
Note: An asterisk (*) denotes optional equipment.
Continuing technical development requires Tadano to retain the right to make specification, equipment and price changes without notice.
Illustrations may include optional equipment.

TADANO

**TADANO LTD.**

World Trade Center Bldg.
4-1, Hamamatsu-cho 2-chome
Minato-ku, Tokyo 105, Japan
Telephone: Tokyo 435-3611
Cable: TADANIRCO TOKYO
Telex: 23755

Form No. TG-900E-1-10201 TEC 10000 54 2
Printed in Japan 346JG73L10

TADANO HYDRAULIC TRUCK CRANE

# TG-900E

## 100 ton capacity (90 metric tons)

# UNEXCELLED PERFORMANCE AND RELIABILITY

*The unsurpassed performance of Tadano truck cranes reflects the company's dedication to continual product development and innovation. Day in, day out, they've earned a reputation for safety, reliability and durability in countries around the world. Built tough, built to handle the toughest jobs. Now there's the new TG-900E, Tadano's largest truck crane to date. Its strong but light-weight four- or five-section full power boom boasts a capacity of 90 tons. Plus it's got all the other features that make the new TG range pace-setters for the industry: long swingaround two-stage boom extensions with dual offset*, extra powerful winches and elevation cylinders, ultra-reliable hydraulic system with boost circuitry, ruggedly constructed outriggers and Tadano's micro-computer controlled Automatic Moment Limiter which electronically monitors moment, hook load, boom angle, working radius and other key safety features. As an added plus, the TG-900E is fitted with a superstructure engine to provide matched power for all crane motion circuits. Put it all together and you've got one of the most sophisticated and reliable truck cranes available—the Tadano TG-900E.*

Two alternative full length power booms available—a four-section telescoping to 36m or a five-section to 44m.

Main hoist with boost high speed yet maintained high line pull.

Dual elevation cylinders designed with power to spare.

Wider, more spacious, ergonomically designed cab.

Micro-computer controlled Automatic Moment Limiter.

Monitor Control Centre and full cab instrumentation.

7.8m centres outriggers provide excellent stability based capacities.

An asterisk (*) denotes optional equipment.

Two-stage, dual offset swingaround extensions*.

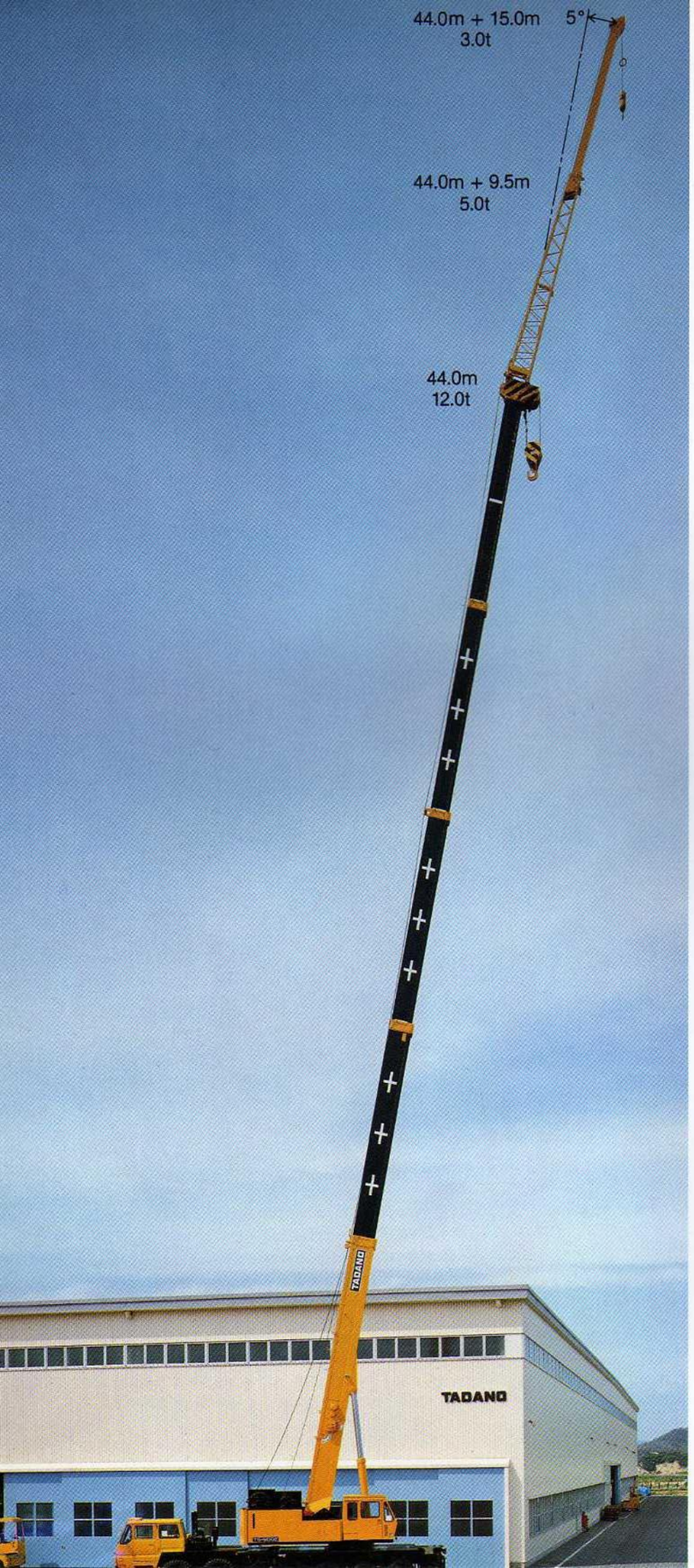
Variable displacement axial piston pumps and new hydraulic circuit design improve operating efficiency.

Matched-power super-structure diesel engine.

Front (5th) float permitting full capacities through 360° swing.

## *Ruggedly built carrier*

The TG-900E is available mounted on two alternative Nissan carriers, a 4-axle 8 x 4 or a 5-axle 10 x 6. Both employ a powerful water-cooled 4-stroke direct injection diesel engine which couples with efficient powertrain components to provide superior vehicle performance, including acceleration and gradeability, over a wide variety of terrain. The 4-axle carrier has a front-mounted full width cab, while the 5-axle carrier has a side-mounted cab. Both cabs are spacious and offer superb comfort and visibility for two.
All of the interior appointments, including steering wheel, seats, pedals and control levers, are ergonomically designed for optimum comfort and ease of operation, thus minimising driver fatigue—particularly valuable for long distance driving. Easy-to-read meters and gauges are logically arranged for quick reference.




# CAPACITY ENOUGH FOR THE TOUGHEST JOBS

### *Full length power boom*

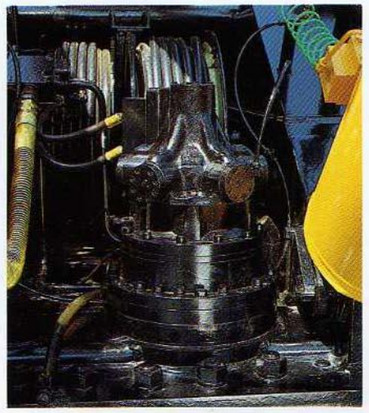
Two alternative booms are available—four-section or five-section. The four-section boom features full length power synchronised single lever extension/retraction from 12.0m to 36.0m. The five-section boom adds a full power sequentially operated top section which gives a boom length of 44.0m. Boom sections slide on individually adjustable nylon wear pads and the seven boomhead sheaves run on lifetime lubricated heavy duty ball-bearings to minimise maintenance requirements. Counterbalance valves are fitted to all telescope and elevation cylinders for safe, smooth operation. A spotlamp is mounted alongside the base boom section.

### *Powerful dual elevation cylinders*

Two powerful double-acting elevating cylinders are fitted, designed to derrick the maximum load with power to spare. Hydraulic boost circuitry permits selection of high-speed operation at the touch of a switch, which is located on the derrick motion control lever. Integral counterbalance and lock valves guard against hydraulic hose failure.

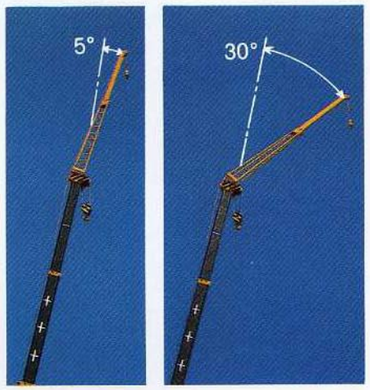
### *Supersmooth swing*

The superstructure swings continuously through 360° on a large diameter sealed ball-bearing swing ring driven internally by a radial piston motor via planetary reduction gearing to ensure powerful and smooth swing operation. A hand-operated parking brake is provided.

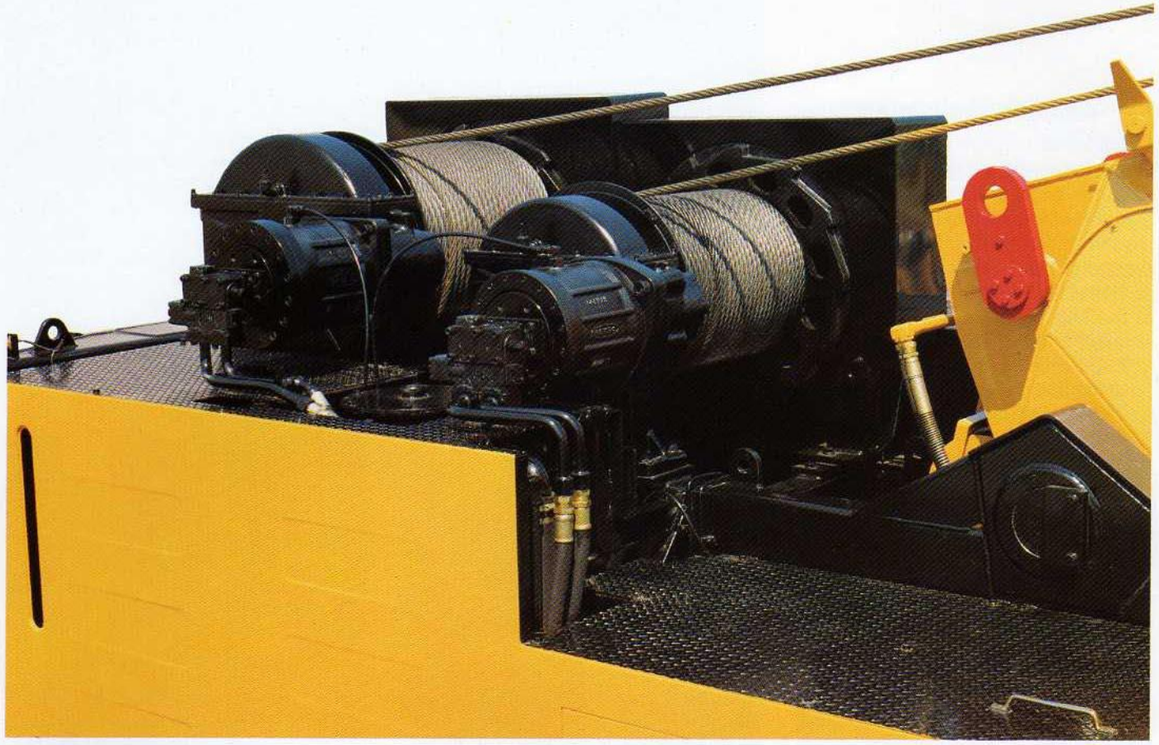


### *Dual offset capability*

The optional two-stage swing-around boom extension can be erected in two alternative positions—offset either 5° or 30° from the main boom centre line. The additional outreach provided by the 30° position can be particularly useful when lifting over tall buildings, and enhances the TG-900E's all-round versatility.




# TWO-SPEED MAIN HOIST AND OPTIONAL HIGH-SPEED AUXILIARY HOIST

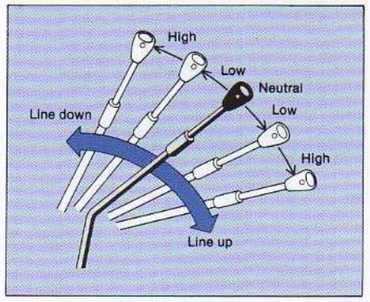


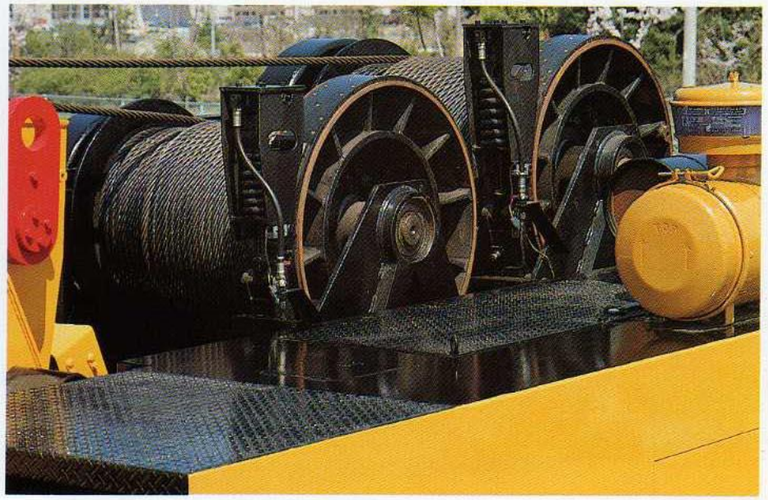
### *New, more powerful winches*

Tadano use powerful, high torque, axial piston motors to drive their winches. The main hoist features 2-speed boost circuitry that nearly doubles line speed while maintaining high line pull characteristics. The optional auxiliary hoist has its own separate motor and is a single high-speed version of the main hoist unit. An automatic fail-safe brake system and counterbalance valves ensure safe, smooth operation.

### *Wide, grooved drums for better spooling*

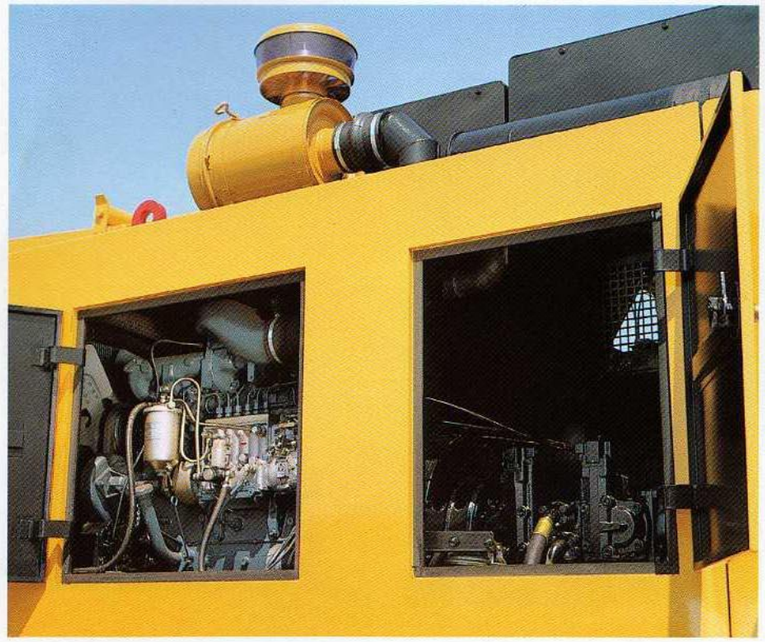
To increase rope service life, the hoist drums are grooved and only require a maximum of 4 layers of rope on the main hoist and 2 layers on the auxiliary hoist. Cable followers and electric drum rotation indicators are fitted as standard equipment.



### *Matched superstructure power*

An economical, watercooled, direct injection 4-stroke diesel engine is mounted on the superstructure to provide the power needed for crane operation. Designed maintenance access makes oil, filter and coolant changes simple.
A large-capacity fuel tank ensures long operation before refueling is necessary.



### *Matched-demand hydraulic system*

Tadano's new hydraulic circuit design provides an ideal power distribution system. The superstructure engine drives two variable displacement axial piston pumps and one fixed displacement gear pump. The variable displacement pumps automatically provide higher speed motion when light loads are involved, whether derricking, telescoping or hook loads. Since this system demands fewer engine revolutions, fuel consumption is minimised and engine output is utilised to the maximum.

### *Overhoist cut-out*

A pendant type overhoist cut-out is fitted as standard equipment to the main boomhead. When the optional swingaround boom extension is supplied, an additional pendant type cut-out is fitted to it.

# A SOLID BASE FOR HIGH PERFORMANCE

### *New, wide outriggers*

The rigid, double box construction outriggers can be hydraulically extended to a maximum of 7.8m centres. The outrigger housings have been designed for increased road clearance and to permit the jacks to retract to within carrier width. Long stroke hydraulic jacks make it easy to level the crane on uneven terrain.

### *Front (5th) float*

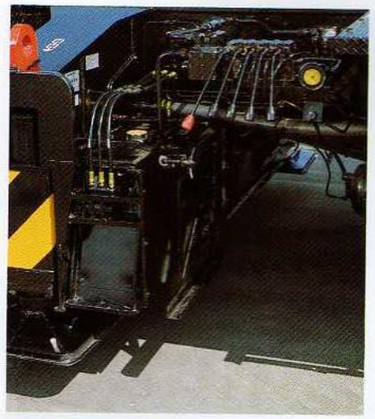
A hydraulically operated jack with integral float is fitted to the front of the chassis, which, when extended, permits full capacities through 360° of swing. Fitted with a pilot check valve, the jack is operated from the outrigger control centre.

### *Simultaneous or independent outrigger operation*

The outrigger control centres (one each side on the 10×6 carrier—left hand side only on the 8×4 carrier), permit simultaneous or independent operation of the outrigger beams and jacks. Each control centre has its own sight level gauge and features a control layout that virtually eliminates the possibility of inadvertent operation. For extra safety, the outrigger beams can be pinned in the fully extended or fully retracted position.



# TADANO MAKE MAINTENANCE SIMPLE



### *Lifetime lubricated bearings—steel hydraulic piping*

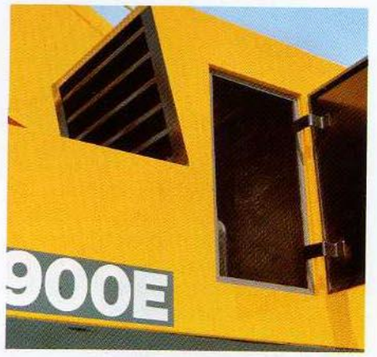
To help keep routine maintenance to a minimum, Tadano use heavy duty lifetime lubricated ball-bearings for all rope sheaves, including those in the hook blocks. The boom and elevation cylinders also pivot in lifetime lubricated plain bearings. Wherever possible, steel hydraulic piping is used for its advantages of designed maintenance access, minimised oil leakage and the elimination of the eventual need to replace flexible hose.

### *Oil reservoir*

The TG-900E has a large-capacity oil reservoir fitted with a sight gauge. The oil return lines are equipped with filters with quick-change replaceable elements.

### *Oil cooler*

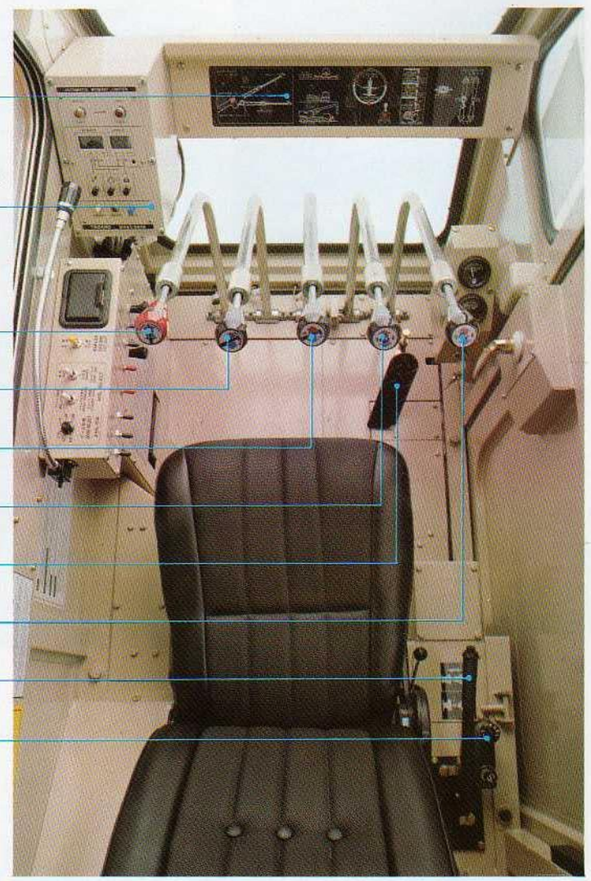
An oil cooler is fitted to maintain safe hydraulic oil operating temperature during long hours of operation. An oil temperature gauge is also provided.



# CONTROL IN COMFORT

## *Total control centre*

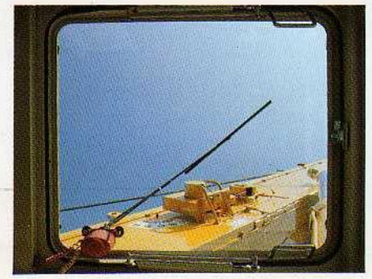
The cab features comprehensive instrumentation for increased safety. In addition to the Automatic Moment Limiter, the cab is fitted with a Monitor Control Centre which shows boom/extension and outrigger configuration; overhoist warning and cut-out; extended front (5th) jack; drum rotation and direction indicators for both main and optional auxiliary hoist (if fitted) and indicators for boom location and Moment Limiter override in use. A pressure gauge provides readouts of all crane motion circuit pressures. Other controls include an engine start and stop switch; water temperature gauge; fuel gauge; low oil pressure warning lamp; battery charge warning lamp; hand throttle and warning horn.

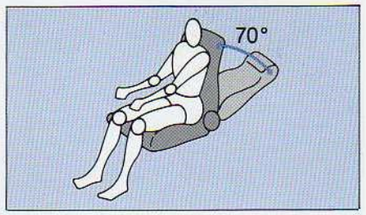


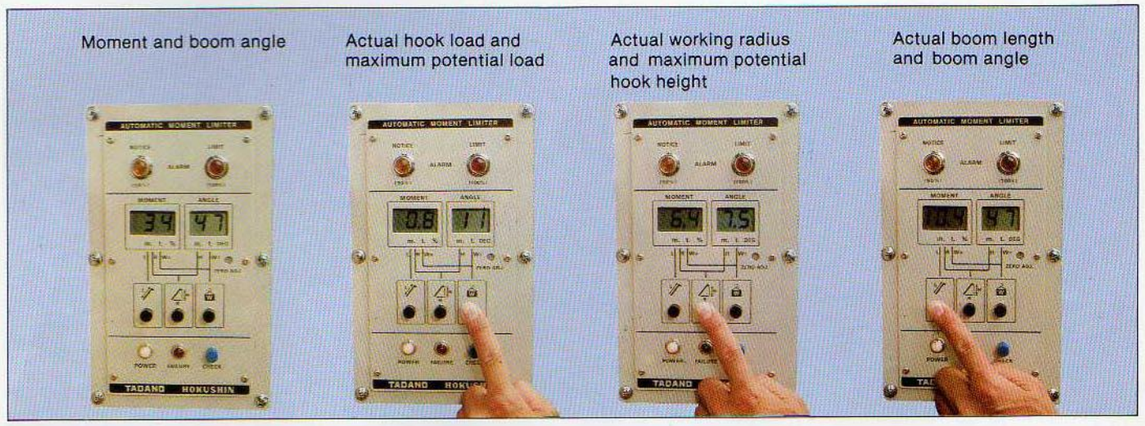

## *Ergonomically designed full vision cab*

One look at the cab and you'll know it's been designed with the operator in mind. Get inside and you'll feel the sort of comfort that most other crane cabs lack. Tadano's new, full vision cabs are wider and more spacious than ever. Adjustable, full length crane control levers for enhanced 'feel' are complemented by an adjustable, reclining seat with headrest. Other creature comforts include through ventilation from the sliding door and opening side, rear and roof windows; cigarette lighter; hot water heater*; interior lighting and an adjustable spotlamp fitted to the front of the cab (another adjustable spotlamp is also fitted to the left-hand side of the superstructure).

An asterisk (*) denotes optional equipment.






## *Tadano's new 'U' series Automatic Moment Limiter*

Tadano's latest Moment Limiter is another major step forward in crane safety. Instead of being based on oil pressure, which is often inaccurate, moment input is monitored electrically directly at the boom support point, while the boom angle is detected in relation to the ground. These factors are combined with the boom/extension length and outrigger configuration to enable the unit to monitor and control stepless capacity changes and also to compensate for reduced capacity operation over the front if the front float has not been extended. The Moment Limiter gives a constant digital liquid crystal display of moment as a percentage of the safe working load together with boom angle, provides audible and visible warning of approach to overload, and most importantly, overrides the manual controls to halt the dangerous crane motions of hoist up, telescope out and boom down before overloading occurs. When the appropriate request button is depressed and held, the unit displays:

- Actual hook load and maximum potential load
- Actual working radius and maximum potential hook height
- Actual boom length and boom angle

Finally, in the event of some operator input error, or system defect, the unit again prevents dangerous crane motions and displays a code number which identifies the error or defect and suggests the remedy.

# OPTIONS

## *Swingaround extension*

The 2-stage swingaround boom extension gives a maximum tip height of 61m (53m when fitted to the four-section main boom). The extension can be erected at an offset of either 5° or 30° from the main boom centre line. For stowage, the extension stores alongside the base boom section where its position is slightly offset to ensure disconnection from the boomhead. When the optional auxiliary hoist unit is fitted the extension can be left permanently reeved so that erection is only a matter of minutes.

## *Auxiliary boom sheave*

An auxiliary sheave may be mounted at the boomhead to facilitate single-line operation when the extra height of lift of the swingaround extension is not required. For easy storage it stows alongside the boomhead but can also be quickly unpinned for storage in the tackle locker. The sheave runs on lifetime lubricated heavy duty ball-bearings and Automatic Moment Limiter protection is incorporated.