TRUCK CRANE

TG-450M

TG

JAPANESE SPECIFICATIONS

CARRIER MODEL	OUTLINE	SPEC. NO.
NISSAN DIESEL K-KG51T	5-section Boom, 2-stage Jib	TG-450M-1-10101

Control No. JA-02

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TG-450M-1-10101

TG-450M

CRANE SPECIFICATIONS

MAXIMUM TOTAL RATED LOAD

Boom	10.4m	45,000kg	(9 part-line)
	17.6m	27,000kg	(6 part-line)
	24.7m	18,000kg	(4 part-line)
	31.9m	12,000kg	(4 part-line)
	39.0m	6,500kg	(2 part-line)
Jib	9.0m	3,500kg	(1 part-line)
	14.5m	2,500kg	(1 part-line)
Single top	0.7m	4,000kg	(1 part-line)

MAX. LIFTING HEIGHT

Boom	38.5m
Jib	53.0m
Single top	39.0m

MAX. WORKING RADIUS

Boom	30.0m
Jib	36.0m
Single top	31.0m

BOOM LENGTH
10.4m – 39.0m

BOOM EXTENSION
28.6m

BOOM EXTENSION SPEED
28.6m / 120s

JIB LENGTH
9.0m, 14.5m

MAIN WINCH SINGLE LINE SPEED

High range:	92m/min	(3rd layer)
Low range:	52m/min	(3rd layer)

MAIN WINCH HOOK SPEED
(9 part-line)

High range:	10.2m/min	(3rd layer)
Low range:	5.7m/min	(3rd layer)

AUXILIARY WINCH SINGLE LINE SPEED
106m/min (2nd layer)

AUXILIARY WINCH HOOK SPEED
(1 part-line) 106m/min (2nd layer)

BOOM ELEVATION ANGLE
-3° – 81°

BOOM ELEVATION SPEED
-3° – 81° / 65s

SWING ANGLE
360° continue

SWING SPEED
2.2 rpm

WIRE ROPE
Main Winch
IWRC 6×Fi(29)
Class B (Spin-resistant type)
20mm × 175m (Diameter×Length)
Breaking strength 27.6t
Auxiliary Winch
IWRC 6×Fi(29)
Class C (Spin-resistant type)
18mm × 120m (Diameter×Length)
Breaking strength 24.3t

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

BOOM EXTENSION
3 double-acting hydraulic cylinder
1 wire rope type telescoping device

JIB
2-staged swingaround boon extensions.
(2nd stage: pull-out type)
Dual (5°, 30°) offset

SINGLE TOP
Single sheave. Mounted to main boom head for single line work. (attached with a 15° tilt)

HOIST
Driven by hydraulic motor and via spur gear speed reducer.
Power load lowering / free-fall lowering type
2 single winches

BOOM ELEVATION
2 double-acting hydraulic cylinders

SWING
Hydraulic motor driven planetary gear reducer
Swing bearing
Hand brake
Swing free/lock changeover type

OUTRIGGERS
Fully hydraulic H-type (floats mounted integrally)
Slides and jacks each provided with independent operation device.

Full extended width	6.6m
Middle extended width	4.0m

MAX. OUTRIGGER LOAD
46.0t

HYDRAULIC PUMPS

Type	3 gear pumps
Pressure	210kg/cm², 210kg/cm², 210kg/cm²

HYDRAULC OIL TANK CAPACITY
602.5 liters (when oil temperature is 20°C)

SAFETY DEVICES
Automatic moment limiter
- Moment display
- Load display
- Total rated load display
- Boom angle display
- Boom length display
- Max. lifting height disply
- Working radius display

Over-winding cutout
Level gauge
Over front area control device
Hook safety latch
Winch drum lock
Swing brake
Hydraulic safety valve
Elevation counterbalance valve
Telescopic counterbalance valve
Jack pilot check valve

EQUIPMENTS
Oil cooler
Hydraulic oil temperature gauge
Boom angle indicator
Crane cab heater 1,400Kcal/H

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CARRIER SPECIFICATIONS

MANUFACTURER
NISSAN DIESEL MOTOR CO., LTD

CARRIER MODEL
K-KG51T

ENGINE
Model RD8
Type 4-cycle, vertical 8-cylinder, direct-injection water-cooled diesel engine
Piston displacement 14,313cc
Max. output 300PS at 2,500rpm
Max. torque 100kg·m at 1,400rpm

CLUTCH
Dry single-plate coil spring type

TRANSMISSION
Type Synchronized-mesh gear

Gear ratios				
1st speed	6.833	2nd speed	4.134
3rd speed	2.530	4th speed	1.550
5th speed	1.000	Reverse	6.865

AUXILIARY TRANSMISSION
Type Directly coupled to synchromesh transmission
Gear ratios High range 1.000 Low range 1.277

REDUCER
Type Hypoid gear type
Final drive 6.833

FRONT AXLE
Elliot-type steel pipe cross section

REAR AXLE
Full-floating type, cast torque rods

SUSPENSION
Front Laminated leaf spring type
Rear Equalizer and torque rods

STEERING
Recirculating ball screw type

BRAKE SYSTEM
Service Brake
2-circuit air brake
Parking Brake
Mechanically operated, duo-servo shoe type acting on drum at transmission case rear.
Auxiliary Brake
Electro-pneumatic operated exhaust brake

FRAME
Lattice type, box type, all-welded structure

ELECTRIC SYSTEM
2 batteries of 12V (120Ah)

FUEL TANK CAPACITY
300 liters

CAB
Two-man type

TIRES
Front 13.00-20-20PR
Rear 11.00-20-14PR

STANDARD EQUIPMENTS
Car heater
Car radio

GENERAL DATA

DIMENSIONS

Overall length	13,260mm	
Overall width	2,820mm	
Overall height	3,600mm	
Wheel base	1,470mm + 3,780mm + 1,400mm = 6,650mm	
Tread Front	2,200mm	
Rear	2,110mm	

WEIGHTS

Vehicle weight		
Total	37,040kg	
Front	16,200kg	
Rear	20,840kg	
Gross vehicle weight		
Total	37,150kg	
Front	16,340kg	
Rear	20,810kg	

PERFORMANCE

Max. traveling speed		70km/h
Gradeability	(tan θ)	0.27
Min. turning radius	(Outermost wheel)	11.8m

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TOTAL RATED LOADS

Unit : ton

Outriggers fully extended (Over rear · Over sides)

A / B (m)	10.4 m	17.6 m	24.7 m	31.9 m	39.0 m
3.0	45.00	27.00			
3.5	40.50	27.00			
4.0	36.50	27.00			
4.5	33.00	27.00	18.00		
5.0	30.20	27.00	18.00		
5.5	27.50	24.90	18.00		
6.0	25.00	22.90	18.00	12.00	
6.5	22.70	21.20	18.00	12.00	
7.0	20.00	19.50	16.75	12.00	
7.5	17.80	17.80	15.65	12.00	6.50
8.0	16.00	15.60	14.70	12.00	6.50
9.0	12.80	12.80	12.80	10.75	6.50
10.0		10.50	10.40	9.75	6.50
11.0		8.60	8.55	8.90	6.50
12.0		7.10	7.10	8.00	6.00
14.0		5.00	5.00	5.80	5.15
16.0		3.50	3.50	4.35	4.45
18.0			2.40	3.25	3.70
20.0			1.50	2.45	2.90
22.0			0.75	1.70	2.20
24.0				1.10	1.70
26.0				0.60	1.20
28.0					0.80
30.0					0.45

C / D / E (°)	9.0 m		14.5 m	
	5°	30°	5°	30°
80.0	3.50	2.00	2.50	1.00
79.0	3.50	2.00	2.50	1.00
78.0	3.50	1.96	2.50	1.00
77.0	3.31	1.91	2.33	1.00
75.0	2.97	1.82	2.06	0.96
72.0	2.56	1.68	1.78	0.90
70.0	2.33	1.58	1.62	0.87
68.0	2.14	1.49	1.48	0.84
65.0	1.90	1.37	1.32	0.80
62.0	1.64	1.25	1.18	0.76
60.0	1.30	1.11	1.00	0.74
58.0	1.01	0.87	0.77	0.69
55.0	0.64	0.54	0.50	0.43

A = Boom length
B = Working radius
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 are based on the crane strength.
2. The weights of slings and hooks (450kg for a 45 ton capacity hook, 180kg for a 10 ton capacity hook and 100kg for a 4 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 number of part lines for each boom length should not exceed the values below. The load per line should not exceed 5t for the main winch and 4t for the auxiliary winch.

A	10.4 m	17.6 m	24.7 m	31.9 m	39.0 m	J
H	9	6	4	4	2	1

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

5. The total rated loads for free-fall operations is 1/5 of the total rated loads given above. The load per line should not exceed 1t for the main winch and 0.8t for the auxiliary winch.
6. The total rated load for the single top is the same as that of the main boom and must not exceed 4 t. However, when hooks, slings, etc. are mounted on the main boom, one should work with the to rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the main boomtal from the total rated load of the main boom.

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Unit : ton

A / B (m)	Outriggers middle extended (Over front) 10.4m	17.6m	24.7m	31.9m	39.0m	Without outriggers (Over rear) 10.4 m BOOM
3.0	28.00	17.50				8.00
3.5	28.00	17.50				6.40
4.0	28.00	17.50				5.10
4.5	22.00	17.50	12.00			4.20
5.0	17.50	17.50	12.00			3.40
5.5	14.30	14.30	12.00			2.80
6.0	12.00	12.00	12.00	7.00		2.30
6.5	10.10	10.10	10.10	7.00		1.90
7.0	8.50	8.50	8.50	7.00		1.60
7.5	7.20	7.20	7.20	7.00	4.50	1.25
8.0	6.10	6.10	6.10	7.00	4.50	1.00
9.0	4.50	4.50	4.50	5.40	4.50	
10.0		3.30	3.30	4.20	4.50	
11.0		2.40	2.40	3.30	3.60	
12.0		1.70	1.70	2.50	3.00	
14.0				1.50	1.90	
16.0					1.20	

A = Boom length B = Working radius

NOTES:

1. The total rated loads shown are for the case when the crane is set horizontally on firm ground. All values are based on the crane stability. The foundation, working conditions, etc. should be taken into consideration adequately when performing crane operations according to the total rated load chart for the case when the outriggers are not used (Over rear).
2. The weights of slings and hooks (450kg for a 45 ton capacity hook, 180kg for a 10 ton capacity hook and 100kg for a 4 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 number of part lines for each boom length should not exceed the values below. The load per line should not exceed 5t for the main winch and 4t for the auxiliary winch.

A	10.4m	17.6m	24.7m	31.9m	39.0m	Single top
H	9	6	4	4	2	1

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

5. The total rated loads for free-fall operations is 1/5 of the total rated loads given above. The load per line should not exceed 1t for the main winch and 0.8t for the auxiliary winch.Free-fall operations should not be performed without the outriggers.
6. The total rated load for the single top is the same as that of the main boom and must not exceed 4 tons. However, when hooks, slings, etc. are mounted on the main boom, one should work with the to rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the main boomtal from the total rated load of the main boom.

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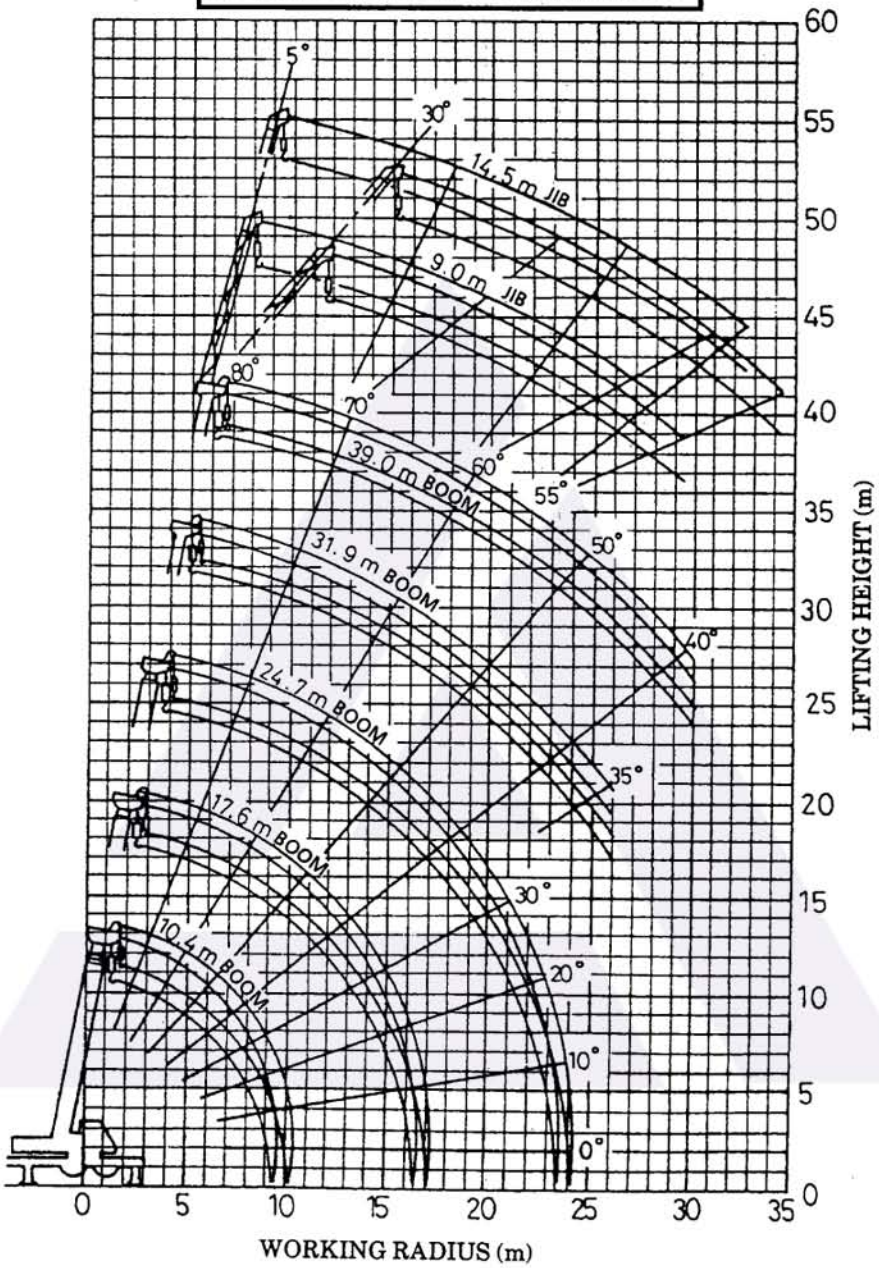
WORKING RADIUS - LIFTING HEIGHT



NOTES:

1. The deflection of the boom is not incorporated in the figure above.
2. The figure above is for the case when the outriggers are fully extended (Over rear or sides of the carrier).

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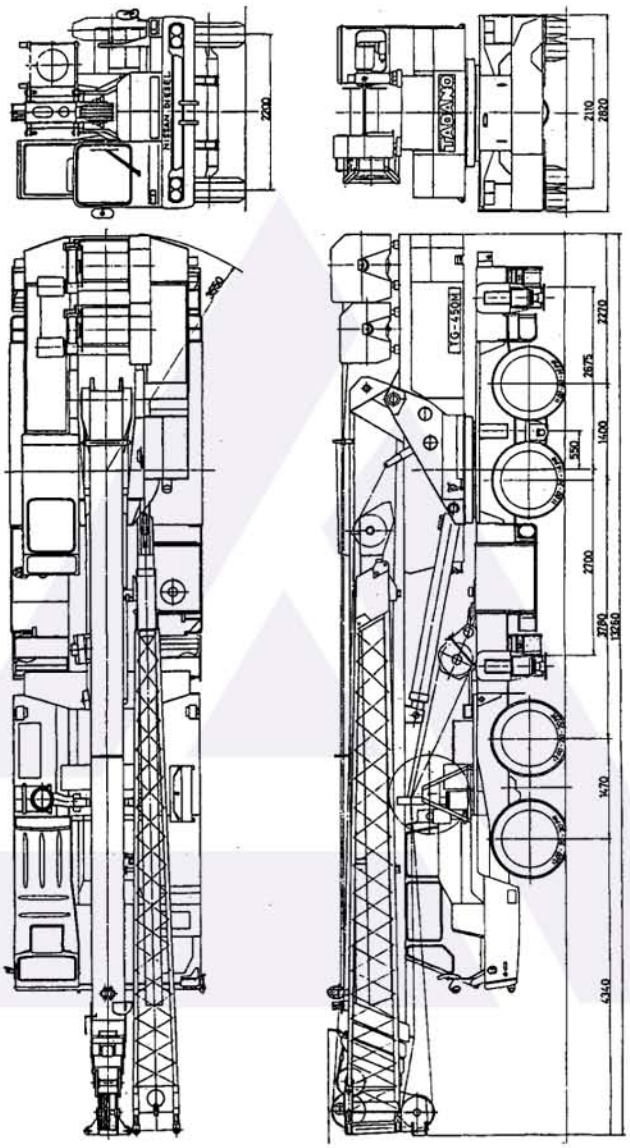
DIMENSIONS (1/100)



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