GR-1600XL RATED LIFTING CAPACITIES(IN POUNDS)

COUNTERWEIGHT 40,100lbs(18.2t)
ON OUTRIGGERS FULLY EXTENDED 26'10-7/8"(8.20m) SPREAD
360° ROTATION

C	200.1'(61.0m) Boom + 59.1'(18.0m) Hydraulic offset jib					
	5° Tilt		20° Tilt		40° Tilt	
	R	W	R	W	R	W
81.5	56.1'	8,200	72.2'	8,200	88.9'	7,100
81	59.1'	8,200	74.5'	8,200	91.9'	7,100
80	65.3'	8,200	81.0'	8,200	97.1'	6,800
79	70.9'	8,200	86.3'	8,200	102.0'	6,800
78	76.8'	8,200	91.5'	7,900	107.0'	6,600
77	82.0'	8,200	96.1'	7,700	112.0'	6,600
76	87.9'	8,200	101.0'	7,500	116.0'	6,600
75	93.5'	8,200	106.0'	7,300	119.0'	6,400
73	103.0'	7,700	115.0'	6,800	129.0'	6,200
70	117.0'	7,100	128.0'	6,400	140.0'	5,700
68	126.0'	6,800	135.0'	6,000	147.0'	5,500
65	138.0'	6,200	149.0'	5,700	158.0'	5,300
63	147.0'	6,000	156.0'	5,500	164.0'	5,100
60	156.0'	4,900	164.0'	4,200	172.0'	3,700
58	162.0'	4,000	170.0'	3,500	177.0'	3,100
55	171.0'	2,900	178.0'	2,400	185.0'	2,200
53	177.0'	2,200	184.0'	2,000	190.0'	1,800
50						
48						
45						
43						
40						
38						
35						
33						
30						
28						
25						
23						
20						

C	187.0'(57.0m) Boom + 59.1'(18.0m) Hydraulic offset jib					
	5° Tilt		20° Tilt		40° Tilt	
	R	W	R	W	R	W
81.5	47.9'	8,800	65.6'	8,800	81.0'	7,300
81	49.2'	8,800	68.2'	8,800	83.7'	7,300
80	56.4'	8,800	73.8'	8,800	88.6'	7,100
79	61.7'	8,800	78.1'	8,600	92.9'	7,100
78	66.6'	8,800	83.3'	8,400	97.4'	7,100
77	71.9'	8,800	87.6'	8,200	102.0'	6,800
76	77.1'	8,800	92.5'	7,900	106.0'	6,800
75	82.0'	8,800	97.1'	7,900	110.0'	6,600
73	92.2'	8,800	106.0'	7,700	118.0'	6,600
70	106.0'	8,200	119.0'	7,300	129.0'	6,400
68	114.0'	7,700	127.0'	7,100	137.0'	6,200
65	126.0'	7,300	138.0'	6,600	147.0'	6,200
63	135.0'	7,100	146.0'	6,400	154.0'	6,000
60	146.0'	6,400	155.0'	5,700	162.0'	5,300
58	152.0'	5,500	161.0'	4,900	167.0'	4,400
55	160.0'	4,400	169.0'	4,000	175.0'	3,500
53	165.0'	3,500	175.0'	3,300	179.0'	2,900
50	174.0'	2,600	182.0'	2,400	185.0'	2,200
48	179.0'	2,200	187.0'	2,000		
45						
43						
40						
38						
35						
33						
30						
28						
25						
23						
20						

COUNTERWEIGHT 40,100lbs(18.2t)
ON OUTRIGGERS FULLY EXTENDED 26'10-7/8"(8.20m) SPREAD
360° ROTATION

C	172.5'(52.6m) Boom + 59.1'(18.0m) Hydraulic offset jib					
	5° Tilt		20° Tilt		40° Tilt	
	R	W	R	W	R	W
81.5	45.0'	10,400	61.7'	9,700	76.1'	7,500
81	47.6'	10,400	64.3'	9,700	78.4'	7,500
80	52.8'	10,400	69.2'	9,500	82.7'	7,500
79	57.7'	10,400	73.5'	9,300	86.6'	7,300
78	63.0'	10,400	78.1'	9,000	90.9'	7,300
77	67.3'	10,400	82.0'	8,800	94.8'	7,300
76	72.2'	10,400	86.3'	8,600	98.1'	7,100
75	76.8'	10,400	90.9'	8,600	102.0'	7,100
73	86.6'	10,100	98.8'	8,200	110.0'	6,800
70	98.4'	9,500	111.0'	7,700	120.0'	6,600
68	114.0'	9,300	118.0'	7,500	127.0'	6,600
65	119.0'	8,800	129.0'	7,300	136.0'	6,400
63	126.0'	8,400	135.0'	7,100	143.0'	6,400
60	136.0'	7,700	145.0'	6,800	152.0'	6,200
58	142.0'	6,800	151.0'	6,000	156.0'	5,500
55	151.0'	5,500	159.0'	4,900	163.0'	4,400
53	189.0'	4,900	164.0'	4,200	168.0'	3,700
50	164.0'	3,700	172.0'	3,300	174.0'	2,900
48	170.0'	3,100	177.0'	2,900	178.0'	2,400
45	177.0'	2,400	183.0'	2,000	184.0'	1,800
43	182.0'	1,800				
40						
38						
35						
33						
30						
28						

C	114.9'(35.0m) Boom + 59.1'(18.0m) Hydraulic offset jib					
	5° Tilt		20° Tilt		40° Tilt	
	R	W	R	W	R	W
81.5	27.6'	14,100	44.6'	11,900	58.7'	8,200
81	29.2'	14,100	45.9'	11,700	60.4'	8,200
80	32.8'	14,100	49.2'	11,500	63.3'	7,900
79	36.1'	14,100	52.5'	11,200	65.9'	7,900
78	39.7'	14,100	55.5'	11,000	68.6'	7,900
77	42.7'	14,100	58.4'	10,600	71.2'	7,700
76	46.3'	14,100	61.0'	10,400	73.8'	7,700
75	49.2'	14,100	64.0'	10,100	76.4'	7,700
73	55.8'	13,200	70.2'	9,900	81.7'	7,500
70	64.6'	12,300	78.1'	9,300	88.9'	7,300
68	70.9'	11,700	83.7'	9,000	93.5'	7,100
65	79.4'	11,000	91.5'	8,600	100.0'	7,100
63	84.7'	10,600	96.5'	8,400	105.0'	7,100
60	92.5'	10,100	104.0'	7,900	112.0'	6,800
58	97.4'	9,700	109.0'	7,900	116.0'	6,800
55	105.0'	9,300	115.0'	7,500	122.0'	6,800
53	110.0'	9,000	120.0'	7,500	125.0'	6,600
50	116.0'	8,600	126.0'	7,300	130.0'	6,600
48	121.0'	8,400	130.0'	7,300	134.0'	6,600
45	127.0'	8,200	135.0'	7,100	138.0'	6,600
43	131.0'	7,900	138.0'	7,100		
40	137.0'	7,700	143.0'	6,800		
38	143.0'	7,500	146.0'	6,800		
35	145.0'	7,300	150.0'	6,800		
33	148.0'	7,300	153.0'	6,800		
30	152.0'	6,800	156.0'	6,600		
28	155.0'	6,600	157.0'	6,200		

WARNING AND OPERATING INSTRUCTIONS FOR LIFTING CAPACITIES

GENERAL

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

SET UP

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

OPERATION

1. Rated lifting capacities have been tested to and meet minimum requirements of SAE J1063-Cantilevered Boom Crane Structures Method of Test.
2. Rated lifting capacities do not exceed 85 % of the tipping load on outriggers fully extended as determined by SAE J765-Crane Stability Test Code.
   Rated lifting capacities for partially extended outriggers are determined from the formula, Rated Lifting Capacities =(Tipping Load - 0.1 x Tip Reaction)/1.25.
3. Rated lifting capacities above thick lines in the chart are based on crane strength and those below, on its stability. They are based on actual load radius increased by boom deflection.
4. The weight of handling device such as hook blocks, slings, etc., must be considered as part of the load and must be deducted from the lifting capacities.
5. Rated lifting capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tires, operating speeds, side loads, etc. Side pull on the boom or jib is extremely dangerous.
   Such action can damage the boom, jib or swing mechanism, and lead to overturning of the crane.
6. Rated lifting capacities do not account for wind on lifted load or boom. We recommend against working under the condition that the load is out of control due to a strong wind.During boom lift, consider that the rated lifting capacity is reduced by 50% when the wind speed is 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) or over.
7. Rated lifting capacities at load radius shall not be exceeded. Do not tip the crane to determine allowable loads.
8. Do not operate at boom lengths, radii, or boom angle, where no capacities are shown. Crane may overturn without any load on the hook.
9. When boom length is between values listed, refer to the rated lifting capacities of the next longer and next shorter booms for the same radius. The lesser of the two rated lifting capacities shall be used.
10. When making lifts at a load radius not shown, use the next longer radius to determine allowable capacity.
11. Load per line should not exceed 15,900lbs (7,200kg) for main winch and auxiliary winch.
12. Check the actual number of parts of line with LOAD MOMENT INDICATOR (AML-C) before operation. Maximum lifting capacity is restricted by the number of parts of line of LOAD MOMENT INDICATOR (AML-C). Limited capacity is as determined from the formula, Single line pull for main winch 15,900lbs (7,200kg) 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. Maximum capacity without boom pin is shown in the chart. The 39.4' (12.0m) boom length capacities are based on boom fully retracted. If not fully retracted [less than 53.7'(16.4m) boom length], use the rated lifting capacities for the 53.7' (16.4m) boom length.
15. Do not operate extension or retraction of the boom with loads. Extension or retraction of the boom with loads may be attempted within the limits of the RATED LIFTING CAPACITIES. The ability to telescope loads is limited by hydraulic pressure, boom angle, boom length, crane maintenance, etc.
16. For lifting capacity of single top, deduct the weight of the load handling equipment from the rated lifting capacity of the boom. For the lifting capacity of single top, the net capacity shall not exceed 15,900lbs (7,200kg) including main boom hook mass attached to the boom.
17. When the base jib or top jib or both jibs are removed, set the jib state switch to the REMOVED position.
18. When erecting and stowing jib, be sure to retain it by hand or by other means to prevent its free movement.
19. Use "ANTI-TWO BLOCK DEVICE" 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 selected boom length or less with jib, rated lifting capacities are determined by loaded boom angle only in the column headed "selected boom+jib".
    For boom length 154.2'(47.0m) or less and 125.5'(38.3m) or longer with jib, rated lifting capacities are detarmined by loaded boom angle only in the column handed "154.2'(47.0m)boom+jib.
    For boom length 125.5'(38.3m) or less with jib, rated lifting capacities are determined by loaded boom angle only in the column headed "125.5'(38.3m)boom+jib".For angles not shown, use the next lower loaded boom angle to determine allowable capacity.(Telescoping MODE Ⅰ)
    For boom length 154.2'(47.0m) or less and 139.8'(42.6m) or longer with jib, rated lifting capacities are detarmined by loaded boom angle only in the column handed "154.2'(47.0m)boom+jib.
    For boom length 139.8'(42.6m) or less with jib, rated lifting capacities are determined by loaded boom angle only in the column headed "139.8'(42.6m)boom+jib".For angles not shown, use the next lower loaded boom angle to determine allowable capacity.(Telescoping MODEⅡ)
21. When lifting a load by using jib (aux. winch) and boom (main winch) simultaneously, do the following: 国内は禁止しているが問題ないか？
    - Enter the operation status as jib operation, not as boom operation.
    - Before starting operation, make sure that mass of load is within rated lifting capacity for jib.
22. Before telescoping the boom, set the telescoping mode selector switch to MODE Ⅰ or MODEⅡ with the boom fully retracted. A change of the telescoping mode is not permissible when the boom has been partially or fully extended.
23. Crane operation is prohibited without full counterweight 22,000lbs.(10 ton) installed. Outriggers shall be extended 26'10-7/8" (8.2m) spread when installing or removing removable counterweight.

DEFINITIONS

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

GR-1600XL RATED LIFTING CAPACITIES (IN POUNDS)

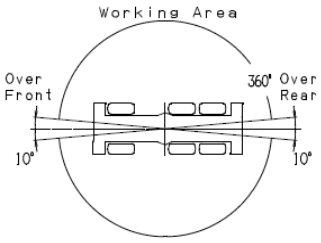
WITHOUT COUNTERWEIGHT

ON-RUBBER STATIONARY

A / B	Over front and rear						360° Rotation					
	42.8'		57.2'		71.6'		42.8'		57.2'		71.6'	
	C	(13.1m)	C	(17.4m)	C	(21.8m)	C	(13.1m)	C	(17.4m)	C	(21.8m)
8'	73	22,000	78	22,000	81	22,000	73	22,000	78	22,000	81	22,000
10'	70	22,000	76	22,000	79	22,000	70	22,000	76	22,000	79	22,000
12'	67	22,000	73	22,000	77	22,000	67	20,500	73	22,000	77	22,000
15'	63	22,000	70	22,000	75	22,000	63	13,700	70	17,400	75	19,400
20'	54	14,800	65	18,100	71	19,600	54	6,200	65	9,900	71	12,100
25'	45	9,000	59	12,300	66	14,100			59	4,900	66	7,100
30'	33	3,500	53	7,700	62	9,700					62	3,300
35'			45	4,000	57	6,000						
D	0		45		57		54		59		62	
Telescoping conditions (%)												
2nd boom	0		0		0		0		0		0	
3rd boom	0		0		0		0		0		0	
4th boom	0		0		0		0		0		0	
5th boom	0		0		0		0		0		0	
Top boom	0		45		90		0		45		90	
E	4		4		4		4		4		4	

NOTE: The lifting capacity data stowed in the LOAD MOMENT INDICATOR (AML-C) is based on the standard number of parts of line listed in the chart.
Standard number of parts of line for on-rubber operation should be according to the chart.

A :Boom length in feet
B :Load radius in feet
C :Loaded boom angle (°)
D :Minimum boom angle (°) for indicated length (no load)
E :Number of parts of line



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. On rubber lifting is only permitted without counterweight and stationary. Creep operation is prohibited.
   Rated lifting capacities shown in the chart are based on condition that crane is set on firm level surfaces with suspention-fully retracted. Those above thick lines are based on tire capacity and those below, on crane stability. They are based on actual load radius increased by tire deformation and boom deflection.
3. If the suspention-lock cylinders contain air, the axle will not be locked completely and rated lifting capacities may not be obtainable. Bleed the cylinders according to the operation safety and maintenance manual.
4. Rated lifting capacities are based on proper tire inflation, capacity and condition. Damaged tires are hazardous to safe operation of crane.
5. Tires shall be inflated to correct air pressure.

Tires	Air Pressure
26.5R25☆☆	94psi (650kPa)

6. Over front and rear operation shall be performed within 10 degrees.
7. On-rubber lifting with "jib" is not permitted. Maximum permissible boom length is 71.6'. (21.8m).
8. When making lift on-rubber stationary, set parking brake.
9. 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.
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. Set AML select keys in accordance with the actually operating crane conditions and don't fail to make sure, before crane operation, that the displays on front panel are correct.
2. When operating crane on outriggers:
   - Set P.T.O. switch to "ON".
   - Press the outrigger state select key to register for the outrigger operation. If the display agrees with the actual state, press the set key to register. After the completion of the registration, the pop-up window closes.
   - Press the lift state select key to register the lift state to be used (single top/jib/boom).
   - Each time the lift state select key is pressed, the display changes. If the display agrees with the autual state, press the set key to register. After the completion of the registration, the pop-up window closes.
   - when erecting and stowing jib, select the status of jib set (Jib lift indicator symbol flickers).
3. When operating crane on-rubber:
   - Set P.T.O. switch to "ON".
   - Press the outrigger state select key to register for the on-rubber operation. Each time the outrigger state select key is pressed, the display changes. Select the stationary operation, the on-rubber state indicative symbol flickers.
   - Press the lift state select key to register the lift state.

   However, pay attention to the following.

   (1) For stationary operation.
   - The front and rear capacities are attainable only when the over front or rear position.
     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 or rear position and then swung to the side area, make sure the value of the LOAD MOMENT INDICATOR(AML-C) is below the 360 ° lifting capacity.

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

GR-1600XL Axle weight distribution chart

Hydraulic offset jib		Pounds				Kilograms			
		GVW	1st	2nd	3rd	GVW	1st	2nd	3rd
Base machine		200,960	64,812	67,550	68,599	91,154	29,398	30,640	31,116
Remove:	1.7.9ton (7.2metric ton) hook block	-661	-928	134	134	-300	-421	61	61
	2.110ton (100metric ton) hook block	-2,381	-3,904	763	763	-1,080	-1,771	346	346
	3.Counterweight 24,500lbs (11,100kg)	-24,515	7,388	-15,953	-15,953	-11,120	3,351	-7,236	-7,236
	4.Counterweight 40,100lbs (18,200kg)	-40,036	12,066	-26,050	-26,050	-18,160	5,473	-11,816	-11,816
	5.Front and rear outrigger boxes and bean	-19,758	-7,635	-6,063	-6,063	-8,962	-3,463	-2,750	-2,750
	6.Auxiliary Winch&wire rope	-2,650	1,080	-1,865	-1,865	-1,202	490	-846	-846
	7.Boom and jib	-38,413	-49,699	5,642	5,642	-17,424	-22,543	2,559	2,559

MEMO

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