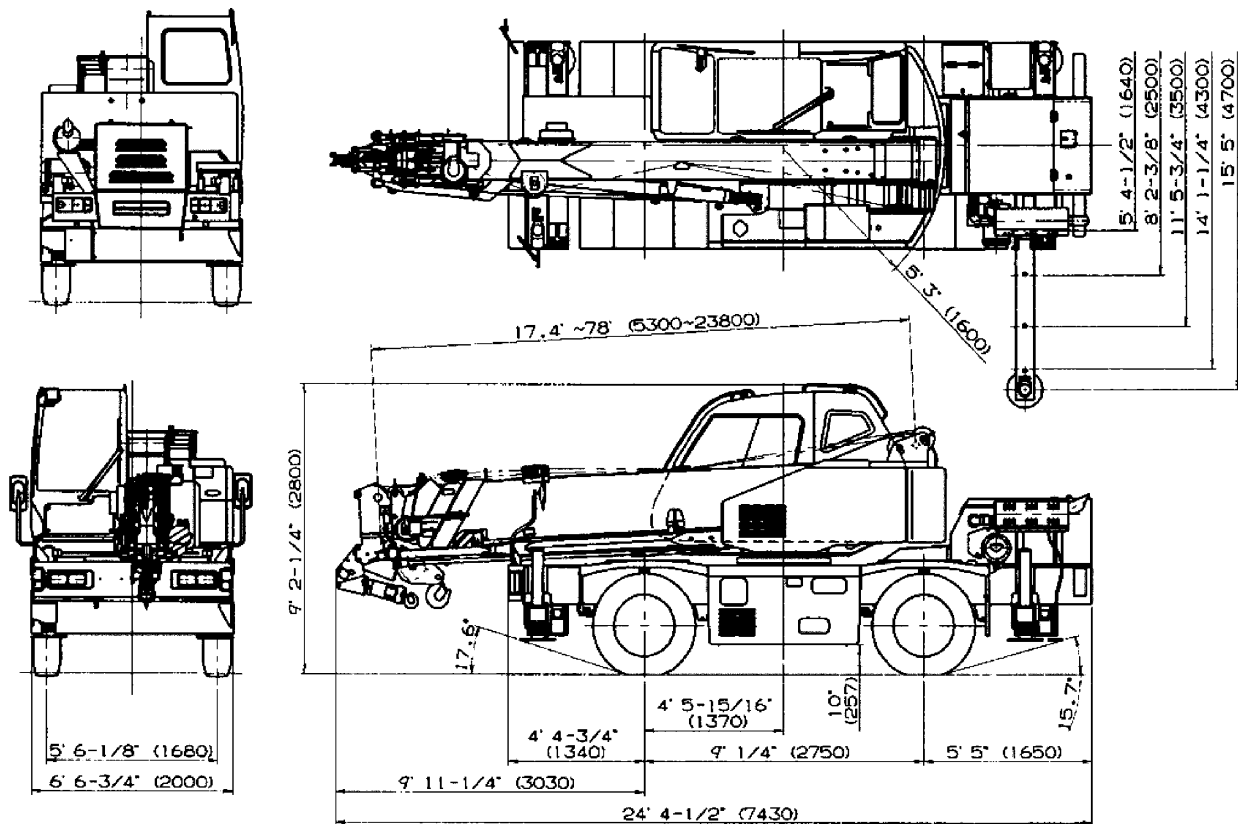


GR-150XL-1

15 Ton Capacity (13.6 Metric Tons)

HYDRAULIC ROUGH TERRAIN CRANE

DIMENSIONS



GENERAL DIMENSIONS (275/80R22.5 Tires)

	Feet	Meters
Turning radius		
4 wheel steer	12' 5-5/8"	3.8
2 wheel steer	21' 3-7/8"	6.5

Specifications are subject to change without notice.
Specification effective with S/N FD1307 and up.

CRANE SPECIFICATIONS

BOOM

Six section full power synchronized telescoping boom, 17.4'~78' (5.3m~23.8m), of box construction with 4 sheaves, 9-5/16" (0.236m) root diameter, at boom head.

The synchronization system consists of two double acting 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 60.6' (18.5m) in 52 seconds.

BOOM ELEVATION - By a double acting hydraulic cylinder with holding valve. Elevation -3°~82°, combination controls for hand or foot operation. Boom angle indicator. Automatic speed reduction and soft stop function. Elevation speed -3°~82° in 29 seconds.

JIB - Two stage extension type with 5°, 25° or 45° offset (tilt type). Single sheave, 8" (0.203m) root diameter, at jib head. Box type top section telescopes from box type base section which stores under base boom section. Jib length is 11.8' (3.6m) or 18' (5.5m).

AUXILIARY LIFTING SHEAVE (SINGLE TOP)

Single sheave, 8" (0.203m) root diameter. Mounted to main boom head for single line work.

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

SWING

Hydraulic axial piston motor driven through planetary speed reducer. Continuous 360° full circle swing on ball bearing turntable at 2.4rpm. Equipped with manually locked/released swing brake. A 360° positive swing lock for pick and carry and travel modes.

HOIST

MAIN HOIST - Grooved drum driven by hydraulic axial piston motor through winch 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 9-7/16" (0.24m) root diameter x 9-7/16" (0.239m) wide. Wire rope: 433' of 7/16" diameter rope (132m of 11.2mm). Drum capacity: 429.5' (130.9m) 7 layers. Maximum line pull (available): 7,600lbs. (3,460kg). Maximum line speed: 406FPM (124m/min).

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

DRUM - Grooved 9-7/16" (0.24m) root diameter x 9-7/16" (0.239m) wide. Wire rope: 433' of 7/16" diameter rope (132m of 11.2mm). Drum capacity: 429.5' (130.9m) 7 layers. Maximum line pull (available): 7,600lbs. (3,460kg). Maximum line speed: 406FPM (124m/min).

WIRE ROPE - Warrington seal wire, extra improved plow steel, preformed, independent wire rope core, right regular lay. 7/16" (11.2mm) 6X37 class
Maximum Permissible Line Pull (Main and Auxiliary) : 6,500lbs (2,940kg)

HOOK BLOCKS

15.0 ton (13.6 metric ton) - Weighted hook with swivel and safety latch, for 7/16" (11.2mm) wire rope.

2.0 ton (1.8 metric ton) - Weighted hook with swivel and safety latch, for 7/16" (11.2mm) wire rope.

HYDRAULIC SYSTEM

PUMPS - Two variable piston pumps for crane functions. Tandem gear pump for steering, swing and accumulator. 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 - 45 gallon (172 lit.) capacity. External sight level gauge.

FILTRATION - 26 micron 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.

Right side, 1 man type, steel construction with sliding door access and tinted 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 for swing, boom hoist, boom telescoping, auxiliary hoist and main hoist. Control lever can change neutral positions and tilt for easy access into cab. 3 way adjustable operator's seat with high back, headrest and armrest. Engine throttle knob. Foot operated controls : boom hoist, boom telescoping, service brake and engine throttle.

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

Instruments - Torque converter oil temperature, engine water temperature, air pressure, fuel, speedometer, tachometer and hour meter. Hydraulic oil pressure is monitored and displayed on the AML-L display panel.

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

- Control lever lockout function with audible and visual pre-warning
- Boom position indicator
- Outrigger status indicator
- Boom angle / boom length / jib offset angle / load radius / rated lifting capacities / actual loads read out
- Ratio of actual load moment to rated load moment indication
- Automatic Speed Reduction and Soft Stop function on boom elevation and swing
- Working condition register switch
- Load radius / boom angle / tip height / swing range preset function
- External warning lamp

CARRIER SPECIFICATIONS

TYPE - Rear engine, right hand steering, driving axle 2-way selected type by manual switch, 4x2 front drive, 4x4 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 - 30.4 mph (49 km/h)

AXLE - Front: Full floating type, steering and driving axle.
Rear: Full floating type, steering and driving axle.

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 .

ENGINE

Model	Cummins QSB3.9-30TAA
Type	Direct injection diesel
No. of cylinders	4
Combustion	4 cycle, turbo charged and after cooled
BoreXStroke, in.(mm)	4.016 X 4.724 (102X120)
Displacement, cu. in (liters)	238 (3.900)
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)	50 (189), right side of carrier
Cooling	Liquid pressurized, recirculating by-pass

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

Operator's left hand console includes transmission gear selector and sight level bubble. Upper console includes roof washer and wiper switch, emergency outrigger set up key switch, jib equipped / removed select switch, air conditioning control switch and winch drum indicator switch. Lower console includes working light switch and boom emergency telescoping switch (2nd-3rd and 4th-top).

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

SUSPENSION - Semi-elliptic leaf springs with hydraulic lockout device.

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 - 275/80R22.5

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 15' 5" (4.7 m) center-line and retract to within 5' 4-1/2" (1.64 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. Both symmetrical and Non-symmetrical outrigger extension (deployment) is permitted.

Min. Extension	5' 4-1/2" center to center
Mid. Extension	8' 2-3/8" center to center
Mid. Extension	11' 5-3/4" center to center
Mid. Extension	14' 1-1/4" center to center
Max. Extension	15' 5" center to center

Float size(Diameter) 1' 1-3/4" (0.35m)

Radiator	Fin and tube core, thermostat controlled
Fan, in.(mm)	Suction type, 10-blade, 18 (457) dia.
Starting	24 volt
Charging	24 volt system, negative ground
Battery	2-80 amp. Hour
Compressor, air, CFM(l /min)	15.2 CFM (430) at 2,500rpm
Horsepower (kW)	Gross 135 (101) at 2,300rpm
Torque, Max. ft-lb (kgm)	354 (49) at 1,500rpm
Capacity, gal.(liters)	
Cooling water	2.1 (7.9)
Lubrication	2 ~ 2.5 (7.6 ~ 9.5)
Fuel	50 (189)

STANDARD EQUIPMENT

- Six section full power partially synchronized boom 17.4' ~ 78' (5.3 m~23.8 m)
- Main hoist with grooved drum and 433' of 7/16" cable.
- Drum rotation indicator (visual type) main hoist
- Anti-Two block device (overwind cutout)
- Tadano electronic load moment indicator system (AML-L)
- Outrigger extension length detector
- Electronic crane monitoring system
- 360° positive swing lock
- Self centering finger control levers with pilot control
- Control pedals for boom hoist and boom telescoping
- 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)
- Rear view mirrors (right and left side)
- Cigarette lighter
- Electric fan in cab
- Cab floor mat
- Pump disconnect in operator's cab
- Hydraulic oil cooler
- Independently controlled outriggers
- Four outrigger extension positions
- Self-storing outrigger pads
- Cummins QSB3.9-30TAA turbo charged after cooled engine(135HP) with exhaust brake
- Electronic controlled automatic transmission driven by torque converter
- 4 X 4 X 4 drive/steer
- Hydraulic lockout suspension system
- 275/80R22.5 tires
- Disc brakes
- Fenders
- Air dryer
- Water separator with filter
- Engine over-run alarm
- Back-up alarm
- Low oil pressure/high water temp. warning device(visual)
- Rear steer centering light
- Air cleaner dust indicator
- Full instrumentation package
- Complete highway light package
- Work lights
- Tool storage compartment
- Tire inflation kit
- 24 volt electric system
- 15 ton (13.6 metric ton) hook with swivel
- 2.0 ton (1.8 metric ton) hook with swivel
- Towing hooks-Front and rear
- Hot water cab heater and air conditioner

OPTIONAL PACKAGE

- 11.8' or 18' (3.6 m or 5.5 m) box jib (tilt type) with 5°, 25° or 45° pinned offsets and self storing pins
- Auxiliary lifting sheave (single top) stowable
- Auxiliary hoist with grooved drum and 213' of 7/16" cable.
- Drum rotation indicator (visual type) auxiliary hoist

HOISTING PERFORMANCE

Layer	Main or auxiliary hoist - 9-7/16" (0.24m) drum, 7/16" (11.2mm) wire rope							
	Line speeds ²		Line pulls				Drum grooved lagging	
			Available ¹		Permissible ³		Total wire rope	
	F.P.M	m/min	Lbs.	kgf	Lbs.	kgf	Feet	Meters
1st	295	90	7,600	3,460	6,500	2,940	48.9	14.9
2nd	321	98	6,900	3,150	5,900	2,670	101.7	31.0
3rd	344	105	6,400	2,890	5,400	2,450	159.1	48.5
4th	370	113	5,900	2,670	5,000	2,260	220.5	67.2
5th	406	124	5,500	2,480	4,600	2,100	285.8	87.1
6th	423	129	5,100	2,310	4,300	1,960	355.6	108.4
7th	449	137	4,800	2,170	4,000	1,840	429.5	130.9

¹ Developed by machinery with each layer of wire rope, but not based on rope strength or other limitation in machinery or equipment.

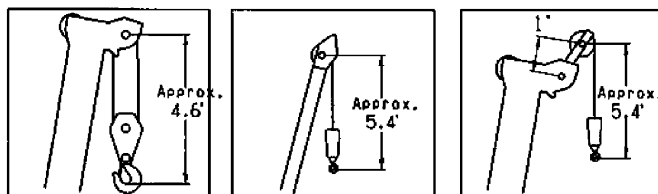
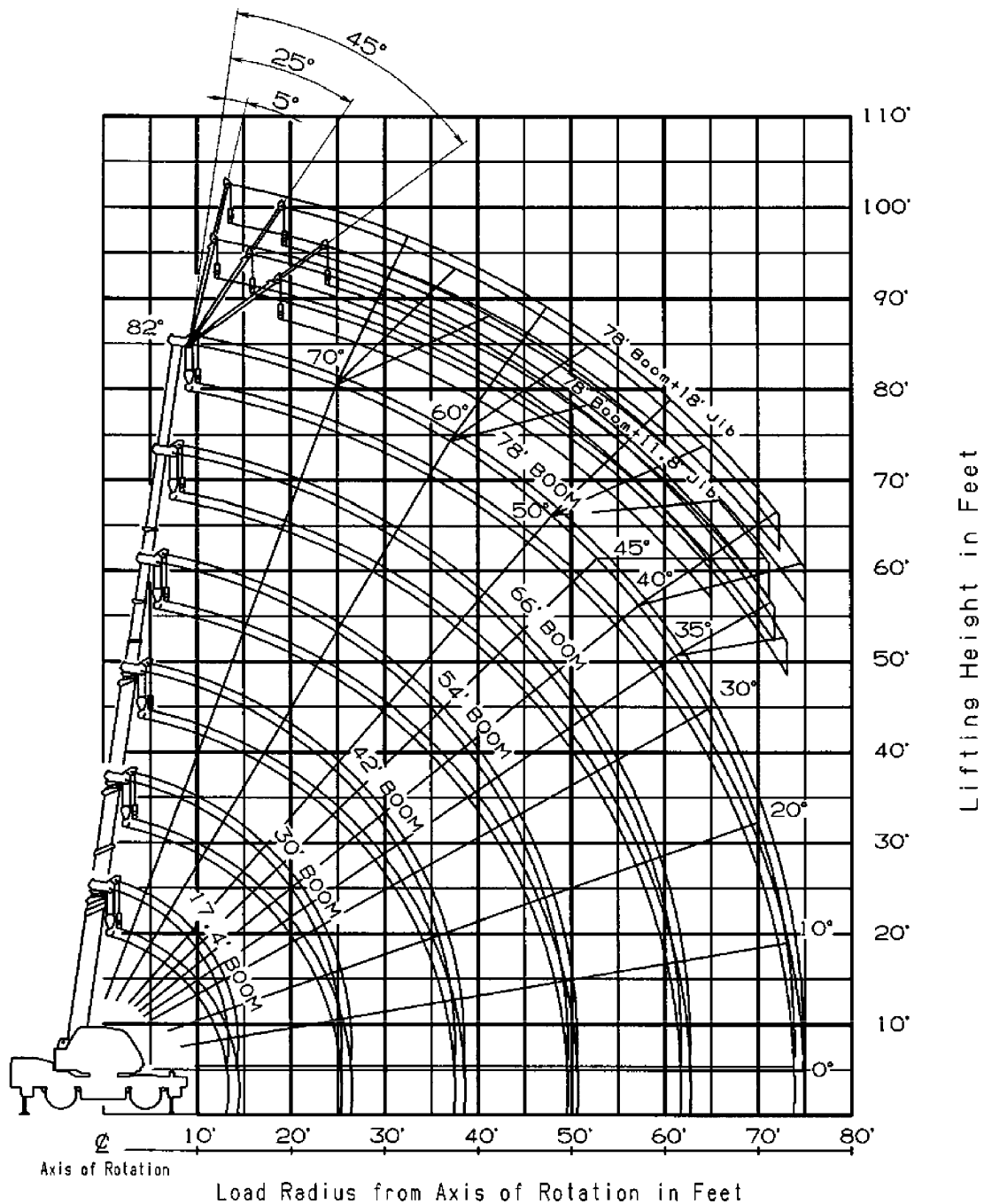
² Line speeds based only on hook block, not loaded.

³ Permissible line pull may be affected by wire rope strength.

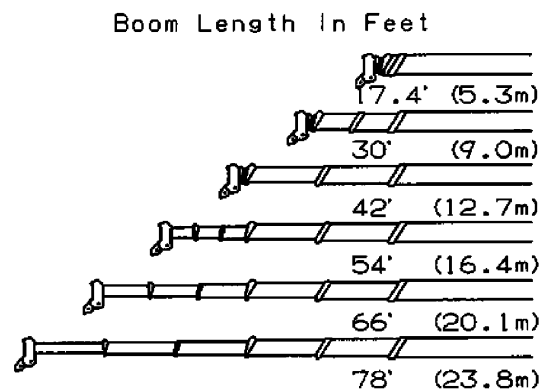
DRUM DIMENSIONS

		Inch	mm
Root diameter		9-7/16"	240
Length	Main	9-7/16"	239
	Auxiliary	9-7/16"	239
Flange diameter		1' 4-1/8"	410

GR-150XL-1 WORKING RANGE CHART



NOTE: 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.



GR-150XL-1 RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 15' 5" (4.7m) SPREAD												
360° ROTATION												
A \ B	17.4'		30'		42'		54'		66'		78'	
	C	(5.3m)	C	(9.0m)	C	(12.7m)	C	(16.4m)	C	(20.1m)	C	(23.8m)
4	70.4	30,000	78.9	13,200								
6	62.8	30,000	75.1	13,200	79.5	13,200						
8	54.2	23,800	70.8	13,200	76.7	13,200	79.9	11,000				
10	44.1	17,800	66.7	13,200	73.8	13,200	78.0	11,000	80.4	9,900		
12	30.8	14,800	62.4	13,200	71.0	13,200	75.8	11,000	78.7	9,900	80.5	6,600
15			55.4	11,500	66.6	11,100	72.4	10,850	76.0	8,950	78.5	6,600
20			42.1	8,300	58.5	8,000	66.6	7,750	71.5	7,050	74.8	6,050
25			19.5	6,200	49.8	5,850	60.6	5,700	66.8	5,500	70.9	4,950
30					39.4	3,450	54.3	4,400	61.8	4,400	66.9	4,100
35					25.2	2,500	47.1	2,850	56.5	3,550	62.6	3,350
40							38.9	2,300	51.0	2,750	58.3	2,800
45							28.3	1,650	44.8	2,050	53.7	2,000
50									37.9	1,600	48.6	1,700
55									29.3	1,200	43.2	1,300
60									16.2	850	37.2	1,050
65											29.9	850
70											20.2	650

ON OUTRIGGERS MID EXTENDED 14' 1-1/4" (4.3m) SPREAD												
360° ROTATION												
A \ B	17.4'		30'		42'		54'		66'		78'	
	C	(5.3m)	C	(9.0m)	C	(12.7m)	C	(16.4m)	C	(20.1m)	C	(23.8m)
4	70.4	30,000	78.9	13,200								
6	62.8	30,000	75.1	13,200	79.5	13,200						
8	54.2	23,800	70.8	13,200	76.7	13,200	79.9	11,000				
10	44.1	17,800	66.7	13,200	73.8	13,200	78.0	11,000	80.4	9,900		
12	30.8	14,800	62.4	13,200	71.0	13,200	75.8	11,000	78.7	9,900	80.5	6,600
15			55.3	11,300	66.6	11,100	72.4	10,850	76.0	8,950	78.5	6,600
20			42.1	8,050	58.5	7,450	66.6	7,750	71.5	7,050	74.8	6,050
25			19.5	4,700	49.8	5,300	60.6	5,400	66.7	5,100	70.9	4,950
30					39.4	3,000	54.2	3,450	61.7	3,500	66.8	3,900
35					25.2	2,100	47.0	2,400	56.5	2,750	62.6	2,700
40							38.7	1,750	50.9	1,950	58.3	2,200
45							28.1	1,200	44.6	1,450	53.6	1,650
50									37.7	1,050	48.5	1,250
55									29.3	750	43.1	950
60									16.2	450	37.0	750
65											29.8	450

A :Boom length in feet
B :Load radius in feet
C :Loaded boom angle (deg.)

GR-150XL-1 RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS MID EXTENDED 11' 5-3/4" (3.5m) SPREAD												
360° ROTATION												
A B	17.4'		30'		42'		54'		66'		78'	
	C	(5.3m)	C	(9.0m)	C	(12.7m)	C	(16.4m)	C	(20.1m)	C	(23.8m)
4	70.4	30,000	78.9	13,200								
6	62.8	30,000	75.1	13,200	79.5	13,200						
8	54.2	23,800	70.8	13,200	76.7	13,200	79.9	11,000				
10	44.1	17,800	66.7	13,200	73.8	13,200	78.0	11,000	80.4	9,900		
12	30.8	14,800	62.4	13,200	71.0	13,200	75.8	11,000	78.7	9,900	80.5	6,600
15			55.2	8,700	66.6	10,000	72.4	9,450	76.0	8,950	78.5	6,600
20			42.0	5,000	58.5	4,750	66.5	5,400	71.4	5,600	74.8	5,000
25			19.5	3,050	49.7	2,900	60.4	3,500	66.6	3,800	70.8	3,850
30					39.3	1,750	53.9	2,250	61.4	2,550	66.7	2,650
35					24.9	1,050	46.5	1,500	56.3	1,750	62.4	1,900
40							38.3	950	50.6	1,100	58.0	1,300
45							27.6	500	44.5	800	53.2	850
50									37.4	450	48.2	550

ON OUTRIGGERS MID EXTENDED 8' 2-3/8" (2.5m) SPREAD												
360° ROTATION												
A B	17.4'		30'		42'		54'		66'		78'	
	C	(5.3m)	C	(9.0m)	C	(12.7m)	C	(16.4m)	C	(20.1m)	C	(23.8m)
4	70.4	30,000	78.9	13,200								
6	62.8	30,000	75.1	13,200	79.5	13,200						
8	54.1	15,900	70.8	13,200	76.7	13,200	79.9	11,000				
10	43.6	10,400	66.7	10,100	73.7	10,100	78.0	11,000	80.4	9,900		
12	30.5	7,500	62.3	7,400	70.8	7,350	75.6	8,000	78.7	9,900	80.5	6,600
15			55.2	4,650	66.3	4,600	72.2	5,150	75.8	5,400	78.5	6,600
20			42.0	2,400	58.3	2,300	66.4	2,800	71.1	3,050	74.5	3,300
25			19.5	1,200	49.6	1,050	60.3	1,600	66.3	1,850	70.4	2,000
30							53.8	800	61.3	1,100	66.3	1,200
35									56.0	600	62.0	700

ON OUTRIGGERS MIN EXTENDED 5' 4-1/2" (1.64m) SPREAD												
360° ROTATION												
A B	17.4'		30'		42'		54'		66'		78'	
	C	(5.3m)	C	(9.0m)	C	(12.7m)	C	(16.4m)	C	(20.1m)	C	(23.8m)
4	70.3	14,300	78.9	10,600								
6	62.5	10,850	75.0	9,900	79.5	10,100						
8	54.1	7,300	70.8	7,450	76.6	6,950	79.9	6,100				
10	44.0	4,900	66.6	5,200	73.8	4,700	77.6	4,600	80.1	4,600		
12	30.1	3,600	62.2	3,450	70.9	3,450	75.3	3,500	78.3	3,600	80.4	3,550
15			55.2	2,050	66.4	1,900	72.0	2,250	75.5	2,500	77.9	2,550
20			41.8	700	58.5	600	66.2	1,000	71.0	1,250	74.1	1,500
25											70.2	750

A :Boom length in feet

C :Loaded boom angle (deg.)

B :Load radius in feet

Boom Length in Feet	17.4' (5.3m)	17.4' to 78' (5.3m to 23.8m)	Single top Jib
Number of parts of line	8	4	1

GR-150XL-1 RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 15' 5" (4.7m) SPREAD 360° ROTATION												
C	78' (23.8m) Boom + 11.8' (3.6m) Jib						78' (23.8m) Boom +18' (5.5m) Jib					
	5° Tilt		25° Tilt		45° Tilt		5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W	R	W	R	W	R	W
82°	12.6	3300	16.7	2650	19.6	2000	13.9	1850	20.0	1550	24.7	1300
80°	16.1	3300	20.0	2650	22.7	2000	17.5	1850	23.5	1550	28.0	1300
77.5°	20.4	3300	24.2	2650	26.5	2000	21.9	1850	27.9	1550	31.9	1200
75°	24.4	3300	28.1	2650	30.3	2000	26.3	1850	32.1	1550	35.8	1200
72.5°	28.3	3000	31.8	2400	33.9	1900	30.6	1850	36.0	1500	39.6	1200
70°	32.1	2750	35.4	2200	37.4	1850	34.7	1850	39.7	1400	43.1	1150
67.5°	35.7	2500	38.9	2100	40.8	1800	38.6	1800	43.3	1350	46.5	1100
65°	39.2	2300	42.3	1950	44.2	1700	42.5	1750	47.1	1300	49.8	1100
62.5°	42.8	2100	45.7	1850	47.3	1600	46.1	1600	50.5	1250	53.0	1100
60°	46.1	1950	49.0	1750	50.3	1550	49.6	1450	53.8	1200	56.1	1050
57.5°	49.1	1600	51.9	1450	53.3	1300	53.1	1350	57.2	1150	59.1	1000
55°	52.1	1300	54.9	1200	56.0	1100	56.4	1250	60.3	1100	61.9	1000
52.5°	55.1	1100	57.7	1000	58.6	1000	59.5	1000	63.3	900	64.7	850
50°	57.9	900	60.3	800	61.2	850	62.7	800	66.0	750	67.4	750
47.5°	60.7	800	62.8	750	63.6	750	65.4	700	68.7	650	69.8	650
45°	63.2	650	65.3	600	65.8	600	68.1	600	71.2	500	72.0	500
42.5°	65.7	600	67.6	450			70.8	450	73.7	450		
40°	68.1	450	69.9	400			73.4	400				
37.5°	70.4	350										

ON OUTRIGGERS MID EXTENDED 14' 1-1/4" (4.3m) SPREAD 360° ROTATION												
C	78' (23.8m) Boom + 11.8' (3.6m) Jib						78' (23.8m) Boom +18' (5.5m) Jib					
	5° Tilt		25° Tilt		45° Tilt		5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W	R	W	R	W	R	W
82°	12.6	3300	16.7	2650	19.6	2000	13.9	1850	20.0	1550	24.7	1300
80°	16.1	3300	20.0	2650	22.7	2000	17.5	1850	23.5	1550	28.0	1300
77.5°	20.4	3300	24.2	2650	26.5	2000	21.9	1850	27.9	1550	31.9	1200
75°	24.4	3300	28.1	2650	30.3	2000	26.3	1850	32.1	1550	35.8	1200
72.5°	28.3	3000	31.8	2400	33.9	1900	30.6	1850	36.0	1500	39.6	1200
70°	32.1	2750	35.4	2200	37.4	1850	34.7	1850	39.7	1400	43.1	1150
67.5°	35.7	2500	38.9	2100	40.8	1800	38.6	1800	43.3	1350	46.5	1150
65°	39.2	2300	42.3	1950	44.2	1700	42.5	1750	47.1	1300	49.8	1100
62.5°	42.6	2000	45.7	1600	47.3	1450	46.1	1450	50.5	1150	53.0	1100
60°	45.8	1450	48.9	1300	50.3	1200	49.6	1150	53.8	1050	56.1	1050
57.5°	48.9	1250	51.8	1200	53.1	1050	52.9	1050	57.2	950	59.1	950
55°	51.9	1000	54.7	950	55.8	900	56.1	900	60.2	800	61.9	750
52.5°	54.8	800	57.3	800	58.4	750	59.3	750	63.0	700	64.6	650
50°	57.7	650	60.1	600	61.0	600	62.3	600	65.9	550	67.2	550
47.5°	60.4	500	62.6	450	63.4	450	65.2	450	68.6	450	69.7	450
45°	63.0	400	65.1	400	65.7	400	68.0	400	71.1	350	71.9	350

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

GR-150XL-1 RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS MID EXTENDED 11' 5-3/4" (3.5m) SPREAD 360° ROTATION												
C	78' (23.8m) Boom + 11.8' (3.6m) Jib						78' (23.8m) Boom +18' (5.5m) Jib					
	5° Tilt		25° Tilt		45° Tilt		5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W	R	W	R	W	R	W
82°	12.6	3300	16.7	2650	19.6	2000	13.9	1850	20.0	1550	24.7	1300
80°	16.1	3300	20.0	2650	22.7	2000	17.5	1850	23.5	1550	28.0	1300
77.5°	20.4	3300	24.2	2650	26.5	2000	21.9	1850	27.9	1550	31.9	1200
75°	24.4	3300	28.1	2650	30.3	2000	26.3	1850	32.1	1550	35.8	1200
72.5°	28.3	2850	31.8	2400	33.9	1900	30.6	1850	36.0	1500	39.6	1200
70°	31.8	2000	35.4	2000	37.4	1850	34.7	1850	39.7	1400	43.1	1150
67.5°	35.3	1700	38.7	1650	40.8	1600	38.6	1650	43.3	1300	46.5	1100
65°	38.7	1300	41.9	1300	43.8	1200	42.2	1200	46.9	950	49.8	900
62.5°	42.0	1000	45.7	1000	46.9	950	45.7	1000	50.2	800	52.9	700
60°	45.2	750	48.9	750	49.8	750	48.9	750	53.4	650	55.8	600
57.5°	48.3	550	51.8	550	52.6	550	52.2	550	56.7	450	58.7	450
55°	51.4	450	54.2	450	55.4	400	55.6	400	59.7	350	61.6	350

ON OUTRIGGERS MID EXTENDED 8' 2-3/8" (2.5m) SPREAD 360° ROTATION												
C	78' (23.8m) Boom + 11.8' (3.6m) Jib						78' (23.8m) Boom +18' (5.5m) Jib					
	5° Tilt		25° Tilt		45° Tilt		5° Tilt		25° Tilt		45° Tilt	
	R	W	R	W	R	W	R	W	R	W	R	W
82°	12.6	3300	16.7	2650	19.6	2000	13.9	1850	20.0	1550	24.7	1300
80°	16.1	3300	20.0	2650	22.7	2000	17.5	1850	23.5	1550	28.0	1300
77.5°	20.1	2850	23.9	2300	26.3	1900	21.9	1850	27.7	1500	31.9	1200
75°	23.9	2000	27.7	1700	30.0	1450	26.3	1850	31.9	1400	35.7	1100
72.5°	27.5	1550	31.1	1300	33.5	1200	30.2	1500	35.5	1100	39.1	900
70°	31.0	1050	34.5	900	36.7	800	33.9	900	39.3	700	42.8	600
67.5°	34.5	750	37.9	650	39.9	550	37.6	650				
65°	37.8	450	41.1	400	43.0	350	41.0	350				

C :Loaded boom angle (deg.)

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 crane. If these manuals are missing, order replacements 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 by this formula, Rated Lifting Capacities = (Tipping Load - 0.1 x Tip Reaction) / 1.25.
3. Rated lifting capacities above bold 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 boom or jib is extremely dangerous.
6. Rated lifting capacities do not account for the effects of wind on a lifted load or boom. Rated lifting capacities and boom length shall be appropriately reduced, when wind velocity exceeds 20 mph (9 m/sec.).
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 4,000 lbs. (1,800kg) for main winch and auxiliary winch.
12. Check the actual number of parts of line with LOAD MOMENT INDICATOR (AML-L) before operation. Maximum lifting capacity is restricted by the number of parts of line of LOAD MOMENT INDICATOR (AML-L). Limited capacity is as determined from the formula, Single line pull for main winch (4,000 lbs.) 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 17.4' (5.3m) boom length capacities are based on boom fully retracted. If not fully retracted [less than 30' (9.0m) boom length], use the rated lifting capacities for the 30' (9.0m) 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, reduce the rated lifting capacities of relevant boom according to a weight reductions for auxiliary load handling equipment. Capacities of single top shall not exceed 4,000 lbs. (1,800kg) including main hook.
17. When jib removing, jib state switch select removed.
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 11.8' (3.6m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "78' (23.8m) boom + 11.8' (3.6m) jib".
For boom length with 18' (5.5m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "78' (23.8m) boom + 18' (5.5m) 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

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-150XL-1 RATED LIFTING CAPACITIES (IN POUNDS)

ON RUBBER STATIONARY										
A	Over Front						360° Rotation			
	17.4'		30'		42'		17.4'		30'	
B	C	(5.3m)	C	(9.0m)	C	(12.7m)	C	(5.3m)	C	(9.0m)
4	70.3	7,900	79.0	7,900			70.3	6,200	79.0	6,200
6	62.7	7,650	74.9	7,650	79.4	7,900	62.7	6,200	74.9	6,200
8	54.4	6,900	70.8	6,900	76.6	6,900	54.4	4,900	70.8	4,800
10	44.4	5,750	66.5	5,650	73.6	5,500	44.4	3,450	66.5	3,350
12	30.7	4,850	62.2	4,600	70.7	4,350	30.7	2,500	62.2	2,350
15			55.2	3,450	66.2	3,000			55.2	1,000
20			41.7	1,900	58.3	1,700				
25			19.2	550	49.4	650				

ON RUBBER CREEP										
A	Over Front						360° Rotation			
	17.4'		30'		42'		17.4'		30'	
B	C	(5.3m)	C	(9.0m)	C	(12.7m)	C	(5.3m)	C	(9.0m)
4	70.3	7,050	79.0	7,050			70.3	4,400	79.0	4,400
6	62.7	6,750	74.9	6,750	79.4	7,050	62.7	4,400	74.9	4,400
8	54.4	6,200	70.8	6,100	76.6	5,900	54.4	3,500	70.8	3,450
10	44.4	5,200	66.5	4,950	73.6	4,750	44.4	2,350	66.5	2,250
12	30.7	4,150	62.2	4,000	70.7	3,750	30.7	1,700	62.2	1,450
15			55.2	3,000	66.2	2,700			55.2	600
20			41.7	1,700	58.3	1,500				
25			19.2	500	49.4	650				

A :Boom length in feet

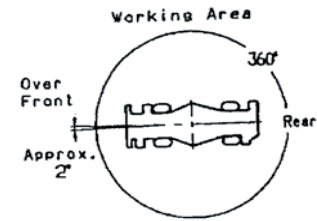
C :Loaded boom angle (deg.)

B :Load radius in feet

NOTE: Standard number of parts of line for on rubber operation should be according to the following table

Boom Length in Feet (meters)	17.4' to 42' (5.3m to 12.7m)	Single top
Number of parts of line	4	1

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



WARNING AND OPERATING INSTRUCTIONS FOR ON RUBBER LIFTING CAPACITIES

- 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
- Rated lifting capacities shown in the chart are based on condition that crane is set on firm level surfaces with axle oscillation lockout applied. Those above bold 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.
- Rated lifting capacities are based on proper tire inflation capacity and condition. Damaged tires are hazardous to safe operation of crane
- Tires shall be inflated to correct air pressure

Tires	Air Pressure
275/80R22.5	125 psi (8.75 kgf/cm ²)
- Over front operation shall be performed within two degrees in front of chassis
- On rubber lifting with "jib" is not permitted. Maximum permissible boom length is 42 ft. (12.7m)
- When making lift on rubber stationary, set parking brake
- For creep operation, boom must be centered over front of machine, swing lock engaged, and load restrained from swinging. Travel slowly and keep the lifted load as close to the ground as possible, and especially avoid any abrupt steering, accelerating or braking
- Do not operate the crane while carrying the load
- Creep is motion for crane not to travel more than 200 ft. (60m) in any 30 minute period and to travel at the speed of less than 1 mph (1.6km/h).
- For creep operation, set Drive select switch to "4-WHEEL (Lo)" and set gear shift lever to "1"

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

1. When operating crane on outriggers:
 - Set P.T.O. switch to "ON".
 - Press the outrigger mode select key to register for the outrigger operation. Press the set key, then the outrigger mode indicative symbol changes from flickering to lighting.
 - Press the boom mode select key to register the boom mode, then the boom mode indicative symbol changes from lighting to flickering. Each time the boom mode select key is pressed, the mode changes. Press the set key to select the status that corresponds to the actual state of the boom, then the boom mode indicative symbol changes from flickering to lighting.
 - When erecting and stowing jib, select the status of jib set (jib state indicative symbol flicker).
 2. When operating crane on rubber:
 - Set P.T.O. switch to "ON".
 - Press the outrigger mode select key. The on-tire mode indicative symbol comes on. Each time the outrigger mode select key is pressed the mode changes. Select the creep operation, the on-tire mode indicative symbol flicker.
 - Press the boom mode select key to register the boom mode.
- 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 swung to the side area, make sure the value of the LOAD MOMENT INDICATOR(AML-L) 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.
 3. This machine is equipped with an automatic swing stopping device. (For the details, see Operation Maintenance Manual.) But, operate very carefully because the automatic swing stop does not work in the following cases.
 - During on - tire operation.
 - When the "P.T.O" switch is set to "OVERRIDE" and the "OVERRIDE" key switch outside the cab is on.
 4. During crane operation, make sure that the displays on front panel are in accordance with actual operating conditions.
 5. The displayed values of LOAD MOMENT INDICATOR (AML-L) 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 swinging, lifting loads shall be appropriately reduced.
 6. LOAD MOMENT INDICATOR (AML-L) 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-L) aids in place of good operating practice can cause an accident. The operator must exercise caution to assure safety.

GR-150XL-1 Axle weight distribution chart

	Pounds			Kilograms		
	GVW	Front	Rear	GVW	Front	Rear
Base machine	27,208	13,756	13,452	12,340	6,240	6,100
Add: Optional Package : Aux.Winch Kits, Single Top, 2 stage jib(11.8' - 18')	1,457	1,094	364	660	495	165

MEMO

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