

# TRUCK CRANE

## TG-1200M

TG

## *JAPANESE SPECIFICATIONS*

CARRIER MODEL	OUTLINE	SPEC. NO.
MITSUBISHI W-KA904U	3-stage Luffing Jib	TG-1200M-4-20101

Control No. JA-01

# TG-1200M

## CRANE SPECIFICATIONS

### CRANE CAPACITY

12.0m Boom	120,000kg	at 3.2m	(18 part-line)
17.7m Boom	50,000kg	at 7.0m	(7 part-line)
23.4m Boom	40,000kg	at 8.0m	(6 part-line)
29.1m Boom	32,000kg	at 8.5m	(5 part-line)
34.8m Boom	25,000kg	at 10.0m	(4 part-line)
42.4m Boom	16,500kg	at 14.0m	(4 part-line)
50.0m Boom	14,000kg	at 12.0m	(4 part-line)
11.0m Jib	6,000kg	at 77°	(1 part-line)
6.25m + 12.75m Jib	4,000kg	at 80°	(1 part-line)
6.25m + 19.75m Jib	2,800kg	at 75°	(1 part-line)
Single top	6,000kg		(1 part-line)

### MAX. LIFTING HEIGHT

Boom	50.0m
Jib	76.0m

### MAX. WORKING RADIUS

Boom	42.0m
Jib	50.0m

### BOOM LENGTH

12.0m – 50.0m

### BOOM EXTENSION

38.0m

### BOOM EXTENSION SPEED

38.0m / 147s

### JIB LENGTH

11.0m, 6.25m + 12.75m, 6.25m + 19.75m

### MAIN WINCH SINGLE LINE SPEED

115m/min (4th layer)

### MAIN WINCH HOOK SPEED

6.4m/min (18 part-line)

### AUXILIARY WINCH SINGLE LINE SPEED

140m/min (2nd layer)

### AUXILIARY WINCH HOOK SPEED

140m/min (1 part-line)

### BOOM ELEVATION ANGLE

-1.0° – 82.6°

### BOOM ELEVATION SPEED

-1.0° – 82.6° / 66s

### SWING ANGLE

360° continue

### SWING SPEED

1.6 rpm

### WIRE ROPE

#### Main Winch

22mm × 275m (Diameter × Length)

Spin-resistant type

#### Auxiliary Winch

22mm × 185m (Diameter × Length)

Spin-resistant type

### HOOK

120t hook (18 part-line)

50t hook (7 part-line)

6t hook (1 part-line)

### BOOM

6-section hydraulically telescoping boom of box construction.

(stages 2–4 : synchronized; 5,6 : synchronized)

### BOOM EXTENSION

4 double-acting hydraulic cylinder

1 wire rope type telescoping device

### JIB

3-staged swingaround boom extensions.

(with 2nd and 3rd stages being of a pull-out type)

Hydraulic non-stage offset (5°-50°) type

(offset is 0° for 11.0m jib)

### SINGLE TOP

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

### HOIST

Driven by hydraulic motor and via planetary gear reducer

Automatic brake

2-speed (High/Low) selection type

2 single winches

With flow regulator valve with pressure compensation

### BOOM ELEVATION

2 double-acting hydraulic cylinders

### SWING

Hydraulic motor driven planetary gear reducer

Swing bearing

Manual switch type brake

Swing free/lock changeover type

### OUTRIGGERS

Fully hydraulic H-type

Slides and jacks each provided with independent operation device.

Full extended width 9.0m

Middle extended width 7.6m, 6.2m

Extended width detector

### MAX. OUTRIGGER LOAD

103t

### FRONT JACK

Hydraulic operated type

Ground contact detector

### REAR JACK

Hydraulic type (with cylinder for extension)

Ground contact detector

Individual operation type

### ENGINE FOR CRANE

Model MITSUBISHI 6D22

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

Piston Displacement 11,149cc

Max. Output 200PS at 2,200rpm

Max. Torque 73kg-m at 1,200rpm

### HYDRAULIC PUMPS

2 variable piston pumps and 1 variable gear pumps

### HYDRAULIC OIL TANK CAPACITY

Upper 1,014 liters / lower 120liters

### SAFETY DEVICES

Automatic moment limiter (AML)

With working range limiting function

Over-winding cutout

Level gauge

Outrigger extension width detector

Front jack ground contact detector

Rear jack ground contact detector

Weight combination detector

Working area control device

Hook safety latch

Cable follower

Winch drum lock

Hydraulic safety valve

Telescopic counterbalance valve

Elevation counterbalance valve

Jack pilot check valve

Luffing cylinder hydraulic locking device

Swing lock

Frontjack over load alarm

### EQUIPMENTS

Crane cab heater

Oil cooler

Boom angle indicator

Winch drum rotation indicator

Rear jack extended device

Boom dismount device

Swing frame dismount device

Counterweight dismount device

Radio

Fan

### OPTIONAL EQUIPMENTS

Extra counterweight (10t)

Crane cab cooler

Jib extending device

## CARRIER SPECIFICATIONS

### MANUFACTURER

MITSUBISHI MOTOR CORPORATION

### CARRIER MODEL

W-KA904U

### ENGINE

Model 10DC11

Type 4-cycle V10-cylinder, direct-injection, water-cooled diesel engine

Piston displacement 22,171cc  
 Max. output 440PS at 2,200rpm  
 Max. torque 156kg·m at 1,300rpm

### CLUTCH

Dry single-plate type

### TRANSMISSION

10-forward and 2-reverse speeds  
 Constant-mesh gear (1st speed, 2nd speed, reverse)  
 Synchronized-mesh gear (for 3rd – 10th speeds)

### REDUCER

Hypoid gear type  
 With planetary gear type hub reduction

### FRONT AXLE

Reverse-elliot type steering knuckles

### REAR AXLE

Full floating, cast torque rods

### SUSPENSION

Front Tapered leaf spring  
 With torsion bar stabilizer  
 Rear Equalizer beam and torque rod type

### STEERING

Recirculating ball screw type  
 With linkage type hydraulic power booster

### BRAKE SYSTEM

Service Brake

Foot operated full air brake on all wheels, dual air line system, internal expanding leading and trailing shoe type.

Parking Brake

Mechanically operated, internal expanding duo-servo shoe type acting on drum at transmission case rear.

Auxiliary Brake

Electro-pneumatic operated exhaust brake.  
 Spring brake, acting on 4 rear wheels

### ELECTRIC SYSTEM

24 V DC, 2 batteries of 12V-145G51 (120Ah)

### FUEL TANK CAPACITY

400 liters

### CAB

Two-man type

### TIRES

Front 14.00-24-24PR

Rear 14.00-24-24PR

### STANDARD EQUIPMENTS

Car heater  
 Car radio  
 Car cooler

## GENERAL DATA

### DIMENSIONS (CARRIER ONLY)

Overall length 12,180mm  
 Overall width 3,400mm  
 Overall height 3,085mm  
 Wheel base 1,550mm + 4,325mm + 1,500mm = 7,375mm  
 Tread Front 2,760mm  
 Rear 2,520mm

### WEIGHTS (CARRIER ONLY)

Gross vehicle weight  
 Total 38,340kg  
 Front 15,265kg  
 Rear 23,075kg

### PERFORMANCE (CARRIER ONLY)

Max. traveling speed 60km/h  
 Gradeability (tan  $\theta$ ) 0.77  
 Min. turning radius 11.8m

**TOTAL RATED LOADS**

(1) Fully extended  
(i)

Unit:ton

· Outriggers fully extended + Front jack + Rear jack (360°) · Outriggers fully extended (Over the Sides) · Outriggers extended to 7.6m + Front jack + Rear jack + 10t extra weight (option) (360°)							
A \ B (m)	12.0m	17.7m	23.4m	29.1m	34.8m	42.4m	50.0m
3.2	120.0	50.0					
4.0	105.0	50.0					
4.5	92.0	50.0	40.0				
5.0	82.0	50.0	40.0				
5.5	73.0	50.0	40.0				
6.0	66.0	50.0	40.0	32.0			
6.5	60.0	50.0	40.0	32.0	25.0		
7.0	55.0	50.0	40.0	32.0	25.0	16.5	
7.5	51.0	47.0	40.0	32.0	25.0	16.5	
8.0	47.0	44.5	40.0	32.0	25.0	16.5	
8.5	43.5	42.5	38.5	32.0	25.0	16.5	
9.0	40.0	40.0	36.5	30.7	25.0	16.5	
10.0	35.0	35.2	33.5	27.8	25.0	16.5	14.0
11.0		31.2	30.1	25.4	23.0	16.5	14.0
12.0		27.6	27.0	23.3	21.0	16.5	14.0
14.0		21.4	21.8	19.6	17.6	16.5	12.6
16.0		16.2	16.8	16.2	15.1	14.0	11.5
18.0			13.2	13.4	12.9	12.1	10.5
20.0			10.4	10.7	10.8	10.6	9.5
22.0				8.5	8.7	9.3	8.6
24.0				6.6	6.8	8.2	7.7
26.0				5.0	5.2	6.9	7.0
28.0					3.8	5.6	6.1
30.0					2.7	4.4	5.5
32.0					1.8	3.4	4.6
34.0						2.6	3.7
36.0						1.8	3.0
38.0						1.2	2.3
40.0							1.7
42.0							1.2

A = Boom length  
B = Working radius

(ii)

Unit:ton

<ul style="list-style-type: none"> <li>• Outriggers fully extended + Front jack + Rear jack (360°)</li> <li>• Outriggers fully extended (Over the Sides)</li> <li>• Outriggers extended to 7.6m + Front jack + Rear jack + 10t extra weight (option) (360°)</li> </ul>													
E	C	11.0m	6.25m + 12.75m					6.25m + 19.75m					
	D	0°	5°	15°	25°	35°	45°	50°	5°	15°	25°	35°	45°
80°	6.0	4.0	3.5	3.1	2.8	2.4	2.2	2.8	2.8	2.1	1.65	1.4	1.1
79°	6.0	3.8	3.5	3.0	2.7	2.3	2.2	2.8	2.7	2.0	1.6	1.35	1.1
78°	6.0	3.75	3.5	3.0	2.6	2.3	2.15	2.8	2.6	1.95	1.5	1.3	1.1
77°	6.0	3.75	3.5	3.0	2.5	2.2	2.1	2.8	2.5	1.9	1.5	1.3	1.1
75°	5.8	3.75	3.3	2.75	2.35	2.1	2.0	2.8	2.25	1.8	1.5	1.3	1.0
72°	5.1	3.2	2.75	2.35	2.0	1.8	1.7	2.4	1.8	1.55	1.3	1.15	1.0
70°	4.7	2.85	2.4	2.05	1.8	1.7	1.6	2.1	1.6	1.35	1.2	1.05	1.0
68°	4.2	2.5	2.1	1.85	1.65	1.55	1.45	1.8	1.45	1.2	1.05	0.95	0.9
65°	3.4	2.15	1.8	1.6	1.45	1.35	1.25	1.5	1.2	1.0	0.9	0.8	0.8
62°	2.75	1.8	1.6	1.3	1.25	1.2	1.05	1.2	1.0	0.9	0.8	0.7	0.7
60°	2.4	1.55	1.4	1.2	1.15	1.05	0.95	1.1	0.9	0.8	0.7	0.65	0.6
58°	2.1	1.35	1.2	1.1	1.0	0.95	0.85	1.0	0.8	0.7	0.6	0.6	0.6
55°	1.7	1.1	1.0	0.9	0.85	0.85							

C = Jib length D = Jib offset E = Boom angle

**NOTES:**

1. The total rated loads shown are for the case when the outriggers are set horizontally on firm ground. The values above the bold lines are based on the crane strength while those below are based on the crane stability.
2. The weights of slings and hooks are included in the total rated loads shown.
3. The total rated load is based on the actual working radius including the deflection of the boom.
4. Boom operations should be performed on the basis of the working radius. Jib operations should be performed on the basis of the boom angle regardless of the boom length.
5. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 7.14t for the main winch and 6.0t for the auxiliary winch.

A	12.0m	17.7m	23.4m	29.1m	34.8m	42.4m	50.0m	J
K	120t Hook	50t Hook					6.0t Hook	
L	1,250kg	525kg					250kg	
H	18, 14	7	6	5	4		1	

A=Boom length H=No. of part-line J=Jib/Single top K=Hook type L=Hook weight

6. The total rated load for the single top is the same as that of the boom and must not exceed 6.0 tons. However, when hooks, slings, etc. are mounted on the boom, one should work with the total rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the boom from the total rated load of the boom.

(2) Middle extended  
(i)

Unit:ton

· Outriggers extended to 6.2m + 10t extra weight (option) (360°)								· Outriggers extended to 6.2m (360°)						
A B (m)	12.0 m	17.7 m	23.4 m	29.1 m	34.8 m	42.4 m	50.0 m	12.0 m	17.7 m	23.4 m	29.1 m	34.8 m	42.4 m	50.0 m
3.2	60.0	50.0						60.0	50.0					
4.0	60.0	50.0						60.0	50.0					
4.5	60.0	50.0	40.0					60.0	50.0	40.0				
5.0	60.0	50.0	40.0					60.0	50.0	40.0				
5.5	60.0	50.0	40.0					53.0	50.0	40.0				
6.0	58.6	50.0	40.0	32.0				45.0	46.0	40.0	32.0			
6.5	51.0	50.0	40.0	32.0	25.0			39.0	39.9	40.0	32.0	25.0		
7.0	44.8	45.7	40.0	32.0	25.0	16.5		34.0	35.0	35.3	32.0	25.0	16.5	
7.5	39.8	40.7	40.0	32.0	25.0	16.5		30.0	31.0	31.3	32.0	25.0	16.5	
8.0	35.7	36.5	36.9	32.0	25.0	16.5		26.5	27.6	28.0	28.1	25.0	16.5	
8.5	31.9	32.8	33.2	31.5	25.0	16.5		23.7	24.7	25.2	25.3	24.0	16.5	
9.0	29.1	30.0	30.3	30.5	25.0	16.5		21.4	22.4	22.7	22.9	23.0	16.5	
10.0	24.1	25.1	25.4	25.6	25.0	16.5	14.0	17.4	18.4	18.8	18.9	19.0	16.5	14.0
11.0		21.3	21.6	21.8	21.9	16.5	14.0		15.3	15.7	15.9	15.9	16.5	14.0
12.0		18.2	18.6	18.7	18.8	16.5	14.0		12.9	13.2	13.4	13.5	14.9	14.0
14.0		13.6	14.0	14.2	14.2	15.6	12.6		9.1	9.5	9.7	9.8	11.2	12.2
16.0		10.2	10.7	10.9	11.0	12.4	11.5		6.2	6.8	7.0	7.1	8.5	9.5
18.0			8.2	8.4	8.5	9.9	10.5			4.5	4.7	4.8	6.5	7.5
20.0			6.0	6.3	6.4	8.0	8.8			2.7	3.0	3.1	4.7	5.9
22.0				4.5	4.7	6.3	7.3				1.5	1.7	3.3	4.5
24.0				3.1	3.2	4.9	6.0						2.2	3.3
26.0				1.9	2.0	3.7	4.8						1.2	2.3
28.0					1.0	2.7	3.8							1.5
30.0						1.8	2.9							
32.0						1.0	2.1							
34.0							1.5							

A = Boom length  
B = Working radius

(ii)

Unit:ton

· Outriggers extended to 6.2m (360°) · Outriggers extended to 6.2m + 10t extra weight (option) (360°)													
E	C	11.0m	6.25m + 12.75m					6.25m + 19.75m					
	D	0°	5°	15°	25°	35°	45°	50°	5°	15°	25°	35°	45°
80°	6.0	4.0	3.5	3.1	2.8	2.4	2.2	2.8	2.8	2.1	1.65	1.4	1.1
79°	6.0	3.8	3.5	3.0	2.7	2.3	2.2	2.8	2.7	2.0	1.6	1.35	1.1
78°	6.0	3.75	3.5	3.0	2.6	2.3	2.15	2.8	2.6	1.95	1.5	1.3	1.1
77°	6.0	3.75	3.5	3.0	2.5	2.2	2.1	2.8	2.5	1.9	1.5	1.3	1.1
75°	5.8	3.75	3.3	2.75	2.35	2.1	2.0	2.8	2.25	1.8	1.5	1.3	1.0
72°	4.3	3.0	2.75	2.35	2.0	1.8	1.7	2.4	1.8	1.55	1.3	1.15	1.0

C = Jib length D = Jib offset E = Boom angle

**NOTES:**

1. The total rated loads shown are for the case when the outriggers are set horizontally on firm ground. The values above the bold lines are based on the crane strength while those below are based on the crane stability.
2. The weights of slings and hooks are included in the total rated loads shown.
3. The total rated load is based on the actual working radius including the deflection of the boom.
4. Boom operations should be performed on the basis of the working radius. Jib operations should be performed on the basis of the boom angle regardless of the boom length.
5. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 7.14t for the main winch and 6.0t for the auxiliary winch.

A	12.0m	17.7m	23.4m	29.1m	34.8m	42.4m	50.0m	J
K	120t Hook	50t Hook					6.0t Hook	
L	1,250kg	525kg					250kg	
H	18, 14	7	6	5	4		1	

A=Boom length H=No. of part-line J=Jib / Single top K=Hook type L=Hook weight

6. The total rated load for the single top is the same as that of the boom and must not exceed 6.0 tons. However, when hooks, slings, etc. are mounted on the boom, one should work with the total rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the boom from the total rated load of the boom.

(3) 10t extra weight (option) specifications  
(i)

Unit:ton

· Outriggers fully extended + Front jack + Rear jack (360°) · Outriggers fully extended (Over the Sides)							
A \ B (m)	12.0m	17.7m	23.4m	29.1m	34.8m	42.4m	50.0m
3.2	120.0	50.0					
4.0	105.0	50.0					
4.5	92.0	50.0	40.0				
5.0	82.0	50.0	40.0				
5.5	73.0	50.0	40.0				
6.0	66.0	50.0	40.0	32.0			
6.5	60.0	50.0	40.0	32.0	25.0		
7.0	55.0	50.0	40.0	32.0	25.0	16.5	
7.5	51.0	47.0	40.0	32.0	25.0	16.5	
8.0	47.0	44.5	40.0	32.0	25.0	16.5	
8.5	43.5	42.5	38.5	32.0	25.0	16.5	
9.0	40.0	40.0	36.5	30.7	25.0	16.5	
10.0	35.0	36.0	33.5	27.8	25.0	16.5	14.0
11.0		32.8	30.9	25.4	23.0	16.5	14.0
12.0		30.0	28.7	23.3	21.0	16.5	14.0
14.0		25.5	24.3	19.7	17.6	16.5	12.6
16.0		20.5	20.5	17.0	15.1	14.0	11.5
18.0			17.0	14.9	12.9	12.1	10.5
20.0			13.5	13.2	11.1	10.6	9.5
22.0				11.6	9.5	9.3	8.6
24.0				9.5	8.1	8.2	7.7
26.0				7.5	6.8	7.2	7.0
28.0					5.6	6.3	6.1
30.0					4.5	5.5	5.5
32.0					3.4	4.8	4.8
34.0						4.2	4.3
36.0						3.6	3.8
38.0						3.0	3.4
40.0							3.0
42.0							2.7
44.0							2.5

A = Boom length

B = Working radius



(ii)

Unit:ton

· Outriggers fully extended + Front jack + Rear jack (360°) · Outriggers fully extended (Over the Sides)														
E	C	11.0m	6.25m + 12.75m					6.25m + 19.75m						
	D	0°	5°	15°	25°	35°	45°	50°	5°	15°	25°	35°	45°	50°
80°		6.0	4.0	3.5	3.1	2.8	2.4	2.2	2.8	2.8	2.1	1.65	1.4	1.1
79°		6.0	3.8	3.5	3.0	2.7	2.3	2.2	2.8	2.7	2.0	1.6	1.35	1.1
78°		6.0	3.75	3.5	3.0	2.6	2.3	2.15	2.8	2.6	1.95	1.5	1.3	1.1
77°		6.0	3.75	3.5	3.0	2.5	2.2	2.1	2.8	2.5	1.9	1.5	1.3	1.1
75°		5.8	3.75	3.3	2.75	2.35	2.1	2.0	2.8	2.25	1.8	1.5	1.3	1.0
72°		5.1	3.2	2.75	2.35	2.0	1.8	1.7	2.4	1.8	1.55	1.3	1.15	1.0
70°		4.7	2.85	2.4	2.05	1.8	1.7	1.6	2.1	1.6	1.35	1.2	1.05	1.0
68°		4.2	2.5	2.1	1.85	1.65	1.55	1.45	1.8	1.45	1.2	1.05	0.95	0.9
65°		3.4	2.15	1.8	1.6	1.45	1.35	1.25	1.5	1.2	1.0	0.9	0.8	0.8
62°		2.75	1.8	1.6	1.3	1.25	1.2	1.05	1.2	1.0	0.9	0.8	0.7	0.7
60°		2.4	1.55	1.4	1.2	1.15	1.05	0.95	1.1	0.9	0.8	0.7	0.65	0.6
58°		2.1	1.35	1.2	1.1	1.0	0.95	0.85	1.0	0.8	0.7	0.6	0.6	0.6
55°		1.7	1.1	1.0	0.9	0.85	0.85		0.75	0.7	0.6	0.5	0.5	
52°		1.3	0.7	0.7	0.7	0.65	0.65		0.65	0.6	0.5	0.4	0.4	
50°		0.9												
48°		0.6												

C = Jib length D = Jib offset E = Boom angle

**NOTES:**

1. The total rated loads shown are for the case when the outriggers are set horizontally on firm ground. The values above the bold lines are based on the crane strength while those below are based on the crane stability.
2. The weights of slings and hooks are included in the total rated loads shown.
3. The total rated load is based on the actual working radius including the deflection of the boom.
4. Boom operations should be performed on the basis of the working radius. Jib operations should be performed on the basis of the boom angle regardless of the boom length.
5. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 7.14t for the main winch and 6.0t for the auxiliary winch.

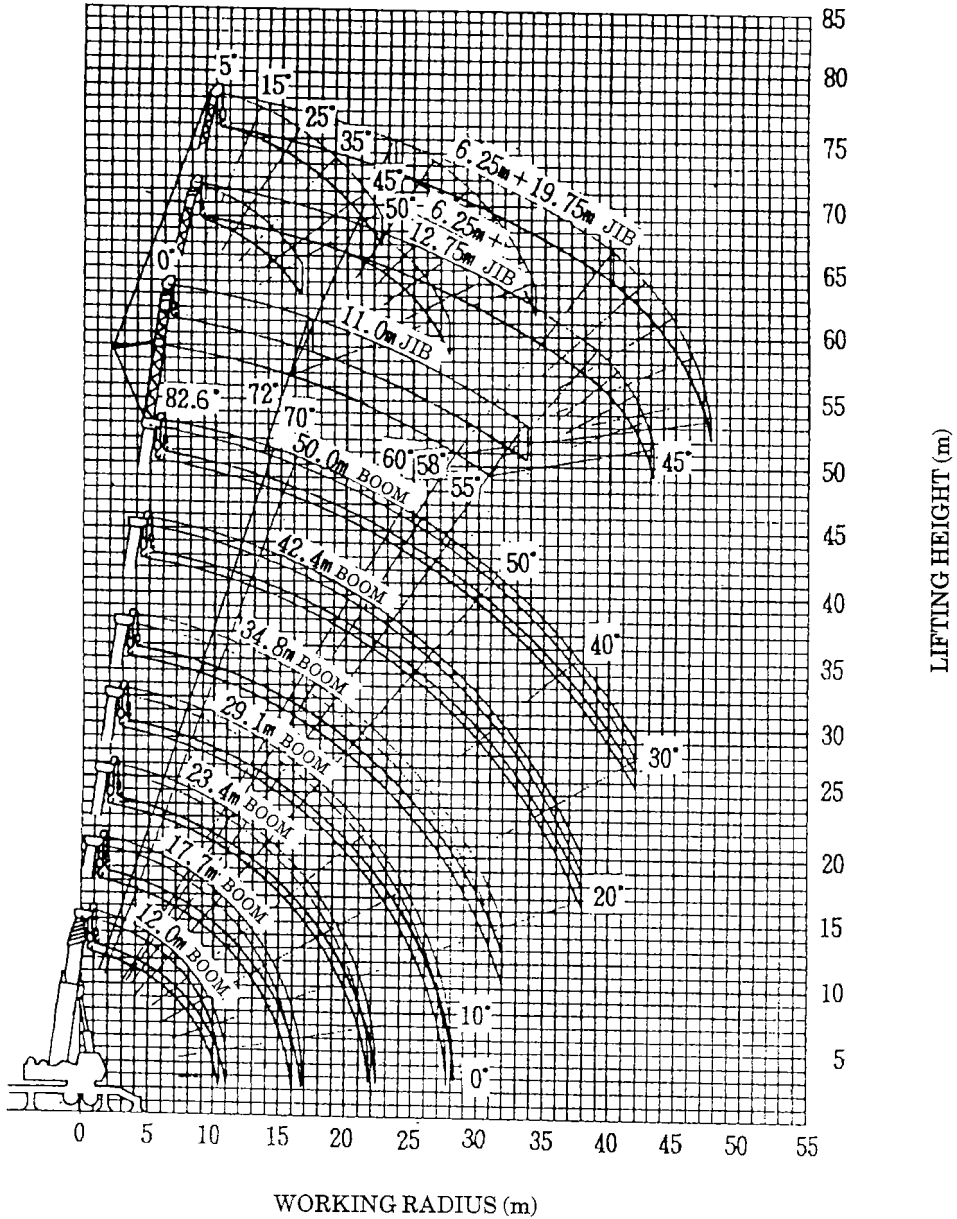
A	12.0m	17.7m	23.4m	29.1m	34.8m	42.4m	50.0m	J
K	120t Hook	50t Hook					6.0t Hook	
L	1,250kg	525kg					250kg	
H	18, 14	7	6	5	4		1	

A=Boom length H=No. of part-line J=Jib / Single top K=Hook type L=Hook weight

6. The total rated load for the single top is the same as that of the boom and must not exceed 6.0 tons. However, when hooks, slings, etc. are mounted on the boom, one should work with the total rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the boom from the total rated load of the boom.

# WORKING RADIUS - LIFTING HEIGHT

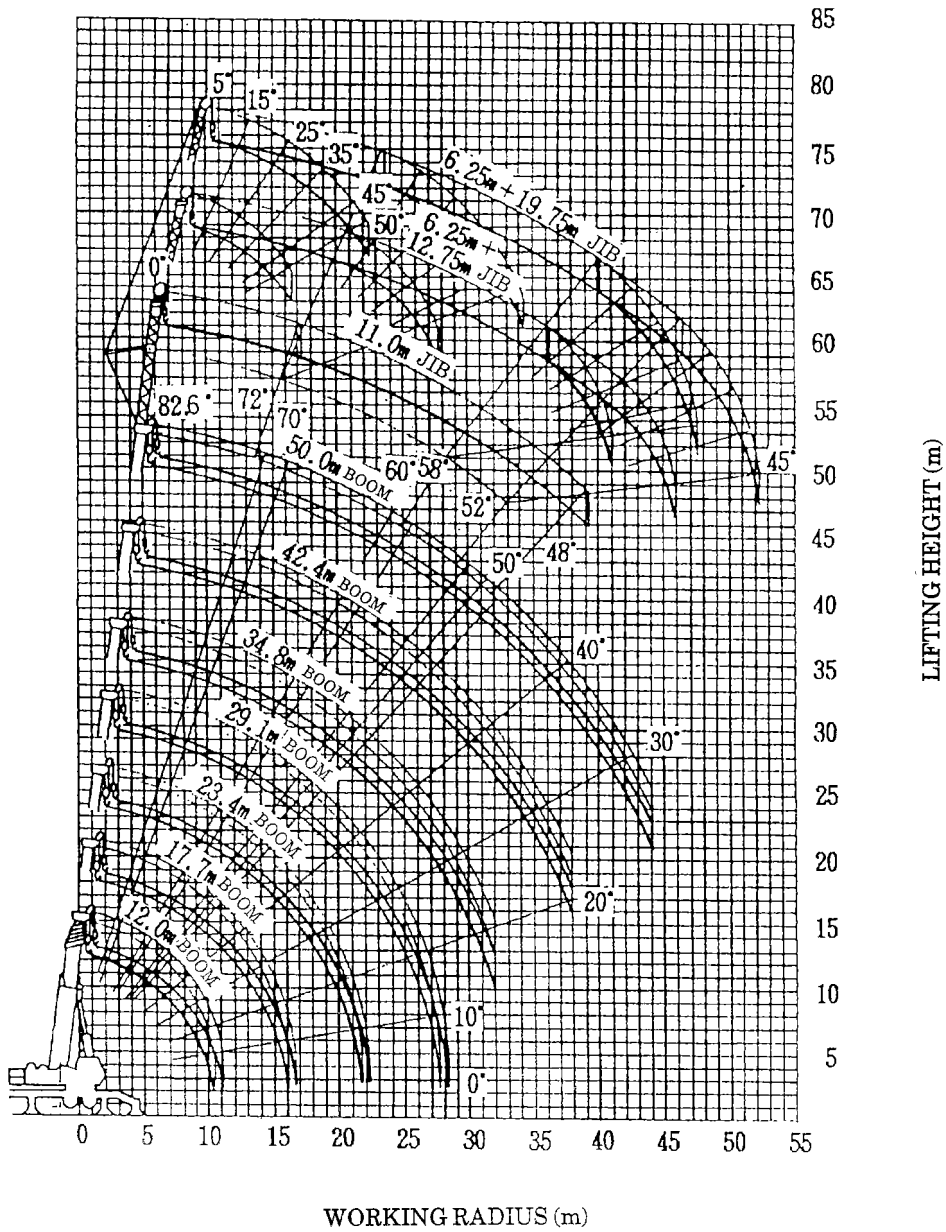
(i) Standard specifications



**NOTES:**

1. The deflection of the boom is not incorporated in the figure above.
2. The above chart is for the case where the outriggers are fully extended and where the front and rear jacks are used (over 360°).

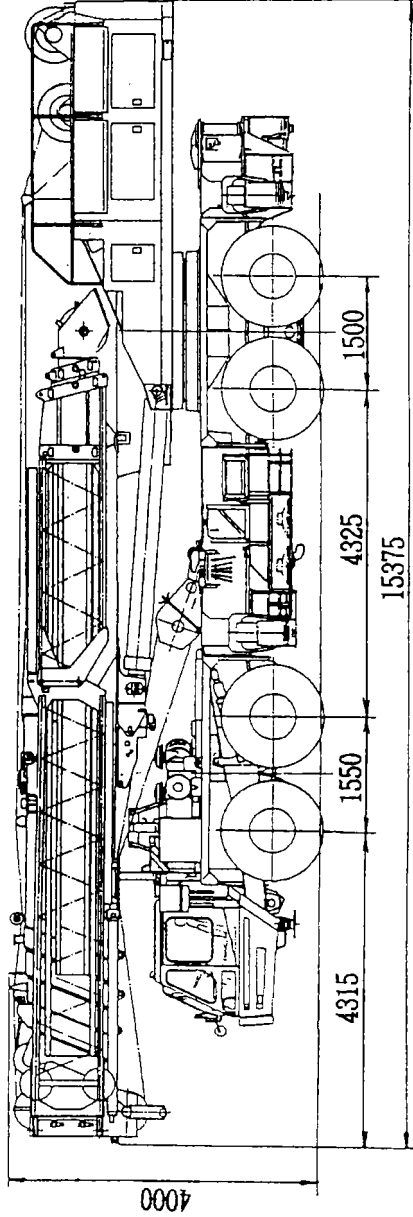
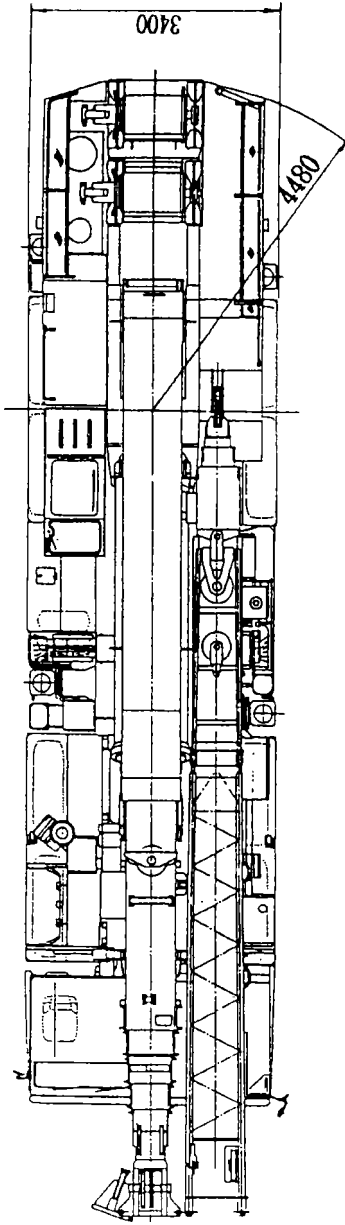
(ii) 10t extra weight (option) specifications



**NOTES:**

1. The deflection of the boom is not incorporated in the figure above.
2. The above chart is for the case where the outriggers are fully extended and where the front and rear jacks are used (over 360°).

**DIMENSIONS (1/100)**  
[On-site traveling condition]



(NOTE) This drawings shows the condition with a 50t hook mounted.