# **ROUGH TERRAIN CRANE**

# TR-250M

## JAPANESE SPECIFICATIONS

OUTLINE	SPEC. NO.
4-section Boom, 2-staged Power Tilt Jib X-type Outrigger	TR-250M-7-00101

Control No. JA-01

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## TR-250M

## CRANE SPECIFICATIONS

8part-line)

6part-line)

4part-line)

4part-line)

1part-line)

1part-line)

1part-line)

### CRANE CAPACITY

9.5m	Boom	25,000kg	at 3.5m	(
16.5m	Boom	19,000kg	at 4.0m	(
23.5m	Boom	12,500kg	at 5.0m	(
30.5m	Boom	7,000kg	at 8.0m	(
8.0m	Jib	3,000kg	at 72 °	(
13.0m	Jib	2,000kg	at 76 °	(
Single t	ор	3,500kg		(

#### MAX.LIFTING HEIGHT

Boom 31.3m Jib 44.2m

MAX.WORKING RADIUS

Boom 28.0m Jib 35.0m

**BOOM LENGTH** 

9.5m – 30.5m

BOOM EXTENSION

21.0m

BOOM EXTENSION SPEED

21.0m/90s

JIB LENGTH

8.0m, 13.0m

MAIN WINCH SINGLE LINE WINDING SPEED 120m/min (4th layer)

MAIN WINCH HOOK SPEED 15.0m/min (8 part-line)

AUXILIARY WINCH SINGLE LINE WINDING SPEED

120m/min (4th layer)

AUXILIARY WINCH HOOK SPEED 120m/min (1 part-line)

BOOM ELEVATION ANGLE

## BOOM ELEVATION SPEED

SWING ANGLE 360 ° continue

SWING SPEED

## 2.6min<sup>-1</sup> (rpm)

WIRE ROPE Main Winch 16mm x 170m (Diameter x Length) Spin-resistant wire rope Auxiliary Winch

16mm x 98m (Diameter x Length) Spin-resistant wire rope

#### BOOM

4-section hydraulically telescoping boom of hexagonal box construction

(stage 2: sequential; stages 3,4: synchronized)

## BOOM EXTENSION

2 double-acting hydraulic cylinders 1 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  $^{\circ}$  - 45  $^{\circ}$  type

#### SINGLE TOP

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

#### HOIST

Driven by hydraulic motor and via spur gear reducer. With free-fall device.

Automatic brake (with foot brake for free-fall device) 2 single winches

With flow regulator valve with pressure compensation

## BOOM ELEVATION

1 double-acting hydraulic cylinder 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 independentoperation device.Fully extended width6.3mMiddle extended width5.9m, 5.0m, 3.6m

Middle extended width5.9mMinimum extended width3.1m

## OPERATION METHOD

Hydraulic pilot valve operation MAX. VERTICAL LOAD CAPACITY OF OUTRIGGER 26.8t

POWER TAKE-OFF

PTO wet multi-plate clutch

## HYDRAULIC PUMPS

2 variable piston pumps 2 gear pumps

HYDRAULIC OIL TANK CAPACITY 380 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 Free-fall interlock device Outrigger extension width detector Winch drum lock 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 MITSUBISHI 6M60 - TLE2A (with turbo charger and air cooler) Туре 4-cycle, 6-cylinder, direct-injection, water-cooled diesel engine Piston displacement 7,545cc Max. output 200kW {272PS} at 2,700min<sup>-1</sup>{rpm} Max. torque 785N·m {80.0kgf·m} at 1,400min 1{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 Hydro-pneumatic disk brake 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** 12 V DC. 2 batteries of 24V (120Ah) FUEL TANK CAPACITY 300 liters TIRES Front 385/95R25 170E ROAD Rear 385/95R25 170E ROAD CAB One-man type With interior equipment Liquid filled rubber mounted type Fully adjustable foldable 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 Powered mirror for right side of boom Monitor TV for left side of boom

#### EQUIPMENT

Centralized oiling device Electric mirror

## GENERAL DATA

11,130mm

2 620mm

3,455mm

3.500mm

2,170mm

2.170mm

#### DIMENSIONS

Overall length Overall width Overall height Wheel base Tread Front

#### Rear WEIGHTS

Gross vehicle weight Total Front Rear

#### PERFORMANCE

Max. traveling speed Gradeability (tan ) Min. turning radius

26,495kg 13,250kg 13,245kg

49km/h 0.57 5.0m (4-wheel steering) 8.4m (2-wheel steering)

#### Note:

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

## TOTAL RATED LOADS

## (1) With outriggers set [BOOM]

Unit-ton

Outriggers fully extended (6.3m) -360 °-							
B	9.5m	16.5m	23.5m	30.5m			
2.5m	25.0	19.0	12.5				
3.0m	25.0	19.0	12.5				
3.5m	25.0	19.0	12.5	7.0			
4.0m	23.0	19.0	12.5	7.0			
4.5m	21.2	18.0	12.5	7.0			
5.0m	19.4	16.7	12.5	7.0			
5.5m	17.8	15.6	11.85	7.0			
6.0m	16.3	14.6	11.2	7.0			
6.5m	15.1	13.8	10.6	7.0			
7.0m	13.7	13.0	10.1	7.0			
8.0m		10.55	9.1	7.0			
9.0m		8.5	8.2	6.4			
10.0m		7.05	7.4	5.9			
11.0m		5.85	6.4	5.35			
12.0m		4.95	5.5	4.9			
13.0m		4.2	4.75	4.5			
14.0m		3.6	4.1	4.15			
15.0m			3.6	3.85			
16.0m			3.15	3.45			
17.0m			2.8	3.05			
18.0m			2.45	2.7			
19.0m			2.15	2.45			
20.0m			1.9	2.2			
21.0m			1.7	1.95			
22.0m				1.75			
24.0m				1.4			
26.0m				1.15			
28.0m				0.95			
a ( ° )		0 ~	- 83				

Unit:ton								
Outriggers middle extended (5.9m) -Over sides-								
B	9.5m	16.5m 23.5m		30.5m				
2.5m	25.0	19.0	12.5					
3.0m	25.0	19.0	12.5					
3.5m	25.0	19.0	12.5	7.0				
4.0m	23.0	19.0	12.5	7.0				
4.5m	21.2	18.0	12.5	7.0				
5.0m	19.4	16.7	12.5	7.0				
5.5m	17.8	15.6	11.85	7.0				
6.0m	16.3	14.6	11.2	7.0				
6.5m	15.1	13.8	10.6	7.0				
7.0m	13.0	12.6	10.1	7.0				
8.0m		9.7	9.1	7.0				
9.0m		7.7	8.2	6.4				
10.0m		6.3	7.0	5.9				
11.0m		5.2	6.0	5.35				
12.0m		4.35	5.1	4.9				
13.0m		3.7	4.35	4.5				
14.0m		3.15	3.8	4.05				
15.0m			3.3	3.6				
16.0m			2.85	3.15				
17.0m			2.5	2.75				
18.0m			2.2	2.45				
19.0m			1.95	2.2				
20.0m			1.7	1.95				
21.0m			1.5	1.75				
22.0m				1.55				
24.0m				1.2				
26.0m				0.95				
27.9m				0.75				
a (°)		0 ~	83					

Unit:ton

A= Boom length B= Working radius a= Boom angle range (for the unladen condition)

[BOOM]
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				Unit:ton		
Outrigge	ers middle	extended	(5.0m) –O	ver sides-	Outrig	gers
B	9.5m	16.5m	23.5m	30.5m	B	
2.5m	25.0	19.0	12.5		2.5m	2
3.0m	25.0	19.0	12.5		3.0m	2
3.5m	25.0	19.0	12.5	7.0	3.5m	2
4.0m	23.0	19.0	12.5	7.0	4.0m	1
4.5m	21.2	18.0	12.5	7.0	4.5m	1
5.0m	18.4	16.7	12.5	7.0	5.0m	1
5.5m	15.4	15.0	11.85	7.0	5.5m	
6.0m	13.0	12.6	11.2	7.0	6.0m	
6.5m	11.2	10.8	10.6	7.0	6.5m	
7.0m	9.5	9.4	10.1	7.0	7.0m	
8.0m		7.3	8.0	7.0	8.0m	
9.0m		5.85	6.5	6.4	9.0m	
10.0m		4.75	5.4	5.6	10.0m	
11.0m		3.9	4.55	4.8	11.0m	
12.0m		3.3	3.85	4.15	12.0m	
13.0m		2.75	3.3	3.55	13.0m	
14.0m		2.3	2.85	3.1	14.0m	
15.0m			2.45	2.7	15.0m	
16.0m			2.1	2.35	16.0m	
17.0m			1.8	2.1	17.0m	
18.0m			1.55	1.8	18.0m	
19.0m			1.35	1.6	19.0m	
20.0m			1.15	1.4	20.0m	
21.0m			0.95	1.2		
22.0m				1.05		
24.0m				0.75		
26.0m				0.5		
a (°)		0~83		20~83	a (°)	

			ا	Unit:ton				
Outriggers middle extended (3.6m) –Over sides–								
B	9.5m	16.5m	23.5m	30.5m				
2.5m	25.0	19.0	12.5					
3.0m	25.0	19.0	12.5					
3.5m	20.5	19.0	12.5	7.0				
4.0m	16.0	15.7	12.5	7.0				
4.5m	12.8	12.6	12.5	7.0				
5.0m	10.7	10.5	11.0	7.0				
5.5m	9.05	8.8	9.4	7.0				
6.0m	7.7	7.6	8.2	7.0				
6.5m	6.6	6.5	7.25	7.0				
7.0m	5.8	5.6	6.4	6.5				
8.0m		4.4	5.05	5.3				
9.0m		3.4	4.05	4.35				
10.0m		2.7	3.3	3.65				
11.0m		2.15	2.75	3.05				
12.0m		1.7	2.3	2.6				
13.0m		1.3	1.9	2.2				
14.0m		1.0	1.6	1.85				
15.0m			1.3	1.55				
16.0m			1.05	1.3				
17.0m			0.85	1.05				
18.0m			0.65	0.9				
19.0m			0.5	0.7				
20.0m				0.55				
a (°) 0~83 20~83 42~83								

A= Boom length B= Working radius a= Boom angle range (for the unladen condition)

## [BOOM]

The States	
Unit:tor	1

Outrigge	rs minimur	n extended		ver sides-
ВА	9.5m	16.5m	23.5m	30.5m
2.5m	18.0	14.2	12.2	
3.0m	18.0	14.2	12.2	
3.5m	14.5	14.2	12.2	7.0
4.0m	11.6	11.25	12.2	7.0
4.5m	9.5	9.15	10.05	7.0
5.0m	7.9	7.65	8.45	7.0
5.5m	6.75	6.45	7.25	7.0
6.0m	5.75	5.5	6.25	6.5
6.5m	5.0	4.75	5.45	5.7
7.0m	4.25	4.1	4.8	5.0
8.0m		3.0	3.8	4.0
9.0m		2.2	3.0	3.2
10.0m		1.6	2.4	2.6
11.0m		1.1	1.9	2.1
12.0m		0.7	1.5	1.7
13.0m			1.1	1.4
14.0m			0.8	1.1
15.0m				0.8
16.0m				0.6
a (°)	0~83	21~83	40~83	54~83

A= Boom length B= Working radius a= Boom angle range (for the unladen condition)

					L	נסוט					Un	it:ton
	Outriggers fully extended $(6.3m)$ $-360 $ $-$											
С		30.5r	n Boon	1 + 8.0	m Jib			30.5n	n Boom	+ 13.0	)m Jib	
D		5°	2	5°	4	5°		5°	2	5°	4	5°
E (°)	B (m)	М	B (m)	М	B (m)	М	B (m)	М	B (m)	М	B (m)	М
83	4.3	3.0	6.9	2.1	8.9	1.6	5.7	2.0	10.0	1.2	13.0	0.8
76	9.5	3.0	11.8	2.1	13.5	1.6	11.7	2.0	15.5	1.2	18.1	0.8
72	12.3	3.0	14.4	2.1	15.9	1.6	14.6	1.75	18.4	1.1	20.5	0.8
70	13.6	2.8	15.6	2.1	17.0	1.6	16.1	1.65	19.7	1.05	21.8	0.8
65	16.6	2.35	18.5	1.8	19.7	1.5	19.6	1.4	22.8	0.95	24.5	0.78
60	19.6	2.0	21.2	1.55	22.1	1.35	22.8	1.2	25.8	0.9	27.0	0.75
55	22.2	1.45	23.7	1.35	24.4	1.2	25.9	1.05	28.5	0.85	29.4	0.74
50	24.6	1.05	26.0	1.0	26.5	0.95	28.6	0.85	31.0	0.75	31.5	0.7
45	26.9	0.75	28.1	0.7	28.3	0.7	31.1	0.6	33.1	0.55	33.3	0.55
40	29.0	0.55	29.9	0.5			33.3	0.4	35.0	0.4		
35	30.8	0.38	31.6	0.35								
a ( ° )		34 ~	- 83		44 ·	~ 83		39 -	~ 83		44	~ 83

[JIB]

Unit:ton

	Outriggers middle extended (5.9m) –Over sides–										ides–	
С		30.5r	n Boon	1 + 8.0	m Jib			30.5n	n Boom	+ 13.0	)m Jib	
D		5 °	2	5°	4	5°		5°	25 °		45 °	
E (°)	B (m)	М	B (m)	М	B (m)	М	B (m)	М	B (m)	М	B (m)	М
83	4.3	3.0	6.9	2.1	8.9	1.6	5.7	2.0	10.0	1.2	13.0	0.8
76	9.5	3.0	11.8	2.1	13.5	1.6	11.7	2.0	15.5	1.2	18.1	0.8
72	12.3	3.0	14.4	2.1	15.9	1.6	14.6	1.75	18.4	1.1	20.5	0.8
70	13.6	2.8	15.6	2.1	17.0	1.6	16.1	1.65	19.7	1.05	21.8	0.8
65	16.6	2.35	18.5	1.8	19.7	1.5	19.6	1.4	22.8	0.95	24.5	0.78
60	19.5	1.85	21.2	1.55	22.1	1.35	22.8	1.2	25.8	0.9	27.0	0.75
55	22.1	1.3	23.7	1.15	24.4	1.1	25.9	1.05	28.5	0.85	29.4	0.74
50	24.5	0.9	25.9	0.85	26.5	0.8	28.6	0.7	30.9	0.6	31.5	0.6
45	26.8	0.6	28.0	0.55	28.3	0.55	31.0	0.5	33.0	0.4	33.3	0.4
40	28.9	0.4	29.9	0.35			33.3	0.3				
a ( ° )		39 <i>·</i>	~ 83		44 -	- 83	39 <i>·</i>	~ 83		44 ·	~ 83	

B= Working radius C= Jib length D= Jib offset E= Boom angle M= Total rated loads a= Boom angle range (for the unladen condition)

[JIB]	
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					L	נסוט					Un	it:ton
	Outriggers middle ext								n)	-0	Over s	ides–
С		30.5r	n Boon	n + 8.0	m Jib			30.5m	n Boom	+ 13.0	)m Jib	
D		5°	2	5°	4	5°		5°	2	5°	45 °	
E (°)	B (m)	М	B (m)	М	B (m)	М	<b>B</b> (m)	М	B (m)	М	B (m)	М
83	4.3	3.0	6.9	2.1	8.9	1.6	5.7	2.0	10.0	1.2	13.0	0.8
76	9.5	3.0	11.8	2.1	13.5	1.6	11.7	2.0	15.5	1.2	18.1	0.8
72	12.3	3.0	14.4	2.1	15.9	1.6	14.6	1.75	18.4	1.1	20.5	0.8
70	13.6	2.8	15.6	2.1	17.0	1.6	16.1	1.65	19.7	1.05	21.8	0.8
65	16.5	2.0	18.5	1.7	19.7	1.5	19.6	1.4	22.8	0.95	24.5	0.78
60	19.3	1.3	21.0	1.15	22.1	1.1	22.7	1.0	25.8	0.9	27.0	0.75
55	21.8	0.8	23.5	0.75	24.3	0.75	25.7	0.65	28.4	0.6	29.4	0.5
50	24.3	0.5	25.8	0.45	26.4	0.45	28.3	0.4	30.8	0.35	31.4	0.3
a (°)			49 <i>·</i>	~ 83					49 <i>·</i>	~ 83		

## Unit:ton

	Outriggers minimum extended (3.6m) –Over sides–											
С	30.5m Boom + 8.0m Jib						30.5m Boom + 13.0m Jib					
D	1	5°	2	5°	4	5°	5 °		25 °		4	5°
E (°)	B (m)	М	B (m)	М	B (m)	М	B (m)	М	B (m)	М	B (m)	М
83	4.4	3.0	6.9	2.1	8.9	1.6	5.7	2.0	10.0	1.2	13.0	0.8
76	9.5	3.0	11.8	2.1	13.5	1.6	11.7	2.0	15.5	1.2	18.1	0.8
72	12.0	2.2	14.3	1.8	15.9	1.6	14.6	1.75	18.4	1.1	20.5	0.8
70	13.2	1.8	15.4	1.5	16.9	1.35	15.9	1.4	19.7	1.05	21.8	0.8
65	16.1	1.0	18.1	0.9	19.4	0.8	19.1	0.8	22.6	0.65	24.4	0.55
60	18.9	0.5	20.7	0.45	21.8	0.4	22.2	0.4	25.3	0.35	26.8	0.3
a ( ° )			59 ·	~ 83					59 <i>·</i>	~ 83		

B= Working radius C= Jib length D= Jib offset E= Boom angle M= Total rated loads a= Boom angle range (for the unladen condition)

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

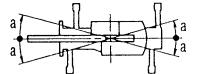
- 1. The total rated loads shown are for the case where the crane is set horizontally on firm level ground. They include the weights of the slings and hooks (main hook: 260kg, 12t hook: 170kg, auxiliary hook: 60kg).
- The values above the bold lines are based on the crane strength while those below are 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 on a 30.5m 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 3.5t.
- 5. As a rule, free-fall operation should be performed only when lowering the hook alone. If a hoisted load must be lowered by free-fall operation, the load must be kept below 1/5th of the total rated load 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 3.17t for the main winch, and 3.5t for the auxiliary winch.

А	9.5m	16.5m	23.5m	30.5m	J
Н	8	6	4	4	1

A= Boom length H= No. of part-lines J= Jib/Single top

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 (5.9m)	Middle extended (5.0m)	Middle extended (3.6m)	Minimum extended (3.1m)
Angle a °	35	25	15	5



## (2) Without outriggers

<b>T</b> T	• • •		
U	nıt	:	ton
-		٠	

	Stationary Creep (travell							elling a	at 1.6k	m∕h or less)		
B	9.5m Boom 16.5m			n Boom 23.5m Boom		9.5m Boom		16.5m Boom		23.5m Boom		
(m)	K	G	K	G	K	G	K	G	K	G	K	G
3.0	14.0	9.0	9.0	7.3			10.5	7.0	7.5	5.1		
3.5	14.0	7.6	9.0	7.3	6.5	4.5	10.5	6.2	7.5	5.1	5.5	3.2
4.0	12.5	6.3	9.0	5.85	6.5	4.5	9.5	5.3	7.5	4.9	5.5	3.2
4.5	10.9	5.2	9.0	4.75	6.5	4.5	8.7	4.4	7.5	3.95	5.5	3.2
5.0	9.55	4.3	8.2	4.0	6.5	4.3	8.0	3.6	7.0	3.3	5.5	3.2
5.5	8.3	3.6	7.4	3.3	6.1	3.7	6.9	3.0	6.2	2.7	5.15	3.1
6.0	7.2	3.0	6.6	2.8	5.65	3.2	5.9	2.5	5.5	2.3	4.8	2.7
6.5	6.25	2.5	5.9	2.35	5.25	2.75	5.1	2.1	4.9	1.9	4.45	2.3
7.0	5.2	2.0	5.25	1.95	4.85	2.4	4.3	1.7	4.35	1.6	4.15	2.0
8.0			4.1	1.4	4.1	1.8			3.4	1.1	3.5	1.5
9.0			3.25	0.95	3.5	1.4			2.7	0.7	2.95	1.1
10.0			2.6	0.6	3.0	1.05			2.15		2.45	0.8
11.0			2.1		2.55	0.75			1.7		2.05	0.6
12.0			1.7		2.2				1.35		1.7	
13.0			1.35		1.85				1.1		1.45	
14.0			1.0		1.55				0.8		1.2	
15.0					1.3						1.0	
16.0					1.05						0.85	
17.0					0.85						0.7	
18.0					0.65						0.55	
19.0					0.5							
a (°)		0~77		42 ~ 77	26~ 77	56~ 77		0~77		48 ~ 77	31 ~ 77	57 ~ 77

B= Working radius K= Front G= 360 ° a= Boom angle range (for the unladen condition)

## PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE NOT MOUNTED:

The total rated loads shown are for the case where the tire air pressure on firm level ground is as specified (900kPa {9.00kgf/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: 260kg, 12t hook: 170kg, auxiliary hook: 60kg).
The values above the bold lines are based on the crane strength while those below are based on the crane stability.

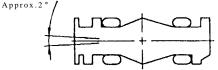
The foundation, working conditions, etc. should be taken into consideration for actual work. 2. Since the working radii are based on the actual values including the deflection of the boom and the tires, operations

- 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.
- 3. 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 3.17t for the main winch, and 3.5t for the auxiliary winch.

А	9.5m	16.5m	23.5m	Single top
Н	6	4	4	1

A= Boom length H= No. of part-lines

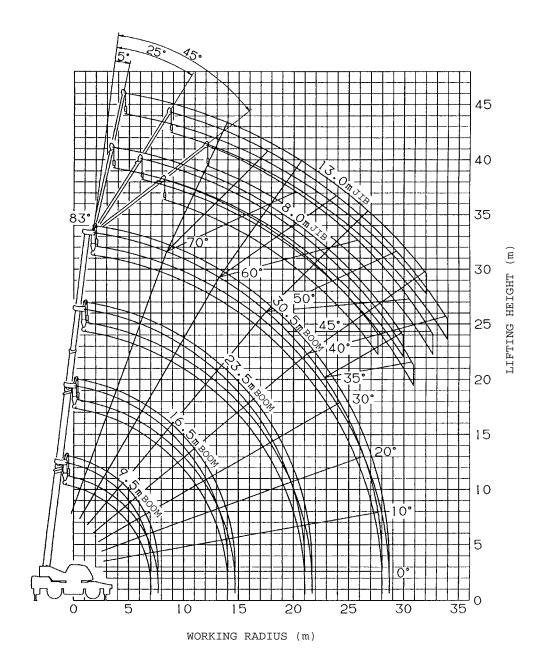
- 4. "Over front" crane operations should be performed only when the AML "over-front area indicator lamp" is lit. The boom must be kept inside a 2 ° area over front of the carrier when performing "Over front" crane operations without the outriggers.
- 5. The total rated load for the single top shall 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 3.5t.

- 6. Free-fall operations should not be performed without outriggers.
- Booms over 23.5m in length and jibs should not be used without outriggers.
- 7. The "Drive Mode Selection" switch should be set to "4-wheel / Lo" for creeping while hoisting a load and the shift lever should be set to first.
- 8. When creeping 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.
- 9. Crane operations should not be performed when creeping while hoisting a load.

## WORKING RADIUS - LIFTING HEIGHT



NOTES:

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

