



# TADANO

# GR-1000XLL-4

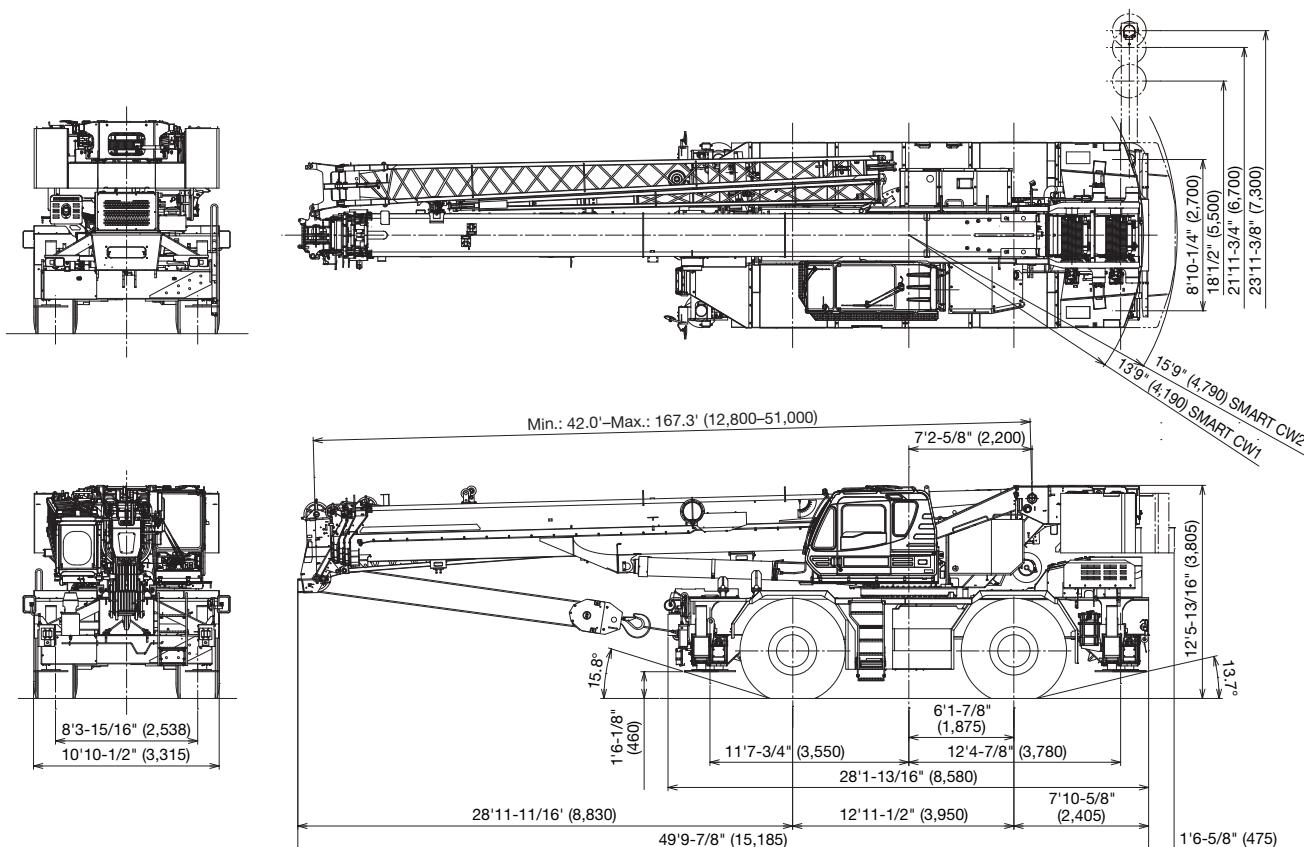
**(Left-hand drive)**

## **100 Ton (90.7 Metric Ton) Capacity**

Form NO. GR-1000-4-00104/US-01

# HYDRAULIC ROUGH TERRAIN CRANE

## DIMENSIONS



Note: Dimension is with boom angle at -1.5 degree.  
( ) Reference dimensions in mm.

## GENERAL DIMENSIONS

	Feet	Meters		Feet	Meters
Turning radius (29.5-25 Tires)			Overall length	approx. 49' 9-7/8"	15.185
4 wheel steer	22' 4"	6.8	Overall width	approx. 10' 10-1/2"	3.315
2 wheel steer	35' 9-3/32"	10.9	Overall height	approx. 12' 5-13/16"	3.805

# CRANE SPECIFICATIONS

## BOOM

5 section full power synchronized telescoping boom, 42.0'-167.3' (12.8 m-51.0 m), of round box construction with 7 sheaves, 17-5/16" (0.44 m) root diameter, at boom head. The synchronization system consists of 2 telescope cylinders, an extension cable and retraction cable. Hydraulic cylinder fitted with holding valve. 2 easily removable wire rope guards, rope dead end provided on both sides of boom head. Boom telescope sections are supported by wear pads both vertically and horizontally. Extension speed 125.3' in 170 seconds.

**BOOM ELEVATION** - By a double acting hydraulic cylinder with holding valve. Elevation -1.5°-80.5°, combination controls for hand or foot operation. Boom angle indicator. Automatic speed reduction and slow stop function.

Boom raising speed 20° to 60° in 46 seconds.

**JIB** - 2 stage bi-fold lattice type, 3.5°, 25° or 45° offset (tilt type). Single sheave, 15-5/8" (0.396 m) root diameter, at the head of both jib sections. Stored alongside base boom section. Jib length is 33.2' (10.1 m) or 58.1' (17.7 m). Assistant cylinders for mounting and stowing, controlled at right side of superstructure. Self stowing jib mounting pins.

## AUXILIARY LIFTING SHEAVE (SINGLE TOP)

Single sheave, 15-5/8" (0.396 m) root diameter. Mounted to main boom head for single line work (stowable).

**ANTI-TWO BLOCK** - Pendant type over-winding cut out device with audio-visual (FAILURE lamp/BUZZER) warning system.

## SLEWING

Hydraulic axial piston motor through planetary slewing speed reducer. Continuous 360° full circle slewing on ball bearing turn table at 1.5 min<sup>-1</sup> {rpm}. Equipped with manually locked/released slewing brake. A 360° positive slewing lock for pick and carry and travel modes, manually engaged in cab. Twin slewing system: Free slewing or lock slewing controlled by selector switch on front console.

## WINCH

**MAIN WINCH** - Variable speed type with grooved drum driven by hydraulic axial piston motor through speed reducer. Power load lowering and raising. Equipped with automatic brake (neutral brake) and counterbalance valve. Controlled independently of auxiliary winch. Equipped with cable follower and drum rotation indicator.

**DRUM** - Grooved 14-1/4" (0.362 m) root diameter x 26-13/16" (0.681 m) wide. Wire rope: 935' of 3/4" diameter rope (285 m of 19 mm). Drum capacity: 1135' (346 m) 7 layers. Maximum single line pull: 1st layer 20,000 lbs (9,090 kg). Maximum permissible line pull wire strength: 14,600 lbs (6,600 kg).

**AUXILIARY WINCH** - Variable speed type with grooved drum driven by hydraulic axial piston motor through speed reducer. Power load lowering and raising. Equipped with automatic brake (neutral brake) and counterbalance valve. Controlled independently of main winch. Equipped with cable follower and drum rotation indicator.

**DRUM** - Grooved 14-1/4" (0.362 m) root diameter x 26-13/16" (0.681 m) wide. Wire rope: 482' of 3/4" diameter rope (147 m of 19 mm). Drum capacity: 1135' (346 m) 7 layers. Maximum single line pull: 1st layer 20,000 lbs (9,090 kg). Maximum permissible line pull wire strength: 14,600 lbs (6,600 kg).

**WIRE ROPE** - Non-rotating 3/4" (19 mm) P·S (19) + 39 x P·7  
Breaking Strength 72,800 lbs (33,000 kg)

## HOOK BLOCKS

100 ton (90.7 metric ton)-8 sheaves with swivel hook and safety latch, for 3/4" (19 mm) wire rope.  
7.3 ton (6.6 metric ton) - Weighted hook with swivel and safety latch, for 3/4" (19 mm) wire rope.

## COUNTERWEIGHT

Self-removable counterweight ..... 24,700 lbs (11,200 kg)

## HYDRAULIC SYSTEM

**PUMPS** - 2 variable piston pumps for crane functions. Tandem gear pump for steering slewing and other hydraulic systems. Powered by carrier engine. Pump disconnect for crane is engaged/disengaged by rotary switch from operator's cab.

**CONTROL VALVES** - Multiple valves actuated by pilot pressure with integral pressure relief valves.

**RESERVOIR** - 210 gallon (795 lit.) capacity. External sight level gauge.

**FILTRATION** - BETA10=10 return filter, full flow with bypass protection, located inside of hydraulic reservoir. Accessible for easy replacement.

**OIL COOLER** - Air cooled fan type.

## CAB AND CONTROLS

Both crane and drive operations can be performed from one cab mounted on rotating superstructure.

20° tilt, Left side, 1 man type, steel construction with sliding door access and safety glass windows opening at side. Door window is powered control. Windshield glass window and roof glass window are shatter-resistant. Tilt-telescoping steering wheel. Adjustable control lever stands for slewing, boom elevating, boom telescoping, auxiliary winch and main winch. Control lever stands can change neutral positions and tilt for easy access to cab. 3 way adjustable operator's seat with high back, headrest and armrest. Engine throttle knob. Foot operated controls: boom elevating boom telescoping, service brake and engine throttle. Hot water cab heater and air conditioning.

Dash-mounted Instrument panel, Multi Function Display, Starter switch (engine start/stop), 12 V power outlet, USB port, drive selector switch, parking brake switch, steering mode select switch, power window switch, pump engaged/disengaged switch, slewing brake switch, telescoping/auxiliary winch select switch, outrigger controls, free slewing/lock slewing selector switch, air conditioning control switch.

Instruments panel - Torque converter oil temperature, engine water temperature, air pressure, fuel, speedometer, tachometer, hour meter and odometer/tripmeter.

Multi Function Display - DEF level gauge, Fuel consumption monitor.

Tadano electronic LOAD MOMENT INDICATOR system (AML-E2) including:

- Control lever lockout function with audible and visual pre-warning
- Number of parts of line
- Boom position indicator
- Outrigger state indicator
- Slewing angle
- Boom angle / boom length / jib offset angle / jib length / load radius / rated lifting capacities / actual loads read out
- Potential lifting height
- Ratio of actual load moment to rated load moment indication
- Automatic Speed reduction and slow stop function on boom elevation and slewing
- Working condition register switch
- Load radius / boom angle / tip height / slewing range preset function
- External warning lamp
- Tare function
- Main Hydraulic oil pressure
- Fuel consumption monitor

- Main winch / auxiliary winch select
- Drum rotation indicator (audible and visible type) main and auxiliary winch
- On rubber indicator

AML-E2 monitors outrigger extended length and automatically programs the corresponding "RATED LIFTING CAPACITIES" table.

Operator's right hand console includes transmission gear selector, slewing lock lever and sight level bubble.

Upper console includes, roof washer and wiper switch, emergency outrigger set up key switch, jib equipped / removed select switch, high speed winch (main / aux) switch, Cab tilt switch, Pump disconnect enable switch and boom emergency telescoping switch (2nd and 3rd-top).

NOTE: Each crane motion speed is based on unladen conditions.

## CARRIER SPECIFICATIONS

**TYPE** - Rear engine, left hand steering, driving axle 2-way selected type by manual switch, 4 x 2 front drive, 4 x 4 front and rear drive.

**FRAME** - High tensile steel, all welded mono-box construction.

**TRANSMISSION** - Electronically controlled full automatic transmission. Torque converter driving full powershift with driving axle selector. 6 forward and 2 reverse speeds, constant mesh.

3 speeds - high range - 2 wheel drive; 4 wheel drive  
3 speeds - low range - 4 wheel drive

**TRAVEL SPEED** - 22 mph (36 km/h)

**GRADEABILITY (tanθ)** - 84% (at stall), 57%\*

\* Machine should be operated within the limit of engine crankcase design (30°: Cummins B6.7)

**AXLE** - Front: Full floating type, steering and driving axle with planetary reduction. Rear: Full floating type, steering and driving axle with planetary reduction and non-spin rear differential.

**STEERING** - Hydraulic power steering controlled by steering wheel. Four steering modes available: 2 wheel front, 2 wheel rear, 4 wheel coordinated and 4 wheel crab.

**SUSPENSION** - Front: Rigid mounted to frame. Rear: Pivot mounted with hydraulic lockout device.

### ENGINE

Model	Cummins B6.7
Type	Direct injection diesel
No. of cylinders	6
Combustion	4 cycle, turbo charged and after cooled
BoreXStroke, in. (mm)	4.212 X 4.882 (107 X 124)
Displacement, cu. in. (liters)	409 (6.7)
Air inlet heater	24 volt preheat
Air cleaner	Dry type, replaceable element
Oil filter	Full flow with replaceable element
Fuel filter	Full flow with replaceable element
Fuel tank, gal. (liters)	79.2 (300), right side of carrier
Cooling	Liquid pressurized, recirculating by-pass

**BRAKE SYSTEMS** - Service: Air over hydraulic disc brakes on all 4 wheels. Parking / Emergency: Spring applied-air released brake acting on input shaft of front axle. Auxiliary: Electro-pneumatic operated exhaust brake.

**TIRES** - 29.5-25 36PR (OR) Air pressure: 68 psi (470 kPa)  
29.5-25 40PR (OR) Air pressure: 67 psi (465 kPa)

**OUTRIGGERS** - Four hydraulic, beam and jack outriggers. Vertical jack cylinders equipped with integral holding valve. Each outrigger beam and jack is controlled independently from cab. Beams extend to 23' 11-3/8" (7.3 m) center-line and retract to within 10' 10-1/2" (3.315 m) overall width with floats. Outrigger jack floats are attached thus eliminating the need of manually attaching and detaching them. Controls and sight bubble located in superstructure cab. Four outrigger extension lengths are provided with corresponding "RATED LIFTING CAPACITIES" for crane duty in confined areas.

Min. Extension 8' 10-1/4" (2.7 m) center to center  
Mid. Extension 18' 1/2" (5.5 m) center to center  
Mid. Extension 21' 11-3/4" (6.7 m) center to center  
Max. Extension 23' 11-3/8" (7.3 m) center to center

Float size (Diameter) 1' 11- 5/8" (0.6 m)

Radiator	Fin and tube core, thermostat controlled
Fan, in. (mm)	Suction type, 9-blade, 28 (711) dia.
Starting	24 volt
Charging	24 volt system, negative ground
Battery	2-120 amp. Hour
Compressor, air, CFM (l /min)	17.0 CFM (481) at 2,400 rpm
Output, Max. HP (kW)	Gross 280 (209) at 2,200 rpm
Torque, Max. ft-lb (Nm)	850 (1,152) at 1,500 rpm
Capacity, gal. (liters)	
Cooling water	2.7 (10)
Lubrication	4.0 (15)
Fuel	79.2 (300)
DEF/AdBlue	15.0 (57)

# STANDARD EQUIPMENT

- 5 section full power partially synchronized boom 42.0'-167.3' (12.8 m-51.0 m)
- 33.2' or 58.1' (10.1 m or 17.7 m) bi-fold lattice jib (tilt type) with 3.5°, 25° or 45° pinned offsets and self storing pins.
- Quick reeving type bi-fold jib
- Anti-Two block device (overwind cutout)
- Winch drum camera with light
- LED work lights
- Variable speed main winch with grooved drum, cable follower, drum rotation indicator (audible, visible and thumper type) and 935' of 3/4" cable.
- Variable speed auxiliary winch with grooved drum, cable follower, drum rotation indicator (audible, visible and thumper type) and 482' of 3/4" cable.
- Auxiliary lifting sheave (single top) stowable
- 2-speed winch
- 100 ton (90.7 metric ton) hook block - 8 sheave with swivel hook and safety latch for 3/4" (19 mm) wire rope
- 7.3 ton (6.6 metric ton) hook with swivel
- Tadano twin slewing system and 360° positive slewing lock
- Positive control
- Hydraulic oil cooler
- 3 way adjustable cloth seat with armrests, high back and seat belt
- Tilt-telescoping steering wheel
- Tinted safety glass and sun visor
- Front windshield wiper and washer
- Roof window wiper and washer
- Power window (cab door)
- 12V power outlet
- Ashtray
- Cab floor mat
- Pump disconnect in operator's cab
- Air conditioner (hot water heater and cooler)
- Full instrumentation package
- Self centering finger control levers with pilot control
- Control pedals for boom elevating and boom telescoping
- Low oil pressure / high water temp. warning device (visual)
- Air cleaner dust indicator
- Cup holder
- Battery disconnect
- USB port
- 20° tilt cab
- Wind speed indicator
- Emergency steering system

- Tadano electronic load moment indicator system (AML-E2)
- Boom angle indicator
- Outrigger extension length detector
- Electronic crane monitoring system
- Rear view camera
- Right front view camera
- Fenders
- Air dryer
- Complete highway light package
- Towing hooks-Front and rear
- Hook block tie down (front bumper)
- Weighted hook storage compartment
- Halogen head lamp
- Independently controlled outriggers
- Four outrigger extension positions
- Self-storing outrigger pads
- Electronic controlled automatic transmission driven by torque converter
- 4 X 4 X 4 drive / steer
- Non-spin rear differential
- Automatic rear axle oscillation lockout system
- 29.5-25 36 PR tires
- 29.5-25 40 PR tires
- Disc brakes
- Water separator with filter (high filtration)
- Back-up alarm
- 24 volt electric system
- Tool storage compartment
- Tire inflation kit
- Cummins B6.7 turbo charged after cooled engine (280 HP) with exhaust brake
- Engine over-run alarm
- Lifting eyes
- Telematics (machine data logging and monitoring system) with HELLO-NET via internet (availability depends on countries)
- Fuel consumption monitor
- Eco mode system
- Self-removable counterweight
- Radiator cover
- Clearance sonar (Rear side)
- Automatic pump disconnect
- Over unwinding prevention

# OPTIONAL EQUIPMENT

- Auxiliary power unit

# HOISTING PERFORMANCE

## LINE SPEEDS AND PULLS

Layer	Main or auxiliary hoist - 14'-1/4" (0.362 m) drum							
	Line speeds <sup>1</sup>				Line pulls Available <sup>2</sup>			
	Low		High		Low		High	
F.P.M	m/min	F.P.M	m/min	Lbs.	kgf	Lbs.	kgf	
1st	278	84	387	118	20,000	9,090	14,400	6,520
2nd	302	92	421	128	18,100	8,230	13,000	5,900
3rd	327	99	456	139	16,600	7,520	11,900	5,390
4th	352	107	491	149	15,300	6,920	10,900	4,960
5th	377	115	526	160	14,100	6,410	10,100	4,600
6th	402	122	560	170	13,200	5,970	9,400	4,280
7th <sup>3</sup>	427	130	595	181	12,300	5,590	8,800	4,010

- Maximum permissible line pull wire strength 14,600 lbs (6,600 kg).

- <sup>1</sup> Line speeds based only on hook block, not loaded.
- <sup>2</sup> Developed by machinery with each layer of wire rope, but not based on rope strength or other limitation in machinery or equipment.
- <sup>3</sup> Seventh layer of wire rope are not recommended for hoisting operations.

## DRUM WIRE ROPE CAPACITIES

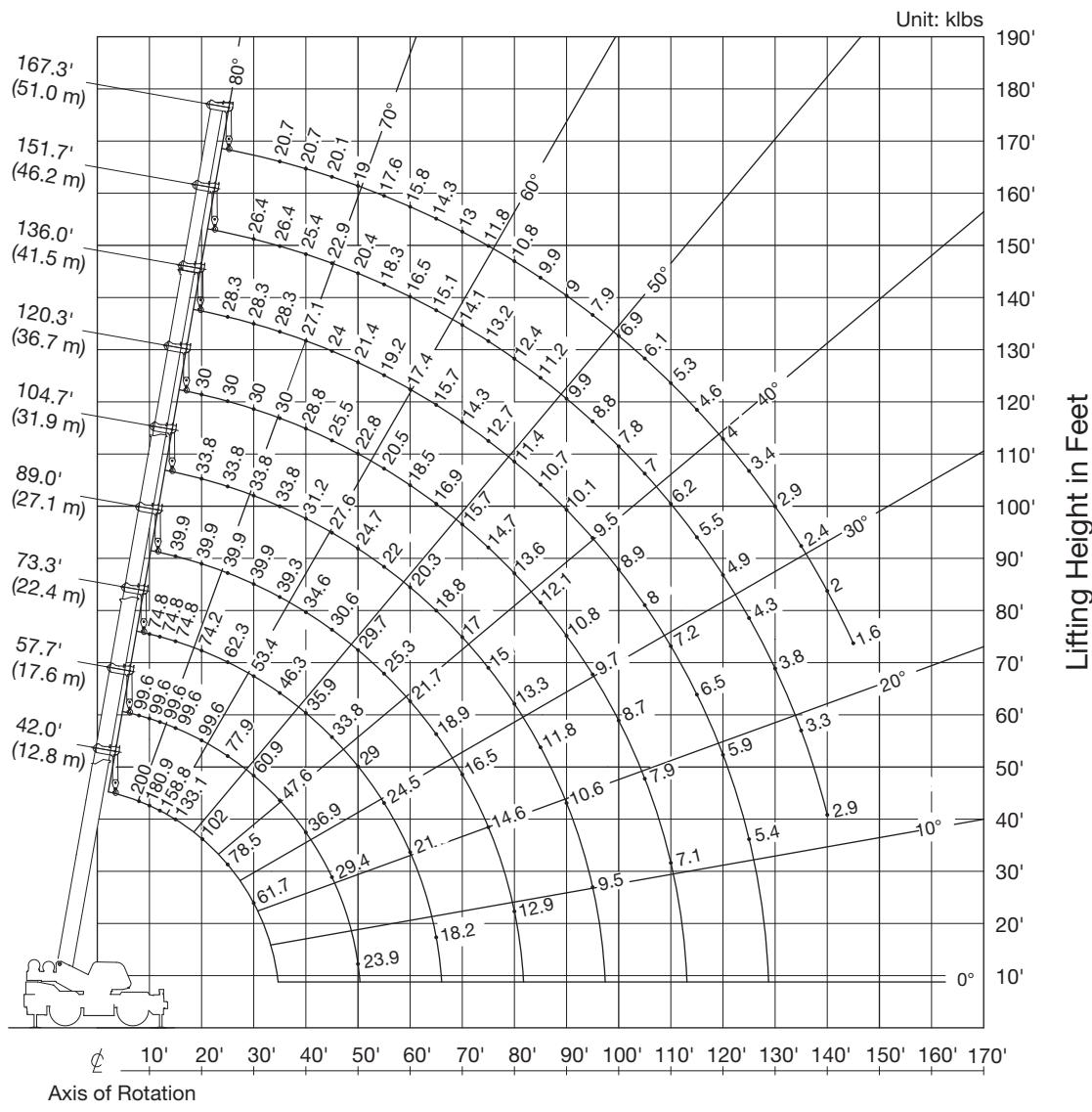
Wire rope layer	Main and auxiliary drum grooved lagging 3/4" (19 mm) wire rope			
	Rope per layer m		Total wire rope m	
	Feet	Meters	Feet	Meters
1	128.0	39.0	128.0	39.0
2	139.4	42.5	267.4	81.5
3	150.9	46.0	418.3	127.5
4	162.1	49.4	580.4	176.9
5	173.9	53.0	754.3	229.9
6	185.4	56.5	939.6	286.4
7	196.9	60.0	1,136.5	346.4

## DRUM DIMENSIONS

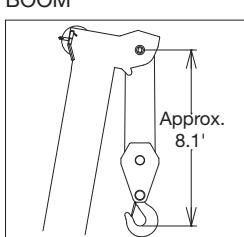
	Inch	mm
Root diameter	14-1/4"	362
Length Flange diameter	26-13/16"	681
	25-7/8"	657

# GR-1000XLL-4 WORKING RANGE CHART

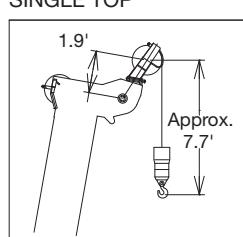
## SMART CW1 360° ROTATION



BOOM



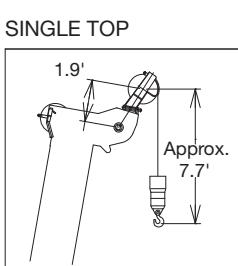
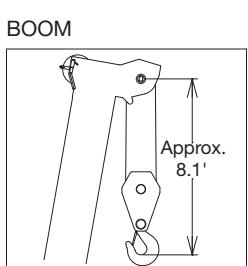
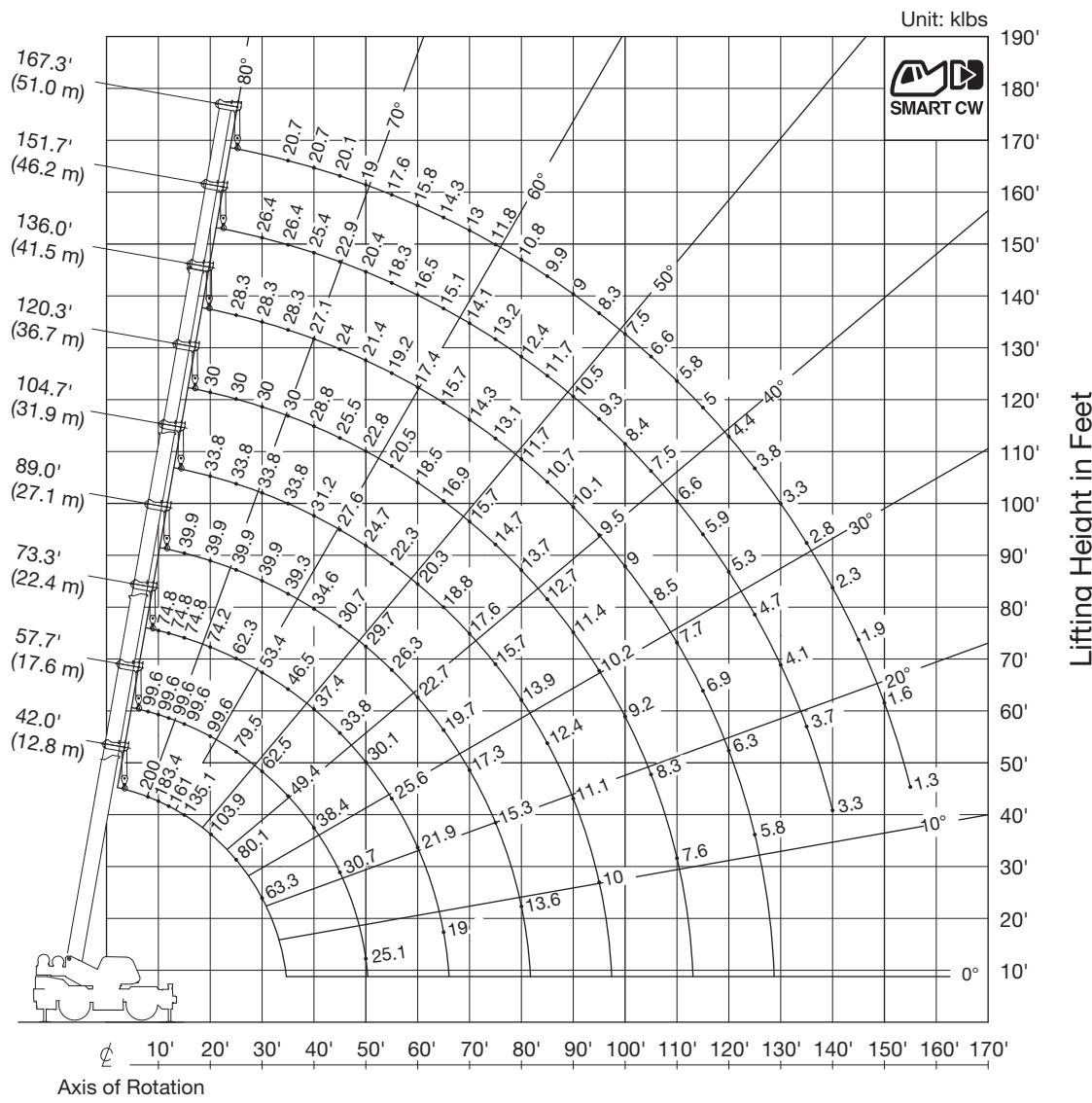
SINGLE TOP



NOTE: Boom geometry shown is for unloaded condition and machine standing level on firm supporting surface.  
Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.  
When boom length is same as telescoping mode 1 and 2, it show large load.

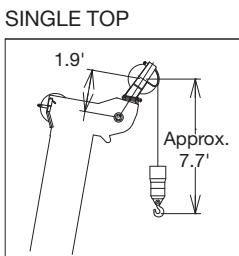
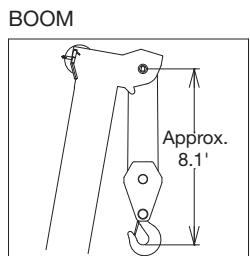
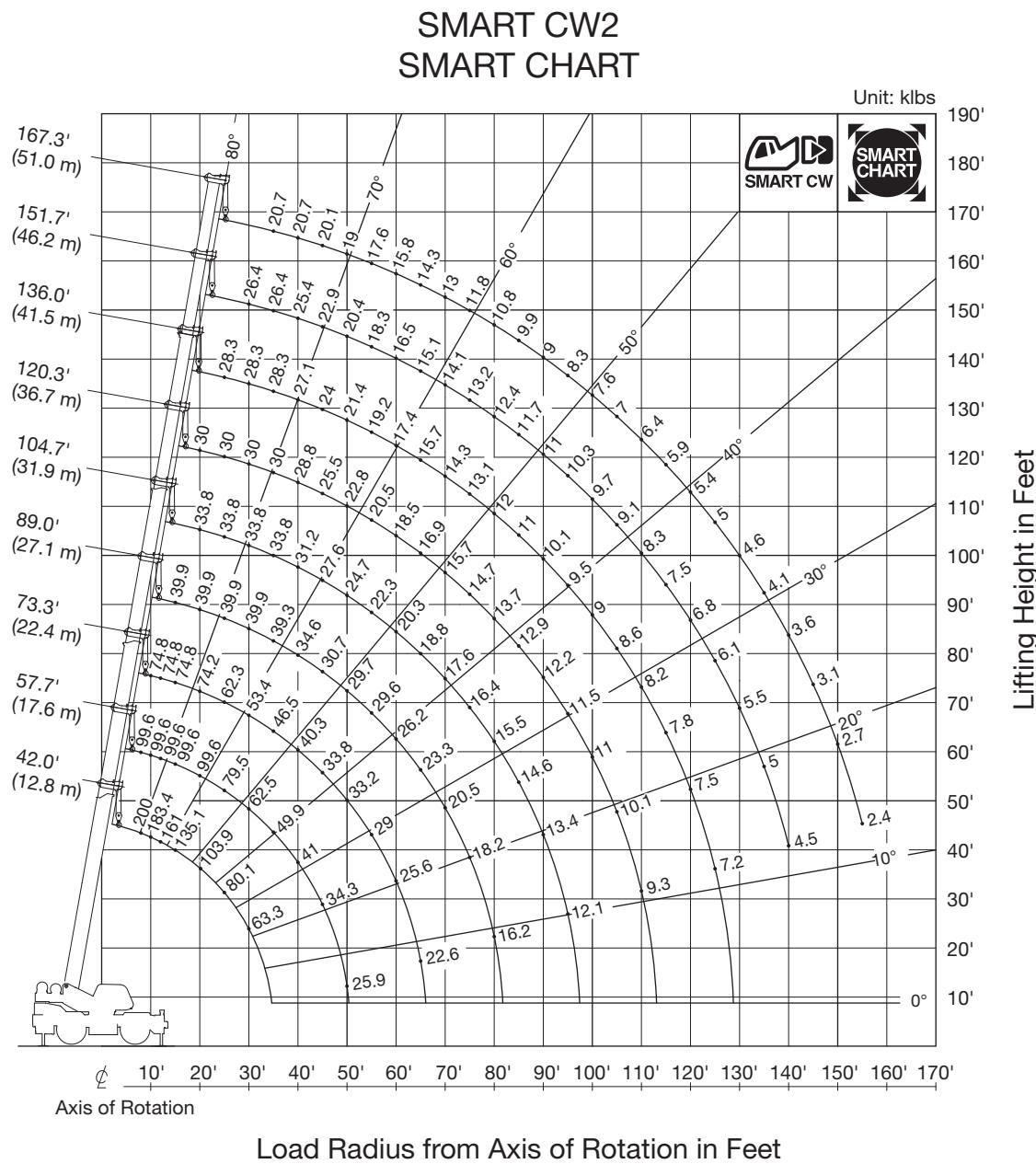
# GR-1000XLL-4 WORKING RANGE CHART

## SMART CW2 360° ROTATION



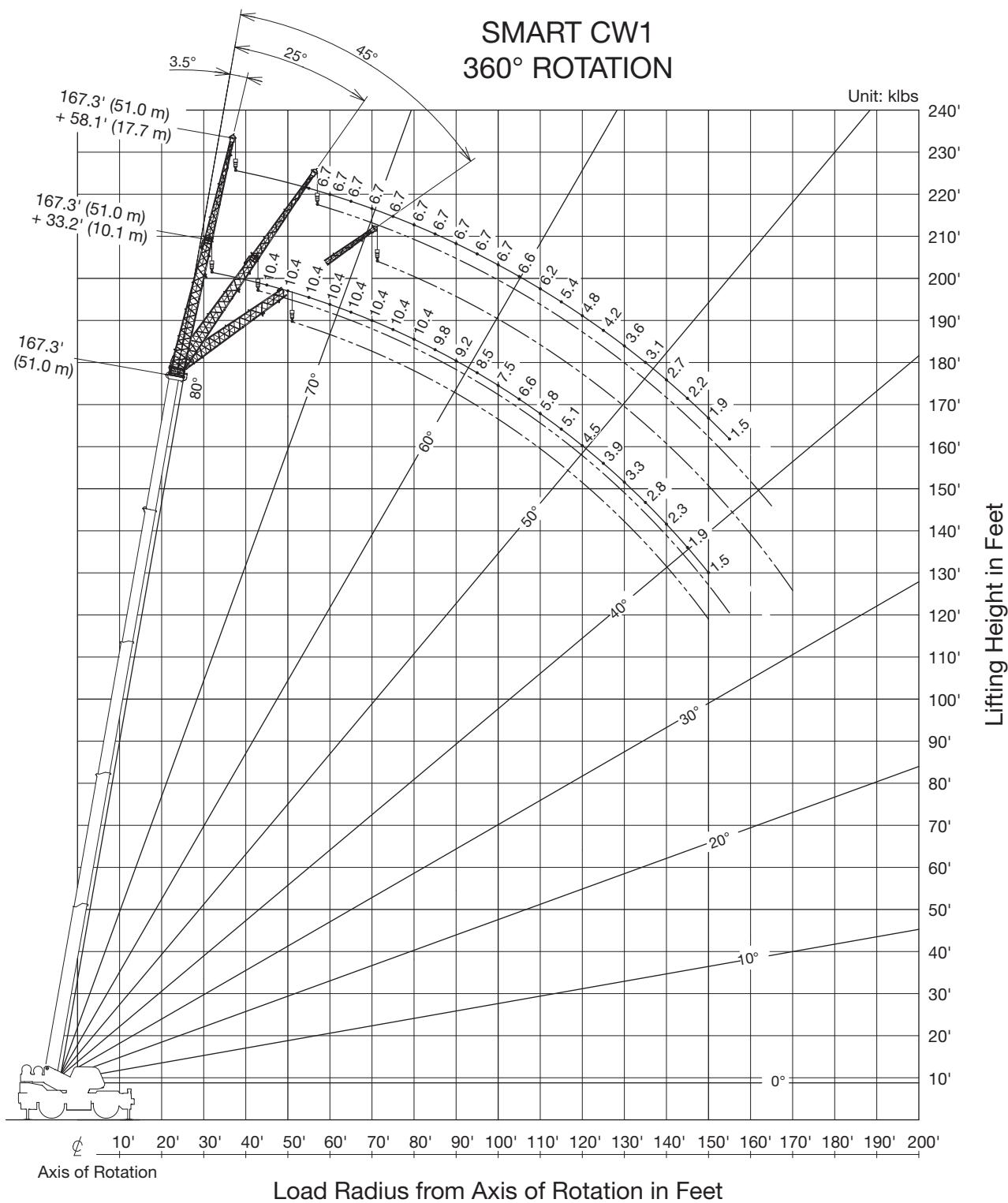
NOTE: Boom geometry shown is for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook. When boom length is same as telescoping mode 1 and 2, it show large load.

# GR-1000XLL-4 WORKING RANGE CHART

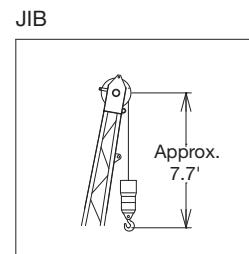


NOTE: Boom geometry shown is for unloaded condition and machine standing level on firm supporting surface.  
 Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.  
 When boom length is same as telescoping mode 1 and 2, it show large load.

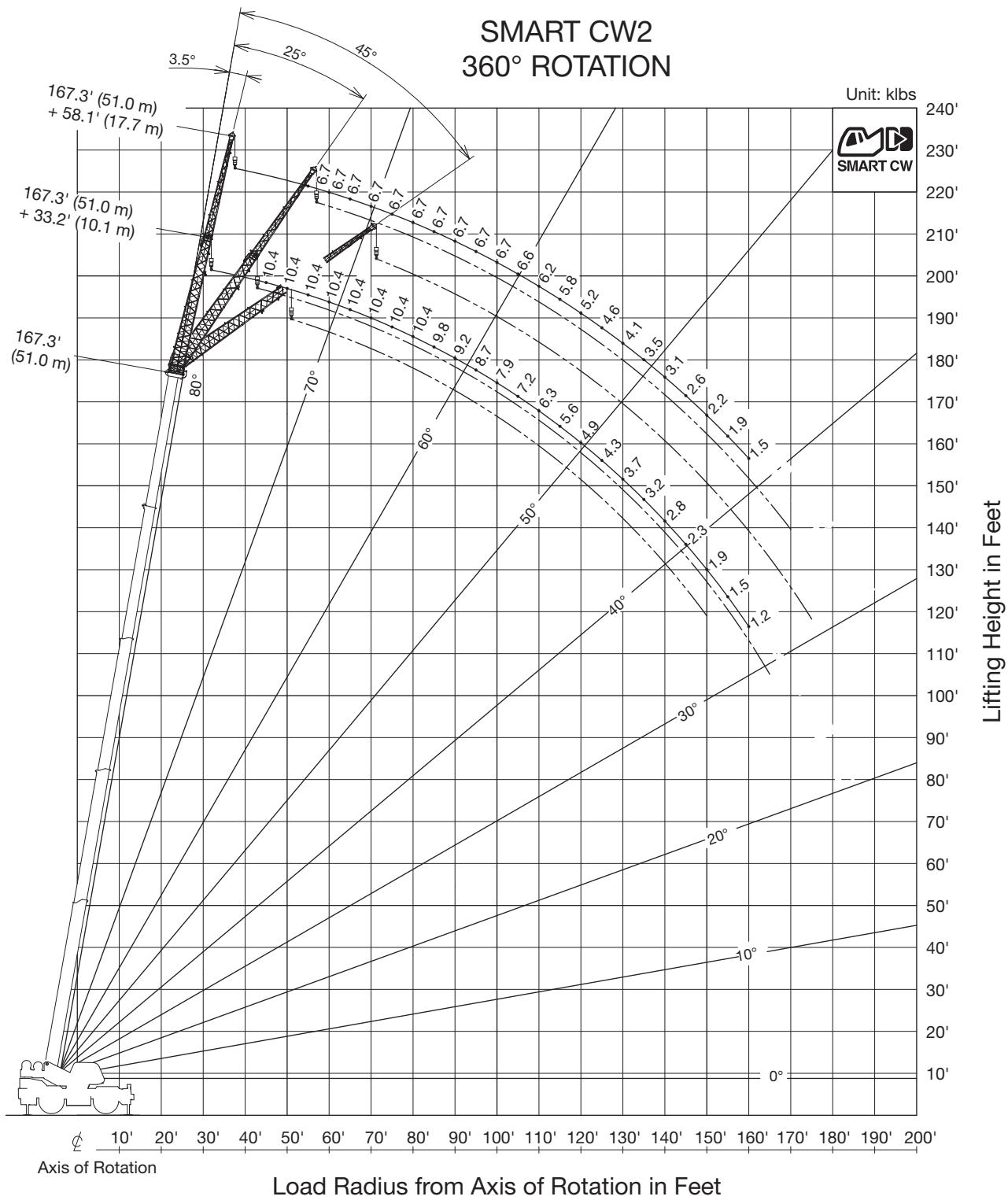
# GR-1000XLL-4 WORKING RANGE CHART



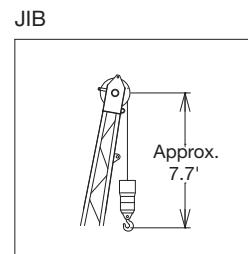
NOTE: Jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.



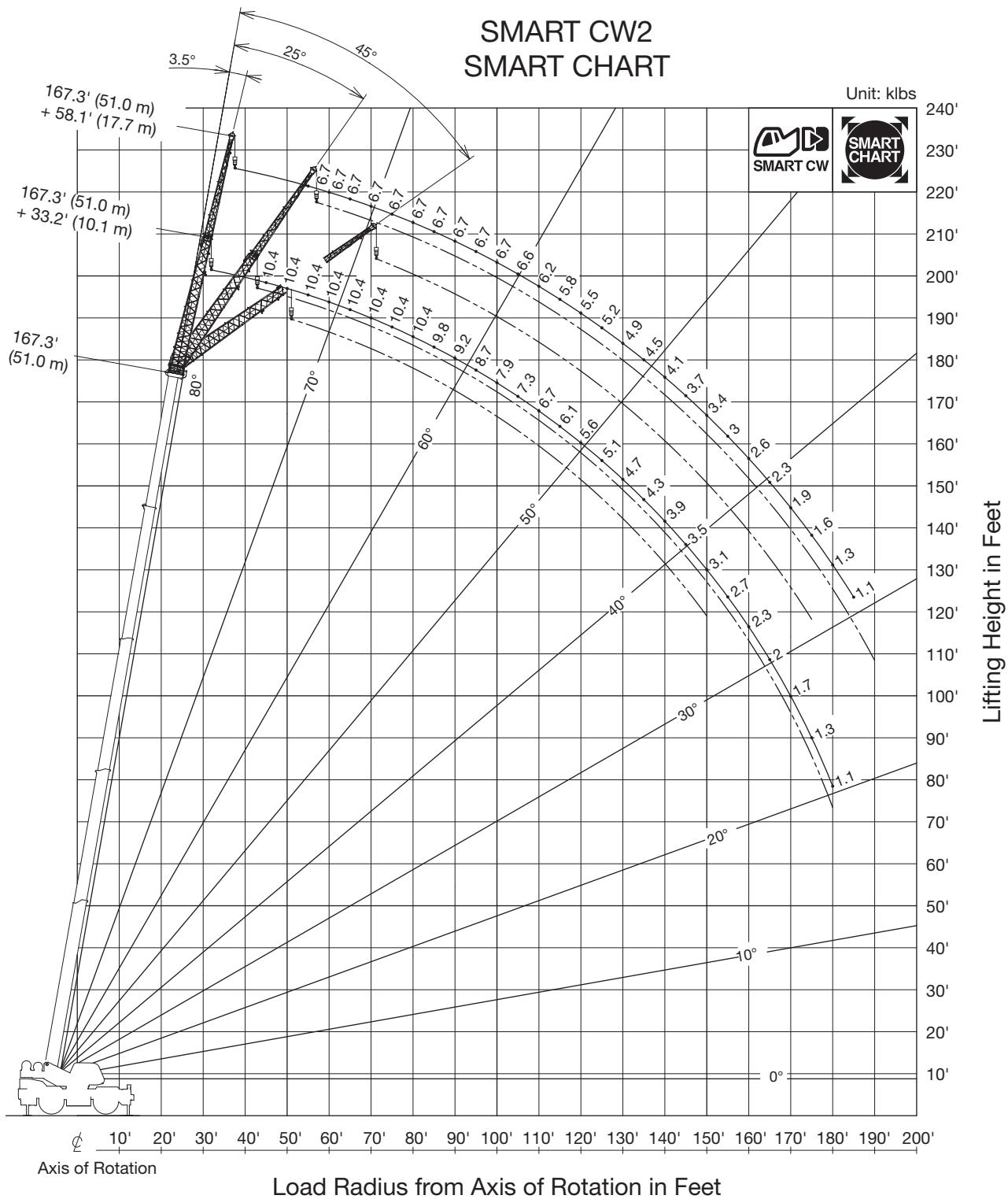
# GR-1000XLL-4 WORKING RANGE CHART



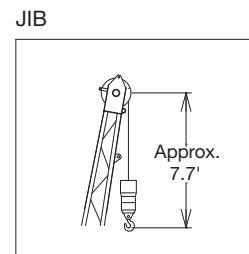
NOTE: Jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.



# GR-1000XLL-4 WORKING RANGE CHART



NOTE: Jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.



## GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

COUNTERWEIGHT 24,700lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW1															
B \ A	42.0' (12.8 m)	57.7' (17.6 m)	73.3' (22.4 m)		89.0' (27.1 m)		104.7' (31.9 m)		120.3' (36.7 m)		136.0' (41.5 m)		151.7' (46.2 m)	167.3' (51 m)	
8	200,000	99,600													
10	180,900	99,600	74,800	33,800											
12	158,800	99,600	74,800	33,800											
15	133,100	99,600	74,800	33,800	39,900	29,700									
20	102,000	99,600	74,200	33,800	39,900	29,700	33,800	27,700	30,000	27,600					
25	78,500	77,900	62,300	33,800	39,900	29,700	33,800	27,700	30,000	27,600	28,300	27,500			
30	61,700	60,900	53,400	33,800	39,900	29,700	33,800	27,700	30,000	27,600	28,300	26,100	26,400 24,100		
35		47,600	46,300	33,800	39,300	29,700	33,800	27,700	30,000	27,400	28,300	23,900	26,400 23,600 20,700		
40		36,900	35,900	33,800	34,600	29,700	31,200	27,700	28,800	25,000	27,100	21,500	25,400 22,000 20,700		
45		29,400	28,500	33,800	30,600	29,700	27,600	26,300	25,500	23,000	24,000	19,500	22,900 20,500 20,100		
50		23,900	23,000	29,000	25,000	29,700	24,700	23,900	22,800	21,200	21,400	17,800	20,400 19,100 19,000		
55			18,800	24,500	20,800	25,300	21,800	22,000	20,500	19,800	19,200	16,300	18,300 17,600 17,600		
60			15,400	21,000	17,400	21,700	18,400	20,300	18,500	18,200	17,400	15,000	16,500 16,200 15,800		
65			12,800	18,200	14,600	18,900	15,700	18,800	16,400	16,900	15,700	14,000	14,900 15,100 14,300		
70					12,300	16,500	13,400	17,000	14,100	15,700	14,300	13,000	13,600 14,100 13,000		
75					10,400	14,600	11,400	15,000	12,200	14,700	12,700	12,100	12,400 13,200 11,800		
80					8,800	12,900	9,800	13,300	10,500	13,600	11,000	11,400	11,300 12,400 10,800		
85						8,400	11,800	9,100	12,100	9,600	10,700	10,000	11,200 9,900		
90							7,200	10,600	7,900	10,800	8,400	10,100	8,800 9,900 9,900		
95							6,100	9,500	6,800	9,700	7,300	9,500	7,600 8,800 7,900		
100									5,800	8,700	6,300	8,900	6,700 7,800 6,900		
105									5,000	7,900	5,500	8,000	5,800 7,000 6,100		
110									4,300	7,100	4,700	7,200	5,000 6,200 5,300		
115										4,000	6,500	4,300	5,500 4,600		
120										3,400	5,900	3,700	4,900 4,000		
125										2,900	5,400	3,200	4,300 3,400		
130											2,700	3,800	2,900		
135											2,200	3,300	2,400		
140											1,800	2,900	2,000		
145												1,600			
D			0°						10°	0°	12°	0°	15°	13°	26°
Telescoping mode	1, 2	1	1	2	1	2	1	2	1	2	1	2	1	2	1, 2
2nd Boom	0	50	100	0	100	0	100	0	100	0	100	0	100	50	100
3rd Boom	0	0	0	33	16	50	33	67	50	83	67	100	83	100	100
4th Boom	0	0	0	33	16	50	33	67	50	83	67	100	83	100	100
Top Boom	0	0	0	33	16	50	33	67	50	83	67	100	83	100	100

A: Boom length in feet

A: Boom length in feet  
B: Load radius in feet

C: Loaded boom angle ( °)

D: Minimum boom angle (°) for indicated length (no load)

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-E2) is based on the standard number of parts of line listed in the chart. Standard number of parts of line for each boom length should be according to the following table.

Boom length in feet (meters)	42.0' (12.8 m)	42.0' to 73.3' (12.8 m to 22.4 m)	73.3' to 167.3' (22.4 m to 51 m)	Single top jib
Telescoping mode	1, 2	1	2	1, 2
Number of parts of line	16	8	4	4

# GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

A		COUNTERWEIGHT 24,700lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW2														
		42.0' (12.8 m)	57.7' (17.6 m)	73.3' (22.4 m)		89.0' (27.1 m)		104.7' (31.9 m)		120.3' (36.7 m)		136.0' (41.5 m)		151.7' (46.2 m)	167.3' (51 m)	
B																
8	200,000	99,600														
10	183,400	99,600	74,800	33,800												
12	161,000	99,600	74,800	33,800												
15	135,100	99,600	74,800	33,800	39,900	29,700										
20	103,900	99,600	74,200	33,800	39,900	29,700	33,800	27,700	30,000	27,600						
25	80,100	79,500	62,300	33,800	39,900	29,700	33,800	27,700	30,000	27,600	28,300	27,500				
30	63,300	62,500	53,400	33,800	39,900	29,700	33,800	27,700	30,000	27,600	28,300	26,100	26,400	24,100		
35		49,400	46,500	33,800	39,300	29,700	33,800	27,700	30,000	27,400	28,300	23,900	26,400	23,600		
40		38,400	37,400	33,800	34,600	29,700	31,200	27,700	28,800	25,000	27,100	21,500	25,400	22,000		
45		30,700	29,800	33,800	30,700	29,700	27,600	26,300	25,500	23,000	24,000	19,500	22,900	20,500		
50		25,100	24,100	30,100	26,200	29,700	24,700	23,900	22,800	21,200	21,400	17,800	20,400	19,100		
55			19,800	25,600	21,800	26,300	22,300	22,000	20,500	19,800	19,200	16,300	18,300	17,600		
60			16,400	21,900	18,300	22,700	19,300	20,300	18,500	18,200	17,400	15,000	16,500	16,200		
65			13,600	19,000	15,400	19,700	16,500	18,800	16,800	16,900	15,700	14,000	14,900	15,100		
70					13,100	17,300	14,100	17,600	14,900	15,700	14,300	13,000	13,600	14,100		
75					11,100	15,300	12,100	15,700	12,900	14,700	13,100	12,100	12,400	13,200		
80					9,400	13,600	10,400	13,900	11,200	13,700	11,700	11,400	11,300	12,400		
85							9,000	12,400	9,700	12,700	10,200	10,700	10,400	11,700		
90							7,700	11,100	8,400	11,400	9,000	10,100	9,300	10,500		
95							6,600	10,000	7,300	10,200	7,800	9,500	8,200	9,300		
100									6,300	9,200	6,800	9,000	7,200	8,400		
105									5,500	8,300	5,900	8,500	6,300	7,500		
110									4,700	7,600	5,100	7,700	5,500	6,600		
115											4,400	6,900	4,800	5,900		
120											3,800	6,300	4,100	5,300		
125											3,300	5,800	3,500	4,700		
130												3,000	4,100	3,300		
135												2,600	3,700	2,800		
140												2,200	3,300	2,300		
145														1,900		
150														1,600		
155														1,300		
D									0°	10°	0°	12°	0°	15°	13°	18°
Telescoping mode	1, 2	1	1	2	1	2	1	2	1	2	1	2	1	2	1, 2	
2nd Boom	0	50	100	0	100	0	100	0	100	0	100	0	100	50	100	
3rd Boom	0	0	0	33	16	50	33	67	50	83	67	100	83	100	100	
4th Boom	0	0	0	33	16	50	33	67	50	83	67	100	83	100	100	
Top Boom	0	0	0	33	16	50	33	67	50	83	67	100	83	100	100	

COUNTERWEIGHT 24,700lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW2														
A	42.0'	57.7'	73.3'	73.3'	89.0'	89.0'	104.7'	104.7'		120.3'		136.0'		
	B (12.8 m)	B (17.6 m)	B (22.4 m)	B (22.4 m)	B (27.1 m)	B (27.1 m)	B (31.9 m)	B (31.9 m)		B (36.7 m)		B (41.5 m)		
0°	35.2	19,700	50.7	10,900	66.1	4,600	66.1	9,500	81.7	3,200	81.8	6,700	97.2	5,200
Telescoping mode	1, 2	1	1	2	1	2	1	2	1	2	1	2	1	

A: Boom length in feet

B: Load radius in feet

C: Loaded boom angle (°)

D: Minimum boom angle (°) for indicated length (no load)

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-E2) is based on the standard number of parts of line listed in the chart.  
Standard number of parts of line for each boom length should be according to the following table.

Boom length in feet (meters)	42.0' (12.8 m)	42.0' to 73.3' (12.8 m to 22.4 m)	73.3' to 167.3' (22.4 m to 51 m)	Single top jib
Telescoping mode	1, 2	1	2	1, 2
Number of parts of line	16	8	4	4

## GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

COUNTERWEIGHT 24,700lbs (11.2 t)																				
ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8" (7.3 m) SPREAD																				
SMART CHART																				
SMART CW2																				
A		42.0'	57.7'	73.3'	73.3'	89.0'	89.0'	104.7'	104.7'	120.3'	136.0'									
C	B	(12.8 m)	B	(17.6 m)	B	(22.4 m)	B	(22.4 m)	B	(27.1 m)	B	(31.9 m)	B	(31.9 m)						
	0°	35.2	19,700	50.7	10,900	66.1	4,600	66.1	9,500	81.7	3,400	81.7	7,000	97.2	2,000	97.2	5,400	112.1	5,100	126.5
Telescoping mode		1,2	1	1	2	1	2	1	2	2	2									

#### A: Boom length in feet

A: Boom length in feet  
B: Load radius in feet

### C: Loaded boom angle ( °)

D: Minimum boom angle ( ° ) for indicated length (no load)

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-E2) is based on the standard number of parts of line listed in the chart. Standard number of parts of line for each boom length should be according to the following table.

Boom length in feet (meters)	42.0' (12.8 m)	42.0' to 73.3' (12.8 m to 22.4 m)		73.3' to 167.3' (22.4 m to 51 m)	Single top jib
Telescoping mode	1, 2	1	2	1, 2	1, 2
Number of parts of line	16	8	4	4	1

# GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

		COUNTERWEIGHT 24,700 lbs (11,2 t) ON OUTRIGGERS FULLY EXTENDED 23° 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW1					
B	167.3' (51 m) Boom + 33.2' (10.1 m) JIB			B	167.3' (51 m) Boom + 58.1' (17.7 m) JIB		
	3.5° Offset	25° Offset	45° Offset		3.5° Offset	25° Offset	45° Offset
45	10,400			45			
50	10,400			50			
55	10,400			55	6,700		
60	10,400	10,400		60	6,700		
65	10,400	10,400	9,800	65	6,700		
70	10,400	10,400	9,600	70	6,700		
75	10,400	10,200	9,400	75	6,700	6,200	
80	10,400	9,500	9,000	80	6,700	6,100	
85	9,800	9,000	8,500	85	6,700	5,900	
90	9,200	8,500	8,100	90	6,700	5,800	4,800
95	8,500	8,000	7,700	95	6,700	5,600	4,700
100	7,500	7,600	7,300	100	6,700	5,500	4,600
105	6,700	7,200	6,900	105	6,600	5,400	4,500
110	5,800	6,700	6,600	110	6,200	5,300	4,400
115	5,100	5,900	6,300	115	5,400	5,200	4,300
120	4,500	5,200	5,600	120	4,800	5,000	4,200
125	3,900	4,500	4,900	125	4,200	4,900	4,200
130	3,300	3,900	4,300	130	3,600	4,600	4,100
135	2,800	3,400	3,700	135	3,100	4,200	4,000
140	2,400	2,800	3,100	140	2,700	3,700	4,000
145	1,900	2,400	2,600	145	2,200	3,200	3,800
150	1,500	1,900	2,100	150	1,900	2,700	3,200
155		1,500		155	1,500	2,300	2,800
160				160		1,900	2,300
165				165		1,500	1,900
170				170			1,500
Telescoping mode	1, 2	1, 2	1, 2	Telescoping mode	1, 2	1, 2	1, 2

		COUNTERWEIGHT 24,700 lbs (11,2 t) ON OUTRIGGERS FULLY EXTENDED 23° 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW1					
B	151.7' (46.2 m) Boom + 33.2' (10.1 m) JIB			B	151.7' (46.2 m) Boom + 58.1' (17.7 m) JIB		
	3.5° Offset	25° Offset	45° Offset		3.5° Offset	25° Offset	45° Offset
40	12,500	11,500		40			
45	12,500	11,500		45			
50	12,500	11,500		50	7,600	7,200	
55	12,500	11,500	12,500	55	7,600	7,200	
60	12,500	11,500	12,500	60	7,600	7,200	
65	12,500	11,500	12,100	65	11,100	9,800	9,700
70	12,500	11,500	11,700	70	10,300	9,600	9,500
75	12,500	10,900	11,400	75	9,700	9,400	9,200
80	11,700	10,300	11,000	80	9,100	9,200	8,600
85	10,700	9,800	10,700	85	8,500	9,100	8,200
90	9,800	8,600	10,100	90	8,000	8,900	7,700
95	8,700	8,000	9,300	95	7,600	8,800	7,300
100	7,700	7,600	8,600	100	7,100	6,500	6,900
105	6,800	7,100	7,600	105	6,800	8,000	6,600
110	6,000	6,700	6,400	110	7,200	6,200	6,200
115	5,200	6,200	6,000	115	6,100	5,300	4,400
120	4,600	5,600	5,200	120	5,600	5,700	
125	4,000	5,000	4,600	125	4,900	4,600	4,100
130	3,400	4,400	3,900	130	4,600	4,700	4,100
135	2,900	3,900	3,400	135	4,300	4,300	4,000
140	2,400	3,400	2,900	140	2,900	3,800	3,800
145	2,000	3,000	2,400	145	2,500	3,400	3,300
150	1,600	2,600	2,000	150	2,100	3,000	2,800
155	1,300	2,200	1,500	155	1,700	2,600	2,400
160	900	1,900	2,100	160	1,300	2,200	2,000
165	1,500		1,700	165	1,900	1,600	2,500
170	1,300			170	1,600	1,300	2,100
175	1,000			175	1,400		1,800
180				180		1,100	1,500
185				185			1,200
Telescoping mode	1	2	1	2	1	2	1

		COUNTERWEIGHT 24,700 lbs (11,2 t) ON OUTRIGGERS FULLY EXTENDED 23° 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW1					
B	120.3' (36.7 m) Boom + 33.2' (10.1 m) JIB			B	120.3' (36.7 m) Boom + 58.1' (17.7 m) JIB		
	3.5° Offset	25° Offset	45° Offset		3.5° Offset	25° Offset	45° Offset
30	14,600	14,600		30			
35	14,600	14,600		35			
40	14,600	14,600	14,400	40	9,900	8,700	
45	14,600	14,600	13,800	45	9,900	8,700	
50	14,600	14,600	13,200	50	13,000	10,400	10,400
55	14,600	14,600	12,700	55	12,500	10,200	10,100
60	14,600	14,400	12,200	60	12,000	9,900	9,800
65	14,600	13,400	11,800	65	11,600	9,700	9,600
70	14,600	12,600	11,400	70	11,200	9,500	9,400
75	13,900	12,400	11,000	75	10,800	9,300	9,200
80	12,400	11,700	10,700	80	10,500	9,200	9,100
85	10,900	11,000	10,400	85	10,200	9,000	8,900
90	9,600	10,300	10,100	90	9,900	8,900	8,800
95	8,500	9,800	9,300	95	9,700	8,800	8,700
100	7,500	9,300	8,200	100	8,600	8,600	8,600
105	6,600	8,800	7,200	105	8,700	7,600	8,500
110	5,800	7,900	6,300	110	8,300	6,600	8,300
115	5,000	7,200	5,500	115	7,600	5,800	7,800
120	4,400	6,500	4,800	120	5,300	6,000	4,800
125	3,700	5,900	4,100	125	4,700	5,800	4,600
130	3,200	5,400	3,500	130	4,100	5,600	4,500
135	2,700	4,900	2,900	135	3,600	5,300	4,300
140	2,200	4,400		140	3,100	5,000	3,700
145	1,800	4,000		145	2,700	4,500	3,200
150				150	2,300	4,100	2,800
155				155	1,900	3,700	4,000
160				160	1,600	3,400	1,900
165				165	1,300	3,100	
170				170	900	2,800	
Telescoping mode	1	2	1	2	1	2	1

B: Load radius in feet

# GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

		COUNTERWEIGHT 24,700 lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23° 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW2			
B		167.3' (51 m) Boom + 33.2' (10.1 m) JIB	3.5° Offset	25° Offset	45° Offset
45		10,400			
50		10,400			
55		10,400			
60		10,400	10,400		
65		10,400	10,400	9,800	
70		10,400	10,400	9,600	
75		10,400	10,200	9,400	
80		10,400	9,500	9,000	
85		9,800	9,000	8,500	
90		9,200	8,500	8,100	
95		8,700	8,000	7,700	
100		7,900	7,600	7,300	
105		7,200	7,200	6,900	
110		6,300	6,800	6,600	
115		5,600	6,300	6,300	
120		4,900	5,600	6,000	
125		4,300	4,900	5,300	
130		3,700	4,300	4,700	
135		3,200	3,800	4,100	
140		2,800	3,200	3,500	
145		2,300	2,800	3,000	
150		1,900	2,300	2,500	
155		1,500	1,900		
160		1,200	1,500		
165			1,100		
170					
175					
Telescoping mode		1, 2	1, 2	1, 2	

		COUNTERWEIGHT 24,700 lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23° 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW2			
B		151.7' (46.2 m) Boom + 33.2' (10.1 m) JIB	3.5° Offset	25° Offset	45° Offset
40		12,500	11,500		
45		12,500	11,500		
50		12,500	11,500		
55		12,500	11,500	12,500	11,500
60		12,500	11,500	12,500	11,500
65		12,500	11,500	12,100	11,100
70		12,500	11,500	11,700	10,300
75		12,500	10,900	11,400	9,700
80		11,700	10,300	11,000	9,100
85		10,700	9,800	10,700	8,500
90		9,800	8,600	10,100	8,000
95		9,000	8,000	9,300	7,600
100		8,200	7,600	8,600	7,100
105		7,300	7,100	7,900	6,800
110		6,500	6,700	7,200	6,400
115		5,700	6,300	6,400	6,100
120		5,000	6,000	5,600	5,000
125		4,400	5,400	5,000	5,200
130		3,800	4,800	4,400	5,200
135		3,300	4,300	3,800	4,700
140		2,800	3,800	3,300	4,100
145		2,400	3,300	2,800	3,600
150		2,000	2,900	2,300	3,200
155		1,600	2,500	1,900	2,800
160		1,300	2,200	1,500	2,400
165		1,900	1,100	2,000	
170		1,500			
175		1,300			
180					
185					
Telescoping mode		1	2	1	2

		COUNTERWEIGHT 24,700 lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23° 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW2			
B		120.3' (36.7 m) Boom + 33.2' (10.1 m) JIB	3.5° Offset	25° Offset	45° Offset
30		14,600	14,600		
35		14,600	14,600		
40		14,600	14,600	14,400	
45		14,600	14,600	13,800	13,600
50		14,600	14,600	13,200	13,000
55		14,600	14,600	12,700	12,500
60		14,600	14,400	12,200	12,000
65		14,600	13,400	11,800	11,600
70		14,600	12,600	11,400	11,200
75		13,900	12,400	11,000	10,800
80		12,800	11,700	10,700	10,500
85		11,500	11,000	10,400	10,200
90		10,200	10,300	10,100	9,900
95		9,000	9,800	9,800	8,700
100		8,000	9,300	8,700	9,200
105		7,000	8,800	7,700	8,700
110		6,200	8,300	6,800	8,300
115		5,400	7,600	6,000	7,900
120		4,800	6,900	5,200	7,300
125		4,100	6,300	4,500	6,600
130		3,600	5,800	3,900	6,000
135		3,100	5,200	3,300	5,400
140		2,600	4,700		
145		2,200	4,300		
150					
155					
160					
165					
170					
Telescoping mode		1	2	1	2

		COUNTERWEIGHT 24,700 lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23° 11-3/8" (7.3 m) SPREAD 360° ROTATION SMART CW2			
B		120.3' (36.7 m) Boom + 58.1' (17.7 m) JIB	3.5° Offset	25° Offset	45° Offset
30					
35					
40		9,900	8,700		
45		9,900	8,700		
50		9,900	8,700		
55		9,900	8,700		
60		9,900	8,700	7,200	7,000
65		9,600	8,700	7,000	6,800
70		9,100	8,700	6,700	6,500
75		8,700	8,400	6,500	6,300
80		8,300	8,000	6,300	6,200
85		8,000	7,700	6,100	6,000
90		7,700	7,400	5,800	5,700
95		7,400	7,100	5,600	5,500
100		7,100	6,900	5,400	5,300
105		6,800	6,600	5,200	5,100
110		6,600	6,400	5,100	5,000
115		6,400	6,200	4,900	4,800
120		5,700	6,000	4,800	4,700
125		5,100	5,800	4,600	4,500
130		4,500	5,600	4,500	4,400
135		4,000	5,300	4,400	4,300
140		3,500	5,100	4,100	4,000
145		3,000	4,900	3,600	4,200
150		2,600	4,400	3,100	4,100
155		2,200	4,100	2,600	4,000
160		1,900	3,700	2,200	3,900
165		1,500	3,400		
170		1,200	3,100		
Telescoping mode		1	2	1	2

B: Load radius in feet

# GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

		COUNTERWEIGHT 24,700 lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8" (7.3 m) SPREAD SMART CHART SMART CW2							
B	167.3' (51 m) Boom + 33.2' (10.1 m) JIB	3.5° Offset	25° Offset	45° Offset	B	167.3' (51 m) Boom + 58.1' (17.7 m) JIB	3.5° Offset	25° Offset	45° Offset
45	10,400				45	16,700			
50	10,400				50	6,700			
55	10,400				55	6,700			
60	10,400	10,400			60	6,700			
65	10,400	10,400	9,800		65	6,700			
70	10,400	10,400	9,600		70	6,700			
75	10,400	10,200	9,400		75	6,700	6,200		
80	10,400	9,500	9,000		80	6,700	6,100		
85	9,800	9,000	8,500		85	6,700	5,900		
90	9,200	8,500	8,100		90	6,700	5,800	4,800	
95	8,700	8,000	7,700		95	6,700	5,600	4,700	
100	7,900	7,600	7,300		100	6,700	5,500	4,600	
105	7,300	7,200	6,900		105	6,600	5,400	4,500	
110	6,700	6,800	6,600		110	6,200	5,300	4,400	
115	6,100	6,500	6,300		115	5,800	5,200	4,300	
120	5,600	5,900	6,000		120	5,500	5,000	4,200	
125	5,100	5,400	5,600		125	5,200	4,900	4,200	
130	4,700	5,000	5,100		130	4,900	4,600	4,100	
135	4,300	4,600	4,700		135	4,500	4,400	4,000	
140	3,900	4,200	4,300		140	4,100	4,200	4,000	
145	3,500	3,800	3,900		145	3,700	4,000	3,900	
150	3,100	3,400			150	3,400	3,800	3,700	
155	2,700	3,100			155	3,000	3,500	3,500	
160	2,300	2,700			160	2,600	3,200	3,400	
165	2,000	2,300			165	2,300	2,900	3,100	
170	1,700	1,900			170	1,900	2,600	2,800	
175	1,300	1,500			175	1,600	2,200	2,500	
180	1,100	1,200			180	1,300	1,900		
185					185	1,100	1,500		
190					190		1,200		
Telescoping mode	1, 2	1, 2	1, 2		Telescoping mode	1, 2	1, 2	1, 2	

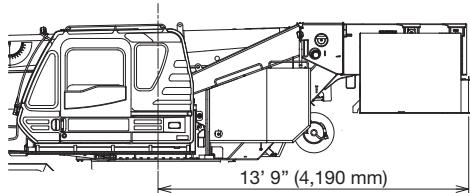
		COUNTERWEIGHT 24,700 lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8" (7.3 m) SPREAD SMART CHART SMART CW2							
B	151.7' (46.2 m) Boom + 33.2' (10.1 m) JIB	3.5° Offset	25° Offset	45° Offset	B	151.7' (46.2 m) Boom + 58.1' (17.7 m) JIB	3.5° Offset	25° Offset	45° Offset
40	12,500	11,500			40	7,600	7,200		
45	12,500	11,500			45	7,600	7,200		
50	12,500	11,500			50	7,600	7,200		
55	12,500	11,500	12,500	11,500	55	7,600	7,200		
60	12,500	11,500	12,500	11,500	60	7,600	7,200	6,500	6,500
65	12,500	11,500	12,100	11,100	65	7,600	7,200	6,300	6,300
70	12,500	11,700	10,300	9,600	70	7,600	7,200	6,100	5,000
75	12,500	10,900	9,700	9,400	75	7,600	7,200	5,900	4,900
80	11,700	10,300	9,100	9,200	80	7,600	7,200	5,800	4,900
85	10,700	9,800	10,700	8,500	85	7,600	7,200	5,700	4,800
90	9,800	8,600	10,100	8,000	90	7,600	7,200	5,600	4,800
95	9,000	8,000	9,300	7,600	95	7,300	7,000	5,700	4,700
100	8,200	7,600	8,600	7,100	100	7,100	6,500	5,600	4,500
105	7,600	7,100	7,900	6,800	105	6,900	6,100	5,400	4,500
110	7,000	6,700	7,300	6,400	110	6,700	5,800	5,300	4,400
115	6,400	6,300	6,700	6,100	115	6,500	5,400	5,200	4,300
120	5,900	6,000	6,200	5,800	120	6,100	5,100	5,000	4,200
125	5,400	5,700	5,700	5,500	125	5,600	4,800	4,900	4,100
130	5,000	5,400	5,200	5,200	130	5,200	4,600	4,700	4,100
135	4,600	5,100	4,800	5,000	135	4,700	4,300	4,600	4,000
140	4,100	4,900	4,400	4,700	140	4,400	4,100	4,500	3,800
145	3,600	4,500	3,900	4,500	145	4,000	3,900	4,400	3,700
150	3,200	4,100	3,400	4,300	150	3,700	3,700	3,500	3,500
155	2,700	3,600	3,000	3,900	155	3,200	3,500	3,700	3,400
160	2,300	3,200	2,500	3,400	160	2,800	3,300	3,400	3,200
165	2,000	2,900	2,100	3,000	165	2,500	3,100	3,100	3,100
170	1,600	2,500			170	2,100	3,000	2,700	
175	1,300	2,200			175	1,800	2,700	2,300	
180					180	2,400	1,900	2,700	
185					185	2,100	1,600	2,300	
190					190	1,800	1,200	2,000	
Telescoping mode	1	2	1	2	Telescoping mode	1	2	1	2

		COUNTERWEIGHT 24,700 lbs (11.2 t) ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8" (7.3 m) SPREAD SMART CHART SMART CW2							
B	120.3' (36.7 m) Boom + 33.2' (10.1 m) JIB	3.5° Offset	25° Offset	45° Offset	B	120.3' (36.7 m) Boom + 58.1' (17.7 m) JIB	3.5° Offset	25° Offset	45° Offset
30	14,600	14,600			30	9,900	8,700		
35	14,600	14,600			35	9,900	8,700		
40	14,600	14,600	14,400		40	9,900	8,700		
45	14,600	14,600	13,800	13,600	45	9,900	8,700		
50	14,600	14,600	13,200	13,000	50	9,900	8,700		
55	14,600	14,600	12,700	12,500	55	9,900	8,700		
60	14,600	14,400	12,200	12,000	60	9,900	8,700	7,200	7,000
65	14,600	13,400	11,800	11,600	65	9,600	8,700	7,000	6,800
70	14,600	12,600	11,400	11,200	70	9,100	8,700	6,700	6,500
75	13,900	12,400	11,000	10,800	75	8,700	8,400	6,500	6,300
80	12,800	11,700	10,700	10,500	80	8,300	8,000	6,300	6,200
85	11,700	11,000	10,400	10,200	85	8,000	7,700	6,100	6,000
90	10,800	10,300	10,100	9,900	90	7,700	7,400	5,800	5,800
95	10,000	9,800	9,900	9,700	95	7,400	7,100	5,600	5,500
100	9,200	9,300	9,400	9,200	100	7,100	6,900	5,400	5,300
105	8,500	8,800	8,700	8,700	105	6,800	6,600	5,200	5,200
110	7,900	8,300	8,100	8,300	110	6,600	6,400	5,100	5,000
115	7,000	7,900	7,500	7,900	115	6,400	6,200	4,900	4,900
120	6,300	7,500	6,700	7,500	120	6,100	6,000	4,800	4,700
125	5,600	7,200	6,000	7,200	125	5,900	5,800	4,600	4,600
130	4,900	6,900	5,200	6,800	130	5,600	5,800	4,500	4,500
135	4,300	6,500	4,600	6,500	135	5,200	5,300	4,400	4,300
140	3,800	6,000			140	4,700	5,100	4,300	4,000
145	3,300	5,500			145	4,200	5,000	4,200	4,200
150					150	3,700	4,800	4,100	4,100
155					155	3,300	4,600	3,700	4,000
160					160	2,900	4,500	3,200	4,000
165					165	2,600	4,400		
170					170	2,200	4,100		
Telescoping mode	1	2	1	2	Telescoping mode	1	2	1	2

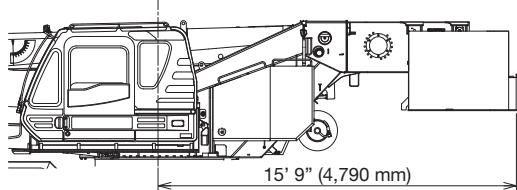
# SMART COUNTERWEIGHT

You can increase the capacity by changing the mounting position of the counterweight.

SMART CW 1 status



SMART CW 2 status



- SMART CW 1: Counterweight is mounted at the front.
- SMART CW 2: Counterweight is mounted at the rear.

# WARNING AND OPERATING INSTRUCTIONS FOR LIFTING CAPACITIES

## GENERAL

1. RATED LIFTING CAPACITIES apply only to the machine as originally manufactured and normally equipped by Tadano Ltd. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
2. Hydraulic cranes can be hazardous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with information, in the Operation Manual supplied with the crane. If this manual is missing, order a replacement through the distributor.
3. The operator and other personnel associated with this machine shall fully acquaint themselves with the latest American National Standards Institute (ANSI) safety standards for cranes.

## SET UP

1. Rated lifting capacities on the chart are the maximum allowable crane capacities and are based on the machine standing level on firm supporting surface under ideal job conditions. 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 loads to a larger bearing surface.
2. For outrigger operation, outriggers shall be properly extended with tires free of supporting surface before operating crane.

## OPERATION

1. Rated lifting capacities have been tested to and meet minimum requirements of SAE J1063-Cantilevered Boom Crane Structures Method of Test. Rated lifting capacities do not exceed 85% of the tipping load on outriggers fully extended as determined by SAE J765-Crane Stability Test Code.
2. Rated lifting capacities for partially extended outriggers are determined from the formula, Rated Lifting Capacities = (Tipping Load - 0.1 x Tip Reaction) / 1.25.
3. Rated lifting capacities are based on actual load radius increased by boom deflection.
4. The weight of handling device such as hook blocks, slings, etc., must be considered as part of the load and must be deducted from the lifting capacities.
5. Rated lifting capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tires, operating speeds, side loads, etc. Side pull on boom or jib is extremely dangerous. Such action can damage the boom, jib or slewing mechanism, and lead to overturning of the crane.
6. Rated lifting capacities do not account for wind on lifted load or boom. We recommend against working under the condition that the load is out of control due to a strong wind. During boom lift, consider that the rated lifting capacity is reduced by 50% when the wind speed is 20 mph (9 m/s) to 27 mph (12 m/s); reduced by 70% when the wind speed is 27 mph (12 m/s) to 31 mph (14 m/s). If the wind speed is 31 mph (14 m/s) or over, stop operation. During jib lift, stop operation if the wind speed is 20 mph (9 m/s) or over.
7. Rated lifting capacities at load radius shall not be exceeded. Do not tip the crane to determine allowable loads.
8. Do not operate at boom lengths, radii, or boom angle, where no capacities are shown. Crane may overturn without any load on the hook.
9. When boom length is between values listed, refer to the rated lifting capacities of the next longer and next shorter booms for the same radius. The lesser of the two rated lifting capacities shall be used.
10. When making lifts at a load radius not shown, use the next longer radius to determine allowable capacity.
11. Load per line should not exceed 14,600 lbs. (6,600 kg) for main winch and auxiliary winch.
12. Check the actual number of parts of line with LOAD MOMENT INDICATOR (AML-E2) before operation. Maximum lifting capacity is restricted by the number of parts of line of LOAD MOMENT INDICATOR (AML-E2). Limited capacity is as determined from the formula, Single line pull for main winch 14,600 lbs. (6,600 kg) x number of parts of line.

13. The boom angle before loading should be greater to account for deflection. For rated lifting capacities, the loaded boom angle and the load radius is for reference only.
14. The 42.0' (12.8 m) boom length capacities are based on boom fully retracted. If not fully retracted [less than 57.7' (17.6 m) boom length], use the rated lifting capacities for the 57.7' (17.6 m) boom length.
15. Extension or retraction of the boom with loads may be attempted within the limits of the RATED LIFTING CAPACITIES. The ability to telescope loads is limited by hydraulic pressure, boom angle, boom length, crane maintenance, etc. For lifting capacity of single top, deduct the weight of the load handling equipment from the rated lifting capacity of the boom.
16. For the lifting capacity of single top, the net capacity shall not exceed 14,600 lbs. (6,600 kg) including the main boom hook mass attached to the boom.
17. When the base jib or top jib or both jibs are removed, set the jib state switch to the REMOVED position.
18. When erecting and stowing jib, be sure to retain it by hand or by other means to prevent its free movement.
19. Use "ANTI-TWOBLOCK" disable switch when erecting and stowing jib and when stowing hook block. While the switch is pushed, the hoist does not stop, even when overwind condition occurs.
20. When lifting a load by using jib (aux. winch) and boom (main winch) simultaneously, do the following:
  - Enter the operation status as jib operation, not as boom operation.
  - Before starting operation, make sure that mass of load is within rated lifting capacity for jib.
21. Before telescoping the boom, set the telescoping mode selector switch to mode 1 or mode 2 fully retracted. A change of the telescoping mode is not permissible when the boom has been partially or fully extended.
22. Crane operation is prohibited without full counterweight 24,700 lbs. (11.2 ton) installed. Outriggers shall be extended 23' 11-3/8" (7.3 m) spread when installing or removing removable counterweight.

## DEFINITIONS

1. Load Radius: Horizontal distance from a projection of the axis of rotation to supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
2. Loaded Boom Angle: The angle between the boom base section and the horizontal, after lifting the rated lifting capacity at the load radius.
3. Working Area: Area measured in a circular arc about the centerline of rotation.
4. Freely Suspended Load: Load hanging free with no direct external force applied except by the hoist line.
5. Side Load: Horizontal side force applied to the lifted load either on the ground or in the air.

# GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

COUNTERWEIGHT 24,700lbs (11.2 t) ON RUBBER STATIONARY SMART CW1						
Over front						
B	A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)	
12		65,000				
15		53,700				
20		40,400	33,800	29,700		
25		31,400	33,800	29,700	27,700	
30		24,200	27,300	27,800	27,700	
35			21,200	21,700	22,000	
40			16,800	17,400	17,800	
45			13,600	14,200	14,500	
50			11,100	11,600	12,000	
55			9,100	9,700	10,000	
60			7,500	8,000	8,400	
65			6,200	6,700	7,100	
70				5,600	5,900	
75				4,700	5,000	
80				3,900	4,200	
85					3,400	
90					2,800	
95					2,300	
D		0°				
Telescoping mode	1, 2	2	2	2		
2nd Boom	0	0	0	0		
3rd Boom	0	33	50	67		
4th Boom	0	33	50	67		
Top Boom	0	33	50	67		

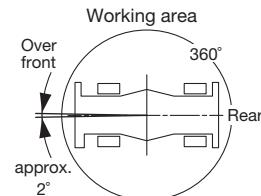
360° Rotation						
B	A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)	
12		43,000				
15		32,600				
20		19,400		22,900	22,900	
25		12,500		15,700	16,400	16,800
30		8,100		11,200	11,800	12,200
35				8,100	8,700	9,100
40				5,800	6,400	6,800
45				4,100	4,700	5,100
50				2,800	3,400	3,700
55				1,700	2,300	2,600
60						
65						
70						
75						
80						
85						
90						
95						
D		0°		29°	43°	50°
Telescoping mode	1, 2	2	2	2		
2nd Boom	0	0	0	0		
3rd Boom	0	33	50	67		
4th Boom	0	33	50	67		
Top Boom	0	33	50	67		

COUNTERWEIGHT 24,700lbs (11.2 t) ON RUBBER STATIONARY SMART CW1						
Over front						
C	A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)	
0°		35.2	18,400	66.1	5,100	81.8
				3,300	97.2	2,200

C	A	42.0' (12.8 m)			
0°		35.2	5,100		

COUNTERWEIGHT 24,700lbs (11.2 t) ON RUBBER CREEP SMART CW1						
Over front						
C	A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)	
0°						
		35.2	13,800	66.1	4,200	81.8
				2,400	97.2	1,400



A: Boom length in feet

B: Load radius in feet

C: Loaded boom angle (°)

D: Minimum boom angle (°) for indicated length (no load)

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AMI-E2) is based on the standard number of parts of line listed in the chart.

Standard number of parts of line for on-rubber operation should be according to the chart.

Boom length in feet (meters)	42.0' (12.8 m)	42.0' to 104.7' (12.8 m to 31.9 m)	Single top jib
Number of parts of line	6	4	1

# GR-1000XLL-4 RATED LIFTING CAPACITIES (IN POUNDS)

		COUNTERWEIGHT 24,700lbs (11.2 t) ON RUBBER STATIONARY SMART CW2				
		360° Rotation				
		A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)
B	A	12	67,600			
		15	56,000			
		20	42,300	33,800	29,700	
		25	33,000	33,800	29,700	27,700
		30	25,900	29,000	29,400	27,700
		35		22,600	23,000	23,300
		40		18,000	18,600	18,800
		45		14,600	15,200	15,500
		50		12,000	12,500	12,900
		55		9,900	10,500	10,800
		60		8,200	8,800	9,100
		65		6,900	7,400	7,700
		70			6,200	6,500
		75			5,200	5,600
		80			4,400	4,700
		85				3,900
		90				3,300
		95				2,800
D		0°				
Telescoping mode	1, 2	2	2	2		
2nd Boom	0	0	0	0		
3rd Boom	0	33	50	67		
4th Boom	0	33	50	67		
Top Boom	0	33	50	67		

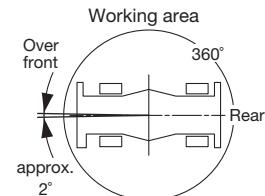
		COUNTERWEIGHT 24,700lbs (11.2 t) ON RUBBER STATIONARY SMART CW2								
		A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)				
C	A	0°	35.2	19,900	66.1	5,700				
		B	(12.8 m)	B	(22.4 m)	B	(31.9 m)			
		0°	35.2	19,900	66.1	5,700	81.8	3,700	97.2	2,600

		COUNTERWEIGHT 24,700lbs (11.2 t) ON RUBBER CREEP SMART CW2								
		A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)				
C	A	0°	35.2	19,900	66.1	5,700				
		B	(12.8 m)	B	(22.4 m)	B	(31.9 m)			
		0°	35.2	19,900	66.1	5,700	81.8	3,700	97.2	2,600

		COUNTERWEIGHT 24,700lbs (11.2 t) ON RUBBER CREEP SMART CW2								
		A	42.0' (12.8 m)	73.3' (22.4 m)	89.0' (27.1 m)	104.7' (31.9 m)				
C	A	0°	35.2	14,700	66.1	4,800				
		B	(12.8 m)	B	(22.4 m)	B	(31.9 m)			
		0°	35.2	14,700	66.1	4,800	81.8	3,000	97.2	1,900



A: Boom length in feet

B: Load radius in feet

C: Loaded boom angle (°)

D: Minimum boom angle (°) for indicated length (no load)

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-E2) is based on the standard number of parts of line listed in the chart.

Standard number of parts of line for on-rubber operation should be according to the chart.

Boom length in feet (meters)	42.0' (12.8 m)	42.0' to 104.7' (12.8 m to 31.9 m)	Single top jib
Number of parts of line	6	4	1

# WARNING AND OPERATING INSTRUCTIONS FOR ON RUBBER LIFTING CAPACITIES

1. Rated lifting capacities on-rubber are in pounds and do not exceed 75% of tipping loads as determined by SAE J765-Crane Stability Test Code.
2. Rated lifting capacities shown in the chart are based on condition that crane is set on firm level surfaces with suspension-lock applied. They are based on actual load radius increased by tire deformation and boom deflection.
3. If the suspension-lock cylinders contain air, the axle will not be locked completely and rated lifting capacities may not be obtainable. Bleed the cylinders according to the operation safety and maintenance manual.
4. Rated lifting capacities are based on proper tire inflation, capacity and condition. Damaged tires are hazardous to safe operation of crane.
5. Tires shall be inflated to correct air pressure.

Tires	Air Pressure
29.5-25 36PR	68 psi. (470 kPa)
29.5-25 40PR	67 psi. (465 kPa)

6. Over front operation shall be performed within 2 degrees in front of chassis.
7. On-rubber lifting with "jib" is not permitted. Maximum permissible boom length is 104.7 ft. (31.9 m).
8. When making lift on-rubber stationary, set parking brake.
9. For creep operation, boom must be centered over front of machine, slewing lock engaged, and load restrained from slewing. Travel slowly and keep the lifted load as close to the ground as possible, and especially avoid any abrupt steering, accelerating or braking.
10. Do not operate the crane while carrying the load.
11. Creep is motion for crane not to travel more than 200 ft. (60 m) in any 30 minute period and to travel at the speed of less than 1 mph (1.6 km/h).
12. For creep operation, choose the drive mode and proper gear according to the road or working condition.

## NOTES FOR LOAD MOMENT INDICATOR (AML-E2)

1. Set AML select keys in accordance with the actually operating crane conditions and don't fail to make sure, before crane operation, that the displays on front panel are correct.
2. When operating crane on outriggers:
  - Set "P.T.O." switch to "ON".
  - Press the outrigger state select key to register for the outrigger operation. If the display agrees with the actual state, press the set key to register. After the completion of the registration, the display returns to the crane operation status.
  - Press the lift state select key to register the lift state to be used (single top/jib/boom).
  - Each time the lift state select key is pressed, the display changes. If the display agrees with the actual state, press the set key to register. After the completion of the registration, the display returns to the crane operation status.
  - When erecting and stowing jib, select the status of jib set (Jib state indicative symbol lights up).
3. When operating crane on-rubber:
  - Set "P.T.O." switch to "ON".
  - Press the outrigger state select key to register for the on-rubber operation. Each time the outrigger state select key is pressed, the display changes. Select the creep operation, the on-rubber state indicator symbol lights up.
  - Press the lift state select key to register the lift state. However, pay attention to the following.
    - (1) For stationary operation.
      - The front capacities are attainable only when the over front position symbol comes on.

When the boom is more than 2 degrees from centered over front of chassis, 360° capacities are in effect.

- When a load is lifted in the front position and then slewed to the side area, make sure the value of the LOAD MOMENT INDICATOR (AML-E2) is below the 360° lifting capacity.

### (2) For creep operation.

- The creep capacities are attainable only when boom is in the straight forward position of chassis and the over front position symbol is on. If boom is not in the straight forward position of chassis, never lift load.
- 4. This machine is equipped with an automatic slewing stopping device. (For the details, see Operation Manual.) But, operate very carefully because the automatic slewing stop does not work in the following cases.
  - During on-rubber operation.
  - When the "P.T.O." switch is set to "OVERRIDE" and the "OVERRIDE" key switch outside the cab is on.
- 5. During crane operation, make sure that the displays on front panel are in accordance with actual operating conditions.
- 6. The displayed values of LOAD MOMENT INDICATOR (AML-E2) are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tire, operating speed, side loads, etc.
- For safe operation, it is recommended when extending and lowering boom or slewing, lifting loads shall be appropriately reduced.
- 7. LOAD MOMENT INDICATOR (AML-E2) is intended as an aid to the operator. Under no condition should it be relied upon to replace use of capacity charts and operating instruction. Sole reliance upon LOAD MOMENT INDICATOR (AML-E2) aids in place of good operating practice can cause an accident. The operator must exercise caution to assure safety.
- 8. The lifting capacity differs depending on the outrigger extension width and slewing position. Work with the capacity corresponding to the outrigger extension width and slewing position.
- For the relationship among the outrigger extension width, slewing position and lifting capacities, refer to the working area charts.

## GR-1000XLL-4 AXLE WEIGHT DISTRIBUTION CHART

	Pounds			Kilograms		
	GVW	Front	Rear	GVW	Front	Rear
Base machine	123,550	61,600	61,950	56,040	27,940	28,100
Remove:	1. 7.3 ton (6.6 metric ton) hook block	-360	-550	190	-165	-251
	2. 100 ton (90.7 metric ton) hook block	-1,900	-3,460	1,590	-850	-1,571
	3. Top jib	-740	-1,180	440	-336	-534
	4. Base jib	-1,910	-4,160	2,250	-867	-1,886
	5. Removable Counterweight	-24,700	9,470	-34,160	-11,200	4,296
Add:	6. Auxiliary power unit (option)	780	480	300	353	217
						136

## MEMO

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