

DIAMOND[®]

DIAMOND CHAIN COMPANY



American
Petroleum
Institute

7F-0003



OIL FIELD PRODUCT GUIDE



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Every Calling is Great, When Greatly Pursued.

OLIVER WENDELL HOLMES



At the Diamond Chain Company, the calling to design and manufacture the world's highest-performing roller chain is greatly pursued every day by teams of passionate technical experts who have made your success their life's work. It's that intensity of focus that some of the world's greatest inventors trusted to provide the drive chains they needed to transform the world. From the Wright Brothers, to Henry Ford, to the global leaders of our time, Diamond® chain is the roller chain most trusted to perform, when performance matters most.



OIL AND GAS CHAIN SOLUTIONS

THE DIAMOND CHAIN COMPANY

Founded on December 24, 1890, the Diamond Chain Company is one of the most experienced roller chain manufacturers in the world. Driven by the principles of unrivaled experience, unsurpassed quality, and unparalleled performance, the diamond was adopted as the company's trademark as it symbolizes perfection and acts as a constant reminder of the company's core values.

Today, the Diamond Chain Company sets the standard for high performance roller chain with industry leading wear life, warranty, and product selection.

WHY CHOOSE DIAMOND CHAIN?

Building industry-leading roller chain is a matter of demanding precision and discipline – first to establish unsurpassed standards for material selection, fabrication, and final assembly, and second, to ensure those standards are continuously achieved.

The challenge when selecting roller chain is that the difference between industry leading chain and all others isn't readily visible, and only really becomes apparent after use. At the Diamond Chain Company, roller chain is our passion, our focus, and our calling. Diamond Chain has mastered the design and manufacturing processes necessary to create consistently high quality, and high performance, roller chain. We know that our processes and products are second to none, in fact we're so confident that "Nothing Outlasts a Diamond," that we back our products with industry leading warranties against defects in material and workmanship.

From industry launch to industry leader, Diamond chain is the most trusted roller chain when performance matters most.

OIL FIELD ROLLER CHAIN

Manufactured up to twelve strands wide, Diamond Chain's multi strand products are available in two types of construction – with center plates slip-fit on the pins or with center plates press-fit on the pins.

DIAMOND ACE®

Diamond ACE® (anti-corrosive exterior) roller chains incorporate an electro-chemically bonded, protective exterior coating that is applied to each component part prior to assembly. The protective coating, a specially formulated zinc-nickel and non-hexavalent chromium coating, serves as a physical barrier that provides superior water-resistance and physical and structural integrity for carbon steel base chain. Diamond ACE provides the optimum balance between corrosion protection and performance.

COILED TUBING INJECTOR CHAIN

Diamond series coiled tubing injector chains feature specially manufactured pins for increased tensile strength and improved impact and pin fatigue resistance. Special interference fit coverplates are manufactured to exacting tolerances to minimize pin turning and assure equal distribution of chain working load. Diamond's coil tubing injector chain is available in nickel or ACE® plating for improved resistance to stress corrosion cracking caused by use in wet environments. Diamond Chain products stand up to the strenuous conditions of the oil and gas industry which means longer chain life and increased up-time and production.

NOTE: IN ADDITION TO THE CORE LINE OF OIL AND GAS ROLLER CHAIN, THE DIAMOND CHAIN COMPANY PRODUCES SEVERAL SPECIALTY ROLLER CHAINS FOR OIL AND GAS APPLICATIONS.



CHAIN COMPONENTS

ROLLER LINKS

Standard for all sizes of roller chains, roller links are furnished as complete roller link assemblies. The two bushings are press-fit in each of the link plates.



SLIP-FIT CENTER PLATES

Slip-fit center plate roller chains are intended for drive applications of moderate severity. They are designed to be easily disassembled, shortened, or elongated with minimal effort.

PRESS-FIT CENTER PLATES

Press-fit center plate roller chains are intended for extreme service applications such as power shovels, diesel engines, and oil drilling and pumping units. Roller chains with press-fit construction have significantly greater fatigue strength over slip-fit roller chains due to the rigid support of the pins at each tension point.

FOUR-PITCH PRESS-FIT OFFSET LINK ASSEMBLY

Pins are press-fit in offset link pitch holes. Four-pitch length permits the use of BCL connecting links on either end, giving maximum capacity of chain assembly.



BCL (BUSHED CENTER PLATE LINKS) CONNECTING LINK

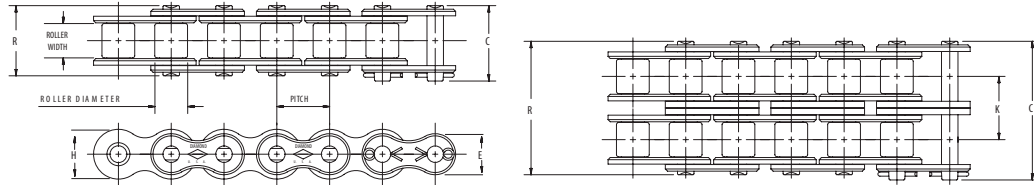
The BCL connecting link is constructed using center plate assemblies consisting of two center plates securely held together with two press-fit bushings. These bushings, hardened to resist wear, have inside diameters that are precision ground after assembly in the center plates. The grinding tolerances are extremely close with respect to both the pitch dimension and the hole size to assure a close sliding-fit on the chain pins.

These features reduce the possibility of any relative motion between pins and bushings assuring equal distribution of chain load across pins. Diamond BCL connecting links are available for 5/8" through 2 1/2" pitch standard series multi strand roller chain.

OIL FIELD ROLLER CHAIN

CHAIN DESCRIPTIONS AND DIMENSIONS

Roller chains used in the oil and gas industry are subject to some of the greatest operating loads and harshest environments. Diamond Chain produces its oil and gas roller chain to meet or exceed the standards set by the American Petroleum Institute's (API) specification 7F8*. It is highly recommended that multi strand chains used in oil field operations be constructed with press-fit center plates.



Dimensions in Inches

ANSI NUMBER	PITCH INCHES	ROLLER WIDTH	ROLLER DIAMETER	PIN DIAMETER	LINK PLATE THICKNESS	C	R	K	POUNDS PER FOOT	AVERAGE TENSILE STRENGTH	E*	H*
60	3/4	1/2	.469	.234	.044	1.11	1.04	-	.99	8500	0.615	0.713
60H	3/4	1/2	.469	.234	.125	1.24	1.17	-	1.18	8500	0.615	0.713
60-2	3/4	1/2	.469	.234	.094	2.01	1.94	.897	1.95	17000	0.615	0.713
60H-2	3/4	1/2	.469	.234	.125	2.27	2.20	1.028	2.33	17000	0.615	0.713
60-3	3/4	1/2	.469	.234	.094	2.91	2.84	.897	2.88	25500	0.615	0.713
60H-3	3/4	1/2	.469	.234	.125	3.31	3.24	1.028	3.47	25500	0.615	0.713
60-4	3/4	1/2	.469	.234	.094	3.81	3.74	.897	3.90	34000	0.615	0.713
60H-4	3/4	1/2	.469	.234	.125	4.34	4.26	1.028	4.61	34000	0.615	0.713
60-5	3/4	1/2	.469	.234	.094	4.71	4.64	.897	4.97	42500	0.615	0.713
60-6	3/4	1/2	.469	.234	.094	5.60	5.53	.897	5.96	51000	0.615	0.713
60-8	3/4	1/2	.469	.234	.094	7.40	7.33	.897	7.94	68000	0.615	0.713
60-10	3/4	1/2	.469	.234	.094	9.19	9.12	.897	9.92	85000	0.615	0.713
80	1	5/8	.625	.312	.125	1.44	1.32	-	1.73	14500	0.820	0.950
80H	1	5/8	.625	.312	.156	1.57	1.45	-	2.02	14500	0.820	0.950
80-2	1	5/8	.625	.312	.125	2.59	2.47	1.153	3.37	29000	0.820	0.950
80H-2	1	5/8	.625	.312	.156	2.84	2.72	1.283	3.93	29000	0.820	0.950
80-3	1	5/8	.625	.312	.125	3.74	3.62	1.153	5.02	43500	0.820	0.950
80H-3	1	5/8	.625	.312	.156	4.14	4.02	1.283	5.92	43500	0.820	0.950
80-4	1	5/8	.625	.312	.125	4.90	4.79	1.153	6.73	58000	0.820	0.950
80H-4	1	5/8	.625	.312	.156	5.42	5.30	1.283	7.87	58000	0.820	0.950
80-5	1	5/8	.625	.312	.125	6.06	5.94	1.153	8.40	72500	0.820	0.950
80-6	1	5/8	.625	.312	.125	7.22	7.10	1.153	10.07	87000	0.820	0.950
80-8	1	5/8	.625	.312	.125	9.53	9.40	1.153	13.41	116000	0.820	0.950

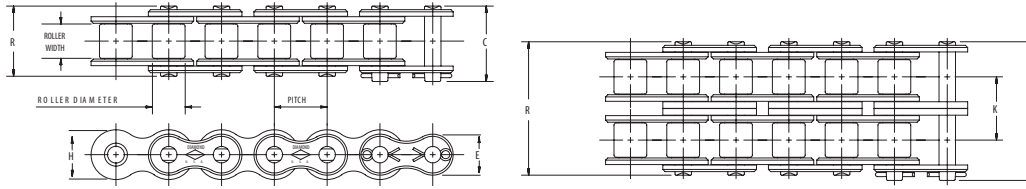
*Maximum values are shown.

NOTE: ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

Chart continues on next page.

OIL FIELD ROLLER CHAIN

CHAIN DESCRIPTIONS AND DIMENSIONS



Dimensions in Inches

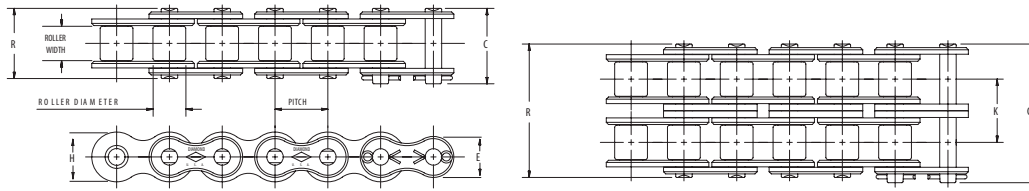
ANSI NUMBER	PITCH INCHES	ROLLER WIDTH	ROLLER DIAMETER	PIN DIAMETER	LINK PLATE THICKNESS	C	R	K	POUNDS PER FOOT	AVERAGE TENSILE STRENGTH	E*	H*
100	1 1/4	3/4	.750	.375	.156	1.73	1.61	-	2.51	24000	1.025	1.188
100H	1 1/4	3/4	.750	.375	.187	1.86	1.74	-	2.82	24000	1.025	1.188
100-2	1 1/4	3/4	.750	.375	.156	3.14	3.02	1.408	4.91	48000	1.025	1.188
100H-2	1 1/4	3/4	.750	.375	.187	3.41	3.28	1.539	5.58	48000	1.025	1.188
100-3	1 1/4	3/4	.750	.375	.156	4.56	4.43	1.408	7.40	72000	1.025	1.188
100H-3	1 1/4	3/4	.750	.375	.187	4.96	4.82	1.539	8.32	72000	1.025	1.188
100-4	1 1/4	3/4	.750	.375	.156	5.97	5.84	1.408	9.80	96000	1.025	1.188
100H-4	1 1/4	3/4	.750	.375	.187	6.49	6.37	1.539	11.04	96000	1.025	1.188
100-5	1 1/4	3/4	.750	.375	.156	7.38	7.25	1.408	12.20	120000	1.025	1.188
100-6	1 1/4	3/4	.750	.375	.156	8.78	8.66	1.408	14.60	144000	1.025	1.188
100-8	1 1/4	3/4	.750	.375	.156	11.6	11.48	1.408	19.40	192000	1.025	1.188
120	1 1/2	1	.875	.437	.187	2.14	2.00	-	3.69	34000	1.230	1.425
120H	1 1/2	1	.875	.437	.219	2.27	2.13	-	4.08	34000	1.230	1.425
120-2	1 1/2	1	.875	.437	.187	3.93	3.79	1.789	7.35	68000	1.230	1.425
120H-2	1 1/2	1	.875	.437	.219	4.20	4.06	1.924	8.04	68000	1.230	1.425
120-3	1 1/2	1	.875	.437	.187	5.72	5.58	1.789	11.10	102000	1.230	1.425
120H-3	1 1/2	1	.875	.437	.219	6.13	5.99	1.924	11.99	102000	1.230	1.425
120-4	1 1/2	1	.875	.437	.187	7.52	7.38	1.789	14.70	136000	1.230	1.425
120H-4	1 1/2	1	.875	.437	.219	8.06	7.92	1.924	15.94	136000	1.230	1.425
120-5	1 1/2	1	.875	.437	.187	9.31	9.17	1.789	18.43	170000	1.230	1.425
120-6	1 1/2	1	.875	.437	.187	11.10	10.96	1.789	22.11	204000	1.230	1.425
120H-6	1 1/2	1	.875	.437	.219	11.91	11.77	1.924	23.84	204000	1.230	1.425
120-8	1 1/2	1	.875	.437	.187	14.68	14.54	1.789	29.47	272000	1.230	1.425
120-10	1 1/2	1	.875	.437	.187	18.26	18.12	1.789	36.83	340000	1.230	1.425
140	1 3/4	1	1.000	.500	.219	2.31	2.14	-	5.00	46000	1.435	1.663
140H	1 3/4	1	1.000	.500	.250	2.44	2.28	-	5.40	46000	1.435	1.663
140-2	1 3/4	1	1.000	.500	.219	4.24	4.07	1.924	9.65	92000	1.435	1.663
140H-2	1 3/4	1	1.000	.500	.250	4.50	4.34	2.055	10.65	92000	1.435	1.663
140-3	1 3/4	1	1.000	.500	.219	6.16	6.00	1.924	14.30	138000	1.435	1.663
140H-3	1 3/4	1	1.000	.500	.250	6.56	6.39	2.055	15.90	138000	1.435	1.663
140-4	1 3/4	1	1.000	.500	.219	8.09	7.93	1.924	18.95	184000	1.435	1.663
140H-4	1 3/4	1	1.000	.500	.250	8.62	8.45	2.055	21.10	184000	1.435	1.663
140-6	1 3/4	1	1.000	.500	.219	11.94	11.78	1.924	28.25	276000	1.435	1.663
160	2	1 1/4	1.125	.562	.250	2.73	2.54	-	6.35	58000	1.640	1.900
160H	2	1 1/4	1.125	.562	.281	2.86	2.68	-	7.03	58000	1.640	1.900
160-2	2	1 1/4	1.125	.562	.250	5.04	4.85	2.305	12.83	116000	1.640	1.900
160H-2	2	1 1/4	1.125	.562	.281	5.30	5.12	2.436	13.88	116000	1.640	1.900
160-3	2	1 1/4	1.125	.562	.250	7.35	7.16	2.305	19.03	174000	1.640	1.900
160H-3	2	1 1/4	1.125	.562	.281	7.75	7.56	2.436	20.68	174000	1.640	1.900
160-4	2	1 1/4	1.125	.562	.250	9.66	9.47	2.305	25.60	232000	1.640	1.900
160H-4	2	1 1/4	1.125	.562	.281	10.17	10.00	2.436	27.62	232000	1.640	1.900
160-6	2	1 1/4	1.125	.562	.250	14.27	14.09	2.305	37.78	348000	1.640	1.900

*Maximum values are shown.

NOTE: ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.

OIL FIELD ROLLER CHAIN

CHAIN DESCRIPTIONS AND DIMENSIONS

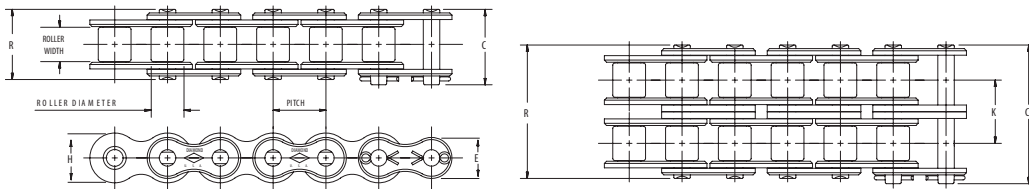


Dimensions in Inches

ANSI NUMBER	PITCH INCHES	ROLLER WIDTH	ROLLER DIAMETER	PIN DIAMETER	LINK PLATE THICKNESS	C	R	K	POUNDS PER FOOT	AVERAGE TENSILE STRENGTH	E*	H*
180	2 1/4	1 13/32	1.406	.687	.281	3.15	2.88	—	9.06	76000	1.845	2.138
180H	2 1/4	1 13/32	1.406	.687	.312	3.28	3.01	—	9.59	76000	1.845	2.138
180-2	2 1/4	1 13/32	1.406	.687	.281	5.75	5.48	2.592	17.67	152000	1.845	2.138
180H-2	2 1/4	1 13/32	1.406	.687	.312	6.00	5.73	2.723	18.86	152000	1.845	2.138
180-3	2 1/4	1 13/32	1.406	.687	.281	8.34	8.07	2.592	26.20	228000	1.845	2.138
180H-3	2 1/4	1 13/32	1.406	.687	.312	8.73	8.46	2.723	28.14	228000	1.845	2.138
200	2 1/2	1 1/2	1.562	.781	.312	3.44	3.12	—	10.65	95000	2.050	2.375
200H	2 1/2	1 1/2	1.562	.781	.375	3.71	3.39	—	13.38	110000	2.050	2.375
200-2	2 1/2	1 1/2	1.562	.781	.312	6.26	5.94	2.817	21.50	190000	2.050	2.375
200H-2	2 1/2	1 1/2	1.562	.781	.375	6.79	6.48	3.083	26.38	220000	2.050	2.375
200-3	2 1/2	1 1/2	1.562	.781	.312	9.08	8.76	2.817	32.30	285000	2.050	2.375
200H-3	2 1/2	1 1/2	1.562	.781	.375	9.88	9.56	3.083	40.85	330000	2.050	2.375
200-4	2 1/2	1 1/2	1.562	.781	.312	11.90	11.58	2.817	42.90	380000	2.050	2.375
200-6	2 1/2	1 1/2	1.562	.781	.312	17.52	17.21	2.817	64.50	570000	2.050	2.375
240	3	1 7/8	1.875	.937	.375	4.32	3.83	—	17.03	157600	2.422	2.806
240H	3	1 7/8	1.875	.937	.500	4.85	4.35	—	21.08	157600	2.422	2.806
240-2	3	1 7/8	1.875	.937	.375	7.77	7.27	3.458	33.44	315200	2.422	2.806
240-3	3	1 7/8	1.875	.937	.375	11.23	10.73	3.458	49.77	472800	2.422	2.806

*Maximum values are shown.

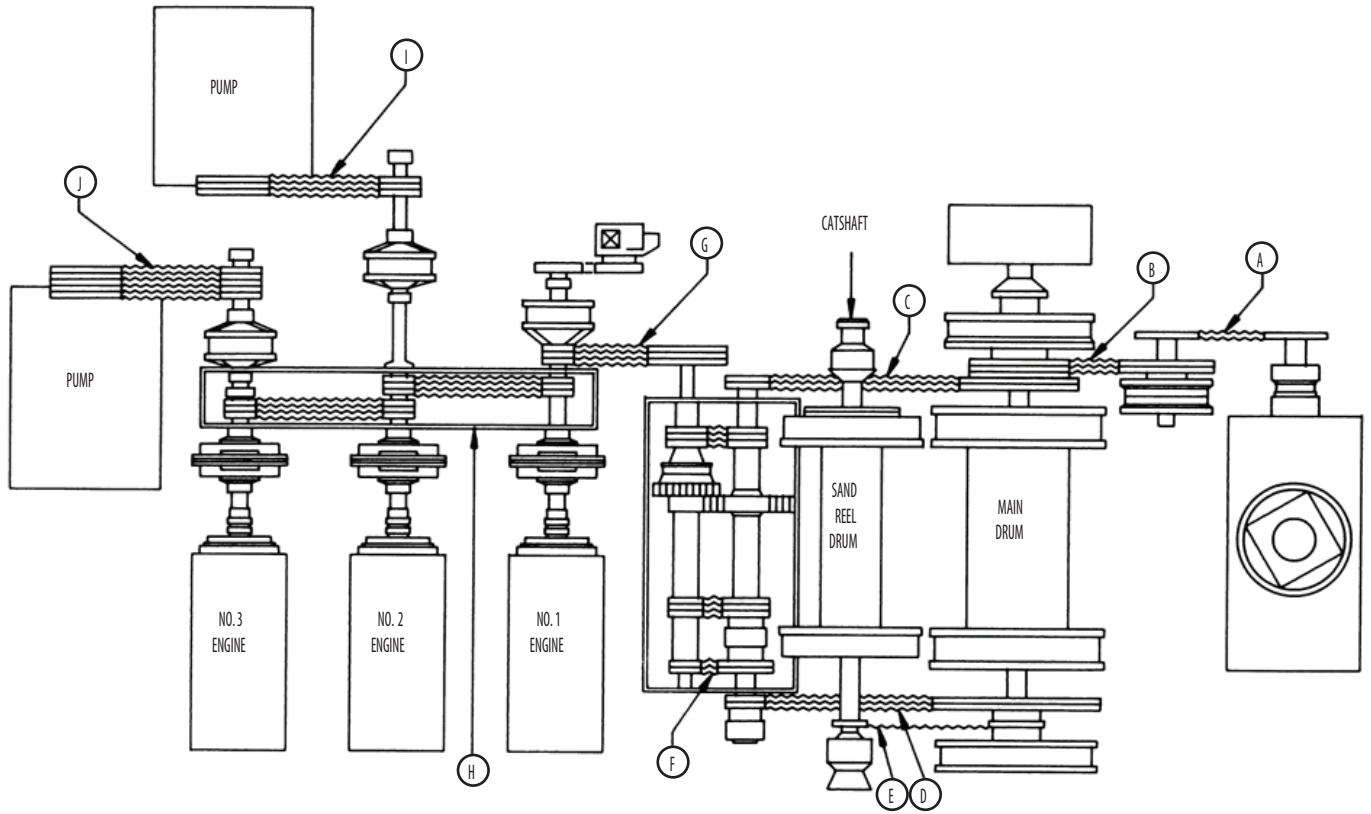
NOTE: ANSI 60 and larger chains are available as cottered or riveted type design.
Multiple strand chains are available with slip-fit (standard) or press-fit center plates.



Dimensions in Inches

ANSI NUMBER	PITCH INCHES	ROLLER WIDTH	ROLLER DIAMETER	PIN DIAMETER	LINK PLATE THICKNESS	C	R	K	POUNDS PER FOOT	AVERAGE TENSILE STRENGTH
472	1 1/2	3/4	.875	.437	.187	1.86	1.72	—	3.40	34000
472-2	1 1/2	3/4	.875	.437	.187	3.45	3.30	1.546	6.76	68000
472-3	1 1/2	3/4	.875	.437	.187	5.00	4.85	1.546	10.08	102000
472-4	1 1/2	3/4	.875	.437	.187	6.55	6.41	1.546	13.40	136000
264	2 1/2	1 1/2	1.562	.875	.375	3.71	3.39	—	13.68	148500
264-3	2 1/2	1 1/2	1.562	.875	.375	9.88	9.56	3.083	40.92	445500

OIL FIELD ROLLER CHAIN



CHAIN DRIVE	4000	RIG HORSEPOWER				1000	750	500
		3000	2000	1500				
A. ROTARY TABLE	160-2	160-2 200H-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1	
B. ROTARY COUNTERSHAFT	160-2	160-2 200H-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1	
C. HIGH DRUM	240-3	200H-3	160-4	160-3	140-3 160-2	160-2 140-2	120-3 140-2	
D. LOW DRUM	240-3	200H-3	160-4	160-3	140-3 160-2	160-2 140-3	120-3 140-2	
E. CATSHAFT	160-2	160-2 200H-1	160-2	160-1 140-2	160-1 140-2	160-1 140-2	140-1 120-1	
F. TRANSMISSION	140-8	160-4 200H-3	160-4 160-3	160-3	160-2 140-3	140-2	120-2 100-3	
G. DRAWWORKS INPUT	140-8	120-8	120-6	120-4	120-3 120-4	100-4	100-3 100-4	
H. COMPOUND	140-8	120-8	120-6	120-4	120-3 120-4	100-4	100-3	
I. & J. MUD PUMP DRIVES	140-8	120-8	120-8 120-6	120-6 120-4	120-4 120-3	100-6 100-4	100-4 100-3	

DIAMOND®

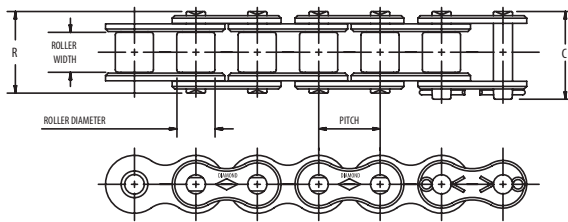
DIAMOND ACE® CHAIN

The Diamond ACE® (anti-corrosion exterior) chain incorporates an electrochemically bonded, protective exterior coating that is applied prior to assembly. Each individual part is treated before assembly using an electrochemical bonding process that provides maximum resistance to iron oxide (red rust) corrosion. Pre-assembly coating ensures all component parts are thoroughly treated, which prevents internal rust from seeping out and causing contamination. Diamond ACE features a zinc-nickel and non-hexavalent chromate coating with a protective lubricant to provide corrosion protection and extended wear resistance. The anti-corrosion exterior is specifically designed to permit sacrificial oxidation of the outer layer, allowing the chain to function without corrosive attack of the base metal.

Independent salt spray and sprocket drive tests have shown that Diamond ACE is superior in balancing corrosion protection and performance.

NOTE: These chains are not intended to resist corrosion from caustic chemicals or acids. Stainless steel chain is recommended for those types of applications. Contact Diamond's application engineers for assistance in selecting the proper chain for your application.

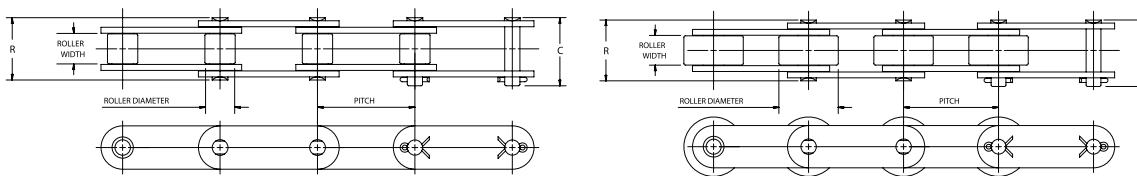
SINGLE PITCH DRIVE CHAINS



Dimensions in Inches

ANSI NUMBER	PITCH INCHES	ROLLER WIDTH	ROLLER DIAMETER	PIN DIAMETER	LINK PLATE THICKNESS	C	R	POUNDS PER FOOT	AVERAGE TENSILE STRENGTH
40 ACE	1/2	0.313	0.312	0.156	0.060	0.720	0.670	0.420	4000
50 ACE	5/8	0.375	0.400	0.200	0.080	0.890	0.830	0.680	6600
60 ACE	3/4	0.500	0.469	0.234	0.094	1.110	1.040	0.970	8500
80 ACE	1	0.625	0.625	0.312	0.125	1.440	1.320	1.700	14500

DOUBLE PITCH DRIVE CHAINS



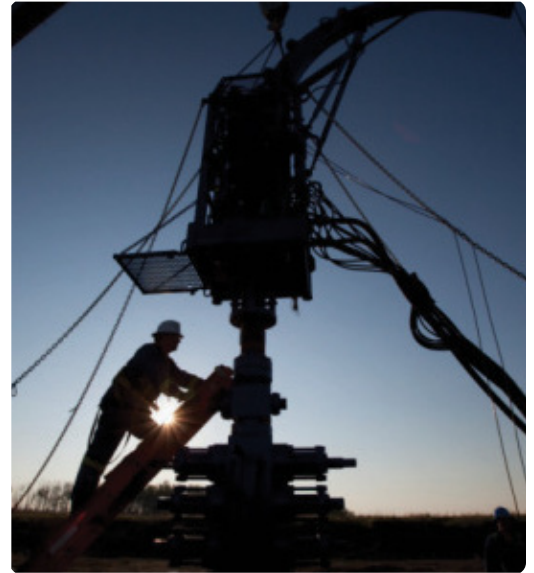
Dimensions in Inches

ANSI NUMBER	PITCH INCHES	ROLLER WIDTH	ROLLER DIAMETER	PIN DIAMETER	LINK PLATE THICKNESS	C	R	POUNDS PER FOOT	AVERAGE TENSILE STRENGTH
C-2040 ACE	1	0.313	0.312	0.156	0.060	0.760	0.680	0.340	3700
C-2042 ACE	1	0.313	0.325	0.156	0.060	0.760	0.680	0.340	3700
C-2050 ACE	1 1/4	0.375	0.400	0.200	0.080	0.920	0.840	0.580	6100
C-2052 ACE	1 1/4	0.375	0.750	0.200	0.080	0.920	0.840	0.580	6100
C-2060H ACE	1 1/2	0.500	0.469	0.234	0.125	1.250	1.180	1.050	8500
C-2062H ACE	1 1/2	0.500	0.875	0.234	0.125	1.250	1.180	1.050	8500
C-2080H ACE	2	0.625	0.625	0.312	0.156	1.570	1.450	1.400	14500
C-20802H ACE	2	0.625	1.125	0.312	0.156	1.570	1.450	1.400	14500

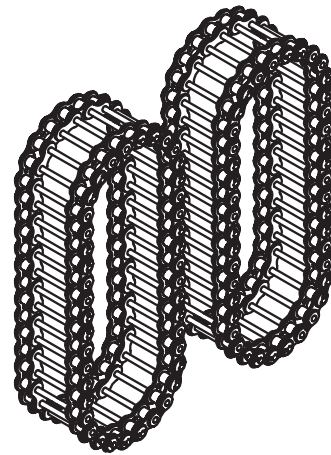
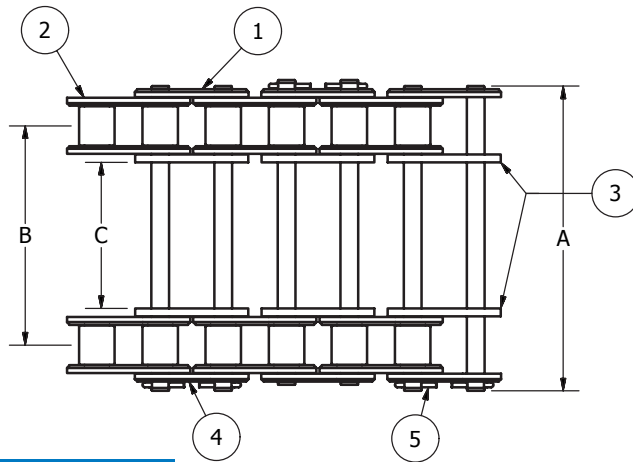
NOTE: FOR SIZES NOT LISTED, CONTACT DIAMOND FOR AVAILABILITY ON A MADE-TO-ORDER BASIS.

COILED TUBING KITS

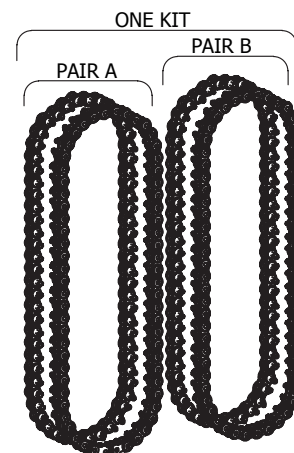
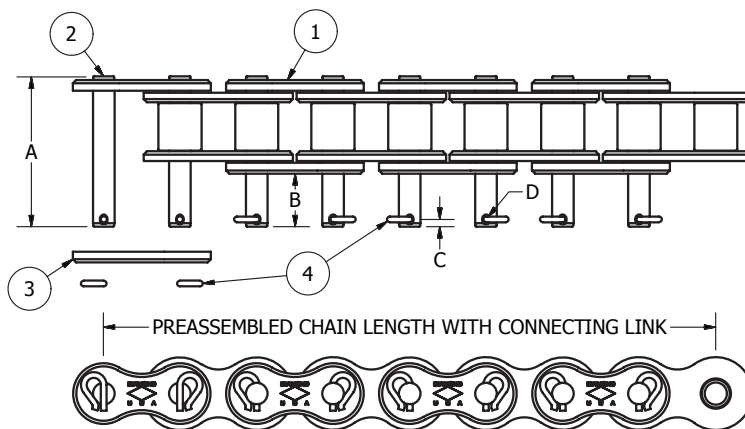
Diamond Chain coiled tubing kits feature specially manufactured pins for increased tensile strength and improved impact and pin fatigue resistance. Special interference fit coverplates are manufactured to exacting tolerances to minimize pin turning and assure equal distribution of chain working load. Diamond's coiled tubing kits are available in nickel or ACE® plating for improved resistance to stress corrosion cracking caused by use in wet environments. Diamond Chain products stand up to the strenuous conditions of the oil and gas industry which means longer chain life and increased up-time and production.



1. Diamond M-Link
2. Diamond Roller Link
3. Diamond Slip-Fit Centerplates
4. Diamond Semi-Press Coverplate
5. Diamond Cotter



1. Diamond Extended Pin Chain
2. Diamond Extended Pin M-Link (Loose)
3. Diamond Slip-Fit Coverplate (Loose)
4. Diamond Retaining Clips (Loose)



NOTE: DIAMOND CHAIN WILL SUPPLY THE FULL KIT OF COMPONENTS THAT WILL PROVIDE FOUR CHAINS FOR ONE COMPLETE INJECTOR UNIT AS SHOWN ABOVE. THE CHAINS WILL BE SUPPLIED LOOSE, TO BE ASSEMBLED BY THE USER.

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