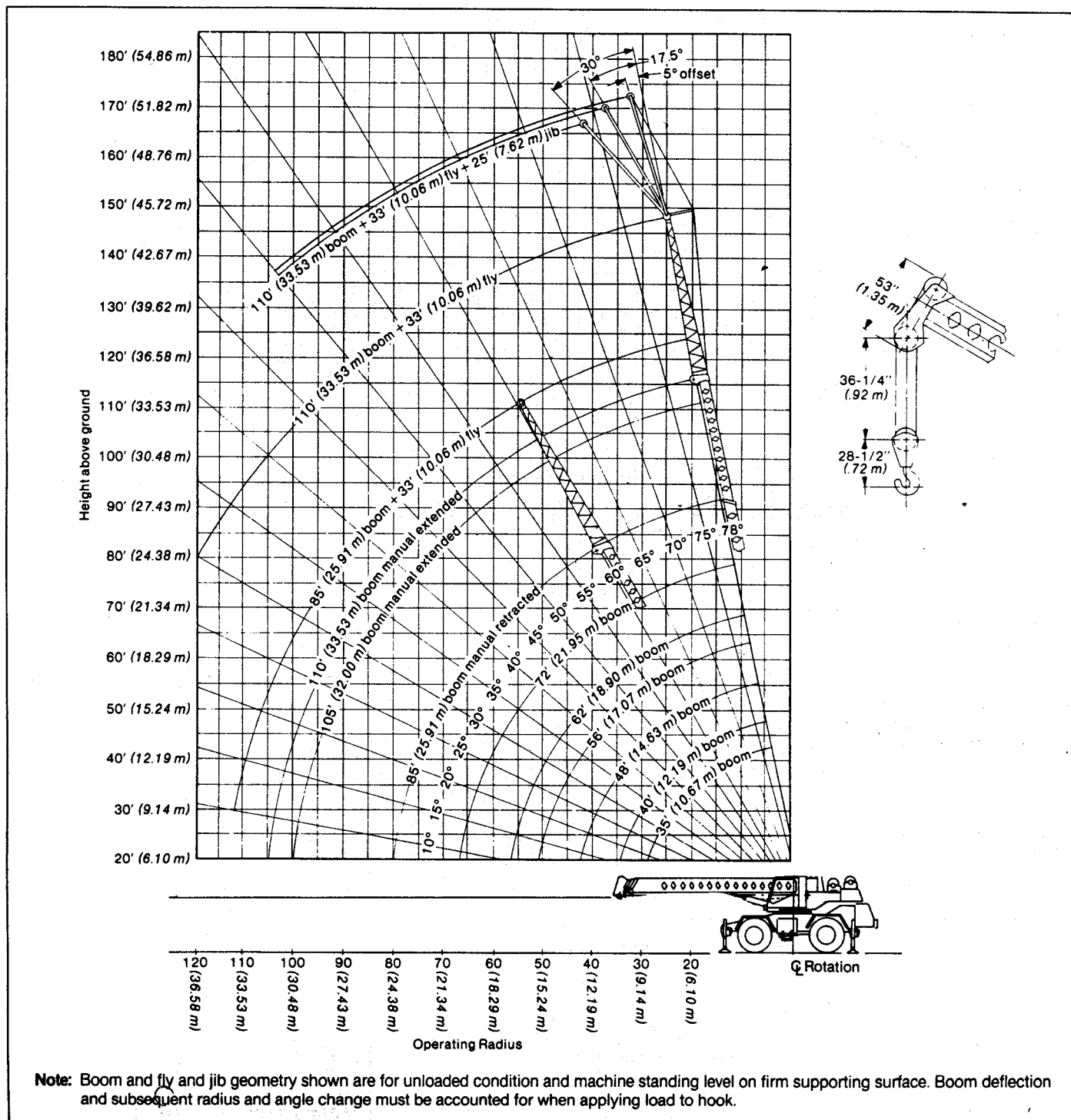**Link-Belt**
CONSTRUCTION EQUIPMENT

Lifting Capacities
Hydraulic Rough Terrain Crane

GENERAL INFORMATION ONLY

PCSA Class 12-199

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.

Litho in U.S.A. 8/87

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.

#6061

GENERAL INFORMATION ONLY

HSP-8040 Lifting Capacities

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

Refer to **Operating Instructions** page 4

Capacities On Outriggers① Manual Section Retracted

Load radius	35' (10.67m) Front	35' 360°	40' (12.19m) Front	40' 360°	48' (14.63m) Front	48' 360°	56' (17.07m) Front	56' 360°	62' (18.90m) Front	62' 360°	72' (21.95m) Front	72' 360°	85' (25.91m) Front	85' 360°	77' (23.47m) boom plus 33' (10.06m) fly Boom angle	77'+fly Front	77'+fly 360°	85' (25.91m) boom plus 33' (10.06m) fly Boom angle	85'+fly Front	85'+fly 360°
10' / 3.05m	80,000 / 36288	80,000 / 36288	72,100 / 32705	72,100 / 32705	70,800 / 32115	70,800 / 32115	68,100 / 30890	68,100 / 30890								See Note ②			See Note ②	
12' / 3.66m	80,000 / 36288	80,000 / 36288	72,100 / 32705	72,100 / 32705	70,800 / 32115	70,800 / 32115	68,100 / 30890	68,100 / 30890	64,500 / 29257	64,500 / 29257										
15' / 4.57m	70,100 / 31797	70,100 / 31797	68,700 / 31162	68,700 / 31162	66,400 / 30119	66,400 / 30119	64,200 / 29121	64,200 / 29121	56,300 / 25538	56,300 / 25538	50,100 / 22725	50,100 / 22725								
20' / 6.10m	54,800 / 24857	54,800 / 24857	54,200 / 24585	54,200 / 24585	52,600 / 23859	52,600 / 23859	51,000 / 23134	51,000 / 23134	46,200 / 20956	46,200 / 20956	41,500 / 18824	41,500 / 18824	32,500 / 14742	32,500 / 14742						
25' / 7.62m	43,100 / 19550	43,100 / 19550	43,100 / 19550	43,100 / 19550	43,100 / 19550	43,100 / 19550	42,200 / 19142	42,200 / 19142	38,900 / 17645	38,900 / 17645	35,100 / 15921	35,100 / 15921	27,000 / 12247	27,000 / 12247	76°	22,200 / 10070	22,200 / 10070	77°	18,500 / 8392	18,500 / 8392
30' / 9.14m			34,700 / 15740	34,500 / 15649	34,700 / 15740	34,500 / 15649	34,700 / 15740	34,500 / 15649	33,400 / 15150	33,400 / 15150	30,200 / 13699	30,200 / 13699	22,700 / 10297	22,700 / 10297	74°	22,200 / 10070	22,200 / 10070	75°	17,500 / 7938	17,500 / 7938
35' / 10.67m					29,400 / 13336	25,700 / 11658	29,400 / 13336	25,700 / 11658	29,400 / 13336	25,700 / 11658	28,100 / 12746	25,700 / 11658	19,400 / 8800	19,400 / 8800	71°	20,200 / 10070	20,200 / 10070	72°	15,500 / 7031	15,500 / 7031
40' / 12.19m					23,200 / 10524	19,900 / 9027	23,200 / 10524	19,900 / 9027	23,200 / 10524	19,900 / 9027	23,200 / 10524	19,900 / 9027	16,800 / 7620	16,800 / 7620	68°	18,900 / 8573	18,900 / 8573	70°	13,900 / 6305	13,900 / 6305
45' / 13.72m							19,100 / 8664	15,900 / 7212	19,100 / 8664	15,900 / 7212	19,100 / 8664	15,900 / 7212	15,700 / 7122	15,700 / 7122	66°	17,300 / 7847	17,300 / 7847	67°	12,400 / 5625	12,400 / 5625
50' / 15.24m							15,500 / 7031	12,800 / 5806	15,500 / 7031	12,800 / 5806	15,500 / 7031	12,800 / 5806	13,300 / 6033	12,800 / 5806	63°	15,400 / 6985	15,100 / 6849	64°	10,900 / 4944	10,900 / 4944
55' / 16.76m									12,900 / 5851	10,500 / 4763	12,900 / 5851	10,500 / 4763	11,900 / 5398	10,500 / 4763	60°	14,300 / 6486	12,700 / 5761	62°	9,600 / 4355	9,600 / 4355
60' / 18.29m											10,800 / 4899	8,700 / 3946	10,600 / 4808	8,700 / 3946	56°	12,900 / 5851	10,700 / 4854	59°	8,600 / 3901	8,600 / 3901
65' / 19.81m											9,100 / 4128	7,200 / 3266	9,100 / 4128	7,200 / 3266	53°	11,100 / 5035	9,200 / 4173	56°	7,700 / 3493	7,700 / 3493
70' / 21.34m													7,700 / 3493	6,900 / 3130	50°	9,700 / 4400	7,900 / 3583	53°	6,900 / 3130	6,900 / 3130
80' / 24.38m													5,400 / 2449	3,900 / 1769	42°	7,400 / 3357	5900 / 2676	46°	5,600 / 2540	5,600 / 2540
90' / 27.43m															33°	5,600 / 2540	4,400 / 1996	39°	4,600 / 2087	4,100 / 1880
100' / 30.48m															21°	4,300 / 1950	3,200 / 1452	30°	3,900 / 1769	3,000 / 1361
110' / 33.53m																		17°	3,100 / 1542	2,100 / 953

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 Feet	meters	Total wire rope 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:
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.

Capacities On Tires

Load Radius	Max. boom length	Pick & Carry③ Over Front	Stationary 360°	Stationary Over Front
10' / 3.05m	35' / 10.67m	58,000 / 26309	42,100 / 19097	57,300 / 25991
12' / 3.66m	35' / 10.67m	50,600 / 22952	33,700 / 15286	50,500 / 22907
15' / 4.57m	35' / 10.67m	42,100 / 19097	23,100 / 10478	42,700 / 19369
20' / 6.10m	35' / 10.67m	32,200 / 14606	14,000 / 6350	32,700 / 14833
25' / 7.62m	35' / 10.67m	22,400 / 10160	9,100 / 4127	22,600 / 10251
30' / 9.14m	40' / 12.19m	15,900 / 7212	6,000 / 2721	15,900 / 7212
35' / 10.67m	40' / 12.19m	11,900 / 5398	3,800 / 1723	11,900 / 5398
40' / 12.19m	48' / 14.63m	9,100 / 4127	—	9,100 / 4127
45' / 13.72m	56' / 17.07m	7,000 / 3175	—	7,000 / 3175
50' / 15.24m	56' / 17.07m	5,400 / 2449	—	5,400 / 2449
55' / 16.76m	62' / 18.90m	4,200 / 1904	—	4,200 / 1904
60' / 18.29m	72' / 21.95m	3,200 / 1451	—	3,200 / 1451

—2—

GENERAL INFORMATION ONLY

Link-Belt
CONSTRUCTION EQUIPMENT

HSP-8040 Lifting Capacities

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

Capacities① On Outriggers Manual Section Extended

Load radius	105' (32.00 m) Boom angle	Front	360°	110' (33.53 m) Boom angle	Front	360°	110' (33.53 m) boom plus 33' (10.06 m) fly Boom angle	Front	360°
		See Note ②			See Note ②				
25' / 7.62 m	76°	20,200 / 9163	20,200 / 9163	77°	19,000 / 8618	19,000 / 9027	See Note ③		
30' / 9.14 m	73°	20,200 / 9163	20,200 / 9163	74°	18,500 / 8392	18,500 / 8392			
35' / 10.67 m	71°	20,200 / 9163	20,200 / 9163	72°	17,300 / 7847	17,300 / 7847	76°	9,400 / 4264	9,400 / 4264
40' / 12.19 m	68°	18,200 / 8256	18,200 / 8256	69°	14,800 / 6713	14,800 / 6713	74°	9,400 / 4264	9,400 / 4264
45' / 13.72 m	65°	16,400 / 7439	16,400 / 7439	66°	13,300 / 6033	13,300 / 6033	72°	9,000 / 4082	9,000 / 4082
50' / 15.24 m	62°	15,000 / 6804	14,600 / 6623	63°	11,600 / 5262	11,600 / 5262	70°	8,400 / 3810	8,400 / 3810
55' / 16.76 m	59°	13,800 / 6260	12,200 / 5534	60°	10,200 / 4627	10,200 / 4627	68°	8,000 / 3629	8,000 / 3629
60' / 18.29 m	55°	12,500 / 5670	10,300 / 4672	57°	9,100 / 4128	9,100 / 4128	66°	7,300 / 3311	7,300 / 3311
65' / 19.81 m	52°	10,700 / 4854	8,700 / 3946	54°	8,200 / 3720	8,200 / 3720	64°	6,500 / 2948	6,500 / 2948
70' / 21.34 m	48°	9,200 / 4173	7,500 / 3402	50°	7,400 / 3357	7,400 / 3357	61°	5,700 / 2586	5,700 / 2586
80' / 24.38 m	39°	7,000 / 3175	5,500 / 2495	43°	6,100 / 2767	5,400 / 2449	56°	4,600 / 2087	4,600 / 2087
90' / 27.43 m	29°	5,200 / 2359	4,000 / 1814	34°	4,600 / 2087	3,900 / 1769	51°	3,600 / 1633	3,600 / 1633
100' / 30.48 m	12°	3,800 / 1724	2,800 / 1270	22°	3,800 / 1724	2,700 / 1225	46°	2,800 / 1270	2,800 / 1270
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

33' (8.84 m) fly plus 25' (7.62 m) jib

Boom angle	Jib Offset 5°	17.5°	30°
78°	5,100 / 2313	5,100 / 2313	4,200 / 1905
75°	5,100 / 2313	5,100 / 2313	4,000 / 1814
70°	5,100 / 2313	4,900 / 2223	3,600 / 1633
65°	4,500 / 2041	4,100 / 1860	3,400 / 1542
60°	3,700 / 1678	3,300 / 1497	2,800 / 1270
55°	3,000 / 1361	2,700 / 1225	2,400 / 1089
50°	2,500 / 1134	2,300 / 1043	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 F.p.m.	m/min.	Available Line Pulls Lbs.	kgs.
First	Low	172	52.43	15,870	7199
	High	364	110.95	7,520	3411
Second	Low	187	57.00	14,630	6636
	High	394	120.09	6,930	3143
Third	Low	201	61.26	13,580	6160
	High	425	129.54	6,430	2917
Fourth	Low	216	65.84	12,660	5743
	High	456	138.99	6,000	2722
Fifth	Low	230	70.10	11,860	5380
	High	487	148.44	5,620	2549
Sixth	Low	245	74.68	11,160	5062
	High	517	157.58	5,280	2395
Seventh	Low	260	79.25	10,530	4776
	High	548	167.03	4,990	2264

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)

Link-Belt
CONSTRUCTION EQUIPMENT

GENERAL INFORMATION ONLY

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 italic.

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 ¾" (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 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
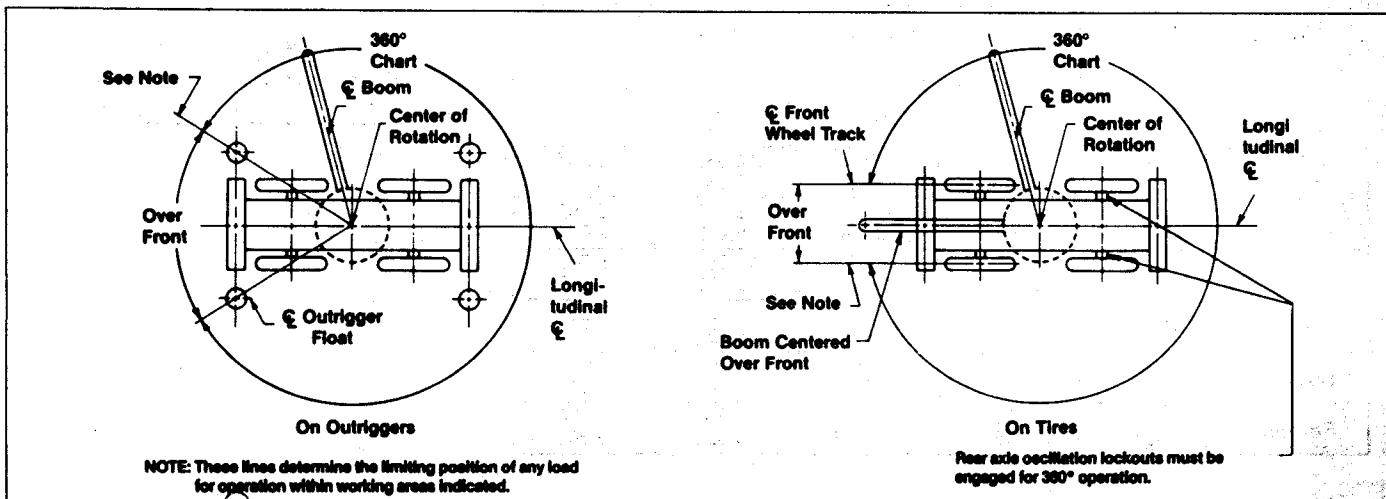
® Link-Belt is a registered trademark. Copyright 1991.
We are constantly improving our products and therefore reserve the right to change designs and specifications.

Link-Belt Construction Equipment Company Lexington, Kentucky
A unit of Sumitomo Construction Machinery Co., Ltd.