

Section 2.1



Safety - Basic Safety Rules & Precautions

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General Safety Information

TimberPro's policy is to produce products that are safe and reliable. However, even when using well engineered equipment, there will always be an element of risk in heavy equipment operation.

Most accidents involving heavy equipment operation, maintenance or service result from failure to follow basic safety rules and precautions.

Study all the safety messages carefully, remember them and apply them when operating, maintaining or servicing equipment.

“Safety Alert” Symbol



Figure 1 - Safety Alert Symbol

The “Safety Alert” symbol is used throughout the manual text and on the machine to indicate important personal safety measures and equipment cautions. Carefully read, understand and follow these instructions to prevent hazardous situations, possible injuries to personnel or damage to equipment.

Understanding Signal Words

In this manual and on the safety decals installed on the machine, the “Safety Alert” symbol is always accompanied by a signal word to identify the hazard level. Understand the signal words DANGER, WARNING, and CAUTION.

! DANGER

Identifies the most serious safety hazards. Failure to follow a DANGER safety message would result in high probability of death or serious personal injury.

! WARNING

Identifies that a safety hazard exists. Failure to follow a WARNING safety message can result in death or serious personal injury if proper precautions are not taken.

! CAUTION

Identifies that a safety hazard exists. Failure to follow a CAUTION safety message can result in personal injury or equipment damage if the proper precautions are not taken.

The signal words DANGER, WARNING and CAUTION are used to identify personal safety hazards and some equipment cautions. The signal word NOTICE is used to identify hazards that may damage equipment or its components.

NOTICE

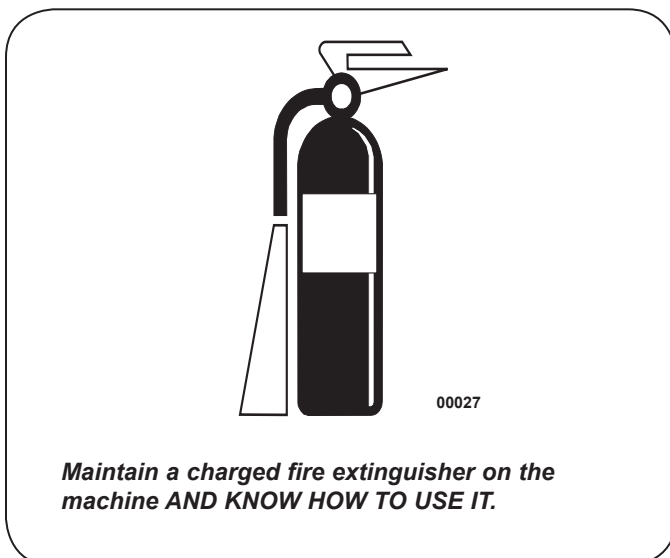
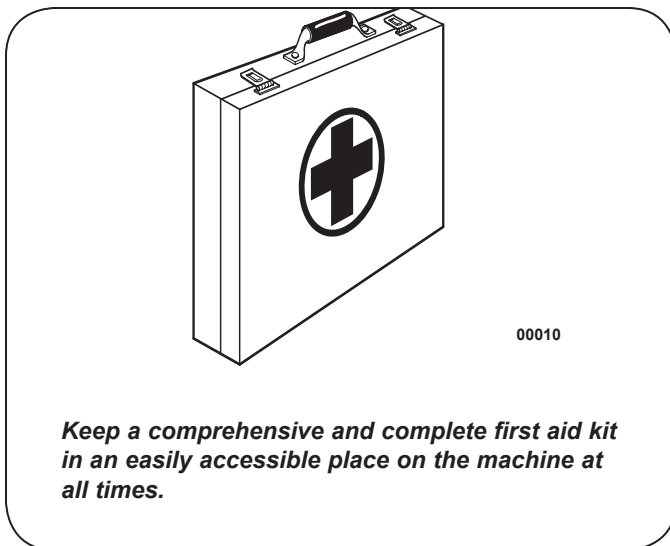
Follow procedures as outlined to avoid damage to equipment or its components as a result of misuse or improper procedures.

The Careful Operator

A careful operator studies, remembers and applies the basic safety rules and all safety messages found in the manuals and on the equipment being operated, maintained or serviced. This person also has the required training, skills and tools to operate the equipment and/or perform the required maintenance and service procedures.

TimberPro cannot anticipate every possible circumstance where a potential hazard may exist. Therefore, the safety messages and equipment cautions found in the manuals and on the machine are not all inclusive. If an operating technique, maintenance or service procedure, tool, etc... not specifically recommended by TimberPro is used, it is your responsibility to insure it is safe for yourself and others. You should also be sure the machine will not be damaged or made unsafe by the operation, maintenance procedures or service procedures you choose.

WHEN IT COMES TO SAFETY, NOTHING WILL EVER REPLACE A CAREFUL OPERATOR.



General Operator Precautions

Carry no passengers. The machine is provided and approved with seating for the operator only.

Keep floors, steps and running boards clean and free of oil, ice, mud and loose objects.

Properly secure all loose items not part of the machine such as tools, maintenance items, and lunch boxes.

Inspect the machine daily for signs of damage, unusual wear, fluid leaks or faulty operation.

Clean out debris from high heat areas, such as the engine compartment, frequently during the working shift and always after quitting operations for the day.

Never remove any element of the engine's exhaust system or any safety covers or devices from the operational machine.

Get to know the capabilities and limitations of the machine and learn the most efficient operating techniques.

Machine Operation Precautions

Operate the machine controls only from a seated position in the operator's seat, with your seat belt fastened.



Operate the machine only when physically fit and not under the influence of alcohol or drugs.

EMERGENCY ESCAPE: An emergency escape is provided on all TimberPro machines. Know the operation of these escapes and inspect them before every shift. See Section 2.2 for additional information.

Report all required repairs to your supervisor or machine owner.

Mounting And Dismounting Precautions

Use tread plates and handles provided when entering or exiting the machine.

Always face machine when mounting and dismounting.

NEVER attempt to mount or dismount a moving machine.

NEVER jump from the machine.

Do not use the controls or operator's seat armrest as a handhold when mounting or dismounting the machine.

Do not carry tools or other materials with you as you mount or dismount the machine. Get assistance or use a hand line to raise and lower materials.

Before Starting Engine

Be sure no one is working on, underneath or close to the machine. **KEEP ALL PERSONNEL CLEAR.**

Check the machine to insure that all doors, panels, and access covers are installed and properly secured.

Start machine **ONLY** from the operator's seat. Never short across the starter terminals or batteries.

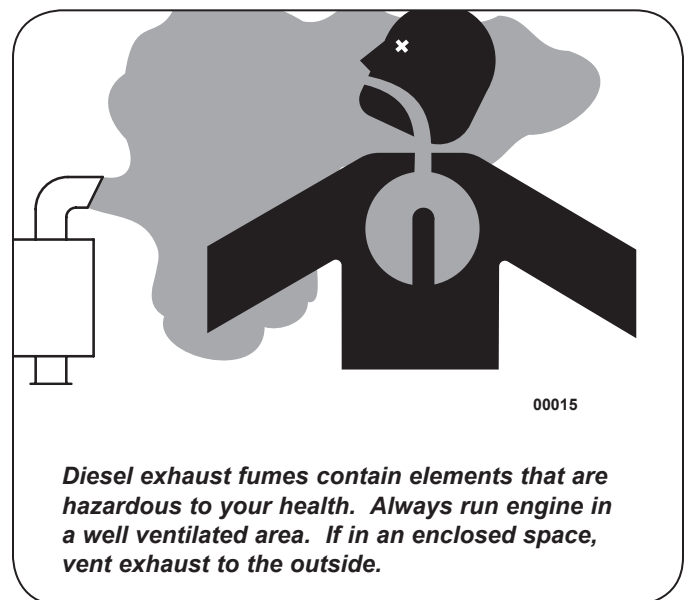
Adjust the operator's seat correctly. Full foot pedal travel must be obtained with your back firmly against the seat back.

If working conditions require lighting, be sure machine is adequately equipped with lighting and that it is in good working condition.

When ready to start engine, be sure all controls are positioned in the off or neutral position.

When the engine is running, allow no personnel in the areas of the machine where they may be crushed by moving components.

Never leave the machine un-attended while it is running.



Before Beginning To Work

Fasten safety belt.

Always allow for adequate warm-up of the engine and hydraulic oil, particularly when ambient temperature is below 32°F (0°C).

! WARNING

Check operation of emergency escape hatch before every shift and during the 50 hour inspection. See Maintenance section in this manual for more instruction.

Check all controls for proper operation. If a control is malfunctioning, stop immediately and have the problem corrected before resuming work.

Be aware of all obstacles and hazards around you; stumps, slopes, ditches, overhead wires, etc.

Before moving the machine, check position of frame articulation joint. Normal forward travel is with the frame articulation joint behind the cab. When the frame articulation joint is in front of the cab the reverse steer feature, (see section 3.1 on machine operation for more info) should be activated otherwise the steering controls must be worked opposite.

During Machine Operation

Adhere strictly to all regulations at the work site pertaining to the operation of this machine.

Know the capacities and limitations of the machine and DO NOT exceed them. Lift capacity decreases as the load moves away from the machine.

If a failure occurs that causes the loss of implement control, steering, brakes or engine, stop machine motion as quickly as possible, lower the attachment to the ground and shut down machine. Leave machine parked until repairs can be made or the machine can be towed.

Keep eye contact on the attachment and its immediate surroundings at all times when handling the load.

Maintain a safe operating distance between the machine and other equipment and personnel.

NEVER swing the boom or grapple above the heads of bystanders.

When moving the machine, watch that enough clearance is available on both sides and above the boom. Extra clearance may be required particularly where ground is uneven.

Maintain a safe operation distance from hazards such as steep drop-offs, deep ditches and areas where the ground may be unstable and allow the machine to slide or tip.

Drive machine with care and at speeds compatible with job conditions. Use extra care on rough ground, slopes and when turning the machine.

Approach an area where overhanging electrical power lines are present with EXTREME CAUTION. Serious injury or death by electrocution could result if the machine or its grapple is not kept a safe distance away from these lines. Keep machine and booms at least 10 ft. (3m), plus an additional 1/2" (10mm) for each 1,000 volts over 50,000 volts, from any power line. If state/province, local or job site regulations require even greater safety distances than stated above, adhere strictly to those regulations for your protection.

Keep attachment close to ground level, approximately 15" (40 cm), while traveling.

Keep loads close to the machine when traveling or swinging and avoid conditions and operating practices that may lead to tipping or overturning the machine.

On steep slopes, travel as straight up and down as possible and always carry any load on the uphill side of the machine.

Always lower the booms so that the grapple rests on the ground whenever operation is stopped; regardless if the engine is running or not.

Use a recommended vehicle when transporting the machine between jobsites.

When transport of machine is required, make sure that it is adequately secured to the vehicle. Even though the machine's parking brakes are fully engaged, block the wheels to prevent movement during transport.

When transporting the machine, know and use the signaling devices required by the machine. Provide an escort for transporting the machine when required.

Parking The Machine

When parking the machine, select a spot where the ground is level. Do not park on a hillside or an incline.

When in freezing conditions, planks can be placed under the machine to prevent the wheels from freezing into the ground.

Lower attachment to the ground and shut down the engine. Remove ignition key and place in safekeeping.

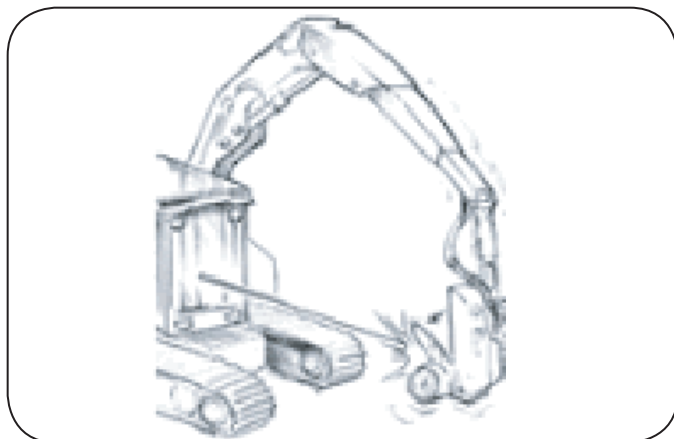
If the machine is to be parked for a greater length of time, such as overnight, switch off the master electrical disconnect or disconnect the positive (+) battery cable.

Towing The Machine

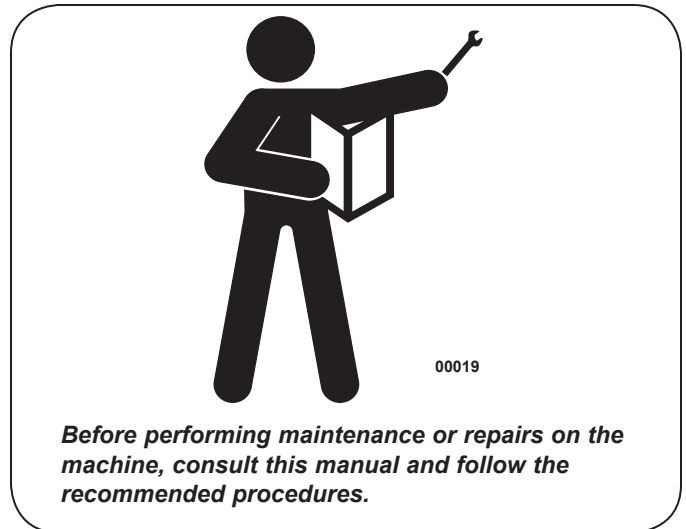
If it becomes necessary to tow the machine, do not exceed recommended towing speed. Be sure the towing equipment has sufficient braking capacity to stop the towed load. If the towed machine cannot be braked, a towbar must be used or two towing machines must be used - one in front pulling, and the other in the rear retarding. Avoid towing over long distances. See section 4.3 for more information.

Cutting Attachment Safety Information

- Always follow the attachment manufacturer's operating instructions:



- Never use the saw so that the saw bar or disc saw is directly in line with the cab or other persons.
- Ensure chain speed does not exceed the chain manufacturer's rating.
- Do not reuse riveted connecting components.
- Follow the recommended maintenance practices for the chain, bar, and sprocket.
- Ensure that the chain has adequate lubrication.
- Consider installing a chain catcher designed to minimize the chance of chain shot.
- Consider upgrading the front window from 1/2-inch Lexon to the (optional) 1 1/4" thick Lexon, which is proven to stop such projectiles.
- Inspect the operator's cab window before every shift for scratches or damage that could reduce the strength or the window.
- Keep ground workers at least 70 metres (230 feet) away from a working harvester/processor.
- Thoroughly inspect the bar and chain, or disc, saw teeth, tooth holders and mounting hardware before every shift.



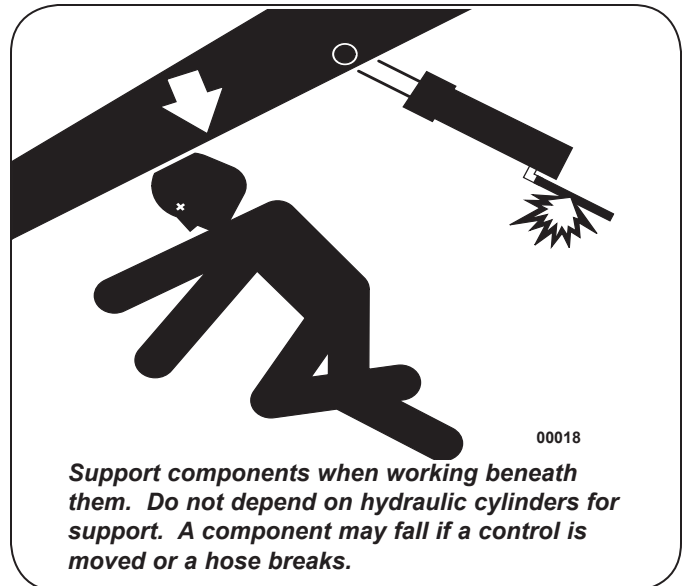
Before performing maintenance or repairs on the machine, consult this manual and follow the recommended procedures.

Service And Maintenance Precautions

General

Unless otherwise specified, all maintenance or repair procedures should begin as follows:

- 1) Position machine on level ground.
- 2) Lower boom and all attachments to the ground.
- 3) Shut down engine. Remove ignition key and place in safekeeping.



4) Switch off master electrical disconnect or disconnect the positive (+) battery cable.

Run the engine only when it is required for test or adjustment purposes. Always use the proper tools for the job. Repair or replace any broken or damaged tools, including lifting equipment, immediately.

When servicing or replacing hardened steel pins, use a brass drift or other suitable material between the hammer and pin if it must be driven into the pivot. Use safety glasses or other suitable eye protection.

DO NOT make adjustments while the machine is moving or the engine is running unless otherwise specified to do so.

DO NOT change the pressure setting on any hydraulic valve without authorized instruction.

Check electrical connections daily. Have any loose connections or damaged wiring tightened, repaired or replaced immediately.

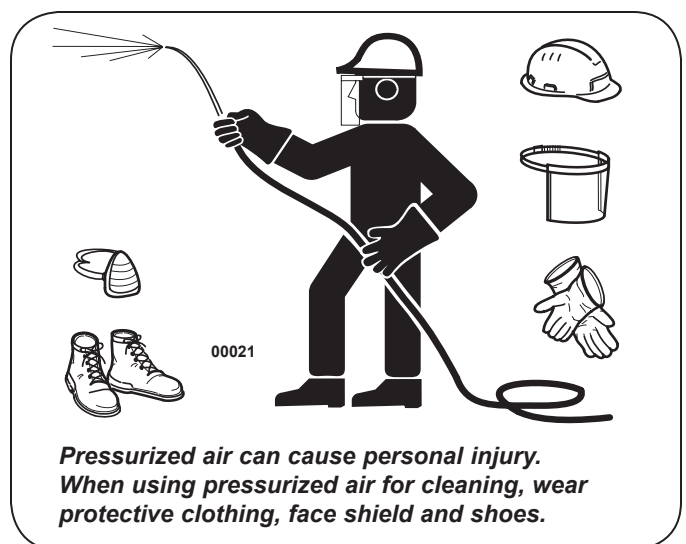
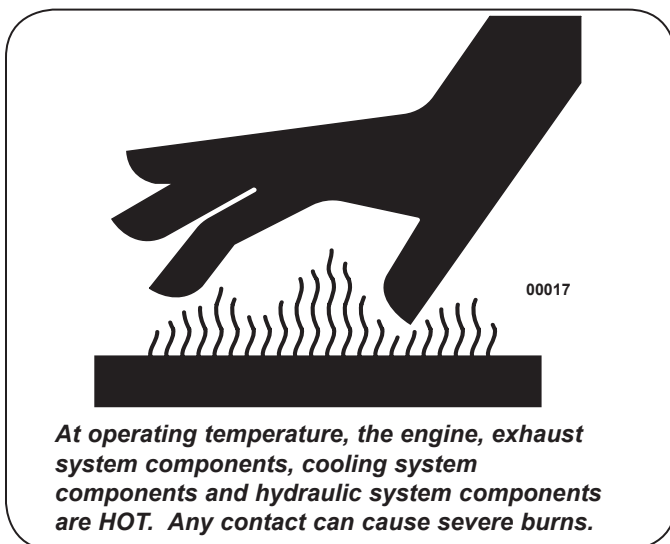
Use all cleaning solutions with care. Avoid breathing vapors and contact with eyes and skin

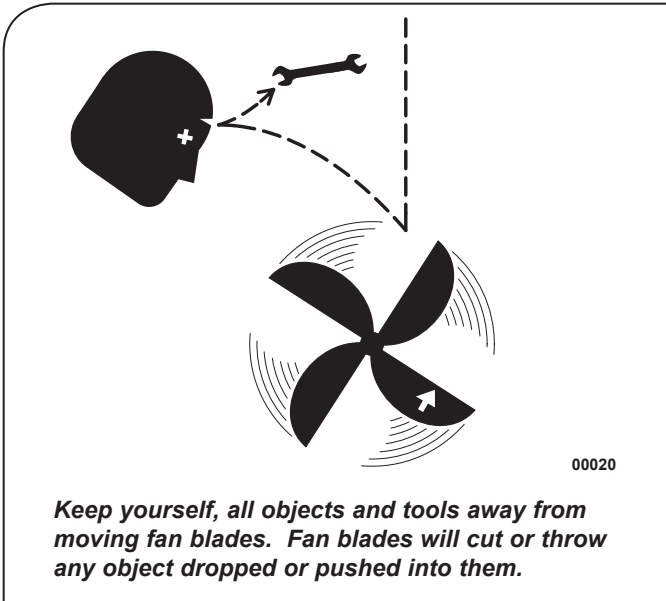
Keep all fuels and maintenance items in properly marked containers.

Place all fuel or oil soaked rags, waste material, debris and other flammable items in a properly marked protective container stored in a safe place.

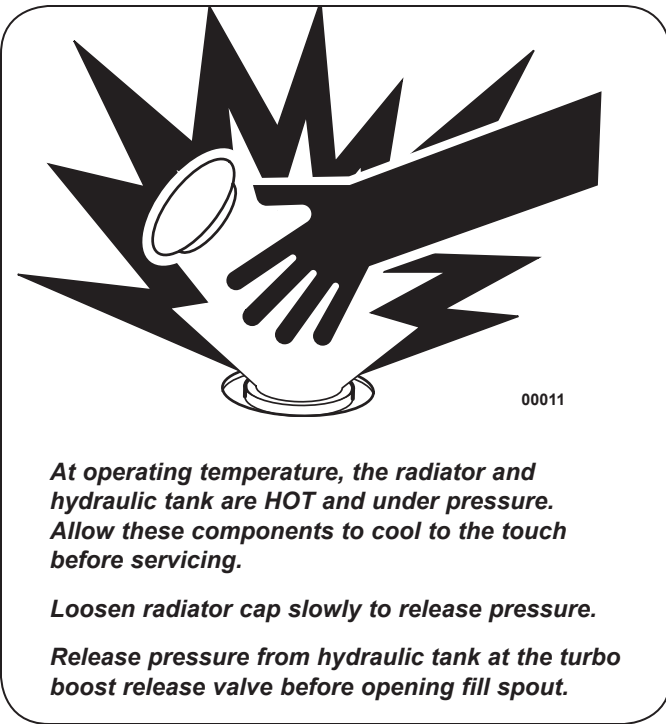
Inspect the machine for missing, unreadable or damaged safety decals. Keep safety decals clean.

The maximum allowed air pressure used for cleaning purposes should not exceed 30 psi (205 kPa).





Cooling And Hydraulic System

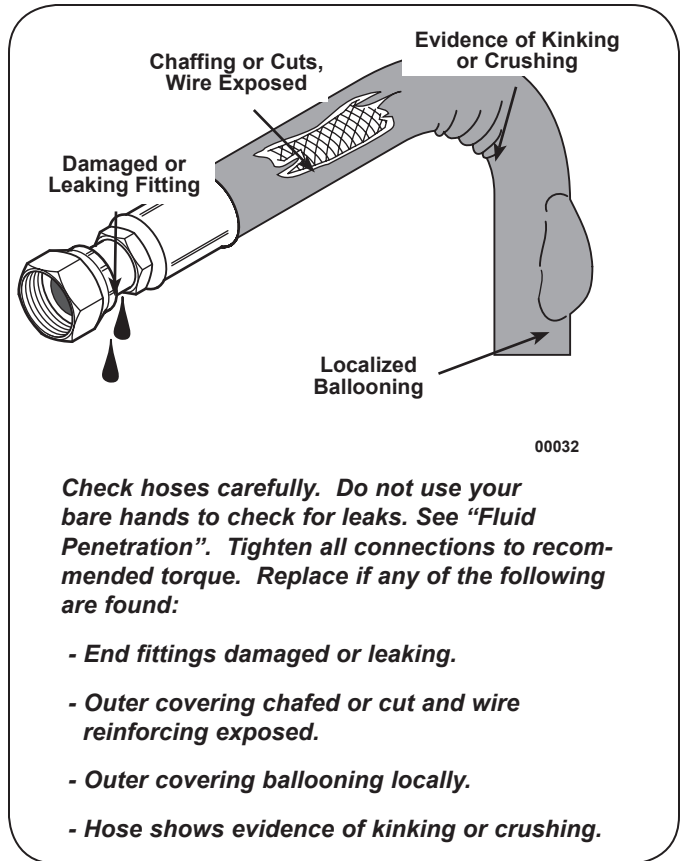


Check coolant level only with the engine shut down and the radiator cap cool enough to remove with your bare hand.

Anti-freeze solutions used in the cooling system may contain alkali that can cause personal injury. Avoid contact with skin, eyes and mouth.

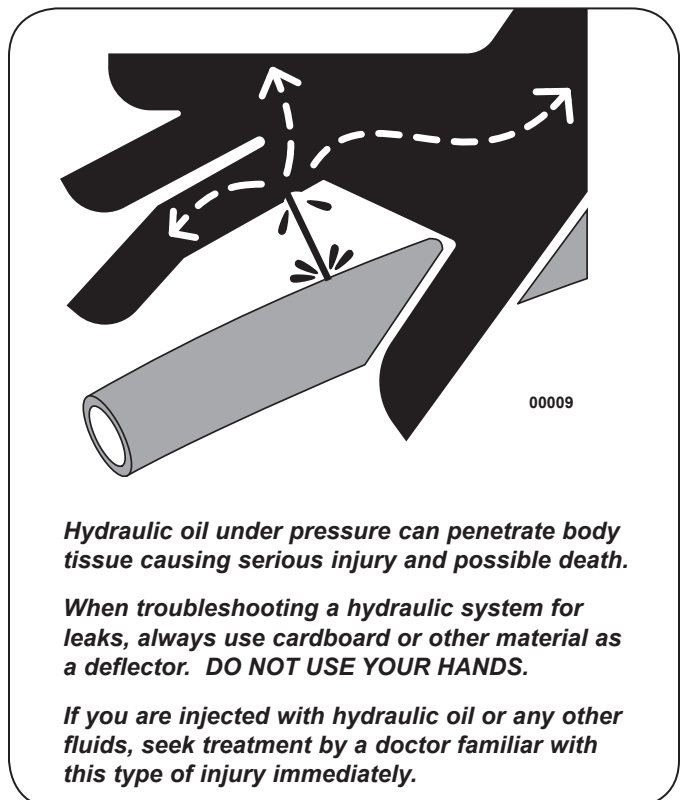
Do not bend or install bent or damaged hydraulic hoses and tubelines.

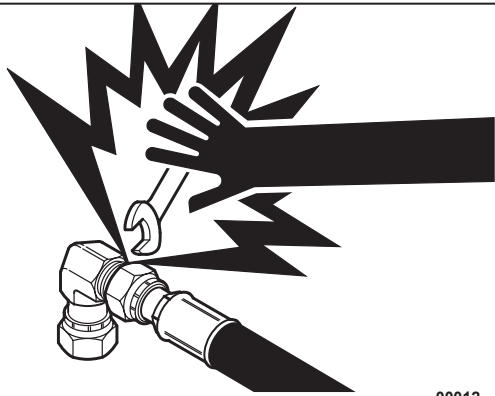
Do not strike hydraulic hoses or tubelines.



Be sure all hose clamps, guards and protective wrapping is installed correctly to prevent vibration and rubbing which could lead to hose failure.

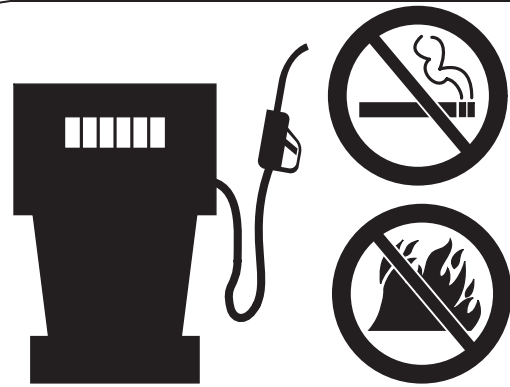
Fluid Penetration





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Pressure can be maintained in system circuits long after the engine and pumps have been shut down. Release trapped pressure in hydraulic, fuel, and cooling system lines before performing any maintenance or repair procedures.



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All fuels, most lubricants and some coolant mixtures are flammable. Do not smoke while refueling while near refueling operations. Keep all fuels, lubricants and coolant mixtures away from open flames.

Diesel Fuel

Maintain control of the hose nozzle when filling the fuel tank. Do not allow fuel to spill. Clean up spilled fuel immediately. Dispose of clean up materials properly.

Do not fill fuel tank to capacity. Allow room for fuel expansion.

Tighten the fuel cap securely. If the fuel cap is lost, replace only with original equipment or TimberPro approved equivalent.

Do not use diesel fuel for cleaning purposes.

Use the correct grade of diesel fuel for the operating season.



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Fuel spilled or leaked onto hot surfaces or electrical components can cause a fire.

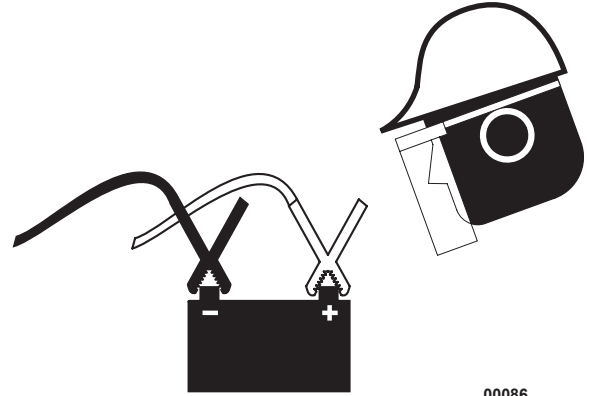
Batteries



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Do not smoke while checking battery electrolyte (acid) level. Keep open flames or sparks away from batteries and where they are stored or charged. Battery fumes are flammable and can explode



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Always wear proper eye and face protection when working with jumper cables. Batteries can explode.

Use jumper cables with care when attempting to start a machine with dead batteries.

TimberPro machines are equipped with a 24 volt electrical system, only use a compatible power source to start the machine.

Make sure to follow proper technique when connecting battery cables to prevent damage to electrical components.

Contact your TimberPro dealer for information on the proper way to jump start your machine.



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Always wear protective clothing and suitable eye, face and hand protection when working with batteries.



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Battery electrolyte (acid) is highly corrosive. Avoid contact with eyes, skin and clothing.

Machine Fire Safety

It is important to know and understand the location and have good working knowledge of the fire extinguisher or optional fire suppression system if machine is equipped. (See fire suppression operators manual for more info) Not all fires can be prevented so follow these key instructions if the machine where to catch fire. Never put yourself or others into harms way. If fire is out of control move away from the machine and Call for Help.

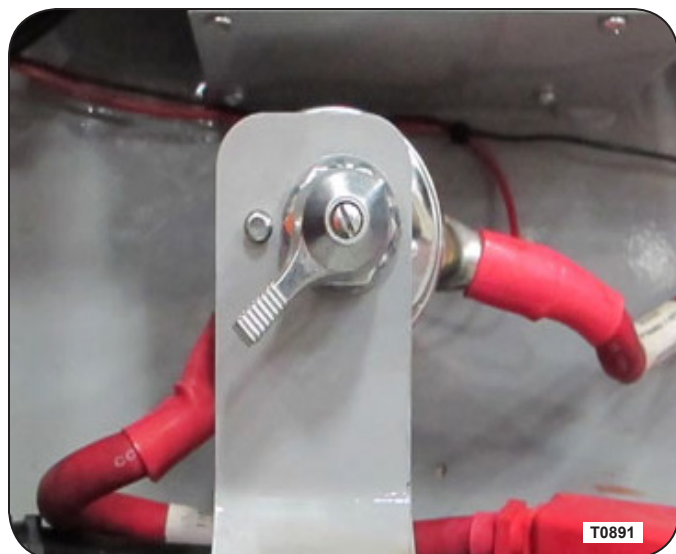
1. Turn Off Engine: *If smoke or fire is noticed place the booms on the ground and shut off the engine. (If working in unstable terrain or steep conditions try and get machine positioned safely before shutting off engine)*

2. Fire Suppression System: *If OPTIONAL fire suppression system is installed on machine. Follow suppression system manufacturers owners manual to properly actuate the automatic fire suppression system.*

3. Fire Extinguisher: *Use portable fire extinguisher to extinguish the fire.*

4. Turn Off Master Disconnect Switch: *Turning off the master disconnect (see image below) will disable battery power from the electrical system.*

5. Call for Help! : *If fire is to large to extinguish, Call local fire department. Try and keep fire from spreading into the surrounding area while waiting for help to arrive.*



Master Electrical Disconnect Switch

Machine Fire Prevention

Fire prevention is a very important part of machine operation. Please follow these key instructions to help prevent the possibility of fire.

1. Keep a Fire Extinguisher Available:

Always keep a multipurpose fire extinguisher on or near the machine. Be aware of the location of the extinguisher and make sure the extinguisher is in proper working order and know how to properly use it.

2. Inspect and Clean machine Regularly:

Make sure to inspect and clean the machine before and after every work shift. Remove trash, debris, grease and oil from around engine, electrical and hydraulic components. Never store flammable materials in the operators cab or machine compartments.

3. Inspect for damaged Hoses and Electrical Wiring:

Replace any hydraulic hoses immediately if they begin to leak. Inspect and repair any damaged electrical wiring or connectors.

4. Handle Fuel and Oil Safely: Store flammable fluids away from fire hazards. Never refuel machine while smoking or when near open flame or sparks.

5. Turn Off Master Disconnect Switch: *When leaving machine unattended always shut off master disconnect switch. (see image below)*

6. Engine Cover: Always clean all debris off the engine cover and boom debris flap while performing daily maintenance and also before opening the engine cover for service. (see images and instructions below)

7. Boom Debris Flap: Check the boom debris flap daily for proper placement, the condition of the flap and proper operation. This is an important step to keep debris out of the hydraulic and engine compartments. (See next page for proper use and placement of the boom debris flap)

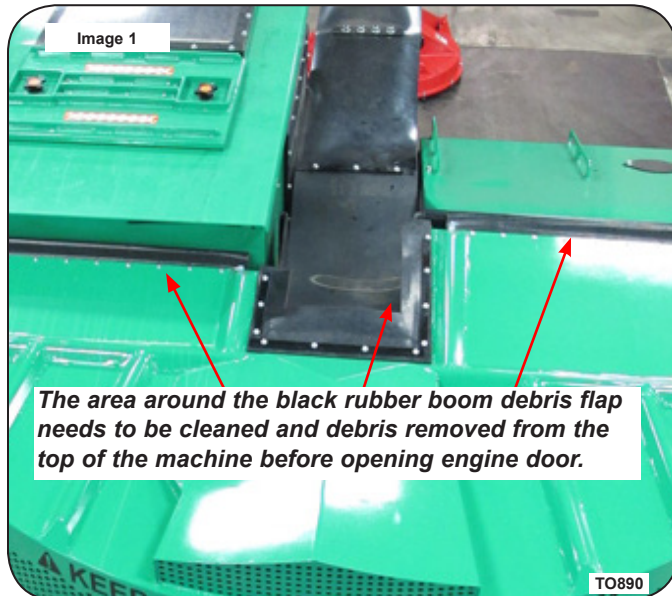
Boom Debris Protection

Proper operation and maintenance of boom debris Protection guards are important to keep flammable debris from the engine and hydraulic compartments.

Daily Maintenance: While performing daily maintenance on the machine, all debris should be removed from the top of the engine door and the area around the boom debris guards. At this time an inspection of the boom debris guards should be done to insure proper operation.

Opening Engine Door:

- 1) Before opening engine door, always clean debris from the top of the engine cover and on and around the boom debris guards.



- 2) After your finished with your service or maintenance on the machine and after closing the engine door. Make sure all rubber seals and debris guards are properly seal. Again check the debris guards for damage and proper operation.