

HTC-835

AXLE WEIGHT DISTRIBUTION CHART

Axle loads — 4-section boom ①

	G.V.W. ①		Upper facing front				Upper facing rear			
			Front axle ①		Rear axle		Front axle		Rear axle	
	Lbs.	Kgs	Lbs.	Kgs	Lbs.	Kgs	Lbs.	Kgs	Lbs.	Kgs
Base machine includes 32' -101' (9.75-30.78 m) 4-section boom with 4500 lb. (2 041 kg.) counter-weight, 2M main winch, 450' (137.16 m) of 5/8" (16 mm) wire rope, 6 x 4 carrier with GM 8.2T engine, Roadranger transmission, full fuel and hydraulics.	52,269	23 709	16,151	7 326	36,118	16 383	6,089	2 762	46,180	20 947
3M freefall rear winch with 450' (137.16 m) rope	41	19	-20	-9	61	28	20	9	21	10
Power up/down front winch with 350' (106.68 m) rope	516	234	-80	-36	596	270	80	36	436	198
2 3M free fall winches with 350' (106.68 m) rope on front and 450' (137.16 m) on rear	491	223	-44	-20	535	243	44	20	447	203
29' (8.84 m) lattice fly, stowed	1 080	490	629	285	451	205	-629	-285	1 709	775
21' (6.40 m) A-frame jib, stowed	970	440	490	222	480	218	-490	-222	1 460	662
Hook block at bumper	650	295	903	410	-253	-115	903	410	-253	-115
Headache ball at bumper	215	98	300	136	-85	-39	300	136	-85	-39
Auxiliary lifting sheave	125	57	205	93	-80	-36	-205	-93	330	150
Front bumper outrigger	320	145	430	195	-110	-50	430	195	-110	-50
11 0 x 20 0 optional rear tires with rims and wheels	128	58	0	0	128	58	0	0	128	58
Caterpillar engine	175	79	156	71	19	9	156	71	19	9

- ① All weights are ± 3%.
- ② Adjust gross vehicle weight and axle loading according to component's weight.
- ③ When selecting a tire and drive combination, the front axle load with upper facing front, should not exceed the limits in the Maximum Front Axle Load table, above right.

HOIST SPECIFICATIONS

Line speeds and pulls

Layer	Speed	Main or auxiliary winch - 10 1/2" (27 m) drum						Main or auxiliary winch - 15 1/4" (38 m) drum					
		Line speeds		Line pulls				Line speeds		Line pulls			
		F.p.m.	m/min	Available*		Permissible		F.p.m.	m/min	Available*		Permissible	
1st	Low	133	40.54	12,970	5 883	11,700	5 307	186	56.69	9,260	4 200	8,420	3 819
	High	266	81.08	6,480	2 939	5,890	2 672	372	113.38	4,630	2 100	4,210	1 910
2nd	Low	148	45.11	11,670	5 207	10,610	4 812	201	61.26	8,570	3 887	7,790	3 533
	High	296	90.22	5,840	2 649	5,300	2 404	402	122.52	4,290	1 945	3,900	1 769
3rd	Low	163	49.68	10,610	4 812	9,640	4 372	216	65.83	7,980	3 619	7,260	3 293
	High	325	99.06	5,310	2 408	4,820	2 186	432	131.67	3,990	1 809	3,630	1 646
4th	Low	177	53.94	9,730	4 413	8,840	4 009	231	70.40	7,470	3 388	6,790	3 079
	High	355	108.20	4,860	2 204	4,420	2 004	462	140.81	3,730	1 691	3,390	1 537
5th	Low	192	58.52	8,980	4 073	8,160	3 701	246	74.98	7,020	3 184	6,380	2 893
	High	384	117.04	4,490	2 036	4,080	1 850	492	149.96	3,510	1 592	3,190	1 446
6th	Low	207	63.09	8,340	3 783	7,580	3 438	261	79.55	6,620	3 003	6,010	2 726
	High	413	125.88	4,170	1 891	3,790	1 719	522	159.11	3,310	1 501	3,010	1 365

* Developed by machinery with first layer of wire rope, but not based on wire rope strength

Drum wire rope capacities

Wire rope layer	Main and auxiliary drum 10 1/2" (27 m) root diameter smooth lagging			
	5/8" (16 mm) wire rope			
	Rope per layer		Total wire rope	
	Feet	meters	Feet	meters
1	74	22.55	74	22.55
2	85	25.91	159	48.46
3	90	27.43	249	75.89
4	98	29.87	347	105.76
5	106	32.31	453	138.07
6	115	35.05	568	173.13
Wire rope layer	Main and auxiliary drum 15 1/4" (38 m) root diameter grooved lagging			
	5/8" (16 mm) wire rope			
	Rope per layer		Total wire rope	
	Feet	meters	Feet	meters
1	103	31.39	103	31.39
2	111	33.83	214	65.23
3	120	36.58	334	101.80
4	128	39.01	462	140.82
5	136	41.52	598	182.27
6	144	43.89	742	226.16

Wire rope size and type

Wire rope application	Size and type used	Wire rope description
Main winch	5/8" (16 mm) diameter, Type "N"	Type "N" - 6 x 25 (6 x 19 class) filler wire, extra improved plow steel, preformed, independent wire rope core, right lay, regular lay.
Auxiliary winch	5/8" (16 mm) diameter, Type "N"	
Jib frontstay pendants ①	1/2" (13 mm) diameter, Type "N"	
Jib backstay pendants ②	1/2" (13 mm) diameter, Type "N"	

- ① Jib frontstay pendants - 24' 3-5/8" (7.45 m)
- ② Jib backstay pendants - 32' 3/4" (9.77 m)



Crane Service
Division

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Capacities On Outriggers Manual Section Extended						
Load radius	101' (30.78 m)			101' (30.78 m) plus 29' (8.84 m) fly		
	Boom angle	Side	Rear	Boom angle	Side	Rear
		See Note ①			See Note ①	
20' 6.10 m	79°	14,800 6 713	14,800 6 713			
25' 7.62 m	76°	14,300 6 486	14,300 6 486			
30' 9.14 m	74°	13,800 6 259	13,800 6 259	78°	7,000 3 175	7,000 3 175
35' 10.67 m	71°	12,500 5 670	12,500 5 670	76°	7,000 3 175	7,000 3 175
40' 12.19 m	68°	9,800 4 445	11,100 5 034	74°	7,000 3 175	7,000 3 175
45' 13.72 m	65°	7,700 3 492	9,900 4 490	72°	7,000 3 175	7,000 3 175
50' 15.24 m	61°	6,200 2 812	8,600 3 900	70°	6,800 3 084	6,800 3 084
55' 16.76 m	58°	5,000 2 268	7,200 3 265	67°	5,600 2 540	6,200 2 812
60' 18.29 m	54°	4,100 1 859	6,000 2 721	65°	4,600 2 086	5,700 2 585
65' 19.81 m	50°	3,300 1 496	5,100 2 313	62°	3,800 1 723	5,200 2 358
70' 21.34 m	46°	2,600 1 179	4,300 1 950	60°	3,100 1 406	4,700 2 131
75' 22.86 m	42°	2,000 907	3,600 1 632	57°	2,600 1 179	4,100 1 859
80' 24.38 m	37°	1,600 725	3,100 1 406	54°	2,100 952	3,500 1 587
85' 25.90 m	31°	1,200 544	2,500 1 134	51°	1,600 725	3,000 1 360
90' 27.43 m	27°		2,100 952	48°	1,300 589	2,600 1 179
95' 28.95 m				44°		2,200 997
100' 30.48 m				40°		1,800 816

Note: For 360° capacities, use the over side capacities with the bumper outrigger set in proper working position.

① Calculating capacities for extended or retracted boom with manual section extended must be based on boom angle only; see Operating Instructions Number 15.

② Capacities for boom plus fly can be extended or retracted, but are based on boom angle only; see Operating Instructions Number 16.

Jib Capacities			
29' (8.84 m) fly plus 21' (6.40 m) jib			
Boom angle	Jib Offset		
	5°	17.5°	30°
80°	4,000 1 814	4,000 1 814	4,000 1 814
75°	4,000 1 814	4,000 1 814	3,600 1 632
70°	3,800 1 723	3,300 1 496	2,900 1 315
65°	2,500 1 134	2,200 997	1,900 861
60°	1,500 680	1,300 589	1,200 544

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Lifting Capacities

Capacities On Outriggers Manual Section Retracted																78' (23.77 m) boom plus 29' (2.84 m) fly		
Load radius	32' (9.75 m)		40' (12.19 m)		48' (14.63 m)		56' (17.07 m)		64' (19.50 m)		72' (21.95 m)		78' (23.77 m)		Boom angle	Side	Rear	
	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear				
10 3.05m	70,000 31,752	70,000 31,752	51,800 23,496	51,800 23,496	50,900 23,088	50,900 23,088	50,400 22,861	50,400 22,861	41,700 18,915	41,700 18,915					See Note ①			
12 3.66m	56,500 25,628	56,800 25,764	51,800 23,496	51,800 23,496	50,900 23,088	50,900 23,088	50,400 22,861	50,400 22,861	38,600 17,509	38,600 17,509	32,300 14,651	32,300 14,651						
15 4.57m	43,100 19,550	48,200 21,863	43,100 19,550	48,200 21,863	43,000 19,505	48,100 21,818	43,000 19,505	45,900 20,820	34,600 15,694	34,600 15,694	29,200 13,245	29,200 13,245	24,700 11,204	24,700 11,204				
20' 6.10m	30,800 13,971	35,800 16,239	30,800 13,971	35,800 16,239	30,800 13,971	35,800 16,239	30,800 13,971	35,800 16,239	29,200 13,245	29,200 13,245	25,000 11,340	25,000 11,340	22,600 10,251	22,600 10,251	79°	14,500 6,577	14,500 6,577	
25' 7.62m	21,500 9,752	26,100 11,839	21,500 9,752	26,100 11,839	21,500 9,752	26,100 11,839	21,500 9,752	26,100 11,839	21,500 9,752	25,200 11,431	21,400 9,707	21,400 9,707	19,400 8,800	19,400 8,800	77°	13,600 6,168	13,600 6,168	
30' 9.14m			15,100 6,849	19,100 8,664	15,100 6,849	19,100 8,664	15,100 6,849	19,100 8,664	15,100 6,849	19,100 8,664	15,100 6,849	18,900 8,573	15,100 6,849	17,100 7,756	74°	12,100 5,488	12,100 5,488	
35' 10.67m					11,200 5,080	14,600 6,622	11,200 5,080	14,600 6,622	11,200 5,080	14,600 6,622	11,200 5,080	14,600 6,622	11,200 5,080	14,600 6,622	72°	11,500 5,216	11,500 5,216	
40' 12.19m					8,400 3,810	11,500 5,216	8,400 3,810	11,500 5,216	8,400 3,810	11,500 5,216	8,400 3,810	11,500 5,216	8,400 3,810	11,500 5,216	69°	10,000 4,536	10,500 4,762	
45' 13.72m							6,500 2,948	9,200 4,173	6,500 2,948	9,200 4,173	6,500 2,948	9,200 4,173	6,500 2,948	9,200 4,173	66°	7,900 3,583	8,700 3,946	
50' 15.24m							5,000 2,268	7,400 3,357	5,000 2,268	7,400 3,357	5,000 2,268	7,400 3,357	5,000 2,268	7,400 3,357	63°	6,400 2,903	7,900 3,583	
55' 16.76m									3,900 1,769	6,100 2,767	3,900 1,769	6,100 2,767	3,900 1,769	6,100 2,767	60°	5,100 2,313	7,200 3,265	
60' 18.29m									2,900 1,315	4,900 2,223	2,900 1,315	4,900 2,223	2,900 1,315	4,900 2,223	56°	4,200 1,905	6,100 2,766	
65' 19.81m											2,200 998	4,000 1,814	2,200 998	4,000 1,814	53°	3,400 1,542	5,200 2,358	
70' 21.34m													1,600 726	3,300 1,497	49°	2,700 1,224	4,400 1,995	
75' 22.86m															45°	2,100 952	3,700 1,678	
80' 24.38m															41°	1,600 725	3,100 1,406	
85' 25.90m															36°	1,200 544	2,600 1,179	
90' 27.43m															30°		2,100 952	

Note: For 360° capacities, use the over side capacities with the bumper outrigger set in proper working position.

① Capacities for boom plus fly can be extended or retracted, but are based on boom angle only. See Operating Instructions Number 16.

Main Boom Capacities ① On Tires						
Load radius		1.0 m.p.h. (1.61 km/hr) over rear only		Crane capacities on tires depend on tire capacity, condition of tires, and tire pressures.		
Feet	meters	Pounds	kilograms	Tires	Ply rating	1.0 m.p.h. (1.61 km/hr) Inflation
10	3.05	19,500	8,845			
12	3.66	16,000	7,257			
15	4.57	11,700	5,171			
20	6.10	7,300	3,311	10.0 x 20.0	12	65 p.s.i. (4.48 Bars)
25	7.62	4,600	2,086	11.0 x 20.0	12	55 p.s.i. (3.79 Bars)
30	9.14	2,800	1,270	16.5 x 22.5	16	90 p.s.i. (6.21 Bars)
35	10.67	1,600	725			

① See Operating Instructions, Set-Up Number 3 and 4

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Warning and Operating Instructions

Read and understand these operating instructions and the chart values before operating crane. Operation which does not follow these instructions may result in an accident.

General:

1. Rated lifting capacities in pounds as shown on lift chart pertain to this machine as originally manufactured and normally equipped by Link-Belt Construction Equipment Company. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
2. Construction equipment can be dangerous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with the information in the operator's parts and safety manuals supplied with this machine. If these manuals are missing, order replacements through the distributor.
3. The operator and other personnel associated with this machine shall fully acquaint themselves with the latest applicable American National Standards Institute (ANSI) Safety Standards for cranes.
4. The maximum allowable lifting capacities are based on machine standing level on firm supporting surface.

Set-Up:

1. The machine shall be leveled on a firm supporting surface. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats or tires to spread the load to a larger bearing surface.
2. When making lifts on outriggers, outrigger beams must be fully extended with tires free of supporting surface.
3. Crane capacities on tires depend on tire capacity, condition of tires, and tire pressure. On-tire picks require lifting from main boom head only on a smooth and level surface. Boom sections must be extended equally. Pick and carry operations are restricted to 1 m.p.h. (1.61 km/hr) maximum speed. The boom must be centered over rear with swinglock engaged and the load must be restrained from swinging. Lifts with manual extended, fly or fly-jib combination erected are prohibited on tires.
4. When making lifts on rubber, tires must be inflated to the recommended pressure.
5. For machine equipped with front bumper outrigger, the front bumper outrigger must be set in proper working position before swinging boom lengths greater than 32' (9.75 m) 360.
6. Outriggers must be set before swinging boom to over side position as defined on working area.

plate No. 59P0009

7. When installing or removing counterweight, use fully retracted boom only. Do not swing counterweight beyond a 25' (7.62 m) radius. Machine must be on outriggers during this operation.
8. For required parts of line see wire rope strength plate.

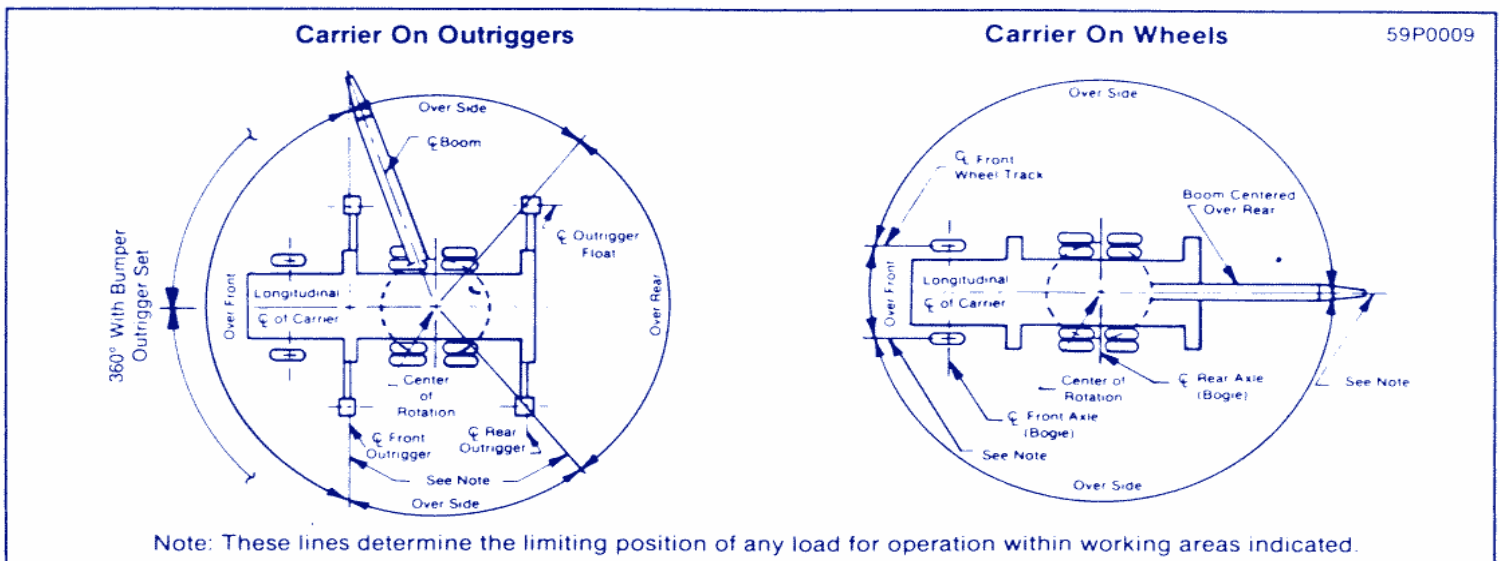
Operation:

1. Rated lifting capacities at rated radius shall not be exceeded. Do not tip machine to determine allowable load. For concrete bucket operation, weight of bucket and load shall not exceed 80% of rated lifting capacity. For clamshell bucket operation, weight of bucket and bucket content is restricted to a maximum of 6,000 lbs. (2722 kg) or 80% of rated lifting capacity, whichever is less. For magnet operation, weight of magnet and load is restricted to a maximum of 6,000 lbs. (2722 kg) or 80% of rated lifting capacity, whichever is less. For clamshell and magnet operation, maximum boom length is restricted to 50' (15.24 m) and the boom angle is restricted to a minimum of 35°. Manual extended, fly or fly-jib combinations are prohibited for both clam and magnet operations.
2. The crane capacities shown on outriggers do not exceed 85% of the tipping loads and crane capacities shown on tires do not exceed 85% of the tipping loads as determined by SAE crane stability test code J-765a.
3. The crane capacities above the bold lines are based on structural strength or hydraulic limitations.
4. Rated lifting capacities include the weight of hook block, slings, bucket, magnet and auxiliary lifting devices and their weights must be subtracted from the listed rated load to obtain the net load to be lifted. Also see in-capacity chart for deductions for auxiliary head, fly and jib.
5. Rated lifting capacities are based on freely suspended loads. No attempt shall be made to move a load horizontally on the ground in any direction.
6. Rated lifting capacities are for lift crane service only.
7. Do not operate at radii or boom lengths where capacities are not listed. At these positions, the machine can overturn without any load on the hook.
8. The maximum loads which can be telescoped are not definable because of variation in loadings and crane maintenance, but it is permissible to attempt retraction and extension within the limits of the load rating chart.
9. When either boom length or radius or both are between values listed, the smallest load shown at

either the next larger radius or boom length shall be used.

10. The user shall operate at reduced ratings to allow for adverse job conditions, such as soft or uneven ground, out of level conditions, wind, side loads, pendulum action, jerking or sudden stopping of loads, hazardous conditions, experience of personnel, two machine lifts, traveling with loads, electrical wires, etc. Side load on boom, fly or jib is extremely dangerous.
11. When making lifts with auxiliary head machinery, the effective length of the boom increases by 2' (.61 m). Effective length of boom is length shown on boom length indicator plus 2' (.61 m).
12. Power sections must be extended equally.
13. The least stable rated working area on outriggers is over the side.
14. Rated lifting capacities are based on correct reeving. Deduction must be made for excessive reeving. Any reeving over minimum required (see wire rope strength plate) is considered excessive and must be accounted for. Use working range plate to estimate the extra feet or rope then deduct .72 lb. (.33 kg) for each foot of wire rope before attempting to lift a load.
15. For boom lengths less than 101' (32.61 m) with manual extended, the rated loads are determined by boom angle only in the column headed 101' (30.78 m). For angles not shown, use next lower boom angle to determine allowable capacity.
16. For boom lengths plus fly less than 107' (32.62 m) with manual retracted or less than 130' (39.62 m) with manual extended the rated loads are determined by boom angle only in the respective column. For angles not shown, use next lower boom angle to determine allowable capacity.
17. With front bumper outrigger set, use over side capacity values for 360 degree working area. Do not lower 78' (23.77 m) boom below 12 degrees. Do not lower 78' (23.77 m) boom with fly below 30 degrees. Do not lower 101' (30.78 m) boom with manual extended below 27 degrees. Do not lower 101' (30.78 m) boom with 29' (8.84 m) fly below 40 degrees. Failure to follow Note 18 will result in a tipping condition.
18. The 21' (6.40 m) jib capacities are based on main boom angle regardless of main boom length. For angles not shown use next lower boom angle to determine allowable capacity. Capacity values can be used to operate over rear or over side. Warning: do not lower 21' (6.40 m) jib in working position below 60 degrees unless boom is fully retracted.
19. The 32' (9.75 m) boom length capacities are based on boom fully retracted. If not fully retracted, do not exceed ratings for the 40' (12.19 m) boom length.

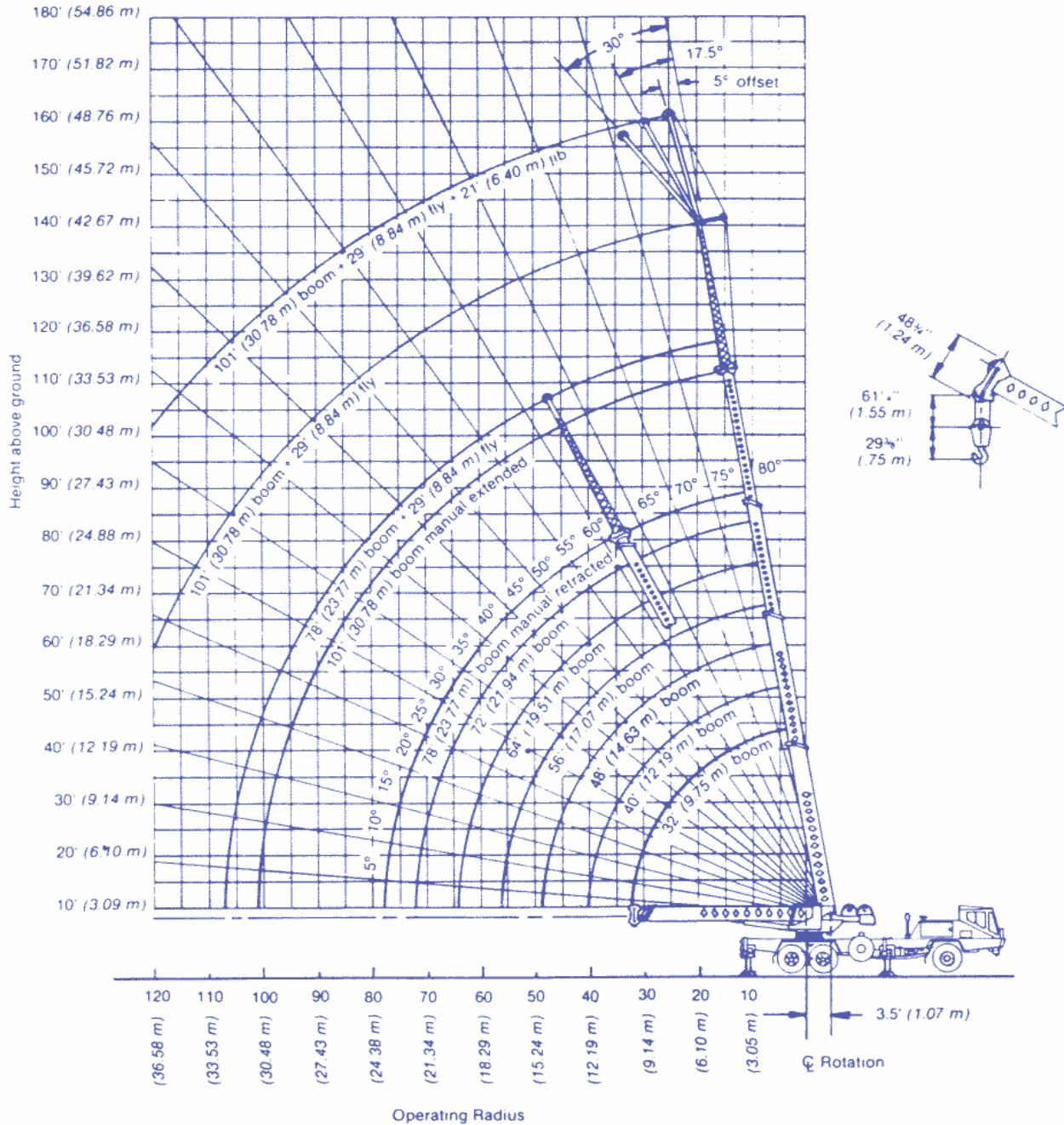
HTC-835 Working Areas



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RANGE DIAGRAM

4-Section Boom



Note: Boom and fly and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and angle change must be accounted for when applying load to hook.

CAUTION: This material is supplied for reference only. Operator **MUST** refer to in-cab capacity plate to determine allowable machine lifting capacities and operating procedures.