

Operation and Maintenance Manual

Rough Terrain Crane

Model **TR-650XXL-3**

Applicable Serial No. 545332 ~

▲CAUTION: Read this manual before operating the crane. Save this manual for future reference.

TADANO LTD.

WARRANTY

Tadano Ltd. (herein referred to as TDN) warrants that each new Product manufactured by TDN shall be free from defects in material or workmanship under normal use and maintenance for a period of twelve (12) months or 1,000 hours, whichever occurs first, from the date of initial sale, lease or rental.

Within the United States, the distributor designated by TDN, shall repair and replace free of charge, including related labor, any such defective parts.

This warranty does not apply in the following cases, even when they occur during the warranty period:

1. Damage or defects caused by accident, misuse, negligence or natural calamity.
2. Damage or defects caused by using other than TDN genuine parts.
3. Damage or defects ascribed to repair work or modification, etc., being carried out at workshops other than those designated by TDN.
4. Damage or defects arising from the use of a product beyond the operating limitations specified by TDN.
5. Damage or defects caused by failure to operate, service or maintain products in accordance with the operation and maintenance manual or other instruction of TDN.
6. Loss of use, loss of time, inconvenience and other consequential damages such as expenses for fuel, telephone, travel, lodging, transportation, loss or damages to personal property or loss of revenues.
7. Slight defects that generally do not affect the integrity or reliability of product.
8. Corrosion or discoloration of plated surfaces caused by aging.
9. Consumable articles such as oil, fan belts, packings, gaskets, fuses, brake linings, fuel filters and other similar parts.

The present warranty is in lieu of any other warranties, expressed or implied, including any warranty of merchantability or fitness for a particular purpose.

TADANO LTD.

No.3

⚠ DANGER DO NOT LIFT PEOPLE. ACCIDENT MAY RESULT CAUSING INJURY.	⚠ DANGER STAY AWAY FROM MACHINE IF CLOSE TO POWER LINE. MACHINE, LOAD AND GROUND MAY BECOME ELECTRIFIED AND DEADLY.	⚠ CAUTION ALWAYS DISENGAGE THE HYDRAULIC PUMPS TO PREVENT UNEXPECTED CRANE MOTIONS WHILE TRAVELING.
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343-912-01230
343-912-01230-1

No.4

⚠ DANGER

DO NOT OPERATE THIS CRANE UNLESS

- YOU HAVE BEEN TRAINED IN ITS SAFE OPERATION.
- YOU KNOW AND FOLLOW THE SAFETY AND RECOMMENDATIONS CONTAINED IN THE TADANO INSTRUCTION MANUALS.
- YOU ARE FAMILIAR WITH THE OSHA RULES FOR A SAFE WORKPLACE.

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

343-912-01261
343-912-01261-0

No.7

⚠ WARNING



DO NOT STAY IN
DIRECTION OF JIB
EXTENSION WHEN
EXTENDING SECOND
JIB STAGE.

343-912-01440
343-912-01440-0

No.5



⚠ WARNING

TO PREVENT BODILY
INJURY DO NOT CLIMB
BOOM, JIB OR
OUTRIGGER.

343-912-02140
343-912-02140-0

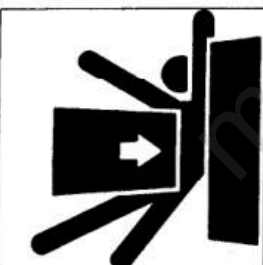
No.8

⚠ WARNING

FALLING OBJECT CAN CAUSE
SEVERE INJURY.
MAKE SURE JIB PIVOT PIN
IS INSTALLED ON RIGHT
SIDE OF BOOM HEAD BEFORE
DISCONNECTING JIB FROM
STOWING BRACKET.

343-941-91360
343-941-91360-0

No.6



⚠ WARNING

STAND CLEAR OF
MOVING MACHINE
TO PREVENT BODILY
INJURY.

343-912-02180
343-912-02180-0

No.9

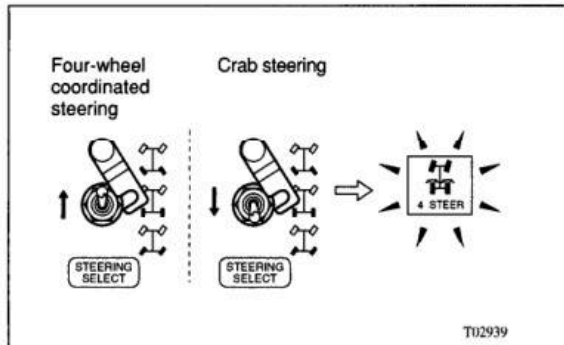
⚠ WARNING

HAZARDOUS CONDITION
CAN CAUSE SEVERE INJURY

USE A TAGLINE TO PREVENT RAPID SWING
OF JIB FROM BOOM WHEN JIB IS RELEASED
AT STOWING BRACKET.
KEEP ALL PERSONNEL CLEAR OF JIB SWING
PATH.

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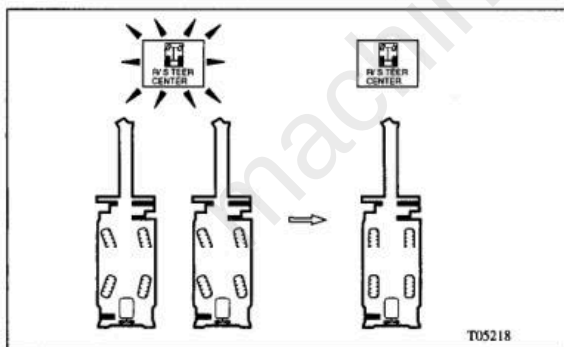
- Place the steering mode select switch in the "four-wheel coordinated steering" or "crab steering" position. Make sure that the four-wheel steering indicator lamp comes on simultaneously.



- Move the steering wheel, and visually confirm the front and rear wheels show the same motion as the selected steering mode.

From Four-wheel Coordinated/Crab to Two-wheel Steering Mode

- Stop the carrier with the rear wheels directed straight so that the rear steering center indicator lamp goes out.



- Return the steering mode select switch to "two-wheel steering". Now the two-wheel steering mode has been set.
◆ Lock the steering mode select switch lever with the stopper.
- Try to turn the steering wheel and visually confirm that the rear wheels do not move.

5. Tire shall be inflated to correct air pressure.

Tires	Air Pressure
29.5-25-22PR	60 psi. (4.2 kgf/cm ²)

6. Over front operation shall be performed within 2 degrees in front of chassis.
7. On rubber lifting with "jib" is not permitted. Maximum permissible boom length is 100' (30.48 m).
8. When making lift on rubber, stationary, set parking brake.
9. For creep operation, boom must be centered over front of machine, swing lock engaged, and load restrained from swinging. Travel slowly and keep the lifted load as close to the ground as possible, and especially avoid any abrupt steering, accelerating or braking.
10. Do not operate the crane while carrying the load.
11. Creep is motion for crane not to travel more than 200 ft. (60 m) in any 30 minute period and to travel at the speed of less than 1 mph (1.6 km/h).
12. For creep operation, set Drive select switch to "4-WHEEL(Lo)" and set gear shift lever to "1".
13. Work under the condition that removable counterweight isn't attached is prohibition.

NOTES FOR LOAD MOMENT INDICATOR (AML-L)

- When operating crane on outriggers:
 - Set P.T.O. switch to "ON".
 - Press the outrigger mode select key to register for the outrigger operation. Press the set key, then the outrigger mode indicative symbol changes from flickering to lighting.
 - Press the boom mode select key to register the boom mode, then the boom mode indicative symbol changes from lighting to flickering. Each time the boom mode select key is pressed, the mode changes. Press the set key to select the status that corresponds to the actual state of the boom, then the boom mode indicative symbol changes from flickering to lighting.
 - When erecting and stowing jib, select the status of jib set (Jib state indicative symbol flicker).
- When operating crane on rubber:
 - Set P.T.O. switch to "ON".
 - Press the on-tire mode select key. The on-tire mode indicative symbol comes on. Each time the

on-tire mode select key is pressed, the mode changes. Select the creep operation, the on-tire mode indicative symbol flicker.

- Press the boom mode select key to register the boom mode. However, pay attention to the following.

(1) For stationary operation.

- The front capacities are attainable only when the over front position symbol comes on. When the boom is more than 2 degrees from centered over front of chassis, 360° capacities are in effect.
- When a load is lifted in the front position and then swung to the side area, make sure the value of the LOAD MOMENT INDICATOR (AML-L) is below the 360° lifting capacity.

(2) For creep operation.

- The creep capacities are attainable only when boom is in the straight forward position of chassis and the over front position symbol is on. If boom is not in the straight forward position of chassis, never lift load.

- A swing does not automatically stop even if the crane becomes overloaded.
- During crane operation, make sure that the displays on front panel are in accordance with actual operating conditions.
- The displayed values of LOAD MOMENT INDICATOR (AML-L) are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tire, operating speed, side loads, etc.
For safe operation, it is recommended when extending and lowering boom or swinging, lifting loads shall be appropriately reduced.
- LOAD MOMENT INDICATOR (AML-L) is intended as an aid to the operator. Under no condition should it be relied upon to replace use of capacity charts and operating instruction. Sole reliance upon LOAD MOMENT INDICATOR (AML-L) aids in place of good operating practice can cause an accident. The operator must exercise caution to assure safety.

Extending the Outriggers

⚠ WARNING

⚠ Outriggers with improperly extended beams cannot assure safety. Fully extend the beams at all times.

⚠ The machine can sometimes remain level even when it is supported on only three jacks. Operating the machine in such a condition is very dangerous. After extending the outriggers, make sure that all outrigger floats are in contact with the ground. Any unseated float must be lowered so that it is in firm contact with the ground.

⚠ If the crane is not level on the ground, the load radius will increase when the load is swung toward the lower side. In the worst case, this could cause the crane to overturn. Always use the bubble levels to make sure that the crane is level after extending the outriggers.

⚠ Operating on outriggers when any tires are in contact with the ground will reduce machine stability due to the reaction force of the tires. Extend jacks and, if necessary, place blocking under the outrigger floats to raise the tires clear of the ground.

⚠ The outrigger beams may accidentally retract during operation if they are not properly locked with the lock pins. Be sure to secure the outrigger beams with the lock pins whenever they are extended.

⚠ The outrigger switches can be activated regardless of the PTO switch position.

After extending or retracting the outriggers, be sure to return the extend/retract selector switch and slider/jack selector switch to their neutral positions. This action prevents unexpected extension or retraction of the outriggers if the switches are touched inadvertently.

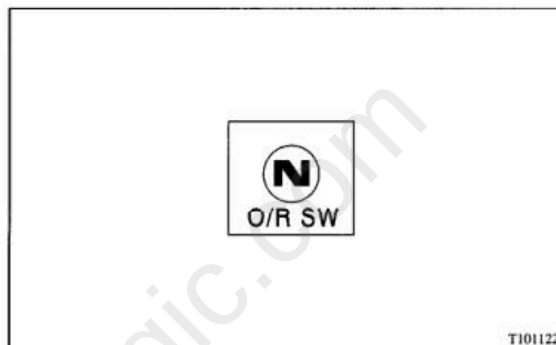
⚠ Unless the gearshift lever is set to other than the "N" position, neither extension nor retraction of outriggers can be performed. Make sure of the gearshift lever "N" position, beforehand.

[NOTICE]

◆ After outriggers' extension and retraction, set the switches to neutral:

- Extend/retract selector switch
- Slide/jack selector switch

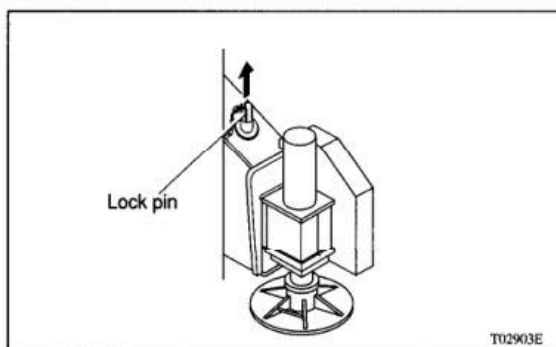
Unless the extend/retract selector switch is situated at neutral, the outrigger switch non-neutral position lamp flashes.



◆ When outrigger stowing operation is made, data on outrigger extension width is cleared. After resetting the outriggers, register the extension widths again.

Full Extension Procedure

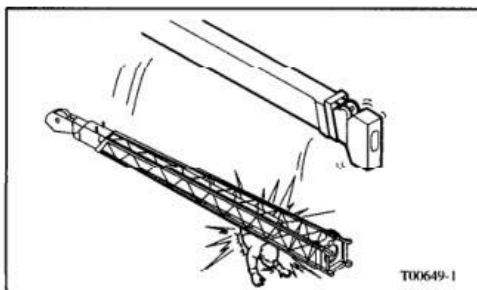
1. Remove all four lock pins.



Stowing the Jib

⚠ WARNING

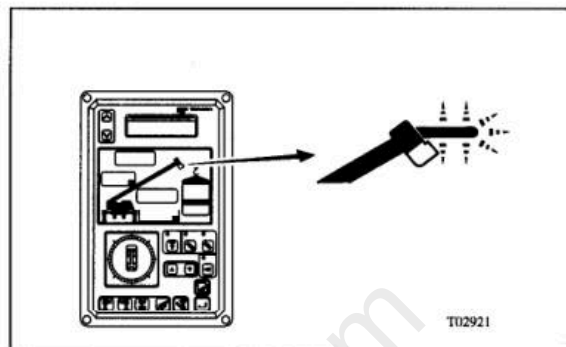
- ⚠ Do not lower the boom to an angle below 0° . The jib could become disengaged and drop off.
- ⚠ Always make sure that either the stowing pin or pivot pin is in position before starting any crane operation. Without these pins in position, the jib will drop off when an operation is started.



- ⚠ Take the necessary precautions to ensure that nobody enters the work area over which the jib will swing. Anyone standing in this vicinity could be injured. Also check the adjacent area for any structure or other obstruction that may present a problem when operating the jib.
- ⚠ The load moment indicator's control functions and the automatic stop function are deactivated when the jib set status is selected on the load moment indicator. Stow the jib carefully with no load on the crane.
- ⚠ When working at an elevated position, use a platform or scissor lift to prevent falling and ensure safety.
- ⚠ Use the attached bolts and cotter pins to secure the lock pin, rope guide pins, and stowing pin in position.

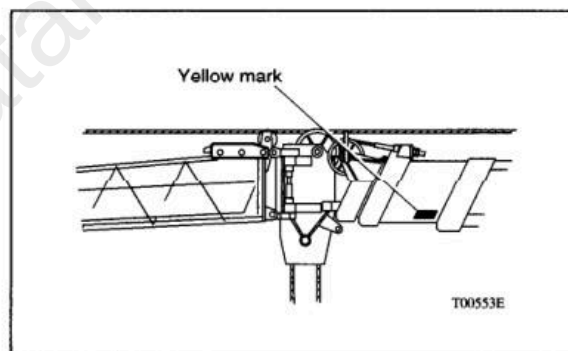
◆ When the offset angle and length of the jib is changed, return the jib to the 32.2 ft (9.8 m) jib, 5° offset status before stowing it.

1. Select the jib set status on the load moment indicator.

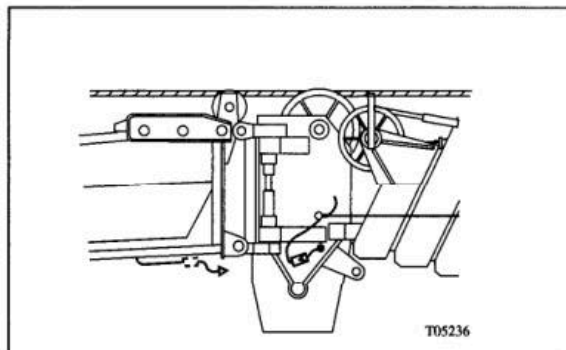


2. Place the auxiliary hook block in its stowing position.

3. Extend the boom until the yellow mark on the side of the 2nd boom section comes out of the base boom section.



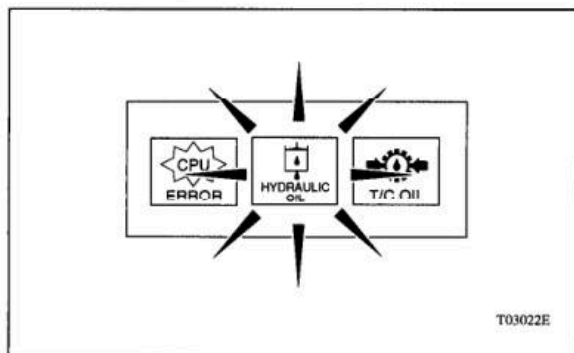
4. Lower the boom to a 0° angle. Connect the anti two block device leads to the connector on the boom.



Equipment Outside the Cab

Oil Cooler

When the hydraulic oil temperature goes above 122°F(50°C), the oil cooler begins to work. When the temperature gets higher than 185°F(85°C), the temperature warning lamp comes on. If the lamp lights, stop crane operation immediately. Wait until the lamp goes off and resume operation.



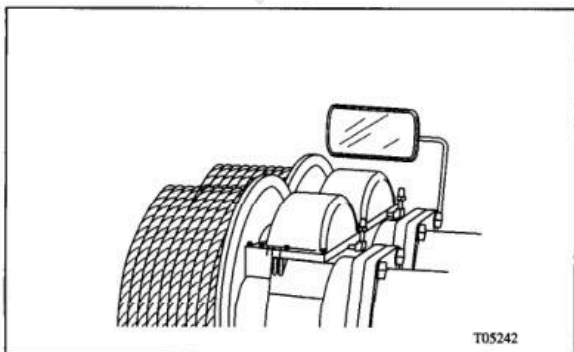
Winch Drum Monitor Mirror (Option)

[NOTICE]

Lifting a load with a wire rope disorderly wound on a winch drum will damage the wire rope the shorten the life of the wire rope. Do not lift a load with a wire rope disorderly wound.

Use the mirror to check the wire rope condition on the winch drum.

◆To look at the mirror, turn to the rear of the crane operator's cab

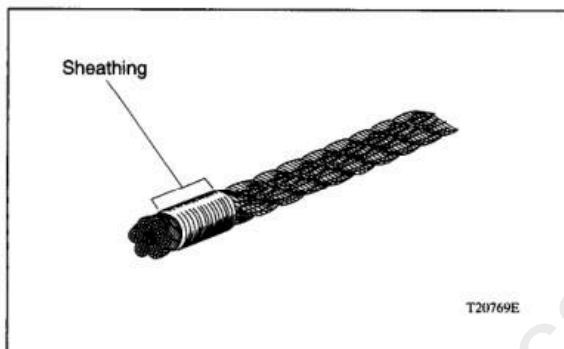


Installing Wire Rope

◆ When a wire rope is cut or treatment is applied to the ends, wrap the cut or treated ends with sheathing to prevent the strands from coming loose. Use an annealed low carbon steel wire covered with zinc plating. Wrap it around the wire rope.

The width of the sheathing should be two or three times the diameter of the rope.

Wire rope diameter (mm)	Sheathing wire diameter (mm)
Less than 12	0.8
12 or more but less than 18	1.8
18 or more but less than 30	2.0
30 or more but less than 50	2.5

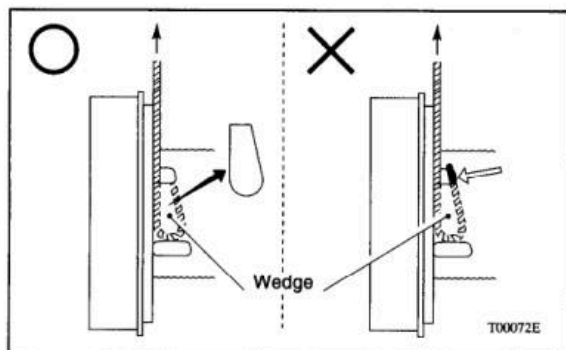


1. Reeve a new wire rope from the boom head or jib head to the winch drum.

◆ Be sure to route the rope correctly.

2. Secure the end of the wire rope to the winch drum with the wedge.

◆ The wedge must be oriented correctly. Make sure that the end of the wire rope does not extend beyond the edge of the winch drum spool (lagging).

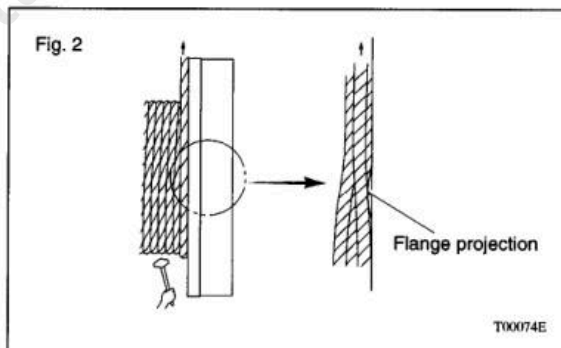
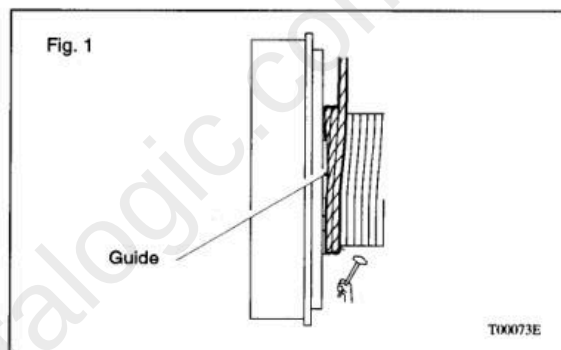


3. Operate the winch to wind the rope around the drum leaving enough rope for attaching it to the hook block.

◆ Wind the rope slowly while applying tension to prevent improper winding.

◆ Pay attention to the following when winding the rope:

- (1) The first wrap must be wound along the guide at the end of the drum. (See Fig. 1.)
- (2) In the first layer of wraps, the rope should be fitted in the grooves made on the drum.
- (3) When winding over a layer of wraps, the rope should be set in the valleys between the wraps. (See Fig. 2.)



4. After passing the rope through the weight of the overwind cutout device, reeve it through the boom and hook block sheaves in the pattern appropriate to the number of parts of line.

◆ For information on how to reeve the crane, see the "Reeving Wire Ropes" section.

Full Version Available

Tadano TR-650XXL-3 Rough Terrain Crane Operator Manual

Tadano TR-650XXL-3 rough terrain crane operator manual, covering controls, safe operation, setup and daily checks. Instant PDF download.

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File Pages: 498 · File Count: 2 · File Language: English