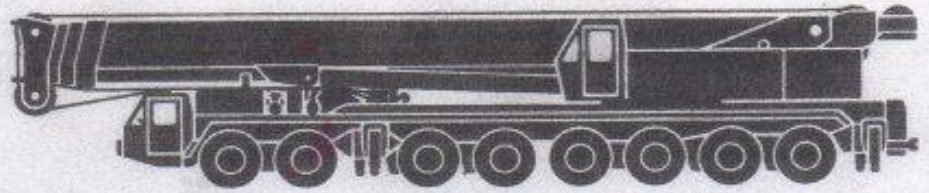


Hydraulic Crane — Technical Data



LIEBHERR

16,000 KTS.

Working lengths of boom (feet). Outriggers fully extended, 380°. Counterweight: 32,000 lbs.

Radius in feet	Boom lengths in feet					
	18 MTS 54 ft.	32 MTS 96 ft*	32 MTS 96 ft**	45.6 MTS 138 ft.	53 MTS 160 ft.	60 MTS 180 ft.
3.3 10'6"	498,000					
4.3 13	417,600	275,500				
6.6 20	271,100	244,300		136,200		
7.6 23	238,000	230,100	181,600	122,200		
8.6 26	198,700	189,800	179,500	130,200	101,400	
9.9 30	166,500	158,900	162,800	125,300	98,000	
10.9 33	148,800	140,200	148,900	123,100	90,100	81,400
13.2 40	119,000	107,900	116,900	110,900	80,900	76,500
14.9 45		89,600	100,100	99,200	75,900	71,400
16.5 50		75,000	84,700	86,000	70,800	68,100
18.2 55		63,800	72,500	74,300	66,400	63,400
19.8 60		54,500	62,000	64,500	62,400	62,800
21.5 65		44,000	52,600	56,100	58,200	59,400
23.1 70		36,500	44,600	48,600	52,000	52,300
26.4 80		25,100	32,600	35,400	39,400	39,400
29.7 90				25,500	28,800	30,000
33 100				17,900	23,400	22,900
36.3 110				12,100	16,700	17,900
39.6 120				7,700	12,500	12,300
42.9 130					7,700	8,100
46.2 137					5,800	5,950
46.2 140						5,510
47.8 145						4,190

* Telescope section 1 fully extended, telescope sections 2 and 3 retracted.

** Each telescope section extended 2/3 of its individual length.

16,000 MTS.

Working lengths of boom (feet). Outriggers fully extended, 360°. Counterweight: 32,000 lbs.

Radius in feet	Boom lengths in feet					
	18 MTS 54 ft.	32 MTS 96 ft.*	32 MTS 96 ft.**	45.6 MTS 138 ft.	53 MTS 160 ft.	60 MTS 180 ft.
3.3	498,000					
4.3	417,600	275,500				
6.6	271,100	244,300		138,200		
7.6	228,900	220,100	191,800	122,200		
8.6	188,700	189,800	179,500	130,200	101,400	
9.9	156,500	158,900	163,800	125,200	98,050	
10.9	148,800	140,200	148,800	123,100	90,100	81,400
13.2	119,000	107,900	118,900	110,900	80,800	76,500
14.9		89,400	100,100	99,200	75,900	71,400
16.5		75,000	84,700	85,000	70,800	68,100
18.2		63,800	72,500	74,300	66,400	66,400
19.8		54,500	63,000	64,500	62,400	62,800
21.5		44,000	52,600	56,100	58,200	58,400
23.1		36,500	44,400	48,800	52,900	52,300
24.4		28,100	32,800	35,400	39,400	39,400
29.2				25,500	29,800	30,000
33				17,900	23,400	23,900
36.3				12,100	16,700	17,300
37.6				7,700	12,500	12,300
42.9					7,700	8,100
45.2					8,200	5,950
46.2						5,510
47.8						4,190

* Telescope section 1 fully extended, telescope sections 2 and 3 retracted.

** Each telescope section extended 1/3 of its individual length.

Lifting capacities (in lbs.) at the telescopic boom.

Working lengths of boom (feet). Outriggers fully extended, 360°. Counterweight: 57,300 lbs. 28,650 HTS.

Radius in feet	Boom lengths in feet					
	18 HTS 54 ft.	32 HTS 96 ft*	32 HTS 96 ft**	45.6 HTS 138 ft.	53 HTS 160 ft.	60 HTS 180 ft.
3.3	10	545,800				
4.3	15	457,300	275,500			
6.6	20	345,900	244,300			
7.6	25	281,800	220,100	191,000	138,200	
8.6	26	248,500	193,900	179,500	138,200	101,400
9.9	30	216,300	167,500	163,100	125,300	94,100
10.9	33	190,800	153,400	149,200	123,200	90,100
13.2	40	159,700	123,500	126,100	115,500	80,900
14.9	45		106,700	112,700	105,500	75,900
16.5	50		94,000	102,000	95,400	70,800
18.2	55		83,900	91,100	86,100	66,400
19.8	60		74,900	79,500	77,700	62,400
21.5	65		63,300	70,900	69,300	58,500
23.1	70		53,700	61,500	61,200	56,000
26.4	80		39,600	47,400	48,000	48,000
29.7	90				37,100	37,200
33	100				28,800	29,900
36.3	110				21,100	24,100
39.6	120				16,200	19,000
42.9	130					15,500
45.2	137					12,300
46.2	140					15,500
49.5	150					11,300
51.8	157					8,900

* Telescope section 1 fully extended, telescope sections 2 and 3 retracted.

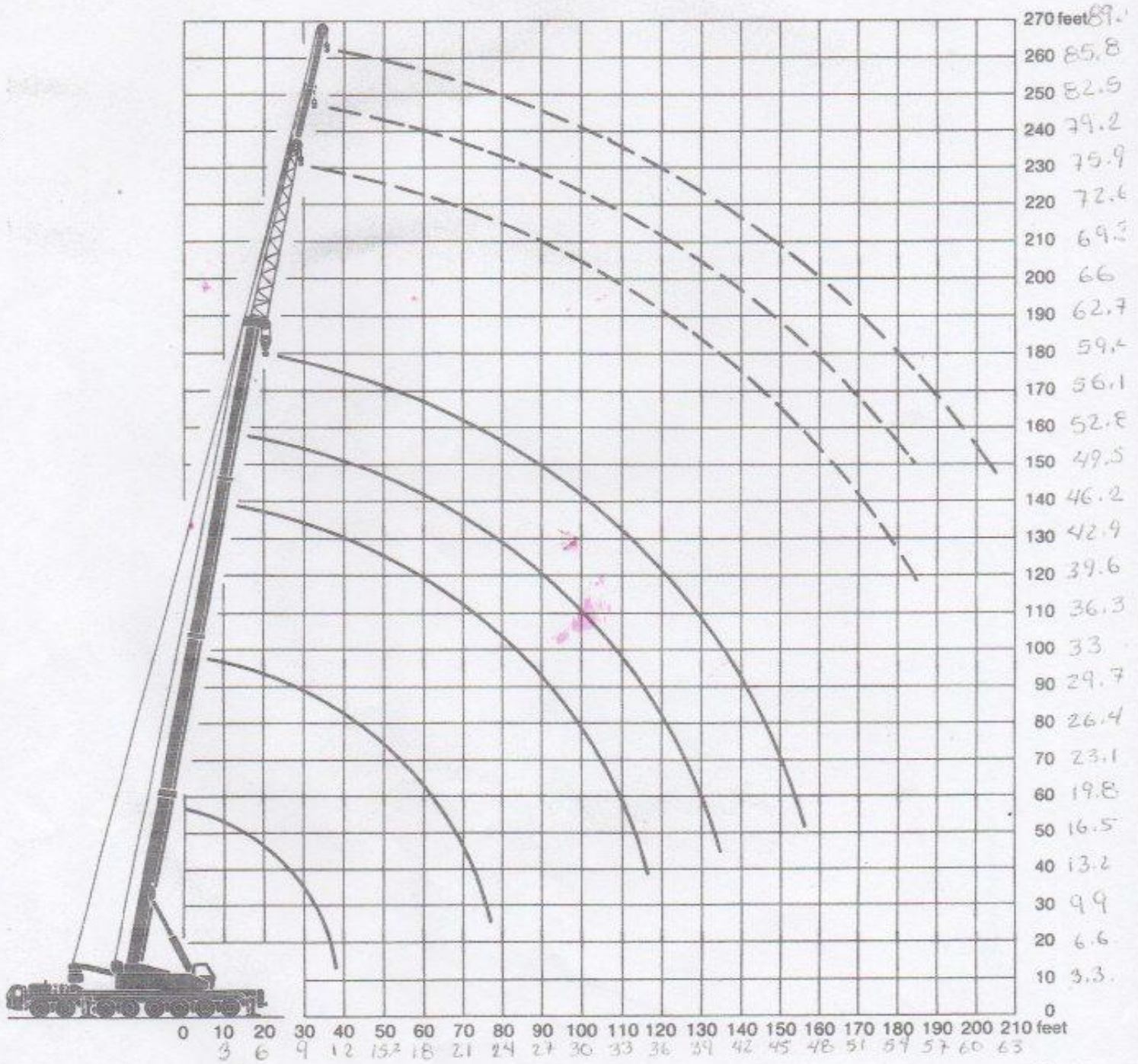
** Each telescope section extended 1/3 of its individual length.

Lifting capacities (in lbs.) at the fold in jib.

Telescopic boom: 160 ft. - 180 ft. Fold in jib: 49 ft. - 75 ft.
Outriggers fully extended, 360°. Counterweight: 57,300 lbs. 28,650 HTS.

Radius in feet	53 HTS 100 ft.	Boom lengths in feet		60 HTS
	Fold in jib 49 ft. 16 HTS	Fold in jib 49 ft. 16 HTS	Fold in jib 75 ft. 24 HTS	Fold in jib 75 ft. 24 HTS
9.9	30	43,930	34,550	
11.5	35	42,400	33,900	21,160
13.2	40	40,950	33,540	20,640
16.5	50	36,720	31,060	18,300
19.8	60	32,750	28,810	16,390
23.1	70	29,340	26,590	14,700
26.4	80	26,115	24,630	13,190
29.7	90	23,560	22,800	11,920
33	100	21,090	20,900	10,170
36.3	110	18,820	19,220	8,330
39.6	120	17,540	17,540	7,440
42.9	130	15,860	15,660	6,460
46.2	140	13,960	13,430	5,170
49.5	150	11,530	10,260	4,650
52.8	160	8,600	7,730	3,260
56.1	170	5,900	5,290	2,210
59.4	180	3,970	3,310	1,260
62.7	184	3,090	2,430	8,730
66	190			4,630
66.9	200			2,670
	203			2,200

Lifting heights at the telescopic boom and at the fold in jib.



Lifting capacities (in lbs.) at the luffing fly jib.

Luffing fly jib: 36 ft. - 124 ft. Outriggers fully extended, 360°.
Counterweight: 57,300 lbs. extended or retracted. 28,650 lbs.

- 6.6
- 8.5
- 9.9
- 10.9
- 11.8
- 13.2
- 14.1
- 15.1
- 16.1
- 17.4
- 18.4
- 19.4
- 21.4
- 23.7
- 26
- 28
- 30.3
- 32.3
- 34.6
- 36.6
- 38.9
- 41.2
- 43.2
- 45.5

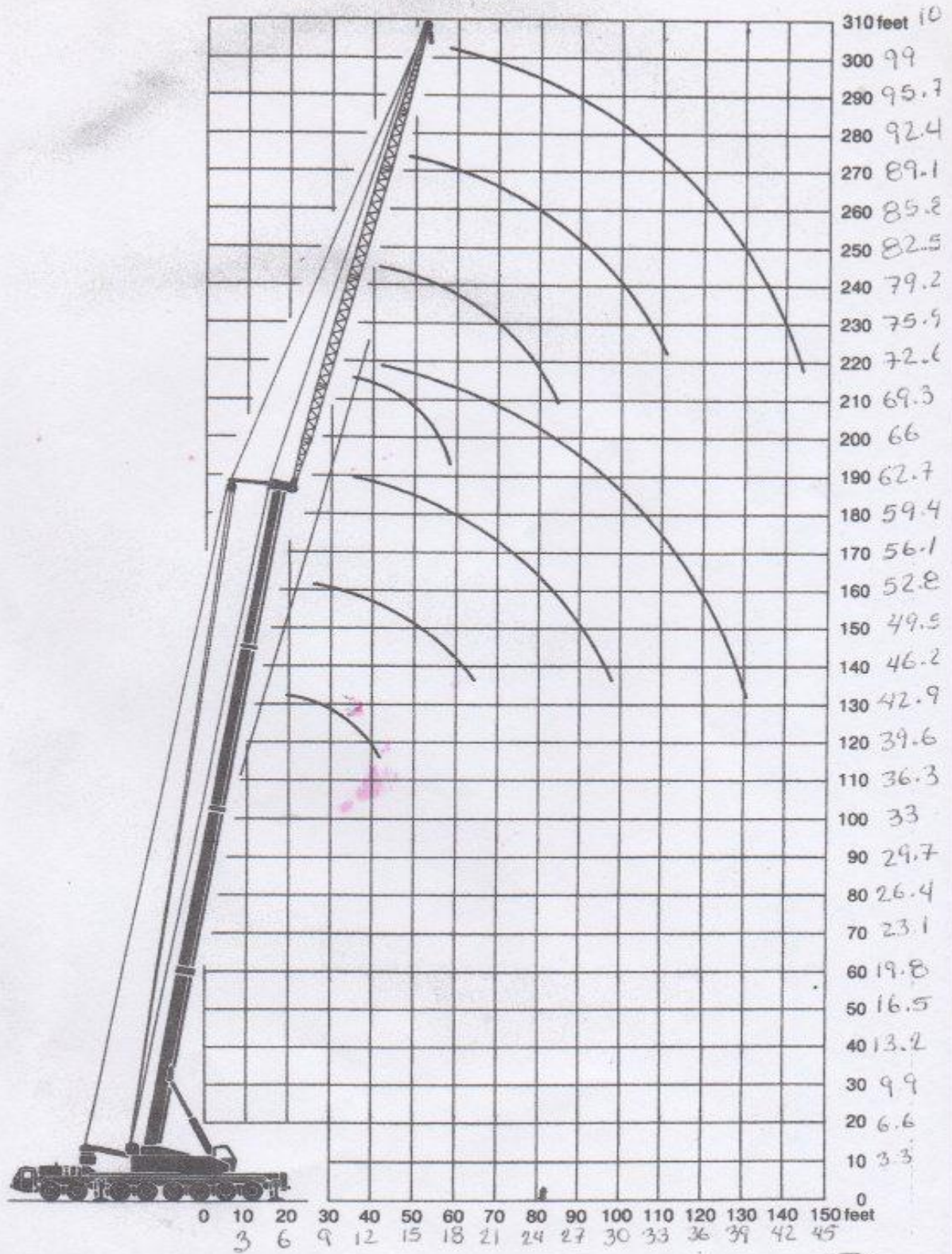
Radius in feet	32 MTS 96 ft.				Working lengths of telescopic boom				45.6 MTS 138 ft.			
	12 MTS 36 ft.	21.5 MTS 65 ft.	Fly jib 95 ft.	31.3	41 124 ft.	12 36 ft.	21.5 65 ft.	Fly jib 95 ft.	31.3	41 124 ft.		
20	144,870											
28	130,730	110,290				94,900						
30	122,500	102,980				91,950						
33	116,450	98,950				88,050						
36	110,410	94,910	72,750			85,040	77,180					
40	101,920	87,780	69,700			83,400	74,000					
43	94,800	85,510	65,900	38,480		80,550	71,610	57,520				
46		81,470	63,660	37,580		77,530	69,390	55,520				
49		77,440	61,370	37,090	37,090	74,710	67,170	54,320	37,920			
53		72,070	58,370	36,200	36,200	71,850	63,780	51,940	36,860			
56		68,040	57,160	35,200	35,200		61,540	50,160	35,860			
59		64,000	55,150	34,190	34,190		59,120	48,740	34,850			
65		55,110	50,520	32,370	32,370		54,680	45,520	33,230			
72			45,540	30,250	30,250		48,940	41,330	30,920			
79			41,080	28,150	28,150			37,560	28,790			
85			37,230	26,530	26,530			34,540	26,770			
92			32,990	24,650	24,650			31,250	24,960			
98			29,280	22,830	22,830			28,890	22,850			
105				21,160	21,160			26,010	21,160			
111				19,540	19,540				18,940			
118				17,890	17,890				17,000			
125				16,010	16,010				15,350			
131				14,550	14,550				13,940			
138									12,580			

- 10.9
- 11.8
- 13.2
- 14.1
- 15.1
- 16.1
- 17.4
- 18.4
- 19.4
- 21.4
- 23.7
- 26
- 28
- 30.3
- 32.3
- 34.6
- 36.6
- 38.9
- 41.2
- 43.2
- 45.5
- 47.5

Radius in feet	53 MTS 160 ft.				Working lengths of telescopic boom				60 MTS 180 ft.			
	12 MTS 36 ft.	21.5 MTS 65 ft.	Fly jib 95 ft.	31.3	41 124 ft.	12 36 ft.	21.5 65 ft.	Fly jib 95 ft.	31.3	41 124 ft.		
33	65,980											
36	64,950					48,060						
40	64,850	53,270				47,230						
43	62,610	51,890				46,420	35,200					
46	60,500	50,890	41,200			45,610	34,590					
49	58,990	48,850	39,990			44,800	33,780	24,890				
53	56,900	47,120	38,340			43,550	32,930	24,140				
56	55,110	45,530	36,940	23,780		42,930	32,140	23,560				
59		44,110	35,730	23,370	23,370	42,100	31,530	23,150	13,860			
65		41,290	33,710	22,170	22,170		30,320	22,150	13,270			
72		37,790	30,930	20,540	20,540		28,910	20,540	12,580			
79		34,610	28,800	19,350	19,350		27,490	19,350	12,100			
85			26,980	18,350	18,350		26,010	18,350	11,490			
92			23,770	16,950	16,950			17,160	11,010			
98			22,160	16,150	16,150			15,960	10,400			
105				15,840	14,900			14,770	9,920			
111				13,780	13,780			13,660	9,310			
118				12,590	12,590				9,040			
125				11,440	11,440				8,790			
131				11,040	11,040				8,390			
138				9,920	9,920				8,150			
144									7,930			

Lifting heights at the luffing fly jib.

MTS. .3048
KLS. .454



①

Lifting capacities (in lbs.) at the fixed fly jib.

Fixed fly jib: 65 ft. - 95 ft. Outriggers fully extended, 360°.
Counterweight: 57,300 lbs. or 72,750 lbs. fully extended.

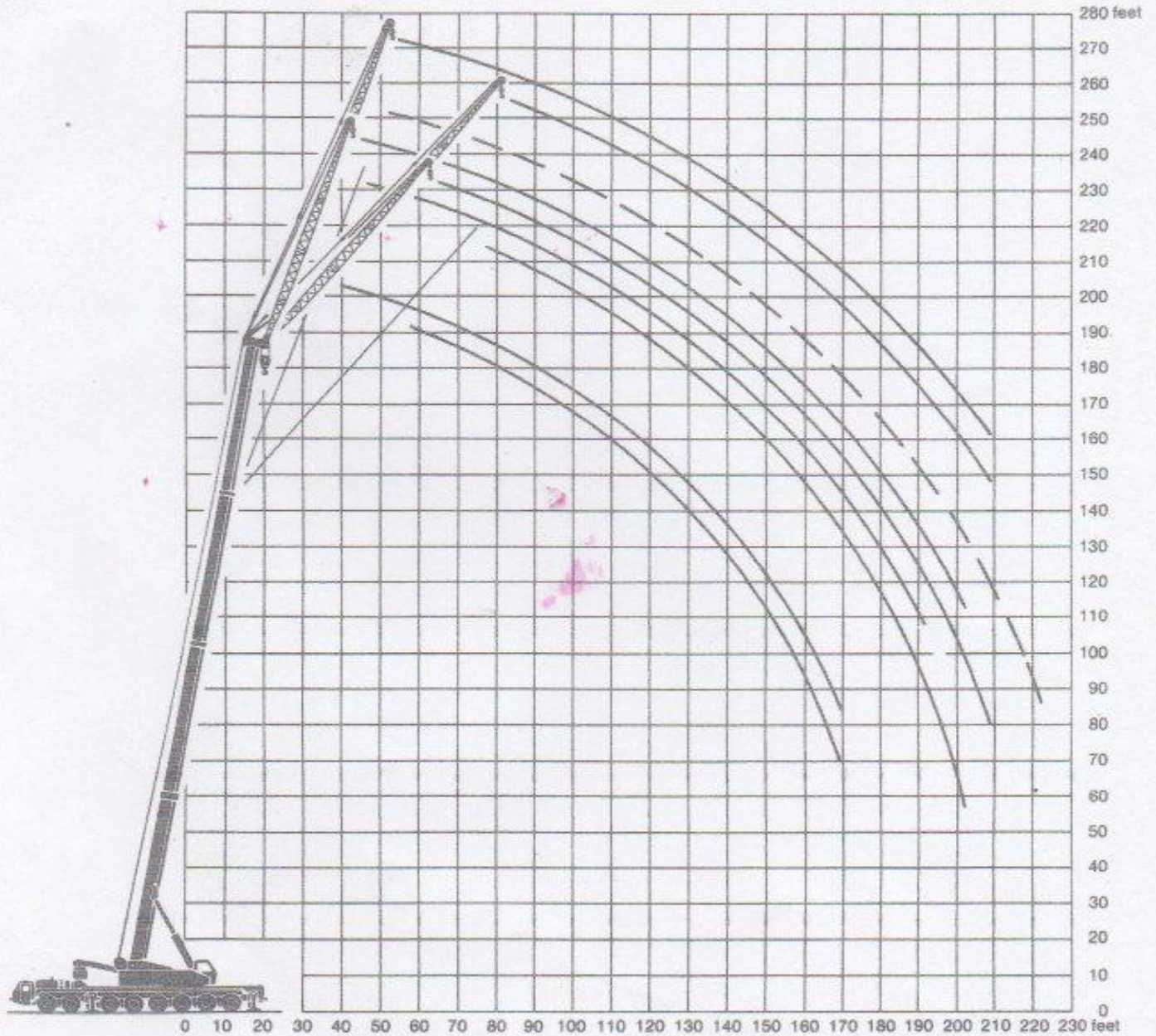
Radius in feet	Working lengths of telescopic boom											
	138 ft.						160 ft.					
	85 ft.		Fly jib		95 ft.		65 ft.		Fly jib		95 ft.	
	10°	30°	10°	30°	10°	30°	10°	30°	10°	30°	10°	30°
53	24,600											
60	23,430			12,720					20,280			
65	22,690		19,180	12,360					19,100		13,000	
72	21,410		18,320	12,200					17,870	18,090	12,360	
78	20,400		17,710	11,730					16,660	15,110	12,150	
80	20,070		17,420	11,550					16,320	14,780	12,040	
92	18,060		15,630	10,570	9,030				14,520	13,210	11,230	11,230
98	17,250		14,820	10,170	8,830				13,520	12,400	10,620	10,620
110	15,580		13,380	9,410	8,040				12,280	11,180	9,800	9,800
120	14,230		12,100	8,840	7,210				11,050	10,170	9,130	9,130
130	12,730		11,100	8,020	6,700				10,040	9,160	8,460	8,460
140	11,680		9,990	7,340	6,370				9,190	8,450	7,780	7,780
150	10,870		9,000	6,670	5,320				8,340	7,680	7,110	7,110
160	9,820		8,250	6,040	4,980				7,500	6,880	6,440	6,440
170	8,970		7,710	5,540	4,650				6,660	6,210	5,770	5,770
180				4,880	4,150				5,820	5,540	5,100	5,100
190				4,200	3,660				5,190	4,870	4,430	4,430
195				3,740	3,780				4,940	4,530	4,090	4,090
203					3,520				3,740		3,550	3,550
210											3,060	3,060
215											2,630	2,630
223												2,200

Radius in feet	Working lengths of telescopic boom 180 ft.					
	85 ft.		Fly jib		95 ft.	
	10°	30°	10°	30°	10°	30°
53						
60	17,030					
65	16,190			9,920		
72	15,020			9,490		
78	14,210		13,010	9,090		
80	13,940		12,750	8,990		
92	12,100		11,010	8,150		
98	11,300		10,190	7,950		7,950
110	9,660		8,750	7,160		7,160
120	8,560		7,740	6,480		6,480
130	7,220		6,910	5,990		5,990
140	6,310		6,240	5,360		5,360
150	5,470		5,470	4,780		4,780
160	4,690		4,690	4,240		4,240
170	4,010		4,010	3,560		3,560
180	3,490		3,490	3,050		3,050
190	3,040		2,880	2,550		2,550
195	2,830		2,550	2,290		2,290
203	2,420		2,210	1,810		1,810
210			1,870	1,360		1,360
215						
223						

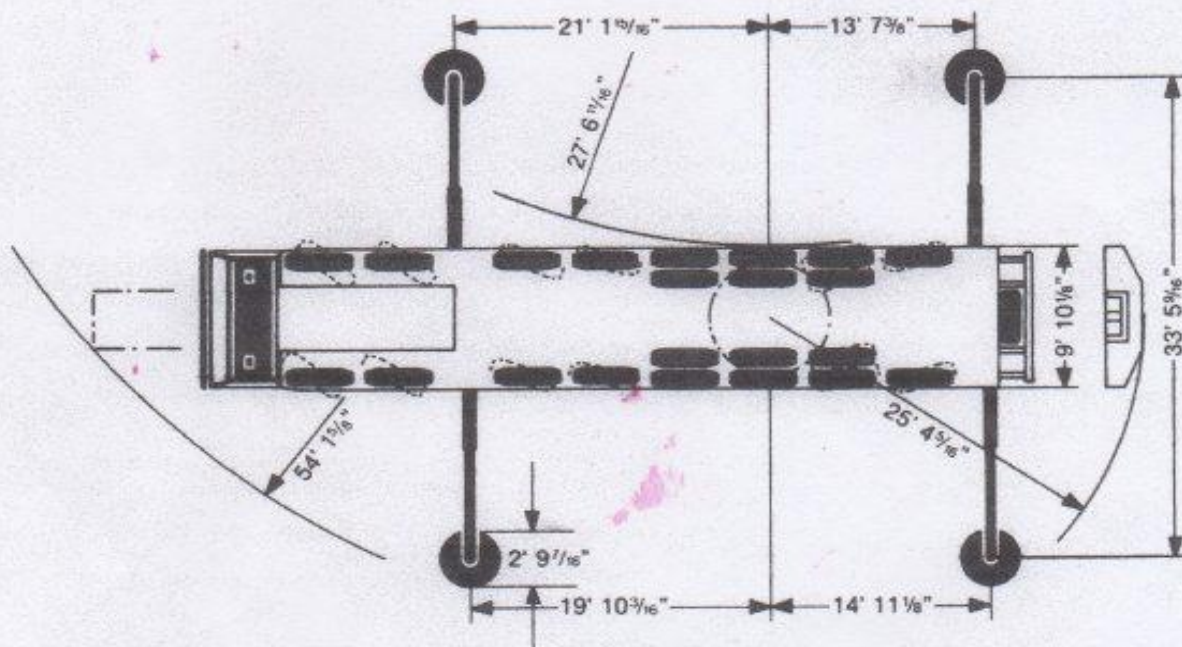
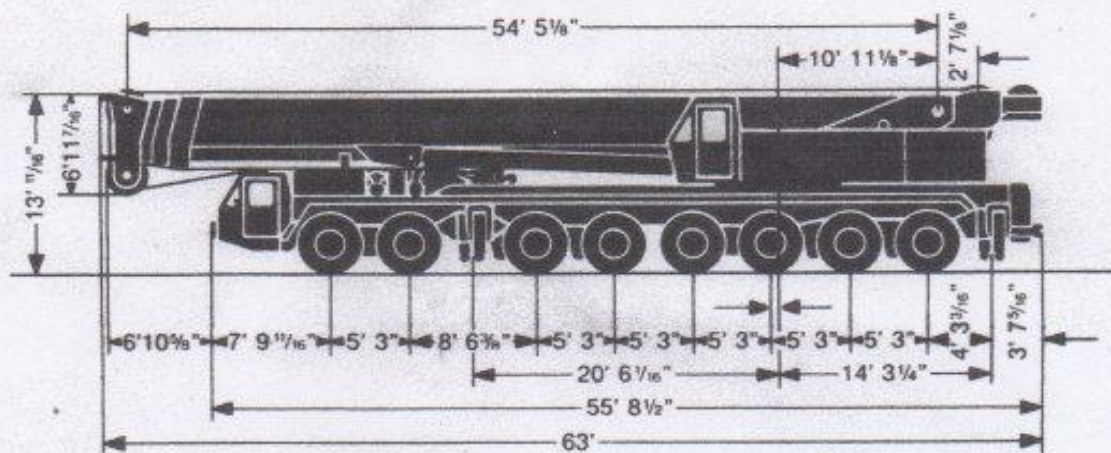
Remarks referring to load charts.

1. The tabulated load ratings are maximum capacities and do not exceed 85% of the tipping load as determined by S.A.E. crane stability test code J-765 A.
2. The load charts are only valid for use as a liftcrane.
3. The tabulated loads have to be reduced for particular job conditions to account for wind, accelerations, side forces from pendulum actions etc.
5. The crane has to be carefully levelled
6. The load capacities are given in pounds and do include the weight of the hook respectively the hook block.
7. Working radii are counted from slewing center
8. The tabulated load ratings for the telescopic boom are valid when fly jib and fold in jib are disassembled.

Lifting heights at the fixed fly jib.



DIMENSIONS.



Hook blocks and hook.

Basic machine complete with counterweight	279,990 lbs.
Counterweight	57,300 lbs.
Boom complete	70,550 lbs.
Luffing cylinders	9,920 lbs.
Counterweight frame	5,510 lbs.
Outriggers forward	7,165 lbs.
Outriggers rear	7,165 lbs.
Hydraulic Oil	7,790 lbs.
† gross vehicle weight	114,660 lbs.

Ton	No. of sheaves	No. of lines	Weight lbs.
200	10	20	7,606
150	7	15	4,850
70	3	7	2,425
30	1	3	882
10	—	1	772

Upper machinery.

Frame:	Liebherr-made, torsion-resistant, welded construction made of high-tensile structural steel. Connection to crane carrier by triple roller slewing ring, make Rothe Erde, designed for 360° continuous rotation.
Crane engine:	Diesel, 8 cylinder, watercooled, make Daimler-Benz, type OM 402, output 181 kW DIN (246 HP) at 2300 min ⁻¹ . Max. torque 620 lbs. ft. at 1400 min ⁻¹ . Fuel supply: 93 gal.
Crane drive:	Diesel-hydraulic with 4 axial piston swivelling pumps with servo control and automatic output regulation. One auxiliary double pump for feeder circuit.
Crane control:	By self-centering control lever, operationable in 4 directions (cross-control arrangement).
Main winch and aux. winch:	Axial piston motor, full hydraulic power up and down. Hoist drum with integrated planetary gear and spring loaded brake.
Derricking:	Twin double-acting hydraulic cylinders with integral safety locking valves.
Slewing:	Worm-and-planetary-gear with flange connected hydraulic motor and spring loaded brake.
Crane cab:	All-steel construction, safety glazing, heater, full instrumentation.
Safety devices:	Hoist limit switch, radius indicator, safety valves to protect hydraulic system against pipe and hose fracture. Overload protection.
Telescopic main boom:	1 boom pivot section and 3 telescope sections. All sections hydraulically under load extendable. Extension of sections 2 and 3 synchronous. Boom length: 180 ft.
Lattice-type head section:	36 ft. - 124 ft. long, fixed or luffing, only in conjunction with auxiliary winch.
Fold in jib:	From 49 ft. - 75 ft. extendable, straight line extension of main boom.
Electrical system:	24 volts d. c., 2 batteries.

Truck chassis.

Frame:	Liebherr designed and manufactured, box type, torsion resistant, all-welded construction made of high-tensile structural steel.
Outriggers:	4 sliding beams with hydraulic extension cylinders and hydraulic support pad jacks. Front outriggers mounted between axles 2 and 3, rear outriggers at rear of truck chassis.
Engine:	Diesel, 12 cylinder, watercooled, make Daimler-Benz, type OM 404 A, output 386 kW DIN (525 HP) at 2500 min ⁻¹ . Max. torque 1400 lbs. ft. at 1600 min ⁻¹ . Fuel supply: 238 gal.
Gearbox:	Allison Type CLBT 750 automatic transmission with torque converter and hydrodynamic retarder brake. 5 forward speeds, 1 reverse. Splitter gearbox with differential.
Axles:	Heavy duty crane truck axles, all 8 axles sprung. Axles 1 to 4 and 7 and 8 steered. Axles 1, 2, 5 and 6 have planetary reduction gears and inter-axle differentials.
Suspension:	Axles 1 and 2 and 5 and 6 coil-sprung and mounted on tandem compensating beams. Axles 3, 4, 7 and 8 hydraulically sprung, with variable axle load facility. All axles provided with hydraulic locking without sacrificing balance-beam action between the above-mentioned axle pairs.
Tyres:	22 tyres: axles 1 to 4 and 8 with single tyres, axles 5 to 7 with twin tyres. Tyre size: 14.00-24, 22 PR.
Steering:	ZF semi-unitary hydraulic power steering with 2 pump circuits. Main pump circuit driven from engine, auxiliary pump circuit from final drive.
Brakes:	Service brake: servo assisted air brakes acting on all wheels. Twin pipe, dual circuit system. Handbrake: spring-action, acting on all wheels of axles 2 to 7.
Driver's cab:	Large-area, all-steel cab with resilient mountings, safety glass windows and full range of instruments.
Electrical system:	24 volts d. c., 2 batteries, lighting to German road vehicle regulations.