



Recycling & Waste Management

Product Catalog

Powering a Sustainable Future with Tsubaki

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Recycling is the cornerstone of a greener, more sustainable world, and Tsubaki is proud to empower this vital industry with innovative, high-quality power transmission and motion control solutions. Since 1917, Tsubaki has been a trusted global leader in engineering and manufacturing, offering a wide range of products—from small-pitch roller chains and large engineering-class chains to sprockets, conveyors, and advanced motion control systems.

With 83 locations and 46 manufacturing facilities worldwide, Tsubaki combines global reach with localized expertise, positioning us as the definitive solution provider for even the toughest challenge

Recycling environments are demanding, pushing equipment to its limits with harsh conditions and high-performance requirements.

Tsubaki’s advanced engineering solutions are specifically designed to excel under these pressures, delivering unmatched reliability, efficiency, and value-added performance. Backed by decades of proven success and unrivaled field engineering expertise, we understand the unique demands of the recycling industry and tailor solutions to meet its specific operational needs.

At Tsubaki, we don’t just provide exceptional products—we build enduring partnerships grounded in shared innovation and a vision for a sustainable tomorrow.

When it comes to recycling, Tsubaki is your trusted partner for success, offering solutions that drive efficiency, reliability, and environmental responsibility.



Explore this catalogue to discover how Tsubaki’s industry-leading solutions can help your operations thrive in even the toughest conditions.

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Powering Your Every Need

Tsubaki's wide range of power transmission and motion control products are here for your various operational needs. From the simplest to the most complicated applications, we have the right product for you. Quality is guaranteed. Expect to get maximum performance from any of our products.

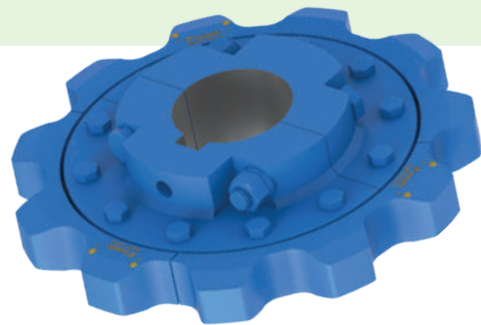
Roller Chains

Challenging applications require the most innovative problem solvers. From carbon to alloy steel, to corrosion resistance, lube-free and harsh environment duty, Tsubaki has the problem solver for all of your challenging roller chain applications.



Sprockets

It has to be precise and strong. Extensive design, engineering, and manufacturing capability allows us to produce a wide variety of Made-To-Order (MTO) sprocket products for a multitude of applications. From one-off custom to high volume OEM sprocket requirements, Tsubaki has you covered.



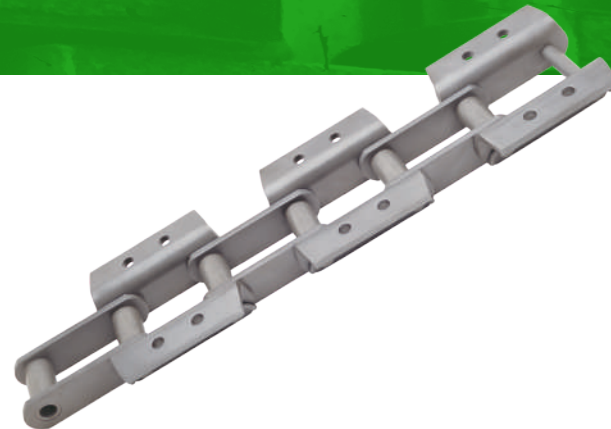
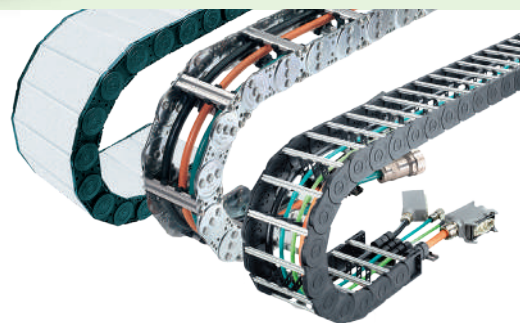
Power Transmission Components and Backstops

Quality designs and features are key when it comes to clutches and backstops. From preventing reverse rotations to overheating, Tsubaki clutches and backstops are designed to outperform the competition. With a variety of innovative power transmission solutions from overload protection to keyless shaft mounting devices to custom zip chain lifters, Tsubaki has your solution.



Cable & Hose Carriers

It is not a one-size-fits all solution. Not all applications can be solved by one type of carrier. Tsubaki KabelSchlepp's cable & hose carriers come in nylon, steel and hybrid materials. Whether you have an extremely heavy cable package or an ultra long travel length, we have the perfect carrier for you.



Engineering Class Conveyor Chains

Proudly manufactured in Sandusky, Ohio since 1917, Tsubaki's Engineering Class Drive Chains represent over 100 years of uncompromising quality and innovation. Designed for maximum strength and endurance, our chains are crafted from premium materials to withstand extreme loads and abrasive conditions. From heavy-duty conveyors to mission-critical applications, these chains are trusted worldwide for consistent power transfer, long wear life, and field-proven durability. Backed by expert engineering support, Tsubaki delivers the performance you need—where it matters most.

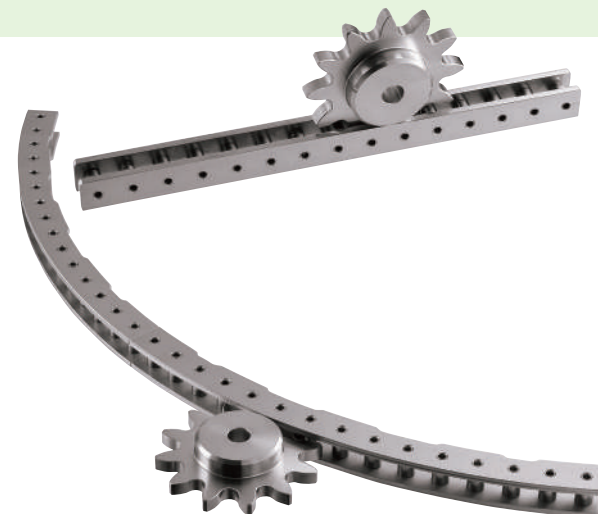
Flexible Couplings

Engineered for performance, ATRA-FLEX® flexible shaft couplings feature elastomeric inserts that absorb shock, dampen vibration, and accommodate misalignment with zero metal-to-metal contact. Designed for demanding power transmission environments, these couplings require no lubrication and minimal maintenance—making them ideal for operations seeking to reduce downtime and standardize solutions across applications. When reliability and simplicity are non-negotiable, ATRA-FLEX delivers.



Pin Gear Drive Units

Tsubaki Pin Gear Drive Units redefine motion control with an innovative segmented design and precision-engineered tooth profile—perfect for both rotational and linear applications. Ideal for replacing traditional racks or large ring gears, these modular units offer space-saving efficiency, easy maintenance, and scalable torque performance. Whether powering large-scale equipment or automating complex machinery, Tsubaki's Pin Gear Drive Units provide the advanced solution you didn't know you needed—until now.





Market Leading Innovation

Innovation Excellence is synonymous with the Tsubaki brand. Each and every day Tsubaki strives to develop unique, effective solutions for our customers most demanding applications. This unwavering dedication to innovation continuously redefines what is possible, allowing our customers to maximize their productivity and overall operational reliability.

ENGINEERING CONVEYOR CHAIN

Tsubaki's Engineering Conveyor Chain represents the most common and universal class of chain. Tsubaki is proud to offer a premium, well diversified portfolio.

Pins

- Alloy or premium grade carbon steel.
- Heat treated for superior strength and toughness.
 - Core – Through hardened for superior impact resistance.
 - Surface – Induction hardened for extended wear resistance.
- Precision manufactured to maintain high interference fit with sidebars.
 - Prevents pin rotation and subsequent sidebar wear.

Bushings

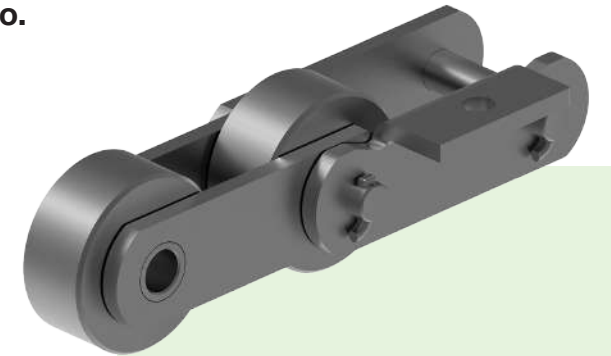
- Alloy or premium grade carbon steel.
- Heat treated for superior strength.
 - Core – Through hardened for toughness and impact.
 - Surface – Case hardened for the ultimate in extended wear resistance.
- Precision machined to maintain smooth bearing surfaces and high interference fit with sidebars.
 - Favorable residual stresses resist fatigue and promote extended life.

Sidebars

- Premium carbon steel.
- Optional heat treated sidebars available.
- High quality hole finish increases fatigue resistance.
 - Favorable residual stresses resist fatigue and allow for extended life.

Rollers

- Alloy or premium grade carbon steel.
- Through hardened for superior strength, toughness and the ability to withstand high shock loads.

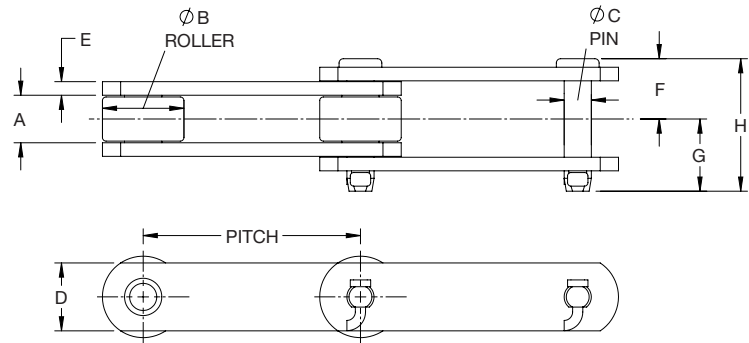


Typical Applications

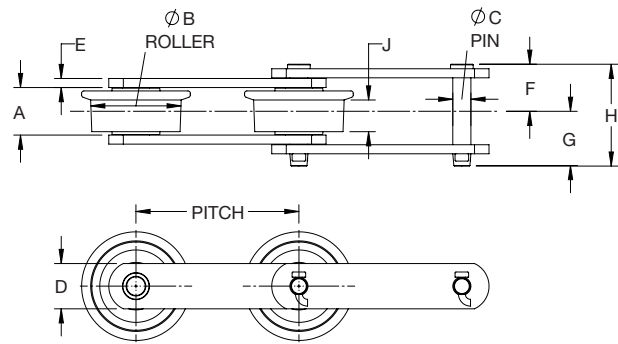
- Conveyors
- Optical Scanner
- Magnetic Separator
- Eddy Current Separator
- Tire Crusher Granulation Crumbing

ENGINEERING CONVEYOR CHAINS

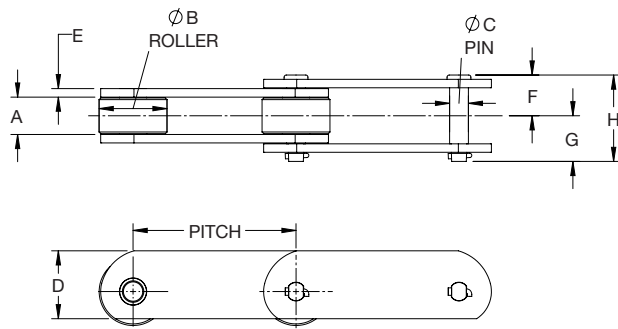
Chain Number	Pitch	Style	DIMENSIONS									AUS (Lbs)	Max Working Load (Lbs)
			Inside Width	Roller Diameter	Pin Diameter	Sidebar Height	Sidebar Thickness	Pin Head to CL	Pin End to CL	Overall Width	Tread Width		
			A	B	C	D	E	F	G	H	J		
89R	4.000	4	1.31	2.25	0.62	1.50	0.38	1.59	1.88	3.47	-	28,000	4,500
84R	4.000	4	2.31	2.25	0.62	1.50	0.38	2.08	2.39	4.47	-	28,000	4,700
94R	4.000	4	0.88	1.50	0.50	1.25	0.25	1.11	1.33	2.44	-	19,000	2,400
CC5	6.000	6	1.38	2.50	0.69	2.50	0.31	1.50	1.66	3.16	-	50,000	4,800
610R	6.000	4	1.69	2.75	0.88	2.25	0.38	1.81	2.19	4.00	-	45,000	7,450
B964R	9.000	5	2.25	4.00	0.88	2.50	0.38	2.16	2.47	4.63	1.50	75,000	9,200



STYLE 4



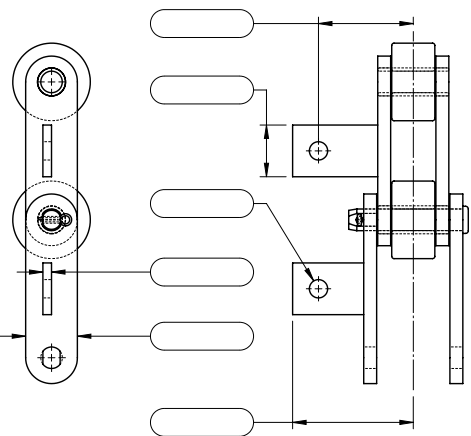
STYLE 5



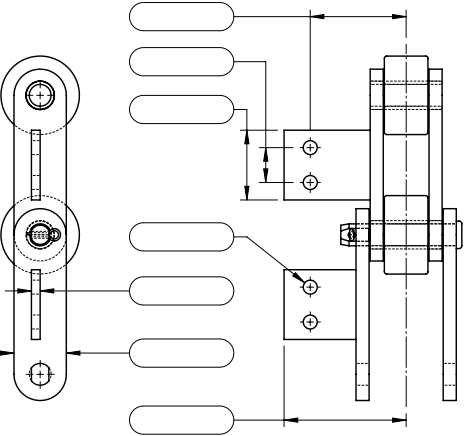
STYLE 6

ENGINEERING CLASS ATTACHMENT DIMENSIONAL SHEET

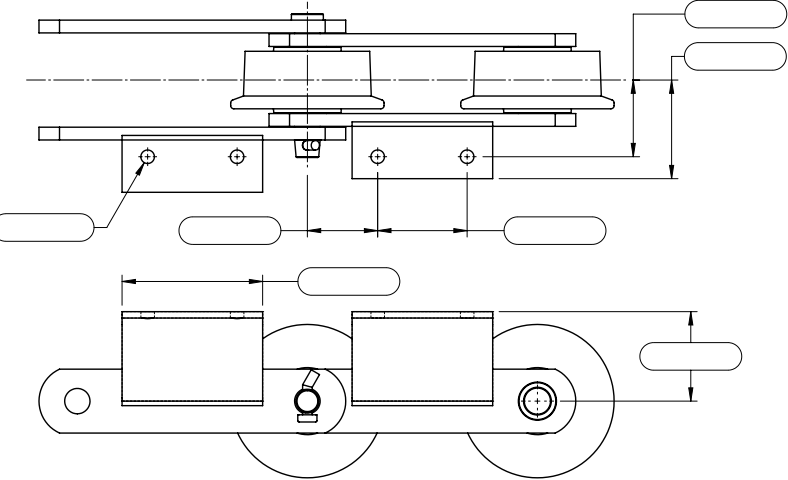
A11 Attachment Form



A22 Attachment Form

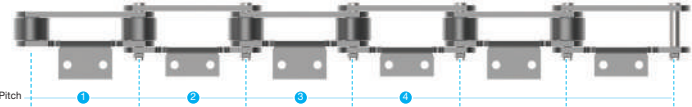


Angled Steel A2 Attachment Form

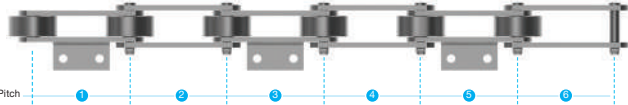


Attachment Spacing Nomenclature Examples

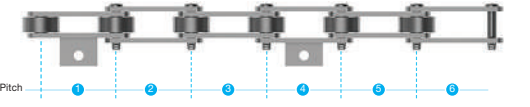
Attachment on Every Pitch (1L)



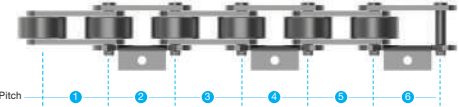
Even Attachment Spacing on Block Link Pitch (2L)



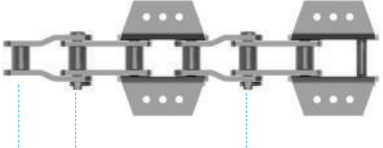
Odd Attachment Spacing on Block Link and Pin Link Pitches (3L)



Even Attachment Spacing on Pin Link Pitch (2L)

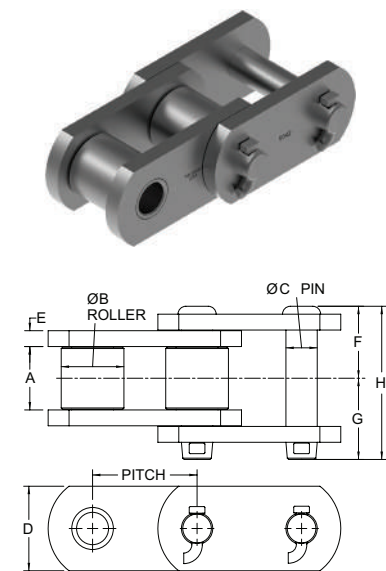


Odd Attachment Spacing on Pin Link Pitch, Utilizing Offsets (3L)

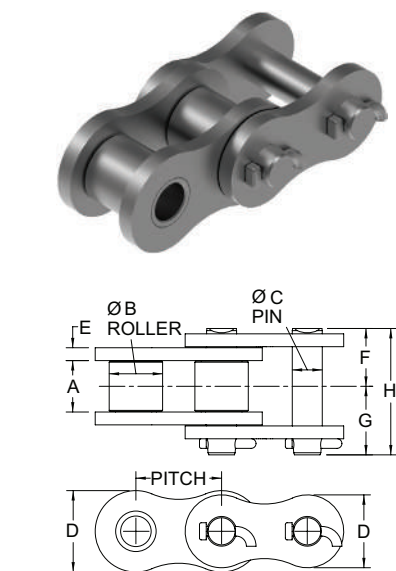


STRAIGHT SIDEBAR

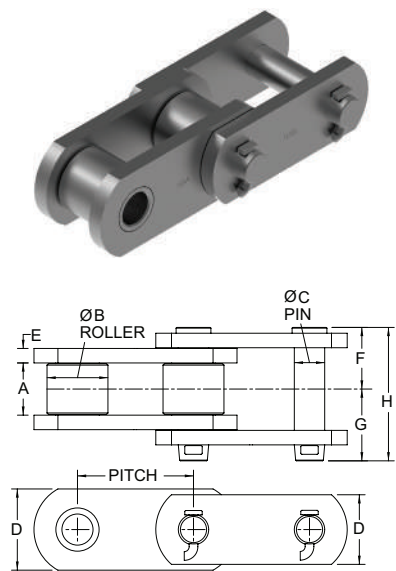
Style 1



Style 2

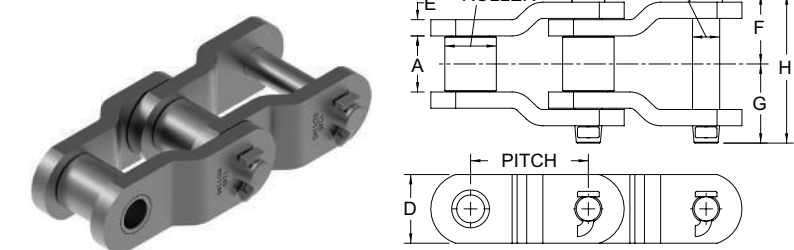


Style 3

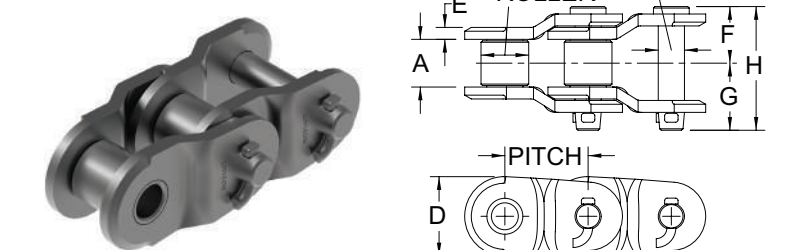


Straight Sidebar

Style 1



Style 2



Chain life is only as good as the sprocket that drives it, so maximize your operation with **Engineering Class Sprockets** from **Tsubaki**.

ENGINEERING CLASS DRIVE CHAINS & SPROCKETS MUST WORK TOGETHER

So buying them from the same source makes sense. When chains and sprockets articulate correctly, you get longer service life from your chain. That means long-term savings and real value for your operation.

COMMON ASPHALT DRIVE CHAIN INTERCHANGE DATA

Tsubaki Part Number	Pitch	Allied Locke	Renold/ Jeffery	Link Belt	Rexnord
US-1030	3.075	----	JS1030	RO40	1030
US-1031	3.075	MXS1031	JS1031	RO1031	R1033
US-1242	4.063	MXS1242	JS4014	LXS1242M	R1248
US-1245	4.073	MXS1245	JS1245A	RO3315	RX1245
US-2065	2.000	MXS2065	IS2065R	RO3160S	B3113
US-3011	3.067	MXS3011	JS3011	RO2512	AX1568
US-3075	3.075	MXS3075	JS3075	RO40HYPER	R1037
US-3514	3.500	MXS3514	JS3514	RO2814	RX238
US-4522	4.500	MXS4522	IS4522	RO3618	RO635
US-5031	5.000	MXS5031	JS5031	RO4020	RO1207
US-5035	5.000	MXS5035	1605AAA		RO1315
US-5042	5.000	---	---		
US-5542	5.500	MXS5542	---		RO1356
US-6042	6.000	MXS6042	JS6042	RO4824	RX1306
US-6066	6.000	MXS6066	---		
US-882	2.609	MXS882	JS882	LSX882	R588

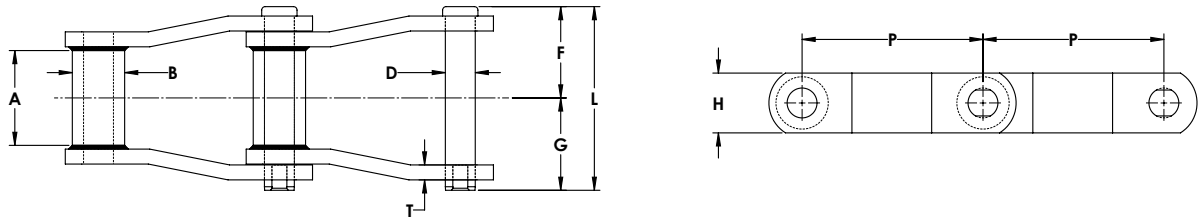
	Chain Number	Pitch	Sidebar Style ¹	DIMENSIONS										STOCKED LENGTH		Tsubaki Average Ult. Stgth. (lbs.)	Max Working Load (lbs.)	Approx. Weight (lbs./ft.)
				Inside Width	Roller Dia.	Roller Mat. ²	Pin Dia.	Pin Mat. ²	Sidebar Height	Sidebar Thickness	Sidebar Mat. ²	Pin Head to CL (L1)	Pin End to CL (L2)	Pitch	Feet			
				A	B		C		D	E		F	G					
O F F S E T S I D E B A R	US-2065	2.000	1	1.270	1.130	AHT	0.590	AHTIH	1.630	0.310	AHT	1.440	1.690	60	10.000	65,000	4,000	7.6
	RO-3140	1.750	2	1.000	1.000	AHT	0.550	AHT	1.700	0.250	AHT	1.190	1.410	69	10.000	57,000	2,800	6.5
	RO-3160	2.000	1	1.250	1.130	AHT	0.540	AHT	1.940	0.250	AHT	1.310	1.530	60	10.000	67,300	3,450	6.7
	RO-3180	2.250	2	1.440	1.410	AHT	0.690	AHT	2.130	0.280	AHT	1.470	1.740	53	10.000	80,000	4,800	9.6
	RO-25H	2.500	1	1.500	1.250	AHT	0.650	AHTIH	1.630	0.380	AHT	1.710	1.960	48	10.000	87,000	4,900	9.2
	520RX	2.563	1	1.060	1.130	CHT	0.500	CHT	1.250	0.250	CHT	1.220	1.440	47	10.000	25,000	2,800	4.8
	US-882	2.609	1	1.130	0.880	AHT	0.440	AHT	1.130	0.250	CHT	1.250	1.440	46	10.000	26,000	2,500	3.6
	US-3011	3.067	1	1.560	1.630	AHT	0.750	AHTIH	2.250	0.380	AHT	1.750	2.130	39	10.000	110,000	6,100	12.0
	US-1030	3.075	1	1.500	1.250	AHT	0.630	AHTIH	1.500	0.310	HC	1.560	1.840	39	10.000	28,000	4,650	7.0
	US-1031	3.075	1	1.500	1.250	AHT	0.630	AHTIH	1.500	0.310	CHT	1.590	1.840	39	10.000	48,000	4,650	7.0
	US-3075	3.075	1	1.500	1.250	AHT	0.650	AHTIH	1.750	0.380	AHT	1.720	2.000	39	10.00	75,000	5,100	9.6
	US-3514	3.500	1	1.500	1.750	AHT	0.880	AHTIH	2.250	0.500	AHT	2.030	2.380	34	9.900	140,000	7,700	16.1
	US-1241	4.063	1	1.940	1.750	AHT	0.880	AHTIH	2.250	0.500	AHT	2.250	2.560	30	10.200	112,000	9,000	16.3
	US-1242	4.063	1	1.940	1.750	AHT	0.880	AHTIH	2.250	0.500	AHT	2.250	2.560	30	10.200	140,000	9,000	16.1
	US-1245	4.073	1	1.940	1.780	AHT	0.940	AHTIH	2.380	0.560	AHT	2.380	2.750	30	10.200	170,000	10,100	18.0
	US-4121	4.090	1	1.940	1.880	AHT	1.000	AHTIH	2.750	0.560	AHT	2.380	2.750	30	10.200	210,000	10,700	13.6
	US-4122	4.090	1	1.940	2.000	AHT	1.100	AHTIH	2.750	0.560	AHT	2.380	2.750	30	10.200	235,000	11,700	14.0
	US-4522	4.500	1	2.060	2.250	AHT	1.100	AHTIH	3.000	0.560	AHT	2.450	2.880	27	10.100	220,000	12,300	25.4
	US-5031	5.000	1	2.750	2.500	AHT	1.250	AHTIH	3.500	0.630	AHT	3.060	3.380	24	10.000	310,000	17,500	34.0
	US-5035	5.000	1	2.560	2.500	AHT	1.380	AHTIH	3.500	0.750	AHT	3.080	3.510	24	10.000	350,000	19,600	38.1
US-5542	5.500	1	3.000	3.000	AHT	1.500	AHTIH	4.000	0.750	AHT	3.410	3.850	62	28.400	420,000	23,600	49.1	
US-5738	5.750	1	3.000	3.000	AHT	1.500	AHTIH	4.000	0.690	AHT	3.310	3.690	21	10.100	380,000	23,000	46.0	
US-6042	6.000	1	3.000	3.000	AHT	1.500	AHTIH	4.000	0.750	AHT	3.410	3.850	20	10.000	420,000	23,600	45.0	
US-6066	6.000	1	3.000	—	—	1.750	AHTIH	4.750	0.750	AHT	3.550	3.830	57	28.500	600,000	27,600	51.7	
S T R A I G H T	US-64S	2.500	2	1.500	1.560	AHT	0.880	AHT	2.130	0.380	AHT	1.690	2.000	48	10.000	125,000	6,900	13.1
	344SXX	3.000	1	1.940	1.780	AHT	0.940	AHTIH	2.380	0.560	AHT	2.380	2.750	40	10.000	170,000	10,050	22.0
	US-4031	4.000	1	2.750	2.500	AHT	1.250	AHTIH	3.500	0.630	AHT	2.910	3.340	30	10.000	310,000	17,500	40.0
	US-1353	4.090	3	2.190	2.630	AHT	1.310	AHTIH	3.500	0.630	AHT	2.660	3.090	30	10.200	210,000	16,000	37.6
	US-5042	5.000	1	3.000	3.000	AHT	1.500	AHTIH	4.000	0.750	AHT	3.410	3.850	24	10.000	420,000	23,600	53.0
	US-6566	6.500	1	3.190	3.500	AHT	1.750	AHTIH	6.000	0.880	AHT	3.950	4.360	36	19.500	600,000	30,600	71.1

Indicates chain is normally stocked. All others made to order.

1 - Styles on previous page. All Pin Styles above are K=Full round; Contact Tsubaki for A=Double flat.
2- Material: HC=High carbon; CHT=Carbon heat treated; AHT= Alloy heat treated; AHTIH=Alloy heat treated and induction hardened; CCH=Carbon case hardened; ACH=Alloy case hardened.

All dimensions in inches unless otherwise stated.

WELDED STEEL CHAINS



WH - All Parts Heat Treated (Standard)

Chain Number	Pitch	Style	Inside Width	Barrell Diameter	Pin Diameter	Sidebar Height	Sidebar Thickness	Pin Head to CL	Pin End to CL	Overall Width	AUS (Lbs)	Max Working Load (Lbs)
	P		A	B/R	D/G	F/D	E/T	F	G	H/L		
WH78	2.609	OFFSET	1.00	0.84	0.50	1.25	0.38			3.00	33,000	5,500
WH82	3.075	OFFSET	1.13	1.00	0.56	1.25	0.38			3.24	36,000	6,000
WH124	4.000	OFFSET	1.50	1.25	0.75	1.50	0.25			4.50	57,000	9,500
WH106	6.000	OFFSET	1.50	1.25	0.75	1.50	0.38			4.25	60,250	12,000
WH132	6.050	OFFSET	2.75	1.75	1.00	2.00	0.31			6.14	122,000	20,300
WH157	6.050	OFFSET	2.75	1.75	1.13	2.50	0.38			6.63	175,350	29,225

WH - IBR- All parts Heat Treated, Induction Hardened Barrels and Rivets

Chain Number	Pitch	Style	Inside Width	Barrell Diameter	Pin Diameter	Sidebar Height	Sidebar Thickness	Pin Head to CL	Pin End to CL	Overall Width	AUS (Lbs)	Max Working Load (Lbs)
	P		A	B/R	D/G	F/D	E/T	F	G	H/L		
WH78IBR	2.609	OFFSET	1.00	0.84	0.50	1.25	0.38			3.00	33,000	5,500
WH82IBR	3.075	OFFSET	1.13	1.00	0.56	1.25	0.38			3.24	36,000	6,000
WH124IBR	4.000	OFFSET	1.50	1.25	0.75	1.50	0.25			4.50	57,000	9,500
WH132IBR	6.050	OFFSET	2.75	1.75	1.00	2.00	0.31			6.14	122,000	20,300
WH157IBR	6.050	OFFSET	2.75	1.75	1.13	2.50	0.38			6.63	175,350	29,225

WH - XHD - All Parts Heat Treated, Extra Heavy Duty

Chain Number	Pitch	Style	Inside Width	Barrell Diameter	Pin Diameter	Sidebar Height	Sidebar Thickness	Pin Head to CL	Pin End to CL	Overall Width	AUS (Lbs)	Max Working Load (Lbs)
	P		A	B/R	D/G	F/D	E/T	F	G	H/L		
WH78XHD	2.636	OFFSET	1.00	1.00	0.56	1.25	0.38			3.37	54,000	6,000
WH82XHD	3.075	OFFSET	1.13	1.25	0.75	1.50	0.38			3.75	57,100	9,500
WH124XHD	4.063	OFFSET	1.50	1.75	1.00	2.00	0.50			4.87	122,000	20,400
WH106XHD	6.050	OFFSET	1.50	1.75	1.00	2.00	0.50			4.87	122,000	20,400
WH132XHD	6.050	OFFSET	2.75	1.75	1.00	2.00	0.63			6.75	123,650	20,400

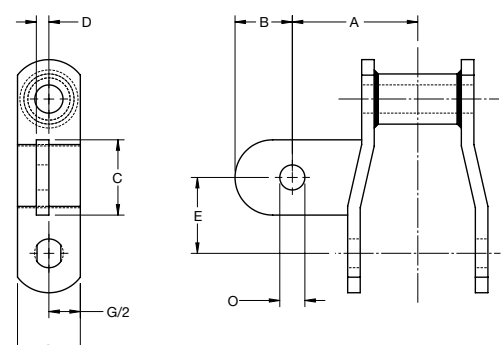
WH - XHD - IBR - All Parts Heat Treated, Extra Heavy Duty, Induction Hardened Barrels and Rivets

Chain Number	Pitch	Style	Inside Width	Barrell Diameter	Pin Diameter	Sidebar Height	Sidebar Thickness	Pin Head to CL	Pin End to CL	Overall Width	AUS (Lbs)	Max Working Load (Lbs)
	P		A	B/R	D/G	F/D	E/T	F	G	H/L		
WH106XHDIBR	4.063	OFFSET	1.50	1.75	1.00	2.00	0.50			4.87	122,000	20,400
WH124XHDIBR	6.050	OFFSET	1.50	1.75	1.00	2.00	0.50			4.87	122,000	20,400
WH132XHDIBR	6.050	OFFSET	2.75	1.75	1.00	2.00	0.63			6.75	123,650	20,400

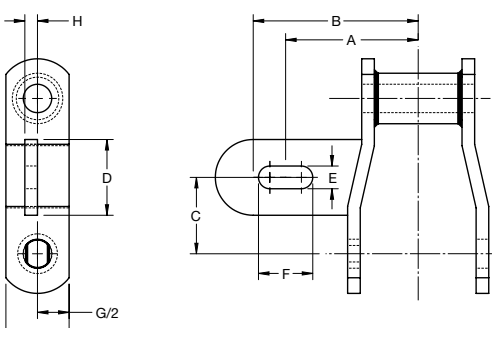
All dimensions in inches unless otherwise stated.

A22 Attachment							A22 Slotted Attachment								
Chain Number	A	B	C	D	E	O	Chain Number	A	B	C	D	E	F	G	H
WH78	2.000	0.63	1.25	0.25	1.25	0.44	WH124	4	5 15/16	1 3/4	2	13/16	1 1/2	1 1/2	1/2
WH78XHD	2.125	0.75	1.25	0.38	1.25	0.44	WH124XHD	4 1/8	6 1/16	1 3/4	2	13/16	1 1/2	2	1/2
WH124	3.000	0.88	1.75	0.38	2.00	0.56	WH132	4 1/2	6 1/4	3	2	13/16	1 1/2	2	1/2
WH124XHD	3.125	1.00	1.75	0.50	2.00	0.56	WH132XHD	4 5/8	6 3/8	3	2 1/2	13/16	1 1/4	2	1/2
WH132	4.250	1.00	1.75	0.50	3.00	0.81	All options are available in "IBR" Series, with Induction Hardened Barrels & Rivets. Tabular dimensions and weights are approximate and non-binding. Design improvements may result in variations to published figures. Verification is recommended.								
WH132XHD	4.250	1.00	2.00	0.63	3.00	0.81									

A22 Attachment



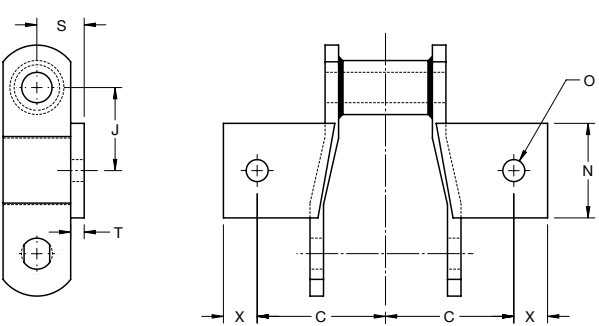
A22 Slotted Attachment



All dimensions in inches unless otherwise stated.

K-1 ATTACHMENT							
Chain Number	C	J	N	O	S	T	X
WH78	2.00	1.25	1.25	0.38	0.88	0.25	0.50
WH78XHD	2.00	1.25	1.25	0.38	0.88	0.25	0.50
WH82	2.38	1.50	1.75	0.38	0.88	0.25	0.63
WH82XHD	2.38	1.50	1.75	0.38	1.13	0.38	0.63
WH124	2.63	2.00	1.75	0.38	1.13	0.38	0.63
WH124XHD	2.63	2.00	1.75	0.50	1.50	0.50	0.75
WH111	3.13	2.13	1.75	0.38	1.25	0.38	0.63
WH132	3.75	3.00	2.00	0.50	1.50	0.50	0.88
WH132XHD	3.75	3.00	2.00	0.50	1.50	0.50	0.88

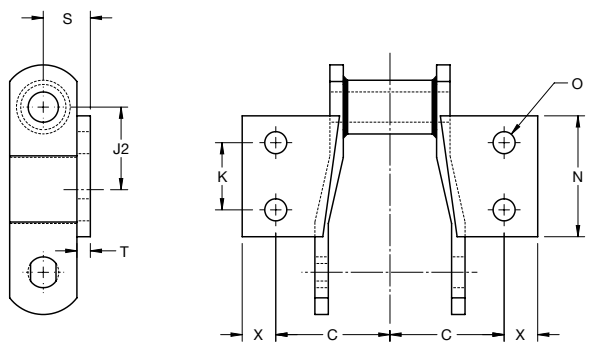
K-1 Attachment



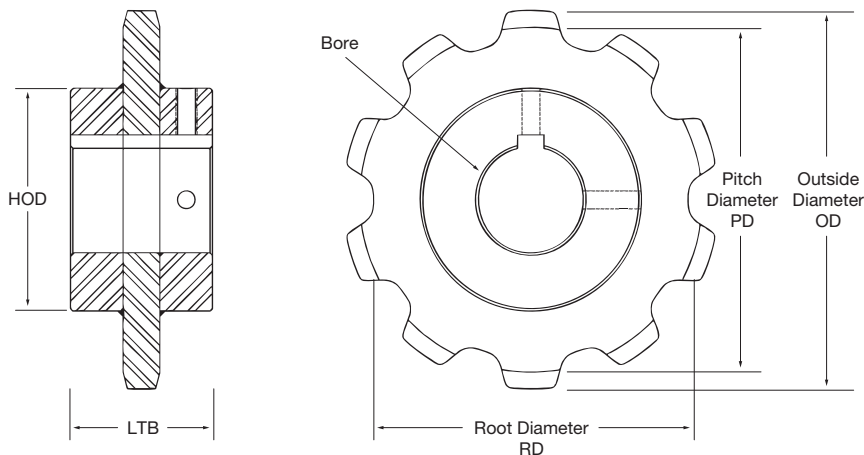
All dimensions in inches unless otherwise stated.

K-2 ATTACHMENT								
Chain Number	C	J2	N	K	O	S	T	X
WH78	2.00	0.81	2.13	1.13	0.38	0.88	0.25	0.50
WH78XHD	2.00	0.81	2.13	1.13	0.38	0.88	0.25	0.50
WH82	2.13	0.50	2.25	1.25	0.38	0.88	0.25	0.63
WH82XHD	2.38	0.50	2.25	1.25	0.38	1.13	0.38	0.63
WH124	2.63	0.88	3.00	1.94	0.38	1.13	0.38	0.63
WH124XHD	2.63	0.88	4.00	1.94	0.50	1.50	0.50	0.75
WH111	3.13	1.00	4.00	2.31	0.38	1.25	0.38	0.75
WH132	3.75	1.63	4.25	2.75	0.50	1.50	0.50	0.75
WH132XHD	3.75	1.63	4.25	2.75	0.50	1.50	0.50	0.88
WH150	3.75	1.63	4.25	2.75	0.50	1.75	0.50	0.88

K-2 Attachment



ENGINEERING CLASS SPROCKETS



84R - 4.000 PITCH

2.250 Roller Diameter
1.750 Plate Thickness

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	11.157	10.453	8.203	84RA8	1.750	1.500	43	84RC8	1.500	3.940	6.500	5.000	71
9	12.490	11.695	9.445	84RA9	1.750	1.500	53	84RC9	1.500	3.940	6.500	5.000	81
10	13.811	12.944	10.694	84RA10	1.750	1.500	63	84RC10	1.500	3.940	6.500	5.000	93
11	15.123	14.198	11.948	84RA11	1.750	1.500	79	84RC11	1.500	3.940	6.500	5.000	107
12	16.428	15.455	13.205	84RA12	1.750	1.500	93	84RC12	1.500	3.940	6.500	5.000	121

89R - 4.000 PITCH

2.250 Roller Diameter
1.125 Plate Thickness

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	11.157	10.453	8.203	89RA8	1.125	1.500	27	89RC8	1.500	3.440	5.500	4.250	46
9	12.490	11.695	9.445	89RA9	1.125	1.500	34	89RC9	1.500	3.440	5.500	4.250	53
10	13.811	12.944	10.694	89RA10	1.125	1.500	42	89RC10	1.500	3.440	5.500	4.250	61
11	15.123	14.198	11.948	89RA11	1.125	1.500	51	89RC11	1.500	3.440	5.500	4.250	70
12	16.428	15.455	13.205	89RA12	1.125	1.500	60	89RC12	1.500	3.440	5.500	4.250	79

94R - 4.000 PITCH

1.500 Roller Diameter
0.750 Plate Thickness

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	11.157	10.453	8.953	94RA8	0.750	1.250	18	94RC8	1.250	3.190	5.250	3.880	36
9	12.490	11.695	10.195	94RA9	0.750	1.250	23	94RC9	1.250	3.190	5.250	3.880	40
10	13.811	12.944	11.444	94RA10	0.750	1.250	28	94RC10	1.250	3.190	5.250	3.880	45
11	15.123	14.198	12.698	94RA11	0.750	1.250	34	94RC11	1.250	3.190	5.250	3.880	51
12	16.428	15.455	13.955	94RA12	0.750	1.250	40	94RC12	1.250	3.190	5.250	3.880	57

ENGINEERING CLASS SPROCKETS

CC5 - 6.000 PITCH

2.500 Roller Diameter
1.125 Plate Thickness

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
6	12.392	12.000	9.500	CC5A6	1.125	1.500	36	CC5C6	1.500	3.440	4.250	3.880	55
7	14.459	13.829	11.329	CC5A7	1.125	1.500	48	CC5C7	1.500	3.440	4.250	3.880	67
8	16.485	15.679	13.179	CC5A8	1.125	1.500	62	CC5C8	1.500	3.940	5.000	3.880	96
9	18.485	17.543	15.043	CC5A9	1.125	1.500	77	CC5C9	1.500	3.940	5.000	3.880	111
10	20.466	19.416	16.916	CC5A10	1.125	1.500	95	CC5C10	1.500	3.940	5.000	3.880	129
11	22.434	21.297	18.797	CC5A11	1.125	1.500	114	CC5C11	1.500	3.940	5.000	3.880	148
12	24.392	23.182	20.682	CC5A12	1.125	1.500	135	CC5C12	1.500	3.940	5.000	3.880	169

610R - 6.000 PITCH

2.750 Roller Diameter
1.250 Plate Thickness

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	16.485	15.679	12.929	610RA8	1.250	1.500	69	610RC8	1.500	4.440	6.000	3.880	117
9	18.485	17.543	14.793	610RA9	1.250	1.500	86	610RC9	1.500	4.440	6.000	3.880	135
10	20.466	19.416	16.666	610RA10	1.250	1.500	105	610RC10	1.500	4.440	6.000	3.880	154
11	22.434	21.297	18.547	610RA11	1.250	1.500	126	610RC11	1.500	5.440	6.250	3.880	193
12	24.392	23.182	20.432	610RA12	1.250	1.500	150	610RC12	1.500	5.440	6.250	3.880	216

B964R - 9.000 PITCH

4.000 Roller Diameter
1.250 Plate Thickness

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	24.228	23.518	19.518	B964RA8	1.250	1.500	154	B964RC8	1.500	5.940	9.000	6.500	117
9	27.227	26.314	22.314	B964RA9	1.250	1.500	193	B964RC9	1.500	5.940	9.000	6.500	135
10	30.199	29.125	25.125	B964RA10	1.250	1.500	219	B964RC10	1.500	5.940	9.000	6.500	154
11	33.151	31.945	27.945	B964RA11	1.250	1.500	249	B964RC11	1.500	5.940	9.000	6.500	193
12	36.088	34.773	30.773	B964RA12	1.250	1.500	286	B964RC12	1.500	5.940	9.000	6.500	216

ENGINEERING CLASS SPROCKETS

Sprocket Construction Types /Styles



- Solid**
- Solid plate, welded to solid hub.
 - A basic, economic construction.



- Split**
- Split plate, split hub.
 - A basic construction that allows for easier installation – can remove without removing shaft.



- Segmented**
- Solid plate welded to hub with bolt on segments.
 - An innovative construction that allows for easy segment replacement—can remove without removing shaft or hub body.



- Segmented / Split**
- A split plate/hub with bolt on segments.
 - Ultimate flexibility – Segment or hub body can be easily serviced/replaced without removing shaft.



- Hunting Tooth**
- A unique construction that allows for extended service life.
 - Hunting tooth sprockets have an odd number of teeth and are half the pitch of the mating chain. Every time the sprocket makes a revolution, the chain engages with one set of teeth, ahead of the previously engaged set. Hence, each sprocket tooth only sees engagement every other rotation.



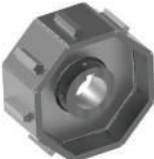
- Double Duty**
- An innovative construction that allows for extended service life.
 - Double Duty sprockets are double cut and have an even number of teeth. Utilizing strategic, manual indexing, this design can provide extended service life, somewhat similar to a hunting design for an even tooth setup.



- Chain Saver Sprockets**
- A unique design that incorporates a special flanged rim on either side of the sprocket body. The chain sidebars rest on the flange as the chain wraps around the sprocket. This configuration keeps the chain on true center and distributes the load over a greater contact area, thus reducing the rate of wear.



- Traction Rim / Wheel**
- Essentially a sprocket without teeth.
 - Available as a solid, segmented or a segmented/split design.
 - Ideal for single strand bucket elevators and/or abrasive conveyor applications.
 - Coefficient of friction must be great enough to allow the wheel to drive.
 - Key Benefit – Allows the chain to slip in an overload or obstructed condition.



- Octagonal Wheel**
- Utilized with Heavy Duty Hard Faced Drag Chains.
 - Octagon shape allows the dynamic forces to be transferred directly between chain sidebars and the flats of the octagon. This eliminates the traditional sprocket tooth/chain bushing wear point.
 - Guide lugs are typical and keep the chain on center.
 - Hardfacing available for extreme conditions.



- Full-Face Drum Sprocket**
- Highly respected design regularly utilized with both Welded Mill and Welded Drag chain.
 - Full-Face design offers an increased surface area which reduces contact pressures and in turn offers solid wear performance.
 - Available in single and multi-strand configurations.



- A-Plate Drum Sprocket**
- Classic, traditional style utilized with both Welded Mill and Welded Drag chain.
 - Can handle misalignment quite well.
 - Open design allows for bulk material pass through.
 - Available in single and multi-strand configurations.

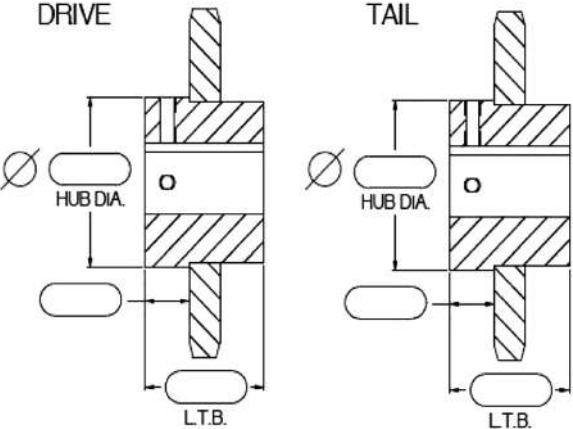
ENGINEERING CLASS SPROCKET QUOTATION DATA SHEET

Standard Sprockets / Traction Wheels

Name/Surveyor		Customer Name	
Site/Location		Application Type	
Customer Name		Phone	

MOUNTING CONFIGURATIONS

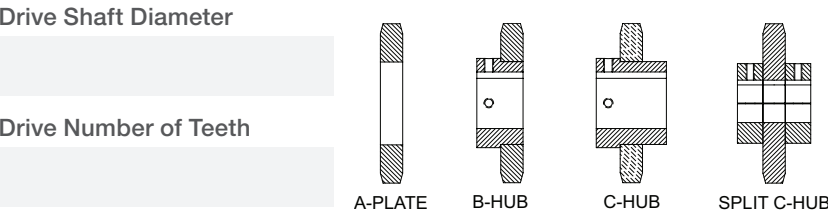
(Choose One)	Drive	Tail
Rough Stock Bore	☐	☐
Plain Bore	☐	☐
Keyway & 2 Set Screws	☐	☐
Bronze Bushing	☐	☐
Power Lock	☐	☐
Taper-lock Bushing	☐	☐
QD Bushing	☐	☐
ER Bushing	☐	☐
Other (specify below)	☐	☐



Notes

CONSTRUCTION DETAILS

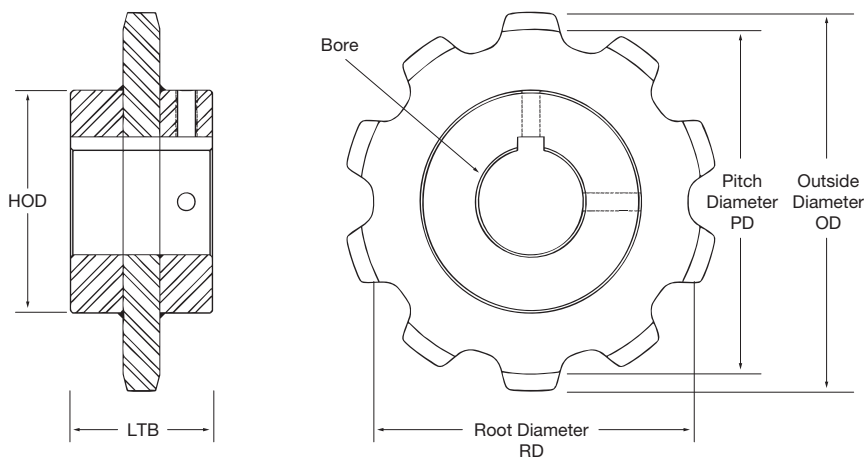
(Check all that apply)	Drive	Tail
A-Plate	☐	☐
B-HUB	☐	☐
C-HUB	☐	☐
Split HUB	☐	☐
Segmented	☐	☐
Hunting Tooth	☐	☐
Double Duty	☐	☐
Chain Saver	☐	☐
Traction Rim / Wheel	☐	☐
Octagonal Wheel	☐	☐
Lightening Holes	☐	☐



Notes



WELDED STEEL CHAIN SPROCKETS



WH78 - 2.609 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	7.299	6.818	5.918	78A8	1.000	1.250	9	78C8	0.940	2.940	4.750	3.130	19
9	8.168	7.628	6.728	78A9	1.000	1.250	11	78C9	1.250	3.190	5.250	3.880	28
10	9.030	8.443	7.543	78A10	1.000	1.250	14	78C10	1.250	3.190	5.250	3.880	31
11	9.885	9.261	8.361	78A11	1.000	1.250	17	78C11	1.250	3.190	5.250	3.880	34
12	10.737	10.080	9.180	78A12	1.000	1.250	20	78C12	1.250	3.190	5.250	3.880	37
13	11.585	10.902	10.002	78A13	1.000	1.500	23	78C13	1.500	3.440	5.500	4.250	44
14	12.431	11.725	10.825	78A14	1.000	1.500	27	78C14	1.500	3.440	5.500	4.250	47
15	13.274	12.549	11.649	78A15	1.000	1.500	31	78C15	1.500	3.440	5.500	4.250	51
16	14.116	13.373	12.473	78A16	1.000	1.500	35	78C16	1.500	3.440	5.500	4.250	56

WH78XHD - 2.636 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	7.364	6.888	5.828	78XHDA8	1.000	1.250	9	78XHDC8	0.940	2.940	4.750	3.130	19
9	8.242	7.707	6.647	78XHDA9	1.000	1.250	11	78XHDC9	1.250	3.190	5.250	3.880	28
10	9.113	8.530	7.470	78XHDA10	1.000	1.250	14	78XHDC10	1.250	3.190	5.250	3.880	31
11	9.977	9.356	8.296	78XHDA11	1.000	1.250	17	78XHDC11	1.250	3.190	5.250	3.880	34
12	10.838	10.185	9.125	78XHDA12	1.000	1.250	20	78XHDC12	1.250	3.190	5.250	3.880	37
13	11.695	11.015	9.955	78XHDA13	1.000	1.500	23	78XHDC13	1.500	3.440	5.500	4.250	44
14	12.549	11.846	10.786	78XHDA14	1.000	1.500	27	78XHDC14	1.500	3.440	5.500	4.250	47
15	13.401	12.678	11.618	78XHDA15	1.000	1.500	31	78XHDC15	1.500	3.440	5.500	4.250	51
16	14.252	13.512	12.452	78XHDA16	1.000	1.500	35	78XHDC16	1.500	3.440	5.500	4.250	56

WELDED STEEL CHAIN SPROCKETS

WH82 - 3.075 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	8.424	8.035	6.975	82A8	1.125	1.25	16	82C8	1.250	3.190	3.880	4.250	32
9	9.448	8.991	7.931	82A9	1.125	1.25	20	82C9	1.250	3.190	3.880	4.250	36
10	10.464	9.951	8.891	82A10	1.125	1.25	25	82C10	1.250	3.190	3.880	4.250	40
11	11.472	10.915	9.855	82A11	1.125	1.25	30	82C11	1.250	3.190	3.880	4.250	45
12	12.476	11.881	10.821	82A12	1.125	1.25	35	82C12	1.250	3.190	3.880	4.250	51
13	13.476	12.849	11.789	82A13	1.125	1.5	41	82C13	1.500	3.440	4.250	4.250	60
14	14.472	13.819	12.759	82A14	1.125	1.5	48	82C14	1.500	3.440	4.250	4.250	67
15	15.467	14.790	13.730	82A15	1.125	1.5	55	82C15	1.500	3.440	4.250	4.250	74
16	16.459	15.762	14.702	82A16	1.125	1.5	62	82C16	1.500	3.440	4.250	4.250	81

WH82XHD - 3.075 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	8.674	8.035	6.725	82XHDA8	1.125	1.25	16	82XHDC8	1.250	3.190	3.880	4.250	32
9	9.698	8.991	7.681	82XHDA9	1.125	1.25	20	82XHDC9	1.250	3.190	3.880	4.250	36
10	10.714	9.951	8.641	82XHDA10	1.125	1.25	25	82XHDC10	1.250	3.190	3.880	4.250	40
11	11.722	10.915	9.605	82XHDA11	1.125	1.25	30	82XHDC11	1.250	3.190	3.880	4.250	45
12	12.726	11.881	10.571	82XHDA12	1.125	1.25	35	82XHDC12	1.250	3.190	3.880	4.250	51
13	13.726	12.849	11.539	82XHDA13	1.125	1.5	41	82XHDC13	1.500	3.440	4.250	4.250	60
14	14.722	13.819	12.509	82XHDA14	1.125	1.5	48	82XHDC14	1.500	3.440	4.250	4.250	67
15	15.717	14.790	13.480	82XHDA15	1.125	1.5	55	82XHDC15	1.500	3.440	4.250	4.250	74
16	16.709	15.762	14.452	82XHDA16	1.125	1.5	62	82XHDC16	1.500	3.440	4.250	4.250	81

WH124 - 4.000 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	10.907	10.453	9.143	124A8	1.500	1.5	30	124C8	1.500	3.440	5.500	4.250	49
9	12.240	11.695	10.385	124A9	1.500	1.5	38	124C9	1.500	3.440	5.500	4.250	56
10	13.561	12.944	11.634	124A10	1.500	1.5	47	124C10	1.500	3.440	5.500	4.250	65
11	14.873	14.198	12.888	124A11	1.500	1.5	56	124C11	1.500	3.940	6.500	5.000	89
12	16.178	15.455	14.145	124A12	1.500	1.5	67	124C12	1.500	3.940	6.500	5.000	99
13	17.479	16.714	15.404	124A13	1.500	1.5	78	124C13	1.500	3.940	6.500	5.000	111
14	18.775	17.976	16.666	124A14	1.500	1.5	90	124C14	1.500	3.940	6.500	5.000	123
15	20.069	19.239	17.929	124A15	1.500	1.5	103	124C15	1.500	3.940	6.500	5.000	136
16	21.359	20.503	19.193	124A16	1.500	1.5	117	124C16	1.500	3.940	6.500	5.000	150

WELDED STEEL CHAIN SPROCKETS

WH124XHD - 4.063 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	11.559	10.617	8.807	124XHDA8	1.500	1.5	30	124XHDC8	1.500	3.440	5.500	4.250	49
9	12.913	11.879	10.069	124XHDA9	1.500	1.5	38	124XHDC9	1.500	3.440	5.500	4.250	56
10	14.255	13.148	11.338	124XHDA10	1.500	1.5	47	124XHDC10	1.500	3.440	5.500	4.250	65
11	15.587	14.421	12.611	124XHDA11	1.500	1.5	56	124XHDC11	1.500	3.940	6.500	5.000	89
12	16.913	15.698	13.888	124XHDA12	1.500	1.5	67	124XHDC12	1.500	3.940	6.500	5.000	99
13	18.234	16.978	15.168	124XHDA13	1.500	1.5	78	124XHDC13	1.500	3.940	6.500	5.000	111
14	19.551	18.259	16.449	124XHDA14	1.500	1.5	90	124XHDC14	1.500	3.940	6.500	5.000	123
15	20.865	19.542	17.732	124XHDA15	1.500	1.5	103	124XHDC15	1.500	3.940	6.500	5.000	136
16	22.176	20.826	19.016	124XHDA16	1.500	1.5	117	124XHDC16	1.500	3.940	6.500	5.000	150

WH132 - 6.050 PITCH (and WH132XHD)

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	16.356	15.809	13.999	132A8	2.750	1.5	153	132C8	1.500	5.440	8.000	6.750	205
9	18.372	17.689	15.879	132A9	2.750	1.5	192	132C9	1.500	5.440	8.000	6.750	244
10	20.370	19.578	17.768	132A10	2.750	1.5	235	132C10	1.500	5.440	8.000	6.750	287
11	22.354	21.474	19.664	132A11	2.750	1.5	283	132C11	1.500	5.940	9.000	6.750	352
12	24.329	23.375	21.565	132A12	2.750	1.5	335	132C12	1.500	5.940	9.000	6.750	404
13	26.296	25.280	23.470	132A13	2.750	1.5	392	132C13	1.500	5.940	9.000	6.750	461
14	28.257	27.188	25.378	132A14	2.750	1.5	453	132C14	1.500	5.940	9.000	6.750	522
15	30.213	29.099	27.289	132A15	2.750	1.5	519	132C15	1.500	5.940	9.000	6.750	588
16	32.165	31.011	29.201	132A16	2.750	1.5	590	132C16	1.500	6.500	10.000	6.750	697

WH157 - 6.050 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	16.856	15.809	13.999	157A8	2.750	1.5	153	157C8	1.500	5.940	9.000	6.750	287
9	18.872	17.689	15.879	157A9	2.750	1.5	192	157C9	1.500	5.940	9.000	6.750	261
10	20.870	19.578	17.768	157A10	2.750	1.5	235	157C10	1.500	5.940	9.000	6.750	304
11	22.854	21.474	19.664	157A11	2.750	1.5	283	157C11	1.500	6.500	10.000	6.750	390
12	24.829	23.375	21.565	157A12	2.750	1.5	335	157C12	1.500	6.500	10.000	6.750	443
13	26.796	25.280	23.470	157A13	2.750	1.5	392	157C13	1.500	6.500	10.000	6.750	500
14	28.757	27.188	25.378	157A14	2.750	1.5	453	157C14	1.500	6.500	10.000	6.750	561
15	30.713	29.099	27.289	157A15	2.750	1.5	519	157C15	1.500	6.500	10.000	6.750	627
16	32.665	31.011	29.261	157A16	2.750	1.5	590	157C16	1.500	6.500	10.000	6.750	697

WELDED STEEL CHAIN SPROCKETS

WH106 - 6.000 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	15.735	15.679	14.369	106A8	1.250	1.5	69	106C8	1.500	4.440	7.000	6.000	117.000
9	17.735	17.543	16.233	106A9	1.250	1.5	86	106C9	1.500	4.440	7.000	6.000	135.000
10	19.716	19.416	18.106	106A10	1.250	1.5	105	106C10	1.500	4.440	7.000	6.000	154.000
11	21.684	21.297	19.987	106A11	1.250	1.5	126	106C11	1.500	5.440	8.000	6.250	193.000
12	23.642	23.182	21.872	106A12	1.250	1.5	150	106C12	1.500	5.440	8.000	6.250	216.000
13	25.593	25.071	23.761	106A13	1.250	1.5	158	106C13	1.500	5.440	8.000	6.250	224.000
14	27.538	26.964	25.654	106A14	1.250	1.5	176	106C14	1.500	5.440	8.000	6.250	242.000
15	29.478	28.858	27.548	106A15	1.250	1.5	198	106C15	1.500	5.440	8.000	6.250	265.000
16	31.414	30.755	29.505	106A16	1.250	1.5	214	106C16	1.500	5.440	8.000	6.250	280.000

WH106XHD - 6.050 PITCH

Number of Teeth	Outside Diameter	Pitch Diameter	Root Diameter	Type A				Type C					
				Item Number	Plate Thickness	Stock Bore	Weight (Lbs)	Item Number	Stock Bore	Max Bore	Hub Diameter	LTB	Weight (Lbs)
8	16.356	15.809	13.999	106XHDA8	1.250	1.5	69	106XHDC8	1.500	4.440	7.000	6.000	117.000
9	18.372	17.689	15.879	106XHDA9	1.250	1.5	86	106XHDC9	1.500	4.440	7.000	6.000	135.000
10	20.370	19.578	17.768	106XHDA10	1.250	1.5	105	106XHDC10	1.500	4.440	7.000	6.000	154.000
11	22.354	21.474	19.664	106XHDA11	1.250	1.5	126	106XHDC11	1.500	5.440	8.000	6.250	193.000
12	24.329	23.375	21.565	106XHDA12	1.250	1.5	150	106XHDC12	1.500	5.440	8.000	6.250	216.000
13	26.296	25.280	23.470	106XHDA13	1.250	1.5	158	106XHDC13	1.500	5.440	8.000	6.250	224.000
14	28.257	27.188	25.378	106XHDA14	1.250	1.5	176	106XHDC14	1.500	5.440	8.000	6.250	242.000
15	30.213	29.099	27.289	106XHDA15	1.250	1.5	198	106XHDC15	1.500	5.440	8.000	6.250	265.000
16	32.165	31.011	29.261	106XHDA16	1.250	1.5	214	106XHDC16	1.500	5.440	8.000	6.250	280.000

IDLER, SPLIT, SEGMENTAL & SUPPORT ROLLERS

Idler Sprocket

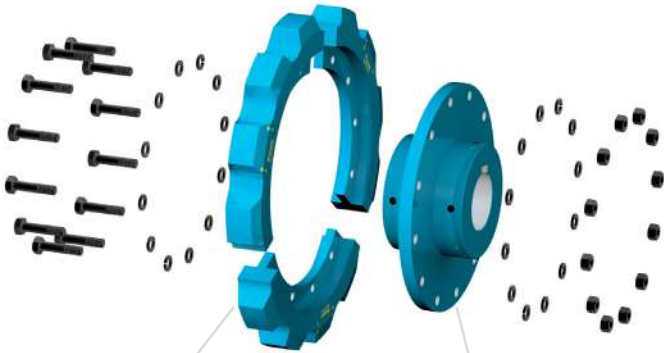
Tsubaki offers a variety of different types of idler sprockets to fit a variety of applications, including the following standard types:

- Ball Bearing Idlers
- Needle Bearing Idlers
- Non-Metallic Idlers (Nylon/Nyloil, Delrin, Urethane and other bushed idlers using custom materials)



Split Adjustable Sprocket

- Fast and accurate sprocket tooth/chain roller positioning at installation, or when a chain is forced off the sprockets due to jam-ups.
- Fast and simple rim replacement when rim is worn out.
- Split hub adjustable sprockets are ideal for applications with long shafts running 2 or more strands of chain.

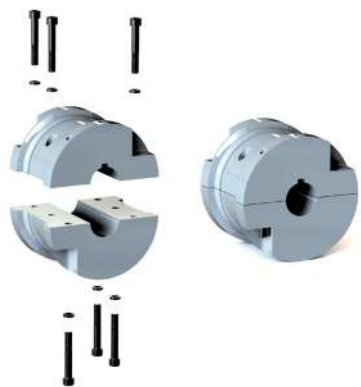


Segmental Rim Sprocket

- High Quality 1045 Steel
- Min 50 HRC Tooth Hardness to withstand extreme abrasion.

Hub Body

- Solid Construction to ensure strength in operation.
- Easily mountable to standard shafting.
- Also available in Split style for easy replacement.



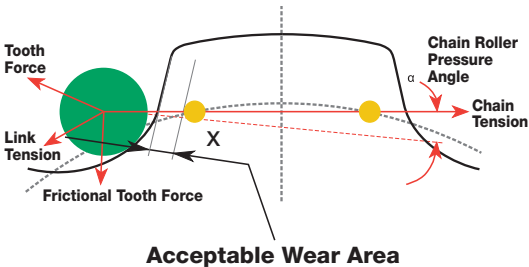
Return Support Rollers

Support the weight of the chain on the conveyor return side with rollers machined to the chain's exact profile.

SMART TOOTH® SPROCKET TECHNOLOGY

Tsubaki's Smart Tooth® sprockets with patented **Wear Indicator Technology** offer the ability to easily and proactively identify and schedule maintenance before a critical component failure. This innovative design not only allows for proactive sprocket wear identification, it also mitigates the risk of worn sprockets permanently damaging the mating chain. This patented technology is **available on most Engineering Class Sprockets**.

- Extended chain life through predictable maintenance
- Eliminates the guesswork associated with worn sprockets
- Reduces overall cost of equipment ownership
- Provides warning of catastrophic drive failure
- Provides the opportunity to schedule maintenance based on sprocket wear rate



Tsubaki Smart Tooth® offers users visual indication that a sprocket is still within allowable wear tolerance. The patented wear indicator pins on one or more teeth around the sprocket along with highly-visible blue painted finish, allow the operator to get a clear look at the wear of the sprocket without taking costly downtime to shut down the system. Tsubaki wear indicator technology makes sense in applications wear down time is critical. Sprockets are available with Smart Tooth® technology on a made to order basis.



New Smart Tooth® Sprocket

- Availability
- ANSI Sizes 80-240 pitch sprockets
- Hardened teeth
- Bored to size and bushed sprockets



Worn sprocket with Smart Tooth®

- Value
- Extended chain life through predictable maintenance
- Reduction in overall ownership cost
- Life cycle predictability.

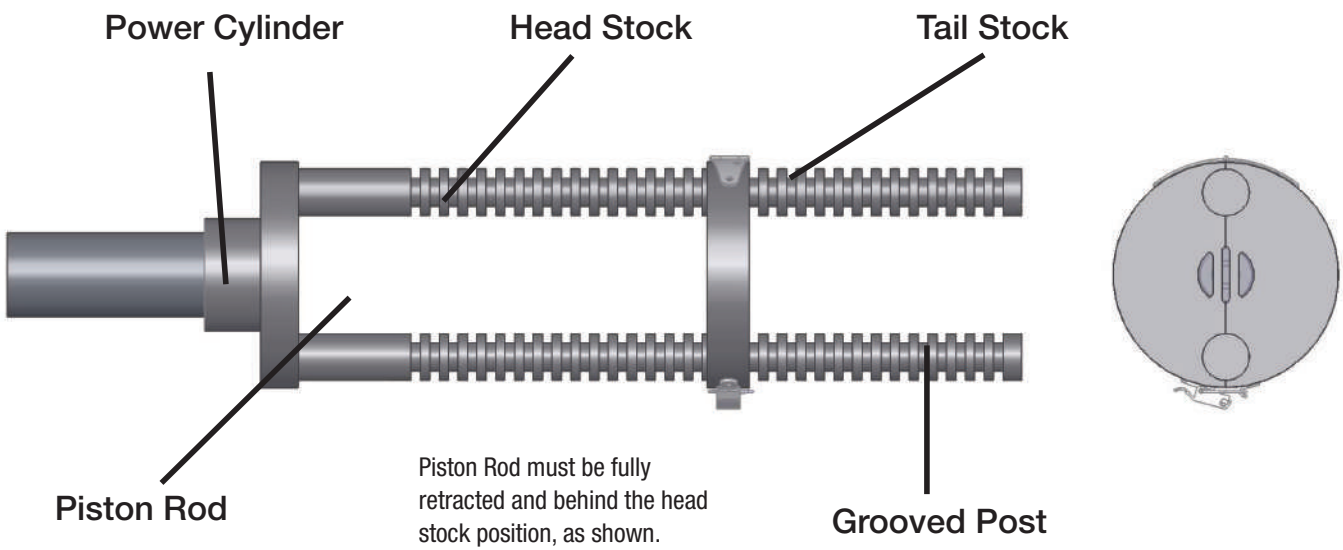
Brass wear indicator pins



Triangles below the pins

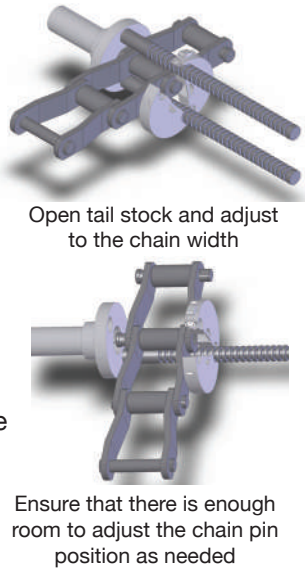
No Impact. Just 5 easy steps with ECCT.

When excellence really matters

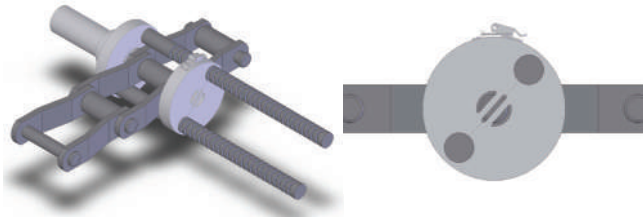


Sample of chain sizes that are suitable are as follows:	Mill Chain: 82, 124, 111, 106, 110, 132	Drag Chain: 102, 104, 110, 112, 116, 480	Standard: CC5
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- 1** Start with the ECCT Tool aligned so that the posts are in the vertical position with one post directly over top of the other post.
- 2** Disassembly/Assembly
- a) To disassemble, grind off peened end of the chain pin. Open the tail end stock and adjust along the posts as needed to the appropriate position for the chain that you wish to disassemble. It is not critical that the chain be tight to the head and tail stocks as the piston rod will move out to meet the chain. 1/2"-1" space is recommended. To continue disassembly, go to Step 3.
 - b) To assemble, loosely install the pin into the chain, open the tail stock and adjust along the posts to the appropriate position for the chain that you wish to assemble. It is not critical that the chain be tight to the head and tail stocks as the piston rod will move out to meet the pin. To continue assembly go to Step 3.



- 3** Rotate the entire ECCT tool until the top and bottom posts contact the chain at the top and bottom as shown below.



- 4** Disassembly/Assembly
- a) To disassemble, continue applying pressure until the pin breaks the press fit on the chain. You will hear "pop or breaking" sounds when this happens. Ensure that the pin has broken the press fit completely. To continue disassembling chain, go to step 5.
 - b) To assemble, continue to apply pressure until pin seats completely into the chain. There should be no gap between pin head and link plate. To continue assembling go to Step 5.

- 5** Release the hydraulic pressure, returning the piston rod to the relaxed position. Open the tail stock and remove the chain.



ANSI ROLLER CHAINS

ANSI Chains from Tsubaki provide the strength, reliability and durability that is required in the toughest environments. With the Tsubaki Performax™ Bushing in sizes 80-140 – single and multi-wide strands, Tsubaki ANSI chains help **reduce downtime and improve reliability while decreasing equipment repair costs.**

Why Tsubaki Chain?

Longer Wear Life

Tsubaki roller chains last up to twice as long as previously manufactured chains due to the reliability and durability of the solid bushing and patented lube groove design.

This technology covers sizes 80-140 in carbon steel chains. The solid bushings are precisely round while the grooves on the inner wall of the bushing holds lubricant where the chain needs it most. The result is a longer lasting chain.

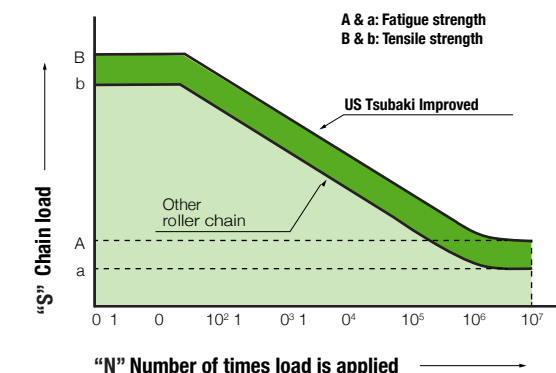
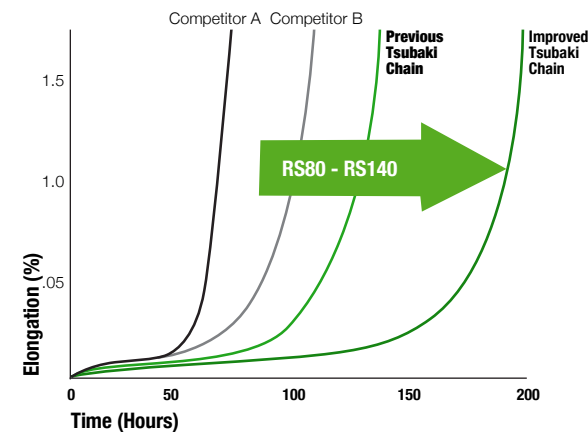
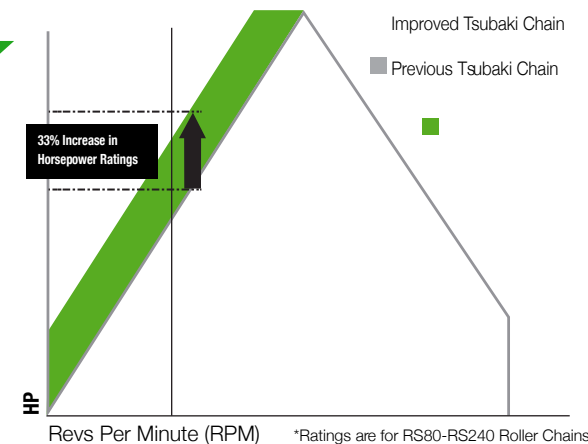
Higher Horsepower Ratings

Tsubaki ANSI roller chains can handle up to 33-percent more horsepower allowing your application to increase drive

performance without increasing chain size. Tsubaki chains may also allow your application to transmit the same horsepower with a smaller pitch chain. The improvement comes from a ring-coining process for slip-fit style connecting links.

Greater Fatigue Strength

Tsubaki Chains are designed to have greater fatigue strength. The wider-waist of the link plates puts more metal where it's needed most. This means less downtime, reduced operating costs, and better application efficiency. These benefits impact your application in one major way – the bottom line.

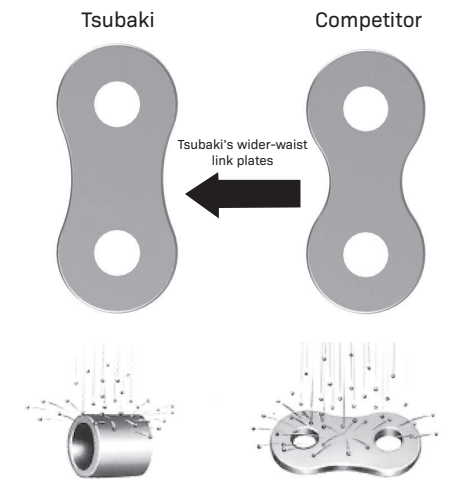


Assurance of Greater Fatigue Strength

The wider waist of the Tsubaki link plates ensures greater fatigue strength for all chain sizes and styles.

Longer Wear Life & Less Set-up Time

- Tsubaki has decreased initial wear elongation to .01% and increased the life by up to 2x as long in many applications. When there isn't time to adjust and readjust a chain during installation, Tsubaki roller chains are the very best solution.
- Tsubaki uses a special pre-lubrication process that vastly increases chain wear life.
- Improved Tsubaki roller chain sizes 80-140 have the patented Performax™ solid lube groove bushings. By retaining the lube in the grooves of the bushing, it allows lubrication to stay in the key pin and bushing friction point.



Factory Preloading

Tsubaki roller chains are preloaded using a process that involves the chain under tension running through a loading table. This allows all key components to seat properly thus eliminating initial set up elongation. This process is commonly referred to as prestressing the chain.

Heat Treatment

Chain durability depends heavily on the proper heat treatment of the wear components. The use of advanced heat-treatment methods allows for Tsubaki roller chains to maintain a high level of durability.

Prelubrication

A special lubrication is applied by hot-dipping the chain in an oil bath prior to packaging. This will help to ensure that the lube penetrates the key friction wear points of the chain.

Laser-Express™ – Custom Capabilities

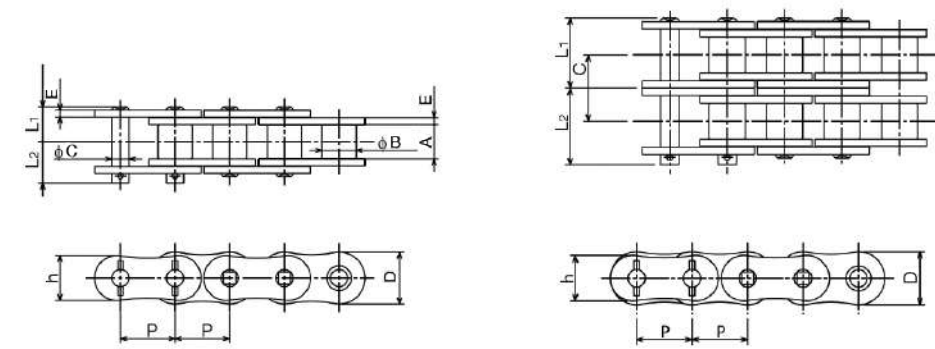
No specialty attachment for roller chain is too complex for Tsubaki. With our Laser-Express™ production line, even the most unique attachments are simple. No special tooling or lengthy lead times are needed. Parts can be directly created from even the most complex CAD and SolidWorks® drawings.

A Completely Automated Manufacturing Process

The manufacturing of Tsubaki roller chains employs advanced automated techniques. The specialized equipment used in each process ensures that all parts are uniform and of the highest quality. The adjacent image shows an assembled solid bushing placed in the roller link.



ANSI ROLLER CHAINS



Chain Number	Pitch	Transverse Pitch	DIMENSIONS									Offset Pin Length	ANSI Min. Tensile Strength (lbs.)	Tsubaki Minimum Tensile Strength (lbs.)	Tsubaki Average Tensile Strength (lbs.)	Max Working Load (lbs.)	Approx. Weight (lbs./ft.)
			Inside Width	Roller Dia.	Pin Dia.	Sidebar Height	Sidebar Thickness	Pin Head to CL (L1)	Pin End to CL (L2)	Overall Width (L1+L2)							
			A	B	C	D	E	F	G	H							
SINGLE STRAND																	
80	1.000	-	0.625	0.625	0.313	0.949	0.126	0.640	0.758	1.398	1.417	12,500	16,060	17,600	3,300	1.78	
100	1.250	-	0.750	0.750	0.376	1.185	0.157	0.778	0.900	1.677	1.748	19,530	23,980	26,400	5,060	2.67	
120	1.500	-	1.000	0.875	0.437	1.425	0.189	0.980	1.138	2.118	2.197	28,120	33,220	37,400	6,820	3.97	
140	1.750	-	1.000	1.000	0.500	1.661	0.220	1.059	1.248	2.307	2.343	38,280	43,340	48,400	9,020	5.02	
160	2.000	-	1.250	1.125	0.563	1.898	0.252	1.254	1.451	2.705	2.795	50,000	57,200	62,700	11,880	6.77	
180	2.250	-	1.406	1.406	0.687	2.134	0.281	1.404	1.671	3.075	3.173	63,280	75,460	82,940	13,640	9.01	
200	2.500	-	1.500	1.562	0.781	2.374	0.315	1.535	1.764	3.299	3.437	78,120	95,700	105,600	16,060	11.05	
240	3.000	-	1.875	1.875	0.937	2.850	0.374	1.886	2.185	4.071	4.201	112,500	139,700	154,00	22,220	16.42	
DOUBLE STRAND																	
80-2	1.000	1.154	0.625	0.625	0.313	0.949	0.126	1.217	1.335	2.551	2.657	25,000	32,120	35,200	5,610	3.53	
100-2	1.250	1.409	0.750	0.750	0.376	1.185	0.157	1.484	1.606	3.091	3.209	39,060	47,960	52,800	8,602	5.26	
120-2	1.500	1.787	1.000	0.875	0.437	1.425	0.189	1.874	2.031	3.906	4.063	56,240	66,440	74,800	11,590	7.84	
140-2	1.750	1.925	1.000	1.000	0.500	1.661	0.220	2.022	2.211	4.232	4.421	76,560	86,680	96,800	15,334	9.94	
160-2	2.000	2.303	1.250	1.125	0.563	1.898	0.252	2.407	2.604	5.012	5.205	100,00	114,400	125,400	20,196	13.43	
180-2	2.250	2.591	1.406	1.406	0.687	2.134	0.281	2.707	2.967	5.673	5.949	126,560	150,920	165,880	23,190	17.77	
200-2	2.500	2.819	1.500	1.562	0.781	2.374	0.315	2.947	3.175	6.122	6.346	156,240	191,400	211,200	27,300	21.86	
240-2	3.000	3.457	1.875	1.875	0.937	2.850	0.374	3.618	3.913	7.531	7.811	225,000	279.400	308,000	37,770	32.23	
TRIPLE STRAND																	
100-3	1.250	1.409	0.750	0.750	0.376	1.185	0.157	2.191	2.313	4.504	4.618	58,590	71,940	79,200	12,650	7.89	
120-3	1.500	1.787	1.000	0.875	0.437	1.425	0.189	2.772	2.929	5.701	5.850	84,360	99,660	112,200	17,050	11.75	
140-3	1.750	1.925	1.000	1.000	0.500	1.661	0.220	2.986	3.179	6.165	6.350	114,840	130,020	145,200	22,550	14.87	
160-3	2.000	2.303	1.250	1.125	0.563	1.898	0.252	3.561	3.758	7.319	7.508	150,000	171,600	188,100	29,700	20.11	
180-3	2.250	2.591	1.406	1.406	0.687	2.134	0.281	4.004	4.272	8.276	8.539	189,840	226,578	288,420	34,100	25.61	
200-3	2.500	2.819	1.500	1.562	0.781	2.374	0.315	4.360	4.585	8.945	9.173	234,360	287,100	316,800	40,150	32.84	
240-3	3.000	3.457	1.875	1.875	0.937	2.850	0.374	5.348	5.636	10.984	11.272	337,500	419,100	462,000	55,550	47.97	

All dimensions in inches unless otherwise stated.

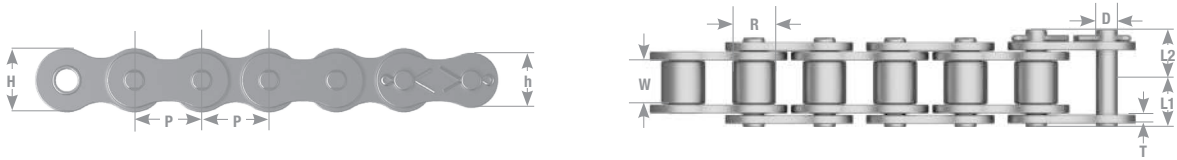


TITAN®

TITAN® CHAIN

Titan® Features Include:

- 1. Custom engineered pins provide extended wear life and robust performance in high debris environments.
- 2. Special coated plates provide an additional layer of protection from corrosion.
- 3. Patented Tsubaki Performax™ lube-groove bushings — available in sizes 80-140.
- 4. Ring-coined connecting links to increase fatigue strength and durability in what used to be the weakest link in the chain.
- 5. Available in multi-strand, British Standard, and made-to-order chains as well.



Tsubaki	Pitch	Roller Dia.	Width Between Roller Link Plates	Pin			Offset Pin	Link Plate			Average Tensile Strength	Maximum Allowable Load*	Approx. Weight lbs/ft.
Chain No.	P	R	W	D	L1	L2	L	T	H	h			
40TTRB	0.500	0.312	0.312	0.156	0.325	0.392	0.717	0.060	0.472	0.409	4,290	810	0.43
50TTRB	0.625	0.400	0.375	0.200	0.406	0.469	0.890	0.080	0.591	0.512	7,050	1,430	0.70
60TTRB	0.750	0.469	0.500	0.234	0.506	0.581	1.110	0.094	0.713	0.614	9,920	1,980	1.03
80TTRB	1.000	0.625	0.625	0.312	0.640	0.758	1.441	0.125	0.949	0.819	17,640	3,300	1.79
100TTRB	1.250	0.750	0.750	0.375	0.778	0.900	1.720	0.156	1.185	1.024	26,460	5,070	2.68
120TTRB	1.500	0.875	1.000	0.437	0.980	1.138	2.165	0.187	1.425	1.228	37,480	6,830	3.98
140TTRB	1.750	1.000	1.000	0.500	1.059	1.248	2.343	0.219	1.661	1.433	48,500	9,040	5.03
160TTRB	2.000	1.125	1.250	0.562	1.254	1.451	2.764	0.250	1.898	1.638	62,830	11,900	6.79
180TTRB	2.250	1.406	1.406	0.687	1.404	1.671	3.173	0.281	2.134	1.843	83,110	13,670	9.04
200TTRB	2.500	1.562	1.500	0.781	1.535	1.764	3.437	0.312	2.374	2.047	105,820	16,090	11.08
240TTRB	3.000	1.875	1.875	0.937	1.886	2.185	4.201	0.375	2.850	2.457	154,320	22,260	16.46

Note: 1. "RB" designation indicates 10' box riveted. Cottered, cut-to-length and reel stock available upon request.

2. Sizes 40-60 Supplied with spring clip style connecting links. 80-240 come cottered style.

HEAVY DUTY CHAINS

Tsubaki offers the most complete line of roller chains for tough applications that require extra performance, like material handling and construction. Heavy Series Chains are directly interchangeable with standard ANSI chains and require no special equipment modifications or sprockets.

Super Series

Chains have wider-waist link plates, ball-drifted pitch holes, and through-hardened pins for greater shock resistance and 25 to 30 percent higher maximum allowable loads.

Super-H Series

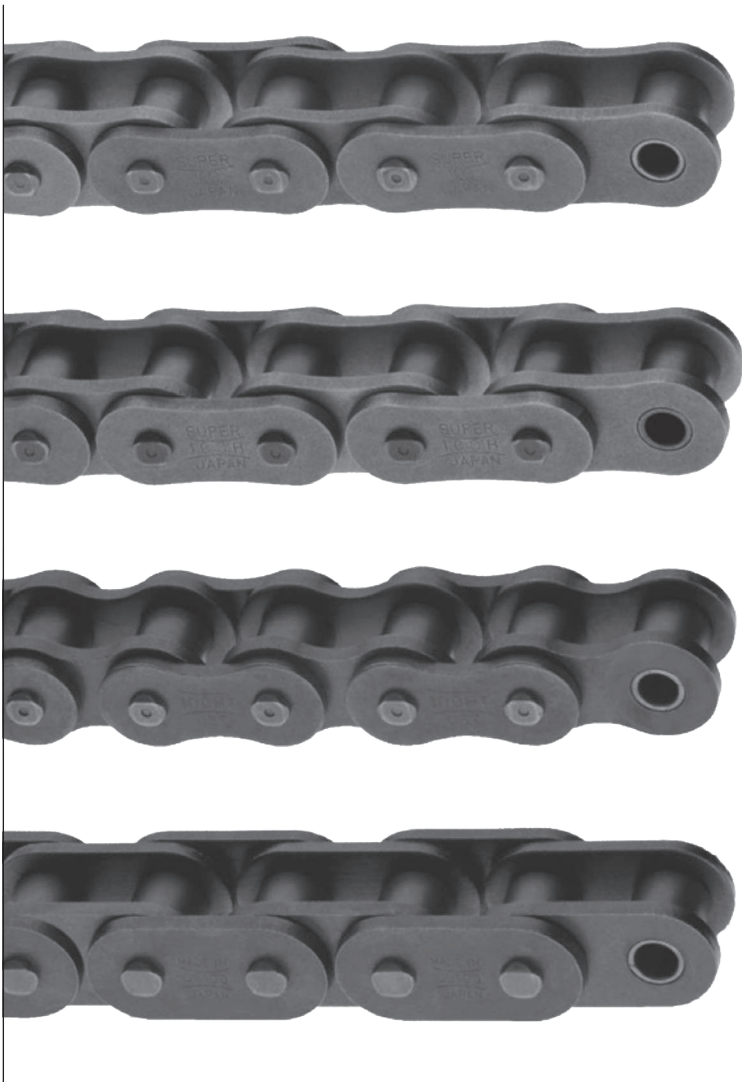
Chains have the same features as Super Series, plus wider-waist and thicker link plates for even higher maximum allowable loads.

HT Series

Chains have thru-hardened pins and thicker link plates for 15 to 30 percent higher ultimate strength and even more shock load resistance.

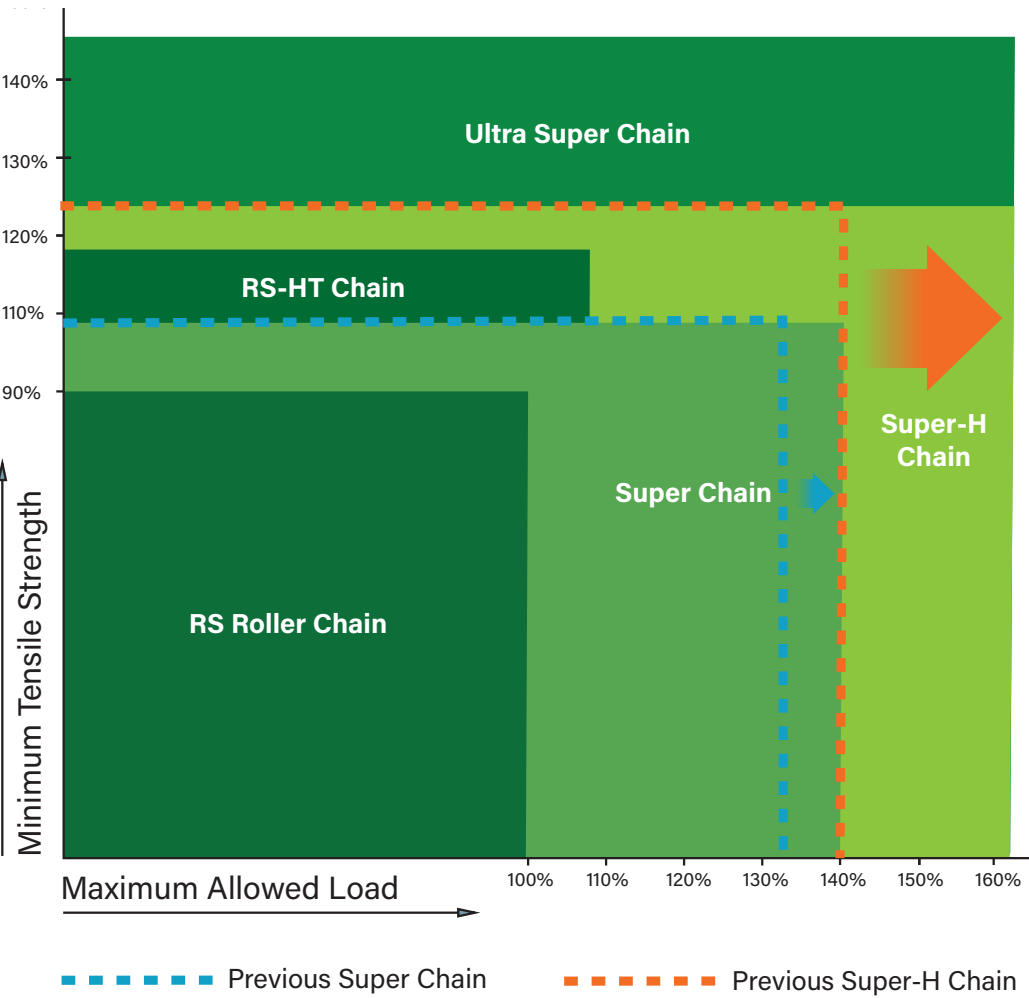
Ultra Super Series

Chains provide the highest ultimate tensile strength and maximum allowable loads of any Tsubaki roller chain. In some applications, these chains can transmit virtually twice the load of their standard equivalents.

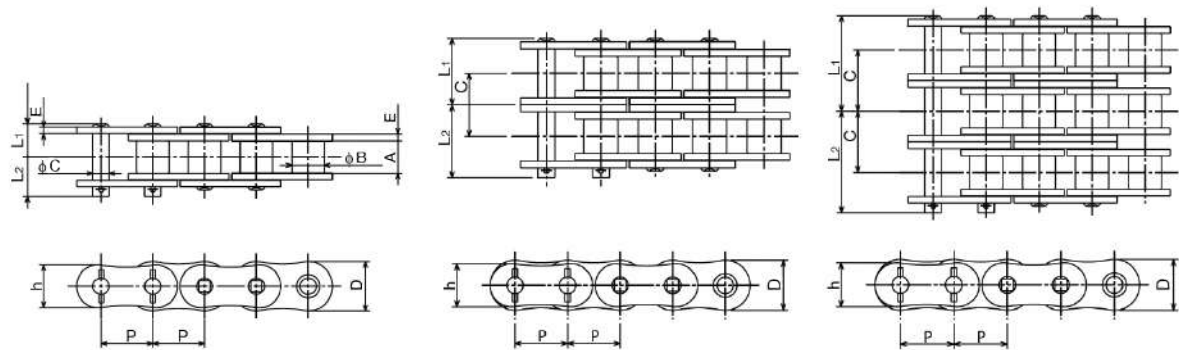


HEAVY DUTY CHAINS

When just a standard ANSI carbon steel roller chain won't do, Tsubaki completes its line of ANSI chains with a full line of **Heavy-Duty** series roller chains. Tsubaki offers many options to handle the most rugged and high-load applications. For common asphalt applications, we recommend **HT** series for greater ultimate tensile strength, and a full series of **Super** and **Super Heavy** offering the highest load rated chains.



SUPER SERIES CHAINS



Chain Number	Pitch	Transverse Pitch	DIMENSIONS								Tsubaki Average Tensile Strength (lbs.)	Max Working Load (lbs.)	Approx. Weight (lbs./ft.)
			Inside Width	Roller Dia.	Pin Dia.	Sidebar Height	Sidebar Thickness	Pin Head to CL (L1)	Pin End to CL (L2)	Overall Width (L1+L2)			
			A	B	C	D	E	F	G	H			
SINGLE STRAND													
80SUPER	1.000	-	0.625	0.625	0.313	0.949	0.126	0.640	0.758	1.398	19,140	4,180	1.9
100SUPER	1.250	-	0.750	0.750	0.376	1.185	0.157	0.778	0.900	1.677	28,600	6,820	2.9
120SUPER	1.500	-	1.000	0.875	0.437	1.425	0.189	0.980	1.138	2.118	41,800	8,800	4.2
140SUPER	1.750	-	1.000	1.000	0.500	1.661	0.220	1.059	1.248	2.307	55,000	12,100	5.4
160SUPER	2.000	-	1.250	1.125	0.563	1.898	0.252	1.254	1.451	2.705	70,400	15,840	7.2
200SUPER	2.500	-	1.500	1.562	0.781	2.374	0.315	1.535	1.764	3.299	113,300	21,120	11.8
240SUPER	3.000	-	1.875	1.875	0.937	2.850	0.374	1.886	2.185	4.071	165,000	29,700	17.2
DOUBLE STRAND													
80-2SUPER	1.000	1.154	0.625	0.625	0.313	0.949	0.126	1.217	1.335	2.551	38,280	7,106	3.8
100-2SUPER	1.250	1.409	0.750	0.750	0.376	1.185	0.157	1.484	1.606	3.091	57,200	11,594	5.6
120-2SUPER	1.500	1.787	1.000	0.875	0.437	1.425	0.189	1.874	2.031	3.906	83,600	14,990	8.3
140-2SUPER	1.750	1.925	1.000	1.000	0.500	1.661	0.220	2.022	2.211	4.232	110,000	20,570	10.7
160-2SUPER	2.000	2.303	1.250	1.125	0.563	1.898	0.252	2.407	2.604	5.012	140,800	26,928	14.4
200-2SUPER	2.500	2.819	1.500	1.562	0.781	2.374	0.315	2.947	3.175	6.122	226,600	35,904	23.4
240-2SUPER	3.000	3.457	1.875	1.875	0.937	2.850	0.374	3.618	3.913	7.531	330,000	50,490	34.0
TRIPLE STRAND													
80-3SUPER	1.000	1.154	0.625	0.625	0.313	0.949	0.126	1.795	1.909	3.705	57,420	10,450	5.6
100-3SUPER	1.250	1.409	0.750	0.750	0.376	1.185	0.157	2.191	2.313	4.504	85,800	17,050	8.4
120-3SUPER	1.500	1.787	1.000	0.875	0.437	1.425	0.189	2.772	2.929	5.701	125,400	22,000	12.5
140-3SUPER	1.750	1.925	1.000	1.000	0.500	1.661	0.220	2.986	3.179	6.165	165,000	30,250	16.0
160-3SUPER	2.000	2.303	1.250	1.125	0.563	1.898	0.252	3.561	3.758	7.319	211,200	39,600	21.5
200-3SUPER	2.500	2.819	1.500	1.562	0.781	2.374	0.315	4.360	4.585	8.945	339,900	52,800	35.1
240-3SUPER	3.000	3.457	1.875	1.875	0.937	2.850	0.374	5.348	5.636	10.984	495,000	74,250	51.0

Notes:

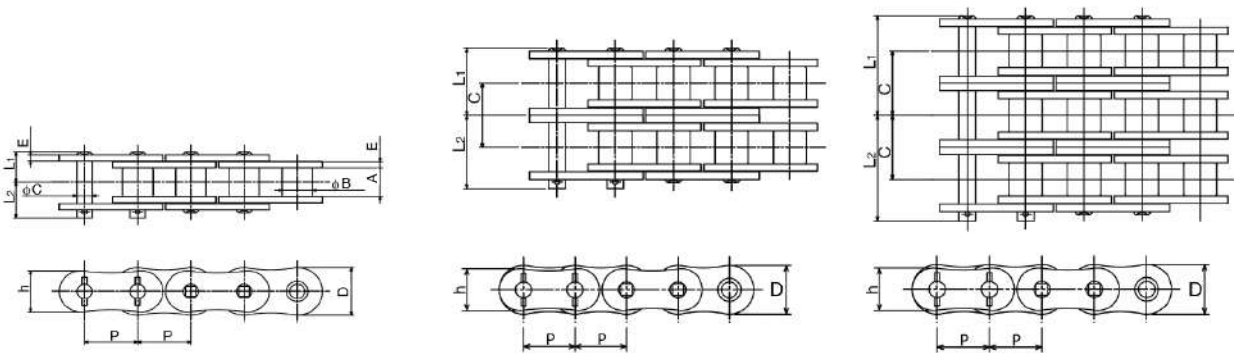
1. Four pitch offset link is available for single strand.

2. Riveted type chain will be provided unless otherwise specified. Roll pin type chain will be provided upon request.

3. Semi press-fit type connecting links will be supplied.

All dimensions in inches unless otherwise stated.

SUPER-H SERIES CHAINS



Chain Number	Pitch	Transverse Pitch	DIMENSIONS								Tsubaki Average Tensile Strenght (lbs.)	Max Working Load (lbs.)	Approx. Weight (lbs./ft.)
			Inside Width	Roller Dia.	Pin Dia.	Sidebar Height	Sidebar Thickness	Pin Head to CL (L1)	Pin End to CL (L2)	Overall Width (L1+L2)			
			A	B	C	D	E	F	G	H			
SINGLE STRAND													
80HSUPER	1.000	-	0.625	0.625	0.313	0.949	0.157	0.720	0.823	1.543	22,000	4,620	2.2
100HSUPER	1.250	-	0.750	0.750	0.376	1.185	0.189	0.858	0.965	1.823	32,560	7,260	3.3
120HSUPER	1.500	-	1.000	0.875	0.437	1.425	0.220	1.061	1.203	2.264	44,000	9,460	4.7
140HSUPER	1.750	-	1.000	1.000	0.500	1.661	0.252	1.138	1.303	2.441	57,200	12,760	6.0
160HSUPER	2.000	-	1.250	1.125	0.563	1.898	0.281	1.337	1.514	2.851	72,600	16,500	7.9
200HSUPER	2.500	-	1.500	1.500	0.781	2.374	0.374	1.689	1.894	3.583	134,200	22,400	13.2
240HSUPER	3.000	-	1.875	1.875	0.937	2.850	0.500	2.157	2.453	4.610	206,800	31,240	20.5
DOUBLE STRAND													
80-2HSUPER	1.000	1.283	0.625	0.625	0.313	0.949	0.157	1.358	1.465	2.823	44,000	7,854	4.4
100-2HSUPER	1.250	1.539	0.750	0.750	0.376	1.185	0.189	1.630	1.736	3.366	65,120	12,342	6.4
120-2HSUPER	1.500	1.925	1.000	0.875	0.437	1.425	0.220	2.014	2.165	4.179	88,000	16,082	9.1
140-2HSUPER	1.750	2.055	1.000	1.000	0.500	1.661	0.252	2.163	2.343	4.506	114,400	21,692	11.7
160-2HSUPER	2.000	2.437	1.250	1.125	0.563	1.898	0.281	2.555	2.740	5.295	145,200	28,050	15.4
200-2HSUPER	2.500	3.083	1.500	1.562	0.781	2.374	0.374	3.230	3.437	6.667	268,400	38,080	25.9
240-2HSUPER	3.000	3.984	1.875	1.875	0.937	2.850	0.500	4.146	4.445	8.591	413,600	53,108	40.2
TRIPLE STRAND													
80-3HSUPER	1.000	1.283	0.625	0.625	0.313	0.949	0.157	1.998	2.108	4.106	66,000	11,550	6.6
100-3HSUPER	1.250	1.539	0.750	0.750	0.376	1.185	0.189	2.400	2.504	4.904	97,680	18,150	9.6
120-3HSUPER	1.500	1.925	1.000	0.875	0.437	1.425	0.220	2.954	3.132	6.086	132,000	23,650	13.6
140-3HSUPER	1.750	2.055	1.000	1.000	0.500	1.661	0.252	3.191	3.356	6.547	171,600	31,900	17.4
160-3HSUPER	2.000	2.437	1.250	1.125	0.563	1.898	0.281	3.756	3.955	7.711	217,800	41,250	23.0
200-3HSUPER	2.500	3.083	1.500	1.562	0.781	2.374	0.374	4.761	4.982	9.743	402,600	56,000	38.5
240-3HSUPER	3.000	3.984	1.875	1.875	0.937	2.850	0.500	6.105	6.439	12.544	620,400	78,100	59.9

Notes:

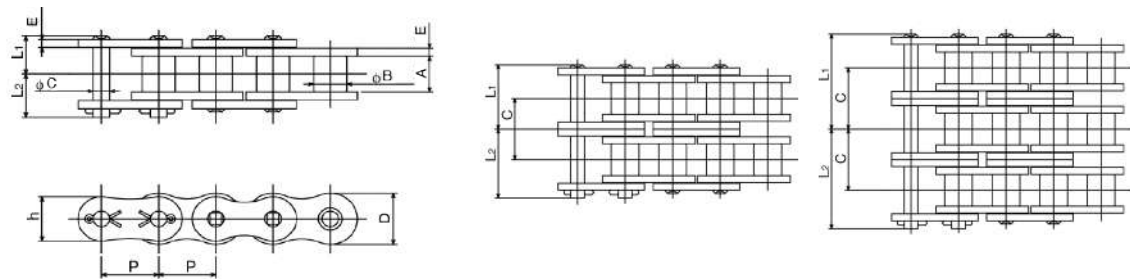
1. Offset links are not available.

2. Riveted type chain will be provided unless otherwise specified. Roll pin type chain will be provided upon request.

3. Semi press-fit type connecting links will be supplied.



HT SERIES CHAINS



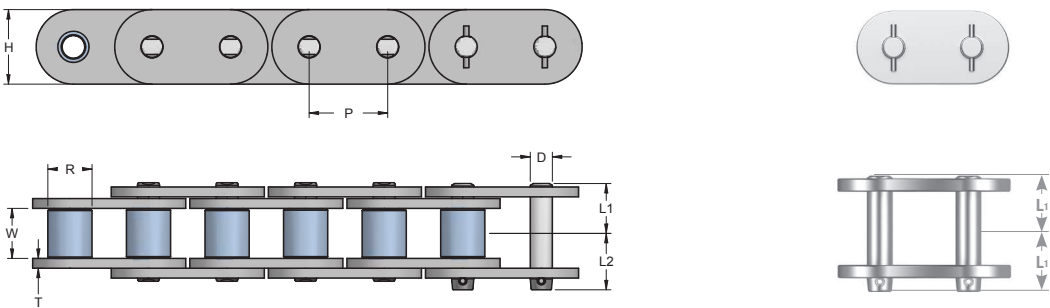
Chain Number	Pitch	Transverse Pitch	DIMENSIONS								Tsubaki Average Tensile Strenght (lbs.)	Max Working Load (lbs.)	Approx. Weight (lbs./ft.)
			Inside Width	Roller Dia.	Pin Dia.	Sidebar Height	Sidebar Thickness	Pin Head to CL (L1)	Pin End to CL (L2)	Overall Width (L1+L2)			
			A	B	C	D	E	F	G	H			
SINGLE STRAND													
80HT	1.000	-	0.625	0.625	0.313	0.949	0.157	0.720	0.823	1.543	20,900	3,630	2.1
100HT	1.250	-	0.750	0.750	0.376	1.185	0.189	0.858	0.965	1.823	31,900	5,500	3.1
120HT	1.500	-	1.000	0.875	0.437	1.425	0.220	1.061	1.203	2.264	42,900	7,260	4.4
140HT	1.750	-	1.000	1.000	0.500	1.661	0.252	1.138	1.303	2.441	56,100	9,570	5.5
160HT	2.000	-	1.250	1.125	0.563	1.898	0.281	1.337	1.514	2.850	71,500	12,540	7.4
200HT	2.500	-	1.500	1.562	0.781	2.374	0.374	1.689	1.894	3.583	125,400	17,600	12.3
240HT	3.000	-	1.875	1.875	0.937	2.850	0.500	2.157	2.453	4.610	198,000	25,300	19.5
DOUBLE STRAND													
80-2HT	1.000	1.283	0.625	0.625	0.313	0.949	0.157	1.362	1.465	2.827	41,800	6,100	4.1
100-2HT	1.250	1.539	0.750	0.750	0.376	1.185	0.189	1.630	1.736	3.366	63,800	9,350	6.1
120-2HT	1.500	1.925	1.000	0.875	0.437	1.425	0.220	2.024	2.165	4.189	85,800	12,340	8.6
140-2HT	1.750	2.055	1.000	1.000	0.500	1.661	0.252	2.163	2.343	4.506	112,200	16,280	11.0
160-2HT	2.000	2.437	1.250	1.125	0.563	1.898	0.281	2.555	2.740	5.295	143,000	21,310	14.6
200-2HT	2.500	3.083	1.500	1.562	0.781	2.374	0.374	3.230	3.437	6.667	250,800	29,920	24.4
240-2HT	3.000	3.984	1.875	1.875	0.937	2.850	0.500	4.146	4.445	8.591	396,000	43,010	38.4
TRIPLE STRAND													
80-3HT	1.000	1.283	0.625	0.625	0.313	0.949	0.157	2.006	2.108	4.114	62,700	9,080	6.2
100-3HT	1.250	1.539	0.750	0.750	0.376	1.185	0.189	2.402	2.504	4.906	95,700	13,750	9.1
120-3HT	1.500	1.925	1.000	0.875	0.437	1.425	0.220	2.986	3.132	6.118	128,700	18,150	13.0
140-3HT	1.750	2.055	1.000	1.000	0.500	1.661	0.252	3.195	3.356	6.551	168,300	23,930	16.4
160-3HT	2.000	2.437	1.250	1.125	0.563	1.898	0.281	3.778	3.955	7.732	214,500	31,350	21.9
200-3HT	2.500	3.083	1.500	1.562	0.781	2.374	0.374	4.774	4.982	9.756	376,200	44,000	36.7
240-3HT	3.000	3.984	1.875	1.875	0.937	2.850	0.500	6.144	6.439	12.583	594,000	63,250	57.3

- Notes:
1. Riveted type chain will be provided unless otherwise specified. Cottered type chain is available upon request.
 2. Semi press-fit connecting links will be supplied as standard. Slip-fit connecting links are also available upon request.

All dimensions in inches unless otherwise stated.

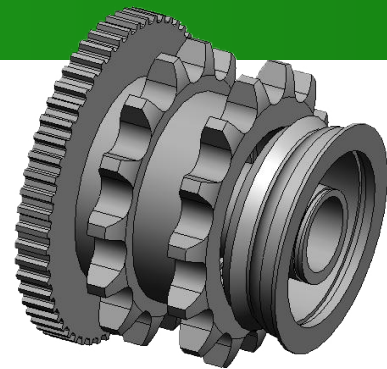


ULTRA SUPER SERIES CHAINS



Tsubaki	Pitch	Roller Dia.	Width Between Roller Link Plates	Link Plate		Pin			Average Tensile Strength	Maximu Allowable Load*	Approx. Weight lbs/ft.
Chain No.	P	R	W	T	H	D	L1	L2			
100ULTRASUPER	1.250	0.750	0.750	0.187	1.185	0.375	0.858	0.965	33,500	8,800	3.41
120ULTRASUPER	1.500	0.875	1.000	0.219	1.425	0.437	1.061	1.203	47,800	12,100	4.85
140ULTRASUPER	1.750	1.000	1.000	0.250	1.661	0.500	1.138	1.303	61,200	15,300	6.21
160ULTRASUPER	2.000	1.125	1.250	0.281	1.898	0.562	1.337	1.514	76,700	20,200	8.19
200ULTRASUPER	2.500	1.562	1.500	0.375	2.374	0.781	1.689	1.894	130,200	27,300	13.76
240ULTRASUPER	3.000	1.875	1.875	0.500	2.850	0.937	2.157	2.453	191,800	37,800	21.29

SPROCKETS



Tsubaki Precision Manufacturing

Seamless excellence from concept to market.
Largest sprocket manufacturing facility in Canada.

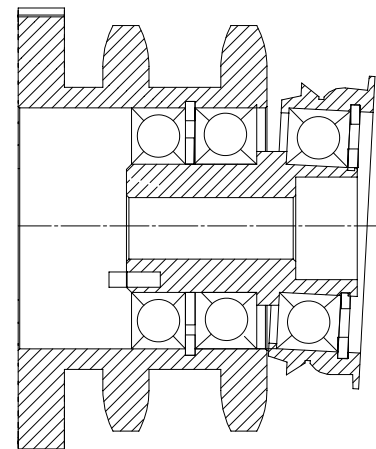
These are the concepts we live:

Dantotsu, a better than best mentality to produce the utmost in quality.

Kaizen, a total company involvement focusing on continuous workplace improvement.

5S, workplace management to improve safety, increase worker efficiency, and to achieve a sense of pride and ownership.

ISO, 9001-2008 registered.



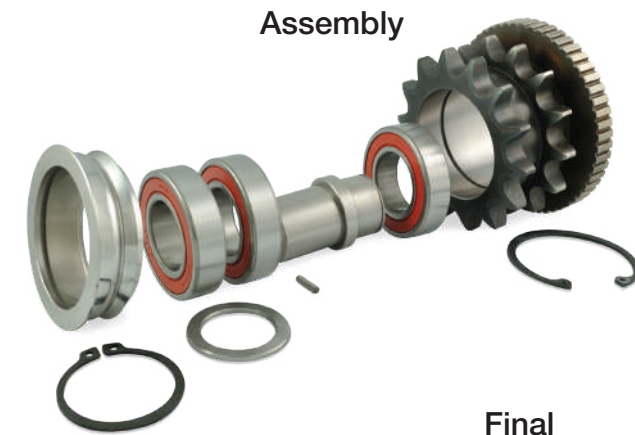
Concept & Design



Raw Materials
Maximize material suitability

In Process
Precision & Accuracy

Final Component
Quality & Reliability



Assembly

Final Product



Sprocket Options

- Bore Options – Plain, Finished, Bushing Style including Split Taper, QD and Taper Lock, Keyless Locking Device/Power Lock, Spline, Idler including bronze, bearing, plastic, hex bore, square bore.
- Material – Carbon, Stainless, Alloy, Quench & Tempered (QT), Plastic.
- Styles – Roller Chain & Engineered Class.
- Value Added Options – Mud Relief, Wear Indicator, Adjustable, Encoder mounting holes, encoder flags, Integrate separate components (sprocket-clutch), lubrication holes and grooves.
- Construction Options – Split Segmental Rim

Wear Indicators

Sprocket wear is one of the leading causes of premature chain failure. When you can't waste valuable machine time inspecting sprockets, trust Tsubaki wear indicators to remove the guesswork.

Patent information: Canada 2429302, USA 7018313

Timing Pulley Options

- Aluminum, Steel, Stainless
- Poly-Chain GT2™, HTD, Trapezoid
- Zinc Plating, Brass Pulley

*Poly-Chain GT2™ is a trademark of the Gates Corporation.



Capacities & Machining Centres

- Local manufacturing means rapid turnaround of your unique products and requirements.
- Raw material sourcing
 - Local daily delivery of plate and bar
 - Forged ring
- Turning
- Milling
- Cutting
 - Machining
- Hobber
- Gasher
 - Flame Cut
- Slotting & Broaching
 - Spline
 - Keyway
- Heat Treat
 - Induction
 - Flame
 - Tempering & Quenching
- Finishing
 - Paint/Powder Coat/Oxide/Plate/Vibra-Finish



Design

- Design from sample
- Design Studies – Mechanical property testing
- Prototype development
- Understands your need for unique and custom design
- 3D Modeling (SolidWorks) software. Can be integrated into your assembly drawing.

Reliability

- The assurance that your unique designs will be manufactured to order.

Engineering Support

- Improvement to current design
 - Optimization of material selection
 - Value added additions
 - Review of geometry and profile to suit application requirement
- Engineering report using 3rd party analysis
- Reverse Engineering

Inventory Support

- Tsubaki will stock to suit your blanket order requirements.
 - Draw inventory as your product requires
 - Peace of mind security: assurance that your inventory will be available when you need it
- Tap into Tsubaki's global supply chain network and resources.

ROLLER CHAIN SPROCKETS

The following defines terminology and provides guidance to help select the best sprocket for a given application. In the event that further assistance is required, please call Tsubaki customer service at (800) 323-7790.

Basics of Sprockets

Caliper Diameter:

Caliper Diameter refers to the dimension measured from sprocket tooth valley to sprocket tooth valley on the opposite side (180°) of the sprocket. This dimension is used to measure the diameter of the sprocket plate (not including sprocket teeth). On sprockets that have an odd number of teeth, the measurement would be taken from the valley of one tooth to the valley as close to 180° on the opposite side of the sprocket.

Sprocket Outside Diameter:

Sprocket outside diameter is the measurement from sprocket tooth peak to sprocket tooth peak on the opposite (180°) side of the sprocket. For sprockets with an odd number of teeth, the measurement would be taken from the peak of one sprocket tooth to the peak of a tooth as close to 180° as possible.

Maximum Bore Diameter:

Refers to the maximum bore size diameter a sprocket can be machined to without compromising structural integrity. This term is associated with both “B” and “C” style sprockets.

Length Thru Bore:

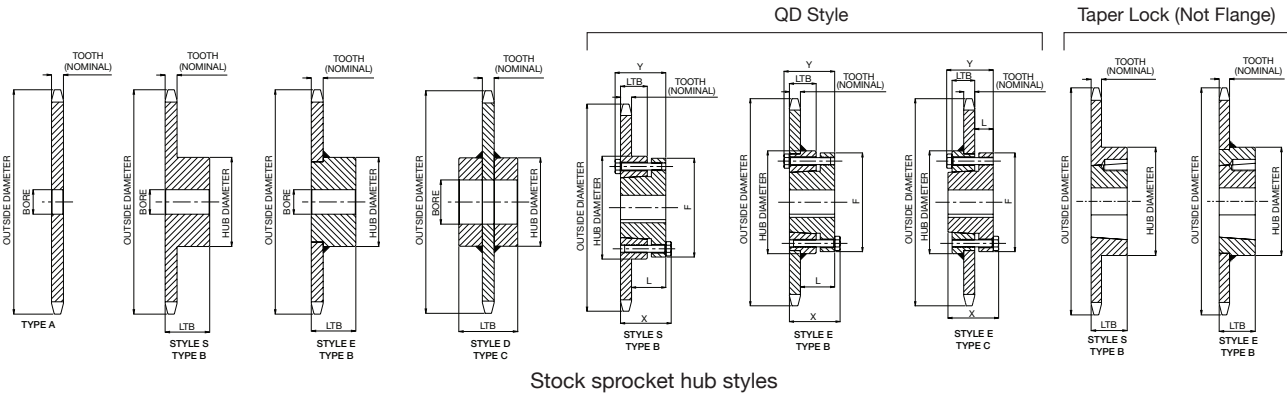
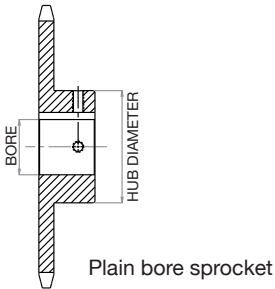
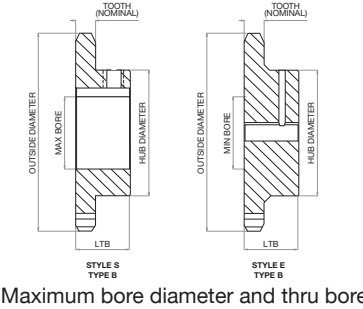
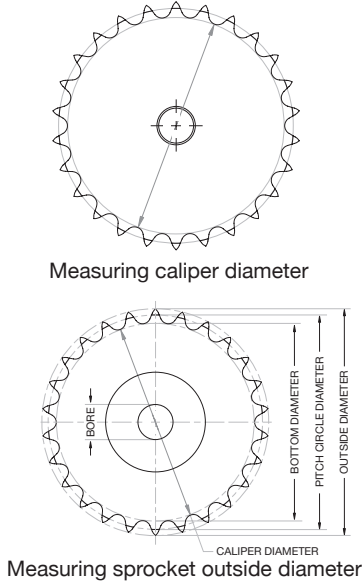
“LTB” Refers to the inside hub diameter and the length to which it was machined. This machined length must be long enough to accommodate the proper size keyway to withstand shear and torque stress induced by the rotating shaft.

Plain Bore:

Associated with “A,” “B” and “C” style sprockets where there is no special machining performed to accommodate keyways or set screws, only a hole to accommodate shaft diameter.

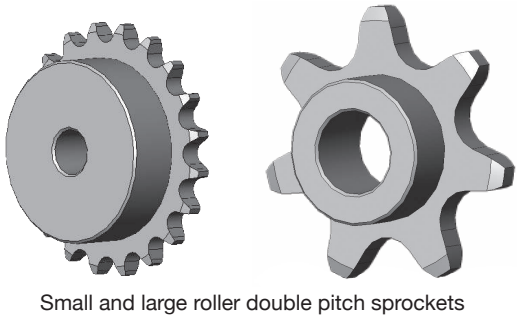
Sprocket Hub Style:

Tsubaki manufactures various sprocket hub styles to meet the application requirements of our customers.



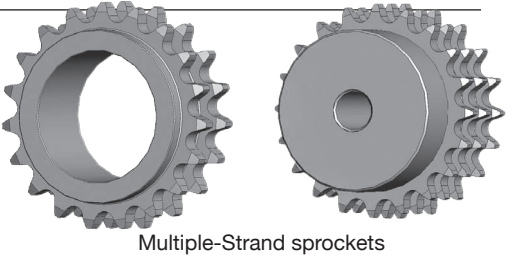
Small and Large Roller Double Pitch Sprockets:

Used with double pitch conveyor series roller chains. These chains are available with either the standard small roller diameter (i.e.: 2040, 2050, 2060, 2080, 2100) or a larger diameter chain roller style (i.e.: 2042, 2052, 2062, 2082, 2102). Sprockets are available from stock to accommodate either style. This type of sprocket is primarily used in conveying applications where torque requirements are lower, and long service life is critical.



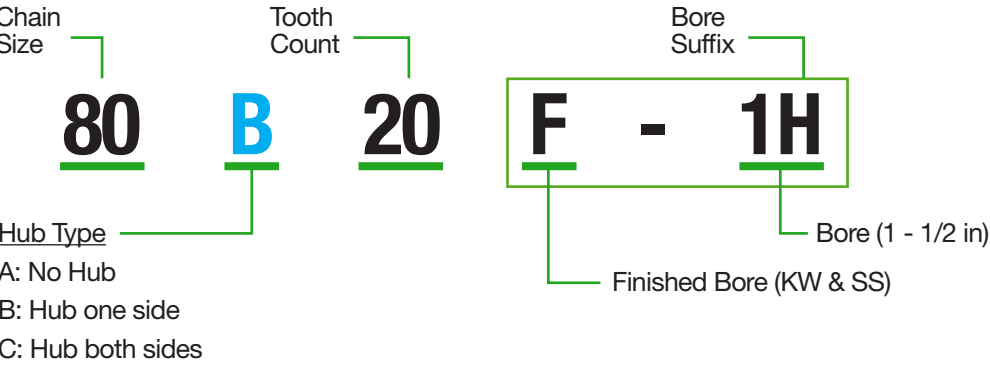
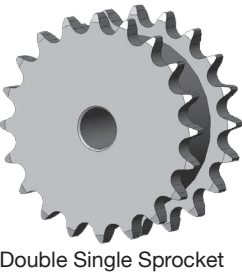
Multiple-Strand Sprockets:

This type of sprocket is commonly used in applications where higher torque and power requirements are needed. The spacing between the rows of teeth corresponds with the center-line of chain strands. Due to the added width of chain, the “LTB” of multiple strand sprockets is correspondingly longer. This style of sprocket is available in 40 through 160 chain pitch with plain, finished or Taper-Lock®/QD® style hubs.



Double Single Sprockets:

This type of sprocket is commonly used in applications where two or more items are powered by a common drive shaft. The space between the sprocket plates is wider than a multi-strand sprocket, and allows two separate strands of chain to engage without contacting each other. With this type of sprocket, one strand of chain may exit in a different direction than the other. For example, one strand exiting towards the ceiling and the other running parallel to the floor.



Fraction Legend for Hub Bore Size:

The Alpha-Numeric callouts should be used to define the sprocket bore size associated with “Finished Bore” sprocket. The letter designator is used to represent a fractional dimension. For example: a **1B** hub bore equates to a sprocket bore of **1.125”** inside diameter.

If Bushing Type, replace “Hub Type” Letter with the below		
Taper Lock TL	Quick Detachable QD	Split Taper ST
Hub Type + TL	Bushing Size	1st Alpha of Bushing Size
ATL	JA	G
BTL	SH	H
CTL	SDS	P
	SD	B
	SK	Q
	SF	R
	E	S
	F	U
	J	W
	M	
	N	
	P	

For TL & ST, replace Bore with “-” & Bushing	
TL Taper Lock	ST Split Taper
1008	G1
1108	H1
1210	P1
1215	P2
1310	B
1610	Q1
1615	Q2
2012	R1
2517	R2
2525	S1
3020	S2
3030	U0
3535	U1
4040	U2
4545	W1
5050	W2

Alpha Callout	Fraction
A	1/16
B	1/8
C	3/16
D	1/4
E	5/16
F	3/8
G	7/16
H	1/2
I	9/16
J	5/8
K	11/16
L	3/4
M	13/16
P	7/8
R	15/16

No. 60
PLAIN BORE

All dimensions in inches unless noted.

60 Plain Bore Sprocket Dia.				Type “A” Plain Bore		Type “B” Plain Bore					
No. Teeth	Outside Diameter	Pitch Diameter	Caliper Diameter	Plain Bore	Wt. Lbs.	Plain Bore	MAX Bore *	Hub Diameter	LTB	Hub Style	Wt. Lbs.
8	2.260	1.959	1.491	NS	NS	0.625	0.625	1.469 □	1.250	S	0.54
9	2.510	2.193	1.691	NS	NS	0.750	0.875	1.563 □	1.250	S	0.64
10	2.760	2.427	1.958	0.750	0.44	0.750	1.125	1.938 □	1.250	S	0.99
11	3.000	2.663	2.166	0.750	0.54	0.750	1.313	2.063 □	1.250	S	1.15
12	3.250	2.898	2.429	0.750	0.68	0.750	1.438	2.375 □	1.250	S	1.47
13	3.490	3.134	2.642	0.750	0.80	0.750	1.500	2.344	1.250	S	1.66
14	3.740	3.371	2.902	0.750	0.94	0.750	1.750	2.563	1.250	S	2.00
15	3.980	3.608	3.119	0.750	1.08	0.750	1.875	2.875	1.250	S	2.51
16	4.220	3.845	3.375	0.750	1.24	0.750	2.000	3.063	1.250	S	2.81
17	4.460	4.082	3.595	0.750	1.44	0.750	2.250	3.250	1.250	S	3.22
18	4.700	4.319	3.850	0.750	1.62	0.750	2.375	3.500	1.250	E	3.72
19	4.950	4.557	4.072	0.750	1.84	0.750	2.375	3.500	1.250	E	3.92
20	5.190	4.794	4.325	0.750	2.12	0.750	2.625	3.875	1.250	E	4.63
21	5.430	5.033	4.549	0.750	2.28	0.750	2.750	4.000	1.250	E	5.00
22	5.670	5.270	4.801	0.750	2.48	0.750	2.750	4.000	1.250	E	5.25
23	5.910	5.508	5.026	0.750	2.68	0.750	2.750	4.000	1.250	E	5.48
24	6.150	5.746	5.277	0.719	3.00	0.750	2.750	4.000	1.250	E	5.78
25	6.390	5.984	5.503	0.719	3.34	0.750	2.750	4.000	1.250	E	6.13
26	6.630	6.222	5.753	0.719	3.54	0.750	2.750	4.000	1.250	E	6.38
27	6.870	6.461	5.980	0.719	3.96	0.750	2.750	4.000	1.250	E	6.72
28	7.110	6.698	6.229	0.719	4.14	0.750	2.750	4.000	1.250	E	6.88
29	7.350	6.937	6.458	0.719	4.40	0.750	2.750	4.000	1.250	E	7.28
30	7.590	7.175	6.706	0.719	4.78	0.750	2.750	4.000	1.250	E	7.58
31	7.830	7.413	6.935	0.719	5.24	0.750	2.750	4.000	1.250	E	7.72
32	8.070	7.652	7.183	0.719	5.52	0.750	2.750	4.000	1.250	E	8.26
33	8.300	7.890	7.412	0.938	5.86	1.000	2.750	4.000	1.250	E	8.42
34	8.540	8.129	7.660	0.938	6.16	1.000	2.750	4.000	1.250	E	8.80
35	8.780	8.367	7.889	0.938	6.78	1.000	2.750	4.000	1.250	E	9.04
36	9.020	8.606	8.137	0.938	6.82	1.000	2.750	4.000	1.250	E	9.60
37	9.260	8.844	8.367	0.938	7.52	1.000	2.750	4.000	1.250	E	10.24
38	9.500	9.083	8.614	0.938	7.84	1.000	2.750	4.250	1.250	E	10.84
39	9.740	9.321	8.844	0.938	8.28	1.000	2.750	4.250	1.250	E	11.36
40	9.980	9.560	9.091	0.938	8.56	1.000	2.750	4.250	1.250	E	11.50
41	10.220	9.798	9.321	0.938	9.10	1.000	2.750	4.250	1.250	E	12.14
42	10.460	10.037	9.568	0.938	9.74	1.000	2.750	4.250	1.250	E	12.74
43	10.700	10.275	9.799	0.938	9.84	1.000	2.750	4.250	1.250	E	13.00
44	10.940	10.514	10.045	0.938	10.76	0.938	2.750	4.250	1.250	E	13.88
45	11.180	10.752	10.276	0.938	11.08	0.938	2.750	4.250	1.250	E	13.98
46	11.420	10.991	10.522	0.938	11.50	0.938	2.750	4.250	1.250	E	14.60
47	11.650	11.229	10.754	0.938	12.32	0.938	2.750	4.250	1.250	E	15.00
48	11.890	11.468	10.999	0.938	12.42	0.938	2.750	4.250	1.250	E	15.82
49	12.130	11.706	11.231	0.938	12.92	0.938	2.750	4.250	1.250	E	15.90
50	12.370	11.945	11.476	0.938	13.98	0.938	2.750	4.250	1.250	E	16.98
51	12.610	12.183	11.708	0.938	14.58	0.938	2.750	4.250	1.250	E	17.66
52	12.850	12.422	11.953	0.938	14.60	0.938	2.750	4.250	1.250	E	17.93
53	13.090	12.660	12.186	0.938	15.84	0.938	2.750	4.250	1.250	E	17.99
54	13.330	12.889	12.430	0.938	15.92	0.938	2.750	4.250	1.750	E	21.60
55	13.570	13.137	12.663	1.250	16.96	1.250	2.750	4.250	1.750	E	21.14
56	13.810	13.376	12.907	1.250	17.60	1.250	2.750	4.250	1.750	E	21.88
57	14.040	13.615	13.140	1.250	17.62	1.250	2.750	4.250	1.750	E	22.25
58	14.280	13.853	13.384	1.250	19.00	1.250	2.750	4.250	1.750	E	22.80
59	14.520	14.092	13.618	1.250	19.20	1.250	2.750	4.250	1.750	E	23.86
60	14.760	14.330	13.861	1.250	20.02	1.250	2.750	4.250	1.750	E	25.22
70	17.150	16.717	16.248	1.250	27.20	1.250	2.750	4.250	1.750	E	31.98
72	17.630	17.195	16.726	1.250	28.90	1.250	2.750	4.250	1.750	E	34.18
80	19.540	19.103	18.634	1.250	40.18	1.250	2.750	4.250	2.000	E	41.88
84	20.490	20.058	19.589	1.250	45.50	1.250	3.250	4.750	2.000	E	46.46
96	23.360	22.922	22.453	1.250	52.02	1.250	3.750	5.500	2.250	E	63.08
112	27.180	26.741	26.272	1.250	70.80	1.250	3.750	5.500	2.250	E	81.78

* Dimensions shown allow for standard keyway with set screw at 90 degrees. □ Has recessed groove in hub for chain clearance. NS = Non Stock

3/4" PITCH

Chain Data	
Size	60
Pitch	3/4"
Inside Width	1/2"
Roller Diameter	0.469"
Nominal Tooth Width:	0.459"

No. 60
MULTI-STRAND

All dimensions in inches unless noted.

60 Multi-Strand Sprocket Diameters			Dimensional Data: Double Strand Sprockets					
No. Teeth	Outside Diameter	Plain Bore	Hub Diameter	LTB	MAX Bore *	Hub Type	Hub Style	Weight Lbs.
11	3.000	1.000	1.813	2.125	1.250	B	S	1.62
12	3.250	1.000	2.125	2.125	1.438	B	S	2.20
13	3.490	1.000	2.250	2.125	1.500	B	S	2.60
14	3.740	1.000	2.500	2.125	1.750	B	S	3.24
15	3.980	1.000	2.813	2.125	1.875	B	S	3.96
16	4.220	1.000	3.000	2.125	2.000	B	S	4.62
17	4.460	1.000	3.250	2.125	2.250	B	S	5.40
18	4.700	1.000	3.500	2.125	2.375	B	S	6.24
19	4.950	1.000	3.688	2.125	2.500	B	S	7.00
20	5.190	1.000	3.750	2.125	2.500	B	S	7.72
21	5.430	1.000	4.125	2.125	2.750	B	S	8.82
22	5.670	1.000	4.250	2.125	2.750	B	S	9.68
23	5.910	1.000	4.250	2.125	2.750	B	S	10.30
24	6.150	1.000	4.250	2.125	2.750	B	S	11.14
25	6.390	1.000	4.250	2.125	2.750	B	S	11.96
26	6.630	1.000	4.250	2.125	2.750	B	S	12.70
30	7.590	1.000	4.250	2.125	2.750	B	S	16.36
32	8.070	1.250	4.500	2.375	3.000	B	S	19.52
35	8.780	1.250	4.500	2.375	3.000	B	S	22.80
36	9.020	1.250	4.500	2.375	3.000	B	S	23.82
40	9.980	1.250	4.750	2.750	3.250	B	S	30.84
45	11.180	1.250	4.750	2.750	3.250	B	S	37.08
48	11.890	1.250	4.750	2.750	3.250	B	D	44.90
60	14.760	1.250	4.750	2.750	3.250	B	D	63.10

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

60 Multi-Strand Sprocket Diameters			Dimensional Data: Triple Strand Sprockets					
No. Teeth	Outside Diameter	Plain Bore	Hub Diameter	LTB	MAX Bore *	Hub Type	Hub Style	Weight Lbs.
11	3.000	1.000	1.813	3.000	1.250	B	S	2.50
12	3.250	1.000	2.125	3.000	1.438	B	S	3.30
13	3.490	1.000	2.250	3.000	1.500	B	S	3.90
14	3.740	1.000	2.500	3.000	1.750	B	S	4.50
15	3.980	1.000	2.688	3.000	1.875	B	S	5.40
16	4.220	1.000	3.000	3.000	2.000	B	S	6.50
17	4.460	1.000	3.250	3.000	2.250	B	S	7.70
18	4.700	1.000	3.500	3.000	2.375	B	S	8.50
19	4.950	1.000	3.688	3.000	2.500	B	S	10.00
20	5.190	1.000	3.750	3.000	2.500	B	S	11.20
21	5.430	1.000	4.125	3.000	2.750	B	S	12.50
22	5.670	1.000	4.250	3.000	2.750	B	S	13.20
23	5.910	1.000	4.250	3.000	2.750	B	S	14.60
24	6.150	1.000	4.250	3.000	2.750	B	S	15.80
25	6.390	1.000	4.250	3.000	2.750	B	S	17.00
26	6.630	1.000	4.250	3.000	2.750	B	S	18.60
30	7.590	1.000	4.250	3.000	2.750	B	S	23.20
35	8.780	1.250	4.500	3.250	3.000	B	S	34.50
36	9.020	1.250	4.500	3.250	3.000	B	S	37.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

No. 60
DOUBLE SINGLE

3/4" PITCH	
Chain Data	
Size	60
Pitch	3/4"
Inside Width	1/2"
Roller Diameter	0.469"
Nominal Tooth Width:	0.459"

All dimensions in inches unless noted.

60 Double Single Sprocket Diameters			Dimensional Data: Double Single Sprockets				
No. Teeth	Outside Dia.	Plain Bore	LTB	C	D	MAX Bore *	Weight Lbs.
13	3.490	0.750	1.938	1.484	2.344	1.500	2.60
14	3.740	0.750	1.938	1.484	2.563	1.750	3.20
15	3.980	0.750	1.938	1.484	2.875	1.875	3.80
16	4.220	0.750	1.938	1.484	3.047	2.000	4.50
17	4.460	0.750	1.938	1.484	3.250	2.250	5.30
18	4.700	0.750	1.938	1.484	3.500	2.375	6.50
19	4.950	0.750	1.938	1.484	3.703	2.500	6.80
20	5.190	0.750	1.938	1.484	3.953	2.750	7.00
21	5.430	0.750	1.938	1.484	4.188	2.875	7.50

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

No. 80
PLAIN BORE

1" PITCH	
Chain Data	
Size	80
Pitch	1"
Inside Width	5/8"
Roller Diameter	0.625"
Nominal Tooth Width:	0.575"

All dimensions in inches unless noted.

80 Plain Bore Sprocket Dia.				Type "A" Plain Bore		Type "B" & "C" Plain Bore						
No. Teeth	Outside Diameter	Pitch Diameter	Caliper Diameter	Plain Bore	Wt. Lbs.	Plain Bore	MAX Bore *	Hub Diameter	LTB	Hub Type	Hub Style	Wt. Lbs.
8	3.010	2.613	1.988	N/A	N/A	1.000	1.000	1.938 □	1.625	B	S	1.40
9	3.350	2.924	2.254	0.938	0.80	1.000	1.313	2.250 □	1.625	B	S	1.60
10	3.680	3.236	2.611	0.938	1.00	1.000	1.500	2.563 □	1.625	B	S	2.20
11	4.010	3.549	2.888	0.938	1.30	1.000	1.625	2.813 □	1.625	B	S	3.20
12	4.330	3.864	3.239	0.938	1.50	1.000	1.875	3.125 □	1.625	B	S	3.40
13	4.660	4.179	3.523	0.938	1.80	1.000	2.000	3.000	1.500	B	S	3.50
14	4.980	4.494	3.869	0.938	2.20	1.000	2.250	3.250	1.500	B	S	4.10
15	5.300	4.810	4.158	0.938	2.50	1.000	2.500	3.813	1.500	B	S	5.30
16	5.630	5.126	4.501	0.938	2.90	1.000	2.750	4.000	1.500	B	S	5.90
17	5.950	5.442	4.794	0.938	3.30	1.000	2.750	4.000	1.500	B	S	6.60
18	6.270	5.759	5.134	0.938	3.70	1.000	2.750	4.250	1.500	B	S	7.30
19	6.590	6.076	5.430	0.938	4.10	1.000	2.750	4.250	1.500	B	S	7.80
20	6.910	6.392	5.767	0.938	4.70	1.000	2.750	4.250	1.500	B	S	8.40
21	7.240	6.710	6.066	0.938	4.900	1.000	2.750	4.250	1.750	B	S	9.40
22	7.560	7.027	6.402	0.938	5.500	1.000	2.750	4.250	1.750	B	S	10.00
23	7.880	7.344	6.702	0.938	6.300	1.000	2.750	4.250	1.750	B	S	10.70
24	8.200	7.661	7.036	0.938	6.700	1.000	2.750	4.250	1.750	B	S	11.30
25	8.520	7.979	7.338	0.938	7.200	1.000	2.750	4.250	1.750	B	S	11.90
26	8.840	8.296	7.671	1.188	7.800	1.250	3.250	4.750	2.000	B	D	14.30
27	9.160	8.614	7.974	1.188	8.600	1.250	3.250	4.750	2.000	B	D	15.40
28	9.480	8.931	8.306	1.188	9.300	1.250	3.250	4.750	2.000	B	D	16.00
29	9.800	9.249	8.611	1.188	9.800	1.188	3.250	4.750	2.000	B	D	17.10
30	10.110	9.567	8.942	1.188	10.70	1.188	3.250	4.750	2.000	B	D	17.40
31	10.430	9.884	9.247	1.188	11.30	1.188	3.250	4.750	2.000	B	D	18.70
32	10.750	10.202	9.577	1.188	12.10	1.188	3.250	4.750	2.000	B	D	19.50
33	11.070	10.520	9.883	1.188	13.60	1.188	3.250	4.750	2.000	B	D	19.60
34	11.390	10.838	10.213	1.188	14.30	1.188	3.250	4.750	2.000	B	D	21.30
35	11.710	11.156	10.520	1.188	14.80	1.188	3.250	4.750	2.000	B	D	22.10
36	12.030	11.474	10.849	1.188	16.10	1.188	3.250	4.750	2.000	B	D	23.10
37	12.350	11.792	11.156	1.188	16.80	1.188	3.250	4.750	2.000	B	D	23.80
38	12.670	12.110	11.485	1.188	17.20	1.188	3.250	4.750	2.000	B	D	24.70
39	12.990	12.428	11.792	1.188	17.90	1.188	3.250	4.750	2.000	B	D	25.60
40	13.310	12.746	12.121	1.188	18.90	1.188	3.250	4.750	2.000	B	D	26.70
41	13.630	13.064	12.429	1.250	21.00	1.250	3.250	4.750	2.000	B	D	27.80
42	13.940	13.382	12.757	1.250	21.80	1.250	3.250	4.750	2.000	B	D	28.70
43	14.260	13.700	13.065	1.250	23.60	1.250	3.250	4.750	2.000	B	D	29.40
44	14.580	14.018	13.393	1.250	24.30	1.250	3.250	4.750	2.000	B	D	29.90
45	14.900	14.336	13.702	1.250	25.20	1.250	3.250	4.750	2.000	B	D	31.40
46	15.220	14.654	14.029	1.250	26.60	1.250	3.250	4.750	2.000	B	D	33.10
47	15.540	14.972	14.338	1.250	26.40	1.250	3.250	4.750	2.000	B	D	34.00
48	15.860	15.290	14.665	1.250	27.80	1.250	3.250	4.750	2.000	B	D	35.50
49	16.180	15.608	14.975	1.250	28.90	1.250	3.250	4.750	2.000	B	D	35.80
50	16.500	15.926	15.301	1.250	30.90	1.250	3.250	4.750	2.000	B	D	37.30
51	16.810	16.244	15.611	1.250	32.20	1.250	3.250	4.750	2.000	B	D	38.50
52	17.130	16.562	15.937	1.250	33.00	1.250	3.250	4.750	2.000	B	D	39.40
53	17.450	16.880	16.248	1.250	34.90	1.250	3.250	4.750	2.000	B	D	41.30
54	17.770	17.198	16.573	1.250	36.60	1.250	3.500	5.250	2.000	B	D	44.70
55	18.090	17.516	16.884	1.250	37.50	1.250	3.500	5.250	2.000	B	D	45.60
56	18.410	17.835	17.210	1.250	39.40	1.250	3.500	5.250	2.000	B	D	47.50
57	18.730	18.153	17.521	1.250	40.40	1.250	3.500	5.250	2.000	B	D	48.50
58	19.040	18.471	17.846	1.250	41.30	1.250	3.500	5.250	2.000	B	D	50.50
59	19.360	18.789	18.157	1.250	42.90	1.250	3.500	5.250	2.000	B	D	52.10
60	19.680	19.107	18.482	1.250	45.30	1.250	3.500	5.250	2.000	B	D	54.50
65	21.270	20.698	20.067	1.250	52.20	1.250	3.500	5.250	2.000	B	D	61.80
70	22.870	22.289	21.644	1.500	59.80	1.500	4.250	6.250	3.500	C	D	75.70
72	23.500	22.926	22.301	1.500	65.70	1.500	4.250	6.250	3.500	C	D	81.40
80	26.050	25.471	24.846	1.500	79.60	1.500	4.250	6.250	3.500	C	D	89.90
84	27.330	26.744	26.119	1.500	86.10	1.500	4.250	6.250	3.500	C	D	99.20
96	31.150	30.563	29.938	1.500	120.00	1.500	4.250	6.250	3.500	C	D	117.00
112	36.240	35.655	35.030	1.500	166.00	1.500	4.250	6.250	3.500	C	D	154.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

□ Has recessed groove in hub for chain clearance.

For more information on Sprockets see pages 132-137.

No. 80
MULTI-STRAND

All dimensions in inches unless noted.

80 Multi-Strand Sprocket Dia.			Dimensional Data: Double Strand Sprockets					
No. Teeth	Outside Dia.	Plain Bore	Hub Dia.	LTB	MAX Bore *	Hub Type	Hub Style	Wt. Lbs.
10	3.680	1.000	2.563 □	2.750	1.500	B	S	3.50
11	4.010	1.000	2.500	2.500	1.750	B	S	4.00
12	4.330	1.000	2.844	2.500	1.875	B	S	5.10
13	4.660	1.000	3.156	2.500	2.250	B	S	6.30
14	4.980	1.000	3.469	2.500	2.375	B	S	7.60
15	5.300	1.000	3.797	2.500	2.500	B	S	9.00
16	5.630	1.000	4.000	2.750	2.750	B	S	11.00
17	5.950	1.000	4.422	2.750	3.000	B	S	13.20
18	6.270	1.000	4.734	2.750	3.250	B	S	15.00
19	6.590	1.000	5.000	2.750	3.313	B	S	17.00
20	6.910	1.000	5.000	2.750	3.313	B	S	18.20
21	7.240	1.000	5.000	2.750	3.313	B	S	19.50
22	7.560	1.000	5.000	2.750	3.313	B	S	21.00
23	7.880	1.000	5.000	2.750	3.313	B	S	22.80
24	8.200	1.000	5.250	2.750	3.500	B	S	25.10
25	8.520	1.000	5.250	3.000	3.500	B	S	28.30
30	10.110	1.250	5.750	3.000	3.750	B	S	39.50
36	12.030	1.250	5.750	3.125	3.750	B	D	54.20
45	14.900	1.250	5.750	3.125	3.750	B	D	73.50

* Dimensions shown allow for standard keyway with set screw at 90 degrees. □ Has recessed groove in hub for chain clearance.

80 Multi-Strand Sprocket Dia.			Dimensional Data: Triple Strand Sprockets					
No. Teeth	Outside Dia.	Plain Bore	Hub Dia.	LTB	MAX Bore *	Hub Type	Hub Style	Wt. Lbs.
11	4.010	1.000	2.500	3.625	1.750	B	S	5.90
12	4.330	1.000	2.844	3.625	1.875	B	S	7.50
13	4.660	1.000	3.156	3.625	2.250	B	S	9.20
14	4.980	1.000	3.469	3.625	2.375	B	S	11.00
15	5.300	1.000	3.797	3.625	2.500	B	S	13.10
16	5.630	1.000	4.000	3.875	2.750	B	S	15.80
17	5.950	1.000	4.422	3.875	3.000	B	S	18.60
18	6.270	1.000	4.734	3.875	3.250	B	S	21.20
19	6.590	1.000	5.000	3.875	3.313	B	S	23.70
20	6.910	1.000	5.000	3.875	3.313	B	S	26.00
21	7.240	1.000	5.000	3.875	3.313	B	S	28.40
22	7.560	1.000	5.000	3.875	3.313	B	S	31.00
23	7.880	1.000	5.000	3.875	3.313	B	S	33.60
24	8.200	1.000	5.250	3.875	3.500	B	S	37.10
25	8.520	1.000	5.250	3.875	3.500	B	S	40.10
30	10.110	1.250	5.750	4.250	3.750	B	S	54.50
36	12.030	1.250	5.750	4.250	3.750	B	D	83.90
45	14.900	1.250	6.000	4.500	3.813	B	D	92.40

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

For more information on Sprockets see pages 132-137.

No. 80
DOUBLE SINGLE

All dimensions in inches unless noted.

80 Double Single Sprocket Diameters			Dimensional Data: Double Single Sprockets				
No. Teeth	Outside Dia.	Plain Bore	LTB	C	D	MAX Bore *	Weight Lbs.
13	4.660	1.000	2.188	1.625	3.016	2.000	6.50
14	4.980	1.000	2.188	1.625	3.344	2.250	7.70
15	5.300	1.000	2.188	1.625	3.813	2.375	9.10
16	5.630	1.000	2.188	1.625	4.000	2.688	9.50
17	5.950	1.000	2.188	1.625	4.313	2.813	10.80
18	6.270	1.000	2.188	1.625	4.641	3.125	12.10
19	6.590	1.000	2.188	1.625	4.953	3.250	12.80
20	6.910	1.000	2.188	1.625	5.281	3.500	14.00
21	7.240	1.000	2.188	1.625	5.594	3.750	16.50
22	7.560	1.000	2.188	1.625	5.922	3.750	18.40

1" PITCH

Chain Data	
Size	80-2, 80-3
Pitch	1"
Inside Width	5/8"
Roller Diameter	0.625"
Nominal Tooth Width:	0.557"

No. 100
PLAIN BORE

All dimensions in inches unless noted.

100 Plain Bore Sprocket Dia.				Type “A” Plain Bore		Type “B” & “C” Plain Bore						
No. Teeth	Outside Diameter	Pitch Diameter	Caliper Diameter	Plain Bore	Wt. Lbs.	Plain Bore	MAX Bore *	Hub Diameter	LTB	Hub Type	Hub Style	Wt. Lbs.
8	3.770	3.266	2.516	1.000	1.40	1.000	1.250	2.438 □	1.875	B	S	2.30
9	4.180	3.655	2.849	1.000	1.60	1.000	1.625	2.813 □	1.875	B	S	3.20
10	4.600	4.045	3.295	1.000	2.00	1.000	1.875	3.250 □	1.875	B	S	4.10
11	5.010	4.438	3.642	1.250	2.50	1.000	2.250	3.563 □	1.875	B	S	5.30
12	5.420	4.830	4.080	1.250	3.00	1.000	2.250	4.000 □	1.875	B	S	6.40
13	5.820	5.224	4.435	1.250	3.50	1.000	2.375	3.875	1.625	B	S	6.50
14	6.230	5.618	4.868	1.250	4.10	1.250	2.750	4.188	1.625	B	S	7.40
15	6.630	6.013	5.229	1.250	4.70	1.250	3.000	4.500	1.750	B	D	9.20
16	7.030	6.408	5.658	1.250	5.40	1.313	3.000	4.500	1.750	B	D	9.90
17	7.440	6.803	6.024	1.250	6.10	1.313	3.000	4.500	1.750	B	D	10.80
18	7.840	7.199	6.449	1.250	7.00	1.313	3.000	4.500	1.750	B	D	11.50
19	8.240	7.595	6.819	1.250	7.80	1.313	3.000	4.500	2.000	B	D	13.10
20	8.640	7.990	7.240	1.250	8.80	1.313	3.000	4.500	2.000	B	D	14.20
21	9.040	8.388	7.613	1.250	9.80	1.313	3.000	4.500	2.000	B	D	15.30
22	9.440	8.784	8.034	1.250	10.50	1.313	3.000	4.500	2.000	B	D	16.10
23	9.840	9.180	8.409	1.250	11.80	1.250	3.000	4.500	2.000	B	D	17.20
24	10.250	9.576	8.826	1.250	12.80	1.250	3.000	4.500	2.000	B	D	19.20
25	10.660	9.974	9.204	1.250	13.90	1.250	3.000	4.500	2.000	B	D	19.50
26	11.050	10.370	9.620	1.250	15.00	1.250	3.313	5.000	2.000	B	D	21.70
27	11.440	10.768	9.999	1.250	16.00	1.250	3.313	5.000	2.000	B	D	23.00
28	11.840	11.164	10.414	1.250	17.40	1.250	3.313	5.000	2.000	B	D	24.40
30	12.640	11.959	11.209	1.250	20.10	1.250	3.313	5.000	2.000	B	D	26.90
32	13.440	12.753	12.003	1.250	22.60	1.250	3.313	5.000	2.000	B	D	29.80
35	14.640	13.945	13.181	1.250	27.20	1.250	3.313	5.000	2.500	B	D	36.90
36	15.040	14.343	13.593	1.250	30.00	1.250	3.313	5.000	2.500	B	D	38.60
40	16.630	15.933	15.183	1.250	36.00	1.250	3.313	5.000	2.500	B	D	46.90
42	17.430	16.728	15.978	1.250	40.00	1.250	3.313	5.000	2.500	B	D	50.40
45	18.630	17.920	17.159	1.500	47.00	1.500	3.313	5.000	2.500	B	D	54.00
48	19.820	19.113	18.363	1.500	54.00	1.500	4.000	6.000	2.500	B	D	66.00
54	22.210	21.498	20.748	1.500	68.00	1.500	4.000	6.000	3.250	C	D	78.00
60	24.600	23.884	23.134	1.500	80.00	1.500	4.000	6.000	3.250	C	D	89.00
70	28.580	27.861	27.111	1.500	113.00	1.500	5.250	7.000	3.750	C	D	125.00
72	29.380	28.657	27.908	1.500	119.00	1.500	5.250	7.000	3.750	C	D	134.00
80	32.570	31.839	31.089	1.500	146.00	1.500	5.250	7.000	3.750	C	D	151.00
84	34.160	33.430	32.680	1.500	162.00	1.500	5.250	7.000	3.750	C	D	170.00
90	36.550	35.817	35.068	1.500	193.00	1.500	5.250	7.000	3.750	C	D	184.00
96	38.930	38.204	37.454	1.500	215.00	1.500	5.250	7.000	4.500	C	D	203.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

□ Has recessed groove in hub for chain clearance.

1" PITCH

Chain Data	
Size	80
Pitch	1"
Inside Width	5/8"
Roller Diameter	0.625"
Nominal Tooth Width:	0.575"

No. 100
MULTI-STRAND

All dimensions in inches unless noted.

100 Multi-Strand Sprocket Dia.			Dimensional Data: Double Strand Sprockets					
No. Teeth	Outside Dia.	Plain Bore	Hub Dia.	LTB	MAX Bore *	Hub Type	Hub Style	Weight Lbs.
9	4.180	1.000	2.375	2.875	1.625	B	S	4.60
10	4.600	1.000	2.375	2.875	1.875	B	S	6.20
11	5.010	1.000	3.125	2.875	2.125	B	S	7.90
12	5.420	1.125	3.375	2.875	2.250	B	S	9.30
13	5.820	1.125	3.813	2.875	2.500	B	S	11.40
14	6.230	1.125	4.188	2.875	2.750	B	S	13.60
15	6.630	1.250	4.625	3.125	3.125	B	S	17.10
16	7.030	1.250	5.000	3.125	3.313	B	S	20.10
17	7.440	1.250	5.250	3.125	3.500	B	S	23.10
18	7.840	1.250	5.250	3.125	3.500	B	S	25.40
19	8.240	1.250	5.500	3.375	3.750	B	S	29.60
20	8.640	1.250	5.500	3.375	3.750	B	S	32.40
21	9.040	1.250	5.500	3.375	3.750	B	S	35.30
22	9.440	1.250	5.500	3.375	3.750	B	D	38.40
23	9.840	1.250	5.500	3.375	3.750	B	D	41.30
24	10.250	1.250	5.750	3.375	3.750	B	D	45.10
25	10.660	1.250	5.750	3.375	3.750	B	D	48.50
26	11.050	1.500	5.750	3.375	3.750	B	D	51.50
30	12.640	1.500	5.750	3.375	3.750	B	D	65.00
32	13.440	1.500	5.750	3.375	3.750	B	D	69.00
35	14.640	1.500	6.000	4.250	3.813	B	D	75.00
36	15.038	1.500	6.000	4.500	4.000	B	D	90.80

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

100 Multi-Strand Sprocket Dia.			Dimensional Data: Triple Strand Sprockets					
No. Teeth	Outside Dia.	Plain Bore	Hub Dia.	LTB	MAX Bore *	Hub Type	Hub Style	Weight Lbs.
12	5.420	1.125	3.375	4.250	2.250	B	S	13.70
13	5.820	1.125	3.813	4.250	2.500	B	S	16.90
14	6.230	1.125	4.188	4.250	2.750	B	S	20.20
15	6.630	1.250	4.625	4.500	3.125	B	S	25.00
16	7.030	1.250	5.000	4.500	3.313	B	S	29.30
17	7.440	1.250	5.250	4.500	3.500	B	S	33.80
18	7.840	1.250	5.250	4.750	3.500	B	S	38.60
19	8.240	1.250	5.500	4.750	3.750	B	D	43.30
20	8.640	1.250	5.500	4.750	3.750	B	D	47.90
21	9.040	1.250	5.500	4.750	3.750	B	D	52.30
22	9.440	1.250	5.500	4.750	3.750	B	D	57.50
23	9.840	1.250	5.500	4.750	3.750	B	D	62.50
24	10.250	1.250	5.750	4.750	3.750	B	D	69.00
25	10.660	1.250	5.750	4.750	3.750	B	D	73.00
26	11.050	1.500	5.750	4.750	3.813	B	D	79.00
30	12.640	1.500	5.750	4.750	3.813	B	D	103.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

1 1/4” PITCH

Chain Data	
Size	100-2, 100-3
Pitch	1 1/4”
Inside Width	3/4”
Roller Diameter	0.750”
Nominal Tooth Width:	0.669”

No. 100

DOUBLE SINGLE

All dimensions in inches unless noted.

100 Double Single Sprocket Diameters			Dimensional Data: Double Single Sprockets				
No. Teeth	Outside Dia.	Plain Bore	LTB	C	D	MAX Bore *	Weight Lbs.
13	5.820	1.000	2.688	2.000	3.781	2.500	11.20
14	6.230	1.250	2.688	2.000	4.188	2.750	13.50
15	6.630	1.250	2.688	2.000	4.594	3.063	16.80
16	7.030	1.250	2.688	2.000	4.500	3.250	19.30
17	7.440	1.250	2.688	2.000	4.906	3.625	21.50
18	7.840	1.250	2.688	2.000	5.281	3.750	23.00
19	8.240	1.250	2.688	2.000	6.203	4.188	25.00
20	8.640	1.250	2.688	2.000	6.609	4.813	26.50
21	9.040	1.250	2.688	2.000	7.000	5.250	29.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

1 1/4" PITCH

Chain Data	
Size	100
Pitch	1 1/4”
Inside Width	3/4”
Roller Diameter	0.750”
Nominal Tooth Width:	0.692”

No. 120

PLAIN BORE

1 1/2” PITCH

Chain Data	
Size	120
Pitch	1 1/2”
Inside Width	1.00”
Roller Diameter	0.875”
Nominal Tooth Width:	0.924”

All dimensions in inches unless noted.

120 Plain Bore Sprocket Dia.				Type “A” Plain Bore		Type “B” & “C” Plain Bore						
No. Teeth	Outside Dia.	Pitch Dia.	Caliper Dia.	Plain Bore	Wt. Lbs.	Plain Bore	MAX Bore *	Hub Dia.	LTB	Hub Type	Hub Style	Wt. Lbs.
9	5.020	4.386	3.444	1.250	3.00	1.375	1.813	3.375 □	2.250	B	S	5.30
10	5.520	4.854	3.979	1.250	3.80	1.375	2.250	3.750 □	2.250	B	S	7.10
11	6.010	5.325	4.395	1.250	4.80	1.375	2.375	3.563	2.125	B	S	7.60
12	6.500	5.796	4.921	1.250	5.80	1.375	2.750	4.125	2.125	B	S	9.90
13	6.990	6.269	5.347	1.250	6.70	1.375	3.000	4.563	2.250	B	S	12.40
14	7.470	6.741	5.866	1.250	8.00	1.375	3.250	4.750	2.250	B	D	14.40
15	7.960	7.215	6.300	1.250	9.10	1.250	3.250	4.750	2.375	B	D	16.70
16	8.440	7.689	6.814	1.250	10.60	1.250	3.500	5.250	2.375	B	D	19.90
17	8.920	8.163	7.254	1.250	12.60	1.250	3.500	5.250	2.375	B	D	20.80
18	9.410	8.639	7.764	1.250	13.60	1.250	3.500	5.250	2.375	B	D	22.20
19	9.890	9.114	8.207	1.250	15.10	1.250	3.500	5.250	2.375	B	D	24.80
20	10.370	9.588	8.713	1.250	16.90	1.250	3.500	5.250	2.375	B	D	25.80
21	10.850	10.065	9.161	1.250	18.70	1.250	3.500	5.250	2.375	B	D	26.70
22	11.330	10.541	9.666	1.250	20.00	1.250	3.500	5.250	2.375	B	D	28.20
23	11.810	11.016	10.115	1.250	22.10	1.250	3.500	5.250	2.375	B	D	30.30
24	12.290	11.492	10.617	1.250	24.80	1.250	3.500	5.250	2.375	B	D	32.10
25	12.770	11.969	11.070	1.250	26.80	1.250	3.500	5.250	2.375	B	D	34.60
26	13.250	12.444	11.569	1.500	28.30	1.500	4.000	6.000	2.500	B	D	40.00
27	13.730	12.921	12.024	1.500	30.90	1.500	4.000	6.000	2.500	B	D	43.15
28	14.210	13.397	12.522	1.500	33.60	1.500	4.000	6.000	2.500	B	D	44.90
30	15.170	14.351	13.476	1.500	39.00	1.500	4.000	6.000	2.500	B	D	50.20
32	16.130	15.303	14.428	1.500	43.90	1.500	4.000	6.000	2.500	B	D	56.00
35	17.570	16.734	15.842	1.500	52.00	1.500	4.000	6.000	2.500	B	D	62.40
36	18.050	17.211	16.336	1.500	56.00	1.500	4.000	6.000	2.500	B	D	66.40
40	19.960	19.119	18.244	1.500	71.00	1.500	4.000	6.000	3.750	C	D	92.00
42	20.920	20.073	19.198	1.500	75.00	1.500	4.000	6.000	3.750	C	D	98.00
45	22.350	21.504	20.615	1.500	88.00	1.500	4.000	6.000	3.750	C	D	99.20
48	23.790	22.935	22.060	1.500	103.00	1.500	4.000	6.000	4.000	C	D	113.00
54	26.650	25.797	24.922	1.500	140.00	1.500	4.000	6.000	4.000	C	D	133.00
60	29.520	28.661	27.786	1.500	160.00	1.500	5.250	7.000	4.000	C	D	160.00
70	34.300	33.434	32.559	1.500	216.00	1.500	5.375	7.500	4.500	C	D	206.00
80	39.080	38.207	37.332	1.500	284.00	1.500	5.375	7.500	4.500	C	D	254.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.
□ Has recessed groove in hub for chain clearance.

No. 120

MULTI-STRAND

1 1/2" PITCH

Chain Data	
Size	120
Pitch	1 1/2”
Inside Width	1.00”
Roller Diameter	0.875”
Nominal Tooth Width:	0.824”

All dimensions in inches unless noted.

120 Multi-Strand Sprocket Dia.			Dimensional Data: Double Strand Sprockets					
No. Teeth	Outside Diameter	Plain Bore	Hub Diameter	LTB	MAX Bore *	Hub Type	Hub Style	Weight Lbs.
11	6.010	1.500	3.563	3.750	2.375	B	S	13.60
12	6.500	1.500	4.063	3.750	2.375	B	S	17.30
13	6.990	1.500	4.500	3.750	3.000	B	S	21.10
14	7.470	1.500	5.000	3.750	3.313	B	S	25.60
15	7.960	1.500	5.250	3.750	3.500	B	S	29.90
16	8.440	1.500	5.250	3.750	3.500	B	S	33.80
17	8.920	1.500	5.250	3.750	3.500	B	S	36.90
18	9.410	1.500	5.250	3.750	3.500	B	S	41.90
19	9.890	1.500	5.250	3.750	3.500	B	S	46.50
20	10.370	1.500	5.500	3.750	3.500	B	S	50.20
21	10.850	1.500	5.500	3.750	3.500	B	S	55.60
22	11.330	1.500	5.750	4.000	3.813	B	S	64.00
23	11.810	1.500	6.500	4.000	4.500	B	S	75.00
24	12.290	1.500	6.500	4.000	4.500	B	D	79.00
25	12.770	1.500	6.500	4.000	4.500	B	D	84.00
26	13.250	1.500	6.500	4.000	4.500	B	D	90.00
30	15.170	1.500	6.500	4.000	4.500	B	D	119.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

No. 140

PLAIN BORE

1 3/4" PITCH

Chain Data	
Size	140
Pitch	1 3/4"
Inside Width	1.000"
Roller Diameter	1.000"
Nominal Tooth Width:	0.924"

All dimensions in inches unless noted.

140 Plain Bore Sprocket Dia.				Type “A” Plain Bore		Type “B” & “C” Plain Bore						
No. Teeth	Outside Dia.	Pitch Dia.	Caliper Dia.	Plain Bore	Wt. Lbs.	Plain Bore	MAX Bore *	Hub Dia.	LTB	Hub Type	Hub Style	Wt. Lbs.
11	7.010	6.213	5.148	1.500	5.00	1.500	2.750	4.250	2.250	B	S	11.30
12	7.580	6.762	5.762	1.500	7.80	1.500	3.000	4.500	2.250	B	D	13.20
13	8.150	7.313	6.259	1.500	8.20	1.500	3.563	5.313	2.375	B	D	18.90
14	8.720	7.865	6.865	1.500	10.00	1.500	3.750	5.500	2.375	B	D	20.40
15	9.280	8.418	7.371	1.500	11.00	1.500	4.250	6.250	2.375	B	D	25.10
16	9.850	8.971	7.971	1.500	14.00	1.500	4.250	6.250	2.500	B	D	27.90
17	10.410	9.524	8.483	1.500	16.00	1.500	4.250	6.250	2.500	B	D	29.80
18	10.980	10.078	9.078	1.500	18.00	1.500	4.250	6.250	2.500	B	D	32.00
19	11.540	10.633	9.596	1.500	21.00	1.500	4.250	6.250	2.500	B	D	34.10
20	12.100	11.186	10.186	1.500	23.00	1.500	4.250	6.250	2.500	B	D	36.00
21	12.660	11.743	10.709	1.500	25.00	1.500	4.250	6.250	2.500	B	D	38.70
22	13.220	12.297	11.297	1.500	28.00	1.500	4.250	6.250	2.500	B	D	40.60
23	13.780	12.852	11.822	1.500	30.00	1.500	4.250	6.250	2.500	B	D	42.10
24	14.340	13.407	12.407	1.500	33.00	1.500	4.250	6.250	2.500	B	D	46.20
25	14.900	13.963	12.935	1.500	34.00	1.500	4.250	6.250	2.500	B	D	47.80
26	15.460	14.518	13.518	1.500	39.00	1.500	4.250	6.250	3.000	B	D	57.20
28	16.580	15.629	14.629	1.500	45.00	1.500	4.250	6.250	3.000	B	D	62.20
30	17.700	16.742	15.742	1.500	52.00	1.500	4.250	6.250	3.000	B	D	69.80
32	18.820	17.854	16.854	1.500	60.00	1.500	4.250	6.250	3.000	B	D	76.30
35	20.490	19.523	18.503	1.500	73.00	1.500	5.250	7.000	4.000	C	D	108.00
36	21.050	20.080	19.080	1.500	77.00	1.500	5.250	7.000	4.000	C	D	115.00
40	23.290	22.306	21.306	1.500	93.00	1.500	5.250	7.000	4.000	C	D	121.00
45	26.080	25.088	24.072	1.500	131.00	1.500	5.250	7.000	4.000	C	D	142.00
48	27.750	26.758	25.758	1.500	134.00	1.500	5.250	7.000	4.000	C	D	150.00
54	31.100	30.097	29.097	1.500	173.00	1.500	5.250	7.000	4.000	C	D	177.00
60	34.400	33.437	32.437	1.500	219.00	1.500	5.250	7.000	5.000	C	D	220.00
70	40.020	39.006	38.006	1.500	292.00	1.500	5.375	7.500	5.000	C	D	282.00
80	45.590	44.574	43.574	1.500	402.00	1.500	5.375	7.500	5.000	C	D	331.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

No. 140

MULTI-STRAND

1 3/4" PITCH

Chain Data	
Size	140
Pitch	1 3/4"
Inside Width	1.000"
Roller Diameter	1.000"
Nominal Tooth Width:	0.824"

All dimensions in inches unless noted.

140 Multi-Strand Sprocket Dia.			Dimensional Data: Double Strand Sprockets					
No. Teeth	Outside Diameter	Plain Bore	Hub Diameter	LTB	MAX Bore *	Hub Type	Hub Style	Weight Lbs.
13	8.150	1.625	5.000	3.750	3.313	B	S	29.00
14	8.720	1.625	5.500	3.750	3.750	B	S	34.80
15	9.280	1.625	6.500	3.750	4.500	B	S	42.50
16	9.850	1.625	7.000	4.000	5.250	B	S	48.10
17	10.410	1.625	7.000	4.000	5.250	B	S	57.50
18	10.980	1.750	7.000	4.000	5.250	B	S	65.60
19	11.540	1.750	7.000	4.000	5.250	B	D	72.00
20	12.100	1.750	7.000	4.000	5.250	B	D	76.00
21	12.660	1.750	7.000	4.000	5.250	B	D	82.00
22	13.220	1.750	7.000	4.000	5.250	B	D	94.00
23	13.780	1.750	7.000	4.000	5.250	B	D	100.00
24	14.340	1.750	7.000	4.000	5.250	B	D	104.00
25	14.900	1.750	7.000	4.000	5.250	B	D	120.00
26	15.460	1.750	7.000	4.000	5.250	B	D	128.00
30	17.700	1.750	7.000	4.000	5.250	B	D	163.50

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

140 Multi-Strand Sprocket Dia.			Dimensional Data: Triple Strand Sprockets					
No. Teeth	Outside Diameter	Plain Bore	Hub Diameter	LTB	MAX Bore *	Hub Type	Hub Style	Weight Lbs.
15	9.283	1.625	6.500	5.688	4.500	B	S	70.00
18	10.980	1.750	7.000	5.938	5.250	B	S	90.00
20	12.100	1.750	7.000	5.938	5.250	B	S	110.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

No. 240
PLAIN BORE

3" PITCH

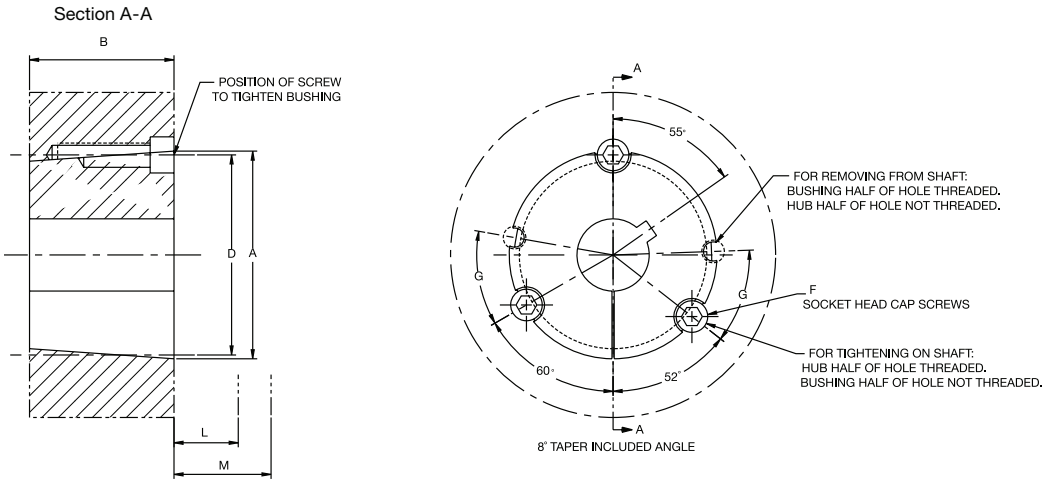
Chain Data	
Size	240
Pitch	3"
Inside Width	1.875"
Roller Diameter	1.875"
Nominal Tooth Width:	1.738"

All dimensions in inches unless noted.

240 Plain Bore Sprocket Dia.				Type "A" Plain Bore		Type "B" & "C" Plain Bore						
No. Teeth	Outside Dia.	Pitch Dia.	Caliper Dia.	Plain Bore	Wt. Lbs.	Plain Bore	MAX Bore *	Hub Dia.	LTB	Hub Type	Hub Style	Wt. Lbs.
10	11.030	9.708	7.833	1.500	30.00	1.500	4.500	6.500	3.375	B	S	49.00
11	12.020	10.648	8.665	1.500	37.00	1.500	4.750	7.000	3.875	B	D	66.00
12	13.000	11.591	9.716	1.500	45.00	1.500	5.375	7.500	3.875	B	D	72.00
13	13.970	12.536	10.569	1.500	54.00	1.500	5.375	7.500	3.875	B	D	81.00
14	14.940	13.482	11.607	1.500	62.00	1.500	5.375	7.500	3.875	B	D	88.00
15	15.910	14.429	12.475	1.500	68.00	1.500	5.375	7.500	3.875	B	D	98.00
16	16.880	15.377	13.502	1.500	82.00	1.500	5.500	8.000	4.125	B	D	120.00
17	17.850	16.327	14.382	1.500	93.00	1.500	5.500	8.000	4.125	B	D	137.00
18	18.810	17.276	15.401	1.500	108.00	1.500	5.500	8.000	4.125	B	D	142.00
19	19.780	18.227	16.289	1.500	120.00	1.500	5.500	8.000	4.125	B	D	154.00
20	20.740	19.177	17.302	1.500	128.00	1.500	5.500	8.000	4.125	B	D	169.00
21	21.710	20.129	18.197	1.500	148.00	1.500	5.500	8.000	4.125	B	D	186.00
25	25.550	23.936	22.014	1.500	208.00	1.500	5.500	8.000	4.125	B	D	254.00
30	30.340	28.700	26.825	1.500	310.00	1.500	6.000	9.000	6.250	C	D	398.00
35	35.130	33.467	31.559	1.500	416.00	1.500	6.000	9.000	6.250	C	D	527.00
40	39.920	38.237	36.362	1.500	548.00	1.500	7.000	10.000	6.750	C	D	672.00
45	44.700	43.007	41.106	1.500	702.00	1.500	7.000	10.000	6.750	C	D	850.00
54	53.310	51.595	49.720	1.500	1022.00	1.500	7.000	10.000	6.750	C	D	1148.00
60	59.040	57.322	55.447	1.500	1268.00	1.500	7.000	10.000	6.750	C	D	1419.00

* Dimensions shown allow for standard keyway with set screw at 90 degrees.

TAPER-LOCK® BUSHING DIMENSIONS



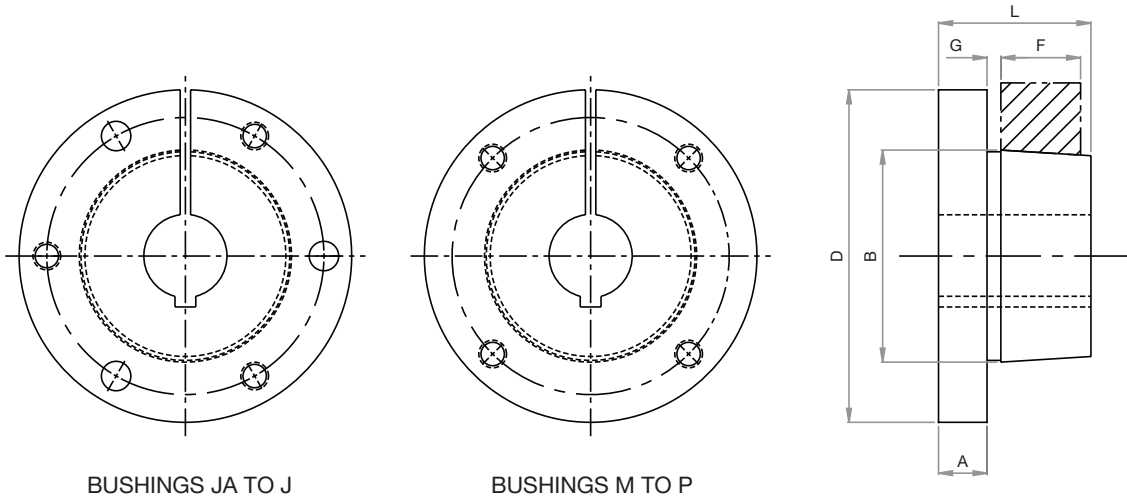
TAPER-LOCK® is a registered trademark of Rockwell Automation.

All dimensions in inches unless noted.

Bushing No.	Bore Range				Torque Capacity (lb-in)	A	B	C	Wt. Lbs*
	Minimum	Max w/ Standard Keyway	Max w/ Shallow Keyway	Max w/No Keyway					
1008	0.500	0.875	1.000	1.000	1,200	1.386	0.875	1.328	0.20
1108	0.500	1.000	1.125	1.125	1,300	1.511	0.875	1.453	0.25
1210	0.500	1.250	1.250	1.250	3,600	1.875	1.000	1.750	0.55
1215	0.500	1.250	1.250	1.250	3,550	1.875	1.500	1.750	0.70
1310	0.500	1.375	1.438	1.438	3,850	2.000	1.000	1.875	0.70
1610	0.500	1.625	1.688	1.688	4,300	2.250	1.000	2.125	0.75
1615	0.500	1.625	1.688	1.688	4,300	2.250	1.500	2.125	1.00
2012	0.500	2.000	2.125	2.125	7,150	2.750	1.250	2.625	1.40
2517	0.500	2.438	2.688	2.688	11,600	3.375	1.750	3.250	3.20
2525	0.750	2.375	2.688	2.688	11,300	3.375	2.500	3.250	4.30
3020	0.875	3.000	3.250	3.250	24,000	4.250	2.000	4.000	5.80
3030	0.938	3.000	3.250	3.250	24,000	4.250	3.000	4.000	8.00
3535	1.188	3.500	3.938	3.938	44,800	5.000	3.500	4.830	11.00
4040	1.438	4.000	4.438	4.438	77,300	5.750	4.000	5.540	17.00
4545	1.938	4.500	4.938	4.938	110,000	6.375	4.500	6.130	24.00
5050	2.438	5.000	5.313	5.313	126,000	7.000	5.000	6.720	32.00

* Bushing weight changes with bore size. Weight depicted reflects approximate weight.
NOTE: Torque Capacity shown is for light starting and steady running. For more sever applications apply Service Factor as needed.

QD® BUSHINGS



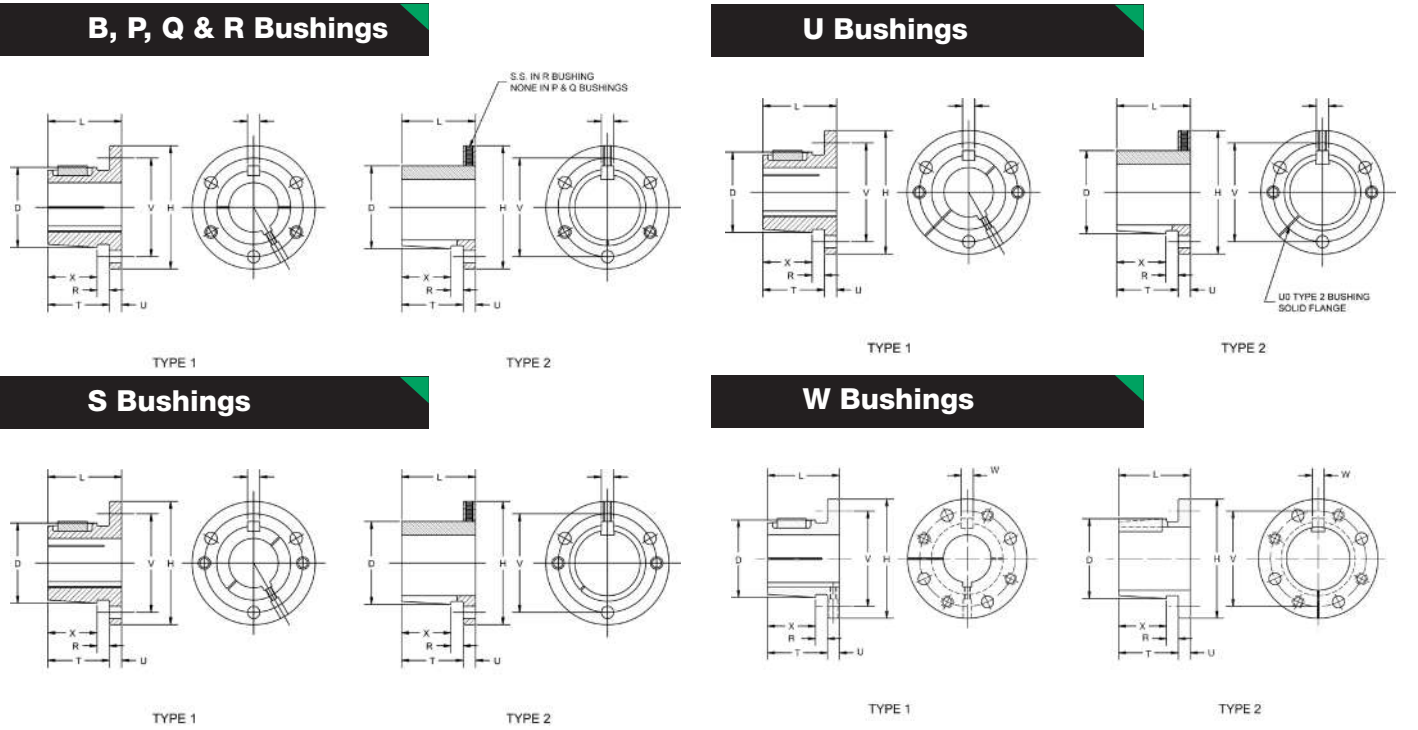
QD® is a registered trademark of, and is used under license agreement from Emerson Electric Co.

QD® Bushing Dimensional Information

All dimensions in inches unless noted.

QD® Bushing	Bore Range				Torque Capacity (lb-in)	A	B	D	F	G	L	Wt. Lbs
	Min.	Max w/ Standard Keyway	Max w/ Shallow Keyway	Max w/No Keyway								
JA	0.500	1.000	1.188	1.250	1,000	0.375	1.375	2.000	0.563	0.125	1.063	0.80
SH	0.500	1.375	1.625	1.688	3,500	0.438	1.871	2.625	0.813	0.125	1.313	0.70
SDS	0.500	1.625	1.938	2.000	5,000	0.438	2.187	3.188	0.760	0.125	1.313	1.00
SD	0.500	1.625	1.938	2.000	5,000	0.438	2.187	3.188	1.250	0.125	1.813	1.20
SK	0.500	2.125	2.500	2.625	7,000	0.563	2.812	3.875	1.250	0.125	1.938	2.10
SF	0.500	2.313	2.938	2.938	11,000	0.625	3.125	4.625	1.250	0.125	2.063	3.10
E	0.875	2.875	3.500	-	20,000	0.873	3.834	6.000	1.625	0.250	2.750	7.10
F	1.000	3.250	3.938	4.000	30,000	0.938	4.437	6.625	2.500	0.344	3.750	8.70
J	1.500	3.750	4.500	-	45,000	1.125	5.148	7.250	3.188	0.375	4.625	16.80
M	2.000	4.750	5.500	-	85,000	1.250	6.500	9.000	5.188	0.400	6.750	56.00
N	2.438	5.000	6.000	-	150,000	1.500	7.000	10.000	6.250	0.563	8.125	68.00
P	2.938	5.938	7.000	-	250,000	1.750	8.250	11.750	7.250	0.625	9.375	120.00

SPLIT TAPER BUSHINGS



ANSI SPLIT TAPER BUSHINGS

All dimensions in inches unless noted.

Bushing No.	Dimensions										Bore Range				Cap Screws		Approx. Weight (Lbs)	Wrench Torque In. Lbs
	L	U	T	D		H	V	W	X	R	Type 1		Type 2		No.	Size		
				Large End	Small End						Min Bore	Max Bore	Min Bore	Max Bore				
G1	1.000	0.250	0.750	1.172	1.133	2.000	1.563		0.675	0.125	0.375	0.938	1.000	1.000	2	1/4 x 5/8	0.5	95
H1	1.250	0.250	1.000	1.625	1.570	2.500	2.000		0.875	0.125	0.375	1.375	1.438	1.500	2	1/4 x 3/4	0.8	95
P1	1.938	0.406	1.531	1.938	1.856	3.000	2.438	0.375	1.313	0.219	0.500	1.438	1.500	1.750	3	5/16 x 1	1.3	192
P2	2.938	0.406	2.531	1.938	1.793	3.000	2.438	0.375	2.313	0.219	0.750	1.438	1.500	1.750	3	5/16 x 1	1.5	192
B	1.938	0.500	1.439	2.625	2.557	3.688	3.125	0.500	1.188	0.250	0.500	1.938	2.000	2.438	3	5/16 x 1-1/4	1.8	192
Q1	2.500	0.531	1.969	2.875	1.796	4.125	3.375	0.500	1.750	0.219	0.750	2.063	2.125	2.688	3	3/8 x 1-1/4	3.5	348
Q2	3.500	0.531	2.969	2.875	1.704	4.125	3.375	0.500	2.750	0.219	1.000	2.063	2.125	2.625	3	3/8 x 1-1/4	4.5	348
R1	2.875	0.675	2.250	4.000	3.875	5.375	4.625	0.750	2.000	0.250	1.185	2.813	2.875	3.750	3	3/8 x 1-1/4	7.5	348
R2	4.875	0.675	4.250	4.000	3.750	5.375	4.625	0.750	4.000	0.313	1.375	2.813	2.875	3.625	3	3/8 x 1-1/4	11	348
S1	4.375	0.750	3.675	4.625	4.418	6.375	5.375	0.750	3.313	0.313	1.688	3.188	3.250	4.250	3	1/2 x 2-1/4	14	840
S2	6.750	0.750	6.000	4.625	4.270	6.375	5.375	0.750	5.688	0.438	1.875	3.188	3.250	4.188	3	1/2 x 2-1/4	19	840
U0	5.250	1.063	4.188	6.000	5.770	8.375	7.000	1.250	3.750	0.438	2.375	3.063			3	5/8 x 2-3/4	30	1680
U0	4.938	0.750	4.188	6.000	2.766	8.375	7.000	1.250	3.750	0.438	3.250	4.250	4.375	5.500	3	5/8 x 2-3/4	27	1680
U1	7.125	1.063	6.063	6.000	5.649	8.375	7.000	1.250	5.625	0.438	2.375	4.250	4.375	5.500	3	5/8 x 2-3/4	40	1680
U2	10.125	1.063	9.063	6.000	5.461	8.375	7.000	1.250	5.625	0.438	2.438	4.250	4.375	5.000	3	5/8 x 2-3/4	50	1680
W1	8.250	1.438	6.813	8.500	6.102	12.500	10.000	1.250	6.375	0.438	3.375	6.188	6.250	7.438	4	3/4 x 3	104	3000
W2	11.250	1.438	9.813	8.500	7.914	12.500	10.000	1.250	9.375	0.438	3.375	6.188	6.250	7.438	4	3/4 x 3	133	3000

POWER-LOCKS®

Enter the “Keyless” Society

Our POWER-LOCK® solves your problems.
Eliminate backlash damage to keyways from heavy loads... the Tsubaki POWER-LOCK® fits tightly around the shaft/hub and is not affected by load reversals.

End your high machining expenses for long shaft keyways, splined shafts, threads, grooves and steps... the Tsubaki POWER-LOCK® offers exacting, slip-free location. Erase the headaches of shrink and press fits. The Tsubaki POWER-LOCK® simplifies installation and removal.

This easy-to-install unit slides into position and offers a keyless shaft-hub lock that will simultaneously handle both high torque and thrust while increasing your shaft strength.

The POWER-LOCK® is easy to assemble... you only need one tool. It is ideal for locking in large or small sprockets, gears, pulleys, timing cams and rollers. Best of all, the POWER-LOCK® is in stock for immediate shipment.

Features & Applications

High Durability Against Reversing or Impacting Loads
The POWER-LOCK® connection is not affected by torsional load reversal or impact, which damages the key and keyway connection. Tsubaki POWER-LOCKS® fit tightly around the shaft/hub and is free of backlash.

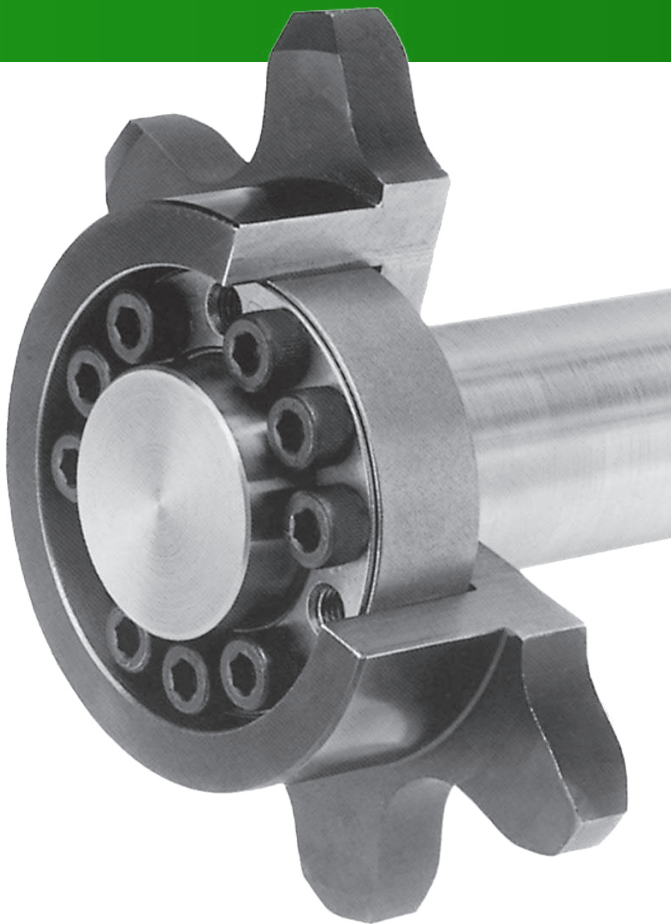
Easy and Precise Positioning
The POWER-LOCK® offers 360-degree angular adjustment and is excellent for indexing tables, cam mechanisms, gear drives and double-strand conveyor sprockets.

Thrust Capability
The Tsubaki POWER-LOCK® can hold axial forces, too. Typical applications with these forces include indexing tables and bevel gears.

Easy Assembly and Disassembly
The POWER-LOCK® can be assembled and disassembled frequently, so maintenance or replacement of worn parts is simple and easy as compared to other methods (key and keyway, spline, shrink or press fits and welding).

Increased Shaft Strength
By using the POWER-LOCK®, no metal needs to be removed from the shaft (such as the cutting of a keyway). The strength of the shaft can be kept at its original diameter. This savings can be especially noted on hollow-shaft applications.

Eliminates Costly Machining
There is no need for time-consuming machining of keyways. The POWER-LOCK® offers substantial savings on long, heavy shafts.



Tsubaki POWER-LOCKS® offer a Whole New Approach to Replacing Keyways

POWER-LOCKS®



AS Inch and Metric Series Power-Lock
Multi-purpose locking devices available in stainless steel and electroless nickel-plated finish, in addition to standard models.
Bore range: 0.75" to 12" (19mm to 300mm)
Also available in larger sizes. Please contact Tsubaki.



AD Metric Series Power-Lock
Capable of transmitting 1.5 to 3 times the AS Series rated torque capacity. Suitable for applications requiring very high torque.
Bore range: 0.75" to 12" (19mm to 300mm)



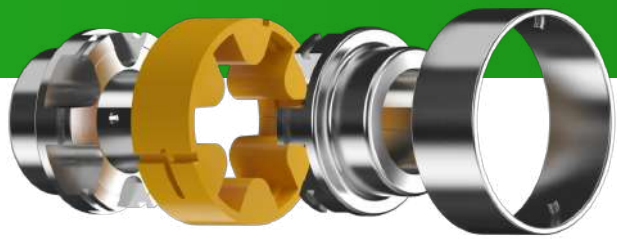
KE Inch Series Power-Lock
Suitable for small shafts with a wide range of tolerances (m6, k6, js6, h6~h10). Available in stainless steel and electroless nickel-plated KP models.
Bore range: 0.1875" to 4" (5mm to 100mm)



AE Metric Series Power-Lock
Simply constructed units with only an inner and an outer ring with a few locking bolts.
Bore range: 19mm to 150mm



EL Metric Series Power-Lock
Although these shaft-hub locking devices cannot connect independently, they require minimum installation space and offer compact design configurations.
Bore range: 10mm to 150mm



ATRA-FLEX M-SERIES COUPLINGS

How it Works

The M-Series close coupled couplings consist of four parts, two flex hubs, insert, and ring. The flex hubs are installed on the shafts with the ring twisted and locked over the flex hub. After coupling alignment, the insert is placed around the flex hubs engaging with the bottom lobes of the insert. The ring is then twisted and locked to engage with the insert.

No fasteners or special tooling is required. M-Series uniquely combines the stability of a compression type coupling with the safety of a shear coupling. In the event of a lockup, the insert will shear, minimizing the possibility of damaging your rotational equipment.

The rugged polyurethane insert is the only spare part and can be replaced in minutes without having to move the equipment or the shaft hubs.



Features

- Unique twist and lock-on ring means no fasteners or special tools required to install the coupling
- Absorbs extreme torsional shock and vibration while accommodating angular, parallel, and axial misalignment
- No lubrication
- Improved design with a larger bore capacity and a higher horsepower rating
- Withstands a temperature range from -60° to 350° Fahrenheit depending on insert type
- Wide range of inserts available to meet most torsional stiffness and torque requirements and offers very high resistance to chemical and temperature shifts.
- Nitrocarburized process is available for corrosion resistance as a cost-effective alternative to stainless steel
- High torque density allowing for up to 20" shaft diameters and 3,610,000 in-lbs of torque in several configurations including: spacer, floating shaft, flywheel, axial slide, and limited-end float, among others

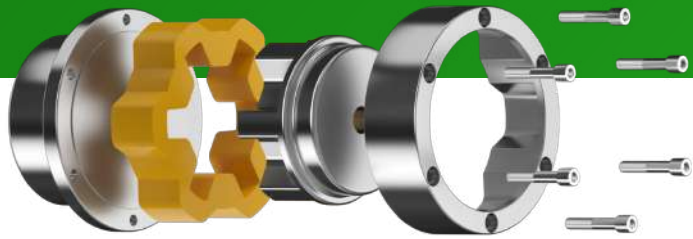
Insert Yellow

	M00	M0	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M12	M13
CONTINUOUS (LB-IN)	180	600	1,260	3,000	5,760	12,600	28,800	48,000	111,000	186,600	273,000	420,000	960,000	1,900,000
INTERMITTENT (LB-IN)	300	1,000	2,100	5,000	9,600	21,000	48,000	80,000	185,000	311,000	455,000	700,000	1,600,000	3,200,000

Millennium Non Spacer Couplings

SIZE	M00	M0	M1	M1H	M2	M3	M4	M5	M6	M7	M8	M9	M10	M12	M13
DIAMETER/HEIGHT inches	2.170	2.840	3.860	4.345	4.820	5.750	7.600	9.700	11.800	13.600	15.850	17.860	19.875	27.350	34.620
TOTAL WIDTH inches	2.050	2.825	3.575	3.950	4.575	5.075	6.700	9.200	11.200	12.200	14.700	18.200	20.200	23.250	22.300
MAXIMUM BORE	1.0	1.375	1.750	1.9375	2.250	2.500	3.375	4.500	5.500	6.000	7.2500	9.000	10.000	13.250	16.000
PILOT BORE	0.250	0.300	0.410	0.609	0.609	0.750	0.940	1.00	1.500	1.750	2.450	2.900	3.750	4.000	7.000
IDEAL HUB GAP (DBSE)	0.120	0.175	0.175	0.175	0.175	0.175	0.300	0.320	0.320	0.320	0.320	0.320	0.320	0.370	0.500

Please provide distance between shaft ends for spacer coupling
Standard inch spacers available 1-5, 6-13 are MTO, consult factory
M series spacer uses A series flange



ATRA-FLEX T-SERIES COUPLINGS

How it Works

T-Series close coupled couplings consist of four parts. The ring hub, flex hub, insert, and drive ring. The ring hub and flex hub are installed on the shafts with the drive ring fitting over the flex hub. After coupling alignment, the insert is placed around the flex hub engaging the bottom lobes of the insert. The drive ring is then fitted over the insert engaging the top lobes of the insert. The drive ring is then fastened to the ring hub using high strength alloy steel socket head cap screws with high collar lock washers. The coupling will now transmit torque with silent, smooth reliable, maintenance free operation.

Features

- Absorbs extreme torsional shock and vibration while accommodating angular, parallel, and axial misalignment without generating reactionary loads, significantly increasing bearing life.
- Uniquely combines the stability of a compression type coupling with the safety of a shear coupling. In the event of a lockup, the insert will shear, minimizing the possibility of damaging your rotational equipment.
- Allows up to 15" shaft diameters and 1,570,000 in-lbs of torque in several configurations including: non-spacer, spacer, floating shaft, flywheel, limited-end float, among others.

- No lubrication.
- Reduced spare parts. The rugged polyurethane insert is the only spare part and can be inspected or replaced in minutes without having to move the equipment or the shaft hubs.
- Withstands a temperature range from -60° to 350° Fahrenheit depending on insert type.
- Wide range of inserts available to meet most torsional stiffness and torque requirements and offers very high resistance to chemicals and weather.
- HD inserts available for 30% higher torque without changing any other components.
- Nitrocarburized process is available for corrosion resistance as a cost-effective alternative to stainless steel.



Insert Yellow

	T-0	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12
CONTINUOUS (LB-IN)	1,000	1,600	3,800	6,000	12,000	35,000	64,700	120,000	202,000	304,000	540,000	720,000	950,000
INTERMITTENT (LB-IN)	1,800	2,500	7,000	9,600	19,200	60,000	103,600	200,000	269,600	500,000	860,000	1,050,000	1,280,000

T-Flex Non Spacer Couplings

SIZE	T-0	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12
DIAMETER/HEIGHT inches	2.950	3.960	4.800	6.290	7.800	9.765	11.900	13.600	14.625	18.020	19.950	23.250	28.500
TOTAL WIDTH inches	2.850	3.600	4.600	5.100	6.680	8.180	10.180	12.200	14.200	16.200	18.200	20.250	22.275
MAX BORE FLEX HUB	1.375	1.750	2.250	2.500	3.375	4.500	5.500	6.250	7.125	9.000	10.000	11.250	12.875
MAX BORE RING HUB	1.625	2.250	2.500	3.375	3.875	5.250	6.250	7.250	7.625	10.375	12.000	12.500	15.000
HD RING HUB MAX BORE	1.875	2.750	2.875	4.500	5.250	6.625	8.250	9.250	10.625	13.250	15.375	17.500	20.000
PILOT BORE	0.300	0.500	0.600	0.750	0.950	1.000	1.500	1.750	2.250	2.900	3.700	3.900	3.900
IDEAL HUB GAP (DBSE)	0.100	0.100	0.100	0.100	0.180	0.180	0.180	0.200	0.200	0.200	0.200	0.250	0.275

Please provide distance between shaft ends for spacer coupling
Standard inch spacers available 1-5, 6-12 are MTO, consult factory



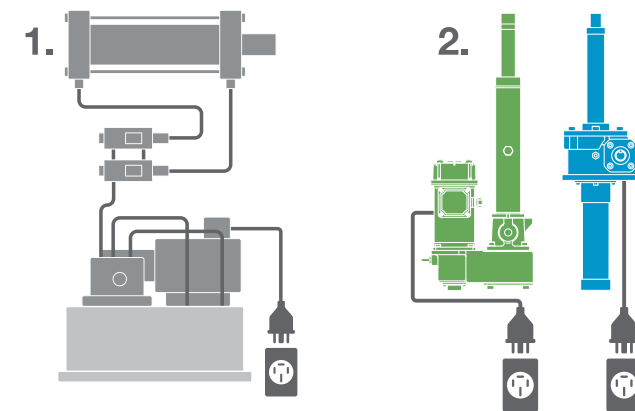
Customized Solutions

Tsubaki has extensive made-to-order capabilities and can design a solution to fit any application you might have. With 50+ years of experience building power cylinders, gear motors and gear reducers, Tsubaki brings a wealth of knowledge of the industry, towering over competitors who only make actuators.



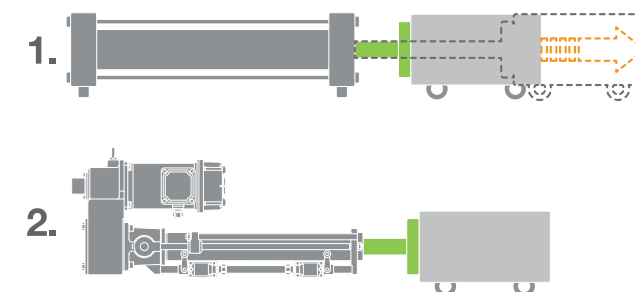
POWER CYLINDERS

Tsubaki Power Cylinders hit the mark every time. These electric cylinders operate with just simple wiring and have several advantages over hydraulic or pneumatic actuators. First, without extra parts like pneumatic or hydraulic piping, maintenance is a snap, **saving time and money**. Plus, Tsubaki Power Cylinders are designed for safe and clean operation. Various built-in overload devices give users **peace of mind**, and a **leak-proof casing prevents oil spills**.



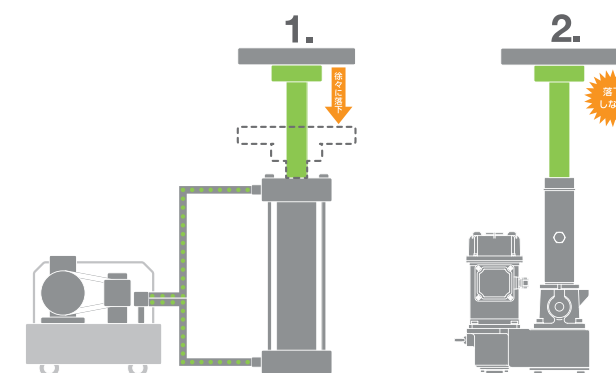
Simple Installation

1. Hydraulic/Pneumatic cylinders require an entire pressurized fluid system.
2. Power Cylinders only require electrical wiring. No need for compressor, piping or valves.



Maximum Control

1. Hydraulic/Pneumatic Cylinders require position sensors and a physical stopper to have intermediate positioning.
2. Power Cylinders can have built in encoders that can be incorporated into a control system to provide accurate multi-point stopping positions.



Safe Operation Clean Operation

1. Hydraulic/Pneumatic Cylinders require a constant pressure source to hold a load, and pipe leaks can cause a gradual retraction of the load.
2. Power Cylinders are supplied with brake motors that allow the cylinder to hold a load in position with no power equipment.

POWER CYLINDER THE ECOLOGICALLY-FRIENDLY SOLUTION

80% less CO₂ emission and electricity usage compared to hydraulic or pneumatic cylinders.



Clean Operation

Clean operation is possible because there is no oil leak.



Easy Installation

Unlike hydraulic cylinders, operation at a high place and under adverse environment is easier because power cylinder does not require extra components installation.



Operable Only by Electrical Wiring

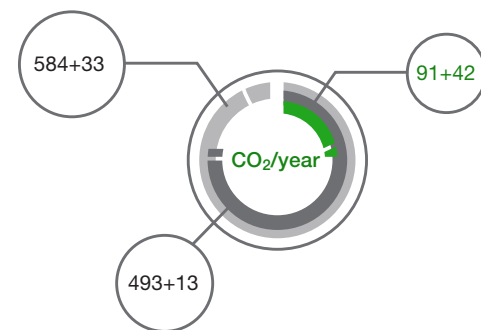
All you need for operation is electrical wiring.



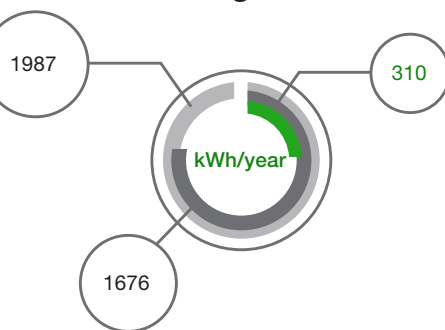
Eco-Friendly

The Power Cylinder has been recognized as a power-saving product by LCA (Life Cycle Assessment). In addition to its energy-saving feature, CO₂ emissions can be significantly reduced compared with air cylinders and hydraulic cylinders.

CO₂ Emission



Electrical Usage



CO₂ Comparison

Power cylinder	1.0
Pneumatic cylinder	4.6
Hydraulic cylinder	3.8

Electrical Comparison

Power cylinder	1.0
Pneumatic cylinder	6.4
Hydraulic cylinder	5.4

Power cylinder	
Pneumatic cylinder	
Hydraulic cylinder	

CO₂ Emission (lbs CO₂/year)

In Operation

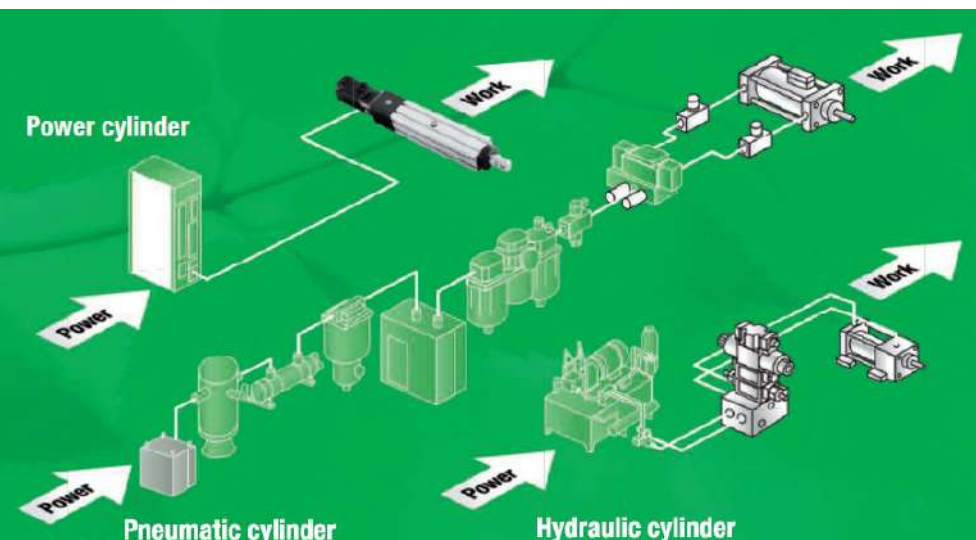
Power cylinder :	201
Pneumatic cylinder:	1,290
Hydraulic cylinder:	1,090

In Production

Power cylinder :	93
Pneumatic cylinder:	73
Hydraulic cylinder:	29

Comparison Condition

Thrust; 675lbf, speed ; 8 in/s, Stroke 20in
1 reciprocating/min x 12 Hrs. x 250 days
Including all drive unit such as drive motor, hydraulic pump or compressor



U SERIES POWER CYLINDERS

New flagship power cylinder

(Successor model of T series Power Cylinders with more than 6 tons rated thrust)

Thrust: 13,250lbf to 70,000lbf {6000kgf to 32000kgf}

Power Cylinder that succeeds in providing a smaller, lighter unit with better cost performance while maintaining the same performance of the previous model (T series).

Lightweight and compact

Thanks to newly developed special ball screws and bearings, we succeeded in reducing the total length by a max. of 11% and the mass 40% compared with the previous model. The smaller size and lighter weight make it easy to replace hydraulic cylinders.

Complete line-up available

We added a model with a 32-ton rated thrust that we did not have previously. We can now replace hydraulic cylinders in the large thrust range.

Better cost performance

In addition to achieving cost reductions compared to previous models thanks to smaller and lighter parts, the power cylinder is electrical so it has much better power savings than hydraulic types, greatly reducing power consumption.

Two easy-to-select types

U series have two types which are different in safety mechanisms from each other. The UB type incorporates a wet slip clutch. UC type is equipped with a thrust detection unit.

Abundance of options

The stroke adjusting limit switch includes two types of the external type and internal type, and the stroke sensor includes two types of the potentiometer method and rotary encoder method. Control by a sequencer becomes simpler. For a stroke sensor with potentiometer, an option not only indicating stroke but also allowing for control by a meter relay is also available.



LP

UB

6000

L

5

V

T1

LPUJ

Power Cylinder

Thrust

Speed : S, L, M, H

Motor Option

Option Code

6000 : 13,250lbf { 6000k g f }

8000 : 17,680lbf { 8000k g f }

12000 : 26,520lbf { 12000k g f }

16000 : 35,360lbf { 16000k g f }

22000 : 48,620lbf { 22000k g f }

32000 : 70,720lbf { 32000k g f }

Nominal Stroke

5 : 500mm [19.68in]

10 : 1000mm [39.37in]

15 : 1500mm [59.06in]

20 : 2000mm [78.74in]

Voltage Code

No code : 200V class 200/200/220V 50/60/60Hz

V : 400V class 400/400/440V 50/60/60Hz

V1 : 380V/50Hz

V2 : 380V/60Hz

V3 : 415V/50Hz

V4 : 460V/60Hz

V5 : 575V/60Hz

A : NEMA Adapter

L : With two external limit switches for stroke adjustment *1

L3 : With three external limit switches for stroke adjustment *2

K2,K4 : Position detecting internal limit switch

P : Potentiometer

R : Rotary encoder

C : Clevis *3

U : U type end fitting (blank: standard) *4

J : Bellows *5

The above values are examples of indication.

U Series

LPUB with: Wet slip clutch

LPUC with: Thrust detection unit

Please order the trunnion mounting adaptor separately from the Power Cylinder.

Manually-operated handle is available as an option.

*1 This cylinder may be damaged during over strokes. At a minimum, we recommend attaching this OP (for position control).

*2 Please specify 4 or more mountings separately.

*3 Cannot combine with clevises and K2, K4, P, and R.

*4 I type end fittings are standard for the U series.

*5 The stroke is the same.

Classification of usage for LPUB and LPUC types

Both types of the Power Cylinders have the same basic functions (thrust, speed, stroke), however, each has its feature as regards to the mechanism.

UB type

- With wet slip clutch

The screw shaft end of the reduction part incorporates a slip clutch which operates stably in grease as a safety device. Adoption of special lining exerts a protective function even at the time of overload or stroke overextension.

When overload electrically detected, use in combination with our shock relay is recommended.

UC type

- Thrust detecting mechanism type
- This type exerts its effect in the following cases:
 - For push/pull press stop
 - When requiring an electric signal during overload
 - When an overload is applied from the load side during power cylinder stops
 - When an overload is impulsively applied, the spring absorbs the impact load (Thrust detecting mechanism)

Bellows (-J)

Clevis fitting (LPUB6000-C)

Trunnion fitting (LPUB6000-T)

Manual handle (LPTB4000-H)

Manual handle for control unit options (LPTB4000-HC)

Structure

UB type

With wet slip clutch protection device

UC type

With thrust detecting mechanism

Brake motor

Fully sealed construction for use in normal outdoor conditions. This brake action holds load while the power cylinder stops and reduces coasting during stoppage, and of increases stop accuracy. All of the brake motors are outdoor types.

Reduction part

The reduction consists of combination of a helical gear on the high speed side and a spur gear on the low speed side. The lubrication is grease bath type, and has a low noise operating specification. Furthermore, a manual handle shaft is provided, and the structure of the speed reducer enables manual operation at power failure and adjustment for installation. As options, various position detecting devices can be installed.

Actuation part

The actuation part is with a ball screw and nut which converts a rotating force into linear motion. In addition external limit switches for stroke adjustment can be mounted. A high precision ball screw and nut have advantages such as high transmission efficiency, less wear, long life and easy lubrication.

The external limit switches for stroke adjustment are structured to freely adjust the stroke and endure outdoor use. The bellows are excellent in weatherproofing, and the working stroke is the same even with bellows equipped. The sealed rod also endures outdoor use.

Installation and Mounting Method

Trunnion mount Clevis mount

* For the mount fitting, refer to the item of options.

Position detecting unit

Note:
Mounting cannot be carried out with clevis fitting. Mount this unit with trunnion fitting.

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TSUBAKI Recycling & Waste Management Product Catalog

TSUBAKI Recycling & Waste Management Product Catalog

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POWER CYLINDERS

T SERIES POWER CYLINDERS

Thrust: 550lbf to 8,800lbf {250kgf to 4000kgf}

This series can be used in every application with the following features: Brake motor that holds load strongly; Gear reducer that provides low-noise operation; High-efficiency ball screw developed for cylinders: Safety mechanism that protects other devices; Extensive options. Can also be used outdoors (IP55).

Easy-to-Choose Two Types

There are two types that have different safety mechanisms. TB Type has a built-in wet slip clutch. The TC Type comes with a thrust-detecting limit switch.

Wide Variety

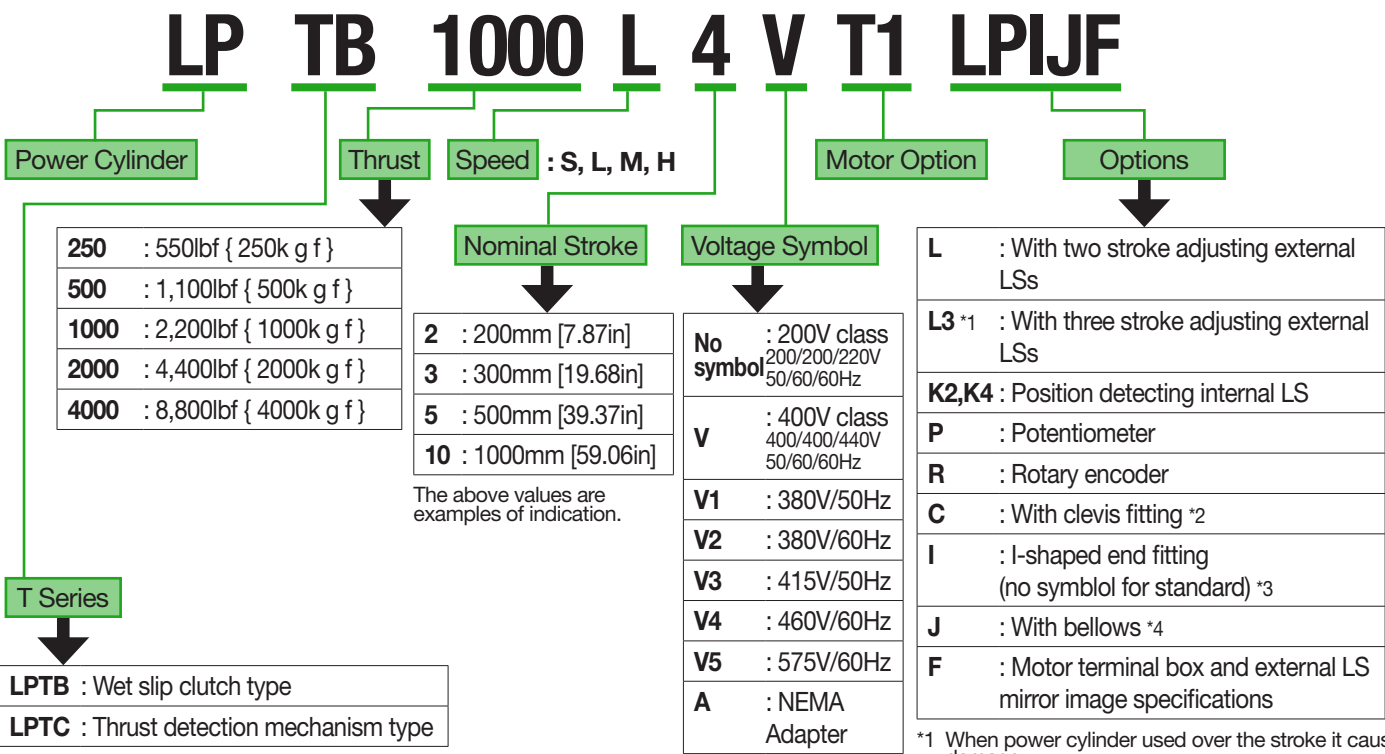
A wide range of standard models are available depending on the application, thrust, and speed. You can choose the thrust from between 2.45kN and 39.2kN, and the speed from 10mm/s and 120mm/s.

Secure Operation

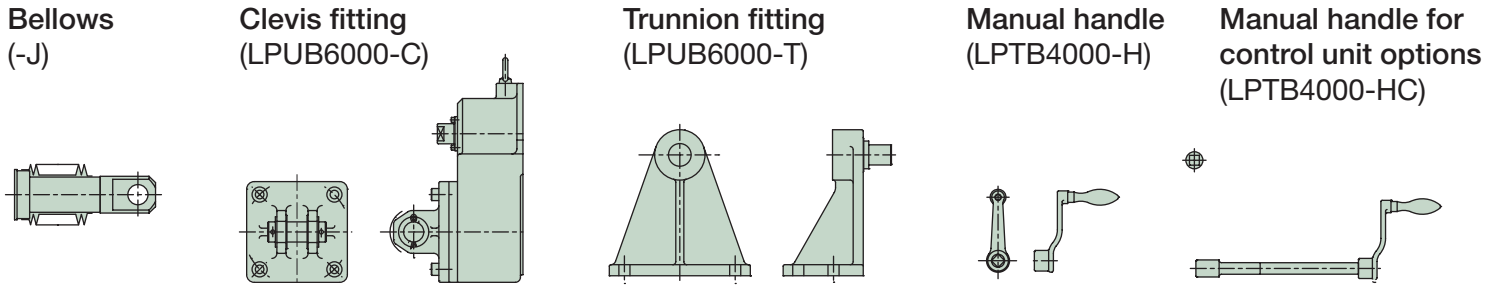
All models use a high-efficiency ball screw, quiet reducer, and reliable brake motor. In addition, a highly reliable safety device is built into all series to work effectively against overload.

Various Options

Two types of stroke-adjusting limit switches (external and internal types) and stroke sensors (potentiometer and rotary encoder types) are available, allowing for much easier control by a sequencer.

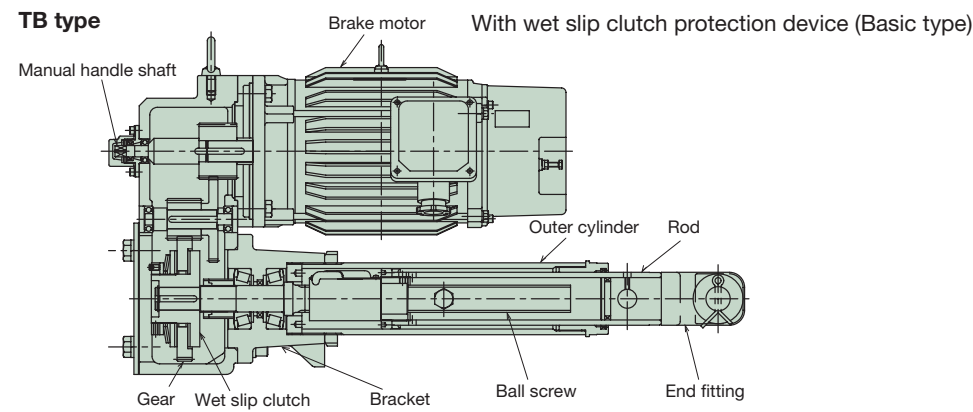


- The Trunnion fitting is not included in the body model number. Please separately specify a Trunnion model number.
 - Manual operating handles are also available.
- Classification of usage for LPTB and LPTC types**
- Both types of the power cylinders have the same basic functions (thrust, speed, stroke), however, each has its feature as regardsto the mechanism. Read the following to select the optimum type.
- TB type**
- Wet slip clutch type (simple type) [Wet slip clutch]
- The screw shaft end of the reduction part incorporates a slip clutch which operates stably in grease as a safety device.
- Adoption of special lining exerts a protective function even at the time of overload or stroke overextension.
- * When overload is electrically detected, use in combination with our shock relay is recommended.
- TC type**
- Thrust detecting mechanism type
 - This type exerts its effect in the fillwing cases:
 - When performing press (pull) stop
 - When requiring an electric signal at the time of overload
 - When an overload is possibly applied from the load side during stop
 - When an overload is impulsively applied, the incorporated spring absorbs the impact load. (Thrust detecting mechanism)
- *1 When power cylinder used over the stroke it causes damage.
*2 When four or more limit switch are installed, please contact Tsubaki.
*3 The clevis fitting cannot be used with K2, K4, P, or R options.
*4 The stroke is the same.

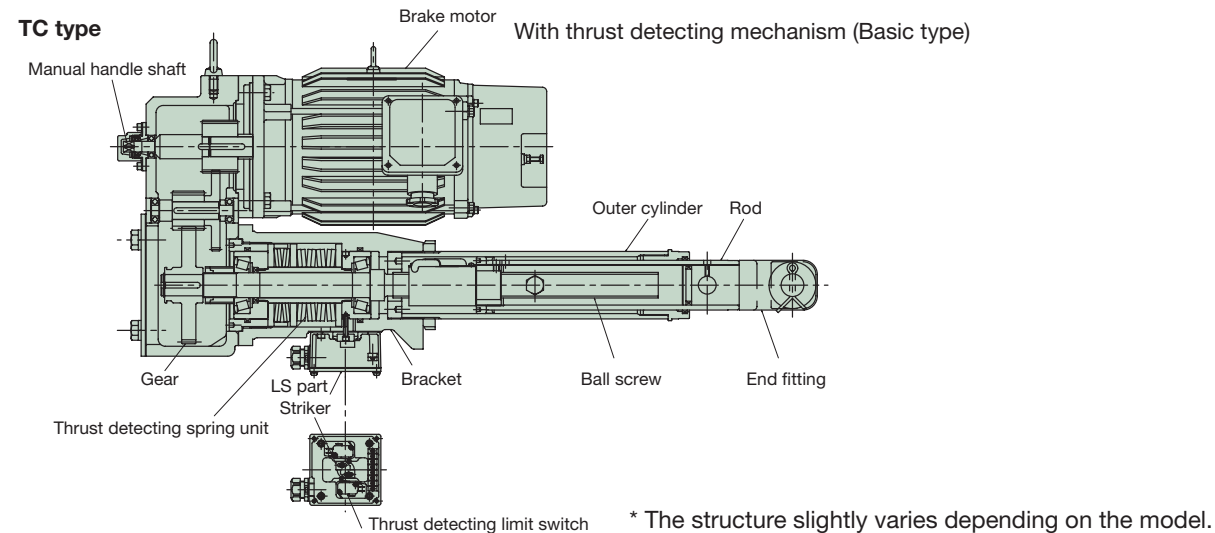


Structure

TB type



TC type



Brake motor

This motor adopts a deenergization operation type (spring close type), and the brake is applied while the cylinder stops. This brake action holds load while the power cylinder stops and reduces coasting during stoppage, and serves the purpose of increasing stop accuracy. All of the brake motors adopt outdoor types.

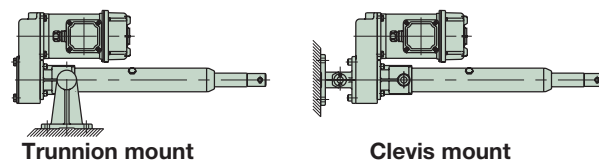
Reduction part

The reduction part adopts a combination of a helical gear on the high speed side and a spur gear on the low speed side. The lubrication method is grease bath type, and has a quiet operating specification. Furthermore, a manual handle shaft is provided, and the structure of the speed reducer facilitates operation at power failure and adjustment for installation. As options, various position detecting devices can be installed.

Actuation part

The actuation part is provided with a ball screw and nut which converts a rotating force into linear motion. Further, external limit switches for stroke adjustment can be mounted. A high precision ball screw and nut have advantages such as high transmission efficiency, less wear, long life and easy lubrication. The external limit switches for stroke adjustment are structured to freely adjust the stroke and endure outdoor use. The bellows are excellent in weatherproofing, and the stroke does not change even if the bellows are mounted. The seal for the rod also endures outdoor use.

Installation and Mounting Method



MULTI SERIES POWER CYLINDERS

Thrust: 1,100lbf to 70,000lbf {500kgf to 32000kgf}

This is a power cylinder that allows multiple use of cylinders to completely synchronize by one motor. Compact economy type (LPTB) and thrust detecting type with a safety device (LPTC) are available. Select a type according to the application.

Tough configuration

Operating part to carry a load is separated from the reduce part. There is no change in gear tooth contact due to fluctuation load.

Multiple use of some units is allowed

Multiple use of some units is allowed by use of an input shaft with sufficient strength.

Long life

Long life is realized by adopting a ball screw with a large load capacity.

Swinging operation is allowed

Since the input shaft and trunnion part have the same shaft center, swing is allowed while linkage operation is performed.

Safety

Thrust detecting mechanism to detect overload and protect can be built in. (LPTC)



LP TB 1000 BR6LIJ

Power Cylinder

T Series

Thrust

Options

LPTB : Without thrust detecting mechanism
LPTC : With thrust detecting mechanism

500 : 1,100lb { 500k g f }
1000 : 2,200lb { 1000k g f }
2000 : 4,400lb { 2000k g f }
4000 : 8,800lb { 4000k g f }

The above is an indication example.

BR : With bevel gear R type
BL : With bevel gear L type

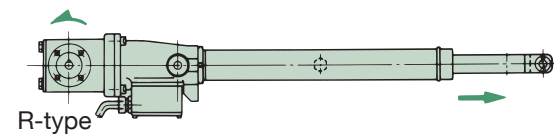
*Relationship between rotating direction of input shaft and moving direction of rod.

6 : stroke 600mm [23.6in]

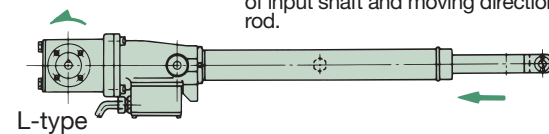
L : With stroke adjusting external limit switch

I : I-type end fitting (The standards have no symbol.) *
J : With bellows (The stroke is not changed.)

*Relationship between rotating direction of input shaft and moving direction of rod.



R-type

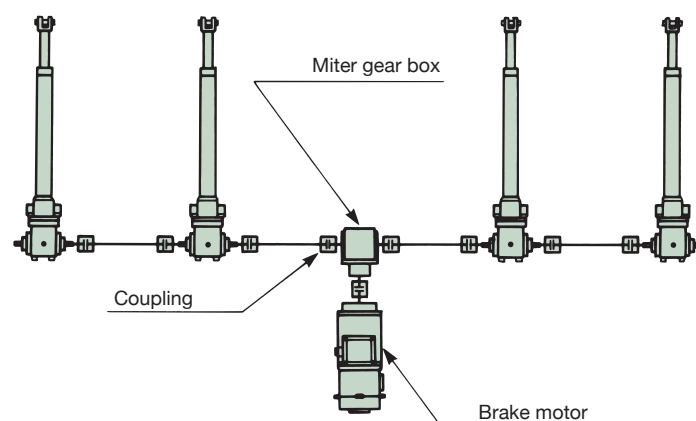


L-type

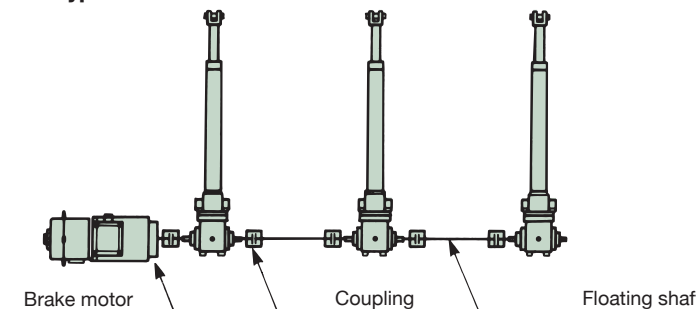
Synchronizing Operation

Multi series has a feature to ensure synchronization of multiple power cylinders. Refer to the layout shown below to plan synchronizing operation.

<Type 1>

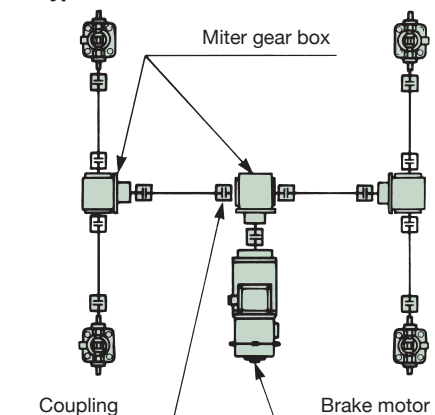


<Type 2>

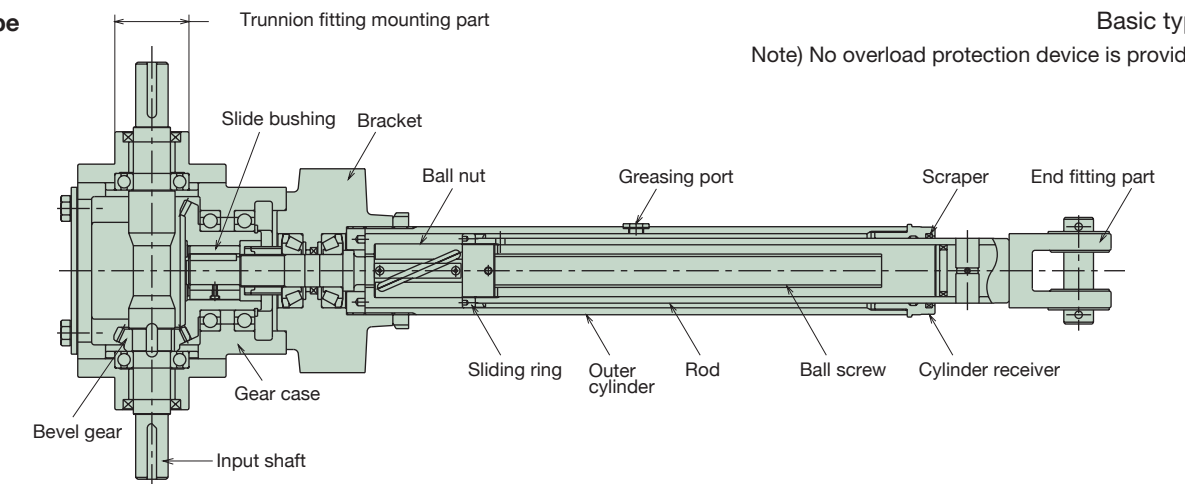


Image

<Type 3>



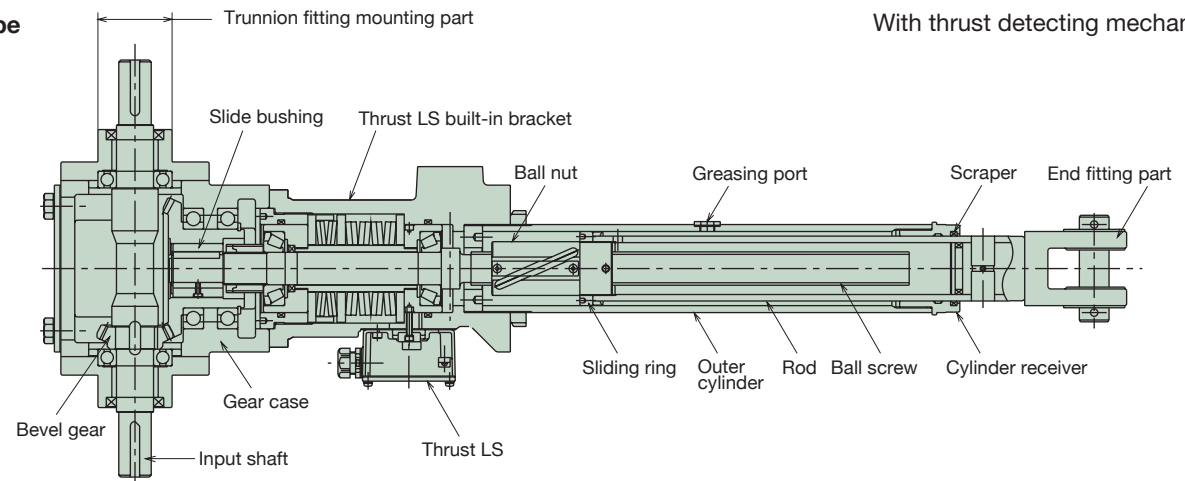
LPTB type



Basic type

Note) No overload protection device is provided.

LPTC type



With thrust detecting mechanism

TB type

- Basic type (without overload protection device)

For mechanical protection and for electric overload detection on the input side, combination with our shock relay is recommended.

TC type

- Thrust detecting mechanism type
- This type exerts its effect in the following cases:
 - When performing press (pull) stop
 - When requiring electric signal at overload
 - When overload is possibly applied from load side during stoppage
 - When overload is impulsively applied, the incorporated spring deflects to absorb an impact load.

[Thrust detecting mechanism]

This is a thrust detecting mechanism which combines two types of pre-loaded disc springs whose spring constants are different from each other and limit switches. The combination effect of these disc springs also allows for press and stop of high speed type. (There is only one type for the 6000 type or larger.)

TORQUE LIMITERS



TL Series

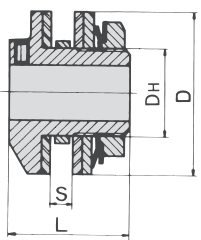
Traditional machine protection. Friction-type construction. Slip-torque setting is done by simply tightening the adjusting nut or bolts. Competitively priced and easy to use.

Selection

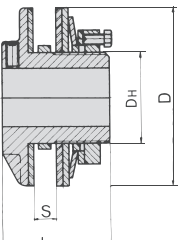
Select based on torque required, rpm, and shaft diameter. Bushing Length selection should be equal to or shorter than width of center member (sprocket, etc.):

MODEL	TORQUE RANGE (LBS. - FT.)	MAXIMUM RPM	ROUGH STOCK BORE	MAX. BORE W.STD. KW	BUSHING LENGTHS	D	DH	L	S (MAX.)	WT (LBS.)
TL200-1L	0.7 ~ 1.5	1800	0.28	0.55	0.150, 0.236	2.0	0.95	1.14	0.276	0.44
TL200-1	2.2 ~ 7.2									
TL200-2	5.0 ~ 15									
TL250-1L	2.2 ~ 5.0	1800	0.39	0.88	0.177, 0.256	2.5	1.38	1.88	0.354	1.32
TL250-1	5.0 ~ 20									
TL250-2	10 ~ 40									
TL350-1L	7.0 ~ 15	1800	0.67	1.00	0.177, 0.256, 0.374	3.5	1.65	2.44	0.630	2.65
TL350-1	15 ~ 55									
TL350-2	25 ~ 110									
TL500-1L	15 ~ 36	1800	0.78	1.75	0.256, 0.374	5.0	2.56	3.0	0.630	7.72
TL500-1	35 ~ 155									
TL500-2	65 ~ 310									
TL700-1L	36 ~ 87	1800	1.18	2.63	0.374, 0.492	7.0	3.75	3.86	1.142	18.5
TL700-1	85 ~ 420									
TL700-2	165 ~ 800									
TL10-16	289 ~ 940	1000	1.18	2.84	0.492, 0.610, 0.768	10	3.94	4.53	0.945	46.3
TL10-24	435 ~ 1,370									
TL14-10	651 ~ 1,960									
TL14-15	1,446 ~ 2,890	500	1.57	3.94	0.610, 0.768, 0.925	14	5.71	5.91	1.142	115
TL20-6	1,807 ~ 3,615									
TL20-12	3,400 ~ 6,870									
TL20-12	3,400 ~ 6,870	500	1.97	5.12	0.610, 0.768, 0.925	20	7.28	6.89	1.22	258

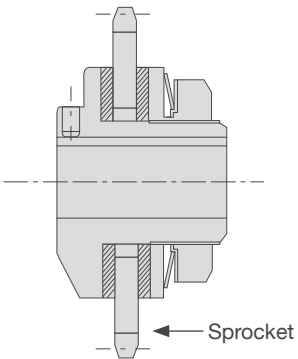
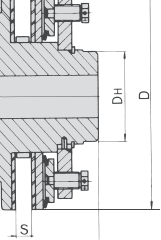
TL200~TL350



TL500~TL700



TL10~TL20



Minimum Roller Chain Sprocket Size and Number of Teeth

MODEL	RS35	RS40	RS50	RS60	RS80	RS100	RS120	RS140	RS160
TL200	20	16							
TL250		20	17						
TL350	26	21	18	15					
TL500			29	25	19				
TL700				33	26	21	16		
TL10						29	24	22	
TL14						39	33	29	26
TL20						54	46	40	35

SHOCK RELAY



Pioneered by Tsubaki, the Shock Relay protects your equipment against unexpected shock loads, overloads, and underloads before damage occurs. Shock Relay protects the mechanical parts of your equipment by monitoring the current on your motor and shutting it down when the motor works too hard for too long.

Advantages to you:

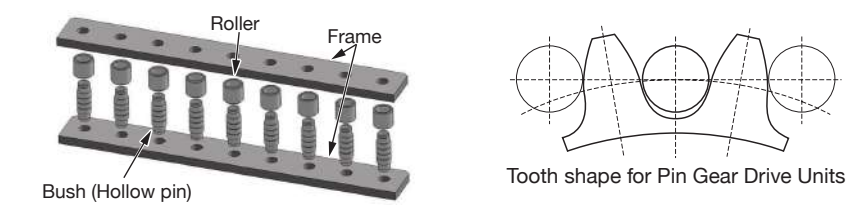
- Back to work with the press of a button
- No parts to replace
- Precision adjustment and setting
- Little potential for nuisance trips
- Monitors and protects equipment from up to 1,000 feet away

Model No.		TSBSB05	TSBSB10	TSBSB30	TSBSB60	TSBSB100	TSBSB200	TSBSB300
Current setting range		0.5 ~ 6A	1 ~ 12A	3 ~ 30A	5 ~ 60A	10 ~ 100A	20 ~ 200A	30 ~ 300A
Time setting range	Start time	0.2 ~ 10s						
	Shock time	0.2 ~ 5s						
Current accuracy setting		±10% (Full scale)						
Operation power		24 ~ 240VAC / DC±10% 50/60Hz						
Maximum motor circuit voltage		AC600V 50/60Hz						
Current detection		Two-phase CT system						
Display		Monitoring state, [MON] lamp on Overcurrent state, [OC] lamp on						
Output relay	Contact arrangement	1a1b						
	Contact rating	3A AC250V cos ϕ =1						
	“Recommended current (High-frequency operation)”	0.2A below AC250V cos ϕ =0.4						
	Minimum applicable load	DC10V, 10mA						
Operating environment	Operation selecting	DIP switch selection SS : Normal operation/excitation; self-holding after trip SA : Abnormal/excitation; self-holding after trip						
	Life	80,000 times at contact rating load						
	Operating temperature	- 20 ~ 60°C						
	Storage temperature	- 30 ~ 70°C						
Insulation resistance	Humidity	45 ~ 85% RH No condensation						
	Altitude	Below 2,000m (6,500 ft)						
	Atmosphere	No corrosive gas or dust; Pollution degree 3 or below in the control box						
	Vibration	5.9m/s ² below						
Dielectric voltage	Between circuit and housing	DC500V, 10M Ω						
	Between circuit and contacts	AC2000V, 60Hz, 1 minute						
	Between circuits	AC1000V, 60Hz, 1 minute AC2000V, 60Hz, 1 minute						
Material	Protection construction	IP20						
	Housing	Upper housing : PA6, Lower housing : PA66						
	Terminal cover	PA6						
Power consumption		2W below						
Mounting		35mmDIN rail or Panel						

PIN GEAR DRIVE UNIT

Innovative, Light Weight and Durable

Tsubaki Pin Gear Drive Units (PDU) are an innovative alternative to traditional gears and racks, designed to enhance transmission efficiency. These units consist of a pin wheel, a rack, and a uniquely profiled gear, enabling limitless design possibilities for both rotating and linear motion applications.



Tsubaki PDUs feature a segmented system for easy installation and accommodate loose tolerances. Their modular pin gear design provides flexibility while maintaining optimal balance between pin wheels and racks, allowing for high transmission torque. Additionally, by increasing the number of wheel segments, the system can be scaled for large equipment applications.

Ideal for the steel industry, large-size Pin Gear Drive Units offer superior cost efficiency and higher tangential force compared to conventional large gears, making them a powerful solution for demanding industrial applications.

Standard Specifications

Frame No.	Pitch mm	Allowable Tangential Load kN {kgf}		
		Steel Models	Flexible Models	Stainless Steel Models
PDU020	20	4.7 {480}	—	0.8 {80}
PDU022	22	7.7 {780}	—	1.1 {110}
PDU030	30	12.8 {1300}	—	1.9 {190}
PDU035	35	19.5 {1990}	—	2.6 {270}
PDU040	40	27.3 {2780}	—	4.1 {420}
PDU050	50	31.7 {3230}	25.3 {2580}	5.1 {520}
PDU055	55	52.9 {5390}	37.0 {3770}	7.0 {710}
PDU070	70	60.7 {6190}	48.5 {4950}	9.9 {1010}
PDU080	80	71.5 {7290}	57.2 {5830}	12.0 {1220}
PDU090	90	98.9 {10100}	79.1 {8070}	16.8 {1710}
PDU120	120	122.5 {12490}	—	—
PDU150	150	240 {24500}	—	—
PDU180	180	347 {35400}	—	—
PDU240	240	525 {53400}	—	—

* Pin wheel pitch notation indicates circular arc pitch.

* Tangential load may be reduced for some specifications or in certain applications.

		Steel Models	Flexible Models	Stainless Steel Models
Maximum Speed		Tangential speed: 50 m/min		
Usage Environment		Indoors (not exposed to rain or water)		Corrosive atmospheres
Usage Temperature		-10°C to 150°C		-20°C to 400°C
Materials	Frame	Rolled steel		Austenitic stainless steel
	Bush	Alloy steel		Precipitation hardened stainless steel
	Roller	Alloy steel		Austenitic stainless steel
	Pin Gear	Carbon steel (with hardened teeth)		Austenitic stainless steel



Model Numbering Examples

Pin Rack

PDU070-SPA080P-Y

Frame No

Drive System

S: Linear drive

Pin drive

Mounting type F: Horizontal (Flat)

A: Vertical (Angle)

Overall pin count

[Blank]: Standard steel type

Y: Flexible type

Pin Wheel

PDU070-GPF300P090P-Y

Frame No

Drive System

G: Outer rotational drive

N: Inner rotational drive

Pin wheel

Horizontal installation

Overall pin count

No. of pins required

* for partial circumference only

[Blank]: Standard steel type

Y: Flexible type

Pin Gear

PDU070-GGC017T300P-Y

Frame No

Drive System

S: Linear Drive

G: Outer Drive

N: Inner drive

Pin gear

Pin gear model

B: Single hub model

C: Dual hub model

No. of teeth

Pin Wheel

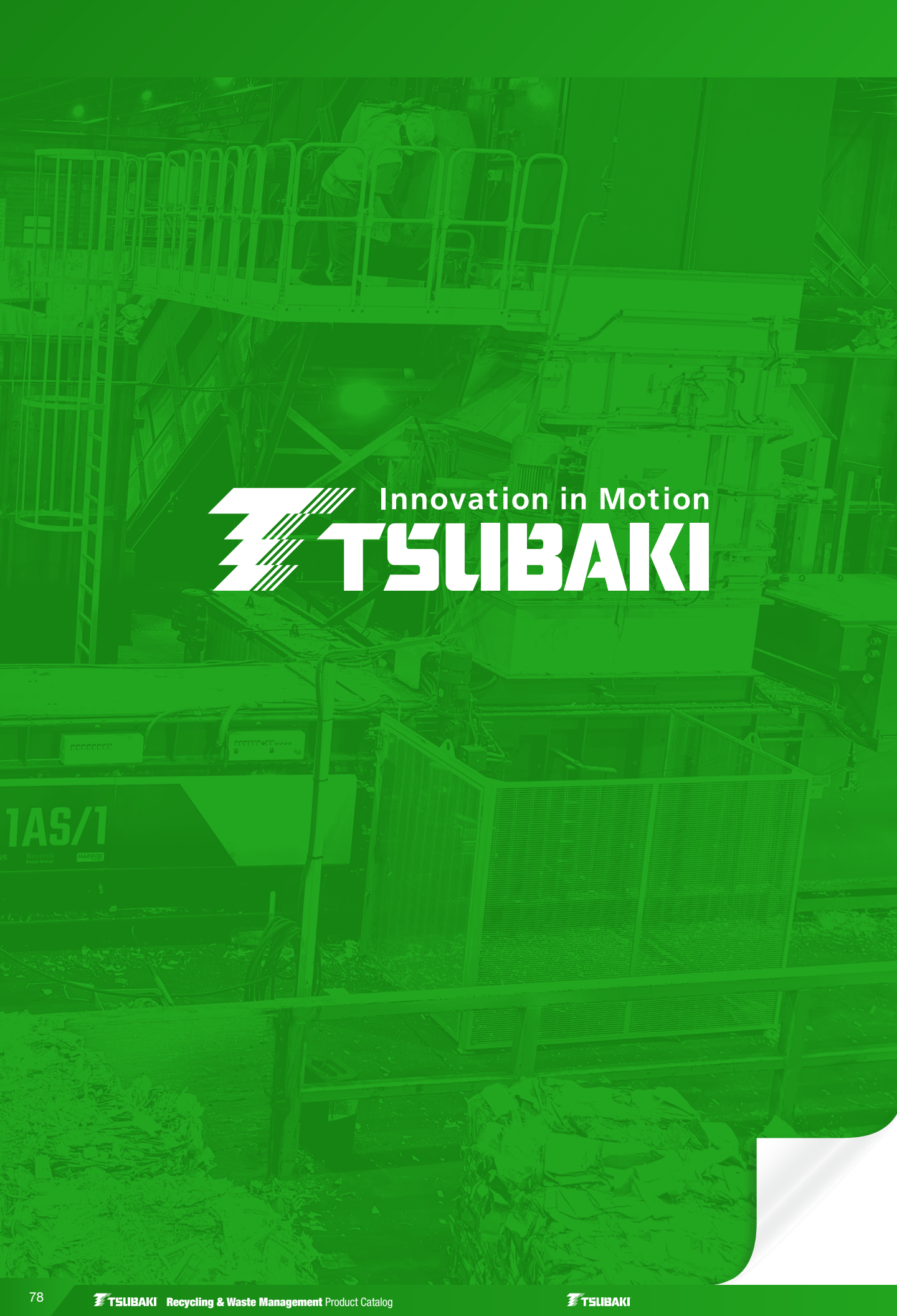
No. of Pins

* For outer drive and inner drive

[Blank]: Standard steel type

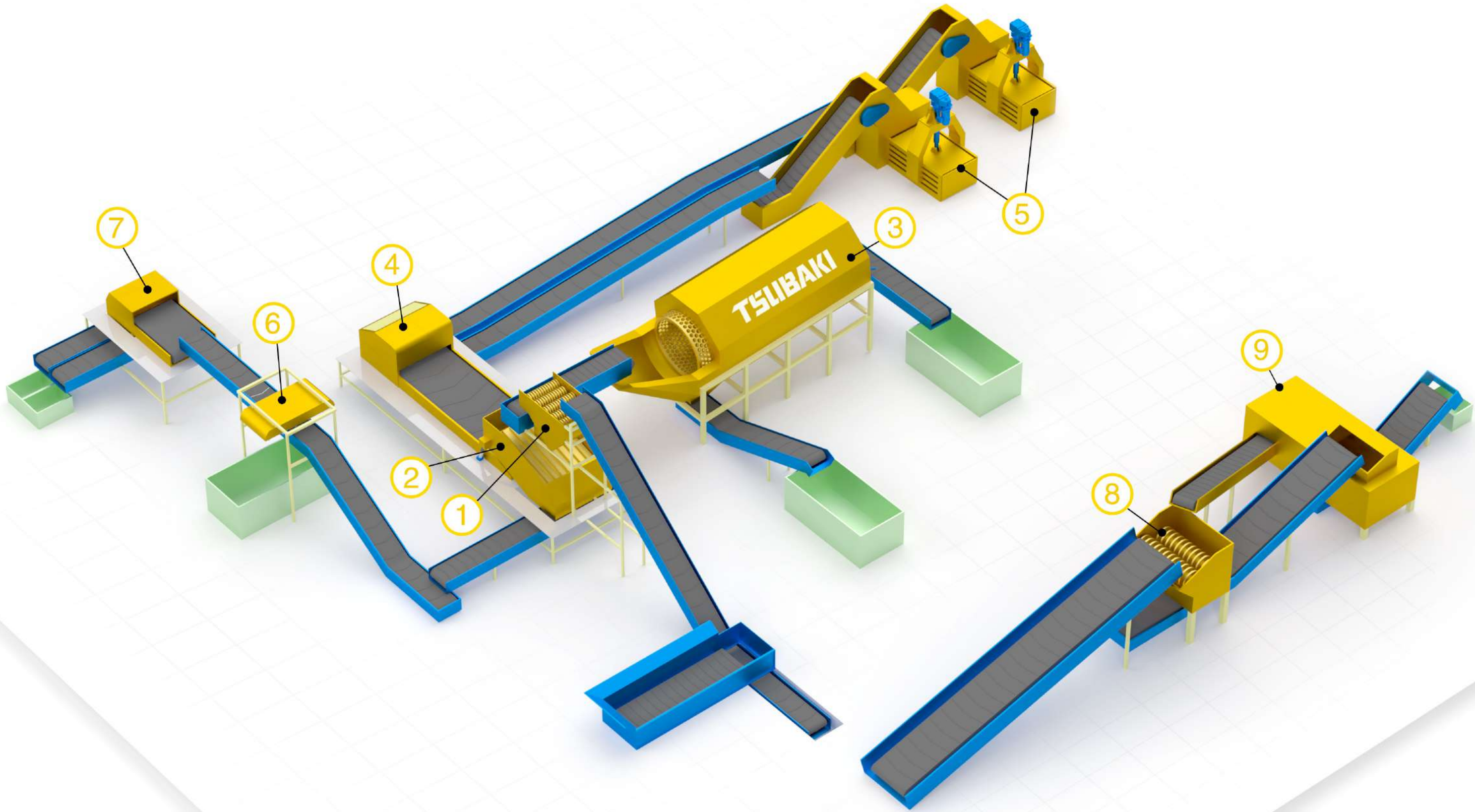
Y: Flexible type

For more details of the Pin Gear Drive Unit: Tech@tsubaki.ca



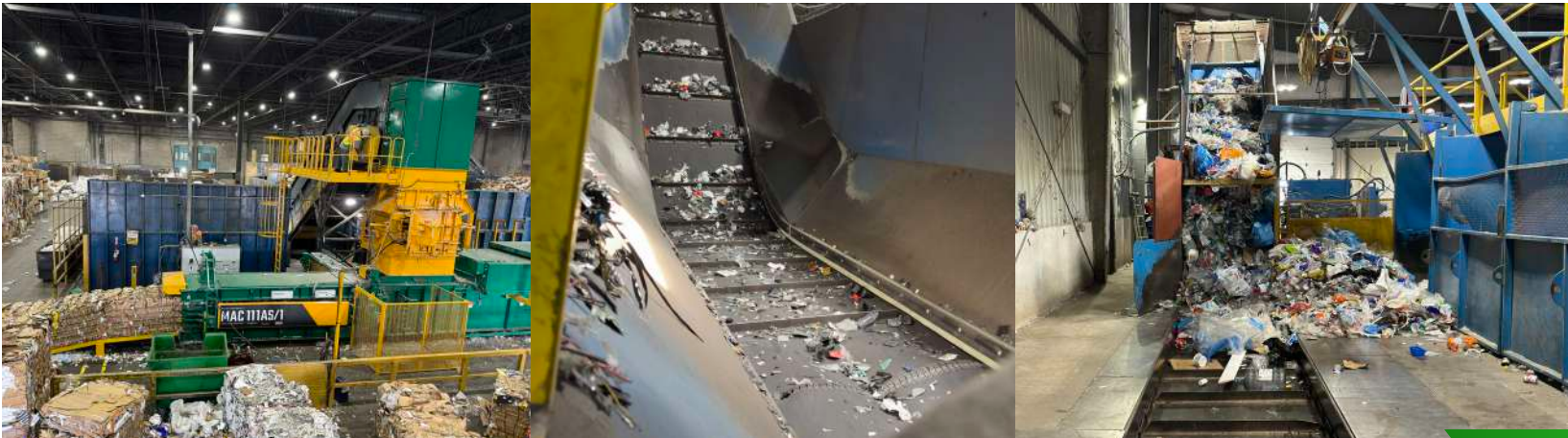
Innovation in Motion **TSUBAKI**

GENERAL RECYCLING PLANT LAYOUT



APPLICATIONS FOR THE RECYCLING INDUSTRY

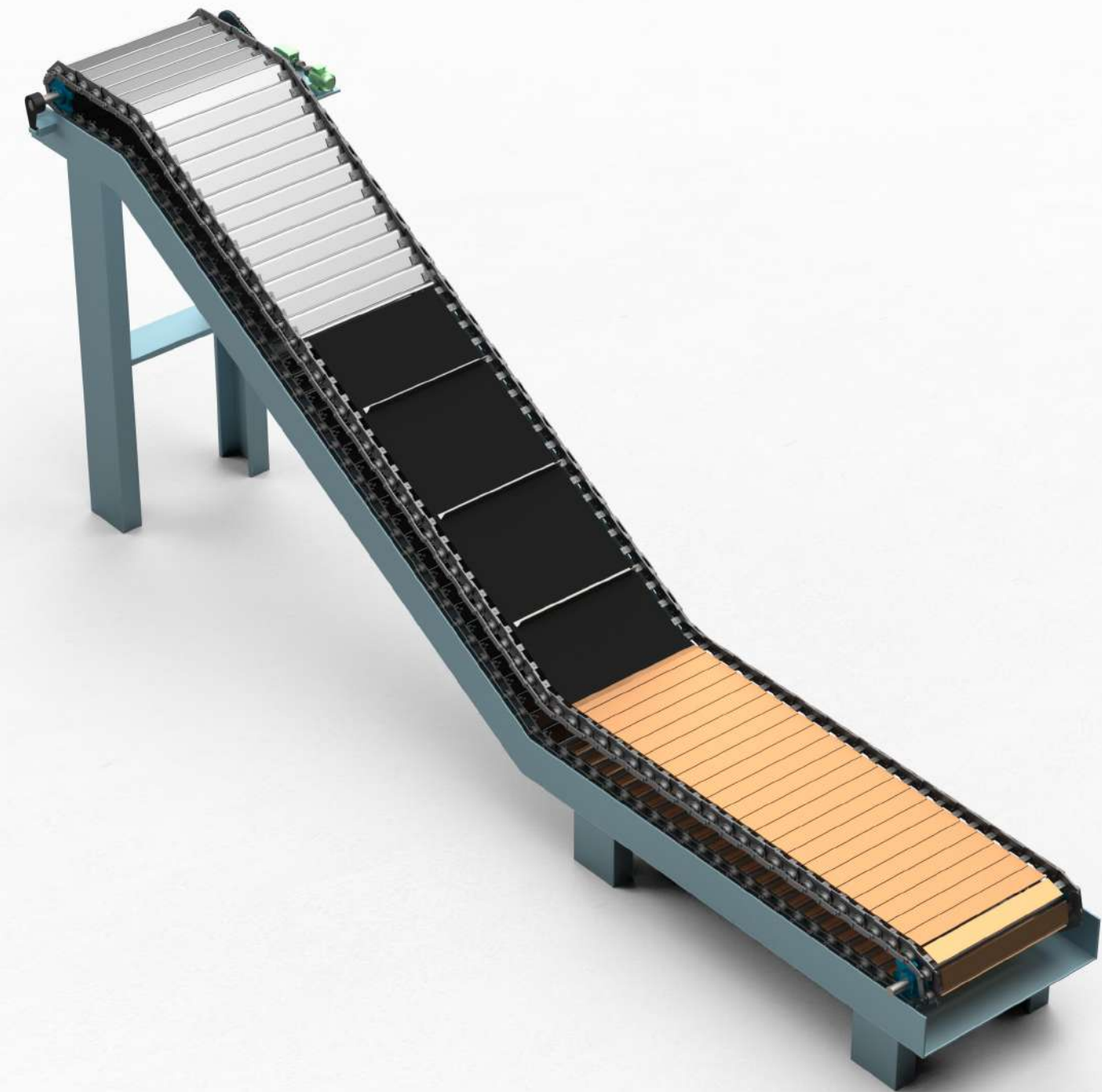
Application Number	Equipment Name	Industry Applicable	Critical Products
1	Disk Screen	Metal / Plastic / Electronics / Paper and Cardboard / Waste Management	Sprocket Roller Chain Flexing Couplings
2	Ballistic Separator	Metal / Plastic / Electronics / Paper and Cardboard	Sprocket Roller Chain Flexing Couplings
3	Trommel Screen	Metal / Plastic / Electronics / Paper and Cardboard / Waste Management	Sprocket Roller Chain Engineering Class Chain Flexing Couplings PDU
4	Optical Scanner	Paper and Cardboard / Plastic	Conveyor Chain Sprocket Roller Chain Flexing Couplings
5	Baler	Paper and Cardboard / Plastic	Power Cylinder Heavy Duty Drive Chain Sprocket Cam Clutch
6	Magnetic Separator	Metal / Plastic / Electronics	Roller Chain Conveyor Chain Sprocket Flexing Couplings
7	Eddy Current Separator	Metal / Plastic / Electronics	Sprocket Roller Chain Flexing Couplings Conveyor Chain
8	Shredder	Rubber / Tire / Cable	Sprocket Roller Chain Flexing Couplings
9	Tire Crusher Granulation Crumbing	Rubber / Tire / Cable	Sprocket Roller Chain Flexing Couplings Cam Clutch Conveyor Chain



CONVEYORS - APRON PAN, BELT & SLAT

Common Application Challenges & Impacts

Mechanical Wear & Chain Elongation	Chains elongate due to mechanical wear at a rapid pace, mainly due to abrasion and bearing pressure within the applications. This results in reduced performance, frequent replacements, and increased and/or unexpected downtime.
Fatigue from Shock Loads	High-impact or fluctuating loads cause fatigue and damage to the micro-structure of the components. This often results in a shortened lifespan of chains and components, and unexpected failures.
Contaminant Ingress	Dust, debris, and moisture enter critical contact areas of the chains and other components, accelerating wear, causing corrosion development, as well as breakdown of lubrication.
Conveyor Rollback	Inclined applications face the possibility of failure of components such as shafts, gearboxes and motors, which can lead to rollback of the entire conveyor. This may lead to potential safety hazards, both to equipment and personnel.
Overloads and Jam-Ups	Overloads and jam-ups are common and often frequent occurrences on most recycling conveyor applications. Unchecked, they can lead to damage to equipment, unexpected downtime of major equipment and unnecessary repair costs associated.



CRITICAL TSUBAKI APPLICATIONS OF A CONVEYOR SYSTEM

1 Engineering Class Conveyor Chains

Challenges Faced	Tsubaki Product Solution
- Elongation due to mechanical wear, abrasive debris, and lack of or improper lubrication. - High impact product loading and fluctuating loads, leading to shock loading and fatigue.	Tsubaki's Engineering Class Conveyor Chains are precision-manufactured at our Sandusky, Ohio facility using premium materials and advanced production methods to ensure superior durability. Engineered for exceptional resistance to mechanical wear (elongation), these chains are built to withstand significant abrasive wear, radial and frequent shock loads, ensuring an extended service life.

2 RS Drive Chains

Challenges Faced	Tsubaki Product Solution
- Rapid mechanical wear (elongation) and high-shock loading. - Severe shock loading and frequent jam-ups. - Little to no lubrication, ingress of debris in critical contact areas.	Tsubaki's RS Roller Chain portfolio includes specialized solutions for high-demand environments. This range encompasses heavy-duty variants such as HT, Super, and Super H, alongside maintenance-free Lambda® (lubrication-free) and corrosion-resistant Neptune® series. Where dust and debris are the issue, don't look past the Titan® and SpeedMaster® lines for increased wear resistance against contaminants within the critical contact areas of the chain. Tsubaki chains are recognized for their resilience and superior fatigue strength.

3 Drive & Conveyor Sprockets

Challenges Faced	Tsubaki Product Solution
- Rapid tooth wear and increased rate of wear with elongation chains. - Difficulty assessing sprocket wear, especially in inaccessible areas.	Tsubaki distinguishes itself as the only true chain manufacturer offering high-quality sprockets produced in-house at the state-of-the-art facility in Mississauga, Ontario. When paired with our high-performance chains, these sprockets contribute to extended operational cycles and reduced maintenance. Additionally, leave guesswork out of sprocket wear analysis with the use of SmartTooth® wear indicators to provide a clear visual cue when it's time for replacement.

4 Backstop Cam Clutch – BS Series

Challenges Faced	Tsubaki Product Solution
- Conveyor rollback due to failed motor, gearbox and shafts breaking. - Ingress of debris into clutch critical surfaces causes abrasive wear and breaks down grease. - Oil lubricated units often face problems of constant oil top-ups and leaks.	Tsubaki's BS Series Backstop Cam Clutches are engineered to prevent reverse rotation in elevating conveyors, including hinged, belt-type, and goose-necked apron conveyors. The BS-F Series incorporates grease-lubricated designs with labyrinth seals to retain lubrication and keep contaminants out.

5 ATR Drive Coupling – ATRA-FLEX

Challenges Faced	Tsubaki Product Solution
- Couplings utilized to motors to driven equipment often face immense maintenance requirements. - Replacements may take hours and cause lengthy downtime.	ATRA-FLEX Drive Coupling offers a robust, low-maintenance solution. Utilizing elastomeric inserts for efficient power transmission, these couplings withstand harsh operating conditions while enabling standardized system design and quick serviceability. The innovative construction of the inserts allows for straightforward and simple replacements without the need for hub disassembly or equipment realignment.

6 Power Lock® Keyless Locking Device

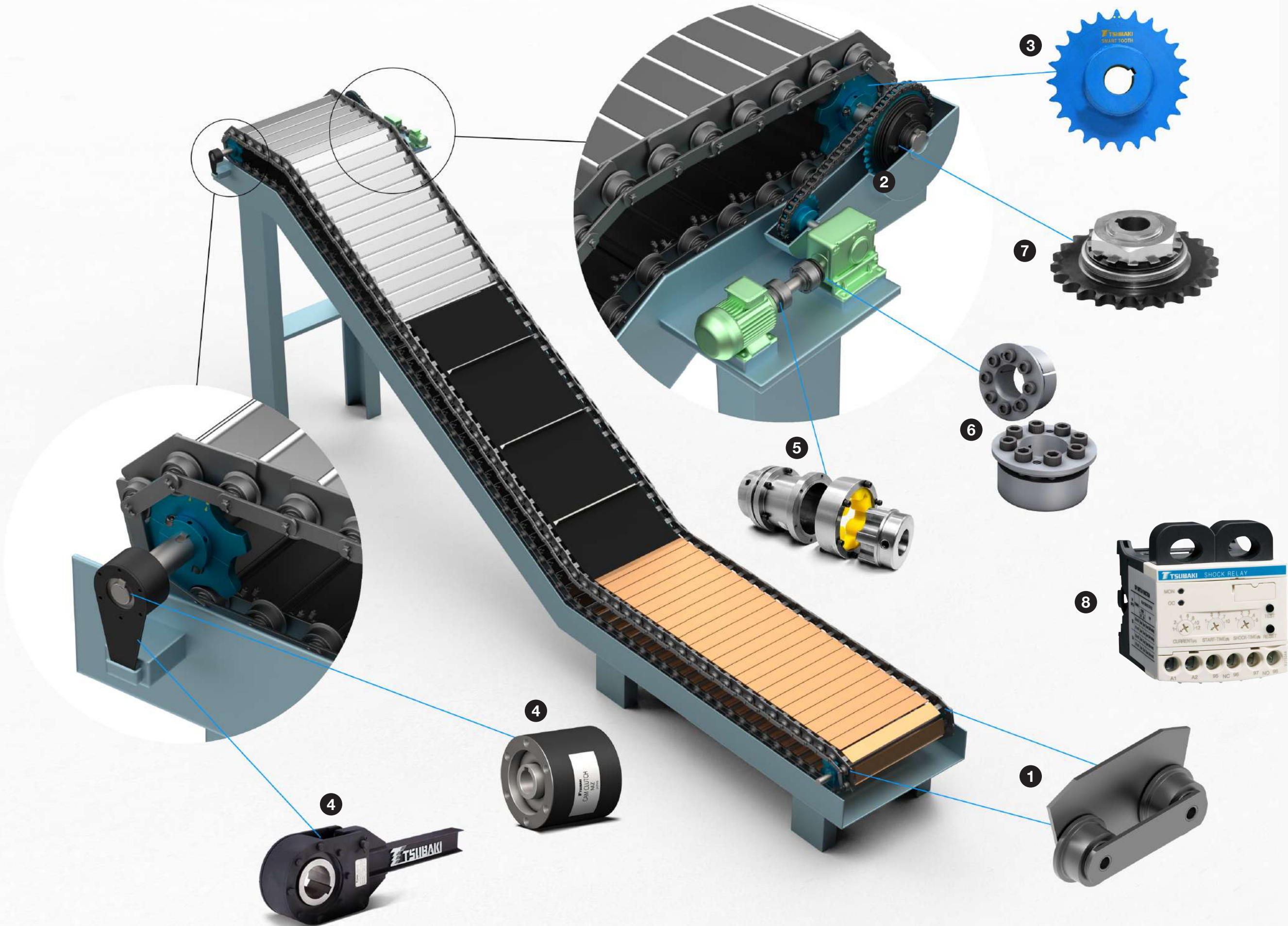
Challenges Faced	Tsubaki Product Solution
High shock loading, constant start and stop and high torque requirements often lead to shearing of shaft keys and damage to sprockets.	Tsubaki's Power Lock® keyless locking devices provide secure shaft-to-hub connections without the need for keyways, delivering higher torque transmission and eliminating backlash.

7 Torque Limiter Sprocket

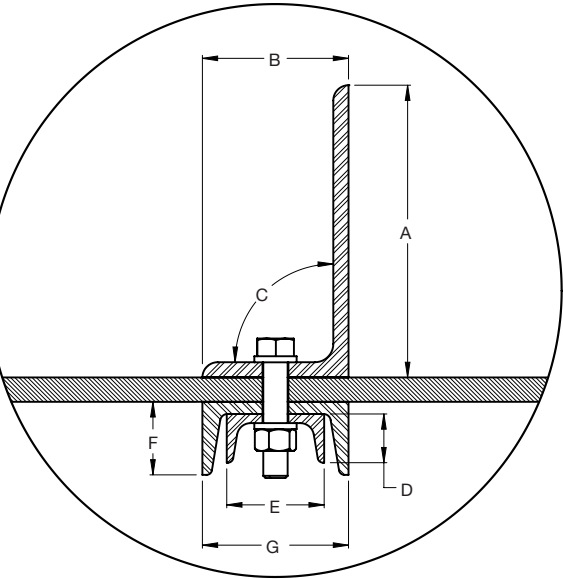
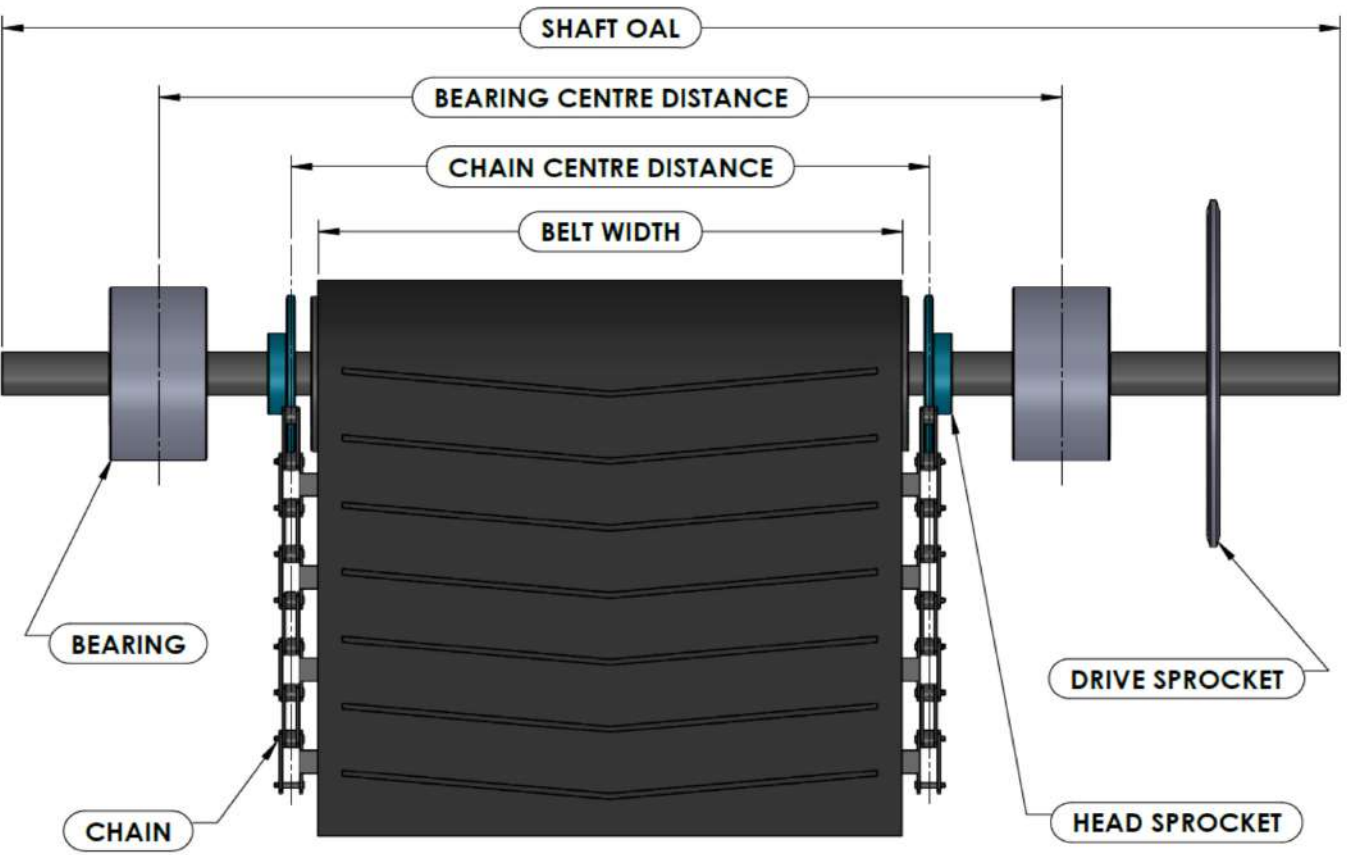
Challenges Faced	Tsubaki Product Solution
- Frequent jam-ups can cause damage to mechanical equipment on the conveyor. - Traditional shear pins require downtime to replace.	Tsubaki's Torque Limiter Sprockets provide an advanced alternative to conventional shear pin devices, protecting equipment during overload conditions. Designed for automatic reset following a jam or incident, these limiters eliminate downtime and the need for component replacement. Ideal for use in baler feeders and inclined apron conveyors, Torque Limiters enhance operational uptime while safeguarding mechanical systems.

8 Shock Relays

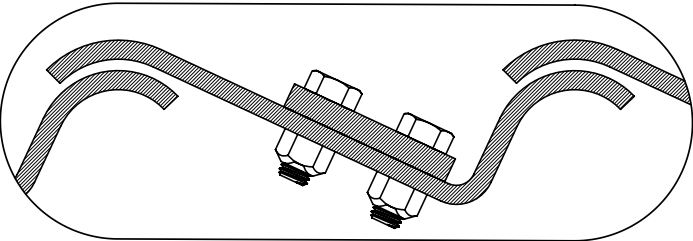
Challenges Faced	Tsubaki Product Solution
Mechanical protectors often fail to trip when desired, and damage is still possible to more fragile equipment, such as drive chains and couplings.	For equipment requiring an added level of protection beyond mechanical devices, Tsubaki's Shock Relays offer an electronic solution. These devices continuously monitor motor amperage and allow real-time adjustments to overload thresholds, without the need for manual reset. Easily integrated into existing systems, they can serve as an early warning mechanism when used alongside mechanical devices such as Torque Limiters or shear pin assemblies. Trip settings can be customized on-site, ensuring optimal responsiveness based on specific application parameters.



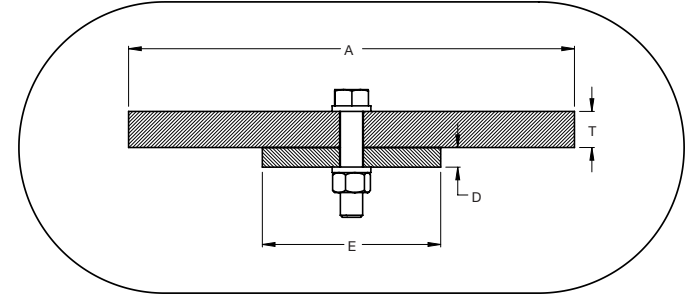
CONVEYOR SYSTEMS



BELT CONVEYOR ATTACHMENT



APRON CONVEYOR ATTACHMENT
SEE APRON CONVEYOR PAGE FOR MORE DETAILS



SLAT CONVEYOR ATTACHMENT

CONVEYOR DATA SHEET

Conveyor Details	
Length (ft)	
Capacity (ton/hr)	
Speed (ft/min)	
Inclined Angle	
Shaft OAL	
Shaft Diameter	

Sprocket Details					
	Drive	Driven	Head	Tail	Idler
Size					
Teeth					
Mounting Method					
Material					
Hardening					
Hub OD					
LTB					

Chain Detail	
Size	
Pitch	
Inner Width	
Roller/Barrel Diameter	
Sidebar Thickness	
Sidebar Height	
Pin Diameter	
Attachment Type	
Attachment Spacing	
Chain Centre Distance	

Bearing Detail	
Bearing No.	
Bearing Centre Distance	

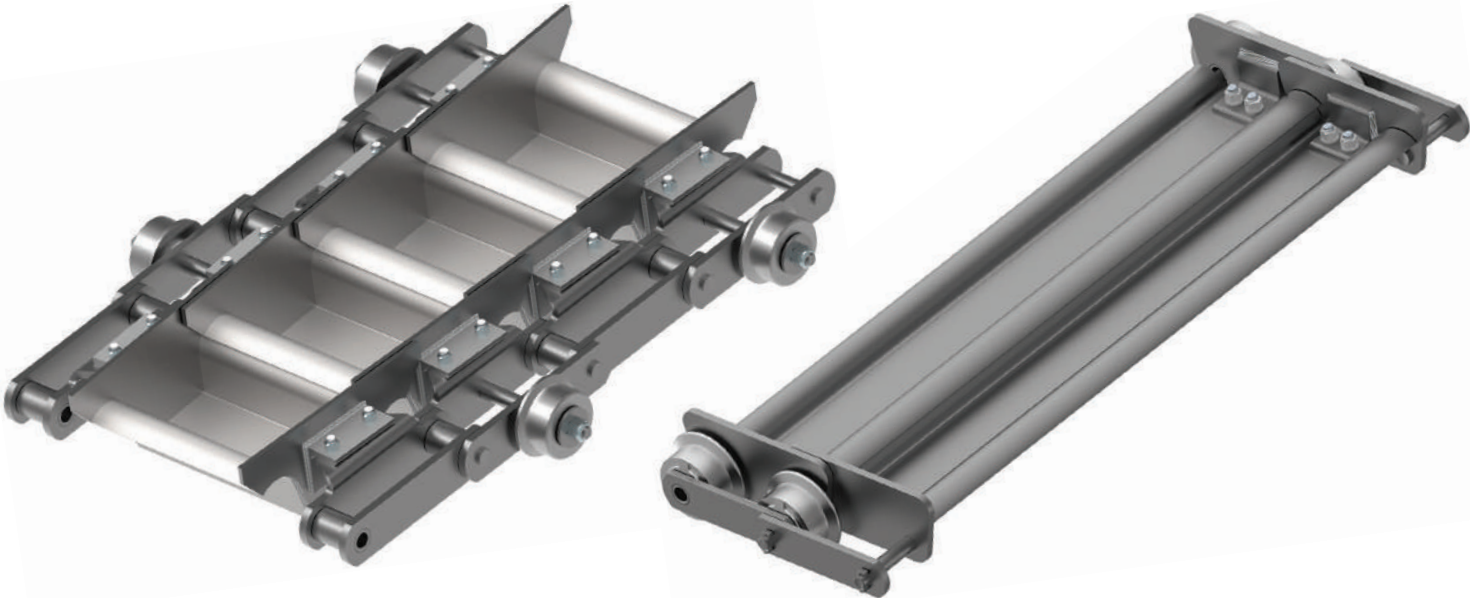
Belt Detail	
Belt Thickness	
Belt Width	
Belt Material	

	L-Angle	Slat
A		
B		
C		
Thickness		
Length		
Attachment		
D		
E		
Thickness		
Length		
U-Channel		
F		
G		
Thickness		
Length		

APRON CONVEYOR CHAIN ASSEMBLIES

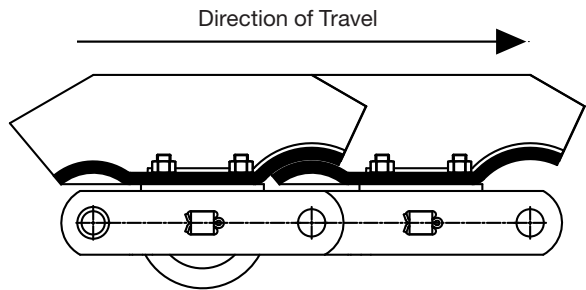
Premium Tsubaki® Apron Conveyor Chain Assemblies

- Tsubaki maintains an industry leading portfolio of apron conveyor chain assemblies.
- Direct drop in replacements are available for virtually any bulk material OEM conveyor system.
- Tsubaki apron designs are uniquely engineered to mitigate leakage and in turn optimize throughput.
- Numerous standard and upgraded roller designs available, including numerous bearing types and/or lube ports.
- Conveyor apron assemblies are tailored based on the inclination of the system and the size, weight, fragility and temperature of the product being transferred.
- Full design and engineering resources are available to assist with proper selection, issue resolution and potential optimization/enhancement.



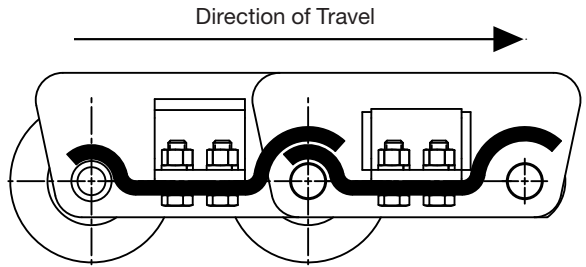
Apron Style

A



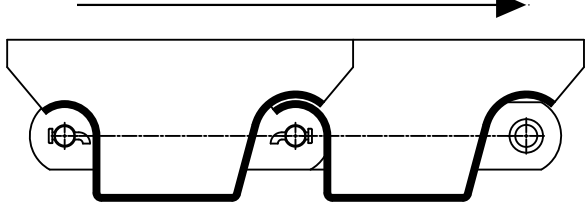
- Adaptable to most pitch sizes
- Pan bottoms are above the chain pitch centerline.
- Most widely used on horizontal and incline applications up to 35 degrees.
- Double beaded pans resist leakage.
- Commonly used with A and K style chain attachments.
- Optional outboard rollers available to carry heavier loads and reduce maintenance costs.
- Ideal for fine or hot materials.

B



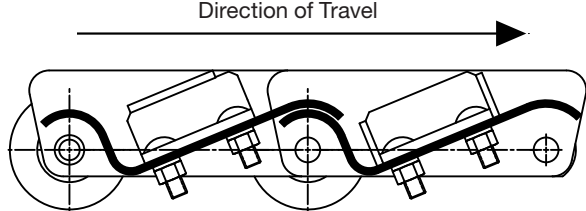
- Generally used with larger pitch sizes (>8") and heavier loads/capacities.
- Pan bottoms are typically below the chain pitch centerline.
- Able to withstand reasonable impacts from larger material clumps.
- Often used on incline applications up to 35 degrees.
- Deep double beaded pans offer a rigid heavy duty platform allowing for greater conveyor widths.
- Optional outboard rollers available to carry heavier loads and reduce maintenance costs.
- Through rods and load deflection rails are options for the more extreme conditions.
- Ideal for heavy materials of various temperatures.

C



- Pan bottoms formed extra deep, well below the chain centerline.
- Extra Deep pans allow for higher capacity transports up steep slopes.
- Deep double beaded pans offer a rigid heavy duty platform allowing for greater conveyor widths.
- Optional outboard rollers available to carry heavier loads and reduce maintenance costs.
- Through rods and load deflection rails are options for the more extreme conditions.
- Ideal for heavy materials of various temperatures.

D



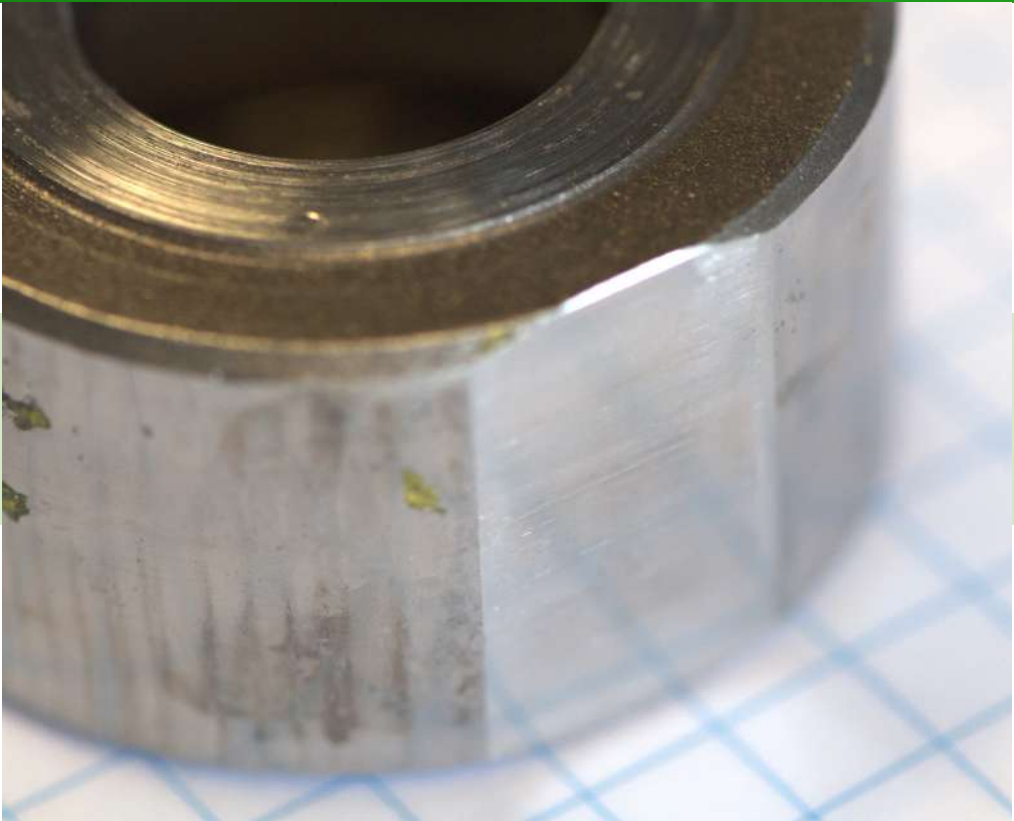
- Single bead pans are ideal for inclined positive discharge systems.
- Typically utilized for inclined systems up to 35 degrees.
- Angular apron configuration helps resist rollback of material.
- G attachments are common.
- Outboard rollers available.
- Smooth, gentle discharge - ideal for transporting fragile materials.

CONVEYOR MAINTENANCE AND BEST PRACTICES

The Importance of Proper Lubrication in Conveyor Chains

Proper lubrication and maintenance significantly reduce the most common failure modes associated with chain operation.

1. **Reduced Component Wear** – Lubrication decreases wear in critical bearing areas, particularly between roller and bushing, extending chain life. It also minimizes chain elongation caused by pin-bushing wear. Regular lubrication in these areas directly increases chain longevity.
2. **Corrosion Protection** – Steel chains are susceptible to corrosion, which reduces tensile and fatigue strength. Lubrication creates a protective barrier that repels moisture and contaminants, preserving the chain's structural integrity.
3. **Enhanced Performance** – Lubrication cushions impact forces when the chain meets the sprocket. This dampening effect reduces shock loading, enables smoother operation, and increases load-carrying capacity.
4. **Quieter Operation** – Squeaking and rattling often signal poor lubrication. Proper lubrication reduces friction, resulting in quieter and smoother chain movement.



The Risks of Over-Lubrication in Conveyor Chains

While proper lubrication is crucial for conveyor chains, excess lubrication can be detrimental. Too much lubricant may cause rollers to slide instead of rolling, creating flat spots. When normal rotation resumes, these flat spots create vibrations and jerking motions that compromise system stability.

To avoid this, apply lubricant in measured amounts that provide adequate coverage without excess. Regular monitoring and following recommended lubrication schedules will maintain smooth operation while preventing unnecessary wear.



Consistent lubrication helps optimize chain performance, extend service life, and prevent costly downtime.

CONVEYOR MAINTENANCE AND BEST PRACTICES



Roller Wear in Conveyor Chains: Causes and Mitigation Strategies

Roller wear, the most common failure mode in roller chain conveyors, occurs when the bushing's outer diameter reduces while the roller's inner diameter expands, creating an increasing gap between components.

Key practices to minimize wear and extend chain life:

1. **Proper Lubrication** – Maintain adequate lubrication between bushing and roller, increasing volume as chain wear progresses.
2. **Prevent Contamination** – Keep critical areas clean, especially the pin-bushing interface, as debris accelerates wear.
3. **Design Solutions** – When regular maintenance is impractical, consider:
 - Extended bushings that butt against the outer sidebar
 - Sealed joint systems for lubrication retention
 - Hardened materials or wear-resistant coatings
 - Larger bushing and roller diameters to increase bearing area

These strategies significantly reduce roller wear, improving chain performance and longevity in demanding applications.



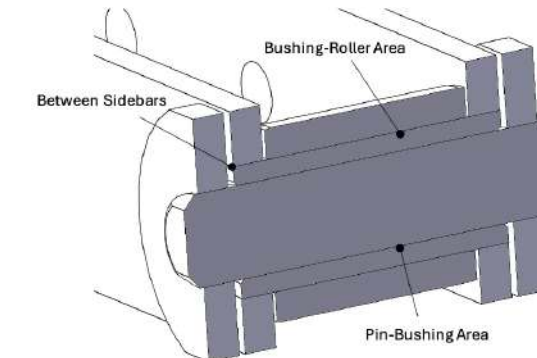
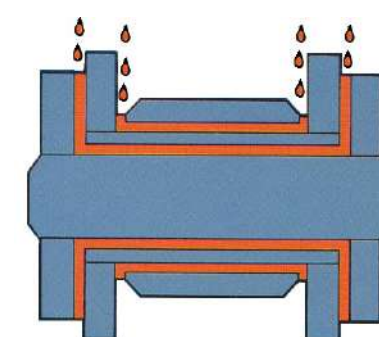
Chain Elongation in Conveyor Systems: Causes and Mitigation Strategies

Chain elongation occurs when progressive wear at the pin-bushing interface increases chain length. As the chain moves around sprockets, pin rotation within bushings gradually creates gaps, leading to overall elongation. While not the primary failure mode, elongation ultimately requires chain replacement.

Key strategies to extend chain life:

1. **Effective Lubrication** – Match lubrication volume to pin-bushing clearance, increasing as gaps widen.
2. **Regular Cleaning** – Maintain clean ingress points between:
 - Sidebars
 - Sidebar and roller edges
3. **Design Improvements:**
 - Install sealed joint systems
 - Use wear-resistant materials
 - Add lubrication ports through pins

These measures slow elongation, extending service life and reducing maintenance costs.



CONVEYOR MAINTENANCE AND BEST PRACTICES



Chain Load Ratings and the Impact of Changing Operational Conditions

Conveyor chains are designed and manufactured to meet specific tensile and fatigue strength ratings, as well as defined working load capacities. Exceeding these limits can lead to catastrophic failures, including but not limited to:

- Sidebar failure
- Pin failure
- Bushing cracking
- Roller failure

Proper lubrication, correct installation, regular maintenance, and selecting the appropriate chain for the application are key factors in mitigating these risks. However, over time, the operational characteristics of a system may change. For instance:

- Increased conveyor capacity to improve factory throughput
- Higher chain speeds to enhance productivity
- Reduced or eliminated lubrication of critical components as a cost-cutting measure

These factors can result in a conveyor chain that is no longer suitable for the current operating conditions, despite being appropriate for its original design parameters. In such cases, a review of the chain's design and material selection is often necessary to ensure continued reliability and performance.

Possible design modifications to accommodate increased loading characteristics include:

- **Heavy-Duty Chains** – Increasing the cross-sectional area of the sidebars to enhance strength and durability.
- **Larger Components** – Utilizing larger bushings, rollers, or an overall increased chain footprint to better distribute loads and reduce localized stress.
- **Material Upgrades** – Switching from carbon steel to an appropriate alloy steel to improve wear resistance, fatigue strength, and overall durability.

Regularly evaluating chain specifications against evolving operational demands is essential to maintaining safe and efficient conveyor performance while preventing unexpected failures in the field.

BALER FEED CONVEYORS

Mayfran Baler Feed Conveyors are designed to your needs and built to last as long as your facility. Thousands of Mayfran systems have been installed,

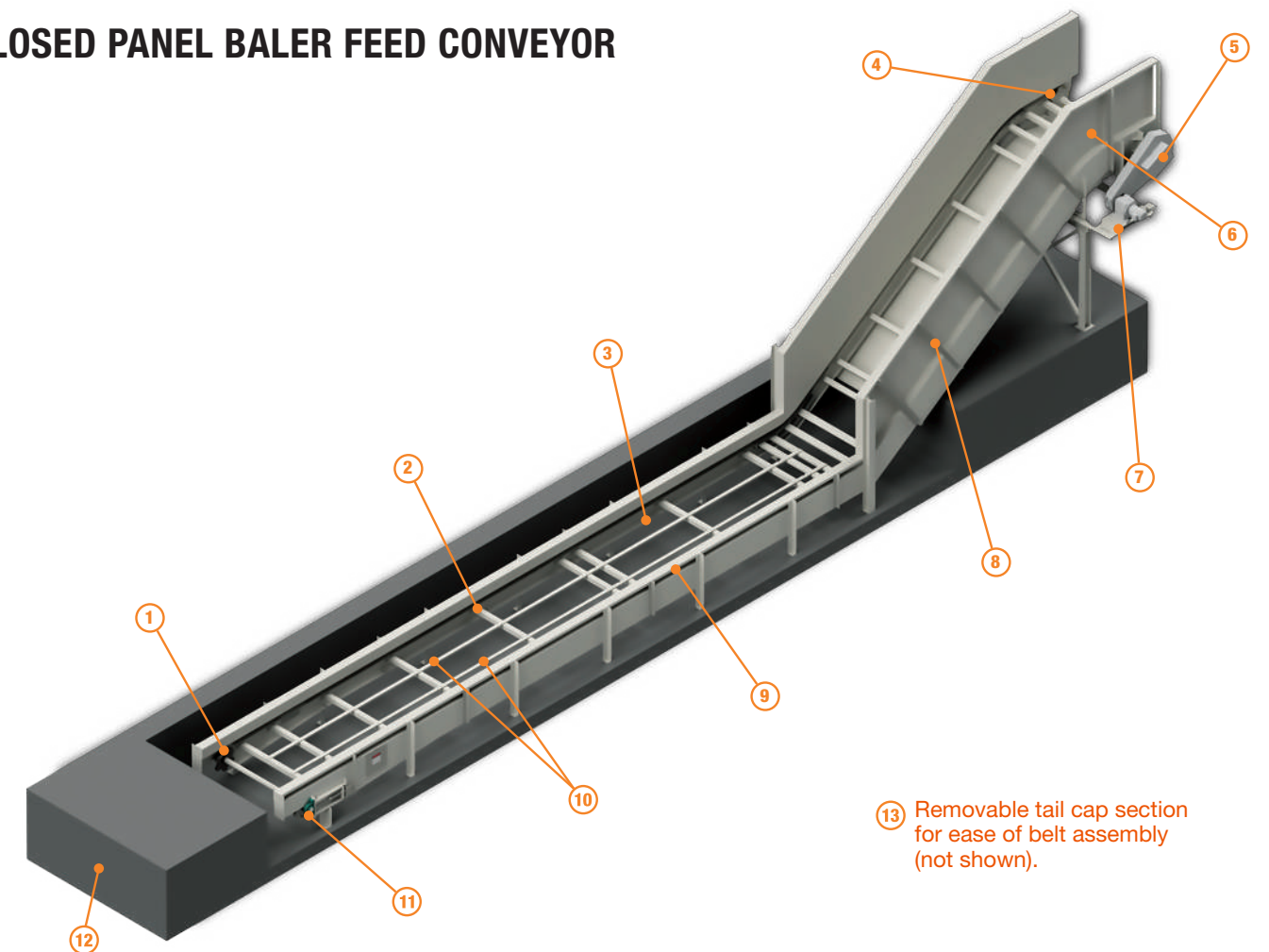
but it's our personal attention to detail that makes them the preferred choice for waste transfer and recycling facilities worldwide.



FEATURES AND BENEFITS

- Constant or adjustable speed control to meet changing processing demands.
- Soft-start controls for intermittent operation prevent damage from initial startup surges.
- Mechanical backstops prevent belt rollback under load.
- Mechanical overload protection.
- Rugged closed and open frame made of heavy-duty structural steel construction.
- Bottom Guard with dribble chute on incline and upper horizontal frame section.
- Automatic chain oilers.
- Access doors on conveyor sides for cleaning and inspection.
- Choose Reinforced Hinge Steel, Z-Pan or PolyArmor™ Belting with Mayfran designed and manufactured chain.

CLOSED PANEL BALER FEED CONVEYOR



- ① Take-up sprockets ride on shouldered shafts for assured belt tracking.
- ② Welded and braced spreaders maintain frame integrity.
- ③ Closed panel enclosed 3/8" thick belt-carrying and return tracks, or open-frame ASCE rail belt-carrying tracks and wear-resistant bars on return tracks.
- ④ Drive and head-end belt sprockets ride on shouldered shafts for assured belt tracking.
- ⑤ Roller chain drive (with guard) from reducer to sprocketed shear pin hub on conveyor head shaft.
- ⑥ Side skirts.
- ⑦ Drive machinery is mounted on adjustable steel base.
- ⑧ Each section is match-marked for ease of assembly.
- ⑨ 3/8" thick side skirts in loading area.
- ⑩ Impact rails in all loading areas.
- ⑪ Easily accessible belt take-up adjustments.
- ⑫ Conveyor pit (by others).
- ⑬ Removable tail cap section for ease of belt assembly (not shown).

Speak to a Mayfran representative to discuss your options.
We will work with you to find what is the best solution for your application.

QUALITY, BUILT IN.



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Improve Operational Reliability and Productivity with ProService®

Tsubaki's customer commitment goes beyond the quality of the product. To provide exceptional service and support, Tsubaki designated a team of field and technical experts to assist in optimizing your operations. Our Technical Solutions Team will work with you to build the ideal products for your project, optimize your requirements as they change, and proactively assist in its performance throughout the entire lifecycle. It's how we ensure that you get the maximum value out of your application.

When properly specified, installed, and maintained, a chain should never break but wear predictably, allowing for maximum productivity, ultimate reliability, and peace of mind.

The Tsubaki Difference

ProService is a unique portfolio of product lifecycle consultative services performed by our Technical Solutions Team, who are ready to invest in a proactive approach to enhancing your operations across the country. Tsubaki's Technical Solutions Team is your partner in providing solutions to the most daunting challenges your industry faces. Discover our service packages and witness the Tsubaki difference!



BENEFITS OF PROSERVICE® PACKAGES

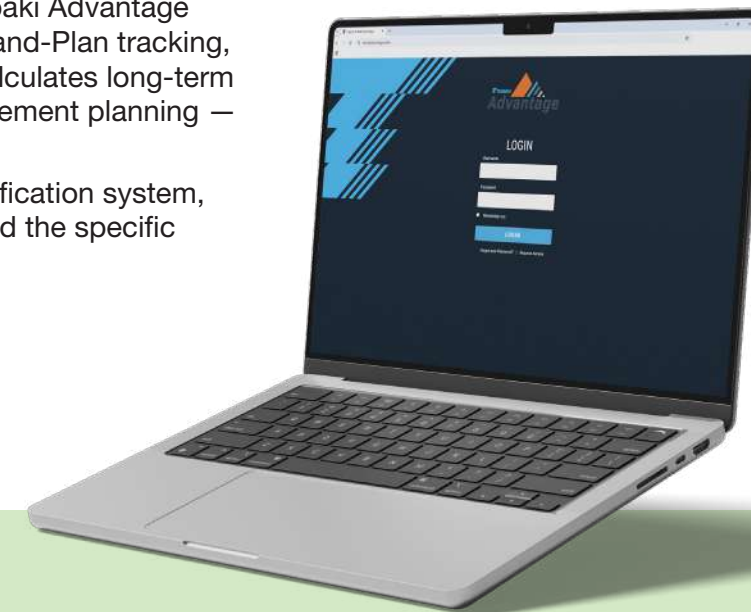
- Improved operational reliability
- Lower cost of ownership
- Reliable and predictable performance
- Employee development and training
- Proactive partnership with the world's premier chain and sprocket manufacturer



TSUBAKI ADVANTAGE

Maximize efficiency and reduce costs with the Tsubaki Advantage Total Cost of Ownership software. Featuring Scan-and-Plan tracking, our solution delivers instant application insights, calculates long-term cost savings, and enables proactive product replacement planning — ensuring smooth, cost-effective operations.

When paired with the Tsubaki Scan-and-Plan identification system, customers can quickly identify their applications and the specific Tsubaki products installed.



How It Works:

Data Integration: Critical product, application, and maintenance information are entered into Tsubaki Advantage and the program tracks and calculates the total cost savings over the entire time the Tsubaki products are installed.

Cost Savings Monitoring: Generate detailed, documented cost savings reports at any time to monitor actual savings as they occur.

Special Scan-and-Plan QR code labels are applied to each piece of equipment that contain the application and product information as well as the date of installation for easy access when the time comes for replacement.

Scan and Plan

Get application information in Seconds

Scan and Plan is easy with just a few steps.

- 1 - Contact your local Tsubaki representative for your QR label
- 2 - Register at: www.tsubakiscanandplan.com
- 3 - Scan the QR label to receive relevant information about your application
- 4 - Use the tool to proactively plan ahead and avoid an unplanned shutdown

Experience the Tsubaki Advantage

and transform how you manage maintenance and operational costs.





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CAT-TCLRECYCLING

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