

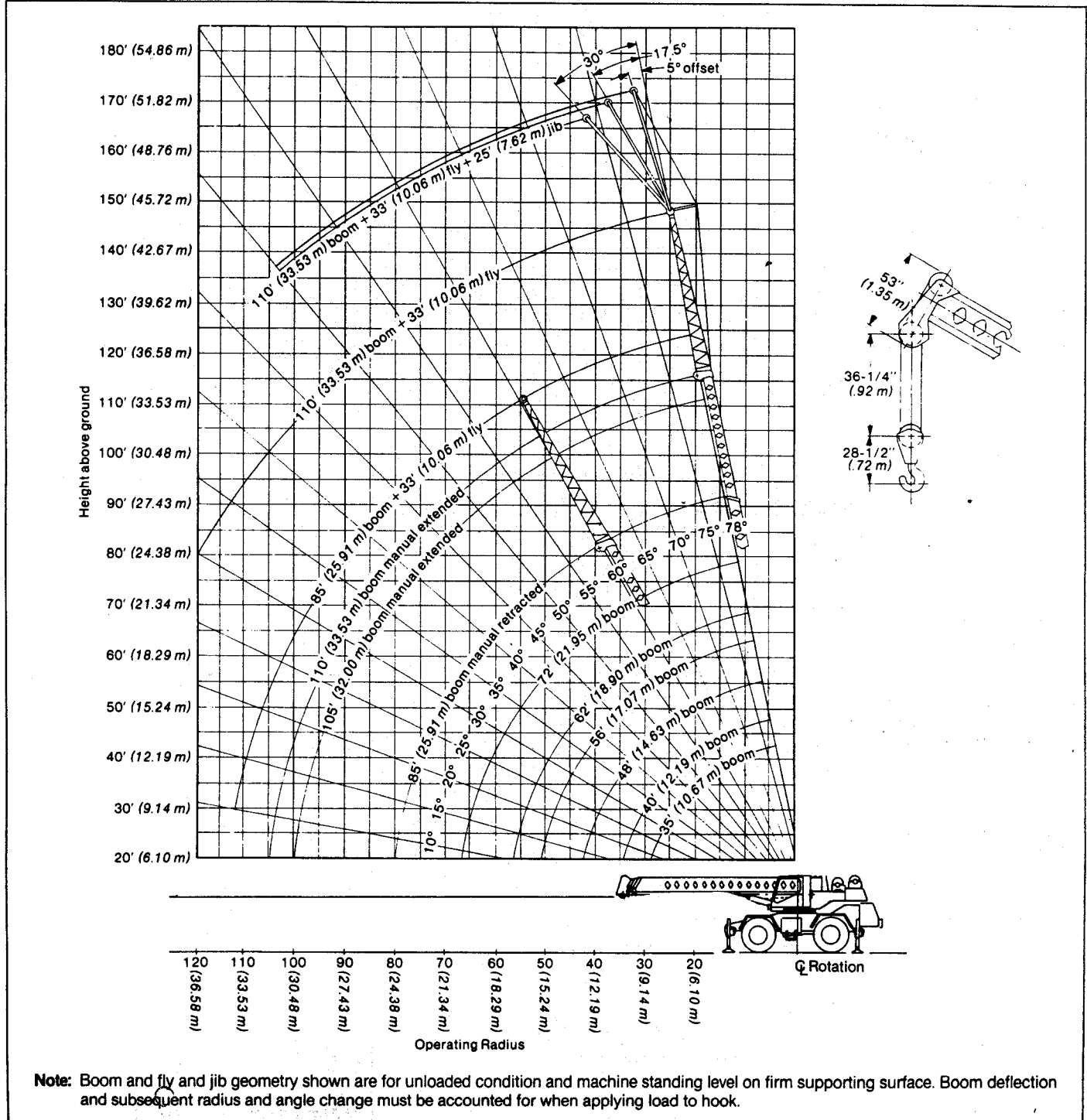
Lifting Capacities

Hydraulic Rough Terrain Crane

GENERAL INFORMATION ONLY

HSP-8040 40-ton (36.29 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 angle change must be accounted for when applying load to hook.

GENERAL INFORMATION ONLY

HSP-8040 Lifting Capacities

Refer to Operating Instructions page 4

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

Capacities On Outriggers① 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' (10.67 m)		40' (12.19 m)		48' (14.63 m)		56' (17.07 m)		62' (18.90 m)		72' (21.95 m)		85' (25.91 m)		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	80,000	80,000	72,100	72,100	70,800	70,800	68,100	68,100															
12' 3.66 m	80,000	80,000	72,100	72,100	70,800	70,800	68,100	68,100	64,500	64,500													
15' 4.57 m	70,100	70,100	68,700	68,700	66,400	66,400	64,200	64,200	56,300	56,300	50,100	50,100											
20' 6.10 m	54,800	54,800	54,200	54,200	52,600	52,600	51,000	51,000	46,200	46,200	41,500	41,500	32,500	32,500									
25' 7.62 m	43,100	43,100	43,100	43,100	43,100	43,100	42,200	42,200	38,900	38,900	35,100	35,100	27,000	27,000	76°	22,200	22,200	77°	18,500	18,500			
30' 9.14 m			34,700	34,500	34,700	34,500	34,700	34,500	33,400	33,400	30,200	30,200	22,700	22,700	74°	22,200	22,200	75°	17,500	17,500			
35' 10.67 m					29,400	29,400	25,700	25,700	29,400	25,700	28,100	25,700	19,400	19,400	71°	20,200	20,200	72°	15,500	15,500			
40' 12.19 m					23,200	19,900	23,200	19,900	23,200	19,900	23,200	19,900	16,800	16,800	68°	18,900	18,900	70°	13,900	13,900			
45' 13.72 m							19,100	15,900	19,100	15,900	19,100	15,900	15,700	15,700	66°	17,300	17,300	67°	12,400	12,400			
50' 15.24 m							15,500	12,800	15,500	12,800	15,500	12,800	13,300	12,800	63°	15,400	15,100	64°	10,900	10,900			
55' 16.76 m									12,900	10,500	12,900	10,500	11,900	10,500	60°	14,300	12,700	62°	9,600	9,600			
60' 18.29 m											10,800	8,700	10,800	8,700	58°	12,900	10,700	59°	8,600	8,600			
65' 19.81 m												9,100	7,200	9,100	55°	11,100	9,200	56°	7,700	7,700			
70' 21.34 m													7,700	6,900	50°	9,700	7,900	53°	6,900	6,900			
80' 24.38 m														5,400	3,900	42°	7,400	5,900	46°	5,800	5,800		
90' 27.43 m																33°	5,600	4,400	39°	4,600	4,100		
100' 30.48 m																			30°	3,900	3,000		
110' 33.53 m																					17°	3,100	2,100

See Note ②

Wire rope size and type

Wire rope application	Size and type used	Wire rope description
Main winch Auxiliary winch	3/4" (19 mm) diameter, Type "N" 3/4" (19 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.

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	140	42.67	853	259.99

Footnotes:

- All capacities on outriggers are based on outriggers fully extended with boom sections extended equal distance.
- 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.
- See Operating Instructions; set-up Number 4.

Capacities On Tires

Load Radius	Max. boom length	Pick & Carry③	Stationary	
		Over Front	360°	Over Front
10' 3.05 m	35' 10.67 m	58,000 26 309	42,100 19 097	57,300 25 991
12' 3.66 m	35' 10.67 m	50,600 22 952	33,700 15 286	50,500 22 907
15' 4.57 m	35' 10.67 m	42,100 19 097	23,100 10 478	42,700 19 369
20' 6.10 m	35' 10.67 m	32,200 14 606	14,000 6 350	32,700 14 833
25' 7.62 m	35' 10.67 m	22,400 10 160	9,100 4 127	22,600 10 251
30' 9.14 m	40' 12.19 m	15,900 7 212	6,000 2 721	15,900 7 212
35' 10.67 m	40' 12.19 m	11,900 5 398	3,800 1 723	11,900 5 398
40' 12.19 m	48' 14.63 m	9,100 4 127	--	9,100 4 127
45' 13.72 m	56' 17.07 m	7,000 3 175	--	7,000 3 175
50' 15.24 m	56' 17.07 m	5,400 2 449	--	5,400 2 449
55' 16.76 m	62' 18.90 m	4,200 1 904	--	4,200 1 904
60' 18.29 m	72' 21.95 m	3,200 1 451	--	3,200 1 451

Courtesy of Crane Market

HSP-8040 Lifting Capacities

Refer to Operating Instructions page 4

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

Capacities① 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°	20,200 9 163	20,200 9 163	74°	18,500 8 392	18,500 8 392			
35' 10.67 m	71°	20,200 9 163	20,200 9 163	72°	17,300 7 847	17,300 7 847			
40' 12.19 m	68°	18,200 8 256	18,200 8 256	69°	14,800 6 713	14,800 6 713	76°	9,400 4 264	9,400 4 264
45' 13.72 m	65°	16,400 7 439	16,400 7 439	66°	13,300 6 033	13,300 6 033	74°	9,400 4 264	9,400 4 264
50' 15.24 m	62°	15,000 6 804	14,600 6 623	63°	11,600 5 262	11,600 5 262	72°	9,000 4 082	9,000 4 082
55' 16.76 m	59°	13,800 6 260	12,200 5 534	60°	10,200 4 627	10,200 4 627	70°	8,400 3 810	8,400 3 810
60' 18.29 m	55°	12,500 5 670	10,300 4 672	57°	9,100 4 128	9,100 4 128	68°	8,000 3 629	8,000 3 629
65' 19.81 m	52°	10,700 4 854	8,700 3 946	54°	8,200 3 720	8,200 3 720	66°	7,300 3 311	7,300 3 311
70' 21.34 m	48°	9,200 4 173	7,500 3 402	50°	7,400 3 357	7,400 3 357	64°	6,500 2 948	6,500 2 948
80' 24.38 m	39°	7,000 3 175	5,500 2 495	43°	6,100 2 767	5,400 2 449	61°	5,700 2 586	5,700 2 586
90' 27.43 m	29°	5,200 2 359	4,000 1 814	34°	4,600 2 087	3,900 1 789	56°	4,600 2 087	4,600 2 087
100' 30.48 m	12°	3,800 1 724	2,800 1 270	22°	3,800 1 724	2,700 1 225	51°	3,600 1 633	3,600 1 633
110' 33.53 m							46°	2,800 1 270	2,800 1 270
120' 36.58 m							39°	2,100 953	2,100 953
							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			
33' (8.84 m) fly plus 25' (7.62 m) jib			
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 1 814
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-8040 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 or auxiliary winch -17' (0.43 m) drum			
		Line Speeds		Available Line Pulls	
		F.p.m.	m/min.	Lbs.	kgs.
First	Low	172	52.43	15,870	7 199
	High	364	110.95	7,520	3 411
Second	Low	187	57.00	14,630	6 636
	High	394	120.09	6,930	3 143
Third	Low	201	61.26	13,580	6 160
	High	425	129.54	6,430	2 917
Fourth	Low	216	65.84	12,660	5 743
	High	456	138.99	6,000	2 722
Fifth	Low	230	70.10	11,860	5 380
	High	487	148.44	5,620	2 549
Sixth	Low	245	74.68	11,160	5 062
	High	517	157.58	5,280	2 395
Seventh	Low	260	79.25	10,530	4 776
	High	548	167.03	4,990	2 264

Tire Inflation

Tires	Ply	Pressure
21.0 x 25	24	85 p.s.i. (5.86 Bars)
26.5 x 25	24	75 p.s.i. (5.17 Bars)
29.5 x 25	22	60 p.s.i. (2.14 Bars)

Warning and Operating Instructions

HSP-8040

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. All capacities are in pounds with metric equivalent in *italics*.

Set-Up:

1. 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.
2. When making lifts on outriggers, outrigger beams must be fully extended with tires free of supporting surface.
3. Eight parts of 3/4" (19 mm) diameter Type "N" wire rope required to lift maximum 80,000 lbs. (36 288 kg) rated load.
4. 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.
5. When making lifts on rubber, tires must be inflated to the recommended pressure and power sections must be equally extended.

Operation:

1. 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 (17.07 m) and a minimum boom angle of 35°. Manual extended, fly or fly/jib combinations are prohibited for clam work.
2. The crane capacities shown on outriggers do not exceed 85% of the tipping loads and crane capacities shown on tires do not exceed 75% of the tipping loads as determined by SAE crane stability test code J-765a. Those capacities above the heavy bold line indicate capacities based on factors other than those which would cause a tipping condition.

3. Do not operate at boom lengths or beyond radii where no capacities are shown. Machine may overturn without any load on the hook.
4. 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.
5. When making lifts at a load radius not shown on charts, use the next longer radius to determine allowable capacity.
6. 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.
7. 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.
8. The following deductions from rated main boom capacities must be made if the machine is equipped with the following:
 - a. auxiliary lifting sheave - 200 lbs. (91 kg.)
 - b. 33' (10.06 m) one-piece fly stowed on boom - 700 lbs. (318 kg)
 - c. 33' (10.06 m) one-piece fly in working position - 1,800 lbs. (816 kg)
 - d. 33' (10.06 m) fly plus 25' (7.62 m) jib stowed on boom - 1,100 lbs. (499 kg)
 - e. 33' (10.06 m) fly plus 25' (7.62 m) jib in working position - 4,400 lbs. (1 996 kg)
 - f. 25' (7.62 m) jib in working position and picking from fly tip - 1,900 lbs. (862 kg)
9. Powered boom length is from 35' (10.67 m) to 85' (25.91 m).
10. 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.
11. Do not move load to radii or boom lengths greater than those specified on applicable chart.
12. Effective length of boom with auxiliary lifting sheave is length shown on boom length indicator plus 2' (0.61 m).
13. 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.

14. 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.
15. 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.
16. The 25' (8 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' (8 m) jib in working position below 50 degrees unless boom is fully retracted.
17. 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:

1. 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.
2. Loaded Boom Angle: The angle between the boom base section and the horizontal after lifting the load at the rated radius. The boom angle, before loading, should be greater to account for deflections.
3. Working Area: Area measured in a circular arc about the center line of rotation as shown on the working area diagram.
4. Freely Suspended Load: Load hanging free with no direct external force applied except by the hoist line.
5. Side Load: Horizontal side force applied to the lifted load either on the ground or in the air.

Working Areas

HSP-8040

