TADANO CITY CRANE

SPEC. SHEET No. TR-200E-3-00101/EU-11

CREVO 200EXC

MODEL TR-200EXC

GENERAL DATA

CRANE CAPACITY	20,000 kg at 2.5 m	
BOOM	6-section, 6.5 m 27.5 m	
DIMENSIONS		
Overall length	approx.	8,680 mm
Overall width	approx.	2,200 mm
Overall height	approx.	3,170 mm
MASS		
Gross vehicle mass	approx.	19,895 kg
- front axle	approx.	9,950 kg
- rear axle	approx.	9,945 kg
PERFORMANCE		
Max. travelling speed	computed	55 km/h
Gradeability (tan θ)	computed	60% (at stall)

CRANE SPECIFICATIONS

CAPACITY
20,000 kg at 2.5 m

BOOM
6-section full length power telescoping boom of box construction with 3 sheaves at boom head. 4th, 5th and top boom section, as well as 2nd and 3nd boom section, telescope synchronously by means of a double-acting cylinder, extension cables and retraction cables.
Hydraulic cylinders fitted with holding valves.
Fully retracted length ……6.5 m
Fully extended length ……27.5 m
Extension speed ……21 m in 87 s

JIB
Single stage. Triple offset (5°/25°/45°) type. Single sheave at jib head.
Stored under base boom section.
Length ……3.5 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 …… −2° to 82° in 35 s

TADANO LTD.

CRANE SPECIFICATIONS

SPEC. SHEET No. TR-200E-3-00101/EU-11

HOIST – Main winch
Grooved drum driven by hydraulic axial piston motor through winch speed reducer. Power load lowering and hoisting.
Equipped with automatic fail-safe brake and counterbalance valve.
Controlled independently of auxiliary winch.

Single line pull	28.0 kN (2,860 kgf)
Single line speed	123 m/min. (at the 5th layer)
Wire rope	No-spin type
Diameter x length	14 mm x 155 m

HOOK BLOCK – 20 ton capacity
3 sheaves, swivel type hook with safety latch.

HOIST – Auxiliary winch
Grooved drum driven by hydraulic axial piston motor through winch speed reducer. Power load lowering and hoisting.
Equipped with automatic fail-safe brake and counterbalance valve.
Controlled independently of main winch.

Single line pull	29.4 kN (3,000 kgf)
Single line speed	107 m/min. (at the 3rd layer)
Wire rope	No-spin type
Diameter x length	14 mm x 72 m

HOOK BLOCK – 3 ton capacity
Swivel hook with safety latch for single line use.

SWING
Hydraulic piston motor driven through planetary swing speed reducer. Continuous 360° full circle swing on ball bearing slew ring.
Equipped with spring loaded swing brake.

Swing speed	2.9 min^{-1} {rpm}

HYDRAULIC SYSTEM

Pumps	Two variable piston pump for telescoping, elevating and winches. Tandem gear pump for swing, steering and accumulator.
Control valves	Multiple valves actuated by pilot pressure with integral pressure relief valves.
Circuit	Equipped with air cooled type oil cooler. Oil pressure appears on AML display for main circuit and accumulator.
Hydraulic oil tank capacity	approx. 293 liters
Filters	Return line filter

CAB
Both crane and drive operations can be performed from cab mounted on rotating superstructure. One sided one-man type, steel construction cab with safety glass, sliding door access and windows opening at side and rear, 3-way adjustable, shoulder-supportable, cloth-covered operator's seat.

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 (including swing motion) before overload. With working range (load radius and/or boom angle and/or tip height and/or swing range) limit function.
Eight functions are constantly displayed.
Digital liquid crystal display:
- Boom angle
- Either boom length or potential hook height*
- Either actual load radius or swing angle*
- Actual hook load
- Permissible load
- Either jib offset angle or number of parts of line of rope*
- Boom position indicator
- Either outriggers position or on-tire indicator

Bar graphical display:
- Either moment as percentage or main hydraulic pressure and accumulator pressure.*

* : Display changes by alternation key.

OUTRIGGERS
Hydraulically operated H-type outriggers. Each outrigger controlled simultaneously or independently from the cab. Equipped with sight level gauge. Floats mounted integrally with the jacks retract to within vehicle width.
All jack cylinders fitted with pilot check valves.
Equipped with extension width detector for each outrigger.
Extended width

Fully	5,200 mm
Middle	4,800 mm/4,400 mm/3,200 mm
Minimum	1,790 mm
Float size (Diameter)	400 mm

NOTE :
Each crane motion speed is based on unladen conditions.

CARRIER SPECIFICATIONS

SPEC. SHEET No. TR-200E-3-00101/EU-11

TYPE
Rear engine, right-hand steering, driving axle 2-way selected type (by manual switch).
- 4 x 2 front drive
- 4 x 4 front and rear drive

FRAME
High-tensile steel, all welded box construction.

ENGINE
Model.....MITSUBISHI 6D16TUA
Type.....4 cycle, turbo charged, 6 cylinder in line, direct injection, water cooled diesel engine.
Piston displacement...7,546 cm³
Bore x Stroke.....118 mm x 115 mm
Max. output
.....158 kW (215 PS) at 2,800 min^{-1} {rpm}
Max. torque
.....706 N•m (72 kgf•m) at 1,250 min^{-1} {rpm}

TRANSMISSION
Full automatic transmission.
Torque converter (with automatic lock up device at forward 2nd, 3rd and 4th of High range) driving full powershift.
High range.....4 forward and 1 reverse speeds.
Low range.....4 forward and 1 reverse speeds.

AXLES
Front.....Full floating type, steering and driving axle with planetary reduction.
Rear.....Full floating type, steering and driving axle with planetary reduction.

STEERING
Hydraulic power steering controlled by steering wheel.
4 steering modes available:
- 2-wheel front
- 2-wheel rear
- 4-wheel coordinated
- 4-wheel crab

SUSPENSION
Front.....Semi-elliptic leaf springs with hydraulic lockout device.
Rear .....Semi-elliptic leaf springs with hydraulic lockout device.

BRAKE SYSTEM
Service.....Air over hydraulic disc brakes on all 4 wheels.
Parking.....Spring operated air released brake acting on input shaft of front axle.
Auxiliary .....Exhaust brake and eddy current retarder.

ELECTRIC SYSTEM
24 V DC. 2 batteries of 12 V-120 Ah capacity.

FUEL TANK CAPACITY
250 liters

TIRES
Front .....325/95 R24 161E ROAD, Single x 2
Rear.....325/95 R24 161E ROAD, Single x 2

TURN RADIUS
Min. turning radius (at center of extreme outer tire)
2-wheel steering.....8.7 m
4-wheel steering.....5.1 m

EQUIPMENT

STANDARD EQUIPMENT
Automatic moment limiter (AML-L)
External lamp (AML)
Pendant type over-winding cutout
Winch automatic fail-safe brake
Over-unwinding prevention
Hook stowing device (Mechanically stowed beneath boom top portion)
Hook safety latch
Pilot check valves
Holding valves
Counterbalance valves
Hydraulic pressure relief valves
Swing brake
Working area control device
Swing signal lamp
Boom elevation slowing-down and stop function
Load follower control switch
Boom angle indicator
Boom telescoping foot pedal
Boom elevating foot pedal
Winch drum rotation indicator (Visual)
Outrigger extension width detector
Sight level gauge
Hydraulic oil cooler
Electric windshield wiper and washer
Roof window wiper and washer
Tachometer/Speedometer
Seat belt (Driver's seat)
Air conditioner (Hot water heater type with dehumidification function)
Power window (Right-hand door of the cab)
Cab floor mats
Sun visor (Roof and side)
Neutral position adjustable crane control levers
Automatic drive system
Transmission neutral position engine start
Overshift prevention
Parking braked travel warning
Rear steering lock
Tilt-telescope steering wheel
Back-up alarm
Air cleaner dust indicator
Air dryer
Engine over-run alarm
Hydraulic lockout suspension
Towing eyes-front and rear
Reversing steering compensator
Emergency steering
Central lubricating system
Power stowing mirror
Rear fog lamps

OPTIONAL EQUIPMENT
Tire inflation kit
Outrigger control box (Both sides of carrier)

RATED LIFTING CAPACITIES ISO 4305

SPEC. SHEET No. TR-200E-3-00101/EU-11

ON OUTRIGGERS

Unit : kg

Outriggers fully extended (5.2m) — 360° rotation —						
B \ A	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	20,000	12,000	9,000	7,000		
3.0 m	16,000	12,000	9,000	7,000		
3.5 m	14,000	12,000	9,000	7,000	5,000	3,500
4.0 m	12,500	12,000	9,000	7,000	5,000	3,500
4.5 m	11,500	11,100	9,000	7,000	5,000	3,500
5.0 m		10,250	8,900	7,000	5,000	3,500
5.5 m		9,400	8,200	6,700	5,000	3,500
6.0 m		8,450	7,600	6,300	5,000	3,500
7.0 m		6,450	6,400	5,600	4,700	3,500
8.0 m		5,050	4,800	5,000	4,150	3,350
9.0 m		4,100 (8.7m)	3,800	4,250	3,700	3,000
10.0 m			3,100	3,350	3,300	2,750
11.0 m			2,500	2,800	3,000	2,500
12.0 m			2,050	2,350	2,700	2,300
13.0 m			1,700 (12.9m)	1,950	2,200	2,100
14.0 m				1,650	1,900	1,900
15.0 m				1,350	1,600	1,600
16.0 m				1,200	1,350	1,400
17.0 m				1,000	1,200	1,250
18.0 m					1,000	1,050
19.0 m					850	900
20.0 m					700	750
22.0 m						550

Outriggers fully extended (5.2m) — 360° rotation —						
C	3.5m					
D	5°		25°		45°	
E	B (m)	W (kg)	B (m)	W (kg)	B (m)	W (kg)
82°	4.2	1,750	5.1	1,500	6.1	1,250
75°	8.1	1,750	8.8	1,500	9.8	1,250
70°	10.8	1,750	11.4	1,500	12.3	1,250
65°	13.2	1,500	13.8	1,350	14.6	1,250
60°	15.5	1,300	16.1	1,150	16.8	1,150
55°	17.7	1,050	18.2	1,000	18.8	1,000
50°	19.7	850	20.1	800	20.7	800
45°	21.6	650	21.9	600	22.3	600
40°	23.2	500	23.5	450		
35°	24.7	350	24.9	350		

A : Boom length
B : Load radius
C : Jib length
D : Jib offset
E : Boom angle
W : Rated lifting capacity

Unit : kg

Outriggers extended to middle (4.8m) — Over side —						
B \ A	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	20,000	12,000	9,000	7,000		
3.0 m	16,000	12,000	9,000	7,000		
3.5 m	14,000	12,000	9,000	7,000	5,000	3,500
4.0 m	12,500	12,000	9,000	7,000	5,000	3,500
4.5 m	11,500	11,100	9,000	7,000	5,000	3,500
5.0 m		10,250	8,900	7,000	5,000	3,500
5.5 m		8,800	8,200	6,700	5,000	3,500
6.0 m		7,550	7,200	6,300	5,000	3,500
7.0 m		5,600	5,600	5,600	4,700	3,500
8.0 m		4,350	4,300	4,600	4,150	3,350
9.0 m		3,650 (8.7m)	3,400	3,750	3,700	3,000
10.0 m			2,700	3,000	3,300	2,750
11.0 m			2,200	2,500	2,650	2,500
12.0 m			1,750	2,050	2,250	2,300
13.0 m			1,400 (12.9m)	1,650	1,850	2,000
14.0 m				1,350	1,550	1,650
15.0 m				1,150	1,300	1,400
16.0 m				950	1,150	1,200
17.0 m				800	950	1,000
18.0 m					800	850
19.0 m					650	700

Outriggers extended to middle (4.8m) — Over side —						
C	3.5m					
D	5°		25°		45°	
E	B (m)	W (kg)	B (m)	W (kg)	B (m)	W (kg)
82°	4.2	1,750	5.1	1,500	6.1	1,250
75°	8.1	1,750	8.8	1,500	9.8	1,250
70°	10.8	1,750	11.4	1,500	12.3	1,250
65°	13.2	1,500	13.8	1,350	14.6	1,250
60°	15.5	1,250	16.1	1,150	16.8	1,150
55°	17.7	900	18.2	850	18.8	850
50°	19.7	650	20.1	650	20.6	600

RATED LIFTING CAPACITIES ISO 4305

SPEC. SHEET No. TR-200E-3-00101/EU-11

ON OUTRIGGERS

Unit : kg

Outriggers extended to middle (4.4m) — Over side —						
B \ A	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	20,000	12,000	9,000	7,000		
3.0 m	16,000	12,000	9,000	7,000		
3.5 m	14,000	12,000	9,000	7,000	5,000	3,500
4.0 m	12,500	12,000	9,000	7,000	5,000	3,500
4.5 m	11,050	11,100	9,000	7,000	5,000	3,500
5.0 m		9,100	8,500	7,000	5,000	3,500
5.5 m		7,700	7,300	6,700	5,000	3,500
6.0 m		6,550	6,350	6,300	5,000	3,500
7.0 m		4,850	4,800	5,000	4,700	3,500
8.0 m		3,700	3,700	3,950	4,000	3,350
9.0 m		3,050 (8.7m)	2,850	3,150	3,350	3,000
10.0 m			2,250	2,500	2,750	2,750
11.0 m			1,750	2,050	2,250	2,400
12.0 m			1,350	1,650	1,850	2,000
13.0 m			1,050 (12.9m)	1,300	1,500	1,650
14.0 m				1,100	1,250	1,400
15.0 m				900	1,050	1,200
16.0 m				700	850	1,000
17.0 m					700	800
18.0 m						650

Outriggers extended to middle (4.4m) — Over side —						
C	3.5m					
D	5 -		25 -		45 -	
E	B (m)	W (kg)	B (m)	W (kg)	B (m)	W (kg)
82 -	4.2	1,750	5.1	1,500	6.1	1,250
75 -	8.1	1,750	8.8	1,500	9.8	1,250
70 -	10.8	1,750	11.4	1,500	12.3	1,250
65 -	13.1	1,450	13.8	1,350	14.6	1,250
60 -	15.4	1,000	16.0	1,000	16.8	900

A : Boom length
B : Load radius
C : Jib length
D : Jib offset
E : Boom angle
W : Rated lifting capacity

Unit : kg

Outriggers extended to middle (3.2m) — Over side —						
B \ A	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	16,000	12,000	9,000	7,000		
3.0 m	13,900	12,000	9,000	7,000		
3.5 m	10,050	9,600	8,200	7,000	5,000	3,500
4.0 m	7,650	7,800	6,750	6,550	5,000	3,500
4.5 m	6,250	6,300	5,650	5,550	5,000	3,500
5.0 m		5,200	4,800	4,800	4,650	3,500
5.5 m		4,400	4,100	4,150	4,100	3,500
6.0 m		3,750	3,500	3,650	3,600	3,200
7.0 m		2,750	2,600	2,800	2,850	2,850
8.0 m		2,100	1,950	2,200	2,300	2,300
9.0 m		1,600 (8.7m)	1,400	1,700	1,850	1,900
10.0 m			950	1,300	1,500	1,550
11.0 m			650	950	1,200	1,250
12.0 m				700	900	1,000
13.0 m					700	800
14.0 m						600

Outriggers extended to middle (3.2m) - Over side -						
C	3.5m					
D	5 -		25 -		45 -	
E	B (m)	W (kg)	B (m)	W (kg)	B (m)	W (kg)
82 -	4.2	1,750	5.1	1,500	6.1	1,250
75 -	8.1	1,750	8.8	1,500	9.8	1,250
72 -	9.6	1,400	10.3	1,250	11.3	1,200
70 -	10.6	1,150	11.3	1,050	12.2	1,000

Unit : kg

Outriggers extended to minimum (1.79m) — Over side —						
B \ A	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	6,700	6,000	4,900	4,700		
3.0 m	5,350	4,650	3,850	3,800		
3.5 m	4,000	3,700	3,050	3,100	3,000	2,500
4.0 m	3,150	2,950	2,400	2,550	2,500	2,450
4.5 m	2,650	2,350	1,950	2,100	2,100	2,100
5.0 m		1,900	1,550	1,700	1,800	1,750
5.5 m		1,550	1,200	1,400	1,500	1,500
6.0 m		1,250	900	1,150	1,250	1,300
7.0 m		750		750	900	900

RATED LIFTING CAPACITIES ISO 4305

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NOTES FOR "ON OUTRIGGERS" TABLES

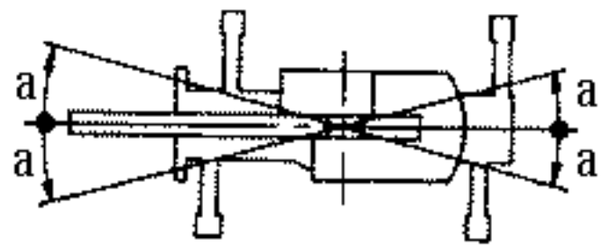
1. Rated lifting capacities based on crane stability are according to ISO4305.
2. Rated lifting capacities shown in the table are based on condition that crane is set on firm level surface. Those above bold lines are based on crane strength and those below, on its stability.
3. The mass of the hook (220 kg for 20,000 kg capacity, 60 kg for 3,000 kg capacity), slings and all similarly used load handling devices must be added to the weight of the load.
4. For rated lifting capacity of single top, reduce the 220 kg from the relevant boom rated lifting capacity.
   Rated lifting capacity of single top should not exceed 3,000 kg.
5. Standard number of part lines for each boom length is as shown below. Load per line should not surpass 28.0 kN {2,860 kgf} for main winch and 29.4 kN {3,000 kgf} for auxiliary winch.

Boom length (m)	6.5	10.7	14.9	19.1	23.3	27.5	JIB/Single top
No. of part of line	7	6	4	4	4	4	1

The lifting capacity data stored in the AUTOMATIC MOMENT LIMITER (AML-L) is based on the standard number of parts of line listed in the chart.
Maximum lifting capacity is restricted by the number of parts of line of AUTOMATIC MOMENT LIMITER (AML-L).

6. The over-side rated lifting capacity depends on outrigger extension. Rated lifting capacity of over-front and over-rear assume fully extended outrigger position. Working area for each outrigger position are given separately and must be followed accordingly during operation.

Outriggers position	Extended to middle (4.8m)	Extended to middle (4.4m)	Extended to middle (3.2m)	Extended to minimum (1.79m)
Angle a°	30	25	15	5



ON TIRES

Unit : kg

Load radius	Stationary								Creep							
	6.5m Boom		10.7m Boom		14.9m Boom		19.1m Boom		6.5m Boom		10.7m Boom		14.9m Boom		19.1m Boom	
	Over front	360°	Over front	360°	Over front	360°	Over front	360°	Over front	360°	Over front	360°	Over front	360°	Over front	360°
3.0m	8,000	4,200	7,500	4,300	7,000	4,450	5,500	4,800	6,700	3,700	6,300	3,800	5,900	3,800	4,600	4,200
3.5m	7,400	3,350	7,200	3,500	6,700	3,550	5,500	3,800	6,500	2,950	6,300	3,000	5,900	3,100	4,600	3,350
4.0m	7,000	2,650	7,000	2,750	6,500	2,850	5,500	3,000	6,100	2,350	6,000	2,450	5,750	2,500	4,600	2,650
4.5m	6,300	2,100	6,150	2,300	5,500	2,300	5,100	2,400	5,500	1,850	5,400	2,000	4,850	2,000	4,500	2,100
5.0m			5,200	1,800	4,650	1,750	4,800	1,900			4,600	1,600	4,100	1,550	4,200	1,650
5.5m			4,400	1,400	3,950	1,300	4,250	1,550			3,850	1,250	3,500	1,150	3,700	1,350
6.0m			3,750	1,100	3,550	1,000	3,750	1,250			3,000	950	3,100		3,400	1,100
7.0m			2,850		2,850		2,850				2,500		2,500		2,500	
8.0m			2,200		2,200		2,350				1,900		1,900		2,050	
9.0m					1,600		1,800						1,400		1,600	
10.0m					1,200		1,350						1,050		1,200	
11.0m							1,100									

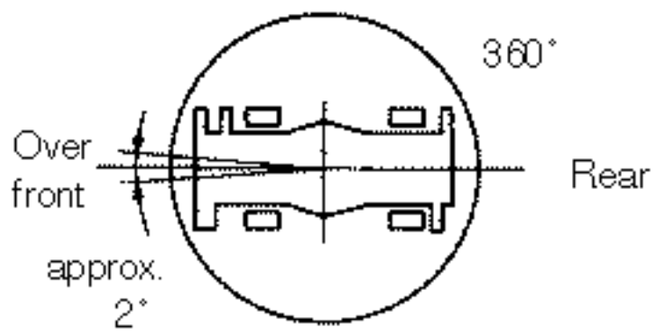
NOTES FOR "ON TIRES" TABLES

1. Rated lifting capacities based on crane stability are according to ISO4305.
2. Rated lifting capacities shown in the table are based on condition that crane is set on firm level surface, with suspension lock applied. Those above bold lines are based on tire capacity and those below, on crane stability. They are based on actual working radii increased by tire deformation and boom deflection.
3. The mass of the hook (220 kg for 20,000 kg capacity, 60 kg for 3,000 kg capacity), slings and all similarly used load handling devices must be added to the weight of the load.
4. For rated lifting capacity of single top, reduce the 220 kg from the relevant boom rated lifting capacity.
   Rated lifting capacity of single top should not exceed 3,000 kg.
5. On tires lifting with "jib" is not permitted. Maximum permissible boom length is 19.1m.
6. CREEP is motion for crane not to travel more than 60 m in any 30 min. period and to travel at the speed of less than 1.6 km/h.
7. During "CREEP" duties travel slowly and keep the lifting load as close to the ground as possible, and especially avoid any abrupt steering, accelerating or braking.
8. Do not operate the crane while carrying the load.
9. Tires should be inflatde to their correct air pressure of 900 kPa {9.00 kgf/cm^2}.
10. For CREEP operation, set Drive select switch to "4-WHEEL(Lo)" and set gear shift lever to "1"
11. Standard number of parts of line for each boom length is as shown below.
    Load per line should not surpass 28.0 kN {2,860 kgf} for main winch and 29.4kN {3,000 kgf} for auxiliary winch.

Boom length (m)	6.5	10.7	14.9	19.1	Single top
No. of part line	4	4	4	4	1

12. The lifting capacity data stored in the AUTOMATIC MOMENT LIMITER (AML-L) is based on the standard number of parts of line listed in the chart.
    Maximum lifting capacity is restricted by the number of parts of line of AUTOMATIC MOMENT LIMITER (AML-L).

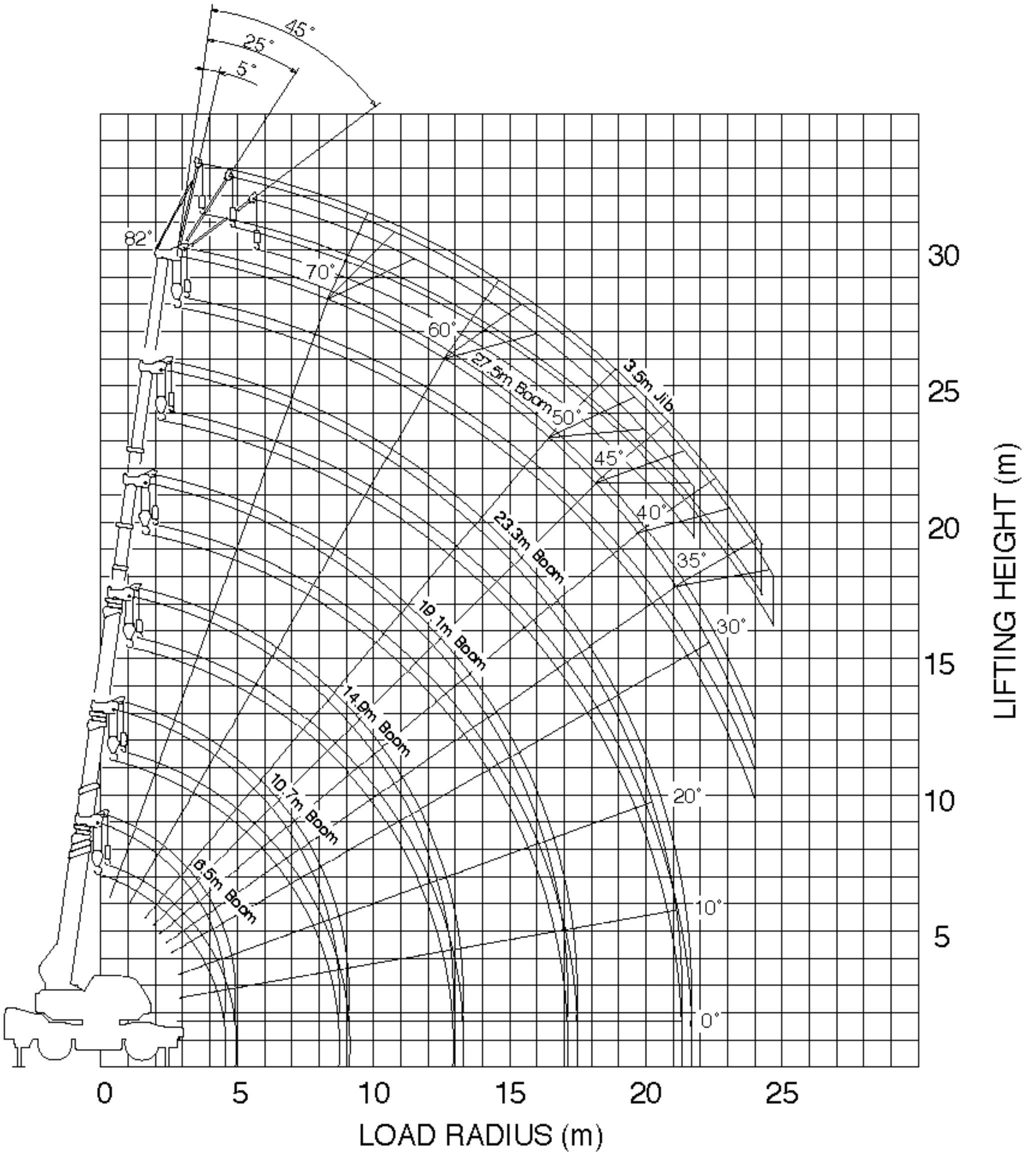
WORKING AREA



Without outriggers "Over front" operation should be performed within 2 degrees in front of chassis.

WORKING RANGE

SPEC. SHEET No. TR-200E-3-00101/EU-11

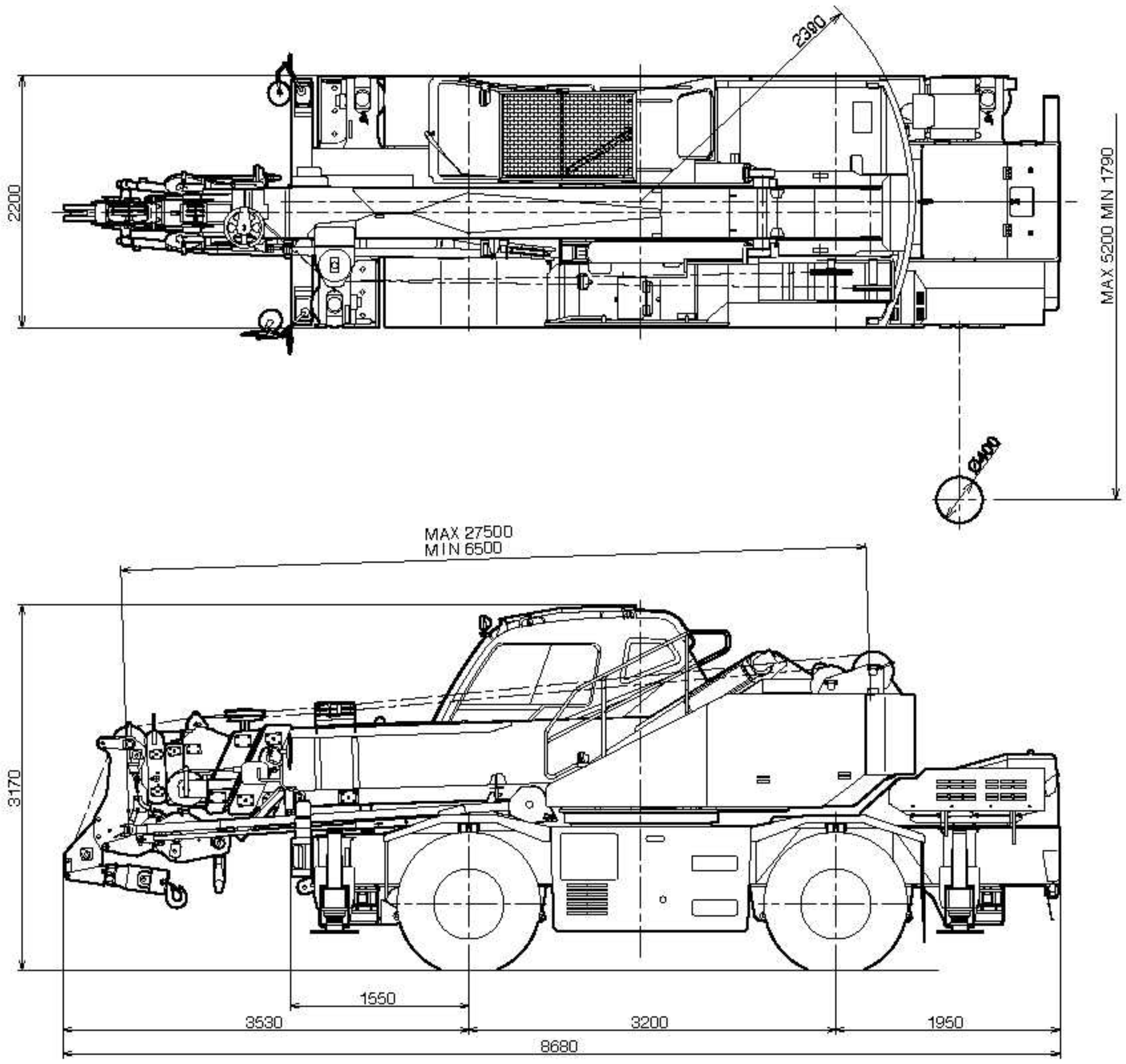


NOTE :

1. The above lifting heights and boom angles are based on a straight (unladen) boom, and allowance should be made for boom deflection obtained under laden conditions.
2. The above working range is shown on condition with outriggers fully extended (360°).

DIMENSIONS

SPEC. SHEET No. TR-200E-3-00101/EU-11



Tread (track) Front ····· 1,820 mm
Rear ····· 1,820 mm

NOTE :

The drawing is with boom angle at -2°

Specifications are subject to change without notice.

TADANO

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