

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

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 boom 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

HYDRAULIC 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 display
- 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

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

TOTAL RATED LOADS

Unit : ton

| Outriggers fully extended (Over rear · Over sides) | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-----------|-------|------|--------|------|
| B (m) \ A | A | | | | | E (°) \ C | 9.0 m | | 14.5 m | |
| | 10.4m | 17.6m | 24.7m | 31.9m | 39.0m | | D | 5° | 30° | 5° |
| 3.0 | 45.00 | 27.00 | | | | 80.0 | 3.50 | 2.00 | 2.50 | 1.00 |
| 3.5 | 40.50 | 27.00 | | | | 79.0 | 3.50 | 2.00 | 2.50 | 1.00 |
| 4.0 | 36.50 | 27.00 | | | | 78.0 | 3.50 | 1.96 | 2.50 | 1.00 |
| 4.5 | 33.00 | 27.00 | 18.00 | | | 77.0 | 3.31 | 1.91 | 2.33 | 1.00 |
| 5.0 | 30.20 | 27.00 | 18.00 | | | 75.0 | 2.97 | 1.82 | 2.06 | 0.96 |
| 5.5 | 27.50 | 24.90 | 18.00 | | | 72.0 | 2.56 | 1.68 | 1.78 | 0.90 |
| 6.0 | 25.00 | 22.90 | 18.00 | 12.00 | | 70.0 | 2.33 | 1.58 | 1.62 | 0.87 |
| 6.5 | 22.70 | 21.20 | 18.00 | 12.00 | | 68.0 | 2.14 | 1.49 | 1.48 | 0.84 |
| 7.0 | 20.00 | 19.50 | 16.75 | 12.00 | | 65.0 | 1.90 | 1.37 | 1.32 | 0.80 |
| 7.5 | 17.80 | 17.80 | 15.65 | 12.00 | 6.50 | 62.0 | 1.64 | 1.25 | 1.18 | 0.76 |
| 8.0 | 16.00 | 15.60 | 14.70 | 12.00 | 6.50 | 60.0 | 1.30 | 1.11 | 1.00 | 0.74 |
| 9.0 | 12.80 | 12.80 | 12.80 | 10.75 | 6.50 | 58.0 | 1.01 | 0.87 | 0.77 | 0.69 |
| 10.0 | | 10.50 | 10.40 | 9.75 | 6.50 | 55.0 | 0.64 | 0.54 | 0.50 | 0.43 |
| 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 | | | | | |

- 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 boomal from the total rated load of the main boom.

Unit : ton

| A \ B (m) | Outriggers middle extended (Over front) | | | | | Without outriggers (Over rear) 10.4 m BOOM |
|-----------|---|--------|--------|--------|--------|--|
| | 10.4 m | 17.6 m | 24.7 m | 31.9 m | 39.0 m | |
| 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:

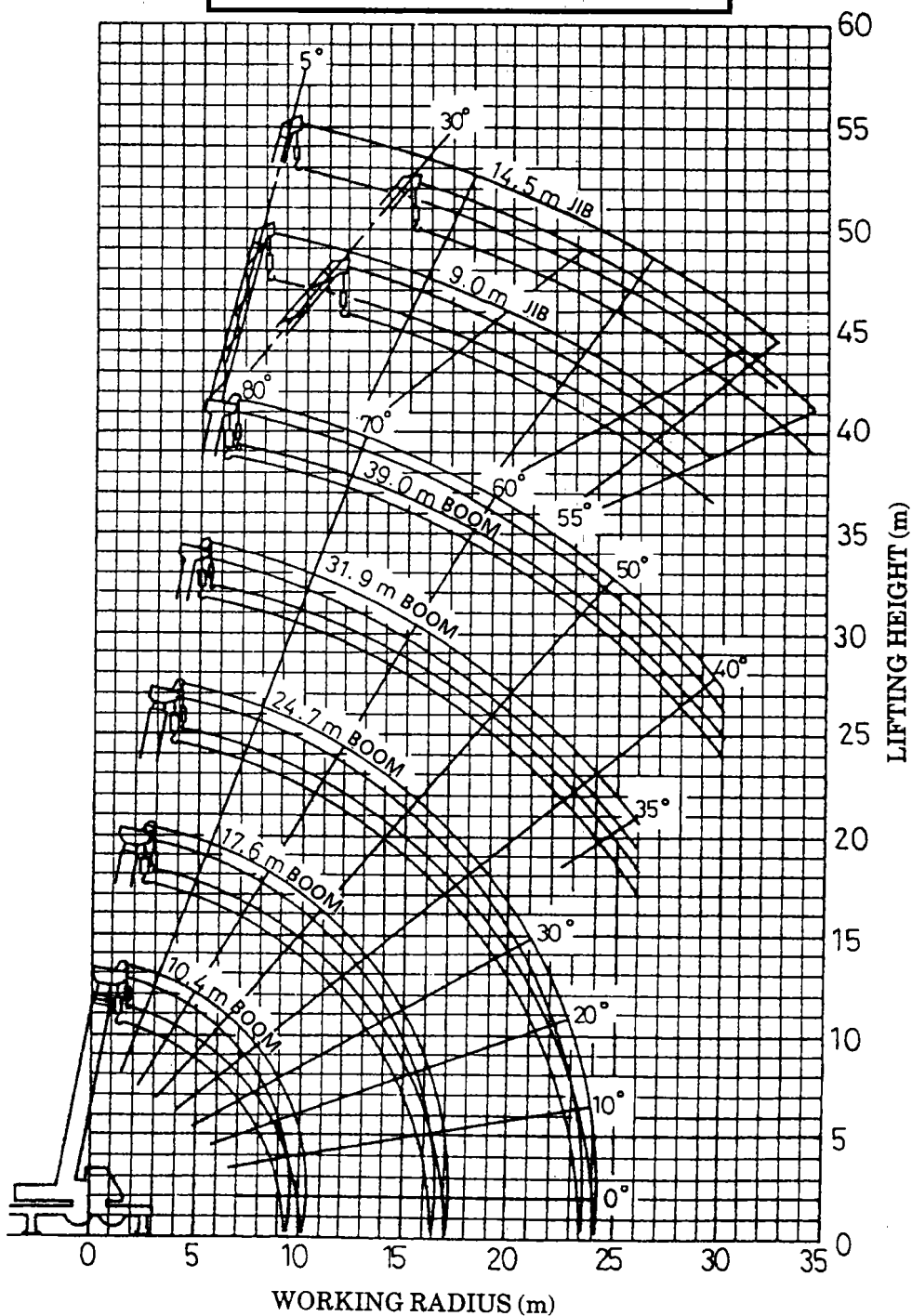
1. The total rated loads shown are for the case when the crane is set horizontally on firm ground. All values are based on the crane stability. The foundation, working conditions, etc. should be taken into consideration adequately when performing crane operations according to the total rated load chart 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 | 10.4 m | 17.6 m | 24.7 m | 31.9 m | 39.0 m | 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 boom from the total rated load of the main boom.

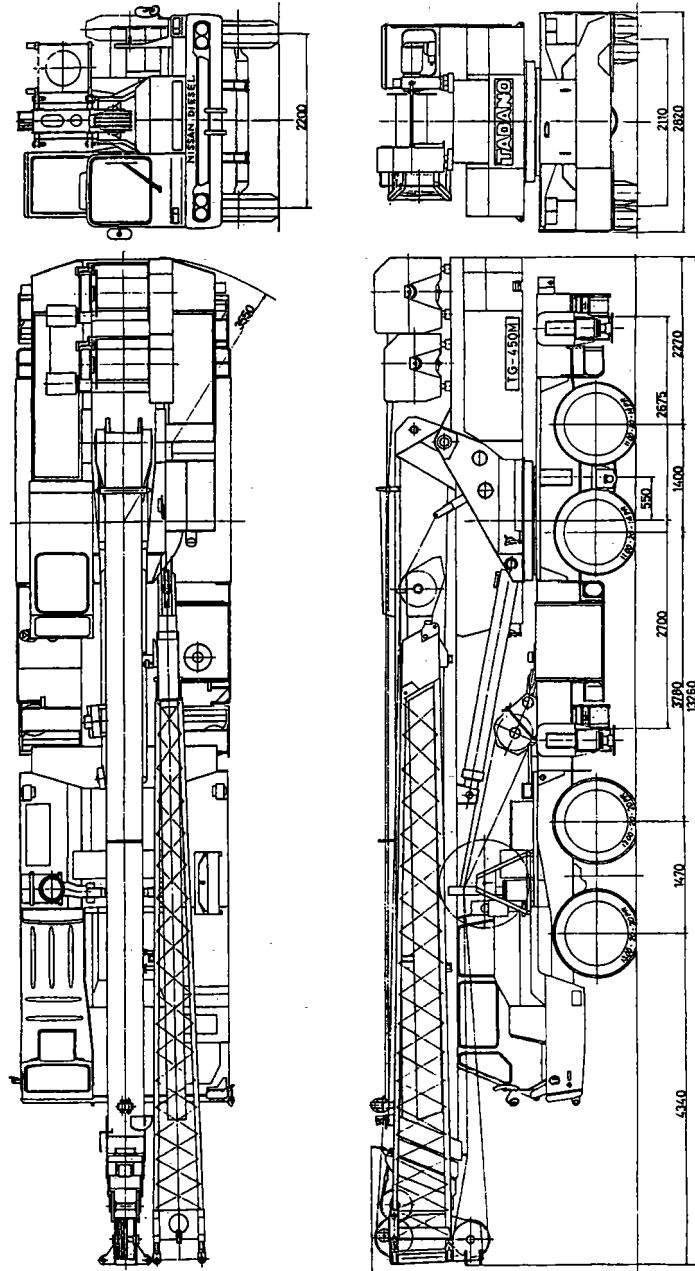
WORKING RADIUS - LIFTING HEIGHT



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).

DIMENSIONS (1/100)



◆ MEMO ◆

A series of horizontal dashed lines for writing a memo.