

# ROUGH TERRAIN CRANE

## GR-350N

(5-section Boom, 2-staged Power Tilt Jib, X-type Outrigger)

### *JAPANESE SPECIFICATIONS*

GR

SPEC. NO.	OUTLINE
GR-350N-1-00101 GR-350N-1-00102	Winch without free-fall device Winch with free-fall device

Control No. GR-350N-1-00101, 00102 / JA-02

# GR-350N

## CRANE SPECIFICATIONS

### CRANE CAPACITY

9.5m Boom	35,000kg	at 3.0m	(10part-line)
16.2m Boom	22,500kg	at 4.0m	( 7part-line)
22.9m Boom	14,000kg	at 5.5m	( 6part-line)
29.6m Boom	10,000kg	at 7.0m	( 4part-line)
36.3m Boom	7,000kg	at 8.0m	( 4part-line)
8.0m Jib	3,400kg	at 78°	( 1part-line)
13.0m Jib	2,200kg	at 77°	( 1part-line)
Single top	3,500kg		( 1part-line)

### MAX.LIFTING HEIGHT

Boom	37.1m
Jib	50.1m

### MAX.WORKING RADIUS

Boom	33.0m
Jib	37.4m

### BOOM LENGTH

9.5m – 36.3m

### BOOM EXTENSION

26.8m

### BOOM EXTENSION SPEED

26.8m/112s

### JIB LENGTH

8.0m, 13.0m

### MAIN WINCH SINGLE LINE WINDING SPEED

127m/min (4th layer)

### MAIN WINCH HOOK SPEED

12.7m/min (10 part-line)

### AUXILIARY WINCH SINGLE LINE WINDING SPEED

127m/min (4th layer)

### AUXILIARY WINCH HOOK SPEED

127m/min (1 part-line)

### BOOM ELEVATION ANGLE

0° – 83.5°

### BOOM ELEVATION SPEED

0° – 83.5°/54s

### SWING ANGLE

360° continue

### SWING SPEED

2.5min<sup>-1</sup> {rpm}

### WIRE ROPE

#### Main Winch

16mm x 200m (Diameter x Length)  
Spin-resistant wire rope

#### Auxiliary Winch

16mm x 110m (Diameter x Length)  
Spin-resistant wire rope

### HOOK

35t hook (10 part-line) (with attachment)  
3.5t hook (1 part-line)

### BOOM

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

### BOOM EXTENSION

2 double-acting hydraulic cylinders  
2 wire rope type telescoping devices

### 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°- 45°) type

### SINGLE TOP

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

### HOIST

Driven by hydraulic motor and via spur gear reducer.  
Automatic brake  
Free-fall device (with foot brake) (Note)  
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 independent operation device.  
Fully extended width 6.7m  
Middle extended width 6.3m, 5.2m, 3.8m  
Minimum extended width 3.3m

### OPERATION METHOD

Hydraulic pilot valve operation

### MAX. VERTICAL LOAD CAPACITY OF OUTRIGGER

34.9t

### POWER TAKE-OFF

PTO wet multi-plate clutch

### HYDRAULIC PUMPS

2 variable piston pumps  
3 gear pumps

### HYDRAULIC OIL TANK CAPACITY

418 liters

### SAFETY DEVICES

Automatic moment limiter (AML)  
With working range limiting function  
Outrigger extension width detector (individual detection)  
Swing range controller  
Swing automatic stop device  
Boom elevation slow down and stop device  
Winch drum lock (Main winch is optional)  
Free-fall interlock device (Note)  
Over-winding cutout device  
Level gauge  
Hook safety latch  
Swing lock  
Hydraulic safety valve  
Hydraulic lock (elevation, telescoping, hoist, tilt, jack)

### 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

### OPTIONAL EQUIPMENT

AML external warning lamp  
TV tuner  
Loudspeaker  
(Note) A free-fall device is equipped only for the crane for spec number GR-350N-1-00102.

## CARRIER SPECIFICATIONS

### MANUFACTURER AND MODEL

TADANO SD-T001

### ENGINE

Model MITSUBISHI 6M60 - TLE2A (with turbo charger and air cooler)

Type 4-cycle, 6-cylinder, direct-injection, water-cooled diesel engine

Piston displacement 7.545L

Max. output At the time of travel

200kW (272PS) at 2,700min<sup>-1</sup>(rpm)

Max. torque 785N·m(80kgf·m) at 1,400min<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 shaft tube type

### REAR AXLE

Full floating shaft tube 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

Air-type transmission braking and internal expanding type spring brake

Auxiliary Brake

Transmission braking and fluid type retarder

Electro-pneumatic operated exhaust brake

Auxiliary braking device for operations

### FRAME

Welded box-shaped structure

### ELECTRIC SYSTEM

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

### FUEL TANK CAPACITY

300 liters

### TIRES

Front 445/95R25 177E ROAD

Rear 445/95R25 177E 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)

Monitor TV for left side of boom

### EQUIPMENT

Centralized oiling device (Electric type is optional)

Electric mirror

## GENERAL DATA

### DIMENSIONS

Overall length	11,400mm
Overall width	2,750mm
Overall height	3,605mm
Wheel base	3,800mm
Tread Front	2,260mm
Rear	2,260mm

### WEIGHTS

Gross vehicle weight	
Total	31,595kg
Front	15,800kg
Rear	15,795kg

### PERFORMANCE

Max. traveling speed	49km/h
Gradeability (tan $\theta$ )	0.57
Min. turning radius	5.2m (4-wheel steering) 8.6m (2-wheel steering)

Note:

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

## TOTAL RATED LOADS CHART

(1) With outriggers  
[BOOM]

Unit: ton

Unit: ton

Outriggers fully extended (6.7 m) -360°-					
Working radius \ Boom length	9.5m	16.2m	22.9m	29.6m	36.3m
	□ □ 3.0m	35.0	□22.5	□14.0	
□ □ 3.5m	30.6	□22.5	□14.0	□10.0	
□ □ 4.0m	27.5	□22.5	□14.0	□10.0	□7.0
□ □ 4.5m	24.7	□20.7	□14.0	□10.0	□7.0
□ □ 5.0m	22.3	□19.3	□14.0	□10.0	□7.0
□ □ 5.5m	20.3	□17.9	□14.0	□10.0	□7.0
□ □ 6.0m	18.6	□16.8	□13.4	□10.0	□7.0
□ □ 6.5m	16.4	□15.8	□12.5	□10.0	□7.0
□ □ 7.0m	14.5	□14.9	□11.8	□10.0	□7.0
□ □ 8.0m		□13.1	□10.6	□□8.9	□7.0
□ □ 9.0m		□10.7	□□9.6	□□8.0	□6.3
□ □ 10.0m		□□9.0	□□8.6	□□7.2	□5.8
□ □ 11.0m		□□7.4	□□7.7	□□6.55	□5.3
□ □ 12.0m		□□6.1	□□6.7	□□6.0	□4.9
□ □ 13.0m		□□5.1	□□5.95	□□5.55	□4.5
□ □ 14.0m			□□5.1	□□5.1	□4.15
□ □ 15.0m			□□4.4	□□4.75	□3.85
□ □ 16.0m			□□3.8	□□4.25	□3.6
□ □ 17.0m			□□3.35	□□3.75	□3.35
□ □ 18.0m			□□2.9	□□3.3	□3.15
□ □ 19.0m			□□2.55	□□2.95	□2.95
□ □ 20.0m			□□2.2	□□2.6	□2.85
□ □ 22.0m				□□2.0	□2.8
□ □ 24.0m				□□1.55	□1.8
□ □ 26.0m				□□1.2	□1.4
□ □ 28.0m					□1.05
□ □ 30.0m					□0.8
□ □ 32.0m					□0.6
□ □ 33.0m					□0.5
A ( ° )	0 ~ 83.5				
Standard hook	35 t hook with attachment		35 t hook		

Outriggers middle extended (6.3 m) -Over sides-					
Working radius \ Boom length	9.5m	16.2m	22.9m	29.6m	36.3m
	□ □ 3.0m	35.0	□22.5	□14.0	
□ □ 3.5m	30.6	□22.5	□14.0	□10.0	
□ □ 4.0m	27.5	□22.5	□14.0	□10.0	□7.0
□ □ 4.5m	24.7	□20.7	□14.0	□10.0	□7.0
□ □ 5.0m	22.3	□19.3	□14.0	□10.0	□7.0
□ □ 5.5m	20.3	□17.9	□14.0	□10.0	□7.0
□ □ 6.0m	18.6	□16.8	□13.4	□10.0	□7.0
□ □ 6.5m	16.4	□15.8	□12.5	□10.0	□7.0
□ □ 7.0m	14.5	□14.9	□11.8	□10.0	□7.0
□ □ 8.0m			□12.9	□10.6	□□8.9
□ □ 9.0m			□10.1	□□9.6	□□8.0
□ □ 10.0m			□□8.1	□□8.6	□□7.2
□ □ 11.0m			□□6.6	□□7.5	□□6.5
□ □ 12.0m			□□5.45	□□6.3	□□5.9
□ □ 13.0m			□□4.55	□□5.55	□□5.5
□ □ 14.0m				□□4.6	□□5.0
□ □ 15.0m				□□3.95	□□4.35
□ □ 16.0m				□□3.4	□□3.8
□ □ 17.0m				□□2.95	□□3.35
□ □ 18.0m				□□2.55	□□2.95
□ □ 19.0m				□□2.2	□□2.6
□ □ 20.0m				□□1.9	□□2.25
□ □ 22.0m				□□1.75	□□2.0
□ □ 24.0m				□□1.35	□□1.8
□ □ 26.0m				□□1.0	□□1.4
□ □ 28.0m					□□1.05
□ □ 30.0m					□□0.8
□ □ 33.0m					□□0.6
A ( ° )	0 ~ 83.5				18 ~ 83.5
Standard hook	35 t hook with attachment		35 t hook		

A= Boom angle range (for the unladen condition)

[BOOM]

Unit: ton

Outriggers middle extended (5.2 m) -Over sides-					
Working radius \ Boom length	9.5m	16.2m	22.9m	29.6m	36.3m
	003.0m	35.0	22.5	14.0	
003.5m	30.6	22.5	14.0	10.0	
004.0m	27.5	22.5	14.0	10.0	7.0
004.5m	24.7	20.7	14.0	10.0	7.0
005.0m	22.3	19.3	14.0	10.0	7.0
005.5m	20.3	17.9	14.0	10.0	7.0
006.0m	17.4	15.9	13.4	10.0	7.0
006.5m	14.8	13.7	12.5	10.0	7.0
007.0m	12.7	11.9	11.8	10.0	7.0
008.0m		9.1	10.1	8.9	7.0
009.0m		7.1	8.1	8.0	6.3
010.0m		5.7	6.6	6.9	5.8
011.0m		4.6	5.5	5.85	5.3
012.0m		3.75	4.6	4.95	4.9
013.0m		3.05	3.85	4.25	4.45
014.0m			3.25	3.6	3.9
015.0m			2.7	3.1	3.4
016.0m			2.3	2.65	2.95
017.0m			1.9	2.3	2.55
018.0m			1.6	1.95	2.25
019.0m			1.35	1.65	1.95
020.0m			1.1	1.4	1.7
022.0m				1.0	1.25
024.0m				0.65	0.85
026.0m					0.55
A (°)	0 ~ 83.5		17 ~ 83.5	35 ~ 83.5	
Standard hook	35 t hook with attachment		35 t hook		

Unit: ton

Outriggers middle extended (3.8 m) -Over sides-					
Working radius \ Boom length	9.5m	16.2m	22.9m	29.6m	36.3m
	003.0m	35.0	22.5	14.0	
003.5m	28.6	22.5	14.0	10	
004.0m	21.5	20.5	14.0	10.0	7.0
004.5m	17.5	16.8	14.0	10.0	7.0
005.0m	14.2	13.0	14.0	10.0	7.0
005.5m	11.9	11.0	14.0	10.0	7.0
006.0m	10.2	9.93	13.0	10.0	7.0
006.5m	8.8	8.98	11.95	10.0	7.0
007.0m	7.6	7.8	10.87	10.0	7.0
008.0m		5.8	9.61	9.7	6.6
009.0m		4.05	8.95	9.5	5.3
010.0m		3.1	8.9	9.35	4.35
011.0m		2.4	8.15	8.6	3.6
012.0m		1.75	7.53	7.7	3.6
013.0m		1.25	7.07	7.1	3.6
014.0m			6.6	6.6	3.2
015.0m			6.25	6.65	3.1
016.0m			5.95	6.35	3.1
017.0m			5.7	6.05	3.1
018.0m			5.45	5.85	3.1
019.0m			5.2	5.65	3.1
020.0m			5.0	5.5	3.1
A (°)	0 ~ 83.5	26 ~ 83.5	43 ~ 83.5	53 ~ 83.5	
Standard hook	35 t hook with attachment		35 t hook		

Unit: ton

Outriggers minimum extended (3.3 m) -Over sides-					
Working radius \ Boom length	9.5m	16.2m	22.9m	29.6m	36.3m
	003.0m	30.0	22.5	14.0	
003.5m	21.5	22.5	14.0	10.0	
004.0m	16.5	15.9	14.0	10.0	7.0
004.5m	13.4	12.8	13.9	10.0	7.0
005.0m	11.1	10.5	11.6	10.0	7.0
005.5m	9.5	8.75	9.8	10.0	7.0
006.0m	7.9	7.4	8.4	10.0	7.0
006.5m	6.8	6.3	7.3	10.0	7.0
007.0m	5.9	5.5	6.4	10.0	6.9
008.0m		4.1	4.9	5.4	5.6
009.0m		3.05	3.95	4.35	4.5
010.0m		2.25	3.1	3.5	3.7
011.0m		1.65	2.45	2.9	3.1
012.0m		1.15	1.9	2.35	2.6
013.0m		0.6	1.5	1.9	2.1
014.0m			1.15	1.5	1.75
015.0m			0.8	1.2	1.45
016.0m			0.5	0.9	1.15
017.0m				0.65	0.9
018.0m					0.65
A (°)	0 ~ 83.5	8 ~ 83.5	36 ~ 83.5	49 ~ 83.5	57 ~ 83.5
Standard hook	35 t hook with attachment		35 t hook		

A= Boom angle range (for the unladen condition)

## [BOOM]

Unit: ton

Outriggers fully extended (6.7 m)												-360°-		
Jib length	36.3 m boom + 8.0 m jib						36.3 m boom + 13.0 m jib							
Offset	□□□□□□5°		□□□□□□25°		□□□□□□45°		□□□□□□5°		□□□□□□25°					
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)	Working radius (m)	Total rated loads (t)
83.5°	□□4.9	□3.4	□□7.6	□2.1	□□9.4	□1.6	□□6.2	□2.2	□□10.5	□□13.8	□1.0			
78°	□□9.8	□3.4	□□12.3	□2.1	□□13.7	□1.6	□□11.7	□2.2	□□15.4	□□18.2	□1.0			
77°	□□10.7	□3.25	□□13.1	□2.1	□□14.5	□1.6	□□12.6	□2.2	□□16.2	□□19.5	□□0.95			
75°	□□12.2	□2.9	□□14.6	□1.95	□□15.9	□1.5	□□14.3	□1.95	□□17.9	□□20.5	□□0.85			
70°	□□15.9	□2.3	□□18.1	□1.65	□□19.2	□1.3	□□18.3	□1.55	□□21.7	□□23.8	□□0.75			
65°	□□19.5	□1.9	□□21.5	□1.45	□□22.3	□1.2	□□22.3	□1.25	□□25.3	□□27.0	□□0.7			
63°	□□20.9	□1.8	□□22.8	□1.35	□□23.5	□1.15	□□23.8	□1.15	□□26.75	□□28.3	□□0.65			
60°	□□22.8	□1.6	□□24.6	□1.25	□□25.3	□1.1	□□26.0	□1.05	□□28.8	□□30.1	□□0.63			
56°	□□25.3	□1.4	□□27.1	□1.15	□□27.5	□1.05	□□28.8	□0.9	□□31.4	□□32.4	□□0.6			
54°	□□26.5	□1.2	□□28.2	□1.1	□□28.6	□1.0	□□30.2	□0.85	□□32.6	□□33.5	□□0.57			
50°	□□28.7	□0.9	□□30.2	□0.8	□□30.5	□0.8	□□32.8	□0.75	□□34.9	□□35.5	□□0.55			
47°	□□30.3	□0.7	□□31.7	□0.65	□□31.9	□0.65	□□34.4	□0.55	□□36.5	□□36.9	□□0.5			
45°	□□31.3	□0.55	□□32.6	□0.5			□□35.6	□0.45	□□37.4	□□0.4				
43°	□□32.3	□0.45	□□33.5	□0.4										
A(°)	42□ ~ □83.5				46□ ~ □83.5				44□ ~ □83.5				46□ ~ □83.	

Outriggers middle extended (6.3 m)												-Over sides-		
Jib length	36.3 m boom + 8.0 m jib						36.3 m boom + 13.0 m jib							
Offset	□□□□□□5°		□□□□□□25°		□□□□□□45°		□□□□□□5°		□□□□□□25°					
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)	Working radius (m)	Total rated loads (t)
83.5°	□□4.9	□3.4	□□7.6	□2.1	□□9.4	□1.6	□□6.2	□2.2	□□10.5	□□13.8	□1.0			
78°	□□9.8	□3.4	□□12.3	□2.1	□□13.7	□1.6	□□11.7	□2.2	□□15.4	□□18.2	□1.0			
77°	□□10.7	□3.25	□□13.1	□2.1	□□14.5	□1.6	□□12.6	□2.2	□□16.2	□□19.5	□□0.95			
75°	□□12.2	□2.9	□□14.6	□1.95	□□15.9	□1.5	□□14.3	□1.95	□□17.9	□□20.5	□□0.85			
70°	□□15.9	□2.3	□□18.1	□1.65	□□19.2	□1.3	□□18.3	□1.55	□□21.7	□□23.8	□□0.75			
65°	□□19.5	□1.9	□□21.5	□1.45	□□22.3	□1.2	□□22.3	□1.25	□□25.3	□□27.0	□□0.7			
63°	□□20.9	□1.8	□□22.8	□1.35	□□23.5	□1.15	□□23.8	□1.15	□□26.75	□□28.3	□□0.65			
60°	□□22.8	□1.6	□□24.6	□1.25	□□25.3	□1.1	□□26.0	□1.05	□□28.8	□□30.1	□□0.63			
56°	□□25.2	□1.2	□□27.1	□1.1	□□27.5	□1.05	□□28.8	□0.9	□□31.4	□□32.4	□□0.6			
54°	□□26.4	□1.0	□□28.2	□0.95	□□28.6	□0.9	□□30.2	□0.85	□□32.6	□□33.5	□□0.57			
50°	□□28.6	□0.7	□□30.2	□0.65	□□30.4	□0.65	□□32.6	□0.55	□□34.8	□□35.5	□□0.5			
47°	□□30.2	□0.5	□□31.6	□0.45	□□31.9	□0.5								
A(°)	46□ ~ □83.5						49□ ~ □83.5							

## [JIB]

Unit: ton

Outriggers middle extended (5.2 m)												-Over sides-	
Jib length	36.3 m boom + 8.0 m jib						36.3 m boom + 13.0 m jib						
Offset	0°		5°		25°		45°		0°		25°		
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°	04.9	03.4	07.6	02.1	09.4	01.6	06.2	02.2	10.5	03.2	01.0		
78°	09.8	03.4	12.3	02.1	13.7	01.6	12.7	01.5	15.4	01.25	18.3	01.0	
77°	10.7	03.25	13.1	02.1	14.5	01.6	12.6	02.2	16.2	01.25	19.0	00.95	
75°	12.2	02.9	14.6	01.95	15.9	01.5	14.3	01.95	17.9	02.0	20.5	00.85	
70°	15.9	02.3	18.1	01.65	19.2	01.3	18.3	01.55	21.7	02.3	23.8	00.75	
65°	19.5	01.8	21.5	01.45	22.3	01.2	22.3	01.25	25.3	02.0	27.0	00.7	
63°	20.7	01.45	22.8	01.3	23.5	01.15	23.8	01.15	26.7	00.85	28.3	00.6	
60°	22.5	01.05	24.5	00.95	25.1	00.85	25.9	00.9	28.7	00.7	30.1	00.63	
56°	24.9	00.65	26.7	00.55	27.3	00.55	28.4	00.5	31.2	00.45	32.3	00.4	
54°	26.1	00.5	27.8	00.45	28.3	00.4							
A (°)	53° ~ 83.5						55° ~ 83.5						

Unit: ton

Outriggers middle extended (3.8 m)												-Over sides-	
Jib length	36.3 m boom + 8.0 m jib						36.3 m boom + 13.0 m jib						
Offset	0°		5°		25°		45°		0°		25°		
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°	04.9	03.4	07.6	02.1	09.4	01.6	06.2	02.2	10.5	03.2	01.0		
78°	09.8	03.4	12.3	02.1	13.7	01.6	12.7	01.5	15.4	01.25	18.3	01.0	
77°	10.7	03.25	13.1	02.1	14.5	01.6	12.6	02.2	16.2	01.25	19.0	00.95	
75°	12.2	02.9	14.6	01.95	15.9	01.5	14.3	01.95	17.9	02.0	20.5	00.85	
70°	15.7	01.7	18.0	01.4	19.2	01.25	18.2	01.25	21.7	01.0	23.8	00.75	
66°	18.2	00.95	20.4	00.75	21.4	00.75	21.0	00.75	24.3	00.6	26.3	00.5	
A (°)	65° ~ 83.5												

A= Boom angle range (for the unladen condition)

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

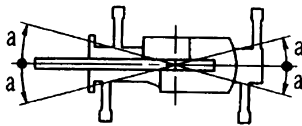
1. The total rated loads shown are for the case where the crane is set horizontally on firm level ground. They include the weights of the slings and hooks (35t hook with attachment: 310 kg, 35 t hook: 210 kg, auxiliary hook: 70 kg). The values above the bold lines are based on the crane strength while those below are based on the crane stability. 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.
  2. 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 36.3m boom.
  3. The total rated load for the boom is the value when the single top is stored inside. For the total rated load for the boom when the single top and auxiliary hook are attached, subtract 70 kg from the value shown in the total rated loads chart.
  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 (Only for spec. number GR-350N-1-00102) 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 3.5 t for the main winch and the auxiliary winch.

Boom length	9.5 m	16.2 m	22.9 m	29.6 m	36.3 m	Jib/Single top
Number of part lines	12	8	6	4	4	1

8. 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 (6.3 m)	Middle extended (5.2 m)	Middle extended (3.8 m)	Minimum extended (3.3 m)
Angle a°	50	40	25	20

Angle a° in the chart shows the minimum value.





## (2) Without outriggers

Unit: ton

Working radius (m)	Stationary						Travelling at 1.6km/h or less										
	9.5 m boom		16.2 m boom		22.9 m boom		9.5 m boom		16.2 m boom		22.9 m boom						
	Front	-360°-	Front	-360°-	Front	-360°-	Front	-360°-	Front	-360°-	Front	-360°-					
□3.0	16.0	9.0	13.0	8.0			12.0	6.8	10.0	6.0							
□3.5	16.0	9.0	13.0	8.0			12.0	6.8	10.0	6.0							
□4.0	14.4	7.6	13.0	□6.75			10.8	5.7	10.0	□5.05							
□4.5	□13.05	6.4	11.8	5.7	10.0	5.5	□9.75	4.8	□9	15	4.2	7.5	4.0				
□5.0	□11.85	5.2	10.8	4.6	10.0	5.5	□8.9	□4.05	□8	35	□3	45	7.5	4.0			
□5.5	10.8	4.3	□9.9	3.7	□9.5	4.6	□8	15	□3	35	□7.6	2	8	7	2	3	4
□6.0	10.0	3.6	□9.1	□3.05	□9.0	3.9	□7.5	2.8	□6	□95	2	3	6	8	□2.8		
□6.5	□8.7	3.0	□8.4	2.5	□8.3	3.3	□6.9	□2.35	□6.2	1	9	6	2	2	4		
□7.0	□7.5	2.5	□7.3	2.0	□7.8	2.8	□5.9	1.9	□5	5	□1	55	□5.85	□2.8			
□8.0			□5.6	1.2	□6.25	□2.05			□4.25	1.0	□4.85	□1.5					
□9.0			□4.4	0.6	□5.05	1.4			□3.3	0.5	3.9	□1.05					
10.0			□3.5		□4.15	0.9			□2.65		□3.15	□0.7					
11.0			□2.75		□3.4	0.5			□2.05		2.6						
12.0			□2.1		□2.8				□1.65		□2.15						
13.0			□1.6		□2.35				□1.3		1.8						
14.0					□1.9						1.5						
15.0					□1.5						□1.25						
16.0					□1.2						1.0						
17.0					□0.9						□0.75						
18.0					□0.65						0.5						
19.0					□0.5												
A (°)	0 ~ 76		47 ~ 76		18 ~ 76		56 ~ 76		0 ~ 76		47 ~ 76		22 ~ 76		59 ~ 76		
Standard hook	35 t hook with attachment		35 t hook				35 t hook with attachment		35 t hook								

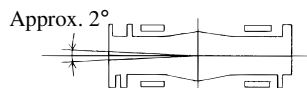
A= Boom angle range (for the unladen condition)

**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 900kPa (9.00 kgf/cm<sup>2</sup>) and the suspension-lock cylinder is retracted completely. They include the weights of the slings and hooks (35 t hook with attachment: 310 kg, 35 t hook: 210 kg, auxiliary hook: 70 kg).  
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 3.5 t for the main winch and the auxiliary winch.

Boom length	9.5 m □	16.2 m □	22.9 m □	Single top
Number of part lines	8 □	6 □	4 □	1 □

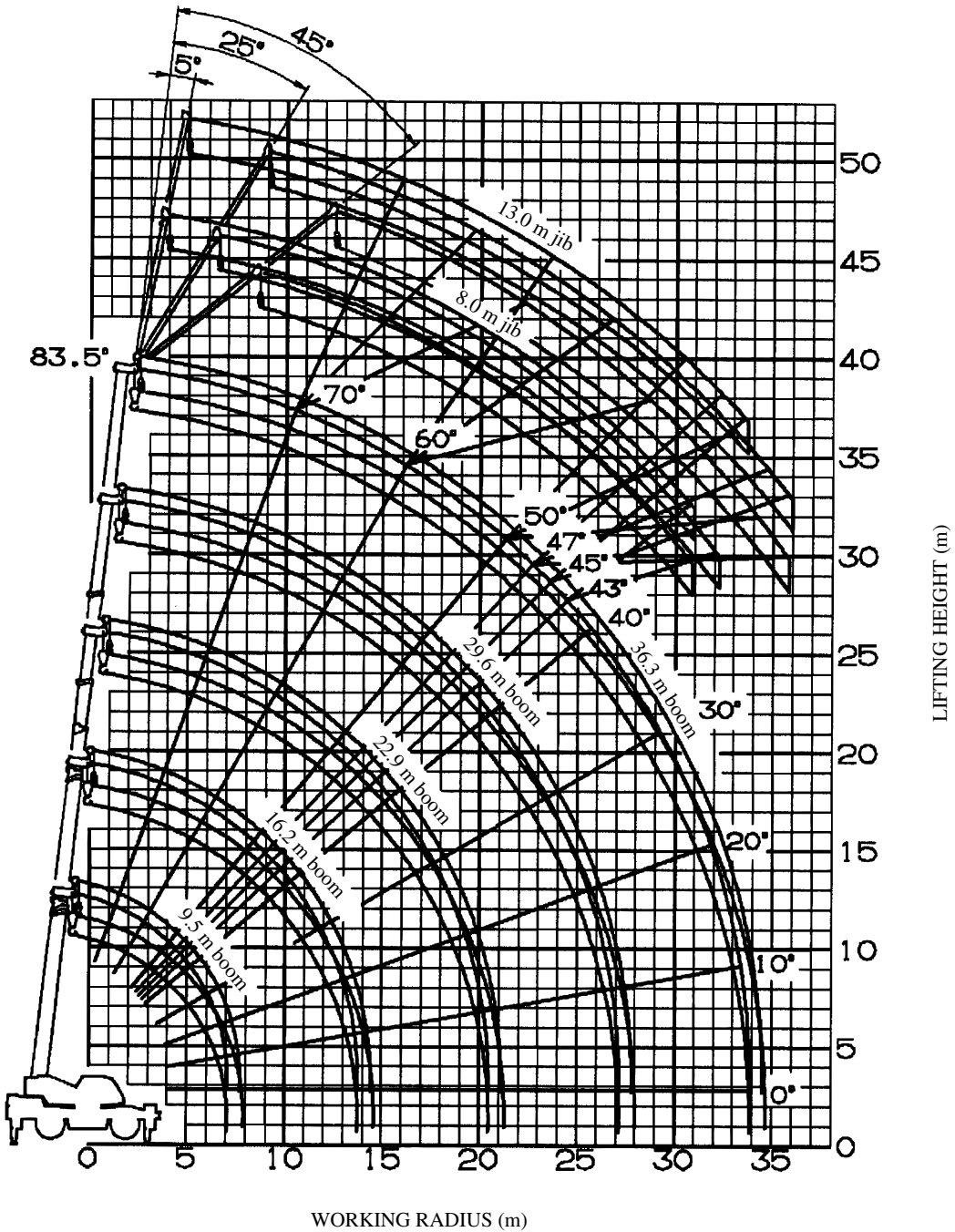
- "Over front" crane operations should be performed only when the AML "over-front area indicator lamp" is lit.



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 boom is the value when the single top is stored inside. For the total rated load for the boom when the single top and auxiliary hook are attached, subtract 70 kg from the value shown in the total rated loads chart.
- 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.
- Free-fall operations (only for spec. number GR-350N-1-00102) should not be performed without outriggers. Booms over 22.9m 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.

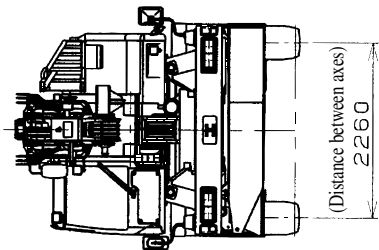
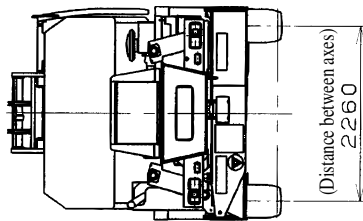
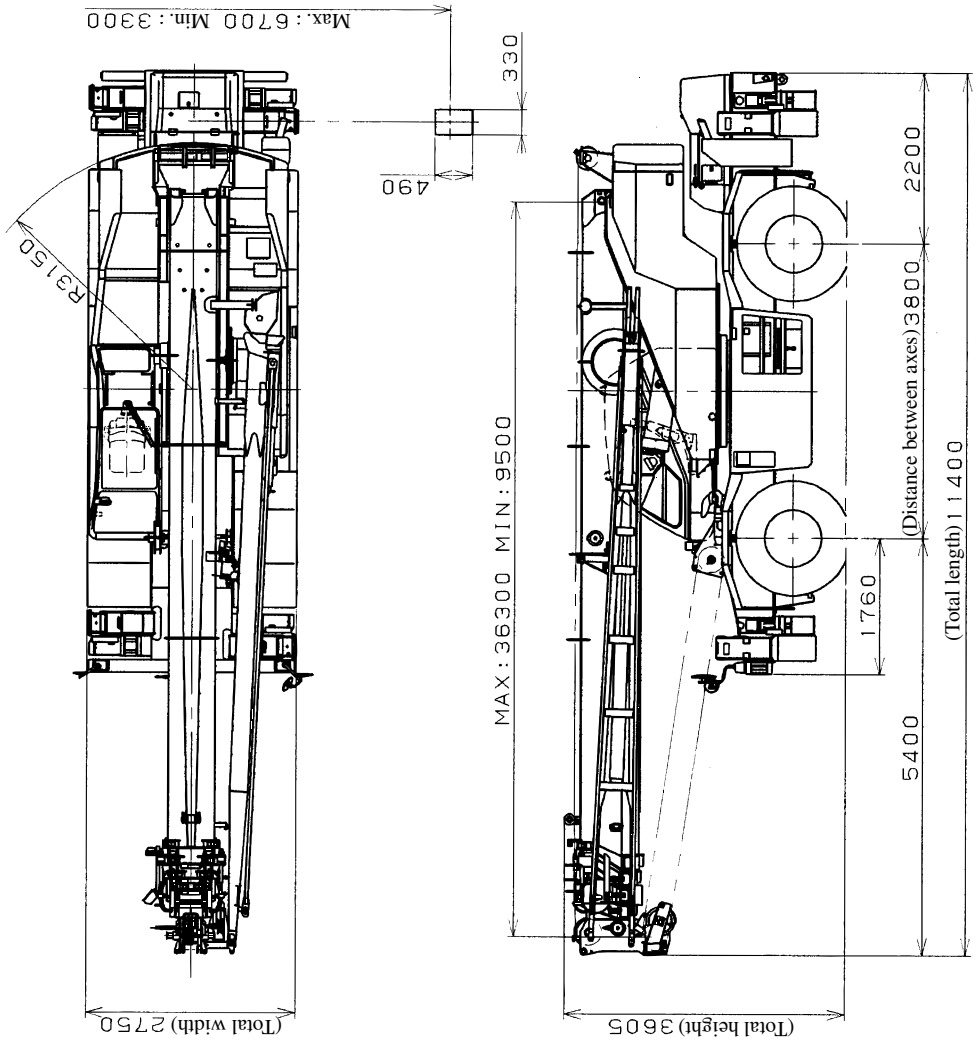
WORKING RADIUS - LIFTING HEIGHT



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)



◆ MEMO ◆

A series of 20 horizontal dashed lines for writing a memo.