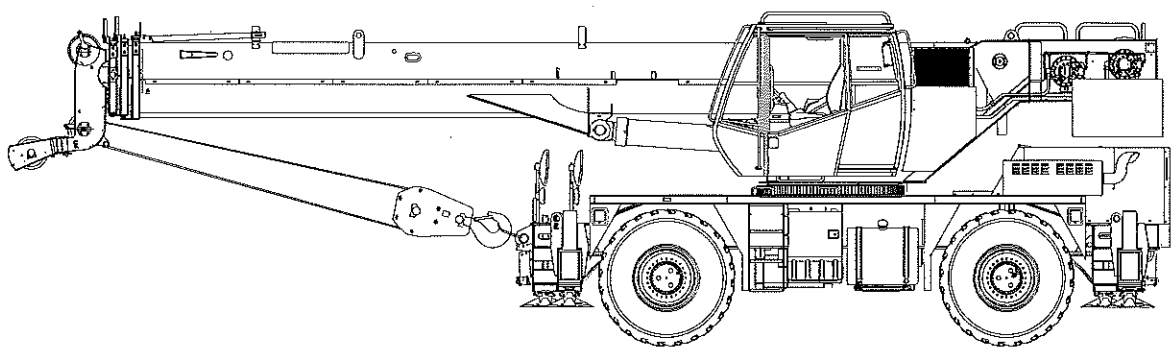
SANY

Quality Changes the World

Load Charts Manual

SRC400C Rough Terrain Crane



SANY

LOAD CHARTS MANUAL

GENERAL NOTES AND WARNINGS

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 Safety, Operation & Maintenance Manual supplied with this machine. If this manual is 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 standards 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) When outrigger use is intended, the outriggers shall be properly extended with tires raised off of the supporting surface before operating crane functions and lifting loads.
3) Tires shall be inflated to the recommended pressure before lifting on tires.
4) Axle lockouts shall be operating properly before lifting over the side of the crane.
5) Unless approved by Sany, do not travel with boom extension erected.

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, total weight of component and load must not exceed 80% of rated lifting capacities.
2) All rated loads have been tested to and meet the ISO4305 requirements. Capacities on outriggers correspond to (Test Load = 1.25P + 0.1F). 0.1F represents one-tenth (0.10) of the total boom weight reduced to the boom head. Capacities on tires correspond to (Test Load = 1.33 P + 0.1 F). Capacities on creep correspond to (Test Load = 1.5 P+ 0.1 F).
3) Rated loads include the weight of hook block, slings and auxiliary lifting devices and their weights shall be subtracted from the listed rating to obtain the actual 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 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) Rated loads do not account for wind on lifted loads or boom. The maximum in-service wind speed is 32 km/h. It is recommended when wind velocity is above 32 km/h, rated loads and boom lengths shall be appropriately reduced. For machines not in-service, the main boom should be retracted and lowered with swing brake set in wind velocities over 48 km/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 if the rated capacity is not exceeded.
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) 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) Regardless of outrigger spread configuration, no deduct is required from the main boom charts for a stowed boom extension.
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 all load handling devices a minimum of 1m 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) When operating with the Outriggers in the 50% Extended Mode, the outrigger beam pins must be engaged. When operating in the On Outriggers 0% Extended Mode, the outrigger beams must be fully retracted. Failure to comply could result in structural damage or loss of stability of the crane.
16) Do not lift loads when boom is fully lowered. The Load Moment Indicator (LMI) senses pressure in the lift cylinder and it will not sense a warning or lockout condition. The crane can be overloaded without warning if the lift cylinder is fully retracted.

Definitions

1) Load 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: 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 hoist cable.
5) Side Load: Horizontal force applied to the lifted load either on the ground or in the air.
6) No Load Stability Limit: The stability limit is determined by the Min Boom Angle on the Load Charts Manual. It is not permitted to lower the boom below the boom angles listed because the machine can overturn without any load on the hook.

4) Freely Suspended Load: Load hanging free with no direct external force applied except by the hoist cable.
5) Side Load: Horizontal force applied to the lifted load either on the ground or in the air.
6) No Load Stability Limit: The stability limit is determined by the Min Boom Angle on the Load Charts Manual. It is not permitted to lower the boom below the boom angles listed because the machine can overturn without any load on the hook.

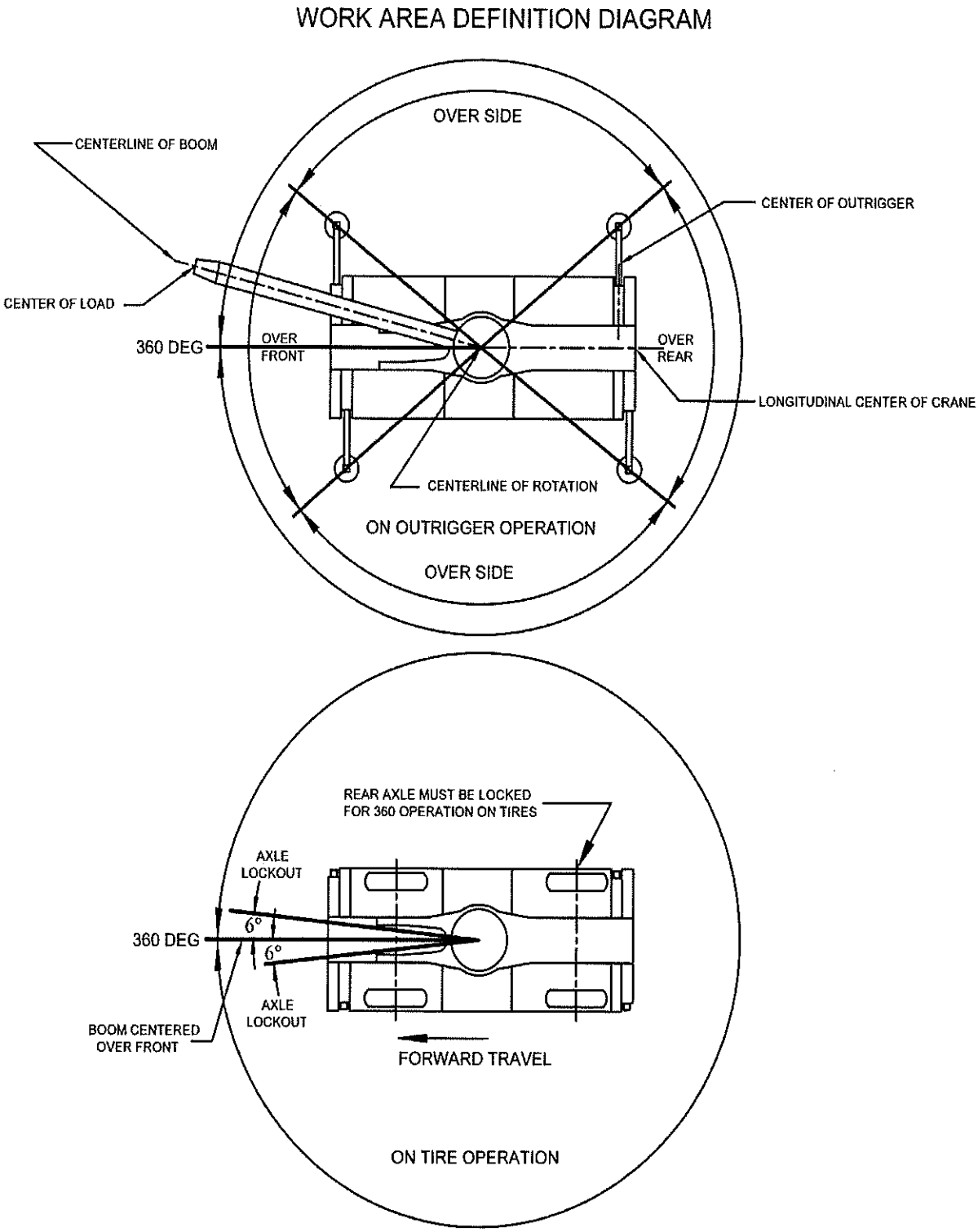
Counterweight (CT)	
Type	Weight
Standard	4000 kg fixed counterweight
All load handling devices and boom attachments are considered part of the load and suitable allowances **MUST BE MADE** for their combined weights. Weights listed are for Sany furnished equipment.	

Wind Speed Restrictions	
If the wind speed is:	Rated lifted capacities must be reduced by at least:
0-32 km/h (0-20mph)	Normal lifting operations (see load chart)
33-47 km/h (21-29mph)	40%
48 km/h (30mph) or greater	Crane operation must be shutdown and the boom retracted and lowered to horizontal
Additional reductions are required for loads with large wind sail area. These restrictions are based on crane on fully extended outriggers.	

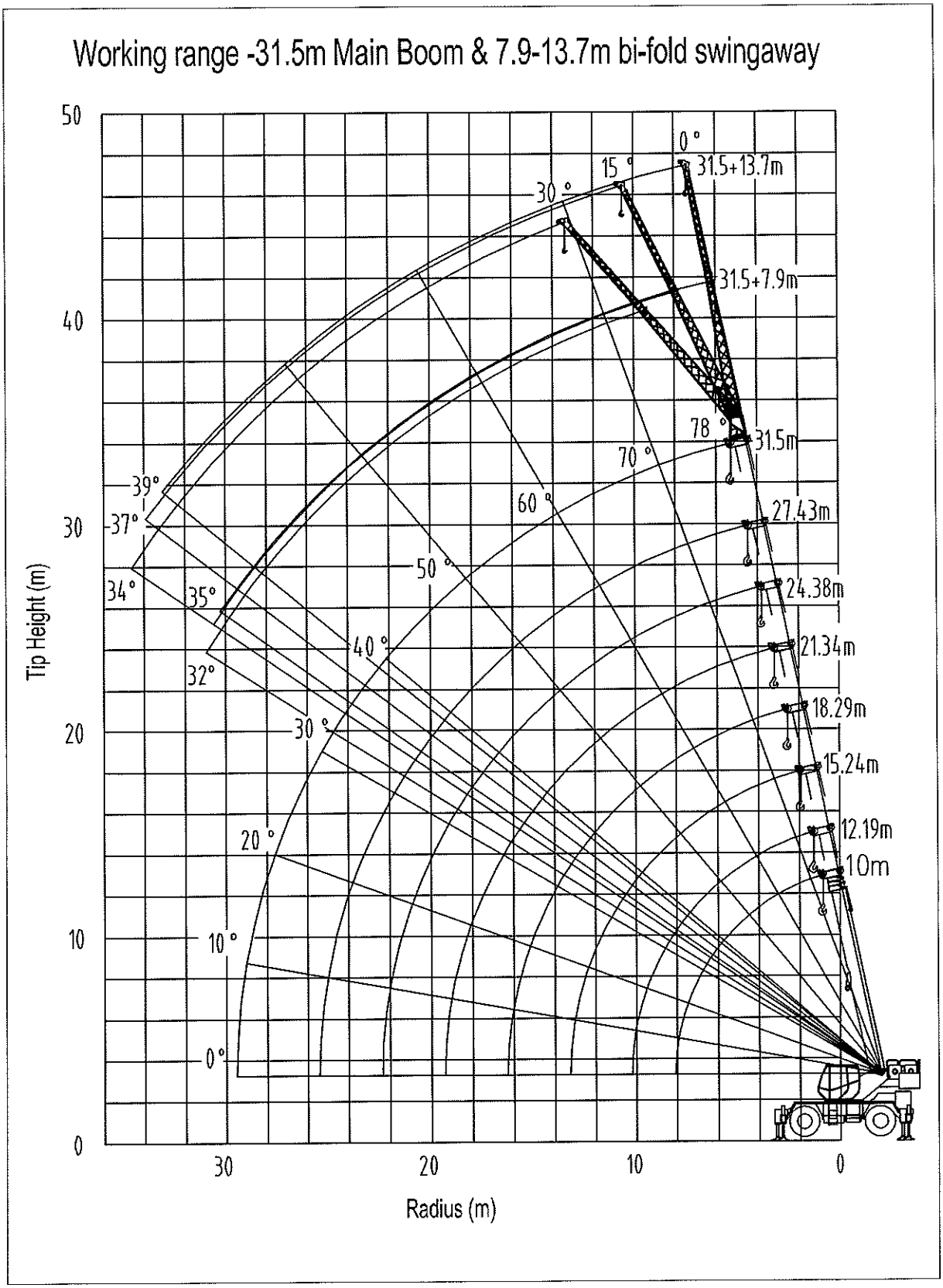
⚠ WARNING

Read and understand all safety precautions and instructions in SOM manual before reading this load chart manual. Failure to do this could result in death or serious injury.

Working area Diagram



Working Range Diagram



Load Chart , Main Boom, Outriggers 100% Extended, 360°

4t Counterweight

Boom (m) / Radius (m)	Load Chart, Main Boom, Outriggers 100% Extended, 360° Unit: (kg)							
	10	12.19	15.24	18.29	21.34	24.38	27.43	31.5
2.5	40000							
3	35000	23000	22000					
3.5	31500	23000	22000	21500				
4	29200	23000	22000	20600				
4.5	26200	22000	22000	20200	18500			
5	23800	20500	20300	19000	17500			
5.5	21800	19500	18500	17600	16200			
6	19000	17500	17000	16200	15000	14200	13200	
6.5	17300	16000	15600	15200	14200	13500	12300	
7	15800	14700	14400	14200	13500	12700	11500	9000
7.5	14300	13500	13400	13300	12700	12000	10800	8600
8		12600	12500	12400	12000	11400	10200	8400
9		11000	10800	10700	10600	10200	9200	8000
10			8800	9350	9450	9250	8300	7500
12			6700	7150	7300	7250	6600	6400
14				5300	5500	5550	5600	5500
16				4050	4250	4300	4400	4500
18					3300	3350	3400	3450
20						2600	2650	2700
22							2150	2200
24							1650	1700
26								1350
28								1050
Min. angle (empty load)	0°							
Load (0°)	11300	8200	5100	3400	2300	1600	1000	500
Parts of Line	8	6	6	4	4	4	4	3

Load Chart , Main Boom, Outriggers 50% Extended, 360°

4t Counterweight

Boom (m) / Radius (m)	Load Chart, Main Boom, Outriggers 50% Extended, 360° Unit: (kg)							
	10	12.19	15.24	18.29	21.34	24.38	27.43	31.5
2.5	40000							
2.5	40000							
3	35000	23000	22000					
3.5	31500	23000	22000	21000				
4	27000	21800	20800	19800				
4.5	22000	20200	19200	18200	18000			
5	19600	18000	17500	16800	16600			
5.5	16900	16000	15700	15600	15500			
6	14200	14300	14200	14100	14000	13800	10500	
6.5	12200	12500	12600	12800	12900	12800	10000	
7	10600	11000	11300	11500	11700	11800	9500	8600
7.5	9200	9600	9900	10200	10400	10500	9000	8600
8		8300	8900	9150	9300	9400	8500	8250
9		6700	7100	7300	7500	7600	7450	7400
10			5800	6050	6200	6300	6350	6400
12			3850	4150	4300	4400	4500	4600
14				2950	3100	3200	3250	3350
16				2100	2250	2300	2400	2500
18					1600	1700	1750	1850
20						1200	1300	1350
22						800	900	950
Min. angle (empty load)	0°						27°	38°
Load (0°)	7000	4500	2700	1600	900	500		
Parts of Line	8	6	6	4	4	4	4	3

Load Chart , Main Boom, Outriggers 0% Extended, 360°

4t Counterweight

Boom (m) / Radius (m)	Load Chart, Main Boom, Outriggers 0% Extended, 360° Unit: (kg)							
	10	12.19	15.24	18.29	21.34	24.38	27.43	31.5
2.5	25000							
3	23000	22600	22000					
3.5	17300	17700	18000	17000				
4	13500	14000	14500	14700				
4.5	10300	11000	11500	11800	12000			
5	8800	9500	9900	10100	10200			
5.5	7600	8100	8400	8600	8700			
6	6500	6900	7000	7200	7400	7450	7500	
6.5	4800	5800	6100	6300	6450	6600	6700	
7	4300	5200	5300	5500	5700	5850	5900	5950
7.5	3750	4500	4750	4800	4900	5050	5100	5150
8		3650	4000	4200	4350	4500	4550	4650
9		2700	3050	3250	3400	3500	3600	3650
10			2350	2550	2700	2800	2900	2950
12			1350	1500	1600	1750	1800	1900
14				900	1000	1100	1150	1200
Min. angle (empty load)	0°			28°	40°	47°	52°	57°
Load (0°)	2700	1450	550					
Parts of Line	6	6	6	4	4	4	4	3

Load Chart, Main Boom, Travel with Load (≤4 km/h) , Center Front

4t Counterweight

Radius (m) \ Boom (m)	Load Chart, Main Boom, Travel with Load(4 km/h), Center Front Unit:(kg)			
	10	12.19	15.24	18.29
3	12400	12300		
3.5	11100	11000		
4	9900	9850		
4.5	9000	8900	8800	
5	8000	8100	8200	
5.5	7200	7400	7600	
6	6400	6600	6750	6800
6.5	5800	6050	6200	6250
7	5250	5550	5700	5750
7.5	4750	5050	5200	5250
8		4600	4800	4850
9		3900	4050	4100
10			3450	3550
12			2450	2550
14				1850
16				1200
Min. angle (empty load)	0°			
Parts of Line	4	4	4	4

WARNING: Full outriggers and counterweight 4000kg must be installed. Failure to do this may cause the crane tip over.

NOTES:

1.Capacities are applicable at 6.5 bar cold tire inflation pressure.

2.Capacities are applicable only with machine on firm level surface.

3.On tire lifting with the swingaway boom extension is not permitted.

4.For pick and carry operation, boom must be centered over the front of the machine with the swing lock engaged and the load restrained from swinging. When handling loads in the structural range with capacities close to maximum ratings, travel should be reduced to creep speeds. Especially avoid any abrupt steering, accelerating or braking.

5.Axle lockouts must be functioning when lifting on tires.

Load Chart , Main Boom, Stationary and on Tires, 360°

4t Counterweight

Radius (m) \ Boom (m)	Load Chart, Main Boom, Stationary and on Tires ,360° Unit:(kg)			
	10	12.19	15.24	18.29
3	11000	11000	10500	
3.5	9700	9700	9700	
4	8350	8600	8700	
4.5	7200	7350	7500	6300
5	6200	6300	6500	5800
5.5	5250	5350	5600	5300
6	4250	4450	4650	4700
6.5	3550	3850	4050	4100
7	2950	3300	3550	3600
7.5	2350	2750	3050	3100
8		2300	2650	2700
9		1800	1900	2050
10			1350	1600
12			850	900
Min. angle (empty load)	0°		24°	40°
Parts of Line	4	4	4	4

WARNING: Full outriggers and counterweight 4000kg must be installed. Failure to do this may cause the crane tip over.

NOTES:

1.Capacities are applicable at 6.5 bar cold tire inflation pressure.

2.Capacities are applicable only with machine on firm level surface.

3.On tire lifting with the swingaway boom extension is not permitted.

4.Axle lockouts must be applied when lifting on tires.

5.Parking brake must be applied when lifting on tires.

Load Chart , Main Boom, Stationary and on Tires, Center Front

4t Counterweight

Radius (m) \ Boom (m)	Load Chart, Main Boom, Stationary and on Tires, Center Front			Unit:(kg)
	10	12.19	15.24	18.29
3	14000	14300	14500	
3.5	12200	12300	12500	
4	10800	11000	11200	
4.5	9800	9900	10000	10200
5	8700	9000	9100	9200
5.5	7800	8200	8300	8400
6	7000	7400	7700	7800
6.5	6400	6700	7200	7300
7	5600	6100	6500	6600
7.5	4800	5600	5900	6000
8		4900	5200	5400
9		4000	4300	4400
10			3500	3600
12			2500	2600
14				1900
16				1300
Min. angle (empty load)	0°			
Parts of Line	4	4	4	4

WARNING: Full outriggers and counterweight 4000kg must be installed. Failure to do this may cause the crane tip over.

NOTES:

1.Capacities are applicable at 6.5 bar cold tire inflation pressure.

2.Capacities are applicable only with machine on firm level surface.

3.On tire lifting with the swingaway boom extension is not permitted.

4.Axle lockouts must be applied when lifting on tires.

5.Parking brake must be applied when lifting on tires.

Load Chart , Swingaway Boom Extension, Outriggers 100% Extended, 360°

4t Counterweight

Boom Angle (°)	Load Chart, Main Boom Fully Extended + Swingsway Boom Extension, Outriggers 100% Extended, 360° Unit: (kg)					
	31.5 + 7.9(m)					
	0°		15°		30°	
	Load (kg)	Radius (m)	Load (kg)	Radius (m)	Load (kg)	Radius (m)
78	3800	7.6	2900	9.3	2200	10.8
76	3700	9	2750	10.7	2150	12.1
74	3600	10.4	2650	12	2050	13.4
72	3400	11.8	2550	13.3	2000	14.7
70	3200	13.2	2450	14.6	1950	16
68	3050	14.5	2350	15.9	1900	17.2
66	2900	15.8	2250	17.2	1800	18.4
64	2700	17.1	2150	18.4	1750	19.6
62	2550	18.3	2050	19.5	1700	20.8
60	2400	19.4	1950	20.6	1650	21.9
58	2250	20.5	1800	21.7	1600	23.1
56	2000	21.6	1700	22.8	1500	24.1
54	1800	22.7	1600	23.8	1400	25.1
52	1600	23.7	1450	24.8	1300	26
50	1450	24.7	1300	25.8	1200	26.9
Min Angle (°)	32		34		35	

4t Counterweight

Boom Angle (°)	Load Chart, Main Boom Fully Extended + Swingsway Boom Extension, Outriggers 100% Extended, 360° Unit: (kg)					
	31.5 +13.7(m)					
	0°		15°		30°	
	Load (kg)	Radius (m)	Load (kg)	Radius (m)	Load (kg)	Radius (m)
78	2100	8.7	1600	12.1	1200	14.8
76	2050	10.3	1550	13.7	1150	16.4
74	2000	11.9	1500	15.2	1100	17.8
72	1950	13.5	1450	16.7	1100	19.2
70	1900	15.1	1400	18.2	1100	20.6
68	1800	16.6	1350	19.7	1050	22
66	1700	18.1	1300	21.1	1000	23.3
64	1600	19.6	1250	22.5	1000	24.6
62	1500	21.1	1200	23.9	950	25.9
60	1450	22.5	1150	25.2	950	27.1
58	1400	23.9	1100	26.4	950	28.3
56	1300	25.1	1050	27.6	950	29.5
54	1200	26.3	1000	28.8	900	30.6
52	1100	27.5	950	29.9	900	31.5
50	1000	28.7	900	31	850	32.5
Min Angle (°)	34		37		39	

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.

NOTES:

1.The capacities listed are with the outriggers fully extended and vertical jacks properly set only.

2.The swingaway boom extension may only be used for single line lifting service.

3.Use only the load which corresponds to the boom extension length and offset angle as the machine is configured.

4.For boom angles not shown, use the rating of the next lower boom angle.

5.The boom angle is defined as the angle above or below the horizontal line of the longitudinal axis of the boom base section after lifting the rated load.

6.When lifting over the main boom nose with the boom extension erected, the outriggers must be fully extended and the proper load reduction must be used.

7.Do not lower the boom below the minimum boom angle with the extension erected. Fully retract the boom to lower the boom below the minimum boom angle.

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