



# 900 Series MODEL 9310 CRAWLER CRANE WITH 77H BOOM

## LIFT RATINGS With 77H Tubular Hammerhead Boom and "S-S" Counterweight (135,000 Lbs.)

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
70 feet	16	82.8	—	450000	77
	20	79.5	—	335830	77
	25	75.4	—	230370	75
	30	71.1	—	174380	74
	35	66.7	121510	139730	72
	40	62.2	101700	116210	70
	50	52.4	78820	86030	63
	60	41.0	59890	67720	53
	70	25.6	48950	55270	37
80 feet	17	83.0	—	407830	87
	20	80.8	—	335750	87
	25	77.2	—	230220	86
	30	73.5	—	174180	84
	35	69.8	121280	139530	83
	40	65.9	101470	116000	81
	50	57.8	75580	85810	75
	60	48.8	59670	67520	68
	70	38.2	48730	55070	57
80	23.8	40780	46100	39	
90 feet	19	82.5	—	363930	97
	20	81.9	—	335630	97
	25	78.7	—	230060	96
	30	75.4	149700	173980	95
	35	72.1	121030	139310	93
	40	68.7	101220	115780	92
	50	61.7	75320	85570	87
	60	54.2	59420	67280	81
	70	45.8	48480	54840	72
80	35.9	40550	45870	60	
90	22.4	34600	39180	41	
100 feet	20	82.7	—	327760	107
	25	79.8	—	229820	106
	30	76.9	149390	173710	105
	35	73.9	120720	139040	104
	40	70.9	100920	115510	102
	50	64.8	74990	85260	98
	60	58.2	59120	66990	93
	70	51.2	48170	54540	85
	80	43.3	40240	45570	76
90	34.0	34340	38930	63	
100	21.2	29580	33600	43	
110 feet	21	82.8	—	296210	117
	25	80.7	—	229590	116
	30	78.1	149090	173440	115
	35	75.4	120410	138760	114
	40	72.7	100610	115220	113
	50	67.2	74670	84950	109
	60	61.4	58810	66700	104
	70	55.3	47860	54240	98
	80	48.6	39930	45270	90
90	41.2	34070	38660	80	
100	32.3	29320	33340	66	
110	20.1	25480	29060	45	
120 feet	22	82.9	—	262380	127
	25	81.5	194030	229400	126
	30	79.1	148830	173220	126
	35	76.7	120150	138520	124
	40	74.2	100370	115000	123

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
120 feet cont.	50	69.2	74400	84700	120
	60	64.0	58570	66460	115
	70	58.5	47610	54000	110
	80	52.7	39670	45020	103
	90	46.4	33850	38450	94
	100	39.3	29110	33140	83
	120	19.2	22120	25340	47
130 feet	24	82.6	206120	232640	137
	25	82.2	193710	229140	137
	30	79.9	148490	172920	136
	35	77.7	119810	138210	135
	40	75.4	100030	114680	134
	50	70.8	74040	84350	131
	60	66.1	58210	66120	127
	70	61.2	47250	53640	122
	80	56.0	39300	44660	115
	90	50.5	33520	38130	108
	100	44.5	28780	32810	99
	120	29.6	21790	25030	71
130	18.4	19150	22090	48	
140 feet	25	82.7	193400	205950	147
	30	80.7	148170	172630	146
	35	78.6	119470	137900	145
	40	76.5	99700	114380	144
	50	72.3	73680	84010	141
	60	67.9	57870	65790	137
	70	63.4	46900	53310	133
	80	58.7	38960	44320	127
	90	53.8	33190	37810	121
	100	48.5	28450	32500	112
	120	36.2	21480	24720	90
	140	17.7	16580	19280	50
150 feet	26	82.8	182320	183100	157
	30	81.3	147810	172310	156
	35	79.4	119110	137570	155
	40	77.4	99330	114030	154
	50	73.5	73300	83650	152
	60	69.5	57500	65430	148
	70	65.3	46520	52940	144
	80	61.0	38560	43940	139
	90	56.6	32830	37450	133
	100	51.8	28080	32130	125
120	41.2	21110	24360	106	
140	27.5	16230	18940	76	
150	17.1	14300	16800	51	
160 feet	27	82.9	163790	163790	167
	30	81.8	147460	163790	166
	35	80.0	118760	137240	165
	40	78.2	98990	113710	164
	50	74.5	72930	83290	162
	60	70.8	57130	65080	159
	70	67.0	46150	52580	155
	80	63.0	38190	43580	150
	90	58.9	32470	37100	145
	100	54.6	27730	31790	138
	120	45.2	20770	24020	121
	140	33.8	15880	18590	96
160	16.5	12280	14600	53	

(Continued)

# LIFT RATINGS (cont.)

With 77H Tubular Hammerhead Boom

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
170 feet	28	83.0	147330	147330	176
	30	82.3	147330	147330	176
	35	80.6	118450	136950	175
	40	78.9	98690	113420	175
	50	75.5	72600	82980	172
	60	72.0	56820	64780	169
	70	68.4	45830	52260	166
	80	64.7	37860	43260	161
	90	60.9	32160	36800	156
	100	57.0	27430	31490	150
	120	48.5	20450	23710	135
	140	38.6	15580	18290	113
160	25.7	11980	14300	81	
170	16.0	10500	12670	54	
180 feet	30	82.7	133870	133870	186
	35	81.1	118080	133870	186
	40	79.5	98320	113090	185
	50	76.3	72210	82600	183
	60	73.0	56440	64410	180
	70	69.6	45440	51880	176
	80	66.2	37470	42870	172
	90	62.7	31800	36440	168
	100	59.0	27050	31120	162
	120	51.2	20070	23340	148
	140	42.5	15210	17920	129
	160	31.8	11600	13930	102
180	15.5	8830	10870	55	
190 feet	31	82.8	120130	120130	196
	35	81.6	117730	120130	196
	40	80.1	97970	112760	195
	50	77.0	71830	82240	193
	60	73.9	56070	64050	190
	70	70.7	45060	51520	187
	80	67.5	37070	42490	183
	90	64.2	31430	36080	179
	100	60.8	26680	30760	174
	120	53.6	19700	22970	161
	140	45.7	14830	17550	143
	160	36.4	11230	13570	120
180	24.3	8470	10510	85	
190	15.1	7320	9240	57	
200 feet	32	82.9	109570	109570	206
	35	82.0	109570	109570	206
	40	80.6	97610	109570	205
	50	77.7	71440	81870	203
	60	74.7	55680	63680	201
	70	71.7	44660	51130	198
	80	68.7	36670	42090	194
	90	65.6	31040	35700	190
	100	62.4	26300	30380	185
	120	55.7	19310	22580	173
	140	48.4	14440	17170	157
	160	40.2	10840	13180	136
180	30.1	8080	10120	108	
200	14.7	5880	7700	58	
210 feet	33	83.0	99900	99900	216
	35	82.4	99900	99900	216
	40	81.0	97240	99900	215
	50	78.3	71060	81500	213
	60	75.5	55300	63310	211
	70	72.6	44270	50750	208
	80	69.8	36280	41710	205
	90	66.8	30670	35340	201
	100	63.8	25920	30010	196
	120	57.6	18940	22220	185
	140	50.8	14060	16790	170
	160	43.3	10450	12790	152
180	34.6	7690	9730	126	
200	23.1	5500	7320	89	
210	14.3	4580	6300	59	
220 feet	35	82.8	91700	91700	226
	40	81.4	91700	91700	225
	50	78.8	70710	81160	224
	60	76.1	54970	62990	221
	70	73.5	43920	50410	219

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
220 feet cont.	80	70.7	35920	41350	215
	90	67.9	30330	35010	212
	100	65.1	25570	29670	207
	120	59.2	18600	21880	197
	140	52.9	13710	16450	183
	160	46.0	10110	12450	166
	180	38.2	7340	9390	143
	200	28.6	5150	6970	113
	220	14.0	3400	5040	60
	230 feet	36	82.8	84050	84050
40		81.8	84050	84050	235
50		79.3	70300	80770	234
60		76.8	54580	62610	232
70		74.2	43530	50020	229
80		71.6	35510	40960	226
90		68.9	29950	34630	222
100		66.2	25190	29290	218
120		60.7	18200	21480	208
140		54.8	13310	16050	195
160		48.4	9710	12060	179
180		41.3	6950	9000	159
200	33.0	4760	6580	132	
220	22.0	2200	4630	93	
230	13.7	1300	3790	61	
240 feet	37	82.9	75920	75920	246
	40	82.2	75920	75920	246
	50	79.7	70470	75920	244
	60	77.3	54200	62250	242
	70	74.9	43140	49640	239
	80	72.4	35130	40580	236
	90	69.9	29570	34260	233
	100	67.3	24810	28920	229
	120	62.0	17810	21100	220
	140	56.4	12930	15670	208
	160	50.5	9330	11680	193
	180	44.0	6550	8610	174
200	36.5	4370	6190	150	
220	27.4	2700	4230	118	
250 feet	38	82.9	70020	70020	256
	40	82.5	70020	70020	256
	50	80.2	69930	69930	254
	60	77.8	53810	61870	252
	70	75.5	42730	49250	250
	80	73.1	34720	40180	247
	90	70.7	29190	33880	244
	100	68.2	24420	28530	240
	120	63.2	17420	20710	231
	140	58.0	12520	15270	220
	160	52.4	8920	11270	206
	180	46.3	6150	8210	188
200	39.5	3960	5790	166	
220	31.6	2700	3830	138	
260 feet	39	83.0	64630	64630	266
	40	82.8	64570	64570	266
	50	80.5	64360	64360	264
	60	78.3	53430	61490	262
	70	76.0	42340	48870	260
	80	73.8	34320	39790	257
	90	71.5	28800	33500	254
	100	69.1	24030	28150	251
	120	64.3	17020	20320	242
	140	59.3	12130	14890	231
	160	54.0	8520	10880	218
	180	48.4	5750	7820	202
200	42.1	3550	5390	182	
220	35.0	2700	3430	157	

9310.27

# LIFT RATINGS With 77H Tubular Tapered Tip Boom and "S-S" Counterweight

(135,000 Lbs.)

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
100 feet	21	80.8		243800	105
	25	78.5		232400	105
	30	75.6		176600	104
	35	72.6		142100	102
	40	69.6		118710	100
	50	63.3		88630	96
	60	56.7	62620	70480	90
	70	49.5	51750	58100	83
	80	41.5	43880	49200	73
	90	31.9	37920	42500	60
100	18.3	33340	37350	38	
110 feet	23	80.6		243670	115
	25	79.6		232120	115
	30	76.9		176290	114
	35	74.2		141780	113
	40	71.5		118400	111
	50	65.9	78030	88290	107
	60	60.0	62270	70150	102
	70	53.8	51400	57770	96
	80	47.1	43520	48860	87
	90	39.5	37560	42150	77
100	30.3	33020	37040	62	
110	17.5	29240	32820	40	
120 feet	24	80.9		243530	125
	25	80.4		231840	125
	30	78.0		175980	124
	35	75.6		141480	123
	40	73.1		118080	122
	50	68.0	77690	87970	118
	60	62.8	61940	69830	113
	70	57.2	51070	57450	108
	80	51.4	43190	48530	100
	90	44.9	37220	41810	92
100	37.7	32710	36740	80	
120	16.7	25810	29040	41	
130 feet	26	80.7		217680	135
	30	78.9		175630	134
	35	76.7		141120	133
	40	74.4	103110	117740	132
	50	69.8	77290	87590	129
	60	65.0	61570	69470	125
	70	60.0	50680	57070	119
	80	54.8	42800	48160	113
	90	49.2	36830	41440	105
	100	43.1	32350	36390	96
120	27.9	25460	28690	68	
130	16.0	22850	25790	43	
140 feet	27	81.0		201070	145
	30	79.7		175290	145
	35	77.7		140780	144
	40	75.5	102750	117400	142
	50	71.3	76920	87230	139
	60	66.9	61210	69120	136
	70	62.4	50320	56720	131
	80	57.6	42440	47800	125
	90	52.6	36460	41070	118
	100	47.3	32010	36050	110
120	34.8	25120	28360	87	
140	15.5	20300	23000	44	
150 feet	29	80.8		182200	155
	30	80.4		174980	155
	35	78.5	122070	140470	154
	40	76.5	102430	117090	153
	50	72.6	76580	86910	150
	60	68.5	60900	68820	146
	70	64.3	50010	56410	142
	80	60.0	42110	47480	137
	90	55.5	36140	40750	130
	100	50.7	31720	35770	123
120	40.0	24820	28070	103	
140	25.9	20000	22710	72	
150	14.9	18110	20600	45	
160 feet	31	80.7	143420	165090	165
	35	79.2	121670	140100	164
	40	77.4	102050	116730	163
	50	73.7	76180	86520	160
	60	69.9	60510	68450	157

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
160 feet cont.	70	66.1	49610	56030	153
	80	62.1	41710	47090	148
	90	57.9	35740	40360	142
	100	53.6	31340	35390	136
	120	44.1	24440	27690	118
	140	32.5	19620	22330	93
	160	14.5	16080	18400	47
170 feet	32	80.9	137200	148370	175
	35	79.9	121290	139740	174
	40	78.1	101680	116380	173
	50	74.7	75790	86150	171
	60	71.1	60130	68080	168
	70	67.5	49220	55640	164
	80	63.8	41330	46710	159
	90	60.0	35680	40310	154
	100	56.1	30970	35030	148
	120	47.5	24070	27330	132
140	37.5	19250	21960	110	
160	24.3	15700	18030	77	
170	14.0	14270	16440	48	
180 feet	34	80.7	125790	135170	184
	35	80.4	120880	135170	184
	40	78.8	101280	116010	183
	50	75.5	75370	85740	181
	60	72.2	59730	67690	178
	70	68.9	48810	55250	175
	80	65.4	40910	46300	170
	90	61.8	35280	39920	165
	100	58.2	30580	34640	160
	120	50.3	23680	26940	145
140	41.4	18850	21570	126	
160	30.6	15310	17630	98	
180	13.6	12590	14630	49	
190 feet	35	80.9	120490	122910	194
	40	79.4	100900	115640	194
	50	76.3	74970	85360	191
	60	73.2	59340	67310	189
	70	70.0	48410	54860	185
	80	66.8	40510	45910	181
	90	63.4	34900	39550	177
	100	60.0	30200	34280	171
	120	52.8	23300	26560	158
	140	44.7	18470	21190	141
160	35.4	14920	17250	117	
180	23.0	12200	14240	81	
190	13.3	11080	13000	50	
200 feet	37	80.8	111690	111690	204
	40	79.9	100550	111690	204
	50	77.0	74610	85000	202
	60	74.1	58990	66970	199
	70	71.1	48060	54510	196
	80	68.0	40150	45560	192
	90	64.9	34570	39220	188
	100	61.7	29860	33940	183
	120	54.9	22950	26220	170
	140	47.6	18130	20860	154
160	39.2	14580	16910	133	
180	29.0	11860	13900	104	
200	12.9	9720	11540	51	
210 feet	38	81.0	101820	101820	214
	40	80.4	100140	101820	214
	50	77.6	74190	84610	212
	60	74.8	58580	66580	209
	70	72.0	47650	54120	206
	80	69.1	39730	45150	203
	90	66.1	34170	38830	199
	100	63.1	29460	33550	194
	120	56.8	22550	25830	183
	140	50.0	17730	20460	168
160	42.5	14170	16510	149	
180	33.6	11440	13490	123	
200	21.8	9300	11120	85	
210	12.6	8410	10130	53	

(Continued)

# LIFT RATINGS (cont.)

With 77H Tubular Tapered Tip Boom

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
220 feet	40	80.9	93680	93680	224
	50	78.2	73790	84220	222
	60	75.5	58190	66190	220
	70	72.8	47250	53730	217
	80	70.1	39320	44750	214
	90	67.3	33790	38460	210
	100	64.4	29080	33170	205
	120	58.5	22160	25440	194
	140	52.2	17340	20070	181
	160	45.2	13780	16120	163
	180	37.3	11050	13100	140
	200	27.6	8890	10720	109
220	12.3	7180	8820	54	
230 feet	42	80.8	86060	86060	234
	50	78.7	73360	83800	232
	60	76.2	57780	65790	230
	70	73.6	46840	53320	227
	80	71.0	38900	44340	224
	90	68.3	33390	38060	221
	100	65.6	28670	32770	216
	120	60.0	21760	25040	206
	140	54.1	16930	19670	193
	160	47.7	13360	15710	177
	180	40.5	10630	12680	156
	200	23.1	8480	10310	129
	220	20.9	6750	8390	89
	230	12.0	6020	7590	55
240 feet	43	80.9	77490	77490	244
	50	79.2	73500	77490	243
	60	76.8	57390	65410	240
	70	74.3	46430	52920	238
	80	71.8	38490	43930	235
	90	69.3	33000	37680	231
	100	66.7	28290	32390	227
	120	61.4	21360	24650	217
	140	55.8	16530	19270	205
	160	49.8	12960	15310	190
	180	43.2	10230	12290	171
	200	35.7	8070	9900	147
	220	26.4	6340	7980	114
	240	11.8	4940	6430	56
250 feet	45	80.8	71730	71730	254
	50	79.6	71520	71520	253
	60	77.3	57020	65050	251
	70	74.9	46050	52550	248
	80	72.6	38110	43560	245
	90	70.1	32640	37330	242
	100	67.7	27920	32030	238
	120	62.6	20990	24290	229
	140	57.3	16160	18910	217
	160	51.7	12600	14950	203
	180	45.6	9860	11920	185
	200	38.8	7710	9540	163
	220	30.7	5960	7610	134
	240	20.0	4540	6040	92
250	11.6	3950	5380	57	
260 feet	46	80.9	66000	66000	264
	50	80.0	65820	65820	263
	60	77.8	56610	64660	261
	70	75.5	45630	52150	259

Boom Length (Feet)	Radius In Feet	Boom Angle Degrees	Side Frames Retracted (Lbs.)	Side Frames Extended (Lbs.)	Ft. From Boom Point
260 feet cont.	80	73.2	37690	43150	256
	90	70.9	32240	36940	252
	100	68.6	27520	31640	249
	120	63.8	20590	23890	240
	140	58.7	15750	18500	229
	160	53.4	12180	14540	216
	180	47.7	9450	11510	199
	200	41.4	7290	9120	179
	220	34.2	5540	7190	153
	240	25.4	4110	5610	118
	260	11.3	2950	4320	58
	270 feet	48	80.8	60860	60860
50		80.4	60830	60830	273
60		78.3	56210	60110	271
70		76.1	45230	51750	269
80		73.9	37280	42750	266
90		71.7	31850	36550	263
100		69.4	27120	31240	260
120		64.8	20190	23490	251
140		60.0	15360	18110	241
160		55.0	11790	14150	228
180		49.6	9040	11110	212
200		43.8	6890	8720	194
220		37.2	5130	6790	170
240		29.5	3700	5200	140
260	19.2	—	3890	96	
270	11.1	—	3340	59	
280 feet	49	81.0	56400	56400	283
	50	80.8	56210	56210	283
	60	78.7	55510	55510	281
	70	76.6	44810	51350	279
	80	74.5	36860	42330	277
	90	72.3	31450	36160	274
	100	70.2	26720	30850	270
	120	65.8	19780	23090	262
	140	61.2	14940	17700	252
	160	56.4	11370	13730	240
	180	51.3	8630	10690	225
	200	45.9	6460	8300	208
	220	39.9	4710	6360	186
	240	33.0	3280	4780	159
260	24.4	—	3460	123	
290 feet	51	80.9	51900	51900	293
	60	79.1	51230	51230	292
	70	77.1	44400	50080	289
	80	75.0	36440	41920	287
	90	73.0	31050	35760	284
	100	70.9	26320	30450	281
	120	66.7	19380	22690	273
	140	62.3	14530	17290	263
	160	57.7	10960	13330	252
	180	52.9	8220	10290	238
	200	47.8	6050	7890	221
	220	42.2	4300	5960	201
240	35.9	2850	4360	177	
260	28.5	—	3040	145	

9310.64

# LIFT RATINGS With 77H Tubular Hammerhead Boom and "S-S" Counterweight (61,240 Kgs.)

METRIC

Boom Length (Meters)	Radius In Meters	Boom Angle Degrees	Side Frames Retracted (Kgs.)	Side Frames Extended (Kgs.)	Meters From Boom Point
21.3 meters	5.1	82.2	—	204120	23.5
	6.0	79.8	—	156800	23.4
	7.0	77.1	—	119890	23.2
	8.0	74.3	—	96770	22.9
	9.0	71.5	—	80970	22.6
	10.0	68.7	—	69490	22.2

Boom Length (Meters)	Radius In Meters	Boom Angle Degrees	Side Frames Retracted (Kgs.)	Side Frames Extended (Kgs.)	Meters From Boom Point
21.3 meters (cont.)	12.0	62.8	47110	53860	21.3
	14.0	56.5	38420	43700	20.1
	16.0	49.8	32330	36640	18.6
	18.0	42.2	27730	31360	16.6
	20.0	33.2	24160	27300	13.9

(Continued)

# BOOM ANGLE DIAGRAM

## AMERICAN MODEL 9310 CRAWLER CRANE WORKING RANGES

