

Conventional Pumping Units



Conventional Pumping Units

Main Specifications

		Model						
		C80D-133-54	C80D-119-64	C114D-143-64	C114D-173-64	C160D-173-100	C160D-200-74	
Basic parameters	Rated polished rod capacity, lbf	13,300	11,900	14,300	17,300	17,300	20,000	
	Designated stroke length, in	54	64	64	64	100	74	
	Running speed, rpm	20	20	20	20	15	15	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	80,000	80,000	114,000	114,000	160,000	160,000	
	Model	80D	80D	114D	114D	160D	160D	
	Gear type	Involute	Involute	Involute	Involute	Involute	Involute	
	Gear ratio	31.747	31.747	29.818	29.818	28.506	28.506	
	Center range, in	21.65	21.65	25.59	25.59	29.53	29.53	
	Center height, in	13.78	13.78	16.73	16.73	17.72	17.72	
	Oil storage quantity, galUS	16	16	29	29	37	37	
	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	
Balance assembly	Weight of crank, lbm	827 × 2	827 × 2	1,368 × 2	1,655 × 2	2,022 × 2	2,022 × 2	
	Crank pin bore position, in	Stroke 1	24.02	24.02	26.97	31.89	37.01	37.01
		Stroke 2	19.29	19.29	21.46	26.38	31.50	31.50
		Stroke 3	14.56	14.56	15.94	20.87	25.98	25.98
	Stroke length, in	Stroke 1	55.62	64.88	64.96	65.89	102.60	76.44
		Stroke 2	44.19	51.56	51.04	53.88	85.33	64.42
Stroke 3		33.10	38.62	37.59	42.27	70.79	52.74	
Wireline	Type	22, 6 × 25F EIPS	22, 6 × 25F EIPS	26, 6 × 25F EIPS	26, 6 × 25F EIPS	28, 6 × 25F EIPS	28, 6 × 25F EIPS	
	Length, in	187	205	218.5	245	320	270	
Other	Structural unbalance, lbf	260	60	290	500	–220	700	
	Overall dimensions length × width × height, in	TH base	230 × 87 × 164	242 × 87 × 169	–	–	338 × 110 × 260	–
		TL base	–	–	–	–	–	–
		WL base	295 × 87 × 164	–	318 × 104 × 209	327 × 104 × 211	–	364 × 110 × 247

Continued on next page

Conventional Pumping Units

Main Specifications

		Model					
		C228D-213-86	C228D-246-86	C228D-213-100	C228D-173-120	C228D-256-120	
Basic parameters	Rated polished rod capacity, lbf	21,300	24,600	21,300	17,300	25,600	
	Designated stroke length, in	86	86	100	120	120	
	Running speed, rpm	15	15	15	15	15	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	228,000	228,000	228,000	228,000	228,000	
	Model	228D	228D	228D	228D	228D	
	Gear type	Involute	Involute	Involute	Involute	Involute	
	Gear ratio	28.87	28.87	28.87	28.87	28.87	
	Center range, in	33.46	33.46	33.46	33.46	33.46	
	Center height, in	19.69	19.69	19.69	19.69	19.69	
	Oil storage quantity, galUS	48	48	48	48	48	
	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	
Balance assembly	Weight of crank, lbm	1,979 × 2	3,106 × 2	1,979 × 2	3,106 × 2	3,106 × 2	
	Crank pin bore position, in	Stroke 1	37.01	42.01	37.01	42.01	42.01
		Stroke 2	31.50	35.12	31.50	35.12	35.12
		Stroke 3	25.98	28.23	25.98	28.23	28.23
	Stroke length, in	Stroke 1	88.34	86.59	102.60	121.00	121.00
		Stroke 2	74.45	71.65	85.33	100.12	100.12
Stroke 3		60.95	57.16	70.79	79.84	79.84	
Wireline	Type	28, 6 × 25F EIPS	28, 6 × 25F EIPS	28, 6 × 25F EIPS	28, 6 × 25F EIPS	28, 6 × 25F EIPS	
	Length, in	295	295	320	360	360	
Other	Structural unbalance, lbf	120	1,069	-220	50	50	
	Overall dimensions length × width × height, in	TH base	324 × 119 × 252	365 × 119 × 287	360 × 119 × 260	393 × 119 × 305	409 × 119 × 305
		TL base	—	—	—	—	—
		WL base	379 × 119 × 252	—	—	—	—

Continued on next page

Conventional Pumping Units

Main Specifications

		Model				
		C320D-305-100	C320D-256-120	C320D-305-120	C320D-256-144	
Basic parameters	Rated polished rod capacity, lbf	30,500	25,600	30,500	25,600	
	Designated stroke length, in	100	120	120	144	
	Running speed, rpm	15	15	15	12	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	320,000	320,000	320,000	320,000	
	Model	320D	320D	320D	320D	
	Gear type	Involute	Involute	Involute	Involute	
	Gear ratio	28.807	28.807	28.807	28.807	
	Center range, in	37.40	37.40	37.40	37.40	
	Center height, in	23.23	23.23	23.23	23.23	
	Oil storage quantity, galUS	75	75	75	75	
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant oil in summer				
	Sheave diameter, in	44	44	44	44	
	Sheave groove type	5C	5C	5C	5C	
Balance assembly	Weight of crank, lbm	3,106 × 2	3,106 × 2	3,106 × 2	4,270 × 2	
	Crank pin bore position, in	Stroke 1	42.01	42.01	42.01	47.09
		Stroke 2	35.12	35.12	35.12	39.49
		Stroke 3	28.23	28.23	28.23	31.89
	Stroke length, in	Stroke 1	100.75	121.00	121.00	146.12
		Stroke 2	83.34	100.12	100.12	121.16
Stroke 3		66.46	79.84	79.84	97.01	
Wireline	Type	32, 6 × 25F EIPS	28, 6 × 25F EIPS	32, 6 × 25F EIPS	32, 6 × 25F EIPS	
	Length, in	320	360	360	410	
Other	Structural unbalance, lbf	755	-70	120	-930	
	Overall dimensions length × width × height, in	TH base	387 × 119 × 295	413 × 119 × 305	413 × 119 × 306	439 × 119 × 345
		TL base	435 × 119 × 295	—	—	—
		WL base	—	—	—	—

Continued on next page

Conventional Pumping Units

Main Specifications

		Model					
		C456D-305-120	C456D-365-120	C456D-305-144	C456D-365-144	C456D-305-168	
Basic parameters	Rated polished rod capacity, lbf	30,500	36,500	30,500	36,500	30,500	
	Designated stroke length, in	120	120	144	144	168	
	Running speed, rpm	15	15	12	12	12	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	456,000	456,000	456,000	456,000	456,000	
	Model	456D	456D	456D	456D	456D	
	Gear type	Involute	Involute	Involute	Involute	Involute	
	Gear ratio	28.25	28.25	28.25	28.25	28.25	
	Center range, in	39.37	39.37	39.37	39.37	39.37	
	Center height, in	25.59	25.59	25.59	25.59	25.59	
	Oil storage quantity, galUS	110	110	110	110	110	
	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	
Balance assembly	Weight of crank, lbm	3,106 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	
	Crank pin bore 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	146.12	145.43	169.70
		Stroke 2	100.17	101.91	121.16	120.68	140.82
Stroke 3		79.88	81.66	97.01	96.70	112.83	
Wireline	Type	32, 6 × 25F EIPS	34, 6 × 25F EIPS	32, 6 × 25F EIPS	34, 6 × 25F EIPS	32, 6 × 25F EIPS	
	Length, in	360	360	410	410	460	
Other	Structural unbalance, lbf	180	760	-285	-365	-1,400	
	Overall dimensions length × width × height, in	TH base	431 × 139 × 308	437 × 139 × 339	465 × 139 × 345	465 × 139 × 350	495 × 139 × 363
		TL base	494 × 139 × 308	504 × 139 × 339	—	—	—
		WL base	—	—	—	—	—

Continued on next page

Conventional Pumping Units

Main Specifications

		Model					
		C640D-305-120	C640D-365-120	C640D-305-144	C640D-365-144	C640D-427-144	
Basic parameters	Rated polished rod capacity, lbf	30,500	36,500	30,500	36,500	42,700	
	Designated stroke length, in	120	120	144	144	144	
	Running speed, rpm	15	15	12	12	12	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	640,000	640,000	640,000	640,000	640,000	
	Model	640D	640D	640D	640D	640D	
	Gear type	Involute	Involute	Involute	Involute	Involute	
	Gear ratio	27.21	27.21	27.21	27.21	27.21	
	Center range, in	41.34	41.34	41.34	41.34	41.34	
	Center height, in	25.98	25.98	25.98	25.98	25.98	
	Oil storage quantity, galUS	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	
Balance assembly	Weight of crank, lbm	3,106 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	
	Crank pin bore 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	Type	32, 6 × 25F EIPS	34, 6 × 25F EIPS	32, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	
	Length, in	360	360	410	410	410	
Other	Structural unbalance, lbf	180	750	-350	-400	-400	
	Overall dimensions length × width × height, in	TH base	433 × 139 × 308	439 × 139 × 339	467 × 139 × 345	467 × 139 × 350	467 × 139 × 350
		TL base	–	–	–	534 × 139 × 350	–
		WL base	–	–	–	–	–

Continued on next page

Conventional Pumping Units

Main Specifications

		Model					
		C640D-305-168	C640D-365-168	C640D-365-192	C912D-365-144	C912D-427-144	
Basic parameters	Rated polished rod capacity, lbf	30,500	36,500	36,500	36,500	42,700	
	Designated stroke length, in	168	168	192	144	144	
	Running speed, rpm	12	12	10	12	12	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	640,000	640,000	640,000	912,000	912,000	
	Model	640D	640D	640D	912D	912D	
	Gear type	Involute	Involute	Involute	Involute	Involute	
	Gear ratio	27.21	27.21	27.21	28.79	28.79	
	Center range, in	41.34	41.34	41.34	48.43	48.43	
	Center height, in	25.98	25.98	25.98	30.91	30.91	
	Oil storage quantity, galUS	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	
	Sheave groove type	6C	6C	6C	8C	8C	
Balance assembly	Weight of crank, lbm	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	
	Crank pin bore position, in	Stroke 1	47.09	47.09	52.95	47.09	47.09
		Stroke 2	39.49	39.49	45.35	39.49	39.49
		Stroke 3	31.89	31.89	37.76	31.89	31.89
		Stroke 4	–	–	30.16	–	–
	Stroke length, in	Stroke 1	169.70	169.70	192.56	145.43	145.43
		Stroke 2	140.82	140.82	162.89	120.68	120.68
		Stroke 3	112.83	112.83	134.33	96.70	96.70
Stroke 4		–	–	106.53	–	–	
Wireline	Type	32, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	
	Length, in	460	460	500	410	410	
Other	Structural unbalance, lbf	–1,400	–1,400	–1,700	–365	–365	
	Overall dimensions length × width × height, in	TH base	497 × 139 × 363	497 × 139 × 363	507 × 139 × 395	475 × 139 × 350	475 × 139 × 350
		TL base	–	560 × 139 × 363	–	–	–
		WL base	–	–	–	–	–

Continued on next page

Conventional Pumping Units

Main Specifications

		Model					
		C912D-305-168	C912D-365-168	C912D-427-168	C912D-365-192	C912D-427-192	
Basic parameters	Rated polished rod capacity, lbf	30,500	36,500	42,700	36,500	42,700	
	Designated stroke length, in	168	168	168	192	192	
	Running speed, rpm	12	12	12	10	10	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	912,000	912,000	912,000	912,000	912,000	
	Model	912D	912D	912D	912D	912D	
	Gear type	Involute	Involute	Involute	Involute	Involute	
	Gear ratio	28.79	28.79	28.79	28.79	28.79	
	Center range, in	48.43	48.43	48.43	48.43	48.43	
	Center height, in	30.91	30.91	30.91	30.91	30.91	
	Oil storage quantity, galUS	181	181	181	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	
	Sheave groove type	8C	8C	8C	8C	8C	
Balance assembly	Weight of crank, lbm	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	4,699 × 2	
	Crank pin bore position, in	Stroke 1	47.09	47.09	47.09	52.95	52.95
		Stroke 2	39.49	39.49	38.62	45.35	44.49
		Stroke 3	31.89	31.89	30.16	37.76	36.02
		Stroke 4	–	–	–	30.16	27.56
	Stroke length, in	Stroke 1	169.70	169.70	169.70	192.56	192.56
		Stroke 2	140.82	140.82	137.59	162.89	159.59
		Stroke 3	112.83	112.83	106.55	134.33	127.93
Stroke 4		–	–	–	106.53	97.16	
Wireline	Type	32, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	
	Length, in	460	460	460	500	512	
Other	Structural unbalance, lbf	–1,400	–1,400	–1,255	–1,900	–2,070	
	Overall dimensions length × width × height, in	TH base	505 × 139 × 363	505 × 139 × 363	505 × 139 × 365	515 × 139 × 395	515 × 139 × 397
		TL base	–	572 × 139 × 363	–	614 × 139 × 395	–
		WL base	–	–	–	–	–

Continued on next page



Conventional Pumping Units

Main Specifications

		Model					
		C1280D-365-192	C1280D-427-192	C1280D-427-216	C1280D-365-240	C1280D-427-240	
Basic parameters	Rated polished rod capacity, lbf	36,500	42,700	42,700	36,500	42,700	
	Designated stroke length, in	192	192	216	240	240	
	Running speed, rpm	10	10	8	8	8	
	Balance type	Crank balanced	Crank balanced	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	1,280,000	1,280,000	1,280,000	1,280,000	1,280,000	
	Model	1280D	1280D	1280D	1280D	1280D	
	Gear type	Involute	Involute	Involute	Involute	Involute	
	Gear ratio	28.67	28.67	28.67	28.67	28.67	
	Center range, in	56.69	56.69	56.69	56.69	56.69	
	Center height, in	34.25	34.25	34.25	34.25	34.25	
	Oil storage quantity, galUS	251	251	251	251	251	
	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	
Balance assembly	Weight of crank, lbm	4,699 × 2	4,699 × 2	5,971 × 2	5,971 × 2	5,971 × 2	
	Crank pin bore position, in	Stroke 1	52.95	52.95	63.78	63.78	63.78
		Stroke 2	44.49	44.49	55.31	55.31	55.31
		Stroke 3	36.02	36.02	46.85	46.85	46.85
		Stroke 4	27.56	27.56	38.39	38.39	38.39
	Stroke length, in	Stroke 1	192.56	192.56	216.48	240.26	240.26
		Stroke 2	159.59	159.59	184.99	205.31	205.31
		Stroke 3	127.93	127.93	154.92	171.93	171.93
Stroke 4		97.16	97.16	125.83	139.65	139.65	
Wireline	Type	34, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	34, 6 × 25F EIPS	
	Length, in	512	512	565	602	602	
Other	Structural unbalance, lbf	-2,070	-2,070	-1,970	-2,900	-3,400	
	Overall dimensions length × width × height, in	TH base	521 × 148 × 394	521 × 148 × 397	537 × 148 × 455	557 × 148 × 466	557 × 148 × 466
		TL base	—	—	—	—	—
		WL base	—	—	—	—	—

Continued on next page

Conventional Pumping Units

Main Specifications

		Model			
		C1824D-427-216	C1824D-365-240	C1824D-427-240	
Basic parameters	Rated polished rod capacity, lbf	42,700	36,500	42,700	
	Designated stroke length, in	216	240	240	
	Running speed, rpm	8	8	8	
	Balance type	Crank balanced	Crank balanced	Crank balanced	
	Crank direction	Clockwise or counterclockwise	Clockwise or counterclockwise	Clockwise or counterclockwise	
Gear reducer	Rated torque, lbf.in	1,824,000	1,824,000	1,824,000	
	Model	1824D	1824D	1824D	
	Gear type	Involute	Involute	Involute	
	Gear ratio	28.89	28.89	28.89	
	Center range, in	57.09	57.09	57.09	
	Center height, in	34.25	34.25	34.25	
	Oil storage quantity, galUS	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	
	Sheave groove type	12C	12C	12C	
Balance assembly	Weight of crank, lbm	5,343 × 2			
	Crank pin bore position, in	Stroke 1	63.78	63.78	63.78
		Stroke 2	55.31	55.31	55.31
		Stroke 3	46.85	46.85	46.85
		Stroke 4	38.39	38.39	38.39
	Stroke length, in	Stroke 1	216.15	240.26	240.26
		Stroke 2	184.72	205.31	205.31
		Stroke 3	154.70	171.93	171.93
Stroke 4		125.66	139.65	139.65	
Wireline	Type	34, 6 × 25F EIPS			
	Length, in	565	602	602	
Other	Structural unbalance, lbf	-1,983	-3,000	-3,400	
	Overall dimensions length × width × height, in	TH base	488 × 146 × 455	511.06 × 146 × 466	511.06 × 146 × 466
		TL base	–	–	–
		WL base	–	–	–



Conventional Pumping Units

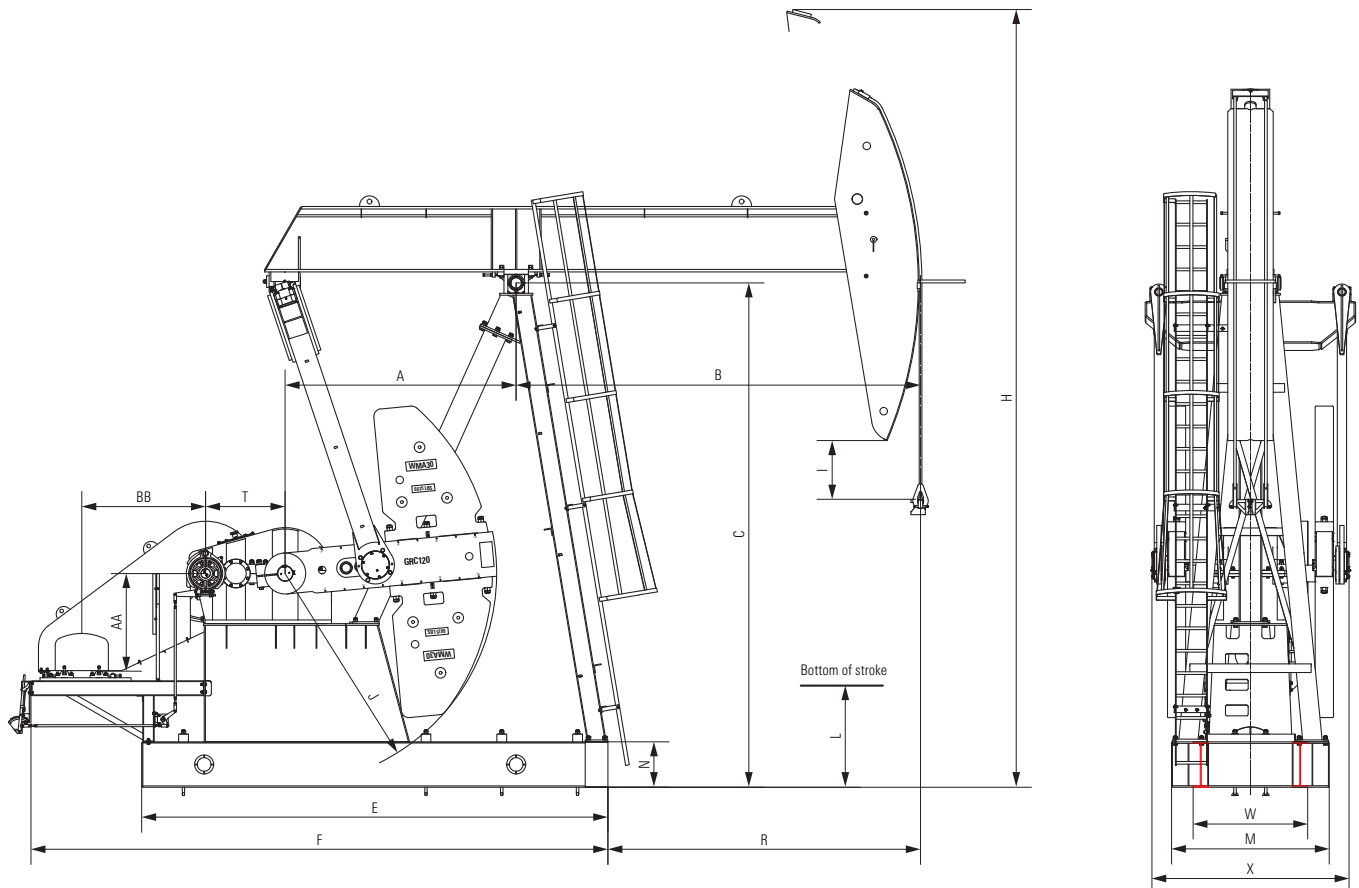
Dimensional Data

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 stated in inches

† Not applicable

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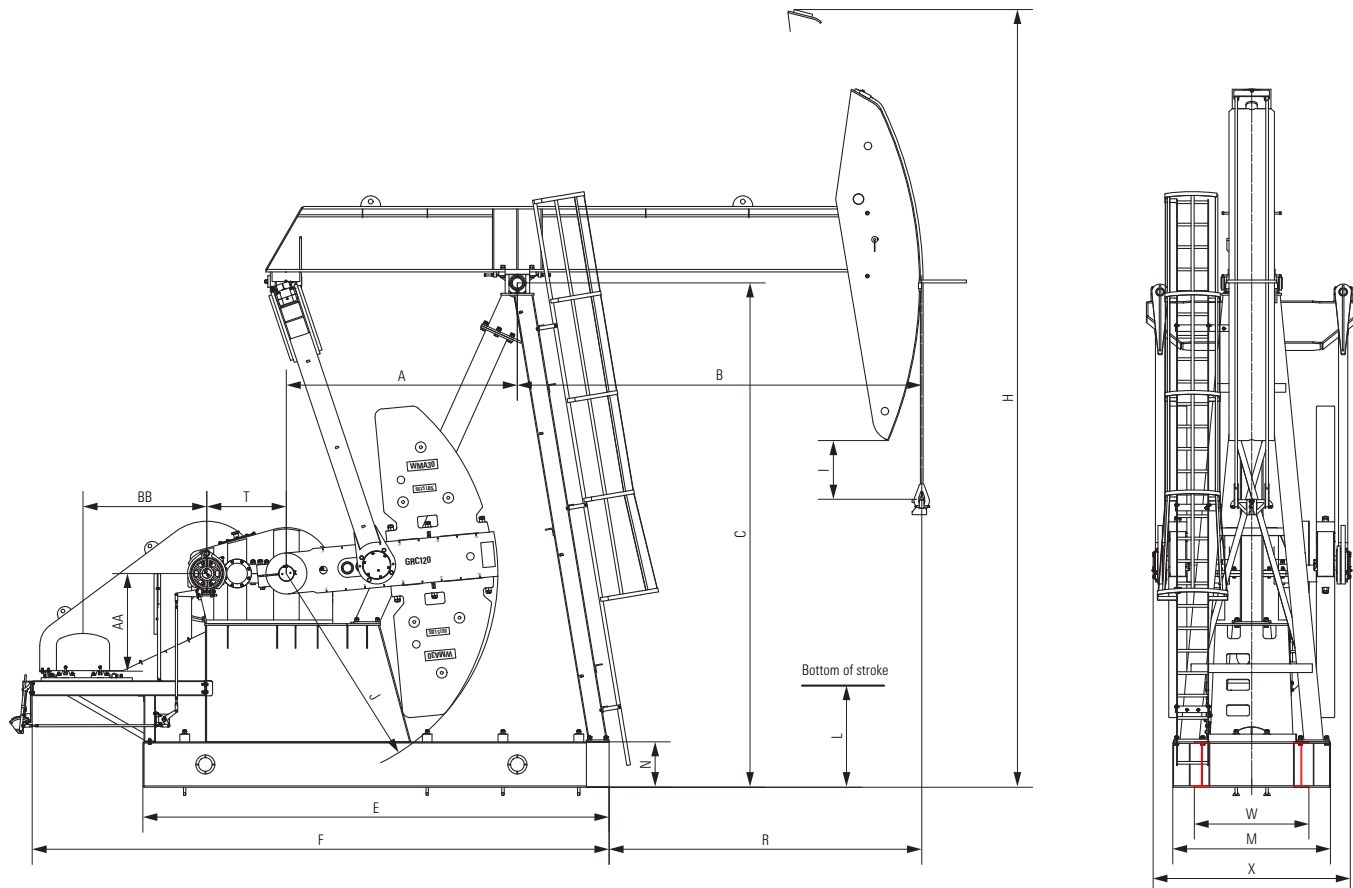


Conventional Pumping Units

Dimensional Data

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 stated in inches

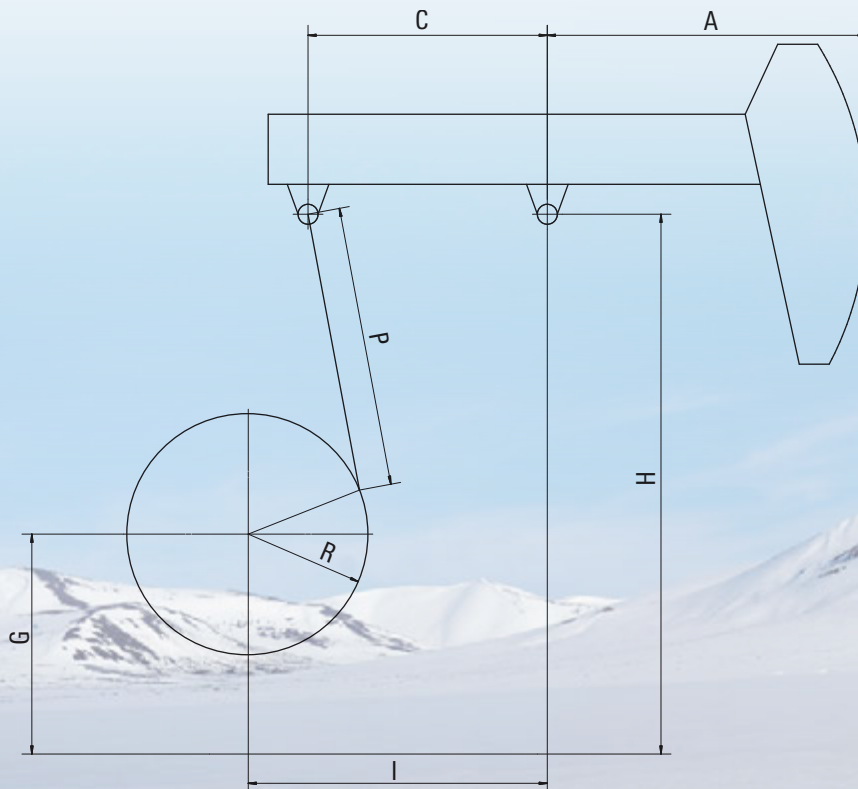


Conventional Pumping Units

API Geometry Dimensions and Torque Factors

Model	A, in	C, in	I, in	P, in	H, in	G, in	R1, in	R2, in	R3, in	R4, in	Structural Unbalance, lbf	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	–

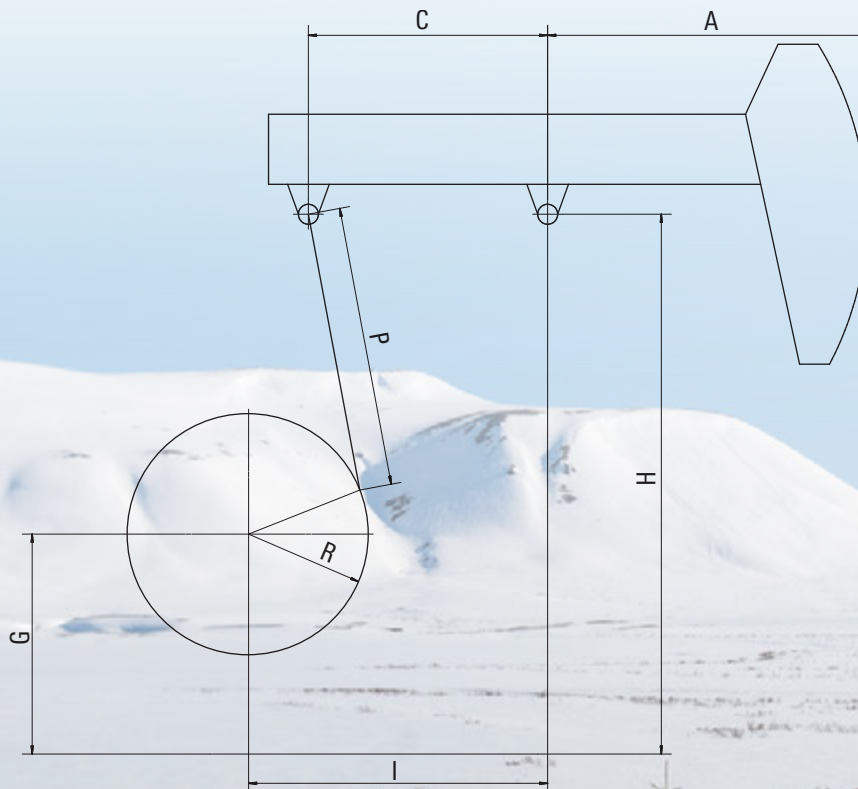
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Conventional Pumping Units

API Geometry Dimensions and Torque Factors

Model	A, in	C, in	I, in	P, in	H, in	G, in	R1, in	R2, in	R3, in	R4, in	Structural Unbalance, lbf	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



Conventional Pumping Units

Structural Data

Model	Polished Rod Capacity, lbf	Stroke Lengths, in				Wireline Hanger, in	Crank	Crank Pin Bearing	Equalizer Bearing	Center Bearing
		Stroke 1	Stroke 2	Stroke 3	Stroke 4					
C80D-133-54	13,300	55.62	44.19	33.10	—	7/8 × 9 centers	GRC180	WAS150	EAS150	SAS120
C80D-119-64	11,900	64.88	51.56	38.62	—	7/8 × 9 centers	GRC180	WAS150	EAS150	SAS120
C114D-143-64	14,300	64.96	51.04	37.59	—	1 × 9 centers	GRC200	WAS140	EAS140	SAS110
C114D-173-64	17,300	65.89	53.88	42.27	—	1 × 9 centers	GRC170	WAS140	EAS140	SAS110
C160D-200-74	20,000	76.44	64.42	52.74	—	1 1/8 × 9 centers	GRC110	WAS140	EAS130	SAS110
C160D-173-100	17,300	102.60	85.33	70.79	—	1 1/8 × 12 centers	GRC110	WAS140	EAS130	SAS110
C228D-213-86	21,300	88.34	74.45	60.95	—	1 1/8 × 12 centers	GRC190	WAS160	EAS130	SAS110
C228D-246-86	24,600	86.59	71.65	57.16	—	1 1/8 × 12 centers	GRC130	WAS130	EAS130	SAS110
C228D-213-100	21,300	102.60	85.33	70.79	—	1 1/8 × 12 centers	GRC190	WAS160	EAS130	SAS110
C228D-173-120	17,300	121.00	100.12	79.84	—	1 1/8 × 12 centers	GRC130	WAS130	EAS120	SAS110
C228D-256-120	25,600	121.00	100.12	79.84	—	1 1/8 × 12 centers	GRC130	WAS120	EAS120	SAS110
C320D-305-100	30,500	100.75	83.34	66.46	—	1 1/4 × 12 centers	GRC130	WAS120	EAS120	SAS110
C320D-256-120	25,600	121.00	100.12	79.84	—	1 1/8 × 12 centers	GRC130	WAS120	EAS120	SAS110
C320D-305-120	30,500	121.00	100.12	79.84	—	1 1/4 × 12 centers	GRC130	WAS120	EAS110	SAS110
C320D-256-144	25,600	146.12	121.16	97.01	—	1 1/4 × 16 centers	GRC120E	WAS120	EAS110	SAS110
C456D-305-120	30,500	121.12	100.17	79.88	—	1 1/4 × 12 centers	GRC130A	WAS120	EAS110	SAS110
C456D-365-120	36,500	122.82	101.91	81.66	—	1 3/8 × 12 centers	GRC120	WAS110	EAS110	SAS110
C456D-305-144	30,500	146.12	121.16	97.01	—	1 1/4 × 16 centers	GRC120	WAS110	EAS110	SAS110
C456D-365-144	36,500	145.43	120.68	96.70	—	1 3/8 × 16 centers	GRC120	WAS110	EAS110	SAS110
C456D-305-168	30,500	169.70	140.82	112.83	—	1 1/4 × 16 centers	GRC120	WAS110	EAS110	SAS110
C640D-305-120	30,500	121.12	100.17	79.88	—	1 1/4 × 12 centers	GRC130A	WAS120	EAS110	SAS110
C640D-365-120	36,500	122.82	101.91	81.66	—	1 3/8 × 12 centers	GRC120	WAS110	EAS110	SAS110
C640D-305-144	30,500	146.16	121.16	97.02	—	1 1/4 × 16 centers	GRC120	WAS110	EAS110	SAS110
C640D-365-144	36,500	145.43	120.68	96.70	—	1 3/8 × 16 centers	GRC120	WAS110	EAS110	SAS110
C640D-427-144	42,700	145.43	120.68	96.70	—	1 3/8 × 16 centers	GRC120	WAS110	EAS110	SAS110
C640D-305-168	30,500	169.70	140.82	112.83	—	1 1/4 × 16 centers	GRC120	WAS110	EAS110	SAS110
C640D-365-168	36,500	169.70	140.82	112.83	—	1 3/8 × 16 centers	GRC120	WAS110	EAS110	SAS110
C640D-365-192	36,500	192.56	162.89	134.33	106.53	1 3/8 × 16 centers	GRC120A	WAS110	EAS110	SAS110
C912D-365-144	36,500	145.43	120.68	96.70	—	1 3/8 × 16 centers	GRC120	WAS110	EAS110	SAS110
C912D-427-144	42,700	145.43	120.68	96.70	—	1 3/8 × 16 centers	GRC120	WAS110	EAS110	SAS110
C912D-305-168	30,500	169.70	140.82	112.83	—	1 1/4 × 16 centers	GRC120	WAS110	EAS110	SAS110
C912D-365-168	36,500	169.70	140.82	112.83	—	1 3/8 × 16 centers	GRC120	WAS110	EAS110	SAS110
C912D-427-168	42,700	169.70	137.59	106.55	—	1 3/8 × 16 centers	GRC120B	WAS100	EAS100	SAS100
C912D-365-192	36,500	192.56	162.89	134.33	106.53	1 3/8 × 16 centers	GRC120A	WAS110	EAS110	SAS110
C912D-427-192	42,700	192.56	159.59	127.93	97.16	1 3/8 × 16 centers	GRC120C	WAS100	EAS100	SAS100
C1280D-365-192	36,500	192.56	159.59	127.93	97.16	1 3/8 × 16 centers	GRC120D	WAS100	EAS100	SAS100
C1280D-427-192	42,700	192.56	159.59	127.93	97.16	1 3/8 × 16 centers	GRC120D	WAS100	EAS100	SAS100
C1280D-427-216	42,700	216.48	184.99	154.92	125.83	1 3/8 × 16 centers	GRC140	WAS100	EAS100	SAS100
C1280D-365-240	36,500	240.26	205.31	171.93	139.65	1 3/8 × 16 centers	GRC140	WAS100	EAS100	SAS100
C1280D-427-240	42,700	240.26	205.31	171.93	139.65	1 3/8 × 16 centers	GRC140	WAS100	EAS100	SAS100
C1824D-427-216	42,700	216.15	184.72	154.70	125.66	1 3/8 × 16 centers	CA140A	WAS100A	EAS100	SAS100
C1824D-365-240	36,500	239.89	205.01	171.70	139.47	1 3/8 × 16 centers	CA140A	WAS100	EAS100	SAS100
C1824D-427-240	42,700	239.89	205.01	171.70	139.47	1 3/8 × 16 centers	CA140A	WAS100	EAS100	SAS100

Conventional Pumping Units

Counterbalance Data

		Model		
		C80D-133-54	C80D-119-64	C114D-143-64
Maximum stroke, in		54	64	64
Structural unbalance, lbf		260	60	290
Cranks		GRC180	GRC180	GRC200
ECB [†] (cranks only), lbf		1,823	1,399	2,977
Total ECB, lbf	4 × WMA04A + 8 × WAX01	–	–	10,027
	2 × WMA04A + 4 × WAX01	–	–	6,502
	4 × WMA04A + 4 × WAX01	–	–	8,944
	2 × WMA04A + 2 × WAX01	–	–	5,961
	4 × WMA04A	6,553	5,454	7,853
	2 × WMA04A	4,188	3,426	5,415
	4 × WMA04	6,191	5,143	7,451
	2 × WMA04	4,007	3,271	5,214
	4 × WMA03A	5,775	4,786	7,007
	2 × WMA03A	3,799	3,093	4,992

[†] Effective counterbalance

		Model		
		C114D-173-64	C160D-200-74	C160D-173-100
Maximum stroke, in		64	74	100
Structural unbalance, lbf		500	700	–220
Cranks		GRC170	GRC110	GRC110
ECB [†] (cranks only), lbf		4,104	4,946	2,945
Total ECB, lbf	4 × WMA12	–	–	–
	2 × WMA12	–	–	–
	4 × WMA11	–	–	–
	2 × WMA11	–	–	–
	4 × WMA10	–	–	–
	2 × WMA10	–	–	–
	4 × WMA09	–	–	–
	2 × WMA09	–	–	–
	4 × WMA08	15,032	16,254	11,374
	2 × WMA08	9,568	10,600	7,160
	4 × WMA07	13,859	15,007	10,444
	2 × WMA07	8,982	9,976	6,695
	4 × WMA06	12,497	13,596	9,393
	2 × WMA06	8,300	9,271	6,169
	4 × WMA05A	11,934	12,993	8,943
	2 × WMA05A	8,019	8,969	5,944
	4 × WMA05	11,359	12,379	8,486
	2 × WMA05	7,732	8,663	5,715
	4 × WMA04A	10,466	11,491	7,824
	2 × WMA04A	7,285	8,219	5,384
	4 × WMA04	9,900	10,885	7,372
	2 × WMA04	7,002	7,916	5,158
	4 × WMA03A	9,287	10,239	6,890
	2 × WMA03A	6,695	7,592	4,918

[†] Effective counterbalance

Continued on next page

Conventional Pumping Units

Counterbalance Data

		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, lbf		120	1,069	-220	50	50
Cranks		GRC190	GRC130	GRC190	GRC130	GRC130
ECB† (cranks only), lbf		3,752	8,262	2,908	5,217	5,224
Total ECB, lbf	4 × WMA12	16,585	26,617	13,960	18,394	18,401
	2 × WMA12	10,169	17,439	8,434	11,805	11,812
	4 × WMA11	15,910	25,323	13,379	17,465	17,472
	2 × WMA11	9,831	16,792	8,143	11,341	11,348
	4 × WMA10	14,870	24,031	12,483	16,538	16,545
	2 × WMA10	9,311	16,147	7,696	10,877	10,884
	4 × WMA09	14,228	22,687	11,930	15,572	15,579
	2 × WMA09	8,990	15,474	7,419	10,395	10,402
	4 × WMA08	13,524	20,972	11,324	14,341	14,348
	2 × WMA08	8,638	14,617	7,116	9,779	9,786
	4 × WMA07	12,446	19,530	10,396	13,306	13,313
	2 × WMA07	8,099	13,896	6,652	9,262	9,269
	4 × WMA06	11,227	17,943	9,346	12,167	12,174
	2 × WMA06	7,490	13,103	6,127	8,692	8,699
	4 × WMA05A	10,706	17,240	8,897	11,662	11,669
	2 × WMA05A	7,229	12,751	5,902	8,440	8,447
	4 × WMA05	10,176	16,528	8,441	11,151	11,158
	2 × WMA05	6,964	12,395	5,674	8,184	8,191
	4 × WMA04A	9,380	15,543	7,755	10,444	10,451
	2 × WMA04A	6,566	11,903	5,331	7,831	7,838
4 × WMA04	8,859	14,841	7,307	9,940	9,947	
2 × WMA04	6,306	11,551	5,107	7,578	7,585	
4 × WMA03A	8,304	14,103	6,828	9,410	9,417	
2 × WMA03A	6,028	11,183	4,868	7,314	7,321	

† Effective counterbalance

Continued on next page

Conventional Pumping Units

Counterbalance Data

		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, lbf		755	25	120	180
Cranks		GRC130	GRC130	GRC130	GRC130A
ECB [†] (cranks only), lbf		6,972	5,104	5,294	5,357
Total ECB, lbf	4 × WMA12	22,802	18,281	18,471	18,540
	2 × WMA12	14,887	11,692	11,882	11,948
	4 × WMA11	21,687	17,352	17,542	17,611
	2 × WMA11	14,330	11,228	11,418	11,484
	4 × WMA10	20,573	16,425	16,615	16,683
	2 × WMA10	13,773	10,764	10,954	11,020
	4 × WMA09	19,414	15,459	15,649	15,717
	2 × WMA09	13,193	10,282	10,472	10,537
	4 × WMA08	17,935	14,228	14,418	14,486
	2 × WMA08	12,453	9,666	9,856	9,921
	4 × WMA07	16,691	13,193	13,383	13,450
	2 × WMA07	11,832	9,149	9,339	9,404
	4 × WMA06	15,322	12,054	12,244	12,310
	2 × WMA06	11,147	8,579	8,769	8,834
	4 × WMA05A	14,716	11,549	11,739	11,805
	2 × WMA05A	10,844	8,327	8,517	8,581
	4 × WMA05	14,102	11,038	11,228	11,294
	2 × WMA05	10,537	8,071	8,261	8,326
	4 × WMA04A	13,252	10,331	10,521	10,587
	2 × WMA04A	10,112	7,718	7,908	7,972
4 × WMA04	12,647	9,827	10,017	10,082	
2 × WMA04	9,809	7,465	7,655	7,720	
4 × WMA03A	12,010	9,297	9,487	9,552	
2 × WMA03A	9,491	7,201	7,391	7,455	

[†] Effective counterbalance

Continued on next page

Conventional Pumping Units

Counterbalance Data

	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, lbf	760	-930	-285	-365	-1,400	
Cranks	GRC120	GRC120E	GRC120	GRC120	GRC120	
ECB† (cranks only), lbf	9,526	5,699	7,139	7,037	4,944	
Total ECB, lbf	4 × WMA30 + 4 × WAX05	–	–	40,912	33,977	
	2 × WMA30 + 2 × WAX05	–	–	23,975	19,460	
	4 × WMA30	–	–	36,071	29,828	
	2 × WMA30	–	–	21,554	17,386	
	4 × WMA28	–	–	34,879	28,806	
	2 × WMA28	–	–	20,958	16,875	
	4 × WMA27	–	–	34,119	28,155	
	2 × WMA27	–	–	20,578	16,549	
	4 × WMA25	–	–	32,374	26,660	
	2 × WMA25	–	–	19,706	15,802	
	4 × WMA23	–	–	30,812	25,320	
	2 × WMA23	–	–	18,925	15,132	
	4 × WMA22	–	–	29,982	24,609	
	2 × WMA22	–	–	18,510	14,777	
	4 × WMA20	–	–	27,850	22,782	
	2 × WMA20	–	–	17,443	13,863	
	4 × WMA18	32,130	24,842	26,282	26,124	21,303
	2 × WMA18	20,828	15,271	16,711	16,581	13,123
	4 × WMA16	30,000	23,038	24,478	24,326	19,761
	2 × WMA16	19,763	14,369	15,809	15,681	12,353
	4 × WMA14	27,525	20,941	22,382	22,235	17,969
	2 × WMA14	18,525	13,320	14,760	14,636	11,457
	4 × WMA12	25,173	18,950	20,390	20,250	16,268
	2 × WMA12	17,350	12,325	13,765	13,643	10,606
	4 × WMA11	24,036	17,987	19,427	19,289	15,445
	2 × WMA11	16,781	11,843	13,283	13,163	10,194
4 × WMA10	22,900	17,025	18,465	18,330	14,622	
2 × WMA10	16,213	11,362	12,802	12,683	9,783	
4 × WMA09	21,727	16,031	17,471	17,339	13,774	
2 × WMA09	15,626	10,865	12,305	12,188	9,359	

† Effective counterbalance

Continued on next page

Conventional Pumping Units

Counterbalance Data

	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, lbf	-1,255	-1,900	-2,070	-2,070	-1,970	
Cranks	GRC120B	GRC120A	GRC120C	GRC120D	GRC140	
ECB [†] (cranks only), lbf	5,093	3,795	3,629	3,629	5,053	
Total ECB, lbf	4 × WMA30 + 4 × WAX05	34,125	29,623	29,457	29,457	31,040
	2 × WMA30 + 2 × WAX05	19,609	16,709	16,543	16,543	18,047
	4 × WMA30	29,976	25,932	25,766	25,766	27,327
	2 × WMA30	17,534	14,863	14,697	14,697	16,190
	4 × WMA28	28,954	25,023	24,857	24,857	26,072
	2 × WMA28	17,023	14,409	14,243	14,243	15,562
	4 × WMA27	28,302	24,443	24,277	24,277	25,481
	2 × WMA27	16,698	14,119	13,953	13,953	15,267
	4 × WMA25	26,808	23,113	22,947	22,947	24,129
	2 × WMA25	15,950	13,454	13,288	13,288	14,591
	4 × WMA23	25,469	21,922	21,756	21,756	22,920
	2 × WMA23	15,281	12,859	12,693	12,693	13,986
	4 × WMA22	24,757	21,289	21,123	21,123	22,282
	2 × WMA22	14,925	12,542	12,376	12,376	13,667
	4 × WMA20	22,930	19,664	19,498	19,498	20,684
	2 × WMA20	14,012	11,729	11,563	11,563	12,869
	4 × WMA18	21,451	18,348	18,182	18,182	19,364
	2 × WMA18	13,272	11,072	10,906	10,906	12,209
	4 × WMA16	19,910	16,977	16,811	16,811	17,993
	2 × WMA16	12,501	10,386	10,220	10,220	11,523
	4 × WMA14	18,118	15,382	15,216	15,216	16,424
	2 × WMA14	11,605	9,589	9,423	9,423	10,739
	4 × WMA12	16,416	13,869	13,703	13,703	14,926
	2 × WMA12	10,755	8,832	8,666	8,666	9,990
	4 × WMA11	15,594	13,137	12,971	12,971	14,200
	2 × WMA11	10,343	8,466	8,300	8,300	9,626
	4 × WMA10	14,771	12,405	12,239	12,239	13,473
	2 × WMA10	9,932	8,100	7,934	7,934	9,263
4 × WMA09	13,922	11,650	11,484	11,484	12,726	
2 × WMA09	9,508	7,722	7,556	7,556	8,889	

[†] Effective counterbalance

Continued on next page



Conventional Pumping Units

Counterbalance Data

		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, lbf		-3,000	-3,400	-1,983	-3,000	-3,400
Cranks		GRC140	GRC140	CA140A	CA140A	CA140A
ECB† (cranks only), lbf		3,430	2,930	4,576	2,910	2,510
Total ECB, lbf	4 × WMA30 + 4 × WAX05	26,852	26,352	30,610	26,368	25,968
	2 × WMA30 + 2 × WAX05	15,141	14,641	17,593	14,639	14,239
	4 × WMA30	23,505	23,005	26,889	23,016	22,616
	2 × WMA30	13,468	12,968	15,733	12,963	12,563
	4 × WMA28	22,374	21,874	25,633	21,883	21,483
	2 × WMA28	12,902	12,402	15,104	12,397	11,997
	4 × WMA27	21,842	21,342	25,041	21,350	20,950
	2 × WMA27	12,636	12,136	14,808	12,130	11,730
	4 × WMA25	20,623	20,123	23,686	20,129	19,729
	2 × WMA25	12,026	11,526	14,131	11,520	11,120
	4 × WMA23	19,533	19,033	22,475	19,038	18,638
	2 × WMA23	11,482	10,982	13,525	10,974	10,574
	4 × WMA22	18,958	18,458	21,836	18,462	18,062
	2 × WMA22	11,194	10,694	13,206	10,686	10,286
	4 × WMA20	17,518	17,018	20,235	17,020	16,620
	2 × WMA20	10,474	9,974	12,406	9,965	9,565
	4 × WMA18	16,329	15,829	18,913	15,828	15,428
	2 × WMA18	9,879	9,379	11,744	9,369	8,969
	4 × WMA16	15,093	14,593	17,539	14,591	14,191
	2 × WMA16	9,262	8,762	11,058	8,750	8,350
	4 × WMA14	13,679	13,179	15,967	13,174	12,774
	2 × WMA14	8,554	8,054	10,272	8,042	7,642
	4 × WMA12	12,329	11,829	14,467	11,822	11,422
	2 × WMA12	7,879	7,379	9,521	7,366	6,966
	4 × WMA11	11,674	11,174	13,739	11,166	10,766
	2 × WMA11	7,552	7,052	9,157	7,038	6,638
	4 × WMA10	11,019	10,519	13,011	10,511	10,111
	2 × WMA10	7,225	6,725	8,794	6,710	6,310
4 × WMA09	10,346	9,846	12,263	9,836	9,436	
2 × WMA09	6,888	6,388	8,419	6,373	5,973	

† Effective counterbalance

Conventional Pumping Units

