TRUCK CRANE

TL-250M

JAPANESE SPECIFICATIONS

TL

CARRIER MODEL	OUTLINE	SPEC. NO.
NISSAN DIESEL P-KG45S	1-Motor 2-Drum Winch (Standard Specifications)	TL-250M-2-10101
	2 Single Winches (Option)	TL-250M-2-10102

Control No. JA-01

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TL-250M-2-10101
TL-250M-2-10102

TL-250M

CRANE SPECIFICATIONS

CRANE CAPACITY

10.5m	Boom	25,000kg	at 3.5m	(8 part-line)
14.2m	Boom	20,000kg	at 4.5m	(7 part-line)
18.0m	Boom	16,000kg	at 5.0m	(7 part-line)
21.7m	Boom	11,000kg	at 7.0m	(4 part-line)
25.5m	Boom	10,000kg	at 7.0m	(4 part-line)
29.2m	Boom	9,000kg	at 7.0m	(4 part-line)
33.0m	Boom	7,000kg	at 8.0m	(4 part-line)
8.5m	Jib	3,000kg	at 75°	(1 part-line)
14.0m	Jib	2,000kg	at 77°	(1 part-line)
Single top		3,000kg		(1 part-line)

MAX. LIFTING HEIGHT
Boom 32.9m
Jib 46.7m

MAX. WORKING RADIUS
Boom 31.0m
Jib 37.0m

BOOM LENGTH
10.5m – 33.0m

BOOM EXTENSION
22.5m

BOOM EXTENSION SPEED
22.5m / 110s

JIB LENGTH
8.5m, 14.0m

MAIN WINCH SINGLE LINE SPEED
High range: 122m/min (4th layer)
Low range: 61m/min (4th layer)

MAIN WINCH HOOK SPEED
High range: 15.2m/min (8 part-line)
Low range: 7.6m/min (8 part-line)

AUXILIARY WINCH SINGLE LINE SPEED
High range: 104m/min (2nd layer)
Low range: 52m/min (2ndlayer)

AUXILIARY WINCH HOOK SPEED
High range: 104m/min (1 part-line)
Low range: 52m/min (1 part-line)

BOOM ELEVATION ANGLE
-3° – 80°

BOOM ELEVATION SPEED
-3° – 80° / 60s

SWING ANGLE
360° continue

SWING SPEED
3.1rpm

WIRE ROPE
Main Winch
16mm × 180m (Diameter×Length)
7×7+6×Fi(29) Class B ordinary · Z twist
Spin-resistant wire rope
Breaking strength 17.6t
Auxiliary Winch
16mm × 105m (Diameter×Length)
7×7+6×Fi(29) Class B ordinary · Z twist
Spin-resistant wire rope
Breaking strength 17.6t

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

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

JIB
2-staged swingaround boom extension which stores alongside boom base section
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 spur gear speed reducer.
With free-fall device.
Automatic brake (with foot brake for free-fall device)
1-Motor 2-Drum Winch ····· Standard Specifications
Two Single Winches ····· Option

BOOM ELEVATION
1 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 6.1m
Middle extended width 4.0m

FRONT JACK
Hydraulic operated type

MAX. OUTRIGGER LOAD
30.0t

HYDRAULIC PUMPS
3 gear pumps

HYDRAULIC OIL TANK CAPACITY
432 liters

SAFETY DEVICES
Automatic moment limiter (AML-K)
Over-winding cutout
Level gauge
Over front area control device
Working area control device
Hook safety latch
Winch drum lock
Hydraulic safety valve
Telescopic counterbalance valve
Elevation counterbalance valve
Jack pilot check valve
Front jack over load alarm

EQUIPMENTS
Crane cab heater
Boom angle indicator
Jib extending device
Radio
Fan

CARRIER SPECIFICATIONS

MANUFACTURER
NISSAN DIESEL MOTOR CO., LTD

CARRIER MODEL
P-KG45S

ENGINE
Model PE6 (with turbo)
Type 4-cycle, in-line 6-cylinder, direct-injection water-cooled diesel engine
Piston displacement 11,670cc
Max. output 280PS at 2,200rpm
Max. torque 110kg·m at 1,200rpm

CLUTCH
Dry single-plate coil spring type

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 steel pipe cross section

REAR AXLE
Full floating, cast torque rods

SUSPENSION
Front Laminated leaf spring type
Rear Equalizer and torque rods

STEERING
Recirculating ball screw type with linkage power assistance

BRAKE SYSTEM
Service Brake
2-circuit hydro-pneumatic type, 8-wheels internal expanding brake
Parking Brake
Mechanically operated, 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 (120Ah)

FUEL TANK CAPACITY
200 liters

CAB
Two-man type

TIRES
Front 11.00-20-14PR
Rear 10.00-20-14PR

STANDARD EQUIPMENTS
Car heater
Car radio

GENERAL DATA

DIMENSIONS

Overall length	12,410mm
Overall width	2,490mm
Overall height	3,340mm
Wheel base	1,520mm+3,530mm+1,300mm=6,350mm
Tread Front	2,020mm
Rear	1,860mm

WEIGHTS

Gross vehicle weight	
Total	27,780kg
Front	12,300kg
Rear	15,480kg

PERFORMANCE

Max. traveling speed	60km/h
Gradeability (tan θ)	0.42
Min. turning radius	10.5m

TOTAL RATED LOADS

(1)

Unit : ton

· Outriggers fully extended + Front jack (360°)
· Outriggers fully extended (Over rear · Over sides)

B (m) \ A	10.5 m	14.2 m	18.0 m	21.7 m	25.5 m	29.2 m	33.0 m
3.0	25.00	20.00	16.00				
3.5	25.00	20.00	16.00	11.00			
4.0	22.90	20.00	16.00	11.00	10.00		
4.5	21.00	20.00	16.00	11.00	10.00		
5.0	19 40	18.40	16.00	11.00	10.00	9.00	
5.5	17.70	16.80	14.75	11.00	10.00	9.00	7.00
6.0	16.20	15.30	13.70	11.00	10.00	9.00	7.00
6.5	14.80	13.90	12.80	11.00	10.00	9.00	7.00
7.0	13.70	12.65	11.95	11.00	10.00	9.00	7.00
7.5	12.55	11.60	11.25	10.75	9.40	8.65	7.00
8.0	11.50	10.65	10.55	10.20	8.90	8.20	7.00
8.5	10.20	9.85	9.85	9.65	8.45	7.80	6.60
9.0		9.00	8.80	9.20	8.05	7.45	6.25
10.0		7.35	7.20	7.70	7.30	6.75	5.70
12.0		5.05	4.95	5.45	5.75	5.65	4.80
12.5		4.60	4.55	5.00	5.30	5.45	4.55
14.0			3.55	4.00	4.25	4.45	4.10
16.0			2.65	3.00	3.20	3.45	3.50
18.0				2.30	2.50	2.70	2.80
20.0				1.70	1.90	2.10	2.20
22.0					1.45	1.60	1.70
23.5					1.20	1.35	1.45
24.0						1.25	1.35
26.0						0.95	1.05
27.5						0.70	0.90
28.0							0.80
30.0							0.60
31.0							0.45

E (°) \ C / D	8.5 m		14.0 m	
	5°	30°	5°	30°
80	3.00	1.60	2.00	0.90
78	3.00	1.60	2.00	0.90
77	3.00	1.60	2.00	0.85
76	3.00	1.60	1.92	0.80
75	3.00	1.55	1.81	0.77
70	2.28	1.36	1.40	0.69
65	1.85	1.21	1.08	0.63
60	1.57	1.10	0.88	0.58
55	1.16	1.00	0.74	0.53
50	0.88	0.73	0.62	0.45
45	0.51	0.44	0.38	0.32
43	0.40	0.34	0.29	0.25
41	0.29	0.24		

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 (main winch hook: 280kg, auxiliary winch hook: 60kg) 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 chart below shows the standard number of part lines for each boom length. The load per line should not exceed 3.2t for the main winch and 3.0t for the auxiliary winch.

A	10.5 m	14.2 m	18.0 m	21.7 m	25.5 m	29.2 m	33.0 m	J
H	8	7	7	4	4	4	4	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 0.6 ton for both the main winch and the auxiliary winch.
6. The total rated loads for the single top are obtained by subtracting the corresponding values below from the total rated load of the main boom and must not exceed 3.0t.

A	10.5 m	14.2 m	18.0 m	21.7 m	25.5 m	29.2 m	33.0 m
Q	0 kg	100 kg	100 kg	200 kg	200 kg	250 kg	250 kg

A = Boom length Q = Subtracted load

(2) Unit : ton

· Outriggers middle extended (360°)
· Outriggers fully extended (Over front)

B (m) \ A	10.5 m	14.2 m	18.0 m	21.7 m	25.5 m	29.2m	33.0 m
3.0	25.00	20.00	16.00				
3.5	25.00	20.00	16.00	11.00			
4.0	22.00	20.00	16.00	11.00	10.00		
4.5	17.50	17.50	16.00	11.00	10.00		
5.0	14.00	13.80	13.60	11 00	10.00	9.00	
5.5	11.70	11.50	11.30	11.00	10.00	9.00	7.00
6.0	10.00	9.80	9.60	10.00	10.00	9.00	7.00
6.5	8.60	8.40	8.25	8.70	9.00	9.00	7.00
7.0	7.50	7.30	7.15	7.60	7.90	8.10	7.00
7.5	6.50	6.40	6.30	6.70	7.00	7.20	7.00
8.0	5.75	5.70	5.60	6.00	6.25	6.45	6.60
8.5	5.10	5.05	5.00	5.35	5.60	5.80	5.95
9.0		4.55	4.50	4.80	5.10	5.25	5.40
10.0		3.65	3.60	3.90	4.15	4.30	4.45
12.0		2.40	2.30	2.60	2.85	3.00	3.15
12.5		2.10	2.00	2.30	2.60	2.75	2.90
14.0			1.35	1.65	1.95	2.10	2.25
16.0			0.60	1.05	1.30	1.45	1.60
18.0				0.50	0.80	0.95	1.10
19.0					0.55	0.75	0.90

A = Boom length B = Working radius

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 (main winch hook: 280kg, auxiliary winch hook: 60kg) 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 chart below shows the standard number of part lines for each boom length. The load per line should not exceed 3.2t for the main winch and 3.0t for the auxiliary winch.

A	10.5m	14.2m	18.0m	21.7m	25.5m	29.2m	33.0m	Single top
H	8	7	7	4	4	4	4	1

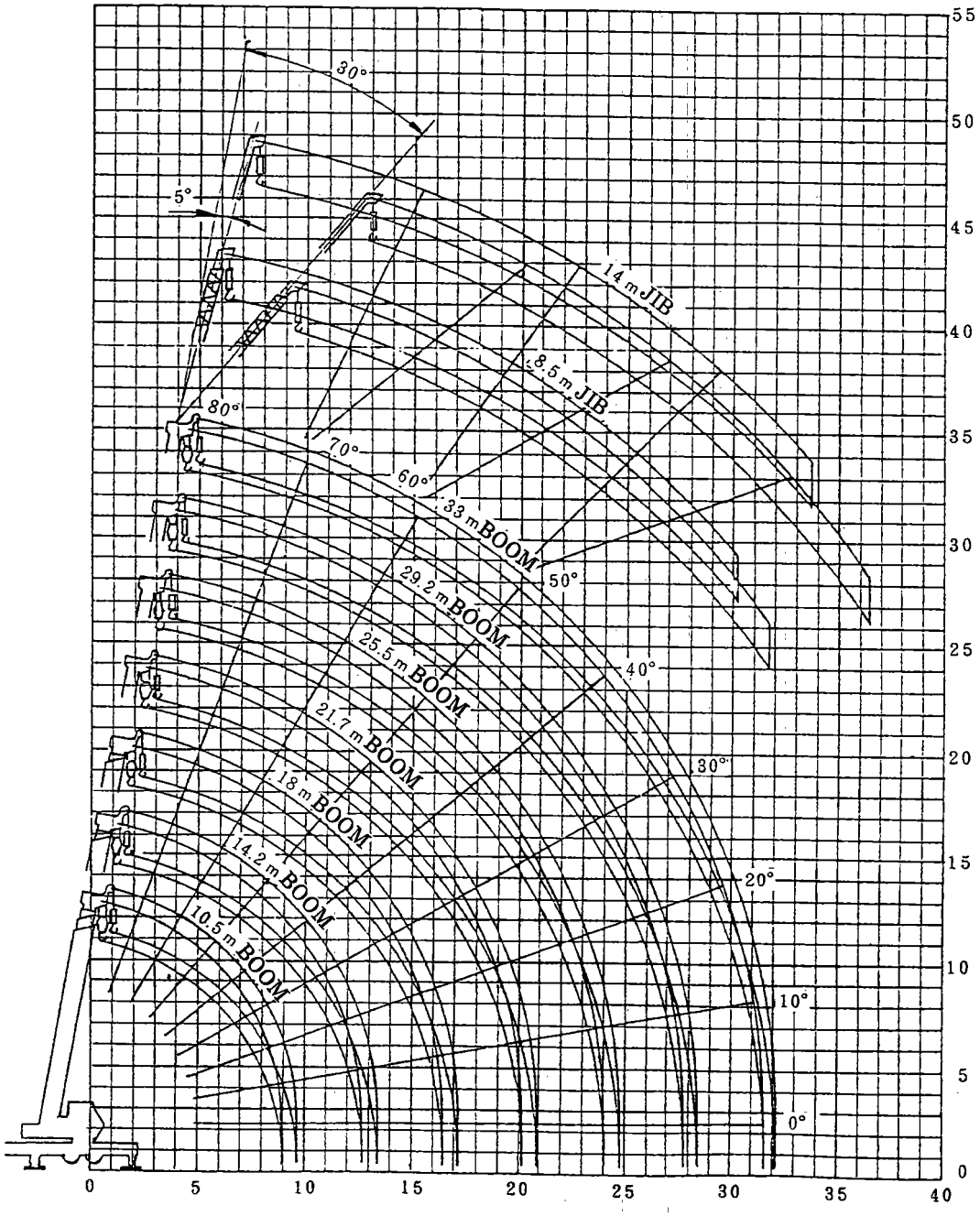
A = Boom length H = No. of part-line

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 0.6 ton for both the main winch and the auxiliary winch.
6. The total rated loads for the single top are obtained by subtracting the corresponding values below from the total rated load of the main boom and must not exceed 3.0t.

A	10.5m	14.2m	18.0m	21.7m	25.5m	29.2m	33.0m
Q	0kg	100kg	100kg	200kg	200kg	250kg	250kg

A = Boom length Q = Subtracted load

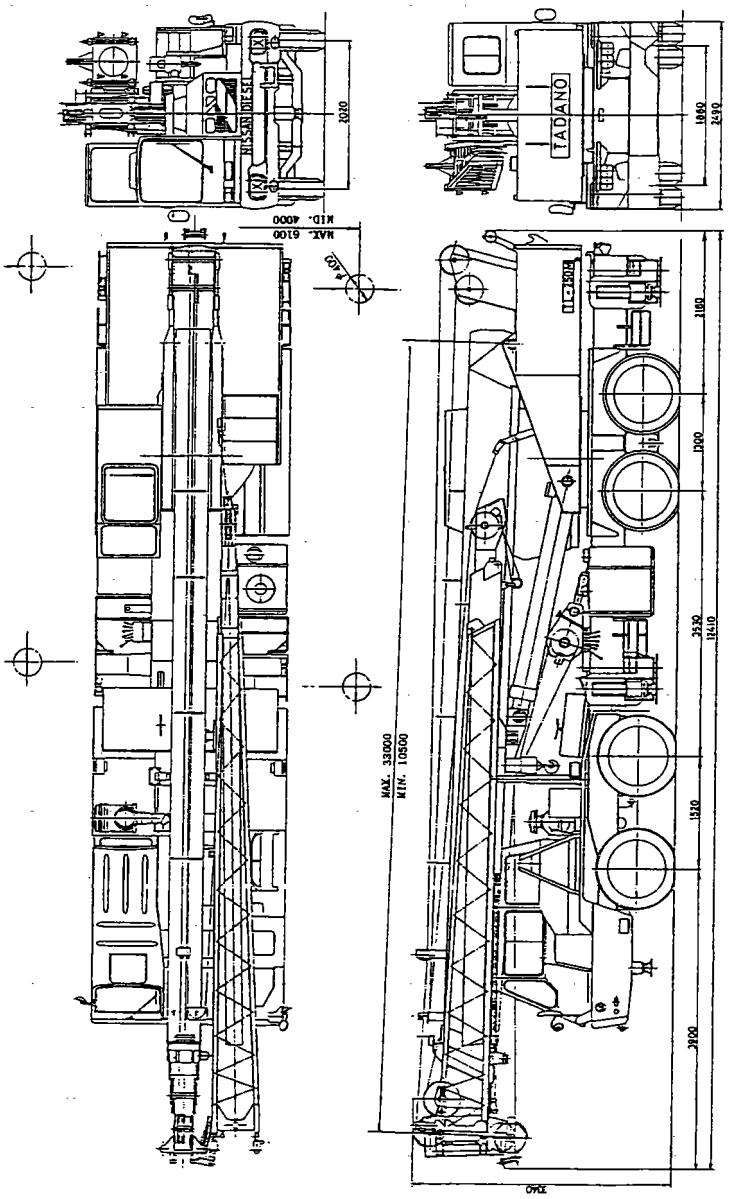
WORKING RADIUS - LIFTING HEIGHT



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 jack are used (over 360°).

DIMENSIONS (1/100)



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