

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

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

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

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	2,040mm
Tread 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

<p>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</p>													
B \ A								C		31.0m Boom + 8.0m Jib			
	9.8m	13.3m	16.9m	20.4m	23.9m	27.5m	31.0m	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						
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						

A= Boom length
 B= Working radius
 C= Jib length
 D= Jib offset
 E= Boom angle
 = Boom angle range
 (for the unladen condition)

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				
B \ A	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	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)						
B \ A	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

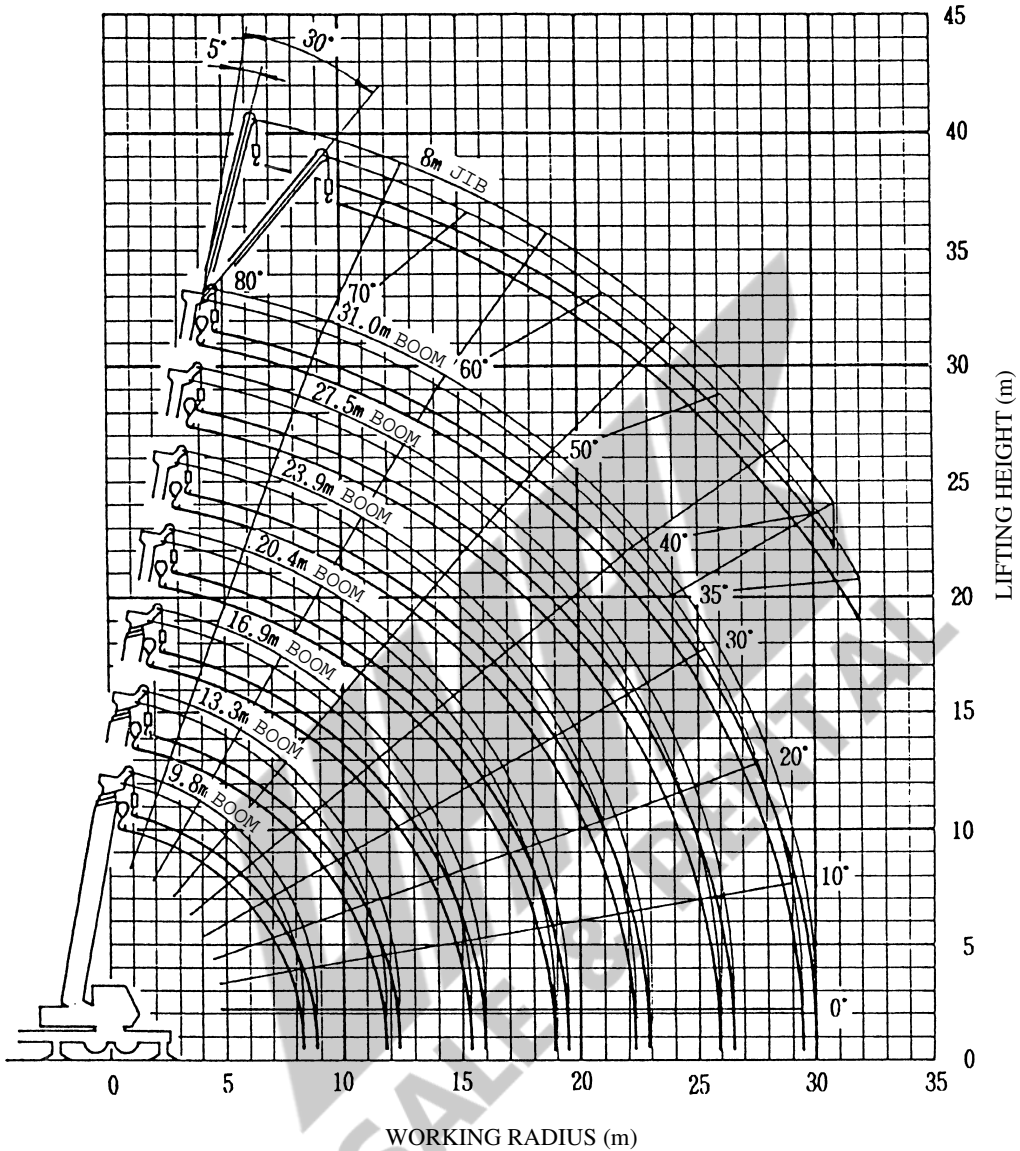
A= Boom length H= No. of part-lines

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.



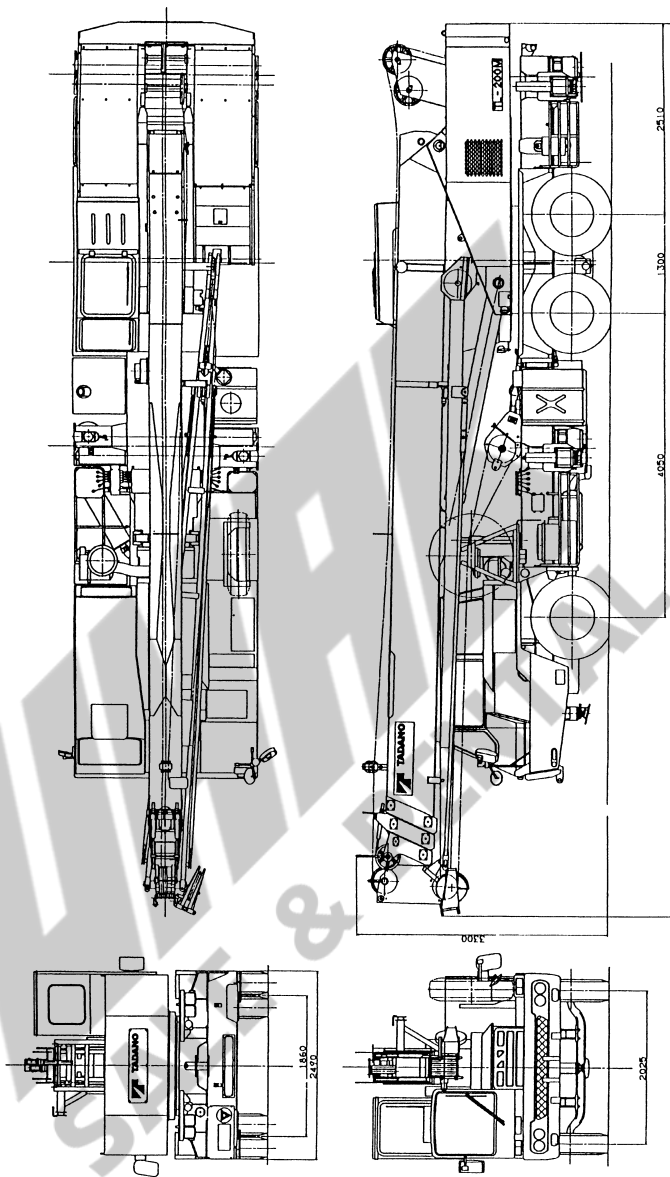
WORKING RADIUS - LIFTING HEIGHT



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



DIMENSIONS

