



Challenger[®]
Terra Gator 3244
Chassis
SERVICE MANUAL
627333-A

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Challenger®
Terra Gator 3244
Chassis

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TERRA GATOR 3244
CHASSIS

Service Manual

Volume

Master No. 627333-A

Challenger®

Terra Gator 3244 Chassis

SERVICE MANUAL 627333-A

01 - Introduction

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SAFETY

IMPORTANT: Any modifications to machine or systems not authorized by AGCO void warranty. This includes, but is not limited to hitches.

FOLLOW SAFETY INSTRUCTIONS

FIG. 1: Carefully read, learn and understand all safety messages and information in this manual and on machine's safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Make sure new machine components and repair parts include current safety signs. Replacement safety signs are available from local AGCO dealer.

Never operate machine or equipment without proper instruction and a complete understanding of control operation.

Learn how to properly operate machine and use all controls before operation. Do not allow anyone to operate machine, systems or perform service and maintenance procedures without proper instruction.

Keep machine, all components and systems in proper working condition. Modifications to machine, unauthorized by AGCO, may impair functionality and safety, affect machine life and void machine warranty.

PREPARE FOR EMERGENCIES

FIG. 2: Be prepared if a fire starts. Keep a first aid kit and fire extinguisher handy.

Dial 112 or your national emergency number in cases of emergency.

Keep emergency numbers for doctors, ambulance service, hospital and fire department readily available at all times.

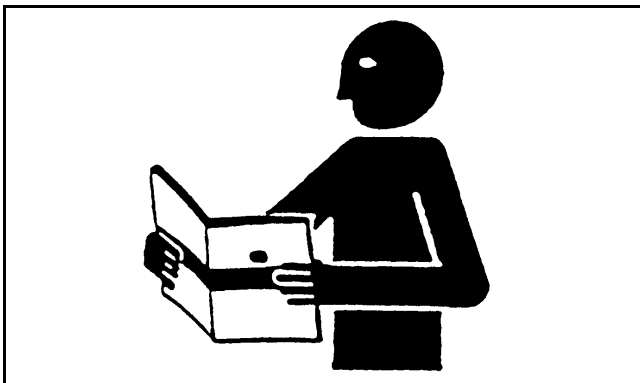


FIG. 1

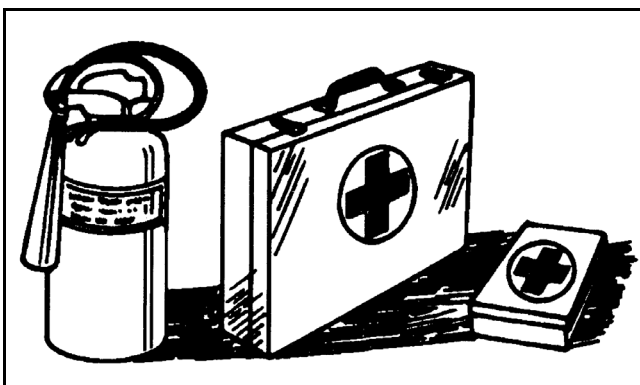


FIG. 2

Safety

SAFETY ALERT SYMBOL

FIG. 3: This is the safety alert symbol and it means attention, become alert, safety is involved. Look for the safety alert symbol in this manual and on safety signs on machine, it directs attention to information involving operator safety and safety of others.



FIG. 3

SIGNAL WORDS

Danger, warning or caution are used with the safety alert symbol. Learn to recognize these safety alerts and follow recommended precautions and safe practices.



DANGER: Indicates **imminently hazardous situation that, if not avoided, results in death or very serious injury.**



WARNING: Indicates **potentially hazardous situation that, if not avoided, could result in death or serious injury.**



CAUTION: Indicates **potentially hazardous situation that, if not avoided, may result in minor injury.**

INFORMATIONAL MESSAGES

The words **IMPORTANT** and **NOTE** are not related to personal safety, but are used to give additional information and tips for operating and servicing machine.

IMPORTANT: *Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of machine, attachments or environment.*

NOTE: *Identifies points of particular interest for more efficient and convenient operation or repair.*

IMPORTANT SAFETY INFORMATION

Most personal injuries occur during product operation, maintenance or repair and are caused by failure to observe basic safety rules and precautions. In most cases, an injury can be avoided by recognizing hazardous situations before an injury occurs.

Operator must be alert to potential hazards and have the necessary training, skills and tools to perform functions properly.

Improper operation, lubrication, maintenance or repair of product can be hazardous and could result in injury or death.

Do not operate or perform any lubrication, maintenance or repair of machine until reading and understanding associated information.

Safety precautions and warnings are provided in manual and on machine. If these hazard warnings are not heeded, bodily injury or death could occur to operator or bystanders.

Not every circumstance involving a potential hazard can be anticipated. Warnings in this publication and on machine are, therefore, not all inclusive. If a tool, procedure, work method or operating technique, not specifically recommended by AGCO is used, ensure it is safe for operator and others.

Make sure machine will not be damaged or be made unsafe by operation, lubrication, maintenance or repair procedures chosen. Information, specifications and illustrations in publication are on basis of information available at time publication was written.

Specifications, torques, pressures, measurements, adjustments, illustrations and other items can change at any time. These changes can affect service given to product. Obtain complete and most current information before starting any job. Local AGCO dealer has the most current information available.



WARNING: When replacement parts are required for this product, AGCO recommends using AGCO replacement parts or parts with equivalent specifications including, but not limited to, physical dimensions, type, strength and material. Failure to heed this warning can lead to premature failures, product damage, personal injury or death.

GENERAL HAZARD INFORMATION

Do not start engine until area is free of personnel to avoid personal injury due to unexpected machine movement.

Know width of machine to maintain proper clearance when operating near fences or boundary obstacles.

As required, wear a hard hat, protective glasses and other protective equipment.

Do not wear loose clothing or jewelry that can snag on controls or other parts.

All protective guards and covers must be secured in place.

Keep machine free of foreign material. Remove debris, oil, tools and other items from deck, walkways and steps.

Secure lunchboxes, tools and other loose items not a part of machine.

Know appropriate work site hand signals, personnel authorized to give hand signals and only accept hand signals from one person.

Drain all liquids into a suitable container, never put maintenance fluids into glass containers.

Discard any drained fluids and filter elements according to local regulations.

Use all cleaning solutions with care.

Report all necessary repairs.

Do not allow unauthorized personnel on machine.

Do not smoke when servicing air conditioner or when refrigerant gas may be present. Inhaling fumes released from a flame that contacts air conditioner refrigerant can cause bodily harm or death.

Inhaling gas from air conditioner refrigerant through a lit cigarette can cause bodily harm or death.

Unless otherwise instructed, perform maintenance under the following conditions:

- Park on level ground
- Lower implements to ground
- Transmission control lever in park
- Stop engine
- Engine start switch is off and key removed
- Machine has cooled down

Safety

Pressurized Air

Air under pressure can cause personal injury. When pressurized air is used for cleaning, wear a protective face shield, protective clothing and protective shoes.

Maximum air pressure for cleaning purposes must be below 205 kPa (30 PSI).

Asbestos Information

AGCO equipment and replacement parts shipped from AGCO are asbestos-free. AGCO recommends use of only genuine AGCO replacement parts.

Electrical Storm Injury Prevention

When lightning is striking in vicinity of machine, do not attempt to mount or dismount machine.

Do not leave operator station during an electrical storm. Stay away from machine if on ground during an electrical storm.

Mounting and Dismounting

Mount or dismount machine only at locations with steps and/or hand holds. Before mounting or dismounting, clean steps and hand holds. Inspect stairs and hand holds and make any necessary repairs.

Maintain three-point contact with steps and hand holds. Three-point contact is two feet and one hand or one foot and two hands.

Never mount or dismount a moving machine. Never jump from machine except in an emergency.

Do not carry tools or supplies when mounting or dismounting machine, use a hand line to pull equipment onto platform.

Do not use any controls as hand holds when entering or exiting operator compartment.

IMPORTANT: Make sure steps are not adjusted too close to machine hood.

A minimum dimension of 75 mm (2 in) between inside hand hold and hood must be maintained to allow room for operator's hand.

Before Starting Engine

Start engine only from operator station. Never short across starter terminals or batteries. Shorting could damage electrical system or cause unexpected machine movement.

Adjust seat so full pedal travel can be achieved with operator's back against back of seat.

Make sure machine is equipped with a lighting system adequate for job conditions and all lights are in working order.

Ensure area is free of personnel before starting engine.

Engine Starting

Move hydraulic controls to HOLD before starting engine.

Make sure transmission control lever is in PARK.

Diesel engine exhaust contains products of combustion which can be harmful to health. Always run engine in a well-ventilated area. Vent exhaust outside when in an enclosed area.

When engine is running and steering wheel is turned, machine will not turn with transmission control lever in PARK.

Ensure area is free of personnel to prevent injury due to unexpected machine movement.

Before Operation

Ensure machine and surrounding area are free of personnel.

Clear all obstacles from path of machine. Beware of hazards such as wires, ditches, etc.

Be sure all windows are clean and either in the open or closed position.

Adjust rear view mirrors for best visibility for objects close to machine. Make sure horn, backup alarm, if equipped and all other warning devices are working properly.

Fasten seat belt securely, low around hips.

Operation

Only operate machine while in operator seat. Seat belt must be fastened during operation. Only operate controls while engine is running.

Check for proper operation of all controls and protective devices while operating machine slowly in an open area.

Make sure no one will be endangered before moving machine.

Report any damage noted during operation and make any necessary repairs.

Do not drive machine near an overhang, edge of a cliff or near edge of an excavation.

If machine begins to sideslip on a grade, immediately dispose of load and turn machine downhill.

Take steps to avoid any ground condition that causes machine to tip.

A rollover can occur when working on hills, banks or slopes or when crossing ditches, ridges or other unexpected obstacles.

When possible, operate machine up and down slopes, avoid driving across slopes whenever possible.

Keep machine under control and do not overload beyond capacity.

Make sure towing devices are adequate for application.

Never straddle, or allow other personnel to straddle a wire cable.

Know maximum dimensions of machine.

When operating on icy roads, reduce travel speed.

After operating in muddy conditions, allow time for tires to reject debris and moisture before making high speed maneuvers. Wet, muddy tires impede machine's steering.

If stability of machine is noticeably reduced, reduce travel speed.

Select a gear that controls machine speed when descending a hill.

Downshift if braking is required to control machine speed. Never coast down a hill with transmission in neutral.

Safety

Parking

Park on a level surface. If parking on a grade is necessary, chock machine's tires.

Move transmission control lever to park.

Before stopping engine, move throttle control lever to low idle. Run engine at low idle speed for five minutes to allow turbocharger to cool.

Stop engine.

Turn engine start switch to off and remove key.

Turn battery disconnect switch to off.

Operator Station

Any modifications to inside of operator station should not project into operator space. The addition of a radio, fire extinguisher and other equipment must be installed so defined operator space is maintained.

Any item brought into cab should not project into defined operator space. A lunchbox or other loose items must be secured. Objects must not pose an impact hazard in rough terrain or in the event of a rollover.

Crushing and Cutting Prevention

Ensure proper support when working under machine. Do not depend on hydraulic cylinders to hold machine up. An implement can fall if a control lever is moved or if a hydraulic line breaks.

Never jump across starter solenoid terminals to start machine, unexpected movement could result.

Never attempt adjustments while machine is moving or engine is running.

Whenever there are attachment control linkages, clearance in linkage area changes with movement of attachment.

Stay clear of all rotating and moving parts.

Keep objects away from moving fan blades. Fan blades will throw and can cut objects.

Always wear gloves when handling wire cable and never use a kinked or frayed wire cable.

When striking a retainer pin may cause personal injury. Make sure there are no personnel in area. To avoid injury to eyes, wear protective glasses when striking retainer pins.

Chips or other debris may fly off objects when struck. Make sure no personnel will be injured by flying debris before striking.

Hydraulic Safety

Machine uses high-pressure fluids for operation. If injured by escaping fluid, seek medical attention immediately.

- Remove hydraulic pressure by operating control lever(s) to all positions with engine shut off.
- Make sure all components in hydraulic system are clean and in good condition and connections are tightened properly.
- Immediately replace any worn, cut, flattened or crimped hoses and/or steel lines.
- Wear proper hand and eye protection when searching for a high-pressure leak.
- Use a piece of wood or cardboard to isolate leaks.
- Never use fingers or hands to search for leaks.
- Relieve system before loosening any hydraulic lines or connections. Use extra care when working on hydraulic circuits containing accumulators. High pressure can exist long after machine is shut down.
- Loosen connections slowly, keeping hands and fingers clear of loosened fittings.
- Tighten connections securely before applying pressure.
- Escaping fluid under high pressure can be almost invisible but can penetrate skin.
- Consult a doctor immediately if an escaping fluid injury is sustained. Serious reactions can result.
- Do not attempt any repairs to hydraulic lines, fittings or hoses by using tape, clamps or cements. Such repairs fail suddenly and create hazardous conditions.

Chemical Safety

Do not perform any maintenance on machine until all chemicals have been thoroughly rinsed from outside and entire system has been flushed.



DANGER: Contact with chemicals can cause injury or death.

Select an area to fill, flush, calibrate and decontaminate machine. Select an area where hazardous chemicals will not drift or run off to contaminate people, animals, vegetation or water supply.

Follow instructions on all signs and labels.

Wear approved hand, eye and body protection.

Do not inhale dust or fumes.

Never use mouth to blow trash or debris from nozzles, tips or other parts which may contain chemical residue. Have spare tips or parts available for replacement.

Follow correct treatment on container if contact is made with chemicals or fertilizers.

Wash hands before touching face or mouth.

Clean machine after each use with correct method.

Get medical help immediately if signs of illness occur during or soon after use of dry or liquid agricultural chemicals or fertilizers.

The Material Safety Data Sheet (MSDS) provides specific details on hazardous chemical products such as physical and health hazards, safety procedures and emergency response techniques.

Safety

EMERGENCY EXIT FROM CAB

FIG. 4: Understand the procedure to use the emergency exit from the Right Hand side of the cab before operating the vehicle.

1. Pull green tab located at the rear of the Right Hand Cab Window. This removes the glass seal.
2. Push out the Right Hand Cab Window and exit the vehicle.

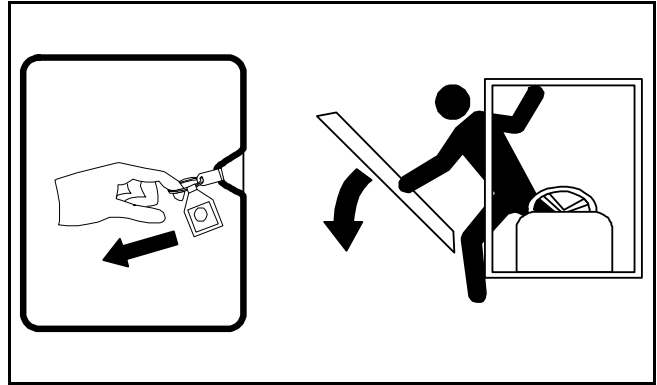


FIG. 4

OPERATING THE VEHICLE SAFELY

FIG. 5: Wear a seat belt at all times.

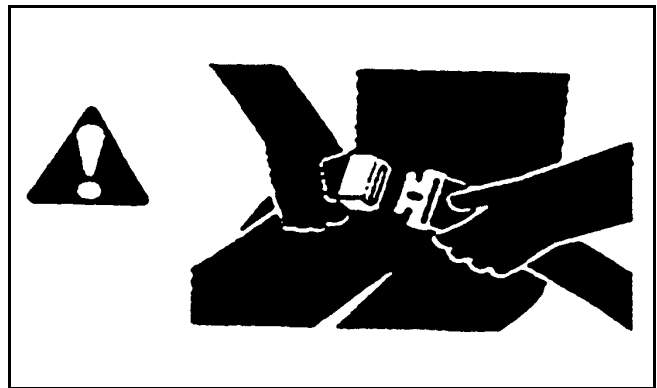


FIG. 5

FIG. 6: Make sure the operator and ladder areas are clean and dry to help prevent personal injuries.

- Make sure all wheel bolts are torqued to the proper specifications before operating the vehicle.
- Never permit any passengers on, or in the vehicle when it is in operation.
- Engage the Parking Brake and place the Drive Lever in the NEUTRAL position before starting the vehicle's engine.
- Stop the vehicle, turn off the engine and set the Parking Brake before inspecting any damage if an accident occurs.
- Stop the vehicle immediately if there is a failure in the engine, hydraulic system, or any vehicle system. Do not turn the key switch to the OFF position until the vehicle is stopped and the vehicle is shutdown properly.
- The operator must not exceed the speeds and loads listed on the tire load and inflation table in the Maintenance section.
- Tire inflation pressure must be maintained per the tire load and inflation table in the Maintenance section.
- Never get off a moving vehicle.

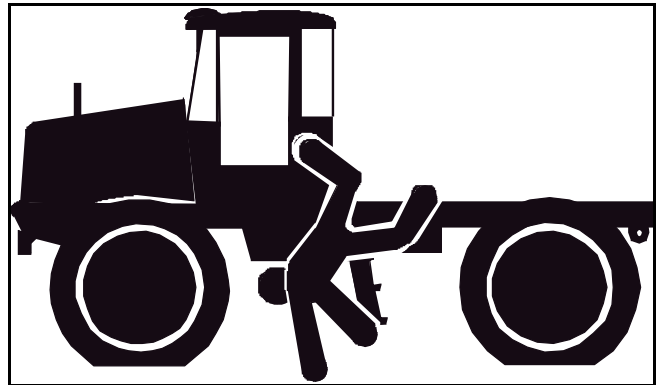


FIG. 6

FIG. 7: When leaving the vehicle unattended, engage the Parking Brake and remove the key.

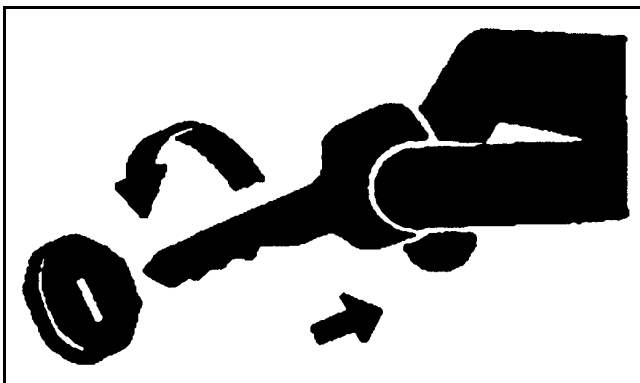


FIG. 7

PREVENT VEHICLE RUNAWAY

FIG. 8: Avoid possible injury or death from vehicle runaway.

Never start the engine by shorting across the starter terminals. The engine will start, and the vehicle will move if normal circuitry is bypassed.

Never start the vehicle's engine while standing on the ground. Start the engine only from the operator's seat with the seat belt on, Drive Lever in the NEUTRAL position and the Parking Brake engaged.

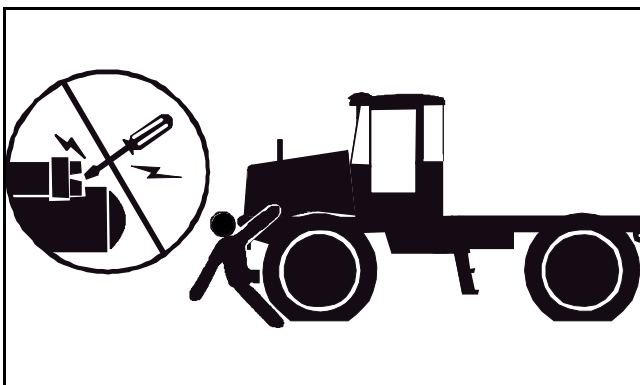


FIG. 8

USE SAFETY LIGHTS AND DEVICES

To increase visibility, use the safety lights and devices provided with the vehicle. Whenever driving on public roads use Amber flashing Warning Lights and turn signals, unless prohibited by law. Keep safety items and features in the proper working order. Replace any missing or damaged components immediately.

OPERATING ON SLOPES

FIG. 9: Keep the vehicle in a safe lower gear when going down slopes. Avoid holes, ditches and obstructions that may cause vehicle roll-over, especially on hillsides. Avoid sharp turns on hills.

When driving parallel on steep slopes be aware that vehicle doesn't roll over.

Never drive near the edge of a gully or steep embankment.

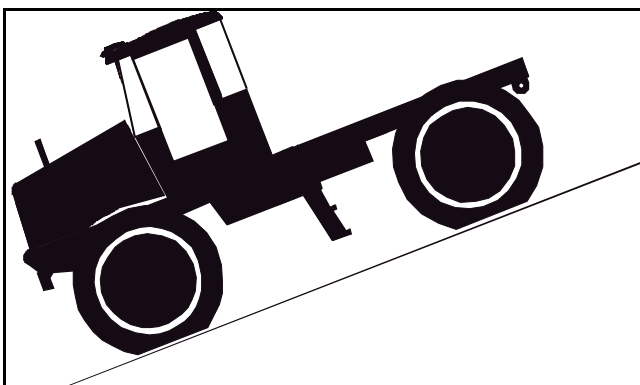


FIG. 9

TRAVELING ON PUBLIC ROADS



CAUTION: This vehicle was designed for applying chemicals and fertilizers in off-road use. Do not use the vehicle for transporting product over public roads. Chemical spills may occur resulting in environmental damage. A loaded vehicle driven on public roads also runs the high risk of tire failure. Personal Injury could result.

ALWAYS walk around and visually inspect the vehicle before traveling on public roads. Check for damage and/or faulty components that can fail and create a hazard or unsafe condition. Make sure ALL vehicle systems operate properly including, but not limited to: Front Road Lights, Tail and Brake Lights, Hazard Warning Lights, Safety Lights, Parking Brake, Horn, Windshield Wiper and Washer, and Rear View Mirrors. Repair or replace any component that is not in proper working order.

Never drive at a speed that causes the vehicle to bounce or cause the loss of control.

Obey all traffic safety rules. Operate the vehicle with hazard warning lights ON, unless prohibited by law. It is the operator's responsibility to activate and use the road lights while traveling on public roads.

STOPPING AND PARKING THE VEHICLE

Vehicle roll-over, collisions, runaway vehicles, and people being crushed under vehicles can occur when the vehicle's operator ignores operation safety procedures.

Signal before stopping, turning or slowing down on public roads, or anywhere it will cause a potential safety hazard.

Pull over to the side of the road before stopping the vehicle.

Be extremely careful when stopping the vehicle on slippery surfaces.

Be extremely careful when stopping with heavy loads.

Always engage the Parking Brake when the vehicle is stopped.

Remove the key to prevent any unauthorized personnel from operating the vehicle.

SYSTEM BOOM SAFETY

FIG. 10: If you have a system with booms, make sure no personnel or objects are ever in the path of the booms before operating them. Especially, when retracting or extending the booms.

Be aware of the location of the booms at all times.

Before driving on public roads, retract and lock the booms if applicable.

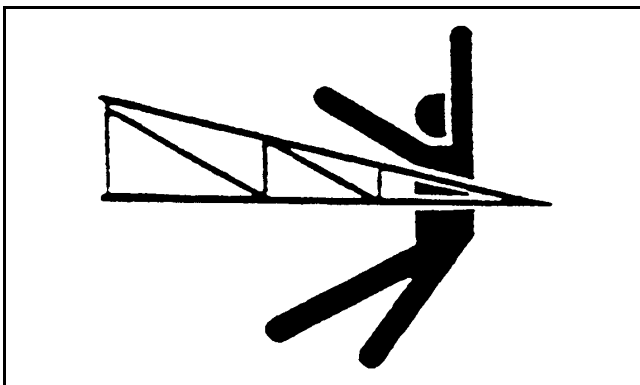


FIG. 10

AVOID EYE CONTACT WITH RADAR

FIG. 11: Radar ground sensors emit a low intensity microwave signal. The microwave signal will not cause any ill effects during normal use. Although the intensity is low, to avoid eye damage, never look directly into the sensor while the sensor is in operation.

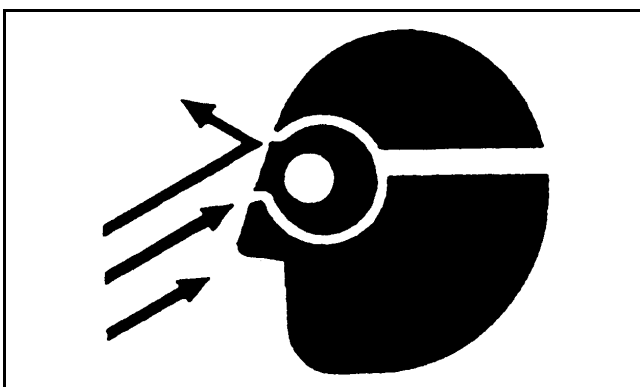


FIG. 11

EXHAUST FUMES

FIG. 12: Always work in a Properly Ventilated Area.

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, use the proper equipment to safely remove the exhaust fumes from the working area.

Always open the doors and get fresh outside air into the working area.

Never operate the vehicle's engine inside a building unless adequate ventilation is provided to safely and properly remove the exhaust fumes.

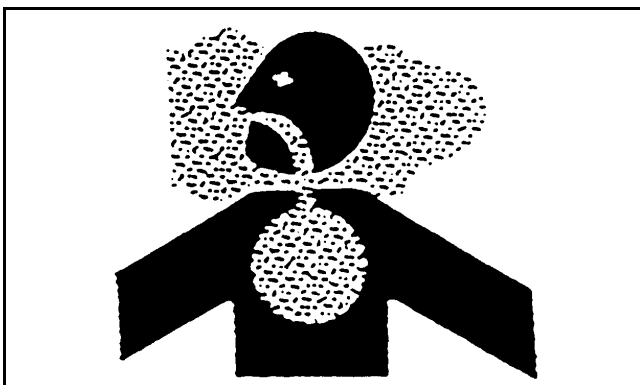


FIG. 12

Safety

OVERHEAD ELECTRICAL POWER LINES

FIG. 13: Never let the vehicle come into contact with overhead power lines. All antennas must be bent over and secured in place any time overhead electrical power lines are near the vehicle. This can decrease the possibility that the vehicle may come into contact with an overhead power line when in operation or when the vehicle is transported.

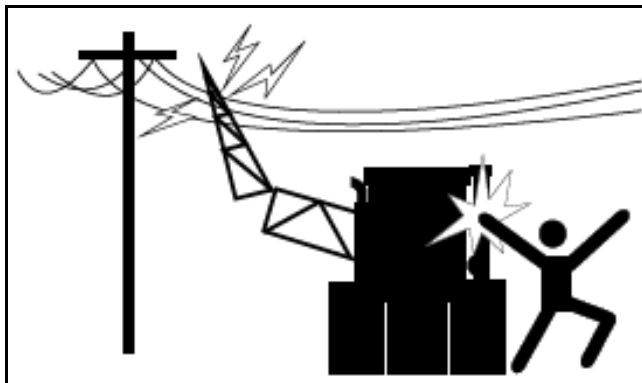


FIG. 13

NOISE

FIG. 14: Long periods of exposure to high decibels or loud noise can cause hearing impairment or loss.

Wear proper hearing protection during periods of exposure to high decibels or loud noise.

Wear a proper hearing protective device such as earmuffs or earplugs to protect against high decibels and/or uncomfortable loud noises.

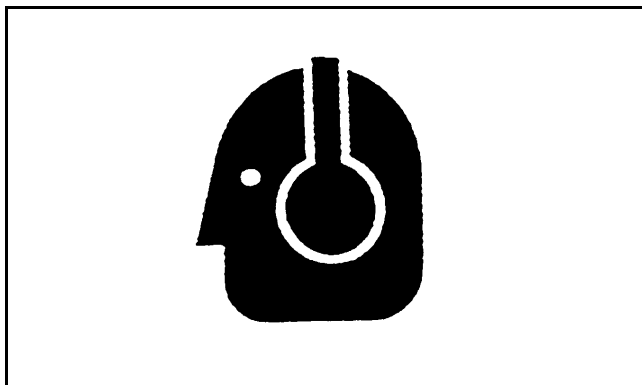


FIG. 14

HANDLE FUEL SAFELY - AVOID FIRES

FIG. 15: Handle fuel with care: it is highly flammable.

Always stop the engine before refueling the vehicle.

Never refuel the vehicle while smoking.

Add fuel in a safe place, away from open flame or sparks.

Fill the fuel tank outdoors.

Never fill the fuel tank completely to the top of the fuel tank.

Clean up any spilled fuel immediately.

Never use diesel fuel, kerosene, gasoline or any flammable solvents for cleaning. Never use any flammable solvents for cleaning anything, EVER!

Prevent fire hazards by keeping the vehicle clean of any accumulated trash, grease and debris.

Always have a multipurpose dry chemical fire extinguisher filled and available during vehicle operation and adding fuel. Know how to use it.

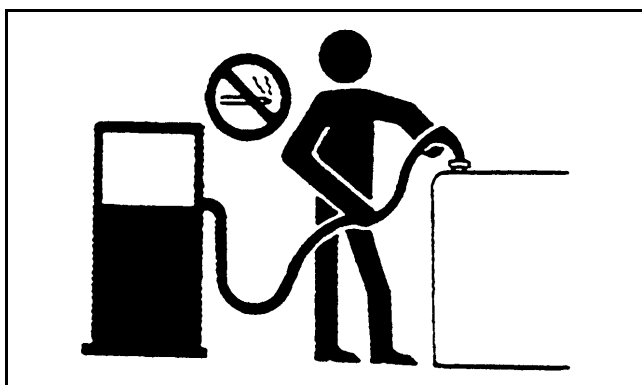


FIG. 15

STAY CLEAR OF ROTATING DRIVE LINES AND MOVING PARTS

FIG. 16: Entanglement in rotating drive lines or moving components will cause serious injury or death.



FIG. 16

FIG. 17: Keep all safety guards and shields in place at all times when operating the vehicle.

Turn the key switch to the OFF position. Remove the key from the switch to prevent unauthorized operation of the vehicle before removing any safety guards and shields.

Wear close fitting clothing. Stop the engine and make sure the drive lines are stopped before making any adjustments or performing any type of service on the engine or vehicle.

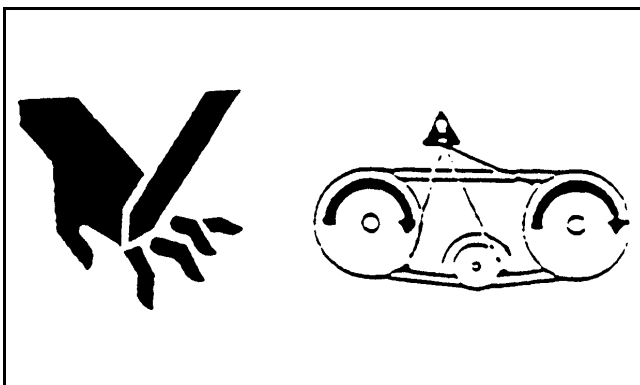


FIG. 17

TOWING OTHER VEHICLES / TRAILERS / EQUIPMENT

FIG. 18: Towing of other vehicles without brakes is NOT approved by Challenger.

Using the vehicle for towing can create a safety hazard and can void the vehicle or system warranty.

MODIFICATIONS

Welding or altering the chassis in any way (such as adding implement towing hitches) can cause damage or failure of components and create a safety hazard. Modifications not approved by Challenger can also void the vehicle or system warranty.

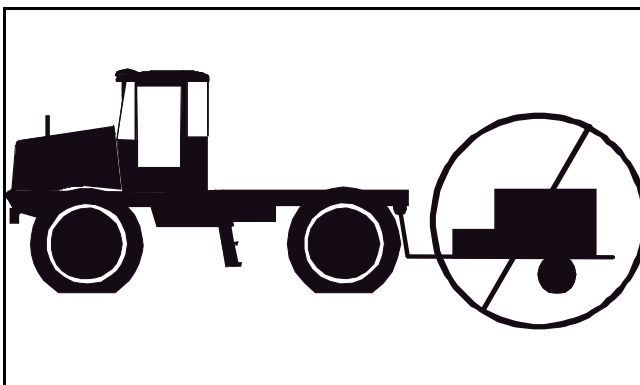


FIG. 18

Safety

MAINTENANCE AND SERVICE SAFETY

FIG. 19: Read the maintenance and safety instructions and understand them before performing any maintenance procedures.

Never perform any maintenance procedures or repairs if the instructions and safety procedures are not fully understood. Only trained and qualified personnel should perform any maintenance procedures or repairs.

Never modify any equipment or add attachments not approved by Challenger.

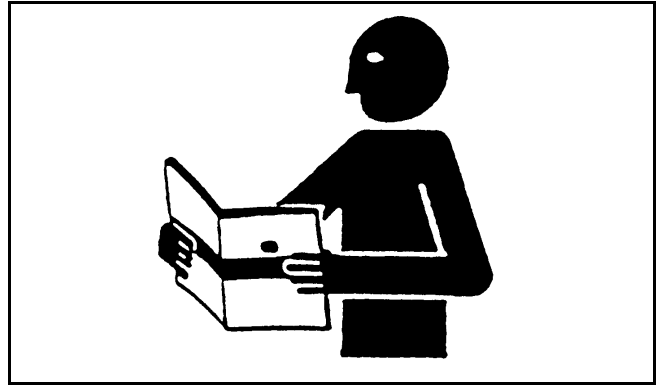


FIG. 19

PRACTICE SAFE MAINTENANCE

FIG. 20: Never lubricate, service, or adjust the vehicle, any of its systems or components while they are moving.

Never wear a necktie, necklace, scarf or loose clothing when working near machine tools or moving parts.

Tie long hair behind the head and wear a hair net.

Remove rings and other jewelry to prevent electrical shorts or other personal injury when in contact with machine tools or moving parts.

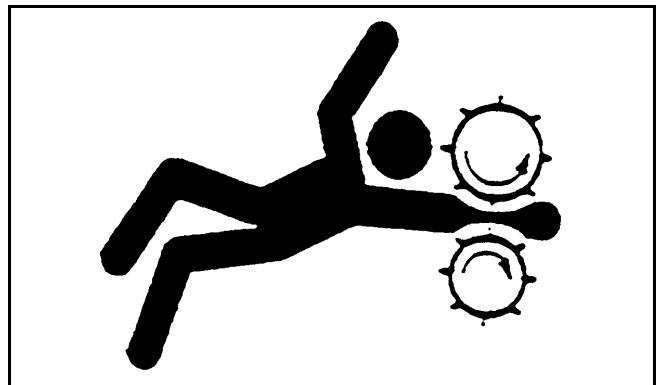


FIG. 20

FIG. 21: Stop the engine. Remove the key.

Allow the vehicle to cool.

Keep all parts in good condition and properly installed.

Fix any damaged vehicle, systems or component immediately.

Replace worn, damaged or broken parts immediately.

Remove any buildup of grease, oil or debris.

Disconnect the electrical system before making adjustments on electrical systems or welding on the vehicle.

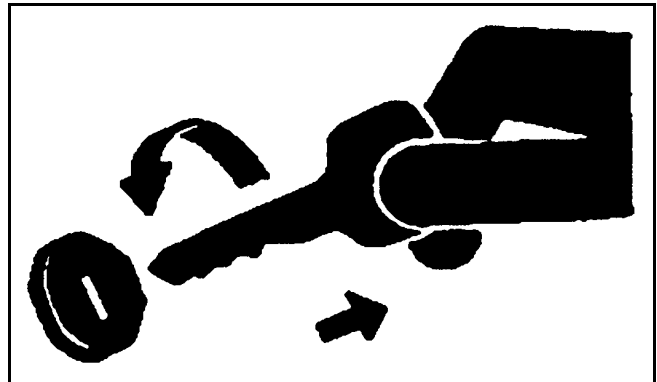


FIG. 21

CHEMICAL SAFETY

Operator Cabs

FIG. 22: Some cabs use filters that MAY NOT filter out dangerous chemicals.

Follow instructions given by the chemical manufacturer.

Cabs labeled as "**Enclosed Cabs for Pesticide Application Incorporating Respiratory Protection**" or "**ECPAR**" comply with ASAE S525 and EPA Worker Protection Standards for operating in a pesticide environment. This does not include fumigants. (Look for the **ECPAR** decal to check if the cab is an **ECPAR** cab.) However, to remain in compliance, **ECPAR** cabs **MUST** be operated with the door closed and the fan on **MAX** setting when applying or driving in a treated area. Operators must also avoid entering or exiting the cab in treated areas. Cabs must be equipped with the required filters and maintained properly. (See the Maintenance Section of this manual.)

FIG. 23: Never spray hazardous chemicals when the wind is in excess of the chemical manufacturer's recommendation. NEVER allow chemicals to contact the skin or eyes.

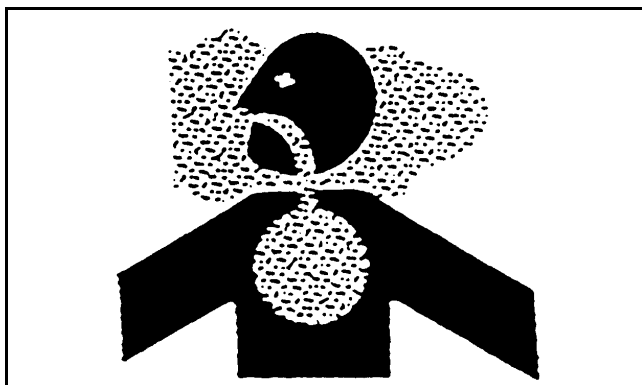


FIG. 22

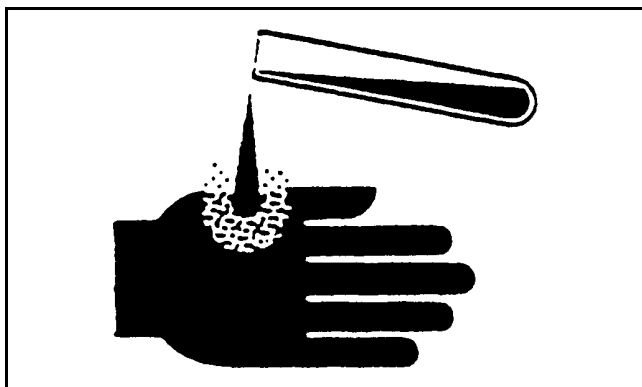


FIG. 23

FIG. 24: Always wear APPROVED protective equipment and clothing.

Before leaving the cab, wear personal protective equipment as required by pesticide use instructions and the chemical manufacturer recommendations. Before re-entering the cab, remove protective equipment and store; either outside the cab in a closed box or another type of sealable container. Inside the cab, use a pesticide resistant container such as a plastic bag or approved container. Clean shoes or boots to remove soil or other contaminant prior to entering the cab.

Select a safe area to fill, flush, calibrate and decontaminate the vehicle. Select an area where hazardous chemicals will not drift or run off to contaminate people, animals, vegetation, water supply, etc.

If hazardous chemicals come in contact with the body, wash immediately according to the chemical manufacturer's recommendations.

Never place nozzles, tips or other parts to lips to blow out trash or debris. Have spare tips available for replacement.



FIG. 24

Safety

FIG. 25: Clean the vehicle of hazardous chemicals after use. Hazardous chemical residue can build up on the inside and outside of the vehicle.

Direct exposure to hazardous chemicals can cause serious injury or death. Potentially hazardous chemicals used with Challenger equipment include such items as fuel, lubricants, coolants, hydraulic fluid, paints and adhesives.

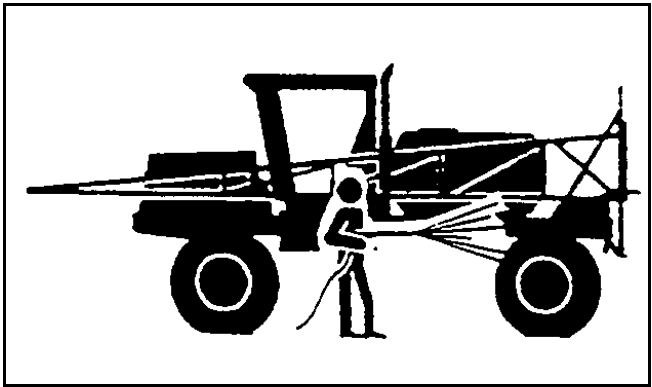


FIG. 25

FIG. 26: The Material Safety Data Sheet (MSDS) provides specific details on hazardous chemical products: physical and health hazards, safety procedures and emergency response techniques.

Check the MSDS before starting any project using a hazardous chemical. Know exactly what the risks are and how to do the project safely. Follow procedures and equipment recommendations.

(See the chemical manufacturer for MSDS's on chemical products used with Challenger equipment.)

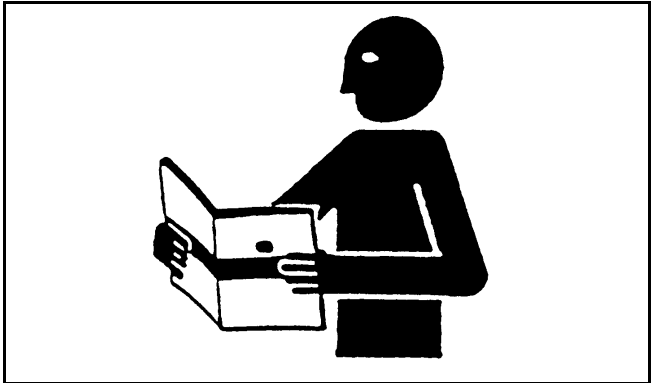


FIG. 26

WEAR PROTECTIVE CLOTHING

FIG. 27: Wear close fitting clothes and the proper safety equipment required for the job.

Wear a suitable hearing protection device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Prolonged exposure to high decibels or loud noise can cause hearing impairment or loss of hearing.

Operating equipment safely requires the full attention of the operator. Never wear radio or music headphones while operating the vehicle.

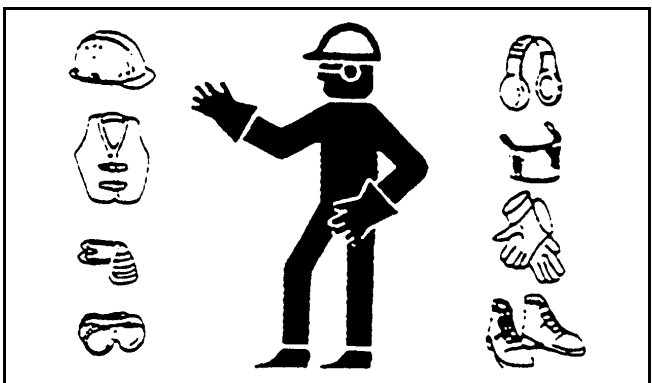


FIG. 27

WORK IN A CLEAN AREA

FIG. 28: Thoroughly clean the work area, the vehicle, systems, and components before starting a job. Dirty and greasy areas can create work hazards.

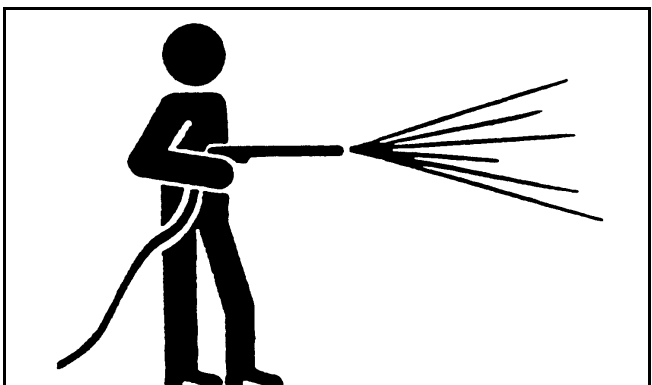


FIG. 28

UNDERSTAND CORRECT SERVICE

FIG. 29: Light your working area properly, adequately and safely.

Use proper safety lights with wire safety cages. Exposed bulbs can ignite fluids.

Catch draining fluids in proper containers.

Never use beverage containers that could mislead personnel to drink from them.

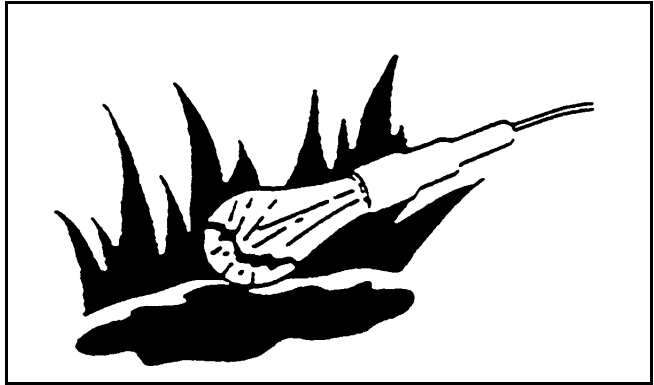


FIG. 29

Safety

USE PROPER TOOLS

FIG. 30: Make-shift tools and procedures can create safety hazards. Use only the proper equipment and procedures.

Use power tools only to loosen threaded parts and fasteners.

Use only U.S. tools with U.S. fasteners and metric tools with metric fasteners.



FIG. 30

SUPPORT MACHINE PROPERLY

FIG. 31: Never support the vehicle on cinder blocks, hollow tiles or supports that may crumble.

Never work under a vehicle that is only supported by a jack. Use wheel chocks.

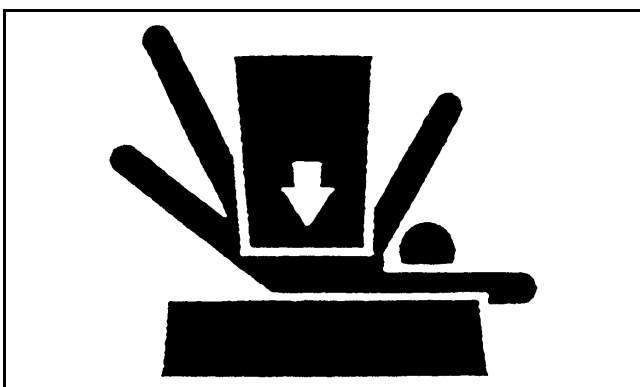


FIG. 31

PROPER LIFTING EQUIPMENT

FIG. 32: Lifting incorrectly can cause severe injury or vehicle damage.

Follow the procedures recommended in the proper manual for removal and installation of components of this vehicle, systems or components.

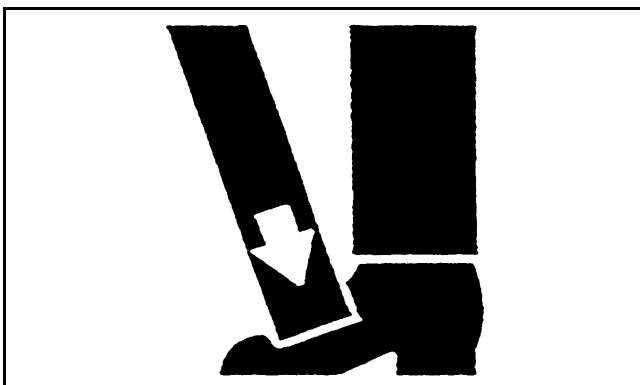


FIG. 32

HIGH-PRESSURE FLUIDS

FIG. 33: AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

The vehicle must be stopped and cooled before checking fluids. Use caution when removing radiator caps, plugs, grease fittings or pressure taps.

Never open pressure lines when they are under pressure. Release all pressure before doing maintenance or repairs on any pressure system.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.



FIG. 33

FIG. 34: Search for leaks with a piece of wood or cardboard. Protect hands and body from high pressure fluids. Do not use your hands!

Never open hydraulic lines or fuel lines when they are under pressure. Hydraulic fluid or diesel fuel under pressure can cut the skin, cause bad burns, eye injury or skin irritation.

If an accident does occur, get medical help immediately if any personnel are injured by hydraulic fluid or fuel.

Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

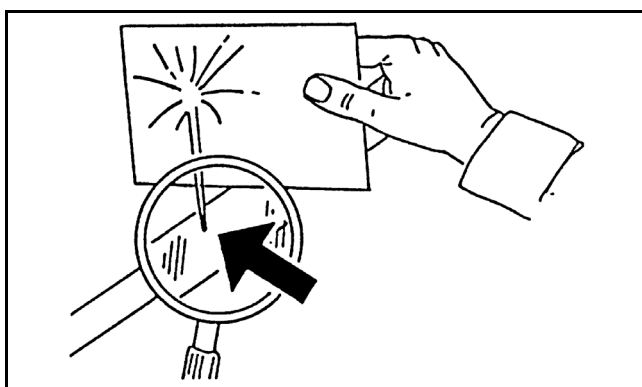


FIG. 34

HYDRAULIC HOSES

IMPORTANT: Hydraulic hoses have a limited working life. By weather influences and use under heavy conditions and normal aging the working life reduce.

Therefore is checking of hydraulic hoses by damaging and aging important for good functioning of your machine and the safety of the user and the environment.

Replace immediately damaged and leaking hydraulic hoses.

AVOID HEATING NEAR PRESSURIZED FLUID LINES

FIG. 35: Never heat by welding, soldering or using a torch near pressurized fluid lines or other flammable materials.

Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to personnel and bystanders.



FIG. 35

Safety

SERVICE COOLING SYSTEM SAFELY

FIG. 36: Explosive release of fluids from pressurized cooling systems can cause serious burns.

Shut off the engine. Remove the filler cap only when it is cool enough to touch with bare hands. Slowly, loosen the filler cap to the first stop to relieve any pressure before removing the cap completely.

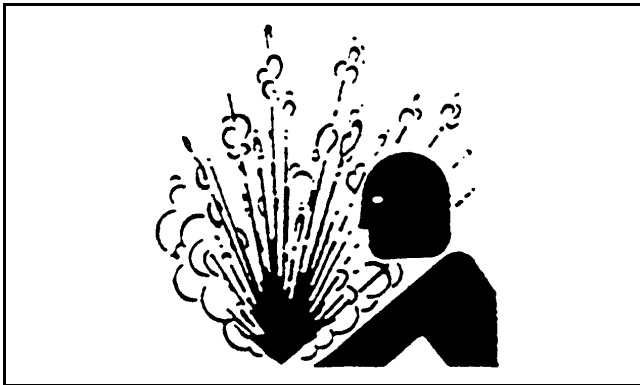


FIG. 36

REMOVE PAINT BEFORE WELDING OR HEATING

FIG. 37: Avoid potentially toxic fumes and dust. Hazardous fumes can be generated when paint is heated by welding, soldering or using a torch.

Always work outside in a well-ventilated area. Dispose of paint and solvent properly.

Always remove paint before welding or heating. Wear an approved respirator to sand or grind paint, avoid breathing the dust.

If using solvent or paint stripper, remove the stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from the area. Allow fumes to disperse before welding or heating.

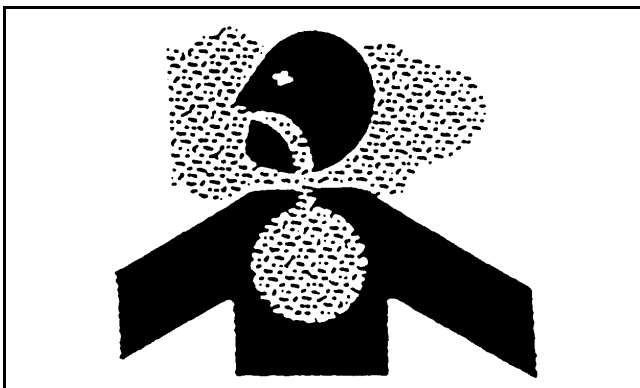


FIG. 37

BATTERIES

FIG. 38: A lead acid battery will generate flammable and explosive gases. Keep sparks and flames away from the battery.

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

If acid contacts eyes, skin or clothing, flush with water immediately. If acid contacts eyes get immediate medical help.

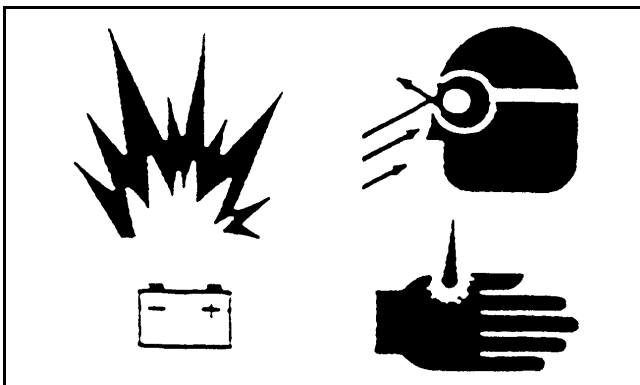


FIG. 38

TIRES AND WHEELS

FIG. 39: Never weld on a wheel or rim that has a tire on it.

Never attempt to mount or remove a tire unless using the proper equipment, tire safety cage, instructions, training and are qualified to perform the work safely. Failure to follow the correct procedures when mounting a tire on a wheel or rim can cause an explosion and serious injury.

Tire repairs procedures must be performed by trained and qualified personnel.

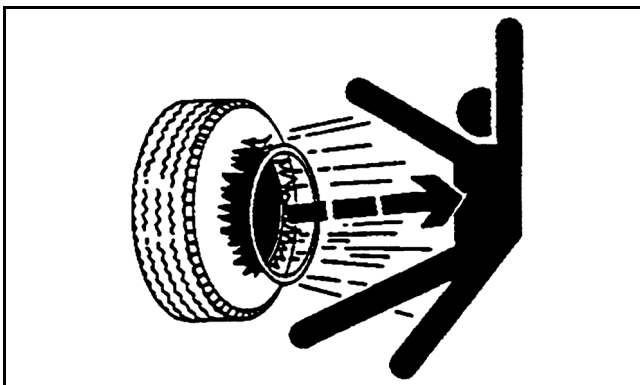


FIG. 39

DISPOSE OF WASTE PROPERLY

FIG. 40: Improper disposal of potentially harmful waste can threaten the environment and ecology. Potentially harmful waste used with Challenger vehicles include such items as oil, fuel, fluids and batteries.

Use leak proof containers when draining fluids. Never use food or beverage containers that may mislead someone to drink from them.

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

Air Conditioning refrigerants escaping into the atmosphere can damage the Earth's atmosphere. Government regulations require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

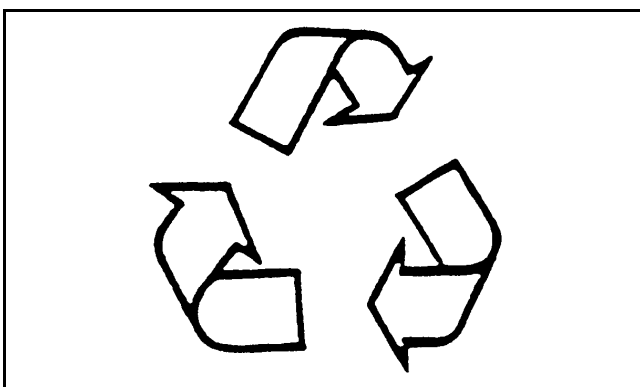


FIG. 40

MOBILE RADIO INSTALLATIONS

Under no circumstances should a mobile radio antenna be mounted to the rear of the cab or antenna cable be routed near harness or electrical system controllers or near operator controls. Failure to follow these precautions could expose the operator to radio frequency energy levels higher than recommended by the American National Standards Institute (ANSI) / Electro Magnetic Compatibility (EMC) and/or could cause undesirable performance of electrically controlled systems.

Safety

MAINTENANCE IN THE ARTICULATION JOINT (HINGE) AREA

FIG. 41: Before performing maintenance in the area of the articulation joint or the steering hydraulic cylinders the following procedure **MUST** be followed:

1. Steer the vehicle into the straight ahead position.
2. Shut the engine off and remove ignition key, lock the cab door after leaving the cab so that nobody can accidentally turn the steering wheel.
3. Move the Articulation Lock Turnbuckle from the Storage position to the transport/maintenance position

This work area is a confined space and lacks clearance for a person if the vehicle steering is accidentally turned. This situation could result in serious injury or death.

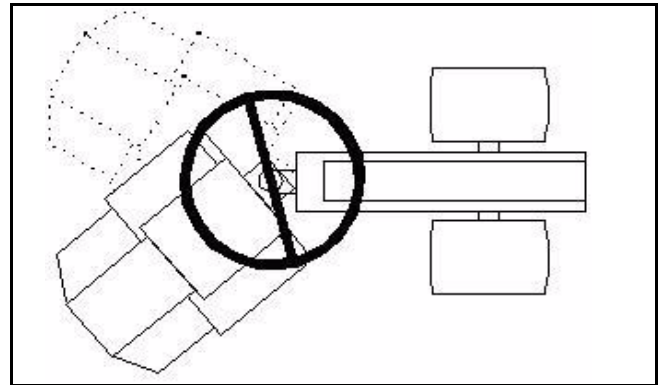


FIG. 41

SAFETY TREAD AND GRIP MATERIAL

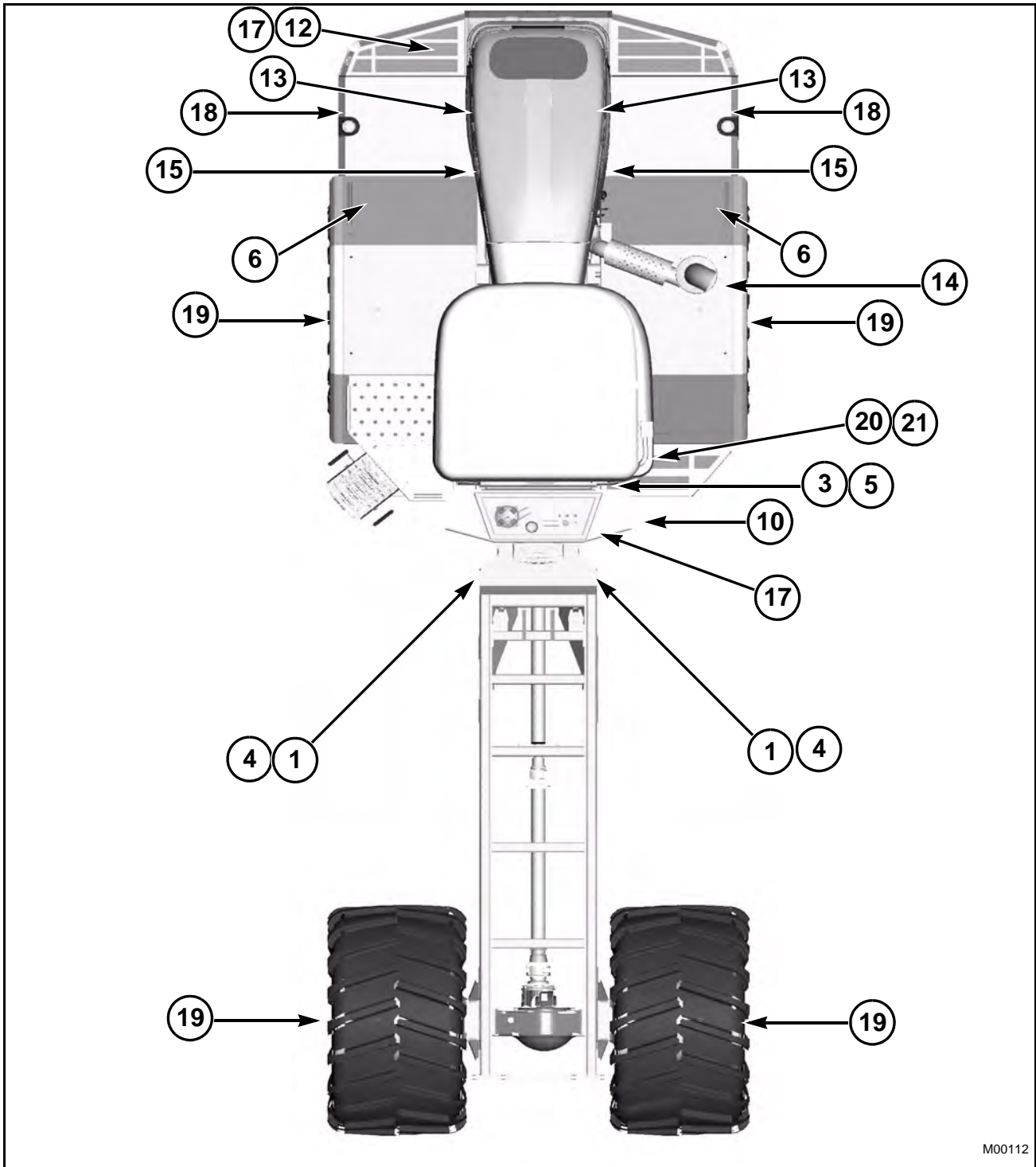
Replace safety treads when worn, damaged or missing.

Replace hand, anti-slip strips, rails and steps if they become damaged.

**SAFETY AND SERVICE DECAL
LOCATIONS CHASSIS**

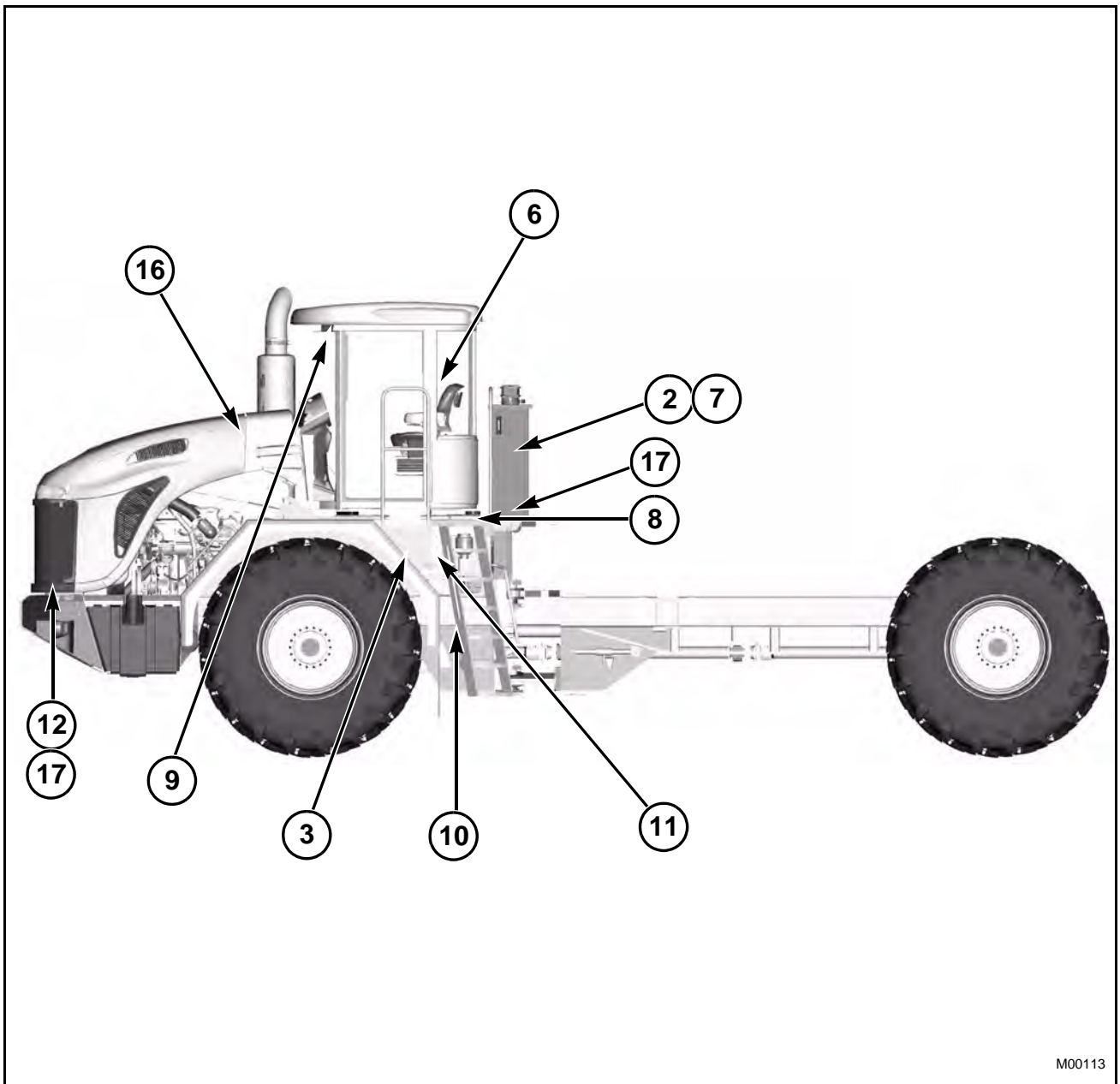


WARNING: Carefully read and understand all safety signs on your vehicle. Failure to read and understand all safety signs may result in personal injury or death. Always be aware of a safety hazard. Make sure new equipment components and repair parts include the current safety signs.



M00112

FIG. 42



M00113

FIG. 43

FIG. 44:

1. Caution - No clearance for person in the working area of the machine.



FIG. 44

FIG. 45:

2. Warning - External hydraulic system filled with ISO VG 46.



FIG. 45

FIG. 46:

3. Caution - Do not work under the cab, when the Safety pin is not mounted.



FIG. 46

Safety

FIG. 47:

4. Danger - No clearance for person in this area when turning vehicle. Keep distance/pinching hazard.



FIG. 47

FIG. 48:

5. Warning - Tipping over order cabin.
 - i. Open engine hood;
 - ii. Dismount side panels engine hood;
 - iii. Check if there are no loose parts in the cab, and everything is ready to tip over the cab;
 - iv. Dismount safety pin;
 - v. Tip over cab;
 - vi. Mount safety pin.

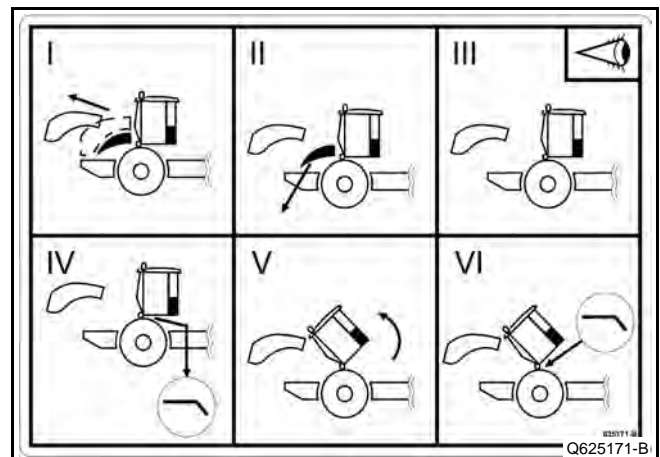


FIG. 48

FIG. 49:

6. Read and understand the operators manual. This decal is in a vertical and in a horizontal position available.



FIG. 49

FIG. 50:

7. Warning - Beware of leaking hydraulic lines/hoses.



FIG. 50

FIG. 51:

8. Secondary Fresh Air Filter.

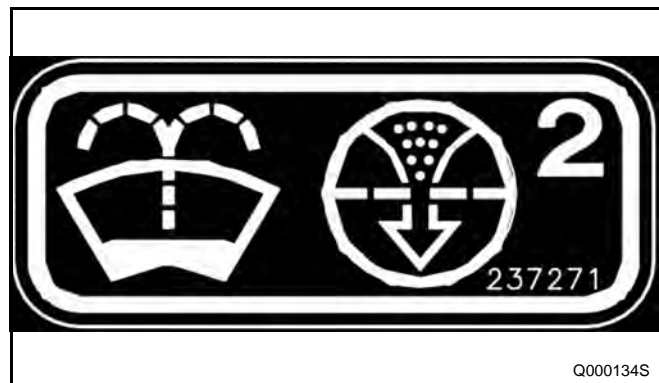


FIG. 51

Safety

FIG. 52:

9. Primary Fresh Air Filter.



FIG. 52

FIG. 53:

10. Warning - Radar Hazard, do not look into the radar.

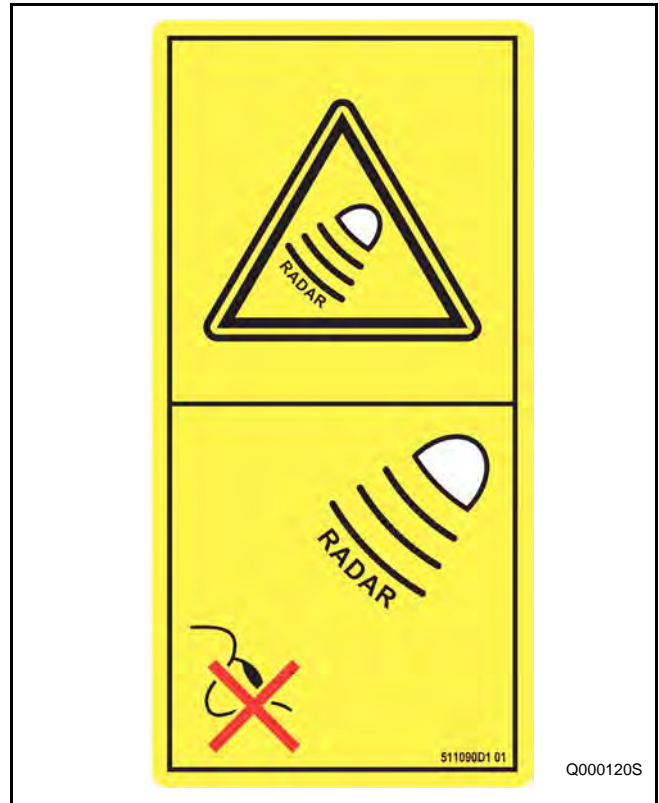


FIG. 53

FIG. 54:

11. Warning - Tire Pressure - Read Operator's Manual.



FIG. 54

Q000121S

FIG. 55:

12. Danger - Explosion Hazard - Disconnect Battery.

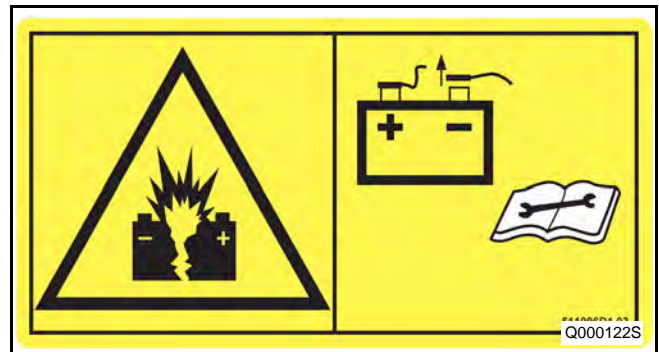


FIG. 55

Q000122S

FIG. 56:

13. Warning - Remove Key Before Maintenance - Rotating Blades.



FIG. 56

Q000123S

Safety

FIG. 57:

14. Hazard - Hot surface, Exhaust.



FIG. 57

FIG. 58:

15. Warning - Remove Key Before Maintenance.



FIG. 58

FIG. 59:

16. Hazard - Hot FLuid, Burn Hazard. Remove Key, Read Manual, Cooldown Before Opening Radiator Pressure Cap.



FIG. 59

FIG. 60:

17. Prohibition No Waterhose.



FIG. 60

FIG. 61:

18. Use Only Specified Diesel, See Engine Operators Manual

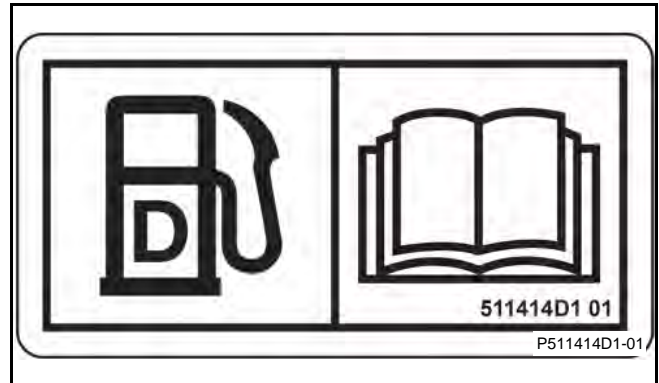


FIG. 61

FIG. 62:

19. Retorque Wheel Bolts With 720 Nm.

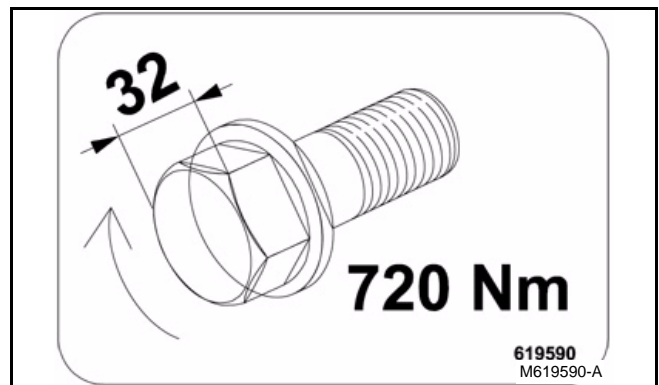


FIG. 62

FIG. 63:

20. Handwash Tank.



FIG. 63

Safety

FIG. 64:

21. Fuse Panel. See Also Chapter Lubrication and Maintenance.

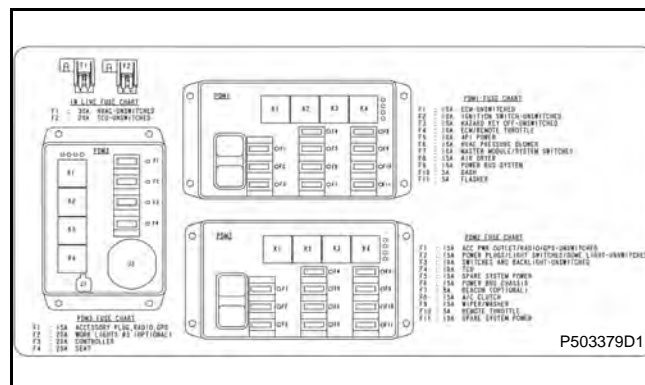


FIG. 64

FIG. 65:

22. Relay panel. See Also Chapter Lubrication and Maintenance.

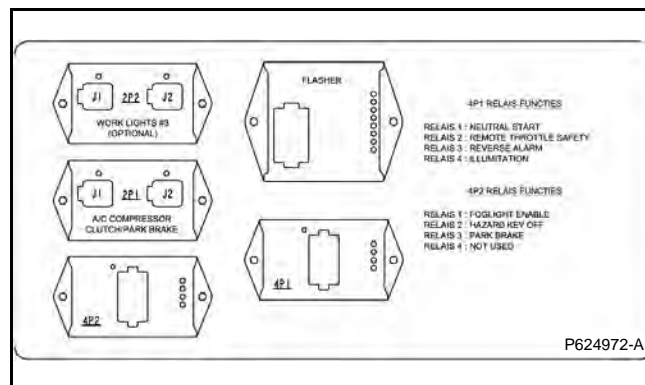


FIG. 65

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