



TADANO HYDRAULIC ROUGH TERRAIN CRANE

SPEC. SHEET No. TR-500E-2-01202/EX-50

TR-500EX

Left hand steering

GENERAL DATA

CRANE CAPACITY 50,000 kg at 3.5 m

BOOM 4-section, 10.7 m — 34.1 m

DIMENSIONS

Overall length approx. 13,570 mm

Overall width approx. 3,315 mm

Overall height approx. 3,800 mm

WEIGHTS

Gross vehicle weight approx. 43,100 kg

- front axle approx. 22,260 kg

- rear axle approx. 20,840 kg

PERFORMANCE

Max. travelling speed computed 35 km/h

Gradeability(tan θ) computed 100 % (at stall)

CRANE SPECIFICATIONS

MODEL

TR-500EX

CAPACITY

50,000 kg at 3.5 m

BOOM

4-section full length power synchronized telescoping boom of hexagonal box construction with 5 sheaves at boom head. Hydraulic cylinders fitted with holding valves.

Fully retracted length 10.7 m

Fully extended length 34.1 m

Extension speed 23.4 m in 130 s

JIB

2-staged swingaround boom extension. Dual offset(5° / 30°)type. Box type top section telescopes from lattice type base section which stores alongside base boom section.

Single sheave at jib head.

Length 9.8 m and 17.1 m

SINGLE TOP (AUXILIARY BOOM SHEAVE)

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

ELEVATION

By 2 double-acting hydraulic cylinders, fitted with holding valve.

Elevation speed -3° to 80° in 77 s

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CRANE SPECIFICATIONS

SPEC. SHEET No. TR-500E-2-01202/EX-50

HOIST—Main winch

2-speed type with grooved drum driven by hydraulic axial piston motor through 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.

Controlled independently of auxiliary winch.

Single line pull 5,200 kg

Single line speed

High range 140 m/min. (at the 4th layer)

Normal range 70 m/min. (at the 4th layer)

Wire rope Spin-resistant type

Diameter x length ... 20 mm x 190 m

HOOK BLOCK—50 ton capacity

5 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 with free-fall device by foot brake operation and counterbalance valve.

Controlled independently of main winch.

Single line pull 5,600 kg

Single line speed 120 m/min (at the 2nd layer)

Wire rope Spin-resistant type

Diameter x length ... 20 mm x 110 m

HOOK BLOCK—5.6 ton capacity

Swivel hook with safety latch for single line use.

SWING

Hydraulic axial piston motor driven through planetary swing speed reducer. Continuous 360° full circle swing on ball bearing slew ring.

Equipped with hand-operated swing brake.

Swing speed 2.2 rpm

HYDRAULIC SYSTEM

Pumps 2 variable piston pumps and one gear pump for crane.

Tandem gear pump for steering and optional equipments.

Control valves Multiple valves actuated by hand levers with integral pressure relief valves.

Circuit Equipped with air cooled type oil cooler. Pressure gauge for main circuit installed in crane cab.

Hydraulic oil tank

capacity approx. 740 liters

Filters Return line filter

CAB

Both crane and drive operations can be performed from one cab mounted on rotating superstructure. One sided one-man type (two-man type optional), steel construction with sliding door access and safety glass windows opening at sides, and roof.

Operator's 4 way adjustable seat with high back.

TADANO Automatic Moment Limiter

(Model:AML-M)

Main unit in crane cab gives audible and visual warning of approach to overload. Automatically cuts out crane motions before overload. With working range (working radius and/or boom angle and/or tip height) limit function. Seven functions are constantly displayed.

Digital liquid crystal display:

Boom angle

Either boom length or potential hook height

Actual working radius

Actual hook load

Permissible load

Jib offset angle (Display changes by button)

Color bar graphical display :

Moment as percentage

OUTRIGGERS

4 hydraulically operated 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 cylinders fitted with pilot check valves.

Extended width 7,000 mm

Float size (Diameter) 600 mm

NOTE :

Each crane motion speed is based on unladen conditions.



CARRIER SPECIFICATIONS

SPEC. SHEET No. TR-500E-2-01202/EX-50

TYPE

Rear engine, left hand steering, driving axle 2 way selected type (by manual switch).

4×2 front drive

4×4 front and rear drive

FRAME

High-tensile steel, all welded box construction.

ENGINE

Model MITSUBISHI 6D22

Type 4 cycle, 6 cylinder in line, direct injection, water cooled diesel engine.

Piston displacement 11,149 cc

Bore × stroke 130 mm × 140 mm

Max. output (JIS) 190 PS at 2,300 rpm

Max. torque (JIS) 69 kgm at 1,200 rpm

TRANSMISSION

Torque converter driving full powershift with driving axle selector.

3 speeds-High range-2 wheel drive

3 speeds-Low range-4 wheel drive

AXLES

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

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

Non-spin differential.

STEERING

Hydraulic power steering controlled by steering wheel.

Three steering modes available:

2-wheel front

4-wheel coordinated

4-wheel crab

SUSPENSION

Front Rigid mounted to the frame.

Rear Pivot mounted with hydraulic lockout cylinders.

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.

ELECTRIC SYSTEM

24 V DC. 2 batteries of 12 V-150 Ah capacity.

FUEL TANK CAPACITY

250 liters

TIRES

Front 29.5-25-22 PR(OR), Single × 2

Rear 29.5-25-22 PR(OR), Single × 2

TURN RADIUS

Min. turning radius(at center of extreme outer tire)

2-wheel steering 11.5 m

4-wheel steering 6.5 m

EQUIPMENTS

STANDARD EQUIPMENTS

Automatic moment limiter (AML-M)

External lamp (AML)

Pendant type over-winding cutout

Winch automatic fail-safe brake

Winch drum lock

Winch drum indicator

Cable follower

Hook safety latch

Pilot check valves

Holding valves

Counterbalance valves

Hydraulic pressure relief valves

Swing brake

Swing lock

Load follower control button

Boom angle indicator

Boom elevation foot pedal

Sight level gauge

Hydraulic oil cooler

Electric windshield wiper and washer

Roof windshield wiper

Tachometer / Speedometer

Cab floor mats

Sun visor (Roof)

Transmission neutral position start

Parking braked travel warning

Emergency steering

Back-up alarm

Air cleaner dust indicator

Air dryer

Water separator with filter

Engine over-run alarm

Hydraulic lockout suspension

Non-spin differential (Rear)

Towing eyes — front and rear

OPTIONAL EQUIPMENTS

Backseat

Seat belt (Driver's seat)

AM radio

Electric fan

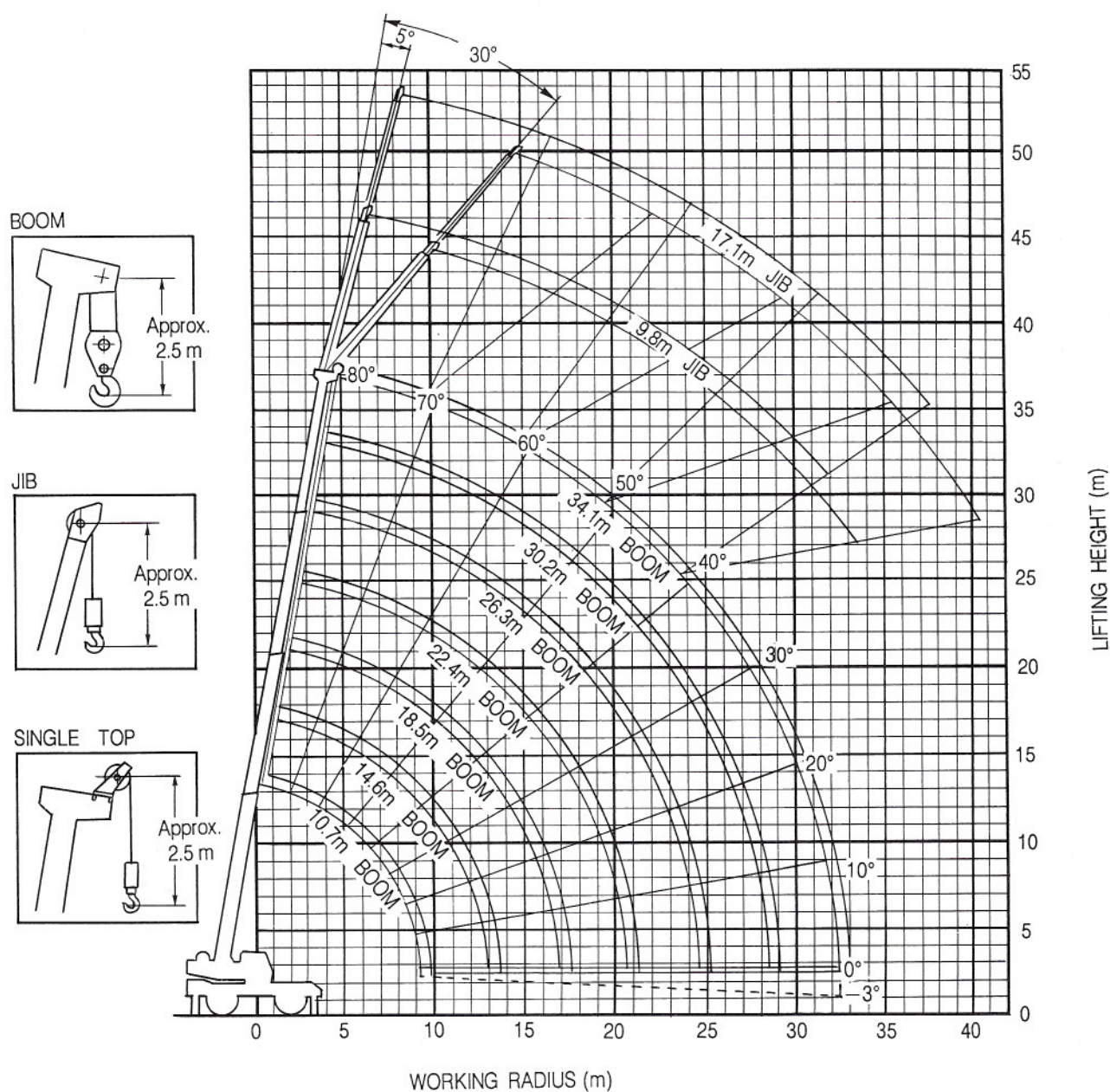
Cab heater and defroster (Diesel engine fuel oil)

Tire inflation kit



WORKING RADIUS - LIFTING HEIGHT

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TOTAL RATED LOADS

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ON OUTRIGGERS

Unit : kg

Outriggers fully extended (360°)														
B	A	10.7m	14.6m	18.5m	22.4m	26.3m	30.2m	34.1m	E	C	9.8m		17.1m	
											D	5°	30°	5°
3.0m		50,000	40,000	36,500					80°		5,600	2,800	2,800	1,100
3.5m		50,000	40,000	34,800					75°		5,000	2,500	2,300	1,000
4.0m		48,000	40,000	33,200	25,000				70°		4,000	2,300	1,900	900
4.5m		42,600	39,000	31,700	24,000				65°		3,200	2,150	1,600	850
5.0m		38,200	37,500	30,400	22,900	20,500			60°		2,600	2,000	1,400	800
5.5m		34,600	34,800	29,200	21,900	19,500			55°		2,150	1,750	1,200	750
6.0m		31,500	31,800	28,100	20,800	18,500	17,000		50°		1,650	1,500	1,050	700
6.5m		28,900	29,200	27,100	19,800	17,400	16,100		45°		1,100	1,000	800	650
7.0m		26,600	26,900	26,200	18,800	16,400	15,300	14,000	40°		750	700	600	500
8.0m		21,100	21,100	21,100	17,200	14,600	13,800	12,600						
9.0m		16,400	17,000	17,000	15,900	13,200	12,500	11,500						
10.0m			14,000	14,000	14,100	12,000	11,400	10,400						
11.0m			11,700	11,800	11,900	11,000	10,300	9,500						
12.0m			9,900	10,100	10,200	10,100	9,500	8,700						
13.0m			8,500	8,700	8,800	8,800	8,700	8,000						
14.0m				7,600	7,700	7,700	7,800	7,400						
15.0m				6,600	6,700	6,800	6,900	6,800						
16.0m				5,800	5,900	6,000	6,100	6,100						
17.0m					5,200	5,300	5,400	5,400						
18.0m					4,700	4,700	4,800	4,800						
19.0m					4,200	4,200	4,300	4,300						
20.0m					3,800	3,800	3,900	3,900						
22.0m						3,000	3,100	3,100						
24.0m						2,400	2,500	2,500						
26.0m							2,000	2,000						
28.0m							1,500	1,600						
30.0m								1,200						
32.0m								900						

A : Boom length

B : Working radius

C : Jib length

D : Jib offset

E : Boom angle

- A : Boom length
- B : Working radius
- C : Jib length
- D : Jib offset
- E : Boom angle

NOTES FOR "ON OUTRIGGERS" TABLE

- Total rated loads 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.
- Total rated loads below bold lines do not exceed 75 % of tipping load.
- The weight of the hook (500 kg for 50 ton capacity, 150 kg for 5.6 ton capacity), slings and all similarly used load handling devices must be added to the weight of the load.
- For total rated load of single top, reduce the 500 kg from the relevant boom total rated load. Total rated load of single top should not exceed 5,600 kg.
- Free-fall operation should be performed without any load on the hook.
- Standard number of part lines for each boom length is as shown below. Load per line should not surpass 5,200 kg for main winch and 5,600 kg for auxiliary winch.

Boom length (m)	10.7	14.6	18.5	22.4	26.3	30.2	34.1	Jib/Single top
No. of part lines	10	8	8	6	4	4	4	1

ON TIRES

Unit : kg

B	A	Stationary						Creep					
		Over front			360°			Over front			360°		
		10.7m	18.5m	26.3m	10.7m	18.5m	26.3m	10.7m	18.5m	26.3m	10.7m	18.5m	26.3m
3.0m		31,000						23,000					
3.5m		27,500			15,600			21,300			12,900		
4.0m		25,300	16,500		13,200	12,300		19,700	14,700		10,900	10,200	
4.5m		23,500	15,600		11,500	10,600		18,300	13,900		9,100	8,700	
5.0m		22,000	14,800		9,700	9,100		16,900	13,100		7,800	7,500	
5.5m		19,000	14,200	9,400	8,400	8,100	7,400	15,700	12,600	8,300	6,600	6,700	6,200
6.0m		16,500	13,700	9,400	7,200	7,200	6,600	14,600	12,100	8,300	5,700	5,900	5,500
6.5m		14,400	13,200	9,400	6,100	6,500	5,900	12,800	11,700	8,300	4,900	5,300	4,900
7.0m		12,500	12,800	9,400	5,300	5,900	5,500	11,100	11,400	8,300	4,200	4,800	4,500
8.0m		9,900	10,700	9,400	3,900	4,700	4,800	8,800	9,500	8,300	3,100	3,800	4,000
9.0m		8,000	9,000	8,500	2,800	3,700	4,100	7,100	8,000	7,500	2,200	2,900	3,400
10.0m			7,500	7,700		2,900	3,400		6,700	6,800		2,300	2,800
11.0m			6,300	6,500		2,200	2,700		5,600	5,800		1,800	2,200
12.0m			5,400	5,600		1,800	2,200		4,800	5,000		1,400	1,800
13.0m			4,700	4,900		1,400	1,800		4,100	4,300		1,100	1,400
14.0m			4,100	4,300		1,100	1,500		3,600	3,800		800	1,100
15.0m			3,500	3,800		900	1,200		3,100	3,400			800
16.0m			3,000	3,300		700	900		2,700	3,000			
17.0m				2,900			700			2,600			
18.0m				2,600						2,300			
19.0m				2,300						2,000			
20.0m				2,000						1,800			
22.0m				1,600						1,400			
24.0m				1,200						1,000			

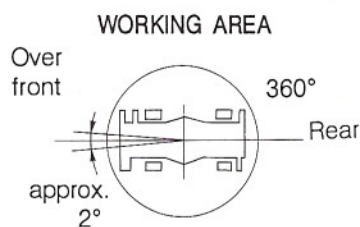
- A : Boom length
- B : Working radius

to be continued.



TOTAL RATED LOADS

SPEC. SHEET No. TR-500E-2-01202/EX-50

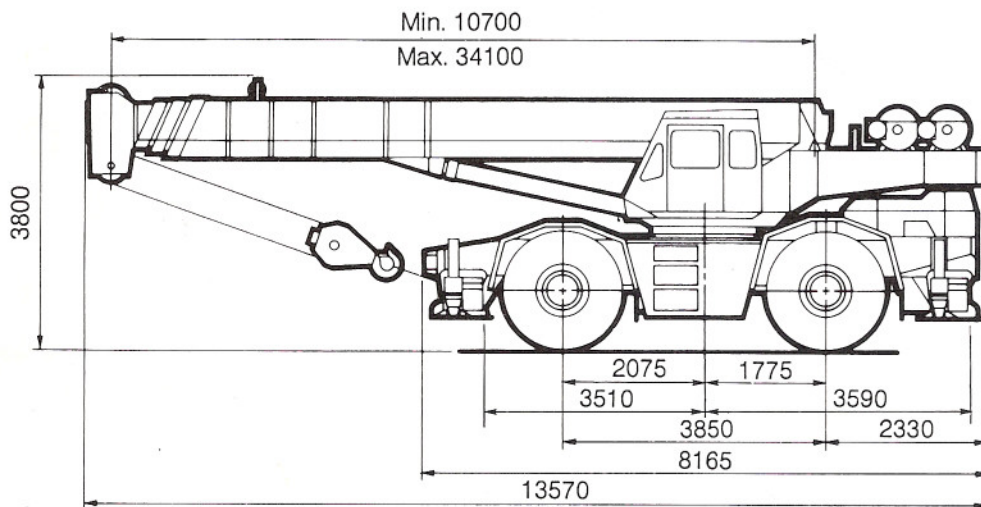


Without outriggers "Over front" operation should be performed within 2 degrees in front of chassis.

NOTES FOR "ON TIRES" TABLES

1. Total rated loads shown in the table are based on condition that crane is set on firm level surface, with axle lockout 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.
2. "STATIONARY" load capacities do not exceed 75 % of tipping loads. "CREEP" load capacities do not exceed 66 $\frac{2}{3}$ % of tipping loads.
3. The weight of the hook (500 kg for 50 ton capacity, 150 kg for 5.6 ton capacity), slings and all similarly used load handling devices must be added to the weight of the load.
4. For total rated load of single top, reduce the 500 kg from the relevant boom total rated load. Total rated load of single top should not exceed 5,600 kg.
5. Without outriggers lifting with "Jib" is not permitted. Maximum permissible boom length is 26.3m.
6. Free-fall operation should not be performed without extending outriggers.
7. 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.
8. 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.
9. Do not operate the crane while carrying the load.
10. Tires should be inflated to their correct air pressure of 4.2 kg/cm².
11. 2nd boom section stays fully retracted (3rd boom section and top boom section able to extend and retract simultaneously).

DIMENSIONS



Overall width 3,315 mm
Tail swing radius 4,140 mm

Tread(track) — Front 2,502 mm
— Rear 2,502 mm

Specifications are subject to change without notice.



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