



# TRUCK CRANE

**TL-200M**

## *JAPANESE SPECIFICATIONS*

**TL**

CARRIER MODEL	OUTLINE	SPEC. NO.
NISSAN DIESEL KC-KW460MN	Jib which swings from and stores under the boom	TL-200M-5-10101
mitsubishi KC-KV207M		TL-200M-5-20101

Control No. JA-01

Return to  
INDEX



TL-200M-5-10101  
TL-200M-5-20101

## TL-200M

### CRANE SPECIFICATIONS

#### CRANE CAPACITY

9.8m	Boom	20,000kg	at 3.5m	( 7part-line)
13.3m	Boom	17,500kg	at 4.0m	( 7part-line)
16.9m	Boom	14,500kg	at 4.5m	( 7part-line)
20.4m	Boom	9,500kg	at 6.5m	( 4part-line)
23.9m	Boom	7,500kg	at 7.5m	( 4part-line)
27.5m	Boom	6,500kg	at 7.5m	( 4part-line)
31.0m	Boom	6,000kg	at 7.5m	( 4part-line)
8.0m	Jib	2,750kg	at 75 °	( 1part-line)
Single top		3,000kg		( 1part-line)

#### MAX.LIFTING HEIGHT

Boom	30.9m
Jib	38.7m

#### MAX.WORKING RADIUS

Boom	29.4m
Jib	32.7m

#### BOOM LENGTH

9.8m – 31.0m

#### BOOM EXTENSION

21.2m

#### BOOM EXTENSION SPEED

21.2m/95s

#### JIB LENGTH

8.0m

#### MAIN WINCH SINGLE LINE SPEED

High range:	110m/min	(4th layer)
Low range:	59m/min	(4th layer)

#### MAIN WINCH HOOK SPEED

High range:	15.7m/min	(7 part-line)
Low range:	8.4m/min	(7 part-line)

#### AUXILIARY WINCH SINGLE LINE SPEED

High range:	95m/min	(2nd layer)
Low range:	50m/min	(2nd layer)

#### AUXILIARY WINCH HOOK SPEED

High range:	95m/min	(1 part-line)
Low range:	50m/min	(1 part-line)

#### BOOM ELEVATION ANGLE

-3 °~ 80 °

#### BOOM ELEVATION SPEED

-3 °~ 80 748s

#### SWING ANGLE

360 °continue

#### SWING SPEED

2.4rpm

#### WIRE ROPE

Main Winch

16mm x 170m (Diameter x Length)  
Spin-resistant wire rope

Auxiliary Winch

16mm x 85m (Diameter x Length)  
Spin-resistant wire rope

#### BOOM

4-section hydraulically telescoping boom of box construction  
(stage 2: sequential; stages 3,4: synchronized)

#### BOOM EXTENSION

2 double-acting hydraulic cylinders  
1 wire rope type telescoping device  
With flow regulator valve with pressure compensation

#### JIB

Single stage which swings from and stores under the boom

Dual offset (5 °, 30 °) type

#### SINGLE TOP

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

#### HOIST

Driven by hydraulic motor and via planetary gear reducer.  
With free-fall device.

Automatic brake (with foot brake for free-fall device)

2 single winches

With flow regulator valve with pressure compensation

#### BOOM ELEVATION

1 double-acting hydraulic cylinder

With flow regulator valve with pressure compensation

#### SWING

Hydraulic motor driven planetary gear reducer

Swing bearing

Swing free/lock changeover type

Hand brake

#### OUTRIGGERS

Fully hydraulic H-type (floats mounted integrally)

Slides and jacks each provided with independent operation device.

Fully extended width 6.1m

Middle extended width 4.0m

Minimum extended width 2.08m

#### FRONT JACK

Hydraulic type

#### MAX. VERTICAL LOAD CAPACITY OF OUTRIGGER

25.0t

#### HYDRAULIC PUMPS

4 variable gear pumps

#### HYDRAULIC OIL TANK CAPACITY

306 liters

#### SAFETY DEVICES

Automatic moment limiter (AML)

With working range limiting function

Working area control device

Outrigger extension automatic detector

Over-winding cutout device

Level gauge

Hook safety latch

Winch drum lock

Swing lock

Hydraulic safety valve

Telescopic counterbalance valve

Elevation counterbalance valve

Jack pilot check valve

Front jack over load alarm

Front jack grounding automatic detector

#### EQUIPMENT

Boom angle indicator

Oil cooler

Crane cab heater

Radio

Fan

Block



## CARRIER SPECIFICATIONS

### MANUFACTURER

NISSAN DIESEL MOTOR CO., LTD.

### CARRIER MODEL

KC-KW460MN

### ENGINE

Model PG6

Type 4-cycle, V6-cylinder, direct-injection,  
water-cooled diesel engine

Piston displacement 13,337cc

Max. output 235PS at 2,100rpm

Max. torque 85kg-m at 1,300rpm

### CLUTCH

Dry single-plate coil spring type

With hydraulic air assistance

### TRANSMISSION

6-forward and 1-reverse speeds

Constant-mesh gear (1st speed, reverse)

Synchronized-mesh gear (2nd – 6th speeds)

### REDUCER

Hypoid gear type

### FRONT AXLE

Reverse-elliot type I-beam

### REAR AXLE

Full-floating type

### SUSPENSION

Front: Semi-elliptic leaf spring type  
With shock absorber

Rear: Equalizer beam type

### STEERING

Recirculating ball screw type

With linkage power assistance

### BRAKE SYSTEM

Service Brake

2-circuit air type 6-wheel internal expanding brake

Parking Brake

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

Auxiliary Brake

Electro-pneumatic operated exhaust brake

### ELECTRIC SYSTEM

24 V DC. 2 batteries of 12V–115F51 (96Ah)

### FUEL TANK CAPACITY

200 liters

### CAB

Two-man type

### TIRES

Front 11.00-20-16PR

Rear 10.00-20-14PR

### STANDARD EQUIPMENT

Car heater

Car radio

## GENERAL DATA

### DIMENSIONS

Overall length 11,800mm

Overall width 2,490mm

Overall height 3,300mm

Wheel base

4,050mm + 1,300mm = 5,350mm

Tread Front 2,025mm

Rear 1,860mm

### WEIGHTS

Gross vehicle weight

Total 23,590kg

Front 6,550kg

Rear 17,040kg

### PERFORMANCE

Max. traveling speed 70km/h

Gradeability (tan ) 0.34

Min. turning radius 8.5m



TL-200M-5-20101

## CARRIER SPECIFICATIONS

### MANUFACTURER

MITSUBISHI MOTOR CORPORATION

### CARRIER MODEL

KC-KV207M

### ENGINE

Model 6D24

Type 4-cycle, V6-cylinder, direct-injection,  
water-cooled diesel engine

Piston displacement 11,945cc

Max. output 240PS at 2,200rpm

Max. torque 85.0kg-m at 1,400rpm

### CLUTCH

Dry single-plate coil spring type

With hydraulic air assistance

### TRANSMISSION

6-forward and 1-reverse speeds

Constant-mesh gear (1st speed, reverse)

Synchronized-mesh gear (2nd – 6th speeds)

### REDUCER

Hypoid gear type

### FRONT AXLE

Reverse-elliot type I-beam

### REAR AXLE

Full-floating type

### SUSPENSION

Front: Semi-elliptic leaf spring type  
With shock absorber

Rear: Equalizer and torque rods

### STEERING

Recirculating ball screw type

Integral power steering

### BRAKE SYSTEM

Service Brake

2-circuit air type 6-wheel internal expanding brake

Parking Brake

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

Auxiliary Brake

Electro-pneumatic operated exhaust brake

### ELECTRIC SYSTEM

24 V DC. 2 batteries of 12V-115F51 (96Ah)

### FUEL TANK CAPACITY

200 liters

### CAB

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### TIRES

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Rear 10.00-20-14PR

### STANDARD EQUIPMENT

Car heater

Car radio

## GENERAL DATA

### DIMENSIONS

Overall length 11,800mm

Overall width 2,490mm

Overall height 3,300mm

Wheel base

4,050mm + 1,300mm = 5,350mm

Tread Front 2,040mm

Rear 1,845mm

### WEIGHTS

Gross vehicle weight

Total 23,590kg

Front 6,555kg

Rear 17,035kg

### PERFORMANCE

Max. traveling speed 70km/h

Gradeability (tan ) 0.38

Min. turning radius 9.5m



**TOTAL RATED LOADS**

Unit : ton

360° : Outriggers fully extended (6.1m) + Front jack Over the sides : Outriggers fully extended (6.1m) Over the rear : Outriggers fully extended (6.1m) Outriggers middle extended (4.0m) Outriggers minimum extended (2.08m) Over the front : Outriggers fully extended (6.1m) + Front jack Outriggers middle extended (4.0m) + Front jack													
A B	9.8m	13.3m	16.9m	20.4m	23.9m	27.5m	31.0m	C		31.0m Boom + 8.0m Jib			
								D	5 °		30 °		
									E ( ° )	B (m)	M	B (m)	M
3.0m	20.00	17.50	14.50	9.50				80	7.8	2.75	10.5	1.35	
3.5m	20.00	17.50	14.50	9.50				75	11.2	2.75	13.7	1.35	
4.0m	18.00	17.50	14.50	9.50	7.50	6.50		70	14.6	2.30	16.8	1.30	
4.5m	16.30	15.80	14.50	9.50	7.50	6.50		65	17.6	2.00	19.8	1.25	
5.0m	14.85	14.40	13.25	9.50	7.50	6.50	6.00	60	20.5	1.60	22.5	1.20	
5.5m	13.65	13.25	12.20	9.50	7.50	6.50	6.00	55	23.3	1.25	25.0	1.00	
6.0m	12.30	12.20	11.30	9.50	7.50	6.50	6.00	50	25.7	0.90	27.4	0.80	
6.5m	11.20	11.00	10.50	9.50	7.50	6.50	6.00	45	27.9	0.60	29.4	0.60	
7.0m	10.25	10.00	9.80	8.85	7.50	6.50	6.00	40	29.9	0.40	31.1	0.40	
7.5m	9.40	9.20	9.10	8.35	7.50	6.50	6.00	35	31.8	0.25	32.7	0.25	
8.0m	8.65	8.45	8.35	7.90	7.20	6.25	5.70	( ° )	34 ~ 80				
9.0m		7.05	7.10	7.00	6.65	5.75	5.20	A= Boom length B= Working radius C= Jib length D= Jib offset E= Boom angle = Boom angle range (for the unladen condition)					
10.0m		6.05	5.90	6.30	6.20	5.30	4.75						
12.0m			4.05	4.45	4.65	4.50	4.00						
14.0m			2.90	3.25	3.45	3.55	3.50						
16.0m				2.40	2.60	2.75	2.85						
18.0m				1.75	2.00	2.10	2.20						
20.0m					1.50	1.65	1.75						
22.0m					1.05	1.25	1.35						
24.0m						0.90	1.05						
26.0m							0.75						
28.0m							0.55						
29.4m							0.40						
( ° )	0 ~ 80	0 ~ 80	0 ~ 80	0 ~ 80	0 ~ 80	0 ~ 80	0 ~ 80						



TL-200M-5-10101  
TL-200M-5-20101

Unit : ton

360° Over the front														: Outriggers middle extended (4.0m) : Outriggers minimum extended (2.08m) Outriggers fully extended (6.1m) + without front jack Outriggers middle extended (4.0m) + without front jack									
<div><div>A</div><div>B</div></div>	9.8m	13.3m	16.9m	20.4m	23.9m	27.5m	31.0m	<div><div>C</div><div>D</div></div>	31.0m Boom + 8.0m Jib														
								E ( ° )	5 °		30 °												
									B (m)	M	B (m)	M											
3.0m	20.00	17.50	14.50	9.50				80	7.8	2.75	10.5	1.35											
3.5m	17.80	17.50	14.50	9.50				78	9.0	2.75	11.7	1.35											
4.0m	15.70	15.40	14.50	9.50	7.50	6.50		77	9.7	2.65	12.4	1.35											
4.5m	13.45	13.10	12.90	9.50	7.50	6.50		75	11.0	2.15	13.7	1.35											
5.0m	10.30	10.05	9.85	9.50	7.50	6.50	6.00	70	14.0	1.15	16.7	0.90											
6.0m	6.70	6.50	6.35	6.85	7.15	6.50	6.00	65	16.9	0.55	19.4	0.45											
7.0m	4.75	4.55	4.40	4.85	5.15	5.30	5.45	( ° )	64 ~ 80														
8.0m	3.45	3.30	3.15	3.60	3.80	4.00	4.10	A= Boom length B= Working radius C= Jib length D= Jib offset E= Boom angle = Boom angle range (for the unladen condition)															
9.0m		2.45	2.30	2.70	2.90	3.10	3.20																
10.0m		1.80	1.65	2.05	2.25	2.45	2.55																
12.0m			0.85	1.15	1.35	1.50	1.60																
14.0m				0.55	0.75	0.90	1.00																
15.0m							0.75																
( ° )	0 ~ 80	0 ~ 80	26 ~ 80	39 ~ 80	48 ~ 80	54 ~ 80	58 ~ 80																

Unit : ton

Over the sides : Outriggers minimum extended (2.08m)								
<div> <div>A</div> <div>B</div> </div>	9.8m	13.3m	16.9m	20.4m	23.9m	27.5m	31.0m	
3.0m	9.50	8.95	8.70	6.85				
3.5m	7.40	7.00	6.70	6.85	5.85			
4.0m	5.95	5.65	5.35	5.70	5.85	4.85		
4.5m	4.95	4.60	4.35	4.65	4.85	4.85		
5.0m	4.15	3.85	3.60	3.90	4.10	4.10	3.60	
6.0m	3.00	2.75	2.55	2.80	3.00	3.05	3.15	
7.0m	2.20	2.00	1.80	2.10	2.25	2.30	2.40	
8.0m	1.50	1.35	1.20	1.55	1.75	1.80	1.90	
9.0m		0.85	0.70	1.05	1.25	1.30	1.45	
( ° )	0 ~ 80	32 ~ 80	52 ~ 80	57 ~ 80	62 ~ 80	66 ~ 80	69 ~ 80	



**NOTES:**

- 1. The total rated loads shown are for the case where the outriggers are set horizontally on firm level 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 the slings and hooks (main hook: 230kg, auxiliary hook: 60kg) are included in the total rated loads shown.
- 3. Since the working radii are based on the actual values including the deflection of the boom, operations should be performed in accordance with the working radii.
- 4. Jib operations should be performed in accordance with the boom angle, irrespective of the boom length. The working radii are reference values for the case where the jib is mounted to a 31.0m boom.
- 5. Mark in the chart of total rated loads shows the boom elevation angle with no load.
- 6. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 2.9t for the main winch and 3.0 for the auxiliary winch.

A	9.8m	13.3m	16.9m	20.4m	23.9m	27.5m	31.0m	J
H	7	7	7	4	4	4	4	1

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

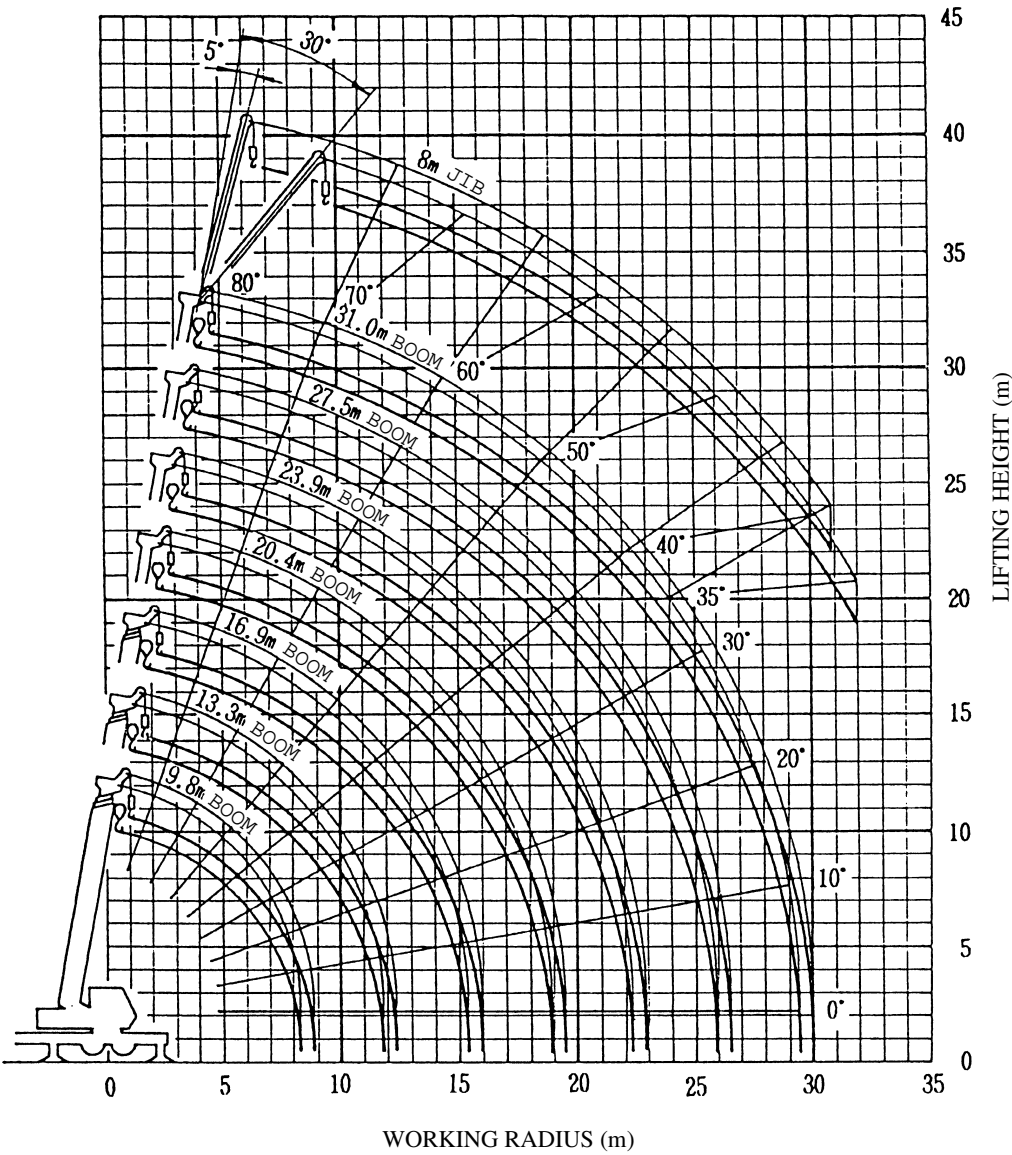
J= Jib/Single top

- 7. As a rule, free-fall operations should be performed only for lowering the hook alone. If a hoisted load must be lowered by free-fall operation, the load must be kept below 1/5 of the total rated load (the load per line must be 0.6t or less) and sudden braking operations must be avoided.
- 8. The total rated load for the single top shall be the value obtained by subtracting the weight of the hook mounted to the boom from the total rated load of the boom and must not exceed 3.0t.



TL-200M-5-10101  
TL-200M-5-20101

WORKING RADIUS - LIFTING HEIGHT



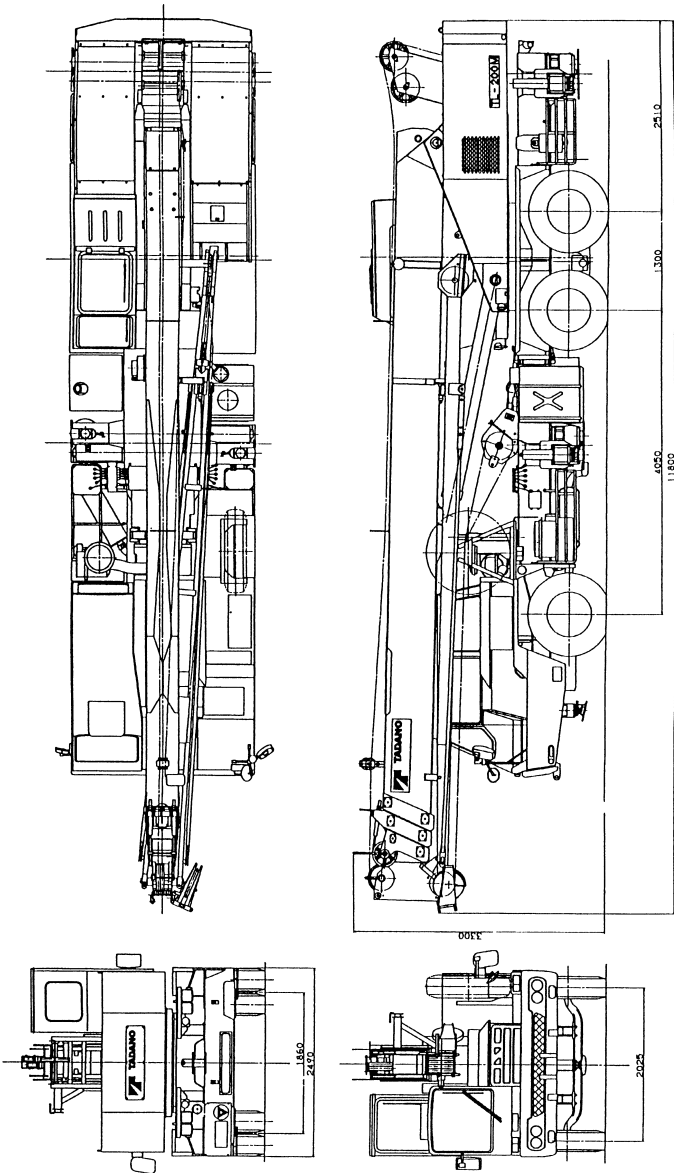
NOTES:

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 jacks are used (over 360°).





DIMENSIONS





TL-200M-5-20101

DIMENSIONS

