



Cement Plants

The Union Chain Division 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

The Union 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 U.S. 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.

Union 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

Three-Year Limited Performance Guarantee Union Chain Division, U.S. Tsubaki, Inc.

U.S. Tsubaki, Inc., guarantees the Union Chain Division Cement Plant Chains, when used in Cement Plant Service only, will not fail or wear out beyond 5% chain elongation for three (3) years and will not fail due to any defect in material or workmanship. In the event of any such wear out, the chain will be replaced in accordance with the following schedule.

1st Year: Chain replaced at no charge.

2nd Year: Chain replaced at 40% of original price.

3rd Year: Chain replaced at 70% of original price.

Improper installation or maintenance, or any abuse, alteration, inappropriate grinding of pins for insertion purposes, etc., will void this guarantee. The guarantee set forth above is exclusive of all other guarantees or warranties, express or implied, and extend only to buyer and to no other person. U.S. Tsubaki's liability is limited to replacement of the non-conforming or defective product, and buyer waives all other remedies, including but not limited to, all rights to consequential, special or incidental damages, including but not limited to damages resulting from personal injury, death, or damage to or loss of use of property. This guarantee commences upon the date of installation, or one year after the date of shipment, whichever occurs first. All Warranties of Merchantability or Fitness for Particular Purpose are Hereby Excluded.

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. Union 4000 Series Chains hang straight and true without compromising strength or wear life.

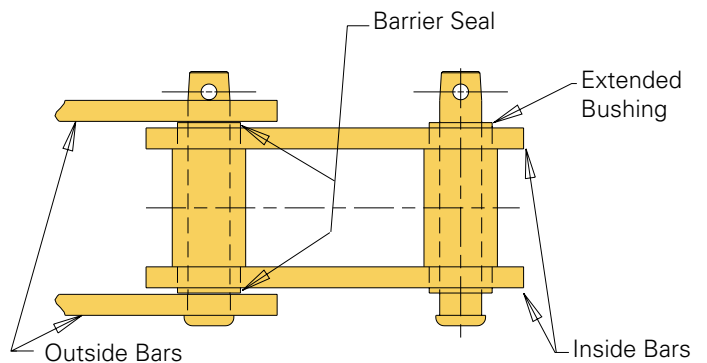
Maximum Wear Life

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.

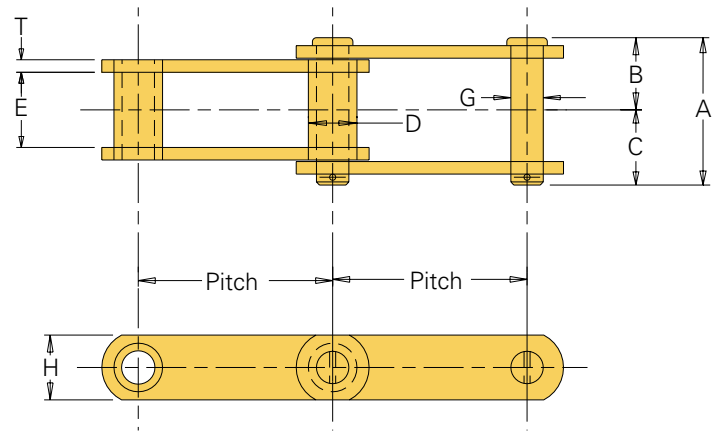
Barrier Seal Design for Longer Wear Life

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

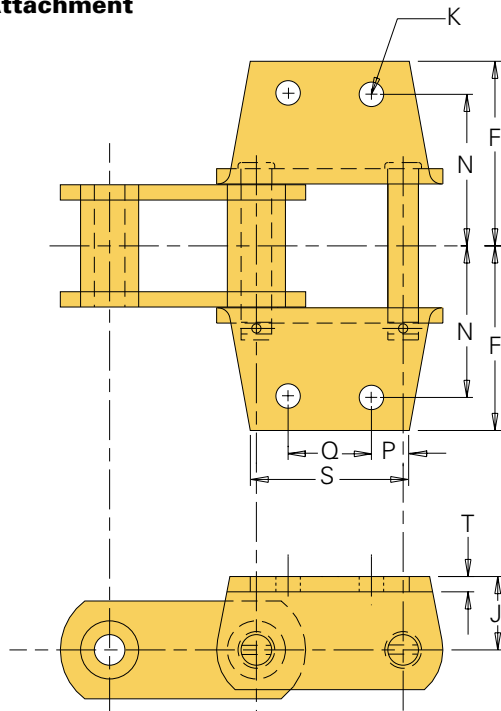


4000 Series Cement Plant Bucket Elevator Chains

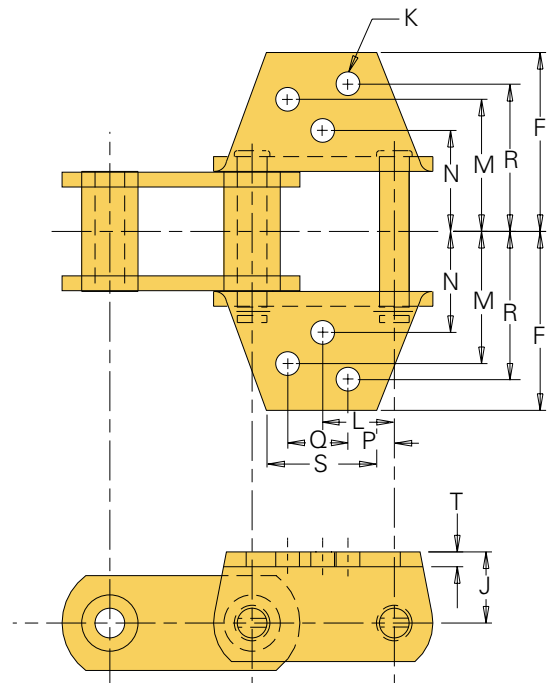
All dimensions are in inches unless otherwise indicated.

Chain Number	Pitch	Width				Bushing Diameter	Pin Diameter	Sidebars		Approx. Weight (lbs./ft.)
		A	B	C	E			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



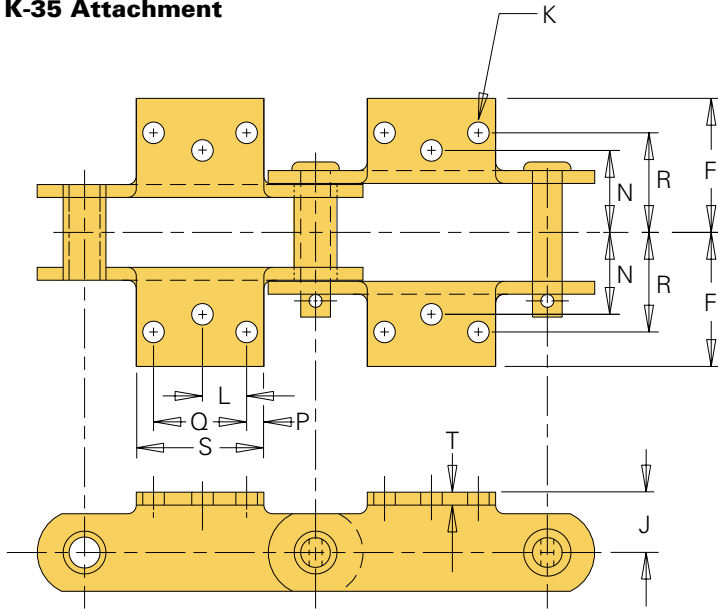
K-3 Attachment



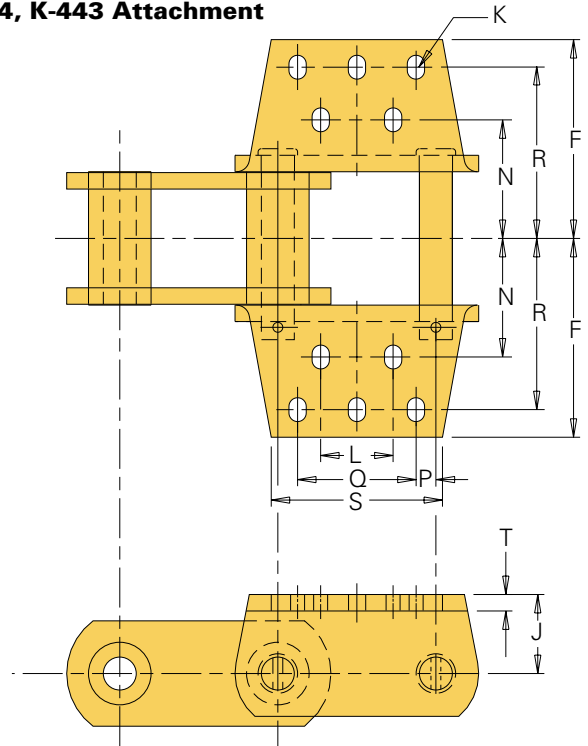
To locate compatible sprockets for your chain, refer to the Product Cross-Reference in Section D.

Note: Dimensions are subject to change. Contact Union Chain to obtain certified prints for design and construction.

K-35 Attachment



K-44, K-443 Attachment



4000 Series Chains with Attachments

Attachment Number	Chain No.												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 ¹	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

Indicates this chain is normally stocked. All others are made-to-order.

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

To locate compatible sprockets for your chain, refer to the Product Cross-Reference in Section D.

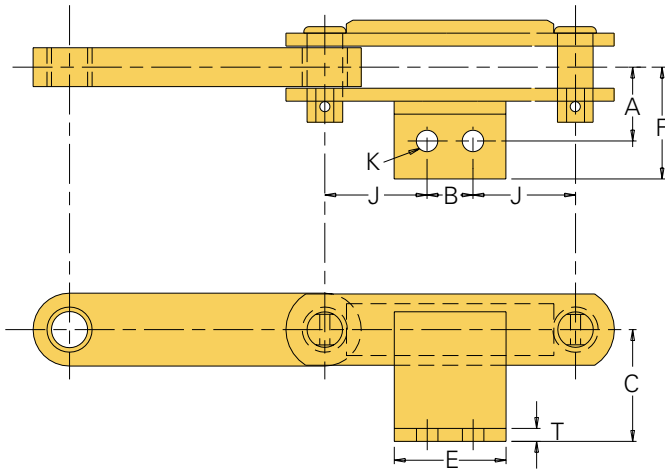
Note: Dimensions are subject to change. Contact Union Chain to obtain certified prints for design and construction.

Stack Reclaimers

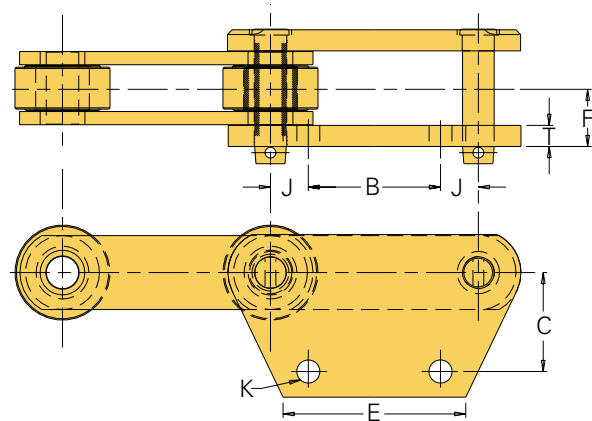
Stack Reclaimers are popular when heavy industrial processes require that large storage piles of lump material are necessary. Reclaimer chain and flight assemblies function like scraper conveyors, less the trough, with flight blades that push material toward a belt feeding conveyor. The reclaimer conveyor's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

Chain for this demanding application should provide the longest service life to achieve the best overall value. Chain must have large bearing areas, high hardnesses and deep case depths to provide the best performance. Union Chain Division engineers have used these principles while retrofitting many reclaiming conveyors with chain and sprockets, achieving service life which is longer than O.E.M. chains. For the superior value and performance, Union Chain is your best choice.

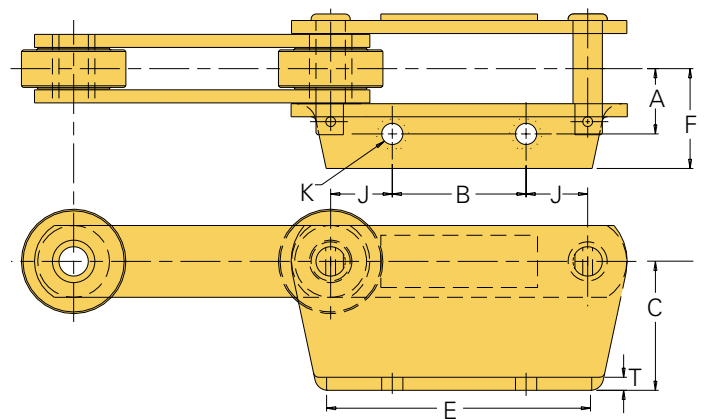
22568



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	.83	.50
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 in Section D.

Note: Dimensions are subject to change. Contact Union Chain to obtain certified prints for design and construction.

Make In-Line Inspections Easy

Put machinery access at your fingertips. ONE-TOUCH INSPECTION DOOR® is a dust- and rain-tight inspection and service door for conveyors, as well as processing and handling equipment. These pre-fabricated units are in-stock and ready-to-go for easy installation at the job site. Once in place, ONE-TOUCH INSPECTION DOOR allows for quick and simple inspection without the need for special tools: just lift the lever! No bolts to loosen and no covers to misplace. One touch is all it takes...it's that simple. For more information, see the ONE-TOUCH INSPECTION DOOR description in Section C.

THE UNION SOLUTION

- **Maximum strength— Approximately 45% greater than the competition**
- **High hardness to resist abrasion**
- **Precision manufacturing**
- **Exacting tolerances**
- **Smooth pitch holes for high interference fit and increased fatigue resistance**
- **Quality guarantee**