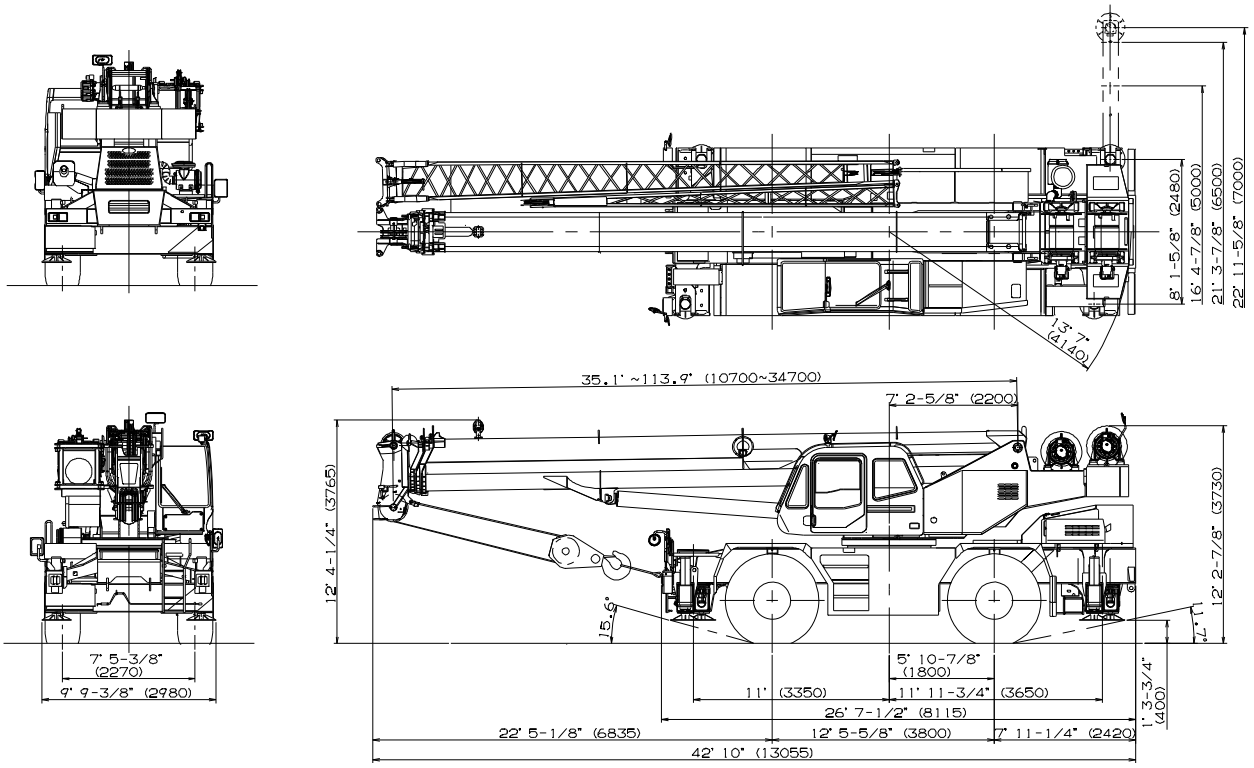
TADANO

GR-500XL

50 Ton Capacity (45.4 Metric Tons)

HYDRAULIC ROUGH TERRAIN CRANE

DIMENSIONS



Note : Dimension is with boom angle at -0.8 degree.

GENERAL DIMENSIONS
(23.5 - 25 Tires)

	Feet	Meters
Turning radius		
4 wheel steer	22'	6.7
2 wheel steer	38' 5"	11.7
Tail swing of counterweight	13' 7"	4.14

CRANE SPECIFICATIONS

BOOM
Four section full power synchronized telescoping boom, 35.1'~113.9' (10.7m~34.7m), of round box construction with four sheaves, 17-5/16" (0.44m) root diameter, at boom head. The synchronization system consists of telescope cylinder, two extension cables and retraction cables. 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 78.8' in 72 seconds.

BOOM ELEVATION - By a double acting hydraulic cylinder with holding valve. Elevation -0.8 ^{o} - 81^{o}, combination controls for hand or foot operation. Boom angle indicator.
Automatic speed reduction and soft stop function.
Boom raising speed 20 ^{o} - 60 ^{o} in 27 sec.

JIB - Two stage bi-fold lattice type with 5 ^{o}, 25 ^{o} or 45 ^{o} offset (tilt type). Single sheave, 15-5/8" (0.396m) root diameter, at the head of both jib sections. Stored alongside base boom section. Jib length is 28.9' (8.8m) or 50' (15.2m). 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" (0.396m) root diameter. Mounted to main boom head for single line work (storable).

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 2.7min^{-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
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.
Equipped with cable follower and drum rotation indicator.

DRUM - Grooved 14-1/4" (0.362m) root diameter x 23-5/8" (0.6m) wide. Wire rope: 633' of 3/4" diameter rope (193m of 19mm).
Drum capacity: 997' (304m) 7 layers.
Maximum line pull (available): 16,500 lbs (7,480kg).
Maximum line speed: 450FPM (137m/min) at the 5th layer.

WIRE ROPE - Warrington seal wire, extra improved plow steel, preformed, independent wire rope core, right regular lay.
3/4" (19 mm) 6x31 class
Braking strength: 54,700 lbs (24,800 kg)

HOOK BLOCKS
50 ton (45.4 metric ton) - 5 sheaves with swivel hook block and safety latch.
25 ton (22.7 metric ton) - 2 sheaves with swivel hook block and safety latch.
6.2 ton (5.6 metric ton) - Weighted hook ball with swivel and safety latch.

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 - 148 gallon (560 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 and 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.
Hot water cab heater and air conditioning.

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, slewing brake switch, outrigger controls, free slewing / lock slewing selector switch, eco mode switch and ashtray.

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

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

- Control lever lockout function
- 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
- Drum rotation indicator (audible and visible type)

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 and sight level bubble. 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. Slewing lock lever.

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

CARRIER SPECIFICATIONS

TYPE - Rear engine, left 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.

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

TRAVEL SPEED - 31 mph (50 km/h)

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. Three steering modes available: 2 wheel front, 4 wheel coordinated and 4 wheel crab .

SUSPENSION - Front: Semi-elliptic leaf springs with hydraulic lockout device. Rear: 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 - 23.5-25(OR)

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 22' 11-5/8" (7.0 m) center-line and retract to within 9' 9-3/8" (2.98 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' 1-5/8"	(2.48m) center to center
Mid. Extension	16' 4-7/8"	(5.0m) center to center
Mid. Extension	21' 3-7/8"	(6.5m) center to center
Max. Extension	22' 11-5/8"	(7.0m) center to center
Float size(Diameter)	1' 7- 11/16"	(0.5m)

ENGINE

Model	Cummins QSB6.7 [Tier 4]
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 (6.700)
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

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 2,400rpm
Horsepower (kW)	Gross 270 (201) at 2,000rpm
Torque, Max. ft-lb (Nm)	730 (990) at 1,500rpm
Capacity, gal.(liters)	
Cooling water	7.4 (28)
Lubrication	4.0 (15)
Fuel	79.2 (300)
DEF	10.0 (38)

STANDARD EQUIPMENT

- Four section full power synchronized boom 35.1'~113.9' (10.7 m~34.7 m)
- 28.9' or 50' (8.8 m or 15.2 m) bi-fold lattice jib (tilt type) with 5°, 25° or 45° pinned offsets and self storing pins.
- Auxiliary lifting sheave (single top) storable
- Variable speed hoist with grooved drum, cable follower and 633' of 3/4" cable.
- Drum rotation indicator (audible, visible and thumper type)
- Anti-Two block device (overwind cutout)
- Boom angle indicator
- Tadano electronic load moment indicator system (AML-C)
- Outrigger extension length detector
- Electronic crane monitoring system
- Tadano twin slewing system and 360° positive slewing lock
- Self centering finger control levers with pilot control
- Control pedals for boom elevating 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)
- Mirror for hoist
- Cigarette lighter and ashtray
- Cab floor mat
- Pump disconnect in operator's cab
- Hydraulic oil cooler
- Hot water cab heater and air conditioner
- Positive control
- Quick reeving type bi-fold jib
- Work lights
- Independently controlled outriggers
- Four outrigger extension positions
- Self-storing outrigger pads
- Cummins QSB6.7 turbo charged after cooled engine (270HP) with exhaust brake
- Electronic controlled automatic transmission driven by torque converter
- 4 X 4 X 4 drive/steer
- Non-spin rear differential
- Semi-elliptic leaf springs suspension with hydraulic lockout device (front and rear)
- 23.5-25(OR) tires
- Disc brakes
- Fenders
- Air dryer
- Water separator with filter(high filtration)
- 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
- Tool storage compartment
- Tire inflation kit
- 24 volt electric system
- 6.2 ton (5.6 metric ton) hook ball with swivel
- 25 ton (22.7 metric ton) - 2 sheave with swivel hook block and safety latch for 3/4" (19mm) wire rope
- Towing hooks-Front and rear
- Lifting eyes
- Hook block tie down (front bumper)
- Weighted hook storage compartment
- Halogen head lamp
- Telematics (machine data logging and monitoring system) with HELLO-NET via internet
- Fuel consumption monitor
- Eco mode system

OPTIONAL EQUIPMENT

- 50 ton (45.4 metric ton) - 5 sheave with swivel hook block and safety latch for 3/4" (19mm) wire rope

HOISTING PERFORMANCE

LINE SPEEDS AND PULLS

Layer	Hoist - 14'-1/4" (0.362m) drum			
	Line speeds[1]		Line pulls Available[2]	
	F.P.M.	m/min	Lbs.	kgf
1st	331	101	16,500	7,480
2nd	361	110	15,200	6,900
3rd	390	119	13,800	6,260
4th	420	128	12,700	5,760
5th	450	137	11,900	5,400
6th	479	146	11,000	4,990
7th[3]	509	155	10,300	4,670

* Maximum permissible line pull may be affected by wire rope strength.
Maximum lifting capacity per line: 12,300 lbs (5,600 kg)

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

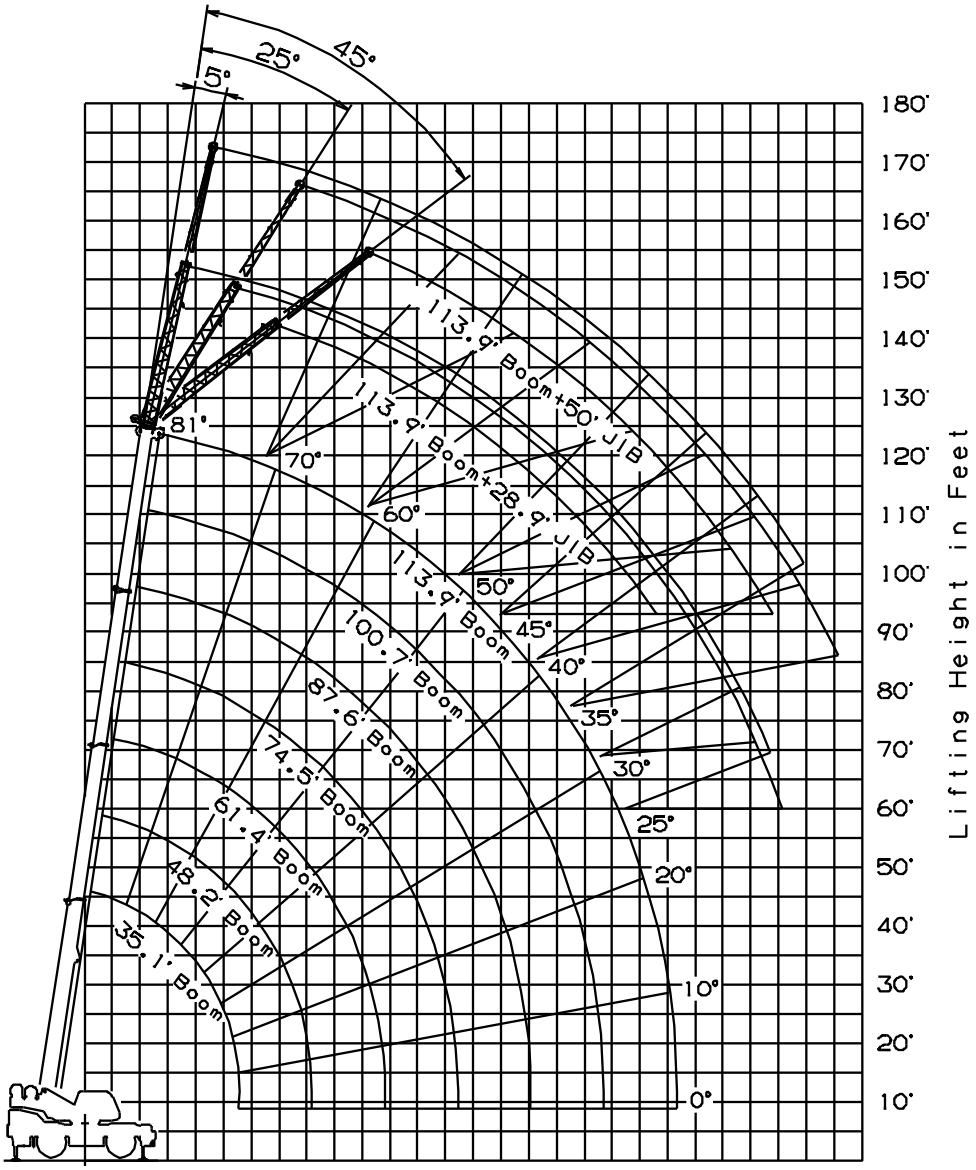
DRUM WIRE ROPE CAPACITIES

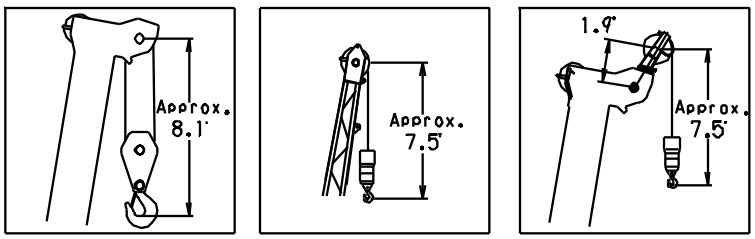
Wire rope layer	Drum grooved lagging 3/4" (19mm) wire rope			
	Rope per layer		Total wire rope	
	Feet	Meters	Feet	Meters
1	112.2	34.2	112.2	34.2
2	122.3	37.3	234.5	71.5
3	132.2	40.3	366.8	111.8
4	142.3	43.4	509.1	155.2
5	152.2	46.4	661.4	201.6
6	162.4	49.5	823.8	251.1
7	172.5	52.6	996.4	303.7

DRUM DIMENSIONS

	Inch	mm
Root diameter	14-1/4"	362
Length	23-5/8"	600
Flange diameter	25-7/8"	657

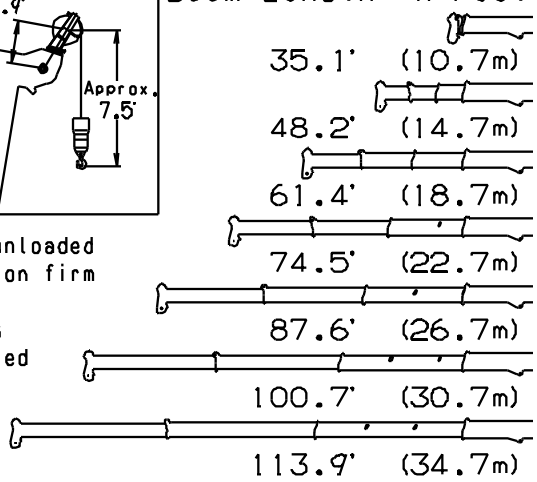
GR-500XL WORKING RANGE CHART





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.

Boom Length in Feet



GR-500XL RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 22' 11-5/8"(7.0m) SPREAD
360° ROTATION

A / B	35.1'		48.2'		61.4'		74.5'		87.6'		100.7'		113.9'	
	C	(10.7m)	C	(14.7m)	C	(18.7m)	C	(22.7m)	C	(26.7m)	C	(30.7m)	C	(34.7m)
8'	70	100,000												
10'	66	100,000	73	46,700	77	46,700	80	44,300						
12'	63	87,900	70	46,700	75	46,700	78	44,300	81	41,200				
15'	56	73,400	67	46,700	72	46,700	76	44,300	79	40,300	81	33,000		
20'	44	54,400	60	46,700	67	46,700	72	42,100	76	35,800	78	30,500	80	25,100
25'	27	38,500	52	42,000	62	42,400	68	39,500	72	31,700	75	27,300	78	23,900
30'			44	29,400	56	29,800	64	30,800	69	28,700	72	25,000	75	21,600
35'			33	22,000	50	22,300	59	23,100	65	23,300	69	23,000	72	19,900
40'			16	17,100	44	17,500	54	18,100	61	18,300	66	18,400	70	18,300
45'					36	14,100	49	14,500	57	14,700	63	14,800	67	14,900
50'					25	11,500	43	11,900	53	12,100	59	12,200	64	12,300
55'							37	9,900	48	10,100	56	10,160	61	10,200
60'							29	8,300	43	8,400	52	8,500	58	8,600
65'							18	7,000	38	7,100	48	7,200	54	7,200
70'									32	6,000	44	6,100	51	6,100
75'									24	5,100	39	5,200	47	5,200
80'									9	4,400	34	4,400	44	4,400
85'											27	3,700	39	3,800
90'											19	3,200	35	3,200
95'													30	2,700
100'													23	2,300
105'													13	1,900

ON OUTRIGGERS MID EXTENDED 21' 3-7/8"(6.5m) SPREAD
360° ROTATION

A / B	35.1'		48.2'		61.4'		74.5'		87.6'		100.7'		113.9'	
	C	(10.7m)	C	(14.7m)	C	(18.7m)	C	(22.7m)	C	(26.7m)	C	(30.7m)	C	(34.7m)
8'	70	100,000												
10'	66	100,000	73	46,700	77	46,700	80	44,300						
12'	63	87,900	70	46,700	75	46,700	78	44,300	81	41,200				
15'	56	73,400	67	46,700	72	46,700	76	44,300	79	40,300	81	33,000		
20'	44	54,400	60	46,700	67	46,700	72	42,100	76	35,800	78	30,500	80	25,100
25'	27	33,300	52	35,000	62	35,800	68	36,500	72	31,700	75	27,300	78	23,900
30'			44	24,200	56	24,800	64	25,400	69	25,700	72	25,000	75	21,600
35'			33	17,800	50	18,300	59	18,900	65	19,100	69	19,300	72	19,400
40'			16	13,600	43	14,100	54	14,600	61	14,800	66	15,000	70	15,000
45'					35	11,100	49	11,600	57	11,800	62	11,900	67	12,000
50'					25	8,900	43	9,300	53	9,500	59	9,600	64	9,700
55'							37	7,600	48	7,700	55	7,900	60	7,900
60'							29	6,200	43	6,400	52	6,500	57	6,500
65'							18	5,100	38	5,200	48	5,300	54	5,400
70'									32	4,300	43	4,400	50	4,400
75'									24	3,500	39	3,600	47	3,700
80'									9	2,900	33	2,900	43	3,000
85'											27	2,400	39	2,400
90'											19	1,900	35	1,900
95'													29	1,500
100'													23	1,100

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

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 each boom length should be according to the following table.

Boom length in feet (meters)	35.1' (10.7m)	35.1' to 61.4' (10.7m to 18.7m)	61.4' to 113.9' (18.7m to 34.7m)	Single top Jib
Number of parts of line	10	6	4	1

GR-500XL RATED LIFTING CAPACITIES (IN POUNDS)

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

360° ROTATION

A / B	35.1'		48.2'		61.4'		74.5'		87.6'		100.7'		113.9'	
	C	(10.7m)	C	(14.7m)	C	(18.7m)	C	(22.7m)	C	(26.7m)	C	(30.7m)	C	(34.7m)
8'	70	100,000												
10'	66	100,000	73	46,700	77	46,700	80	44,300						
12'	63	87,900	70	46,700	75	46,700	78	44,300	81	41,200				
15'	56	61,900	67	46,700	72	46,700	76	44,300	79	40,300	81	33,000		
20'	44	32,200	60	34,000	67	34,700	72	35,400	76	35,700	78	30,500	80	25,100
25'	27	20,300	52	21,800	62	22,400	68	23,000	72	23,300	75	23,400	78	23,600
30'			44	15,200	56	15,800	63	16,300	68	16,500	72	16,700	75	16,800
35'			33	11,100	50	11,600	59	12,100	65	12,300	69	12,400	72	12,500
40'			16	8,300	43	8,800	54	9,200	61	9,400	65	9,500	69	9,600
45'					35	6,700	49	7,100	57	7,300	62	7,400	66	7,500
50'					25	5,200	43	5,500	53	5,700	59	5,800	63	5,900
55'							37	4,300	48	4,400	55	4,500	60	4,600
60'							29	3,300	43	3,400	51	3,500	57	3,600
65'							18	2,500	38	2,600	47	2,700	54	2,800
70'									32	1,900	43	2,000	50	2,100
75'									24	1,400	38	1,400	47	1,500
80'													43	1,000

ON OUTRIGGERS MIN EXTENDED 8' 1-5/8"(2.48m) SPREAD

360° ROTATION

A / B	35.1'		48.2'		61.4'		74.5'		87.6'		100.7'		113.9'	
	C	(10.7m)	C	(14.7m)	C	(18.7m)	C	(22.7m)	C	(26.7m)	C	(30.7m)	C	(34.7m)
8'	70	62,700												
10'	66	38,900	73	40,900	77	41,800	80	42,100						
12'	62	27,100	70	28,800	75	29,600	78	30,300	80	30,300				
15'	56	17,500	67	19,000	72	19,700	76	20,300	78	20,600	80	20,500		
20'	45	9,500	60	10,800	67	11,400	72	11,900	75	12,100	77	12,300	79	12,200
25'	29	5,400	52	6,600	62	7,100	67	7,600	71	7,800	74	7,900	76	8,000
30'			44	3,900	56	4,400	63	4,900	68	5,100	71	5,200	74	5,300
35'			33	2,200	50	2,700	59	3,100	64	3,300	68	3,400	71	3,400
40'					43	1,400	54	1,800	60	1,900	65	2,100	68	2,100
45'									56	1,000	61	1,100	65	1,200

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

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 each boom length should be according to the following table.

Boom length in feet (meters)	35.1' (10.7m)	35.1' to 61.4' (10.7m to 18.7m)	61.4' to 113.9' (18.7m to 34.7m)	Single top Jib
Number of parts of line	10	6	4	1

GR-500XL RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 22' 11-5/8"(7.0m) SPREAD
360° ROTATION

C	113.9' (34.7m) Boom + 28.9' (8.8m) Jib					
	5° offset		25° offset		45° offset	
	R	W	R	W	R	W
80	25.6'	12,300	34.8'	8,400	41.5'	6,050
77.5	32.9'	12,000	41.3'	8,000	47.3'	5,900
75	39.8'	11,500	47.5'	7,650	53.1'	5,700
72.5	46.3'	10,600	53.6'	7,350	58.7'	5,550
70	52.3'	9,750	59.5'	7,100	64.0'	5,400
67.5	58.3'	9,100	65.1'	6,850	69.2'	5,300
65	64.0'	8,100	70.5'	6,600	74.0'	5,200
62.5	69.4'	6,900	75.6'	6,200	78.9'	5,100
60	74.8'	5,900	80.5'	5,300	83.7'	5,000
57.5	79.5'	5,100	85.5'	4,600	88.2'	4,400
55	84.0'	4,400	90.0'	4,000	92.5'	3,800
52.5	88.8'	3,800	94.1'	3,500	96.2'	3,400
50	93.1'	3,300	98.2'	3,000	99.7'	2,900
47.5	97.4'	2,800	102.1'	2,700	103.3'	2,600
45	101.4'	2,500	105.6'	2,300	106.6'	2,300
42.5	105.3'	2,200	109.1'	2,000		
40	109.0'	1,900	112.3'	1,800		
37.5	112.6'	1,600	115.5'	1,500		
35	115.8'	1,400	118.2'	1,400		
32.5	118.7'	1,200	120.9'	1,200		
30	121.6'	1,100	123.3'	1,000		
27.5	124.1'	900	125.3'	900		
25	126.3'	800	127.1'	800		

C	113.9' (34.7m) Boom + 50' (15.2m) Jib					
	5° offset		25° offset		45° offset	
	R	W	R	W	R	W
80	32.6'	6,350	47.6'	4,050	59.0'	2,750
77.5	40.8'	6,200	54.9'	3,900	65.3'	2,700
75	48.6'	6,050	61.9'	3,700	71.6'	2,600
72.5	56.0'	5,600	68.5'	3,550	77.5'	2,550
70	63.0'	5,200	75.0'	3,350	83.2'	2,500
67.5	69.6'	4,900	81.2'	3,200	88.7'	2,450
65	76.1'	4,600	87.0'	3,100	93.9'	2,400
62.5	82.2'	4,350	92.6'	3,000	98.9'	2,350
60	88.4'	4,150	98.1'	2,900	103.8'	2,350
57.5	94.4'	3,600	103.6'	2,800	108.4'	2,300
55	100.0'	3,100	108.7'	2,700	112.6'	2,300
52.5	105.4'	2,600	113.3'	2,300	116.7'	2,200
50	110.2'	2,300	117.9'	2,000	120.3'	1,900
47.5	114.8'	1,900	121.9'	1,700	124.0'	1,600
45	119.3'	1,600	125.7'	1,400	127.1'	1,400
42.5	123.3'	1,400	129.3'	1,200		
40	127.0'	1,100	132.7'	1,000		
37.5	131.1'	900	135.7'	800		
35	134.4'	750	138.5'	700		

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

GR-500XL RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS MID EXTENDED 21' 3-7/8"(6.5m) SPREAD
360° ROTATION

C	113.9' (34.7m) Boom + 28.9' (8.8m) Jib					
	5° offset		25° offset		45° offset	
	R	W	R	W	R	W
80	25.6'	12,300	34.8'	8,400	41.5'	6,050
77.5	32.9'	12,000	41.3'	8,000	47.3'	5,900
75	39.8'	11,500	47.5'	7,650	53.1'	5,700
72.5	46.3'	10,600	53.6'	7,350	58.7'	5,550
70	52.3'	9,600	59.5'	7,100	64.0'	5,450
67.5	58.1'	7,800	65.1'	6,600	69.2'	5,300
65	63.5'	6,400	70.5'	5,500	74.0'	5,100
62.5	68.7'	5,300	75.3'	4,700	78.9'	4,300
60	73.6'	4,400	79.9'	3,900	83.5'	3,600
57.5	78.5'	3,700	84.6'	3,300	87.8'	3,100
55	83.3'	3,000	89.0'	2,800	91.8'	2,600
52.5	87.9'	2,500	93.4'	2,300	95.7'	2,200
50	92.5'	2,100	97.4'	1,900	99.3'	1,800
47.5	96.7'	1,700	101.4'	1,600	102.9'	1,500
45	100.7'	1,400	105.0'	1,300	106.2'	1,300
42.5	104.3'	1,100	108.5'	1,000		
40	108.3'	800	111.8'	800		

C	113.9' (34.7m) Boom + 50' (15.2m) Jib					
	5° offset		25° offset		45° offset	
	R	W	R	W	R	W
80	32.6'	6,350	47.6'	4,050	59.0'	2,750
77.5	40.8'	6,200	54.9'	3,900	65.3'	2,700
75	48.6'	6,050	61.9'	3,700	71.6'	2,600
72.5	56.0'	5,600	68.5'	3,550	77.5'	2,550
70	63.0'	5,200	75.0'	3,350	83.2'	2,500
67.5	69.6'	4,900	81.2'	3,200	88.7'	2,450
65	76.1'	4,600	87.0'	3,100	93.9'	2,400
62.5	82.2'	3,800	92.6'	3,000	98.9'	2,350
60	88.3'	3,100	98.1'	2,600	103.8'	2,300
57.5	93.8'	2,500	103.5'	2,100	108.4'	1,900
55	99.0'	2,000	108.4'	1,700	112.6'	1,500
52.5	104.0'	1,600	112.9'	1,400	116.4'	1,200
50	108.8'	1,200	117.1'	1,100	119.9'	1,000

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

C	113.9' (34.7m) Boom + 28.9' (8.8m) Jib					
	5° offset		25° offset		45° offset	
	R	W	R	W	R	W
80	25.6'	12,300	34.8'	8,400	41.5'	6,050
77.5	32.9'	12,000	41.3'	8,000	47.3'	5,900
75	39.8'	10,100	47.5'	7,650	53.1'	5,700
72.5	45.7'	7,700	53.4'	6,300	58.7'	5,550
70	51.3'	6,000	58.9'	5,000	64.0'	4,400
67.5	56.9'	4,700	64.4'	4,000	68.9'	3,600
65	62.2'	3,600	69.2'	3,100	73.4'	2,800
62.5	67.3'	2,800	74.0'	2,500	78.0'	2,300
60	72.3'	2,200	78.8'	1,900	82.6'	1,700
57.5	77.0'	1,600	83.4'	1,400	86.8'	1,300
55	81.8'	1,200	87.9'	1,000	90.8'	1,000

C	113.9' (34.7m) Boom + 50' (15.2m) Jib					
	5° offset		25° offset		45° offset	
	R	W	R	W	R	W
80	32.6'	6,350	47.6'	4,050	58.8'	2,750
77.5	40.8'	6,200	54.9'	3,900	65.3'	2,700
75	48.6'	6,050	61.9'	3,700	71.6'	2,600
72.5	56.0'	5,500	68.5'	3,550	77.5'	2,550
70	63.0'	4,200	75.0'	3,200	83.2'	2,500
67.5	69.1'	3,200	81.0'	2,500	88.7'	2,100
65	75.1'	2,400	86.6'	1,900	93.7'	1,700
62.5	90.9'	1,800	91.9'	1,400	98.6'	1,200
60	86.1'	1,300	97.1'	1,000	103.3'	900

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 applicable ASME B30.5 safety standards for cranes as mentioned in OSHA CFR29 part 1926.

SET UP

1. Rated lifting capacities on the load chart are the maximum allowable crane capacities. They 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 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 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 the boom or jib is extremely dangerous.
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 20mph(9m/s) to 27mph(12m/s); reduced by 70% when the wind speed is 27mph(12m/s) to 31mph(14m/s).If the wind speed is 31mph(14m/s) or over, stop operation. During jib lift, stop operation if the wind speed is 20mph(9m/s).
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 12,300 lbs. (5,600kg) for hoist.
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 hoist 12,300 lbs. (5,600kg) 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 35.1' (10.7m) boom length capacities are based on boom fully retracted. If not fully retracted [less than 48.2' (14.7m) boom length], use the rated lifting capacities for the 48.2' (14.7m) 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 12,300 lbs. (5,600kg) including main hook.
17. When base jib or top jib or both 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 28.9' (8.8m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "113.9' (34.7m) boom + 28.9' (8.8m) jib".
    For boom length with 50' (15.2 m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "113.9' (34.7m) boom + 50' (15.2m) jib".
    For angles not shown, use the next lower loaded boom angle to determine allowable capacity.

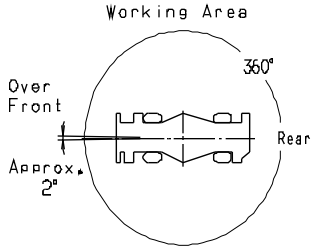
DEFINITIONS

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-500XL RATED LIFTING CAPACITIES (IN POUNDS)

ON RUBBER																		
A / B	Stationary												Creep					
	Over Front						360° Rotation						Over Front					
	35.1'		61.4'		87.6'		35.1'		61.4'		87.6'		35.1'		61.4'		87.6'	
	C	(10.7m)	C	(18.7m)	C	(26.7m)	C	(10.7m)	C	(18.7m)	C	(26.7m)	C	(10.7m)	C	(18.7m)	C	(26.7m)
10'	66	45,700					66	26,500					66	34,100				
12'	62	39,700					62	18,900					62	29,300				
15'	56	32,700	72	29,600			56	12,100	72	13,700			56	23,900	72	25,100		
20'	45	23,100	67	22,300			45	6,400	67	7,800			45	17,500	67	18,800		
25'	29	14,900	62	16,500	71	12,700	30	3,400	62	4,700	71	5,300	29	13,200	62	14,500	71	12,700
30'			56	11,800	68	10,000			56	2,800	68	3,300			56	11,400	68	10,000
35'			50	8,700	64	7,900			50	1,500	64	2,000			50	8,700	64	7,900
40'			43	6,500	60	6,300					60	1,000			43	6,600	60	6,300
45'			35	5,000	57	5,400									35	5,000	57	5,400
50'			25	3,800	52	4,200									25	3,800	52	4,200
55'					48	3,300											48	3,300
60'					43	2,500											43	2,500
65'					38	1,800											38	1,800
70'					31	1,300											31	1,300

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



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 rubber operation should be according to the following table.

Boom length in feet (meters)	35.1' (10.7m)	35.1' to 87.6' (10.7m to 26.7m)	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 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.
3. If the axle oscillation lockout 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
23.5-25	65 psi (450 kPa)

6. Over front operation shall be performed within two degrees in front of chassis.
7. On rubber lifting with "jib" is not permitted. Maximum permissible boom length is 87.6' (26.7m).
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 (1.6km/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. 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 register key, then the outrigger mode indicative symbol changes from flashing to a solid light
   - Press the lift mode select key to select the lift status that corresponds to the actual boom configuration.
     Each time the lift mode select key is pressed, the status changes. Press the register key to register the lift status, then the lift indicative symbol changes from flashing to a solid light.
   - when mounting and stowing jib, select the jib set status.
     (the jib state indicative symbol will be flashing.)
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 status changes. Select the creep operation, the on-tire mode indicative symbol flicker.
   - Press the lift mode select key to register the boom or single top lift.

   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 ^{o} 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-C) is below the 360 ^{o} 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. A slewing does not automatically stop even if the crane becomes overloaded.
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-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.
6. 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-500XL Axle weight distribution chart

		Pounds			Kilograms		
		GVW	Front	Rear	GVW	Front	Rear
Base machine		69,840	39,590	30,250	31,680	17,960	13,720
Remove:	1. 6.2 ton (5.6 metric ton) hook ball	-330	-460	130	-150	-209	59
	2. 25 ton (22.7 metric ton) hook block	-630	-1,150	520	-286	-522	236
	3. Top jib	-500	-630	130	-227	-286	59
	4. Base jib	-1,380	-2,510	1,130	-626	-1,139	513
	5. Auxiliary lifting sheave	-110	-300	190	-50	-136	86
Option:	1. 50 ton (45.4 metric ton) hook block	1,180	2,160	980	534	980	446

TADANO AMERICA Corporation
4242 West Greens Road
Houston, Texas, 77066 U.S.A.
Phone: (281) 869-0030
Fax: (281) 869-0040
www.tadanoamerica.com

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