TADANO HYDRAULIC TRUCK CRANE

SPEC. SHEET NO. TL-300E-3-00107/EX-141

TL-300E

CARRIER : TC-4230

GENERAL DATA

CRANE CAPACITY	30,000 kg at 3.0 m
BOOM	4-section, 10.5m - 33.0m
DIMENSION	
Overall length	approx. 12,670 mm
Overall width	approx. 2,490 mm
Overall height	approx. 3,450 mm
MASS	
Gross vehicle mass	approx. 29,400 kg
— front	approx. 10,200 kg
— rear	approx. 19,200 kg
PERFORMANCE	
Max. travelling speed	computed 64 km/h
Gradeability (tanθ)	computed 35 %

CRANE SPECIFICATIONS

MODEL
TL-300E

CAPACITY
30,000 kg at 3.0 m

BOOM
4-section full length power telescoping boom of box construction with 5-sheaves at boom head. 3rd boom and top boom telescope synchronously by means of a double-acting cylinder, an extension cable and a retraction cable. Hydraulic cylinders fitted with holding valves.

Fully retracted length.....10.5 m
Fully extended length .....33.0 m
Extension speed.....22.5 m in 125 s

JIB
2-staged extension type.Triple offset (5° /25° /45°) type. Stored under base boom section. Single sheave at jib head.

Length .....8.7 m and 14.5 m

SINGLE TOP (AUXILIARY BOOM SHEAVE)
Single sheave. Mounted to main boom head for single line work.

ELEVATION
By a double-acting hydraulic cylinder, fitted with holding valve.

Elevation speed..... -3° to 80° in 70 s

TADANO LTD.

HOIST - Main winch

2-speed type with grooved drum driven by hydraulic axial piston motor through planetary winch speed reducer. Power load lowering and hoisting.
Equipped with automatic fail-safe brake with free-fall device by foot brake operation and counterbalance valve.
Hoist lever is fitted with a high-speed switch.
Controlled independently of auxiliary winch.

- Single line pull .....32.8 kN {3,350 kgf}
- Single line speed
  - High range.....110 m/min. (at the 4th layer)
  - Normal range .....59 m/min. (at the 4th layer)
- Wire rope.....Spin-resistant type
  - Diameter × length.....16 mm X 180 m

HOIST - Auxiliary winch

2-speed type with grooved drum driven by hydraulic axial piston motor through planetary winch speed reducer. Power load lowering and hoisting.
Equipped with automatic fail-safe brake with free-fall device by foot brake operation and counterbalance valve.
Hoist lever is fitted with a high-speed switch.
Controlled independently of main winch.

- Single line pull .....33.3 kN {3,400 kgf}
- Single line speed
  - High range.....95 m/min. (at the 2nd layer)
  - Normal range .....50 m/min. (at the 2nd layer)
- Wire rope.....Spin-resistant type
  - Diameter x length .....16 mm x 105 m

SWING

Hydraulic axial piston motor driven through planetary swing speed reducer. Continuous 360° full circle swing on ball bearing slew ring. TADANO Twin Swing System enable to select power-controlled or free swing. Swing lever is fitted with a horn switch.
Equipped with hand-operated swing brake.

- Swing speed.....2.5 min^{-1} {rpm}

HYDRAULIC SYSTEM

- Pumps .....Quadruple gear pump driven by carrier engine through P.T.O.
- Control valves .....Multiple valves actuated by hand levers with integral pressure relief valves.
- Circuit .....Equipped with air cooled type oil cooler.
- Hydraulic oil tank capacity ...approx. 430 liters
- Filters .....Return line filter

CRANE CONTROL

By 5 control levers based on ISO standard layout.

CAB

Steel construction with sliding door access and safety glass windows opening at sides, rear and roof. Cloth covered reclining seat with headrest is height-adjustable and back-and-forth adjustable.

TADANO Automatic Moment Limiter (Model: AML-L)

Main unit in crane cab gives audible and visual warning of approach to overload. Automatically cuts out crane motions before overload. With working range limit function. Working area for each outrigger position is given separately.
Nine functions are displayed.
Digital liquid crystal display:

- Either Boom angle or moment %
- Either boom length or potential hook height
- Either Actual working radius or swing angle
- Actual hook load
- Permissible load
- Either jib offset angle or number of parts line of rope
- Boom position indicator
- Outrigger position indicator

Bar graphical display:

- Either moment as percentage or main hydraulic pressure and accumulator pressure (Display changes by alternation key.)

OUTRIGGERS

4 hydraulically operated outriggers. Each outrigger controlled simultaneously or independently from either side of carrier.
Equipped with sight level gauges.
Floats mounted integrally with the jacks retract to within vehicle width. All cylinders fitted with pilot check valves.

- Extended width
  - Fully .....6,100 mm
  - Middle .....4,000 mm
  - Minimum .....2,080 mm
- Float size (Diameter) .....400 mm

FRONT JACK

A fifth hydraulically operated outrigger jack. Mounted to the front frame of carrier to permit 360° lifting capabilities. Hydraulic cylinder fitted with pilot check valve.

- Float size (Diameter) .....260 mm

COUNTERWEIGHT

Integral with swing frame.

- Mass .....3,400 kg

NOTE :

Each crane motion speed is based on unladen conditions.

RATED LIFTING CAPACITIES

SPEC. SHEET NO. TL-300E-3-00107/EX-141

MANUFACTURER
TADANO LTD.

MODEL
TC-4230(Left hand steering, 8 X 4)

ENGINE
Model .....NISSAN PE6T
Type .....4 cycle, 6 cylinder in line, direct injection, water cooled diesel engine with turbocharger.
Piston displacement.....11,670 cm^3
Bore X Stroke.....133 mm X 140 mm
Max. output (JIS) .....202 kW {275 PS} at 2,300 min^{-1} {rpm}
Max. torque (JIS) .....961 N･m {98 kgf･m} at 1,200 min^{-1} {rpm}

CLUTCH
Dry single plate, hydraulically operated clutch release mechanism with air assisted booster.

TRANSMISSION
6 forward and 1 reverse speeds, synchromesh on 2nd－6th gears, and constant-mesh on 1st and reverse gears.

AXLES
Front.....Reverse-elliot type, I-beam.
Rear .....Full floating type.

SUSPENSION
Front.....Semi-elliptic leaf springs.
Rear .....Equalizer beams and torque rods.

STEERING
Recirculating ball screw type with linkage power assistance.

BRAKE SYSTEM
Service .....Foot operated full air brake on all wheels, dual air line system, internal expanding leading and trailing shoe type.
Parking .....Mechanically operated by hand brake lever.
Internal expanding duo-servo shoe type acting on drum at transmission case rear.
Auxiliary.....Electro-pneumatic operated exhaust brake.
Emergency .....Pneumatically controlled spring brake, acting on all rear axles.

TIRES
Front.....11R22.5 148 / 145L, Single X 4
Rear .....11R22.5 148 / 145L, Dual X 4
Spare.....11R22.5 148 / 145L, X 1

CAB
Steel construction, one sided 2-man type.
Driver's seat .....Adjustable suspension type.

ELECTRIC SYSTEM
24 V DC. 2 batteries of 12 V (JIS) 115F51, 96 Ah at 5-hour rate
Alternator.....24 V-50 A

FUEL TANK CAPACITY
300 liters

TURN RADIUS
Min. turning radius
(at center of extreme outer tire) .....10.5 m

EQUIPMENT

FOR CRANE

Standard Equipment
30 t capacity, hook block (4 sheaves)
3.4 t capacity, hook block (swivel hook)
Control pedals for telescoping and auxiliary winch
3 working lights
External lamp (AML)
Winch drum mirror
Sun visor
Cab floor mat

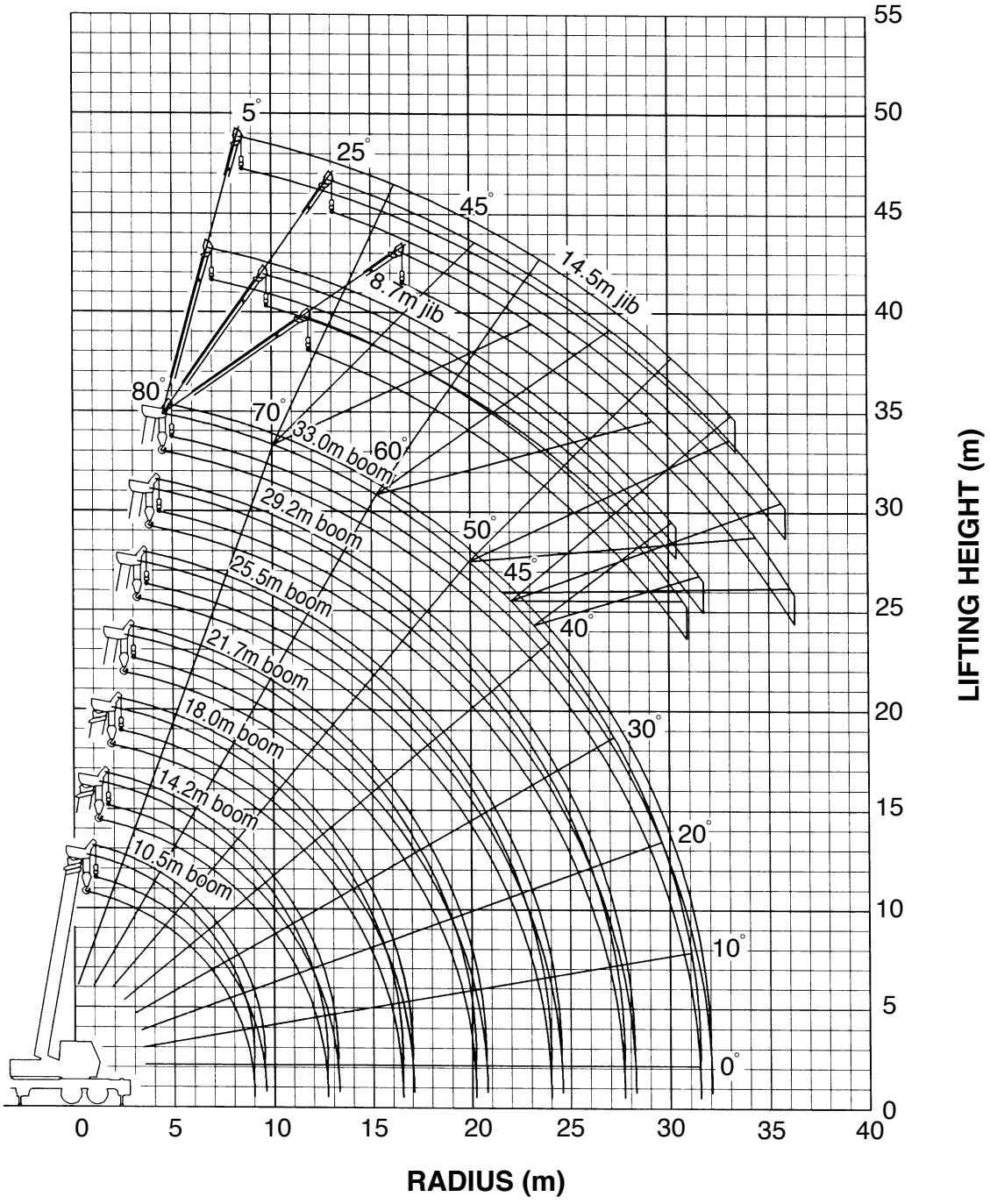
Optional Equipment
☐ Winch drum rotation indicator for main and auxiliary winch
☐ Cable follower
☐ Electric fan
☐ Cab heater (Diesel fuel type)
☐ Cab cooler (Refrigerant: R134a)

FOR CARRIER

Standard Equipment
Fan clutch : Viscous-type
Intake air heater
Overheating warning buzzer
Cooling water level warning buzzer
Engine over-run alarm
PTO hour meter
Passenger seat
Seat belt : 3 point type for driver, 2 point type for passenger
Tilting-telescoping steering wheel
Windshield wiper (with intermittent wiping) and washer
Window glass : Tinted, Infrared and Ultraviolet rays absorption
Tachometer
Low air pressure warning buzzer
AM/FM radio
Car heater (Hot water type) with defroster
Third differential gear lock
Speedometer (with odometer)
Sun visor
Spare tire carrier with lock key
Tool box with lock key
Fuel tank cap with lock key
Back-up light
Back-up alarm
Air filter warning light (Instrument cluster)
Towing hooks (Front, Eye type and Rear, hook type)
Ashtray
Cigarette lighter
Owner's tool set
Cab floor mat
Front fog lamp

Optional Equipment
☐ Car cooler (Refrigerant:R134a)
☐ Tire inflator

WORKING RANGE



NOTE :

The above lifting height and boom angle are based on a straight (unladen) boom, and allowance should be made for boom deflection obtained under laden conditions.

Unit : kg

Outriggers fully extended 6.1m							
Front jack extended (360°) Front jack not extended (Over sides and rear)							
B \ A	10.5	14.2	18.0	21.7	25.5	29.2	33.0
3.0	30,000	20,000	16,000				
3.5	25,400	20,000	16,000	12,000			
4.0	22,900	20,000	16,000	12,000	11,500		
4.5	21,000	20,000	16,000	12,000	11,500		
5.0	19,400	18,400	16,000	12,000	11,500	9,000	
5.5	17,700	16,800	14,750	12,000	11,500	9,000	7,000
6.0	16,200	15,300	13,700	12,000	11,500	9,000	7,000
7.0	13,700	12,650	11,950	11,000	10,000	9,000	7,000
8.0	11,400	11,000	10,550	10,200	8,900	8,200	7,000
9.0		9,000	9,000	9,200	8,050	7,450	6,250
10.0		7,300	7,300	7,700	7,300	6,750	5,700
12.0		5,050	5,050	5,450	5,700	5,650	4,800
14.0			3,600	4,000	4,250	4,400	4,100
16.0			2,550	2,950	3,200	3,400	3,450
18.0				2,200	2,450	2,650	2,800
20.0				1,550	1,850	2,050	2,200
22.0					1,350	1,550	1,750
24.0						1,200	1,350
26.0						850	1,000
28.0							700
30.0							500

Unit : kg

Outriggers fully extended 6.1m						
Front jack extended (360°) Front jack not extended (Over sides and rear)						
C	8.7 m jib			14.5 m jib		
	5° offset	25° offset	45° offset	5° offset	25° offset	45° offset
80°	3,000	1,700	1,000	2,000	900	600
77°	3,000	1,700	1,000	2,000	900	600
76°	3,000	1,700	1,000	1,850	900	600
75°	3,000	1,670	960	1,740	870	570
70°	2,200	1,440	860	1,350	800	530
65°	1,750	1,250	800	1,100	720	490
60°	1,400	1,100	750	900	640	460
55°	1,100	950	700	730	560	430
50°	700	650	600	550	450	400
46°	450	450	400	350	300	250
45°	400	400	350	300	250	
42°	250	250				

A : Boom length (m)
B : Load radius (m)
C : Boom angle

RATED LIFTING CAPACITIES

SPEC. SHEET NO. TL-300E-3-00107/EX-141

Unit : kg

Outriggers fully extended 6.1m (Over front) Outriggers extended to middle 4.0m (360°)							
B \ A	10.5	14.2	18.0	21.7	25.5	29.2	33.0
3.0	27,000	20,000	16,000				
3.5	23,000	20,000	16,000	12,000			
4.0	19,500	20,000	16,000	12,000	11,500		
4.5	16,600	17,100	16,000	12,000	11,500		
5.0	14,250	14,200	13,800	12,000	11,500	9,000	
5.5	11,900	11,800	11,600	12,000	11,500	9,000	7,000
6.0	10,100	10,000	9,900	10,300	10,300	9,000	7,000
6.5	8,650	8,600	8,450	8,950	9,200	9,000	7,000
7.0	7,400	7,300	7,150	7,700	8,050	8,100	7,000
7.5	6,350	6,250	6,150	6,650	7,000	7,200	7,000
8.0	5,500	5,400	5,300	5,800	6,100	6,300	6,400
9.0		4,100	4,000	4,450	4,700	4,900	5,050
10.0		3,200	3,050	3,500	3,750	3,950	4,050
12.0		1,850	1,750	2,150	2,400	2,600	2,700
14.0			900	1,300	1,550	1,750	1,850
15.0				1,000	1,200	1,400	1,500
16.0					900	1,100	1,250
17.0						900	1,000
18.0							750

Unit : kg

Outriggers fully extended 6.1m (Over front) Outriggers extended to middle 4.0m (360°)						
C	8.7 m jib			14.5 m jib		
	5° offset	25° offset	45° offset	5° offset	25° offset	45° offset
80°	3,000	1,700	1,000	2,000	900	600
77°	3,000	1,700	1,000	2,000	900	600
76°	3,000	1,700	1,000	1,850	900	600
75°	2,650	1,670	960	1,740	870	570
70°	1,450	1,150	860	1,100	800	530
66°	800	650	600	600	450	350
65°	650	550	500	500		

A : Boom length (m)
B : Load radius (m)
C : Boom angle

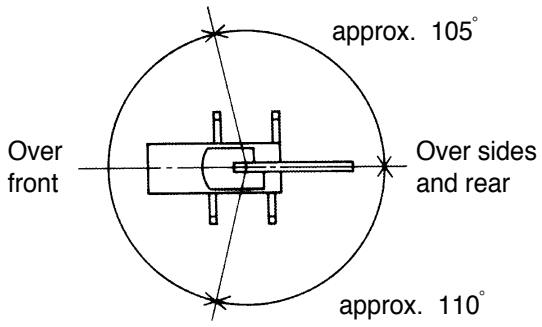
Unit：kg

Outriggers extended to minimum 2.08 m (360°)	
B \ A	10.5
3.0	7,000
3.5	5,300
4.0	4,200
4.5	3,500
5.0	2,900
5.5	2,400
6.0	2,000
6.5	1,700
7.0	1,400
7.5	1,200
8.0	1,000

A : Boom length (m)

B : Load radius (m)

WORKING AREA



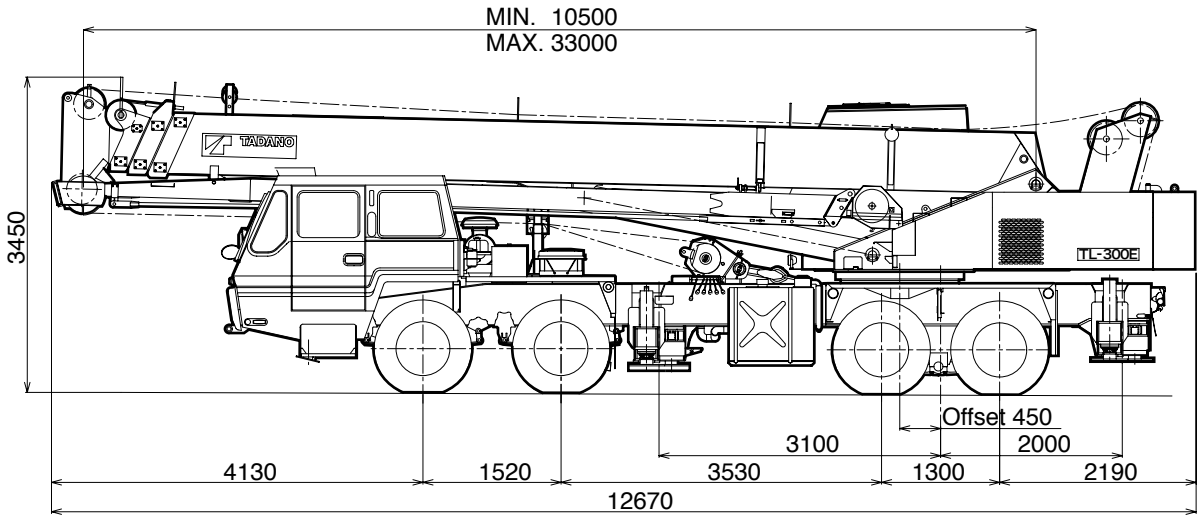
NOTES :

1. Rated lifting capacities shown in the table are based on condition that crane is set on firm ground horizontally. Those above bold lines are based on crane strength and those below, on its stability.
2. Rated lifting capacities below bold lines do not exceed 75 % of tipping load.
3. Each rated lifting capacity includes mass of the hook (280 kg for 30 ton capacity, 70 kg for 3.4 ton capacity), and slings.
4. Without front jack extended, when the boom is within the Over-front, rated lifting capacities are different from those for the boom in the Over-side and Over-rear.
5. Standard number of part line for each boom length is as shown below. Load per line should not surpass 32.8 kN {3,350 kgf} for main winch and 33.3 kN {3,400 kgf} for auxiliary winch.

Boom length (m)	10.5m	14.2m	18.0m	21.7m	25.5m	29.2m	33.0m	Jib/Single top
No. of part line	9	7	6	4	4	4	4	1

6. For rated lifting capacity of single top, reduce the main hook mass from the relevant boom rated lifting capacity. Rated lifting capacity of single top should not exceed 3,400 kg.
7. Free-fall operation should be performed without any load on the hook.

DIMENSION



Overall width.....2,490 mm
Tail swing radius.....3,350 mm
Tread (track) - Front .....2,050 mm
- Rear .....1,860 mm

Specifications are subject to change without notice.

TADANO

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