

Food Processing

Food processing is a large industry with several subcategories, and each has special needs and requirements. The Union Chain Division of U.S. Tsubaki, Inc., manufactures chain for a wide variety of applications in the food industry. Some carry heavy loads, some are subjected to high temperatures, and others endure frequent washdowns. Each requires reliable chain to move product quickly and efficiently. However, the types of chain vary, depending on the application.

Engineering Class Chains and Sprockets from the Union Chain Division are used extensively in six areas:

- Red meat processing
- Poultry processing
- Commercial baking ovens
- Dehydrator ovens
- Citrus processing
- Cooker ovens



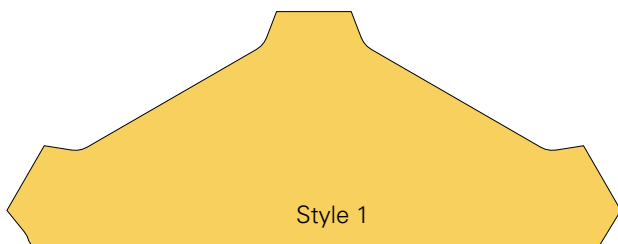
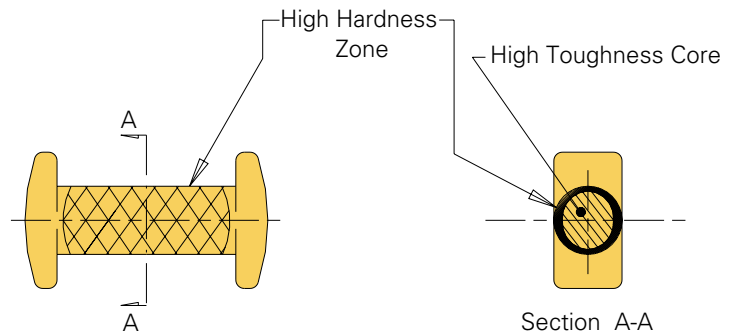
Red Meat Processing

Delrin (Acetal) Bushed Conveyor Chain is used primarily in meat processing and packing plants. Even in these wet, corrosive environments, the Delrin (Acetal) insert eliminates the need for lubrication. These chains feature K-2 attachments; Acetal insert rollers; stainless steel bushings; and electro-galvanized sidebars, pins, and rollers, see page B-33. You get lube-free operation for a clean environment.

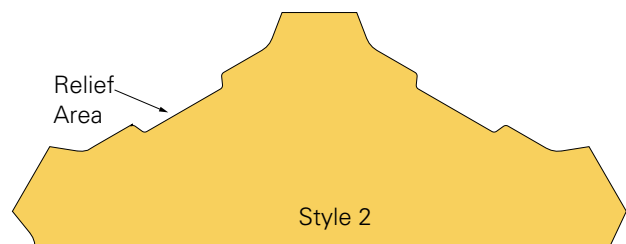
Trolley conveyors and long, complex, overhead conveyor systems such as on the primary processing line in a slaughterhouse require Drop Forged Rivetless Chain, see page B-34. The open joint construction allows for easy washdowns and helps prevent contamination. For extended wear, select Ultra Wear Life-Drop Forged Rivetless Chain, an innovative product that extends wear life of rivetless chain 40 percent or more. This extraordinary performance is achieved with special steels and a proprietary pin hardening process. The result is a pin with a very hard, wear-resistant surface over a ductile core. UWL-Drop Forged Rivetless Chain is available in both X-Style and Barloop Style.

Pay particular attention to the style of sprocket you select and use with Drop Forged Rivetless Chain. Some attachments on overhead slaughterhouse lines, including slider attachments, require additional clearance that is not accounted for in standard sprockets. The Union Chain Division offers sprockets that are specially designed with relief areas to accommodate attachment protrusion, helping the Drop Forged Rivetless Chain to stay in the sprocket and preventing premature chain joint wear.

Higher Hardness Pin for “Ultra Wear Life” Performance

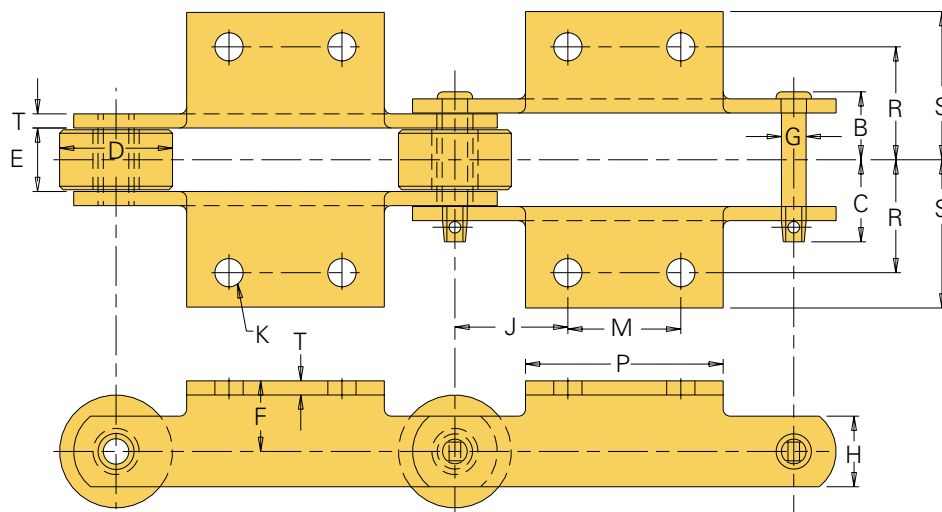


Standard sprockets are not designed for some applications like overhead slaughterhouse lines where the attachment requires extra clearance.



Drop Forged Rivetless Sprockets from the Union Chain Division have a “relief area” that allows for attachment protrusion. This means better articulation and longer wear life.


Red Meat Processing Chain



Red Meat Processing (DS Series Chains)

All dimensions are in inches unless otherwise indicated.

Chain Number	Pitch	Chain Width		Inside Width	Roller			Pin		Sidebar			Bushing	Attachment						Bolt Dia.	Avg. Ult. Stgth. (lbs.)	Max. Work Load (lbs.)	Approx. Weight (lbs./ft.)
		B	C		D	Matl. ²	G	Matl. ²	H	T	Matl. ²	Matl. ²		P	M	J	R	S	F				
DS-1113 ¹	4.040	1.47	1.75	1.31	2.00	AHT	.63	CHT	1.50	.31	HC	SSHT	2.88	1.50	1.27	2.06	2.77	1.25	.38	26,000	3,150	11.4	
DS-196R	6.000	1.20	1.45	1.13	2.00	CCH	.44	CHT	1.25	.25	HC	SSHT	3.50	2.00	2.00	2.00	2.63	1.25	.38	18,000	1,950	7.5	
DS-6272 ¹	6.000	1.47	1.75	1.31	2.25	PMHT	.63	CHT	1.50	.31	HC	SSHT	3.50	2.00	2.00	2.00	2.64	1.38	.38	26,000	3,150	9.2	

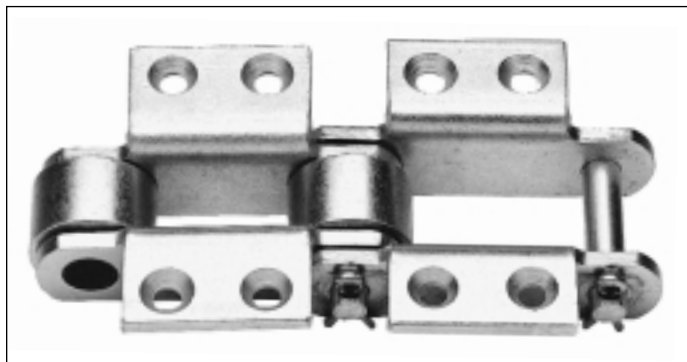
 Indicates this chain is normally stocked. All others are made-to-order.

¹DS-1113 and DS-6272 furnished with counter sunk attachment holes.

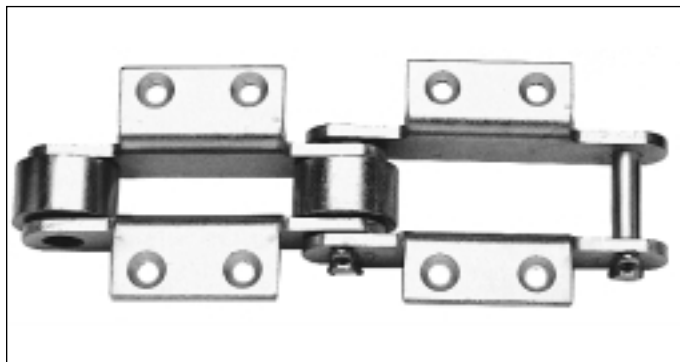
²Material: CCH = Carbon case hardened; CHT = Carbon heat-treated; HC = High carbon; SSHT = Stainless steel heat-treated; AHT = Alloy heat-treated; PMHT = Powdered metal heat-treated.

Notes: DS Series Chains have zinc-plated sidebars, pins, and rollers. The bushings are heat-treated stainless steel.

DS-1113 Chain



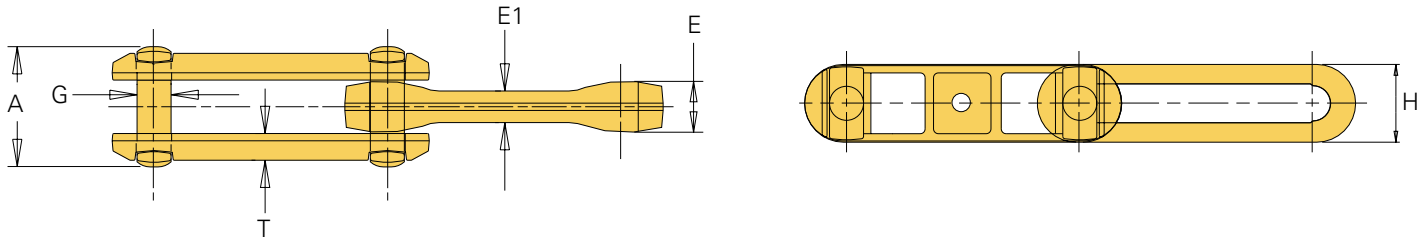
DS-6272 Chain



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.

X-Style Drop Forged Rivetless Chain



Red Meat Processing (Drop Forged Rivetless Chains)

All dimensions are in inches unless otherwise indicated.

Chain Number	Pitch	Chain Width			Pin	Sidebars		Average Ultimate Strength (lbs.)		Max. Work Load (lbs.)		Average Pitches (ft.)	Approx. Weight (lbs./ft.)
		Overall	Inside Width		Dia.	Thickness	Height	Alloy Heat Treated ¹	Heat Treated	Normal	Freq. Flex.		
		A	E	E1	G	T	H						
X-678	6.031	3.03	1.28	.81	.88	.72	2.00	100,000	85,000	7,100	3,300	1.990	6.7

¹ANSI/SAE 8642



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

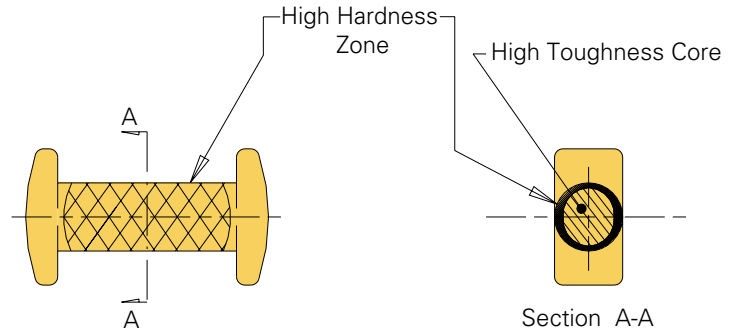
Note: Dimensions are subject to change. Contact Union Chain to obtain certified prints for design and construction.

Poultry Processing

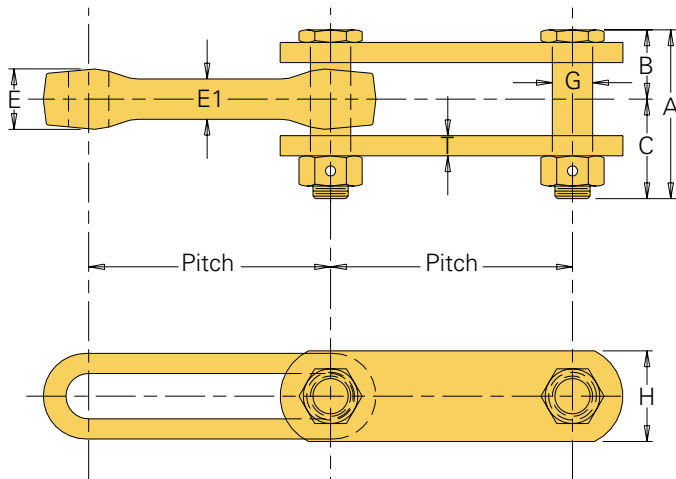
We make several types of chains and sprockets that are used extensively in poultry processing. X-Style and Barloop Style Drop Forged Rivetless Chains are used in overhead trolley conveyors, which move birds and drive processing equipment. The links on the Barloop Style are usually connected with a bolt and threaded lock nut for easy assembly and disassembly.

For extended wear, select Ultra Wear Life-Drop Forged Rivetless Chain, an innovative product that extends wear life of rivetless chain 40 percent or more. This extraordinary performance is achieved with special steels and a proprietary pin hardening process. The result is a pin with a very hard, wear-resistant surface over a ductile core. UWL-Drop Forged Rivetless Chain is available in both X-Style and Barloop Style.

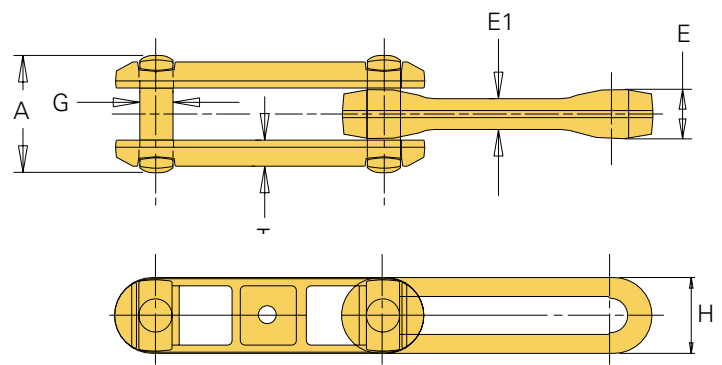
Higher Hardness Pin for "Ultra Wear Life" Performance



Barloop Chain



X-Style Drop Forged Rivetless Chain



Poultry Processing (Drop Forged Rivetless Chains)

All dimensions are in inches unless otherwise indicated.

Chain Number	Pitch	Chain Width					Pin Dia.	Sidebars			Average Ultimate Strength (lbs.)		Max. Work Load (lbs.)		Average Pitches (ft.)	Approx. Weight (lbs./ft.)
		Overall			Inside Width			Thickness	Height	Alloy Heat Treated ¹	Heat Treated	Normal	Freq. Flex.			
		A	B	C	E	E1								G		
X-348	3.015	1.73			.75	.50	.50	.41	1.09		24,000	2,600	1,200	3.950	2.2	
S-348	3.015	2.09	.86	1.23	.75	.50	.50	.25	1.13		24,000	2,600	1,200	3.950	2.4	
X-458	4.031	2.19			1.00	.63	.63	.47	1.38	60,000	48,000	4,000	1,900	2.980	3.2	

¹ANSI/SAE 8642

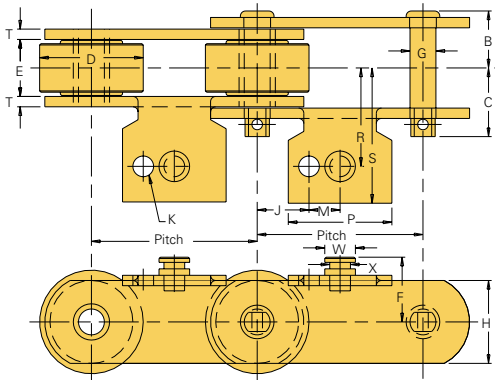
To locate compatible sprockets for your chain, refer to the Product Cross-Reference in Section D.

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

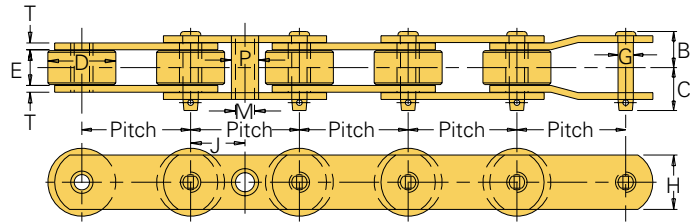
Commercial Baking Ovens

Engineering Class Chains are excellent in this application because they stand up to high temperatures and can be used in horizontal and vertical configurations. We offer a variety of constructions for baking and proofer ovens. Contact Union Engineering for more information.

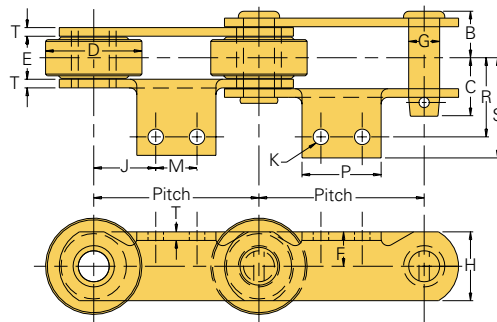
40005



40004



60003

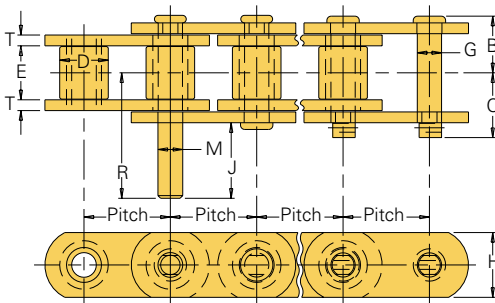


Baking Ovens

All dimensions are in inches unless otherwise indicated.

Chain No.	Pitch	Pin Head to CL	Pin End to CL	Roller Dia.	Inside Width	Pin Dia.	Sidebar		Attachment							Bolt Dia.	Average Ultimate Strength (lbs.)	Max. Work Load (lbs.)	Approx. Weight (lbs./ft.)			
		B	C				D	E	G	H	T	P	M	J	R					S	F	W
40004	4.000	1.20	1.52	2.50	1.06	.63	2.00	.25	1.31	1.15	2.00								.47	31,000	3,400	9.6
40005	4.000	1.37	1.66	2.50	1.38	.63	2.00	.25	2.50	.75	1.25	2.38	3.27	1.56	.74	.50			.47	31,000	4,100	11.5
60003	6.000	1.69	2.13	3.50	1.56	1.13	2.50	.31	2.88	1.50	2.25	2.88	3.70	1.19					.53	60,000	8,600	16.8

20002



Proofer Oven Chain

All dimensions are in inches unless otherwise indicated.

Chain Number	Pitch	Pin Head to CL	Pin End to CL	Roller Dia.	Inside Width	Pin Dia.	Sidebar		Attachment			Average Ultimate Strength (lbs.)	Max. Work Load (lbs.)	Approx. Weight (lbs./ft.)
		B	C				D	E	G	H	T			
20002	2.000	1.31	1.50	1.13	1.25	.56	1.50	.25	.57	1.75	2.91	21,000	3,500	6.2

Note: Extended pins either every 14th or 18th pitch.

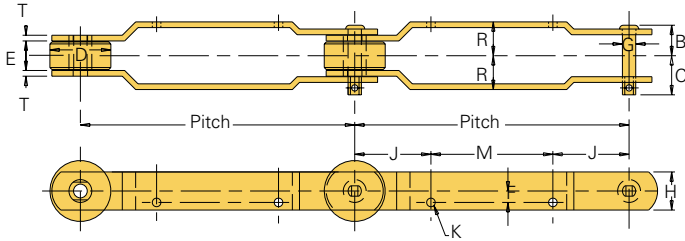
To locate compatible sprockets for your chain, refer to the Product Cross-Reference in Section D.

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

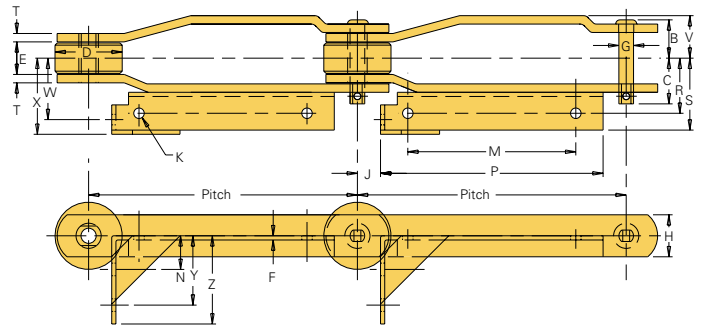
Dehydrator Ovens

Dehydrator ovens remove moisture from foods at a temperature around 200°F. This mildly corrosive environment can be hard on some chains. That's why we provide heat-treated carbon steels or stainless steels.

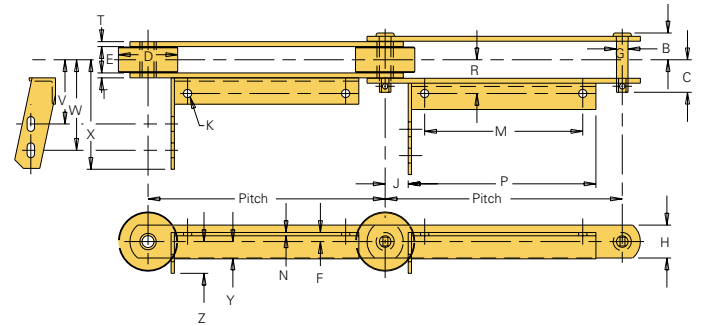
90001



80002 and 80003



90002



Dehydrator Ovens

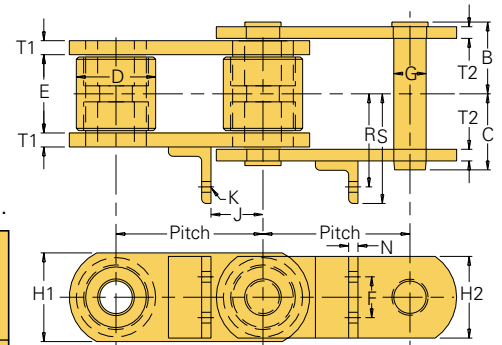
All dimensions are in inches unless otherwise indicated.

Chain No.	Pitch	Pin		Roller Dia.	Inside Width	Pin Dia.	Sidebar										Attachment										Bolt Dia.	Avg. Ult. Stgth. (lbs.)	Max. Work Load (lbs.)	Approx. Weight (lbs./ft.)
		Head to CL	End to CL				B	C	D	E	G	H	T	P	M	J	R	S	F	N	V	W	X	Y	Z	K				
80002	8.000	.89	1.61	2.00	.97	.44	1.25	.25	6.50	5.00	.69	1.64	2.14	.13	1.00	1.27	1.83	2.27	2.06	2.62	.28	18,000	2,500	4.6						
80003	8.000	1.42	1.47	2.50	1.25	.63	1.50	.25	6.50	5.00	.69	1.78	2.28	.13	1.00	1.41	1.79	2.41	2.06	2.62	.28	37,000	3,800	5.9						
90001	9.000	1.02	1.11	2.50	1.00	.44	1.13	.19	4.00	2.50	1.13			.31							.25	13,000	2,100	3.8						
90002	9.000	1.02	1.24	2.25	1.00	.44	1.25	.19	7.13	6.00	.88	1.28		.34	.13	2.64	3.64	4.33	.59	1.21	.28	16,500	2,100	4.1						

Cooker Ovens

Transferring canned goods through a pressurized steam-filled chamber is an important step in food processing. These Union chains are designed for corrosion resistance to withstand the hot, damp environment within the cooker unit.

European Style Can Cooker Chain



European Style Can Cooker Chain

All dimensions are in inches unless otherwise indicated.

Pitch	Pin Head to CL	Pin End to CL	Inside Width	Roller Dia.	Pin Dia.	Sidebar				Attachment					Bolt Dia.
						H1	T1	H2	T2	R	S	J	N	F	
3.937 ¹	1.88	2.08	2.08	2.05	.87	2.38	.38	2.19	.31	2.56	3.45	1.06	.19	1.18	.39
7.283 ¹	1.88	2.08	2.08	2.36	1.10	3.00	.38	2.75	.31	2.56	3.45	2.74	.19	1.18	.39

¹Chains furnished with special insert bearings between pin-bushing and roller-bushing areas.

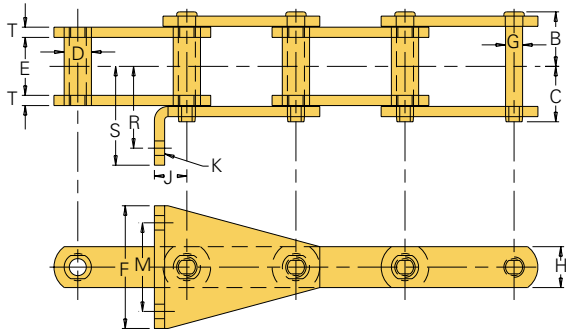
To locate compatible sprockets for your chain, refer to the Product Cross-Reference in Section D.

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

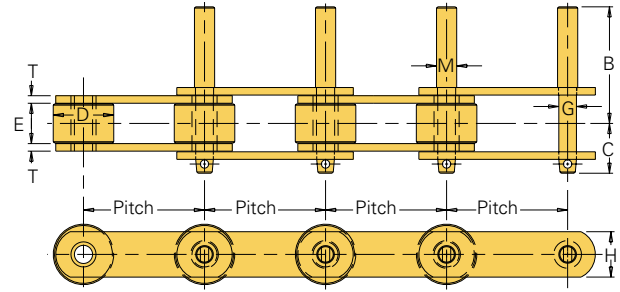
Citrus Processing

This can be a harsh environment for chain—continual operation, minimal lubrication, and corrosion. We have a line of citrus processing chains that have been engineered to meet these specialized demands. The conveyor and elevator chains with G-19 attachments that we show are commonly used to convey or elevate citrus products. The conveyor chain with D-5 attachments is used in washing, sorting, and inspection lines. These are just a few of the chains that the Union Chain Division can make to meet your specifications.

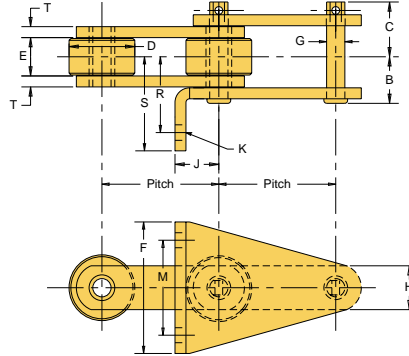
188 and 102B with G-19 Attachment



303R and 53R with D-5 Attachment



89R with G-19 Attachment



All dimensions are in inches unless otherwise indicated.

Citrus Chain

Chain No.	Pitch	Pin Head to CL	Pin End to CL	Roller Dia.	Inside Width	Pin Dia.	Sidebar		Attachment					Bolt Dia.	Avg. Ult. Stgth. (lbs.)	Max. Work Load (lbs.)	Approx. Weight (lbs./ft.)
		B	C	D	E	G	H	T	M	J	R	S	F				
303R w/D-5	3.000	1.44	.77	.88	.50	.44	.88	.19	.50						8,300	1,340	2.2
53R w/D-5	3.000	2.39	1.25	1.50	1.00	.44	1.13	.19	.63						13,000	2,100	4.3
188 ¹ w/G-19	2.609	1.43	1.43	.88	1.06	.50	1.12	.25	2.62	.94	2.19	2.64	3.75	.41	25,000	2,750	4.0
102B ¹ w/G-19	4.000	2.00	2.03	1.00	2.13	.63	1.50	.38	3.25	1.13	3.00	3.63	4.50	.50	40,000	6,300	7.9
89R ¹ w/G-19	4.000	1.59	1.88	2.25	1.31	.63	1.50	.38	3.25	1.50	2.63	3.44	4.50	.50	28,000	4,500	10.8

¹Furnished standard with G-19 attachment every 4th pitch.

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.

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.

ONE-TOUCH INSPECTION DOOR® is a registered trademark of Tsubaki Conveyor of America, Inc.

THE UNION SOLUTION

- **A wide variety of high-quality products**
- **Optimal performance and strength**
- **Long-lasting chains and sprockets**
- **Reliable service in challenging applications**
- **Durable and dependable**