

**CX15B
CX18B
Series 2**
Mini Excavator

SERVICE MANUAL

Part number 84533370B

English
May 2014



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INTRODUCTION

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Safety rules

Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

 DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: Notice indicates a situation that, if not avoided, could result in machine or property damage.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

Personal safety

NOTICE: The proper and safe lubrication and maintenance for this machine, recommended by Manufacturer, are outlined in the OPERATOR'S MANUAL for the machine.

Improper performance of lubrication or maintenance procedures are dangerous and could result in injury or death. Read and understand the MANUAL before performing any lubrication or maintenance.

The serviceman or mechanic may be unfamiliar with many of the systems on this machine. This makes a careful use of the systems very important when performing maintenance operations. Sound knowledge of the system and or components is important before the removal or disassembly of any component.

Because of the size of some of the machine components, the serviceman or mechanic should check the weights noted in this manual. Use proper lifting procedures when removing any components. Weight of components table is shown in this section.

The following is a list of basic precautions that must always be observed.

1. Read and understand all Warning plates and decals on the machine before Operating, Maintaining or Repairing this machine.
2. Always wear protective glasses and protective shoes when working around machines. In particular, wear protective glasses when using hammers, punches or drifts on any part of the machine or attachments. Use welders gloves, hood/goggles, apron and the protective clothing appropriate to the welding job being performed. Do not wear loose fitting or torn clothing. Remove all rings from fingers, loose jewellery, confine long hair and loose clothing before working on this machinery.
3. Disconnect the battery and hang a "Maintenance in Progress" tag in the operator's seat. Remove starter key.
4. If possible, make all repairs with the machine parked on a level and firm surface. Block the machine so it does not roll while working on or under the machine. Hang a "Maintenance in Progress" tag in the operator's seat.
5. Do not work on any machine that is supported only by lift, jacks or a hoist. Always use blocks or stops for the jack before carrying out any disassembly operation.

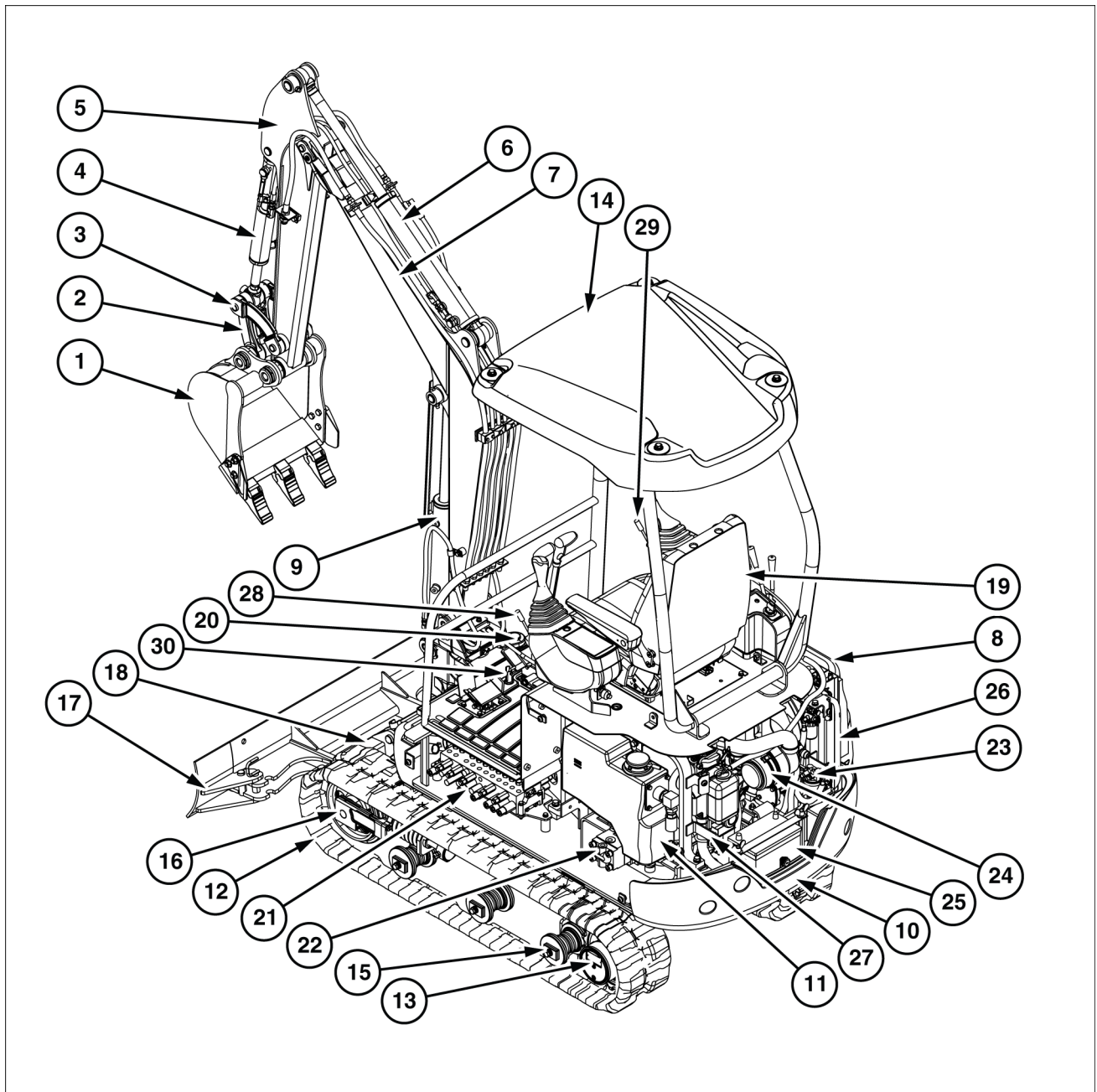
NOTICE: Do not operate this machine unless you have read and understood all instructions contained in this manual. Improper machine operation is dangerous and could result in injury or death.

6. Relieve all pressure in air, oil or water systems before any lines, fittings or related items are disconnected or removed. Always make sure all raised components are blocked correctly and be alert for possible pressure when disconnecting any device from a system under pressure.
7. Lower the bucket, dozer or other attachments to the ground before performing any work on the machine. If this cannot be done, make sure the bucket, blade or other attachment is blocked correctly to prevent it from dropping unexpectedly.
8. Use steps and grab handles when mounting or dismounting a machine. Remove any debris or mud from steps, walkways or work platforms before using them. Always face the machine when using steps, ladders and walkways. When it is not possible to use the designed access system, provide ladders, scaffolds, or work, platforms to perform safe repair operations.
9. To avoid back injury, use a hoist when lifting components which weigh 20 kg (44.09 lb) or more. Make sure all chains, hooks, slings, etc., are in good condition and are the correct capacity. Be sure hooks are positioned correctly. Lifting eyes are not to be side loaded during a lifting operation.
10. To avoid burns, be alert for hot parts and surfaces immediately after stopping the machine such as hot fluids in lines, tubes and compartment covers.
11. Be careful when removing cover plates. Gradually back off the last two capscrews or nuts located at opposite ends of the cover or device and carefully pry the cover loose to relieve any spring or other pressure, before removing the last two capscrews or nuts completely.
12. Be careful when removing filler caps, breathers and plugs on the machine. Hold a rag over the cap or plug to prevent being sprayed or splashed by liquids under pressure. Danger is even greater if the machine has just been stopped, as liquids might be boiling hot.
13. Always use the proper tools that are in good condition and that are suited for the job at hand. Be sure you understand how to use them before performing any service work.
14. Reinstall all clamps with the same spare part number. Do not use clamps of inferior quality if replacement is necessary.

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15. Repairs which require welding should be performed only with the benefit of the appropriate reference information and by personnel adequately trained and skilled in welding procedures. Determine the type of metal being welded and select the correct welding procedure and electrodes, rods or wires to provide a metal weld strength at least equivalent to that of the parent metal. Make sure to disconnect the battery before any welding operation is performed.
16. Do not damage wiring during removal operations. Reinstall the wiring so it is not damaged nor will be damaged in operation of the machine by contacting sharp corners, or by rubbing against some object or hot surface. Do not connect wiring to a line containing fluid.
17. Be sure all protective devices, including guards and shields, are properly installed and functioning correctly before starting a repair. If a guard or shield must be removed to perform the repair work, use extra caution and replace the guard or shield after repair is complete.
18. Performing maintenance and repair operations while the bucket is lifted is dangerous, because there is the possibility of a device falling. Do not fail to lower such device and place the bucket to the ground before starting the operation.
19. Loose or dirty fuel, lubrication and hydraulic systems, pipes and hoses may cause fires. Do not bend or strike high-pressure lines, do not install bent or damaged lines. Inspect lines, tubes and hoses carefully. Do not check for leaks with your hands. Very small (pinhole) leaks can result in a high velocity oil jet that will be invisible close to the hose.
This oil can penetrate the skin and cause personal injury. Use card-board or paper to locate pinhole leaks.
20. Tighten connections to the correct torque. Make sure that all protections against burns, the clamps and the operator's protective devices are correctly installed in order to prevent excessive heat, vibrations or rubbing against other parts during operation. Shields that protect against oil spray onto hot exhaust components in event of a line, tube or seal failure must be installed correctly.
21. Do not operate a machine if any rotating part is damaged or contacts any other part during operation. Any high speed rotating component that has been damaged or altered should be checked for balance before reusing.
22. Be careful when servicing or separating the tracks. Chips can fly when removing or installing a track pin. Wear safety glasses and long sleeve protective clothing. Tracks can unroll very quickly when separated. Keep away from front and rear of machine. The machine can move unexpectedly when both tracks (crawlers) are disengaged from the sprockets. Block the machine to prevent it from moving.

Part identification



TULI12E1B0042GB 1

- | | | |
|--------------------|------------------------|--|
| 1. Bucket | 11. Hydraulic oil tank | 21. Control valve |
| 2. Link rod | 12. Crawler | 22. Pump |
| 3. Lever | 13. Travel motor | 23. Engine |
| 4. Bucket cylinder | 14. Canopy | 24. Air filter |
| 5. Arm | 15. Lower roller | 25. Battery |
| 6. Arm cylinder | 16. Idler adjuster | 26. Radiator |
| 7. Boom | 17. Dozer | 27. Muffler |
| 8. Fuel tank | 18. Dozer cylinder | 28. Left-hand safety lever |
| 9. Boom cylinder | 19. Operator's seat | 29. Right-hand safety lever (only on models with canopy) |
| 10. Counterweight | 20. Swing cylinder | 30. Upper structure slewing locking pin |