TRUCK CRANE

TG-1000R

TG

JAPANESE SPECIFICATIONS

CARRIER MODEL	OUTLINE	SPEC. NO.
NISSAN DIESEL W-KG520RN	6-section Boom, 3-stage Jib	TG-1000R-1-10201

Control No. JA-01

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TG-1000R

CRANE SPECIFICATIONS

CRANE CAPACITY

11.4m	Boom	100,000kg	at 3.0m	(20part-line)
17.0m	Boom	50,000kg	at 5.5m	(10part-line)
22.5m	Boom	40,000kg	at 7.5m	(8part-line)
28.1m	Boom	32,000kg	at 6.5m	(7part-line)
33.6m	Boom	25,000kg	at 8.0m	(5part-line)
41.0m	Boom	16,500kg	at 11.0m	(4part-line)
48.4m	Boom	12,000kg	at 12.0m	(4part-line)
9.8m	Jib	5,500kg	at 75°	(1part-line)
15.4m	Jib	3,500kg	at 73°	(1part-line)
21.0m	Jib	2,500kg	at 78°	(1part-line)
Single top		5,500kg		(1part-line)

MAX. LIFTING HEIGHT
Boom 48.5m
Jib 69.5m

MAX. WORKING RADIUS
Boom 42.0m
Jib 51.5m

BOOM LENGTH
11.4m – 48.4m

BOOM EXTENSION
37m

BOOM EXTENSION SPEED
37m / 130s

JIB LENGTH
9.8m – 21.0m

MAIN WINCH SINGLE LINE SPEED
High range: 100m/min (4th layer)
Low range: 50m/min (4th layer)

MAIN WINCH HOOK SPEED
High range: 5m/min (20 part-line)
Low range: 2.5m/min (20 part-line)

AUXILIARY WINCH SINGLE LINE SPEED
High range: 110m/min (2nd layer)
Low range: 55m/min (2nd layer)

AUXILIARY WINCH HOOK SPEED
High range: 110m/min (1 part-line)
Low range: 55m/min (1 part-line)

BOOM ELEVATION ANGLE
-1° – 82°

BOOM ELEVATION SPEED
-1° – 82° / 66s

SWING ANGLE
360° continue

SWING SPEED
1.8 rpm

WIRE ROPE
Main Winch
20mm × 260m (Diameter×Length)
7×7+6×WS(31)
Spin-resistant wire rope
Auxiliary Winch
20mm × 150m (Diameter×Length)
7×7+6×WS(31)

HOOK
100t hook (20 part-line)
50t hook (10 part-line)
5.5t hook (1 part-line)

BOOM
6-section hydraulically telescoping boom of box construction.
(stages 2–4 : synchronized; 5,6 : sequenced)

BOOM EXTENSION
4 double-acting hydraulic cylinder

JIB
3-staged swingaround boon extensions.
Hydraulically synchronized telescoping type
Hydraulic non-stage offset (5°-45°) type

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

HOIST
Main Winch
Driven by hydraulic motor and via planetary gear reducer
With free-fall device
Automatic brake
(With foot brake for free-fall operation)
Auxiliary Winch
Driven by hydraulic motor and via bevel gear speed reducer
Automatic brake

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 8.2m
Middle extended width 7.2m, 5.4m
With extension width detector

FRONT JACK
Hydraulic operated type
With grounding detector

REAR JACK
Hydraulic type (with cylinder for extension)
With grounding detector
Individually operated type

MAX. OUTRIGGER LOAD
83t

ENGINE FOR CRANE
Model MITSUBISHI 6D16T
Type 4-cycle, 6 in-line cylinder, direct-injection, water-cooled diesel engine.
Piston Displacement 7,545cc
Max. Output 185PS at 2,100rpm
Max. Torque 70.0kg·m at 1,400rpm

HYDRAULIC PUMPS
2 high pressure variable piston pumps and 1 high pressure gear pump
1 high pressure gear pump

HYDRAULIC OIL TANK CAPACITY
985 liters

SAFETY DEVICES
Automatic moment limiter (AML)
With working range limiting function
Automatic outrigger extension width detector
Automatic rear jack grounding detector
Automatic front jack grounding detector
Automatic weight combination detector
Working area control device
Over-winding cutout
Level gauge
Hook safety latch
Cable follower
Winch drum lock
Winch drum rotation indicator
Hydraulic safety valve
Telescopic counterbalance valve
Elevation counterbalance valve
Jack pilot check valve
Front jack over load alarm

EQUIPMENTS
Crane cab heater
Oil cooler
Boom angle indicator
Counterweight dismount device
Boom dismount device
Radio
Fan
Jib extending device

OPTIONAL EQUIPMENT
Crane cab cooler

CARRIER SPECIFICATIONS

MANUFACTURER
NISSAN DIESEL MOTOR CO., LTD

CARRIER MODEL
W-KG520RN

ENGINE
Model RF8
Type 4-cycle V8-cylinder, direct-injection, water-cooled diesel engine
Piston displacement 16,991cc
Max. output 340PS at 2,200rpm
Max. torque 120kg·m at 1,400rpm

CLUTCH
Dry single-plate coil spring type

TRANSMISSION
7-forward and 1-reverse speeds
Constant-mesh gear (2nd–7th gears synchromeshed)

REDUCER
Hypoid gear type (1st speed reduction)
Planetary gear (2nd speed reduction)

FRONT AXLE
Reverse-elliot type

REAR AXLE
Full floating, cast torque rods

SUSPENSION
Front Laminated leaf spring type
Rear Equalizer and torque rods

STEERING
Recirculating ball screw type with linkage power assistance

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.
Emergency
Spring brake, acting on 4 rear wheels

ELECTRIC SYSTEM
24 V DC. 2 batteries of 115F51

FUEL TANK CAPACITY
300 liters

CAB
Two-man type

TIRES
Front 14.00-24-24PR
Rear 14.00-20-20PR

STANDARD EQUIPMENTS
Car heater
Car radio
Car cooler

GENERAL DATA

DIMENSIONS (CARRIER ONLY)

Overall length	10,730mm
Overall width	3,000mm
Overall height	2,780mm
Wheel base	1,500mm + 3,300mm + 1,400mm = 6,200mm
Tread Front	2,480mm
Rear	2,150mm

WEIGHTS (CARRIER ONLY)

Gross vehicle weight	
Total	30,070kg
Front	11,430kg
Rear	18,640kg

PERFORMANCE (CARRIER ONLY)

Max. traveling speed	60km/h
Gradeability (tan θ)	0.42
Min. turning radius	9.8m

TOTAL RATED LOADS

[BOOM]

Performance a

Unit : ton

B (m) \ A	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	100.0	50.0	40.0				
3.5	90.0	50.0	40.0				
4.0	79.0	50.0	40.0	32.0			
4.5	70.0	50.0	40.0	32.0			
5.0	63.0	50.0	40.0	32.0	25.0		
5.5	56.0	50.0	40.0	32.0	25.0		
6.0	52.0	48.5	40.0	32.0	25.0	16.5	
6.5	48.0	46.2	40.0	32.0	25.0	16.5	
7.0	44.0	44.5	40.0	30.5	25.0	16.5	12.0
7.5	40.5	41.0	40.0	28.7	25.0	16.5	12.0
8.0	38.0	38.5	38.5	27.5	25.0	16.5	12.0
9.0	33.0	33.5	33.5	25.0	23.0	16.5	12.0
10.0		29.5	29.5	23.0	21.0	16.5	12.0
11.0		26.0	26.0	21.0	19.1	16.5	12.0
12.0		23.0	23.0	19.0	17.6	16.1	12.0
14.0		17.0	18.0	16.0	14.9	13.8	11.7
16.0			14.1	13.5	12.8	12.0	10.4
18.0			11.1	11.1	10.8	10.5	9.4
20.0			8.8	8.8	8.6	9.2	8.4
22.0				7.0	7.0	8.0	7.4
24.0				5.6	5.5	7.0	6.6
26.0				4.5	4.3	6.0	5.9
28.0					3.3	4.9	5.2
30.0					2.5	3.9	4.6
32.0						3.1	4.0
34.0						2.3	3.2
36.0						1.7	2.6
38.0						1.1	2.0
40.0							1.5
42.0							1.0

A = Boom length B = Working radius

[BOOM]
Performance b

Unit : ton

A / B (m)	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	100.0	50.0	40.0				
3.5	86.0	50.0	40.0				
4.0	75.0	50.0	40.0	32.0			
4.5	67.0	50.0	40.0	32.0			
5.0	60.0	50.0	40.0	32.0	25.0		
5.5	54.0	50.0	40.0	32.0	25.0		
6.0	50.0	48.5	40.0	32.0	25.0	16.5	
6.5	46.0	45.0	40.0	32.0	25.0	16.5	
7.0	42.0	42.0	40.0	30.5	25.0	16.5	12.0
7.5	38.5	38.5	38.0	28.7	25.0	16.5	12.0
8.0	36.0	36.0	36.0	27.5	25.0	16.5	12.0
9.0	31.0	31.5	31.5	25.0	23.0	16.5	12.0
10.0		27.5	27.5	23.0	21.0	16.5	12.0
11.0		23.5	23.5	21.0	19.1	16.5	12.0
12.0		20.2	20.5	19.0	17.6	16.1	12.0
14.0		14.8	14.8	14.8	14.9	13.8	11.7
16.0			11.2	11.2	11.2	12.0	10.4
18.0			8.6	8.6	8.6	9.9	9.4
20.0			6.6	6.5	6.6	7.8	8.4
22.0				5.0	5.0	6.2	7.0
24.0				3.8	3.8	5.0	5.7
26.0				2.9	2.8	4.0	4.7
28.0					1.8	3.1	3.8
30.0					0.9	2.4	3.1
32.0						1.6	2.4
34.0						1.0	1.9
36.0							1.3

A = Boom length B = Working radius

[BOOM]
Performance c

Unit : ton

A / B (m)	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	60.0	50.0	40.0				
3.5	60.0	50.0	40.0				
4.0	60.0	50.0	40.0	32.0			
4.5	60.0	50.0	40.0	32.0			
5.0	58.0	50.0	40.0	32.0	25.0		
5.5	49.0	50.0	40.0	32.0	25.0		
6.0	42.0	42.5	40.0	32.0	25.0	16.5	
6.5	37.0	37.6	37.8	32.0	25.0	16.5	
7.0	32.5	33.1	33.2	30.5	25.0	16.5	12.0
7.5	29.0	29.4	29.5	28.7	25.0	16.5	12.0
8.0	26.0	26.4	26.5	26.4	25.0	16.5	12.0
9.0	21.0	21.5	21.6	21.5	21.6	16.5	12.0
10.0		17.9	18.0	17.9	18.0	16.5	12.0
11.0		15.0	15.1	15.1	15.2	16.5	12.0
12.0		12.8	12.8	12.8	12.9	14.1	12.0
14.0		9.4	9.4	9.4	9.5	10.7	11.4
16.0			6.9	6.8	6.9	8.2	8.9
18.0			4.8	4.8	4.8	6.3	7.1
20.0			3.2	3.2	3.2	4.6	5.5
22.0				1.9	1.9	3.3	4.2
24.0						2.3	3.2
26.0						1.4	2.3
28.0							1.5

A = Boom length B = Working radius

[BOOM]
Performance d

Unit : ton

A / B (m)	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	60.0	50.0	40.0				
3.5	60.0	50.0	40.0				
4.0	60.0	50.0	40.0	32.0			
4.5	60.0	50.0	40.0	32.0			
5.0	50.0	50.0	40.0	32.0	25.0		
5.5	42.0	42.5	40.0	32.0	25.0		
6.0	36.0	36.5	36.6	32.0	25.0	16.5	
6.5	31.0	31.5	31.6	31.6	25.0	16.5	
7.0	27.0	27.5	27.6	27.6	25.0	16.5	12.0
7.5	24.0	24.5	24.6	24.6	24.6	16.5	12.0
8.0	21.5	21.8	21.9	21.9	21.9	16.5	12.0
9.0	17.3	17.6	17.7	17.7	17.7	16.5	12.0
10.0		14.5	14.5	14.5	14.5	15.9	12.0
11.0		12.0	12.1	12.1	12.1	13.4	12.0
12.0		10.0	10.1	10.1	10.1	11.4	12.0
14.0		7.0	7.1	7.1	7.1	8.4	9.2
16.0			4.7	4.7	4.7	6.2	7.0
18.0			2.8	2.8	2.8	4.3	5.3
20.0						2.8	3.8
22.0							2.6

A = Boom length B = Working radius

[JIB]

Performance a

Unit : ton

C / D / E	9.8 m			15.4 m			21.0 m		
	5°	25°	45°	5°	25°	45°	5°	25°	45°
82°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°	5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°	5.2	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°	4.4	3.5	2.6	3.4	2.2	1.6	1.8	0.92	0.6
68°	3.9	3.2	2.5	3.05	2.1	1.6	1.67	0.88	0.6
65°	3.3	2.8	2.4	2.6	1.85	1.42	1.5	0.83	0.6
63°	3.0	2.55	2.2	2.35	1.7	1.3	1.4	0.8	0.6
60°	2.6	2.25	2.0	2.05	1.5	1.2	1.27	0.76	0.6
58°	2.4	2.05	1.85	1.9	1.4	1.15	1.2	0.74	0.6
55°	2.1	1.8	1.7	1.6	1.25	1.06	1.1	0.72	0.6
53°	1.85	1.7	1.6	1.5	1.2	1.03	1.05	0.71	0.6
50°	1.3	1.2	1.2	1.1	1.0	0.9	0.95	0.7	0.6
48°	0.9	0.85	0.85	0.75	0.7	0.65	0.6	0.6	

PERFORMANCE b

Unit : ton

C / D / E	9.8 m			15.4 m			21.0 m		
	5°	25°	45°	5°	25°	45°	5°	25°	45°
82°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°	5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°	5.2	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°	4.4	3.5	2.6	3.4	2.2	1.6	1.8	0.92	0.6
68°	3.9	3.2	2.5	3.05	2.1	1.6	1.67	0.88	0.6
65°	3.3	2.8	2.4	2.6	1.85	1.42	1.5	0.83	0.6
63°	3.0	2.55	2.2	2.35	1.7	1.3	1.4	0.8	0.6
60°	2.5	2.25	2.0	2.05	1.5	1.2	1.27	0.76	0.6
58°	1.9	1.85	1.75	1.8	1.3	1.05	1.1	0.65	0.55
55°	1.2	1.1	1.1	1.0	0.9				

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

[JIB]

Performance c

Unit : ton

C / E D	9.8 m			15.4 m			21.0 m		
	5°	25°	45°	5°	25°	45°	5°	25°	45°
82°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°	5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°	5.2	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°	4.4	3.5	2.6	3.4	2.2	1.6	1.8	0.92	0.6
68°	3.4	3.1	2.5	3.05	2.1	1.6	1.67	0.88	0.6
65°	2.2	1.9	1.75	1.9	1.65				

Performance d

Unit : ton

C / E D	9.8 m			15.4 m			21.0 m		
	5°	25°	45°	5°	25°	45°	5°	25°	45°
82°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°	5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°	5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°	4.9	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°	2.9								

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 (900kg for a 100 ton capacity hook, 500kg for a 50 ton capacity hook and 140kg for a 5.5 ton capacity hook) 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. The performance classifications, a, b, c and d, for the total rated load table are as follows. The same performance is valid for 360°.

Outriggers / Counterweight	Extended width : 8.2m Front jack used Rear jack used	Extended width : 7.2m Front jack used Rear jack used	Extended width : 5.4m or more Front jack used Rear jack not used
With extra weight	a	b	c
With standard weight	b	c	d

5. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 5.0t for the main winch and 5.5t for the auxiliary winch.

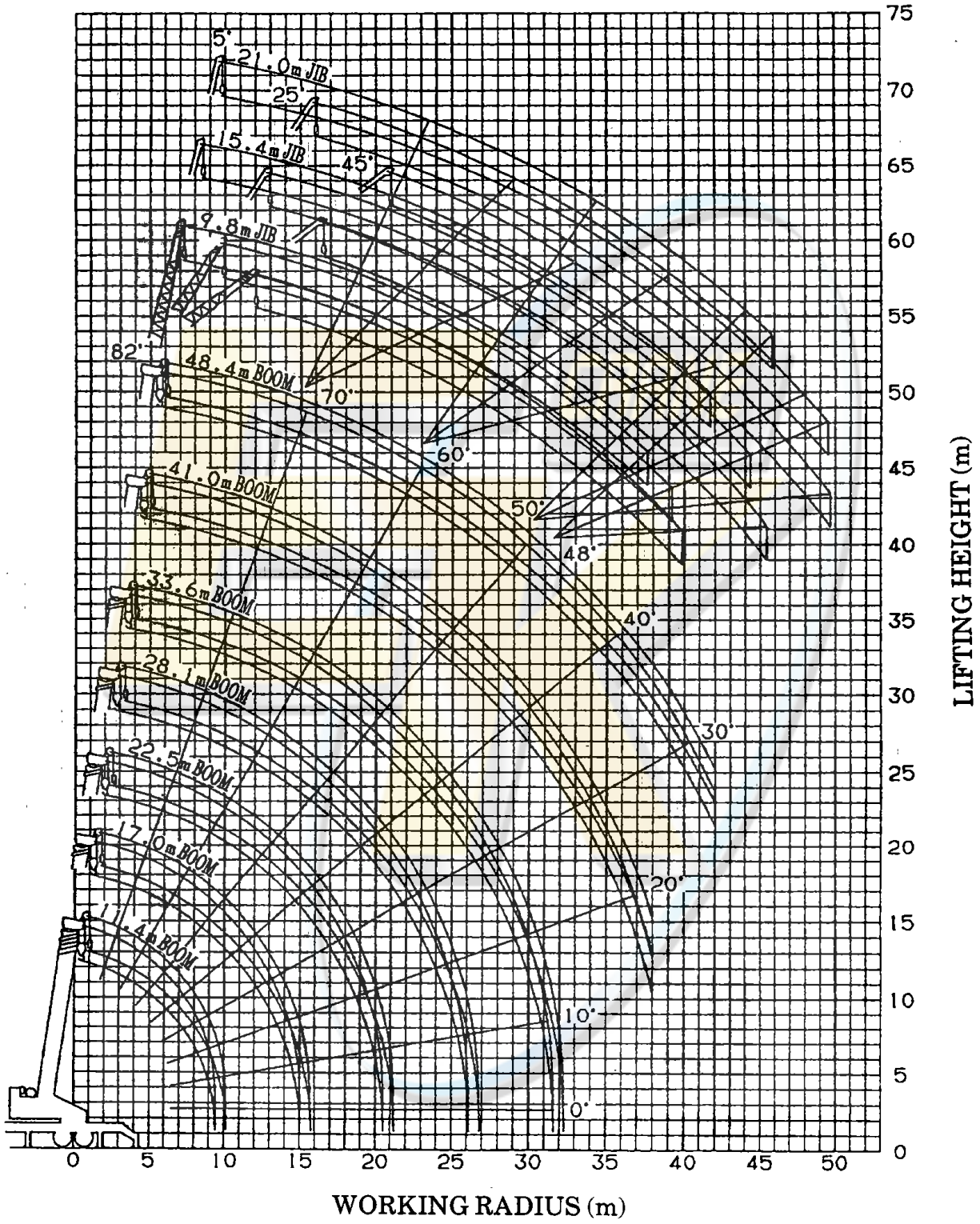
A	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m	J
H	(20)13	10	8	7	5	4	4	1

Value in ( ) is for the case when the attachment is used.

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

6. As a rule, free-fall operation of the main winch should be performed only when lowering the hook alone. If a hoisted load must be lowered by free-fall operation, the load should be kept below 1/5th of the total rated load (keep the load per line at 1.0t or less) and sudden braking operations must be avoided.
7. The total rated load for the single top is the same as that of the boom and must not exceed 5.5 tons. However, when hooks, slings, etc. are mounted on the boom, one should work with the to rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the boomtal from the total rated load of the boom.

WORKING RADIUS - LIFTING HEIGHT



NOTES:

1. The deflection of the boom is not incorporated in the figure above.
2. The above diagram shows the case for performance a.

DIMENSIONS (1/100)

[On-site travelling conditions]