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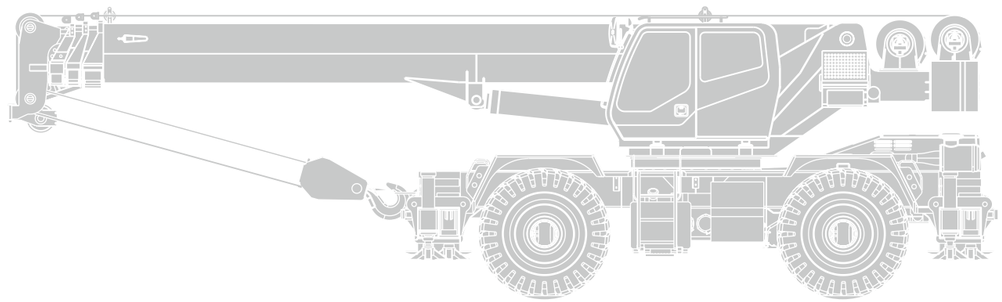
LOAD CHART MANUAL FOR RT100 ROUGH TERRAIN CRANE



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RT100 ROUGH TERRAIN CRANE

LOAD RATINGS

Edition 1

Dec.2013

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To owners, users and operators

Zoomlion Cranes appreciates your selection of the ZOOMLION Rough Terrain Crane for your application.

No one should operate the crane unless they read and understand the information in this manual.

When you follow the instructions in this manual, your crane can operate at MAXIMUM EFFICIENCY.

The operator must keep this manual in the cab of the crane.

If there is anything in the manual that you do not understand, speak with us. We (Zoomlion Cranes) are NOT responsible for damages from an operator who does not obey the instructions in the *OPERATOR'S MANUAL*.

The OPERATOR'S MANUAL is an important part of the crane. If the crane becomes the property of a different person, make sure that the manual stays in the cab of the crane.

THANK YOU!

Mobile Crane Branch Company of ZOOMLION Heavy Industry Science and Technology Co., Ltd.

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Safety

Hazard Indicators

DANGER, WARNING, CAUTION, ATTENTION, NOTE, and IMPORTANT labels are on signs and decals, and as you read this manual to show important instructions. In this manual, DANGER, WARNING, and CAUTION labels are before the paragraph or item to which they apply. ATTENTION, NOTE, and IMPORTANT follow the paragraph or item they apply to. The markers are as follows:

Danger

Refers to a dangerous situation which, if you do not prevent, will cause death or injury.

Warning

Refers to a possible dangerous situation which, if you do not prevent, could cause death or injury.

Caution

Refers to a possible dangerous situation which, if you do not prevent, may cause light or moderate injury.

Attention

Refers to a situation which, if you do not prevent, may cause property or equipment damage.

Note

Refers to a tip or hint in the operation instructions.

Important

Emphasizes the importance of the data in this manual.

This symbol shows a step or procedure that is not approved and can cause a dangerous situation.

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LOAD RATINGS FOR ROUGH TERRAIN CRANE

Chapter 1 Informational data

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1.1 HOIST TACKLE CHART

This chart only represents the maximum permissible hoist line load per parts of line. You must refer to the proper Lift Charts for machine rated loads.

Table 01 – 1 Hoist Tackle Chart

MAXIMUM PERMISSIBLE HOIST LINE LOAD							
LINE PARTS	1	2	3	4	5	6	7
MAXIMUM PERMISSIBLE HOIST LINE LOAD (KG)	7143	14286	21429	28571	35714	42857	50000
MAXIMUM PERMISSIBLE HOIST LINE LOAD (lbs)	15748	31495	47243	62988	78736	94484	110231
LINE PARTS	8	9	10	11	12	13	14
MAXIMUM PERMISSIBLE HOIST LINE LOAD (KG)	57143	64286	71429	78571	85714	92857	100000
MAXIMUM PERMISSIBLE HOIST LINE LOAD (lbs)	125979	141726	157473	173219	188967	204714	220462

Wire rope: 20NAT-15*K7-IWRC-2160MPa Weight: 192kg/100m（129lbs/100FT）

Minimum breaking strength: 380 kN（42.7Ton）

1.2 TIRE INFLATION CHART

Table 01 – 2 Tire Inflation Chart

RECOMMENDED TIRE PRESSURE			
TIRE SIZE	**STATIONARY**	**CREEP (1.6 km/h)**	**TRAVEL**
29.5R29☆☆	750 kpa（109PSI）	750 kpa（109PSI）	750 kpa（109PSI）

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1.3 WEIGHTS

Table 01 – 3 Weights

HOOK ASSY. WEIGHTS

HOOK BLOCK WEIGHTS
Main hook weight: 940 kg（2072 LBS） Auxiliary hook weight: 162 kg（357 LBS）

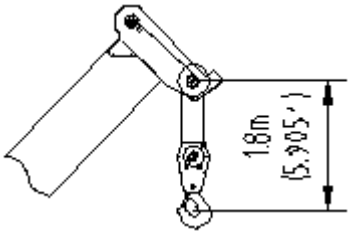
MACHINE EQUIPMENT

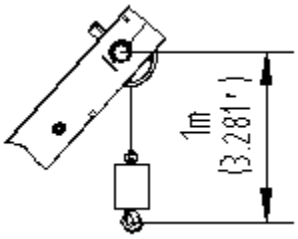
1. COUNTERWEIGHT: 10000 kg（220462 LBS）
2. OUTRIGGER SPREAD:

   8.0 m（26.2ft） from center of outrigger float to center of outrigger float across the longitudinal axis of the machine

   7.9 m（25.9ft）from center of outrigger float to center of outrigger float across the transversal axis of the machine
3. Powered boom length 11.5 m（37.7ft）retracted to 43 m （141ft）extended
4. Crane height 3.96 m（13ft）, length 14.247 m （46.7ft）, width 3.62 m（11.9ft）, wheelbase 4.6 m（15ft）

DIMENSIONS ARE FOR MAIN HOOK AND AUXILIARY HOOK.





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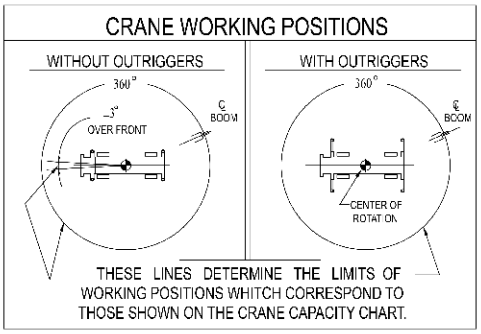
WARNING

1.4 GENERAL

1. Rated loads as shown on Lift Charts 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 Manual* supplied with this machine. If these manuals are missing, order replacements from the manufacturer through your distributor.
3. These warnings do not constitute all of the operating conditions for the crane. The operator and job site supervision must read the *Operator's Manual* .
4. This crane and its load ratings are in accordance with ASME/ANSI B30.5.

1.5 DEFINITIONS

1. LOAD RADIUS – The horizontal distance from the axis of rotation before loading to the center of the vertical hoist line or tackle with a load applied.
2. LOAD BOOM ANGLE – It is the angle between the boom base section and the horizontal, after lifting the rated load at the rated radius. The boom angle before loading should be greater to account for deflections. The loaded boom angle combined with the boom length give only an approximation of the operating radius.
3. WORKING AREA – Areas measured in a circular arc about the centerline of rotation as shown in the diagram.
4. FREELY SUSPENDED LOAD – Load hanging free with no direct external force applied except by the hoist rope.



5. Side load – Horizontal force applied to the lifted load either on the ground or in the air.
6. EXTRA-CAUTION ZONE – Tipping can occur with some boom/jib combinations at radii within this area without any load on the hook.
7. BOOM SIDE OF CRANE – The side of the crane over which the boom is positioned when in an OVER SIDE working position.

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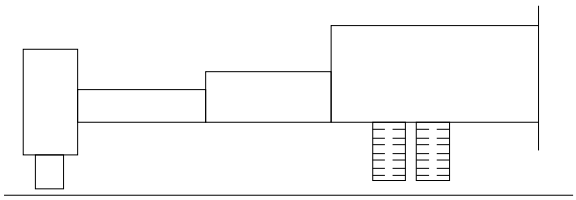
WARNING

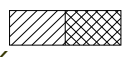
1.6 SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
2. Crane load ratings on outriggers are based on all outrigger beams being fully extended / retracted, or in the case of partial extension ratings mechanically pinned in the appropriate position, and the tires raised free of the supporting surface.



3. Crane load ratings on tires depend on appropriate inflation pressure and the tire conditions. Caution must be exercised when increasing air pressures in tires. Consult *Operator's Manual* for precautions.
4. Consult appropriate section of the *Operator's Manual* for more exact description of hoist line reeving.
5. The use of more parts of line than required by the load may result in having insufficient rope to allow the hook block to reach the ground.
6. Properly maintained wire rope is essential for safe crane operation. Consult *Operator's Manual* for proper maintenance and inspection requirements.
7. When spin-resistant wire rope is used, the allowable rope loading shall be the breaking strength divided by five (5), unless otherwise specified by the wire rope manufacturer.

1.7 OPERATION

1. CRANE LOAD RATINGS MUST NOT BE EXCEEDED. DO NOT ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
2. When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
3. Do not operate at longer radii than those listed on the applicable Lift Chart (cross hatched areas  shown on range diagrams) as tipping can occur without a load on the hook.
4. The boom angles shown on the Lift Charts give an approximation of the operating radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection. It may be necessary to retract the boom if maximum boom angle is insufficient to maintain rated radius.
5. Telescopic sections 3, 4 and 5 must be extended synchronically.

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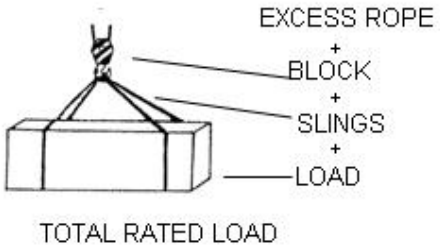
WARNING

6. Rated loads include the weight of hook block, slings, and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted.



   When lifting over the jib, the weight of any hood block, slings, and auxiliary lifting devices at the boom head must be added to the load.

   Rated lifting capacities are based on correct reeving. Deductions must be made for excessive reeving. Any reeving over the minimum required, (see Hoist Tackle Chart), is considered excessive and must be accounted for. Deduct for each meter of excessive wire rope before attempting to lift a load.

   When jibs are erected but unused, add three (3) times the weight of jib, any hook block, slings, and auxiliary lifting devices at the jib head to the load (jib weight: 1242 kg（2738 lbs))。.

7. Rated loads do not exceed 85% on outriggers or 75% on tires, of the tipping load as determined by ASME/ANSI B30.5.
8. Rated loads are based on freely suspended loads. No attempt shall be made to drag a load horizontally on the ground in any direction.
9. The user shall operate at reduced ratings to allow for adverse job conditions, such as: soft or uneven ground, out of level conditions, high winds, side loads, pendulum action, jerking or sudden stopping off loads, hazardous conditions, experience of personnel, two-machine lifts, traveling with loads, electric wires, etc, (side pull on boom or jib is hazardous). If wind speed is greater than the permissible value of 45 ft/s (13.8 m/s), grade 6) or it is fulminous, while the crane is in operation, do the tasks that follow: stop the work (safely lower the load), retract the boom and correctly stow the boom.
10. Load ratings are dependent upon the crane being maintained according to manufacturer’s specifications.
11. It is recommended that load handling devices, including hooks, and hook blocks, be kept away from boom head at all times.

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LOAD RATINGS FOR ROUGH TERRAIN CRANE

Chapter 2 Lifts with outrigger beams fully extended

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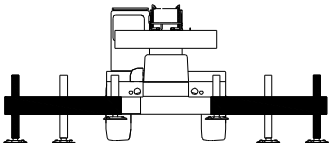
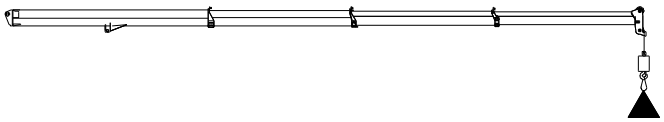
2.1 MAIN BOOM RATED LOADS

USE THIS CHART ONLY WHEN ALL OUTRIGGERS ARE FULLY EXTENDED





Rated loads on outriggers fully extended - 360°
(Rated load unit: kg)

BOOM LENGTH (MM)	11500		15513		19525		27350		35175		43000	
LOAD RADIUS (MM)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)
3000	68.4	100000	74.3	80500								
3500	65.6	96750	72.3	80500								
4000	62.7	84550	70.3	80500	74.6	56300						
4500	59.7	74250	68.3	72350	73.0	54000						
5000	56.6	66050	66.3	64400	71.4	51900						
5500	53.4	59350	64.2	57850	69.9	49900	75.8	32490				
6000	50.0	53750	62.0	52430	68.3	48100	74.7	31390				
6500	46.4	48970	59.8	47830	66.6	44850	73.6	30340				
7000	42.5	44910	57.6	43840	65.0	41300	72.5	29390				
7500	38.2	41380	55.3	40430	63.3	38150	71.4	28490				
8000	33.3	38320	52.9	37420	61.6	35380	70.3	27640	74.8	18890		
9000	19.8	33190	47.8	32370	58.1	30750	68.0	26090	73.1	18040		
9387	0	16270										
10000			42.2	27260	54.5	25280	65.7	24740	71.4	17290	74.9	9740
11000			35.9	22540	50.6	21030	63.3	20960	69.7	16590	73.5	9290
12000			28.1	18970	46.5	17760	60.9	17990	67.9	15940	72.1	8890
13389			0	9960								
14000					37.2	13120	55.9	13690	64.3	12890	69.3	8140
16000					24.7	10030	50.5	10720	60.6	10400	66.4	7540
17395					0	6200						
18000							44.6	8560	56.7	8530	63.4	6990
20000							38.0	6930	52.6	7070	60.3	6490
22000							30.1	5660	48.3	5900	57.2	5970
24000							19.2	4690	43.6	4950	53.9	5040
25213							0	3490				
26000									38.5	4160	50.4	4260
28000									32.6	3500	46.8	3610
30000									25.6	2950	42.9	3050
32000									15.5	2510	38.8	2570
33034									0	1990		
34000											34.1	2150
36000											28.8	1800
38000											22.3	1500
40000											12.8	1270

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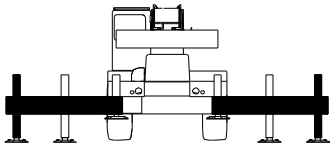
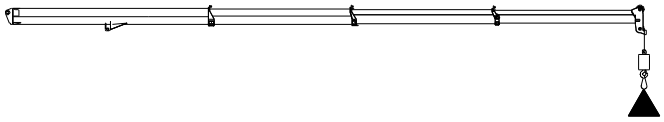
LOAD RATINGS FOR ROUGH TERRAIN CRANE

USE THIS CHART ONLY WHEN ALL OUTRIGGERS ARE FULLY EXTENDED





Lifts with outrigger beams fully extended

Rated loads on outriggers fully extended - 360°
(Rated load unit: lb)

BOOM LENGTH (FT)	37.73ft		50.90ft		64.06ft		89.73ft		115.34ft		141.08ft	
LOAD RADIUS (FT)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)
10	68.1	220000	74.1	177530								
12	64.7	205040	71.7	177530								
15	59.3	160600	68.0	156420	72.8	118140						
20	49.3	116020	61.6	113290	67.9	105050	74.5	68630				
25	37.1	89380	54.7	87250	62.9	82390	71.2	62250				
30	16.7	71640	47.0	69860	57.6	66360	67.7	56970	72.9	39480		
30.8	0	35790										
35			38.1	52720	51.9	49120	64.1	48650	70.2	36950	74.0	20780
40			26.3	40440	45.7	37890	60.5	38500	67.6	34860	71.8	19350
43.6			0	21910								
45					38.6	30060	56.6	31250	64.8	29280	69.7	18140
50					30.1	24350	52.6	25830	62.0	24770	67.5	17040
55					17.5	20090	48.3	21620	59.1	21170	65.2	16050
57.1					0	13650						
60							43.7	18270	56.1	18260	62.9	15170
65							38.7	15550	53.0	15830	60.6	14400
70							32.9	13310	49.7	13790	58.2	13740
75							26.0	11470	46.3	12040	55.8	12210
80							16.2	9990	42.7	10530	53.2	10740
82.7							0	7690				
85									38.7	9230	50.6	9460
90									34.4	8090	47.9	8330
95									29.5	7090	45.0	7330
100									23.6	6230	42.0	6450
105									15.5	5520	38.7	5660
108.3									0	4380		
110											35.3	4950
115											31.4	4320
120											27.1	3760
125											21.9	3270
130											15.1	2880

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SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
2. Crane load ratings on outriggers are based on all outrigger beams being fully extended / retracted, or in the case of partial extension ratings mechanically pinned in the appropriated position, and the tyres raised free of the supporting surface.

OPERATION

1. CRANE LOAD RATINGS MUST NOT BE EXCEEDED. NO ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
2. When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
3. EXTRA-CAUTION ZONE – Tipping can occur with some boom/jib combinations at radii within this area without any load on the hook.
4. The boom angles shown on the Lift Charts give an approximation of the operation radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection. It may be necessary to retract the boom if maximum boom angle is insufficient to maintain rated radius.
5. Rated Loads include the weight of hook block, slings and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted. Rated lift ratings are based on correct reeving. Deductions must be made for excessive reeving. Any reeving over the minimum is considered excessive. Deduct for each foot of excessive wire rope before attempting to lift a load. See HOIST TACKLE CHART for rope information.
6. All telescopic sections must be extended synchronically.

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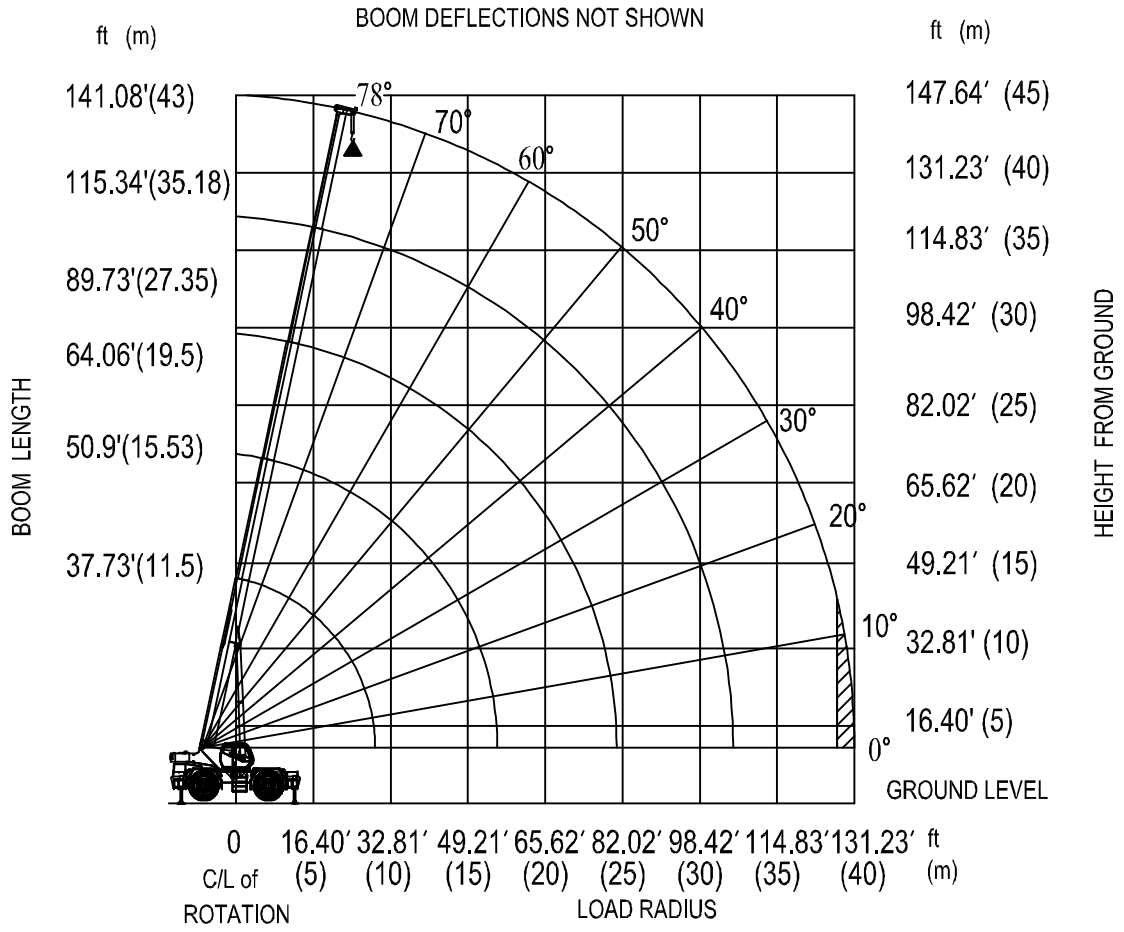

Lift Height on Outriggers Fully Extended

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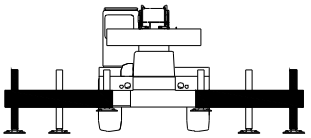
2.2 10.8 M JIB RATED LOADS

USE THIS CHART ONLY WHEN ALL OUTRIGGERS ARE FULLY EXTENDED

USE THIS CHART ONLY WHEN JIB SECTION 2 IS NOT PULLED OUT FROM JIB SECTION 1



Rated loads on outriggers fully extended - 360°
(Rated load unit: Kg)

0° OFFSET			20° OFFSET			40° OFFSET		
BOOM ANGLE (°)	LOAD RADIUS (MM)	360° (KG)	BOOM ANGLE (°)	LOAD RADIUS (MM)	360° (KG)	BOOM ANGLE (°)	LOAD RADIUS (MM)	360° (KG)
76	11151	6990	76	14579	4290	76	17278	3140
74	13006	6390	74	16378	4140	74	18984	3090
72	14842	5890	72	18154	3990	72	20665	3040
70	16657	5440	70	19906	3840	70	22318	2990
68	18449	5040	68	21631	3690	68	23941	2940
66	20216	4740	66	23327	3590	66	25532	2890
64	21956	4440	64	24992	3490	64	27090	2840
62	23667	4140	62	26624	3390	62	28612	2790
60	25346	3890	60	28220	3240	60	30096	2790
58	26992	3690	58	29780	3040	58	31542	2740
56	28602	3330	56	31301	2890	56	32946	2640
54	30175	2970	54	32781	2730	54	34307	2540
52	31708	2650	52	34219	2460	52	35624	2360
50	33200	2370	50	35612	2210	50	36895	2130
48	34649	2120	48	36959	1980	48	38118	1920
46	36053	1900	46	38259	1780	46	39293	1740
44	37411	1700	44	39509	1600	44	40417	1570
42	38720	1520	42	40708	1440	42	41488	1420
40	39980	1360	40	41856	1300	40	42507	1280
38	41188	1220	38	42949	1170	38	43471	1150

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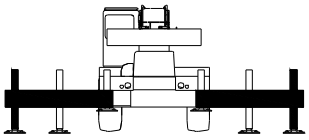
USE THIS CHART ONLY WHEN ALL OUTRIGGERS ARE FULLY EXTENDED

USE THIS CHART ONLY WHEN JIB SECTION 2 IS NOT PULLED OUT FROM JIB SECTION 1



Lifts with outrigger beams fully extended

Rated loads on outriggers fully extended - 360° (Rated load unit: lb)								
0° OFFSET			20° OFFSET			40° OFFSET		
BOOM ANGLE (°)	LOAD RADIUS (ft)	360° (lb)	BOOM ANGLE (°)	LOAD RADIUS (ft)	360° (lb)	BOOM ANGLE (°)	LOAD RADIUS (ft)	360° (lb)
76	36.6	15390	76	47.8	9450	76	56.7	6920
74	42.7	14070	74	53.7	9120	74	62.3	6810
72	48.7	12970	72	59.6	8790	72	67.8	6700
70	54.6	11980	70	65.3	8460	70	73.2	6590
68	60.5	11100	68	71.0	8130	68	78.5	6480
66	66.3	10440	66	76.5	7910	66	83.8	6370
64	72.0	9780	64	82.0	7690	64	88.9	6260
62	77.6	9120	62	87.3	7470	62	93.9	6150
60	83.2	8570	60	92.6	7140	60	98.7	6150
58	88.6	8130	58	97.7	6700	58	103.5	6040
56	93.8	7340	56	102.7	6370	56	108.1	5820
54	99.0	6540	54	107.5	6020	54	112.6	5590
52	104.0	5840	52	112.3	5410	52	116.9	5210
50	108.9	5210	50	116.8	4860	50	121.0	4700
48	113.7	4670	48	121.3	4370	48	125.1	4240
46	118.3	4180	46	125.5	3930	46	128.9	3830
44	122.7	3740	44	129.6	3540	44	132.6	3460
42	127.0	3350	42	133.6	3180	42	136.1	3120
40	131.2	3010	40	137.3	2870	40	139.5	2820
38	135.1	2700	38	140.9	2580	38	142.6	2540

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SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
2. Crane load ratings on outriggers are based on all outriggers beams being fully extended / retracted, or in the case of partial extension ratings mechanically pinned in the appropriate position, and the tires raised free of the supporting surface.

OPERATION

1. CRANE LOAD RATINGS MUST NOT BE EXCEEDED. NO ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
2. When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
3. EXTRA-CAUTION ZONE – Tipping can occur with some boom/jib combinations at radii within this area without any load on the hook.
4. The boom angles shown on the Lift Chart give an approximation of the operation radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection. It may be necessary to retract the boom if maximum boom angle is insufficient to maintain rated radius.
5. Rated Loads include the weight of hook block, slings and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted. Rated lift ratings are based on correct reeving. Deductions must be made for excessive reeving. Any reeving over the minimum is considered excessive. Deduct for each foot of excessive wire rope before attempting to lift a load. See HOIST TACKLE CHART for rope information.
6. When lifting over the jib, the weight of any hook block, slings, and any auxiliary lifting devices at the boom head must be added to the load.
7. For all boom lengths less than the maximum with the jib erected, the rated loads are determined by boom angle only in the appropriate column.

For all boom lengths less than the listed boom length, the rated load is to be determined by boom angle.

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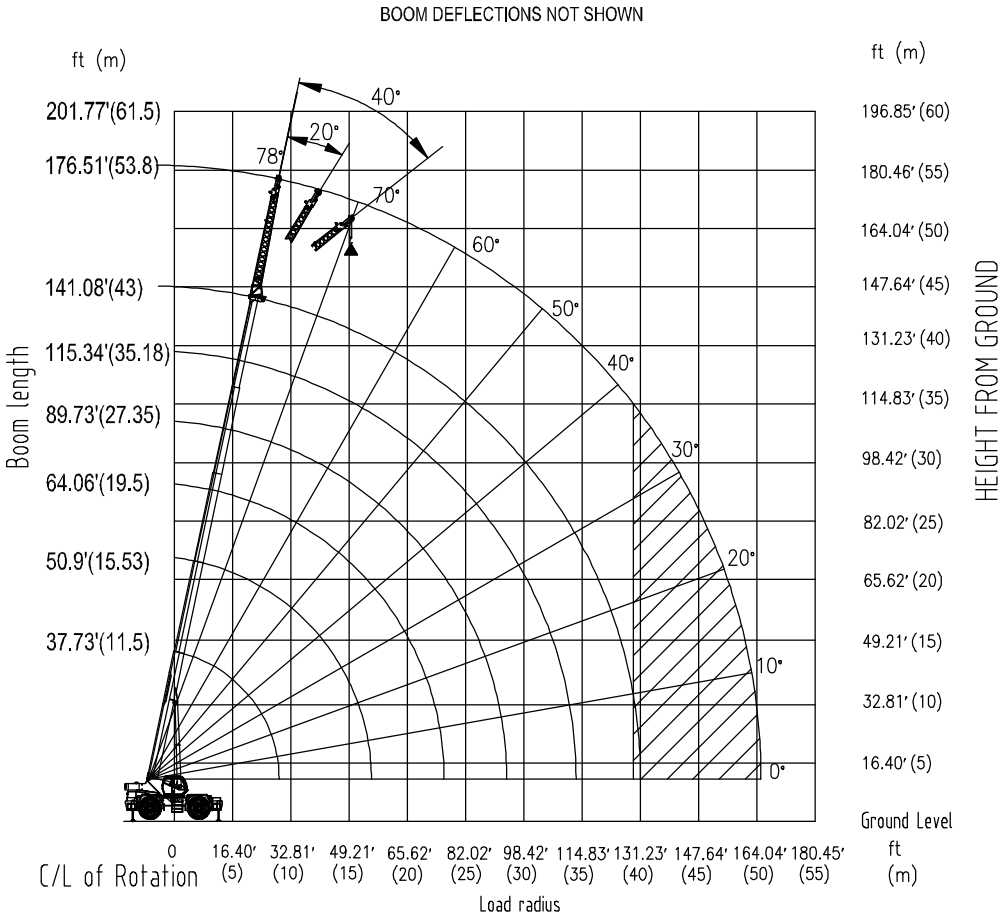

Lift Height on Jib Section 1 Erected

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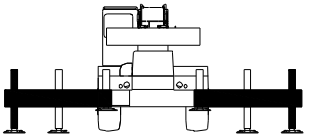
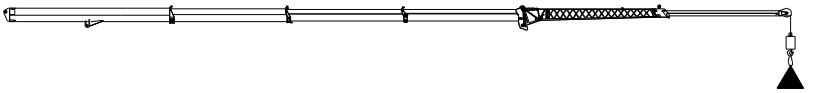
2.3 18.5 M JIB RATED LOADS

USE THIS CHART ONLY WHEN ALL OUTRIGGERS ARE FULLY EXTENDED

USE THIS CHART WHEN JIB SECTION 2 IS PULLED OUT FROM JIB SECTION 1





Rated loads on outriggers fully extended - 360°

(Rated load unit: KG)

0° OFFSET			20° OFFSET			40° OFFSET		
BOOM ANGLE (°)	LOAD RADIUS (MM)	360° (KG)	BOOM ANGLE (°)	LOAD RADIUS (MM)	360° (KG)	BOOM ANGLE (°)	LOAD RADIUS (MM)	360° (KG)
76	13013	3840	76	18884	2090	76	23506	1540
74	15128	3540	74	20903	1990	74	25367	1490
72	17220	3290	72	22894	1940	72	27194	1440
70	19290	3040	70	24855	1840	70	28985	1440
68	21333	2840	68	26782	1790	68	30738	1390
66	23348	2690	66	28675	1740	66	32452	1390
64	25331	2540	64	30530	1690	64	34123	1390
62	27281	2390	62	32345	1640	62	35750	1340
60	29196	2290	60	34118	1590	60	37331	1340
58	31072	2190	58	35847	1540	58	38863	1340
56	32907	2090	56	37529	1540	56	40346	1290
54	34700	1990	54	39163	1490	54	41777	1290
52	36448	1940	52	40747	1490	52	43154	1290
50	38149	1890	50	42279	1440	50	44477	1290
48	39800	1700	48	43756	1440	48	45742	1290
46	41401	1500	46	45178	1360	46	46949	1290
44	42949	1330	44	46542	1210	44	48096	1170
42	44441	1180	42	47846	1080	42	49182	1050
40	45877	1050	40	49090	970	40	50206	940
38	47254	930	38	50271	860	38	51165	840

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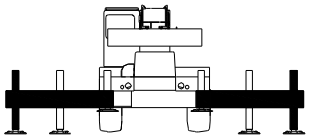
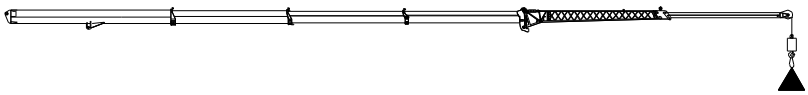
USE THIS CHART ONLY WHEN ALL OUTRIGGERS ARE FULLY EXTENDED

USE THIS CHART WHEN JIB SECTION 2 IS PULLED OUT FROM JIB SECTION 1





Lifts with outrigger beams fully extended

Rated loads on outriggers fully extended - 360°
(Rated load unit: lb)

0° OFFSET			20° OFFSET			40° OFFSET		
BOOM ANGLE (°)	LOAD RADIUS (ft)	360° (lb)	BOOM ANGLE (°)	LOAD RADIUS (ft)	360° (lb)	BOOM ANGLE (°)	LOAD RADIUS (ft)	360° (lb)
76	42.7	8460	76	62.0	4610	76	77.1	3400
74	49.6	7800	74	68.6	4390	74	83.2	3290
72	56.5	7250	72	75.1	4280	72	89.2	3180
70	63.3	6700	70	81.5	4060	70	95.1	3180
68	70.0	6260	68	87.9	3950	68	100.8	3070
66	76.6	5930	66	94.1	3840	66	106.5	3070
64	83.1	5590	64	100.2	3730	64	112.0	3070
62	89.5	5260	62	106.1	3620	62	117.3	2960
60	95.8	5050	60	111.9	3510	60	122.5	2960
58	101.9	4830	58	117.6	3400	58	127.5	2960
56	108.0	4610	56	123.1	3400	56	132.4	2850
54	113.8	4390	54	128.5	3290	54	137.1	2850
52	119.6	4280	52	133.7	3290	52	141.6	2850
50	125.2	4170	50	138.7	3180	50	145.9	2850
48	130.6	3740	48	143.6	3180	48	150.1	2850
46	135.8	3310	46	148.2	3000	46	154.0	2850
44	140.9	2940	44	152.7	2680	44	157.8	2580
42	145.8	2600	42	157.0	2390	42	161.4	2310
40	150.5	2310	40	161.1	2130	40	164.7	2070
38	155.0	2050	38	164.9	1900	38	167.9	1850

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SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
2. Crane load ratings on outriggers are based on all outriggers beams being fully extended / retracted, or in the case of partial extension ratings mechanically pinned in the appropriate position, and the tires raised free of the supporting surface.

OPERATION

1. CRANE LOAD RATINGS MUST NOT BE EXCEEDED. NO ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
2. When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
3. EXTRA-CAUTION ZONE – Tipping can occur with some boom/jib combinations at radii within this area without any load on the hook.
4. The boom angles shown on the Lift Chart give an approximation of the operation radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection. It may be necessary to retract the boom if maximum boom angle is insufficient to maintain rated radius.
5. Rated Loads include the weight of hook block, slings and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted. Rated lift ratings are based on correct reeving. Deductions must be made for excessive reeving. Any reeving over the minimum is considered excessive. Deduct for each foot of excessive wire rope before attempting to lift a load. See HOIST TACKLE CHART for rope information.
6. When lifting over the jib, the weight of any hook block, slings, and any auxiliary lifting devices at the boom head must be added to the load.
7. For all boom lengths less than the maximum with the jib erected, the rated loads are determined by boom angle only in the appropriate column.
8. For all boom lengths less than the listed boom length, the rated load is to be determined by boom angle.

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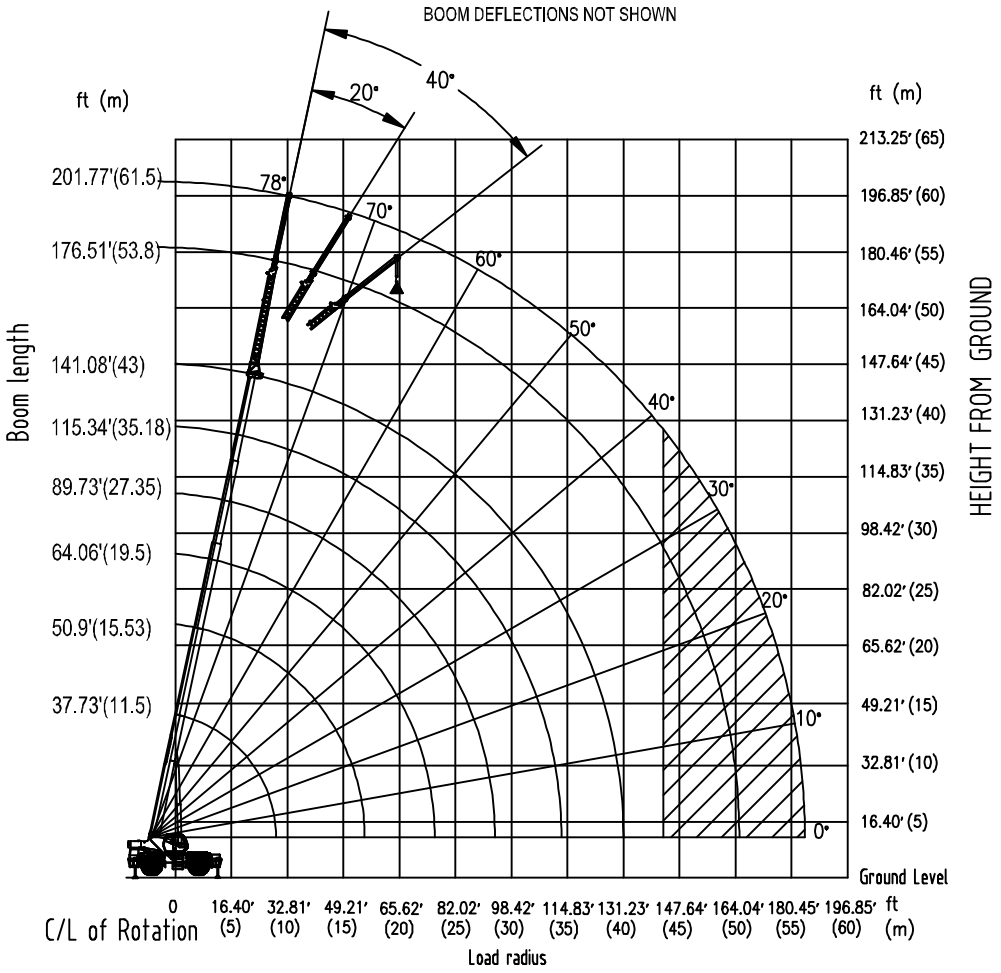

Lift Height on Jib Section 2 Erected

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ZOOMLION

LOAD RATINGS FOR ROUGH TERRAIN CRANE

Chapter 3 Lifts with outrigger beams at mid-position

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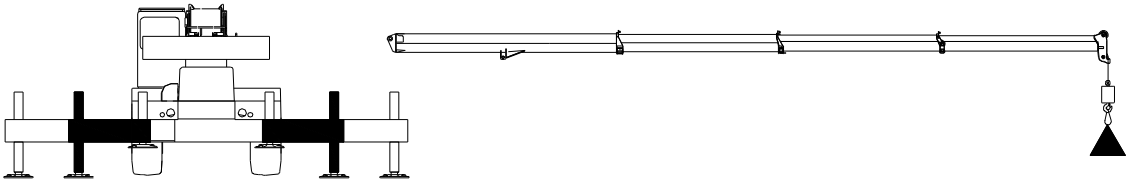
3.1 MAIN BOOM RATED LOADS

USE THIS CHART WHEN ALL OUTRIGGERS ARE PINNED IN THE MID-POSITION



Rated loads on outriggers pinned in mid-position - 360°
(Rated load unit: kg)

BOOM LENGTH (MM)	11500		15513		19525		27350		35175		43000	
LOAD RADIUS (MM)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)
3000	68.4	100000	74.3	80500								
3500	65.6	90150	72.3	80500								
4000	62.7	77900	70.3	75690	74.6	56300						
4500	59.7	68350	68.3	66500	73.0	54000						
5000	56.6	60700	66.3	59150	71.4	51900						
5500	53.4	53570	64.2	51090	69.9	44580						
6000	50.0	44280	62.0	42350	68.3	37540	74.7	31390				
6500	46.4	37480	59.8	35910	66.6	32200	73.6	29820				
7000	42.5	32300	57.6	30970	65.0	28010	72.5	26400				
7500	38.2	28210	55.3	27050	63.3	24640	71.4	23590				
8000	33.3	24900	52.9	23880	61.6	21860	70.3	21220	74.8	18010		
9000	19.8	19890	47.8	19040	58.1	17560	68.0	17480	73.1	15320		
9387	0	16270										
10000			42.2	15530	54.5	14380	65.7	14640	71.4	13180	74.9	9740
11000			35.9	12880	50.6	11940	63.3	12420	69.7	11460	73.5	9290
12000			28.1	10810	46.5	10020	60.9	10650	67.9	10030	72.1	8890
13389			0	8730								
14000					37.2	7170	55.9	7960	64.3	7800	69.3	7740
16000					24.7	5210	50.5	6050	60.6	6150	66.4	6180
17395					0	4300						
18000							44.6	4620	56.7	4880	63.4	4960
20000							38.0	3510	52.6	3880	60.3	4000
22000							30.1	2650	48.3	3060	57.2	3200
24000							19.2	1990	43.6	2390	53.9	2550
25213							0	1790				
26000									38.5	1820	50.4	1990
28000									32.6	1350	46.8	1520
30000									25.6	950	42.9	1120

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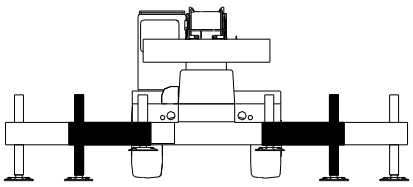
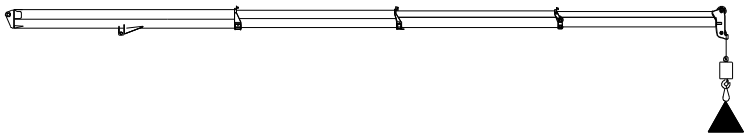
USE THIS CHART WHEN ALL OUTRIGGERS ARE PINNED IN THE MID-POSITION





Rated loads on outriggers pinned in mid-position - 360°
(Rated load unit: lb)

BOOM LENGTH (FT)	37.73ft		50.90ft		64.06ft		89.73ft		115.34ft		141.08ft	
LOAD RADIUS (FT)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)	BOOM ANGLE (°)	360° (lb)
10	68.1	220000	74.1	177530								
12	64.7	188980	71.7	177530								
15	59.3	147730	68.0	143770	72.8	118140						
20	49.3	94200	61.6	90140	67.9	80090	74.5	68630				
25	37.1	60180	54.7	57710	62.9	52630	71.2	50560				
30	16.7	42470	47.0	40630	57.6	37500	67.7	37450	72.9	32950		
30.8	0	35790										
35			38.1	30110	51.9	27920	64.1	28840	70.2	26400	74.0	20780
40			26.3	23030	45.7	21330	60.5	22760	67.6	21520	71.8	19350
43.9			0	19220								
45					38.6	16540	56.6	18240	64.8	17780	69.7	17600
50					30.1	12930	52.6	14760	62.0	14800	67.5	14800
55					17.5	10190	48.3	12010	59.1	12390	65.2	12510
57.1					0	9530						
60							43.7	9770	56.1	10400	62.9	10600
65							38.7	7940	53.0	8720	60.6	8980
70							32.9	6420	49.7	7290	58.2	7590
75							26.0	5160	46.3	6060	55.8	6390
80							16.2	4150	42.7	5000	53.2	5360
82.7							0	3050				
85									38.7	4070	50.6	4440
90									34.4	3250	47.9	3630
95									29.5	2540	45.0	2910
100									23.6	1920	42.0	2270

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Lifts with outrigger beams at mid-position

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SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
2. Crane load ratings on outriggers are based on all outrigger beams being fully extended / retracted, or partial extension ratings mechanically pinned in the appropriated position, and the tyres raised free of the supporting surface.

OPERATION

1. CRANE LOAD RATINGS MUST NOT BE EXCEEDED. NO ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
2. When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
3. EXTRA-CAUTION ZONE – Tipping can occur with some boom/jib combinations at radii within this area without any load on the hook.
4. The boom angles shown on the Lift Charts give an approximation of the operation radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection. It may be necessary to retract the boom if maximum boom angle is insufficient to maintain rated radius.
5. Rated Loads include the weight of hook block, slings and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted. Rated lifting capacities are based on correct reeving. Deductions must be made for excessive reeving. Any reeving over the minimum is considered excessive. Deduct for each foot of excessive wire rope before attempting to lift a load. See HOIST TACKLE CHART for rope information.
6. All telescopic sections must be extended synchronously.

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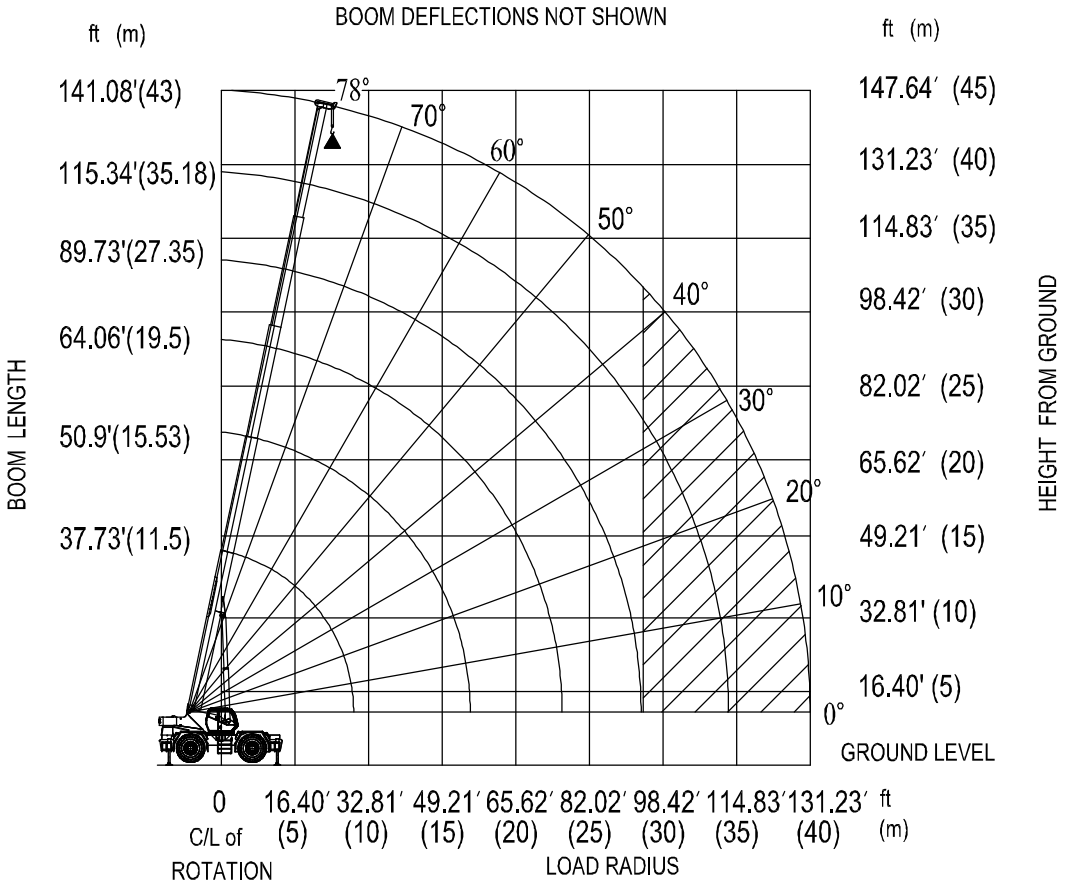

Lift Height on Outriggers Pinned in the Mid-position

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ZOOMLION

LOAD RATINGS FOR ROUGH TERRAIN CRANE

Chapter 4 Lifts with outrigger beams fully retracted

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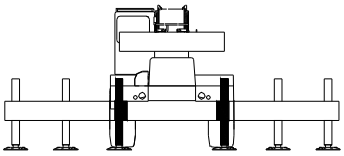
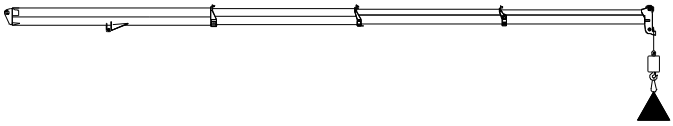
4.1 MAIN BOOM RATED LOADS

USE THIS CHART WHEN ALL OUTRIGGERS ARE FULLY RETRACTED





Rated loads on outriggers are less than half extended - 360°
(Rated load unit: kg)

BOOM LENGTH (MM)	11500		15513		19525		27350		35175		43000	
LOAD RADIUS (MM)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)	BOOM ANGLE (°)	360° (KG)
3000	68.4	75500	74.3	70420								
3500	65.6	54060	72.3	50950								
4000	62.7	41510	70.3	39320	74.6	33700						
4500	59.7	33270	68.3	31590	73.0	27580						
5000	56.6	27440	66.3	26090	71.4	23060						
5500	53.4	23110	64.2	21970	69.9	19590						
6000	50.0	19760	62.0	18760	68.3	16840	74.7	16240				
6500	46.4	17090	59.8	16210	66.6	14610	73.6	14360				
7000	42.5	14920	57.6	14110	65.0	12770	72.5	12770				
7500	38.2	13120	55.3	12370	63.3	11210	71.4	11420				
8000	33.3	11600	52.9	10900	61.6	9890	70.3	10250	74.8	9180		
9000	19.8	9180	47.8	8560	58.1	7750	68.0	8320	73.1	7710		
9387	0	8500										
10000			42.2	6770	54.5	6100	65.7	6810	71.4	6500	74.9	6380
11000			35.9	5370	50.6	4780	63.3	5590	69.7	5510	73.5	5460
12000			28.1	4240	46.5	3720	60.9	4590	67.9	4670	72.1	4680
13389			0	3100								
14000					37.2	2100	55.9	3030	64.3	3340	69.3	3430
16000					24.7	950	50.5	1890	60.6	2320	66.4	2460
18000							44.6	1030	56.7	1530	63.4	1700
20000											60.3	1090

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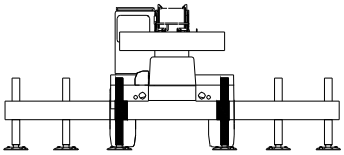
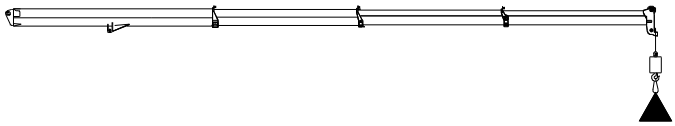
USE THIS CHART WHEN ALL OUTRIGGERS ARE FULLY RETRACTED





Rated loads on outriggers are less than half extended - 360°
(Rated load unit: lb)

BOOM LENGTH (FT)	37.73′ ft		50.90′ ft		64.06′ ft		89.73′ ft		115.34′ ft		141.08′ ft	
LOAD RADIUS (FT)	BOOM ANGLE (º)	360º (lb)	BOOM ANGLE (º)	360º (lb)	BOOM ANGLE (º)	360º (lb)	BOOM ANGLE (º)	360º (lb)	BOOM ANGLE (º)	360º (lb)	BOOM ANGLE (º)	360º (lb)
10	68.1	160170	74.1	149610								
12	64.7	108790	71.7	102730								
15	59.3	71080	68.0	67520	72.8	59060						
20	49.3	42250	61.6	40110	67.9	36040	74.5	34880				
25	37.1	28020	54.7	26400	62.9	23930	71.2	24470				
30	16.7	19560	47.0	18200	57.6	16470	67.7	17790	72.9	16540		
30.8	0	18710										
35			38.1	12760	51.9	11420	64.1	13130	70.2	12820	74.0	12650
40			26.3	8920	45.7	7780	60.5	9710	67.6	9960	71.8	10000
43.9			0	6830								
45					38.6	5060	56.6	7100	64.8	7710	69.7	7890
50					30.1	2960	52.6	5040	62.0	5890	67.5	6170
55							48.3	3380	59.1	4400	65.2	4740
60							43.7	2020	56.1	3150	62.9	3540
65											60.6	2510

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SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
2. Crane load ratings on outriggers are based on all outrigger beams being fully extended / retracted, or partial extension ratings mechanically pinned in the appropriated position, and the tyres raised free of the supporting surface.

OPERATION

1. CRANE LOAD RATINGS MUST NOT BE EXCEEDED. NO ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
2. When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
3. EXTRA-CAUTION ZONE – Tipping can occur with some boom/jib combinations at radii within this area without any load on the hook.
4. The boom angles shown on the Lift Charts give an approximation of the operation radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection. It may be necessary to retract the boom if maximum boom angle is insufficient to maintain rated radius.
5. Rated Loads include the weight of hook block, slings and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted. Rated lifting capacities are based on correct reeving. Deductions must be made for excessive reeving. Any reeving over the minimum is considered excessive. Deduct for each foot of excessive wire rope before attempting to lift a load. See HOIST TACKLE CHART for rope information.
6. All telescopic sections must be extended synchronously.

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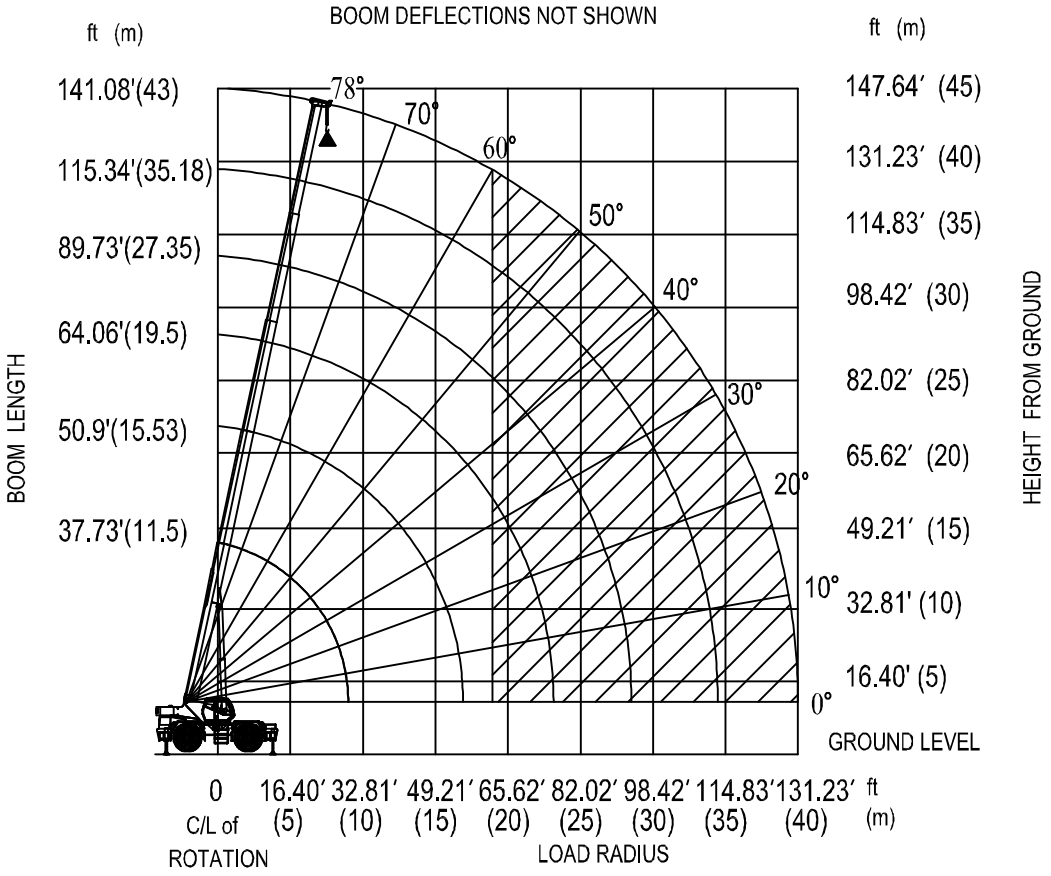

Lift Height on Outriggers Fully Retracted

Lifts with outrigger beams fully retracted

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ZOOMLION

LOAD RATINGS FOR ROUGH TERRAIN CRANE

Chapter 5 Lifts on tires

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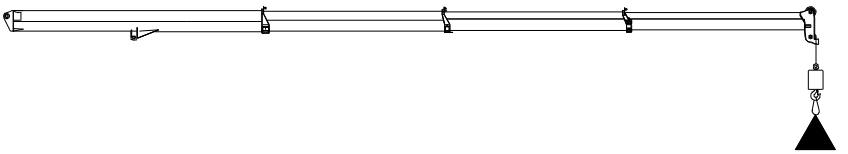
5.1 MAIN BOOM RATED LOADS

USE THESE CHARTS ONLY WHEN LIFTING OVER THE FRONT ON TIRES.



Rated loads on tires (Rated load unit: kg)												
BOOM LENGTH (MM)	11500				15513				19525			
LOAD RADIUS (MM)	BOOM ANGLE (º)	360º (KG)	OVER FRONT (KG)	CREEP (KG)	BOOM ANGLE (º)	360º (KG)	OVER FRONT (KG)	CREEP (KG)	BOOM ANGLE (º)	360º (KG)	OVER FRONT (KG)	CREEP (KG)
3000	68.4	32900	42550	31600	74.3	31680	41500	30700	77.6	28660	38450	28350
3500	65.6	28330	38050	28050	72.3	27270	37050	27250	76.1	24770	34480	25210
4000	62.7	24640	34230	25100	70.3	23680	33370	24320	74.6	21620	31080	22620
4500	59.7	21630	31020	22610	68.3	20780	30170	21860	73.0	18990	28210	20370
5000	56.6	19100	28240	20440	66.3	18320	27450	19780	71.4	16780	25740	18390
5500	53.4	17000	25840	18580	64.2	16240	25120	17920	69.9	14900	23560	16720
6000	50.0	15180	23710	16900	62.0	14440	23060	16310	68.3	13280	21680	15230
6500	46.4	13580	21840	15460	59.8	12930	21220	14900	66.6	11600	19960	13870
7000	42.5	11950	20220	14200	57.6	11180	19560	13590	65.0	9950	18440	12710
7500	38.2	10340	18730	13010	55.3	9620	18140	12460	63.3	8560	17090	11650
8000	33.3	8980	17380	11960	52.9	8310	16780	11450	61.6	7370	15870	10660
9000	19.8	6810	15000	10180	47.8	6190	14220	9640	58.1	5440	12990	8990
9387	0	6210	13910									
10000					42.2	4570	11390	8160	54.5	3940	10410	7600
11000					35.9	3300	9220	6920	50.6	2740	8400	6370
12000					28.1	2280	7500	5890	46.5	1770	6790	5390
13389					0	1260	5780	4740				
14000									37.2	——	4390	3730
16000									24.7	——	2720	2490
17395									0.0	——	1990	1870

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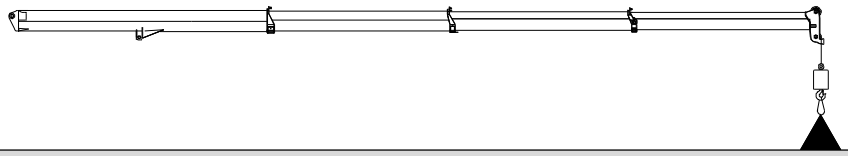
USE THESE CHARTS ONLY WHEN LIFTING OVER THE FRONT ON TIRES.



Rated loads on tires (Rated load unit: lb)												
BOOM LENGTH (ft))	37.73ft				50.9ft				64.06ft			
LOAD RADIUS (ft))	BOOM ANGLE (°)	360° (KG)	OVER FRONT (KG)	CREEP (KG)	BOOM ANGLE (°)	360° (KG)	OVER FRONT (KG)	CREEP (KG)	BOOM ANGLE (°)	360° (KG)	OVER FRONT (KG)	CREEP (KG)
10	68.1	71260	92620	68750	74.1	68670	90200	66660				
12	64.7	59530	80850	59620	71.7	57350	78840	57800				
15	59.3	46680	67310	49000	68.0	44800	65450	47450	72.8	41050	61330	44140
20	49.3	32640	51430	36590	61.6	31180	49890	35190	67.9	28650	46880	32940
25	37.1	22000	40430	28090	54.7	20440	39180	26830	62.9	18180	36940	25090
30	16.7	14410	31960	21940	47.0	13060	30280	20780	57.6	11440	27670	19320
30.8	0	13660	30620	21180								
35					38.1	8130	21740	16120	51.9	6850	19840	14920
40					26.3	4640	15880	12550	45.7	3530	14350	11390
43					0	2770	12720	10440				
45									38.6	1030	10310	8620
50									30.1	——	7240	6380
55									17.5	——	4900	4520
57									0.0	——	4380	4120

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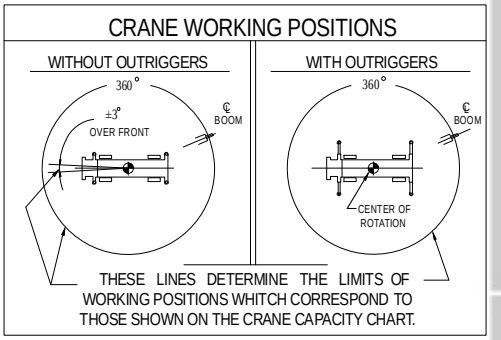
SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
2. Crane load ratings on tires depend on appropriate inflation pressure and tire condition. Caution must be exercised when increasing air pressures in tires. Consult *Operator's Manual* for precautions.
3. Use of jib is not permitted for pick-and-carry operations.



SET-UP

1. For pick-and-carry operations, boom must be centered over the front of the crane with swing and brake lock engaged. Use minimum boom point height and keep load close to ground surface. Travel must be on smooth level surface.
2. The load should be restrained from swinging. No on tire operation with jib erected.

OPERATION

1. CRANE LOAD RATINGS MUST NOT BE EXCEEDED. NO ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
2. When radius is between listed values, the smaller of the two listed load ratings shall be used;
3. Do not operate at longer radii than those listed on the applicable *Lift Chart* as tipping can occur without a load on the hook.
4. All telescopic sections must be extended synchronously.
5. Without outriggers, never maneuver the boom beyond listed load radii for applicable tires used to ensure stability.
6. Creep speed is crane movement of less than 61 m (200ft) in 30-minutes period and not exceeding 1.6 KM/H (1MPH).

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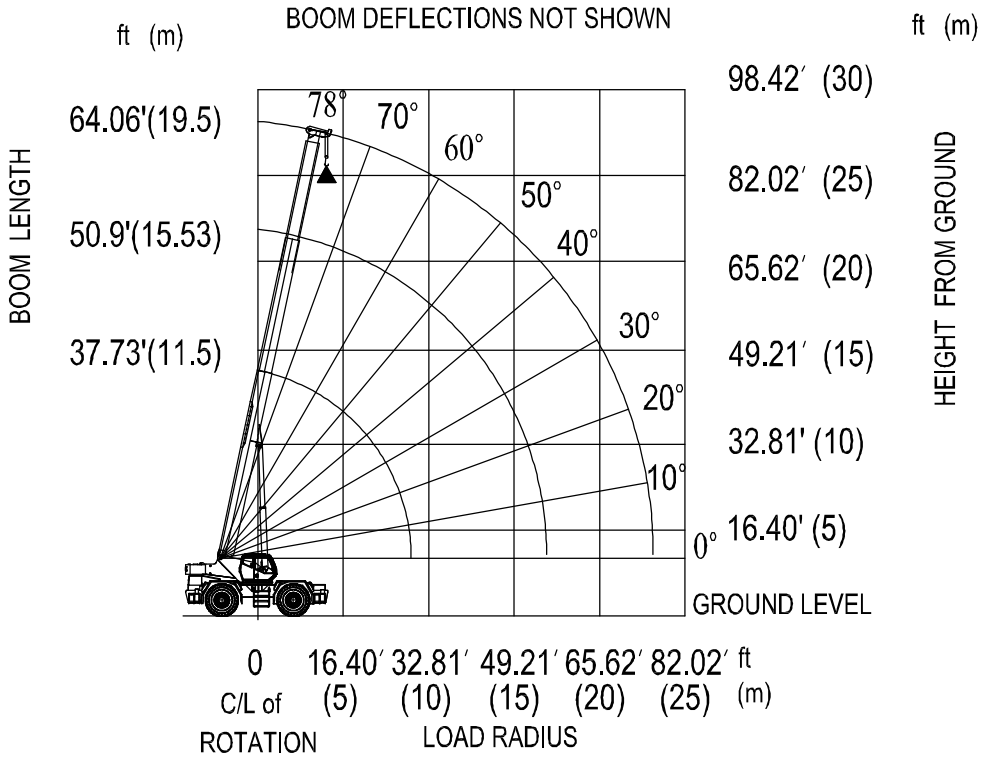

Lift Heigth on Tires