

Lifting Capacities

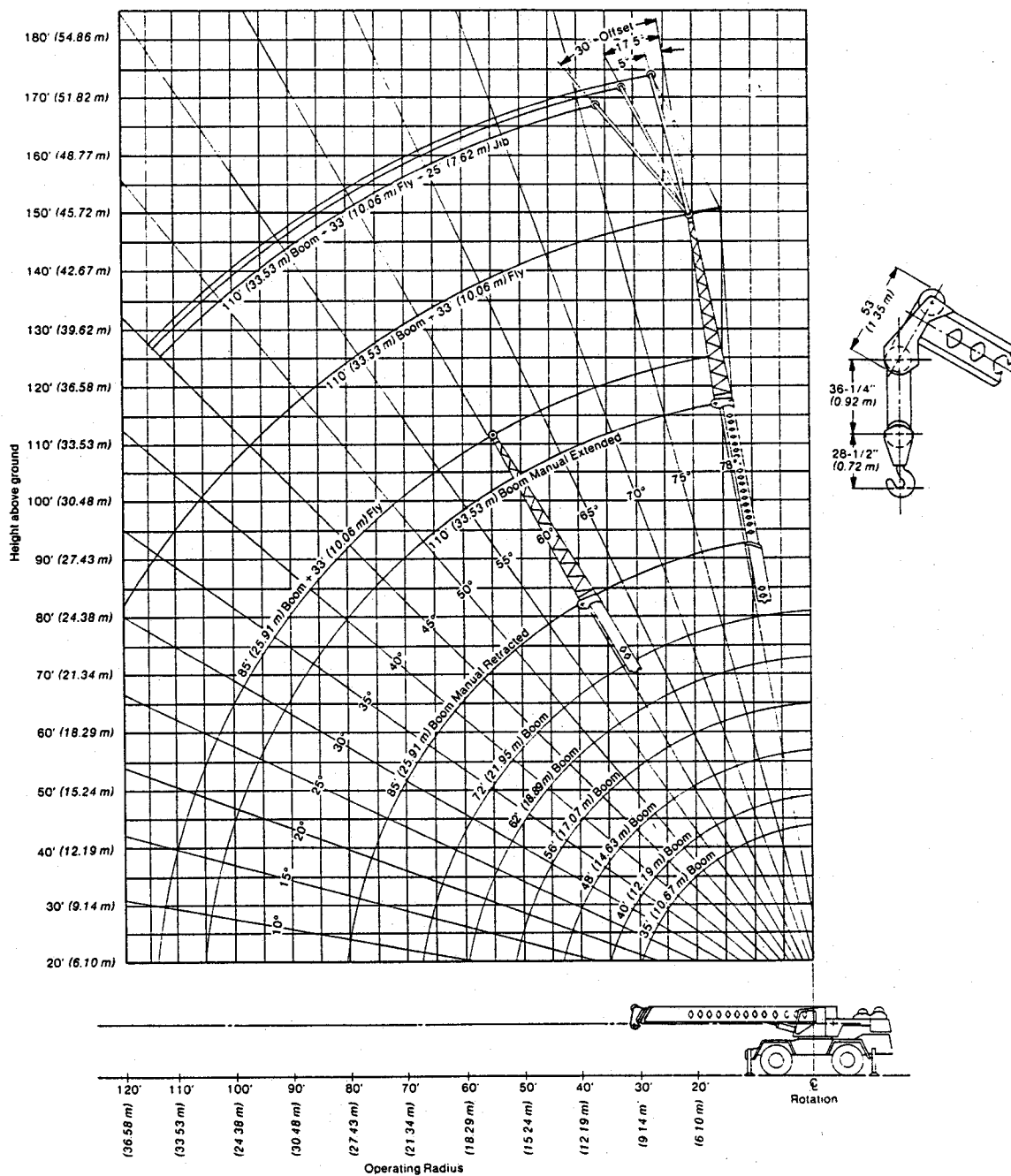
PCSA Class 10-250

Link-Belt®

Eighty Series Hydraulic Rough Terrain Crane

HSP-8055 55-ton (50.0 metric ton)

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 boom angle change must be accounted for when applying load to hook.

HSP-8055 Lifting Capacities

Refer to Operating Instructions page 4

35' - 110' (10.67 - 33.53 m) 4-section boom

Capacities On Outriggers ^① Manual Section Retracted													77' (23.47 m) boom plus 33' (10.06 m) fly			85' (25.91 m) boom plus 33' (10.06 m) fly										
Load radius	35' (10.67m)		40' (12.19m)		48' (14.63m)		56' (17.07m)		62' (18.90m)		72' (21.95m)		85' (25.91m)		Boom angle	Front	360°	Boom angle	Front	360°						
	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°												
10' 3.05 m	110,250 50,009	110,250 50,009	90,600 41,096	90,600 41,096	87,100 39,509	87,100 39,509	86,100 39,055	86,100 39,055																		
12' 3.66 m	98,300 44,589	98,300 44,589	90,600 41,096	90,600 41,096	87,100 39,509	87,100 39,509	80,000 36,288	80,000 36,288	67,700 30,709	67,700 30,709																
15' 4.57 m	84,000 38,102	84,000 38,102	82,400 37,377	82,400 37,377	79,500 36,061	79,500 36,061	69,800 31,661	69,800 31,661	59,400 26,944	59,400 26,944	51,800 23,496	51,800 23,496														
20' 6.10 m	65,000 29,484	65,000 29,484	65,000 29,484	65,000 29,484	63,400 28,758	63,400 28,758	57,200 25,946	57,200 25,946	49,000 22,226	49,000 22,226	43,200 19,596	43,200 19,596	36,600 16,602	36,600 16,602												
25' 7.62 m	50,200 22,771	50,200 22,771	50,200 22,771	50,200 22,771	50,200 22,771	50,200 22,771	48,100 21,818	48,100 21,818	41,300 18,734	41,300 18,734	36,800 16,692	36,800 16,692	30,500 13,835	30,500 13,835	76°	22,200 10,070	22,200 10,070	77°	18,500 8,392	18,500 8,392						
30' 9.14 m			40,400 18,325	40,400 18,325	40,400 18,325	40,400 18,325	40,400 18,325	40,400 18,325	35,500 16,103	35,500 16,103	31,800 14,424	31,800 14,424	25,800 11,703	25,800 11,703	74°	22,200 10,070	22,200 10,070	75°	17,500 7,938	17,500 7,938						
35' 10.67 m					33,300 15,105	31,900 14,470	33,300 15,105	31,900 14,470	31,100 14,107	31,100 14,107	27,800 12,602	27,800 12,602	22,300 10,115	22,300 10,115	71°	20,200 9,070	20,200 9,070	72°	15,500 7,031	15,500 7,031						
40' 12.19 m							26,600 12,066	25,000 11,340	26,600 12,066	25,000 11,340	24,500 11,113	24,500 11,113	19,400 8,800	19,400 8,800	68°	18,900 8,573	18,900 8,573	70°	13,900 6,305	13,900 6,305						
45' 13.72 m									21,500 9,752	20,100 9,117	21,500 9,752	20,100 9,117	17,100 7,757	17,100 7,757	66°	17,300 7,847	17,300 7,847	67°	12,400 5,625	12,400 5,625						
50' 15.24 m										17,500 7,938	16,400 7,439	17,500 7,938	16,400 7,439	15,400 6,985	15,400 6,985	63°	15,400 6,985	15,400 6,985	64°	10,900 4,944	10,900 4,944					
55' 16.76 m											14,700 6,668	13,700 6,214	14,700 6,668	13,700 6,214	60°	14,300 6,486	14,300 6,486	62°	9,600 4,355	9,600 4,355						
60' 18.29 m												12,400 5,625	11,500 5,216	12,400 5,625	11,500 5,216	57°	13,200 5,988	13,200 5,988	59°	8,600 3,901	8,600 3,901					
65' 19.81 m													10,400 4,717	9,700 4,400	10,400 4,717	9,700 4,400	53°	12,300 5,579	11,800 5,352	56°	7,700 3,493	7,700 3,493				
70' 21.34 m														8,900 4,037	8,200 3,720	8,900 4,037	8,200 3,720	50°	11,000 4,990	10,300 4,672	53°	6,900 3,130	6,900 3,130			
80' 24.38 m															6,400 2,903	5,800 2,631	6,400 2,903	5,800 2,631	42°	8,500 3,856	7,900 3,583	46°	5,600 2,540	5,600 2,540		
90' 27.43 m																6,600 2,994	6,100 2,767	6,600 2,994	6,100 2,767	33°	6,600 2,994	6,100 2,767	39°	4,600 2,087	4,600 2,087	
100' 30.48 m																	5,100 2,313	4,700 2,132	5,100 2,313	4,700 2,132	21°	5,100 2,313	4,700 2,132	30°	3,900 1,769	3,900 1,769
110' 33.53 m																							17°	3,400 1,542	3,400 1,542	

Capacities On Tires				
Load Radius	Max. boom length	Pick & Carry ^①	Stationary	
			Over Front	Over Front
10' 3.05 m	35' 10.67 m	59,500 26,989	48,500 22,000	51,900 28,078
12' 3.66 m	35' 10.67 m	51,900 23,542	41,200 18,688	54,600 24,767
15' 4.57 m	35' 10.67 m	43,100 19,550	33,000 14,969	46,200 20,956
20' 6.10 m	35' 10.67 m	33,000 14,969	20,500 9,299	35,500 16,103
25' 7.62 m	35' 10.67 m	26,100 11,839	13,700 6,214	27,500 12,474
30' 9.14 m	40' 12.19 m	20,000 9,072	9,400 4,264	20,000 9,072
35' 10.67 m	40' 12.19 m	15,000 6,804	6,600 2,994	15,000 6,804
40' 12.19 m	48' 14.63 m	11,600 5,262	4,600 2,087	11,600 5,262
45' 13.72 m	56' 17.07 m	9,000 4,082	3,100 1,406	9,000 4,082
50' 15.24 m	56' 17.07 m	7,100 3,221	1,900 862	7,100 3,221
55' 16.76 m	62' 18.90 m	5,500 2,495	—	5,500 2,495
60' 18.29 m	72' 21.95 m	4,300 1,950	—	4,300 1,950
65' 19.81 m	72' 21.45 m	3,200 1,452	—	3,200 1,452
70' 21.34 m	85' 25.91 m	2,400 1,089	—	2,400 1,089

Wire rope size and type

Wire rope application	Size and type used	Wire rope description
Main winch	1" (19 mm) diameter, Type "N"	Type "N" - 6 x 25 (6 x 19 class) filler
Auxiliary winch	1" (19 mm) diameter, Type "N"	wire, extra improved plow steel, pre-
Jib frontstay pendants ^②	1" (13 mm) diameter, Type "N"	formed, independent wire rope core,
Jib backstay pendants ^③	1" (13 mm) diameter, Type "N"	right lay regular lay

Drum wire rope capacities

Wire rope layer	Main and auxiliary drum 17" (0.43 m) root diameter smooth and grooved lagging			
	3/4" (19 mm) wire rope			
	Rope per layer		Total wire rope	
	Feet	meters	Feet	meters
1	97	29.57	97	29.57
2	111	33.83	208	63.40
3	114	34.75	322	98.15
4	122	37.19	444	135.33
5	130	39.62	574	174.96
6	139	42.37	713	217.32
7 ^④	140	42.67	853	259.99

Footnotes

- ① All capacities on outriggers are based on outriggers fully extended with boom sections extended equal distance
- ② Calculating capacities for extended or retracted boom plus fly must be based on boom angle only for boom lengths other than those listed. See Operating Instructions Number 14
- ③ See Operating Instructions set-up Number 4
- ④ Jib frontstay pendants — 24 5/8" (7.45 m)
- ⑤ Jib backstay pendants — 32 1/4" (9.77 m)
- ⑥ For storage purposes only — not a working layer.

Tire Inflation

Tires	Ply	Pressure
29.5 x 25	22	60 p.s.i. (2.14 Bars)

HSP-8055 Lifting Capacities

35' - 110' (10.67 - 33.53 m) 4-section boom

Refer to Operating Instructions page 4

Capacities ^① On Outriggers — Manual Section Extended									
Load radius	105' (32.00 m)			110' (33.53 m)			110' (33.53 m) boom plus 33' (10.06 m) fly		
	Boom angle	Front	360°	Boom angle	Front	360°	Boom angle	Front	360°
	See Note ②			See Note ②			See Note ③		
25' 7.62 m	76°	20,200 9 163	20,200 9 163	77°	19,000 8 618	19,000 9 027			
30' 9.14 m	73°	20,000 9 163	20,200 9 163	74°	18,500 8 392	18,500 8 392			
35' 10.67 m	71°	20,000 9 163	20,200 9 163	72°	18,000 8 165	18,000 8 165	76°	9,400 4 264	9,400 4 264
40' 12.19 m	68°	18,200 8 256	18,200 8 256	69°	16,200 7 348	16,200 7 348	74°	9,400 4 264	9,400 4 264
45' 13.72 m	65°	16,400 7 439	16,400 7 439	66°	14,100 6 396	14,100 6 396	72°	9,000 4 082	9,000 4 082
50' 15.24 m	62°	15,000 6 804	15,000 6 804	63°	12,700 5 761	12,700 5 761	70°	8,400 3 810	8,400 3 810
55' 16.76 m	59°	13,800 6 260	13,800 6 260	60°	11,300 5 126	11,300 5 126	68°	8,000 3 629	8,000 3 629
60' 18.29 m	55°	12,700 5 761	12,700 5 761	57°	10,300 4 672	10,300 4 672	66°	7,300 3 311	7,300 3 311
65' 19.81 m	52°	11,800 5 352	11,400 5 171	54°	9,200 4 173	9,200 4 173	64°	6,500 2 948	6,500 2 948
70' 21.34 m	48°	10,600 4 808	9,900 4 491	50°	8,300 3 765	8,300 3 720	61°	5,700 2 586	5,700 2 586
80' 24.38 m	40°	8,000 3 629	7,500 3 402	43°	6,600 2 994	6,600 2 994	56°	4,600 2 087	4,600 2 087
90' 27.43 m	29°	6,200 2 812	5,700 2 586	34°	5,800 2 631	5,600 2 540	51°	3,600 1 633	3,600 1 633
100' 30.48 m	12°	4,700 2 132	4,200 1 905	22°	4,600 2 087	4,200 1 905	46°	2,800 1 270	2,800 1 270
110' 33.53 m							39°	2,100 953	2,100 953
120' 36.58 m							32°	1,500 680	1,500 680

- ① All capacities on outriggers are based on outriggers fully extended with boom sections extended equal distance.
- ② Calculating capacities for extended or retracted boom with manual section extended must be based on boom angle only. See Operating Instructions Number 13.
- ③ Calculating capacities for extended or retracted boom with manual section extended plus fly must be based on boom angle only. See Operating Instructions Number 15.

Jib Capacities ^①			
Boom angle	Jib Offset		
	5°	17.5°	30°
78°	5,100 2 313	5,100 2 313	4,200 1 905
75°	5,100 2 313	5,100 2 313	4,000 1 914
70°	5,100 2 313	4,900 2 223	3,600 1 633
65°	4,500 2 041	4,100 1 860	3,400 1 542
60°	3,700 1 678	3,300 1 497	2,800 1 270
55°	3,000 1 361	2,700 1 225	2,400 1 089
50°	2,500 1 134	2,300 1 043	2,000 907

HSP-8055 hydraulic circuit pressure settings		
Circuit	Function	Pressure
Main	Boom hoist	2,900 p.s.i. (200.0 Bars)
	Wire rope hoist	2,750 p.s.i. (189.66 Bars)
Secondary	Swing	1,500 p.s.i. (103.45 Bars) at port relief
	Innermid telescope Steering	2,500 p.s.i. (172.41 Bars)
	Outermid telescope	2,700 p.s.i. (186.21 Bars)
	Outriggers	2,700 p.s.i. (186.21 Bars)
Charge Pump	Winch brake and clutch	1,500 p.s.i. (103.45 Bars)

Line Speeds and Pulls

Layer	Speed	Main and auxiliary drums					
		Line speeds		Line pulls			
				Available*		Permissible	
		F.p.m.	m/min.	Pounds	kilograms	Pounds	kilograms
First	Low	172	52.40	15,870	7 199	14,430	6 545
	High	364	110.95	7,520	3 411	6,830	3 098
Second	Low	187	56.98	14,630	6 636	13,300	6 033
	High	394	120.09	6,930	3 143	6,300	2 858
Third	Low	201	61.24	13,580	6 159	12,340	5 597
	High	425	129.54	6,430	2 916	5,840	2 649
Fourth	Low	216	65.83	12,660	5 742	11,510	5 221
	High	456	138.98	6,000	2 721	5,450	2 472
Fifth	Low	230	70.10	11,860	5 379	10,780	4 889
	High	487	148.44	5,620	2 549	5,110	2 318
Sixth	Low	245	74.68	11,160	5 062	10,140	4 599
	High	517	157.58	5,280	2 395	4,800	2 177
Seventh	Low	260	79.25	10,530	4 776	9,570	4 341
	High	548	167.03	4,990	2 263	4,530	2 055

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

HSP-8055 Warning and Operating Instructions

General:

- Rated lifting capacities shown on the lift chart apply only to the machine as originally manufactured and normally equipped by FMC Corporation, Construction Equipment Group. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
- 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 the machine. If these manuals are missing, order replacements through the distributor.
- 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.
- All capacities are in pounds with metric equivalent in *italics*.

Set-Up:

- Capacities included in this chart are the maximum allowable crane capacities and are based on the machine standing level on firm supporting surface under ideal job conditions. 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.
- When making lifts on outriggers, outrigger beams must be fully extended with tires free of supporting surface.
- Eight parts of $\frac{3}{4}$ " (19 mm) diameter Type "N" wire rope required to lift maximum 110,250 lbs. (50,009 kg) rated load.
- 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. Pick and carry operations (creep), are restricted to 1.0 m.p.h. (1.61 km/h) with the boom centered over front, the travel swing lock engaged and the load restrained from swinging. Lifts with the manual extended, fly or fly/jib combination erected are prohibited.
- When making lifts on rubber, tires must be inflated to the recommended pressure and power sections must be equally extended.

Operation:

- Rated lifting capacities at rated radius shall not be exceeded. Do not tip the machine to determine allowable loads. For clamshell and concrete bucket operation, weight of bucket and load shall not exceed 80% of rated lifting capacities. Clamshell bucket weight including bucket content is restricted to a maximum of 7,000 pounds (3175 kg) with a maximum boom length of 56 feet (17.07m) and a minimum boom angle of 35°. Manual extended, fly or fly/jib combinations are prohibited for clam work.
- Capacities are not more than 85% of minimum tipping loads. Those capacities above the heavy, bold line indicate capacities based on factors other than those which would cause a tipping condition.
- Do not operate at boom lengths or beyond radii where no capacities are shown. Machine may overturn without any load on the hook.
- To determine capacities in-between those shown on charts, refer to the rated lifting capacity of the next longer and next shorter booms for the same radius. The lesser of the two capacities will apply.
- When making lifts at a load radius not shown on charts, use the next longer radius to determine allowable capacity.
- Crane capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tires, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deductions from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, fly or other suspended gear.
- Rated lifting capacities are based on correct reeving. Deduction must be made for excessive reeving. Any reeving over minimum required is considered excessive and must be taken into account. Use working range plate to estimate the extra feet of rope and then deduct 1 lb. (.4536 kg) for each foot of wire rope before attempting to lift a load.
- The following deductions from rated main boom capacities must be made if the machine is equipped with the following:
 - auxiliary lifting sheave - 200 lbs. (91 kg)
 - 33' (10.06 m) one-piece fly stowed on boom - 700 lbs. (318 kg)
 - 33' (10.06 m) one-piece fly in working position - 1,800 lbs. (816 kg)
 - 33' (10.06 m) fly plus 25' (7.62 m) jib stowed on boom - 1,100 lbs. (499 kg)
 - 33' (10.06 m) fly plus 25' (7.62 m) jib in working position - 4,400 lbs. (1,996 kg)
 - 25' (7.62 m) jib in working position and picking from fly tip - 1,900 lbs. (862 kg)
- Powered boom length is from 35' (10.67 m) to 85' (25.91 m).
- Extension or retraction of the boom with loads within the limits of the applicable rating chart may be attempted. The ability to telescope loads is limited by hydraulic pressure, boom angle, boom length, boom lubrication, etc.
- Do not move load to radii or boom lengths greater than those specified on applicable chart.
- Effective length of boom with auxiliary lifting sheave

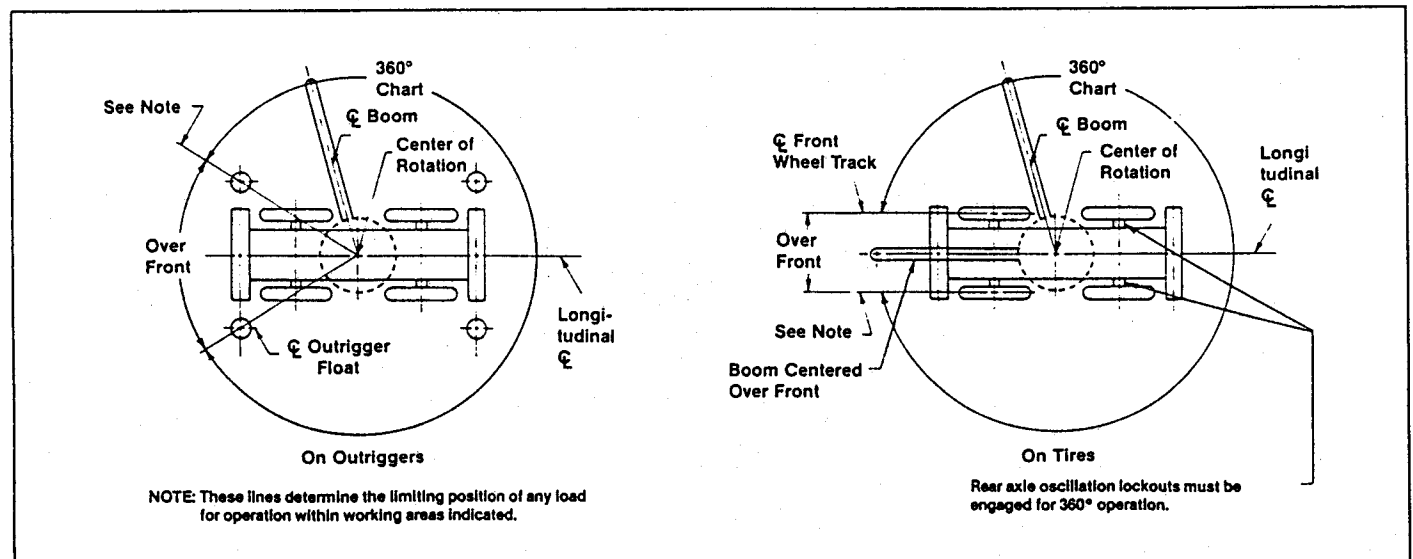
is length shown on boom length indicator plus 2' (0.61 m).

- The rated loads for the manual extended are determined by boom angle only for boom lengths other than 105' (32.00 m) and 110' (33.53 m) as follows: For boom lengths less than 105' (32.00 m), the rated loads are determined by boom angle only in the column headed 105' (32.00 m). For boom lengths between 105' (32.00 m) and 110' (33.53 m), the rated loads are determined by boom angle only in the column headed 110' (33.53 m) manual extended. For angles not shown, use next lower boom angle to determine allowable capacity.
- The rated loads for the manual retracted with 33' (10.06 m) fly are determined by boom angle only for boom lengths other than 110' (33.53 m) and 118' (35.97 m) as follows: For boom lengths with fly and manual retracted less than 110' (33.53 m), the rated loads are determined by boom angle only in the column headed 110' (33.53 m) manual retracted with fly. For boom lengths with fly and manual retracted between 110' (33.53 m) and 118' (35.97 m), the rated loads are determined by boom angle only in the column headed 118' (35.97 m). For angles not shown, use the next lower boom angle to determine allowable capacity.
- For boom lengths with fly less than 143' (44 m) with manual extended, the rated loads are determined by boom angle only in the column headed 143' (44 m). For angles not shown, use the next lower boom angle to determine allowable capacity.
- The 25' (7.6 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 are for 360 degree operation. Warning: Do not lower 25' (7.6 m) jib in working position below 50 degrees unless boom is fully retracted.
- The 35' (10.67 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.

Definitions:

- Load Radius: Horizontal distance from a projection of the axis of rotation to the supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
- Loaded Boom Angle: The angle between the boom base section and the horizontal after lifting the rated load at the rated radius.
- Working Area: Area measured in a circular arc about the centerline of rotation as shown in working area diagram below.
- Freely Suspended Load: Load hanging free with no direct external force applied except by the hoist line.
- Side Load: Horizontal side force applied to the lifted load either on the ground or in the air.

HSP-8055 Working Areas



We are constantly improving our products and therefore reserve the right to change designs and specifications.

FMC Corporation Construction Equipment Group Lexington Kentucky 40512

Link-Belt® cranes/excavators manufactured in: Cedar Rapids Iowa • Lexington & Bowling Green Kentucky • Ontario Canada • Milan Italy • Queretaro Mexico & Nagoya Japan (under license)

Courtesy of Crane.Market

