

B50D Mk III 6X6
ARTICULATED DUMP TRUCK
SERVICE MANUAL
Document Part Number 872152

TO THE SERVICE PERSONNEL

▲ WARNING

Do not operate the machine unless you have read the Operator's Manual and fully understand how to operate the machine properly.

This manual is written for an experienced technician and are on-the-job guides containing only the vital information needed for diagnosis, analyses, testing and repair. Essential tools required in performing certain service works are identified and in this manual and are recommended for use.

The safe operation of your **BELL EQUIPMENT** machines very important to prevent any personal injury and/ or damage. This manual must be read and fully understood before carrying out any tests on your **BELL EQUIPMENT** machine.

Right and left hand sides are determined by facing in the direction of forward travel.

This manual is divided into chapters. The information contained in the manual is in logical sequence, with the instructions written in step by step format.

Effective maintenance on your **BELL EQUIPMENT** machine is achieved when personnel fully understand the information contained in this manual.

Every effort has been made to ensure that the information contained in this manual was correct at the time of publication. **BELL EQUIPMENT Co.** has a policy of continuous product development, improvement, and design. **BELL EQUIPMENT Co.** reserves the right to change, amend and update the design of its product at any time without prior notice. With this policy, changes may have occurred that are not included in this manual.



SAFETY SYMBOL

The following safety symbol is used for all safety messages. When you see the safety symbol, follow the safety message to avoid personal injury or death.

WARNINGS and **CAUTIONS** must be read, fully understood and followed, before carrying out the action or maintenance procedure concerned.

WARNINGS and **CAUTIONS** are always placed before any action or maintenance procedure where personal injury and/or damage to the machine could occur if that action, test or maintenance procedure is not carried out correctly.

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WARNING AND CAUTION SYMBOL

Throughout this manual the word **WARNING** is used to alert the operator and others of the risk of personal injury during the operation of the equipment. **CAUTION** indicates the possible damage to the machine. **NOTE** highlights information of special interest.

▲ WARNING

Diesel engine exhaust and some of its constituents are known to the state of California to cause Cancer, birth Defects and other Reproductive Harm.

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Document Part Number 872152

Revision:0

**Technical Documentation
BELL EQUIPMENT COMPANY
Richards Bay**

IMPORTANT

Due to **BELL EQUIPMENT'S** policy of continuous product improvement, the information contained in this manual was correct up to the time of printing (Revised date of manual). Any changes after this date will only be included in the next update of this manual.

The illustrations in this manual are pictorial and not necessarily true representations of components. Photographs and illustrations may show optional equipment.

The table below is a record of amendments made to this manual after the publication date.

Amendment Record Sheet			
Amendment	Page No's. Replaced	Date	Page amended/ Pages Inserted By

INTRODUCTION

▲ WARNING

All specifications in this manual apply to a standard machine as supplied by the factory and any modifications done to the machine such as greedy boards, etc. will result in different specifications and we as OEM cannot take responsibility for this.

Read this manual carefully for it has been produced to assist you in the correct operation, maintenance and care of your **BELL EQUIPMENT** machine. Failure to do so could result in personnel injury or equipment damage.

Right and left hand sides are determined by facing in the direction of forward travel.

Warranty is provided as part of **BELL EQUIPMENT'S** support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied.

This manual is divided into chapters. The information contained in the manual is in logical sequence, with the instructions written in step by step format.

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Whilst every endeavour has been made to provide accurate and reliable information, **BELL EQUIPMENT Co.** specifically disclaims any actual or implied warranty and under no circumstances shall be liable for any loss, damage or injury to person or property suffered, whether direct, indirect or consequential, arising from the use of this manual. In particular and without detracting from above, the disclaimer also applies in the event of any specification, warning, or representation contained in this manual being inadequate, inaccurate, or unintentionally misleading.

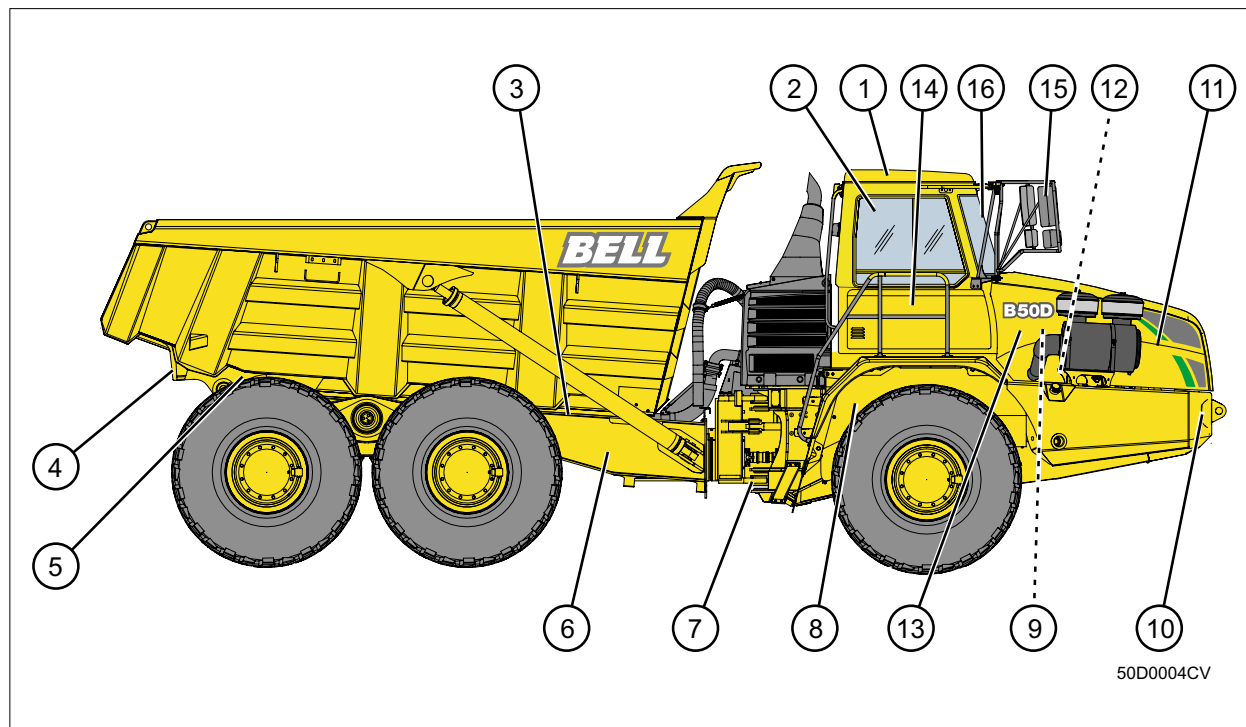
The user is urged to strictly comply with the instructions and warnings that are given in the interests of general safety. Please do not hesitate to contact your **BELL EQUIPMENT** Product Support Representative whenever you have a query on your **BELL EQUIPMENT** product or this manual.

SAFETY

SPECIFICATION

This machine complies to the CE Specification.

SAFETY FEATURES



1. ROPS/FOPS Cab Protection.

The Roll Over Protective Structure has been certified to meet specified test requirements according to SAE J1040 and ISO 3471. The Falling Objects Structure has been certified to meet specified test requirements according to SAE J/ISO 3449 and ISO 3449.

2. Cab with Heater/Defroster.

Positive pressure ventilation system circulates both outside and inside air through filters for a clean working environment. Built in defroster vents direct air flow for effective window de-fogging/de-icing.

3. Dump Body Service Lock.

4. Stop/Back lights. Highly visible lights.

5. Backup Alarm.

6. Independent Parking Brake.

7. Articulation locking Bar.

8. Secondary Steering.

Ground driven, continuously in operation. Secondary steering indicator light will light when activated.

9. Horn.

10. Halogen Lights and Turn Signals.

11. Engine Fan Guard.

12. By-pass Start Protection.

13. Exhaust Brake and Transmission Retarder (If Equipped).

14. Safety Belt Retractors.

15. Mirrors.

16. Large Windshield Wiper With Washer.

MATERIAL SAFETY DATA SHEETS (MSDS)

The Federal Occupational, Safety and Health Administration (OSHA) Standard 29 CFR 1910.1200 and in some cases, State and Local Right-to-Know laws, may require that specific MSDS be available to the employees prior to operating this equipment. This may include information on substances contained in this equipment such as antifreeze, engine oil, battery acid, hydraulic fluid and freon (if equipped with an air conditioner).

To ensure a prompt response, please be sure to include your return address and ZIP (postal) code, along with the model, serial number and/or VIN number of your machine.

UNAUTHORISED MODIFICATIONS OF THE ROLL OVER PROTECTIVE STRUCTURE (ROPS) AND THE FALLING OBJECTS PROTECTIVE STRUCTURE (FOPS)

Do not make unauthorised modifications or alterations to the **ROPS** and **FOPS** such as: welding on extinguisher brackets, **CB** aerial brackets, fire suppression systems etc. Unauthorised modifications will affect the structural limits of the **ROPS** and **FOPS** and will void the certification (and increase the risk of an adverse safety incident.)

The Roll Over Protective Structure has been certified to meet specified test requirements according to **SAE J1040 and ISO 3471**. The Falling Objects Protective Structure has been certified to meet specified test requirements according to **SAE J/ISO 3449 and ISO 3449, Level II**.

Any planned modification or change must be reviewed in advance by the **BELL EQUIPMENT** Engineering Department to determine if the modification or change can be made within the limits of the certifying tests. It is important that each person in your organisation, including management, be made fully aware of these rules involving **ROPS** and **FOPS**. Whenever anyone sees unauthorised modifications or changes to a machine's **ROPS** or **FOPS** both the customer and manufacturer must be notified in writing. The protection offered by **ROPS** or **FOPS** will be impaired if they are subjected to structural damage, is involved in an overturn incident, or is altered in any way and as such **ROPS** or **FOPS** must be replaced, not reused.

LOOSENING OR REMOVAL OF THE ROLL OVER PROTECTIVE STRUCTURE (ROPS) AND THE FALLING OBJECTS PROTECTIVE STRUCTURE (FOPS)

Make sure that all parts are installed correctly if the **ROPS** or **FOPS** is loosened or removed for any reason. Once the mounting bolt and nut assembly has been removed or loosened it must be replaced with new parts as specified in the parts manual. Tighten the mounting bolts to the correct torque specification as specified in the parts manual. Failure to comply could compromise product safety and increase the risk to safety. A damaged **ROPS** or **FOPS** must be replaced, not reused.

NOISE EMISSION LEVELS

The sound pressure was tested according to ISO 6394 (SAE J/ISO 6394) and the sound power was tested according to ISO 6393 (SAE J 2102).

GENERAL SAFETY

Be sure all operators of this machine understand every safety message. Replace operator's manual and safety decals immediately if missing or damaged.

SAFETY REGULATION

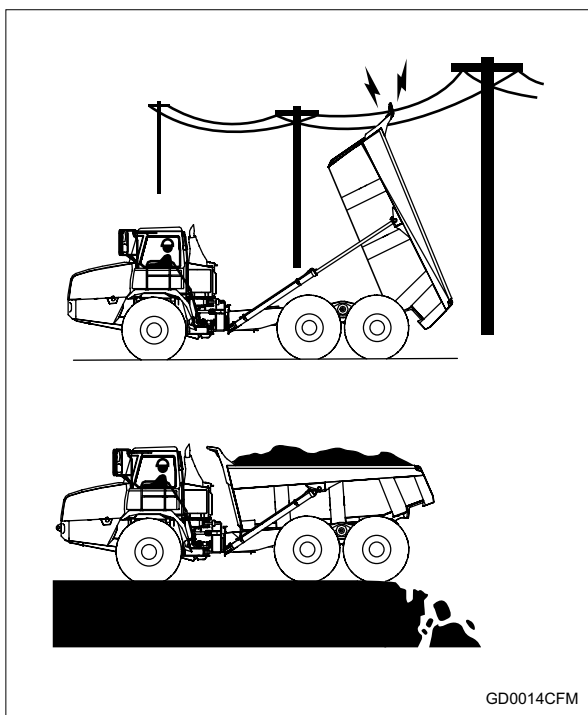
Every country (State) has its own safety regulations. It is the obligation of the operator to know and follow these. This also applies to local regulations covering different types of work. Should the recommendations in this manual deviate from those of your country, your local safety regulations should be followed.

Mounting And Dismounting The Machine

Always use the handrails and steps provided to get on and off the machine. Use both hands and face the machine. Never get on or off a moving machine. Never jump off the machine. Use a hand line to pull equipment up onto the platform, do not climb on or off the machine carrying tools or supplies.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease, oil and foreign objects.

Avoid Work Site Hazards



Avoid Overhead Power Lines

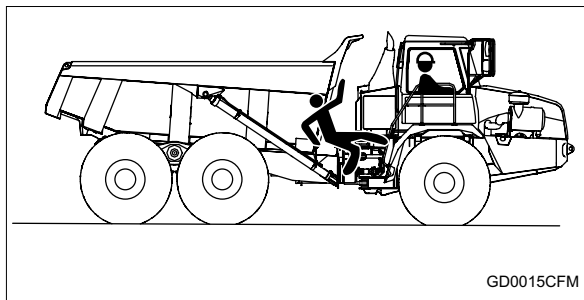
Never move any part of the machine within 4 m (13 ft) plus twice the line insulator length, as serious injury or death may result.

Operate Only On Solid Footing

Operate only on solid footing with strength sufficient to support machine. Be alert working near embankments, excavations and with bin raised. Avoid working on surfaces that could collapse under machine.

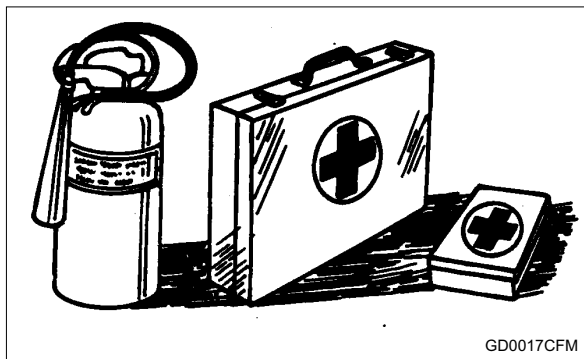
Use caution when backing up to berms before dumping load.

Keep Riders Off the Machine



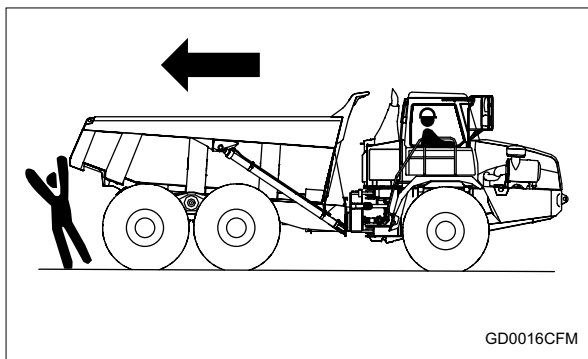
Do not allow unauthorised personnel on the machine.

Prepare for Emergencies



Keep a first aid kit and fire extinguishers handy and know how to use them. Inspect and have your extinguisher serviced as recommended on its instruction plate. Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

Avoid Backing Over Accidents



Make sure all persons are clear of machine path before moving the machine. Where conditions permit, raise bin for better visibility to the rear. Use mirrors to assist in checking all round machine.

Keep windows, mirrors and backup alarm clean and in good condition.

Use a signal person when backing if view is obstructed and/or in close quarters. Keep signal person in view at all times.

Use prearranged hand signals to communicate.

Handle Chemical Products And Flammable Fluids Safety

Exposure to hazardous chemicals can cause serious injury. Under certain conditions, lubricants, coolants, paints and adhesives used with this machine may be hazardous.

If uncertain about safe handling or use of these chemical products, contact your authorized dealer for a **Material Safety Data Sheet (MSDS)**.



Handle fuel with care, as it is highly flammable. Do not smoke or go near an open flame or sparks while refuelling. Always stop the engine before refuelling the machine and fill the fuel tank outdoors.

Keep all fuels and lubricants in properly marked containers and away from all unauthorised persons. Do not smoke in the storage areas.

Store oily rags and other flammable material in a protective container, in a safe place.

Do not weld or flame cut pipes or tubes that have contained flammable fluids. Clean them thoroughly with nonflammable solvent before welding or flame cutting them.

Starting fluid is highly flammable. Keep all sparks and flames away when using it. To prevent accidental discharge when storing the pressurised can, keep the cap on the can and store it in a cool protected place. Do not burn or puncture a starting fluid container.

Clean the Machine Regularly

Wait until the engine has cooled before removing trash from areas such as the engine, radiator, batteries, hydraulic lines, fuel tank and operators cab. Remove any grease, oil or debris build-up. Keep the machine, especially the walkways and steps, free of foreign material, such as debris, oil, tools and other items which are not part of the machine.

Prevent Battery Explosions and Acid Burns



The standard battery supplied with the machine is a sealed type that does not need maintenance.

Keep sparks and flames away from the batteries.

If a non-sealed battery is subsequently installed, keep sparks and flames away from the batteries. Use a flashlight to check the battery electrolyte level. Use a voltmeter or hydrometer to check battery charge. Never place a metal object across the posts. Always remove the grounded (Negative -) battery clamp first and replace it last.

Do not smoke in areas where batteries are being charged.

Sulphuric acid in battery electrolyte is poisonous and is strong enough to burn skin, eat holes in clothing and cause blindness if splashed into the eyes.

Avoid the hazard by:

- Filling the batteries in a well ventilated area.
- Wearing eye protection and rubber gloves.
- Avoid breathing fumes when electrolyte is added.
- Avoid spilling or dripping electrolyte.

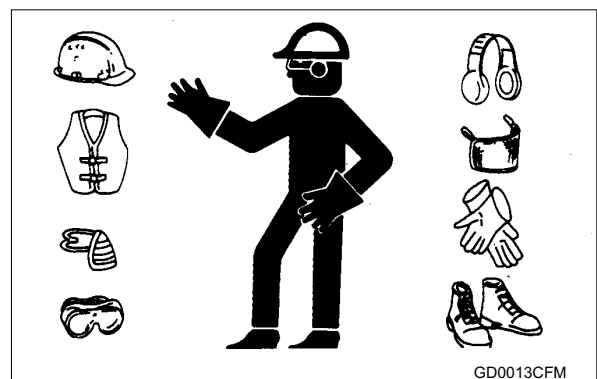
If you spill acid on yourself:

- Flush your skin with water.
- Apply baking soda or lime to help neutralise the acid.
- Flush your eyes with water for 10 - 15 minutes and get medical attention immediately.

If acid is swallowed:

- Drink large amounts of water or milk.
- Then drink milk of magnesia, beaten eggs, or vegetable oil.
- Get medical attention immediately.

Wear Protective Equipment



Wear a hard hat, protective glasses and other protective equipment as required by the job conditions. Do not wear loose clothing or jewellery that can catch on controls or other parts of the machine.

When you drive connecting pins in or out, guard against injury from flying pieces of debris by wearing goggles or protective glasses. Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs or earplugs. Wear gloves when handling wire rope cable.

Use the Seat Belt

Use a seat belt at all times to minimise the chance of injury in an accident.

The seat belt must not be altered or modified in any way. Such changes can render the belt ineffective and unsafe.

The seat belt is designed and intended for the seat's occupant to be of adult build and for one occupant of the seat only.

Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve the pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks.

If any fluid is injected into the skin it must be surgically removed within a few hours by a doctor who is familiar with this type of injury or gangrene may result.

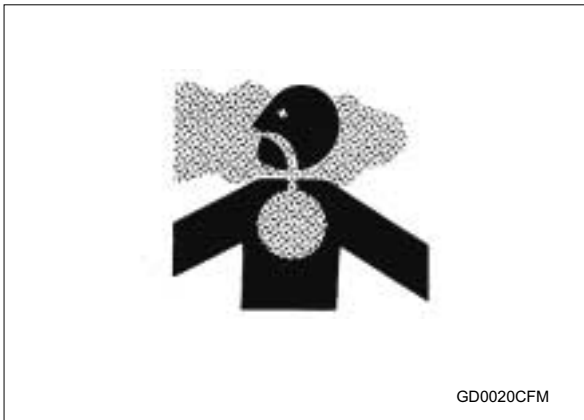
Stay Clear Of Moving Parts

Entanglements in moving parts can cause serious injury.

Stop engine before examining, adjusting or maintaining any part of the machine with moving parts.

Keep guards and shields in place. Replace any guard or shield that has been removed for access as soon as service or repair is complete.

Beware of Toxic Fumes



Prevent asphyxiation. Engine exhaust fumes can cause sickness or death.

Operate only in well ventilated indoor areas. Avoid hazardous fumes by first removing paint on painted surfaces before welding.

Wear an approved respirator when sanding or grinding painted surfaces.

If a solvent or paint stripper is used, wash surface with soap and water. Remove solvent or paint containers before welding and allow at least 15 minutes before welding or heating.

Dispose of Waste Properly

Improper disposal of waste can threaten the environment. Fuel, oils, coolants, filters and batteries used with this machine may be harmful if not disposed of properly.

Never pour waste onto the ground, down a drain or into any water source.

Air conditioning refrigerants can damage the atmosphere. Government regulations may require using a certified service centre to recover and recycle used refrigerants.

If uncertain about the safe disposal of waste, contact your local environmental centre or your dealer for more information.

Start Only From Operator's Seat

▲ WARNING

Never turn the ignition switch On and immediately OFF again. This will reset the cranking time and damage to the starter motor can occur.



Avoid unexpected machine movement. Start engine only while sitting in operator's seat. Ensure all controls and working tools are in proper position for a parked machine.

Never attempt to start engine from the ground. Do not attempt to start engine by shorting across the starter solenoid terminals.

Lower bin during work interruptions, apply park brake and be careful not to accidentally actuate controls when co-workers are present.

Operating The Machine

Avoid Tip Over

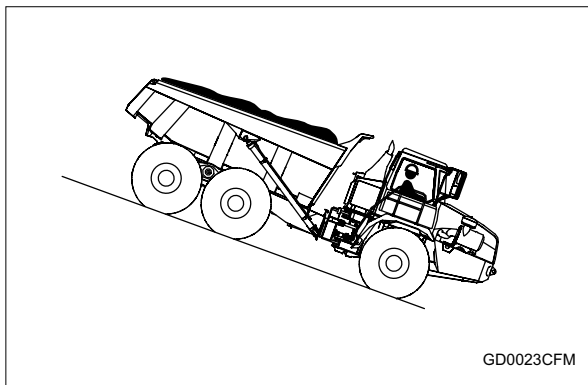
Use safety belt at all times. Do not jump from machine if it tips.

Use extra care when bin is raised. Machine stability is greatly reduced when bin is raised. Drive slowly, avoid sharp turns and uneven ground.

Do not over load the machine.

Before operating machine after it has tipped, carefully inspect all hydraulic and electrical lines.

Operating on Slopes



Avoid side slope travel whenever possible.

Check service brakes frequently when operating on slopes.

The maximum slope will be limited by the ground conditions.

Welding Repairs

NOTE: Disable electrical power before welding. Turn off main battery switch or disconnect positive battery cable. Separate harness connectors to engine, alternator and machine microprocessors.



Avoid welding near fluid lines. Do not let heat go beyond work area near fluid lines.

Remove paint properly. Wear eye protection and protective equipment when welding.

Do not inhale dust or fumes.

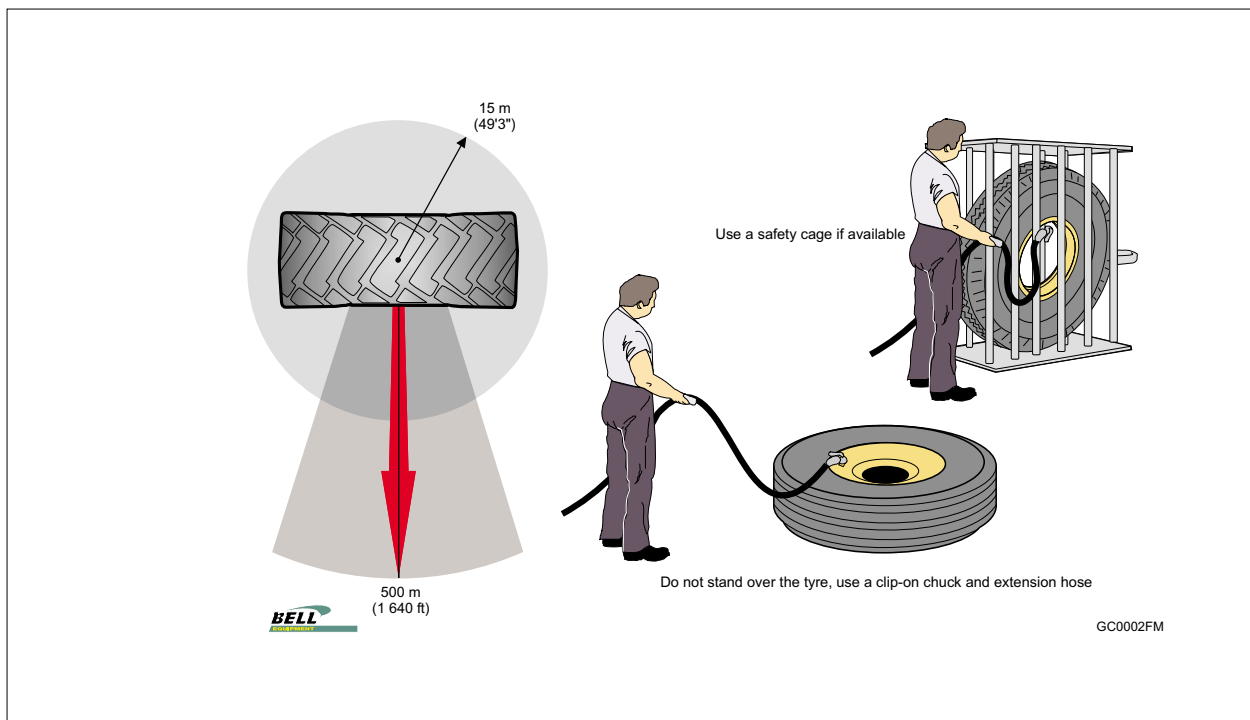
Tyre Information

Welding or heating of the rim components, external fire or excessive use of brakes can cause overheating of the tyres, which could cause a tyre explosion.

This explosion can propel the tyre, rim and final drive components approximately 500 metres (1 640ft) from the machine, which may cause personal injury or death and/or property damage.

If the tyre is overheating and could explode, do not approach it within the area represented by the shaded area in the drawing, until it has cooled.

Stand behind the tread and use a self attaching chuck with extension hose to inflate the tyres. Use a safety cage if available. Do not stand over the tyre.



NOTE: It is recommended that only trained personnel service and change tyres and rims.

Inspect and Maintain ROPS

A damaged roll-over protective structure (**ROPS**) should be replaced, not reused.

If the **ROPS** was loosened or removed for any reason, inspect it carefully before operating the machine again.

To Maintain the ROPS:

- Replace missing hardware using correct grade hardware.
- Check hardware torque.
- Check isolation mounts for damage, looseness or wear; Replace if necessary.
- Check **ROPS** for cracks or physical damaged.

Drive Metal Pins

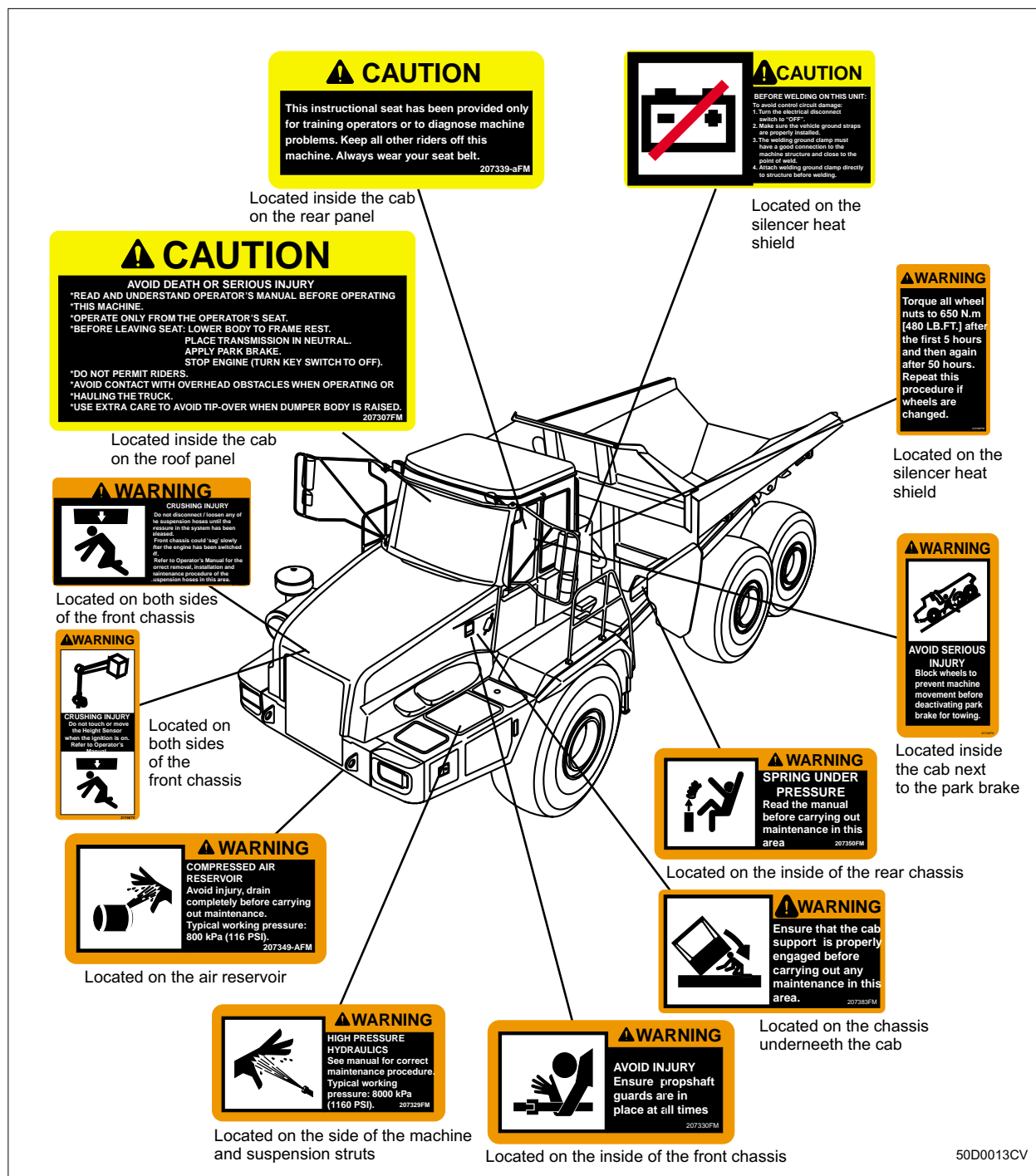
Always wear protective goggles or safety glasses and other safety equipment.

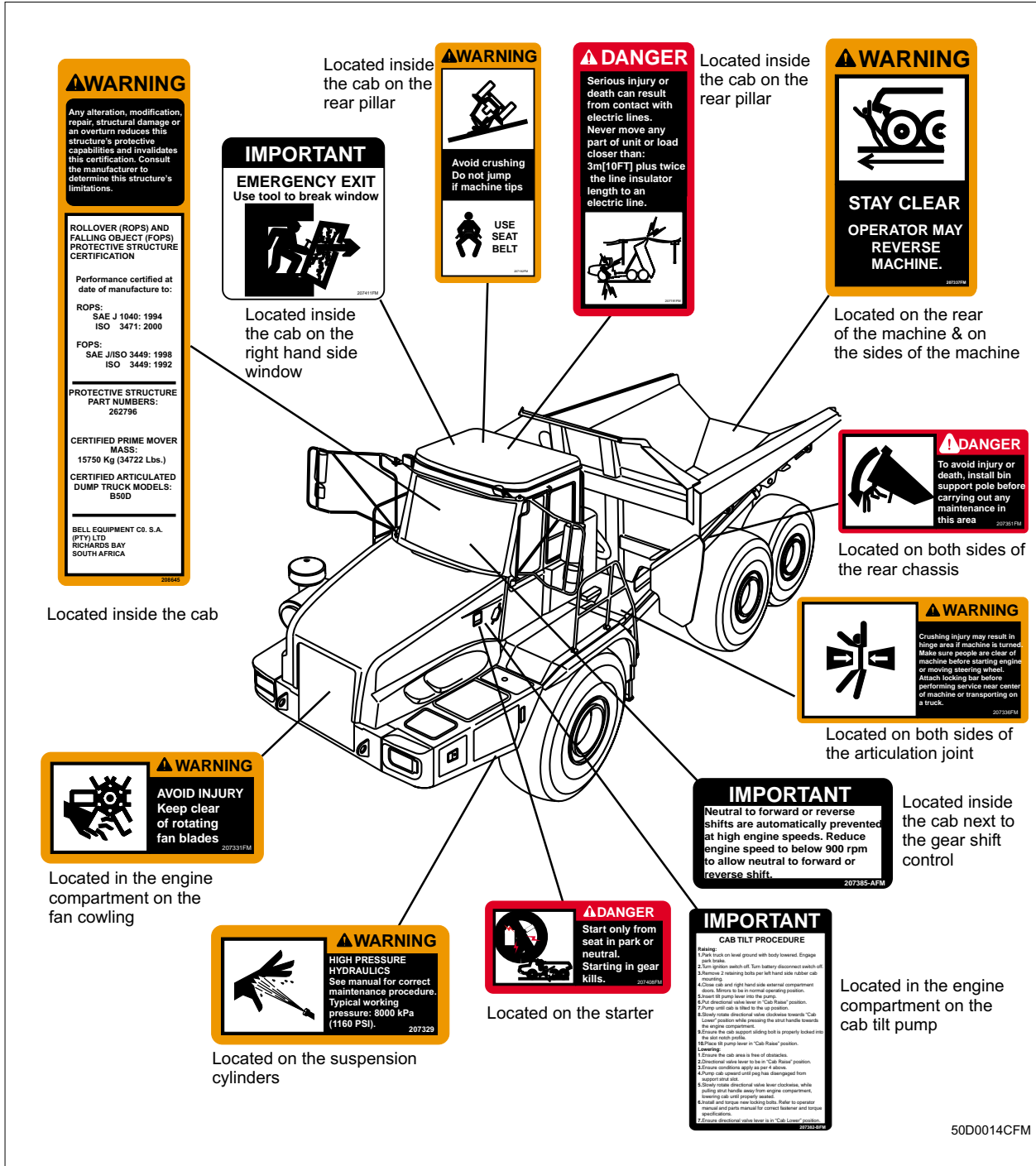
Use soft hammer or a brass bar between hammer and object to prevent chipping.

SAFETY DECALS

There are several safety decals on your **BELL EQUIPMENT** machine. Their exact location and description of the hazard are reviewed in this section. Please take the time to familiarise yourself with these safety decals.

Keep the decals clean by using a soft cloth, water, and soap. Do not use solvent, gasoline, etc. You must replace a decal if it is damaged, missing or cannot be read. If a decal is on a part that is replaced, ensure a new decal is installed on the replacement part. Contact your **BELL EQUIPMENT** Representative for new decals.





Refer to Operator's or Parts Manuals for details of decals.

BUY NOW

**Then Instant Download
the Complete Manual
Thank you very much!**