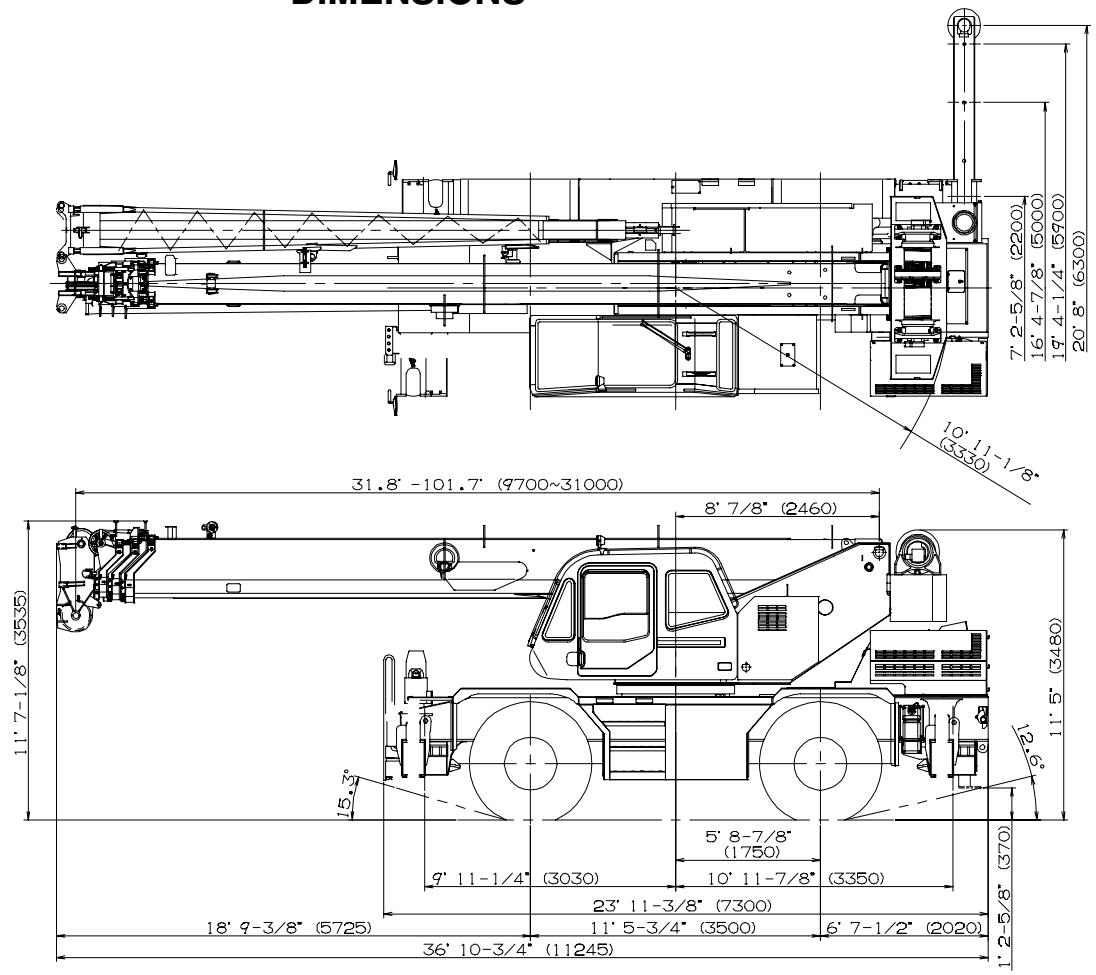
TADANO

GR-350XL-3

35 Ton Capacity (31.8 Metric Tons)

HYDRAULIC ROUGH TERRAIN CRANE

DIMENSIONS



GR-350-3-00311

Note : Dimension is with boom angle at 0 degree.
( ) Reference dimensions in mm.

GENERAL DIMENSIONS
(20.5 - 25 Tires)

	Feet	Meters
Turning radius		
4 wheel steer	21' 4"	6.5
2 wheel steer	37' 5"	11.4

Specifications are subject to change without notice.

CRANE SPECIFICATIONS

BOOM
Four section full power synchronized telescoping boom, 31.8' ~ 101.7' (9.7 m ~ 31.0 m), of round hexagonal box construction with 3 sheaves, 13-1 / 4" (0.336 m) root diameter, at boom head. The synchronization system consists of two telescope cylinders, an extension cable and retraction cable. Hydraulic cylinder fitted with holding valve. Two 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 69.9' in 91 seconds.

BOOM ELEVATION - By a double acting hydraulic cylinder with holding valve. Elevation 0^{o} ~ 81^{o}, combination controls for hand or foot operation. Boom angle indicator.
Automatic speed reduction and slow stop function.
Elevation speed 20^{o} ~ 60^{o} in 22 seconds.

JIB - Two stage lattice type with 5^{o}, 25^{o} or 45^{o} offset (tilt type). Single sheave, 13-7 / 8"(0.352 m) root diameter, at jib head. Box type top section telescopes from lattice type base section which stows alongside base boom section.
Jib length is 23.6' (7.2 m) or 42' (12.8 m).

AUXILIARY LIFTING SHEAVE (SINGLE TOP)
Single sheave, 13-1 / 4"(0.336 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^{o} full circle slewing on ball bearing turn table at 3.2 min^{-1}{rpm}. Equipped with manually locked / released slewing brake. A 360^{o} 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.

HOIST

MAIN HOIST - 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 hoist. Equipped with cable follower and drum rotation indicator.

DRUM - Grooved 12-5 / 8"(0.32 m) root diameter x 19-1 / 16" (0.484 m) wide. Wire rope: 558' of 5 / 8"diameter rope (170 m of 16 mm). Drum capacity: 720' (219.5 m) 6 layers. Maximum single line pull: 1st layer 12,600 lbs (5,710 kg). Maximum permissible line pull wire strength: 11,100 lbs. (5,030 kg).

AUXILIARY HOIST - (GR-350-3-00311

DRUM - Grooved 12-5 / 8"(0.32 m) root diameter x 10-3 / 8" (0.263 m) wide. Wire rope: 322' of 5 / 8"diameter rope (98m of 16 mm). Drum capacity: 392' (119.4 m) 6 layers. Maximum single line pull: 1st layer 12,600 lbs (5,710 kg). Maximum permissible line pull wire strength: 13,100 lbs. (5,940 kg).

WIRE ROPE - Filler or warrington seal wire, extra improved plow steel, preformed, independent wire rope core, right regular lay.
Main : 5 / 8"(16 mm) 6 X 29 class
Auxiliary(GR-350-3-00311) : 5 / 8"(16 mm) 6 X 36 class

HOOK BLOCKS
35 ton (31.8 metric ton) - 4 sheaves with swivel hook and safety latch, for 5 / 8"(16 mm) wire rope(OPTIONAL).
4.4 ton (4.0 metric ton) - Weighted hook with swivel and safety latch, for 5 / 8"(16 mm) wire rope.

HYDRAULIC SYSTEM

PUMPS - Two variable piston pumps for crane functions. Tandem gear pump for steering, slewing and optional equipment. 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 - 100 gallon (380 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.

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 hoist and main hoist. 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. Air conditioner (Hot water heater and cooler).

Dash-mounted engine start / stop, monitor lamps, cigarette lighter, drive selector switch, parking brake switch, steering mode select switch, power window switch, pump engaged /

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

- Control lever lockout function with audible and visual pre-warning
- Boom position indicator
- Outrigger state indicator
- Boom angle / boom length / jib offset angle / jib length / load radius / rated lifting capacities / actual loads read out
- 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
- Fuel consumption monitor
- Main hoist / auxiliarly hoist select(GR-350-3-00311

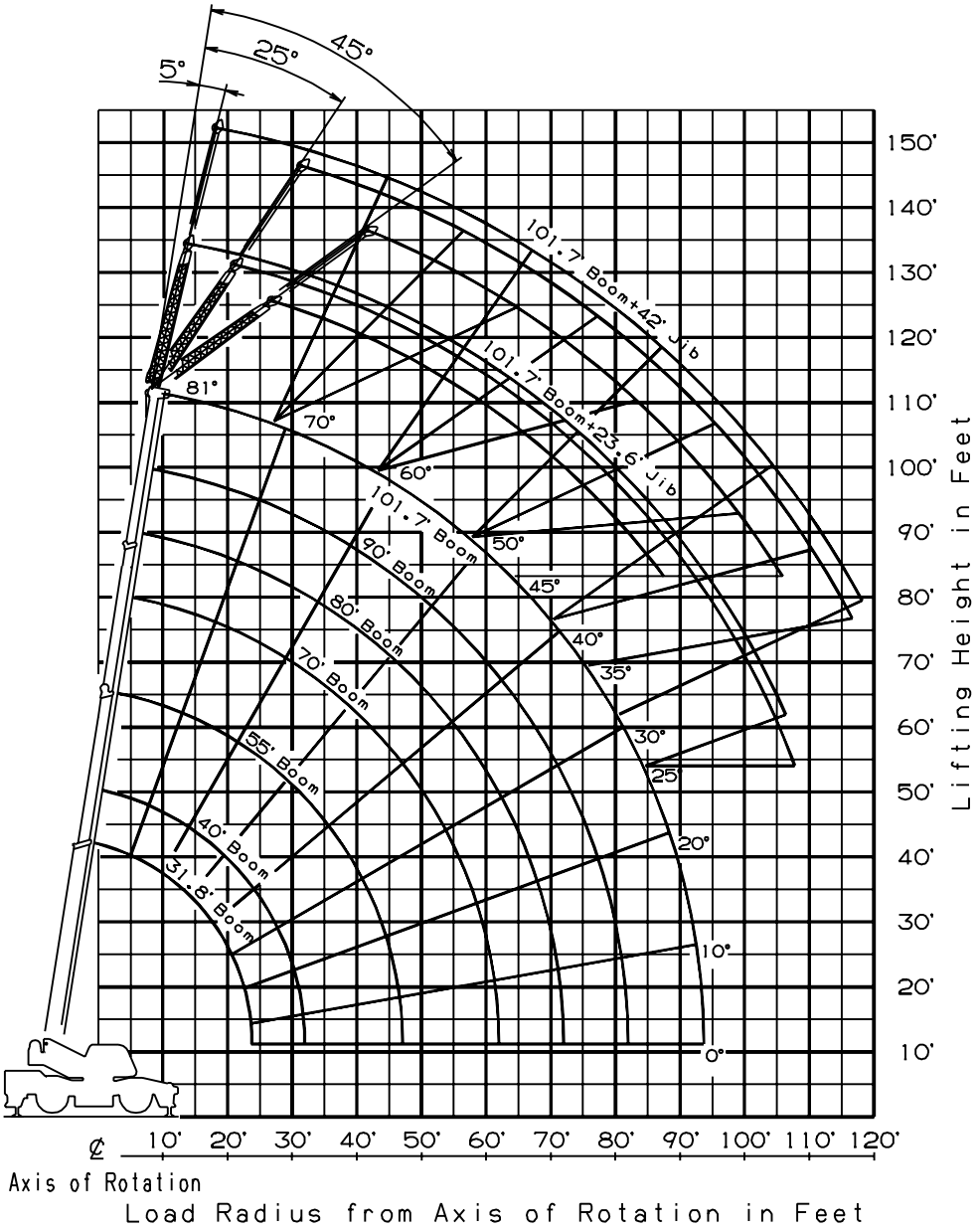
TADANO AML-C monitors outrigger extended length and automatically programs the corresponding "RATED LIFTING CAPACITIES" table

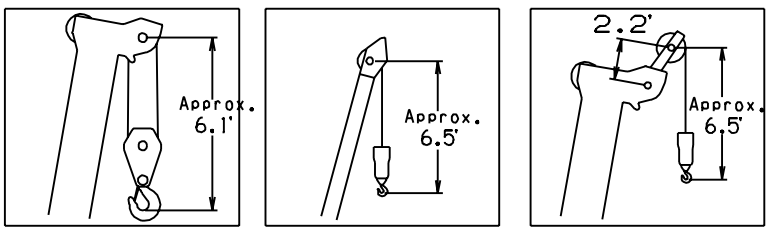
Operator's right hand console includes transmission gear selector, sight level bubble and slewing lock lever .
Upper console includes working light switch,
roof washer and wiper switch,
emergency outrigger set up key switch,
jib equipped / removed select switch, eco mode switch,
and air conditioning control switch.

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

- Four section full power partially synchronized boom 31.8' ~ 101.7' (9.7 m ~ 31.0 m)
- 23.6' or 42' (7.2 m or 12.8 m) lattice jib (tilt type) with 5^{o}, 25^{o} or 45^{o} pinned offsets and self storing pins.
- Quick reeving type bi-fold jib
- Anti-Two block device
- Mirror for main and auxiliary hoists
- Work lights
- Variable speed main hoist with grooved drum, cable follower, drum rotation indicator (audible,visible and thumper type) and 558' of 5 / 8" cable.
- Variable speed auxiliary hoist with grooved drum, cable follower, drum rotation indicator (audible,visible and thumper type) and 322' of 5 / 8" cable.(GR-350-3-00311
- Tadano electronic load moment indicator system (AML-C)
- Boom angle indicator
- Outrigger extension length detector
- Electronic crane monitoring system
- Rear view mirrors (right and left side)
- 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

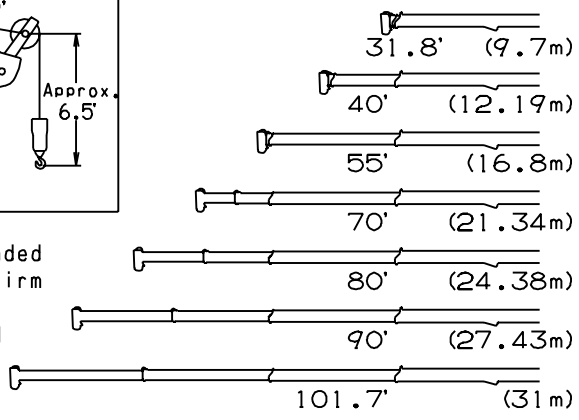
GR-350XL WORKING RANGE CHART





NOTE: 1. Boom and 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.

Boom Length in Feet



GR-350XL RATED LIFTING CAPACITIES
(IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 20' 8" (6.3 m) SPREAD
360° ROTATION

A / B	31.8		40		55		70		80		90		101.7	
	C	(9.7 m)	C	(12.19 m)	C	(16.8 m)	C	(21.34 m)	C	(24.38 m)	C	(27.43 m)	C	(31 m)
8	64.9	70,000												
10	60.2	60,000	67.1	49,600	74.1	42,300	77.8	27,500						
12	55.6	56,500	63.8	49,600	71.9	42,300	76.1	27,500	78.2	27,500				
15	48.7	46,500	58.8	46,000	68.7	40,000	73.6	27,500	76.0	27,500	78.3	25,300		
20	33.8	36,000	49.6	35,500	62.8	32,000	69.4	27,500	72.4	27,200	75.2	23,500	77.3	18,500
25			38.4	28,500	56.5	25,900	64.8	24,200	68.7	22,700	71.8	20,400	74.5	18,100
30			22.4	20,500	49.7	20,100	60.1	20,100	64.7	19,400	68.4	17,800	71.6	16,300
35					42.0	15,800	55.0	16,700	60.4	16,000	64.9	15,300	68.4	14,400
40					32.7	12,200	49.7	13,100	56.0	13,250	61.1	13,050	65.2	12,600
45					19.2	9,250	43.6	10,300	51.2	10,600	57.2	11,000	62.1	11,000
50							36.8	8,400	46.1	8,700	53.0	8,900	58.6	9,300
55							28.6	6,650	40.7	7,100	48.6	7,300	55.0	7,800
60							16.3	5,400	34.3	5,900	43.8	6,200	51.1	6,450
65									26.6	4,800	38.6	5,100	47.3	5,300
70									14.9	3,700	32.7	4,300	42.8	4,400
75											25.4	3,650	38.1	3,800
80											14.9	3,000	32.9	3,200
85													26.5	2,600
90													18.3	2,200
D	0													

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS FULLY EXTENDED
20' 8" (6.3 m) SPREAD 360° ROTATION

A / C	31.8		40		55		70		80		90		101.7	
	B	(9.7 m)	B	(12.19 m)	B	(16.8 m)	B	(21.34 m)	B	(24.38 m)	B	(27.43 m)	B	(31 m)
0	23.7	30,400	31.9	18,700	46.9	8,600	61.9	5,000	71.9	3,400	81.9	2,800	93.6	1,900

ON OUTRIGGERS MID EXTENDED 19' 4-1/4" (5.9m) SPREAD
360° ROTATION

A / B	31.8		40		55		70		80		90		101.7	
	C	(9.7 m)	C	(12.19 m)	C	(16.8m)	C	(21.34 m)	C	(24.38 m)	C	(27.43 m)	C	(31 m)
8	64.9	70,000												
10	60.2	60,000	67.1	49,600	74.1	42,300	77.8	27,500						
12	55.6	56,500	63.8	49,600	71.9	42,300	76.1	27,500	78.2	27,500				
15	48.7	46,500	58.8	46,000	68.7	40,000	73.6	27,500	76.0	27,500	78.3	25,300		
20	33.8	34,700	49.6	35,500	62.8	32,000	69.4	27,500	72.4	27,200	75.2	23,500	77.3	18,500
25			38.4	24,000	56.5	23,700	64.8	24,200	68.7	22,700	71.8	20,400	74.5	18,100
30			22.4	16,700	49.6	16,500	60.1	17,900	64.7	18,300	68.4	17,300	71.6	16,300
35					41.9	12,250	55.0	13,400	60.3	13,850	64.7	14,150	68.4	13,250
40					32.7	9,050	49.4	10,300	55.9	10,700	60.9	11,200	65.2	11,200
45					19.2	6,750	43.4	8,000	51.2	8,350	57.0	8,800	61.8	9,100
50							36.7	6,300	46.1	6,700	52.7	7,050	58.3	7,300
55							28.5	4,850	40.5	5,300	48.3	5,700	54.7	6,000
60							16.2	3,800	34.2	4,200	43.5	4,600	50.9	4,800
65									26.6	3,300	38.3	3,700	46.9	4,000
70									15.0	2,600	32.5	2,900	42.6	3,200
75											25.2	2,300	37.8	2,600
80											14.6	1,700	32.5	2,000
85													26.3	1,400
90													17.9	800
D	0													

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MID EXTENDED
19' 4-1 / 4" (5.9 m) SPREAD 360° ROTATION

A / C	31.8		40		55		70		80		90		101.7	
	B	(9.7 m)	B	(12.19 m)	B	(16.8 m)	B	(21.34 m)	B	(24.38 m)	B	(27.43 m)	B	(31 m)
0	23.7	26,500	31.9	15,000	46.9	6,000	61.9	3,400	71.9	2,300	81.9	1,450	93.6	500

A :Boom length in feet

B :Load radius in feet

C :Loaded boom angle (°)

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

	A		31.8		40		55		70		80		90		101.7				
B		**C**	(9.7 m)	**C**	(12.19 m)	**C**	(16.8 m)	**C**	(21.34 m)	**C**	(24.38 m)	**C**	(27.43 m)	**C**	(31 m)				

GR-350XL RATED LIFTING CAPACITIES
(IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 20' 8" (6.3 m) SPREAD
360° ROTATION

C	101.7' (31 m) Boom + 23.6' (7.2 m) Jib					
	5° Tilt		25° Tilt		45° Tilt	
	R	**W**	**R**	**W**	**R**	**W**
80	19.3	7,700	26.7	5,200	32.1	3,700
77.5	25.2	7,700	32.0	5,000	37.2	3,600
75	30.8	7,700	37.5	4,800	42.4	3,500
72.5	36.4	7,350	42.7	4,600	47.1	3,400
70	41.8	7,000	47.7	4,400	52.1	3,300
67.5	47.0	6,600	52.9	4,250	56.6	3,200
65	52.0	6,200	57.5	4,100	61.0	3,150
62.5	56.8	5,700	62.4	3,950	65.2	3,100
60	61.4	5,200	66.8	3,800	69.5	3,050
57.5	65.8	4,700	71.2	3,650	73.4	3,000
55	70.3	4,200	75.3	3,500	77.4	2,900
52.5	74.3	3,700	79.2	3,300	81.0	2,800
50	78.4	3,200	82.9	3,100	84.5	2,650
47.5	82.2	2,900	86.2	2,750	87.9	2,500
45	85.8	2,600	89.6	2,400	90.9	2,400
42.5	89.3	2,300	92.8	2,150		
40	92.6	2,000	95.7	1,900		
37.5	95.7	1,750	98.6	1,650		
35	98.6	1,500	101.0	1,400		
32.5	101.0	1,350	104.0	1,250		
30	104.0	1,200	106.0	1,100		
27.5	106.0	1,050	108.0	1,000		
25	108.0	900	110.0	900		

C	101.7' (31m) Boom + 42' (12.8 m) Jib					
	5° Tilt		25° Tilt		45° Tilt	
	R	**W**	**R**	**W**	**R**	**W**
80	25.6	4,800	38.0	2,600	47.8	1,700
77.5	32.2	4,800	44.3	2,600	53.4	1,700
75	38.8	4,800	50.4	2,600	58.6	1,700
72.5	44.9	4,400	56.1	2,450	63.9	1,700
70	50.9	4,000	61.6	2,300	68.9	1,650
67.5	56.8	3,700	67.1	2,200	73.9	1,600
65	62.3	3,400	72.2	2,050	78.5	1,600
62.5	67.9	3,150	77.4	1,950	83.0	1,550
60	73.1	2,900	82.1	1,850	87.3	1,500
57.5	78.6	2,750	86.7	1,800	91.4	1,450
55	83.5	2,600	91.4	1,750	95.4	1,400
52.5	88.3	2,450	95.9	1,700	99.0	1,400
50	93.0	2,300	99.8	1,600	102.0	1,350
47.5	97.4	2,100	104.0	1,550	106.0	1,350
45	102.0	1,900	107.0	1,500	110.0	1,350
42.5	105.0	1,700	111.0	1,400		
40	109.0	1,500	114.0	1,300		
37.5	113.0	1,350	117.0	1,150		
35	116.0	1,200	120.0	1,000		
32.5	119.0	1,050				
30	122.0	900				

C :Loaded boom angle (°)
R :Load radius in feet
W :Rated lifting capacity in pounds

GR-350XL RATED LIFTING CAPACITIES
(IN POUNDS)

ON OUTRIGGERS MID EXTENDED 19' 4-1/4" (5.9m) SPREAD
360° ROTATION

C	101.7' (31 m) Boom + 23.6' (7.2 m) Jib					
	5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W
80	19.3	7,700	26.7	5,200	32.1	3,700
77.5	25.2	7,700	32.0	5,000	37.2	3,600
75	30.8	7,700	37.5	4,800	42.4	3,500
72.5	36.4	7,350	42.7	4,600	47.1	3,400
70	41.8	7,000	47.7	4,400	52.1	3,300
67.5	47.1	6,600	52.9	4,250	56.6	3,200
65	52.1	6,200	57.5	4,100	61.0	3,150
62.5	56.7	5,700	62.3	3,950	65.4	3,100
60	61.1	5,200	66.6	3,800	69.5	3,050
57.5	65.6	4,350	70.7	3,500	73.5	2,950
55	69.9	3,500	74.8	3,200	77.2	2,850
52.5	74.0	2,950	78.6	2,750	80.9	2,550
50	78.0	2,400	82.4	2,300	84.2	2,200
47.5	81.8	2,050	86.0	1,950	87.6	1,900
45	85.3	1,750	89.5	1,650	90.7	1,650
42.5	88.9	1,500	92.6	1,350		
40	92.2	1,200	95.6	1,100		

C	101.7' (31 m) Boom + 42' (12.8 m) Jib					
	5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W
80	25.6	4,800	38.0	2,600	47.8	1,700
77.5	32.2	4,800	44.3	2,600	53.4	1,700
75	38.8	4,800	50.4	2,600	58.6	1,700
72.5	44.9	4,400	56.1	2,450	63.9	1,700
70	50.9	4,000	61.6	2,300	68.9	1,650
67.5	56.8	3,700	67.1	2,200	73.9	1,600
65	62.3	3,400	72.2	2,050	78.5	1,600
62.5	67.9	3,150	77.4	1,950	83.0	1,550
60	73.1	2,900	82.1	1,850	87.3	1,500
57.5	78.2	2,700	86.9	1,800	91.4	1,450
55	82.9	2,500	91.2	1,750	95.4	1,400
52.5	87.7	2,150	95.7	1,650	99.0	1,350
50	92.1	1,850	99.8	1,500	103.0	1,300
47.5	96.5	1,550	104.0	1,350	106.0	1,200
45	101.0	1,300	107.0	1,200	109.0	1,100

ON OUTRIGGERS MID EXTENDED 16' 4-7 / 8" (5.0 m) SPREAD
360° ROTATION

C	101.7' (31 m) Boom + 23.6' (7.2 m) Jib					
	5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W
80	19.3	7,700	26.7	5,200	32.1	3,700
77.5	25.2	7,700	32.0	5,000	37.2	3,600
75	30.8	7,700	37.5	4,800	42.4	3,500
72.5	36.4	7,100	42.7	4,600	47.1	3,400
70	41.5	6,500	47.7	4,400	52.1	3,300
67.5	46.7	5,950	52.7	4,350	56.6	3,200
65	51.5	5,400	57.5	4,100	61.0	3,100
62.5	56.1	4,500	61.8	3,650	65.2	3,000
60	60.5	3,600	66.2	3,200	69.3	2,950
57.5	64.8	3,000	70.5	2,700	73.1	2,500
55	69.2	2,400	74.4	2,200	76.9	2,100
52.5	73.4	2,050	78.3	1,750	80.3	1,750
50	77.2	1,650	81.9	1,400	83.8	1,400
47.5	81.4	1,350				
45	85.0	1,000				

C	101.7' (31 m) Boom + 42' (12.8 m) Jib					
	5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W
80	25.6	4,800	38.0	2,600	47.8	1,700
77.5	32.2	4,800	44.3	2,600	53.4	1,700
75	38.8	4,800	50.4	2,600	58.6	1,700
72.5	44.9	4,400	56.1	2,450	63.9	1,700
70	50.9	4,000	61.6	2,300	68.9	1,650
67.5	56.8	3,700	67.1	2,200	73.9	1,600
65	62.3	3,400	72.2	2,050	78.5	1,600
62.5	67.5	3,050	77.4	1,950	83.0	1,500
60	72.7	2,750	82.1	1,850	87.1	1,400
57.5	77.6	2,250	86.6	1,600	91.3	1,400
55	82.4	1,750	90.9	1,400	95.0	1,400
52.5	86.8	1,400	95.1	1,200	99.1	1,200
50	91.2	1,100	99.4	1,000	102.4	1,000

C :Loaded boom angle (°)
R :Load radius in feet
W :Rated lifting capacity in pounds

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 and Maintenance 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.
2. Rated lifting capacities do not exceed 85 % of the tipping load on outriggers fully extended as determined by SAE J765-Crane Stability Test Code.
   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 above thick lines in the chart are based on crane strength and those below, on its stability. They 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 the 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 (12m/s) ; reduced by 70 % when the wind speed is 27 mph (12m/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 8,820 lbs. (4,000 kg) for main winch and auxiliary winch.
12. Check the actual number of parts of line with LOAD MOMENT INDICATOR (AML-C) before operation. Maximum lifting capacity is restricted by the number of parts of line of LOAD MOMENT INDICATOR (AML-C). Limited capacity is as determined from the formula, Single line pull for main winch 8,820 lbs. (4,000 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 31.8' (9.7 m) boom length capacities are based on boom fully retracted. If not fully retracted [less than 40'(12.19 m) boom length], use the rated lifting capacities for the 40' (12.19 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.
16. For lifting capacity of single top, deduct the weight of the load handling equipment from the rated lifting capacity of the boom. For the lifting capacity of single top, the net capacity shall not exceed 8,820 lbs. (4,000 kg) including the main boom hook mass attached to the boom.
17. When a jib is 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-TWO BLOCK" 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. For boom length with 23.6' (7.2 m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "101.7' (31.0 m) boom + 23.6' (7.2 m) jib".
    For boom length with 42' (12.8 m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "101.7' (31.0 m) boom + 42' (12.8 m) jib".
    For angles not shown, use the next lower loaded boom angle to determine allowable capacity.
21. 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.

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-350XL RATED LIFTING CAPACITIES
(IN POUNDS)

ON RUBBER STATIONARY

	Over Front								360° Rotation							
A	31.8		40		55		70		31.8		40		55		70	
B	C	(9.7 m)	C	(12.19 m)	C	(16.8 m)	C	(21.34 m)	C	(9.7 m)	C	(12.19 m)	C	(16.8 m)	C	(21.34 m)
10	60.3	41,400	67.0	32,700					60.2	24,400	66.9	22,700				
12	55.7	37,900	63.8	32,700					55.9	18,200	63.6	17,400				
15	48.5	27,000	58.8	26,200	68.4	24,500			48.5	12,400	58.6	12,000	68.1	13,200		
20	33.5	16,800	49.5	16,500	62.4	15,700	69.1	16,450	33.2	7,200	49.4	6,900	62.3	7,850	68.8	7900
25			38.4	11,200	56.1	10,700	64.4	11,700			38.1	4,200	56.0	4,700	64.1	4750
30			22.1	7,950	49.3	7,500	59.6	8,450			22.2	2,200	49.1	2,900	59.4	2900
35					41.6	5,100	54.5	6,200							54.3	1700
40					32.3	3,650	49.2	4,500								
45					18.7	2,400	43.1	3,300								
50							36.4	2,400								
55							28.1	1,600								
60							16.0	1,200								
D	0												38		49	

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON RUBBER STATIONARY

	Over Front								360° Rotation			
A	31.8		40		55		70		31.8		40	
C	B	(9.7 m)	B	(12.19 m)	B	(16.8 m)	B	(21.34 m)	C	(9.7 m)	C	(12.19 m)
0	23.7	11,900	31.9	6,800	46.9	2,300	61.9	1,000	23.7	4,800	31.9	1,600

ON RUBBER CREEP

	Over Front							
A	31.8		40		55		70	
B	C	(9.7 m)	C	(12.19 m)	C	(16.8 m)	C	(21.34 m)
10	60.3	32,000	66.9	29,200				
12	55.7	27,800	63.6	27,500				
15	48.5	22,800	58.7	22,600	68.2	21,900		
20	33.6	16,800	49.5	16,500	62.5	15,700	69.1	16,450
25			38.2	11,200	56.1	10,700	64.4	11,700
30			22.2	7,950	49.3	7,500	59.6	8,450
35					41.6	5,100	54.5	6,200
40					32.3	3,650	49.2	4,500
45					18.7	2,400	43.1	3,300
50							36.4	2,400
55							28.1	1,600
60							16.0	1,200
D	0							

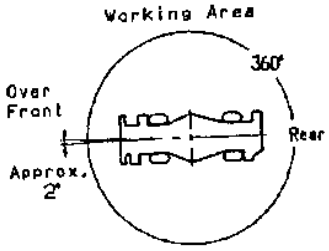
LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON RUBBER CREEP

	Over Front							
A	31.8		40		55		70	
C	B	(9.7 m)	B	(12.19 m)	B	(16.8 m)	B	(21.34 m)
0	23.7	12,100	31.9	6,800	46.9	2,300	61.9	1,000

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-C) 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 following table.

Boom Length in Feet (meters)	31.8' (9.7 m)	31.8' to 70' (9.7 m to 21.34 m)	Single top
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. Those above thick lines are based on tire capacity and those below, on crane stability. 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
20.5-25	94 psi (650 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 70' (21.34 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' (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.

WARNING AND OPERATING INSTRUCTIONS FOR USING THE LOAD MOMENT INDICATOR (AML-C)

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 pop-up window closes.
   - 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 pop-up window closes.
   - When erecting and stowing jib, select the status of jib set (Jib lift indicative symbol flickers).
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 indicative symbol flickers.
   - 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-C) 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 stop device. (For the details, see Operation and Maintenance 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-C) 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-C) 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-C) aids in place of good operating practice can cause an accident. The operator must exercise caution to assure safety.

GR-350XL Axle weight distribution chart

	Pounds			Kilograms		
	GVW	Front	Rear	GVW	Front	Rear
Base machine	60,830	30,380	30,450	27,590	13,780	13,810
Remove: 1. 4.4 ton (4.0 metric ton) hook block	-220	-310	90	-100	-140	40
2. 35 ton (31.8 metric ton) hook block	-620	-1,100	480	-280	-500	220
3. 2-stage jib (7.2 m,12.8 m)	-1,390	-2,390	1,000	-630	-1,085	455
4. Auxiliary lifting sheave	-110	-270	160	-50	-122	72

MEMO

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Form No. GR-350-3-00311/US-02