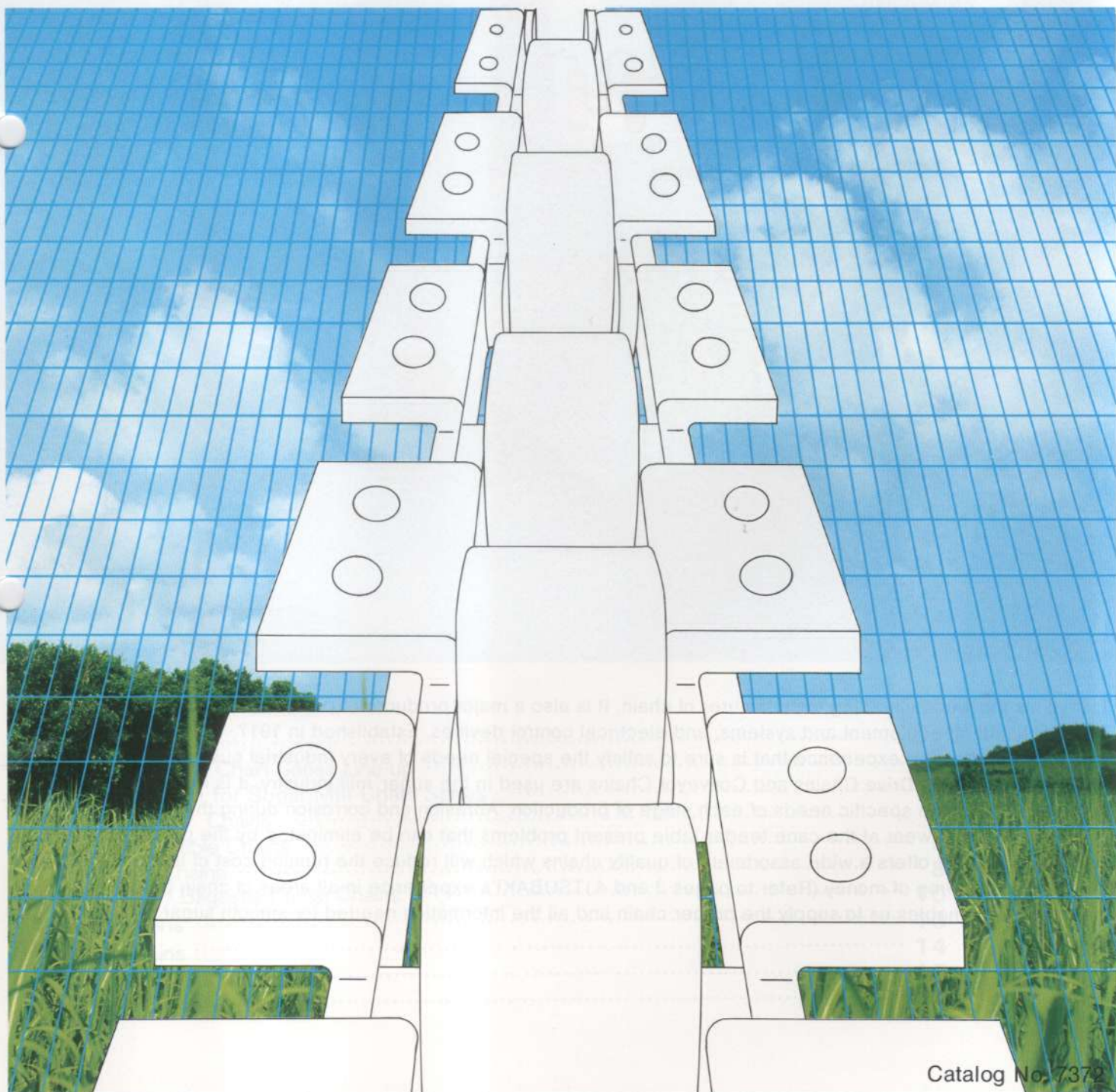




TSUBAKI

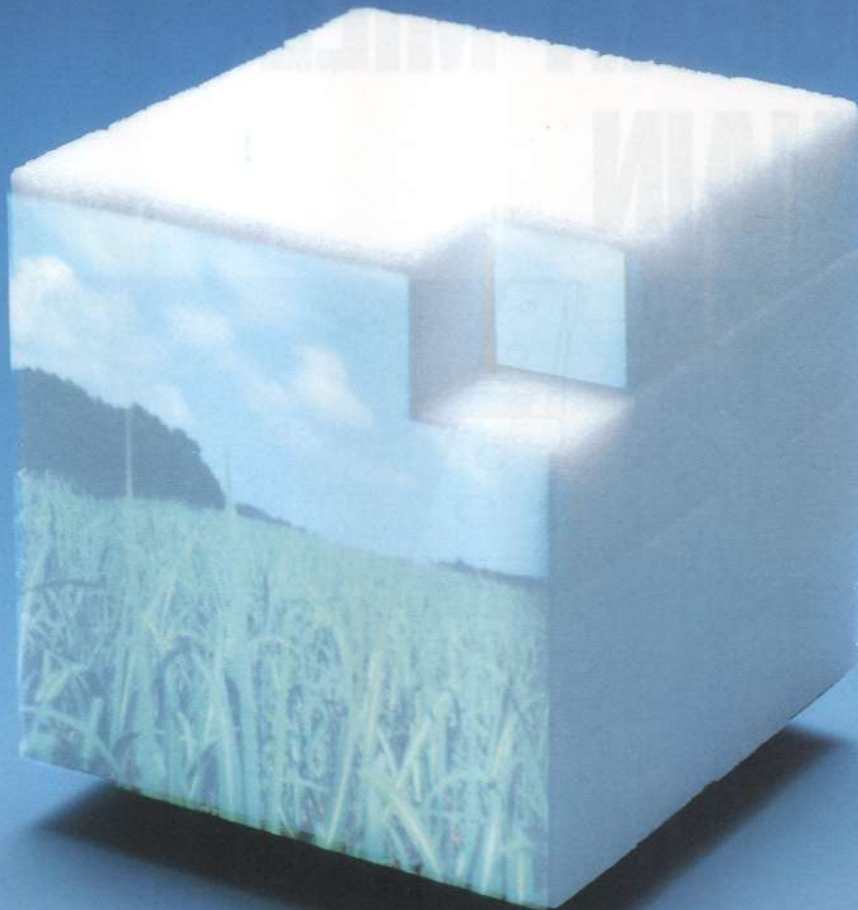
SUGAR MILL

CHAIN



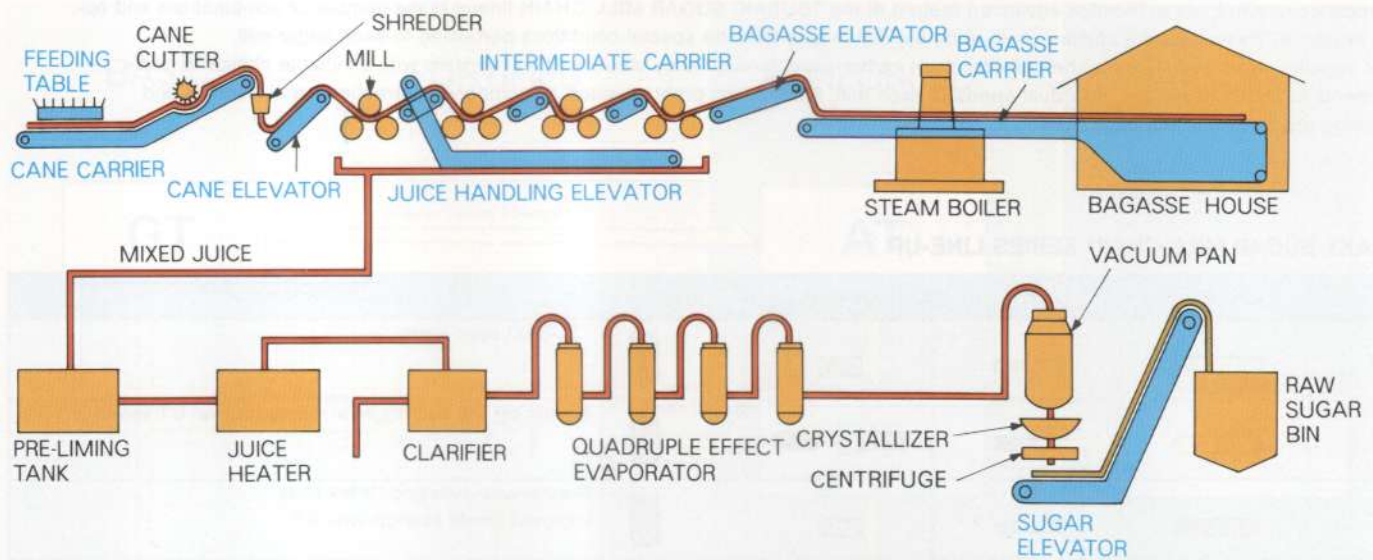
Catalog No. 7372

Tsubaki Sugar Mill Chains- The Link Between the Sugar Cane and the Sugar Cube

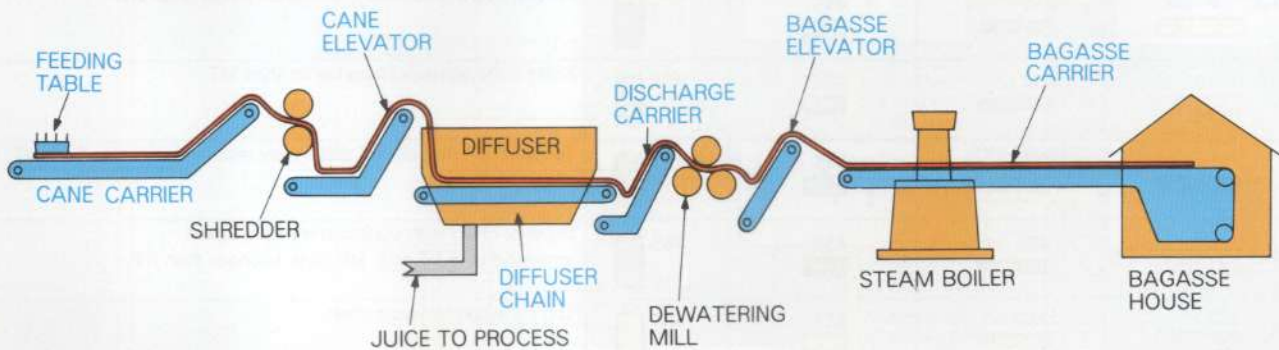


Tsubaki is the world's leading manufacturer of chain. It is also a major producer of power transmission products, material handling equipment and systems, and electrical control devices. Established in 1917, Tsubaki offers a wealth of engineering experience that is sure to satisfy the special needs of every industrial customer. Since many kinds of Drive Chains and Conveyor Chains are used in the sugar mill industry, it is important that the correct chain fits the specific needs of each stage of production. Abrasion and corrosion during the cane washing process and chain wear at the cane feeder table present problems that can be eliminated by the proper choice of chain. TSUBAKI offers a wide assortment of quality chains which will reduce the running cost of the mill and thus enable a saving of money. (Refer to pages 3 and 4.) TSUBAKI's experience in all areas of chain design and manufacturing enables us to supply the proper chain and all the information needed for smooth sugar mill operation.

PROCESS LAYOUT FOR CONVENTIONAL MILL-TYPE SYSTEM



PROCESS LAYOUT FOR MODERN DIFFUSER SYSTEM



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TSUBAKI SUGAR MILL CHAINS

TSUBAKI SUGAR MILL CHAIN SERIES LINEUP

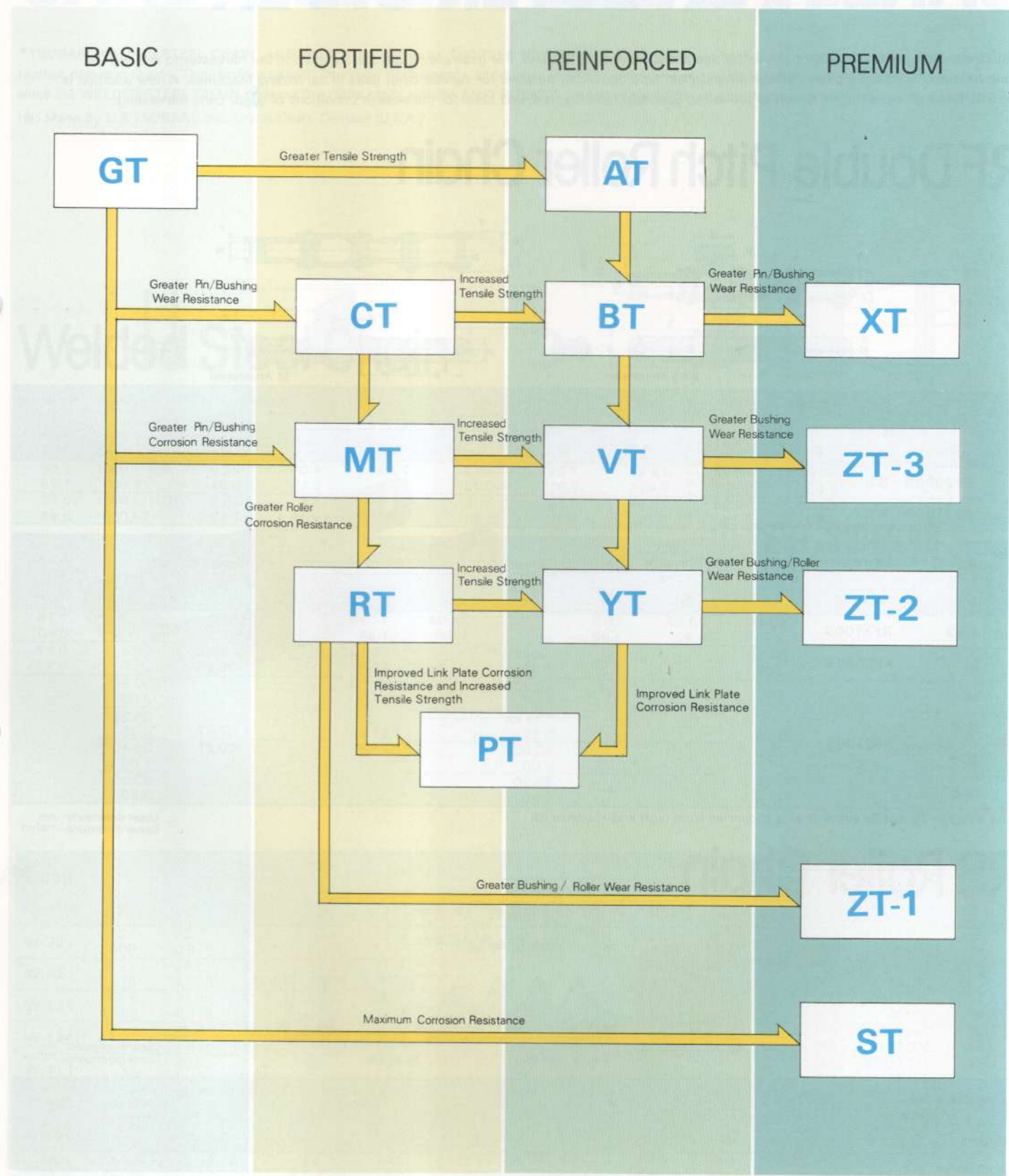
The most convenient, not to mention advanced feature of the TSUBAKI SUGAR MILL CHAIN lineup is the number of combinations and options available. This allows the chosen chain to be exactly in tune with the special conditions pertaining to each sugar mill. Great variation in type of steel can be selected from carbon steel through alloy steel, or stainless steel with a suitable choice of heat-treatments available to suit the individual needs of each mill. Fitting is no problem since all components irrespective of material and hardening are based on standard sizes.

TSUBAKI SUGAR MILL CHAIN SERIES LINE-UP

Series	Link Plate	Pin	Bushing	Roller	Special Characteristics
GT					TSUBAKI basic series.
CT			or		Greater pin and bushing wear resistance than GT series
AT					Greater wear resistance in link plate. Improved tensile strength over GT.
BT					Pin and bushing wear resistance superior to AT
MT					Pin and bushing corrosion resistance better than GT
RT					Roller corrosion resistance better than MT
VT					Tensile strength with link plate wear resistance greater than MT
YT					Superior chain with corrosion resistant rollers improved over VT and link plate stronger than RT
ST					Top corrosion resistant chain
PT					High performance chain with link plate corrosion resistance surpassing RT and YT
ZT-1					Excellent bushing and roller wear resistance better than RT
ZT-2					Excellent bushing and roller wear resistance better than YT Unbeatable strength with link plate tougher than ZT-1
ZT-3					Excellent bushing wear resistance better than VT
XT					Ultra hardened pin and bushing with strengthened link plate

- No mark — Carbon or alloy steel
- 4SS — 400 series stainless steel
- 3SS — 300 series stainless steel
- Non-hardened
- Hardened
- Specially hardened
- Ultra-hardened

FEATURE DIAGRAM FOR SUGAR MILL CHAIN SERIES

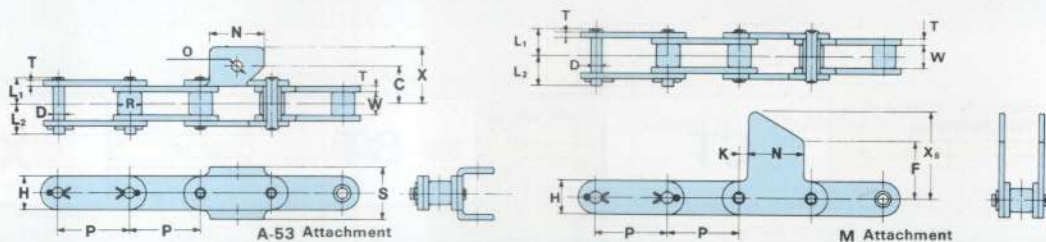


TSUBAKI SUGAR MILL CHAINS

CANE HARVESTER CHAIN

TSUBAKI offers a wide variety of chains for use in the harvesting of cane. For example, RS80 can be used in the harvester to remove the cane tops and RF double pitch chain and hollow pin type chain can be used for various other uses in harvesting machines. A new addition is the TSUBAKI XT series chain which is anti-wear, specially heat-treated, and ideal for the severe conditions of sugar cane harvesting.

RF Double Pitch Roller Chain



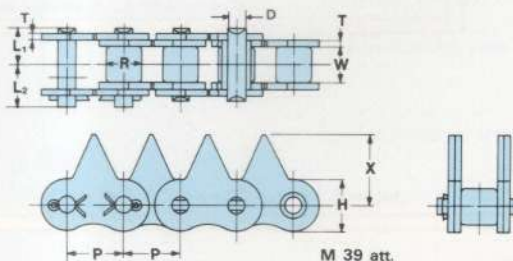
TSUBAKI Chain No.	Tsubaki Standard Specification	Pitch P	Width Between Inner Link Plates W	Roller Dia. R	Pin			Link Plate		Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.
		P	W	R	D	L ₁	L ₂	T	H		
RF2080S	BT	50.80	15.88	15.88	7.94	18.3	20.9	4.0	23.0	69{ 7,000 }	2.66
		2.00	0.625	0.625	0.31	0.72	0.82	0.16	0.91	15,500	1.79
RF2100S	BT	63.50	19.05	19.05	9.54	21.8	24.5	4.8	28.6	109{ 11,000 }	3.99
		2.50	0.75	0.75	0.38	0.86	0.96	0.19	1.13	24,000	2.68

Attachment Style	TSUBAKI	Pitch		Attachment							Additional Mass per Attachment kg/att. lbs./att.
		Chain No.	P	S	X	Xs	C	N	O	K	
A-53	RF2100S	63.50	23.37	50.3		34.04	47.45	9.91			0.18
		2.50	0.92	1.98	—	1.34	1.88	0.39	—	—	0.40
M	RF2080S	50.80			82.55		38.10		6.35	50.8	0.17
		2.00			3.25		1.50		0.25	2.00	0.37
M-4	RF2100S				76.20					50.8	
					3.00					2.00	
M-6	RF2100S				133.25					95.25	
		63.5			5.25		47.75		7.87	3.75	
M-7	RF2100S	2.50			50.80		1.88		0.31	25.40	
					2.00					1.00	
M-8	RF2100S				88.90					63.50	
					3.50					2.50	

The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.

Upper dimensions...mm
Lower dimensions...inches

RS Roller Chain



TSUBAKI Chain No.	Tsubaki Standard Specification	Pitch P	Width Between Inner Link Plates W	Roller Dia. R	Pin			Link Plate		Attachment X	Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.
		P	W	R	D	L ₁	L ₂	H	T			
RS80-M39	BT	25.4	15.88	15.88	7.94	16.25	19.25	24.1	3.2	31.8	32{ 3,300 }	3.68
		1.00	0.625	0.625	0.31	0.64	0.76	0.95	0.13	1.25	8,000	2.48

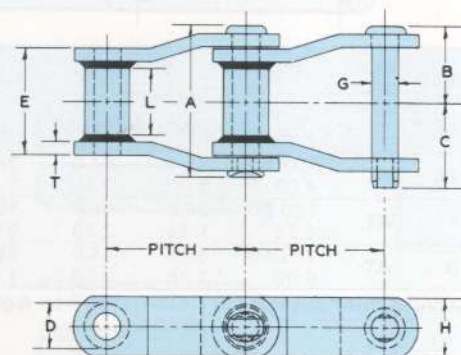
The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.

Upper dimensions...mm
Lower dimensions...inches

CANE FEEDER TABLE CHAIN

*TSUBAKI WELDED STEEL CHAIN, ANSI BUSHED CHAIN and *FORGED RIVETLESS CHAIN for use in cane feeder tables have been designed to replace cast iron chains. They provide greatly improved performance and higher strength, uniformity and durability. The existing sprocket can be used since the WELDED STEEL CHAIN replaces the pintle chain and the ANSI BUSHED CHAIN replaces the combination chain without any change in size.
(※) Made by U.S.TSUBAKI, inc., Union Chain Division (U.S.A.)

Welded Steel Chain



OFFSET SIDEBAR

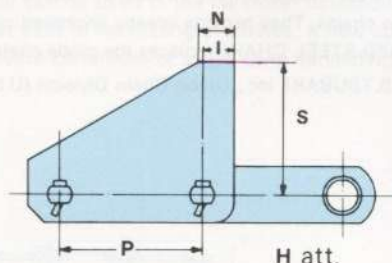
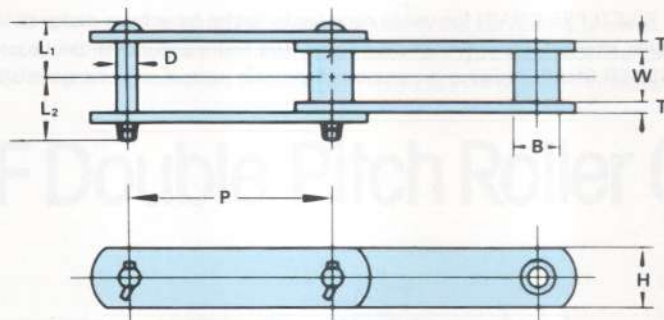
UNION	Pitch	Bushing			Link Plate		Pin				Average Tensile Strength		Approx. Mass
Chain No.	P	D	L	E	H	T	G	A	B	C	Heat treated pins kN (kgf) lbs.	All parts Heat treated kN (kgf) lbs.	kg/m lbs./ft.
W-78	66.27 2.609	22.2 0.875	31.8 1.250	50.8 2.000	28.6 1.125	6.4 0.250	12.7 0.500	73.0 2.875	36.5 1.437	36.5 1.437	111 (11,340) 25,000	147 (14,969) 33,000	6.0 4.0
W-82	78.11 3.075	28.6 1.125	38.1 1.500	57.2 2.250	31.8 1.250	6.4 0.250	14.3 9/16	79.4 3.125	36.5 1.437	45.2 1.781	125 (12,701) 28,000	160 (16,329) 36,000	8.2 5.5
W-124	101.6 4.000	34.9 1.375	41.3 1.625	69.9 2.750	38.1 1.500	9.5 0.375	19.1 0.750	103.2 4-1/16	51.6 2.031	51.6 2.031	205 (20,865) 46,000	267 (27,216) 60,000	12.6 8.5
W-124H	103.2 4.063	41.3 1.625	38.1 1.500	76.2 3.000	50.8 2.000	12.7 0.500	22.2 0.875	115.9 4-9/16	53.2 2.093	62.7 2.469	418 (42,638) 94,000	445 (45,360) 100,000	20.8 14.0
W-111	120.9 4.760	36.5 1.437	57.2 2.250	85.7 3.375	38.1 1.500	9.5 0.375	19.1 0.750	119.1 4-11/16	59.5 2.344	67.5 2.656	205 (20,865) 46,000	267 (27,216) 60,000	13.4 9.0
W-132	153.67 6.050	41.3 1.625	73.0 2.875	111.1 4.375	50.8 2.000	12.7 0.500	25.4 1.000	152.4 6.000	76.2 3.000	77.0 3.031	374 (38,102) 84,000	445 (45,360) 100,000	20.2 13.6
W-150	153.67 6.050	41.3 1.625	73.0 2.875	111.1 4.375	63.5 2.500	12.7 0.500	25.4 1.000	152.4 6.000	76.2 3.000	77.0 3.031	427 (43,545) 96,000	445 (45,360) 100,000	22.8 15.3
W-155	153.67 6.050	44.5 1.750	73.0 2.875	117.5 4.625	63.5 2.500	15.9 0.625	28.6 1.250	165.1 6.500	82.6 3.250	86.5 3.406	641 (65,318) 144,000	818 (83,462) 184,000	29.8 20.0

The Average Tensile Strength (kN) is converted from (lbs.) and rounded off.

Upper dimensions...mm
Lower dimensions...inches

TSUBAKI SUGAR MILL CHAINS

ANSI Bushed Chain



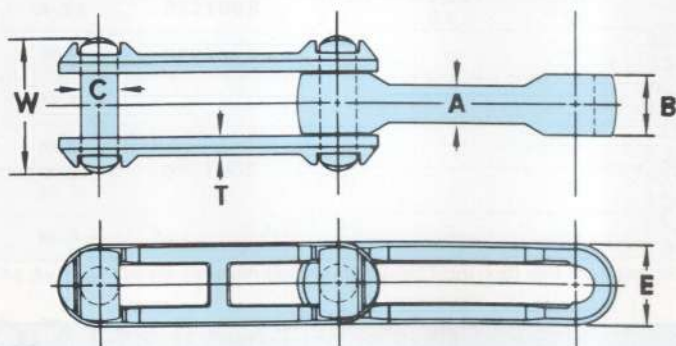
Chain No.	Tsubaki Standard Specification	Pitch	Bushing		Link Plate			Pin		Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.	H Attachment		
		P	B	W	H	T	D	L ₁	L ₂			I	N	S
BF102B	AT	101.60	25.4	54.0	38.1	9.5	15.88	52.5	55.0	186{19,000}	10.5	23.0	25.4	95.2
		4.00	1.00	2.13	1.50	0.37	0.625	2.07	2.17	42,000	7.0	0.91	1.00	3.75
BF111	AT	120.90	36.5	66.7	50.8	9.5	19.05	59.5	66.5	226{23,000}	16.5	27.0	25.4	111.3
		4.76	1.44	2.63	2.00	0.37	0.750	2.34	2.62	50,500	11.0	1.0	1.00	4.38
BF110	AT	152.40	31.8	54.0	38.1	9.5	15.88	52.5	55.0	186{19,000}	9.7	23.0	25.4	108.0
		6.00	1.25	2.13	1.50	0.37	0.625	2.07	2.17	42,000	6.5	0.91	1.00	4.30

The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.

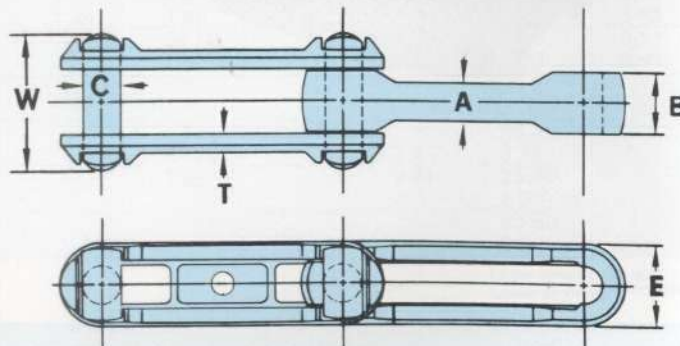
Upper dimensions...mm
Lower dimensions...inches

Forged Rivetless Chain

STANDARD RIVETLESS CHAIN



X STYLE RIVETLESS CHAIN



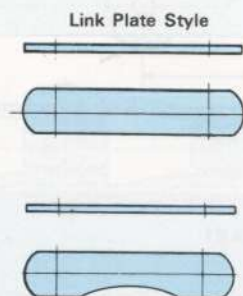
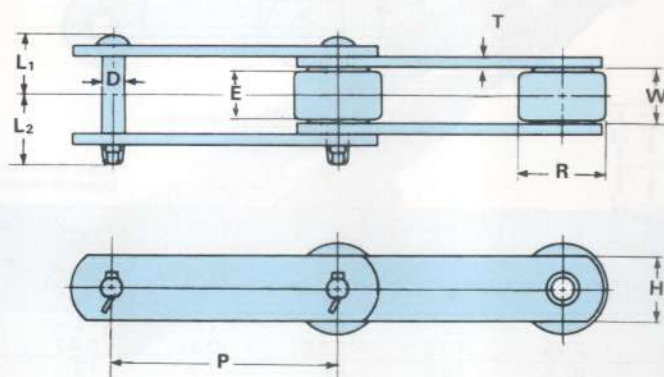
Chain No.	Pitch	Pin		Link Plate			Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.
	P	C	W	B	A	T	E	
X348	76.58	12.7	46.8	19.1	12.7	10.3	27.8	107{10,886}
	3.015	0.500	1-27/32	0.750	0.500	13/32	1-3/32	24,000
X458	102.39	15.9	57.15	25.4	15.9	11.9	34.9	214{21,773}
	4.031	0.625	2-1/4	1.000	0.625	15/32	1.375	48,000
678	153.19	22.2	78.6	33.3	20.6	12.7	50.8	378{38,556}
	6.031	0.875	3-3/32	1-5/16	13/16	0.500	2.000	85,000
X678	153.19	22.2	78.6	33.3	20.6	17.5	25.4	378{38,556}
	6.031	0.875	3-3/32	1-5/16	13/16	11/16	2.000	85,000
698	153.19	28.6	98.4	39.7	25.4	14.3	65.1	578{58,968}
	6.031	1.125	3.875	1-9/16	1.000	9/16	2-9/16	130,000

The Average Tensile Strength (kN) is converted from (lbs.) and rounded off.

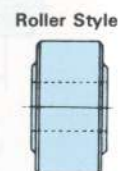
Upper dimensions...mm
Lower dimensions...inches

CANE CARRIER CHAIN

A wide variety of cane carrier chains are available with tensile strengths ranging from 13,000 — 63,500 kgf (28,600 — 139,700 lbs.). These chains have pins, bushings and rollers that provide excellent durability and wear resistance. The link plate of the AT series has been strengthened for extra wear. The ZT-2 series has outstanding corrosion resistant characteristics — it is TSUBAKI's premium chain.



(Only RF2124)



(Only RF205)

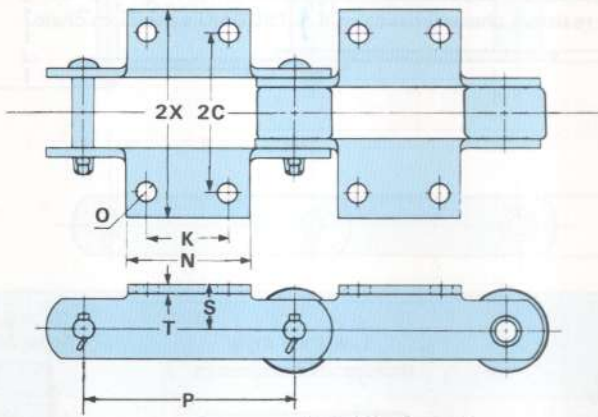
Upper dimensions...mm
Lower dimensions...inches

TSUBAKI Chain No.	Tsubaki Standard Specification	Pitch P	Roller		Pin		Link Plate		Width Between Inner Link plates	Average Tensile Strength kN (kgf) lbs.	Approx Mass kg/m lbs./ft
			E	R	D	L ₁	L ₂	T	H		
RF205	GT	78.11	—	31.8	15.88	40.5	43	7.9	38.1	129{13,000}	10.4
		3.075	—	1.25	0.63	1.59	1.69	0.31	1.50	28,500	7.0
RF2188	GT	101.6	27	44.45	15.88	37.5	40	7.9	38.1	127{13,000}	10.3
		4.000	1.06	1.75	0.63	1.48	1.57	0.31	1.50	28,500	6.9
RF0904	GT	101.6	23.9	50.8	17.5	37.5	43.5	7.9	44.5	177{18,000}	12.1
		4.000	0.94	2.00	0.69	1.48	1.71	0.31	1.75	39,500	8.1
RF1113	GT	102.6	27	50.8	15.88	37.5	40	7.9	38.1	127{13,000}	11.3
		4.039	1.06	2.00	0.63	1.48	1.57	0.31	1.50	28,500	7.6
RF2124	GT	152.4	32.5	69.9	19.05	44.5	51	9.5	50.8	245{25,000}	16.9
		6.000	1.28	2.75	0.75	1.75	2.01	0.37	2.00	55,000	11.3
RF0906	GT	152.4	32.5	69.9	19.05	44.5	51	9.5	50.8	245{25,000}	17.0
		6.000	1.28	2.75	0.75	1.75	2.01	0.37	2.00	55,000	11.4
RF09060	AT	152.4	32.5	69.9	19.05	44.5	51	9.5	50.8	392{40,000}	17.0
		6.000	1.28	2.75	0.75	1.75	2.01	0.37	2.00	88,000	11.4
RF09061	AT	152.4	32.5	69.9	19.05	44.5	51	9.5	57.2	387{39,500}	18.6
		6.000	1.28	2.75	0.75	1.75	2.01	0.37	2.25	87,000	11.9
RF2178A	AT	152.4	33	69.9	22.23	46	51.5	9.5	57.2	490{50,000}	19.2
		6.000	1.30	2.75	0.88	1.81	2.03	0.37	2.25	110,000	12.9
RF2198A	AT	152.4	33	69.9	22.23	52.5	57.5	12.7	57.2	510{52,000}	23.4
		6.000	1.30	2.75	0.88	2.07	2.26	0.50	2.25	115,000	16.1
RF09063	AT	152.4	32	76.2	24	48.5	57.5	10.5	63.5	623{63,500}	23.0
		6.000	1.26	3.00	0.94	1.91	2.26	0.41	2.50	140,000	15.4
RF2315	GT	228.6	38.4	76.2	22.23	49	58	9.5	63.5	314{32,000}	18.8
		9.000	1.51	3.00	0.88	1.93	2.28	0.37	2.50	70,500	12.6
RF2129	GT	228.6	34.5	82.5	19.05	44.5	51	9.5	57.2	294{30,000}	17.4
		9.000	1.36	3.25	0.75	1.75	2.01	0.37	2.25	66,000	11.7

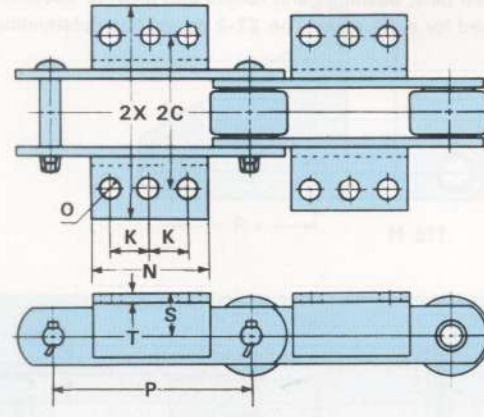
The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.

TSUBAKI SUGAR MILL CHAINS

K-2 Attachment K-3 Attachment



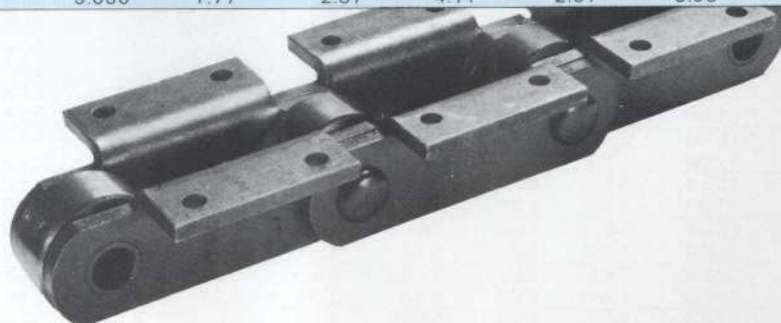
K-2 Attachment



K-3 Attachment

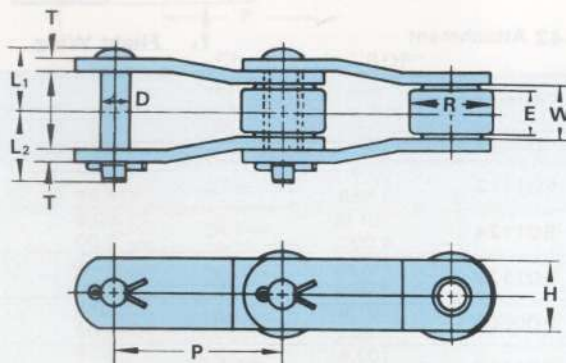
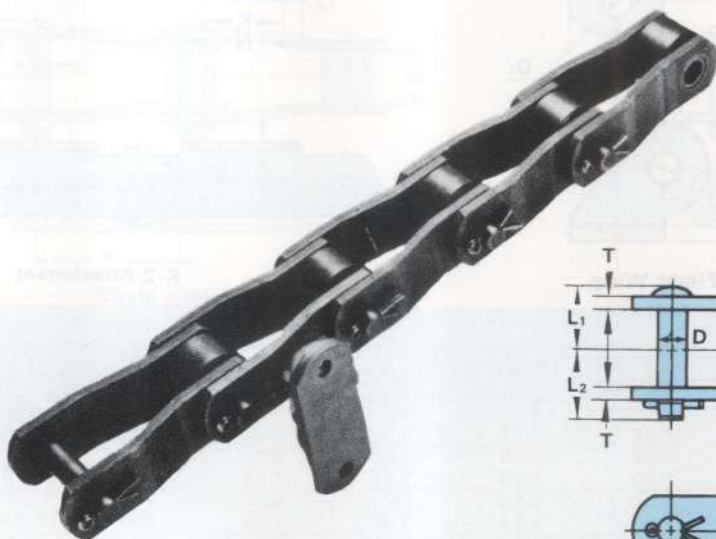
Upper dimensions:···mm
Lower dimensions:···inches

Attachment Style	TSUBAKI Chain No.	Pitch				Attachment				Additional Mass per Attachment kg/att. lbs./att.
		P	S	C	X	K	N	T	O	
K-2	RF205	78.11	35	60	75	30	65	7.9	12	0.50
		3.075	1.38	2.36	2.95	1.18	2.56	0.31	0.47	1.10
	RF0904	101.6	31.8	44.5	62.5	36.6	62	7.9	12	0.35
		4.000	1.25	1.75	2.46	1.44	2.44	0.31	0.47	0.77
	RF1113	102.6	31.8	52.4	67.4	38.1	68	7.9	10	0.40
		4.039	1.25	2.06	2.65	1.50	2.68	0.31	0.39	1.10
	RF2124	152.4	41.5	55.6	73	76.2	120	9.5	16	0.60
		6.000	1.63	2.19	2.87	3.00	4.72	0.37	0.63	1.32
	RF0906	152.4	41.5	55.6	77	76.2	110	9.5	15	0.88
		6.000	1.63	2.19	3.03	3.00	4.33	0.37	0.59	1.94
	RF09060	152.4	41.5	55.6	77	76.2	110	9.5	15	0.88
		6.000	1.63	2.19	3.03	3.00	4.33	0.37	0.59	1.94
	RF09061	152.4	41.5	55.6	84	76.2	110	9.5	15	1.13
		6.000	1.63	2.19	3.31	3.00	4.33	0.37	0.59	2.49
	RF2178A	152.4	41.5	55.6	85	76.2	110	9.5	15	0.90
		6.000	1.63	2.19	3.35	3.00	4.33	0.37	0.59	1.98
K-3	RF2198A	152.4	41.5	55.6	82	76.2	110	12.7	15	1.10
		6.000	1.63	2.19	3.23	3.00	4.33	4.33	0.59	2.42
	RF09063	152.4	44.5	55.6	82.6	76.2	114.3	10.5	15	1.08
		6.000	1.75	2.19	3.25	3.00	4.50	0.41	0.59	2.38
	RF2315	228.6	45	76.2	105.5	139.7	178	9.5	14	1.00
		9.000	1.77	3.00	4.15	5.50	7.01	0.37	0.55	2.20
	RF2129	228.6	45	73	104.5	51	152	9	15	2.80
		9.000	1.77	2.87	4.11	2.01	5.98	0.35	0.59	6.16



INTERMEDIATE AND BAGASSE CARRIER CHAIN

Resistance to both corrosion and wear is essential for intermediate and bagasse carrier chains. TSUBAKI ZT-1 and ZT-2 chains provide all the necessary requirements plus outstanding durability.

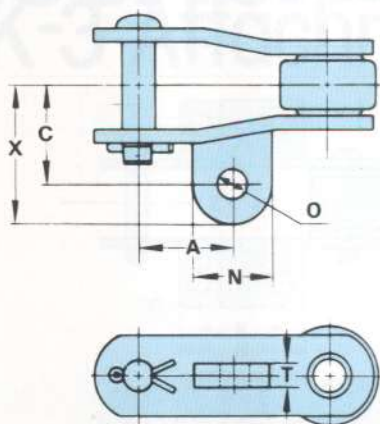


TSUBAKI Chain No.	Tsubaki Standard Specification	Pitch	Width Between Inner Link Plates	Roller		Pin			Link Plate		Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft
		P	W	E	R	D	L ₁	L ₂	T	H		
RO1112	GT	93.7 3.689	27.6 1.09	24 0.94	44.45 1.75	15.88 0.63	33 1.30	35 1.38	6.3 0.25	38.1 1.50	93{ 9,500 } 21,000	9.0 6.0
RO1124	GT	101.6 4.000	32.0 1.26	27 1.06	50.8 2.00	12.7 0.50	36.7 1.44	42.8 1.69	7.9 0.31	38.1 1.50	98{10,000 } 22,000	11.0 7.4
RO1125	GT	101.6 4.000	32.6 1.28	27.1 1.07	50.8 2.00	17.5 0.69	39 1.54	45 1.77	7.9 0.31	44.5 1.75	152{15,500 } 34,000	12.7 8.5
RO0904	GT	101.6 4.000	29.4 1.16	23.9 0.94	50.8 2.00	17.5 0.69	37.5 1.48	43.5 1.71	7.9 0.31	44.5 1.75	177{18,000 } 39,500	12.1 8.1
RO1113	GT	102.6 4.039	37.5 1.48	32 1.26	50.8 2.00	17.5 0.69	38 1.50	45 1.77	6.3 0.25	38.1 1.50	93{ 9,500 } 21,000	10.8 7.2
RO1130	GT	152.4 6.000	37.6 1.48	32 1.26	63.5 2.50	19.05 0.75	38.5 1.52	45.0 1.77	6.3 0.25	50.8 2.00	152{15,500 } 34,000	12.7 8.5
RO2184	GT	152.4 6.000	34.9 1.37	31.8 1.25	76.2 3.00	22.23 0.88	44.5 1.75	49.5 1.95	9.5 0.37	50.8 2.00	196{20,000 } 44,000	18.5 12.4
RO2184A	AT	152.4 6.000	34.9 1.37	31.8 1.25	76.2 3.00	22.23 0.88	44.5 1.75	49.5 1.95	9.5 0.37	50.8 2.00	333{34,000 } 75,000	18.5 12.4
RO0906	GT	152.4 6.000	37.1 1.46	32.5 1.28	69.9 2.75	19.05 0.75	44.5 1.75	51.0 2.01	9.5 0.37	50.8 2.00	245{25,000 } 55,000	16.7 11.2
RO09060	AT	152.4 6.000	37.1 1.46	32.5 1.28	69.9 2.75	19.05 0.75	44.5 1.75	51.0 2.01	9.5 0.37	50.8 2.25	392{40,000 } 88,000	16.7 11.2
RO09061	AT	152.4 6.000	37.1 1.46	32.5 1.28	69.9 2.75	19.05 0.75	44.5 1.75	51.0 2.01	9.5 0.37	57.2 2.25	387{39,500 } 87,000	18.6 12.5
RO2178A	AT	152.4 6.000	38.1 1.50	33 1.30	69.9 2.75	22.23 0.88	46 1.81	51.5 2.03	9.5 0.37	57.2 2.25	446{45,500 } 100,000	19.2 12.9

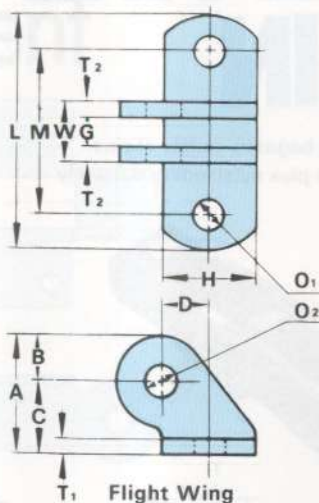
Upper dimensions...mm
Lower dimensions...inches

TSUBAKI SUGAR MILL CHAINS

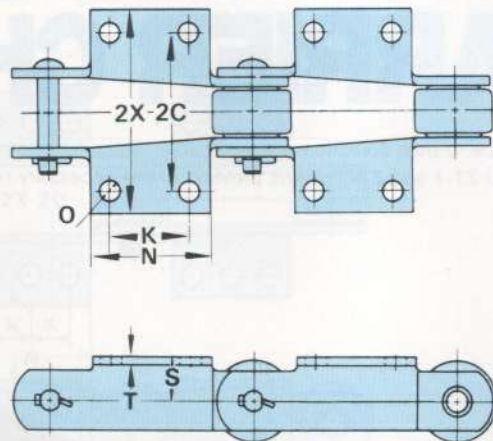
Attachments



A-42 Attachment



Flight Wing



K-2 Attachment

Attachment Style	TSUBAKI		Pitch	Flight Wing No.	Attachment						Additional Mass per Attachment kg/att. lbs./att.
	Chain No.	P			A	C	X	N	O	T	
A-42	RO1112	93.7 3.689	1C		46.8 1.84	44 1.73	59 2.32	31.8 1.25	16.3 0.64	13.5 0.53	0.15 0.33
	RO1124	101.6 4.000			50.8 2.00	50.8 2.00	64.8 2.55	35 1.38	11.1 0.44	10.3 0.41	0.10 0.22
	RO1125	101.6 4.000	0C		50.8 2.00	54.0 2.13	75 2.95	42 1.65	16.3 0.64	12.7 0.50	0.20 0.44
	RO0904	101.6 4.000			50.8 2.00	58.7 2.31	76 3.00	32 1.26	16.3 0.64	12.7 0.50	0.15 0.33
	RO1113	102.6 4.039	1C & 3C		50.8 2.00	60.3 2.37	80.3 3.16	49.6 1.95	16.3 0.64	13.5 0.53	0.30 0.66
	RO1130	152.4 6.000			76.2 3.00	62 2.44	87 3.43	76.2 3.00	16.3 0.64	16 0.63	0.60 1.32
	RO2184	152.4 6.000	2C		76.2 3.00	66.7 2.63	92 3.62	50 1.97	16.3 0.64	16 0.63	0.40 0.88
	RO2184A	152.4 6.000			76.2 3.00	66.7 2.63	92 3.62	50 1.97	16.3 0.64	16 0.63	0.40 0.88
	RO0906	152.4 6.000	5C		76.2 3.00	66.7 2.63	90 3.54	40 1.57	16.3 0.64	16 0.63	0.30 0.66
	RO09060	152.4 6.000			76.2 3.00	66.7 2.63	90 3.54	40 1.57	16.3 0.64	16 0.63	0.30 0.66
	RO09061	152.4 6.000	5C		76.2 3.00	66.7 2.63	90 3.54	40 1.57	16.3 0.64	16 0.63	0.30 0.66

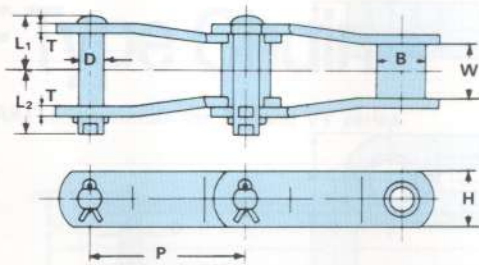
Attachment Style	Flight Wing No.	Attachment												Approx. Mass kg/att. lbs./att	
		A	B	C	D	G	H	L	M	O ₁	O ₂	W	T ₁		T ₂
Flight Wing	0C	49.1	19	30.1	20.6	14.3	44.5	111	84.1	11	16.3	30.1	7.9	7.9	0.50
		1.93	0.75	1.19	0.81	0.56	1.75	4.37	3.31	0.43	0.64	1.19	0.31	0.31	1.10
	1C	64	19	40	25	14.3	50.8	127	88.9	15	16.3	32.3	7.9	9	0.70
		2.32	0.75	1.57	0.98	0.56	2.00	5.00	3.50	0.59	0.64	1.27	0.31	0.35	1.5
	2C	91	24	67	25	17	50.8	127	88.9	15	16.3	35	7.9	9	0.90
		3.58	0.94	2.64	0.98	0.67	2.00	5.00	3.50	0.59	0.64	1.37	0.31	0.35	2.0
	3C	65	24	41	32	14.3	50.8	127	77.8	11	16.3	32.3	7.9	9	0.70
		2.56	0.94	1.61	1.26	0.56	2.00	5.00	3.06	0.43	0.64	1.27	0.31	0.35	1.5
	17C	50	15	35	28	11	44.5	111	76.2	15	11	26.8	7.9	7.9	0.50
		1.97	0.59	1.38	1.10	0.43	1.75	4.37	3.00	0.59	0.43	1.06	0.31	0.31	1.1
	4C	47.6	19	28.6	19	14.3	44.5	111	82.6	11	16.3	32.3	7.9	9	0.50
		1.87	0.75	1.13	0.75	0.56	1.75	4.37	3.25	0.43	0.64	1.27	0.31	0.35	1.1
	5C	59	24	35	25.4	17	50.8	127	84.1	15	16.3	35	7.9	9	0.70
		2.32	0.94	1.38	1.00	0.67	2.00	5.00	3.31	0.59	0.64	1.38	0.31	0.35	1.5

Attachment Style	TSUBAKI		Pitch	Attachment							Approx. Mass kg/att. lbs./att.
	Chain No.	P		S	C	X	K	N	T	O	
K-2	RO2178A	152.4	6.000	41.5	55.6	73	76.2	111.1	9.5	15	0.90
				1.63	2.19	2.87	3.00	4.37	0.37	0.59	1.98

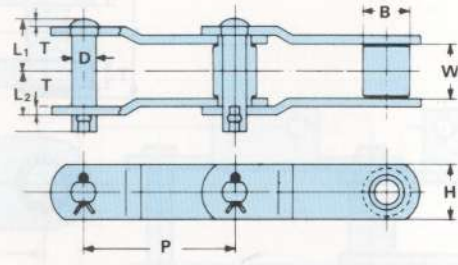
TSUBAKI has developed a new original type of BO series rollerless chain which has been acclaimed for its remarkably long service life in the Bagasse Carrier Process of many modern sugar mills.

TSUBAKI recommends the VT and PT series.

BO/BOP Type Chain



Chain Style "BO"

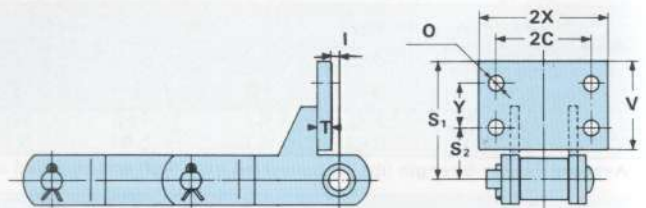


Chain Style "BOP"

Upper dimensions...mm
Lower dimensions...inches

TSUBAKI Chain No.	Chain Style	Tsubaki Standard Specification	Pitch	Average Tensile Strength kN (kgf) lbs.	Approximate Mass kg/m lbs./ft.	Bushings		Pin			Link Plate	
			P			B	W	D	L ₁	L ₂	T	H
BO09060	BO	AT	152.4	304(31,000)	12.5	35	37.1	19.05	44.5	51	9.5	50.8
			6.00	68,500	8.33	1.38	1.46	0.75	1.75	2.01	0.37	2.00
BO2184A	BO	AT	152.4	333(34,000)	13.2	42	34.9	22.23	44.5	49.5	9.5	50.8
			6.00	75,000	8.8	1.65	1.37	0.88	1.75	1.95	0.37	2.00
BOP160	BOP	AT	160	338(34,500)	17.5	48	56	25.4	56	66	9.5	57.2
			6.30	76,000	11.67	1.89	2.20	1.00	2.20	2.60	0.37	2.25
BOP160A	BOP	AT	160	446(45,500)	19.2	48	56	25.4	56	66	9.5	63.5
			6.30	100,000	12.8	1.89	2.20	1.00	2.20	2.60	0.37	2.50
BOP200	BOP	AT	200	338(34,500)	15.5	48	56	25.4	56	66	9.5	57.2
			7.87	76,000	10.3	1.89	2.20	1.00	2.20	2.60	0.37	2.25
BOP200A	BOP	AT	200	446(45,500)	17.4	48	56	25.4	56	66	9.5	63.5
			7.87	100,000	11.6	1.89	2.20	1.00	2.20	2.60	0.37	2.50

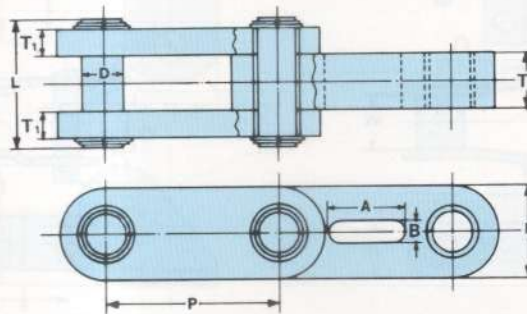
The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.



TSUBAKI Chain No.	Attachment									Additional Mass per Attachment kg/att. lbs./att.
	2C	2X	Y	V	S ₁	S ₂	I	T	O	
BO09060	130	180	65	115	140.4	50.4	8	9	14	2.0
	5.12	7.09	2.56	4.53	5.53	1.98	0.31	0.35	0.55	4.4
BO2184A	140	180	65	115	140.4	50.4	8	9	17	2.0
	5.51	7.09	2.56	4.53	5.53	1.98	0.31	0.35	0.67	4.4
BOP160	108	148	50	102	136	59	10	16	14	3.5
	4.25	5.83	1.97	4.02	5.35	2.32	0.39	0.63	0.55	7.7
BOP160A	108	148	50	102	136	59	20	16	14	3.5
	4.25	5.83	1.97	4.02	5.35	2.32	0.79	0.63	0.55	7.7
BP200	108	148	50	102	136	59	10	16	14	3.5
	4.25	5.83	1.97	4.02	5.35	2.32	0.39	0.63	0.55	7.7
BOP200A	108	148	50	102	136	59	20	16	14	3.5
	4.25	5.83	1.97	4.02	5.35	2.32	0.79	0.63	0.55	7.7

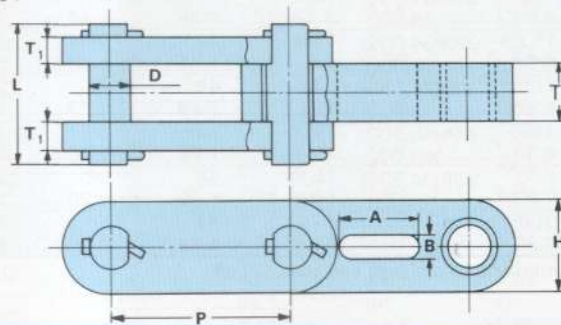
DIFFUSER CHAIN

In order to withstand the corrosive effect of hot acid water, TSUBAKI DIFFUSER CHAINS use tough stainless steel in the principal components to provide high resistance against corrosion and wear. TSUBAKI DIFFUSER CHAINS have successfully been used to improve and increase production in many sugar mills around the world. Not only is the NF BLOCK TYPE CHAIN more economical than the RF type but it is easier to assemble and disassemble.



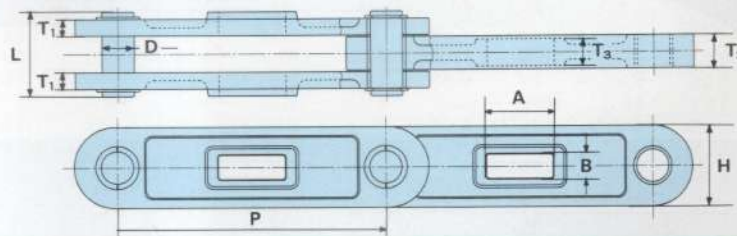
TSUBAKI Chain No.	Chain Type	Tsubaki Standard Specification	Pitch P	Pin			Link Plate				Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.
				D	L	T ₁	T ₂	H	A	B		
NF250	I	VT	250 9.84	47 1.85	161.5 6.36	30 1.18	60 2.36	110 4.33	111 4.37	35 1.38	1720 (175,000) 386,000	52 35

The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.



TSUBAKI Chain No.	Chain Type	Tsubaki Standard Specification	Pitch P	Pin			Link Plate				Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.
				D	L	T ₁	T ₂	H	A	B		
NF250	II	VT	250 9.84	47 1.85	150 5.91	20 0.79	60 2.36	110 4.33	111 4.37	35 1.38	2010 (205,000) 452,000	60 40

The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.



TSUBAKI Chain No.	Chain Type	Tsubaki Standard Specification	Pitch P	Pin			Link Plate				Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.
				D	L	T ₁	T ₂	T ₃	H	A		
NF500			500 19.685	60 2.36	157.5 6.20	31 1.22	62 2.44	50 1.97	150 5.91	125 4.92	2940 (300,000) 661,000	77 52

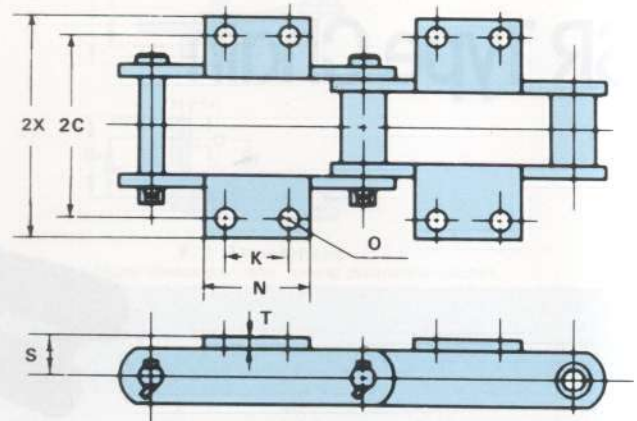
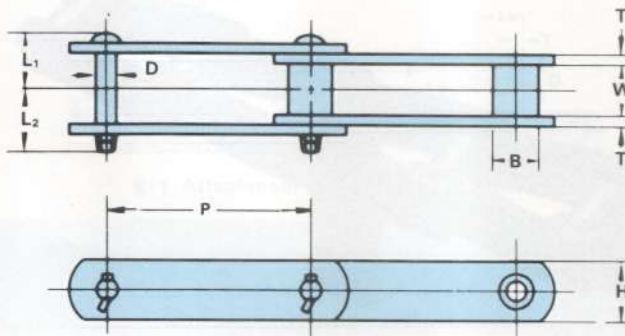
The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.

ELEVATOR CHAIN

TSUBAKI ANSI BUSHED CHAINS for use in elevators and conveyors have been specially designed to offer maximum performance and durability. These high strength chains are compatible with sprockets used for cast iron combination chains.

BF Type Chain

TSUBAKI recommends the BT and VT series.



K-2 att.

TSUBAKI	Tsubaki Standard Specification	Pitch	Bushing		Link Plate		Pin			Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.
Chain No.		P	B	W	H	T	D	L ₁	L ₂		
BF188	AT	66.27	22.2	27.0	28.6	6.3	12.70	32.0	35.0	123{12,500}	5.7
		2.609	0.88	1.06	1.13	0.25	0.50	1.26	1.38	27,500	3.8
BF131	AT	78.11	31.8	33.3	38.1	9.5	15.88	41.5	44.5	186{19,000}	12.0
		3.075	1.25	1.31	1.50	0.37	0.63	1.63	1.75	41,500	8.1
BF102B	AT	101.60	25.4	54.0	38.1	9.5	15.88	52.5	55.0	186{19,000}	10.5
		4.00	1.00	2.13	1.50	0.37	0.625	2.07	2.17	41,500	7.0
BF111	AT	120.90	36.5	66.7	50.8	9.5	19.05	59.5	66.5	226{23,000}	16.5
		4.76	1.44	2.63	2.00	0.37	0.750	2.34	2.62	50,500	11.0
BF110	AT	152.40	31.8	54.0	38.1	9.5	15.88	52.5	55.0	186{19,000}	9.7
		6.00	1.25	2.13	1.50	0.37	0.625	2.07	2.17	41,500	6.5
BF150	AT	153.67	44.5	84.1	63.5	12.7	25.4	76.5	84.5	445{45,500}	25.0
		6.050	1.75	3.31	2.50	0.50	1.00	3.01	3.33	100,000	16.8

Attachment Style	TSUBAKI	Attachment							Additional Mass per Att. kg/att. lbs./att.
	Chain No.	C	K	S	N	X	T	O	
K-2 Att.	BF188	53.2	31.8	20.6	54	65	6.3	9.5	0.2
		2.09	1.35	0.81	2.13	2.56	0.25	0.37	0.4
	BF131	52.4	38.1	28.6	72	67.5	9.5	15.0	0.35
		2.06	1.50	1.13	2.83	2.66	0.37	0.59	0.90
	BF102B	67.5	44.5	25.4	75	82	9.5	11.0	0.4
		2.66	1.75	1.00	2.95	3.23	0.37	0.43	0.9
	BF111	79.4	58.7	38.1	92	97	9.5	15.0	0.75
		3.13	2.31	1.50	3.62	3.82	0.37	0.59	1.65
	BF110	67.5	44.5	25.4	75	82	9.5	11.0	0.45
		2.66	1.75	1.00	2.95	3.23	0.37	0.43	1.0
	BF150	95.3	69.9	47.6	108	116	12.7	15.0	1.3
		3.75	2.75	1.88	4.25	4.57	0.50	0.59	2.9

The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.

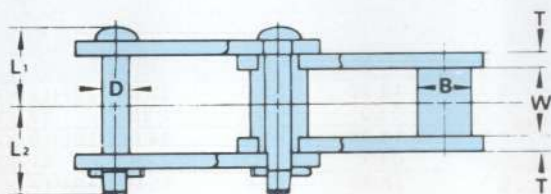
Upper dimensions...mm
Lower dimensions...inches

TSUBAKI SUGAR MILL CHAINS

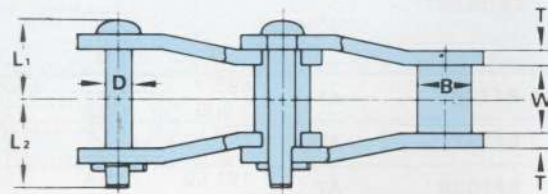
JUICE HANDLING CHAIN

Chains exposed to sugar juice are in perhaps the most corrosive section of the sugar mill. TSUBAKI's SR CHAINS have heat-treated pins and bushings for increased strength and greater durability with more protection against rust and corrosion than the standard cast iron pintle chain. Under severe corrosive conditions, stainless steel pins and bushings are recommended for maximum performance. TSUBAKI recommends the MT, PT and ST series.

SR Type Chain



Chain Style "BF"



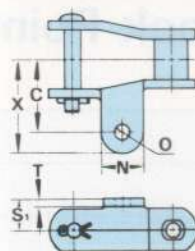
Chain Style "BO"

TSUBAKI Chain No.	Chain Style	Tsubaki Standard Specification	Pitch	Average Tensile Strength kN (kgf) lbs.	Approx. Mass kg/m lbs./ft.	Bushing		Pin			Link Plate	
			P			B	W	D	L ₁	L ₂	T	H
SR234	BF	GT	66.27 2.609	78.5 { 8,000 } 17,500	5.6 3.7	22.58 0.89	27 1.06	11.32 0.45	31 1.22	34.5 1.36	6.3 0.25	28.6 1.13
SR488	BO	GT	66.27 2.609	78.5 { 8,000 } 17,500	5.4 3.6	22.23 0.86	28.6 1.13	11.11 0.44	31.5 0.88	37.5 1.47	6.3 0.25	28.6 1.13
SR4103	BO	GT	78.11 3.075	142 { 14,500 } 32,000	13.2 8.8	31.8 1.25	31.8 1.25	19.05 0.75	39 0.53	45.5 1.80	7.9 0.31	44.5 1.75
SR0340	BO	GT	101.6 4.000	142 { 14,500 } 32,000	11.0 7.3	36.5 1.44	41.3 1.63	15.88 0.63	43.0 1.69	49.5 1.95	7.9 0.31	44.5 1.75
SRH124	BO	GT	101.6 4.000	142 { 14,500 } 32,000	12.9 8.6	36.5 1.44	54 2.13	19.05 0.75	49.5 1.95	57 2.25	7.9 0.31	44.5 1.75

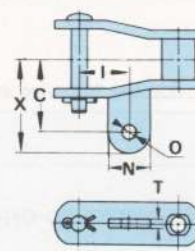
The Average Tensile Strength (lbs.) is converted from (kgf) and rounded off.

Upper dimensions...mm
Lower dimensions...inches

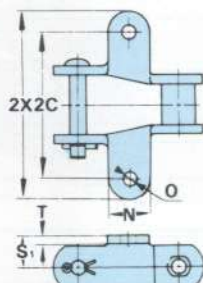
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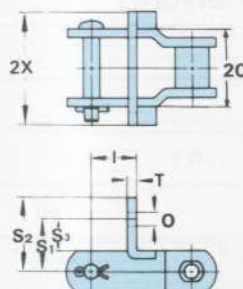
A-1 Attachment



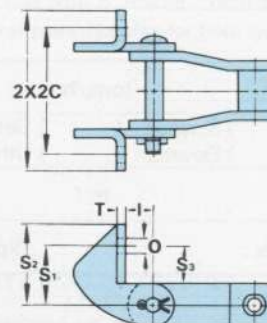
A-42 Attachment



K-1 Attachment



F-2 Attachment (SR488)



F-2 Attachment

Upper dimensions...mm Lower dimensions...inches

Attachment Style	TSUBAKI Chain No.	Pitch	Attachment						Additional Mass per Att. kg/att. lbs./att.
			S ₁	C	O	X	N	T	
A-1	SR488	66.27	21.4	48.4	7	64.3	28.6	6.3	0.08
		2.609	0.84	1.91	0.28	2.53	1.13	0.25	0.18

Attachment Style	TSUBAKI Chain No.	Pitch	Attachment						Additional Mass per Att. kg/att. lbs./att.
			C	O	X	N	I	T	
A-42	SR0340	101.6	55.56	11.1	71.5	31.8	50.8	10	0.11
		4.000	2.19	0.44	2.81	1.25	2	0.39	0.24

Attachment Style	TSUBAKI Chain No.	Pitch	Attachment						Additional Mass per Att. kg/att. lbs./att.
			S ₁	C	O	X	N	T	
K-1	SR488	66.27	21.4	48.4	7	64.3	28.6	6.3	0.16
		2.609	0.84	1.91	0.28	2.53	1.13	0.25	0.35

Attachment Style	TSUBAKI	Pitch	Attachment								Additional Mass per Att. kg/att. lbs./att.
			S ₁	S ₂	S ₃	C	O	X	I	T	
F-2	SR488	66.27	35	50	20.7	25.8	9.5	37.5	30	6.0	0.14
		2.609	1.38	1.97	0.81	1.02	0.37	1.48	1.18	0.23	0.30
	SR4103	78.11	57.75	79.3	35.5	57.1	13.5	75.8	28	7.9	0.90
		3.075	2.27	3.12	1.40	2.25	0.53	2.98	1.10	0.31	2.00
	SRH124	101.6	47.75	72.8	25.4	68	12	83	30.1	7.9	0.90
		4.000	1.88	2.87	1	2.68	0.47	3.27	1.19	0.31	2.00

TSUBAKI SUGAR MILL CHAINS

Check Points

For the best selection, please provide the following information:

1. Material handled :	
2. Abrasion factor :	
3. Corrosion factor :	
4. Characteristics : () Dry () Wet	
5. Density :	kg/m ³ () lbs./cu.ft.)
6. Capacity : Max	tons/hr.
7. Type of Conveyor : () Scraper, () Slat () Elevator, () Others _____	
8. Center distance :	m () ft.)
9. Number of chain strands :	Spacing : m () ft)
10. Chain speed :	m/min. () ft./min.)
11. Required breaking load of chain :	kN/str. { kgf/str. } (lbs./str.)
12. Chain pitch :	mm () inch)
13. Attachment : Attachment style	(Attachment spacing pitches)
14. Mass of the moving parts :	kg/m () lbs./ft.)
15. Drives :	kW () HP)
16. Sprocket number of teeth : Head	Tail
17. Layout sketch	

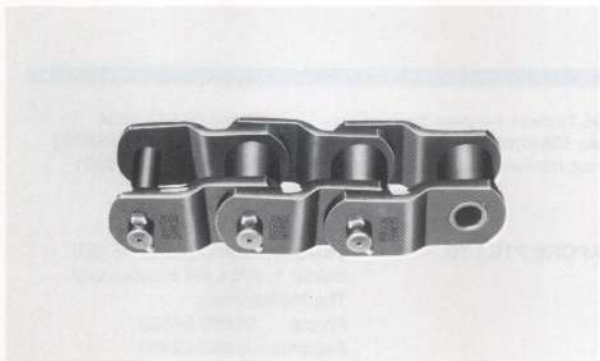
In case of replacement :

1. Brand of existing chain : Manufactured by	
2. Chain No. :	
3. Attachment :	(Attachment spacing : pitches)
4. Breaking load :	kN { kgf } (lbs.)
5. Chain pitch :	mm () inch.)
6. Chain life :	years () seasons)
7. Weakest component parts : () Pin, () Bushing, () Roller, () Others _____	
8. Cause of replacement : () Wear, () Corrosion, () Others _____	



ANSI and BRITISH STANDARD CHAINS

Single and multiple strand Tsubaki standard roller chains conform to ANSI (American National Standards Institute). Tsubaki British standard chain conforms to ISO type B, BS228 : 1970 and DIN8187. Stainless steel and nickel plated chains for both types are available.



RO TYPE HEAVY DUTY ROLLER CHAINS

Tsubaki RO chain is designed for use in the heavy-duty construction field.



TSUBAKI SHOCK RELAY

The TSUBAKI SHOCK RELAY is a unique electronic safety device which detects motor overload current and automatically cuts off the power to ensure safe operation and protection from shock load to a conveyor system.



TSUBAKI BS SERIES CAM CLUTCHES

Cam Clutches are generally used in backstops for bucket elevators to protect machinery and equipment from damage which could result from reversing of the drive shaft. TSUBAKI BS SERIES CAM CLUTCHES are recommended for back stop applications on bucket elevators.

Check Points

For the best selection, please refer to the following information.

1. Material: Hardened
2. Material: Steel
3. Material: Cast Iron
4. Chain: 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 7 1/2", 8", 8 1/2", 9", 9 1/2", 10", 11", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100"
5. Chain: 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 7 1/2", 8", 8 1/2", 9", 9 1/2", 10", 11", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100"
6. Chain: 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 7 1/2", 8", 8 1/2", 9", 9 1/2", 10", 11", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100"
7. Chain: 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 7 1/2", 8", 8 1/2", 9", 9 1/2", 10", 11", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100"
8. Chain: 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 7 1/2", 8", 8 1/2", 9", 9 1/2", 10", 11", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100"
9. Chain: 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 7 1/2", 8", 8 1/2", 9", 9 1/2", 10", 11", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100"
10. Chain: 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 7 1/2", 8", 8 1/2", 9", 9 1/2", 10", 11", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100"



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