

# ROUGH TERRAIN CRANE

## GR-500N

### *JAPANESE SPECIFICATIONS*

GR

OUTLINE	SPEC. NO.
6-section Boom, 2-staged Power Tilt Jib X-type Outrigger	GR-500N-1-00103

Control No. GR-500N-1-00103 / JA-02

# GR-500N

## CRANE SPECIFICATIONS

### CRANE CAPACITY

9.7m Boom	51,000kg	at 3.0m	(12part-line)
16.0m Boom	30,000kg	at 4.5m	( 8part-line)
22.3m Boom	20,000kg	at 5.5m	( 6part-line)
28.6m Boom	12,500kg	at 8.0m	( 4part-line)
34.9m Boom	11,000kg	at 8.0m	( 4part-line)
38.05m Boom	9,000kg	at 9.0m	( 4part-line)
41.2m Boom	7,000kg	at 10.0m	( 4part-line)
8.0m Jib	3,500kg	at 74 °	( 1part-line)
12.7m Jib	2,500kg	at 74 °	( 1part-line)
Single top	4,500kg		( 1part-line)

### MAX.LIFTING HEIGHT

Boom	42.2m
Jib	55.2m

### MAX.WORKING RADIUS

Boom	34.0m
Jib	38.6m

### BOOM LENGTH

9.7m – 41.2m

### BOOM EXTENSION

31.5m

### BOOM EXTENSION SPEED

31.5m/120s

### JIB LENGTH

8.0m – 12.7m

### MAIN WINCH SINGLE LINE WINDING SPEED

125m/min (5th layer)

### MAIN WINCH HOOK SPEED

10.4m/min (12 part-line)

### MAIN WINCH SINGLE LINE UNWINDING SPEED

<Reference>

Standard	125m/min	(5th layer)
High speed	190m/min	(5th layer)

### AUXILIARY WINCH SINGLE LINE WINDING SPEED

110m/min (3th layer)

### AUXILIARY WINCH HOOK SPEED

110m/min (1 part-line)

### AUXILIARY WINCH SINGLE LINE UNWINDING SPEED

<Reference>

Standard	110m/min	(3th layer)
High speed	165m/min	(3th layer)

### BOOM ELEVATION ANGLE

-0 ° ~ 83.5 °

### BOOM ELEVATION SPEED

-0 ° ~ 83.5 °/62s

### SWING ANGLE

360 °continue

### SWING SPEED

2.2min<sup>-1</sup> (rpm)

### WIRE ROPE

Main Winch:	18mm x 224m (Diameter x Length)
	Spin-resistant wire rope
Auxiliary Winch:	18mm x 120m (Diameter x Length)
	Spin-resistant wire rope

### BOOM

6-section hydraulically telescoping boom of hexagonal box construction  
(stages 2,3: synchronized; stages 4,5,6: synchronized)

### BOOM EXTENSION

3 double-acting hydraulic cylinders  
2 wire rope type telescoping device

### JIB

Quick-turn type (2-staged type which stores alongside below the base boom section and extendible from under the boom (with 2nd stage being a pull-out type))

Hydraulic non-stage offset (5 °60 °) type

### SINGLE TOP

Single sheave. Mounted on main boom head for single line work.

### HOIST

Hydraulic motor driven planetary gear reducer

Automatic brake

With high-speed unwind function

2 single winches

With flow regulator valve with pressure compensation

### BOOM ELEVATION

2 double-acting hydraulic cylinders

With flow regulator valve with pressure compensation

### SWING

Hydraulic motor driven planetary gear reducer

Swing bearing

Swing free/lock changeover type

Negative brake

### OUTRIGGERS

Fully hydraulic X-type (floats mounted integrally)

Slides and jacks each provided with independent operation device.

Fully extended width 7.4m

Middle extended width 6.8m, 5.5m, 4.1m

Minimum extended width 3.5m

### OPERATION METHOD

Hydraulic pilot valve operation

### MAX. VERTICAL LOAD CAPACITY OF OUTRIGGER

38.3t

### POWER TAKE-OFF

PTO wet multi-plate clutch

### HYDRAULIC PUMPS

2 variable piston pumps

3 gear pumps

### HYDRAULIC OIL TANK CAPACITY

601 liters

### SAFETY DEVICES

Automatic moment limiter (AML)

Swing automatic stop device

Elevation slow down and stop device

Over-winding cutout device

Working area control device

Outrigger extension width detector

Winch drum lock (auxiliary winch)

Level gauge

Hook safety latch

Hydraulic safety valve

Telescopic counterbalance valve

Elevation counterbalance valve

Power tilt counterbalance valve

Jack pilot check valve

Swing lock

### EQUIPMENT

Air-conditioner with dehumidifier

Hydraulic oil temperature indication lamp

Radio

Oil cooler

Visual-type winch drum rotation indicator

Operation pedals

ISO arrangement: for telescoping/auxiliary hoisting

TADANO arrangement: for elevating/telescoping

Television (option)

## CARRIER SPECIFICATIONS

### ENGINE

Model NISSAN 2A-GE13C (with turbo charger and air cooler)  
 Type 4-cycle, 6-cylinder, direct-injection, water-cooled diesel engine  
 Piston displacement 13.074 liters  
 Max. output At the time of traveling 272kW (370PS) at 2,000min<sup>-1</sup>(rpm)  
 Max. torque 1,470N·m(150kgf·m) at 1,100min<sup>-1</sup>(rpm)

### TORQUE CONVERTER

3-element, 1-stage unit (with automatic lock-up mechanism)

### TRANSMISSION

Automatic and manual transmission  
 Power shift type (wet multi-plate clutch)  
 4 forward and 1 reverse speeds (with Hi/Low settings)

### REDUCER

Axle dual-ratio reduction

### DRIVE

2-wheel drive (4X2) / 4-wheel drive (4X4) selection

### FRONT AXLE

Full floating type

### REAR AXLE

Full floating type

### SUSPENSION

Front Hydro-pneumatic suspension (with hydraulic lock cylinder)

Rear Hydro-pneumatic suspension (with hydraulic lock cylinder)

### STEERING

Fully hydraulic power steering  
 With reverse steering correction mechanism

### BRAKE SYSTEM

Service Brake  
 Air and hydraulic combined type front and rear disk brakes  
 Parking Brake  
 Mechanically operated, internal expanding duo-servo shoe type acting on drum at transmission case rear.  
 Auxiliary Brake  
 Hydrodynamic retarder  
 Electro-pneumatic operated exhaust brake  
 Auxiliary braking device for operations

### FRAME

Welded box-shaped structure

### ELECTRIC SYSTEM

24V DC. 2 batteries of 12V-120Ah

### FUEL TANK CAPACITY

300 liters

### TIRES

Front 505/95R25 183E ROAD

Rear 505/95R25 183E ROAD

### CAB

One-man type  
 With interior equipment  
 Rubber mounted type  
 Fully adjustable seat  
 (with headrest, armrest and seat belt)  
 Adjustable handle (tilt, telescoping)  
 Intermittent type windshield/roof wiper (with washer)  
 Power window  
 Side visor

### SAFETY DEVICES

Emergency steering device  
 Suspension lock device  
 Rear wheel steering lock device  
 Engine over-run alarm  
 Overshift prevention device  
 Parking brake alarm  
 Mirror for right side of boom (Electric type is optional)  
 Boom's left side monitor television

### EQUIPMENT

Centralized oiling device  
 Electric mirror

## GENERAL DATA

### DIMENSIONS

Overall length	11,870mm
Overall width	2,960mm
Overall height	3,760mm
Wheel base	5,050mm
Tread Front	2,380mm
Rear	2,380mm

### WEIGHTS

Gross vehicle weight	
Total	38,895kg
Front	19,450kg
Rear	19,445kg

### PERFORMANCE

Max. traveling speed	49km/h
Gradeability (tan <sup>-1</sup> )	0.57
Min. turning radius	6.3m (4-wheel steering) 10.8m (2-wheel steering)

Note:

This crane is covered by Class D Conditions under the Basic Running Conditions of the Road Traffic Act.

<b>TOTAL RATED LOADS CHART</b>
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[BOOM]

Unit: ton

Outriggers fully extended (7.4 m)								-360 °-
Working radius / Boom length	9.7 m	16.0 m	22.3 m	28.6 m	34.9 m	38.05 m	41.2 m	
2.5 m	51.0	30.0	20.0	12.5				
3.0 m	51.0	30.0	20.0	12.5				
3.5 m	45.0	30.0	20.0	12.5	11.0			
4.0 m	39.5	30.0	20.0	12.5	11.0	9.0		
4.5 m	35.5	30.0	20.0	12.5	11.0	9.0		
5.0 m	32.0	29.0	20.0	12.5	11.0	9.0	7.0	
5.5 m	29.0	27.0	20.0	12.5	11.0	9.0	7.0	
6.0 m	26.5	25.0	19.2	12.5	11.0	9.0	7.0	
6.5 m	24.0	23.2	18.0	12.5	11.0	9.0	7.0	
7.0 m		21.3	17.0	12.5	11.0	9.0	7.0	
8.0 m		18.2	15.0	12.5	11.0	9.0	7.0	
9.0 m		15.0	13.4	11.5	10.2	9.0	7.0	
10.0 m		12.3	11.9	10.5	9.3	8.5	7.0	
11.0 m		10.2	9.9	9.6	8.5	7.8	6.8	
12.0 m		8.5	8.25	8.8	7.8	7.2	6.4	
13.0 m		7.1	6.9	7.9	7.1	6.6	6.0	
14.0 m			5.9	6.9	6.6	6.1	5.6	
16.0 m			4.3	5.2	5.7	5.3	4.9	
18.0 m			3.0	4.0	4.5	4.6	4.3	
20.0 m				3.1	3.5	3.7	3.85	
22.0 m				2.35	2.75	3.0	3.1	
24.0 m				1.7	2.1	2.35	2.5	
26.0 m					1.65	1.85	2.0	
28.0 m					1.25	1.4	1.55	
30.0 m					0.9	1.0	1.2	
32.0 m						0.7	0.9	
34.0 m							0.6	
A (°)	0 ~ 83.5					16 ~ 83.5	26 ~ 83.5	
Standard hook	51 t hook			25 t hook				

A= Boom angle range (for the unladen condition)

## [BOOM]

Unit: ton

		Outriggers middle extended (6.8 m)					-Over sides-	
Working radius	Boom length	9.7 m	16.0 m	22.3 m	28.6 m	34.9 m	38.05 m	41.2 m
	2.5 m		51.0	30.0	20.0	12.5		
3.0 m		50.0	30.0	20.0	12.5			
3.5 m		43.0	30.0	20.0	12.5	11.0		
4.0 m		38.0	30.0	20.0	12.5	11.0	9.0	
4.5 m		34.1	30.0	20.0	12.5	11.0	9.0	
5.0 m		30.7	29.0	20.0	12.5	11.0	9.0	7.0
5.5 m		27.7	27.0	20.0	12.5	11.0	9.0	7.0
6.0 m		25.3	25.0	19.2	12.5	11.0	9.0	7.0
6.5 m		23.0	23.2	18.0	12.5	11.0	9.0	7.0
7.0 m			21.3	17.0	12.5	11.0	9.0	7.0
8.0 m			16.4	15.0	12.5	11.0	9.0	7.0
9.0 m			13.0	12.7	11.5	10.2	9.0	7.0
10.0 m			10.6	10.3	10.5	9.3	8.5	7.0
11.0 m			8.7	8.5	9.5	8.5	7.8	6.8
12.0 m			7.2	7.1	8.1	7.8	7.2	6.4
13.0 m			6.1	6.0	6.9	7.1	6.6	6.0
14.0 m				5.1	6.0	6.4	6.1	5.6
16.0 m				3.65	4.5	4.9	5.1	4.9
18.0 m				2.55	3.3	3.8	4.05	4.2
20.0 m					2.5	3.0	3.2	3.35
22.0 m					1.8	2.3	2.5	2.65
24.0 m					1.2	1.75	1.9	2.05
26.0 m						1.25	1.45	1.6
28.0 m						0.85	1.05	1.2
30.0 m						0.5	0.7	0.85
32.0 m								0.5
A (°)		0 ~ 83.5				21 ~ 83.5	26 ~ 83.5	34 ~ 83.5
Standard hook		51 t hook			25 t hook			

A= Boom angle range (for the unladen condition)

## [BOOM]

Unit: ton

		Outriggers middle extended (5.5 m)					-Over sides-	
Boom length Working radius	9.7 m	16.0 m	22.3 m	28.6 m	34.9 m	38.05 m	41.2 m	
2.5 m	45.0	30.0	20.0	12.5				
3.0 m	45.0	30.0	20.0	12.5				
3.5 m	41.0	30.0	20.0	12.5	11.0			
4.0 m	36.8	30.0	20.0	12.5	11.0	9.0		
4.5 m	33.2	30.0	20.0	12.5	11.0	9.0		
5.0 m	30.2	27.0	20.0	12.5	11.0	9.0	7.0	
5.5 m	25.9	24.0	20.0	12.5	11.0	9.0	7.0	
6.0 m	21.4	21.0	19.2	12.5	11.0	9.0	7.0	
6.5 m	18.2	18.0	17.0	12.5	11.0	9.0	7.0	
7.0 m		15.2	15.1	12.5	11.0	9.0	7.0	
8.0 m		11.9	11.6	12.0	11.0	9.0	7.0	
9.0 m		9.5	9.15	10.2	10.0	9.0	7.0	
10.0 m		7.65	7.35	8.35	8.7	8.5	7.0	
11.0 m		6.25	6.0	7.0	7.3	7.6	6.8	
12.0 m		5.15	4.9	5.85	6.3	6.5	6.4	
13.0 m		4.2	4.0	5.0	5.5	5.6	5.6	
14.0 m			3.25	4.2	4.7	4.9	5.0	
16.0 m			2.05	3.0	3.5	3.7	3.8	
18.0 m			1.15	2.1	2.6	2.75	2.9	
20.0 m				1.35	1.9	2.05	2.25	
22.0 m				0.7	1.25	1.5	1.7	
24.0 m					0.8	1.0	1.2	
26.0 m						0.6	0.8	
A ( ° )	0 ~ 83.5			23 ~ 83.5	36 ~ 83.5	43 ~ 83.5	48 ~ 83.5	
Standard hook	51 t hook		25 t hook					

A= Boom angle range (for the unladen condition)

## [BOOM]

Unit: ton

		Outriggers middle extended (4.1 m)					-Over sides-	
Working radius \ Boom length	9.7 m	16.0 m	22.3 m	28.6 m	34.9 m	38.05 m	41.2 m	
2.5 m	40.0	30.0	20.0	12.5				
3.0 m	40.0	30.0	20.0	12.5				
3.5 m	34.3	30.0	20.0	12.5	11.0			
4.0 m	27.0	27.0	20.0	12.5	11.0	9.0		
4.5 m	22.2	21.5	20.0	12.5	11.0	9.0		
5.0 m	18.5	17.4	17.0	12.5	11.0	9.0	7.0	
5.5 m	15.8	14.5	14.2	12.5	11.0	9.0	7.0	
6.0 m	13.3	12.5	12.0	12.5	11.0	9.0	7.0	
6.5 m	11.2	10.6	10.4	11.4	11.0	9.0	7.0	
7.0 m		9.2	9.0	10.0	10.2	9.0	7.0	
8.0 m		6.9	6.8	7.8	8.1	8.3	7.0	
9.0 m		5.4	5.25	6.2	6.7	6.9	6.9	
10.0 m		4.3	4.1	5.0	5.6	5.8	5.9	
11.0 m		3.4	3.15	4.05	4.65	4.9	5.0	
12.0 m		2.6	2.45	3.3	3.85	4.1	4.2	
13.0 m		1.85	1.75	2.7	3.2	3.5	3.55	
14.0 m			1.15	2.15	2.65	2.9	3.0	
16.0 m				1.2	1.8	2.0	2.1	
18.0 m					1.1	1.3	1.45	
20.0 m						0.75	0.95	
A ( ° )	0 ~ 83.5		38 ~ 83.5	46 ~ 83.5	52 ~ 83.5	55 ~ 83.5	59 ~ 83.5	
Standard hook	51 t hook		25 t hook					

A= Boom angle range (for the unladen condition)

## [BOOM]

Unit: ton

		Outriggers minimum extended (3.5 m)						-Over sides-
Working radius \ Boom length	9.7 m	16.0 m	22.3 m	28.6 m	34.9 m	38.05 m	41.2 m	
2.5 m	30.0	20.0	14.0	9.0				
3.0 m	30.0	20.0	14.0	9.0				
3.5 m	25.6	20.0	14.0	9.0	8.5			
4.0 m	21.0	19.0	14.0	9.0	8.5	7.0		
4.5 m	17.4	16.0	14.0	9.0	8.5	7.0		
5.0 m	14.2	13.4	13.0	9.0	8.5	7.0	6.0	
5.5 m	12.2	11.4	10.7	9.0	8.5	7.0	6.0	
6.0 m	10.4	9.6	9.3	9.0	8.5	7.0	6.0	
6.5 m	8.5	8.3	8.0	8.7	8.5	7.0	6.0	
7.0 m		7.2	6.9	7.7	7.6	7.0	6.0	
8.0 m		5.5	5.2	6.0	6.2	6.3	6.0	
9.0 m		4.2	3.9	4.7	5.0	5.1	5.3	
10.0 m		3.2	2.9	3.7	4.0	4.2	4.4	
11.0 m		2.4	2.1	3.0	3.3	3.5	3.65	
12.0 m		1.8	1.5	2.3	2.7	2.9	3.1	
13.0 m		1.2	0.9	1.85	2.2	2.4	2.55	
14.0 m				1.35	1.75	1.95	2.1	
16.0 m					1.0	1.2	1.4	
A ( ° )	0 ~ 83.5		44 ~ 83.5	51 ~ 83.5	59 ~ 83.5	63 ~ 83.5	65 ~ 83.5	
Standard hook	51 t hook		25 t hook					

A= Boom angle range (for the unladen condition)



## [JIB]

Jib length Offset	Outriggers fully extended (7.4 m)										-360 °					
	41.2 m boom + 8.0 m jib					41.2 m boom + 12.7 m jib										
	5 °	25 °	45 °	60 °	5 °	25 °	45 °	60 °								
Boom angle ( ° )	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)				
83.5	5.6	3.5	8.3	2.4	10.2	1.6	11.0	1.0	6.6	2.5	10.5	1.4	13.4	0.9	15.3	0.5
76.0	12.9	3.5	15.1	2.4	16.6	1.6	17.1	1.0	14.9	2.5	18.3	1.4	20.7	0.9	21.6	0.5
74.0	14.8	3.5	16.8	2.4	18.3	1.6	18.6	1.0	17.0	2.5	20.2	1.4	22.4	0.9	23.2	0.5
72.0	16.6	3.3.5	18.5	2.4	19.8	1.6	20.0	1.0	19.0	2.4	22.0	1.35	24.1	0.9	24.6	0.5
70.0	18.3	3.0	20.2	2.4	21.3	1.6	21.5	1.0	20.8	2.2	23.6	1.25	25.7	0.85	26.1	0.5
68.0	20.0	2.7	21.8	2.2	22.9	1.6	22.8	1.0	22.5	2.0	25.3	1.2	27.2	0.85	27.4	0.5
65.0	22.1	2.3	23.9	1.9	25.0	1.55	24.8	1.0	25.0	1.8	27.7	1.1	29.4	0.8	29.5	0.5
60.0	25.7	1.7.5	27.4	1.5	28.4	1.35	28.1	1.0	28.9	1.4	31.5	1.0	32.8	0.75	32.8	0.5
55.0	29.0	1.3	30.6	1.2	31.3	1.1			32.6	1.1	35.0	0.85	36.0	0.75		
53.0	30.3	1.0.5	31.7	0.95	32.5	0.95			34.0	0.85	36.2	0.75	37.1	0.65		
50.0	32.1	0.6.5	33.4	0.6	34.0	0.6			35.9	0.55	38.0	0.45	38.6	0.4		
A( ° )	49 ~ 83.5					49 ~ 83.5					59 ~ 83.5					

A= Boom angle range (for the unladen condition)

Jib length Offset	Outriggers middle extended (6.8 m)										-Over sides-					
	41.2 m boom + 8.0 m jib					41.2 m boom + 12.7 m jib										
	5 °	25 °	45 °	60 °	5 °	25 °	45 °	60 °								
Boom angle ( ° )	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)				
83.5	5.6	3.5	8.3	2.4	10.2	1.6	11.0	1.0	6.6	2.5	10.5	1.4	13.4	0.9	15.3	0.5
76.0	12.9	3.5	15.1	2.4	16.6	1.6	17.1	1.0	14.9	2.5	18.3	1.4	20.7	0.9	21.6	0.5
74.0	14.8	3.5	16.8	2.4	18.3	1.6	18.6	1.0	17.0	2.5	20.2	1.4	22.4	0.9	23.2	0.5
72.0	16.6	3.3.5	18.5	2.4	19.8	1.6	20.0	1.0	19.0	2.4	22.0	1.35	24.1	0.9	24.6	0.5
70.0	18.3	3.0	20.2	2.4	21.3	1.6	21.5	1.0	20.8	2.2	23.6	1.25	25.7	0.85	26.1	0.5
68.0	20.0	2.7	21.8	2.2	22.9	1.6	22.8	1.0	22.5	2.0	25.3	1.2	27.2	0.85	27.4	0.5
65.0	22.1	2.3	23.9	1.9	25.0	1.55	24.8	1.0	25.0	1.8	27.7	1.1	29.4	0.8	29.5	0.5
60.0	25.7	1.7	27.4	1.5	28.4	1.35	28.1	1.0	28.9	1.4	31.5	1.0	32.8	0.75	32.8	0.5
55.0	28.9	0.9	30.5	0.8	31.2	0.8			32.3	0.75	34.9	0.65	35.8	0.55		
53.0	30.1	0.6.5	31.6	0.6	32.4	0.6			33.6	0.55	36.1	0.5	36.9	0.4		
A( ° )	52 ~ 83.5					52 ~ 83.5					59 ~ 83.5					

A= Boom angle range (for the unladen condition)

[JIB]

Outriggers middle extended (5.5 m)													-Over sides-			
41.2 m boom + 8.0 m jib													41.2 m boom + 12.7 m jib			
Jib length	5°		25°		45°		60°		5°		25°		45°		60°	
Offset	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)
83.5	5.6	3.5	8.3	2.4	10.2	1.6	11.0	1.0	6.6	2.5	10.5	1.4	13.4	0.9	15.3	0.5
76.0	12.9	3.5	15.1	2.4	16.6	1.6	17.1	1.0	14.9	2.5	18.3	1.4	20.7	0.9	21.6	0.5
74.0	14.8	3.5	16.8	2.4	18.3	1.6	18.6	1.0	17.0	2.5	20.2	1.4	22.4	0.9	23.2	0.5
72.0	16.6	3.5	18.5	2.4	19.8	1.6	20.0	1.0	19.0	2.4	22.0	1.35	24.1	0.9	24.6	0.5
70.0	18.3	3.0	20.2	2.4	21.3	1.6	21.5	1.0	20.8	2.2	23.6	1.25	25.7	0.85	26.1	0.5
68.0	19.7	2.35	21.6	2.05	22.9	1.6	22.8	1.0	22.4	1.95	25.3	1.2	27.2	0.85	27.4	0.5
65.0	21.8	1.65	23.7	1.45	24.9	1.3	24.8	1.0	24.7	1.4	27.7	1.1	29.4	0.8	29.5	0.5
62.0	23.9	1.1	25.6	0.95	26.8	0.85	26.9	0.8	26.8	0.85	29.8	0.7	31.4	0.65	32.8	0.5
60.0	25.2	0.7	27.0	0.6	28.0	0.6	28.1	0.55	28.2	0.55						
A(°)	59 ~ 83.5															
	61 ~ 83.5															

A = Boom angle range (for the unladen condition)

Outriggers middle extended (4.1 m)													-Over sides-			
41.2 m boom + 8.0 m jib													41.2 m boom + 12.7 m jib			
Jib length	5°		25°		45°		60°		5°		25°		45°		60°	
Offset	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)	Working radius (m)	Total rated loads (t)
83.5	5.6	3.5	8.3	2.4	10.2	1.6	11.0	1.0	6.6	2.5	10.5	1.4	13.4	0.9	15.3	0.5
76.0	12.9	3.5	15.1	2.4	16.6	1.6	17.1	1.0	14.9	2.5	18.3	1.4	20.7	0.9	21.6	0.5
74.0	14.6	2.9	16.8	2.4	18.3	1.6	18.6	1.0	16.8	2.35	20.2	1.4	22.4	0.9	23.2	0.5
72.0	16.1	2.1	18.3	1.75	19.8	1.6	20.0	1.0	18.5	1.75	21.9	1.3	24.1	0.9	24.6	0.5
70.0	17.6	1.5	19.7	1.25	21.1	1.1	21.5	1.0	20.0	1.2	23.4	0.9	25.6	0.75	26.1	0.5
68.0	19.1	1.0	21.2	0.85	22.5	0.75	22.8	0.7	21.6	0.8						
A(°)	67 ~ 83.5															
	69 ~ 83.5															

A = Boom angle range (for the unladen condition)

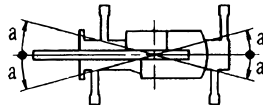
**PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE EXTENDED:**

1. The total rated loads shown are for the case where the crane is set horizontally on firm level ground. They include the weights of the slings and hooks (main hook: 460kg, 25t hook: 300kg, auxiliary hook: 100kg).  
The values above the bold lines are based on the crane strength while those below are based on the crane stability.
2. Since the working radii are based on the actual values including the deflection of the boom, operations should be performed in accordance with the working radii.
3. Jib operations should be performed in accordance with the boom angle, irrespective of the boom length. The working radii are reference values for the case where the jib is mounted to a 41.2m boom.
4. The total rated load for the single top shall be the value obtained by subtracting the weight of the hook mounted on the boom from the total rated load of the boom and must not exceed 4.5t.
5. High-speed unwind function should be performed only when lowering the hook alone and sudden braking operations must be avoided.
6. The table below shows the standard number of part lines for each boom length. When using with other than this number of part lines, the load per line should not exceed 4.25t for the main winch, and 4.5t for the auxiliary winch.

Boom length	9.7m	16.0 m	22.3m	28.6 m	34.9m	38.0 5m	41.2 m	Jib/Single top
Number of part lines	12	8	6	4	4	4	4	1

7. The hoisting performance for the "Over sides" range will differ according to the extended width of the outriggers. Operations should be performed in accordance with the performance corresponding to the extended width. Also, although the hoisting performances for the "Over front" and "Over rear" ranges are equivalent to those of the "outriggers fully extended" condition, the front and rear ranges (angle a) will differ according to the width to which the outriggers are extended in the left and right directions.

Extended width	Middle extended (6.8 m)	Middle extended (5.5 m)	Middle extended (4.1 m)	Minimum extended (3.5 m)
Angle a °	45	35	25	20



## 2-(2) Without outriggers

Unit : ton

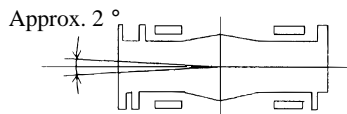
Boom length	Stationary						Travelling at 1.6km/h or less					
	9.7m		16.0m		22.3m		9.7m		16.0m		22.3m	
Working radius	Front	-360 °	Front	-360 °	Front	-360 °	Front	-360 °	Front	-360 °	Front	-360 °
3.0 m	20.0	12.5	15.0	10.0			14.5	8.0	10.5	6.5		
3.5 m	20.0	12.5	15.0	10.0			14.5	8.0	10.5	6.5		
4.0 m	20.0	11.0	15.0	10.0	11.0	5.5	14.5	8.0	10.5	6.5	8.0	4.5
4.5 m	18.0	9.0	15.0	8.5	11.0	5.5	12.9	6.8	10.5	6.5	8.0	4.5
5.0 m	16.0	7.4	15.0	7.0	11.0	5.5	11.5	5.8	10.5	5.3	8.0	4.1
5.5 m	14.3	6.2	14.0	5.7	11.0	5.3	10.3	4.8	10.5	4.4	8.0	3.55
6.0 m	12.8	5.2	13.0	4.8	11.0	4.4	9.3	4.0	10.0	3.7	8.0	3.05
6.5 m	11.7	4.35	12.0	4.05	10.0	3.7	8.6	3.35	9.3	3.15	8.0	2.55
7.0 m			11.0	3.4	9.2	3.0			8.5	2.7	7.4	1.65
8.0 m			9.0	2.3	7.7	2.0			7.0	1.85	6.4	0.95
9.0 m			7.0	1.3	6.4	1.0			5.9	1.1	5.4	
10.0 m			5.7		5.4				4.8		4.5	
11.0 m			4.7		4.5				3.9		3.7	
12.0 m			4.0		3.8				3.3		3.1	
13.0 m			3.4		3.2				2.8		2.6	
14.0 m					2.7						2.2	
16.0 m					1.8						1.5	
18.0 m					1.0						0.85	
A (°)	0 ~ 78		39 ~ 78	22 ~ 78	60 ~ 78		0 ~ 78		45 ~ 78	22 ~ 78	63 ~ 78	
Standard hook	25 t hook						25 t hook					

**PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE NOT USED:**

- The total rated loads shown are for the case where the tire air pressure on firm level ground is as specified 800kPa (8.00kgf/cm<sup>2</sup>) and the suspension-lock cylinder is retracted as much as possible. They include the weights of the slings and hooks (main hook: 460kg, 25t hook: 300kg, auxiliary hook: 100kg).  
The values above the bold lines are based on the crane strength while those below are based on the crane stability. The foundation, working conditions, etc. should be taken into consideration for actual work.
- Since the working radii are based on the actual values including the deflection of the boom and the tires, operations should be performed in accordance with the working radii.
- The table below shows the standard number of part lines for each boom length. When using with other than this number of part lines, the load per line should not exceed 4.25t for the main winch, and 4.5t for the auxiliary winch.

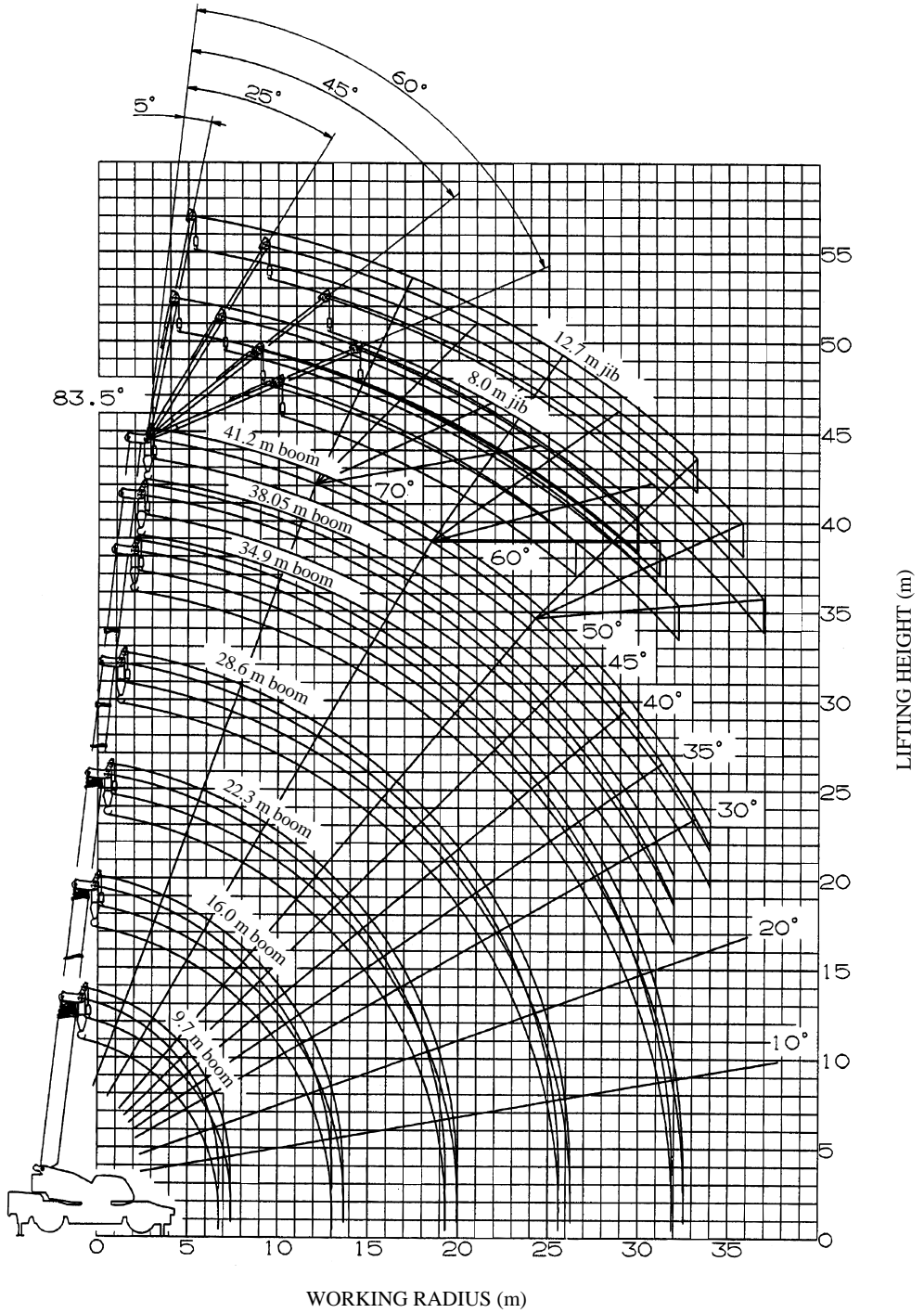
Boom length	9.7 m	16.0 m	22.3 m	Single top
Number of part lines	6	4	4	1

- "Over front" crane operations should be performed only when the AML "over-front area indicator lamp" is lit. The boom must be kept inside a 2° area over front of the carrier when performing "Over front" crane operations without the outriggers.



- The total rated load for the single top shall be the value obtained by subtracting the weight of the hook mounted on the boom from the total rated load of the boom and must not exceed 4.5t.
- High-speed unwind function should not be performed without outriggers.  
Booms over 22.3m in length and jibs should not be used without outriggers.
- The "Drive Mode Selection" switch should be set to "4-wheel / Lo" for travelling while hoisting a load and the shift lever should be set to first.
- When travelling while hoisting a load, the swing brake should be applied, the load should be kept as close to the ground as possible but not touching the ground and the speed should be kept at 1.6km/h or less. In particular, any abrupt steering, starting or braking must be avoided.
- Crane operations should not be performed when travelling while hoisting a load.

**WORKING RADIUS - LIFTING HEIGHT**



**NOTES:**

1. The deflection of the boom and the jib are not incorporated in the figure above.
2. The figure above is for the case where the outriggers are fully extended (360°).

**DIMENSIONS** (1/100)

