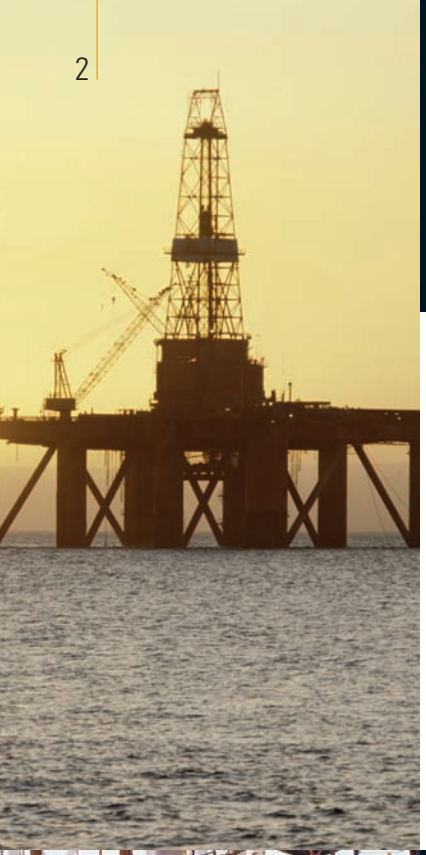
Energy Series™

BY TSUBAKI

Made in the U.S.A.

Power and Performance for
Oil Field Operations

American Petroleum Institute License No. 7F-0016



Made in the U.S.A.

Energy Series™

When Power Counts

High productivity, high speeds, high shock loads, and high cyclic loading in the oil field put great demands on roller chain. Count on the experts at U.S. Tsubaki to deliver Energy Series — the chains you need to keep your operation running smoothly.

Engineered for quality and performance

U.S. Tsubaki builds performance into every Energy Series chain. We start with the highest-quality steel, manufacture all parts to stringent tolerances, and provide the most effective heat-treatment processes to maximize tensile strength and shock load resistance. That means long-lasting chain in the toughest applications.

Proudly made in the U.S.A.

U.S. Tsubaki offers a wide range of sizes — from 80 through 240 and up to 10 strands wide — manufactured at our Holyoke, Mass. facility. With our trained manufacturing team and extensive inventory in stock, you get prompt service on your order.

Wider waist stands up to maximum shock loads and extends fatigue life.

Z-cotters hold tight, minimizing vibration and maximizing fatigue life, yet allow easy assembly and disassembly in the field.

Energy Series™ BY TSUBAKI

Stronger pins for longer chain life

Drilling applications put a lot of stress on pins, and pin wear can cause early chain failure. Energy Series pins are made of special materials, precision-ground to ensure accurate fit, and assembled only after our proprietary heat treatment. The result is tough, through-hardened pins that increase fatigue strength and allow the chain to better withstand shock loads.

Ballized holes for smoother contact

Fatigue cracks can start from imperfections in the plate holes. Energy Series chains are manufactured to minimize imperfections. After heat treatment, the pitch holes on the side plates are ball drifted to impart residual compressive stress and create extremely smooth hole surfaces, which maximizes fatigue strength.

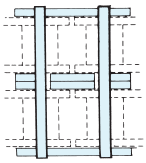
Pre-stressed for performance out of the box

All chains are pre-stressed to ensure uniform load distribution and to minimize initial elongation. The result is better operation immediately following installation and throughout the life of the chain.

Shot-peened link plates add fatigue resistance.

Ballized holes for tighter tolerances and a smoother fit.

Pitch-compensated link plates maintain maximum strength



Energy Series link plates have wider waists, putting more steel where you need it to handle shock loads. The added plate strength creates a rigid link with less deflection under load. Center plates are pitch-compensated, creating a contact fit that allows easy cutting and assembly while maximizing chain strength. The plates hold tighter and share the load equally, creating higher fatigue resistance and longer lasting chain.

Building better bushings and rollers that last

Roller and bushing designs play significant parts in chain life. Every Energy Series chain uses solid rollers, which are carefully formed from high-grade steel into optimal roundness and then heat treated and shot peened for toughness and strength. Energy Series features solid bushings for large sizes and precision-formed bushings for small sizes. Both types of bushings are fabricated to be the roundest in the industry for smooth, long-lasting operations.

Factory-applied hot-dip lube penetrates deeper

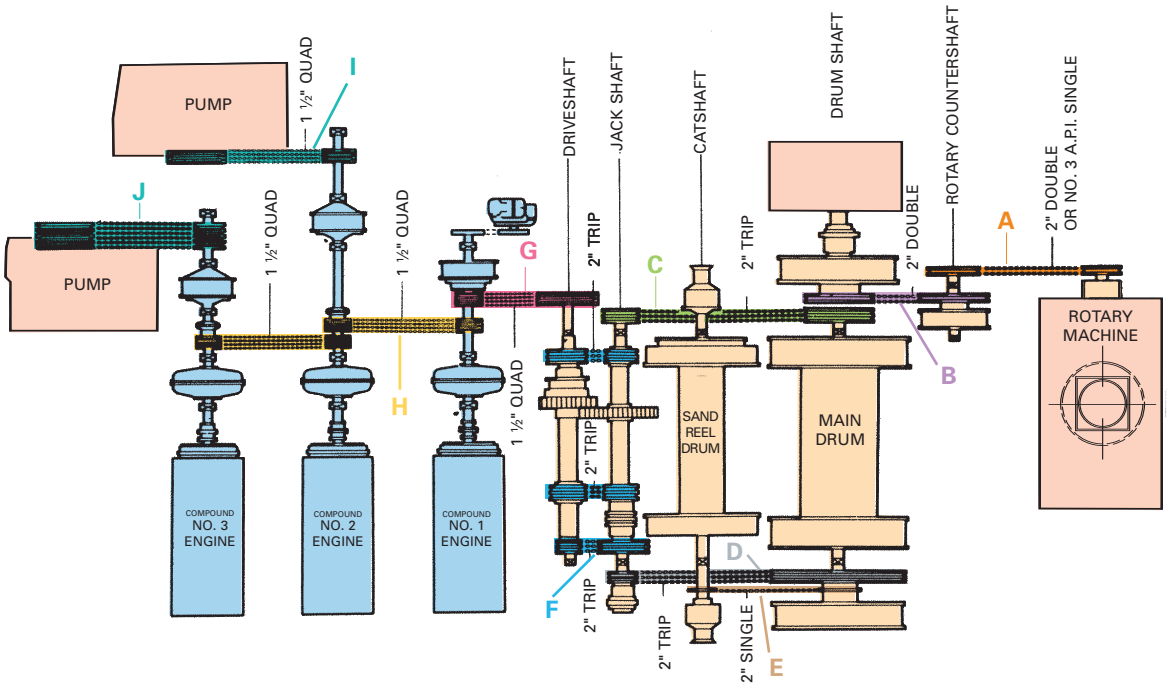
The final manufacturing step before chains are shipped is one of the most important. U.S. Tsubaki dips each chain in hot lubricant, so it penetrates deeper than typical surface sprays. This special step puts the lube where you need it — deep into the pin and bushing area — to extend the working life of the chain.

Made in the U.S.A.

Energy Series™

Designed specifically to fit where you need it.

CHAIN DIAGRAM DRAWWORKS, COMPOUND, AND PUMP



	Chain Drive	Rig Horsepower 4000	3000	2000	1500	1000	750	500
A	Rotary Table	160-2	160-2	160-2	160-2	140-2	140-2	140-1
			200H-1		140-2	160-1	160-1	120-1
B	Rotary Countershaft	160-2	160-2	160-2	160-2	140-2	140-2	140-1
			200H-1		140-2	160-1	160-1	120-1
C	High Drum	240-3	200H-3	160-4	160-3	140-3	160-2	120-3
						160-2	140-2	140-2
D	Low Drum	240-3	200H-3	160-4	160-3	140-3	160-2	120-3
						160-2	140-3	140-2
E	Catshaft	160-2	160-2	160-2	160-1	160-1	160-1	140-1
			200H-1		140-2	140-2	140-2	120-1
F	Transmission	140-8	160-4	160-4	160-3	160-2	140-2	120-2
			200H-3	160-3		140-3		100-3
G	Drawworks Input	140-8	120-8	120-6	120-4	120-3	100-4	100-3
						120-4		100-4
H	Compound	140-8	120-8	120-6	120-4	120-3	100-4	100-3
						120-4		
I & J	Mud Pump Drives	140-8	120-8	120-8	120-6	120-4	100-6	100-4
				120-6	120-4	120-3	100-4	100-3

Energy Series™ BY TSUBAKI

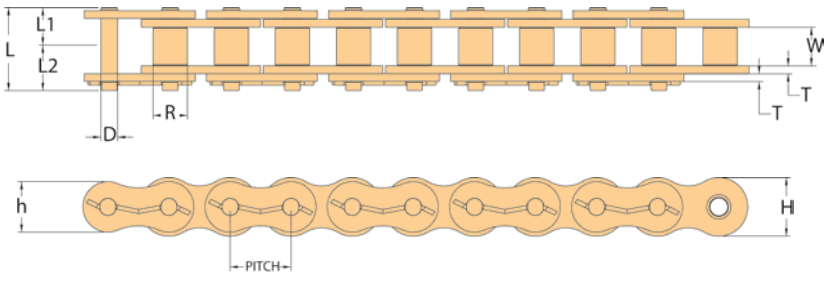
Energy Series Single-Strand Chain Dimensions

All units are in inches unless otherwise indicated.

CChain No.	Pitch	L1	L2	L	D	R	W	h	H	T	ATS[1]	WPF[2]
80	1.000	0.640	0.758	1.398	0.312	0.625	0.625	0.819	0.949	0.125	17,600	1.79
100	1.250	0.778	0.900	1.678	0.375	0.750	0.750	1.025	1.185	0.156	27,300	2.68
120	1.500	0.980	1.138	2.118	0.437	0.875	1.000	1.228	1.425	0.187	39,700	3.98
140	1.750	1.059	1.248	2.307	0.500	1.000	1.000	1.433	1.661	0.219	52,900	5.03
160	2.000	1.254	1.451	2.705	0.562	1.125	1.250	1.638	1.898	0.250	68,300	6.79
180	2.250	1.404	1.671	3.075	0.687	1.406	1.406	1.843	2.134	0.281	80,500	9.04
200	2.500	1.535	1.764	3.299	0.781	1.562	1.500	2.047	2.374	0.312	105,800	11.08
240	3.000	1.886	2.185	4.071	0.937	1.875	1.875	2.457	2.850	0.375	154,300	16.46
80H	1.000	0.720	0.823	1.543	0.312	0.625	0.625	0.819	0.949	0.156	20,900	2.08
100H	1.250	0.858	0.965	1.823	0.375	0.750	0.750	1.025	1.185	0.187	32,000	3.17
120H	1.500	1.061	1.203	2.264	0.437	0.875	1.000	1.228	1.425	0.219	43,000	4.38
140H	1.750	1.138	1.303	2.441	0.500	1.000	1.000	1.433	1.661	0.250	56,200	5.54
160H	2.000	1.337	1.514	2.851	0.562	1.125	1.250	1.638	1.898	0.281	71,700	7.35
180H	2.250	1.486	1.734	3.220	0.687	1.406	1.406	1.843	2.134	0.312	80,500	9.60
200H	2.500	1.689	1.894	3.583	0.781	1.562	1.500	2.047	2.374	0.375	125,700	12.33
264	2.500	1.686	1.965	3.651	0.875	1.562	1.500	2.047	2.366	0.375	125,000	12.47
240H	3.000	2.157	2.453	4.610	0.937	1.875	1.875	2.457	2.850	0.500	198,400	19.54

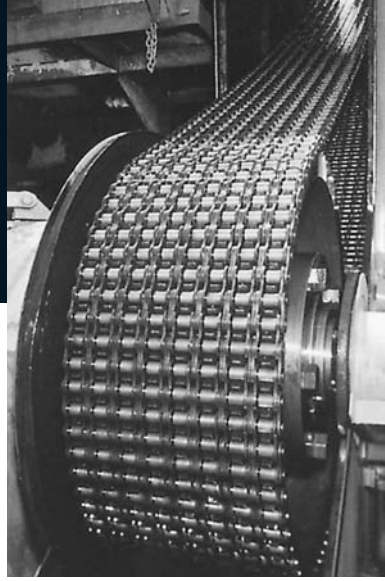
ATS[1] = Average Tensile Strength (lbs.)

WPF[2] = Approximate Weight Per Foot (lbs./ft.)



Made in the U.S.A.

Energy Series™

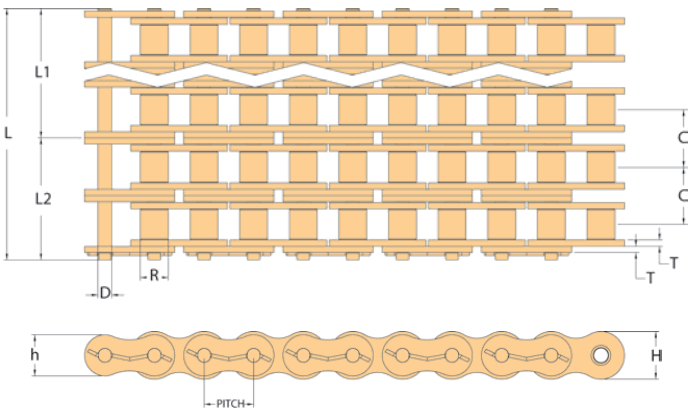


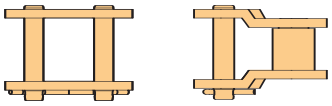
Energy Series Multi-Strand Chain Dimensions

Chain No.	Pitch	L1	L2	L	D	R	W	h	H	C	T	Strands 2 L1	2 L2	2 ATS[1]	2 WPF[2]	3 L1	3 L2	3 ATS[1]	3 WPF[2]
80	1.000	0.640	0.758	1.398	0.312	0.625	0.625	0.819	0.949	1.153	0.125	1.217	1.335	35,200	3.54	1.793	1.911	52,800	5.30
100	1.250	0.778	0.900	1.678	0.375	0.750	0.750	1.025	1.185	1.408	0.156	1.482	1.604	54,600	5.27	2.186	2.308	81,900	7.91
120	1.500	0.980	1.138	2.118	0.437	0.875	1.000	1.228	1.425	1.789	0.187	1.875	2.033	71,880	7.86	2.769	2.927	107,820	11.78
140	1.750	1.059	1.248	2.307	0.500	1.000	1.000	1.433	1.661	1.924	0.219	2.021	2.210	94,370	9.97	2.983	3.172	141,550	14.92
160	2.000	1.254	1.451	2.705	0.562	1.125	1.250	1.638	1.898	2.305	0.250	2.407	2.604	136,600	13.47	3.559	3.756	204,900	20.17
180	2.250	1.404	1.671	3.075	0.687	1.406	1.406	1.843	2.134	2.592	0.281	2.700	2.967	161,000	17.82	3.996	4.263	241,500	25.68
200	2.500	1.535	1.764	3.299	0.781	1.562	1.500	2.047	2.374	2.817	0.312	2.944	3.173	211,600	21.93	4.352	4.581	317,400	32.94
240	3.000	1.886	2.185	4.071	0.937	1.875	1.875	2.457	2.850	3.458	0.375	3.615	3.914	308,600	32.32	5.344	5.643	462,900	48.11
80H	1.000	0.720	0.823	1.543	0.312	0.625	0.625	0.819	0.949	1.283	0.156	1.362	1.465	41,800	4.15	2.003	2.106	62,700	6.21
100H	1.250	0.858	0.965	1.823	0.375	0.750	0.750	1.025	1.185	1.539	0.187	1.628	1.735	64,000	6.07	2.397	2.504	96,000	9.10
120H	1.500	1.061	1.203	2.264	0.437	0.875	1.000	1.228	1.425	1.924	0.219	2.023	2.165	71,880	8.67	2.985	3.127	107,820	12.99
140H	1.750	1.138	1.303	2.441	0.500	1.000	1.000	1.433	1.661	2.055	0.250	2.166	2.331	94,370	11.01	3.193	3.358	141,550	16.48
160H	2.000	1.337	1.514	2.851	0.562	1.125	1.250	1.638	1.898	2.437	0.281	2.556	2.733	143,400	14.64	3.774	3.951	215,100	21.93
180H	2.250	1.486	1.734	3.221	0.687	1.406	1.406	1.843	2.134	2.722	0.312	2.847	3.095	161,000	19.20	4.208	4.456	241,500	28.80
200H	2.500	1.689	1.894	3.583	0.781	1.562	1.500	2.047	2.374	3.083	0.375	3.231	3.436	207,260	24.51	4.772	4.977	310,890	36.81
264	2.500	1.686	1.965	3.651	0.875	1.562	1.500	2.047	2.366	3.083	0.375	3.228	3.507	250,000	24.93	4.769	5.048	375,000	37.32
240H	3.000	2.157	2.453	4.610	0.937	1.875	1.875	2.457	2.850	3.985	0.500	4.150	4.446	304,280	38.47	6.142	6.438	456,420	57.33

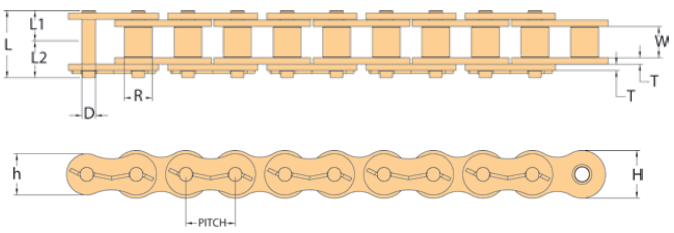
ATS[1] = Average Tensile Strength (lbs.)

WPF[2] = Approximate Weight Per Foot (lbs./ft.)





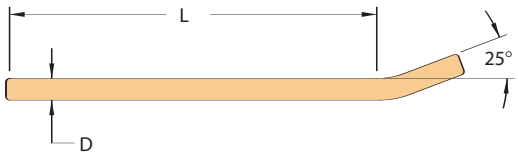
Connecting and offset links are also available.

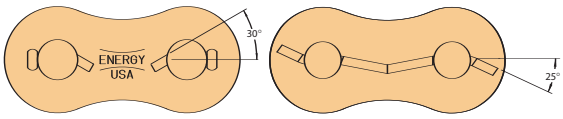


Energy Series™ BY TSUBAKI

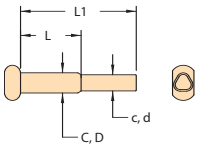
Z-Cotter Dimensions

	80	100	120	140	160	180	200
D	0.090	0.090	0.110	0.146	0.146	0.185	0.185
L	1.500	1.870	2.230	2.600	2.970	3.380	3.750





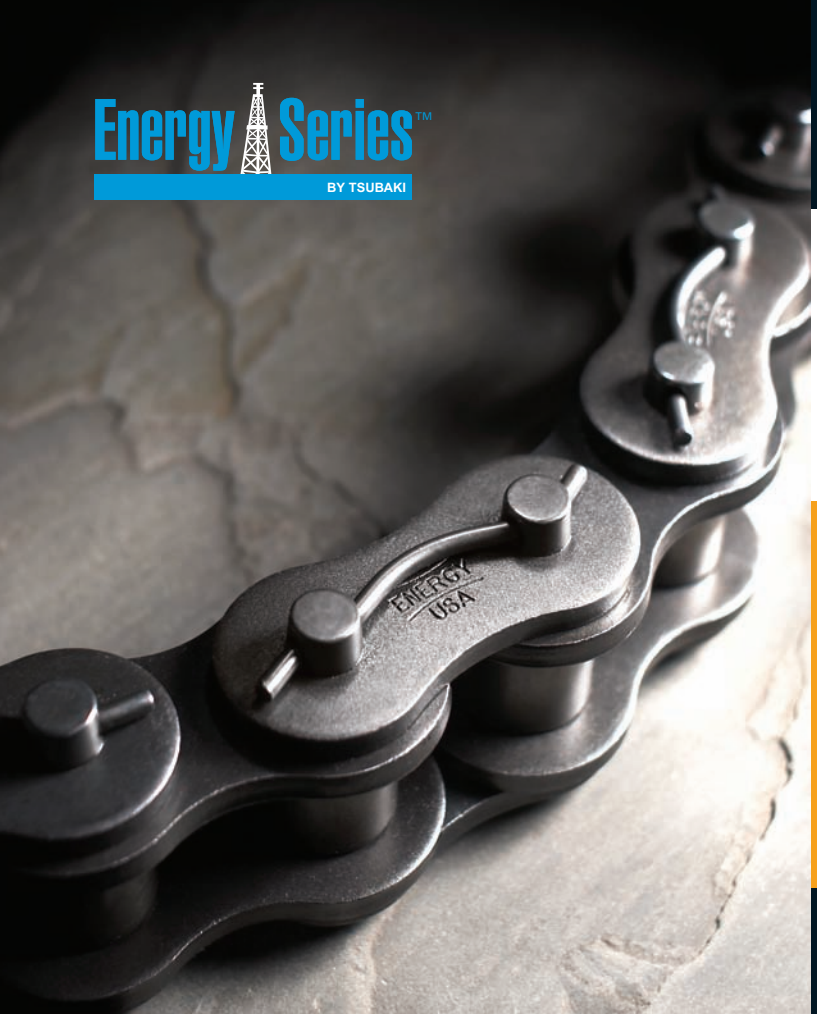
T-Cotter Dimensions



	264 / 240
C	0.245
D	0.237
c	0.230
d	0.215
L	0.745
L1	1.435

All units are in inches unless otherwise indicated.

4				5				6				8				10			
L1	L2	ATS[1]	WPF[2]	L1	L2	ATS[1]	WPF[2]	L1	L2	ATS[1]	WPF[2]	L1	L2	ATS[1]	WPF[2]	L1	L2	ATS[1]	WPF[2]
2.370	2.488	70,400	7.06	2.946	3.064	88,000	8.81	3.523	3.641	105,600	10.57	4.676	4.794	140,800	14.08	5.829	5.947	176,000	17.59
2.890	3.012	109,200	10.55	3.594	3.716	136,500	13.12	4.298	4.420	163,800	15.78	5.706	5.828	218,400	21.01	7.114	7.236	273,000	26.24
3.664	3.822	143,760	15.70	4.558	4.716	179,700	19.59	5.453	5.611	215,640	23.49	7.242	7.400	287,520	31.28	9.031	9.189	359,400	39.07
3.945	4.134	188,740	19.16	4.907	5.096	235,920	24.84	5.869	6.058	283,110	29.77	7.793	7.982	377,490	40.38	9.717	9.906	471,870	50.99
4.712	4.909	273,200	26.92	5.864	6.061	341,500	33.53	7.017	7.214	409,800	40.27	9.322	9.519	546,400	53.62	11.627	11.824	683,000	66.97
5.292	5.559	322,000	34.20	6.588	6.855	402,500	42.73	7.884	8.151	483,000	51.25	10.476	10.743	644.000	68.30	13.068	13.335	805,000	85.35
5.761	5.990	423,200	43.79	7.169	7.398	529,000	54.64	8.578	8.807	634,800	65.58	11.395	11.624	846,400	87.37	14.212	14.441	1,058,000	109.16
7.073	7.372	617,200	63.90	8.802	9.101	771,500	79.70	10.531	10.830	925,800	95.49	13.989	14.288	1,234,400	127.08	—	—	—	—
2.645	2.748	83,600	8.27	3.286	3.389	104,500	10.33	3.928	4.031	125,400	12.39	5.211	5.314	167,200	16.51	6.494	6.597	209,000	20.63
3.167	3.274	128,000	12.13	3.936	4.043	160,000	15.16	4.706	4.813	192,000	18.19	6.245	6.352	256,000	24.25	7.784	7.891	320,000	30.31
3.947	4.089	143,760	17.31	4.909	5.051	179,700	21.63	5.871	6.013	215,640	25.95	7.795	7.937	287,520	34.59	9.719	9.861	359,400	43.23
4.221	4.386	188,730	21.95	5.248	5.413	235,910	27.42	6.276	6.441	283,090	32.89	8.331	8.496	377,450	43.83	10.386	10.551	471,810	54.77
4.993	5.170	286,800	29.22	6.211	6.388	358,500	36.51	7.430	7.607	430,200	43.80	9.867	10.044	573,600	58.38	12.304	12.481	717,000	72.96
5.569	5.817	322,000	38.40	6.930	7.178	402,500	48.00	8.291	8.539	483,000	57.60	11.013	11.261	644,000	76.80	13.735	13.983	805,000	96.00
6.314	6.519	502,800	49.11	7.855	8.060	628,500	61.41	9.397	9.602	754,200	73.71	12.480	12.685	1,005,600	98.31	15.563	15.768	1,257,000	122.91
6.311	6.590	500,000	49.81	7.852	8.131	625,000	62.30	9.394	9.673	750,000	74.79	12.477	12.756	1,000,000	99.77	—	—	—	—
8.135	8.431	793,600	76.19	10.127	10.423	992,000	95.05	12.120	12.416	1,190,400	113.91	16.105	16.401	1,587,200	151.63	—	—	—	—



Energy Series™
BY TSUBAKI

Energy Series™

- Get better performance at the rig
- Improve profitability at your operation
- Reduce downtime and maintenance costs

Sprockets for the Oil Field

System performance depends on chain-sprocket interaction. Make sure your sprockets are as good as your chain. Only U.S. Tsubaki offers both chain and sprocket manufacturing — plus complete, custom machining capabilities for pulleys, shafts, collets, sleeves, and more. Our advanced equipment and expertise mean you get high-quality products that work together to get longer service life and more value from your operation.

Put some real teeth into your operation with Energy Series Sprockets

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