

Tsubaki Chain has developed a truly remarkable line of bucket elevator chains designed especially for service in cement plants. These chains provide the highest ultimate and fatigue strengths available for this application. In addition, our innovative barrier seal design in the 4000 Series Chains helps prevent abrasive materials from entering and attacking the chain joints.

We are so confident in our Cement Plant Elevator Chains that we offer an exclusive Three-Year Limited Performance Guarantee, which protects against breakage and excessive elongation due to wear.

Matching sprockets, designed expressly for use with the 4000 Series Chains, are also available. These include standard-size sprockets furnished with a minimum 58R (Rockwell C) tooth hardness. Sprockets with even greater hardness can also be ordered.



## Maximum Strength

Tsubaki 4000 Series Chains are made of specially selected 100% alloy steel, and they possess ultimate strength ratings approximately 45% higher than competitive brands. A special piercing technique developed by Tsubaki makes exceptionally smooth pitch holes for high interference fits. This piercing method, combined with shot peening, yields maximum fatigue strength and protects against failure—even when chains are challenged by the most severe applications.

## Tsubaki Builds the Strongest Chain

Chain Number	Average Tensile Strength	
	4000 Series	Competitor's Product
4856	145,000	100,000
4857	174,000	130,000
4859	264,000	200,000
4864	275,000	200,000

## Precision Manufacturing Eliminates Staggered Pins

Side bowing (when the chain hangs crooked) has been a problem in bucket elevator chains for years. The condition occurs when the pitch of the outer sidebars is not held to tight tolerances or when pin links are not built straight. Staggering pins or pin links had been believed to correct the problem.

We have a better idea. We manufacture 4000 Series Chains to exacting tolerances using state-of-the-art production equipment and methods. This enables us to produce high performance cement plant elevator chains **without** staggered pins. Tsubaki 4000 Series Chains hang straight and true without compromising strength or wear life.

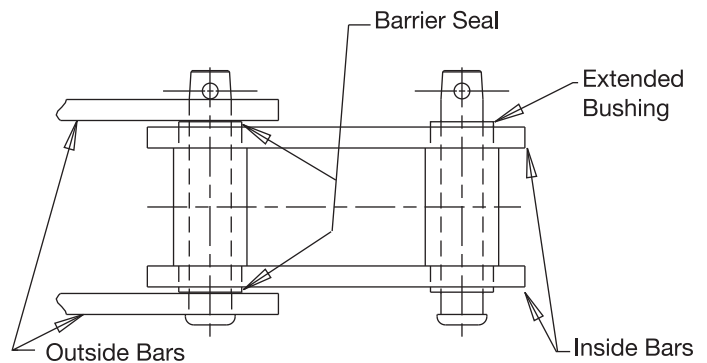
## Maximum Wear Life

Extra deep induction hardening of pins and carburizing of bushings provide unsurpassed wear life. After years of testing, we developed a high hardness specification so our 4000 Series Chains resist abrasion by cement. This ensures maximum wear life and the toughness necessary to survive extended periods of service in cement plant bucket elevators.

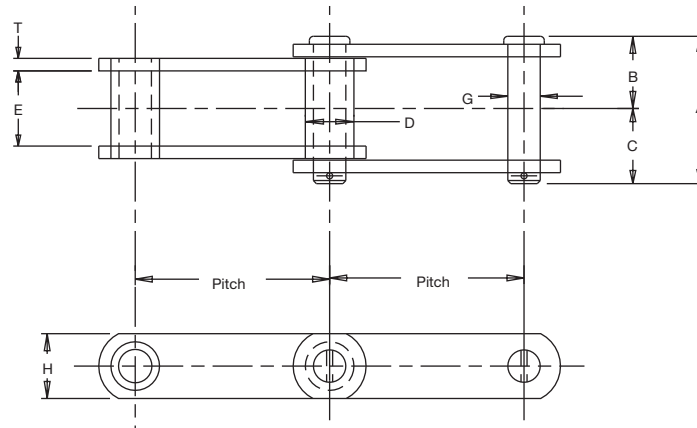
## Barrier Seal Design for Longer Wear Life

The 4000 Series Chain bushings extend beyond the inside sidebar to establish a barrier. This virtually eliminates abrasive material from entering the pin/bushing joint area. This heavy-duty hardened part will not wear out prematurely, and it will not separate from the chain and contaminate current plant production batches. Located between the inside and outside sidebars, the barrier seals prevent a build-up of material due to “flooding” of the elevator boot section, which can result in dry cavitation of pins.

## 4000 Series Elevator Chain with Barrier Seals



## 4000 Series Cement Plant Bucket Elevator Chains

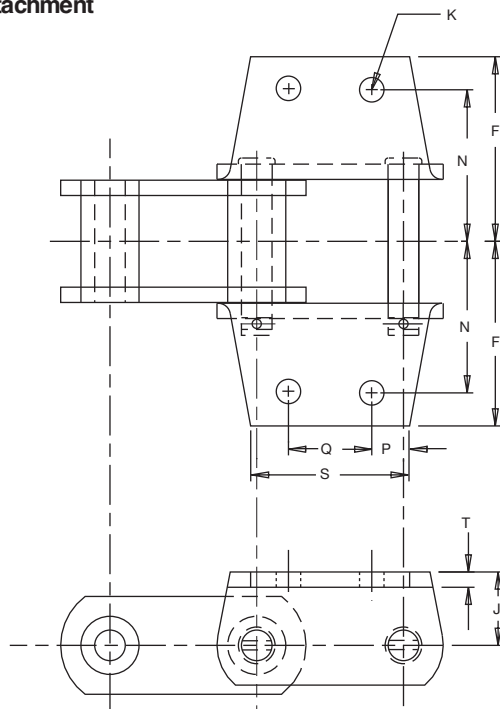


## 4000 Series Cement Plant Bucket Elevator Chains

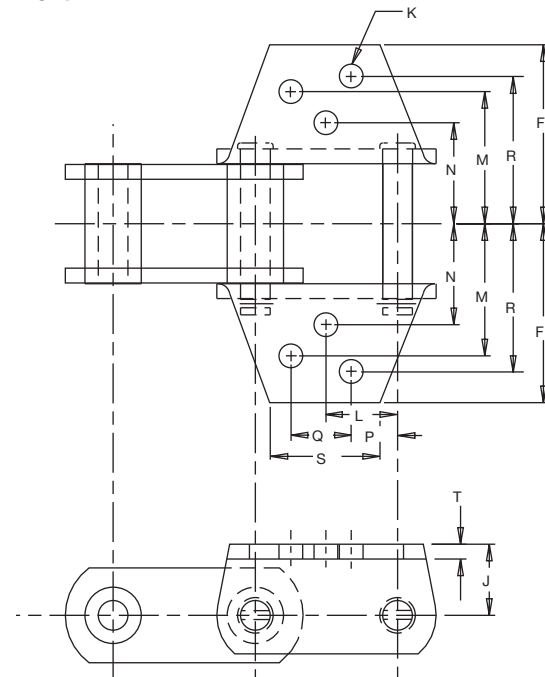
All dimensions are in inches unless otherwise indicated.

Chain Number	Pitch	Width				Bushing	Pin	Sidebars		Approx. Weight (lbs./ft.)
		A	B	C	E	Diameter	Diameter	Height	Thickness	
4856	6.000	6.13	2.88	3.22	3.00	1.75	1.00	2.50	.50	16.5
4857	6.000	6.13	2.88	3.22	3.00	1.75	1.00	3.25	.50	21.0
4859	6.000	7.38	3.56	3.81	3.75	2.38	1.25	4.00	.63	34.0
4864	7.000	7.38	3.56	3.81	3.75	2.38	1.25	4.00	.63	31.0

## K-24 Attachment



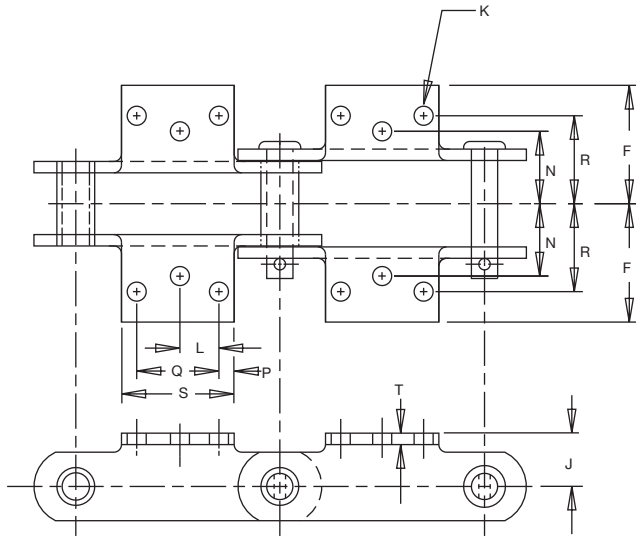
## K-3 Attachment



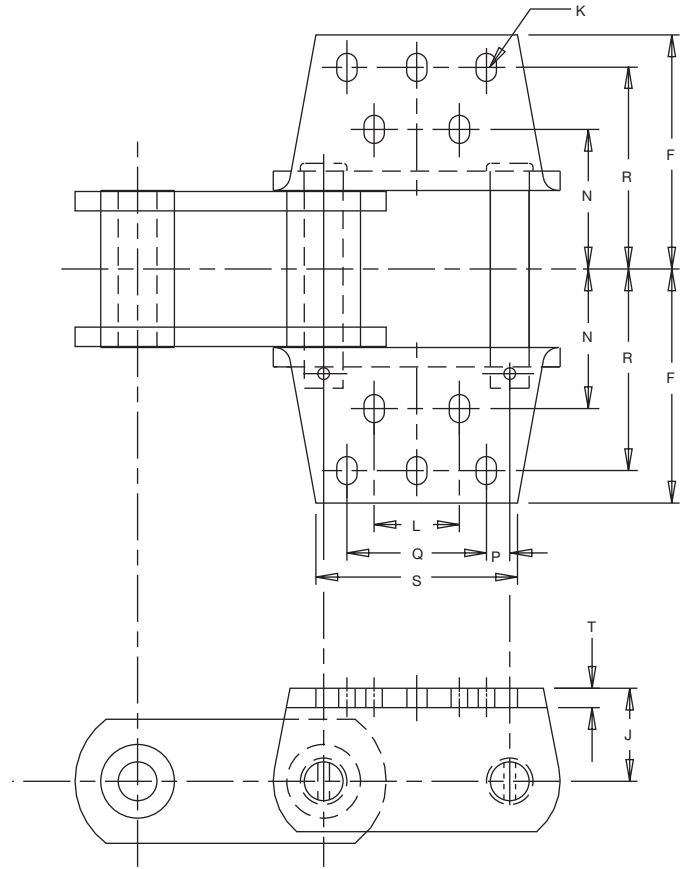
To locate compatible sprockets for your chain, refer to the Product Cross-Reference at the back of this section.

Note: Dimensions are subject to change. Contact Tsubaki Technical Support to obtain certified prints for design and construction.

## K-35 Attachment



## K-44, K-443 Attachment



Section C

## 4000 Series Chains with Attachments

Attachment Number	Chain No.												Bolt Size	Approx. Weight (lbs./ft.)
		N	M	R	F	L	Q	S	P	K	J	T		
K-24	4856	3.63			4.75		2.50	7.25	1.75	.63 <sup>1</sup>	1.88	.50	27.5	
K-3	4856	3.28	5.47	6.03	6.75	3.00	2.75	4.25	1.63	.50	1.88	.50	27.5	
K-35	4856	3.63		6.13	6.75	1.25	2.50	6.44	1.75	.63	1.88	.50	27.5	
K-44	4857	3.50		6.00	7.25	3.50	3.50	6.56	1.25	.50	2.50	.50	42.0	
	4859	4.50		6.50	7.55	2.75	4.50	6.50	.75	.63	3.00	.63	67.0	
K-443	4864	4.50		6.50	7.55	3.75	5.50	8.56	.75	.63	3.00	.63	53.0	

<sup>1</sup>Hole can also be supplied for 1/2" size bolt.

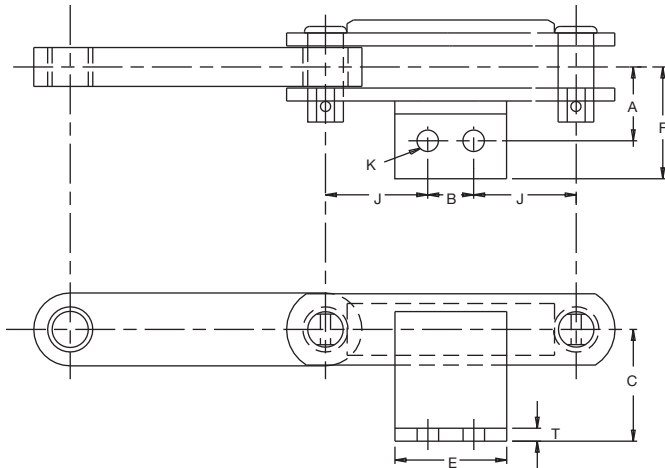
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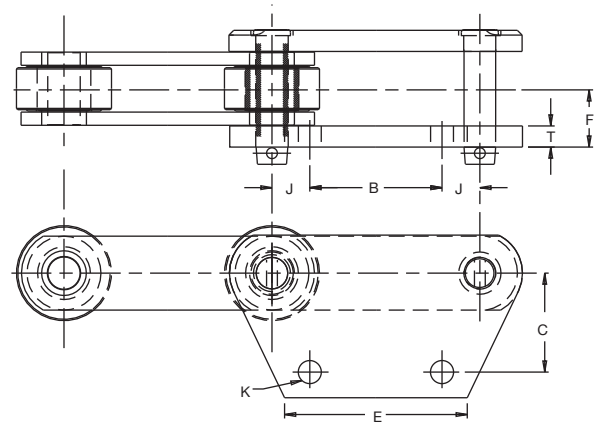
## Stack Reclaimers

Stack Reclaimers are popular when heavy industrial processes require that large storage piles of lump material are necessary. Reclaimer chain and flight assemblies function like scraper conveyors, less the trough, with flight blades that push material toward a belt feeding conveyor. The reclaimer conveyor's chain with digging flights are supported by rails and structure which span over or across the pile being reclaimed for transfer to plant processes.

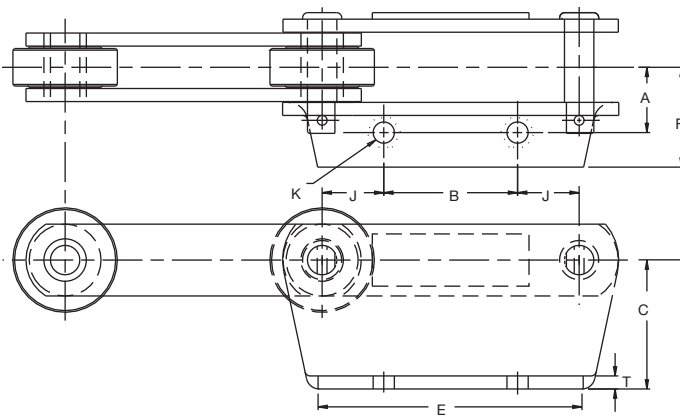
22568



22535



22220



## Reclaimer Chains

All dimensions are in inches unless otherwise indicated.

Drawing Number	Pitch	A	B	C	E	F	J	K	T
		22568	9.843	2.85	1.77	4.31	4.31	4.31	4.04
22535	9.843		6.26	4.69	8.65	2.11	1.79	1.09	1.00
22220	9.843	2.50	5.12	4.94	10.15	3.82	2.36	.81	.50

Note: Reclaimer chains are normally manufactured on a made-to-order basis. A few standard styles are shown above.

To locate compatible sprockets for your chain, refer to the Product Cross-Reference at the back of this section.

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Section C