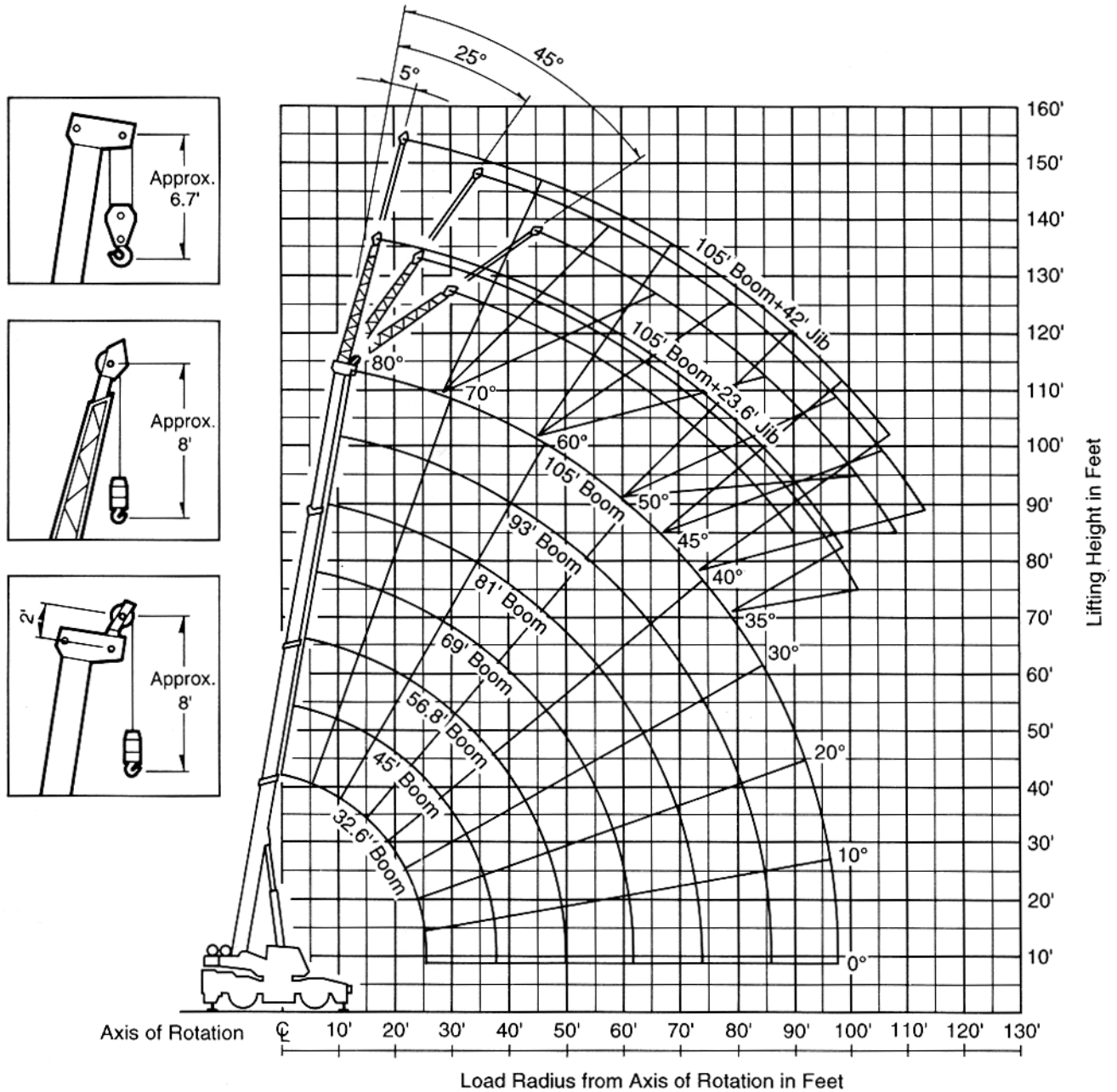


LIFTING CHARTS - Rough Terrain Cranes

TADANO MODEL TR-350XL-3 - 35 TON CAPACITY

WORKING RANGE CHART



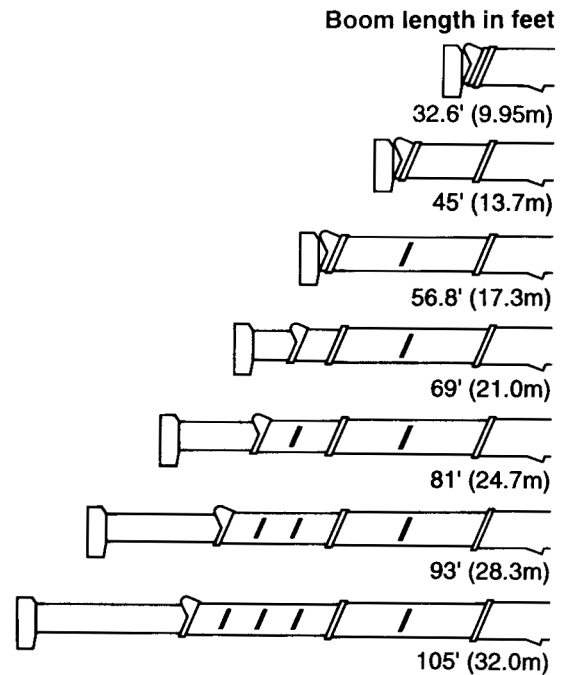
NOTE: Boom and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.

RATED LIFTING CAPACITIES (IN POUNDS)

A → B	ON OUTRIGGERS FULLY EXTENDED 360° ROTATION							ON OUTRIGGERS MID. EXTENDED 19' 4-1/4" (5.9m) SPREAD 360° ROTATION						
	32.6' (9.95m)	45' (13.7m)	56.8' (17.3m)	69' (21.0m)	81' (24.7m)	93' (28.3m)	105' (32.0m)	32.6' (9.95m)	45' (13.7m)	56.8' (17.3m)	69' (21.0m)	81' (24.7m)	93' (28.3m)	105' (32.0m)
10'	70,000	60,000	46,000	37,600				70,000	60,000	46,000	37,600			
12'	56,500	52,000	46,000	37,600	31,800			56,500	52,000	46,000	37,600	31,800		
15'	46,500	45,300	42,500	37,600	31,800	22,400		46,500	45,300	42,500	37,600	31,800	22,400	
20'	36,000	36,000	35,000	30,800	29,200	22,400	15,850	36,000	36,000	35,000	30,800	29,200	22,400	15,850
25'	26,500	28,400	28,400	26,300	24,400	22,400	15,850	25,300	25,900	25,700	26,300	24,400	22,400	15,850
30'		21,700	21,200	22,300	20,700	18,900	15,850		18,000	17,900	19,000	19,500	18,900	15,850
35'		16,000	15,600	17,000	17,400	16,400	14,000		12,800	12,800	13,900	14,500	15,400	14,000
40'			11,700	13,000	13,700	14,100	12,400			9,400	10,700	11,300	12,100	12,400
45'			8,900	10,200	10,700	11,500	11,100			7,000	8,300	8,700	9,500	9,800
50'				8,000	8,500	9,200	9,700				6,400	6,800	7,500	7,900
55'				6,500	6,900	7,500	7,950				4,900	5,500	6,000	6,300
60'				5,200	5,500	6,100	6,500				3,800	4,300	4,700	5,100
65'					4,500	5,000	5,350					3,400	3,900	4,100
70'					3,600	4,100	4,400					2,700	3,000	3,300
75'						3,300	3,600						2,400	2,600
80'						2,600	2,850						1,900	2,000
85'						2,100	2,350							1,500
90'							1,870							
95'							1,350							
C				0°										23°

A : Boom length in feet B : Load radius in feet C : Minimum boom angle (deg.) for indicated length (no load)

A → B	ON OUTRIGGERS MID. EXTENDED 16' 4-7/8" (5.0m) SPREAD 360° ROTATION						
	32.6' (9.95m)	45' (13.7m)	56.8' (17.3m)	69' (21.0m)	81' (24.7m)	93' (28.3m)	105' (32.0m)
10'	70,000	60,000	46,000	37,600			
12'	56,500	52,000	46,000	37,600	31,800		
15'	46,500	45,300	42,500	37,600	31,800	22,400	
20'	31,200	30,400	30,000	30,800	29,200	22,400	15,850
25'	19,800	19,500	19,400	20,700	21,300	22,400	15,850
30'		13,600	13,400	14,500	15,100	15,800	15,850
35'		9,700	9,500	10,800	11,100	11,900	12,100
40'			6,900	7,800	8,400	9,000	9,400
45'			4,900	5,800	6,400	6,900	7,300
50'				4,400	5,000	5,300	5,700
55'				3,200	3,600	4,200	4,500
60'				2,300	2,700	3,200	3,600
65'					2,100	2,400	2,700
70'						1,700	2,000
75'							1,500
80'							
85'							
90'							
95'							
C			0°			26°	35°



RATED LIFTING CAPACITIES (IN POUNDS)

Boom Angle in Degree	ON OUTRIGGERS FULLY EXTENDED 360° ROTATION												ON OUTRIGGERS MID. EXTENDED 19' 4-1/4" (5.9m) SPREAD 360° ROTATION											
	Boom Length in Feet												Boom Length in Feet											
	105' (32.0m) Boom+23.6' (7.2m) Jib						105' (32.0m) Boom+42' (12.8m) Jib						105' (32.0m) Boom+23.6' (7.2m) Jib						105' (32.0m) Boom+42' (12.8m) Jib					
	5° offset		25° offset		45° offset		5° offset		25° offset		45° offset		5° offset		25° offset		45° offset		5° offset		25° offset		45° offset	
	R	W	R	W	R	W	R	W	R	W	R	W	R	W	R	W	R	W	R	W	R	W	R	W
80°	19.7	6,600	26.4	4,400	31.9	3,300	26.0	4,400	38.3	2,200	46.3	1,500	19.7	6,600	26.4	4,400	31.9	3,300	26.0	4,400	38.3	2,200	46.3	1,500
75°	31.6	6,600	37.8	4,400	42.6	3,300	39.8	4,400	51.2	2,200	57.9	1,500	31.6	6,600	37.8	4,400	42.6	3,300	39.8	4,400	51.2	2,200	57.9	1,500
70°	43.2	6,500	48.6	4,400	52.7	3,300	52.7	3,700	63.2	2,200	68.9	1,500	43.2	6,500	48.6	4,400	52.7	3,300	52.7	3,700	63.2	2,200	68.9	1,500
65°	53.7	5,200	58.9	3,900	62.4	3,300	64.8	3,150	74.5	2,000	79.0	1,500	53.7	5,200	58.9	3,900	62.4	3,300	64.8	3,150	74.5	2,000	79.0	1,500
60°	63.6	4,300	68.4	3,400	71.3	3,050	76.1	2,700	85.2	1,900	88.7	1,450	63.6	4,300	68.4	3,400	71.3	3,050	76.1	2,700	85.2	1,900	88.7	1,450
55°	72.8	3,650	77.4	3,000	79.6	2,750	86.6	2,300	94.9	1,750	98.0	1,400	72.8	3,650	77.4	3,000	79.6	2,750	86.6	2,300	94.9	1,750	98.0	1,400
50°	81.3	2,700	85.5	2,700	87.1	2,500	96.8	2,000	104.0	1,600	105.0	1,350	81.0	1,800	85.0	1,650	86.7	1,600	96.1	1,400	104.0	1,350	105.0	1,100
45°	89.1	2,000	92.8	1,900	93.8	1,850	105.0	1,550	112.0	1,450	112.0	1,300	88.7	900	92.3	850	93.2	850						
40°	96.2	1,300	99.3	1,250			113.0	1,050	119.0	1,000														
35°	103.0	850	105.0	800																				

R : Load radius in feet W : Rated lifting capacity in pounds

Boom Angle in Degree	ON OUTRIGGERS MID. EXTENDED 16' 4-7/8" (5.0m) SPREAD 360° ROTATION											
	Boom Length in Feet											
	105' (32.0m) Boom+23.6' (7.2m) Jib						105' (32.0m) Boom+42' (12.8m) Jib					
	5° offset		25° offset		45° offset		5° offset		25° offset		45° offset	
	R	W	R	W	R	W	R	W	R	W	R	W
80°	19.7	6,600	26.4	4,400	31.9	3,300	26.0	4,400	38.3	2,200	46.3	1,500
75°	31.6	6,600	37.8	4,400	42.6	3,300	39.8	4,400	51.2	2,200	57.9	1,500
70°	43.2	6,500	48.6	4,400	52.7	3,300	52.7	3,700	63.2	2,200	68.9	1,500
65°	53.3	4,600	58.9	3,900	62.4	3,300	64.8	3,150	74.5	2,000	79.0	1,500
60°	63.0	2,900	68.0	2,550	71.1	2,400	75.6	2,300	85.2	1,900	88.7	1,450
55°	71.9	1,600	76.8	1,450	79.2	1,400	85.9	1,300	94.3	1,050	97.0	1,000
50°	80.5	850										
45°												
40°												
35°												

NOTE: Load radiuses for jib operation are given for reference with the boom fully extended to 105' (32m).

3,300lbs. (1,500kg) shall be subtracted from the rated lifting capacities of main boom, when jib is attached to main boom head.

Jib weight is 1,300lbs. (590kg).

Standard number of parts of line should be according to the following table.

Boom Length in Feet (meters)	32.6' to 45' (9.95 to 13.7)	45' to 56.8' (13.7 to 17.3)	56.8' to 81' (17.3 to 24.7)	81' to 105' (24.7 to 32.0)	Single top Jib
No. of parts of line	10	8	6	4	1

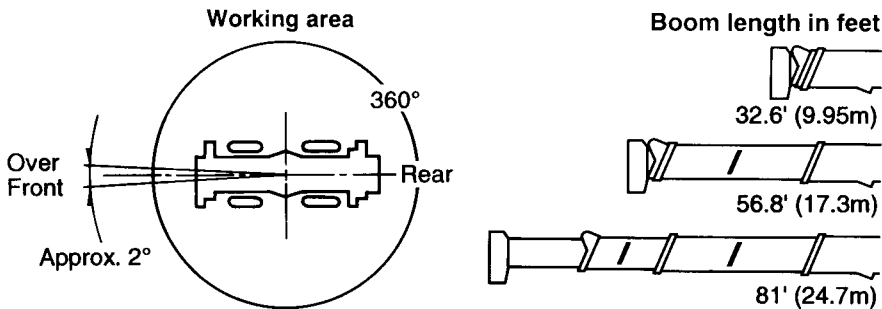
The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-L) is based on the standard number of parts of line listed in the chart.

Maximum lifting capacity is restricted by the number of parts of line of LOAD MOMENT INDICATOR (AML-L).

RATED LIFTING CAPACITIES (IN POUNDS)

ON RUBBER													
A→	Stationary						Creep						
	Over Front			360° Rotation			Over Front						
	Boom Length in Feet			Boom Length in Feet			Boom Length in Feet						
B	32.6' (9.95m)	56.8' (17.3m)	81' (24.7m)	32.6' (9.95m)	56.8' (17.3m)	81' (24.7m)	32.6' (9.95m)	56.8' (17.3m)	81' (24.7m)				
10'	38,000			26,500			31,600						
12'	36,700	32,700	15,300	19,600	18,800		27,200	26,800	15,300				
15'	30,300	28,200	15,300	13,200	12,400	13,600	22,200	21,900	15,300				
20'	19,300	18,600	14,500	7,600	6,700	7,900	16,400	16,000	14,500				
25'	12,400	12,100	13,000	4,500	3,900	5,100	12,400	12,100	13,000				
30'		8,100	10,000		2,000	3,100		8,100	10,000				
35'		5,600	7,400			1,700		5,600	7,400				
40'		3,900	5,600					3,900	5,600				
45'		2,500	4,200					2,500	4,200				
50'			3,100						3,100				
55'			2,300						2,300				
60'			1,500						1,500				
65'			1,100						1,100				
C			0°		26°	0°		46°	58°		0°		26°

A: Boom Length in Feet (meters)
B: Load Radius in Feet
C: Minimum boom angle for indicated length (no load)



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

Boom Length in Feet (meters)	32.6' (9.95)	32.6' to 81' (9.95 to 24.7)	Single top
No. of parts of line	6	6 (4) *	1

* : Stationary 360° Rotation requires 4 parts of line.

WARNING AND OPERATING INSTRUCTIONS FOR ON RUBBER 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 suspension lock 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.
- 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 81 ft. (24.7m).
- 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 (1.6 km/h).
- For creep operation, set drive select switch to "4-WHEEL (Lo) " and set gear shift lever to "1".

Tires	Air Pressure
20.5-25-24PR	93 psi. (6.5kgf/cm ²)

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. Construction equipment can be hazardous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with the information in the operation, safety and maintenance manual supplied with machine.
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 load 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 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. Rated lifting capacities include the weight of main hook block (770lbs. for 35 ton capacity), auxiliary hook block (220lbs. for 4.4 ton capacity), sling and auxiliary lifting devices and their weights shall be subtracted from the listed capacities to obtain the net load to be lifted.
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 wind on lifted load or boom. Rated lifting capacities and boom length shall be appropriately reduced, when wind velocity is above 20mph (9m/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 7,000lbs.(3,200kg) for main winch and 6,610lbs. (3,000kg) for 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 (7,000lbs.) X number of parts of line.
13. The boom angle before loading should be greater to account for deflection.
14. The 32.6' (9.95m) boom length capacities are based on boom fully retracted. If not fully retracted [less than 45' (13.7m) boom length], use the rated lifting capacities for the 45' (13.7m) 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 by 750lbs. (340kg). Capacities of single top shall not exceed 6,610lbs. (3,000kg) including main hook.
17. When erecting and stowing jib, be sure to retain it by hand or by other means to prevent its free movement.
18. 3,300lbs. (1,500kg) shall be subtracted from the rated lifting capacities of the main boom, when jib is attached to main boom head. Jib weight is 1,300lbs. (590kg).
19. Use "OVERWIND CUTOUT" 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' (7.2m) jib or 42' (12.8), rated lifting capacities are determined by boom length and loaded boom angle. For angles not shown, use the next lower loaded boom angle to determine allowable capacity. When boom length is between values listed, refer to the rated lifting capacities of next longer boom for the same angle. However, as for the capacity of 32.6' (9.95m) boom and 45' (13.7m) boom is the same as the capacities of 56.8' (17.3m) boom.
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 weight 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.

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. The outrigger mode indicative symbol changes from flickering to lighting.
- Press the boom mode select key to register the boom mode. Each time the boom mode select key is pressed, the mode changes. Select the status that corresponds to the actual state of the boom.
- 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 on-tire mode select key. The outrigger mode indicative symbol will disappear as the on-tire mode indicative symbol comes on. Each time the on-tire 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. A swing 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-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 tires, 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 instructions. 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.

HOISTING SPECIFICATIONS

LINE SPEEDS AND PULLS

Layer	Speed	Main or auxiliary hoist – 12-5/8" (0.32) drum					
		Line Speeds (2)		Line pulls			
		F.P.M	m/min	Available (1)		Permissible (4)	
				Lbs.	kgf	Lbs.	kgf
1st	High	311	95	13,170	5,974	10,525	4,774
2nd	High	340	104	12,024	5,454	9,610	4,359
3rd	High	370	113	11,063	5,018	8,841	4,010
4th	High	399	122	10,243	4,646	8,186	3,713
5th	High	429	131	9,537	4,326	7,621	3,457
6th (3)	High	459	140	8,922	4,047	7,130	3,234

- (1) Developed by machinery with first 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) Sixth layer of wire rope is not recommended for hoisting operations.
- (4) Permissible line pull may be affected by wire rope strength.

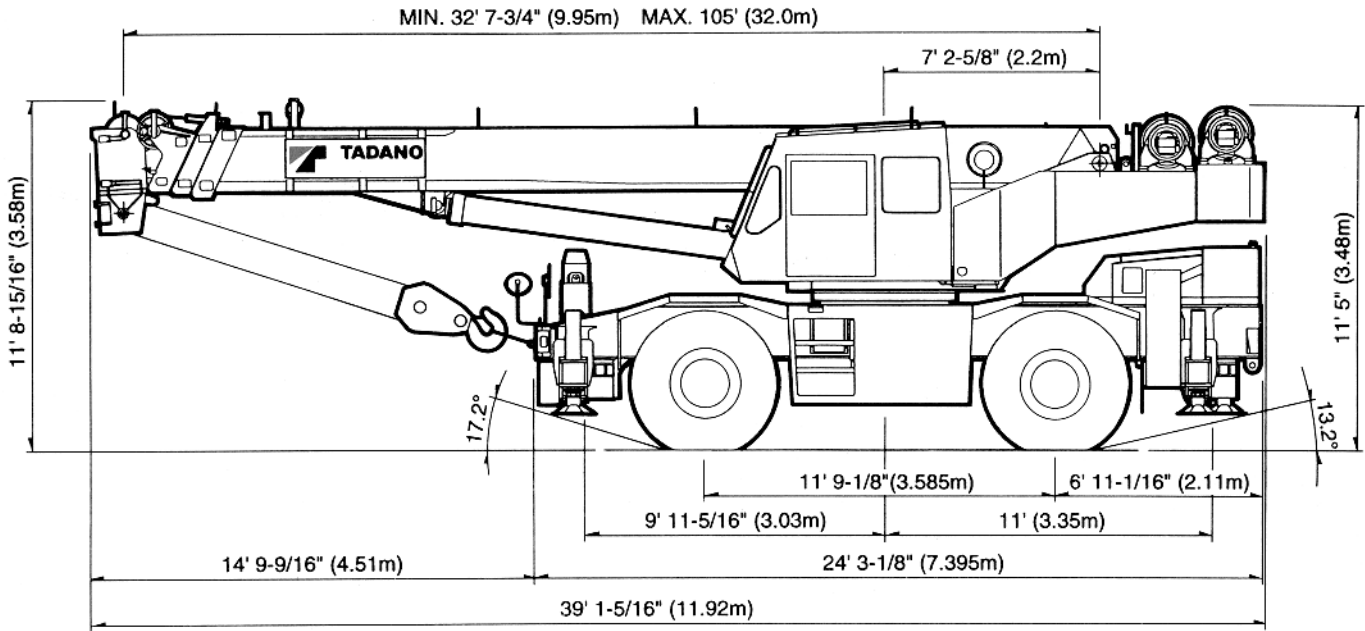
DRUM WIRE ROPE CAPACITIES

Wire rope layer	Main and auxiliary drum grooved lagging			
	5/8" (16 mm) wire rope			
	Rope per layer		Total wire rope	
	Feet	Meters	Feet	Meters
1	99	30.1	99	30.1
2	108	32.9	207	63.0
3	117	35.8	324	98.8
4	127	38.7	451	137.5
5	136	41.6	588	179.1
6	146	44.5	734	223.6

DRUM DIMENSIONS

	Inch	mm
Root diameter	12-5/8"	320
Length	19-1/16"	484.5
Flange diameter	20-7/8"	530

DIMENSIONS



GENERAL DIMENSIONS (20.5 X 25 Tires)

	Feet	Meters
Turning Radius:		
4 wheel steer	21'	6.4
2 wheel steer	36' 5"	11.1
Tail swing of counterweight	12' 9-9/16"	3.9

