## TRUCK CRANE

### TG-350M

**JAPANESE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>CARRIER MODEL</th>
<th>OUTLINE</th>
<th>SPEC. NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NISSAN DIESEL K-KG51T</td>
<td>4-section Boom, 2-stage Jib</td>
<td>TG-350M-1-10101</td>
</tr>
</tbody>
</table>

Control No. JA-01
**TG-350M**

### CRANE SPECIFICATIONS

<table>
<thead>
<tr>
<th>MAXIMUM TOTAL RATED LOAD</th>
<th>10.4m</th>
<th>35,000kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.6m</td>
<td>23,500kg</td>
<td></td>
</tr>
<tr>
<td>24.8m</td>
<td>15,000kg</td>
<td></td>
</tr>
<tr>
<td>32.0m</td>
<td>10,000kg</td>
<td></td>
</tr>
<tr>
<td>Jib</td>
<td>4,000kg</td>
<td></td>
</tr>
<tr>
<td>14.5m</td>
<td>2,700kg</td>
<td></td>
</tr>
<tr>
<td>Single top</td>
<td>0.7m</td>
<td>4,000kg</td>
</tr>
</tbody>
</table>

### MAX. LIFTING HEIGHT
- **Boom**: 31.5m
- **Jib**: 46.0m
- **Single top**: 32.0m

### MAX. WORKING RADIUS
- **Boom**: 29.0m
- **Jib**: 36.0m
- **Single top**: 30.0m

### BOOM LENGTH
- 10.4m – 32.0m

### BOOM EXTENSION
- 21.6m

### BOOM EXTENSION SPEED
- 21.6m / 110s

### JIB LENGTH
- 9.0m, 14.5m

### MAIN WINCH SINGLE LINE SPEED
- **High range**: 113m/min (3rd layer)
- **Low range**: 64m/min (3rd layer)

### MAIN WINCH HOOK SPEED
- **High range**: 12.5m/min (3rd layer)
- **Low range**: 7.1m/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 × F(S29)
  - Class C (Spin-resistant type)
  - 18mm × 175m (Diameter × Length)
  - Breaking strength: 24.3t
- **Auxiliary Winch**: IWRC 6 × F(S29)
  - Class C (Spin-resistant type)
  - 18mm × 100m (Diameter × Length)
  - Breaking strength: 24.3t

### BOOM
- 4-section fully hydraulically synchronized telescoping boom of box construction.

### BOOM EXTENSION
- 3 double-acting hydraulic cylinder

### 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
- 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: 6.3m
- Middle extended width: 4.0m

### MAX. OUTRIGGER LOAD
- 38.0t

### 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-KGS1T

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 synchronmesh transmission
Gear ratios High range 1.000 Low range 1.277

REDUCER
Type Hypoid gear type
Final drive 6.833

FRONT AXLE
Reverse Elliot-type steel pipe cross section

REAR AXLE
Full-floating type, cast-steel housing

SUSPENSION
Front Laminated leaf spring type
Rear Equalizer and torque rods

STEERING
Recirculating 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 12.00-20-18PR
Rear 11.00-20-14PR

STANDARD EQUIPMENTS
Car heater
Car radio

GENERAL DATA

DIMENSIONS
Overall length 13,230mm
Overall width 2,750mm
Overall height 3,600mm
Wheel base 1,470mm + 3,780mm + 1,400mm = 6,650mm
Tread Front 2,215mm Rear 2,110mm

WEIGHTS
Vehicle weight
Total 34,490kg
Front 12,860kg Rear 21,630kg
Gross vehicle weight
Total 34,600kg
Front 13,000kg Rear 21,600kg

PERFORMANCE
Max. traveling speed 70km/h
Gradeability (tan θ) 0.29
Min. turning radius (Outermost wheel) 11.8m
# TOTAL RATED LOADS

<table>
<thead>
<tr>
<th>B (m)</th>
<th>A</th>
<th>Outriggers fully extended (Over rear - Over sides)</th>
<th>C</th>
<th>D</th>
<th>E (°)</th>
<th>Unit: ton</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.4 m</td>
<td>17.6 m</td>
<td>24.8 m</td>
<td>32.0 m</td>
<td>9.0 m</td>
<td>30°</td>
</tr>
<tr>
<td>3.0</td>
<td>35.00</td>
<td>23.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>32.50</td>
<td>23.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td>30.00</td>
<td>23.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>27.60</td>
<td>23.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.0</td>
<td>25.20</td>
<td>21.80</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>23.20</td>
<td>20.80</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0</td>
<td>21.60</td>
<td>18.90</td>
<td>15.00</td>
<td>10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>18.60</td>
<td>17.70</td>
<td>14.60</td>
<td>10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.0</td>
<td>16.40</td>
<td>16.60</td>
<td>14.80</td>
<td>10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>14.50</td>
<td>14.80</td>
<td>13.50</td>
<td>10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.0</td>
<td>13.00</td>
<td>13.80</td>
<td>12.80</td>
<td>10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.0</td>
<td>10.60</td>
<td>11.10</td>
<td>11.30</td>
<td>9.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td>9.40</td>
<td>9.50</td>
<td>8.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.0</td>
<td>8.00</td>
<td>8.10</td>
<td>7.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.0</td>
<td>6.80</td>
<td>7.00</td>
<td>6.95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.0</td>
<td>5.20</td>
<td>5.30</td>
<td>5.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.0</td>
<td>3.90</td>
<td>4.10</td>
<td>4.20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.0</td>
<td>3.20</td>
<td>3.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.0</td>
<td>2.45</td>
<td>2.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.0</td>
<td>1.90</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.0</td>
<td>1.60</td>
<td>1.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.0</td>
<td></td>
<td>1.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.0</td>
<td></td>
<td>1.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.0</td>
<td></td>
<td>0.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.0</td>
<td></td>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 (350kg for a 35 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 4 tons for both the main winch and the auxiliary winch.

<table>
<thead>
<tr>
<th>A</th>
<th>10.4 m</th>
<th>17.6 m</th>
<th>24.8 m</th>
<th>32.0 m</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

**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 0.8 ton for both the main winch and 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 tons. However, when hooks, slings, etc. are mounted on the main boom, one should work with the total 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.
<table>
<thead>
<tr>
<th>A (m)</th>
<th>Outriggers middle extended (Over front)</th>
<th>Without outriggers (Over rear) 10.4 m BOOM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.4 m</td>
<td>17.6 m</td>
</tr>
<tr>
<td>3.0</td>
<td>24.00</td>
<td>16.00</td>
</tr>
<tr>
<td>3.5</td>
<td>24.00</td>
<td>16.00</td>
</tr>
<tr>
<td>4.0</td>
<td>24.00</td>
<td>16.00</td>
</tr>
<tr>
<td>4.5</td>
<td>19.30</td>
<td>16.00</td>
</tr>
<tr>
<td>5.0</td>
<td>15.60</td>
<td>16.00</td>
</tr>
<tr>
<td>5.5</td>
<td>13.00</td>
<td>18.70</td>
</tr>
<tr>
<td>6.0</td>
<td>10.90</td>
<td>11.60</td>
</tr>
<tr>
<td>6.5</td>
<td>9.40</td>
<td>10.00</td>
</tr>
<tr>
<td>7.0</td>
<td>8.10</td>
<td>8.70</td>
</tr>
<tr>
<td>7.5</td>
<td>7.10</td>
<td>7.70</td>
</tr>
<tr>
<td>8.0</td>
<td>6.20</td>
<td>6.80</td>
</tr>
<tr>
<td>9.0</td>
<td>4.80</td>
<td>5.40</td>
</tr>
<tr>
<td>10.0</td>
<td>4.30</td>
<td>4.50</td>
</tr>
<tr>
<td>11.0</td>
<td>3.50</td>
<td>3.70</td>
</tr>
<tr>
<td>12.0</td>
<td>2.90</td>
<td>3.10</td>
</tr>
<tr>
<td>14.0</td>
<td>1.90</td>
<td>2.10</td>
</tr>
<tr>
<td>16.0</td>
<td>1.10</td>
<td>1.40</td>
</tr>
<tr>
<td>18.0</td>
<td></td>
<td>0.80</td>
</tr>
</tbody>
</table>

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 (350kg for a 35 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 4 tons for both the main winch and the auxiliary winch.

<table>
<thead>
<tr>
<th>A</th>
<th>10.4 m</th>
<th>17.6 m</th>
<th>24.8 m</th>
<th>32.0 m</th>
<th>Single top</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

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 0.8 ton for both the main winch and 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 tons. However, when hooks, slings, etc. are mounted on the main boom, one should work with the total 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.
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).