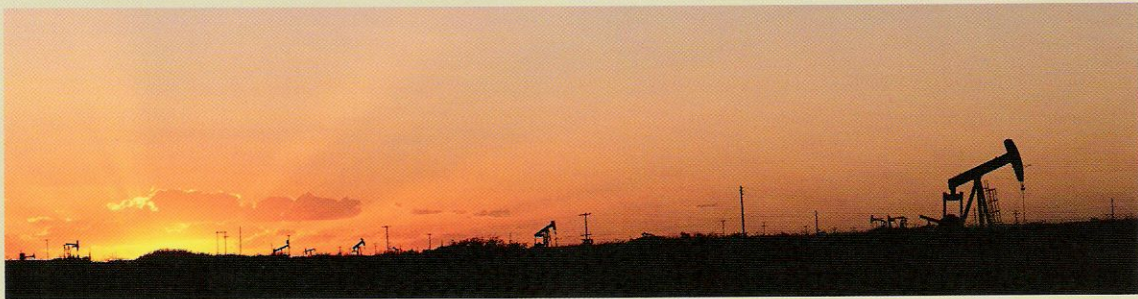




SENTRY[®]
ALWAYS ON DUTY

Product Catalog 2007





Sentry pumping units are simply the best value available. For over 45 years, the Sentry design has proven itself where it matters the most – in the field. Rugged, dependable, engineered for long and efficient use, Sentry units are among the most simple to operate and are easy to maintain.

If your needs span the spectrum, Sentry has precisely the right product for you. Dozens of models. Hundreds of unique configurations. Exactly the right pumping unit, providing precisely the right artificial lift, at the best price. Sentry is always on duty and ready to provide the service level that you deserve and demand.

Sentry is not only a brand, but an experience. From initial inquiry, through delivery – and for years and years to come – Sentry will have your back. Spare parts and service, responsive customer care and extensive assistance down the road, you can count on your Sentry pumping unit team to meet your expectations.



SENTRY
ALWAYS ON DUTY



ISO 9002

Why Sentry?

Quality Parts and Manufacturing

① **Equalizer beam bearing assembly:** Unmatched in the industry for strength and durability, the assembly features machined ductile iron castings, oversized double row, self aligning roller bearing, metal to metal seals and large lubrication reservoirs. Sentry's design ensures constant equalization of loads to the pitman arms and crank pins. Proven, easy to maintain and extremely reliable in the long term.

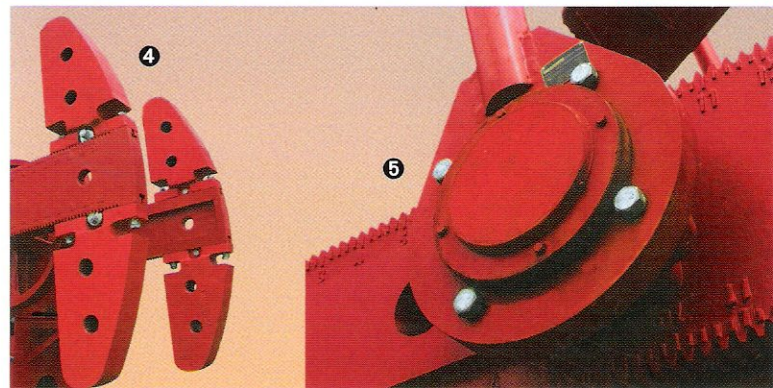
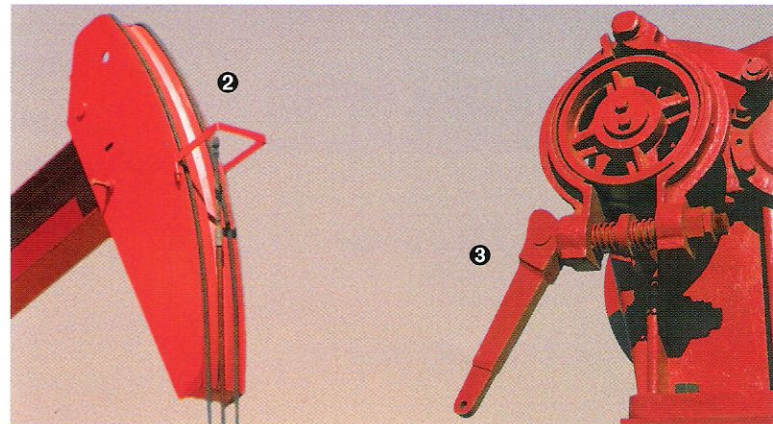
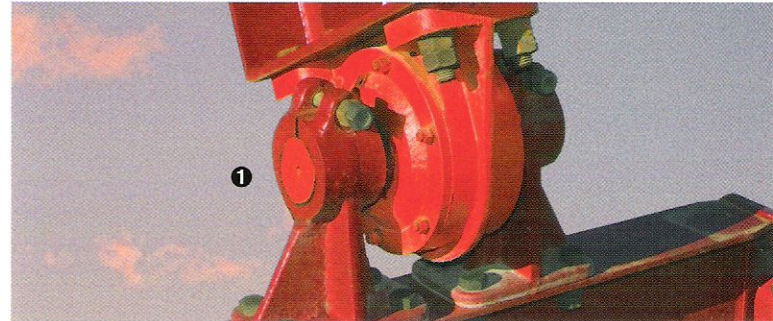
② **Horsehead:** Fitted with a robust steel casting to provide full bridle support, the horsehead is easily attached and removed for well servicing.

③ **Brake:** Equipped with a positive-stop locking PAWL, the Sentry brake ensures totally safe lockouts during inclement weather and regular maintenance.

④ **Counterbalance weights and crank arms:** Massive crank arms utilize integral T-slots and graduated markings for fast easy attachment and positioning of counterweights. The cast rack and pinion locks the weights in place. Simply. Safely. Surely.

⑤ **Crank pins:** Pins assemblies feature oversized self-aligning double roller bearings mounted in machined ductile iron housings. Hardened, ground tapers of extended length on the high-tensile steel wrist pins create additional surface contact. Cast steel knockoff pin nuts are standard on all units.

⑥ **Center beam bearing assembly:** Constructed of fully machined ductile iron, the casting houses over-sized self aligning roller bearings and a large lubricant reservoir, angular gussets transfer vertical and torsional stresses to the walking beam.





SENTRY
ALWAYS ON DUTY

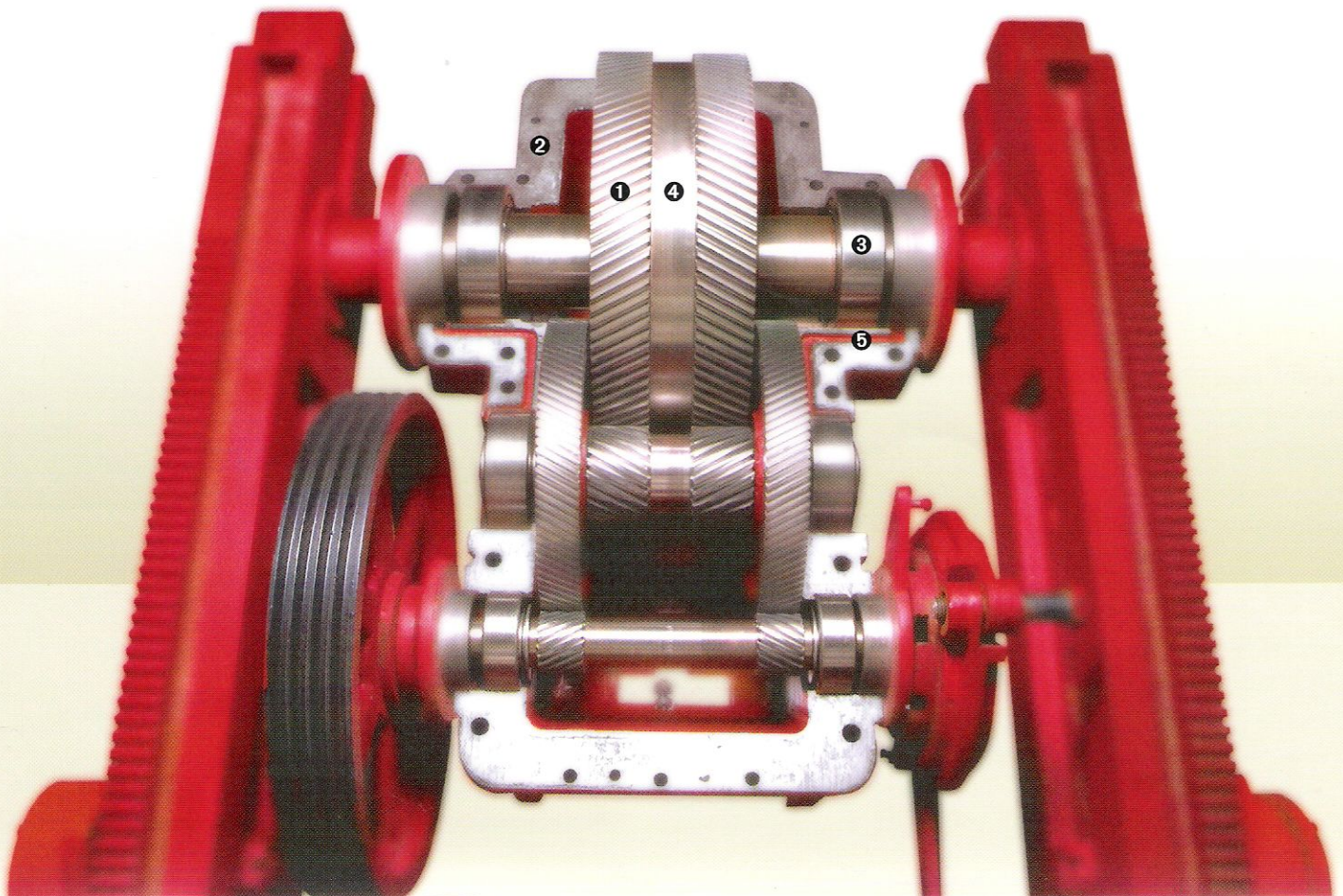
The Gear Reducer Another Sentry Difference

The Sentry gear box utilizes a combination of a ductile iron housing, and forged, high-tensile cast-steel gearing to produce a gear box that is vastly superior to the common cast and steel combinations.

All Sentry gear reducers feature precision machined high tensile, **double helical gears**[®]. The heat-treated steel gear teeth significantly exceed the API criteria for pitting and bending stresses. Our design allows extra wide gear tooth interfaces for uniform loading and equalized stress during peak torque operation.

A rugged, fully machined **ductile iron case**[®] houses component gears, with a split centerline for easy disassembly while **alloy steel shafts**[®] rotate in oversized precision roller bearings ensuring that there is no bronze bushing to seize and no shaft wear from rotational contact.

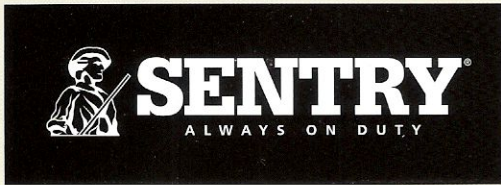
In addition, there is no oil pump to fail or maintain. Add to that a generous **center relief**[®] that ensures positive flow to all gear tooth interfaces and a submerged gear and wiper system which delivers a constant supply of lubricant to the **oil galleries**[®] and you have a hardworking gear box of the highest possible quality and craftsmanship.



SERIES I & II



SENTRY
EQUIPMENT

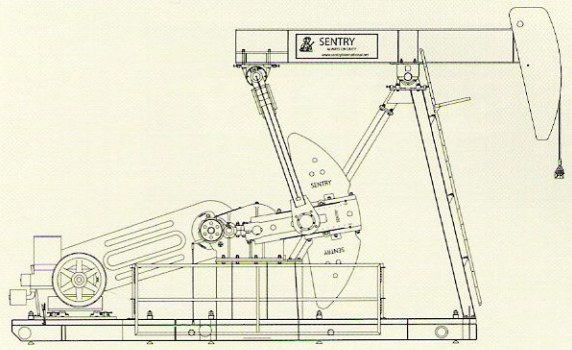


Conventional Pumping Units

Main Specifications for Series I

	MODEL						
	C114-173-64	C160-133-86	C160-173-86	C160-133-100	C160-173-100	C160-200-74	
Basic Parameters	Load Rating (lbs)	17,300	13,300	17,300	13,300	17,300	20,000
	Stroke length (in)	64 / 54 / 40	86 / 74 / 62	86 / 74 / 62	100 / 86 / 72	100 / 86 / 72	74 / 64 / 53
	Max stroke frequency (r/min)	12	12	12	12	12	12
	Rated torque (in.lbs)	114,000	160,000	160,000	160,000	160,000	160,000
	Balanced type	Crank balanced					
	Crank direction	Counterclockwise					
Gear Reducer	Rated torque (in.lbs)	114,000	160,000	160,000	160,000	160,000	160,000
	Model	114D	160D	160D	160D	160D	160D
	Gear type	Divided-flow type, herringbone, Involute gear					
	Gear ratio	29.818	28.506	28.506	28.506	28.506	28.506
	Center range (in)	25.59	29.53	29.53	29.53	29.53	29.53
	Center height (in)	16.93	17.72	17.72	17.72	17.72	17.72
	Oil storage quantity (U.S. gal)	29	37	37	37	37	37
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant in summer					
	Big pulley diameter (in)	30	30 or 36	30 or 36	30 or 36	30 or 36	30 or 36
	Pulley groove type	4C	4C	4C	4C	4C	4C
Balance Assembly	Weight of counter weight (lbs)	1,547 x 4	1,105 x 4	1,326 x 4	1,326 x 4	1,547 x 4	1,326 x 4
	Weight of crank (lbs)	2,011 x 2	2,449 x 2	2,449 x 2	2,449 x 2	2,449 x 2	2,449 x 2
	Wrist pin bore positions (in)	31.1	36.22	36.22	36.22	36.22	36.22
		25.6	31.3	31.3	31.3	31.3	31.3
		19.7	26.38	26.38	26.38	26.38	26.38
	Stroke lengths (in)	64	86	86	100	100	74
54		74	74	86	86	64	
40		62	62	72	72	53	
Wire Line	Type	6 x 19s-26	6 x 19s-26	6 x 19s-26	6 x 19s-26	6 x 19s-26	6 x 19s-28
	Length (in)	220	283	283	283	283	270
Structure Unbalance (lbs)	346	390	390	390	395	352	
Overall Dimensions Length x Width x Height (in)	327 x 72 x 206	317 x 80 x 243	317 x 80 x 243	339 x 80 x 249	339 x 80 x 249	382 x 95 x 237	
Total Weight (lbs)	27,190	28,480	29,410	30,500	29,200	30,940	
	Wide-base	Hi-motor base	Hi-motor base	Hi-motor base	Hi-motor base	Wide-base	

* The specifications provided are subject to change without notice and may vary according to modifications requested.



MODEL

	C228-213-86	C228-246-86	C228-173-100	C228-256-100	C228-213-120	C228-173-120
Basic Parameters						
Load Rating (lbs)	21,300	24,600	17,300	25,600	21,300	17,300
Stroke length (in)	86 / 70 / 56	86 / 70 / 56	100 / 85 / 70	100 / 85 / 70	120 / 102 / 84	120 / 102 / 84
Max stroke frequency (r/min)	12	12	12	12	12	12
Rated torque (in.lbs)	228,000	228,000	228,000	228,000	228,000	228,000
Balanced type	Crank balanced					
Crank direction	Counterclockwise					
Gear Reducer						
Rated torque (in.lbs)	228,000	228,000	228,000	228,000	228,000	228,000
Model	228D	228D	228D	228D	228D	228D
Gear type	Divided-flow type, herringbone, Involute gear					
Gear ratio	28.873	28.873	28.873	28.873	28.873	28.873
Center range (in)	33.46	33.46	33.46	33.46	33.46	33.46
Center height (in)	19.69	19.69	19.69	19.69	19.69	19.69
Oil storage quantity (U.S. gal)	42.8	42.8	42.8	42.8	42.8	42.8
Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant in summer					
Big pulley diameter (in)	36	36	36	36	36	36
Pulley groove type	4C	4C	4C	4C	4C	4C
Balance Assembly						
Weight of counter weight (lbs)	2,100 x 4	2,210 x 4	1,768 x 4	2,431 x 4	1,989 x 4	1,768 x 4
Weight of crank (lbs)	2,449 x 2	2,449 x 2	2,449 x 2	2,919 x 2	2,919 x 2	2,919 x 2
Wrist pin bore positions (in)	36.02 29.92 23.82	36.02 29.92 23.82	36.2 31.3 26.4	41.93 35.83 29.72	41.93 35.83 29.72	41.93 35.83 29.72
Stroke lengths (in)	86 70 56	86 70 56	100 85 70	100 85 70	120 102 84	120 102 84
Wire Line						
Type	6 x 19s-28	6 x 19s-28	6 x 19s-26	6 x 19s-28	6 x 19s-28	6 x 19s-28
Length (in)	278	278	283	343	343	343
Structure Unbalance (lbs)	346	346	390	992	750	348
Overall Dimensions Length x Width x Height (in)	321 x 76 x 249	368 x 76 x 249	389 x 85 x 249	371 x 110 x 287	385 x 71 x 287	387 x 85 x 297
Total Weight (lbs)	33,342 Hi-motor base	36,290 Hi-motor base	34,860 Hi-motor base	42,315 Hi-motor base	35,640 Hi-motor base	35,093 Hi-motor base





Conventional Pumping Units

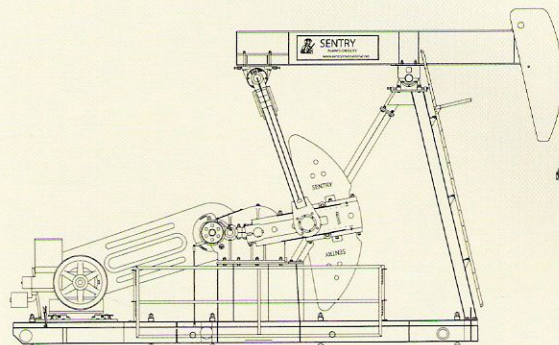
Main Specifications for Series I

		MODEL					
		C320-213-120	C320-256-120	C456-305-144	C456-305-168	C640-305-168	C640-365-168
Basic Parameters	Load Rating (lbs)	21,300	25,600	30,500	30,500	30,500	36,500
	Stroke length (in)	120 / 102 / 84	120 / 102 / 84	144 / 123 / 102	168 / 144 / 121	168 / 144 / 121	168 / 144 / 121
	Max stroke frequency (r/min)	12	12	12	12	12	10
	Rated torque (in.lbs)	320,000	320,000	456,000	456,000	640,000	640,000
	Balanced type	Crank balanced					
	Crank direction	Counterclockwise					
Gear Reducer	Rated torque (in.lbs)	320,000	320,000	456,000	456,000	640,000	640,000
	Model	320D	320D	456D	456D	640D	640D
	Gear type	Divided-flow type, herringbone, Involute gear					
	Gear ratio	28.81	28.81	28.25	28.25	27.21	27.21
	Center range (in)	37.4	37.4	39.37	39.37	41.34	41.34
	Center height (in)	23.23	23.23	25.59	25.59	25.98	25.98
	Oil storage quantity (U.S. gal)	75	75	110	110	106	106
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant in summer					
	Big pulley diameter (in)	36 or 44	36 or 44	44 or 50	44 or 50	30, 44 or 50	30, 44 or 50
	Pulley groove type	5C	5C	5D or 6C	5D or 6C	5D or 6C	5D or 6C
Balance assembly	Weight of counter weight (lbs)	2,210 x 4	2,431 x 4	3,315 x 4	3,536 x 4	3,536 x 4	3,536 x 4
	Weight of crank (lbs)	2,919 x 2	2,919 x 2	3,839 x 2	4,321 x 2	4,321 x 2	4,321 x 2
	Wrist pin bore positions (in)	41.93	41.93	46.46	53.54	53.54	53.54
		35.83	35.83	39.96	46.46	46.46	46.46
		29.72	29.72	33.46	39.37	39.37	39.37
	Stroke lengths (in)	120	120	144	168	168	168
102		102	123	144	144	144	
84		84	102	121	121	121	
Wire Line	Type	6 x 19s-28	6 x 19s-28	6 x 19s-32	6 x 19s-32	6 x 19s-32	6 x 19s-32
	Length (in)	343	343	381	438	438	438
	Structure Unbalance (lbs)	800	483	-540	-540	-540	980
	Overall Dimensions Length x Width x Height (in)	409 x 90 x 301	400 x 91 x 301	445 x 106 x 330	441 x 104 x 353	441 x 104 x 353	450 x 104.3 x 353
	Total Weight (lbs)	41,560 Hi-motor base	44,598 Hi-motor base	62,107 Hi-motor base	59,500 Hi-motor base	59,420 Hi-motor base	62,570 Hi-motor base

* The specifications provided are subject to change without notice and may vary according to modifications requested.

Conventional Pumping Units

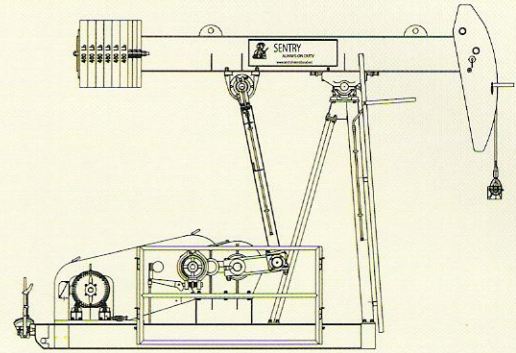
Main Specifications for Series II



		MODEL					
		C114-173-64	C160-200-74	C228-246-86	C320-256-120	C456-305-144	C640-365-168
Basic Parameters	Load Rating (lbs)	17,300	20,000	24,600	25,600	30,500	36,500
	Stroke length (in)	64 / 51 / 39	74 / 61 / 49	86 / 74 / 61	120 / 102 / 85	144 / 124 / 106	168 / 145 / 124
	Max stroke frequency (r/min)	12	12	12	12	12	10
	Rated torque (in.lbs)	114,000	160,000	228,000	320,000	456,000	460,000
	Balanced type	Crank balanced					
	Crank direction	Clockwise or Counterclockwise					
Gear Reducer	Rated torque (in.lbs)	114,000	160,000	228,000	320,000	456,000	640,000
	Model	114D	160D	228D	320D	456D	640D
	Gear type	Divided-flow type, herringbone, double arc gear					
	Gear ratio	29.368	31.714	31.3	31.3	30.193	31.733
	Center range (in)	23.622	29.528	33.465	33.46	39.37	39.37
	Center height (in)	16.142	18.898	22.047	22.047	25.591	24.409
	Oil storage quantity (U.S. gal)	23	32	28	41	56	80
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 220 gear lubricant in summer					
	Big pulley diameter (in)	27	30	36	36	44	47
	Pulley groove type	C					
Balance Assembly	Weight of counter weight (lbs)	1,184 x 4	1,856 x 4	2,932 x 4	2,956 x 4	3,457 x 4	4,896 x 4
	Weight of crank (lbs)	4277	4264	4621	6508	8007	8836
	Wrist pin bore positions (in)	29.13	34.65	41.93	41.93	46.65	54.33
		23.62	29.13	36.02	36.02	40.55	47.24
		18.11	23.62	30.32	30.32	34.84	40.55
	Stroke lengths (in)	64	74	86	120	144	168
51		61	74	102	124	145	
39		49	61	85	106	124	
Wire Line	Type	6 x 37-26-1750	6 x 37-26-1750	6 X37-26-1750	6X37-26-1750	6 x 37-30-1750	6 x 37-30-1750
	Length (in)	248	260	287	353	403	437
	Structure Unbalance (lbs)	1,085	1,252	1,274	128	1,314	-2,035
	Overall Dimensions Length x Width x Height (in)	348 x 115 x 210	346 x 118 x 220	425 x 118 x 275	496 x 122 x 290	526 x 132 x 325	578 x 148 x 354
	Total Weight (lbs)	27,440	33,287	37,509	43,827	57,269	71,828

BEAM BALANCED





Beam Balanced Pumping Unit


Main Specifications

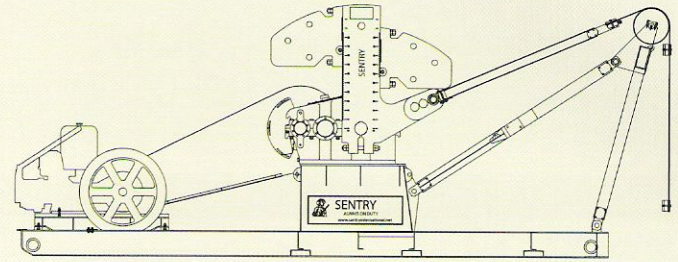
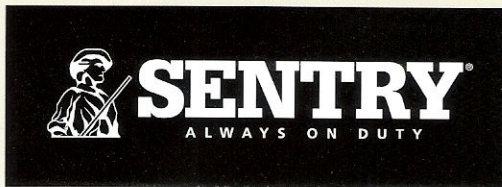
		MODEL			
		B25-67-36	B40-89-48	B57-109-54	B80-133-54
Basic Parameters	Load Rating (lbs)	6,700	8,900	10,900	13,300
	Stroke length (in)	36 / 29 / 23 / 19	48 / 35	54 / 41	54 / 41
	Max stroke frequency (r/min)	12 motor configured, 10 natural gas configured			
	Method of horsehead clearance	Remove horsehead			
	Balanced type	Beam balanced			
	Crank direction	Counterclockwise			
Gear Reducer	Rated torque (in.lbs)	25,000	40,000	57,000	80,000
	Model	25D	40D	57D	80D
	Gear type	Divided-flow type, herringbone, Involute gear			
	Gear ratio	32.85	32.18	31.733	31.746
	Center range (in)	16.54	17.7165	19.685	21.654
	Center height (in)	11.81	12.20	13.39	13.78
	Oil storage quantity (U.S. gal)	7.39	8.3	10.6	11.9
	Lubricant	ISO VG 150 gear lubricant in winter, ISO VG 200 gear lubricant in summer			
	Big pulley diameter (in)	20	20	25	25
	Pulley groove type	2B	3B	3B	3B
Balance assembly	Maximum ECB	3,081	4,890	5,990	7,300
	Weight of crank (lbs)	115 x 2	172 x 2	180 x 2	180 x 2
	Ratio of crank swing, (in)	12	15.748	17.716	17.716
		8	15.748	17.716	17.716
	Rear w/b length to stroke length (in)	26.66	40.95	45.28	45.28
		32.66	54.33	58.66	58.66
Stroke length to rear w/b length (in)	23 / 19	48	54	54	
	36 / 29	35	41	41	
Wire Line	Type	18 x 7S-16	6 x 19S-22	6 x 19S-22	6 x 19S-22
	Length (in)	103	163.5	169.3	169.3
	Structure Unbalance (lbs)	195	440	440	440
	Overall Dimensions Length x Width x Height (in)	144 x 120 x 74 Electromotor and gas engine configured	205 x 53 x 144 Natural gas engine motor configured	212 x 53 x 152 Natural gas engine motor configured	212 x 55 x 152 Natural gas engine motor configured
	Total Weight (lbs)	5,072	7,750	9,950	11,300

*The specifications provided are subject to change without notice and may vary according to modifications requested.

FLEXLIFT



 SENTRY



Low Profile Pumping Unit

Main Specifications for FlexLift

		MODEL				
		F114-173-64	F160-173-74	F228-246-86	F320-246-86	F320-256-100
Basic Parameters	Rated polished rod capacity (lbs)	17,300	17,300	24,600	24,600	25,600
	Stroke length (in)	64 / 54 / 44	74 / 64 / 54	86 / 74 / 62	86 / 74 / 62	100 / 86 / 74
	Max stroke frequency (r/min)	12	12	12	12	12
	Balance type	Crank balanced				
	Crank rotate direction	Counterclockwise				
Gear Reducer	Model	114D	160D	228D	320D	320D
	Rated torque (in-lbs)	114,000	160,000	228,000	320,000	320,000
	Gear type	Divided-flow type, two-stage, involute herring-bone gearing				
	Reducing ratio	29.818	28.506	28.873	28.807	28.807
	Center range (in)	25.59	29.53	33.46	37.4	37.4
	Center height (in)	16.93	17.72	19.69	23.23	23.23
	Oil storage quantity (U.S.gal)	29	37	42.8	75	75
	Lubricant	ISO VG 150 gear lubrication oil in winter, ISO VG 220 gear lubrication oil in summer				
	Big pulley diameter (in)	30	36	36	44	44
Pulley groove type	4C	4C	4C	5C	5C	
Balance Assembly	Weight of the crank counterweight (lbs)	1114 × 4	1114 × 4	1767 × 4	1767 × 4	1767 × 4
	Weight of the aux. weight (lbs)	335 × 8	331 × 8	472 × 8	472 × 8	472 × 8
	Weight of crank (lbs)	2,002 × 2	2,242 × 2	3,406 × 2	3,309 × 2	3,731 × 2
	Wrist bore position (in)	32	37	43	43	50
		27	32	37	37	43
		22	27	31	31	37
	Stroke length (in)	64	74	86	86	100
54		64	74	74	86	
44		54	62	62	74	
Belt	Length × Width × Thickness (in)	116.93×14.96×0.394	133.86×14.96×0.394	146.46×20×0.394	146.46×20×0.394	167.52×20×0.394
Fixed type of main base		Cross bars (levers)				
Approx. total weight (lbs) (Ex. prime mover)		26,032	28,292	36,788	39,000	40,029
Overall dimensions Length × Width × Height (in)		305.9×88.2×110.9	323.3×88.4×122.9	357.6×88.0×138.2	357.6×88.0×138.2	382.7×88.0×156.3

* The specifications provided are subject to change without notice and may vary according to modifications requested.

Conventional Pumping Units

Effective Counter Balance (ECB) Series I

C228-246-86 C228-213-86 C160-173-86 C160-133-86

CRANK TYPE		QB1940								
CW	S	TF@90°	0	10	15	20	22.5	25	27.5	30
500kG	86	40.59	3976	5062	5605	6149	6420	6692	6963	7235
500kG	70	34.01	4745	6041	6690	7338	7662	7986	8310	8634
500kG	56	27.24	5924	7543	8352	9161	9566	9971	10375	10780
1000kG	86	40.59	3976	6149	7235	8321	8864	9407	9950	10494
1000kG	70	34.01	4745	7338	8634	9931	10579	11227	11875	12524
1000kG	56	27.24	5924	9161	10780	12399	13208	14017	14827	15636

C228-173-120 C228-213-120 C320-213-120 C320-256-120

CRANK TYPE		QB2400								
CW	S	TF@90°	0	10	15	20	25	30	35	40
800kG	120	57.18	4311	5545	6162	6779	7395	8012	8629	9246
800kG	102	49.2	5010	6444	7161	7878	8595	9312	10029	10746
800kG	84	41.02	6010	7730	8590	9450	10310	11169	12029	12889
900kG	120	57.18	4311	5699	6393	7087	7781	8475	9169	9863
900kG	102	49.2	5010	6623	7430	8236	9043	9849	10656	11462
900kG	84	41.02	6010	7945	8912	9880	10847	11814	12782	13749
1100kG	120	57.18	4311	6007	6856	7704	8552	9400	10248	11097
1100kG	102	49.2	5010	6982	7967	8953	9939	10925	11911	12896
1100kG	84	41.02	6010	8375	9557	10739	11922	13104	14287	15469

C228-173-100 C160-173-100 C160-133-100

CRANK TYPE		QB1940								
CW	S	TF@90°	0	10	15	20	22.5	25	27.5	30
600kG	100	47.84	3373	4479	5032	5585	5861	6138	6414	6691
600kG	86	41.59	3880	5152	5788	6424	6742	7060	7379	7697
600kG	72	35.21	4583	6086	6837	7588	7964	8340	8715	9091
700kG	100	47.84	3373	4663	5308	5954	6276	6599	6921	7244
700kG	86	41.59	3880	5364	6106	6848	7219	7591	7962	8333
700kG	72	35.21	4583	6336	7213	8089	8528	8966	9404	9842
800kG	100	47.84	3373	4848	5585	6322	6691	7060	7428	7797
800kG	86	41.59	3880	5576	6424	7272	7697	8121	8545	8969
800kG	72	35.21	4583	6587	7588	8590	9091	9592	10093	10594

NOTE:

1. This table shows the ECB for 4 sets of counterweights.
2. For example, the 15 means that the distance from the center of the crank shaft to the center of gravity of the counterweight is 15 inches.
3. The 0 means the crank arm only.
4. The 2max means max ECB for 2 sets of counterweights.
5. The 4max means max ECB for 4 sets of counterweights.
6. When 2 sets of counterweights are used the ECB should be half the distance.
7. The unit of ECB is in pounds.
8. Only the most common counterweights are shown. Consult Sentry Pumping Units International Inc. for counterweights and values not shown.
9. The weight of the counterweight is based on 75% of the structural load rating.



C228-246-86 C228-213-86 C160-173-86 C160-133-86

QB1940

32.5	35	37.5	40	42.5	45	47.5	50	52.5	55	2MAX	4MAX
7506	7778	8050	8321	8593	8864	9136	9407	9679	9950	7173	10370
8958	9283	9607	9931	10255	10579	10903	11227	11551	11875	8560	12376
11185	11589	11994	12399	12803	13208	13613	14017	14422	14827	10688	15451
11037	11580	12123	12666	13209	13752	14296	14839	15582	F	9856	15737
13172	13820	14468	15116	15765	16413	17061	17709	18358	F	11763	18781
16445	17254	18064	18873	19682	20492	21301	22110	22920	F	14686	23449

C228-173-120 C228-213-120 C320-213-120 C320-256-120

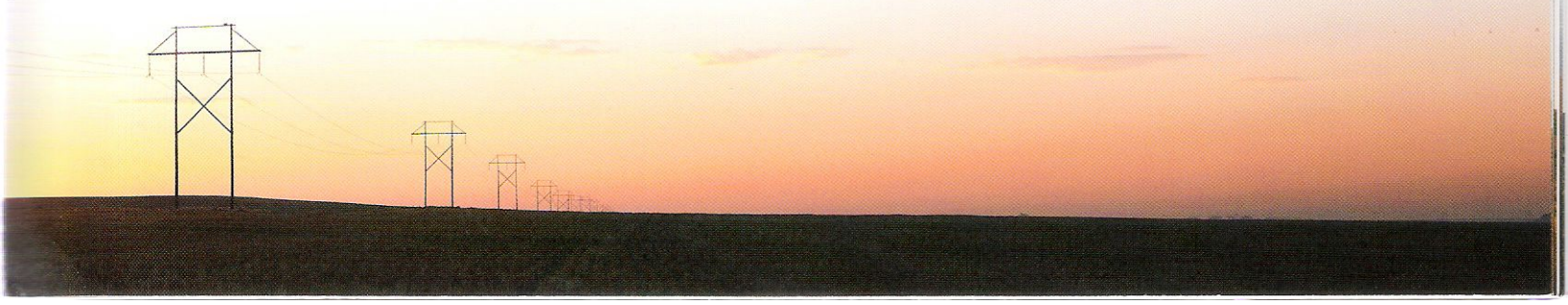
QB2400

45	50	52.5	55	57.5	60	62.5	65	67.5	70	2MAX	4MAX
9863	10480	10788	11097	11405	11714	12022	12330	12639	12947	8853	13394
11462	12179	12538	12896	13255	13613	13972	14330	14689	15047	10288	15566
13749	14609	15039	15469	15899	16329	16759	17189	17619	18049	12341	18672
10557	11251	11598	11945	12292	12639	12986	13333	13680	14027	9379	14448
12269	13076	13479	13882	14285	14689	15092	15495	15899	16302	10900	16791
14717	15684	16168	16651	17135	17619	18102	18586	19070	19554	13075	20140
11945	12793	13217	13641	14065	14490	14914	15338	15762	16186	10322	16333
13882	14868	15361	15854	16347	16839	17332	17825	18318	18811	11996	18982
16651	17834	18425	19016	19607	20198	20790	21381	21972	22563	14389	22768

C228-173-100 C160-173-100 C160-133-100

QB1940

32.5	35	37.5	40	42.5	45	47.5	50	52.5	55	2MAX	4MAX
6967	7244	7520	7797	8073	8350	8626	8903	9179	9456	6562	9752
8015	8333	8651	8969	9287	9605	9923	10241	10559	10877	7549	11218
9467	9842	10218	10594	10969	11345	11721	12096	12472	12848	8917	13250
7567	7889	8212	8534	8857	9179	9502	9825	10147	10470	7031	10688
8704	9075	9446	9817	10188	10559	10930	11301	11672	12043	8087	12294
10281	10719	11157	11596	12034	12472	12910	13349	13787	14225	9553	14522
8166	8534	8903	9272	9640	10009	10378	10746	11115	11484	7466	11559
9393	9817	10241	10665	11089	11513	11937	12361	12785	13209	8588	13296
11095	11596	12096	12597	13098	13599	14100	14601	15102	15603	10144	15705



Conventional Pumping Units

Effective Counter Balance (ECB) Series I

C228-256-100

CRANK TYPE		QB2400								
CW	S	TF@90°	0	10	15	20	25	30	35	40
1100KG	100	47.71	5167	7200	8217	9233	10250	11266	12283	13300
1100KG	85	41.05	6005	8368	9550	10731	11913	13094	14276	15457
1100KG	70	34.23	7202	10036	11453	12870	14287	15703	17120	18537

C640-365-168 C640-305-168 C456-305-168

CRANK TYPE		QB2790								
CW	S	TF@90°	0	10	15	20	25	30	35	40
1600KG	168	78.58	5485	7281	8178	9076	9974	10872	11769	12667
1600KG	144	68.82	6263	8313	9338	10363	11388	12414	13439	14464
1600KG	121	58.73	7339	9741	10943	12144	13345	14546	15747	16949

C160-200-74

CRANK TYPE		QB1940								
CW	S	TF@90°	0	10	15	20	25	27.5	30	32.5
600KG	74	35.59	4534	6021	6764	7507	8251	8622	8994	9366
600KG	64	30.94	5216	6926	7781	8636	9491	9919	10346	10774
600KG	53	26.19	6162	8182	9192	10202	11213	11718	12223	12728

C114-173-64

CRANK TYPE		QB1650								
CW	S	TF@90°	0	5	10	12.5	15	20	22.5	25
700KG	64	30.23	3658	4679	5700	6210	6721	7742	8252	8763
700KG	52	25.12	4402	5631	6859	7474	8088	9317	9931	10545
700KG	40	19.47	5679	7264	8849	9642	10435	12020	12812	13605

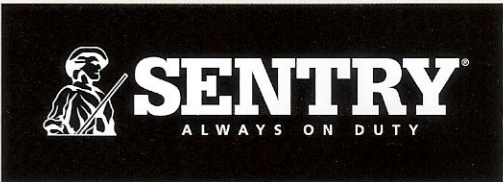
C456-305-144

CRANK TYPE		QB2600								
CW	S	TF@90°	0	10	15	20	25	30	35	40
1500KG	144	68.82	5144	7066	8027	8988	9949	10910	11871	12832
1500KG	123	59.58	5941	8161	9271	10381	11491	12601	13711	14822
1500KG	102	50.13	7061	9700	11019	12338	13658	14977	16296	17616



NOTE:

1. This table shows the ECB for 4 sets of counterweights.
2. For example, the 15 means that the distance from the center of the crank shaft to the center of gravity of the counterweight is 15 inches.
3. The 0 means the crank arm only.
4. The 2max means max ECB for 2 sets of counterweights.
5. The 4max means max ECB for 4 sets of counterweights.
6. When 2 sets of counterweights are used the ECB should be half the distance.
7. The unit of ECB is in pounds.
8. Only the most common counterweights are shown. Consult Sentry Pumping Units International Inc. for counterweights and values not shown.
9. The weight of the counterweight is based on 75% of the structural load rating.



C228-256-100

QB2400

45	50	55	60	62.5	65	67.5	70	72.5	75	2MAX	4MAX
14316	15333	16349	17366	17874	18382	18891	19399	F	F	12371	19575
16639	17820	19002	20183	20774	21365	21955	22546	F	F	14378	22751
19954	21371	22788	24205	24913	25622	26330	27039	F	F	17243	27284

C640-365-168 C640-305-168 C456-305-168

QB2790

45	50	55	60	65	70	75	80	85	90	2MAX	4MAX
13565	14463	15360	16258	17156	18054	18952	19849	F	F	12908	20330
15489	16514	17539	18564	19589	20614	21639	22664	F	F	14738	23213
18150	19351	20552	21753	22955	24156	25357	26558	F	F	17270	27201

C160-200-74

QB1940

35	37.5	40	42.5	45	47.5	50	52.5	55	57.5	2MAX	4MAX
9737	10109	10481	10852	11224	11596	11967	12339	12711	13082	8821	13109
11201	11629	12056	12484	12911	13339	13766	14194	14621	15049	10148	15079
13233	13738	14243	14748	15253	15758	16263	16768	17273	17778	11988	17814

C114-173-64

QB1650

27.5	30	32.5	35	37.5	40	42.5	45	47.5	50	2MAX	4MAX
9273	9784	10294	10805	11315	11826	12336	12847	F	F	8281	12903
11160	11774	12388	13003	13617	14231	14846	15460	F	F	9965	15528
14398	15190	15983	16776	17568	18361	19153	19946	F	F	12856	20033

C456-305-144

QB2600

45	50	55	60	65	70	72.5	75	77.5	80	2MAX	4MAX
13793	14754	15715	16676	17637	18598	19079	19559	F	F	12484	19824
15932	17042	18152	19262	20372	21482	22037	22592	F	F	14419	22898
18935	20254	21574	22893	24212	25531	26191	26851	F	F	17138	27214



Conventional Pumping Units

Effective Counter Balance (ECB) Series II

C114-173-64

2 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
536kG	64	30.8	4543	6462	6765	7067	7369	7672	7973	8278	8650
536kG	51	25.2	5553	7899	8269	8637	9008	9378	9748	10118	10573
536kG	39	19.4	7213	10260	10741	11219	11700	12181	12662	13143	13734

C114-173-64

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
536kG	64	30.8	4543	8381	8987	9590	10196	10802	11408	12014	12757
536kG	51	25.2	5553	10244	10985	11722	12462	13203	13943	14684	15593
536kG	39	19.4	7213	13307	14268	15226	16188	17150	18112	19073	20255

C114-173-64

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
292kG	64	30.8	4543	6418	6750	7079	7410	7740	8070	8401	8802
292kG	51	25.2	5553	7845	8250	8653	9057	9460	9863	10268	10759
292kG	39	19.4	7213	10190	10716	11239	11765	12288	12812	13338	13975

C114-173-64

8 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
292kG	64	30.8	4543	8293	8956	9615	10277	10937	11596	12258	13061
292kG	51	25.2	5553	10136	10946	11752	12561	13367	14173	14982	15964
292kG	39	19.4	7213	13167	14218	15265	16317	17363	18410	19462	20737

C160-200-74

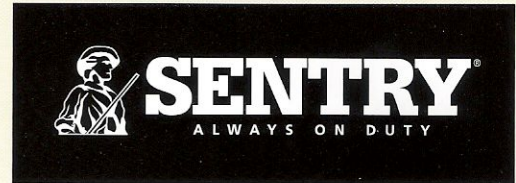
2 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
840kG	74	35	3923	6186	6604	7022	7539	7857	8274	8692	9155
840kG	61	29.7	4623	7290	7782	8275	8767	9259	9750	10243	10789
840kG	49	24.2	5674	8947	9551	10155	10760	11364	11967	12571	13242

C160-200-74

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
840kG	74	35	3923	8449	9284	10120	10956	11792	12625	13460	14388
840kG	61	29.7	4623	9956	10941	11926	12911	13896	14878	15862	16955
840kG	49	24.2	5674	12219	13428	14637	15845	17054	18259	19468	20809



- Note:
 1. The 0 means the crank arm only.
 2. The unit of ECB is in pounds.
 3. Only the most common counterweights are shown. Consult Sentry Pumping Units International Inc. For counterweights and values not shown.



C160-200-74

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
420kG	74	35	3923	6051	6473	6893	7313	7734	8154	8606	9038
420kG	61	29.7	4623	7131	7628	8123	8618	9114	9609	10106	10651
420kG	49	24.2	5674	8751	9361	9969	10577	11185	11793	12403	13071

C160-200-74

8 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
420kG	74	35	3923	8179	9022	9862	10703	11544	12384	13288	14152
420kG	61	29.7	4623	9638	10632	11622	12613	13604	14594	15588	16678
420kG	49	24.2	5674	11828	13048	14264	15480	16695	17911	19131	20468

C228-246-86

2 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
1327kG	86	40.8	3950	8635	9201	9767	10333	10898	11465		12091
1327kG	74	35.4	4553	9953	10605	11258	11910	12562	13214		13936
1327kG	61	30	5373	11745	12515	13284	14054	14418	15593		16445

C228-246-86

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
1327kG	86	40.8	3950	13321	14453	15584	16716	17848	18980		20233
1327kG	74	35.4	4553	15353	16658	17962	19266	20571	21875		23319
1327kG	61	30	5373	18117	19657	21196	22735	24273	25813		27517

C228-246-86

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
611kG	86	40.8	3950	7334	7858	8383	8907	9433	9957		10535
611kG	74	35.4	4553	8453	9057	9662	10266	10872	11476		12141
611kG	61	30	5373	9975	10688	11401	12114	12829	13542		14327

C228-246-86

8 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
611kG	86	40.8	3950	10717	11766	12815	13864	14915	15963		17119
611kG	74	35.4	4553	12352	13561	14770	15979	17190	18399		19730
611kG	61	30	5373	14576	16002	17428	18855	20284	21710		23281



Conventional Pumping Units

Effective Counter Balance (ECB) Series II

C320-256-120

2 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
1338kG	120	57.2	4590	8159	8773	9388	10003	10617	11232	11846	12502
1338kG	102	49.4	5315	9447	10159	10871	11582	12294	13005	13717	14476
1338kG	85	41.9	6266	11138	11977	12816	13655	14494	15333	16172	17067

C320-256-120

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
1338kG	120	57.2	4590	11728	12957	14186	15415	16644	17873	19102	20413
1338kG	102	49.4	5315	13580	15003	16426	17849	19272	20696	22119	23637
1338kG	85	41.9	6266	16010	17688	19366	21044	22722	24400	26078	27867

C320-256-120

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
679kG	120	57.2	4590	7388	8017	8646	9274	9903	10532	11161	11831
679kG	102	49.4	5315	8555	9283	10011	10739	11467	12195	12923	13699
679kG	85	41.9	6266	10086	10945	11802	12661	13520	14377	15236	16151

C320-256-120

8 CW	S	TF@90°	0	1	2	3	4	5	6	7	STOP
679kG	120	57.2	4590	10186	11444	12701	13958	15216	16473	17731	19072
679kG	102	49.4	5315	11795	13251	14706	16162	17619	19074	20530	22083
679kG	85	41.9	6266	13906	15623	17338	19055	20773	22488	24205	26036

C456-305-144

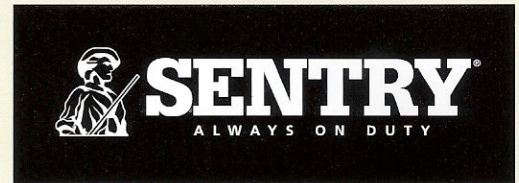
2 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
1564kG	144	68.4	5848	9294	9994	10695	11395	12096	12796	13496	14197	14941
1564kG	124	59.9	6678	10613	11413	12212	13012	13812	14612	15412	16212	17061
1564kG	106	51.7	7738	12298	13224	14150	15077	16004	16930	17857	18784	19768

C456-305-144

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
1564kG	144	68.4	5848	12741	14140	15541	16942	18343	19744	21145	22546	24034
1564kG	124	59.9	6678	14549	16147	17742	19347	20946	22546	24146	25745	27445
1564kG	106	51.7	7738	16857	18709	20562	22416	24269	26123	24976	29830	31799

Note:

1. The 0 means the crank arm only.
2. The unit of ECB is in pounds.
3. Only the most common counterweights are shown. Consult Sentry Pumping Units International Inc. For counterweights and values not shown.



C456-305-144

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
847kG	144	68.4	5848	8619	9366	10114	10861	11609	12357	13105	13852	14647
847kG	124	59.9	6678	9842	10695	11549	12403	13257	14110	14965	15818	16725
847kG	106	51.7	7738	11403	12392	13381	14370	15360	16349	17338	18327	19378

C456-305-144

8 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
847kG	144	68.4	5848	11389	12883	14379	15874	17370	18865	20361	21856	23445
847kG	124	59.9	6678	13005	14712	16420	18127	19835	21542	23251	24957	26772
847kG	106	51.7	7738	15067	17045	19024	21002	22981	24959	26938	28916	31018

C640-365-168

2 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
2215kG	168	79.6	5842	9572	10424	11276	12129	12981	13834	14686	15539	16439
2215kG	145	69.8	6663	10916	11888	12860	13832	14805	15777	16749	17721	18748
2215kG	124	60.3	7712	12635	13760	14886	16011	17136	18262	19387	20512	21701

C640-365-168

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
2215kG	168	79.6	5842	13301	15006	16711	18415	20121	21826	23530	25236	27037
2215kG	145	69.8	6663	15170	17113	19058	21002	22946	24891	26835	28779	30834
2215kG	124	60.3	7712	17559	19809	22060	24310	26561	28812	31062	33313	35691

C640-365-168

4 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
1177kG	168	79.6	5842	9321	10219	11118	12016	12913	13812	14710	15608	16567
1177kG	145	69.8	6663	10834	11860	12884	13908	14932	15957	16981	18005	19087
1177kG	124	60.3	7712	12542	13728	14914	16099	17284	18470	19656	20841	22094

C640-365-168

8 CW	S	TF@90°	0	1	2	3	4	5	6	7	8	STOP
1177kG	168	79.6	5842	13160	14956	16753	18549	20344	22141	23937	25733	27631
1177kG	145	69.8	6663	15008	17056	19105	21153	23201	25250	27298	29346	31511
1177kG	124	60.3	7712	17372	19743	22115	24485	26856	29228	31599	33969	36475





Beam Balanced Pumping Units

Effective Counter Balance (ECB)

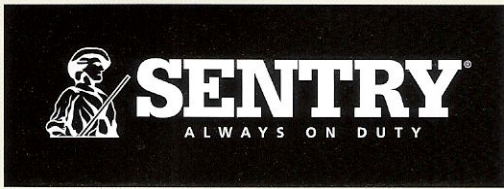
Model	Counterweight	ECB (lbs)	Setback (in)
B25-67-36	One thick counterweight	772	32
	Two thick counterweight	1349	
	Three thick counterweight	1926	
	Three thick counterweight and one thin counterweight	2311	
	Three thick counterweight and two thin counterweight	2696	
	Three thick counterweight and three thin counterweight	3081	
B40-89-48	One thick counterweight	1440	48.23
	Two thick counterweight	2410	
	Three thick counterweight	3350	
	Three thick counterweight and one thin counterweight	3560	
	Three thick counterweight and two thin counterweight	4360	
	Three thick counterweight and three thin counterweight	4890	
B57-109-54	One thick counterweight	1247	52.75
	Two thick counterweight	2028	
	Three thick counterweight	2782	
	Four thick counterweight	3517	
	Five thick counterweight	4224	
	Six thick counterweight	4907	
	Six thick counterweight and one thin counterweight	5275	
	Six thick counterweight and two thin counterweight	5637	
Six thick counterweight and three thin counterweight	5990		
B80-133-54	One thick counterweight	1247	53.15
	Two thick counterweight	2028	
	Three thick counterweight	2782	
	Four thick counterweight	3517	
	Five thick counterweight	4224	
	Six thick counterweight	4907	
	Seven thick counterweight	5566	
	Seven thick counterweight and one thin counterweight	5921	
	Seven thick counterweight and two thin counterweight	6270	
	Seven thick counterweight and three thin counterweight	6610	
Seven thick counterweight and four thin counterweight	6940		
Seven thick counterweight and five thin counterweight	7300		

Low Profile Pumping Units

Effective Counter Balance (ECB) for FlexLift

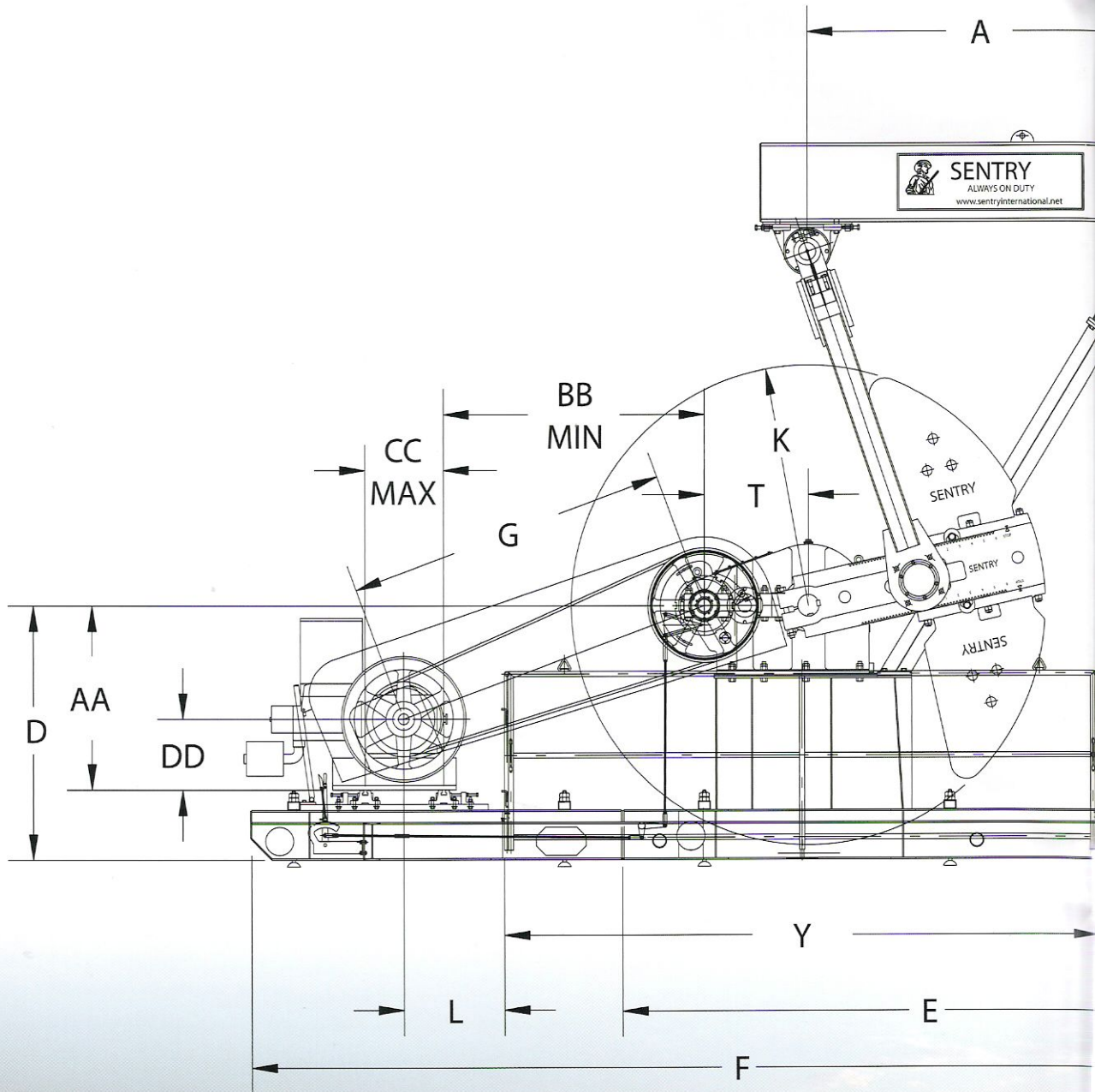
	MODEL														
	F114-173-64			F160-173-74			F228-246-86			F320-246-86			F320-256-100		
Maximum stroke	64	54	44	74	64	54	86	74	62	86	74	62	100	86	74
Cranks only	2120	2513	3085	3388	3917	4643	4072	4732	5648	3932	4570	5454	4342	5049	5868
2 weights	4791	5678	6969	6059	6588	7314	8159	9482	11317	8019	9319	11123	8429	9801	11391
2 weights and 2 Aux. weights	5588	6623	8128	6856	7385	8111	9255	10756	12838	9115	10593	12643	9525	11076	12872
2 weights and 4 Aux. weights	6385	7567	9287	7653	8182	8908	10351	12030	14358	10211	11867	14164	10621	12350	14353
4 weights	7462	8844	10854	8730	9259	9985	12246	14232	16986	12106	14069	16792	12516	14553	16914
4 weights and 4 Aux. weights	9056	10852	13172	10324	10853	11579	14438	16779	20027	14298	16617	29833	14708	17102	19876
4 weights and 8 Aux. weights	10650	12368	15491	11918	12447	13173	16630	19327	23067	16490	19164	22873	16900	19651	22838

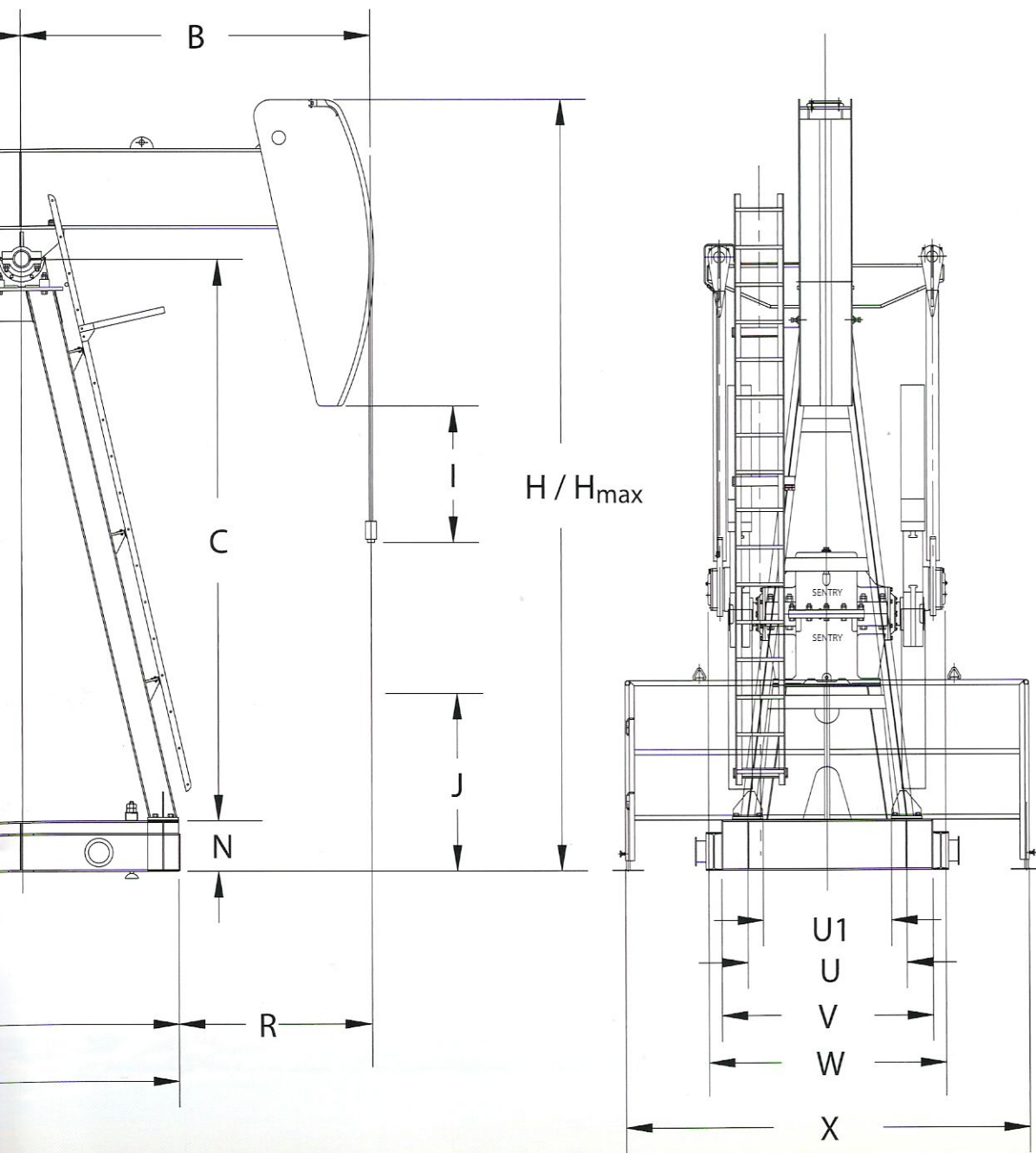




Conventional Pumping Units

Dimensions for Series I & II (inches)



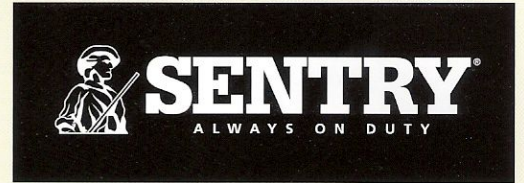


Conventional Pumping Units

Dimensions for Series I & II (inches)

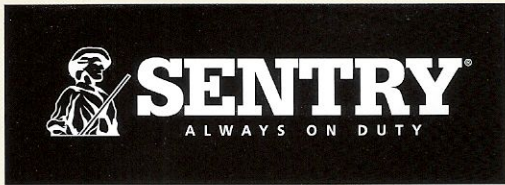
MODEL	A	B	C	D	E	F	G	H _{max}	I
SERIES I									
C114-173-64 (W)	84.06	84.06	165.35	68.69	X	276.77	93.27	233.11	21.46
C160-133-86 (ST)	96.06	111.02	194.88	78.74	187.59	X	51.18	277.39	35.04
C160-133-100 (ST)	96.06	129.13	194.88	78.74	187.59	X	51.18	289.57	22.91
C160-173-86 (M)	96.06	111.02	194.88	78.74	187.59	305.71	99.25	277.39	35.04
C160-173-100 (ST)	96.06	129.13	194.88	78.74	187.59	X	51.18	289.57	22.91
C160-200-74 (W)	96.06	96.06	194.88	78.74	X	306.50	104.96	266.38	41.73
C228-213-86 (T)	96.06	111.02	196.85	79.92	190.94	308.07	107.32	247.24	34.65
C228-213-86 (M)	96.06	111.02	196.85	79.92	190.94	301.97	97.56	247.24	34.65
C228-213-86 (W)	96.06	111.02	196.85	79.92	X	316.93	98.78	247.24	34.65
C228-213-86 (ST)	96.06	111.02	196.85	79.92	190.94	X	59.76	247.24	34.65
C228-246-86 (ST)	96.06	111.02	196.85	79.92	190.94	X	59.76	247.24	34.65
C228-246-86 (T)	96.06	111.02	196.85	79.92	190.94	296.26	102.28	247.24	34.65
C228-173-100(ST)	96.06	129.13	194.88	78.74	192.32	X	51.18	289.56	22.91
C228-256-100 (ST)	111.02	129.13	231.50	96.46	215.35	X	71.57	286.81	51.97
C228-256-100 (M)	111.02	129.13	231.50	96.46	215.35	351.18	115.43	286.81	51.97
C228-256-100 (W)	111.02	129.13	231.50	96.46	X	271.18	113.39	286.81	51.97
C228-173-120 (ST)	111.02	154.52	231.50	96.46	211.73	X	58.66	372.76	30.71
C228-213-120(ST)	111.02	154.52	231.50	96.46	215.35	X	58.66	372.76	30.71
C228-173-144 (ST)	120.08	181.09	245.67	93.69	221.06	X	X	X	X
C320-256-120 (M)	111.02	154.52	231.50	96.46	218.82	344.79	118.11	372.76	30.71
C320-256-120 (ST)	111.02	154.52	231.50	96.46	218.82	X	64.37	372.76	30.71
C320-256-120 (W)	111.02	154.52	231.50	96.46	X	356.29	126.18	372.76	30.71
C320-256-120 (T)	111.02	154.52	231.50	96.46	218.82	350.71	120.12	372.76	30.71
C320-213-120 (ST)	111.02	154.52	231.50	96.46	219.61	X	64.37	372.76	30.71
C456-305-144 (ST)	120.08	181.10	253.94	104.33	228.35	X	62.91	383.07	27.95
C456-305-144 (T)	120.08	181.10	253.94	104.33	228.35	360.24	135.83	383.07	27.95
C456-305-144 (M)	120.08	181.10	253.94	104.33	228.35	364.96	129.13	383.07	27.95
C456-305-168 (ST)	120.08	181.10	263.39	113.78	231.09	X	71.93	416.34	31.89
C640-305-168 (ST)	120.08	181.10	263.39	113.78	233.39	X	71.93	416.34	31.89
C640-305-168 (M)	120.08	181.10	263.39	113.78	233.39	370.00	136.34	416.34	31.89
C640-365-168 (ST)	120.08	181.10	263.79	115.75	234.25	X	65.35	416.34	31.89
C640-365-168 (T)	120.08	181.10	263.79	115.75	234.25	377.56	140.55	416.34	31.89
SERIES II									
C114D-173-64	84	90	157	73.63	180	303	----	210	47
C160D-200-74	84	87	161	73.75	185	305	----	220	44
C228-246-86	111	111	177	79.75	220	340	----	243	43
C320D-256-120	111	154	204	96.75	227	374	----	289	42
C456D-305-144	120	180	229	111.75	254	386	----	324	49
C640D-365-168	140	210	244	114.63	235	411	----	353	42

1. SF-stub base with Hi-prime bracket for electric motor.
2. T-jointed base for slow speed engine.
3. M-jointed base for multi-cylinder engine.
4. W-wide skid base for gas or electric.
5. The negative or the sign (-) means that the distance it stand for are on the opposite side relative to shown.



J	K	L	N	R	T	U1	V	W	X	Y
63.39	64.96	28.74	12.59	53.15	25.59	33.46	74.02	74.65	110.63	166.54
64.96	76.38	-22.17	14.17	71.85	29.53	33.46	56.54	80.16	120.47	188.58
63.39	76.38	-26.10	14.17	89.96	29.53	33.46	56.54	80.16	94.49	196.46
64.96	76.38	27.95	14.17	71.85	29.53	33.46	56.54	80.16	118.11	188.58
63.39	76.38	-26.10	14.17	89.96	29.53	33.46	56.54	80.16	94.49	196.46
70.67	76.38	34.61	14.17	56.89	29.53	33.31	74.25	80.16	119.53	187.39
69.29	75.98	32.05	14.17	75.59	33.46	37.00	60.63	86.06	121.34	188.66
69.29	75.98	27.32	14.17	75.59	33.46	37.00	60.63	86.06	121.34	188.66
69.29	75.98	28.54	14.17	75.59	33.46	X	80.55	86.06	120.87	193.31
69.29	75.98	-19.69	14.17	75.59	33.46	37.00	60.63	86.06	120.87	210.63
69.29	75.98	-19.69	14.17	75.59	33.46	37.00	60.63	86.06	120.87	210.63
69.29	75.98	26.14	14.17	75.59	33.46	37.00	60.63	86.06	121.34	188.66
63.39	76.38	-26.10	14.17	89.96	33.46	37.00	56.54	86.06	121.34	196.46
70.87	94.49	-21.77	14.17	85.51	33.46	40.79	70.87	86.06	120.87	220.67
70.87	94.49	32.87	14.17	85.51	33.46	40.79	70.87	86.06	120.87	203.94
70.87	94.49	30.51	14.17	85.51	33.46	X	80.55	86.06	120.87	203.94
72.24	94.49	-21.89	14.17	110.91	33.46	40.79	70.87	86.06	120.87	212.59
72.24	94.49	-21.89	14.17	110.91	33.46	40.79	70.87	86.06	120.87	212.59
X	92.52	X	14.17	137.99	33.46	33.46	59.06	86.06	94.49	220.47
72.24	94.49	27.52	15.75	111.69	37.39	43.23	70.87	92.19	131.29	227.17
72.24	94.49	-26.18	15.75	111.69	37.39	43.23	70.87	92.19	131.29	227.17
72.24	94.49	36.89	15.75	111.69	37.39	43.23	70.87	92.19	131.29	227.17
72.24	94.49	25.12	15.75	111.69	37.39	43.23	70.87	92.19	131.29	227.17
72.24	94.49	X	14.17	110.91	37.39	42.99	70.87	92.19	131.29	227.17
73.23	102.36	-29.53	17.72	135.83	39.37	51.18	75.59	106.77	134.65	242.52
73.23	102.36	29.92	17.72	135.83	39.37	51.18	75.59	106.77	134.65	242.52
73.23	102.36	29.92	17.72	135.83	39.37	51.18	75.59	106.77	134.65	242.52
53.74	109.84	-34.25	17.72	133.07	39.37	51.18	71.26	107.56	134.65	253.94
53.74	109.84	-32.28	17.72	133.07	41.34	51.18	75.59	105.94	133.07	253.94
53.74	109.84	27.56	17.72	133.07	41.34	51.18	75.59	105.94	133.07	253.94
53.74	109.84	-35.51	19.69	131.89	41.34	51.42	72.44	105.94	141.73	255.91
53.74	109.84	34.79	19.69	131.89	41.34	51.42	72.44	105.94	141.73	238.66

J	K	L	N	R	T	U	V	W	X	Y
56	71	----	14	45	23.622	48	66	68	103	180.75
56	71	----	16	41	29.528	50	67	75.38	110	180.75
56	76	----	16	61	33.465	50	67	75.38	110	190.5
56	95	----	18	98	33.46	52	69	81.38	116	228.75
56	108	----	18	116	39.37	59	76	90	125	254.75
56	114	----	20	143	39.37	75	87	100	135	266.75



Beam Balance Pumping Units

Dimensions (inches)

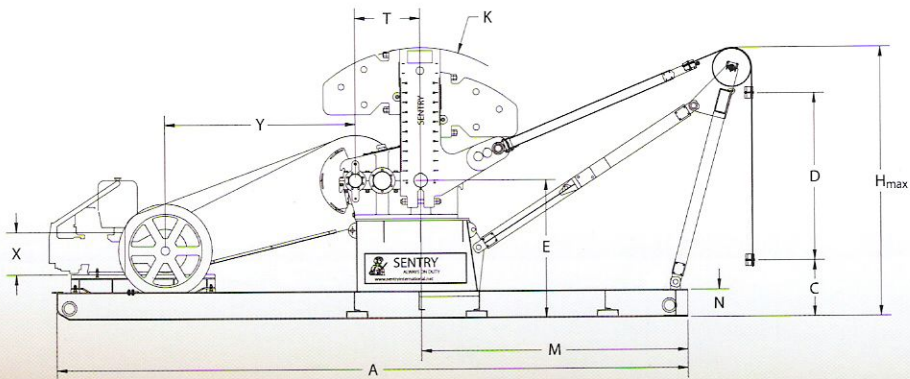
MODEL	A	B	C	D	E	F	H _{max}	I
B25-67-36 (W)	26.66 / 32.66	38.26	93.4	28.2	53.26 / 47.26	112.2	151.8	11
B40-89-48 (W)	40.94	60.43	108.66	33.86	85.35	159.45	160.31	15.31
B57-109-54 (W)	45.28	66.93	115.75	36.22	72.83	162.60	172.68	9.06
B57-109-54 (S)	45.28	66.93	115.75	36.22	72.83	162.60	172.68	9.06
B80-133-54 (W)	45.28	66.93	115.75	36.22	72.83	162.60	172.68	9.06

1. W-wide skid base for gas and electric.
 2. S- for electric motor

Low Profile Pumping Units

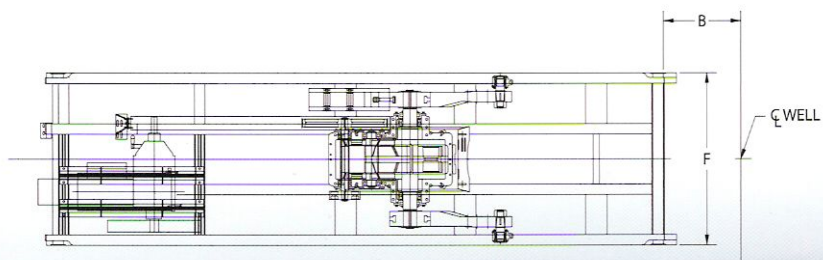
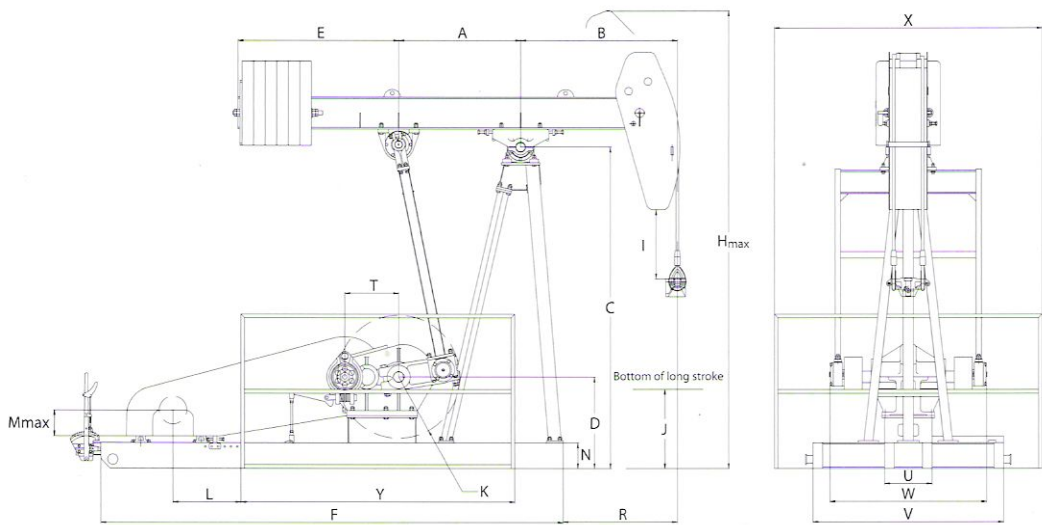
Dimensions for FlexLift (inches)

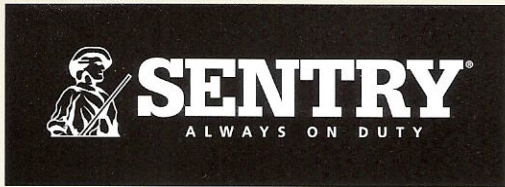
MODEL	A	B	C	D	E	F	H _{max}	K	M	N	X	Y	T
F114-173-64	277.56	28.35	25.67	64.02	58.19	83.86	110.87	55.12	104.06	14.17	94.72	36.02	25.59
F160-173-74	297.05	31.43	23.31	74.02	64.17	83.86	122.91	59.06	127.17	14.17	89.17	36.02	29.53
F228-246-86	323.82	37.36	27.01	85.98	70.87	88.03	138.23	68.11	136.61	14.17	99.8	36.02	33.46
F320-246-86	323.82	37.36	27.01	85.98	70.87	88.03	138.23	68.11	136.61	14.17	99.8	36.02	37.4
F320-256-100	344.29	42.06	31.14	100	78.98	88.03	156.3	75.98	156.54	14.17	96.42	36.02	37.4



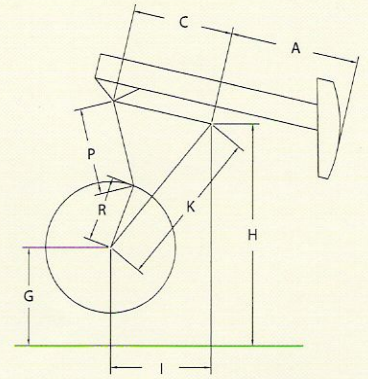
J	K	L	M _{max}	N	R	T	U	V	W	X	Y
---	---	---	------------------	---	---	---	---	---	---	---	---

41.9	8 / 12			8	32	16.54	11.8	46.5	58.27	74	61
44.13	20.47	33.82	16.06	8.66	48.23	17.72	16.93	61.97	52.28	90.35	81.89
42.52	22.44	35.79	19.69	11.02	53.15	19.69	17.32	61.97	52.28	90.35	81.89
42.52	22.44	35.79	19.69	11.02	53.15	19.69	17.32	35.43	52.28	90.35	81.89
42.52	22.44	35.79	19.69	11.02	53.15	19.69	17.32	61.97	52.28	90.35	81.89





Conventional and Beam Balanced Pumping Units API Geometry Dimensions



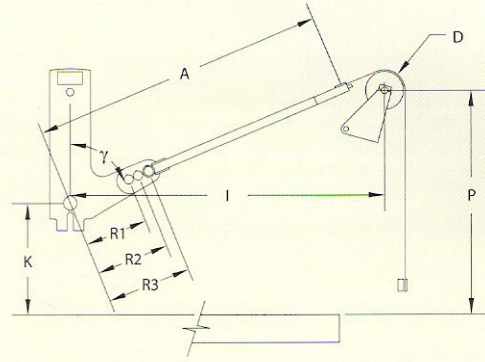
MODEL	A	R1	R2	R3	P	C	K	I	H	G	SU	TF
SERIES I												
C114-173-64	84.1	31.5	26.6	21.7	93.7	84.1	128.1	84.1	165.4	68.7	346	30.23
C160-133-86	111	36.2	31.3	26.4	116.1	96.1	150.7	96.1	194.9	78.7	390	40.59
C160-133-100	129.1	36.2	31.3	26.4	116.1	96.1	150.7	96.1	194.9	78.7	390	47.84
C160-173-86	111	36.2	31.3	26.4	116.1	96.1	150.7	96.1	194.9	78.7	390	40.59
C160-173-100	129.1	36.2	31.3	26.4	116.1	96.1	150.7	96.1	194.9	78.7	395	47.84
C160-200-74	96.1	36.2	31.3	26.4	116.1	96.1	150.7	96.1	194.9	78.7	352	35.59
C228-213-86	111	36.0	29.9	23.8	114	96.1	151.3	96.1	196.9	79.9	346	40.59
C228-246-86	111	36.0	29.9	23.8	114	96.1	151.3	96.1	196.9	79.9	346	40.59
C228-256-100	129.1	41.9	35.8	29.7	133.9	111	174.8	111	231.5	96.5	992	47.71
C320-256-120	154.5	41.9	35.8	29.7	133.9	111	174.8	111	231.5	96.5	483	57.18
C320-213-120	154.5	41.9	35.8	29.7	133.9	111	174.8	111	231.5	96.5	800	57.18
C456-305-144	181.1	46.5	40	33.5	149.6	120.1	191.9	120.1	253.9	104.3	-540	68.82
C456-305-168	181.1	53.5	46.5	39.4	149.6	120.1	191.9	120.1	263.4	113.8	-540	78.58
C640-365-168	181.1	53.5	46.5	39.4	149.6	120.1	191.9	120.1	263.4	113.8	980	78.58
SERIES II												
C114-173-64	90.2	29.1	23.6	18.1	96.5	83.9	127.8	83.9	171.3	74.8	1,085	30.8
C160-200-74	86.6	34.6	29.1	23.6	102.4	83.9	132.3	83.9	177.2	74.8	1,252	35.0
C228-246-86	111	41.9	36.0	30.3	112.2	111	157.8	111	192.9	80.7	1,274	40.8
C320-256-120	154.7	41.9	36.0	30.3	124.0	111	166.5	111	222.8	98.8	128	57.2
C456-305-144	179.9	46.7	40.6	34.8	136.2	120.1	181.3	120.1	246.9	111	1,314	68.4
C640-365-168	210.0	54.3	47.2	40.6	148.0	139.8	203.3	139.8	263.8	116	-2,035	79.6

MODEL	A	C1	C2	I	P	H	G	R	SU	TF
BEAM BALANCED										
B25-67-36 (W)	38.26	26.66	32.66	32	66.9	93.4	28.2	8 / 12	195	25.98
B40-89-48	60.43	40.95	54.33	46.06	75.2	108.7	33.86	15.75	420	23.21
B57-109-54	66.93	45.28	58.66	47.24	79.14	115.8	36.22	17.72	440	25.98
B80-133-54	66.93	45.28	58.66	47.24	79.14	115.8	36.22	17.72	440	25.98



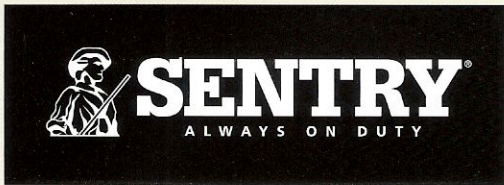
Low Profile Pumping Units

API Geometry Dimensions



MODEL	D	P	I	A	K	R1	R2	R3	γ
FLEXLIFT									
F114-173-64	16.54	102.21	123.94	131.52	44.02	32	27	22	68
F160-173-74	16.54	114.27	144.93	153.35	50	37	32	27	68
F228-246-86	19.88	127.9	160.21	170.06	56.69	43	37	31	68
F320-256-86	19.88	127.9	160.21	170.06	56.69	43	37	31	68
F320-256-100	19.88	145.96	184.84	196.6	64.8	50	43	37	68





Conventional Pumping Unit

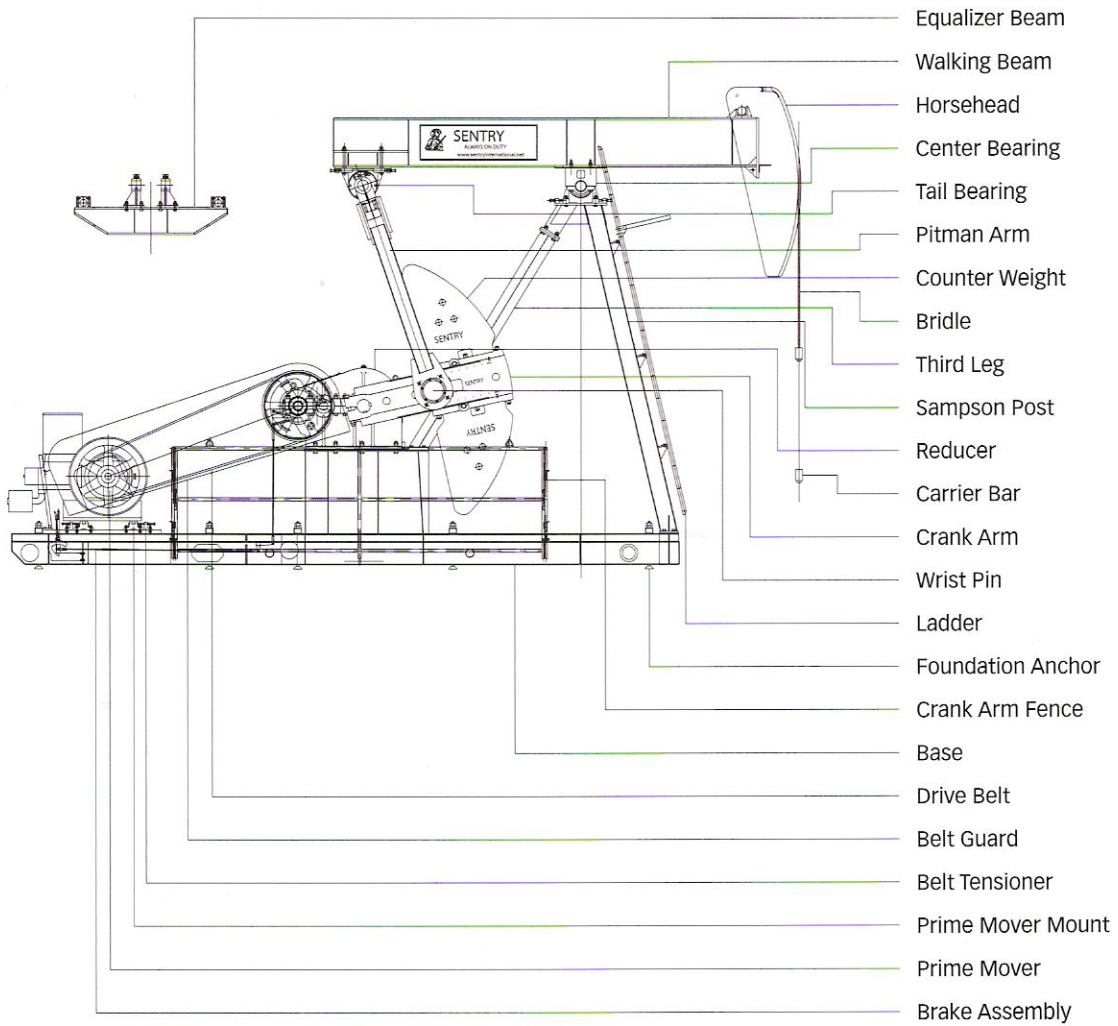
Nomenclature

C228D-246-86

- *Type Of Pumping Unit _____
- Gear Reducer Peak Torque Rating (Thousands of Inch Lbs.) _____
- Double Reduction Gear Reducer _____
- Polished Rod/Structure Load Rating (Hundred Lbs.) _____
- Maximum Stroke Length (Inches) _____

*Key For Type Of Pumping Unit

- A = Air Balanced
- B = Beam Balanced
- C = Conventional



Artificial Lift Application Formulas

EXAMPLE

SPM STROKES PER MINUTE

INPUT	1150	RPM of Prime Mover
INPUT	30.12	GR Gear Reducer Ratio
INPUT	12	Pd Pitch Diameter of Prime Mover Sheave
INPUT	47	PD Pitch Diameter of Reducer Sheave
OUTPUT	10	Strokes Per Minute

$$SPM = \frac{RPM}{G_R} \times \frac{P_d}{P_D}$$

EXAMPLE

d PRIME MOVER SHEAVE DIAMETER

INPUT	9.92	SPM Strokes Per Minute
INPUT	30.12	GR Gear Reducer Ratio
INPUT	47	PD Pitch Diameter of Reducer Sheave
INPUT	1170	RPM of Prime Mover
OUTPUT	12.00	Prime Mover Sheave Diameter

$$d = \frac{SPM \times G_R \times P_D}{RPM}$$

Use nearest size available depending upon belt selection and number of grooves in sheave

EXAMPLE

v BELT VELOCITY

INPUT	14.5	Pd Pitch Diameter of Prime Mover Pulley
INPUT	1170	RPM of Prime Mover
OUTPUT	4441.43	Feet Per Minute
		Limit Between 2000 FPM and 5000 FPM

$$v = \frac{\pi \times P_d \times RPM}{12}$$

Belt velocity less than 2000 fpm results in poor belt life. Belt velocity more than 5000 fpm requires dynamically balanced sheaves

EXAMPLE

CD CENTER DISTANCE

INPUT	31	BB Horizontal Distance from Reducer Input Shaft to Front Motor Mount
INPUT	33.25	CC Horizontal Distance from Front Motor Mount to Rear Motor Mount
INPUT	54	AA Vertical Distance from Reducer Input Shaft to Top of Motor Mount
INPUT	8	DD Vertical Distance from Top of Motor Mount to Prime Mover Output Shaft
OUTPUT	66.21	Inches

$$cd = \sqrt{\left(BB + \frac{CC}{2} \right)^2 + (AA - DD)^2}$$

EXAMPLE

PL BELT LENGTH

INPUT	66.21	G Center Distance of Prime Mover Shaft to Reducer Input Shaft
INPUT	47	PD Pitch Diameter of Gear Reducer Sheave
INPUT	14.5	Pd Pitch Diameter of Prime Mover Sheave
OUTPUT	232.97	Inches

$$PL = 2G + 1.57 (P_D + P_d) + \frac{(P_D - P_d)^2}{4 \times G}$$

Use nearest belt size depending on type of sheaves selected

EXAMPLE

HP HORSEPOWER OF PRIME MOVER (FORMULA: A) For high slip (NEMA D) electric motor and slow speed engines

INPUT	400	BPD Barrels Per Day @100% Pump Efficiency
INPUT	7500	Depth Feet Pump Setting
OUTPUT	53.6	Use Next Even Horsepower

$$HP = \frac{BPD \times Depth}{56,000}$$

EXAMPLE

HP HORSEPOWER OF PRIME MOVER (FORMULA: B) For normal slip electric motor and multi-cylinder engines

INPUT	400	Barrels Per Day @100% Pump Efficiency
INPUT	7500	Depth Feet Pump Setting
OUTPUT	66.7	Use Next Even Horsepower

$$HP = \frac{BPD \times Depth}{45,000}$$

EXAMPLE

SPM MAXIMUM STROKES PER MINUTE FOR CONVENTIONAL PUMPING UNIT

INPUT	100	L Stroke of Pumping Unit
OUTPUT	17	Strokes Per Minute Max.

$$SPM = .7 \sqrt{\frac{60,000}{L}}$$

**Guarantee your productivity.
Guard your profits.**

Sentry represents the standard of the Industry in pumping units. Today's Sentry pumpjacks incorporate more than a century of combined manufacturing expertise and feedback from operators in the field in which Sentry and its joint-venture partners have utilized to benefit the Industry. Our methods of manufacture have been refined and refined again to the satisfaction of our diversified customer base. Over the years, Sentry units have lifted millions of barrels out of the ground. Reliably. Economically. With low maintenance, supported by round the clock service and a full parts inventory.

There are no compromises in the design of these units. No shortcuts in their construction. And, therefore, no surprises at the wellhead. Pump strong. Pump sure. Pump Sentry.



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