TADANO HYDRAULIC ROUGH-TERRAIN CRANE

TR-250

25-ton capacity (27.6 short tons)
27.1-meter outreach w/3-sec. boom + jib
33.0-meter outreach w/4-sec. boom + jib

CARRIER DATA

Type
Manually reversible, front drive (4x2) or
hydraulic drive (4x4)

Engine
Nissan Diesel FD80/3 diesel engine; 4-cylinder,
water-cooled, 6 cylinders, max. output of
189hp/2,000rpm (air-cooled, max. output of
167hp/1,500rpm (diesel/LPG with 3-section boom),
179hp/1,600rpm (LPG) with 4-section boom

Transmission
4-speeds and one reverse, power-shifted in all speeds

Axle (Front/Rear)
Full-floating type

Brakes
4-wheel hydraulic power steering, 4-wheel
conventional, 4-wheel coordinated, 4-wheel
coating

Suspension (Front/Rear)
Leaf-spring type with hydraulic shock absorbers

Service Brakes
Disc brakes, air brakes, 4-wheel internal
expanding

Parking Brakes
Front and rear axles equipped with parking,
set, air-actuated emergency parking chambers

Turn (Turntable)
180°, 350°, 10°

Fuel Tank Capacity
200 liters

Safety Devices
Emergency power steering unit
Brakes, parking brake

GENERAL DATA

Gross Vehicle Weight
Approx. 23,500kg with 3-section boom
23,000kg with 4-section boom

Max. Travel Speed
Approx. 40km/h

Grading ability
6% on 2% grade, 10% at start (assumed values)
In-cab safety and comfort make for efficiency

Electronic automatic moment limiter with high control accuracy (optional)
Tadano's electronic automatic moment limiter (A.M.L.) electronically controls crane operations with a high accuracy of ±5%. It detects the combined moment of lifting load and boom, rate weight, and limits the operator's percentage of the actual moment to the rated moment. When the actual moment reaches 90% capacity, the NOTICE lamp flickers and a buzzer sounds intermittently. At 100% capacity, the LIMIT lamp flickers with a continuous buzzer sound, and simultaneously, all critical crane functions—boom lowering, boom extension and load hoisting—are automatically cut off.

In combination with the fully hydraulic telescoping boom, this enables continuous control of lifting capacities for any boom length. In addition, because of its big memorizing capacity, the A.M.L. functions also in such working conditions as on-tire operation or with-jib operation.

How Tadano's A.M.L. works

Load meter for load weight
This easy-to-read instrument displays the weight of the load on hook by measurement of wire rope tension for higher accuracy. Along with the load indicator which indicates boom angle and total rated loads for each boom length, the load meter increases operating safety.

Overwinding cut-out device
Equipped with both main and auxiliary hoist lines, this device warns the operator of overwinding by lighting up the main operation indicator lamp in the cab when the main or auxiliary hook approaches the boom nose or jib tip, and simultaneously cuts off overwinding. This prevents such accidents as load fall-down due to rope breakage.

Extra safety features
Other considerations for safety include: the swing lock device for added safe traverse; winch brake limiting switch indicating device; hook safety latches for main and auxiliary hooks; and hydraulic safety valves in each circuit.

Comfortable, convenient control layout
The cab of the TR-250 is operator-oriented for efficient, easy operation and comfort. Mounted on the rotating superstructure, the computerized operator's desk enables the operator to perform main drive and crane operations. All instruments and controls are systematically laid out within operator's reach for quick, smooth action. Control levers for main crane functions are adjustable in length. And the transmission shift pattern is the same as those of normal passenger cars—eliminating trouble due to unfamiliarity. For the operator's further comfort, there's a fully-reclining upholstered seat with back-and-forward adjustment, floor and roof ventilation, and extra-wide safety-glass windows throughout for operator protection and unobstructed vision.
Lifts up to 25t, reaches up to 27.1m (3-sec. boom) with jib, 33.0m (4-sec. boom) with jib

Independent three-pump system
The TR-250 has a triple-tandem gear pump, which is directly powered by the carrier engine. Each section delivers hydraulic energy proportionally to the individual crane functions, keeping each circuit independent of the others — Section I to the winch function, Section II to the boom telescoping, boom elevating/lowering and outrigger functions and Section III to the swing function. Thus, there's no fluctuation due to deviation in pressure or flow of the hydraulic fluid — allowing smooth composite crane operations, from inching to high speeds.

Reliable boom elevating/lowering
Two powerful double-acting hydraulic cylinders provide the power for elevating or lowering the boom. An integrated counterbalance valve keeps the cylinders raised in the event of hose failure.

Fully hydraulic boom telescoping
The boom is fully hydraulic in all sections — three-section boom, from 8.3 to 20.1 meters; four-section boom, from 8.3 to 26.0 meters. Smooth telescoping is provided by two powerful double-acting hydraulic cylinders which actuate in response to single-lever control. The boom boxes are constructed of super high-strength steel plates to increase durability and strength as well as to reduce the total boom weight.

Efficient power winching
Two powerful winches are equipped for the main and auxiliary hoist lines, giving a maximum single line pull of 3,150kg and 3,000kg respectively. Line up/down operations are triggered by single-lever control. Shifting from one winch to the other is performed with the clutch lever. Both winches are equipped with a neutral brake to automatically stop hook motion when the control lever is returned to "NEUTRAL."

Smooth, 360° continuous rotation
The TR-250's superstructure continuously rotates a full 360° on precision-built ball bearings. Utilizing a free-swing mechanism, the swing operation is very smooth when stopping. This mechanism also prevents the boom from being dropped aside which could adversely affect the crane. A foot-operated swing brake is provided.

Rigid outriggers with a wide span
The rigid, double-box construction hydraulic outriggers provide a maximum extension of 5.4 meters for higher operating stability to make big lifts. Simultaneous operation of all outriggers is made by switch control in the cab or by lever control outside the cab. The latter also allows individual control of jack cylinders which have a big stroke, providing efficient and easy crane levelling on uneven job sites.

Side-folded extension jib
Fitted to the boom head and stored beside the base boom section, the TR-250's extension jib can easily be set up with the use of a handle by only one person on the ground. An extra 7.0-meter outreach is provided by the jib.
Moves in anywhere, runs with a load

Front or four-wheel drive via lever control
A simple shift of the control lever allows the operator to select four-wheel drive for real off-road mobility, providing sure traction and high gradability over rough terrain, through muddy or sandy ground, or steeping work sites. This degree of mobility is further assured by such features as a low center of gravity, excellent vehicle weight distribution, torque converter, power-shift transmission, planetary reduction gear with both front and rear axles, and no spin differential in the rear axle.

Three-way, fully hydraulic power steering
Hydraulic power steering is standard on all wheels. A simple switch control in the cab provides a choice of three steering modes: two-wheel front steering for normal maneuvering, four-wheel coordinated steering with a minimum turning radius of 8.4 meters for sharp turns, and four-wheel crab steering for diagonal advances and reverses. Along with the compact machine design, this enables the TR-250 to maneuver easily even in confined work sites such as storage yards and plants.

Leaf-spring suspension for all axles
Employing leaf-spring suspension on both front and rear axles, the TR-250 provides the operator with a smooth, comfortable ride to minimize fatigue even after traveling long distances. An automatic spring lock device, which is interconnected and actuated with the brake pedal, is provided for the front axle leaf springs, assuring the operator of safety and comfort by limiting nosedive motion. Furthermore, all springs on front and rear axles are locked by a spring lock device, reducing rolling/pitching phenomena inherent in rough-terrain travel.

Reliable power train components
The power source is a dynamic 180PS diesel engine, an extremely high output for this class of rough-terrain crane. The torque converter smoothly transfers power into transmission according to load variations, eliminating engine stall due to overloads at low speed. The power-shift transmission provides four-forward and one-reverse speeds. High efficiency air brake on all four wheels increases safety as well as assuring easy, fatigue-free braking. In addition, the emergency brake also operates as a parking brake.

All-around sturdy undercarriage
The TR-250's undercarriage components are also carefully selected to meet severe working conditions. Made of high-tensile steel, the frame has an all welded box construction to resist shocks, twists and any other loading impacts. Both the front and rear drive/shaft steering axles are full-floating for maximum flexibility on bumpy roads. Large sized, traction OFF tires provide high durability under the heaviest load as well as superior traction and floatation.
Tadano TR-250: more than just a rough-terrain crane

Available with 4-section boom
- Two powerful winches for main and auxiliary hoisting
- Full 360° rotating superstructure
- Dynamic, 180PS diesel engine
- Hi-pot outriggers with a wide span

Available with 3-section boom
- Electronic automatic moment limiter, A.M.L., to prevent crane overloading (optional)

Side-folded extension [B] for quick set-up
- Sure boom elevating by two double-acting hydraulic cylinders
- Convenient one set control for both crane and drive operations
- Tough, lightweight, fully hydraulic telescoping boom

That's because the TR-250 has the raw power to go to work virtually anywhere. Maneuver all kinds of loads in the tightest spots. And stay rock-steady even on the roughest terrain. Plus, you get the versatility to pick and carry, travel with loads up to 14 tons on both axles, or, of course, operate as a powerful hydraulic engine. On outriggers, it lifts a maximum 25 tons. This high degree of maneuverability and versatility makes the TR-250 the ideal workhorse for almost any outdoor/mobile crane operations such as in timber/forestry, over-into steel making, cargo handling, and plant construction. With the Tadano TR-250, you get increased working efficiency, more productivity.