

TRUCK CRANE

TL-160M

JAPANESE SPECIFICATIONS

CARRIER MODEL	OUTLINE	SPEC. NO.
NISSAN DIESEL K-KW30M	1-Motor 2-Drum Winch (Standard Specifications)	TL-160M-1-10101
	2 Single Winches	TL-160M-1-10102

Control No. JA-02

TL-160M

CRANE SPECIFICATIONS

MAXIMUM TOTAL RATED LOAD

Boom	10m	16,000kg	(6 part-line)
	17m	10,000kg	(6 part-line)
	24m	5,500kg	(4 part-line)
Jib	7.5m	2,500kg	(1 part-line)
Single top	0.6m	2,500kg	(1 part-line)

MAX. LIFTING HEIGHT

Boom	24.0m
Jib	31.6m

MAX. WORKING RADIUS

Boom	22.0m
Jib	29.9m

BOOM LENGTH

10m - 24m

BOOM EXTENSION

14m

BOOM EXTENSION SPEED

14m / 60s

JIB LENGTH

7.5m

MAIN WINCH SINGLE LINE SPEED

High range:	102m/min	(4th layer)
Low range:	51m/min	(1th layer)

MAIN WINCH HOOK SPEED

High range:	17m/min	(6 part-line)
Low range:	8.5m/min	(6 part-line)

AUXILIARY WINCH SINGLE LINE SPEED

(1-motor 2-drum winch)

High range:	94m/min	(2nd layer)
Low range:	47m/min	(2nd layer)

(2 single winches)

86m/min (2nd layer)

AUXILIARY WINCH HOOK SPEED

(1-motor 2-drum winch)

High range:	94m/min	(1 part-line)
Low range:	47m/min	(1 part-line)

(2 single winches)

86m/min (1 part-line)

BOOM ELEVATION ANGLE

-3° - 80°

BOOM ELEVATION SPEED

-3° - 80° / 51s

SWING ANGLE

360° continue

SWING SPEED

3.3 rpm

WIRE ROPE

Main Winch

Spin-resistant type
14mm X 140m (Diameter X Length)

Auxiliary Winch

Spin-resistant type
14mm X 75m (Diameter X Length)

BOOM

3-section fully hydraulically synchronized telescoping boom of box construction.

BOOM EXTENSION

1 double-acting hydraulic cylinder
1 wire rope type telescoping device

JIB

1-staged swingaround boom extensions.
Dual (5°, 30°) offset

SINGLE TOP

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

HOIST

Driven by hydraulic motor and via spur gear speed reducer. Power load lowering / free-fall lowering type
1-Motor 2-Drum WinchStandard Specifications)
2 single winchesOption

BOOM ELEVATION

1 double-acting hydraulic cylinders

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.

Full extended width 5.4m

Middle extended width 3.6m

FRONT JACK

Manual type

MAX. OUTRIGGER LOAD

20.3t

HYDRAULIC PUMPS

Type 3 gear pumps

HYDRAULIC OIL TANK CAPACITY

280 liters

SAFETY DEVICES

Automatic moment limiter (AML-U)

- 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

Boom angle indicator

Crane cab heater

OPTIONAL EQUIPMENTS

Oil cooler

Hydraulic oil temperature gauge

Winch drum rotation indicator

CARRIER SPECIFICATIONS

MANUFACTURER
NISSAN DIESEL MOTOR CO., LTD

CARRIER MODEL
K-KW30M

ENGINE
Model PE6
Type 4-cycle, in-line 6-cylinder, water-cooled diesel engine

Piston displacement 11,670cc
Max. output 230PS at 2,300rpm
Max. torque 83kg·m at 1,200rpm

CLUTCH
Dry single-plate coil spring type

TRANSMISSION
Constant-mesh gear
5-forward and 1-reverse 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, 6-wheels internal expanding brake
Parking Brake
Mechanically operated, duo-servo shoe type acting on drum at transmission case rear.
Auxiliary Brake
Exhaust brake

FRAME
Lattice type, box type, air-welded structure

ELECTRIC SYSTEM
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 11,550mm
Overall width 2,490mm
Overall height 3,290mm
Wheel base 3,950mm + 1,300mm = 5,250mm
Tread Front 2,020mm
Rear 1,860mm

WEIGHTS

Vehicle weight
Total 19,650kg
Front 5,370kg
Rear 14,280kg

Gross vehicle weight
Total 19,760kg
Front 5,500kg
Rear 14,260kg

PERFORMANCE

Max. traveling speed 70km/h
Gradeability (tan θ) 0.30
Min. turning radius (outermost wheel) 9.5m

TOTAL RATED LOADS

(1)

Unit : ton

- Outriggers fully extended + Front jack (360°) - Outriggers fully extended (Over rear · Over sides)							
B (m)	A	10 m	17 m	24 m	C	7.5 m	
						E (°)	Offset 5°
3.0		16.00	10.00		80	2.50	1.25
3.5		16.00	10.00		75	2.50	1.25
4.0		14.15	10.00	5.50	72	2.50	1.25
4.5		12.60	10.00	5.50	70	2.34	1.22
5.0		11.30	10.00	5.50	65	2.03	1.15
5.5		10.25	10.00	5.50	60	1.80	1.09
6.0		9.30	9.50	5.50	55	1.62	1.05
7.0		7.40	7.60	5.50	50	1.29	1.02
7.6		6.50	6.65	5.50	45	1.00	0.94
8.0		6.00	6.15	5.25	40	0.78	0.76
9.0			5.15	4.65	35	0.63	0.61
10.0			4.35	4.15	30	0.53	0.50
12.0			3.15	3.25	25	0.46	0.40
14.0			2.35	2.45	20	0.40	0.32
15.0			2.05	2.15	15	0.34	0.25
16.0				1.90	10	0.29	
18.0				1.45	5	0.25	
20.0				1.15			
22.0				0.85			

A = Boom length B = Working radius C = Jib length E = Boom angle

NOTES:

1. The total rated loads shown are for the case when the outriggers are set horizontally on firm ground.
2. The weights of slings and hooks (main winch hook: 170kg, auxiliary winch hook: 50kg) 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 2.7t for the main winch and 2.5t for the auxiliary winch.

A	10 m	17 m	24 m	J
H	6	6	4	1

A = Boom length H = No. of part-line J = Jib / Single top

5. The total rated loads for free-fall operations is 1/3 of the total rated loads given above. The load per line should not exceed 0.9 ton for the main winch and 0.8 ton for 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 boom and must not exceed 2.5t.

A	10 m	17 m	24 m
Q	0 kg	0 kg	50 kg

A = Boom length Q = Subtracted load

7. Except for over rear and over side cases, the "over front" range performance applies when the front jack is stored while the outriggers are fully extended.

(2)

Unit : ton

· Outriggers middle extended (360°) · Outriggers fully extended (Over front)			
B (m) \ A	10 m	17 m	24 m
3.0	16.00	10.00	
3.4	16.00	10.00	
3.5	15.50	10.00	
4.0	12.00	10.00	5.50
4.4	10.00	10.00	5.50
4.5	9.45	9.65	5.50
5.0	7.70	8.10	5.50
6.0	5.40	5.80	5.50
6.3	4.95	5.30	5.50
7.0	4.05	4.40	4.55
8.0	2.95	3.40	3.60
9.0		2.65	2.80
10.0		2.10	2.20
12.0		1.35	1.45
14.0		0.85	0.95
15.0		0.65	0.75
16.0			0.60
17.0			0.45

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.
2. The weights of slings and hooks (main winch hook: 170kg, auxiliary winch hook: 50kg) 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 2.7t for the main winch and 2.5t for the auxiliary winch.

A	10 m	17 m	24 m	Single top
H	6	6	4	1

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

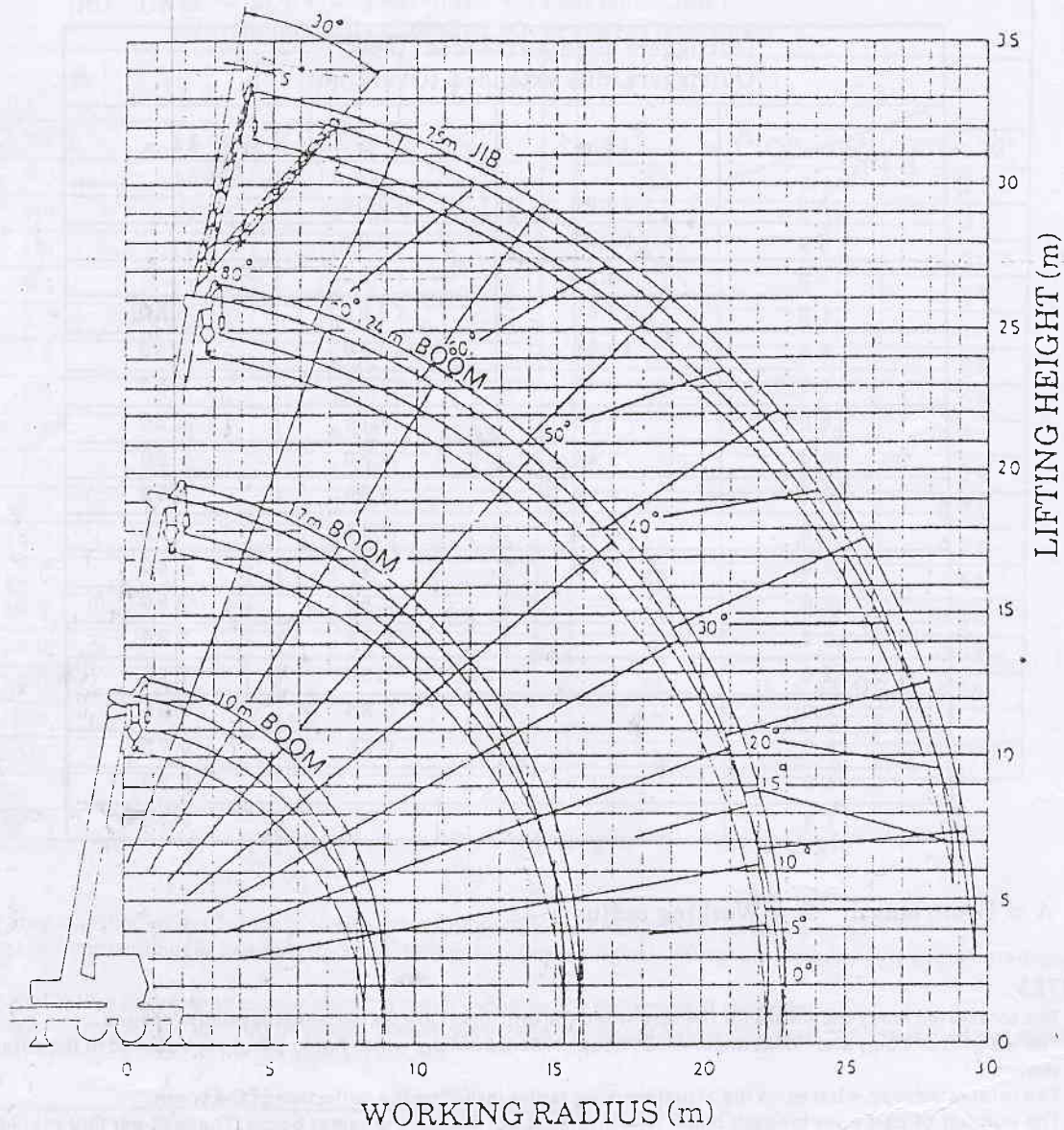
5. The total rated loads for free-fall operations is 1/3 of the total rated loads given above. The load per line should not exceed 0.9 ton for the main winch and 0.8 ton for the auxiliary winch.
6. The total rated loads for the single top are obtained by subtracting the corresponding values below from the total rated load of the boom and must not exceed 2.5t.

A	10 m	17 m	24 m
Q	0 kg	0 kg	50 kg

A = Boom length Q = Subtracted load

7. Except for over rear and over side cases, the "over front" range performance applies when the front jack is stored while the outriggers are fully extended.

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°).

