

Massey Ferguson®

9895

Rotary Combine

EFFECTIVE S/N HUC8101 AND LATER

WORKSHOP SERVICE MANUAL

4283099M1

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01 - General Information

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GENERAL INFORMATION

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GENERAL INFORMATION

SAFETY ALERT SYMBOL

FIG. 1: The safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Look for the safety alert symbol both in this manual and on safety signs on the machine. The safety alert symbol will direct you to information that includes your safety and the safety of others.

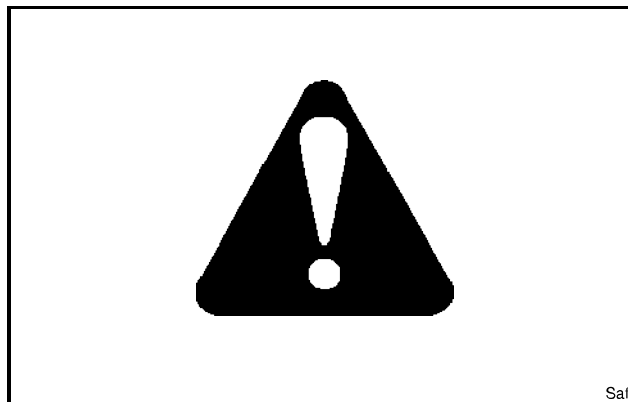




FIG. 1

SAFETY MESSAGES

FIG. 2: The words DANGER, WARNING, or CAUTION are used with the safety alert symbol. Learn to recognize these safety alerts and follow the recommended precautions and safety practices.

 **DANGER:** Indicates an imminently hazardous situation that, if not avoided, will result in DEATH OR VERY SERIOUS INJURY.

 **WARNING:** Indicates a potentially hazardous situation that, if not avoided, can result in DEATH OR SERIOUS INJURY.


 **CAUTION:** Indicates a potentially hazardous situation that, if not avoided, can result in MINOR INJURY.



FIG. 2

INFORMATIONAL MESSAGES

The words IMPORTANT and NOTE are not connected to personal safety, but are used to give additional information and tips for operating or servicing this equipment.

IMPORTANT: Identifies special instructions or procedures which, if not strictly observed, can result in damage to or destruction of the machine, process, or the surroundings.

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

General Information

A WORD TO THE OPERATOR

FIG. 3: Read and understand the Operator's manual and the Operator's manual for all attachments before operating the combine.

Learn how to operate the combine and how to use the controls properly.

Do not let anyone operate the combine without instruction and training.

For your personal safety and the personal safety of others, follow all safety precautions and instructions found in the manuals and on decals fastened to the combine and the combine attachments.

Personal injury or death can result if these precautions are not followed.



WARNING: An operator must not use alcohol or drugs which can affect operator alertness or coordination. An operator taking prescription or over the counter drugs needs medical advice on whether or not the operator can properly operate machines.

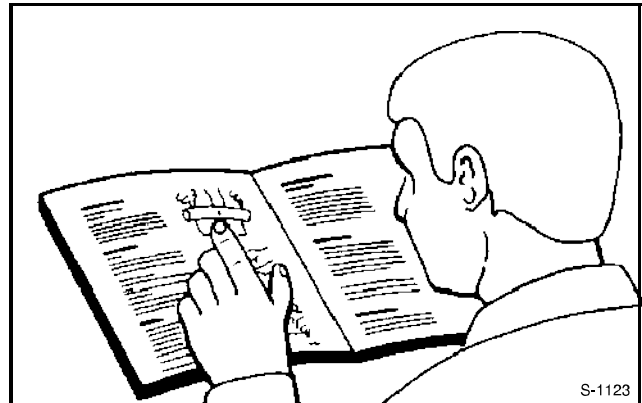


FIG. 3

FIRE PREVENTION AND FIRST AID

FIG. 4: If equipped, a fire extinguisher (1) will be install on the front of the left-hand combine platform.

Be prepared for emergencies. Always carry one or more suitable fire extinguishers - ABC rating, dry chemical, 2.2 KG (5 lb). Check fire extinguishers regularly to make sure the fire extinguishers are properly charged and in operating condition.

Mounting a fire extinguisher near the operator cab and a fire extinguisher near the engine compartment is recommended.

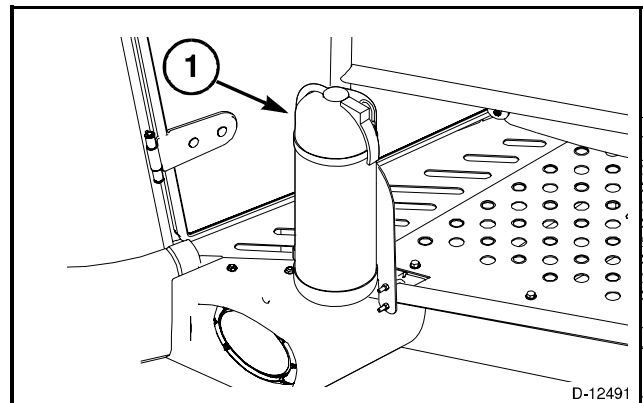


FIG. 4

FIG. 5: To reduce the risk of fire or damage if fire occurs:

- Check for over heated components
- Frequently clean the engine compartment of any chaff and crop debris
- Frequently clean areas of the machine & header where crop can accumulate
- Mount a fire extinguisher within easy reach at the front and rear of the machine

If any flame cutting, welding, or arc welding is to be done on the machine or header, make sure to clear any crop material or debris from around the area. Make sure the area below the work area is clear of any flammable material as falling molten metal or sparks can ignite the material.

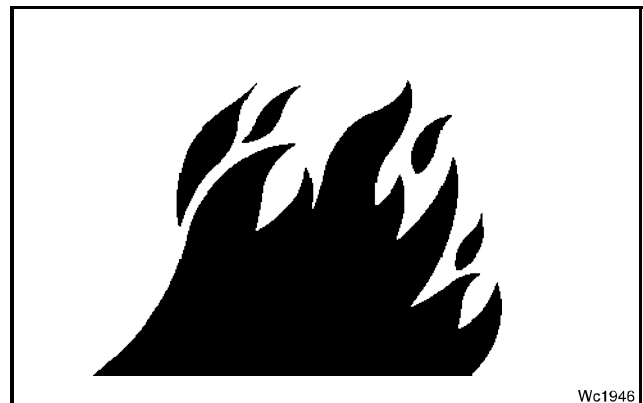


FIG. 5

PREPARE FOR OPERATION

Make sure the combine is in the proper operating condition as shown in the combine operator manual. Make sure the machine has the correct equipment needed by local regulations.

Read and understand all operating instructions and precautions in this manual before operating or servicing the machine. Make sure you know and understand the positions and operations of all controls.

Make sure that all controls are in neutral and the parking brake is engaged before starting the machine. Make sure that all people are well away from your area of work before starting and operating the machine.

All equipment has a limit. Make sure you understand the speed, brakes, steering, stability, and load characteristics of the machine before you start. Check all controls in an area clear of people and obstacles before starting your work.

Be aware of the machine size and have enough space available to permit operation. Never operate the machine at high speeds in crowded locations.

OPERATION



WARNING: In order to provide a better view, photographs and illustrations in this manual can show an assembly with the shield removed. Do not operate the combine unless all shields are in location. Replace the shields immediately after completion of inspection, repairs, cleaning or adjustments and before operation begins.

FIG. 6: Wear close fitting clothing and personal protection equipment for operating or doing lubrication and maintenance on the combine. Tie up long hair to prevent hair from becoming entangled in moving parts.

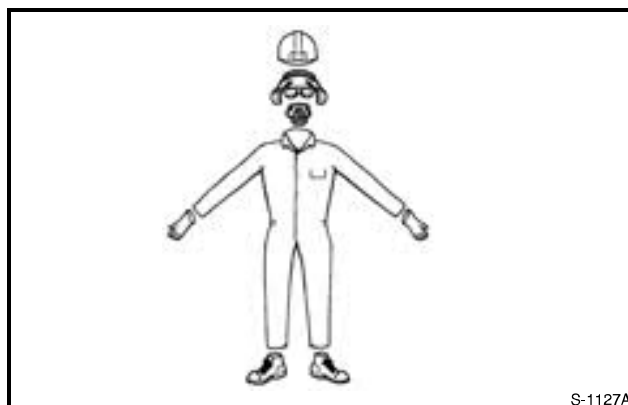


FIG. 6

General Information

FIG. 7: Face the ladder and use the handrails when getting on or off the combine.



FIG. 7

FIG. 8: Never operate the engine in a closed building unless the exhaust is vented outside.

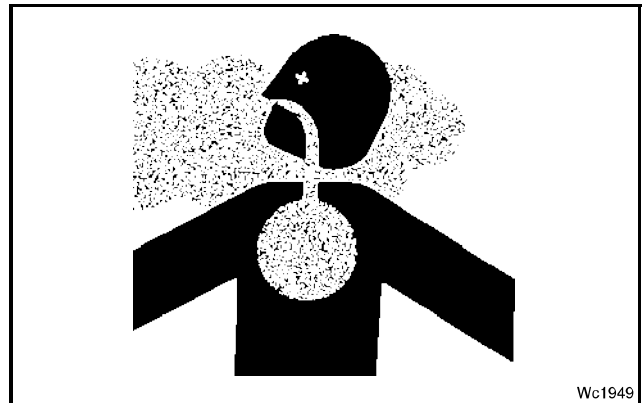


FIG. 8

FIG. 9: Always wear the seat belt when the combine is moving. If another person is riding in the instructor seat, make sure the person wears a seat belt. Seat belts must be worn fitted tightly around the hips and not twisted.

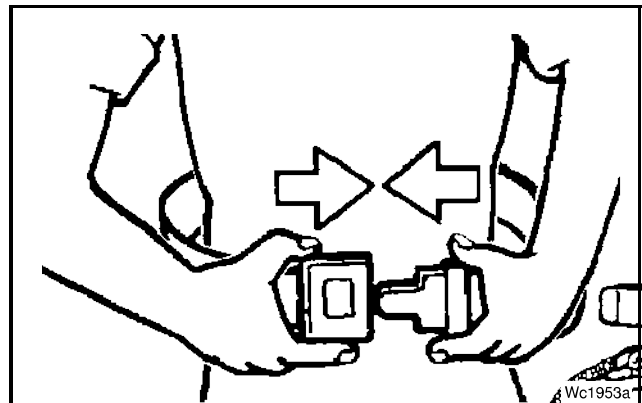


FIG. 9

FIG. 10: Never permit anyone on any part of the combine or attachments except in the operator seat and the instructor seat when the engine is running.

Do not get on or off the combine while the combine is moving.

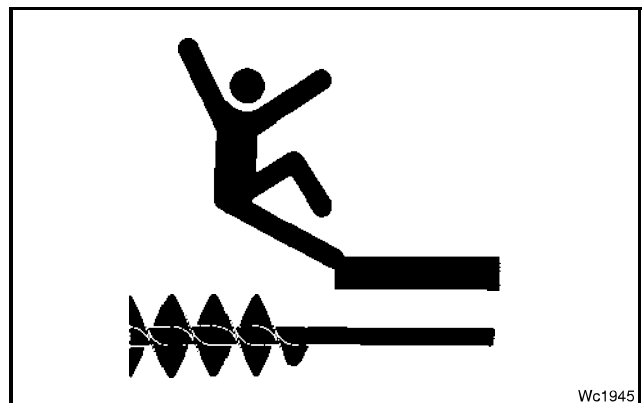


FIG. 10

General Information

FIG. 11: Prevent contact with electrical power lines. Always put the grain tank unloader tube in the transport position and lower the radio aerial before moving the combine near electrical wires. Contact with electrical power lines can cause electrical shock, resulting in very serious injury or death.

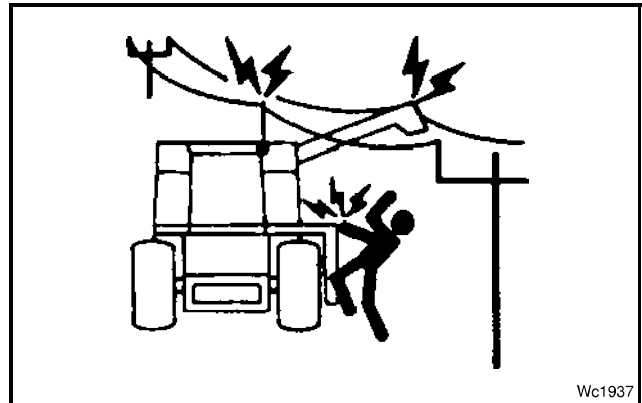


FIG. 11

FIG. 12: Use extra care and reduce speed when operating on hillsides or near ditches or embankments especially with a full grain tank to prevent rollover. Travel speed must be such that complete control and machine stability is kept at all times. Shift to a lower gear before going down a steep hill.

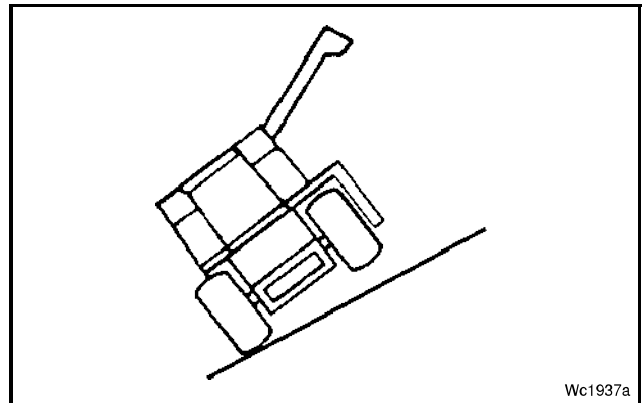


FIG. 12

FIG. 13: Always turn off the engine, shift the transmission to neutral, set the parking brake and remove the start key before leaving the operator cab or before permitting inspection, cleaning, lubrication, adjustment or repair of any part of the combine or attachments unless specifically shown in this manual. Never leave the combine while the engine is operating.



FIG. 13

FIG. 14: Never work under the header or feeder house, unless the stop is properly engaged on the header lift cylinder, the engine is stopped, the parking brake is set, and the start key is removed from the start switch.

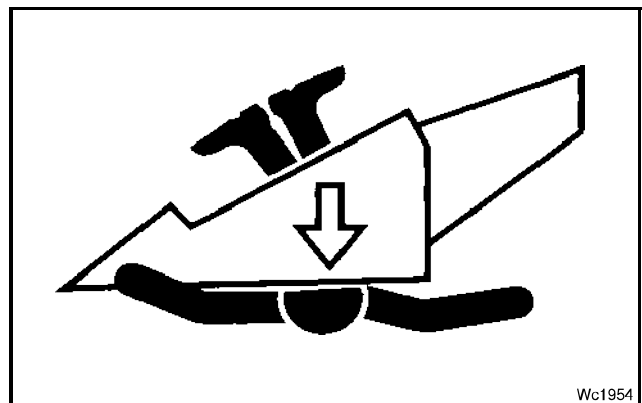


FIG. 14

General Information

FIG. 15: Always stop the combine engine before fueling. Do not smoke while fueling.

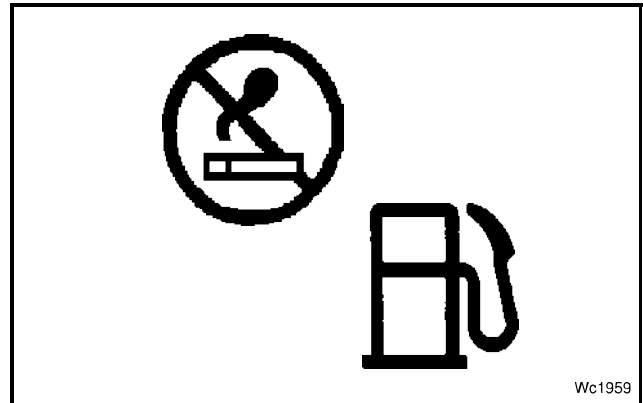


FIG. 15

TRANSPORTING COMBINE ON PUBLIC ROADS

FIG. 16: Consult your local law enforcement agency for local regulations about the movement of farm equipment on public roads.

- Use head lights, flashing warning lights, tail lights, and turn signals day and night unless not permitted by local law. Make sure the lights, reflectors, and SMV emblem (if required) are installed, in good condition, and wiped clean.
- Check to make sure all combine road lights (especially the amber flashers and red tail lights) are working.
- Lock the brake pedals together with the locking strap so that both front wheel brakes will be applied at the same time.
- Empty the grain bin.
- Position the unloading auger tube in the folded (transport) position.
- Remove the header if possible. If the header is to remain on the combine during transport, position header so the operator can see as good as possible. Make sure the header has enough ground and road clearance.

IMPORTANT: Do not carry the header at a height more than approximately 610 mm (24 in) off of the ground or road surface.

- Open the hydraulic accumulator shut off valve before transporting the combine. This will reduce header movement and combine loping when moving on rough roads.



CAUTION: Maintain proper tire pressure at all times to make sure of stability during road travel.

- Measure the overall width and height of the combine. These measurements are important when transporting along narrow roads and where under passes can be found.

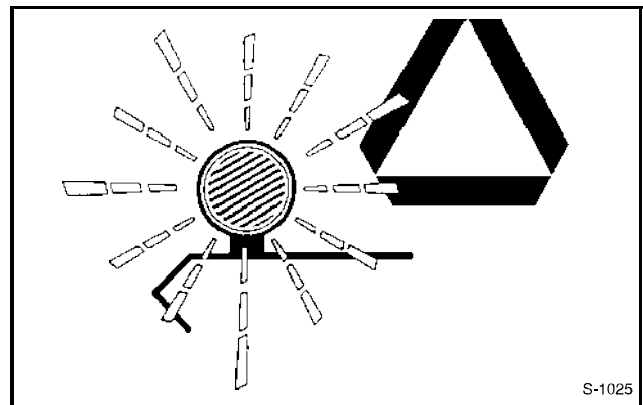


FIG. 16

- Be aware of the other vehicles on the road. Keep well over to your side of the road, and pull over when possible, to let faster vehicles pass.
- Adjust travel speed to keep control at all times. Never permit the combine to coast down hills.
- Reduce the speed of the combine by slowly pulling the hydrostatic control lever to neutral, before applying the brakes. Do not apply the brakes quickly, especially if the combine is equipped with a large header, since weight movement (during rapid braking) can cause the rear wheels to come off the ground and result in loss of steering control.
- When taking the combine to a complete stop, slowly move the hydrostatic control lever to the neutral position, then push the hydrostatic high pressure release valve pedal and apply the brakes (if necessary).
- Make all turns slowly. The combine is steered by the rear wheels and can lose control if turned quickly at transport speeds. This condition will be seen more when a large header is installed on the combine.
- Remember steering to the right moves the rear of the combine to the left and vice versa.
- If the engine is not running, the steering will become manual and be very difficult to handle. Difficult steering also can result in loss of control.
- Drive component damage can result from towing.



CAUTION: Do not tow the combine on a public road.

MAINTENANCE

FIG. 17: Escaping fluid under high pressure can be almost invisible but penetrate the skin causing serious injury.

Consult a doctor immediately if you receive an injury by escaping fluids. Fluid injected into the skin must be surgically removed within a small number of hours or gangrene can result.

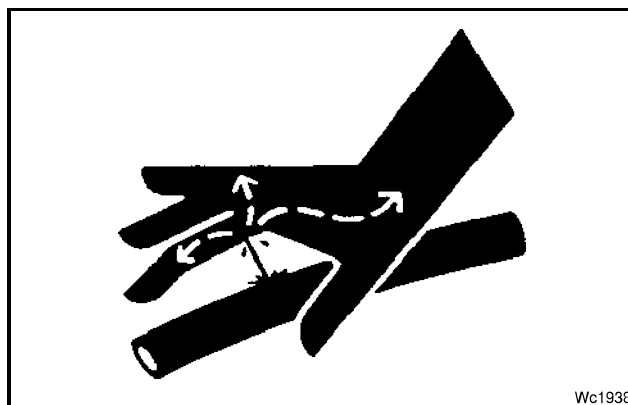


FIG. 17

General Information

FIG. 18: Use a piece of cardboard or wood to look for possible leaks, never use your hands.

Relieve pressure from the hydraulic and fuel injection systems by lowering raised equipment, turning off accumulator valve and turning off the engine before loosening any part of the systems. Tighten all connections before applying pressure.

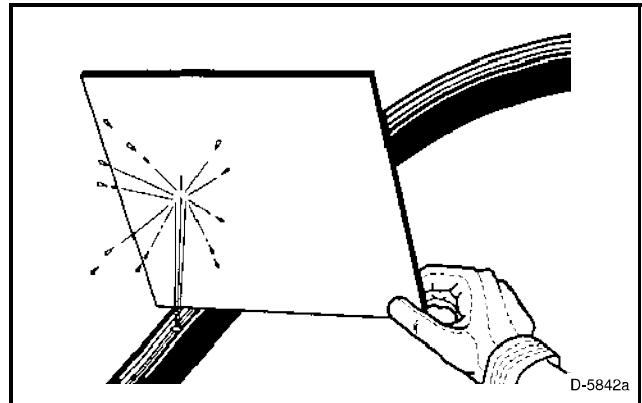


FIG. 18

FIG. 19: Be aware that the surfaces in and around the engine compartment will be hot if the engine has been running, even for a short time.

Always permit parts that contain hot fluid to cool before handling or disconnecting.

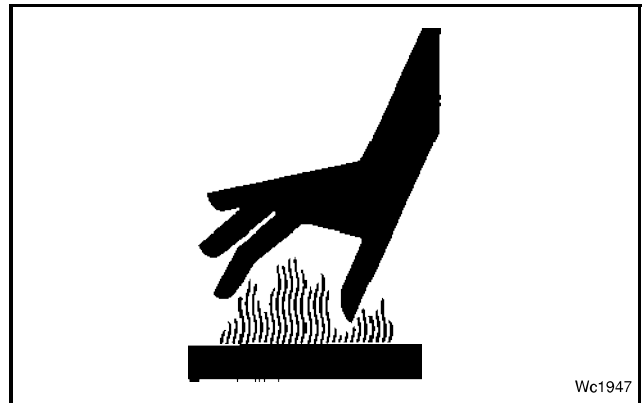


FIG. 19

FIG. 20: Do not remove the radiator cap if the engine is hot. Only remove the cap when the cap is cool enough to touch with bare hands. Loosen cap slowly to the first notch to relieve pressure, then remove the cap.

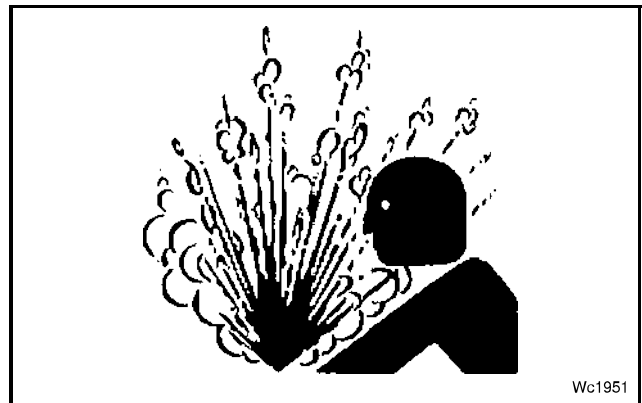


FIG. 20

FIG. 21: Remove spilled oil, antifreeze, or fuel immediately from the operator ladder and platform and other access areas.

Keep all access areas clean and free of obstructions.



FIG. 21

ENGINE SAFETY

FIG. 22: Make sure that all shields, guards, and access doors are in location and properly closed before starting the engine.

Start the engine from the operator seat only. Be sure that the transmission is in neutral and the header, separator, and unloader clutches are disengaged.

Be sure that all bystanders are clear of the combine before starting the engine.

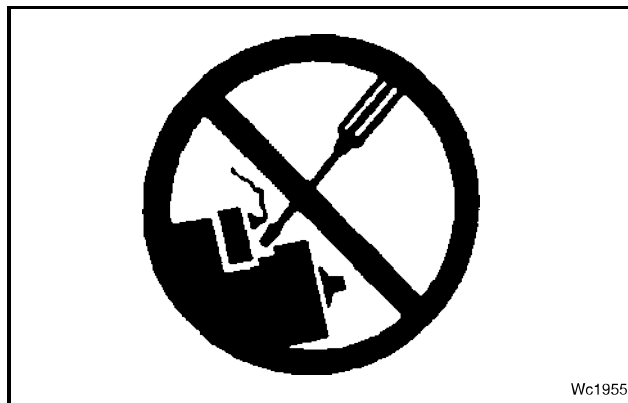


FIG. 22

FIG. 23: Engine is equipped with an electric starting aid. Do not use aerosol starting fluid! Use of this fluid can cause an explosion that can result in severe injury or death.

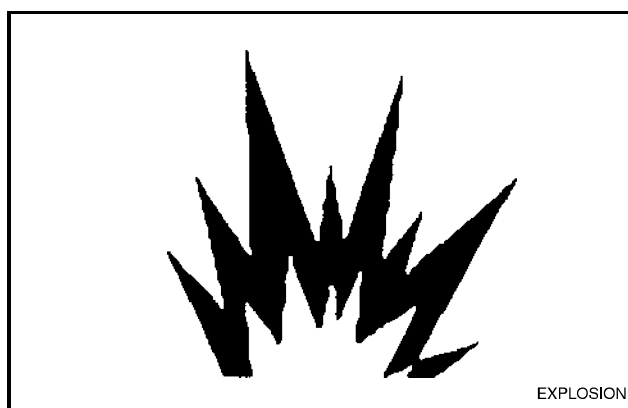


FIG. 23

TIRE SAFETY

FIG. 24: Tire explosion and serious injury can result from over inflation. Do not exceed the tire inflation pressures. See the Operator's manual for the correct tire pressure.

Replace worn or damaged tires. When tire service is needed, have a qualified tire mechanic service the tire. See the Operator's manual for the correct tire size.

Do not weld on the rim when a tire is installed. Welding will cause an explosive air/gas mixture that will ignite with high temperatures. This can happen to tires that are inflated or deflated. Removing the air or breaking the bead is not enough.

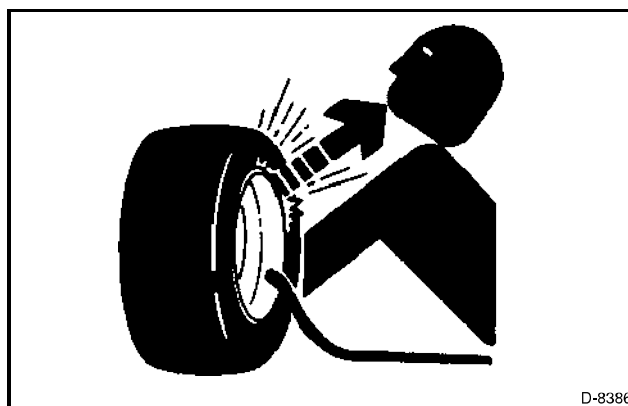


FIG. 24

General Information

BATTERY SAFETY

FIG. 25: Electrical storage batteries give off highly flammable hydrogen gas. Keep lighted smoking material and open flame or electrical sparks away from the battery. Do not lay tools or other conductive materials on the battery.

Be careful when connecting the booster cables to the combine batteries. Electrical component damage or battery explosion can result if the booster cables are not installed correctly.

Do not charge a frozen battery as the battery can explode. Warm the battery to 16°C (60°F).

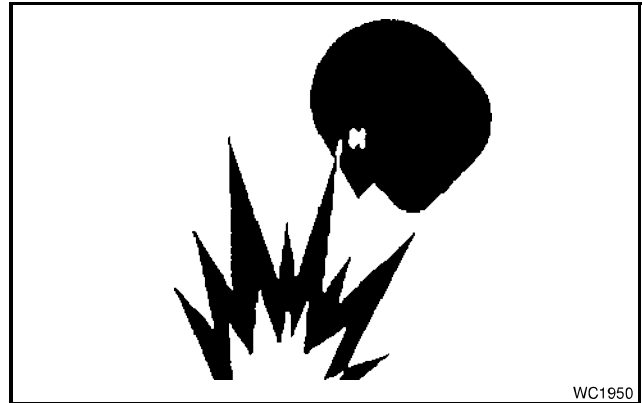


FIG. 25

FIG. 26: Fluid in the electrical storage batteries contains sulfuric acid. Avoid all contact of fluid with eyes, skin, or clothing. If contact does occur, flush off immediately with large amounts of water.

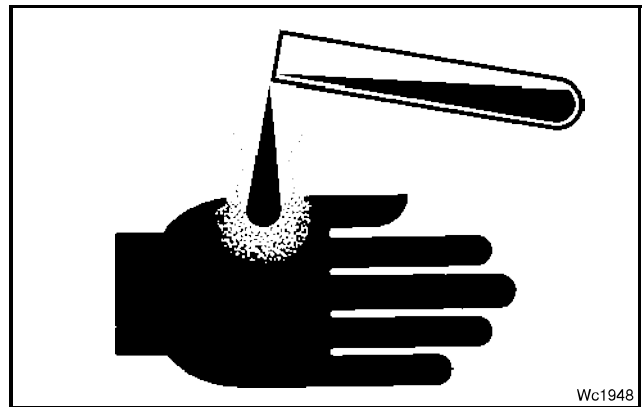


FIG. 26

ACCUMULATOR SAFETY

FIG. 27: The accumulator (1) is charged with dry nitrogen gas. Use only dry nitrogen when charging the accumulator. Do not use air or oxygen or an explosion will occur.

Nitrogen gas when released can cause localized freezing. Be sure to wear protective gloves and glasses when handling nitrogen.

Do not drop the accumulator. A charged accumulator contains nitrogen under pressure. If the shut off valve breaks away from the accumulator, the escaping nitrogen will propel the accumulator at a high rate of speed.

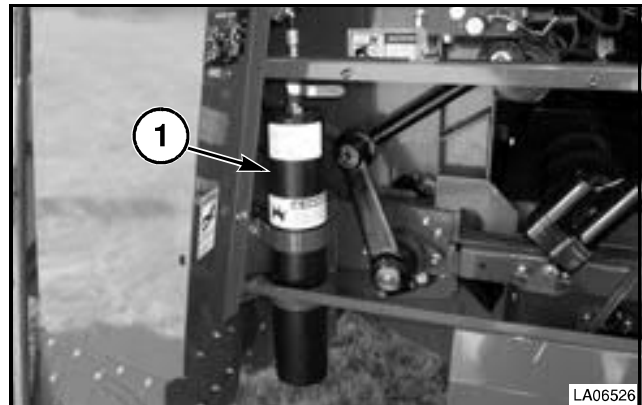


FIG. 27

HEADER LIFT CYLINDER STOP

FIG. 28: A header lift cylinder stop is supplied on the left-hand header lift hydraulic cylinder.

Header lift cylinder stop (1) in the disengaged position.



FIG. 28

FIG. 29: Header lift cylinder stop (1) in the engaged position.

Properly engage the header lift cylinder stop as shown before going under the header or feeder house for any reason.

To engage the header lift cylinder stop:

1. Raise the feeder house until the cylinder rod is fully extended to permit engagement of the header lift cylinder stop.
2. Release the hook and lower the header lift cylinder stop onto the cylinder rod.
3. Lower the feeder house until the header lift cylinder stop contacts the end of the cylinder.

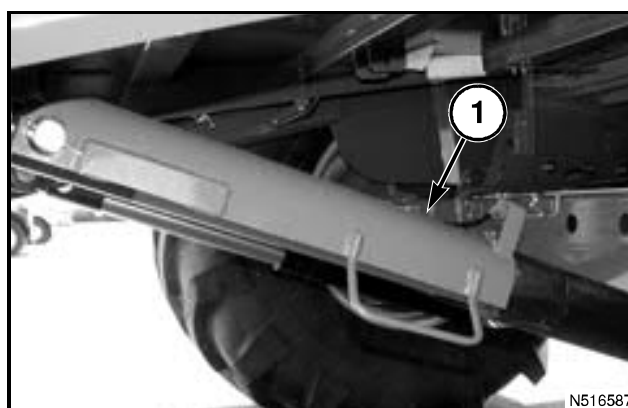


FIG. 29

WHEEL CHOCKS

FIG. 30: Wheel chocks (1), if equipped, are included with the combine and are stored on the left-hand side of the combine.

Use wheel chocks in front of and behind the left-hand drive tire any time the combine is parked. Return the wheel chocks to the mounting brackets after use.

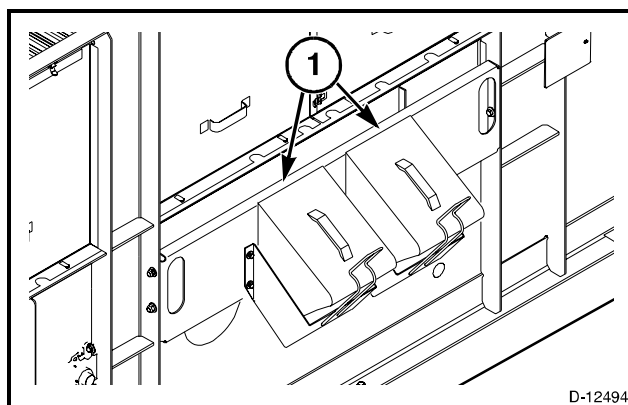


FIG. 30

General Information

SHIELDS AND LATCHES

FIG. 31: To operate the shield latches, twist the latch handle (1) clockwise using the header wrench and pull out on the shield.

The left-hand shield latch is located in the middle of the lower section of the left-hand shield.

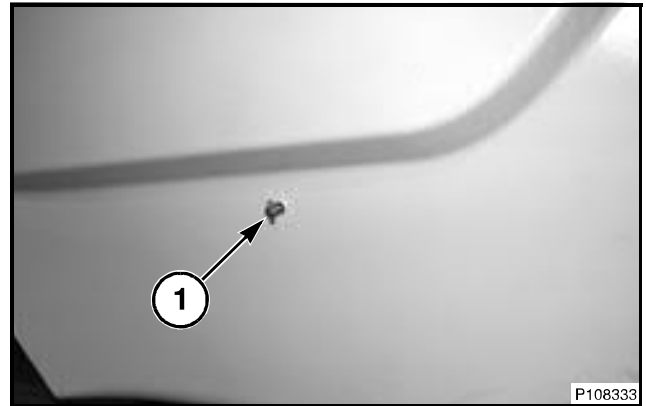


FIG. 31

FIG. 32: The right-hand side of the combine has three shields.

The front right-hand shield latch (1) is located in the middle of the lower section of the right-hand shield (2).

The middle right-hand shield latch (3) is located in the front section of the right-hand, middle shield (4).

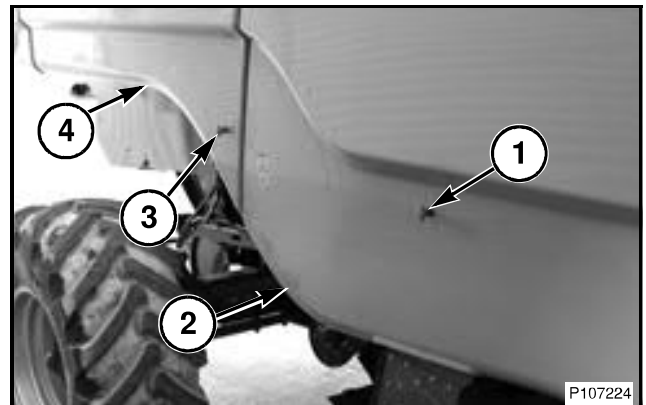


FIG. 32

FIG. 33: The engine platform ladder shield latch (1) is located in the rear section of the shield (2).

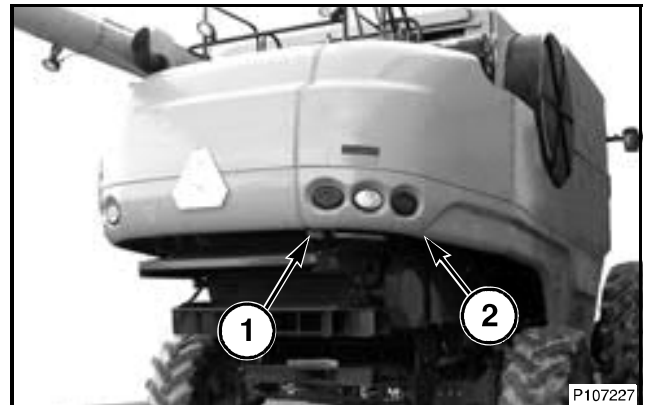


FIG. 33

FIG. 34: To access the drives on the right-hand and left-hand side of the feeder house, use the proper tool to turn the latch counter clockwise.

To close the access doors, close the access door until the door latches.

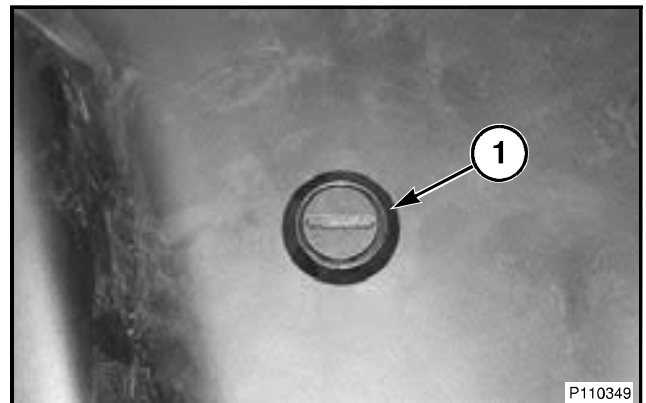


FIG. 34

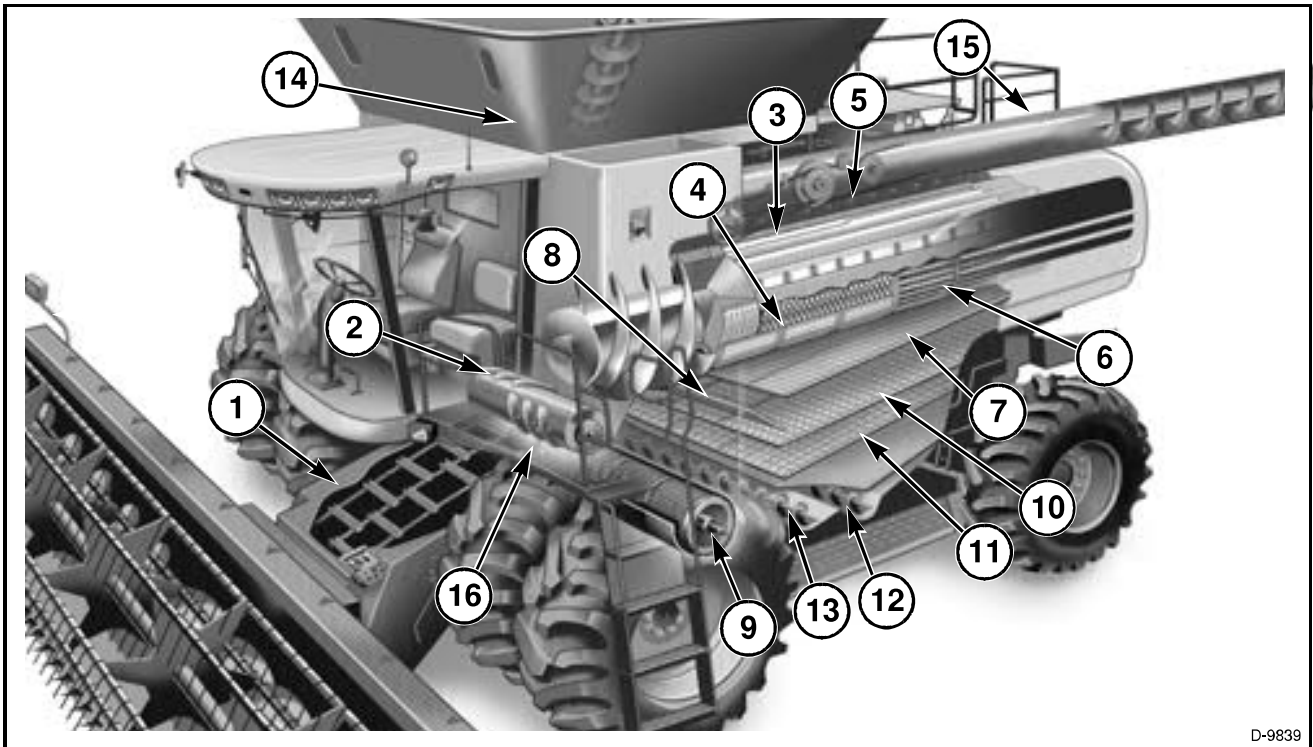
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MANUAL. NO WAITING**



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HOW A COMBINE WORKS



D-9839

FIG. 35

FIG. 35: Four functions are done in the overall harvesting operation of a combine. These are:

- Cutting and Feeding
- Threshing
- Separating
- Cleaning

Cutting and Feeding

The crop is gathered by a header which is supported by the feeder housing.

The grain header uses a reel to direct the crop into the header auger after the crop is cut by the knife and the header auger moves the crop into the feeder (1).

When a pickup header is used, the crop, already cut and laying in a swath, is lifted by a pickup and fed to the header auger where the retractable fingers move the crop into the feeder.

The feeder elevator transports the crop to the front of the accelerator beater (2) which moves the crop to the rotor inlet area and the rotor (3). The feed beater also guides rocks and other foreign objects into the stone trap (16) located forward and below the beater.

Threshing and Separating

The rotor does four functions as the crop moves in rotary motion from front to rear:

- Intake
- Threshing
- Separating
- Discharge

The auger flighting in the intake area starts the crop on a spiral route around the rotor and moves the crop to the threshing area.

Threshing and first separation are done in the threshing zone as a result of relationship between the rotating cylinder bars and the stationary open grate concave (4). Contact with the helical guide vanes (5) causes the material to move rearward and in a circular route, letting the material pass over the concave several times.

Remaining separation occurs in the separating section. Centrifugal force carries the grain and chaff through the grate (6) while the straw moves rearward in the rotor cage. Again, the spiral motion of the crop lets the crop pass over the separating grates several times.

Cylinder bars on the rotating rotor hold the crop against the grates until the crop reaches the end. Paddles then bat the material into a discharge chute where the crop is moved to a straw spreader, chopper, or discharged directly to the ground.

General Information

Grain, chaff, and unthreshed heads which go through the separator grates are carried to the cleaning shoe by the separator return pan (7).

Cleaning

The material is moved from the front of the separator return pan onto a short cascade pan (8) which in turn moves the mixture across a fingered comb and onto the front of the chaffer sieve.

The cleaning fan (9) supplies air to keep the chaff in suspension during the cleaning process in the shoe.

The air blast passing through the reciprocating adjustable chaffer (10) separates and blows the chaff out of the combine. The grain and tailings drop through to the cleaning sieve.

The adjustable cleaning sieve (11) does the final cleaning. The clean grain falls through the sieve into the clean grain auger trough. The tailings, chaff and other material continue to the end of the sieve and into the return auger trough (12) for processing again.

The grain elevator paddle chain moves the clean grain from the clean grain auger (13) to the grain tank filling auger and into the grain tank (14). The return elevator carries the tailings back to the rotor intake for threshing and processing.

The grain in the grain tank is unloaded into a truck or trailer through the unloading auger (15).

COMBINE SERIAL NUMBERS

The combine is identified by serial numbers which are important if you require service or repair parts.

NOTE: References to left-hand and right-hand used all through this manual are referring to position when seated in operator seat and facing forward

Machine Serial Number

FIG. 36: The machine serial number plate (1) is located on the combine left-hand side frame at the rear corner.



FIG. 36

Engine Serial Number

FIG. 37: The engine serial number is on the engine data plate (1) located on the cylinder head.

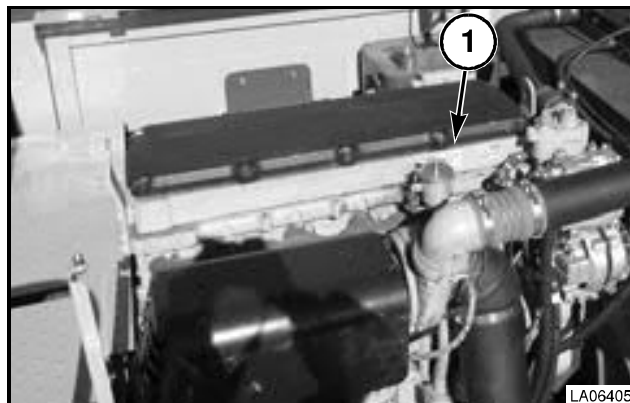


FIG. 37

Transmission Serial Number

FIG. 38: The transmission serial number is stamped on the serial number plate that is fastened to the left-hand side of the transmission housing at location (1).



FIG. 38

General Information

Final Drive Serial Number

FIG. 39: The final drive serial number is stamped on the plate that is on the inner half of the final drive housing at location (1).

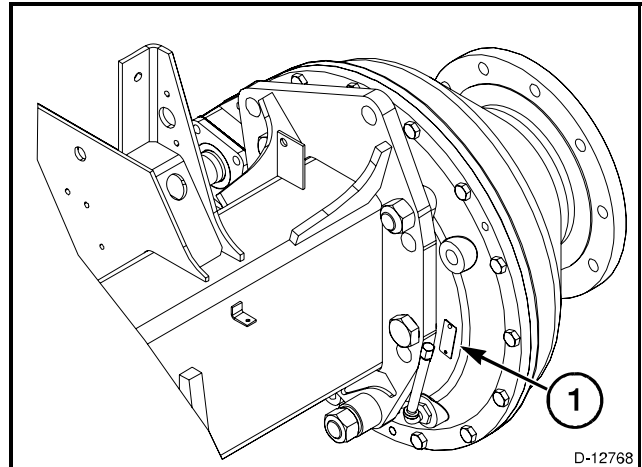


FIG. 39

LUBRICATION AND MAINTENANCE

For efficient and low cost operation of any machine proper lubrication and maintenance is needed. Follow the instructions in the Operators manual (and on the lubrication decals and charts located on the right-hand and left-hand side frames of the machine) to make sure the combine is lubricated at regular service intervals.



CAUTION: Always raise the header and engage the header lift cylinder stop, lower the reel, turn off the engine, and remove the ignition key before doing any lubrication or maintenance functions on the combine.

NOTE: Refer to the combine Operators manual for lubrication and maintenance instructions for the correct year model combine.