



Energy Series® Chain

Power and Performance for
Oil Field Operations



Energy Series

BY TSUBAKI

www.ustsubaki.com

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 rated working load and shock load resistance. That means long lasting chain in the toughest applications.

U.S. Tsubaki offers a wide range of sizes — from 80 through 240 and up to 10 strands wide from 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.





Stronger pins for longer chain life

Drilling and pumping applications put a lot of stress on pins and pin strength is critical. 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 strict specifications. After heat treatment, the pitch holes on the side plates are ball drifted to impart residual compressive stress and create extremely smooth hole surface to maximize fatigue strength.

Pre-stressed for performance

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.

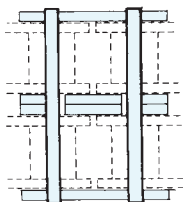


Ballized holes for tighter tolerances and a smoother fit.



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, 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 that are fabricated to the roundest in the industry for smooth, long-lasting operations.



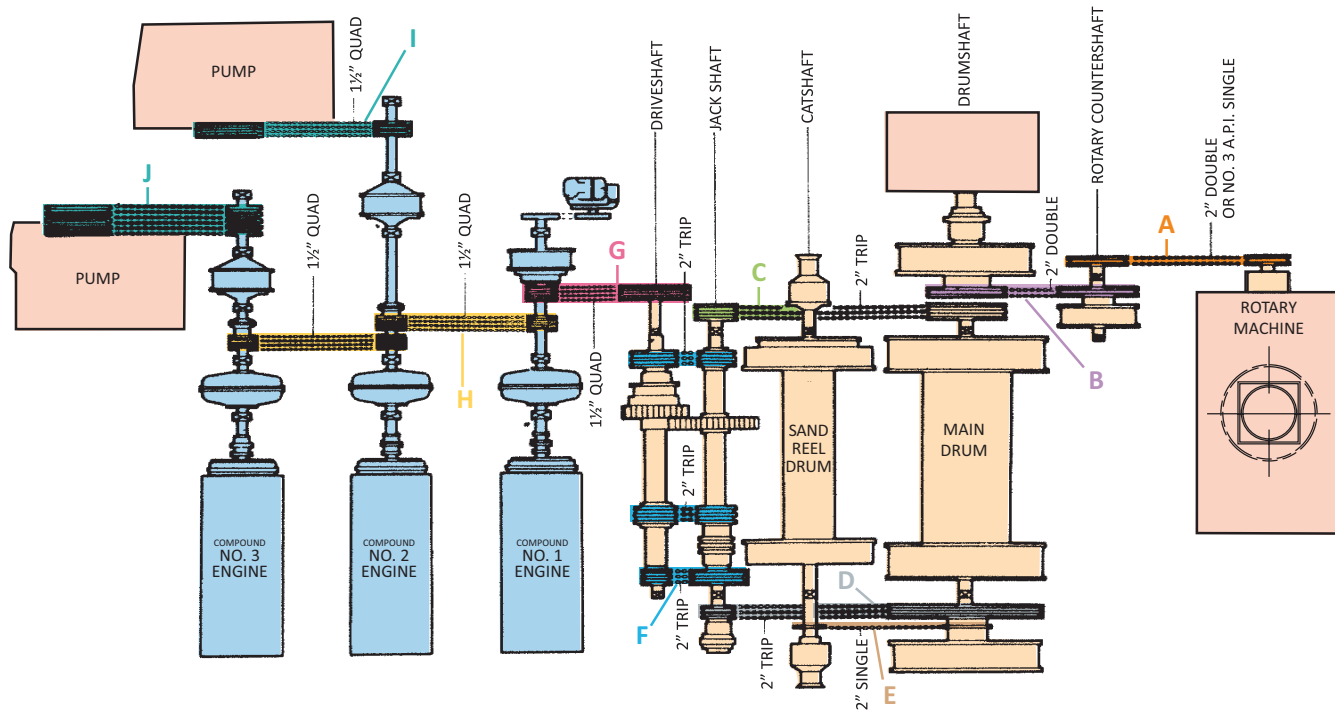
Factory-applied hot-dip lube penetrates deeper

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.



Energy Series®

CHAIN DIAGRAM DRAWWORKS, COMPOUND, AND PUMP



Rig Horsepower

	Chain Drive	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 Single-Strand Chain Dimensions

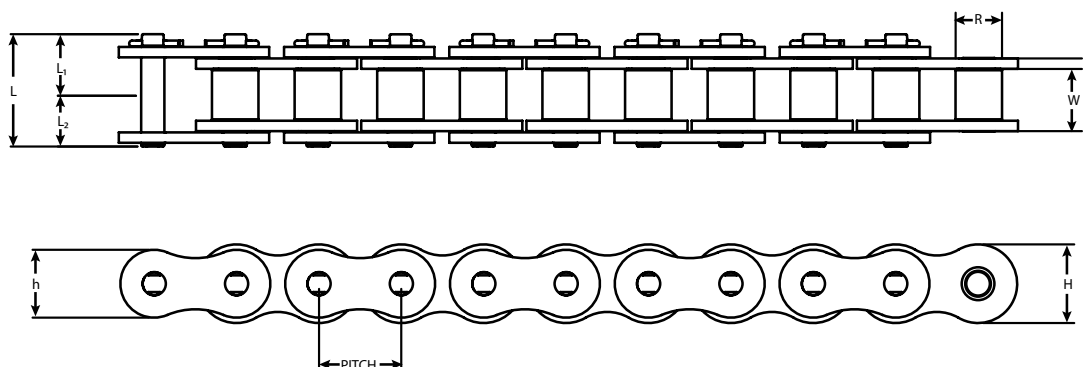
All units are in inches unless otherwise indicated.

No.	Pitch	L ₁	L ₂	L	D	R	W	h	H	T	ATS ¹	WPF ²
80	1.00	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	83,100	9.04
200	2.500	1.535	1.764	3.299	0.781	1.562	1.500	2.047	2.374	0.312	106,000	11.08
240	3.000	1.886	2.185	4.071	0.937	1.875	1.875	2.457	2.850	0.375	154,000	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	71,600	7.35
180H	2.250	1.486	1.734	3.220	0.687	1.406	1.406	1.843	2.134	0.312	96,300	9.60
200H	2.500	1.689	1.894	3.583	0.781	1.562	1.500	2.047	2.374	0.375	126,000	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	198,000	19.54

*264 chain is a supplemental oilfield offering beyond the scope of API 7F.

ATS¹ = Average Tensile Strength (lbs.)

WPF² = Approximate Weight Per Foot (lbs./ft.)



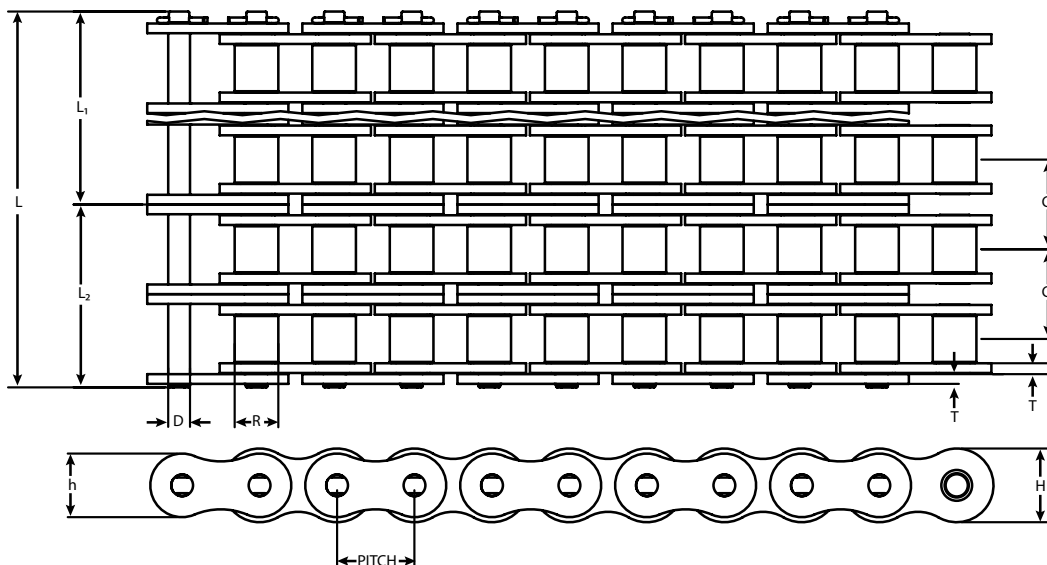
7F-0016



Energy Series®

Energy Series Multi-Strand Chain Dimensions

No.	Pitch	L ₁	L ₂	L	D	R	W	h	H	C	T	Strands							
												2				3			
												L ₁	L ₂	ATS ¹	WPF ²	L ₁	L ₂	ATS ¹	WPF ²
80	1.00	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	79,400	7.86	2.769	2.927	119,100	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	105,800	9.97	2.983	3.172	158,700	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	166,200	17.82	3.996	4.263	249,300	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	212,000	21.93	4.352	4.581	318,000	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	308,000	32.32	5.344	5.643	462,000	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	86,000	8.67	2.985	3.127	129,000	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	112,400	11.01	3.193	3.358	168,600	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	143,200	14.64	3.774	3.951	214,800	21.93
180H	2.250	1.486	1.734	3.220	0.687	1.406	1.406	1.843	2.134	2.722	0.312	2.847	3.095	192,600	19.20	4.208	4.456	288,900	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	252,000	24.51	4.772	4.977	378,000	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	396,000	38.47	6.142	6.438	594,000	57.33



4				5				6				8				10			
L ₁	L ₂	ATS ¹	WPF ²	L ₁	L ₂	ATS ¹	WPF ²	L ₁	L ₂	ATS ¹	WPF ²	L ₁	L ₂	ATS ¹	WPF ²	L ₁	L ₂	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	158,800	15.70	4.558	4.716	198,500	19.59	5.453	5.611	238,200	23.49	7.242	7.400	317,600	31.28	9.031	9.189	397,000	39.07
3.945	4.134	211,600	19.16	4.907	5.096	264,500	24.84	5.869	6.058	317,400	29.77	7.793	7.982	423,200	40.38	9.717	9.906	529,000	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	11.284	683,000	66.97
5.292	5.559	332,400	34.20	6.588	6.855	415,500	42.73	7.884	8.151	498,600	51.25	10.476	10.743	664,800	68.30	13.068	13.335	831,000	85.35
5.761	5.990	424,000	43.79	7.169	7.398	530,000	54.64	8.578	8.807	636,000	65.58	11.395	11.624	848,000	87.37	14.212	14.441	1,060,000	109.16
7.073	7.372	616,000	63.90	8.802	9.101	770,000	79.70	10.531	10.830	924,000	95.49	13.989	14.288	1,232,000	127.08	17.447	17.746	—	—
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	172,000	17.31	4.909	5.051	215,000	21.63	5.871	6.013	258,000	25.95	7.795	7.937	344,000	34.59	9.719	9.861	430,000	43.23
4.221	4.386	224,800	21.95	5.248	5.413	281,000	27.42	6.276	6.441	337,200	32.89	8.331	8.496	449,600	43.83	10.386	10.551	562,000	54.77
4.993	5.170	286,400	29.22	6.211	6.388	358,000	36.51	7.430	7.607	429,600	43.80	9.867	10.044	572,800	58.38	12.304	12.481	716,000	72.96
5.569	5.817	385,200	38.40	6.930	7.178	481,500	48.00	8.291	8.539	577,800	57.60	11.013	11.261	770,400	76.80	13.735	13.983	963,000	96.00
6.314	6.519	504,000	49.11	7.855	8.060	630,000	61.41	9.397	9.602	756,000	73.71	12.480	12.685	1,008,000	98.31	15.563	15.768	1,260,000	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	792,000	76.19	10.127	10.423	990,000	95.05	12.120	12.416	1,188,000	113.91	16.105	16.401	1,584,000	151.63	20.090	20.386	—	—

* 264 chain is a supplemental oilfield offering beyond the scope of API 7F.

ATS¹ = Average Tensile Strength (lbs.)

WPF² = Approximate Weight Per Foot (lbs./ft.)



7F-0016

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 means you get high-quality products that work together to provide longer service life and more value from your operation.



Put some real teeth into your operation with Energy Series sprockets.



Corporate Headquarters
U.S. Tsubaki Power Transmission, LLC
301 E. Marquardt Drive
Wheeling, IL 60090
Tel: (800) 323-7790
www.ustsubaki.com



Roller Chain Division
821 Main Street
Holyoke, MA 01040
Tel: (800) 323-7790



Conveyor and Construction
Chain Division
1010 Edgewater Drive
Sandusky, OH 44870
Tel: (800) 537-6140



Sprocket Manufacturing
Mississauga, Ontario
Tel: (800) 323-7790



Cable & Hose Carrier
Division
7100 W. Marcia Rd
Milwaukee, WI 53223
Tel: (800) 443-4216