....	160
		Max	0.23	0.90	0.30	0.040	0.035	0.70	0.60	0.25	.....	.....	210
6	16Ni3Cr2	Min	0.12	0.60	0.15	0.035	0.035	0.60	0.40	.....	.....	160
		Max	0.20	1.00	0.35	1.00	0.80
7	15CrNi6	Min	0.12	0.40	0.15	.....	.....	1.40	1.40	.....	.....	160
		Max	0.17	0.60	0.40	0.035	0.035	1.70	1.70
8	SCM420	Min	0.18	0.60	0.15	.....	"	.....	0.90	0.15	.....	170
		Max	0.23	0.85	0.35	0.030	0.030	1.20	0.30	"	.....	230
9	16MnCr5	Min	0.14	1.00	0.15	.....	.....	.....	0.80	.....	.....	160
		Max	0.19	1.30	0.40	0.035	0.035	1.10
10	20MnCr5	Min	0.17	1.10	0.15	.....	.....	~	1.00	.....	.....	160
		Max	0.22	1.40	0.40	0.035	0.035	"	1.30
11	EN353	Min	0.14	0.50	~	.....	.....	1.00	0.75	0.08	.....	160
		Max	0.20	1.00	0.35	0.050	0.050	1.50	1.25	0.15	.....	.....	210
12	EN-36B	Min	0.12	0.30	0.10	.....	.....	3.00	0.60	.....	.....	180
		Max	0.18	0.60	0.35	0.050	0.050	3.75	1.10
13	EN19	Min	0.35	0.50	0.10	.....	.....	.....	0.90	0.20	.....	160
		Max	0.45	0.80	0.35	0.05	0.05	1.50	0.40	.....	.....	210
14	EN24	Min	0.35	0.45	0.10	.....	.....	1.30	0.90	0.20	.....	170
		Max	0.45	0.70	0.35	0.05	0.05	1.80	1.40	0.35	.....	.....	240
14	SAE- 01 (OHNS)	Min	0.85	1.00	0.20	.....	.....	.....	0.40	%W0.4	"	180
		Max	0.95	1.30	0.40	0.60	%W 0.6	0.20	.....	240
15	SAE-D3 (WPS)	Min	2.00	0.24	0.25	.....	.....	.....	11.00	.....	.....	180
		Max	2.30	0.45	0.45	13.00	0.80	%W0.75	.....	240
16	41Cr4	Min	0.38	0.50	0.15	.....	.....	.....	0.90	.....	.....	*
		Max	0.45	0.80	0.40	0.035	0.035	1.20
Martensitic Stainless Steel												
17	SS410	Min	.....	.....	.....	.....	.....	.....	11.50	.....	.....	.....
		Max	0.15	1.00	1.00	0.03	0.04	13.50
18	SS420	Min	0.15	.....	.....	.....	.....	.....	12.00	.....	.....	.....
		Max	0.20	1.00	1.00	0.03	0.04	14.00
19	SS431	Min	.....	.....	.....	.....	.....	1.25	15.00	.....	.....	170
		Max	0.20	1.00	1.00	0.03	0.04	2.50	17.00
Austenitic Stainless Steel												
20	SS304	Min	.....	.....	"	.....	.....	8.000	18.00	.....	.....	.....
		Max	0.08	2.00	1.00	0.03	0.045	10.50	20.00
21	SS310	Min	.....	.....	.....	.....	.....	19.00	24.00	.....	.....	.....
		Max	0.25	2.00	1.50	0.03	0.045	22.00	26.00
22	SS316	Min	.....	.....	"	.....	.....	10.00	16.00	2.00	.....	.....
		Max	0.08	2.00	1.00	0.03	0.045	14.00	18.00	3.00	.....	.....	170

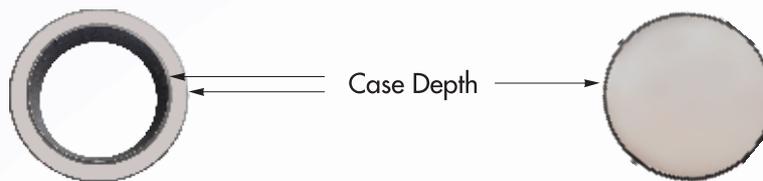
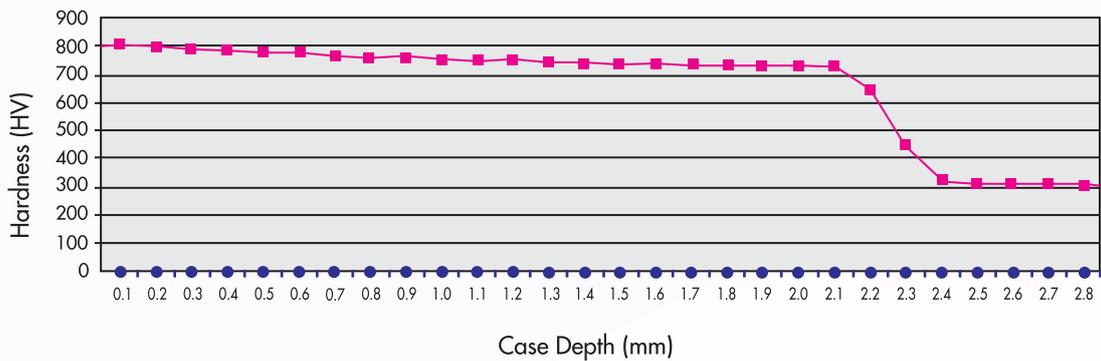
Hardness / Breaking Load									Hardness / Breaking Load								
ROCKWELL			VICKER	SHORE	BRINELL		TENSILE STRENGTH		ROCKWELL			VICKER	SHORE	BRINELL		TENSILE STRENGTH	
C	A	B	HARDNESS	HARDNESS	HARDNESS	INDENTATION DIA (MM)	MPA	KGF/MM	C	A	B	HARDNESS	HARDNESS	HARDNESS	INDENTATION DIA (MM)	MPA	KGF/MM
68		85.6	940	97					39	69.9		382	52	362	3.20	1220	124
67		85.0	900	95					38	69.4		372	51	353	3.24	1180	120
66		84.5	865	92					37	68.9		363	50	344	3.28	1160	118
65		83.9	832	91					36	68.4	109.0	354	49	336	3.33	1120	114
64		83.4	800	88					35	67.9	108.5	345	48	327	3.37	1080	110
63		82.8	772	87					34	67.4	108.0	336	47	319	3.41	1060	108
62		82.3	746	85					33	66.8	107.5	327	46	311	3.45	1030	105
61		81.8	720	83					32	66.3	107.0	318	44	301	3.50	1000	102
60		81.2	697	81					31	65.8	106.0	310	43	294	3.55	980	100
59		80.7	674	80					30	65.3	105.5	302	42	286	3.59	950	97
58		80.1	653	78					29	64.7	104.5	294	41	279	3.64	930	95
57		79.6	633	76					28	64.3	104.0	296	41	272	3.69	910	93
56		79.0	613	75					27	63.8	103.0	279	40	264	3.73	880	90
55		78.5	595	74			2080	212	26	63.3	102.5	272	38	258	3.77	860	88
54		78.0	577	72			2010	205	25	62.8	101.5	266	38	253	3.81	840	86
53		77.4	560	71			1950	199	24	62.4	101.0	260	37	247	3.86	820	84
52		76.8	544	69	500	2.74	1880	192	23	62.0	100.0	254	36	243	3.88	800	82
51		76.3	528	68	487	2.77	1820	186	22	61.5	99.0	248	35	237	3.93	780	80
50		75.9	513	67	475	2.81	1760	179	21	61.0	98.5	243	35	231	3.98	770	79
49		75.2	498	66	464	2.84	1700	173	20	60.5	97.8	238	34	226	4.02	760	77
48		74.7	484	64	451	2.88	1640	167	18		96.7	230	33	219	4.08	740	75
47		74.1	471	63	442	2.91	1580	161	16		95.5	222	32	212	4.15	710	72
46		73.6	458	62	432	2.94	1530	156	14		93.9	213	31	203	4.23	680	69
45		73.1	446	60	421	2.98	1480	151	12		92.3	204	29	194	4.33	650	66
44		72.5	434	58	409	3.02	1430	146	10		90.7	196	28	187	4.40	620	63
43		72.0	423	57	400	3.05	1380	141	8		89.5	188	27	179	4.50	600	61
42		71.5	412	56	390	3.09	1330	136	6		87.1	180	26	171	4.59	580	59
41		70.9	402	55	381	3.13	1290	132	4		85.5	173	25	165	4.67	550	56
40		70.4	392	54	371	3.17	1250	127	2		83.5	166	24	158	4.76	530	54
									0		81.7	150	24	152	4.85	520	53

State of Art Case Hardening & Induction Hardening of Pin & Bush

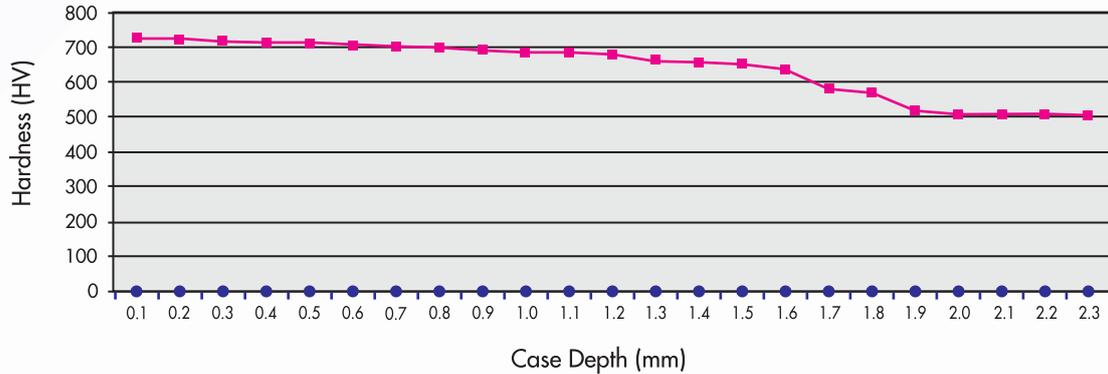
Increases wear resistance especially in Effective area



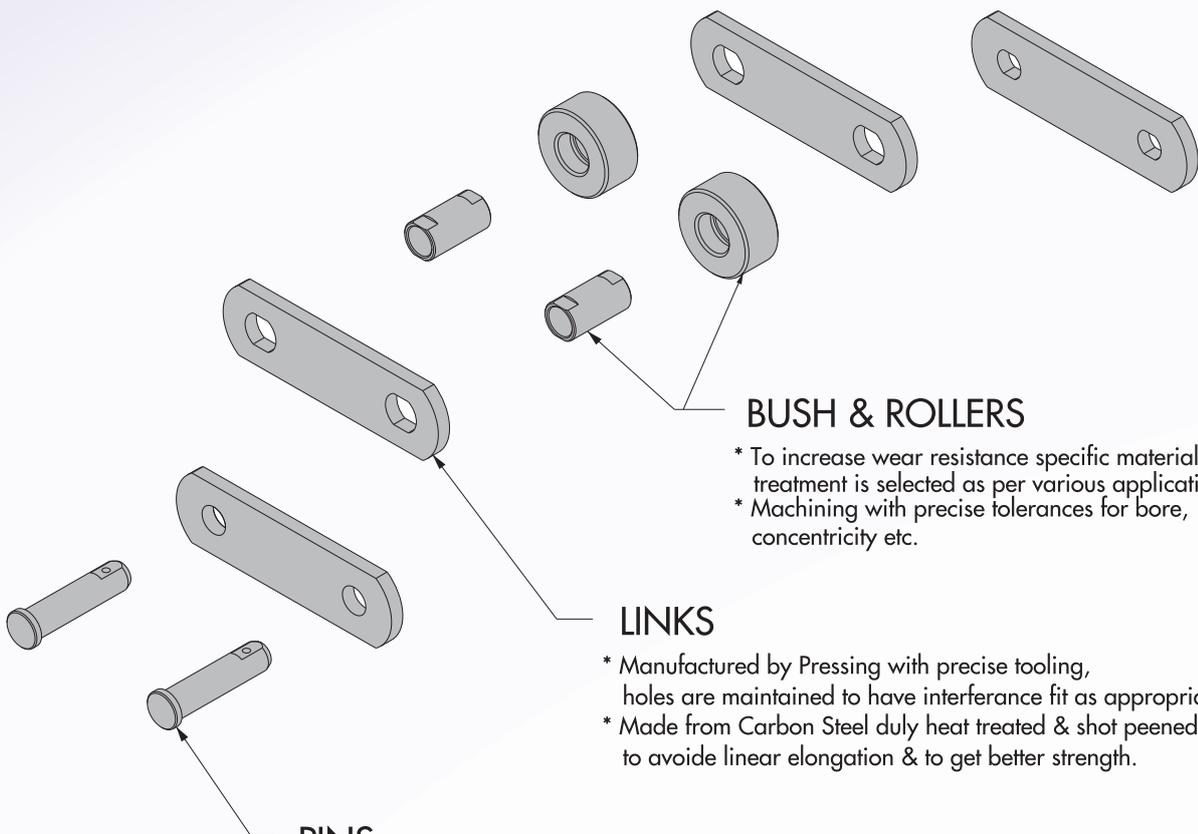
Hardness VS Case Depth Relation Induction Hardening



Hardness VS Case Depth Relation Case Hardening



Construction of SWAJIT Conveyor Chains



BUSH & ROLLERS

- * To increase wear resistance specific material & heat treatment is selected as per various applications.
- * Machining with precise tolerances for bore, concentricity etc.

LINKS

- * Manufactured by Pressing with precise tooling, holes are maintained to have interference fit as appropriate.
- * Made from Carbon Steel duly heat treated & shot peened to avoid linear elongation & to get better strength.

PINS

- * Precisely machined to have appropriate clearance fit with Bush ID
- * Selection of material & heat treatment to suit specific application.

More frequent inspections and check points

- Wear on sprockets teeth and wear on link plates if appeared 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 a 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.
- Compressed air cleaning is necessary to maintain the cleanliness, to avoid the jamming in chain parts which may occur due to accumulations of dirt, foreign materials and baggasse.
- Do not use a new link as replacement in a chain, which has already been elongated by wear. Also do not use the new chain on worn out sprockets because this will reduce the chain life considerably.
- Before disassembling the chain, lubricate it with oil & run the carrier in Idle condition for 8-10 hours, so that chain parts become free, facilitating in easy disassembly.
- After dismantling the pin, bush, rollers from Carrier Chain, the same should have to be subjected to "Sand Blasting" operation to have proper cleaning.
- Simply rematching of chain components and parts to get the assembled chain is very Dangerous.
- Never go for Electroplating of heat treated chains, as it causes the hydrogen embrittlement fracture.
- Never weld the heat treated chains, as heat effect can reduce strength causing the chain to break.
- Prior to get the use of blow chart or other heat source to heat and cut the chain ,be sure to remove all components of either side of heat treated area that may be affected by heat.

Lubrication

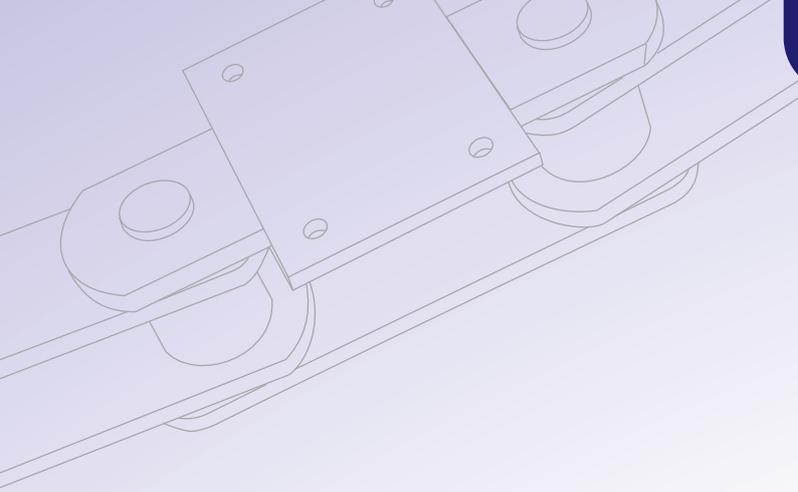
- Selection of proper lubrication method & applying lubricant is necessary for prolongation of the life of chain
- Method of lubrication should be adopted depending upon the chain speed. Mineral oil SAE 40 to 60 is recommended.
- Lubricants such as Oil or Grease should always be applied between inner & 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

Mechanical Wear

Under the reasonable conditions and normal atmosphere, the mechanical wear causes, the bearing surface of conveyor chain to shine brightly, hence the proper lubrication assures further 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, the stainless steel is recommended.



Wear due to conveyed material

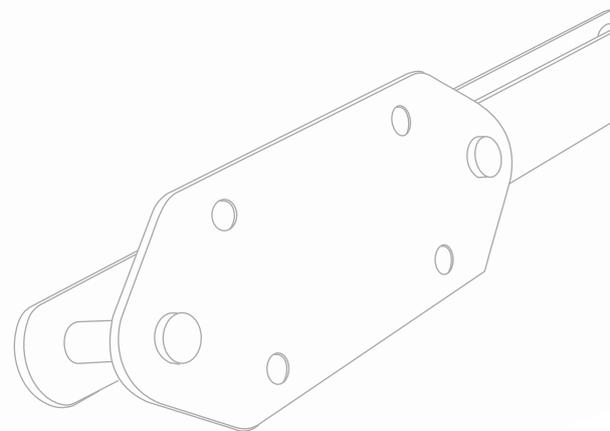
Material conveyed by chain also have an important factor .Wearing of the chain due to reciprocal friction between material and chain can be eliminated by preventing material from falling on the chain. to enhance extra protection the chain should have higher wear resistance specifications.

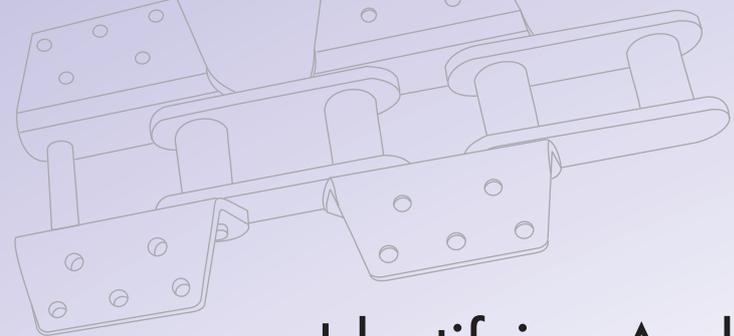
Note:

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

Carrier Chain Check points

- Alignment of sprocket, shaft, with carrier in linear and perpendicular direction.
- Sprocket & teeth condition i.e. Machined or Not Machined.
- Hardness of sprocket teeth as well as the wear & tear of teeth.
- Material feeding position should be Central feeding & not side feeding.
- Chain elongation (whether removed any link)
- Whether Chain has elongated on one side.
- Lubrication and cleaning procedure.
- Before disassembling the Chain, lubricate with oil & run carrier in Idle. Condition for 8-10 hours, so that chain parts become free, facilitating in easy disassembly.
- Chain twist due to alignment problem caused by uneven wear and tension.
- Chain cleanliness.
- Loose chain components and chain attachments.
- Check that chain pin heads are not fouling any side plates.
- Check that material is evenly loaded across conveyor.
- Remove trash or material ingress from chain where possible.
- In case of slat and Apron conveyor, check for distorted or loose slates and rectify and replace if necessary.
- For Scraper conveyors, check that scrapers are not fouling any side of structure or deck plates.
- Ensure that, the chain used in the application is suitable, when there is increase in capacity occurs.
- Any change in the chains particular application ,may require modification to suit .
- Lubrication applied for Pin and Bushes if required.





Identifying And Correcting Problems

Problem	Potential cause	Solution
Chain rises off from sprocket	<ul style="list-style-type: none"> • Excess chain slack. • Excess wear at the bases of sprocket teeth. • Excess chain extension. • Foreign material stuck to the bases of sprocket teeth. 	<ul style="list-style-type: none"> • Adjust the amount of slack. • Replace the sprocket. • Replace the chain. • Remove the foreign material from the bases of the teeth.
Chain separates poorly from the sprocket.	<ul style="list-style-type: none"> • Sprocket misalignment. • Excess chain slack. • Excess wear at the bases of sprocket teeth. 	<ul style="list-style-type: none"> • Adjust alignment. • Adjust the amount of slack. • Replace the sprocket.
Wear to sides of link plats and sprockets	<ul style="list-style-type: none"> • Sprocket misalignment. 	<ul style="list-style-type: none"> • Adjust alignment.
Poor chain flexure	<ul style="list-style-type: none"> • Inadequate oiling. • Foreign materials between pins and bushes. • Corrosion between and bushes. • Sprockets misalignment. 	<ul style="list-style-type: none"> • Lubricate properly. • Wash the chain to remove foreign materials, and then oil it. • Replace with an environment resistant chain series. • Adjust alignment.
Abnormal noise	<ul style="list-style-type: none"> • Chain is too taut or too loose. • Inadequate oiling. • Excess wear of sprockets and chain. • Contact with the chain case. • Damaged bearings. • Sprocket misalignment. 	<ul style="list-style-type: none"> • Adjust slack. • Lubricate properly. • Replace chain and sprockets. • Eliminate contact with the case. • Replace the bearings. • Adjust Alignment.
Chain vibration.	<ul style="list-style-type: none"> • Excess chin slack. • Excess load variation. • Excess chain speed leading to pulsation. • Chain flexes poorly at some points. • Sprocket wear. 	<ul style="list-style-type: none"> • Adjust slack. • Reduce load variation or replace chain. • Use guide stoppers to stop chain swaying. • Remove the affected points. • Replace the sprockets.
Damage to pins, bushes, rollers. Deformation of link plate holes	<ul style="list-style-type: none"> • Inadequate oiling. • jammed foreign bodies. • Corroded components. • Use with greater than allowable load. • Abnormal load action. 	<ul style="list-style-type: none"> • Lubricate properly. • Remove foreign bodies. • Replace with an environment resistant chain series. • Review chain and sprocket selections. • Eliminate the abnormal load. and review chain and sprocket selections.
Overall corrosion Corrosive Wear	<ul style="list-style-type: none"> • Corrosion due to moisture. Acid or alkali. 	<ul style="list-style-type: none"> • Replace with an environment resistant chain series.

The Salient features of SWAJIT Chains

- SWAJIT is an ISO 9001-2008 Certified Company.
- SWAJIT has all infrastructure required for manufacturing of quality chains under one roof i.e. metallurgical laboratory, press shop and state-of-art Heat Treatment facility.
- SWAJIT has achieved higher capacity breaking loads in optimum designs by using special quality Steels, proper metallurgical parameters and state of the art Heat treatment procedures. This results in reduced dead weight of chains, costly inventory and saving in lot of valuable energy.
- SWAJIT chains are manufactured with optimum hardness levels of all parts to reduce wear, tear and elongation of chains.
- Raw material is procured from reputed steel mills which confirms to International metallurgical standards.
- SWAJIT stands at par in quality with International chain manufacturer i.e Ewart, Rexnord, Jaffery, Renold, Hitachi.
- SWAJIT is regular supplier to all reputed factories in India and clients are very much satisfied with the performance of the chains.
- SWAJIT chains have given extra ordinary performance in all the critical operations where other brand chains have failed.
- SWAJIT Pins, Bushes and Rollers are strong because of specified case and core hardness .Case carbon is controlled in carburizing cycle for controlling retained austenite in microstructure with latest technology Further multiple tempering is carried out to reduce remaining retained austenite.
- SWAJIT uses induction hardened pins which are having more case depth then carburized steel which gives more abrasion resistance than the case hardened process. Induction hardening increases fatigue life of components are directly related to case depth and also get more wear resistance then carburized steel. In induction case depth is maintained between 1.5 mm to 4 mm.
- 100% grinding for pin and bushes for better fitment. Link fitting and final chain assembly on hydraulic presses hence less initial elongation.
- Link shaving, broaching and drifting give more bearing area, more contact surface and less elongation.
- SWAJIT links are hardened and toughened. In toughening process free ferrite is controlled less than 5% by keeping proper austenising temperature and sudden quenching, hence it gives more strength and life to chain than any other chains.



SWAJIT Upcoming Developments

Simplex chain



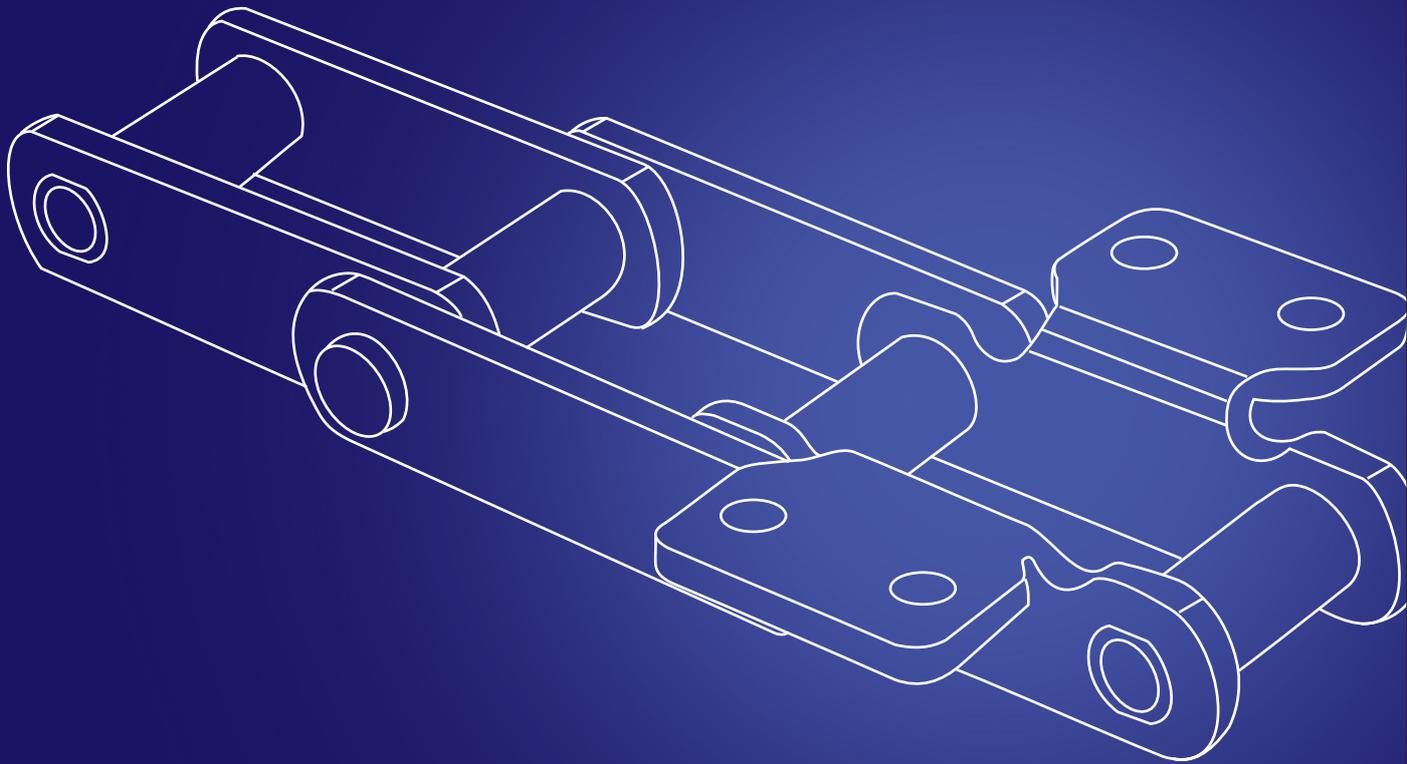
Duplex chain



Triplex chain



Strengthen the power for smooth action.....



Swajit Engineering (P) Ltd.

Sector K-9, M.I.D.C., Waluj, Aurangabad - 431 136. (MS) India.

Tel : +91-240-2554531, 2555031 Fax : +91-240-2555032

E-mail : marketing@swajit.com, ppc@swajit.com

website : www.swajit.com