

TADANO ROUGH TERRAIN CRANE

TR-400E

45 ton capacity (40 metric tons)



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.

New
TADANO LTD.
4-12, Kamezawa 3-chome
Sumida-ku, Tokyo 130, Japan
TEL: Tokyo (03) 621-7777
FAX: Tokyo (03) 621-7785
TLX: J23755 TADANO
CABLE: TADANRUCU TOKYO

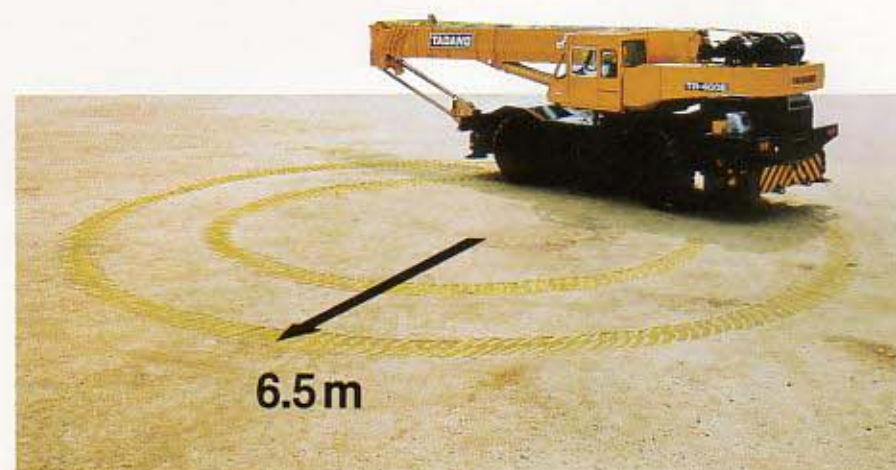
Form No. TR-400E-1-0010 □/EX Printed in Japan 367JU80L10



BUILT FROM THE GROUND UP FOR SAFETY AND STABILITY

Three-way power steering

The TR-400E is equipped with 3-way power steering. A convenient switch inside the cab provides the operator with a choice of steering modes: 1) conventional two wheel front steer, 2) four wheel crab steer and, 3) four wheel coordinated steer. Whether on or off the road, or on crowded construction sites, 3-way steering means maximum manoeuvrability. When using the four wheel coordinated steer mode, the minimum turning radius is only 6.5m (to outer tyre centre).



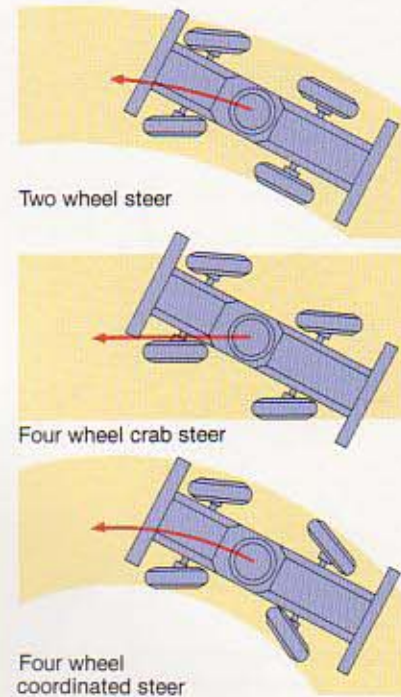
Torque converter transmission puts the power on the road

A heavy duty torque converter transmission takes the power from the 180 PS 4-stroke, water cooled diesel engine and puts it on the road. This powershift unit makes gear changing easy and offers 6 forward and 6 reverse speeds—3 speeds for high range and 3 speeds for low range. All speeds are indicated on the speedometer, including those in the low range. Fully-floating axles are employed front and rear.



Full-air acceleration system

The TR-400E features a full-air acceleration system for enhanced response. In addition, this system automatically increases the air pressure if it falls below the fixed level. When this function is activated, a buzzer and a lamp on the control panel come on until the pressure returns to the normal level. Acceleration by the foot pedal may be overridden by the hand throttle lever, which allows the RPM to be locked at a given speed.



Large-sized tyres

The high quality, large-sized tyres are rugged and durable. They provide superior traction in rough terrain yet can stand up to long distance travel to and from the jobsite.



Responsive braking to match performance

The TR-400E has separate service brake and parking brake systems. The service brakes on all four wheels are powerful hydropneumatic disc units, while the parking brake system is a spring-operated air released brake which acts on the front propeller shaft. Lightly touching the pedal causes all four wheels to brake simultaneously and ensures reliable braking power. To help prevent rust and freezing, and thereby increase service life, a circuit air dryer is provided as standard equipment.

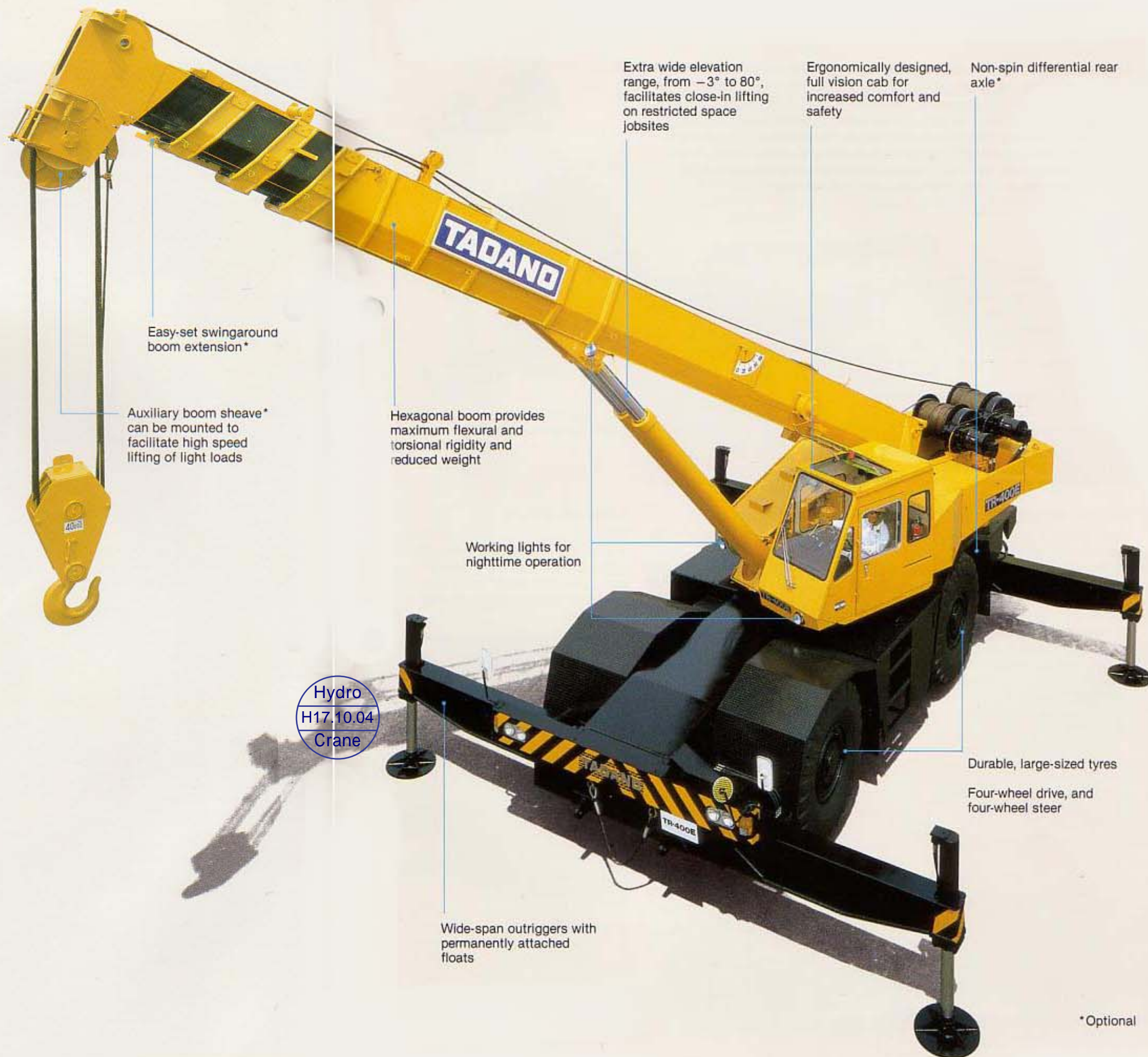
On-rubber duties

The TR-400E can pick and carry or shuttle back and forth on the jobsite with a load on the hook. The "on-rubber" operation switch provided in the cab locks the 2nd boom in the retracted position within the base boom. This feature, together with the hydraulic automatic lock-up cylinders for rear suspension, ensures stable pick-and-carry operations.



Hydro
H17.10.04
Crane

THE NEW STANDARD IN ROUGH TERRAIN DESIGN



*Optional

TADANO TR-400E—AN EXTRA MEASURE OF PERFORMANCE

What sets Tadano's TR-400E apart from other cranes 'in its class' is an extra measure of performance. Tough and manoeuvrable, it's designed to get jobs done even in the most adverse circumstances and like the other Tadano "Super-Hexa," it's got muscle. With an ultra-rigid hexagonal boom, the TR-400E provides superior lifting capabilities, extra reach and full-length power. Tadano has also paid careful attention to comfort and convenience features. "Intelligent" winch speed control and a well-appointed cab make the TR-400E both easy and safe to operate.



TADANO'S ULTRA RIGID HEXAGONAL BOOM



Full length power hexagonal boom



Tadano's new hexagonal boom has been designed to maximise flexural and torsional rigidity while reducing unnecessary weight. The result is a revolutionary boom that is lighter and stronger than those found on conventional cranes. The four-section boom features three

double-acting cylinders for full length power, and synchronised extension/retraction from 10.3m to 32.5m—the widest telescoping range in its class. The single lever control makes telescoping quick and simple.

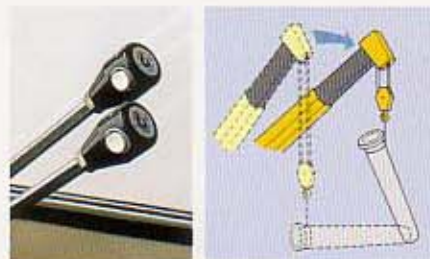
Wide elevation range

Elevation is performed by means of powerful hydraulic cylinders capable of derricking any rated load. The elevation range is from -3° to 80°—versatile enough to answer the requirements of almost any jobsite. The negative boom angle permits ground level reeving. In addition, the elevation is linked to a foot pedal in the driver's cab. Use of the foot pedal frees the operator's hands for other tasks thereby streamlining crane operation.



Supersmooth Tadano "Twin Swing"

In order to prevent dangerous boomhead side-loading, the TR-400E is fitted with Tadano "Twin Swing." This winch lever mounted control permits the operator to switch to free swing as the crane starts to hoist the load, thus enabling the boom to self-centre over the load's centre of gravity.



EASY LIFTING, SMOOTH WINCHING

Powerful winching with wet disc brake

Tadano's winches employ a low-speed high-torque hydraulic motor with a built-in wet disc brake. This brake effectively dissipates heat while providing improved oil distribution. The optional auxiliary hoist is identical to the main hoist unit and features its own separate high-speed motor and brake. Standardization of these units simplifies maintenance. An automatic fail-safe brake system and counterbalance valves ensure safe, smooth operation.

"Intelligent" winch speed control

The main and optional auxiliary winch systems feature Tadano's new "intelligent" winch speed control. Employing variable output pumps, a regulator, and a built-in flow control valve, it automatically adjusts hydraulic pressure to match load conditions. The lighter the load, the faster the winching speed—the heavier the load, the slower the winching speed. In this way, "intelligent" winch speed control allows the crane to select the optimal hoisting speed for each load via single lever action, from 'inching' to high-speed operations—an exclusive Tadano feature.



Impressive lifting capacity

The TR-400E has excellent lifting capacities throughout the full circle swing. The exceptionally rigid mono-box construction frame and wide span outriggers are designed and constructed to provide the extra strength and stability needed for rough terrain operation. Single lever control makes variable speed winching possible no matter how large or small the load.

Wide span outriggers

The TR-400E features wide span, hydraulically-operated double-box construction outriggers. The outriggers can be operated either independently or simultaneously by controls that are mounted in the cab. Situated next to the control switches is a sight level gauge that confirms position at a glance. In addition the floats are permanently attached to the jacks eliminating troublesome mounting chores and permitting rapid set-up.

MAINTENANCE AND SAFETY FEATURES

Oil cooler*

An optional oil cooler is available to ensure that the hydraulic oil is kept at safe temperatures during long hours of operation.



Overhoist cut-out

A pendant type overhoist cut-out is fitted as standard equipment.



Tool compartment

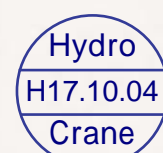
The TR-400E comes equipped with a tool compartment that is accessible from ground level.



Oil reservoir

A large capacity oil reservoir is fitted with a sight level gauge. In addition, the return line filters have quick-change replaceable elements that help simplify maintenance.

* Optional



COMFORT, VISIBILITY, AND TOTAL CONTROL AT YOUR FINGERTIPS

Full vision cab designed with the operator in mind

The full-vision cab on the TR-400E is situated on the left side of the turntable. Windows located on all four sides and in the roof enhance safety by providing excellent visibility. In addition to a large-size front travel wiper, the pop-up roof window is fitted with an electric wiper and a sun visor. For maximum ventilation the windows open wide while the "wagon-type" sliding door allows the operator to step easily in and out of the cab. The driver's seat reclines and can be adjusted for firmness and leg length. The rubber-mounted cab is fully instrumented and laid out to provide a comfortable working environment at the jobsite or on the road. A tachometer is mounted on the engine hood where it is easy to see.



Monitor lamps

Bright monitor lamps indicating steering configuration and other important data are located on the control panel. This easy-to-read display improves safety by providing the operator with a quick index of system status.



Hook load meter

The TR-400E is fitted with a hook load meter which shows the actual weight on the hook. By using this instrument, the operator can ensure that the crane is not overloaded. When the crane is fitted with Tadano's Automatic Moment Limiter (AML)*, the hook load meter is not fitted since its function is taken over by the AML*. In addition to the pendulum type angle indicator fitted to the base boom section, an electric boom angle indicator that provides a digital readout of the boom angle is also available (only when the AML* is not fitted).

* Optional

EXTRA PERFORMANCE OPTIONS

Tadano's Automatic Moment Limiter

Tadano's latest Moment Limiter is another major step forward in crane safety. Instead of being based on oil pressure, which can be inaccurate, moment input is electrically taken directly at the boom support point and the boom angle is detected in relation to true horizon. These factors are combined with the boom/extension* length and outrigger configuration, enabling the unit to monitor and control stepless capacity changes. The Moment Limiter gives a constant LCD readout of moment as a percentage of the safe working load together with boom angle. Furthermore, it provides both audible and visible warnings of approaching overload situations and cuts out the dangerous crane motions of hoist up, telescope out and boom down before overloading occurs. When the appropriate request switch is turned on, the unit displays:

- actual hook load
 - maximum potential load
 - actual working radius
 - maximum potential hook height
 - actual boom length
- Finally, in the event of some operator input error or system defect, the unit again cuts out the dangerous crane motions and displays a code number identifying the error or defect and suggesting the remedy.



Swingaround extensions

Two alternative boom extensions are available—a 9.8m one-piece unit or a 9.8/17.1m 2-stage version. When erected, the one-piece unit is offset 5° from the main boom centre line, while the 2-stage ver-

sion is offset either 5° or 30° from the main boom centre line. The stowage position alongside the base boom section is slightly offset to ensure disconnection from the boomhead.



Auxiliary boom sheave

An auxiliary boom sheave can be mounted to the boomhead to facilitate the high speed lifting of light loads when the extra height of lift provided by the swingaround extension is not required.



Non-spin differential

Especially useful on rough terrain construction sites, the non-spin differential works by transferring power from the slipping wheel to the wheel on the opposite side, thus maintaining traction wherever possible. It can be fitted as an option to the rear axle.

Auxiliary hoist unit

This is a single high speed version of the main hoist unit. It features its own control lever, fitted with a load follower control and an automatic fail-safe brake.