

GROVE®

LOAD CHARTS YB4408

**85% STABILITY
ON OUTRIGGERS
75% STABILITY
ON RUBBER**

86705
SERIAL NUMBER

YB4408 - S/N 86705

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NOTES FOR LIFTING CAPACITIES

GENERAL:

1. Rated loads as shown on lift chart pertain to this machine as originally manufactured and equipped. 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 hazardous if improperly operated or maintained. Operation and maintenance of this machine shall be in compliance with the information in the Operator's and Safety Handbook, Service Manual, and Parts Manual supplied with this machine. If these manuals are missing, order replacements from the manufacturer through the distributor.
3. The operator and other personnel associated with machine shall fully acquaint themselves with the latest American National Safety Standards (ASME/ANSI) for cranes.

SETUP:

1. The machine shall be level and 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. For outrigger operation, all outriggers shall be properly extended with tires raised free of crane weight before operating the boom or lifting loads.
3. When machine is equipped with center front stabilizer, the front stabilizer shall be set in accordance with instructions in the Operator's and Safety Handbook.
4. When equipped with removable and/or extendible counterweight, the proper counterweight shall be installed and fully extended before and during operation.
5. Tires shall be inflated to the recommended pressure before lifting on rubber.
6. With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard cable lengths.
7. Unless approved by the crane manufacturer, do not travel with boom extension or jib erected. Refer to the Operator's and Safety Handbook for job-site travel information.

OPERATION:

1. Rated loads at rated radius shall not be exceeded. Do not attempt to tip the machine to determine allowable loads. For clamshell, grapple, magnet or concrete bucket operation, weight of component and load must not exceed 80% of rated lifting capacities.
2. All rated loads have been tested to and meet the requirements of SAE J1063 - Cantilevered Boom Crane Structures - Method of Test, and do not exceed 85% of the tipping load on outriggers as determined by SAE J765 Crane Stability Test Code.
3. Rated loads include the weight of hookblock, slings and auxiliary lifting devices and their weights shall be subtracted from the listed rating to obtain the net load to be lifted. When more than the minimum required parts of line needed to pick the load are used, the additional rope weight as measured from the lower sheaves of the the main boom nose shall be considered part of the load to be lifted. When both the hook block and headache ball are reeved, the lifting device that is NOT in use, including the line as measured from the lower sheave(s) of the nose supporting the unused device shall be considered part of the load.
4. Load ratings are based on freely suspended loads. No attempt shall be made to move a load horizontally on the ground in any direction.
5. The maximum in-service wind speed is 20 m.p.h. It is recommended when wind velocity is above 20 m.p.h. , rated loads and boom lengths shall be appropriately reduced. For machines not in-service, the main boom should be retracted and lowered with the swing brake set in wind velocities over 30 m.p.h.
6. Rated loads are for lift crane service only.
7. Do not operate at a radius or boom length where capacities are not listed. At these positions, the machine may overturn without any load on the hook.
8. The maximum load which can be telescoped is not definable because of variations in loadings and crane maintenance, but it is safe to attempt retraction and extension of the boom within the limits of the capacity chart.
9. When the boom length or lift radius or both are between values listed, the smallest load shown at either the next larger radius or next longer or shorter boom length shall be used.
10. For safe operation, the user shall make due allowances for his particular job conditions, such as: soft or uneven ground, out of level conditions, high winds, side loads, pendulum action, jerking or sudden stopping of loads, experience of personnel, two machine (tandem) lifts, traveling with loads, electric wires, obstacles, hazardous conditions, etc. Side pull on boom or jib is extremely dangerous.
11. If machine is equipped with individually controlled powered boom sections, the boom sections must be extended equally at all times.
12. Never handle personnel with this machine unless the requirements of the applicable national, state, and local regulations and safety codes are met.
13. Keep load handling devices a minimum of 42 inches below boom head at all times.
14. The boom angle before loading should be greater than the loaded boom angle to account for deflection.
15. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
16. Do not lift loads when boom is fully lowered. The Rated Capacity Limiter (RCL) senses pressure and will not provide warnings or lockout. The crane can become overloaded if lift cylinder(s) is fully retracted.
17. The maximum outrigger pad load is 17,500 lb.

DEFINITIONS:

1. **Operating 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** (Shown in Parenthesis on Main Boom Capacity Chart): is the angle between the boom base section and the horizontal, after lifting the rated load at the rated radius with the rated boom length.
3. **Working Area:** Areas 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 lift cable.
5. **Side Load:** Horizontal force applied to the lifted load either on the ground or in the air.

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.

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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

**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.

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

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

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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.

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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.

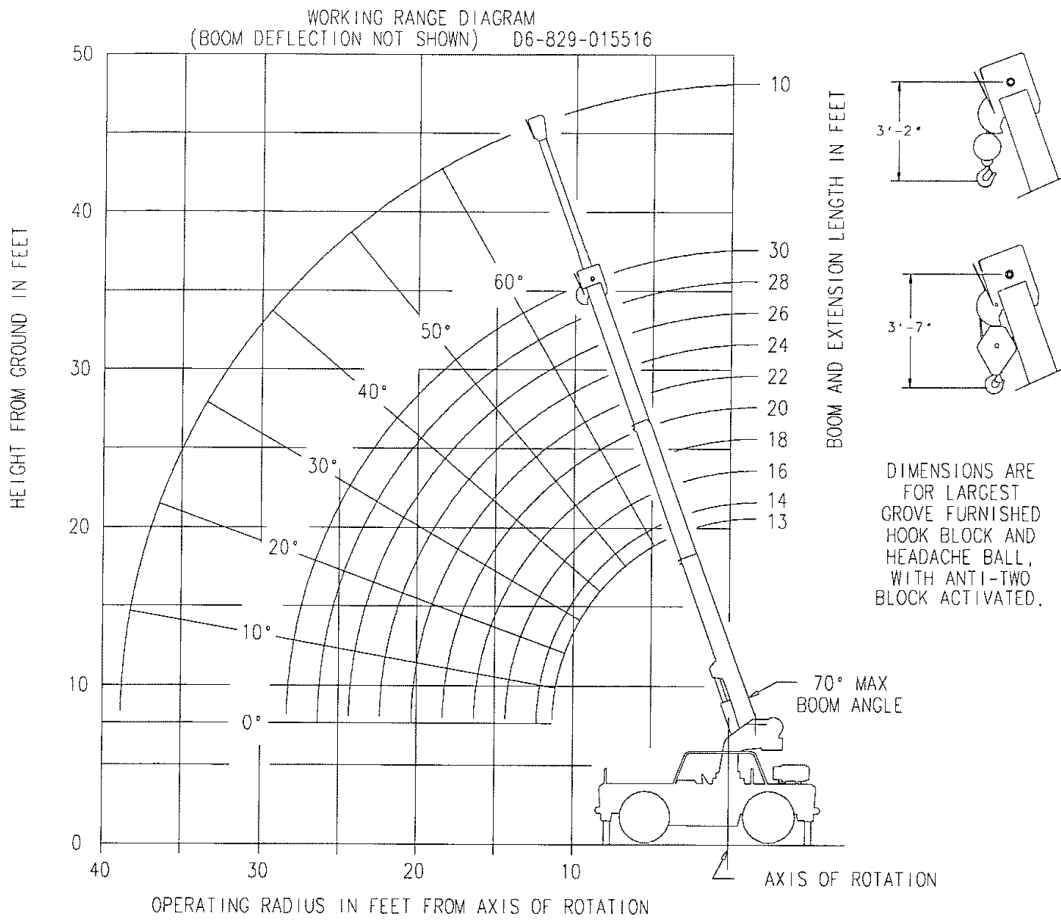
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NOTES:

- 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.
- 10 ft. boom extension may be used for single line lifting service only.
- Defined Arc - Over front includes 6° on either side of longitudinal centerline of machine.
- 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.
- Capacities are applicable only with machine on firm level surface.
- 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.
- 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.
- No load stability on rubber 360° with 10 ft. extension installed:
 - Minimum boom angle for 30 ft. main boom = 45°
 - Maximum main boom length at 0° main boom angle = 19 ft.
- When lifting loads the minimum allowable boom angle is 3°.

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WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES

10 FT. FIXED BOOM EXTENSION	
*Stowed -	114 lb
*Erected -	568 lb

*Reduction of main boom capacities

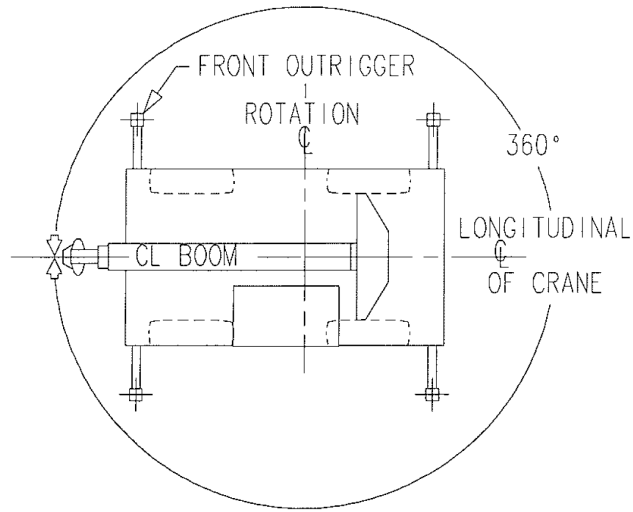
NOTE: All load handling devices and boom attachments are considered part of the load and suitable allowances **MUST BE MADE** for their combined weights. Weights are for Grove furnished equipment.

SEARCHER HOOK	55 lb
HOOKBLOCKS and HEADACHE BALLS:	
11 ton, 1 sheave	304 lb+
5 ton headache ball	120 lb+

+Refer to rating plate for actual weight.

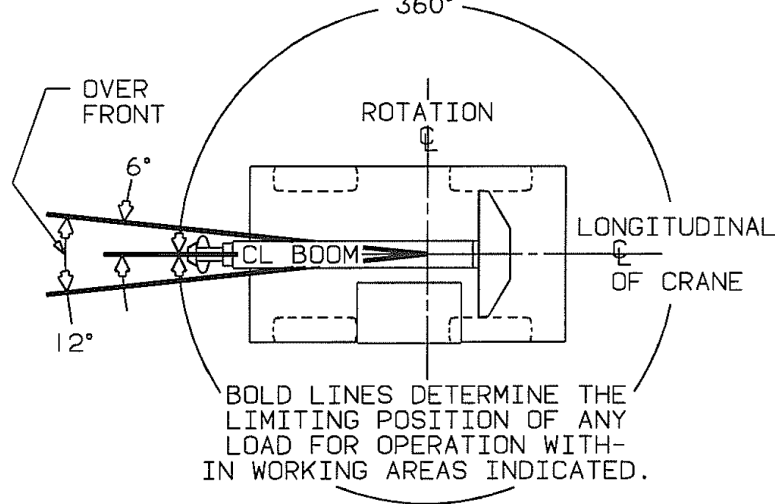
When lifting over swingaway and/or jib combinations, deduct total weight of all load handling devices reeved over main boom nose directly from swingaway or jib capacity.

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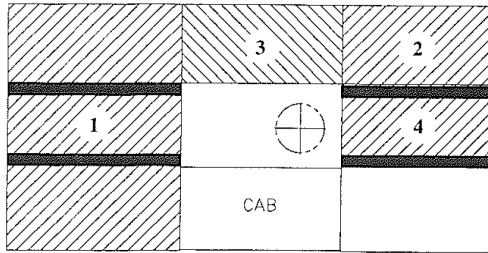
LIFTING ON OUTRIGGERS

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360°



LIFTING ON RUBBER

LOAD DISTRIBUTION CHART FOR CARRY DECK



MAXIMUM ALLOWABLE LOAD

AREA 1	34.0 sq. ft. / 3.16 m ²	8,500 lb / 3,856 kg
AREA 2	9.7 sq. ft. / 0.90 m ²	2,400 lb / 1,088 kg
AREA 3	8.5 sq. ft. / 0.79 m ²	2,125 lb / 964 kg
AREA 4	9.0 sq. ft. / 0.84 m ²	2,275 lb / 1,032 kg
TOTAL	61.2 sq. ft. / 5.69 m²	15,300 lb / 6,940 kg

1. Maximum travel speed with any or all loads - 2.5 MPH / 4.0 km/h
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 & 4 may be used except that Area 4 may not be used at all for cranes equipped with an engine hood in Area 4.
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 Areas 1, 2 and 4 provided the load is cribbed directly on the frame rails.

LINE PULLS AND REEVING INFORMATION

HOISTS	CABLE SPECS.	PERMISSIBLE LINE PULLS	NOMINAL CABLE LENGTH
Main Model HO-12	9/16" (14 mm) 34x7 EEIPS Rotation Resistant Min. Breaking Strength 51,100 lb	10,220 lb	130 ft.
Main Model HO-12	9/16" (14 mm) 6x37 Class EIPS, IWRC Special Flexible Min. Breaking Strength 33,600 lb	9,600 lb	130 ft.

The approximate weight of 9/16" rope is 0.7 lb/ft.

SEARCHER HOOK INFORMATION

Searcher Hook Maximum Capacity is 3,000 lb. Do not exceed Searcher Hook capacity or given stability capacities on outriggers or on rubber. The use of the searcher hook is to be limited to freely suspended vertical lifts only. The main boom angle is not to exceed 25° from horizontal.

TIRE INFLATION - PSI (BAR)		
SIZE (FRONT & REAR)	PLY RATING	LIFTING SERVICE AND TRAVEL
10.00 x 15 or 36.00 x 11-15 (mine lug)	16	115 (7.9)
10.00 x 15 (Denman / OTR)	16	125 (8.6)
10.00 x 15TR (Denman)	14	110 (7.6)

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