

# Lifting Capacities

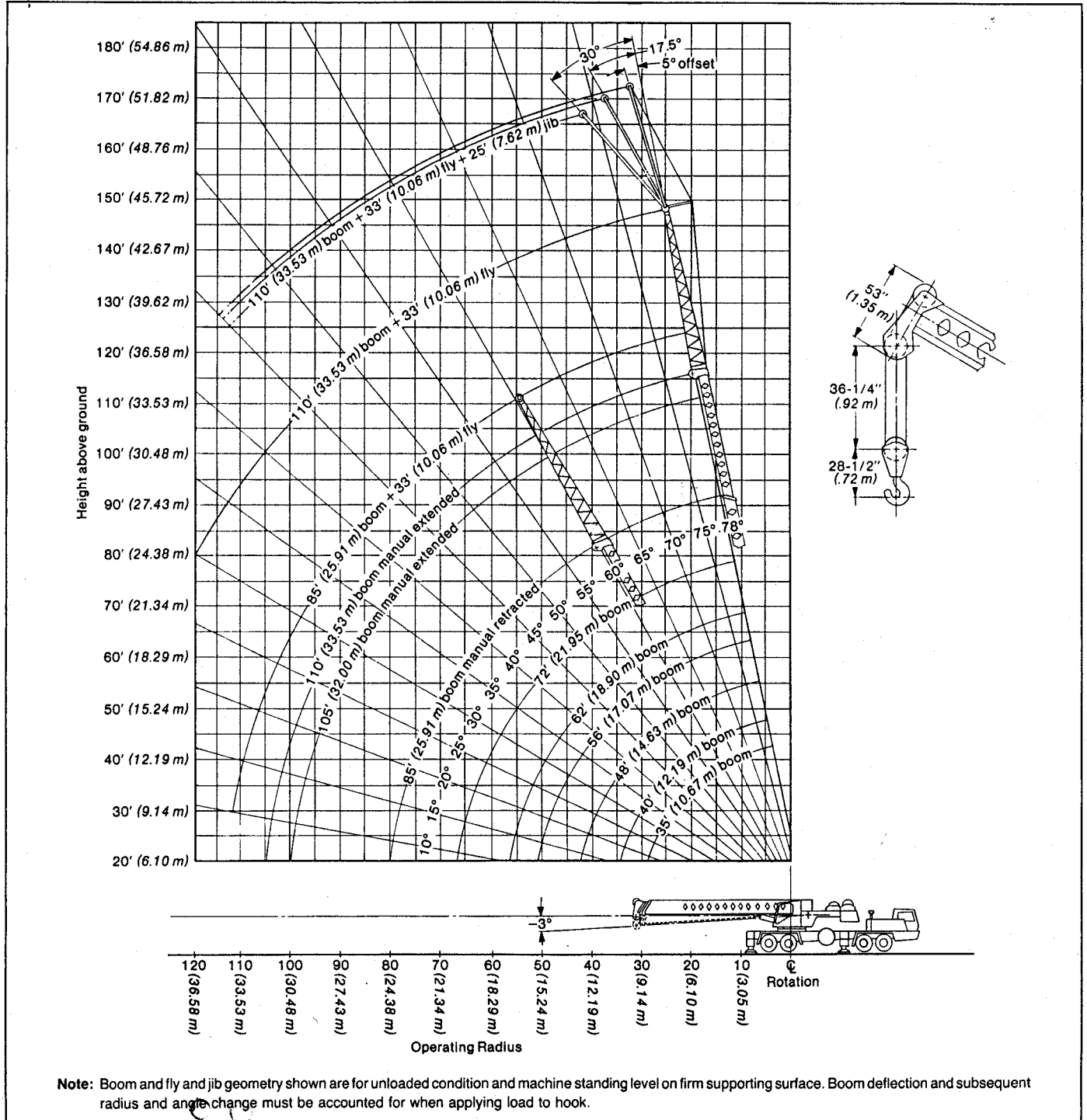
GENERAL INFORMATION ONLY

Link-Belt®

Hydraulic Crane

**HTC-1040** 40-ton (36.29 metric ton)

4-Section Boom



**GENERAL INFORMATION ONLY**

**HTC-1040 Lifting Capacities**

Refer to Operating Instructions page 4

10' 1-1/2" (3.09 m) carrier

**GENERAL INFORMATION ONLY**

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

**Capacities On Outriggers Manual Section Retracted**

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	Side	Rear	
	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear				
10' 3.05 m	80,000 36 288	80,000 36 288	72,100 32 705	72,100 32 705	70,800 32 115	70,800 32 115	68,100 30 890	68,100 30 890							See Note ①			
12' 3.66 m	80,000 36 288	80,000 36 288	72,100 32 705	72,100 32 705	70,800 32 115	70,800 32 115	68,100 30 890	68,100 30 890	64,500 29 257	64,500 29 257								
15' 4.57 m	69,900 31 707	69,900 31 707	68,700 31 162	68,700 31 162	66,400 30 119	66,400 30 119	64,200 29 121	64,200 29 121	56,300 25 538	56,300 25 538	45,000 20 412	45,000 20 412						
20' 6.10 m	50,000 22 680	50,000 22 680	50,000 22 680	50,000 22 680	50,000 22 680	50,000 22 680	50,000 22 680	50,000 22 680	46,200 20 956	46,200 20 956	40,000 18 144	40,000 18 144	32,500 14 742	32,500 14 742				
25' 7.62 m	40,000 18 144	40,000 18 144	40,000 18 144	40,000 18 144	40,000 18 144	40,000 18 144	40,000 18 144	40,000 18 144	38,000 17 237	38,000 17 237	35,000 15 876	35,000 15 876	27,000 12 247	27,000 12 247		77°	18,500 8 392	18,500 8 392
30' 9.14 m			30,500 13 835	31,200 14 152	30,000 13 608	31,200 14 152	30,000 13 608	31,200 14 152	30,000 13 608	31,200 14 152	30,000 13 608	30,000 13 608	22,700 10 297	22,700 10 297		75°	17,500 7 938	17,500 7 938
35' 10.67 m					24,000 10 886	24,000 10 886	24,000 10 886	24,000 10 886	24,000 10 886	24,000 10 886	24,000 10 886	24,000 10 886	19,400 8 800	19,400 8 800		72°	15,500 7 031	15,500 7 031
40' 12.19 m					18,700 8 482	18,900 8 573	18,700 8 482	18,900 8 573	18,700 8 482	18,900 8 573	18,100 8 210	18,900 8 573	16,800 7 620	16,800 7 620		70°	13,900 6 305	13,900 6 305
45' 13.72 m							14,500 6 577	15,400 6 985	14,500 6 577	15,400 6 985	14,200 6 440	15,400 6 985	14,200 6 440	14,700 6 668		67°	12,400 5 625	12,400 5 625
50' 15.24 m							11,400 5 170	12,600 5 715	11,400 5 170	12,600 5 715	11,400 5 170	12,600 5 715	11,200 5 080	12,600 5 715		64°	10,900 4 944	10,900 4 944
55' 16.76 m								9,000 4 082	10,500 4 763	9,000 4 082	10,500 4 763	9,000 4 081	10,500 4 763	9,000 4 081	62°	9,600 4 355	9,600 4 355	
60' 18.29 m											7,300 3 311	8,800 3 992	7,300 3 311	8,800 3 992	59°	8,600 3 901	8,600 3 901	
65' 19.81 m											5,800 2 630	7,200 3 266	5,800 2 630	7,200 3 266	56°	7,500 3 402	7,700 3 493	
70' 21.34 m												4,600 2 086	6,000 2 722	4,600 2 086	53°	6,300 2 857	6,900 3 130	
75' 22.87 m													2,700 1 224	3,900 1 769	47°	4,500 2 131	5,600 2 540	
80' 24.40 m															39°	3,100 1 405	4,200 1 905	
100' 30.48 m															30°	2,100 952	3,100 1 406	

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	Max boom length		Creep ② over rear only		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	Pounds	kilograms	Tires	Ply rating	Creep ② Inflation	1.0 m.p.h. 1.61 km/hr Inflation
10	3.05	35	37,200	16 874	22 450	11 068				
12	3.66	35	34,000	15 442	22 250	10 070				
15	4.57	35	30,000	13 608	19 300	8 754	11.0x200	14	100 p.s.i. (6.90 Bars)	100 p.s.i. (6.90 Bars)
20	6.10	35	19,700	8 936	15 500	7 031	12.0x200	14	100 p.s.i. (6.90 Bars)	90 p.s.i. (6.21 Bars)
25	7.62	35	13,900	6 305	12 700	5 761	15.0x22.5	14	95 p.s.i. (6.55 Bars)	85 p.s.i. (5.86 Bars)
30	9.14	40	10,000	4 536			16.5x22.5	16	100 p.s.i. (6.90 Bars)	90 p.s.i. (6.21 Bars)
35	10.67	40	7,400	3 357			18.0x22.5	16	95 p.s.i. (6.55 Bars)	85 p.s.i. (5.86 Bars)
40	12.19	48	5,600	2 540						
45	13.72	56	4,100	1 860						
50	15.24	56	3,000	1 361						
55	16.76	62	2,200	998						

① See Operating Instruction; Set-Up Number 4  
② See Operating Instruction; Set-Up Number 3

**Wire rope size and type**

Wire rope application	Size and type used	Wire rope description
Main winch	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.
Anchor winch	3/4" (19 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)

# HTC-1040 Lifting Capacities GENERAL INFORMATION ONLY

Refer to Operating Instructions page 4

10' 1-1/2" (3.09 m) carrier

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

Capacities On Outriggers Manual Section Extended									
Load radius	105' (32.00 m) <sup>③</sup>			110' (33.53 m)			110' (33.53 m) boom plus 33' (10.06 m) fly		
	Boom angle	Side	Rear	Boom angle	Side	Rear	Boom angle	Side	Rear
		See Note ①			See Note ①			See Note ②	
25' 7.62 m	76°	20,200 9 163	20,200 9 163	77°	19,000 8 618	19,000 8 618			
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	70°	18,000 8 165	18,000 8 165	72°	17,300 7 847	17,300 7 847	76°	9,400 4 264	9,400 4 264
40' 12.19 m	68°	15,500 7 031	15,500 7 031	69°	14,800 6 713	14,800 6 713	74°	9,400 4 264	9,400 4 264
45' 13.72 m	65°	14,000 6 350	14,000 6 350	66°	13,300 6 033	13,300 6 033	72°	9,000 4 082	9,000 4 082
50' 15.24 m	62°	12,500 5 670	12,500 5 670	63°	11,600 5 262	11,600 5 262	70°	8,400 3 810	8,400 3 810
55' 16.76 m	59°	10,500 4 763	10,500 4 763	60°	10,200 4 627	10,200 4 627	68°	8,000 3 629	8,000 3 629
60' 18.29 m	55°	8,700 3 946	8,800 3 992	58°	8,600 3 900	9,000 4 082	66°	7,300 3 311	7,300 3 311
65' 19.81 m	52°	7,300 3 311	7,800 3 538	54°	7,200 3 266	8,000 3 629	63°	6,500 2 948	6,500 2 948
70' 21.34 m	48°	6,100 2 766	7,000 3 175	51°	6,000 2 721	7,000 3 175	61°	5,700 2 586	5,700 2 586
80' 24.38 m	40°	4,300 1 950	5,500 2 495	43°	4,200 1 904	5,400 2 449	56°	4,600 2 087	4,600 2 087
90' 27.43 m	30°	2,900 1 315	4,000 1 814	34°	2,800 1 269	3,900 1 769	51°	3,600 1 633	3,600 1 633
100' 30.48 m	12°	1,800 816	2,800 1 270	22°	1,800 816	2,800 1 270	48°	2,600 1 179	2,800 1 270
110' 33.53 m							39°	1,800 816	2,100 953
120' 36.58 m							32°		1,500 680

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

- ① Capacities for boom with manual section extended can be extended or retracted, but are 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.
- ③ Capacities are shown for 4-section boom with manual extended and with boom retracted to 105' (32.00 m)

Jib Capacities			
33' (10.06 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°	3,500 1 587	3,100 1 406	2,600 1 179
55°	2,400 1 088	2,300 1 043	1,900 862
50°	1,700 770	1,500 680	1,200 544

## 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 <sup>①</sup>	140	42.67	853	259.99

① For storage purposes only - not a working layer

## 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

HTC-1040 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
	Outermid telescope	2,500 p.s.i. (172.41 Bars)
	Innermid telescope	2,500 p.s.i. (172.41 Bars)
	Outriggers	2,500 p.s.i. (172.41 Bars)
Charge Pump	Winch brake and clutch	1,800 p.s.i. (124.14 Bars)

**Warning and Operating Instructions HTC-1040**

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 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.
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:**

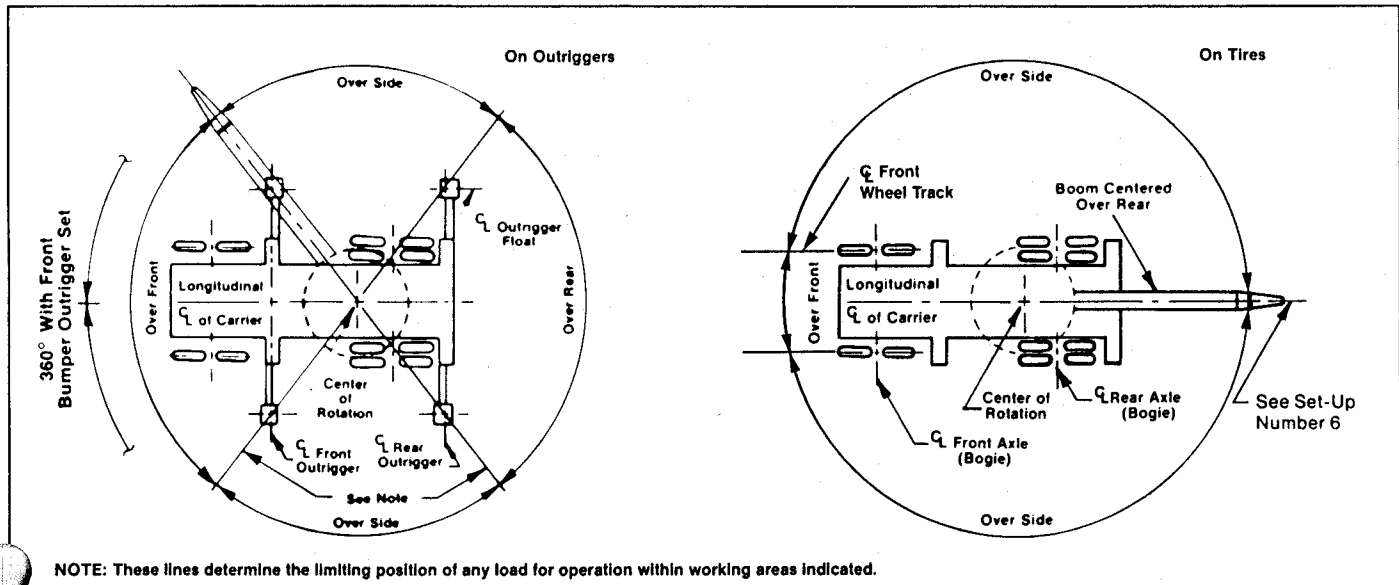
1. The machine shall be leveled on a firm supporting surface. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats or tires to spread the load to a larger bearing surface.
2. When making lifts on outriggers, outrigger beams must 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. Two conditions are available for pick and carry operations. The first condition is creep. Creep is motion for less than 200' (60.9 m) in a 30 minute period and not exceeding 1 m.p.h. (1.61 km/hr). The second condition is 1 m.p.h. (1.61 km/hr) maximum speed. For each condition, creep and 1 m.p.h. (1.61 km/hr), 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. 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 35' (10.67 m) 360°.
6. Outriggers must be set before swinging boom to over side position as defined on working area plate No. 36P0181.

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 weight of 7,000 pounds (3175 kg) or 80% of rated lifting capacity which ever is less. For magnet operation weight of magnet and load is restricted to a maximum weight of 7,000 pounds (3175 kg) or 80% of rated lifting capacity which ever is less. For clamshell and magnet operation maximum boom length is restricted to 56 feet (17.07 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 operation.
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.
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. The following deductions from rated main boom capacities must be made if machine is equipped with the following:  
Picking from main boom with:  
a. Auxiliary head - 200 lbs. (91 kg)  
b. Jib stowed - 600 lbs. (272 kg)  
c. Fly stowed - 700 lbs. (318 kg)  
d. Fly erected - 1,700 lbs. (771 kg)  
e. Fly & jib stowed - 1,300 lbs. (590 kg)  
f. Fly & jib erected - 4,300 lbs. (1,951 kg)  
Picking from 33' (10.66 m) fly with:  
Jib erected - 2,000 lbs. (907 kg)
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 of rope then deduct 1 lb. (.45 kg) for each foot of wire rope before attempting to lift a load.
15. For boom lengths less than 105' (32.00 m) or between 105' (32.00 m) and 110' (33.53 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.
16. For boom lengths plus fly less than 118' (35.97 m) with manual retracted or less than 143' (43.59 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° working area.
18. Do not lower 85' (25.91 m) boom with 33' (10.06 m) fly below 16°. Do not lower 110' (33.53 m) boom with 33' (10.06 m) fly below 32°. Failure to follow note 18 will result in a tipping condition.
19. The 25' (7.62 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 25' (7.62 m) jib in working position below 50° unless boom is fully retracted.
20. 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.

**Working Areas HTC-1040**



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

**Link-Belt Construction Equipment Company Lexington, Kentucky**

