



LOAD CHARTS

for Use With

WRITTEN EXAMINATIONS



Grove YB4408

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These pages are reproduced for illustration only and not as a substitute for reviewing the entire manual for a particular crane.

Make sure that you are fully trained on, and review the entire manual for, every crane you operate.

This load chart has been adapted from the original manufacturer's load chart for use in the NCCER Mobile Crane Certification Examination. It is not to be used for calculating loads, planning lifts, or for any other purpose.

GROVE®

YB4408



INDUSTRIAL CRANE

RATED LIFTING CAPACITIES IN POUNDS ON OUTRIGGERS - 360°
10.9 - 24 FT. BOOM

Radius in Feet	Main Boom Length in Feet							
	*10.9	12	14	16	18	20	22	24
5	17,000	16,850	16,450	14,800	14,250	13,800		
6	15,000	14,750	14,650	13,700	13,200	13,000		
8	13,000	12,500	12,000	11,500	11,000	11,000	9,000	9,100
10		11,000	10,900	10,100	9,700	9,200	7,750	8,200
12			9,100	7,700	8,300	8,250	6,750	6,600
14				6,750	6,730	6,650	5,800	5,700
16					5,740	5,600	5,000	5,100
18							4,750	4,600
20							3,900	4,040
22								3,500

* Fully retracted boom.

A6-829-015916C

Note: For machines equipped with an RCL system, double line lifting service is required for all main boom capacities. For machines not equipped with an RCL system, single part lifting service is permissible for capacities less than the permissible line pulls.

1. Capacities do not exceed 85% of tipping loads as determined by test in accordance with SAE J765.
2. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.

NO LOAD STABILITY FOR ON OUTRIGGERS AND RUBBER CAPACITIES

	No Load Stability Data	Main Boom 24 ft.
Front (No load)	Min. boom angle (deg.) for indicated length	0
	Max. boom length (ft.) at 0 deg. boom angle	24
360 Deg. (No load)	Min. boom angle (deg.) for indicated length	0
	Max. boom length (ft.) at 0 deg. boom angle	24

RATED LIFTING CAPACITIES IN POUNDS ON OUTRIGGERS FULLY EXTENDED - 360°
10 FT. EXTENSION

Radius in Feet	Main Boom Length in Feet							
	*10.9	12	14	16	18	20	22	24
8	7,000	6,700	6,500					
10	6,200	6,000	5,800	6,500	6,450			
12	6,000	5,900	5,000	6,000	5,900	5,750	5,700	5,500
14	5,500	5,450	5,420	5,450	5,425	5,350	5,200	5,100
16	5,000	4,800	4,500	5,000	4,700	4,600	4,550	4,500
18	4,500	4,450	4,400	4,500	4,400	4,150	4,050	3,950
20	3,500	3,900	3,950	4,110	4,000	3,800	3,700	3,650
22			3,400	3,480	3,400	3,400	3,300	3,250
24				2,890	2,900	2,990	2,900	2,750
26					2,500	2,590	2,500	2,490
28						2,260	2,200	2,200
30							1,810	1,980
32								1,750

*Fully retracted boom.

A6-829-015919A

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads on outriggers in accordance with J765 OCT90.
2. 10 ft. boom extension may be used for single line lifting service only.
3. **WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Capacities listed are with fully extended outriggers only.
5. No load stability on outriggers 360° with 10 ft. extension installed:
 - a. Minimum boom angle for 24 ft. main boom = 0°
 - b. Maximum main boom length at 0° main boom angle = 24 ft.
6. When lifting loads the minimum allowable boom angle is 3°.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

RATED LIFTING CAPACITIES IN POUNDS ON RUBBER

STATIONARY - 360°

Radius in Feet	Main Boom Length in Feet							
	*10.9	12	14	16	18	20	22	24
4	12,650	12,300	11,750					
5	10,200	10,000	10,050	8,400	8,100			
6	8,440	8,400	8,430	7,100	6,900	6,650		
7	5,800	7,100	6,500	6,000	5,900	5,800	4,200	
8	5,600	5,200	5,920	4,600	5,200	5,300	3,900	3,700
10		4,000	4,170	3,500	3,400	3,250	3,100	3,000
12			3,160	2,850	2,800	2,750	2,650	2,500
14				2,300	2,500	2,400	2,300	2,200
16					1,950	2,040	1,700	1,850
18						1,660	1,520	1,450
20							1,200	1,280
22								960

*Fully retracted boom.

A6-829-015918E

DEFINED ARC OVER FRONT - PICK & CARRY CAPACITIES

Radius in Feet	Main Boom Length in Feet							
	*10.9	12	14	16	18	20	22	24
4	15,000	14,500	14,200					
5	10,250	13,000	12,900	9,400	9,600			
6	9,300	8,800	10,250	8,600	8,000	7,800		
7	9,000	8,400	7,900	7,500	6,900	6,850	6,350	
8	7,200	7,250	7,300	6,900	6,600	6,450	6,150	6,000
10		5,920	5,820	5,750	5,420	5,050	5,000	4,900
12			4,970	4,630	4,500	4,350	4,250	4,100
14				3,800	4,270	4,110	3,900	3,750
16					3,250	3,520	3,250	3,200
18						2,800	2,890	2,920
20							2,400	2,480
22								2,130

*Fully retracted boom.

A6-829-015917E

Note: For machines equipped with an RCL system, double line lifting service is required for all main boom capacities. For machines not equipped with an RCL system, single part lifting service is permissible for capacities less than the permissible line pulls.

1. Capacities are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J765.
2. Capacities are applicable to machines equipped with Denman 10.00 x 15TR (14 ply) tires at 110 psi cold inflation pressure and 10.00 x 15 (16 ply) or 36.00 x 11-15 (16 ply) mine lug tires at 115 psi cold inflation pressure.
3. Defined Arc - Over front includes 6° on either side of longitudinal centerline of machine.
4. Capacities are applicable only with machine on firm level surface.
5. All rubber lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. Damaged tires are hazardous to safe operation of crane.
6. For pick and carry operation, the boom, using the shortest practical boom length, must be centered over front of machine. When handling loads in the structural range with capacities close to maximum ratings, travel should be reduced to creep speed* 2.5 MPH capacities are permissible on main boom only, NOT on boom extension.

*Creep - not over 200 ft. of movement in any 30 minute period and not exceeding 1 mph.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

**10 FT. EXTENSION RATED LIFTING CAPACITIES IN POUNDS ON RUBBER
STATIONARY-360°**

Radius in Feet	Main Boom Length in Feet							
	*10.9	12	14	16	18	20	22	24
8	6,110	5,300	4,800	3,900				
10	4,260	4,100	3,750	3,250	3,000	2,900		
12	3,000	2,800	3,190	2,600	2,400	2,300	2,200	2,100
14	2,490	2,450	2,300	2,250	2,250	1,950	1,850	1,800
16	2,010	1,950	2,010	1,850	1,800	1,800	1,700	1,650
18	1,640	1,630	1,600	1,640	1,540	1,440	1,400	1,350
20	1,350	1,355	1,360	1,350	1,340	1,330	1,250	1,230
22			1,130	1,140	1,130	1,050	1,040	1,030
24				926	960	950	940	930
26					800	810	800	750
28						690	680	670
30							560	580
32								480

*Fully retracted boom.

A6-829-015920B

DEFINED ARC OVER FRONT

Radius in Feet	Main Boom Length in Feet							
	*10.9	12	14	16	18	20	22	24
8	7,000	6,700	6,500	5,600				
10	6,300	6,000	5,900	4,500	4,300	4,250		
12	5,300	5,000	5,500	3,800	3,600	3,500	3,450	3,300
14	4,570	4,300	4,000	3,500	3,400	3,200	3,100	3,050
16	3,500	3,600	3,630	2,900	2,700	2,650	2,600	2,500
18	2,970	2,890	2,700	2,500	2,400	2,300	2,240	2,100
20	2,300	2,400	2,480	2,200	2,150	2,100	2,000	1,950
22			2,100	1,950	1,900	1,800	1,790	1,750
24				1,650	1,800	1,750	1,700	1,650
26					1,500	1,560	1,550	1,500
28						1,250	1,350	1,360
30							1,140	1,180
32								1,040

*Fully retracted boom.

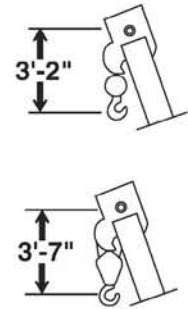
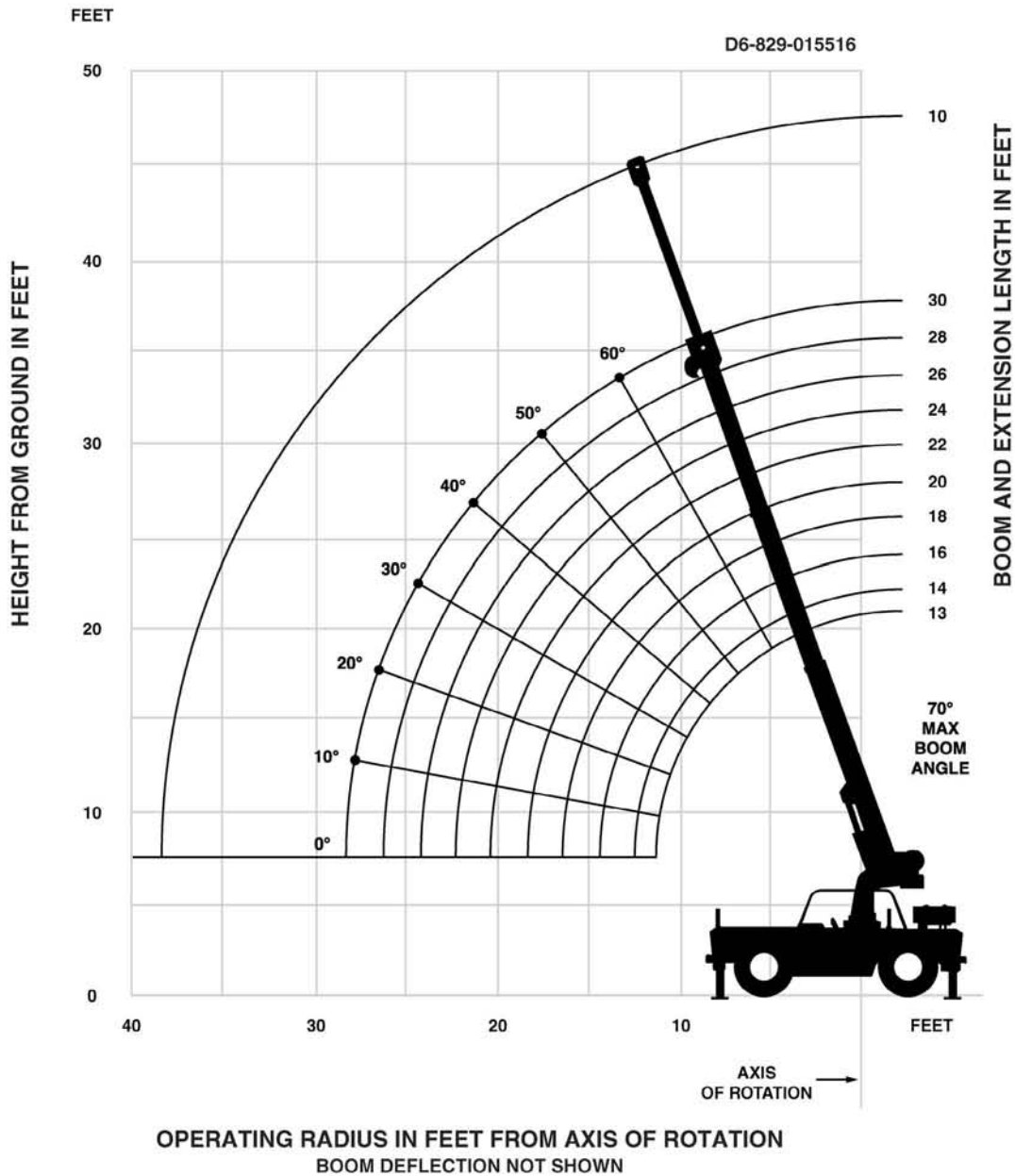
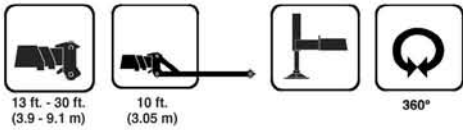
A6-829-015921B

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 75% of tipping loads on rubber in accordance with J765 OCT90.
2. 10 ft. boom extension may be used for single line lifting service only.
3. Defined Arc - Over front includes 6° on either side of longitudinal centerline of machine.
4. Capacities are applicable to machines equipped with Denman 10.00 x 15TR (14 ply) tires at 110 psi cold inflation pressure and 10.00 x 15 (16 ply) mine lug tires at 115 psi cold inflation pressure.
5. Capacities are applicable only with machine on firm level surface.
6. All rubber lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. Damaged tires are hazardous to safe operation of crane.
7. **WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
8. No load stability on rubber 360° with 10 ft. extension installed:
 - a. Minimum boom angle for 24 ft. main boom = 0°
 - b. Maximum main boom length at 0° main boom angle = 24 ft.
9. When lifting loads the minimum allowable boom angle is 3°.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Working Range



DIMENSIONS ARE FOR LARGEST GROVE FURNISHED HOOK BLOCK AND HEADACHE BALL, WITH ANTI-TWO BLOCK ACTIVATED.

RATED LIFTING CAPACITIES IN POUNDS ON OUTRIGGERS FULLY EXTENDED - 360°

13 - 30 FT. BOOM

Radius in Feet	Main Boom Length in Feet									
	*13	14	16	18	20	22	24	26	28	30
5	17,000	16,515								
6	15,000	14,460	14,225	14,970						
8	12,970	12,425	11,895	11,800	11,580	11,270	11,000			
10	10,550	10,320	10,105	9,150	10,160	9,705	9,405	8,715	8,560	8,430
12		8,885	8,825	8,190	7,975	7,910	7,935	7,625	7,545	7,350
14			7,000	6,060	7,105	6,760	6,845	5,550	6,650	6,525
16				5,030	5,350	5,140	5,800	4,945	4,940	5,900
18					4,220	4,450	4,450	4,500	4,350	4,350
20						3,830	4,060	3,525	4,040	4,025
22							3,460	3,160	3,175	3,175
24								2,590	2,860	2,860
26									2,390	2,538
28										2,150

* Fully retracted boom.

A6-829-015602B

Note: For machines equipped with an RCL system, double line lifting service is required for all main boom capacities. For machines not equipped with an RCL system, single part lifting service is permissible for capacities less than the permissible line pulls.

1. Capacities do not exceed 85% of tipping loads as determined by test in accordance with SAE J765.
2. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.

NO LOAD STABILITY FOR ON OUTRIGGERS AND RUBBER CAPACITIES

	No Load Stability Data	Main Boom 30 ft.
Front (No Load)	Min. boom angle (deg.) for indicated length	0
	Max. boom length (ft.) at 0 deg. boom angle	30
360 Deg. (No Load)	Min. boom angle (deg.) for indicated length	0
	Max. boom length (ft.) at 0 deg. boom angle	30

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RATED LIFTING CAPACITIES IN POUNDS ON RUBBER

STATIONARY - 360°

Radius in Feet	Main Boom Length in Feet									
	*13	14	16	18	20	22	24	26	28	30
5	7,585	7,430								
6	6,660	6,440	6,210	5,115						
8	4,350	4,000	4,890	3,890	3,835	3,770	3,715			
10	3,020	3,020	3,365	3,155	3,100	3,100	3,100	2,450	2,370	2,360
12		2,335	2,430	2,440	2,350	2,350	2,500	2,060	1,950	1,940
14			1,890	1,700	1,995	1,995	1,950	1,925	1,620	1,610
16				1,225	1,430	1,350	1,590	1,515	1,370	1,400
18					1,070	1,100	1,135	1,250	1,150	1,090
20							970	1,010	1,030	970
22							650	715	825	825
24								590	635	635
26									525	525
28										425

*Fully retracted boom.

A6-829-015579D

DEFINED ARC OVER FRONT - PICK & CARRY CAPACITIES

Radius in Feet	Main Boom Length in Feet									
	*13	14	16	18	20	22	24	26	28	30
5	13,100	13,100								
6	10,250	10,250	9,400							
8	7,300	7,300	7,250	7,300	7,000	6,500	6,300			
10	5,920	5,920	5,910	5,900	5,800	5,600	5,500	5,400	5,300	5,200
12	4,920	4,920	4,970	4,970	4,960	4,900	4,720	4,690	4,600	4,500
14			4,270	4,270	4,270	4,220	4,010	4,000	3,900	3,850
16				3,600	3,720	3,650	3,670	3,650	3,550	3,450
18					3,100	3,280	3,250	3,225	3,200	3,150
20						2,670	2,900	2,875	2,850	2,800
22							2,500	2,500	2,525	2,550
24								2,040	2,150	2,290
26									1,840	2,010
28										1,680

*Fully retracted boom.

A6-829-015691E

Note: For machines equipped with an RCL system, double line lifting service is required for all main boom capacities. For machines not equipped with an RCL system, single part lifting service is permissible for capacities less than the permissible line pulls.

1. Capacities are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J765.
 2. Capacities are applicable to machines equipped with Denman 10.00 x 15TR (14 ply) tires at 110 psi cold inflation pressure and 10.00 x 15 (16 ply) or 36.00 x 11-15 (16 ply) mine lug tires at 115 psi cold inflation pressure.
 3. Defined Arc - Over front includes 6° on either side of longitudinal centerline of machine.
 4. Capacities are applicable only with machine on firm level surface.
 5. All rubber lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. Damaged tires are hazardous to safe operation of crane.
 6. For pick and carry operation, the boom, using the shortest practical boom length, must be centered over front of machine. When handling loads in the structural range with capacities close to maximum ratings, travel should be reduced to creep speed* 2.5 MPH capacities are permissible on main boom only, NOT on boom extension.
- *Creep - not over 200 ft. of movement in any 30 minute period and not exceeding 1 mph.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

**RATED LIFTING CAPACITIES IN POUNDS ON OUTRIGGERS FULLY EXTENDED - 360°
10 FT. EXTENSION**

Radius in Feet	Main Boom Length in Feet									
	*13	14	16	18	20	22	24	26	28	30
8	7,000	7,000								
10	6,440	6,440	6,430	6,400	5,800					
12	5,560	5,560	5,550	5,415	5,170	4,980	4,720			
14	5,500	5,500	5,220	5,000	4,700	4,570	4,360	5,430	5,200	4,850
16	5,000	5,000	4,675	4,685	4,100	3,900	3,730	4,800	4,770	4,500
18	4,500	4,500	4,120	4,490	4,370	4,260	3,450	4,300	4,295	4,250
20	4,050	4,050	4,000	4,200	4,090	3,970	3,850	3,160	3,600	3,500
22	3,480	3,480	3,600	3,370	3,700	3,550	3,520	2,900	2,825	2,800
24			3,310	3,045	3,045	2,870	3,160	2,730	2,560	2,500
26				2,680	2,735	2,715	2,680	2,490	2,490	2,350
28					2,410	2,450	2,420	2,260	2,200	2,100
30						2,170	2,115	1,975	1,950	1,925
32							1,900	1,815	1,800	1,750
34								1,500	1,600	1,600
36									1,400	1,400
38										1,300

*Fully retracted boom

A6-829-015628A

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads on outriggers in accordance with SAE J765.
2. 10 ft. boom extension may be used for single line lifting service only.
3. **WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Capacities listed are with fully extended outriggers only.
5. No load stability on outriggers 360° with 10 ft. extension installed:
 - a. Minimum boom angle for 30 ft. main boom = 0°
 - b. Maximum main boom length at 0° main boom angle = 30 ft.
6. When lifting loads the minimum allowable boom angle is 3°.

**10 FT. EXTENSION RATED LIFTING CAPACITIES IN POUNDS ON RUBBER
STATIONARY-360°**

Radius In Feet	Main Boom Length in Feet									
	*13	14	16	18	20	22	24	26	28	30
8	4,000	4,000								
10	3,250	3,250	3,050	2,430	2,250					
12	2,730	2,730	2,710	2,050	1,950	1,925	1,720			
14	1,940	1,940	1,875	1,715	1,570	1,500	1,450	1,390	1,350	1,290
16	1,630	1,630	1,580	1,390	1,340	1,215	1,165	1,200	1,120	1,110
18	1,310	1,310	1,300	1,190	1,070	1,015	1,000	980	910	800
20	1,070	1,070	1,040	1,015	950	790	850	760	740	690
22	880	880	870	850	780	790	795	720	660	650
24			690	715	720	680	680	480	500	470
26				525	570	590	570	465	470	465
28					470	490	490	410	350	390

*Fully retracted boom.

A6-829-015640B

DEFINED ARC OVER FRONT

Radius in Feet	Main Boom Length in Feet									
	*13	14	16	18	20	22	24	26	28	30
8	7,000	7,000								
10	6,500	6,500	6,300	5,600	4,900					
12	5,350	5,350	5,200	4,700	4,440	4,325	4,120			
14	5,300	5,300	5,175	3,920	3,910	3,750	3,500	3,580	3,475	3,250
16	4,870	4,870	4,600	3,500	3,325	3,260	3,200	3,150	3,050	3,025
18	3,650	3,650	4,100	3,120	3,020	2,910	2,900	2,725	2,675	2,600
20	3,250	3,250	3,175	2,810	2,700	2,575	2,550	2,450	2,420	2,320
22	2,850	2,850	2,860	2,460	2,420	2,410	2,300	2,230	2,170	2,100
24			2,450	2,250	2,220	2,190	2,060	2,050	1,975	1,900
26				1,870	1,875	1,880	1,900	1,875	1,790	1,600
28					1,750	1,740	1,650	1,630	1,625	1,500
30						1,570	1,600	1,590	1,550	1,400
32							1,400	1,390	1,370	1,300
34								1,230	1,210	1,200
36									1,080	1,080
38										950

*Fully retracted boom.

A6-829-015660B

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 75% of tipping loads on rubber in accordance with SAE J765.
2. 10 ft. boom extension may be used for single line lifting service only.
3. Defined Arc - Over front includes 6° on either side of longitudinal centerline of machine.
4. Capacities are applicable to machines equipped with Denman 10.00 x 15TR (14 ply) tires at 110 psi cold inflation pressure and 10.00 x 15 (16 ply) mine lug tires at 115 psi cold inflation pressure.
5. Capacities are applicable only with machine on firm level surface.
6. All rubber lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. Damaged tires are hazardous to safe operation of crane.
7. **WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
8. No load stability on rubber 360° with 10 ft. extension installed:
 - a. Minimum boom angle for 30 ft. main boom = 45°
 - b. Maximum main boom length at 0° main boom angle = 19 ft.
9. When lifting loads the minimum allowable boom angle is 3°.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES

10 FT. FIXED BOOM EXTENSION WITH 24 FT. OR 30 FT. BOOM

*Stowed -	114 lbs.
*Erected -	568 lbs.

*Reduction of main boom capacities

HOOKBLOCKS and HEADACHE BALLS:

11 Ton, 1 Sheave	304 lbs.+
5 Ton Headache Ball	120 lbs.+

+Refer to rating plate for actual weight.

Load Distribution Chart for Carry Deck

CONTINENTAL ENGINE

1	3	2
1		2
1	OPERATOR COMPARTMENT	L. P. TANK

CUMMINS ENGINE

1	3	2
1		ENGINE HOOD
1	OPERATOR COMPARTMENT	

MAXIMUM ALLOWABLE LOAD

AREA 1	34.0 sq. ft. (3.16 m ²)	8,500 lbs. (3856 kg)
AREA 2	18.7 sq. ft. (1.74 m ²)	4,675 lbs. (2120 kg)
AREA 3	8.5 sq. ft. (0.79 m ²)	2,125 lbs. (964 kg)
TOTAL	61.2 sq. ft. (5.69 m ²)	15,300 lbs. (6940 kg)

MAXIMUM ALLOWABLE LOAD

AREA 1	34.0 sq. ft. (3.16 m ²)	8,500 lbs. (3856 kg)
AREA 2	9.65 sq. ft. (0.90 m ²)	2,412 lbs. (1094 kg)
AREA 3	8.5 sq. ft. (0.79 m ²)	2,125 lbs. (964 kg)
TOTAL	52.15 sq. ft. (4.85 m ²)	13,037 lbs. (5914 kg)

1. MAXIMUM TRAVEL SPEED WITH ANY OR ALL LOADS - 2.5 MPH/4.0 KPH
2. LOADS TO BE TRANSPORTED ON SMOOTH LEVEL FIRM SURFACES ONLY.
3. BOOM MUST BE RETRACTED AND IN CENTER FORWARD POSITION.
4. ANY COMBINATION OR TOTAL OF AREAS 1, 2, & 3 MAY BE USED.
5. LIFTING IS NOT PERMITTED WHEN CARRY DECK IS LOADED EXCEPT FOR LOADING AND UNLOADING CARRY DECK.
6. RATED PICK & CARRY LOADS MAY BE TRANSPORTED ON DECK AREA 1 PROVIDED THE LOAD IS CRIBBED DIRECTLY ON THE FRAME RAILS.