

Safety

Safety Is Your Business

Why? Because SAFETY, based on knowledge, technical skill, and years of experience has been carefully built into your Carrydozer. Time, money and effort have been invested in making your machine a safe product. The dividend from this investment is YOUR PERSONAL SAFETY.

However, it must be realized that no power-driven equipment can be any safer than the person behind the controls. If you don't operate and maintain your Carrydozer safely, our efforts will have been in vain.

The safety instructions and warnings, as documented in this manual and shipped with the machine, provide the most reliable procedures for the safe operation and maintenance of your Carrydozer. It's your responsibility to see that they are carried out.

The following pages contain general safety warnings which supplement specific warnings and cautions appearing elsewhere in this manual. All electrical and hydraulic equipment is potentially hazardous. You must thoroughly review and understand this Safety Section before attempting to operate, troubleshoot, maintain or service this Carrydozer.

Allied Systems Company cannot anticipate all worksite conditions, local regulations, etc. It is the responsibility of the end user to be aware of and obey any specific worksite, local, state, or national regulations or procedures that are applicable to operating this equipment.

NOTE: All possible safety hazards cannot be anticipated so as to be included in this manual. Therefore, you must always be alert to potential hazards that could endanger personnel and/or damage the equipment.

Safety Symbols

The following symbols/terms define the various hazard identifications and notices in this manual:

**DANGER**

The “DANGER” symbol indicates a hazardous situation which, if not avoided, will result in death or serious injury. Carefully read the message that follows to prevent serious injury or death.

**WARNING**

The “WARNING” symbol indicates a hazardous situation which, if not avoided, could result in death or serious injury. Carefully read the message that follows to prevent serious injury or death.

**CAUTION**

The “CAUTION” symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury, or equipment damage. Carefully read the message that follows to prevent minor or moderate injury.

NOTICE

The “NOTICE” symbol alerts to a situation that is not related to personal injury but may cause equipment damage.

The term “NOTE” highlights operating procedures or practices that may improve equipment reliability and/or personnel performance, or to emphasize a concept.



Obey the following cautions and warnings before using your machine to avoid equipment damage, personal injury or death.

Safety Regulations

- Each country has its own safety legislation. It is in the operator's own interest to be conversant with these regulations and to comply with them in full. This also applies to local bylaws and regulations in force on a particular work site.
- Should the recommendations in this manual deviate from those in the user's country, the national regulations should be followed.

Operation Warnings

- You must be trained in the operation of this machine prior to operation. Read this entire manual before operating this machine.
- Be extremely careful if you do not normally operate this machine. Reorient yourself to the machine before starting, then proceed slowly. However, you must not operate without having previously received proper training.
- Know your company's safety rules. Some have site specific directions and procedures. The methods outlined in this manual provide a basis for safe operation of the machine. Because of special conditions, your company's material handling procedures may be somewhat different from those shown in this manual.
- Always face the ladder when going up and down ladders. Maintain three points of contact.
- When entering and exiting the cab, always maintain three points of contact.
- Never jump on or off the machine.
- All walking surfaces (steps, ladders, etc.) must be free of ice, grease, oil or other materials that could cause or contribute to a slip or fall.
- The only person required on the machine is the operator. Never allow anyone to ride on the machine anywhere outside the cab. A person other than the operator may ride inside the cab only if



the unit is equipped with a training seat and safety belt.

- Do not operate this machine if you know of malfunctions, missing parts, and/or mis-adjustments. These situations can cause or contribute to an accident or damage to the machine. Stop the machine immediately if problems arise after starting.
- Do not operate the machine before disconnecting the hydraulic tank or engine block heaters. The hydraulic tank heater and/or engine block heater use a 110 or 220 V AC external power source. An electrical shock could be fatal.
- All electrical cables and connectors must be in good condition. Use caution in wet weather to avoid danger from electrical shock. Extension cords to the hydraulic tank and/or engine block heater must be properly grounded.
- Do not start the engine if the key has been marked with a "**DO NOT START**" or "**RED**" tag, or by your local "lockout/tagout" procedure.
- Never operate any of the cab controls from anywhere other than the operator's seat.
- Sound the horn to alert personnel in the area before starting the engine, and make sure everyone is clear. Be sure that all controls are in neutral before starting the engine.
- Operate at low speeds in crowded areas or soft terrain.
- Avoid abrupt changes in boom direction.
- This machine is not designed for lifting or moving of persons. The operator's cab is the only safe location for personnel while the machine is in operation.



- Operators and trainers (if training seat is provided) must remain in their seats with the safety belt fastened during operation.
- Be aware that several people can stand in the engine compartment, completely out of sight of the operator. Be sure to check under the unit before boarding.
- Never pass a load over ground personnel or other equipment. Sound the horn and wait for the area to be cleared before moving the machine or load.
- Be accurate in load placement. It's important to know what the load will do when it's released.
- Lower or move the load to the ground before leaving the cab or shutting down the engine.



High voltage electricity can discharge to ground without direct contact with the machine's structure. Minimum clearances from energized power lines or other power sources must be maintained. If electrical energy does discharge through the machine, **REMAIN IN THE CAB**. Avoid contact with metal surfaces. Do not permit anyone to come into contact with the machine's structure.



WARNING

Remain at least 25 feet from high voltage electrical wires. Failure to do so may result in injury or death and will damage equipment.

Hydraulic Hazards

Be aware of the hazards of pressurized hydraulics:

- Wear personal protective equipment, such as gloves and safety glasses, whenever servicing or checking a hydraulic system.
- Assume that all hydraulic hoses and components are pressurized. Relieve all hydraulic pressure before disconnecting any hydraulic line.
- Never try to stop or check for a hydraulic leak with any part of your body; use a piece of cardboard to check for hydraulic leaks.
- Small hydraulic hose leaks are extremely dangerous, and can inject hydraulic oil under the skin, even through gloves.
- Infection and gangrene are possible when hydraulic oil penetrates the skin. See a doctor immediately to prevent loss of limb or death.



Maintenance Warnings

Maintenance, lubrication and repair of this machine can be dangerous unless performed properly. Each person must satisfy himself that he has the necessary skills and information, proper tools and equipment, and that his work method is safe, correct, and meets his own company's requirements.

- Do not attempt to make adjustments, or perform maintenance or service unless you are authorized and qualified to do so.
- Unless specified in service procedures, never attempt maintenance or lubrication procedures while the machine is moving or the engine is running.
- Keep hands, feet, long hair and clothing away from power-driven parts. Do not wear loose fitting clothing or jewelry while performing maintenance and lubrication in these areas.



- Always perform all maintenance and lubrication procedures with the machine on level ground, parked away from traffic lanes.

Before performing maintenance or service under the machine:

- Move the machine to a level surface, engage the parking brake, lower the bucket to the ground and stop the engine.
- Tag the key switch with a "DO NOT START" sign and remove the key.
- Block the tires to keep the machine from rolling.

NOTE: Local laws and regulations may require that additional safety measures be taken. Please consult local authorities.

- Never rely on the hydraulic system to support any part of the machine during maintenance or lubrication. Never stand under a component that is supported only by the hydraulics. Make sure it is resting on its mechanical stops. If necessary, support components with appropriate safety stands.
- Use caution when working around hot fluids. Always allow lubricating and hydraulic oils to cool before draining. Burns can be severe.
- Use extreme caution when using compressed air to blow parts dry. The pressure should not exceed 30 psi (208 kPa) at the nozzle. Never use air to blow yourself off. Air pressure penetrating your skin can be fatal.



- DO NOT remove the radiator cap when the engine is hot. The coolant will be under pressure and can flash to steam with explosive force, causing severe burns. To prevent burns, remove the radiator cap only when the engine is cool.



- Before disconnecting hydraulic lines, be sure to lower all loads and relieve all hydraulic pressure. The load could fall on you, or escaping hydraulic oil could cause severe personal injury.

- Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes or clothing.



- Batteries produce explosive gases. Keep sparks, flame and cigarettes away. Ventilate when charging or servicing in an enclosed space. Always shield your eyes when working near batteries. When removing battery cables, always turn the battery disconnect switch(es) OFF first, then disconnect the negative (-) cable. When installing a battery, always connect the positive (+) cable first. This procedure will help to prevent a spark which could cause an explosion.



- Before making adjustments to the engine or chassis electrical system, disconnect the battery. An electrical spark could cause a fire, explosion or severe burns.

- Before welding anywhere on the unit, disconnect the batteries, the ECM, the PLC, fan controllers, and any other sensitive electronic equipment.
- It is essential to personnel safety that safe ladders, personnel lifts and/or scaffolding be used while servicing this machine. Always use safety tread walks and hand holds to reach lubrication points or to inspect or adjust the machine. These areas can be dangerously slick under conditions of rain, frost or oil smears.
- Do not enter fuel or hydraulic tanks without proper safety equipment. Check your local government safety regulations for confined space entry requirements.



Safety Equipment

- Ensure test equipment is in good condition.
- If an instrument must be held while taking measurements, ground the case of the instrument before energizing equipment.
- Do not touch live equipment or personnel working on live equipment while holding a multimeter. Some types of measuring devices should not be grounded; do not hold such devices while taking measurements.
- Prevent personal injury or equipment damage by using a lifting device with a lifting capacity greater than twice the weight of any equipment to be lifted.
- Always use personal protective equipment (PPE) appropriate to the situation. This may include the use of hearing protection, eye protection, a respirator, a hard hat, leather gloves, steel toed boots, etc.



Electrical Hazards

- An electric shock could be fatal. Ensure power to the Carrydozer is "OFF" before opening electrical panels.
- All electrical cables and connectors must be in good condition (free of corrosion, damage, etc). Use caution in wet weather to avoid danger from electrical shock. Never attempt electrical testing or repair while standing in water.
- Do not wear electrically conductive jewelry, clothing, or other items while working on the electrical system.



Fire Safety



WARNING

Diesel fuel and hydraulic oil are flammable. Never smoke while handling fuel or working on the fuel system. The fumes in an empty fuel container are explosive. Never cut or weld on fuel lines, tanks, or containers. Keep open flames and sparks away from the machine.

Avoiding Fire and Explosion Hazards

- Keep the machine free of oil, grease, chips, and trash accumulations. Regular pressure washing and/or steam cleaning is recommended for fire prevention and general safety. Use an approved solvent to clean machine parts. Never use gasoline or diesel fuel.
- Inspect for and remove all combustible materials from engine area before starting the machine and periodically throughout the work shift as required. These materials build up in tight corners and are highly combustible. To do a thorough job, remove the access panels.
- Remove any debris from the operator's compartment after each work shift.
- Inspect the driveshaft and brakes for debris and remove as necessary.



- Never overfill the fuel or hydraulic tanks. Any overflow could cause a fire. Immediately repair any hydraulic or fuel leaks and clean up any spills.
- Shut off the engine and electrical equipment while filling the fuel tank. Use extra caution when fueling a hot engine. Always ground the fuel nozzle against the filler neck to avoid sparks.
- Handle all solvents and dry chemicals according to procedures identified on manufacturer's containers. Work in a well-ventilated area. Make sure you know where fire extinguishers are kept and how to use them.
- Avoid spilling fuel. If a spill occurs, wipe it up immediately.
- Always ensure that excess grease and oil accumulation, including spillage, is cleaned up immediately.
- Inspect the machine daily for potential fire hazards and make any necessary repairs immediately.
- Maintain the engine cooling system to avoid overheating.
- Check all the electrical wiring and connections for defects, and repair or replace as necessary. Keep battery terminals clean and tight.
- Never perform welding operations until the entire machine has undergone a thorough cleaning. In addition, cover rubber hoses and have a fire extinguisher at hand.
- Hydraulic fluid is flammable. Do not weld on or near pipes, tubes, or hoses that are filled with fluid.
- Store flammable starting aids in a cool, well ventilated location.
- Remember, there is always a risk of fire.

Fire Fighting Equipment

All Wagner units built after November 1, 2004 are supplied with a hand held fire extinguisher. If your unit is not so equipped, Allied Systems Company recommends that an appropriately rated fire extinguisher be installed. A 20 pound ABC rated extinguisher is the minimum size recommended. Install it within easy reach of the operator in a position that protects it from damage. Use only a “quick release” type of mount.

- Keep your fire extinguisher(s) and fire suppression system, if so equipped, fully charged and in good working order. Know how to use them. Allied Systems recommends that you, upon receiving your machine, contact your local authorized service center for your fire suppression system. Have your systems fully checked and verified before putting your machine into service.
- Read and understand the instructions printed on the canister and learn how to operate them. Learn how to remove the canisters from their mounting brackets in the shortest amount of time.
- Service the extinguisher and the fire suppression system according to the manufacturer's specifications. Service after every use, no matter how short a time, and never operate the machine without both in proper working order.
- Fire prevention features provided by the manufacturers should be maintained in operational condition and should be used to supplement the operator's fire prevention efforts. In no case should the features be used or assumed as replacement for diligent operator efforts at preventing fires.

In the Event of a Fire

Nothing is more important than personal safety. In the event of a fire, the operator must give priority first to his safety. Fire suppression efforts should only be undertaken once safety is assured, and can be undertaken in a safe manner.

- Do not panic.
- Move the machine to a clear area if possible, lower the bucket, and turn off the engine.
- If your machine is equipped with a fire suppression system, and that system has not automatically been activated, manually activate the system.
- If there is time, remove the hand held extinguisher while exiting the machine, and take it with you.
- Quickly and carefully exit the machine. Move a safe distance away.
- Contact your local fire department immediately.
- Evaluate the situation. If it can be done safely, initiate fire suppression procedures.

Fire Suppression



WARNING

The hand held extinguisher is intended to be used to help prevent reflash only. Always exit the machine before using, and position yourself with an exit at your back for means of escape in case the extinguisher malfunctions or something unexpected happens.

- Take the extinguisher and proceed to the source of the fire calmly.
- Though the manufacturer's instructions may vary, normally aim at the base of the fire.
- Even when the fire seems to be out, stand by with the extinguisher until the fire area is dead cool. Check this by removing any panels and looking for hot spots.
- Locate the cause of the fire and correct it before restarting the machine.
- Have your local authorized service center for your fire suppression system thoroughly inspect the entire machine and service or replace the extinguishers and fire suppression system before returning to work.

Rollover Protection Structure (ROPS)

Your Carrydozer has been designed to minimize the potential for a rollover accident. Should a rollover accident occur, Wagner Carrydozers are fitted with a Rollover Protection Structure (ROPS).

The ROPS is a structure and attachment system designed to meet specific standards and serves the purpose of reducing the possibility of an operator being injured should the machine roll over. In case of a roll over, the protective structure is designed to absorb energy, deform permanently, and maintain a “zone of protection” for the operator. The ROPS frame must pass a series of static and dynamic crush tests. These tests examine the ability of the ROPS to withstand various loads to verify that the protective zone around the operator station remains intact in an overturn. The tests are extensive and destroy the rollover protective structure.

Seatbelts

The ROPS and cab provide a degree of safety during overturns, but operators need more protection. All operators must wear seatbelts! Use of a seatbelt ensures that the operator remains securely in the “zone of protection.” Seat belts restrain and keep the operator from being thrown against the frame, through a window, or out the door. Seatbelts and seatbelt anchors must be maintained and kept in a functional or operable condition at all times.

Avoiding Rollovers

A rollover can occur on any topography given the right circumstances. All operators should be provided with information on rollover hazards they are likely to encounter, and must be supervised until they are competent to work on their own. Facility managers and operators should take measures to reduce the possibility of rollover hazards. For example:

- Restricting the places where the machine is to be used.
- Restricting the speed at which the machine is to be operated.
- Restricting the use of the machine on the basis of operator competence.
- Using a different machine, or equipment better suited for the given task.

Replacing your ROPS

Repair of a modified or damaged ROPS is not possible; the effects of modifications or damage to the strength of steel or on the adequacy of the attachment systems cannot be predicted. The ROPS, including attachment hardware, **must** be replaced if any of the following has occurred:

1. When visible damage has been sustained, such as cracks, tears, dents, or bends in any member or weld.
2. A machine fire where the fire burned in close proximity to the ROPS.
3. Any time the machine has rolled over.
4. Modifications have been made to any part of the ROPS.

A ROPS must be correctly installed. Installation instructions must be followed. It is crucial that the specified installation hardware be used. A ROPS should never be modified by drilling, cutting, welding, or by any other means. Modifications to a ROPS may seriously weaken the structure and cause it to fail during an overturn. Modifications of any kind will void the certification. For questions or concerns, please contact your local dealer or Allied Systems Company Service Department at (503) 625-2560.