

2021 CATALOG

LS2

**Engineering
Performance
Into Every Lift**



LONE STAR
ARTIFICIAL LIFT

Lone Star Artificial Lift Systems Introduces Its Next Generation Of Beam Pumping Unit, The LS2

The LS2 pumping unit has adopted the most reliable features that the market has come to expect for longest operating life and safest operation. Leveraging components that are common to other pumping unit brands, the LS2 enables operators to tap into the vast service and parts network of service companies throughout the world who are familiar with their maintenance, repair, and installation.

LS2 features include:

- **Involute Gear Reducers**
- **Center Bearing Assembly with Railroad Bearings**
- **Hinge-pin style Tail Bearing Assembly**
- **Crank arms with permanent tapered inserts (no keyway)**

These features are incorporated into LS2 Conventional and Enhanced Geometry (RM) pumping units. Also new to the Lone Star pumping unit line is Lone Star's Low Profile pumping unit primarily used in agricultural areas with center pivot irrigation systems.





LONE STAR ARTIFICIAL LIFT

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LS2

CONVENTIONAL

MODEL		C80D-133-54	C80D-119-64	C114D-143-64	C114D-173-64	C160D-173-100	C160D-200-74
UNIT SPECIFICATIONS	Structure rating, lbs.	13,300	11,900	14,300	17,300	17,300	20,000
	Max stroke length, in.	54	64	64	64	100	74
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in.-lbs.	80,000	80,000	114,000	114,000	160,000	160,000
	Gear tooth profile	Involute	Involute	Involute	Involute	Involute	Involute
	Gear ratio	31.747	31.747	29.818	29.818	28.506	28.506
	GB oil capacity, US gal.	16	16	29	29	37	37
CRANK ASSEMBLY	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer					
	Sheave diameter, in.	25	25	30	30	30	30
	Sheave groove type	3B	3B	3C	3C	4C	4C
	Crank arm weight, lbs.	827 × 2	827 × 2	1,368 × 2	1,655 × 2	2,022 × 2	2,022 × 2
	Crank pin position, in.	Stroke 1	24.02	24.02	26.97	31.89	37.01
		Stroke 2	19.29	19.29	21.46	26.38	31.50
		Stroke 3	14.56	14.56	15.94	20.87	25.98
	Stroke length, in.	Stroke 1	55.62	64.88	64.96	65.89	102.60
		Stroke 2	44.19	51.56	51.04	53.88	85.33
		Stroke 3	33.10	38.62	37.59	42.27	70.79
WIRELINE	Length, in.	187	205	218.5	245	320	270
SU	Structural unbalance, lbs.	260	60	290	500	-220	700

MODEL		C228D-213-86	C228D-246-86	C228D-213-100	C228D-173-120	C228D-256-120
UNIT SPECIFICATIONS	Structure rating, lbs.	21,300	24,600	21,300	17,300	25,600
	Max stroke length, in.	86	86	100	120	120
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in-lbs.	228,000	228,000	228,000	228,000	228,000
	Gear tooth profile	Involute	Involute	Involute	Involute	Involute
	Gear ratio	28.87	28.87	28.87	28.87	28.87
	GB oil capacity, US gal.	48	48	48	48	48
CRANK ASSEMBLY	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer				
	Sheave diameter, in.	36	36	36	36	36
	Sheave groove type	4C	4C	4C	4C	4C
	Crank arm weight, lbs.	1,979 × 2	3,106 × 2	1,979 × 2	3,106 × 2	3,106 × 2
	Crank pin position, in.	Stroke 1	37.01	42.01	37.01	42.01
		Stroke 2	31.50	35.12	31.50	35.12
		Stroke 3	25.98	28.23	25.98	28.23
	Stroke length, in.	Stroke 1	88.34	86.59	102.60	121.00
		Stroke 2	74.45	71.65	85.33	100.12
		Stroke 3	60.95	57.16	70.79	79.84
WIRELINE	Length, in.	295	295	320	360	360
SU	Structural unbalance, lbs.	120	1,069	-220	50	50

MODEL		C320D-305-100	C320D-256-120	C320D-305-120	C320D-256-144
UNIT SPECIFICATIONS	Structure rating, lbs.	30,500	25,600	30,500	25,600
	Max stroke length, in.	100	120	120	144
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in-lbs.	320,000	320,000	320,000	320,000
	Gear tooth profile	Involute	Involute	Involute	Involute
	Gear ratio	28.807	28.807	28.807	28.807
	GB oil capacity, US gal.	75	75	75	75
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer			
CRANK ASSEMBLY	Sheave diameter, in.	44	44	44	44
	Sheave groove type	5C	5C	5C	5C
	Crank arm weight, lbs.	3,106 × 2	3,106 × 2	3,106 × 2	4,270 × 2
	Crank pin position, in.	Stroke 1	42.01	42.01	42.01
		Stroke 2	35.12	35.12	35.12
		Stroke 3	28.23	28.23	28.23
	Stroke length, in.	Stroke 1	100.75	121.00	121.00
		Stroke 2	83.34	100.12	100.12
		Stroke 3	66.46	79.84	79.84
WIRELINE	Length, in.	320	360	360	410
SU	Structural unbalance, lbs.	755	−70	120	−930

MODEL		C456D-305-120	C456D-365-120	C456D-305-144	C456D-365-144	C456D-305-168
UNIT SPECIFICATIONS	Structure rating, lbs.	30,500	36,500	30,500	36,500	30,500
	Max stroke length, in.	120	120	144	144	168
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in-lbs.	456,000	456,000	456,000	456,000	456,000
	Gear tooth profile	Involute	Involute	Involute	Involute	Involute
	Gear ratio	28.25	28.25	28.25	28.25	28.25
	GB oil capacity, US gal.	110	110	110	110	110
CRANK ASSEMBLY	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer				
	Sheave diameter, in.	44	44	44	44	44
	Sheave groove type	6C	6C	6C	6C	6C
	Crank arm weight, lbs.	3,106 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2
WIRELINE	Crank pin position, in.	Stroke 1	42.01	47.09	47.09	47.09
		Stroke 2	35.12	39.49	39.49	39.49
		Stroke 3	28.23	31.89	31.89	31.89
SU	Stroke length, in.	Stroke 1	121.12	122.82	146.12	145.43
		Stroke 2	100.17	101.91	121.16	120.68
		Stroke 3	79.88	81.66	97.01	96.70
WIRELINE	Length, in.	360	360	410	410	460
	Structural unbalance, lbs.	180	760	−285	−365	−1,400

		MODEL	C640D-305-120	C640D-365-120	C640D-305-144	C640D-365-144	C640D-427-144	
UNIT SPECIFICATIONS	Structure rating, lbs.		30,500	36,500	30,500	36,500	42,700	
	Max stroke length, in.		120	120	144	144	144	
	Balance type		Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Direction of rotation		CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW	
GEAR REDUCER	Max Torque, in-lbs.		640,000	640,000	640,000	640,000	640,000	
	Gear tooth profile		Involute	Involute	Involute	Involute	Involute	
	Gear ratio		27.21	27.21	27.21	27.21	27.21	
	GB oil capacity, US gal.		100	100	100	100	100	
	Lubricant		ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer					
	Sheave diameter, in.		50	50	50	50	50	
	Sheave groove type		6C	6C	6C	6C	6C	
	Crank arm weight, lbs.		3,106 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	
	CRANK ASSEMBLY	Crank pin position, in.	Stroke 1	42.01	47.09	47.09	47.09	47.09
			Stroke 2	35.12	39.49	39.49	39.49	39.49
Stroke 3			28.23	31.89	31.89	31.89	31.89	
Stroke length, in.		Stroke 1	121.12	122.82	146.16	145.43	145.43	
		Stroke 2	100.17	101.91	121.16	120.68	120.68	
		Stroke 3	79.88	81.66	97.02	96.70	96.70	
WIRELINE	Length, in.		360	360	410	410	410	
SU	Structural unbalance, lbs.		180	750	−350	−400	−400	

MODEL		C640D-305-168	C640D-365-168	C640D-365-192	C912D-365-144	C912D-427-144
UNIT SPECIFICATIONS	Structure rating, lbs.	30,500	36,500	36,500	36,500	42,700
	Max stroke length, in.	168	168	192	144	144
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in.-lbs.	640,000	640,000	640,000	912,000	912,000
	Gear tooth profile	Involute	Involute	Involute	Involute	Involute
	Gear ratio	27.21	27.21	27.21	28.79	28.79
	GB oil capacity, US gal.	100	100	100	181	181
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer				
	Sheave diameter, in.	50	50	50	50	50
CRANK ASSEMBLY	Sheave groove type	6C	6C	6C	8C	8C
	Crank arm weight, lbs.	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2
	Crank pin position, in.	Stroke 1	47.09	47.09	52.95	47.09
		Stroke 2	39.49	39.49	45.35	39.49
		Stroke 3	31.89	31.89	37.76	31.89
		Stroke 4	-	-	30.16	-
	Stroke length, in.	Stroke 1	169.70	169.70	192.56	145.43
		Stroke 2	140.82	140.82	162.89	120.68
		Stroke 3	112.83	112.83	134.33	96.70
		Stroke 4	-	-	106.53	-
WIRELINE	Length, in.	460	460	500	410	410
SU	Structural unbalance, lbs.	-1,400	-1,400	-1,700	-365	-365

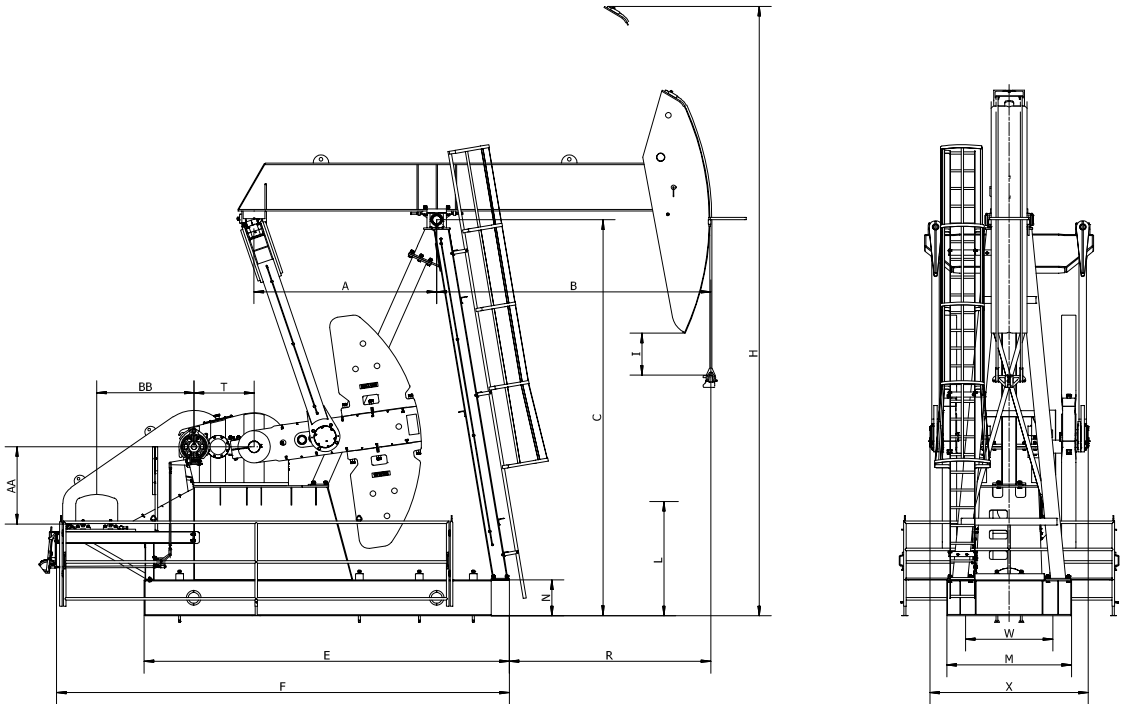
MODEL		C912D-305-168	C912D-365-168	C912D-427-168	C912D-365-192	C912D-427-192
UNIT SPECIFICATIONS	Structure rating, lbs.	30,500	36,500	42,700	36,500	42,700
	Max stroke length, in.	168	168	168	192	192
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in-lbs.	912,000	912,000	912,000	912,000	912,000
	Gear tooth profile	Involute	Involute	Involute	Involute	Involute
	Gear ratio	28.79	28.79	28.79	28.79	28.79
	GB oil capacity, US gal.	181	181	181	181	181
CRANK ASSEMBLY	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer				
	Sheave diameter, in.	50	50	50	50	50
	Sheave groove type	8C	8C	8C	8C	8C
	Crank arm weight, lbs.	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2
	Crank pin position, in.	Stroke 1	47.09	47.09	47.09	52.95
		Stroke 2	39.49	39.49	38.62	45.35
		Stroke 3	31.89	31.89	30.16	37.76
		Stroke 4	-	-	-	30.16
	Stroke length, in.	Stroke 1	169.70	169.70	169.70	192.56
		Stroke 2	140.82	140.82	137.59	162.89
		Stroke 3	112.83	112.83	106.55	134.33
		Stroke 4	-	-	-	106.53
WIRELINE	Length, in.	460	460	460	500	512
SU	Structural unbalance, lbs.	-1,400	-1,400	-1,255	-1,900	-2,070

MODEL		C1280D-365-192	C1280D-427-192	C1280D-427-216	C1280D-365-240	C1280D-427-240
UNIT SPECIFICATIONS	Structure rating, lbs.	36,500	42,700	42,700	36,500	42,700
	Max stroke length, in.	192	192	216	240	240
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in-lbs.	1,280,000	1,280,000	1,280,000	1,280,000	1,280,000
	Gear tooth profile	Involute	Involute	Involute	Involute	Involute
	Gear ratio	28.67	28.67	28.67	28.67	28.67
	GB oil capacity, US gal.	251	251	251	251	251
CRANK ASSEMBLY	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer				
	Sheave diameter, in.	50	50	50	50	50
	Sheave groove type	10C	10C	10C	10C	10C
	Crank arm weight, lbs.	4,699 × 2	4,699 × 2	5,971 × 2	5,971 × 2	5,971 × 2
	Crank pin position, in.	Stroke 1	52.95	52.95	63.78	63.78
		Stroke 2	44.49	44.49	55.31	55.31
		Stroke 3	36.02	36.02	46.85	46.85
		Stroke 4	27.56	27.56	38.39	38.39
	Stroke length, in.	Stroke 1	192.56	192.56	216.48	240.26
		Stroke 2	159.59	159.59	184.99	205.31
		Stroke 3	127.93	127.93	154.92	171.93
		Stroke 4	97.16	97.16	125.83	139.65
WIRELINE	Length, in.	512	512	565	602	602
SU	Structural unbalance, lbs.	-2,070	-2,070	-1,970	-2,900	-3,400

MODEL		C1824D-427-216	C1824D-365-240	C1824D-427-240
UNIT SPECIFICATIONS	Structure rating, lbs.	42,700	36,500	42,700
	Max stroke length, in.	216	240	240
	Balance type	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	CW or CCW	CW or CCW	CW or CCW
GEAR REDUCER	Max Torque, in-lbs.	1,824,000	1,824,000	1,824,000
	Gear tooth profile	Involute	Involute	Involute
	Gear ratio	28.89	28.89	28.89
	GB oil capacity, US gal.	264	264	264
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer		
	Sheave diameter, in.	58	58	58
CRANK ASSEMBLY	Sheave groove type	12C	12C	12C
	Crank arm weight, lbs.	5,343 × 2	5,343 × 2	5,343 × 2
	Crank pin position, in.	Stroke 1	63.78	63.78
		Stroke 2	55.31	55.31
		Stroke 3	46.85	46.85
		Stroke 4	38.39	38.39
	Stroke length, in.	Stroke 1	216.15	240.26
		Stroke 2	184.72	205.31
		Stroke 3	154.70	171.93
		Stroke 4	125.66	139.65
WIRELINE	Length, in.	565	602	602
SU	Structural unbalance, lbs.	−1,983	−3,000	−3,400

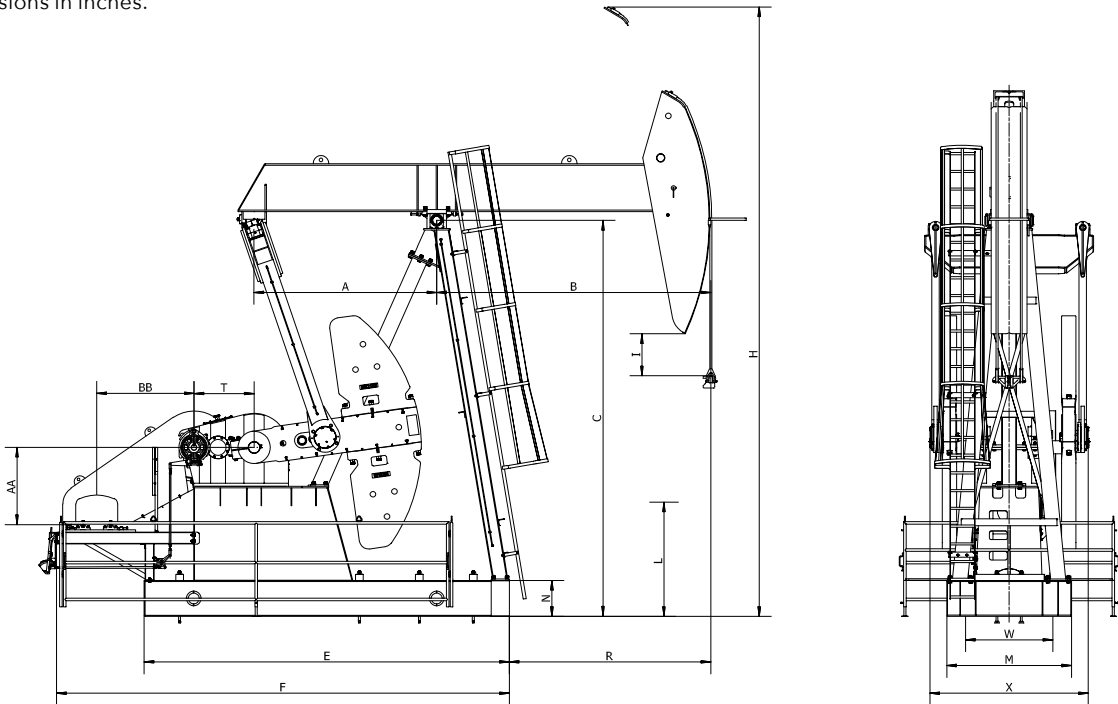
MODEL	A	B	C	E	F	H	I	J	L	M	N	R	T	W	X	AA	BB
C80D-133-54	63.98	72.05	125.98	122.05	167.32	182.52	13.39	50.00	49.61	47.24	9.61	51.18	21.65	27.56	55.91	22.48	33.46
C80D-119-64	63.98	84.06	125.98	122.05	167.32	191.02	13.39	50.00	40.55	47.24	9.61	51.18	21.65	27.56	55.91	22.48	33.46
C114D-143-64WL	72.05	84.06	144.29	243.90	NA†	209.37	29.33	56.30	42.68	72.44	11.81	62.80	25.59	33.46	71.30	40.47	83.07
C114D-173-64WL	84.06	84.06	165.94	273.62	NA	232.48	26.77	68.11	64.57	81.89	15.59	52.95	25.59	35.43	71.30	52.48	94.29
C160D-200-74WL	96.06	96.06	196.06	303.15	NA	271.85	28.74	77.95	82.28	81.89	15.59	60.63	29.53	35.43	77.24	62.32	100.39
C160D-173-100	96.06	128.94	196.06	182.28	254.17	295.47	26.38	77.95	57.09	56.54	15.59	93.50	29.53	35.43	77.87	28.22	40.03
C228D-213-86	96.06	111.02	196.06	186.30	246.61	282.28	29.92	77.95	68.90	70.08	17.72	75.59	33.46	37.01	79.76	26.10	41.53
C228D-246-86	111.02	110.98	231.97	206.14	267.17	315.94	33.07	95.00	103.94	70.08	19.69	70.87	33.46	37.01	83.31	40.98	54.33
C228D-213-100	96.06	128.94	196.06	186.30	246.61	295.47	26.38	77.95	57.09	70.08	17.72	93.50	33.46	37.01	79.76	26.10	41.53
C228D-173-120	111.02	155.00	231.97	206.14	267.17	348.74	27.95	95.00	73.23	70.08	19.69	114.88	33.46	37.01	83.31	40.98	54.33
C228D-256-120	111.02	155.00	231.97	206.14	267.17	348.74	27.95	95.00	73.23	70.08	19.69	114.88	33.46	37.01	83.31	40.98	54.33
C320D-305-100	111.02	129.02	231.97	210.51	270.83	330.24	28.35	95.00	92.91	70.08	19.69	88.90	37.40	42.91	90.39	40.98	54.33
C320D-256-120	111.02	155.00	231.97	210.51	270.83	347.83	27.95	95.00	73.23	70.08	19.69	114.88	37.40	42.91	90.39	40.98	54.33
C320D-305-120	111.02	155.00	231.97	210.51	270.83	347.83	29.13	95.00	73.23	70.08	19.69	114.88	37.40	42.91	90.39	40.98	54.33
C320D-256-144	120.00	180.00	260.00	226.22	295.28	398.03	28.94	109.84	75.00	81.89	23.62	132.36	37.40	42.91	90.39	52.09	58.46
C456D-305-120	111.02	155.00	233.98	223.35	280.83	350.79	27.56	95.00	75.20	81.89	23.62	114.88	39.37	46.85	102.44	37.28	63.94
C456D-365-120	120.00	152.01	261.97	239.84	297.32	379.76	28.74	109.84	100.39	81.89	23.62	104.37	39.37	46.85	104.02	50.75	63.94
C456D-305-144	120.00	180.00	260.00	239.84	297.32	398.03	28.94	109.84	75.00	81.89	23.62	132.36	39.37	46.85	104.02	50.75	63.94
C456D-365-144	120.00	180.00	261.97	239.84	297.32	399.76	29.33	109.84	77.56	81.89	23.62	132.36	39.37	46.85	104.02	50.75	63.94
C456D-305-168	120.00	210.04	261.97	239.84	297.32	421.65	29.92	109.84	52.76	81.89	23.62	162.40	39.37	46.85	104.02	50.75	63.94

Note: All dimensions in inches.

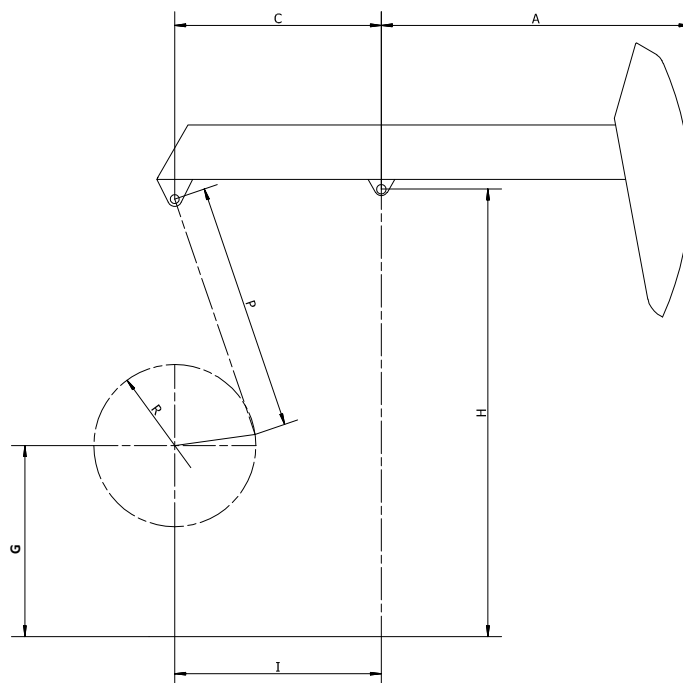


MODEL	A	B	C	E	F	H	I	J	L	M	N	R	T	W	X	AA	BB
C640D-305-120	111.02	155.00	233.98	225.71	283.19	350.79	27.56	95.00	75.20	81.89	23.62	114.88	41.34	46.85	100.83	37.28	64.33
C640D-365-120	120.00	152.01	261.97	242.20	299.69	379.76	28.74	109.84	100.39	81.89	23.62	104.37	41.34	46.85	102.40	50.75	64.33
C640D-305-144	120.00	180.00	260.00	242.20	299.69	398.03	28.94	109.84	75.00	81.89	23.62	132.36	41.34	46.85	102.40	50.75	64.33
C640D-365-144	120.00	180.00	261.97	242.20	299.69	399.76	29.33	109.84	77.56	81.89	23.62	132.36	41.34	46.85	102.40	50.75	64.33
C640D-427-144	120.00	180.00	261.97	242.20	299.69	399.76	29.33	109.84	77.56	81.89	23.62	132.36	41.34	46.85	102.40	50.75	64.33
C640D-305-168	120.00	210.04	261.97	242.20	299.69	421.65	29.92	109.84	52.76	81.89	23.62	162.40	41.34	46.85	102.40	50.75	64.33
C640D-365-168	120.00	210.04	261.97	242.20	299.69	421.65	29.92	109.84	52.76	81.89	23.62	162.40	41.34	46.85	102.40	50.75	64.33
C640D-365-192	120.00	210.04	286.02	265.23	322.72	458.74	28.15	109.84	56.69	81.89	23.62	139.37	41.34	46.85	102.40	50.75	64.33
C912D-365-144	120.00	180.00	261.97	250.16	307.64	399.76	29.33	109.84	77.56	81.89	23.62	132.36	48.43	46.85	106.38	50.75	65.20
C912D-427-144	120.00	180.00	261.97	250.16	307.64	399.76	29.33	109.84	77.56	81.89	23.62	132.36	48.43	46.85	106.38	50.75	65.20
C912D-305-168	120.00	210.04	261.97	250.16	307.64	421.65	29.92	109.84	52.76	81.89	23.62	162.40	48.43	46.85	106.38	50.75	65.20
C912D-365-168	120.00	210.04	261.97	250.16	307.64	421.65	29.92	109.84	52.76	81.89	23.62	162.40	48.43	46.85	106.38	50.75	65.20
C912D-427-168	120.00	210.04	261.97	250.16	307.64	421.65	29.92	109.84	52.76	81.89	23.62	162.40	48.43	46.85	106.38	50.75	65.20
C912D-365-192	120.00	210.04	286.02	273.19	330.67	458.74	28.15	109.84	56.69	81.89	23.62	139.37	48.43	46.85	106.38	50.75	65.20
C912D-427-192	120.00	210.04	286.02	273.39	330.87	457.87	28.35	109.84	55.12	81.89	23.62	139.37	48.43	46.85	106.38	50.75	65.20
C1280D-365-192	120.00	210.04	286.02	279.88	337.36	457.87	28.35	109.84	55.12	86.61	23.62	139.17	56.69	50.00	119.29	63.43	50.75
C1280D-427-192	120.00	210.04	286.02	279.88	337.36	457.87	28.35	109.84	55.12	86.61	23.62	139.17	56.69	50.00	119.29	63.43	50.75
C1280D-427-216	127.56	205.75	331.89	287.44	344.92	513.54	29.21	118.11	75.79	86.61	23.62	134.88	56.69	50.00	119.29	59.02	63.43
C1280D-365-240	127.56	228.35	331.89	287.44	344.92	533.86	29.33	118.11	55.70	86.61	23.62	157.48	56.69	50.00	119.29	59.02	63.43
C1280D-427-240	127.56	228.35	331.89	287.44	344.92	533.86	29.33	118.11	55.70	86.61	23.62	157.48	56.69	50.00	119.29	59.02	63.43
C1824D-427-216	127.56	205.75	331.89	280.31	346.54	513.54	29.21	118.11	75.79	88.19	23.62	134.88	57.09	54.72	128.43	59.02	67.24
C1824D-365-240	127.56	228.35	331.89	280.31	346.54	533.86	29.33	118.11	55.70	88.19	23.62	157.48	57.09	54.72	128.43	59.02	67.24
C1824D-427-240	127.56	228.35	331.89	280.31	346.54	533.86	29.33	118.11	55.70	88.19	23.62	157.48	57.09	54.72	128.43	59.02	67.24

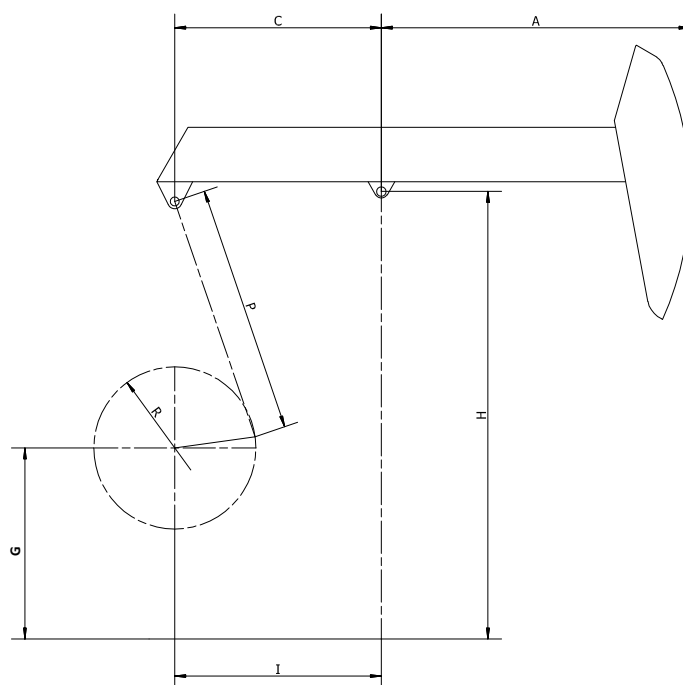
Note: All dimensions in inches.



MODEL	A, in	C, in	I, in	P, in	H, in	G, in	R1, in	R2, in	R3, in	R4, in	SU, lbs	Torque Factor at 90°, in			
												Stroke 1	Stroke 2	Stroke 3	Stroke 4
C80D-133-54	72.05	63.98	63.98	74.41	125.98	51.18	24.02	19.29	14.57	-	260	26.50	21.49	16.32	-
C80D-119-64	84.06	63.98	63.98	74.41	125.98	51.18	24.02	19.29	14.57	-	60	30.92	25.07	19.04	-
C114D-143-64	84.06	72.05	72.05	84.06	144.29	57.28	26.97	21.46	15.94	-	290	30.60	24.61	18.42	-
C114D-173-64	84.06	84.06	84.06	93.70	165.94	69.29	31.89	26.38	20.87	-	500	30.94	25.86	20.61	-
C160D-200-74	96.06	96.06	96.06	113.98	196.06	79.13	37.01	31.50	25.98	-	700	36.02	30.92	25.67	-
C160D-173-100	128.94	96.06	96.06	113.98	196.06	79.13	37.01	31.50	25.98	-	-220	48.35	41.00	34.45	-
C228D-213-86	111.02	96.06	96.06	113.98	196.06	79.13	37.01	31.50	25.98	-	120	41.64	35.73	29.66	-
C228D-246-86	110.98	111.02	111.02	132.99	231.97	95.98	42.01	35.12	28.23	-	1,069	40.97	34.54	27.93	-
C228D-213-100	128.94	96.06	96.06	113.98	196.06	79.13	37.01	31.50	25.98	-	-220	48.35	41.00	34.45	-
C228D-173-120	155.00	111.06	111.02	132.01	231.97	95.98	42.01	35.12	28.23	-	50	57.07	48.13	38.94	-
C228D-256-120	155.00	111.06	111.02	132.01	231.97	95.98	42.01	35.12	28.23	-	50	57.07	48.13	38.94	-
C320D-305-100	129.02	111.06	111.02	132.01	231.97	95.98	42.01	35.12	28.23	-	755	47.50	40.06	32.41	-
C320D-256-120	155.00	111.06	111.02	132.01	231.97	95.98	42.01	35.12	28.23	-	25	57.07	48.13	38.94	-
C320D-305-120	155.00	111.06	111.02	132.01	231.97	95.98	42.01	35.12	28.23	-	120	57.07	48.13	38.94	-
C320D-256-144	180.00	120.08	120.00	144.49	260.00	111.02	47.09	39.49	31.89	-	-930	68.57	58.04	47.20	-
C456D-305-120	155.00	111.06	111.02	133.46	233.98	95.98	42.01	35.12	28.23	-	180	57.04	48.11	38.92	-
C456D-365-120	152.01	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	750	58.07	49.11	39.90	-
C456D-305-144	180.00	120.08	120.00	144.49	260.00	111.02	47.09	39.49	31.89	-	-285	68.57	58.04	47.20	-
C456D-365-144	180.00	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-365	68.77	58.16	47.25	-
C456D-305-168	210.04	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-1,400	80.24	67.86	55.14	-



MODEL	A, in	C, in	I, in	P, in	H, in	G, in	R1, in	R2, in	R3, in	R4, in	SU, lbs	Torque Factor at 90°, in			
												Stroke 1	Stroke 2	Stroke 3	Stroke 4
C640D-305-120	155.00	111.06	111.02	133.46	233.98	95.98	42.01	35.12	28.23	-	180	57.04	48.11	38.92	-
C640D-365-120	152.01	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	760	58.07	49.11	39.90	-
C640D-305-144	180.00	120.08	120.00	144.49	260.00	111.02	47.09	39.49	31.89	-	-285	68.57	58.04	47.20	-
C640D-365-144	180.00	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-365	68.77	58.16	47.25	-
C640D-427-144	180.00	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-365	68.77	58.16	47.25	-
C640D-305-168	210.04	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-1,400	80.24	67.86	55.14	-
C640D-365-168	210.04	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-1,400	80.24	67.86	55.14	-
C640D-365-192	210.04	120.31	120.00	172.44	286.02	111.02	52.95	45.35	37.76	30.16	-1,700	90.20	77.85	65.19	52.29
C912D-365-144	180.00	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-365	68.77	58.16	47.25	-
C912D-427-144	180.00	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-365	68.77	58.16	47.25	-
C912D-305-168	210.04	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-1,400	80.24	67.86	55.14	-
C912D-365-168	210.04	120.31	120.00	148.50	261.97	111.02	47.09	39.49	31.89	-	-1,400	80.24	67.86	55.14	-
C912D-427-168	210.04	120.31	120.00	148.50	261.97	111.02	47.09	38.62	30.16	-	-1,255	80.24	66.43	52.20	-
C912D-365-192	210.04	120.31	120.00	172.44	286.02	111.02	52.95	45.35	37.76	30.16	-1,900	90.20	77.85	65.19	52.29
C912D-427-192	210.04	120.31	120.00	172.44	286.02	111.02	52.95	44.49	36.02	27.56	-2,070	90.20	76.43	62.27	47.84
C1280D-365-192	210.04	120.31	120.00	172.44	286.02	111.02	52.95	44.49	36.02	27.56	-2,070	90.20	76.43	62.27	47.84
C1280D-427-192	210.04	120.31	120.00	172.44	286.02	111.02	52.95	44.49	36.02	27.56	-2,070	90.20	76.43	62.27	47.84
C1280D-427-216	205.75	127.56	127.56	212.6	331.89	119.29	63.78	55.31	46.85	38.39	-1,970	100.81	88.04	74.96	61.64
C1280D-365-240	228.35	127.56	127.56	212.6	331.89	119.29	63.78	55.31	46.85	38.39	-2,900	111.85	97.69	83.17	68.40
C1280D-427-240	228.35	127.56	127.56	212.6	331.89	119.29	63.78	55.31	46.85	38.39	-3,400	111.85	97.69	83.17	68.40
C1824D-427-216	205.75	127.73	127.56	212.6	331.89	119.29	63.78	55.31	46.85	38.39	-1,983	100.63	87.90	74.84	61.55
C1824D-365-240	228.35	127.56	127.56	212.6	331.89	119.29	63.78	55.31	46.85	38.39	-3,000	111.68	97.55	83.05	68.31
C1824D-427-240	228.35	127.56	127.56	212.6	331.89	119.29	63.78	55.31	46.85	38.39	-3,400	111.68	97.55	83.05	68.31



MODEL	Polished Rod Capacity, lbf	Stroke Lengths, in				Wireline Hanger, in	Crank	Crank Weight, lbs.
		Stroke 1	Stroke 2	Stroke 3	Stroke 4			
C80D-133-54	13,300	55.62	44.19	33.10	–	7/8 × 9 centers	CR1270	827
C80D-119-64	11,900	64.88	51.56	38.62	–	7/8 × 9 centers	CR1270	827
C114D-143-64	14,300	64.96	51.04	37.59	–	1 × 9 centers	CR1430	1368
C114D-173-64	17,300	65.89	53.88	42.27	–	1 × 9 centers	CR1730	1655
C160D-200-74	20,000	76.44	64.42	52.74	–	1-1/8 × 9 centers	CR1980	2022
C160D-173-100	17,300	102.60	85.33	70.79	–	1-1/8 × 12 centers	CR1980	2022
C228D-213-86	21,300	88.34	74.45	60.95	–	1-1/8 × 12 centers	CR1980A	1979
C228D-246-86	24,600	86.59	71.65	57.16	–	1-1/8 × 12 centers	CR2413	3106
C228D-213-100	21,300	102.60	85.33	70.79	–	1-1/8 × 12 centers	CR1980A	1979
C228D-173-120	17,300	121.00	100.12	79.84	–	1-1/8 × 12 centers	CR2413	3106
C228D-256-120	25,600	121.00	100.12	79.84	–	1-1/8 × 12 centers	CR2413	3106
C320D-305-100	30,500	100.75	83.34	66.46	–	1-1/4 × 12 centers	CR2413	3106
C320D-256-120	25,600	121.00	100.12	79.84	–	1-1/8 × 12 centers	CR2413	3106
C320D-305-120	30,500	121.00	100.12	79.84	–	1-1/4 × 12 centers	CR2413	3106
C320D-256-144	25,600	146.12	121.16	97.01	–	1-1/4 × 16 centers	CR2790E	4270
C456D-305-120	30,500	121.12	100.17	79.88	–	1-1/4 × 12 centers	CR2413A	3106
C456D-365-120	36,500	122.82	101.91	81.66	–	1-3/8 × 12 centers	CR2790	4699
C456D-305-144	30,500	146.12	121.16	97.01	–	1-1/4 × 16 centers	CR2790	4699
C456D-365-144	36,500	145.43	120.68	96.70	–	1-3/8 × 16 centers	CR2790	4699
C456D-305-168	30,500	169.70	140.82	112.83	–	1-1/4 × 16 centers	CR2790	4699
C640D-305-120	30,500	121.12	100.17	79.88	–	1-1/4 × 12 centers	CR2413A	3106
C640D-365-120	36,500	122.82	101.91	81.66	–	1-3/8 × 12 centers	CR2790	4699
C640D-305-144	30,500	146.16	121.16	97.02	–	1-1/4 × 16 centers	CR2790	4699
C640D-365-144	36,500	145.43	120.68	96.70	–	1-3/8 × 16 centers	CR2790	4699
C640D-427-144	42,700	145.43	120.68	96.70	–	1-3/8 × 16 centers	CR2790	4699
C640D-305-168	30,500	169.70	140.82	112.83	–	1-1/4 × 16 centers	CR2790	4699
C640D-365-168	36,500	169.70	140.82	112.83	–	1-3/8 × 16 centers	CR2790	4699
C640D-365-192	36,500	192.56	162.89	134.33	106.53	1-3/8 × 16 centers	CR2790A	4699
C912D-365-144	36,500	145.43	120.68	96.70	–	1-3/8 × 16 centers	CR2790	4699
C912D-427-144	42,700	145.43	120.68	96.70	–	1-3/8 × 16 centers	CR2790	4699
C912D-305-168	30,500	169.70	140.82	112.83	–	1-1/4 × 16 centers	CR2790	4699
C912D-365-168	36,500	169.70	140.82	112.83	–	1-3/8 × 16 centers	CR2790	4699
C912D-427-168	42,700	169.70	137.59	106.55	–	1-3/8 × 16 centers	CR2790B	4699
C912D-365-192	36,500	192.56	162.89	134.33	106.53	1-3/8 × 16 centers	CR2790A	4699
C912D-427-192	42,700	192.56	159.59	127.93	97.16	1-3/8 × 16 centers	CR2790C	4699
C1280D-365-192	36,500	192.56	159.59	127.93	97.16	1-3/8 × 16 centers	CR2790D	4699
C1280D-427-192	42,700	192.56	159.59	127.93	97.16	1-3/8 × 16 centers	CR2790D	4699
C1280D-427-216	42,700	216.48	184.99	154.92	125.83	1-3/8 × 16 centers	CR3000	5971
C1280D-365-240	36,500	240.26	205.31	171.93	139.65	1-3/8 × 16 centers	CR3000	5971
C1280D-427-240	42,700	240.26	205.31	171.93	139.65	1-3/8 × 16 centers	CR3000	5971
C1824D-427-216	42,700	216.15	184.72	154.70	125.66	1-3/8 × 16 centers	CR3000A	5343
C1824D-365-240	36,500	239.89	205.01	171.70	139.47	1-3/8 × 16 centers	CR3000A	5343
C1824D-427-240	42,700	239.89	205.01	171.70	139.47	1-3/8 × 16 centers	CR3000A	5343

MODEL		C80D-133-54	C80D-119-64	C114D-143-64
Maximum stroke, in		54	64	64
Structural unbalance, lbs.		260	60	290
Cranks		CR1270	CR1270	CR1430
ECB† (cranks only), lbs.		1,823	1,399	2,977
Total ECB, lbs.	(4) CW400	6,553	5,454	7,853
	(2) CW400	4,188	3,426	5,415
	(4) CW300	5,775	4,786	7,007
	(2) CW300	3,799	3,093	4,992

MODEL		C114D-173-64	C160D-200-74	C160D-173-100
Maximum stroke, in		64	74	100
Structural unbalance, lbs.		500	700	–220
Cranks		CR1730	CR1980	CR1980
ECB† (cranks only), lbs.		4,104	4,946	2,945
Total ECB, lbs.	(4) CW800	15,032	16,254	11,374
	(2) CW800	9,568	10,600	7,160
	(4) CW700	13,859	15,007	10,444
	(2) CW700	8,982	9,976	6,695
	(4) CW600	12,497	13,596	9,393
	(2) CW600	8,300	9,271	6,169
	(4) CW500	11,934	12,993	8,943
	(2) CW500	8,019	8,969	5,944
	(4) CW400	10,466	11,491	7,824
	(2) CW400	7,285	8,219	5,384
	(4) CW300	9,287	10,239	6,890
	(2) CW300	6,695	7,592	4,918

† At max stroke length.

MODEL		C228D-213-86	C228D-246-86	C228D-213-100	C228D-173-120	C228D-256-120
Maximum stroke, in		86	86	100	120	120
Structural unbalance, lbs.		120	1,069	-220	50	50
Cranks		CR1980A	CR2413	CR1980A	CR2413	CR2413
ECB† (cranks only), lbs.		3,752	8,262	2,908	5,217	5,224
Total ECB, lbs.	(4) CW1200	16,585	26,617	13,960	18,394	18,401
	(2) CW1200	10,169	17,439	8,434	11,805	11,812
	(4) CW1100	15,910	25,323	13,379	17,465	17,472
	(2) CW1100	9,831	16,792	8,143	11,341	11,348
	(4) CW1000	14,870	24,031	12,483	16,538	16,545
	(2) CW1000	9,311	16,147	7,696	10,877	10,884
	(4) CW900	14,228	22,687	11,930	15,572	15,579
	(2) CW900	8,990	15,474	7,419	10,395	10,402
	(4) CW800	13,524	20,972	11,324	14,341	14,348
	(2) CW800	8,638	14,617	7,116	9,779	9,786
	(4) CW700	12,446	19,530	10,396	13,306	13,313
	(2) CW700	8,099	13,896	6,652	9,262	9,269
	(4) CW600	11,227	17,943	9,346	12,167	12,174
	(2) CW600	7,490	13,103	6,127	8,692	8,699
	(4) CW500	10,706	17,240	8,897	11,662	11,669
	(2) CW500	7,229	12,751	5,902	8,440	8,447
	(4) CW400	9,380	15,543	7,755	10,444	10,451
	(2) CW400	6,566	11,903	5,331	7,831	7,838
	(4) CW300	8,304	14,103	6,828	9,410	9,417
	(2) CW300	6,028	11,183	4,868	7,314	7,321

† At max stroke length.

MODEL		C320D-305-100	C320D-256-120	C320D-305-120	C456D-305-120 C640D-305-120
Maximum stroke, in		100	120	120	120
Structural unbalance, lbs.		755	25	120	180
Cranks		CR2413	CR2413	CR2413	CR2413A
ECB† (cranks only), lbs.		6,972	5,104	5,294	5,357
Total ECB, lbs.	(4) CW1200	22,802	18,281	18,471	18,540
	(2) CW1200	14,887	11,692	11,882	11,948
	(4) CW1100	21,687	17,352	17,542	17,611
	(2) CW1100	14,330	11,228	11,418	11,484
	(4) CW1000	20,573	16,425	16,615	16,683
	(2) CW1000	13,773	10,764	10,954	11,020
	(4) CW900	19,414	15,459	15,649	15,717
	(2) CW900	13,193	10,282	10,472	10,537
	(4) CW800	17,935	14,228	14,418	14,486
	(2) CW800	12,453	9,666	9,856	9,921
	(4) CW700	16,691	13,193	13,383	13,450
	(2) CW700	11,832	9,149	9,339	9,404
	(4) CW600	15,322	12,054	12,244	12,310
	(2) CW600	11,147	8,579	8,769	8,834
	(4) CW500	14,716	11,549	11,739	11,805
	(2) CW500	10,844	8,327	8,517	8,581
	(4) CW400	13,252	10,331	10,521	10,587
	(2) CW400	10,112	7,718	7,908	7,972
	(4) CW300	12,010	9,297	9,487	9,552
	(2) CW300	9,491	7,201	7,391	7,455

† At max stroke length.

MODEL		C456D-365-120 C640D-365-120	C320D-256-144	C456D-305-144 C640D-305-144	456-365-144 640-365-144 640-427-144 912-365-144 912-427-144	C456D-305-168 C640D-305-168 C640D-365-168 C912D-305-168 C912D-365-168
Maximum stroke, in		120	144	144	144	168
Structural unbalance, lbs.		760	-930	-285	-365	-1,400
Cranks		CR2790	CR2790E	CR2790	CR2790	CR2790
ECB† (cranks only), lbs.		9,526	5,699	7,139	7,037	4,944
Total ECB, lbs.	(4) CW3000	-	-	-	36,071	29,828
	(2) CW3000	-	-	-	21,554	17,386
	(4) CW2800	-	-	-	34,879	28,806
	(2) CW2800	-	-	-	20,958	16,875
	(4) CW2700	-	-	-	34,119	28,155
	(2) CW2700	-	-	-	20,578	16,549
	(4) CW2500	-	-	-	32,374	26,660
	(2) CW2500	-	-	-	19,706	15,802
	(4) CW2300	-	-	-	30,812	25,320
	(2) CW2300	-	-	-	18,925	15,132
	(4) CW2200	-	-	-	29,982	24,609
	(2) CW2200	-	-	-	18,510	14,777
	(4) CW2000	-	-	-	27,850	22,782
	(2) CW2000	-	-	-	17,443	13,863
	(4) CW1800	32,130	24,842	26,282	26,124	21,303
	(2) CW1800	20,828	15,271	16,711	16,581	13,123
	(4) CW1600	30,000	23,038	24,478	24,326	19,761
	(2) CW1600	19,763	14,369	15,809	15,681	12,353
	(4) CW1400	27,525	20,941	22,382	22,235	17,969
	(2) CW1400	18,525	13,320	14,760	14,636	11,457
	(4) CW1200	25,173	18,950	20,390	20,250	16,268
	(2) CW1200	17,350	12,325	13,765	13,643	10,606
	(4) CW1100	24,036	17,987	19,427	19,289	15,445
	(2) CW1100	16,781	11,843	13,283	13,163	10,194
	(4) CW1000	22,900	17,025	18,465	18,330	14,622
	(2) CW1000	16,213	11,362	12,802	12,683	9,783
	(4) CW900	21,727	16,031	17,471	17,339	13,774
	(2) CW900	15,626	10,865	12,305	12,188	9,359

† At max stroke length.

MODEL		C912D-427-168	C640D-365-192 C912D-365-192	C912D-427-192	C1280D-365-192 C1280D-427-192	C1280D-427-216
Maximum stroke, in		168	192	192	192	216
Structural unbalance, lbs.		-1,255	-1,900	-2,070	-2,070	-1,970
Cranks		CR2790B	CR2790A	CR2790C	CR2790D	CR3000
ECB† (cranks only), lbs.		5,093	3,795	3,629	3,629	5,053
Total ECB, lbs.	(4) CW3000	29,976	25,932	25,766	25,766	27,327
	(2) CW3000	17,534	14,863	14,697	14,697	16,190
	(4) CW2800	28,954	25,023	24,857	24,857	26,072
	(2) CW2800	17,023	14,409	14,243	14,243	15,562
	(4) CW2700	28,302	24,443	24,277	24,277	25,481
	(2) CW2700	16,698	14,119	13,953	13,953	15,267
	(4) CW2500	26,808	23,113	22,947	22,947	24,129
	(2) CW2500	15,950	13,454	13,288	13,288	14,591
	(4) CW2300	25,469	21,922	21,756	21,756	22,920
	(2) CW2300	15,281	12,859	12,693	12,693	13,986
	(4) CW2200	24,757	21,289	21,123	21,123	22,282
	(2) CW2200	14,925	12,542	12,376	12,376	13,667
	(4) CW2000	22,930	19,664	19,498	19,498	20,684
	(2) CW2000	14,012	11,729	11,563	11,563	12,869
	(4) CW1800	21,451	18,348	18,182	18,182	19,364
	(2) CW1800	13,272	11,072	10,906	10,906	12,209
	(4) CW1600	19,910	16,977	16,811	16,811	17,993
	(2) CW1600	12,501	10,386	10,220	10,220	11,523
	(4) CW1400	18,118	15,382	15,216	15,216	16,424
	(2) CW1400	11,605	9,589	9,423	9,423	10,739
	(4) CW1200	16,416	13,869	13,703	13,703	14,926
	(2) CW1200	10,755	8,832	8,666	8,666	9,990
	(4) CW1100	15,594	13,137	12,971	12,971	14,200
	(2) CW1100	10,343	8,466	8,300	8,300	9,626
	(4) CW1000	14,771	12,405	12,239	12,239	13,473
	(2) CW1000	9,932	8,100	7,934	7,934	9,263
	(4) CW900	13,922	11,650	11,484	11,484	12,726
	(2) CW900	9,508	7,722	7,556	7,556	8,889

† At max stroke length.

MODEL		C1280D-365-240	C1280D-427-240	C1824D-427-216	C1824D-365-240	C1824D-427-240
Maximum stroke, in		240	240	216	240	240
Structural unbalance, lbs.		-3,000	-3,400	-1,983	-3,000	-3,400
Cranks		CR3000	CR3000	CR3000A	CR3000A	CR3000A
ECB† (cranks only), lbs.		3,430	2,930	4,576	2,910	2,510
Total ECB, lbs.	(4) CW3000	23,505	23,005	26,889	23,016	22,616
	(2) CW3000	13,468	12,968	15,733	12,963	12,563
	(4) CW2800	22,374	21,874	25,633	21,883	21,483
	(2) CW2800	12,902	12,402	15,104	12,397	11,997
	(4) CW2700	21,842	21,342	25,041	21,350	20,950
	(2) CW2700	12,636	12,136	14,808	12,130	11,730
	(4) CW2500	20,623	20,123	23,686	20,129	19,729
	(2) CW2500	12,026	11,526	14,131	11,520	11,120
	(4) CW2300	19,533	19,033	22,475	19,038	18,638
	(2) CW2300	11,482	10,982	13,525	10,974	10,574
	(4) CW2200	18,958	18,458	21,836	18,462	18,062
	(2) CW2200	11,194	10,694	13,206	10,686	10,286
	(4) CW2000	17,518	17,018	20,235	17,020	16,620
	(2) CW2000	10,474	9,974	12,406	9,965	9,565
	(4) CW1800	16,329	15,829	18,913	15,828	15,428
	(2) CW1800	9,879	9,379	11,744	9,369	8,969
	(4) CW1600	15,093	14,593	17,539	14,591	14,191
	(2) CW1600	9,262	8,762	11,058	8,750	8,350
	(4) CW1400	13,679	13,179	15,967	13,174	12,774
	(2) CW1400	8,554	8,054	10,272	8,042	7,642
	(4) CW1200	12,329	11,829	14,467	11,822	11,422
	(2) CW1200	7,879	7,379	9,521	7,366	6,966
	(4) CW1100	11,674	11,174	13,739	11,166	10,766
	(2) CW1100	7,552	7,052	9,157	7,038	6,638
	(4) CW1000	11,019	10,519	13,011	10,511	10,111
	(2) CW1000	7,225	6,725	8,794	6,710	6,310
	(4) CW900	10,346	9,846	12,263	9,836	9,436
	(2) CW900	6,888	6,388	8,419	6,373	5,973

† At max stroke length.





LS2

**ENHANCED
GEOMETRY (RM)**

ENHANCED GEOMETRY (RM) SPECIFICATIONS

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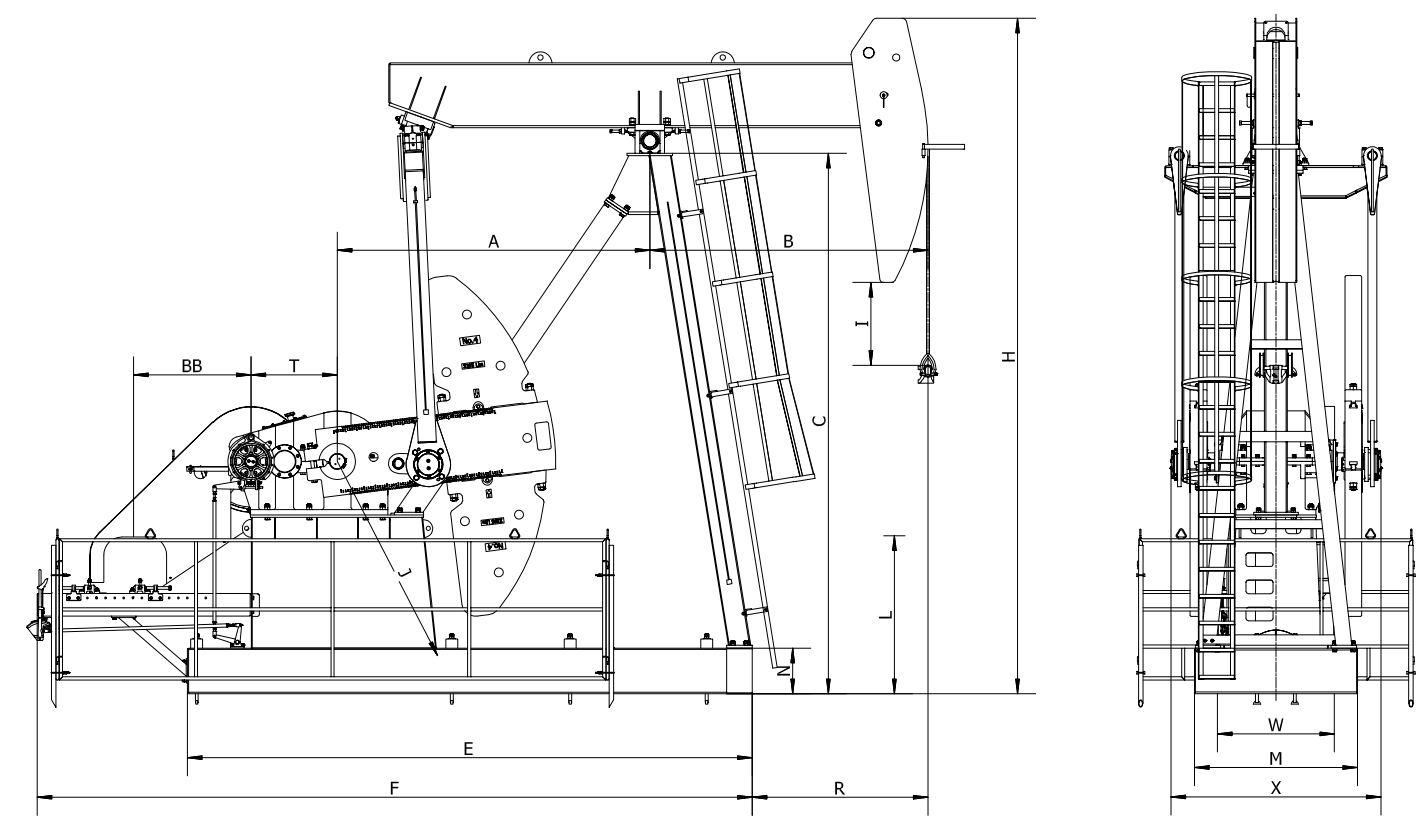
		MODEL	RM456D-365-120	RM456D-305-144
UNIT SPECIFICATIONS	Structure rating, lbs.		36,500	30,500
	Max stroke length, in.		120	144
	Balance type		Crank balanced	Crank balanced
	Direction of rotation		Clockwise	Clockwise
GEAR REDUCER	Max Torque, in-lbs.		456,000	456,000
	Gear tooth profile		Involute	Involute
	Gear ratio		28.25	28.25
	GB oil capacity, US gal.		110	110
	Lubricant		ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer	
	Sheave diameter, in.		44	44
	Sheave groove type		6C	6C
CRANK ASSEMBLY	Crank arm weight, lbs.		5,651 × 2	5,651 × 2
	Crank pin position, in.	Stroke 1	38.98	38.98
		Stroke 2	31.38	31.38
		Stroke 3	23.78	23.78
	Stroke length, in.	Stroke 1	120.21	143.95
		Stroke 2	94.17	112.77
		Stroke 3	70.16	83.98
WIRELINE	Length, in.		350	410
SU	Structural unbalance, lbs.		590	-500

MODEL		RM640D-365-144	RM640D-427-144	RM640D-365-168	RM640D-427-168
UNIT SPECIFICATIONS	Structure rating, lbs.	36,500	42,700	36,500	42,700
	Max stroke length, in.	144	144	168	168
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	Clockwise	Clockwise	Clockwise	Clockwise
GEAR REDUCER	Max Torque, in-lbs.	640,000	640,000	640,000	640,000
	Gear tooth profile	Involute	Involute	Involute	Involute
	Gear ratio	27.21	27.21	27.21	27.21
	GB oil capacity, US gal.	100	100	100	100
CRANK ASSEMBLY	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer			
	Sheave diameter, in.	50	50	50	50
	Sheave groove type	6C	6C	6C	6C
	Crank arm weight, lbs.	6,404 × 2	6,489 × 2	6,489 × 2	6,489 × 2
WIRELINE	Crank pin position, in.	Stroke 1	45.00	45.00	45.00
		Stroke 2	36.54	36.54	36.54
		Stroke 3	28.07	28.07	28.07
SU	Stroke length, in.	Stroke 1	144.02	144.02	167.81
		Stroke 2	113.79	113.79	132.57
		Stroke 3	85.93	85.93	100.13
WIRELINE	Length, in.	410	410	460	460
	Structural unbalance, lbs.	230	230	-900	-940

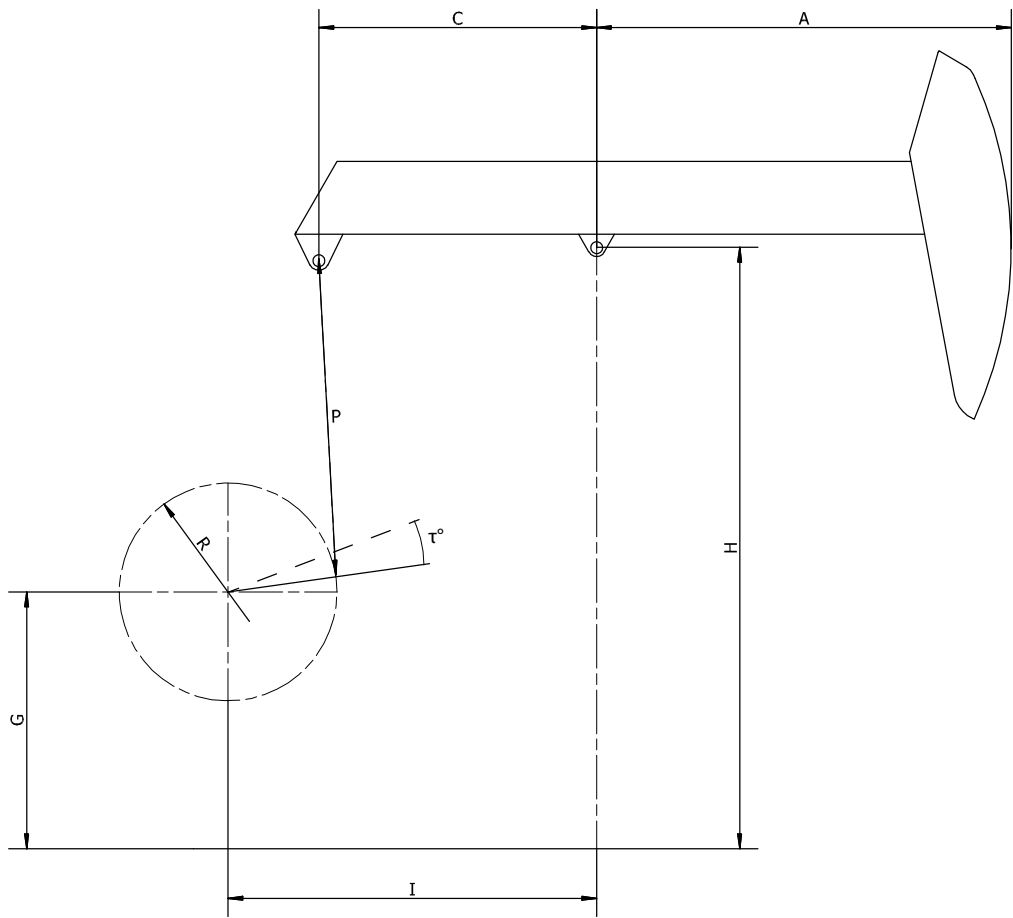
MODEL		RM912D-365-168	RM912D-427-168	RM912D-427-192	RM1280D-427-192
UNIT SPECIFICATIONS	Structure rating, lbs.	36,500	42,700	42,700	42,700
	Max stroke length, in.	168	168	192	192
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced
	Direction of rotation	Clockwise	Clockwise	Clockwise	Clockwise
GEAR REDUCER	Max Torque, in-lbs.	912,000	912,000	912,000	1,280,000
	Gear tooth profile	Involute	Involute	Involute	Involute
	Gear ratio	28.79	28.79	28.79	28.67
	GB oil capacity, US gal.	181	181	181	251
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer			
CRANK ASSEMBLY	Sheave diameter, in.	50	50	50	50
	Sheave groove type	8C	8C	8C	10C
	Crank arm weight, lbs.	6,404 × 2	6,489 × 2	6,489 × 2	6,404 × 2
	Crank pin position, in.	Stroke 1	45.00	45.00	45.00
		Stroke 2	36.54	36.54	36.54
		Stroke 3	28.07	28.07	28.07
	Stroke length, in.	Stroke 1	167.81	167.81	192.11
		Stroke 2	132.57	132.57	151.86
		Stroke 3	100.13	100.13	114.72
WIRELINE	Length, in.	460	460	508	508
SU	Structural unbalance, lbs.	-900	-940	-2,700	-2,695

MODEL	A	B	C	E	F	H	I	J	L	M	N	R	T	W	X	BB
RM456D-365-120	141.93	144.49	237.99	255.75	313.15	351.97	27.36	95.08	81.10	81.89	23.62	102.95	39.37	46.85	104.02	63.94
RM456D-305-144	141.93	173.03	237.99	255.75	313.15	372.05	26.77	95.08	57.87	81.89	23.62	131.50	39.37	46.85	104.02	63.94
RM640D-365-144	162.99	171.65	274.02	287.17	344.65	407.87	26.57	109.84	94.09	81.89	23.62	122.05	41.34	46.85	101.14	64.33
RM640D-427-144	162.99	171.65	274.02	287.17	344.65	407.87	26.57	109.84	94.09	81.89	23.62	122.05	41.34	46.85	101.14	64.33
RM640D-365-168	162.99	200.00	274.02	287.17	344.65	430.51	27.17	109.84	69.68	81.89	23.62	150.39	41.34	46.85	101.14	64.33
RM640D-427-168	162.99	200.00	274.02	287.17	344.65	430.51	27.17	109.84	69.68	81.89	23.62	150.39	41.34	46.85	101.14	64.33
RM912D-365-168	162.99	200.00	274.02	295.12	352.60	430.51	27.17	109.84	69.68	81.89	23.62	150.39	48.43	46.85	105.12	65.20
RM912D-427-168	162.99	200.00	274.02	295.12	352.60	430.51	27.17	109.84	69.68	81.89	23.62	150.39	48.43	46.85	105.12	65.20
RM912D-427-192	162.99	228.35	299.61	295.12	352.60	475.98	28.98	109.84	70.79	86.61	23.62	178.74	48.43	46.85	105.12	65.20
RM1280D-427-192	162.99	228.35	299.61	301.61	352.60	475.98	28.98	109.84	70.79	86.61	23.62	178.74	56.69	46.85	119.29	63.43

Note: All dimensions in inches.



MODEL	A, in	C, in	I, in	P, in	H, in	G, in	R1, in	R2, in	R3, in	Phase Angle (τ)°	SU, lbs	Torque Factor at (90°-τ), in		
												Stroke 1	Stroke 2	Stroke 3
RM456D-365-120	144.49	102.95	141.93	149.02	237.99	96.06	38.98	31.38	23.78	-12	590	53.58	43.58	33.34
RM456D-305-144	173.03	102.95	141.93	149.02	237.99	96.06	38.98	31.38	23.78	-12	-500	64.16	52.19	39.92
RM640D-365-144	171.65	118.11	162.99	170.98	274.02	111.02	45.00	36.54	28.07	-9	230	64.62	52.83	40.85
RM640D-427-144	171.65	118.11	162.99	170.98	274.02	111.02	45.00	36.54	28.07	-12	230	64.06	52.53	40.73
RM640D-365-168	200.00	118.11	162.99	170.98	274.02	111.02	45.00	36.54	28.07	-12	-900	74.60	61.20	47.50
RM640D-427-168	200.00	118.11	162.99	170.98	274.02	111.02	45.00	36.54	28.07	-12	-940	74.60	61.20	47.50
RM912D-365-168	200.00	118.11	162.99	170.98	274.02	111.02	45.00	36.54	28.07	-9	-900	75.29	61.56	47.60
RM912D-427-168	200.00	118.11	162.99	170.98	274.02	111.02	45.00	36.54	28.07	-12	-940	74.60	61.20	47.50
RM912D-427-192	228.35	118.11	162.99	190.95	299.61	111.02	45.00	36.54	28.07	-12	-2,700	85.37	70.03	54.33
RM1280D-427-192	228.35	118.11	162.99	190.95	299.61	111.02	45.00	36.54	28.07	-9	-2,695	86.05	70.41	54.50



MODEL	Polished Rod Capacity, lbf	Stroke Lengths, in			Wireline Hanger, in	Crank	Crank Weight, lbs.
		Stroke 1	Stroke 2	Stroke 3			
RM456D-365-120	36,500	120.21	94.17	70.16	1-3/8 × 12 centers	CRX2415-L / CRX2415-R	5651
RM456D-305-144	30,500	143.95	112.77	83.98	1-1/4 × 16 centers	CRX2415-L / CRX2415-R	5651
RM640D-365-144	36,500	144.02	113.79	85.93	1-3/8 × 16 centers	CRX2790-L / CRX2790-R	6404
RM640D-427-144	42,700	144.02	113.79	85.93	1-3/8 × 16 centers	CRX2790A-L / CRX2790A-R	6489
RM640D-365-168	36,500	167.81	132.57	100.13	1-3/8 × 16 centers	CRX2790A-L / CRX2790A-R	6489
RM640D-427-168	42,700	167.81	132.57	100.13	1-3/8 × 16 centers	CRX2790A-L / CRX2790A-R	6489
RM912D-365-168	36,500	167.81	132.57	100.13	1-3/8 × 16 centers	CRX2790-L / CRX2790-R	6404
RM912D-427-168	42,700	167.81	132.57	100.13	1-3/8 × 16 centers	CRX2790A-L / CRX2790A-R	6489
RM912D-427-192	42,700	192.11	151.86	114.72	1-3/8 × 16 centers	CRX2790A-L / CRX2790A-R	6489
RM1280D-427-192	42,700	192.11	151.86	114.72	1-3/8 × 16 centers	CRX2790B-L / CRX2790B-R	6404

MODEL		RM456D-365-120	RM456D-305-144	RM640D-365-144	RM640D-427-144	RM912D-365-168
Maximum stroke, in		120	144	144	144	168
Structural unbalance, lbs.		590	-500	230	230	-900
Cranks		CRX2415-L and CRX2415-R	CRX2415-L and CRX2415-R	CRX2790-L and CRX2790-R	CRX2790A-L and CRX2790A-R	CRX2790-L and CRX2790-R
Phase angle, °		-12	-12	-9	-12	-9
ECB† (cranks only), lbs.		9,679	7,090	10,302	10,478	7,745
Total ECB, lbs.	(4) CW2800	-	-	-	-	31,525
	(2) CW2800	-	-	-	-	19,635
	(4) CW2700	-	-	-	-	30,880
	(2) CW2700	-	-	-	-	19,312
	(4) CW2500	30,020	24,076	-	36,100	29,544
	(2) CW2500	19,850	15,583	-	23,289	18,645
	(4) CW2300	28,987	23,213	-	34,549	28,225
	(2) CW2300	19,333	15,152	-	22,513	17,985
	(4) CW2200	28,410	22,731	-	33,721	27,520
	(2) CW2200	19,045	14,911	-	22,100	17,633
	(4) CW2000	25,773	20,529	31,060	31,417	25,560
	(2) CW2000	17,726	13,810	20,681	20,947	16,653
	(4) CW1800	25,952	20,678	29,586	29,931	24,295
	(2) CW1800	17,815	13,884	19,944	20,204	16,020
	(4) CW1600	24,495	19,462	27,774	28,103	22,741
	(2) CW1600	17,087	13,276	19,038	19,291	15,243
	(4) CW1400	23,093	18,291	25,736	26,047	20,991
	(2) CW1400	16,386	12,690	18,019	18,262	14,368
	(4) CW1200	22,865	18,101	24,244	24,542	19,710
	(2) CW1200	16,272	12,596	17,273	17,510	13,728
	(4) CW1100	22,035	17,408	23,253	23,542	18,860
	(2) CW1100	15,857	12,249	16,777	17,010	13,302
	(4) CW1000	21,080	16,610	22,220	22,501	17,974
	(2) CW1000	15,379	11,850	16,261	16,489	12,859
	(4) CW900	20,150	15,834	21,176	21,447	17,078
	(2) CW900	14,915	11,462	15,739	15,963	12,411

† At max stroke length.

MODEL		RM640D-365-168	RM640D-427-168	RM912D-427-168	RM912D-427-192	RM1280D-427-192
Maximum stroke, in		168	168	168	192	192
Structural unbalance, lbs.		-900	-940	-940	-2,700	-2,695
Crank		CRX2790A-L and CRX2790A-R	CRX2790A-L and CRX2790A-R	CRX2790A-L and CRX2790A-R	CRX2790A-L and CRX2790A-R	CRX2790B-L and CRX2790B-R
Phase angle, °		-12	-12	-12	-12	-9
ECB† (cranks only), lbs.		7,900	7,892	7,892	4,990	4,869
Total ECB, lbs.	(4) CW3000	-	32,380	32,380	26,389	26,098
	(2) CW3000	-	20,136	20,136	15,689	15,484
	(4) CW2800	-	31,893	31,893	25,925	25,639
	(2) CW2800	-	19,892	19,892	15,458	15,254
	(4) CW2700	31,250	31,242	31,242	25,394	25,112
	(2) CW2700	19,575	19,567	19,567	15,192	14,990
	(4) CW2500	29,902	29,894	29,894	24,216	23,943
	(2) CW2500	18,901	18,893	18,893	14,603	14,406
	(4) CW2300	28,570	28,562	28,562	23,052	22,789
	(2) CW2300	18,235	18,227	18,227	14,021	13,829
	(4) CW2200	27,859	27,851	27,851	22,431	22,172
	(2) CW2200	17,880	17,872	17,872	13,711	13,521
	(4) CW2000	25,881	25,873	25,873	20,702	20,457
	(2) CW2000	16,890	16,882	16,882	12,846	12,663
	(4) CW1800	24,604	24,596	24,596	19,587	19,350
	(2) CW1800	16,252	16,244	16,244	12,288	12,110
	(4) CW1600	23,035	23,027	23,027	18,216	17,990
	(2) CW1600	15,467	15,459	15,459	11,603	11,430
	(4) CW1400	21,269	21,261	21,261	16,673	16,459
	(2) CW1400	14,585	14,577	14,577	10,831	10,664
	(4) CW1200	19,977	19,969	19,969	15,543	15,339
	(2) CW1200	13,938	13,930	13,930	10,267	10,104
	(4) CW1100	19,118	19,110	19,110	14,793	14,594
	(2) CW1100	13,509	13,501	13,501	9,891	9,732
	(4) CW1000	18,224	18,216	18,216	14,011	13,819
	(2) CW1000	13,062	13,054	13,054	9,501	9,344
	(4) CW900	17,319	17,311	17,311	13,221	13,035
	(2) CW900	12,610	12,602	12,602	9,106	8,952

† At max stroke length.





LS2

LOW PROFILE

**UNIT
SPECIFICATIONS**

MODEL		LP114D-173-64	LP160D-173-74	LP228D-246-86	LP320D-246-86	LP320D-256-100
Structure rating, lbs.		17,300	17,300	24,600	24,600	25,600
Max stroke length, in.		64	74	86	86	100
Balance type		Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced
Direction of rotation		Clockwise	Clockwise	Clockwise	Clockwise	Clockwise
Max Torque, in.-lbs.		114,000	160,000	228,000	320,000	320,000
Gear tooth profile		Involute	Involute	Involute	Involute	Involute
Gear ratio		29.818	28.506	28.87	28.807	28.807
GB oil capacity, US gal.		29	37	48	75	75
Lubricant		ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer				
Sheave diameter, in.		30	30	36	44	44
Sheave groove type		3C	4C	4C	5C	5C
Crank arm weight, lbs.		2,217 × 2	2,459 × 2	3,485 × 2	3,485 × 2	3,935 × 2
Crank pin position, in.	Stroke 1	32.01	37.01	42.99	42.99	50.00
	Stroke 2	26.89	31.89	35.51	35.51	42.52
	Stroke 3	21.77	26.77	28.03	28.03	35.04
Stroke length, in.	Stroke 1	64.00	74.00	85.98	85.98	100.00
	Stroke 2	53.80	63.80	71.02	71.02	85.00
	Stroke 3	43.50	53.50	56.06	56.06	70.00
Counterweight name		(4) CW500	(4) CW500	(4) CW800	(4) CW800	(4) CW800
Weight of counterweight, lb/ea.		1103	1103	1764	1764	1764
Auxiliary weight name		(8) CWAX75	(8) CWAX75	(8) CWAX200	(8) CWAX200	(8) CWAX200
Weight of auxiliary weight, lb/ea.		364	364	441	441	441

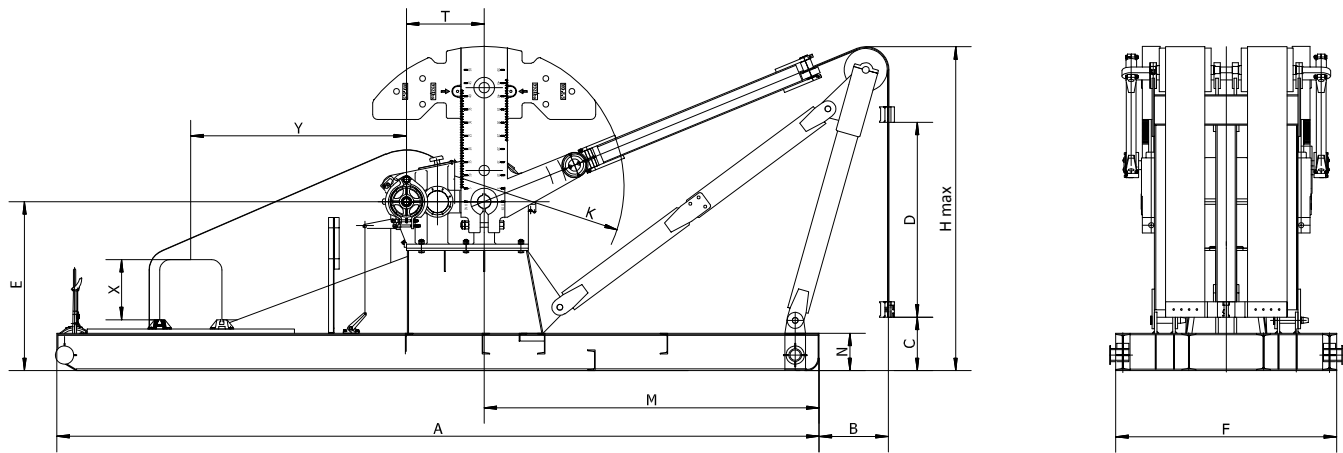
GEAR REDUCER

**CRANK
ASSEMBLY**

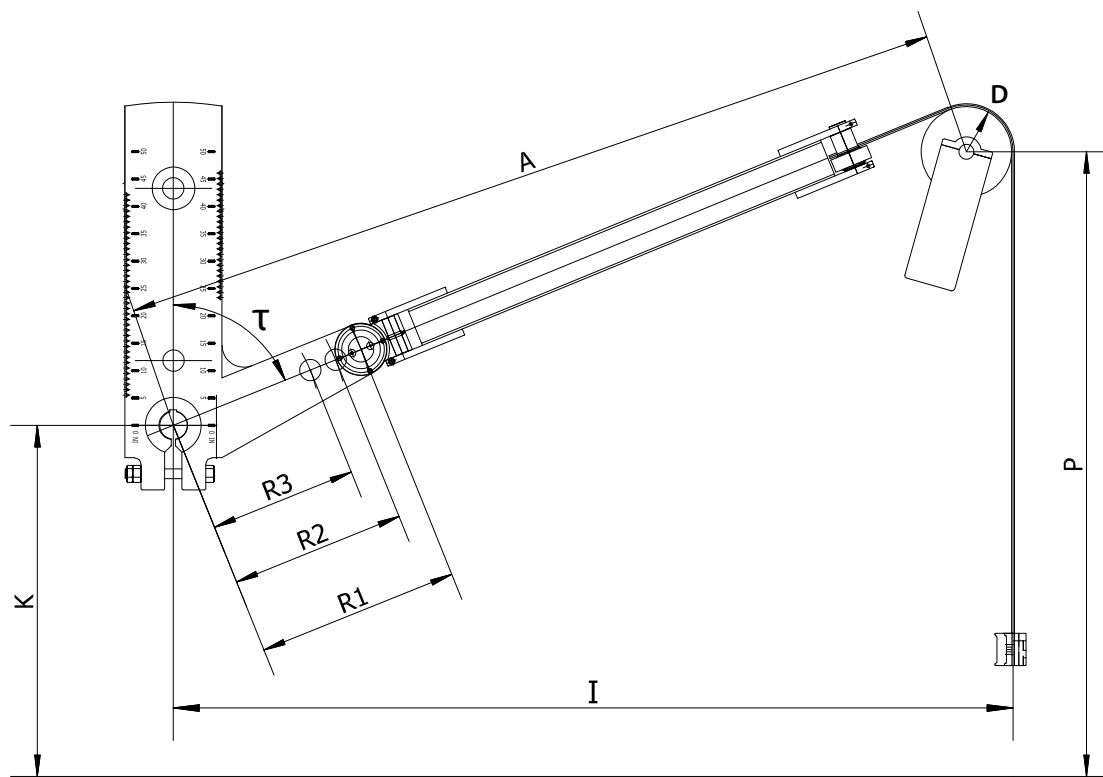
**COUNTER
WEIGHT**

MODEL	A	B	C	D	E	F	Hmax	K	M	N	X	Y	T
LP114D-173-64WL	277.56	28.35	25.67	64.02	58.19	83.86	110.87	55.12	104.06	14.17	22.88	88.78	25.59
LP160D-173-74WL	297.05	31.43	23.31	74.02	64.17	83.86	122.91	59.06	127.17	14.17	24.63	89.17	29.53
LP228D-246-86WL	323.82	37.36	30.39	83.08	70.87	88.03	138.27	68.11	136.61	14.17	29.91	99.80	33.46
LP320D-246-86WL	323.82	37.36	30.39	83.08	70.87	88.03	138.27	68.11	136.61	14.17	29.91	99.80	37.40
LP320D-256-100WL	344.29	42.05	34.53	96.98	78.98	88.03	156.30	75.98	156.54	14.17	29.92	96.46	37.40

Note: All dimensions in inches.



MODEL	D, in	P, in	I, in	A, in	K, in	R1, in	R2, in	R3, in	Phase Angle (τ)°	Torque Factor at (90°-τ), in		
										Stroke 1	Stroke 2	Stroke 3
LP114D-173-64WL	16.54	88.03	123.94	115.08	44.02	32.01	26.89	21.77	68	30.93	26.23	21.40
LP160D-173-74WL	16.54	100.08	144.93	132.99	50.00	37.01	31.89	26.77	68	36.02	31.25	26.39
LP228D-246-86WL	19.92	127.91	160.20	107.72	70.87	42.99	35.51	28.03	68	41.47	34.62	27.57
LP320D-246-86WL	19.92	127.91	160.20	107.72	70.87	42.99	35.51	28.03	68	41.47	34.62	27.57
LP320D-256-100WL	19.92	145.94	184.80	170.26	78.98	50.00	42.52	35.04	68	48.65	41.69	34.59

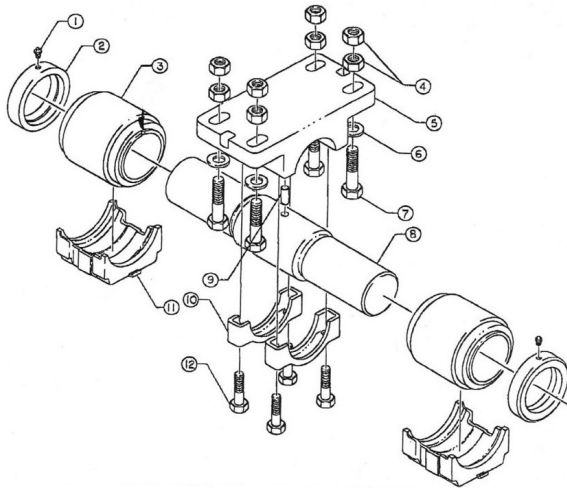


MODEL	Polished Rod Capacity, lbf	Stroke Lengths, in			Cranks	Crank Pin Assembly	Roller Assembly	Belt
		Stroke 1	Stroke 2	Stroke 3				
LP114D-173-64WL	17,300	64.00	53.80	43.50	CRLP140R/CRLP140L	CPLP100	RLP100	BLP100
LP160D-173-74WL	17,300	74.00	63.80	53.50	CRLP130R/CRLP130L	CPLP100	RLP100	BLP110
LP228D-246-86WL	24,600	85.98	71.02	56.06	CRLP120R/CRLP120L	CPLP110	RLP110	BLP120
LP320D-246-86WL	24,600	85.98	71.02	56.06	CRLP120R/CRLP120L	CPLP110	RLP110	BLP120
LP320D-256-100WL	25,600	100.00	85.00	70.00	CRLP110R/CRLP110L	CPLP110	RLP110	BLP130

COUNTERBALANCE

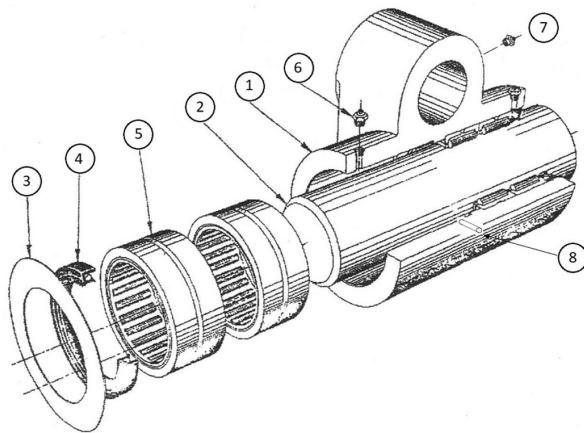
MODEL		LP114D-173-64	LP160D-173-74	LP228D-246-86	LP320D-246-86	LP320D-256-100
Maximum stroke, in		64	74	86	86	100
Cranks		CRLP140R and CRLP140L	CRLP130R and CRLP130L	CRLP120R and CRLP120L	CRLP120R and CRLP120L	CRLP110R and CRLP110L
ECB† (cranks only), lbs.		2,487	2,433	4,366	4,366	4,674
Total ECB, lbs.	(4) CW800	-	-	12,502	12,502	12,764
	(4) CW800 & (4) CWAX200	-	-	14,537	14,537	14,787
	(4) CW800 & (8) CWAX200	-	-	16,571	16,571	16,810
	(2) CW800	-	-	8,434	8,434	8,719
	(2) CW800 & (2) CWAX200	-	-	9,451	9,451	9,730
	(2) CW800 & (4) CWAX200	-	-	10,468	10,468	10,742
	(4) CW500	7,759	7,441	-	-	-
	(4) CW500 & (4) CWAX75	9,494	9,090	-	-	-
	(4) CW500 & (8) CWAX75	11,234	10,742	-	-	-
	(2) CW500	5,123	4,937	-	-	-
	(2) CW500 & (2) CWAX75	5,991	5,761	-	-	-
	(2) CW500 & (4) CWAX75	6,861	6,588	-	-	-

† At max stroke length.



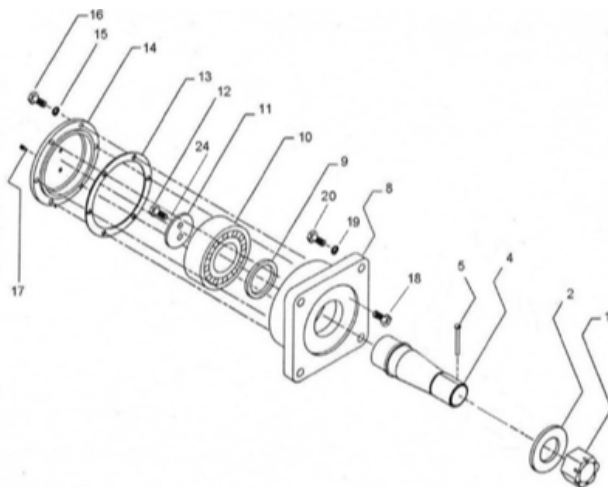
CENTER BEARING ASSEMBLY

Includes two sealed railway bearings designed for extremely high loads. The center bearing assembly is the same one used across all pumping unit model sizes from 114 to 912 for both Conventional and Enhanced Geometry pumping unit styles.



EQUALIZER BEARING ASSEMBLY

Hinge-pin-style tail bearing assembly uses needle bearings for improved shaft alignment. The same hinge-pin-style bearing assembly is utilized across several unit model sizes for both Conventional and Enhanced Geometry unit styles.



CRANK PIN BEARING ASSEMBLY

Includes oversized dual-spherical roller bearing. Assembly shaft is without key or removable sleeve. Shaft fits perfectly into tapered inserts permanently pressed into the crank arm.





**LONE
STAR**

ARTIFICIAL LIFT
SYSTEMS

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