

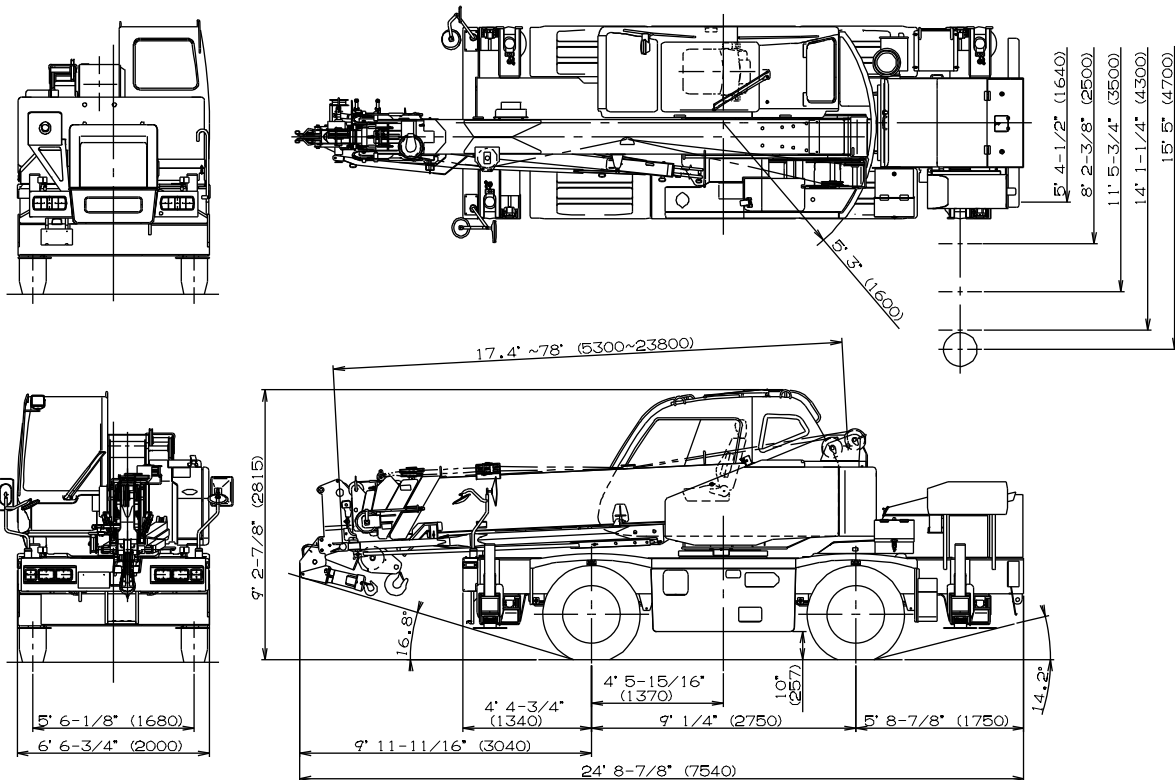


# GR-150XL

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
Tail swing of counterweight	5' 3"	1.6

# 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, extension cables and retraction cables. Hydraulic cylinder fitted with holding valve. 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. Automatic speed reduction and soft stop function. Elevation speed -3° to 82° in 29 seconds

**JIB** - Two stage extension type with 5°, 25°, 45° or 60° 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.

## SLEWING

Hydraulic axial piston motor through planetary slewing speed reducer. Continuous 360° full circle slewing on ball bearing turn table at 2.4min<sup>-1</sup> {rpm}. Equipped with manually locked/released slewing brake. A 360° positive slewing 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 10-7/16" (0.265m) root diameter x 9-7/16" (0.239m) wide. Wire rope: 450' of 7/16" diameter rope (137m of 11.2mm). Drum capacity: 486.8' (148.4m) 7 layers. Maximum line pull (available): 6,700lbs. (3,050kg). Maximum line speed: 410FPM (125m/min) at the 5th layer.

**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 10-7/16" (0.265m) root diameter x 9-7/16" (0.239m) wide. Wire rope: 217' of 7/16" diameter rope (66m of 11.2mm). Drum capacity: 486.8' (148.4m) 7 layers. Maximum line pull (available): 6,700lbs. (3,050kg). Maximum line speed: 361FPM (110m/min) at the 3rd layer.

**WIRE ROPE** - Warrington seal wire, extra improved plow steel, preformed, independent wire rope core, right regular lay. 7/16" (11.2mm) 6x37 class  
Breaking Strength - Main: 19,000 lbs (8,660 kg)  
Aux : 20,000 lbs (9,100 kg)

## HOOK BLOCKS

15 ton (13.6 metric ton)- Weighted hook block with swivel and safety latch.  
2.0 ton (1.8 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 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** - 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.

Right 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 for slewing, boom elevating, boom telescoping, auxiliary hoist and main hoist. Control lever 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 and outrigger controls.

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
- Drum rotation indicator (audible and visible type) main and auxiliary hoist

TADANO AML-C 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 and air conditioning control 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.

## 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.

- 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.

**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** - 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.

Min. Extension	5' 4-1/2" (1.64m) center to center
Mid. Extension	8' 2-3/8" (2.5m) center to center
Mid. Extension	11' 5-3/4" (3.5m) center to center
Mid. Extension	14' 1-1/4" (4.3m) center to center
Max. Extension	15' 5" (4.7m) center to center
Float size(Diameter)	1' 1- 3/4" (0.35m)

### ENGINE

Model	Mitsubishi 4M50-TLA3B
Type	Direct injection diesel
No. of cylinders	4
Combustion	4 cycle, turbo charged and after cooled
BoreXStroke, in.(mm)	4.488 X 4.724 (114X120)
Displacement, cu. in (liters)	299 (4.900)
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

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)	21.6 CFM (612) at 2,700rpm
Output, Max. HP (kW)	Gross 172 (129) at 2,700rpm
Torque, Max. ft-lb (Nm)	390 (529) at 1,600rpm
Capacity, gal.(liters)	
Cooling water	2.9 (11)
Lubrication	201 ~ 2.9 (8 ~11)
Fuel	50 (189)

# STANDARD EQUIPMENT

- Six section full power partially synchronized boom  
17.4' ~ 78' (5.3 m~23.8 m)
- 11.8' or 18' (3.6 m or 5.5 m) box jib (tilt type)  
with 5°, 25°, 45° and 60° pinned offsets and self storing pins.
- Auxiliary lifting sheave (single top) stowable.
- Main hoist with grooved drum and 450' of 7/16" cable.
- Auxiliary hoist with grooved drum and 217' of 16" cable.
- Drum rotation indicator (visible type)
- Anti-Two block device (overwind cutout)
- Tadano electronic load moment indicator system (AML-C)
- Outrigger extension length detector
- Electronic crane monitoring system
- 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)
- Cigarette lighter
- Cab floor mat
- Pump disconnect in operator's cab
- Hydraulic oil cooler
- Hot water cab heater and air conditioner
- Work lights
- Independently controlled outriggers
- Five outrigger extension positions
- Self-storing outrigger pads
- Mitsubishi 4M50-TL turbo charged after  
cooled engine (172HP) with exhaust brake
- Electronic controlled automatic transmission driven  
by torque converter
- 4 X 4 X 4 drive/steer
- Semi-elliptic leaf springs suspension with hydraulic lockout  
device (front and rear)
- 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
- Tool storage compartment
- Tire inflation kit
- 24 volt electric system
- 2.0 ton (1.8 metric ton) hook ball with swivel
- 15 ton (13.6 metric ton) hook block with swivel
- Towing hooks-Front and rear
- Fuel consumption monitor (#FD2021~)
- Eco mode system (#FD2247~)

# HOISTING PERFORMANCE

## LINE SPEEDS AND PULLS

Layer	Main or auxiliary hoist - 10'-7/8" (0.28m) drum			
	Line speeds <sup>1</sup>		Line pulls Available <sup>2</sup>	
	F.P.M.	m/min	Lbs.	kgf
1st	308	94	6700	3050
2nd	330	101	6200	2810
3rd	361	108	5700	2610
4th	375	114	5400	2430
5th	410	121	5000	2280
6th	420	128	4700	2140
7th	443	135	4500	2020

## DRUM WIRE ROPE CAPACITIES

Wire rope layer	Drum grooved lagging	
	7/16" (11.2mm) wire rope	
	Total wire rope	
	Feet	Meters
1	57.0	17.4
2	118.3	36.0
3	183.6	56.0
4	253.2	77.2
5	326.9	99.6
6	404.8	123.4
7	486.8	148.4

\* Maximum permissible line pull may be affected by wire rope strength.

Maximum lifting capacity per line (Main & Aux): 4,000 lbs. (1,800kg)

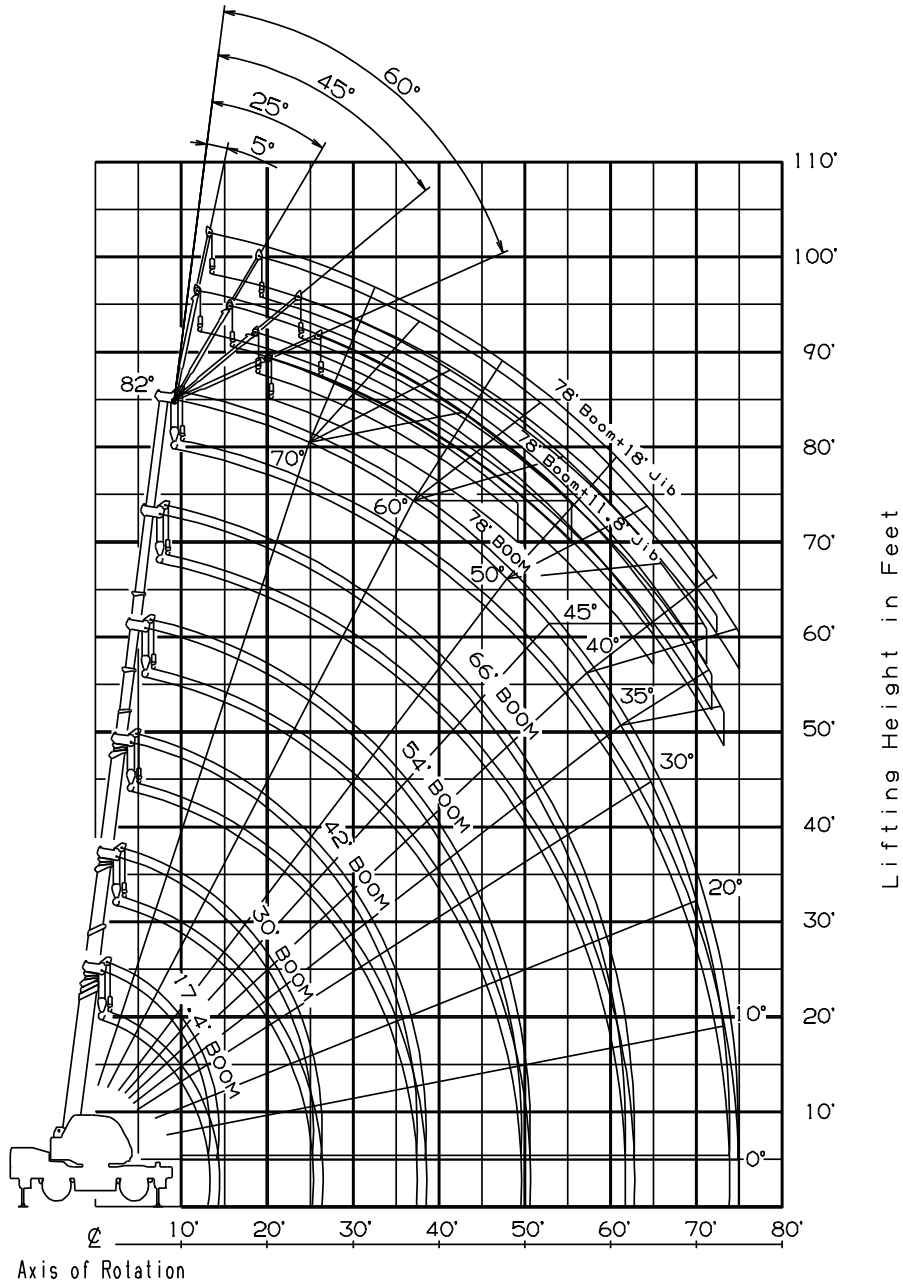
<sup>1</sup> Line speeds based only on hook block, not loaded.

<sup>2</sup> Developed by machinery with each layer of wire rope, but not based on rope strength or other limitation in machinery or equipment.

## DRUM DIMENSIONS

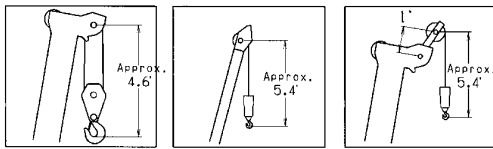
	Inch	mm
Root diameter	10-7/16"	265
Length	9-7/16"	239
Flange diameter	1' 5-11/16"	450

# GR-150XL WORKING RANGE CHART

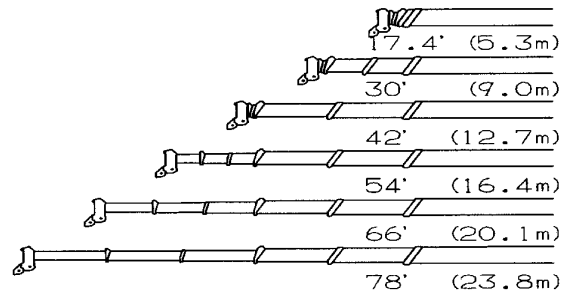


Axis of Rotation

Lifting Height in Feet



Boom Length in Feet



**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 RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 15' 5"(4.7m) SPREAD												
360° ROTATION												
B \ A	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	30,000	79	13,200								
5'	67	30,000	77	13,200	81	13,200						
6'	63	28,800	75	13,200	80	13,200						
8'	54	23,800	71	13,200	77	13,200	80	11,000				
10'	44	17,800	67	13,200	74	13,200	78	11,000	80	9,900		
12'	31	14,800	62	13,200	71	13,200	76	11,000	79	9,900	81	6,600
15'			55	11,500	67	11,100	72	10,850	76	8,950	79	6,600
20'			42	8,300	59	8,000	67	7,750	72	7,050	75	6,050
25'			20	6,200	50	5,850	61	5,700	67	5,500	71	4,950
30'					39	4,050	54	4,400	62	4,400	67	4,100
35'					25	2,950	47	3,350	57	3,550	63	3,350
40'							39	2,650	51	3,150	58	2,800
45'							28	1,950	45	2,400	54	2,350
50'									38	1,850	49	2,000
55'									29	1,400	43	1,550
60'									16	1,050	37	1,250
65'											30	1,000
70'											20	770
D	0											

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS FULLY EXTENDED												
15' 5"(4.7m) SPREAD 360° ROTATION												
C \ A	17.4'		30'		42'		54'		66'		78'	
	B	(5.3m)	B	(9.0m)	B	(12.7m)	B	(16.4m)	B	(20.1m)	B	(23.8m)
0°	13.1'	13,500	25.3'	5,900	37.4'	2,600	49.5'	1,600	61.7'	1,000	73.8'	600

ON OUTRIGGERS MID EXTENDED 14' 1-1/4"(4.3m) SPREAD												
360° ROTATION												
B \ A	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	30,000	79	13,200								
5'	67	30,000	77	13,200	81	13,200						
6'	63	28,800	75	13,200	80	13,200						
8'	54	23,800	71	13,200	77	13,200	80	11,000				
10'	44	17,800	67	13,200	74	13,200	78	11,000	80	9,900		
12'	31	14,800	62	13,200	71	13,200	76	11,000	79	9,900	81	6,600
15'			55	11,300	67	11,100	72	10,850	76	8,950	79	6,600
20'			42	8,050	59	7,450	67	7,750	72	7,050	75	6,050
25'			20	5,500	50	5,300	61	5,400	67	5,100	71	4,950
30'					39	3,500	54	4,050	62	4,100	67	3,900
35'					25	2,500	47	2,850	57	3,200	63	3,200
40'							39	2,100	51	2,300	58	2,550
45'							28	1,450	45	1,750	54	1,950
50'									38	1,250	49	1,500
55'									29	900	43	1,150
60'									16	600	37	900
65'											30	600
D	0											23

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MID EXTENDED												
14' 1-1/4"(4.3m) SPREAD 360° ROTATION												
C \ A	17.4'		30'		42'		54'		66'			
	B	(5.3m)	B	(9.0m)	B	(12.7m)	B	(16.4m)	B	(20.1m)		
0°	13.1'	13,200	25.3'	5,200	37.4'	2,000	49.5'	1,100	61.7'	500		

- A : Boom length in feet
- B : Load radius in feet
- C : Loaded boom angle (°)
- D : Minimum boom angle (°) for indicated length (no load)

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-C) is based on the standard number of parts of line listed in the chart. Standard number of parts of line for each boom length should be according to the following table.

Boom length in feet (meters)	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 RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS MID EXTENDED 11' 5-3/4"(3.5m) SPREAD												
360° ROTATION												
B \ A	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	30,000	79	13,200								
5'	67	30,000	77	13,200	81	13,200						
6'	63	28,800	75	13,200	80	13,200						
8'	54	23,800	71	13,200	77	13,200	80	11,000				
10'	44	17,800	67	13,200	74	13,200	78	11,000	80	9,900		
12'	31	14,800	62	13,200	71	13,200	76	11,000	79	9,900	81	6,600
15'			55	10,150	67	10,000	72	9,450	76	8,950	79	6,600
20'			42	5,800	59	5,550	67	6,300	71	6,550	75	5,950
25'			20	3,600	50	3,400	60	4,050	67	4,400	71	4,500
30'					39	2,100	54	2,650	61	3,000	67	3,100
35'					25	1,250	47	1,800	56	2,050	62	2,250
40'							38	1,150	51	1,350	58	1,550
45'							28	700	45	950	53	1,050
50'									37	650	48	700
55'											43	450
D					0				26			39

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MID EXTENDED								
11' 5-3/4"(3.5m) SPREAD 360° ROTATION								
C \ A	17.4'		30'		42'		54'	
	B	(5.3m)	B	(9.0m)	B	(12.7m)	B	(16.4m)
0°	13.1'	13,200	25.3'	3,300	37.4'	1,000	49.5'	400

ON OUTRIGGERS MID EXTENDED 8' 2-3/8"(2.5m) SPREAD												
360° ROTATION												
B \ A	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	30,000	79	13,200								
5'	67	30,000	77	13,200	81	13,200						
6'	63	28,800	75	13,200	80	13,200						
8'	54	18,700	71	13,200	77	13,200	80	11,000				
10'	44	12,200	67	11,800	74	11,800	78	11,000	80	9,900		
12'	31	8,800	62	8,600	71	8,550	76	9,250	79	9,900	81	6,600
15'			55	5,450	66	5,350	72	6,000	76	6,300	79	6,600
20'			42	2,850	58	2,750	66	3,300	71	3,600	75	3,850
25'			20	1,500	50	1,350	60	1,900	66	2,200	70	2,350
30'					39	500	54	1,000	61	1,350	66	1,450
35'							47	500	56	750	62	850
40'											58	450
D			0		30		41		49		55	

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MID EXTENDED								
8' 2-3/8"(2.5m) SPREAD 360° ROTATION								
C \ A	17.4'		30'					
	B	(5.3m)	B	(9.0m)				
0°	13.1'	7,400	25.3'	1,300				

ON OUTRIGGERS MIN EXTENDED 5' 4-1/2"(1.64m) SPREAD												
360° ROTATION												
B \ A	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	17,500	79	13,200								
5'	67	15,300	77	12,800	81	12,500						
6'	63	13,250	75	12,300	80	12,500						
8'	54	8,650	71	8,800	77	8,300	80	7,500				
10'	44	5,800	67	6,100	74	5,600	78	5,600	80	5,600		
12'	30	4,250	62	4,100	71	4,050	75	4,200	78	4,300	80	4,350
15'			55	2,450	66	2,300	72	2,700	76	3,000	78	3,100
20'			42	900	59	750	66	1,250	71	1,550	74	1,800
25'											70	950
D		0		26		52		58		63		67

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MIN EXTENDED								
8' 2-3/8"(2.5m) SPREAD 360° ROTATION								
C \ A	17.4'							
	B	(5.3m)						
0°	13.1'	3,500						

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

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-C) is based on the standard number of parts of line listed in the chart. Standard number of parts of line for each boom length should be according to the following table.

Boom length in feet (meters)	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 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								C	78' (23.8m) Boom + 18' (5.5m) Jib							
	5° offset		25° offset		45° offset		60° offset			5° offset		25° offset		45° offset		60° offset	
	R	W	R	W	R	W	R	W		R	W	R	W	R	W	R	W
82	12.6'	3,300	16.7'	2,650	19.6'	2,000	21.5'	1,400	82	13.9'	1,850	20.0'	1,550	24.7'	1,300	27.2'	850
82	16.1'	3,300	20.0'	2,650	22.7'	2,000	24.6'	1,400	82	17.5'	1,850	23.5'	1,550	28.0'	1,300	30.1'	850
77.5	20.4'	3,300	24.2'	2,650	26.5'	2,000	28.1'	1,400	77.5	21.9'	1,850	27.9'	1,550	31.9'	1,200	33.9'	850
75	24.4'	3,300	28.1'	2,650	30.3'	2,000	31.9'	1,400	75	26.3'	1,850	32.1'	1,550	35.8'	1,200	37.4'	850
72.5	28.3'	3,000	31.8'	2,400	33.9'	1,900	35.3'	1,400	72.5	30.6'	1,850	36.0'	1,500	39.6'	1,200	41.2'	850
70	32.1'	2,750	35.4'	2,200	37.4'	1,850	38.9'	1,400	70	34.7'	1,850	39.7'	1,400	43.1'	1,150	44.5'	850
67.5	35.7'	2,500	38.9'	2,100	40.8'	1,800	41.9'	1,400	67.5	38.6'	1,800	43.3'	1,350	46.5'	1,100	47.9'	850
65	39.2'	2,300	42.3'	1,950	44.2'	1,700	45.3'	1,400	65	42.5'	1,750	47.1'	1,300	49.8'	1,100	50.9'	850
62.5	42.8'	2,100	45.7'	1,850	47.3'	1,600	48.1'	1,400	62.5	46.1'	1,600	50.5'	1,250	53.0'	1,100	54.0'	850
60	46.1'	1,950	49.0'	1,750	50.3'	1,550	51.1'	1,400	60	49.6'	1,450	53.8'	1,200	56.1'	1,050	56.8'	850
57.5	49.1'	1,750	51.9'	1,600	53.3'	1,500			57.5	53.1'	1,350	57.2'	1,150	59.1'	1,000		
55	52.1'	1,550	54.9'	1,400	56.0'	1,400			55	56.4'	1,250	60.3'	1,100	61.9'	1,000		
52.5	55.1'	1,300	57.7'	1,200	58.6'	1,200			52.5	59.5'	1,100	63.3'	1,000	64.7'	950		
50	57.9'	1,100	60.3'	1,000	61.2'	1,050			50	62.7'	1,000	66.0'	900	67.4'	900		
47.5	60.7'	950	62.8'	900	63.6'	900			47.5	65.4'	850	68.7'	800	69.8'	800		
45	63.2'	800	65.3'	750	65.8'	750			45	68.1'	700	71.2'	650	72.0'	650		
42.5	65.7'	700	67.6'	600					42.5	70.8'	600	73.7'	550				
40	68.1'	550	69.9'	500					40	73.4'	500	76.0'	450				
37.5	70.4'	450	72.0'	400													
35	72.5'	350	73.9'	350													

ON OUTRIGGERS MID EXTENDED 14' 1-1/4"(4.3m) SPREAD																	
360° ROTATION																	
C	78' (23.8m) Boom + 11.8' (3.6m) Jib								C	78' (23.8m) Boom + 18' (5.5m) Jib							
	5° offset		25° offset		45° offset		60° offset			5° offset		25° offset		45° offset		60° offset	
	R	W	R	W	R	W	R	W		R	W	R	W	R	W	R	W
82	12.6'	3,300	16.7'	2,650	19.6'	2,000	21.5'	1,400	82	13.9'	1,850	20.0'	1,550	24.7'	1,300	27.2'	850
82	16.1'	3,300	20.0'	2,650	22.7'	2,000	24.6'	1,400	82	17.5'	1,850	23.5'	1,550	28.0'	1,300	30.1'	850
77.5	20.4'	3,300	24.2'	2,650	26.5'	2,000	28.1'	1,400	77.5	21.9'	1,850	27.9'	1,550	31.9'	1,200	33.9'	850
75	24.4'	3,300	28.1'	2,650	30.3'	2,000	31.9'	1,400	75	26.3'	1,850	32.1'	1,550	35.8'	1,200	37.4'	850
72.5	28.3'	3,000	31.8'	2,400	33.9'	1,900	35.3'	1,400	72.5	30.6'	1,850	36.0'	1,500	39.6'	1,200	41.2'	850
70	32.1'	2,750	35.4'	2,200	37.4'	1,850	38.9'	1,400	70	34.7'	1,850	39.7'	1,400	43.1'	1,150	44.5'	850
67.5	35.7'	2,500	38.9'	2,100	40.8'	1,800	41.9'	1,400	67.5	38.6'	1,800	43.3'	1,350	46.5'	1,150	47.9'	850
65	39.2'	2,300	42.3'	1,950	44.2'	1,700	45.3'	1,400	65	42.5'	1,750	47.1'	1,300	49.8'	1,100	50.9'	850
62.5	42.6'	2,000	45.7'	1,800	47.3'	1,550	48.1'	1,400	62.5	46.1'	1,600	50.5'	1,250	53.0'	1,100	54.0'	850
60	45.8'	1,750	48.9'	1,600	50.3'	1,400	51.1'	1,400	60	49.6'	1,450	53.8'	1,200	56.1'	1,050	56.8'	850
57.5	48.9'	1,500	51.8'	1,400	53.1'	1,250			57.5	52.9'	1,300	57.2'	1,100	59.1'	950		
55	51.9'	1,200	54.7'	1,150	55.8'	1,100			55	56.1'	1,100	60.2'	1,000	61.9'	850		
52.5	54.8'	1,000	57.3'	950	58.4'	900			52.5	59.3'	900	63.0'	850	64.6'	800		
50	57.7'	800	60.1'	750	61.0'	750			50	62.3'	750	65.9'	700	67.2'	700		
47.5	60.4'	650	62.6'	600	63.4'	600			47.5	65.2'	600	68.6'	600	69.7'	600		
45	63.0'	500	65.1'	500	65.7'	500			45	68.0'	500	71.1'	450	71.9'	450		

**C** : Loaded boom angle (°)  
**R** : Load radius in fee  
**W** : Rated lifting capacity in pound:



## GR-150XL 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								C	78' (23.8m) Boom + 18' (5.5m) Jib							
	5° offset		25° offset		45° offset		60° offset			5° offset		25° offset		45° offset		60° offset	
	R	W	R	W	R	W	R	W		R	W	R	W	R	W	R	W
82	12.6'	3,300	16.7'	2,650	19.6'	2,000	21.5'	1,400	82	13.9'	1,850	20.0'	1,550	24.7'	1,300	27.2'	850
82	16.1'	3,300	20.0'	2,650	22.7'	2,000	24.6'	1,400	82	17.5'	1,850	23.5'	1,550	28.0'	1,300	30.1'	850
77.5	20.4'	3,300	24.2'	2,650	26.5'	2,000	28.1'	1,400	77.5	21.9'	1,850	27.9'	1,550	31.9'	1,200	33.9'	850
75	24.4'	3,300	28.1'	2,650	30.3'	2,000	31.9'	1,400	75	26.3'	1,850	32.1'	1,550	35.8'	1,200	37.4'	850
72.5	28.3'	2,850	31.8'	2,400	33.9'	1,900	35.3'	1,400	72.5	30.6'	1,850	36.0'	1,500	39.6'	1,200	41.2'	850
70	31.8'	2,400	35.4'	2,200	37.4'	1,850	38.9'	1,400	70	34.7'	1,850	39.7'	1,400	43.1'	1,150	44.5'	850
67.5	35.3'	2,000	38.7'	1,850	40.8'	1,600	41.9'	1,400	67.5	38.6'	1,650	43.3'	1,300	46.5'	1,100	47.9'	850
65	38.7'	1,550	41.9'	1,500	43.8'	1,400	45.3'	1,400	65	42.2'	1,450	46.9'	1,150	49.8'	1,000	50.9'	850
62.5	42.0'	1,200	45.7'	1,200	46.9'	1,150	47.9'	1,150	62.5	45.7'	1,200	50.2'	1,000	52.9'	850	53.8'	750
60	45.2'	900	48.9'	950	49.8'	900	50.7'	900	60	48.9'	900	53.4'	800	55.8'	700	56.6'	650
57.5	48.3'	700	51.8'	750	52.6'	700			57.5	52.2'	700	56.7'	600	58.7'	600		
55	51.4'	550	54.2'	550	55.4'	500			55	55.6'	500	59.7'	450	61.6'	450		

ON OUTRIGGERS MID EXTENDED 8' 2-3/8"(2.5m) SPREAD																	
360° ROTATION																	
C	78' (23.8m) Boom + 11.8' (3.6m) Jib								C	78' (23.8m) Boom + 18' (5.5m) Jib							
	5° offset		25° offset		45° offset		60° offset			5° offset		25° offset		45° offset		60° offset	
	R	W	R	W	R	W	R	W		R	W	R	W	R	W	R	W
82	12.6'	3,300	16.7'	2,650	19.6'	2,000	21.5'	1,400	82	13.9'	1,850	20.0'	1,550	24.7'	1,300	27.2'	850
82	16.1'	3,200	20.0'	2,650	22.7'	2,000	24.6'	1,400	82	17.5'	1,850	23.5'	1,550	28.0'	1,300	30.1'	850
77.5	20.1'	2,850	23.9'	2,300	26.3'	1,900	28.1'	1,400	77.5	21.9'	1,850	27.7'	1,500	31.9'	1,200	33.9'	850
75	23.9'	2,400	27.7'	2,000	30.0'	1,750	31.9'	1,400	75	26.3'	1,850	31.9'	1,400	35.7'	1,100	37.4'	850
72.5	27.5'	1,800	31.1'	1,550	33.5'	1,400	35.1'	1,150	72.5	30.2'	1,500	35.5'	1,100	39.1'	900	41.1'	750
70	31.0'	1,250	34.5'	1,100	36.7'	1,000	38.3'	850	70	33.9'	1,100	39.3'	850	42.8'	750	44.4'	650
67.5	34.5'	900	37.9'	800	39.9'	700	41.4'	570	67.5	37.6'	800						
65	37.8'	550	41.1'	500	43.0'	450	44.3'	300	65	41.0'	450						

**C** :Loaded boom angle (°)

**R** :Load radius in fee

**W** :Rated lifting capacity in pound:

# 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.
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 hoist and auxiliary 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 main hoist 4,000 lbs.(1,800kg) 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.

## 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.
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 block.
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' (5.5 m) 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. hoist) and boom (main hoist) simultaneously, do the following:
  - Enter the operation status as jib operation, not as boom operation.
  - Before starting operation, make sure that mass of load is within rated lifting capacity for jib.
22. Be very careful not to come in contact with the mirror, engine cover, etc. with following warning messages. When operating crane in the following case.
  - When lowering the boom angles less than 12°
  - When slewing with the boom angles less than 12°

## 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-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° 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° 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-150XL Axle weight distribution chart

	Pounds			Kilograms		
	GVW	Front	Rear	GVW	Front	Rear
Base machine with 2 stage jib, auxiliary lifting sheeve and auxiliary hoist	30,780	15,190	15,590	13,960	6,890	7,070
Remove:						
1. 2.0 ton (1.8metric ton) hook ball and auxiliary lifting sheave (single top)	-120	-340	220	-53	-155	102
2. 2-stage jib	-410	-490	80	-185	-221	36

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