



U.S. Tsubaki, Inc.
Union Chain Division

Steel Drive Chains



Compare quality...

Union Engineering Class Drive Chain for Heavy Duty Service

Ultimate strength

The ultimate strength ratings of Engineering Class Drive Chains are very significant. The chains with the higher ultimate strengths have higher actual yield and fatigue limits. Union Drive Chains are designed to exceed the listed ratings with extra reserve strength to withstand high shock loads.

Alloy steel

It is Union Chain's policy to use alloy steel wherever chain requires a high grade part of uniform hardness. The use of alloy steel insures hardenability throughout the part and therefore provides more uniform core strength than carbon steel. This is especially important for drive chains designed for heavy duty service.

Union Drive Chains with ultimate strength ratings over 112,000 pounds are made entirely of alloy steel and all Union Drive Chains are furnished with alloy steel pins. Union Chain guarantees that no substitutes are used.

Rugged construction for heavy duty service

- ☒ Pre-Tested
- ☒ Alloy Steel
- ☒ Induction Hardened Pins
- ☒ Press Fit Construction
- ☒ Thru-Hardened Sidebars
- ☒ Shock Resistant Rollers
- ☒ Precise Pitch Control

Advanced technology

Union Chain employs the latest manufacturing and heat treating techniques in the production of drive chain components. Each part is carefully machined to close tolerances to insure precise pitch control for smooth sprocket action and longer chain life. In addition, each component is heat treated to achieve properties best suited to its individual function. This results in a balanced chain design with unequalled strength and wear resistance.



Specially designed components

- Longer wear life
- Greater ultimate strength
- Higher shock resistance

A Superstrength sidebars

The sidebars for the Union Drive Chains in the high strength range are made from alloy steel and thru-hardened for super yield strength. The advanced Union Chain techniques used to manufacture these sidebars insure accurate hole size and precise pitch control for equal load distribution and smooth sprocket action.



C Alloy steel induction hardened pins

Union's specially designed drive chain pins are made from alloy steel and are thru-hardened for toughness and strength. In addition, the chains which are designed primarily for heavy duty power shovel applications are furnished with ground bearing surfaces and full round induction hardening for superior wear resistance. This provides the best combination of high yield strength and maximum wear resistance.



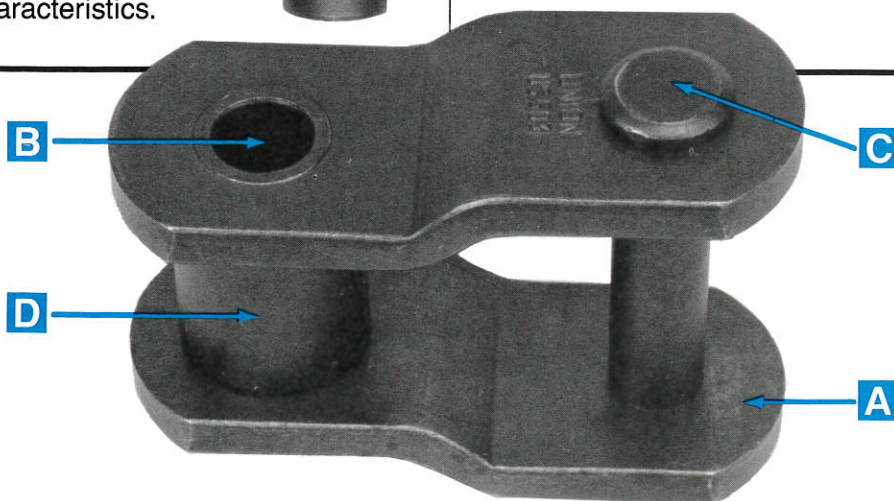
B Precision machined bushings

Union's drive chain bushings are precision machined to provide the smoothest bearing surfaces. They are thru-hardened or case hardened, according to the primary application of the chain, to obtain the proper hardness and strength characteristics.

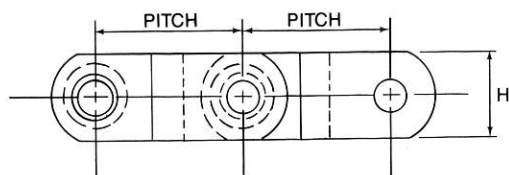


D Shock resistant rollers

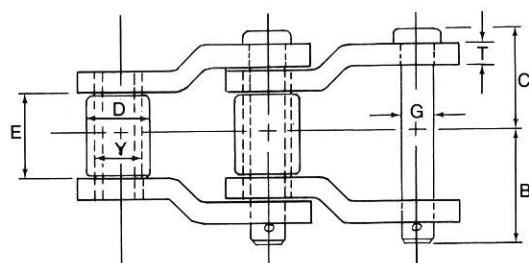
Union's rollers are made from a high quality material for use where critical tolerances and superior finish are required. They are thru-hardened to withstand high shock loads and are manufactured from alloy steel in the higher strength chains.



Union engineering class drive chain



Style O



All Dimensions in Inches.

Chain** Number	Pitch	Style	Maximum Working Load (Lbs)	Average Ultimate Strength (Lbs)	Overall Width	Pin Head To CL C	Pin End To CL B	Inside Width E	Stock Lengths		Weight Per Foot (Lbs)
									Pitch	Feet	
US-2065	2.000	0	4,000	65,000	3 ¹ / ₃₂	1 ³ / ₈	1 ²¹ / ₃₂	1 ¹⁷ / ₆₄	60	10.00	7.6
520RX	2.563	0	2,800	25,000	2 ²¹ / ₃₂	1 ⁷ / ₃₂	1 ⁷ / ₁₆	1 ¹ / ₁₆	47	10.04	4.8
US-882	2.609	0	2,500	26,000	2 ¹¹ / ₁₆	1 ¹ / ₄	1 ⁷ / ₁₆	1 ¹ / ₈	46	10.04	3.6
US-3011	3.067	0	6,100	110,000	3 ⁷ / ₈	1 ¹³ / ₁₆	2 ¹ / ₁₆	1 ⁹ / ₁₆	39	9.97	12.0
US-1030	3.075	0	4,650	28,000	3 ¹ / ₂	1 ⁵ / ₈	1 ⁷ / ₈	1 ¹ / ₂	39	9.99	7.0
US-1031	3.075	0	4,650	48,000	3 ¹⁵ / ₃₂	1 ¹⁹ / ₃₂	1 ⁷ / ₈	1 ¹ / ₂	39	9.99	7.0
US-3075	3.075	0	5,100	75,000	3 ²⁷ / ₃₂	1 ²⁷ / ₃₂	2	1 ¹ / ₂	39	9.99	9.6
US-3514	3.500	0	7,700	140,000	4 ¹³ / ₃₂	2 ¹ / ₁₆	2 ¹¹ / ₃₂	1 ¹ / ₂	34	9.92	16.1
US-1241	4.063	0	9,000	112,000	5	2 ¹ / ₄	2 ³ / ₄	1 ¹⁵ / ₁₆	30	10.16	16.3
US-1242	4.063	0	9,000	140,000	4 ³ / ₄	2 ³ / ₁₆	2 ⁹ / ₁₆	1 ¹⁵ / ₁₆	30	10.16	16.1
US-1245	4.073	0	10,100	170,000	5 ¹ / ₈	2 ³ / ₈	2 ³ / ₄	1 ¹⁵ / ₁₆	30	10.18	18.0
US-4121	4.090	0	10,700	210,000	5 ¹ / ₈	2 ³ / ₈	2 ³ / ₄	1 ¹⁵ / ₁₆	30	10.23	13.6
US-4122	4.090	0	10,700	210,000	5 ¹ / ₈	2 ³ / ₈	2 ³ / ₄	1 ¹⁵ / ₁₆	30	10.23	14.0
US-4522	4.500	0	12,300	220,000	5 ³ / ₈	2 ¹ / ₂	2 ⁷ / ₈	2 ¹ / ₁₆	27	10.13	25.4
US-5031	5.000	0	17,500	310,000	6 ⁷ / ₁₆	3 ¹ / ₁₆	3 ³ / ₈	2 ³ / ₄	24	10.00	34.0
US-5035	5.000	0	19,600	350,000	6 ⁵ / ₈	3 ¹ / ₈	3 ¹ / ₂	2 ⁹ / ₁₆	24	10.00	38.1
US-5542	5.500	0	23,600	420,000	7 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	3 ⁷ / ₈	3	62	28.42	49.1
US-5738	5.750	0	23,000	380,000	7	3 ⁵ / ₁₆	3 ¹¹ / ₁₆	3	21	10.06	46.0
US-6042	6.000	0	23,600	420,000	7 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	3 ⁷ / ₈	3	20	10.00	45.0
US-6066	6.000	0	27,600	600,000	7 ¹ / ₄	3 ³ / ₈	3 ⁷ / ₈	3	57	28.50	51.7
US-6566	6.500	0	30,600	600,000	8 ¹ / ₄	3 ⁷ / ₈	4 ³ / ₈	3 ¹ / ₄	36	19.50	71.1
US-7060	7.000	0	30,600	600,000	8 ¹ / ₄	3 ⁷ / ₈	4 ³ / ₈	3 ¹ / ₄	17	9.92	66.0
US-64S	2.500	S*	***	125,000	3 ⁵ / ₈	1 ¹¹ / ₁₆	1 ¹⁵ / ₁₆	1 ¹ / ₂	48	10.00	13.1
344SXX	3.000	S	10,050	170,000	5 ¹ / ₈	2 ³ / ₈	2 ³ / ₄	1 ¹⁵ / ₁₆	40	10.00	22.0
US-4031	4.000	S	17,500	310,000	6 ⁷ / ₁₆	3 ¹ / ₁₆	3 ³ / ₈	2 ³ / ₄	30	10.00	40.0
US-1353	4.090	S	16,000	210,000	5 ¹³ / ₁₆	2 ¹¹ / ₁₆	3 ¹ / ₈	2 ¹ / ₄	30	10.23	37.6
US-5042	5.000	S	23,600	420,000	7 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	3 ⁷ / ₈	3	24	10.00	53.0
US-7080	7.000	S	37,150	800,000	8	3 ¹³ / ₁₆	4 ³ / ₁₆	3 ¹ / ₄	24	14.00	89.6

Materials

CHT Carbon Heat Treated	CCH Carbon Case Hardened	ACH Alloy Case Hardened	AHT Alloy Heat Treated	AIH Alloy Induction Hardened
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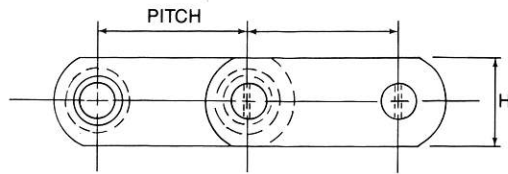
Note: Cottered construction is standard.

* Roller chain style sidebars

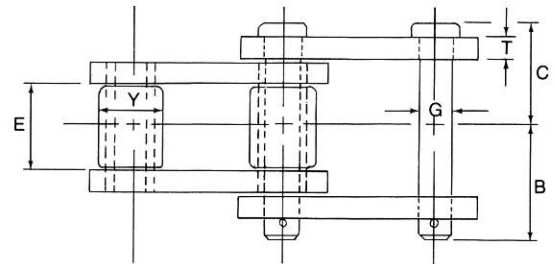
** Shaded areas indicate stock chain, all others are MTO.

*** Special application chain — contact Sandusky for information.

Specifications



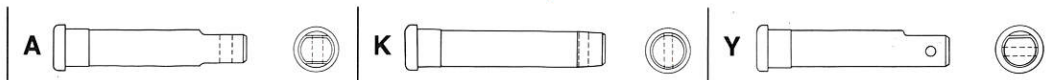
Style S



All Dimensions in Inches.

Chain Number	Pins			Bushings		Rollers		Sidebars		
	Dia. G	Style	Mat'l	Dia. Y	Mat'l	Dia. D	Mat'l	Thick-ness T	Height H	Mat'l
US-2065	.593	K	AHT	$\frac{13}{16}$	ACH	$1\frac{1}{8}$	AHT	$\frac{5}{16}$	$1\frac{5}{8}$	AHT
520RX	.500	A	AHT	$\frac{3}{4}$	CCH	$1\frac{1}{8}$	CHT	$\frac{1}{4}$	$1\frac{1}{4}$	CHT
US-882	.438	Y	AHT	$\frac{41}{64}$	CCH	$\frac{7}{8}$	AHT	$\frac{1}{4}$	$1\frac{1}{8}$	CHT
US-3011	.750	K	AIH	$1\frac{1}{8}$	ACH	$1\frac{5}{8}$	AHT	$\frac{3}{8}$	$2\frac{1}{4}$	AHT
US-1030	.625	Y	AHT	$\frac{29}{32}$	ACH	$1\frac{1}{4}$	AHT	$\frac{5}{16}$	$1\frac{1}{2}$	CHT
US-1031	.625	Y	AHT	$\frac{29}{32}$	ACH	$1\frac{1}{4}$	AHT	$\frac{5}{16}$	$1\frac{1}{2}$	CHT
US-3075	.648	K	AHT	$\frac{29}{32}$	ACH	$1\frac{1}{4}$	AHT	$\frac{3}{8}$	$1\frac{3}{4}$	AHT
US-3514	.875	K	AHT	$1\frac{1}{4}$	ACH	$1\frac{3}{4}$	AHT	$\frac{1}{2}$	$2\frac{1}{4}$	AHT
US-1241	.875	K	AIH	$1\frac{1}{4}$	CCH	$1\frac{3}{4}$	CHT	$\frac{1}{2}$	$2\frac{1}{4}$	CHT
US-1242	.875	K	AIH	$1\frac{1}{4}$	CCH	$1\frac{3}{4}$	CHT	$\frac{1}{2}$	$2\frac{1}{4}$	AHT
US-1245	.937	K	AIH	$1\frac{5}{16}$	ACH	$1\frac{25}{32}$	AHT	$\frac{9}{16}$	$2\frac{3}{8}$	AHT
US-4121	1.000	K	AIH	$1\frac{3}{8}$	AHT	$1\frac{7}{8}$	AHT	$\frac{9}{16}$	$2\frac{3}{4}$	AHT
US-4122	1.000	K	AIH	$1\frac{3}{8}$	AHT	2	AHT	$\frac{9}{16}$	$2\frac{3}{4}$	AHT
US-4522	1.099	K	AIH	1.617	ACH	$2\frac{1}{4}$	AHT	$\frac{9}{16}$	3	AHT
US-5031	1.250	K	AIH	$1\frac{3}{4}$	AHT	$2\frac{1}{2}$	AHT	$\frac{5}{8}$	$3\frac{1}{2}$	AHT
US-5035	1.375	K	AIH	$1\frac{7}{8}$	AHT	$2\frac{1}{2}$	AHT	$\frac{3}{4}$	$3\frac{1}{2}$	AHT
US-5542	1.500	K	AIH	2	AHT	3	AHT	$\frac{3}{4}$	4	AHT
US-5738	1.500	K	AIH	2	AHT	3	AHT	$\frac{11}{16}$	4	AHT
US-6042	1.500	K	AIH	2	AHT	3	AHT	$\frac{3}{4}$	4	AHT
US-6066	1.750	K	AIH	3	AHT	None	—	$\frac{3}{4}$	$4\frac{3}{4}$	AHT
US-6566	1.750	K	AIH	$2\frac{1}{2}$	AHT	$3\frac{1}{2}$	AHT	$\frac{7}{8}$	5	AHT
US-7060	1.750	K	AIH	$2\frac{1}{2}$	AHT	$3\frac{1}{2}$	AHT	$\frac{7}{8}$	5	AHT
US-64S	.875	*	AHT	$\frac{13}{16}$	CCH	$1\frac{9}{16}$	AHT	$\frac{3}{8}$	$2\frac{3}{8}$	AHT
344SXX	.938	K	AIH	$1\frac{5}{16}$	ACH	$1\frac{25}{32}$	AHT	$\frac{9}{16}$	$2\frac{3}{8}$	AHT
US-4031	1.250	K	AIH	$1\frac{3}{4}$	AHT	$2\frac{1}{2}$	AHT	$\frac{5}{8}$	$3\frac{1}{2}$	AHT
US-1353	1.313	K	AIH	$1\frac{7}{8}$	ACH	$2\frac{5}{8}$	AHT	$\frac{5}{8}$	3	AHT
US-5042	1.500	K	AIH	2	AHT	3	AHT	$\frac{3}{4}$	4	AHT
US-7080	2.125	K	AIH	$3\frac{1}{8}$	AHT	$4\frac{1}{2}$	AHT	$\frac{7}{8}$	6	AHT

Pin styles



* Does not have standard head

Installation Data

Lubrication

A separating wedge of fluid lubricant is formed in operating chain joints much like that formed in journal bearings. Therefore, fluid lubricant must be applied to assure an oil supply to the joints and minimize metal to metal contact. Lubrication, if supplied in sufficient volume, also provides effective cooling and impact dampening at the higher speeds. For this reason, it is important that the lubrication recommendations be followed.

Chain drives should be protected against dirt and moisture and the oil supply kept free of contamination. Periodic oil change is desirable and a good grade of non-detergent petroleum base oil is recommended. Heavy oil and greases are generally too stiff to enter and fill the chain joints.

The Lubrication Table indicates the proper lubricant viscosity for various surrounding temperatures:

Temperature Degree F.	Recommended Lubricant
20-40	SAE 20
40-100	SAE 30
100-120	SAE 40
120-140	SAE 50

Alignment

Accurate alignment of shafts and sprocket tooth faces provides uniform distribution of the load across the entire chain width and contributes substantially to optimum drive life. Shafting, bearings, and foundations should be suitable to maintain the initial alignment. Periodic maintenance should include an inspection of alignment to insure optimum chain life.

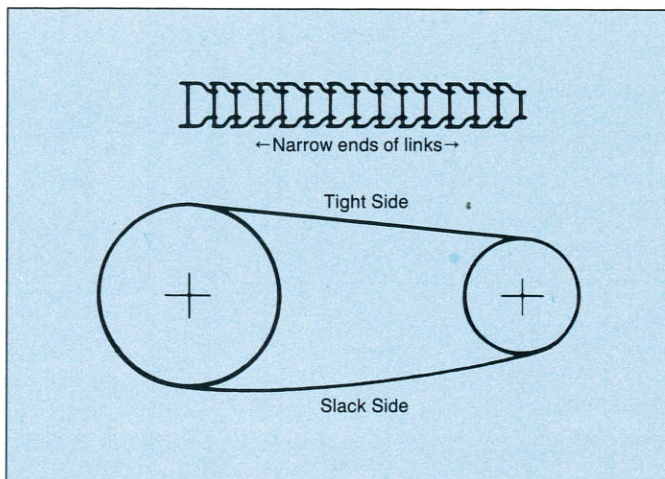
Center distance

In general, distance between sprocket centers should provide at least 120° chain wrap on the smaller sprocket.

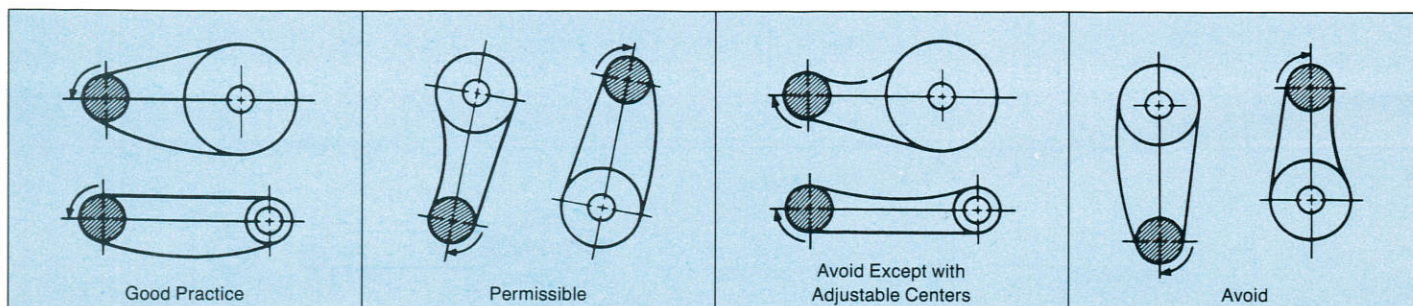
Drives may be installed with either adjustable or fixed center distances. Adjustable centers simplify the control of chain slack. For drives on fixed centers, an idler or shoe may be used to provide slack adjustment. These devices may also be used to control backlash, or to assure 120° minimum chain wrap on the smaller sprocket. Sufficient housing clearance must always be provided for the chain slack to obtain full chain life.

Direction of travel for offset side bar chain

For drives using offset side bar engineering drive chains, the narrow or closed end should run facing the smaller sprocket on the tight side of the drive.



Drive position Proper positioning of the chain and sprockets is essential. The slack side of the chain should hang away from the tight side and vertical drives should be avoided.



Drive chain interchange list

All Dimensions in Inches.

Pitch In Inches	UNION Number	Competitors Cross Reference		
2.000	US-2065	B-3113	IS2065 R	RO3160 S
2.500	US-64S	64 S	8-200H3	
2.563	520RX	A-520	IS-2625	
2.609	US882	R-588	JS-882	LXS-882
3.000	344SXX	X-345	1630A	
3.067	US-3011	AX-1568	JS-3011	RO-2512
3.075	US-1030	1030	JS-1030	RO40
3.075	US-1031	R-1033	JS-1031	RO1031
3.075	US-3075	1037	JS-3075	RO 40HYPER
3.500	US-3514	RX-238	JS-3514	RO2814
4.063	US-1241	1244	JS-4110	LXS-1241-M
4.063	US-1242	R-1248	JS-4014	LXS-1242-M
4.073	US-1245	RX-1245	J-1245-A	RO-3315
4.090	US-4121	X-1343	IS-4121	
4.090	US-4122	X-1345		
4.090	US-1353	X1353		
4.500	US-4522	RO-635	IS-4522	RO-3618
5.000	US-5031	RO-1207	JS-5031	RO-4020
5.000	US-5035		1605AAA	
5.500	US-5542	RO-1356		
5.750	US-5738	RO-1301	1601 A	
6.000	US-6042	RO-1306	JS-6042	RO 4824
7.000	US-7060	RO-1307	JS-7055	
7.000	US-7080	A-1309		

CAUTION

USE CARE TO PREVENT INJURY

COMPLY WITH THE FOLLOWING TO AVOID SERIOUS PERSONAL INJURY:

- Guards must be provided on all chain and sprocket installations in accordance with provisions of ANSI/ASME B15.1-1984 "Safety Standards for Mechanical Power Transmission Apparatus," and ANSI/ASME B20.1-1990 "Safety Standards for Conveyors and Related Equipment," or other applicable safety standards. When revisions of these standards are published, the updated edition shall apply.
- Always lock out power switch before installing, removing, lubricating or servicing a chain system.
- When connecting or disconnecting chain:
 - Eye protection is required. Wear safety glasses, protective clothing, gloves and safety shoes.
 - Support the chain to prevent uncontrolled movement of chain and parts.
 - Use of pressing equipment is recommended. Tools must be in good condition and properly used.
 - Determine correct direction for pin/rivet removal or insertion.



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