

Gleaner®
R66 / R76
Rotary Combine

SERVICE MANUAL
79032996 A Rev.

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01 - General Information

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SAFETY

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 this machine. The safety alert symbol will direct your attention to information that involves your safety and the safety of others.

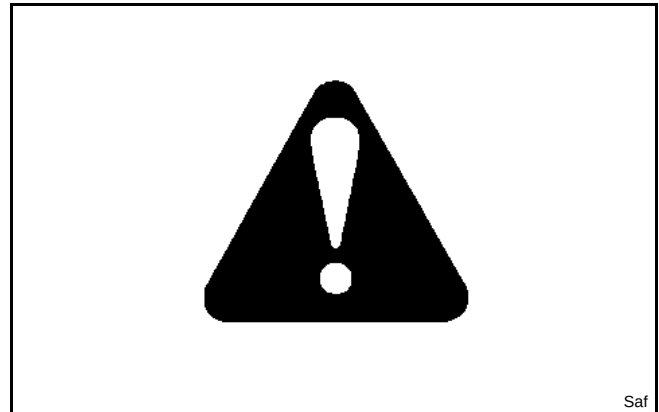


FIG. 1

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, could result in DEATH OR SERIOUS INJURY.



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



FIG. 2

INFORMATIONAL MESSAGES

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

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

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

Safety

SAFETY SIGNS



WARNING: Do not remove or obscure any safety signs. Replace any safety signs that are not readable or are missing. Replacement signs are available from your dealer in the event of loss or damage. The actual location of the safety signs is illustrated at the end of this section.

If a used machine has been purchased, make sure all safety signs are in the correct location and can be read.

See Safety Sign Location of this section for illustrations.

Replace any safety signs that can not be read or are missing. Replacement safety signs are available from your dealer.

A WORD TO THE OPERATOR

FIG. 3: Read and understand this manual and the 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 signs affixed to the combine and its attachments.

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



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



S-1123

FIG. 3

FIRE PREVENTION AND FIRST AID

FIG. 4: Be prepared for emergencies. Always carry one or more suitable fire extinguishers (1) - ABC rating, dry chemical, 2.2 KG (5 lb). Check fire extinguishers regularly to ensure they 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.

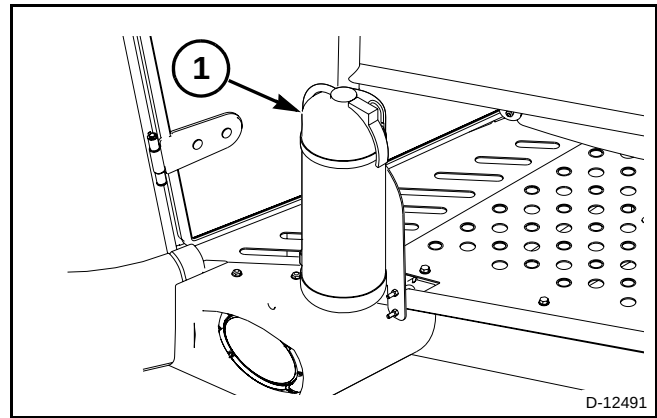


FIG. 4

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

- Check for overheated 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.

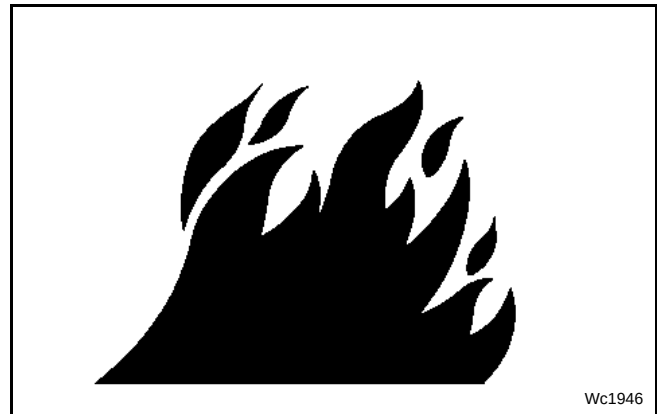


FIG. 5

PREPARE FOR OPERATION

Make sure the combine is in the proper operating condition as stated 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 certain that all controls are in neutral and the parking brake is engaged before starting the machine. Make certain 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 allow for operation. Never operate the machine at high speeds in crowded places.

Safety

OPERATION



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

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

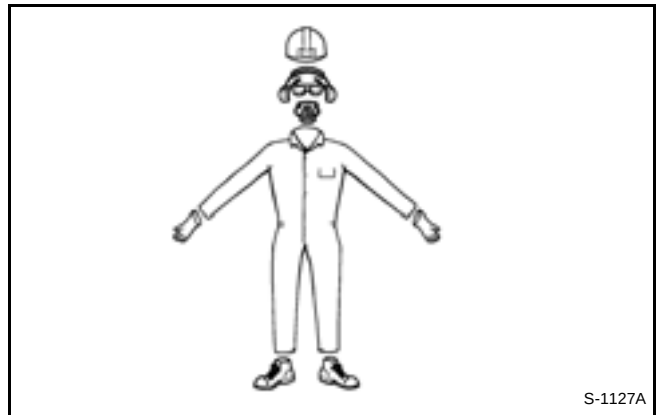


FIG. 6

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 exhaust is vented outside.

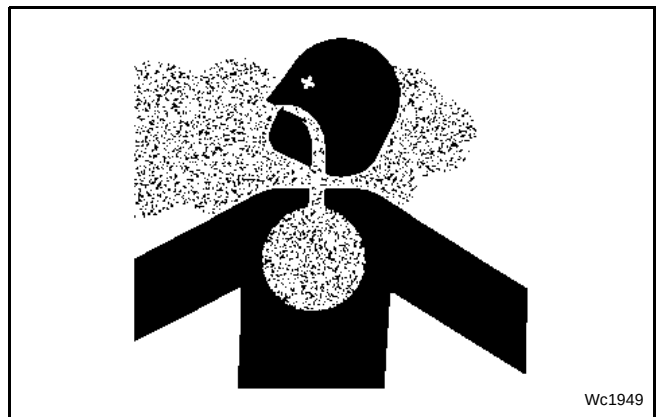


FIG. 8

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

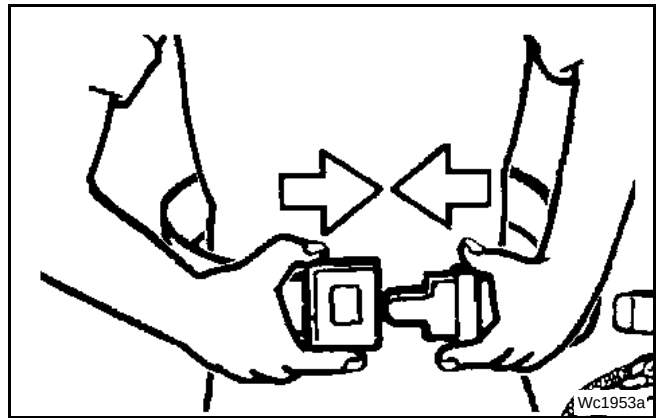


FIG. 9

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

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

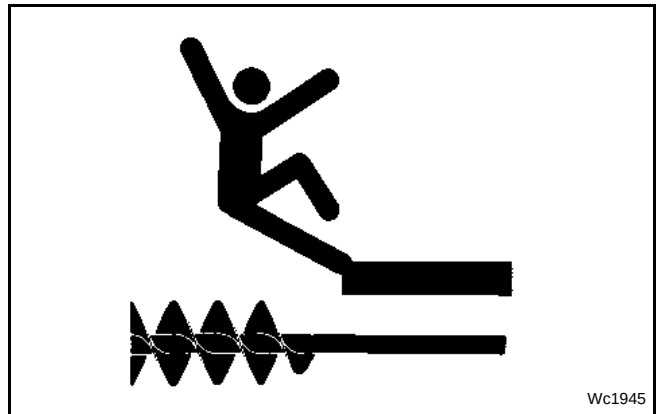


FIG. 10

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

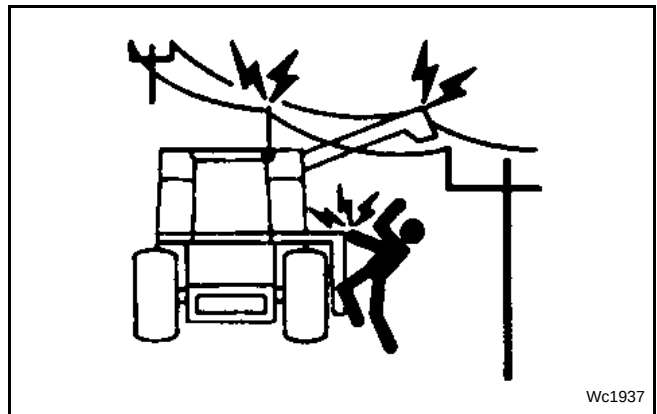


FIG. 11

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

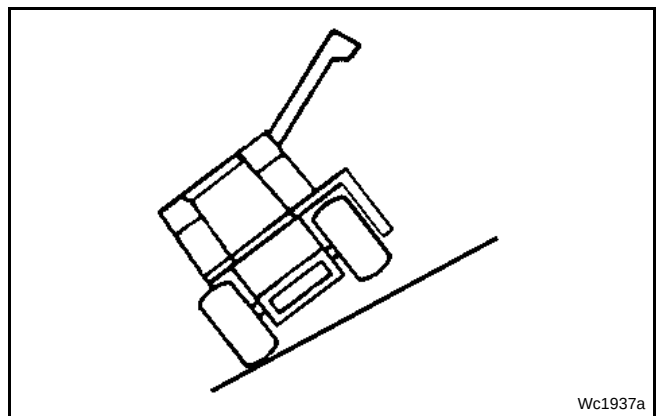


FIG. 12

Safety

FIG. 13: All shields and guards must be in the correct operating position and in good condition.

Do not open, remove, or reach around shields while the engine is operating. Entanglement in rotating belts or moving parts can cause serious injury or death. Stay clear of rotating or moving components.

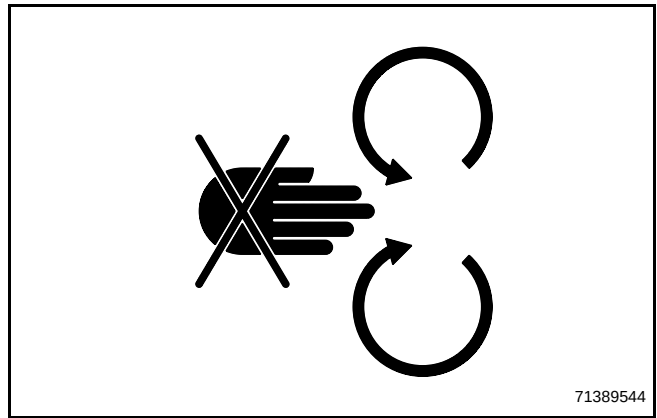


FIG. 13

FIG. 14: Never allow anyone behind the combine while the engine is running or the combine is in operation. Objects can be thrown from the straw chopper or chaff spreader at a high rate of speed. Objects thrown from the straw chopper or chaff spreader can cause serious injury or death.

The straw chopper and chaff spreader can continue to move after the thresher has been disengaged or the engine shut off. Wait for all components of the combine to stop moving prior to inspecting, cleaning, or servicing the combine.

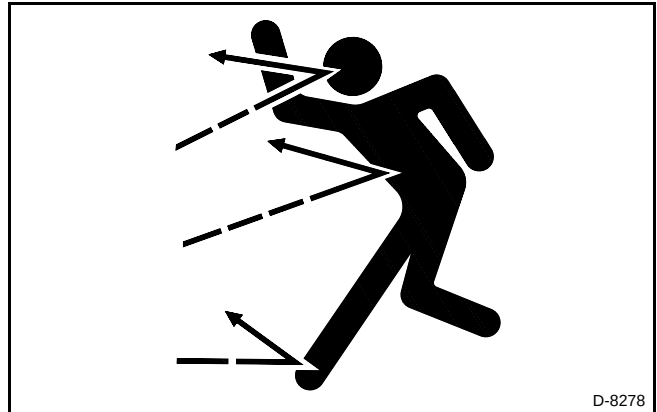


FIG. 14

FIG. 15: Always shut off the engine, shift the transmission to neutral, set parking brake, remove the ignition key and take the ignition key with you before leaving the operator station. Never allow anyone to inspect, clean, lubricate, adjust or repair any part of the combine or attachments while the engine is operating unless specifically instructed otherwise in this manual. Never leave combine unattended while the engine is operating.

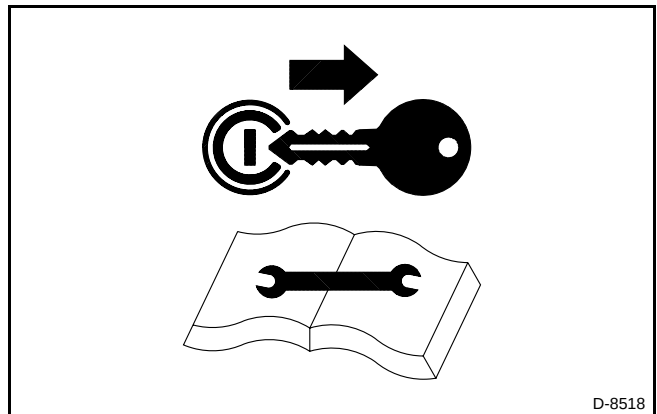


FIG. 15

FIG. 16: Never permit anyone to 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.

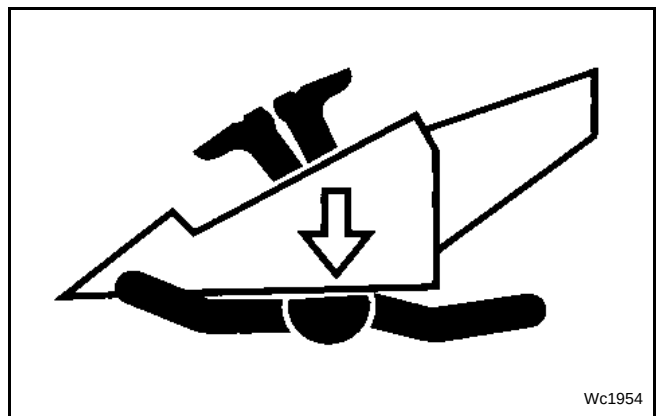


FIG. 16

FIG. 17: Never allow anyone around the header or the feeder when the engine is running. Personnel can become entangled in the moving parts of the header or feeder, or be pulled in to the feeding mechanism of the combine.

Stay clear of any cutting or gathering devices on the header as these devices can cause serious injury or death.



FIG. 17

FIG. 18: Always stop the combine engine before refueling. Do not smoke while refueling.

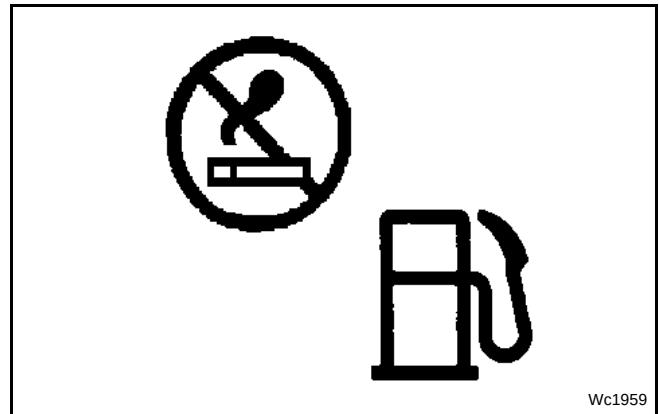


FIG. 18

TRANSPORTING COMBINE ON PUBLIC ROADS

FIG. 19: Consult your local law enforcement agency for local regulations regarding movement of farm equipment on public roads.

Use headlights, flashing warning lights, taillights and turn signals, day and night, unless prohibited by local law. Make sure lights, reflectors and SMV emblem (if required) are installed, in good condition and wiped clean.

Lock brake pedals together with the locking strap so that both front wheel brakes will be applied simultaneously.

Engage the transport switch located in the right-hand console.

Be aware of other traffic on the road. Keep well over to your own side of the road and pull over, whenever possible, to let faster traffic pass.

Adjust travel speed to maintain control at all times. Never allow combine to coast down hills.

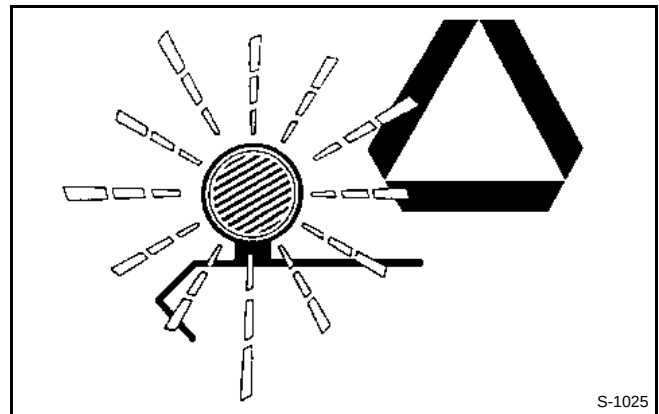


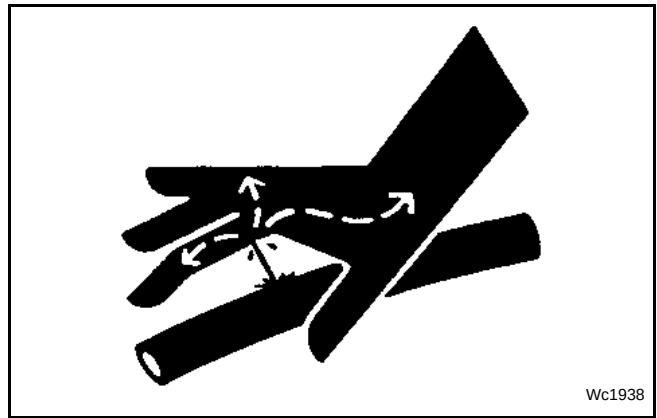
FIG. 19

Safety

MAINTENANCE

FIG. 20: Escaping fluid under high pressure can be almost invisible but penetrate the skin causing serious injury.

Consult a doctor immediately if you sustain an injury by escaping fluids. Fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

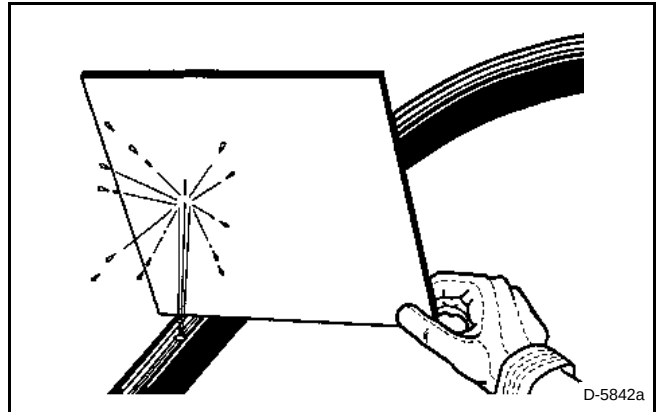


Wc1938

FIG. 20

FIG. 21: Use a piece of cardboard or wood to search for possible leaks, never use your hands.

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

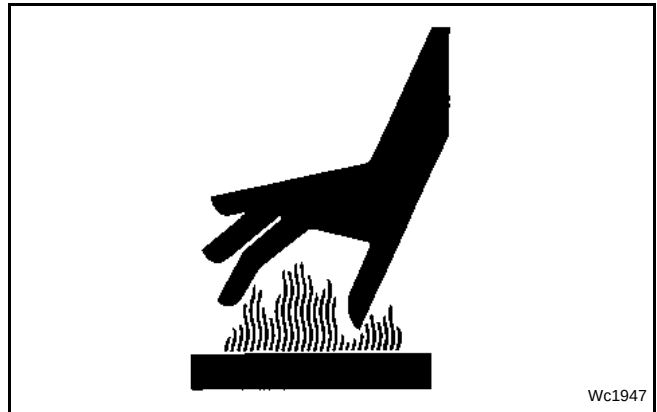


D-5842a

FIG. 21

FIG. 22: 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.

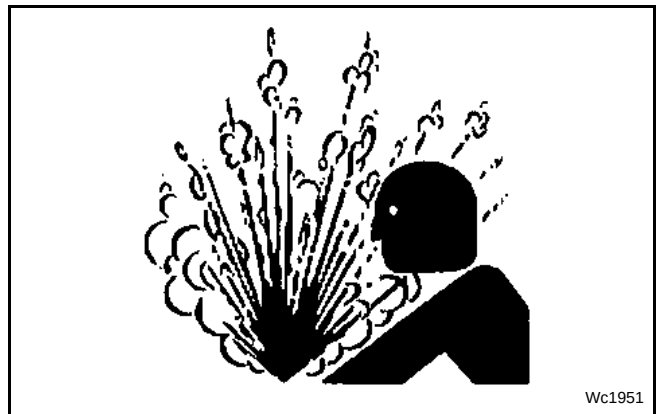
Always permit parts that contain hot fluid to cool before handling or disconnecting.



Wc1947

FIG. 22

FIG. 23: Do not remove radiator cap if engine is hot. Only remove cap when the cap is cool enough to touch with bare hands. Loosen cap slowly to first notch to relieve pressure, then remove cap.



Wc1951

FIG. 23

FIG. 24: Remove spilled oil, antifreeze or fuel immediately from operator ladder and platform and other access areas.

Keep all access areas clean and free of obstructions.



Wc1939

FIG. 24

ENGINE SAFETY

FIG. 25: Make sure that all shields, guards and access doors are in place 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.

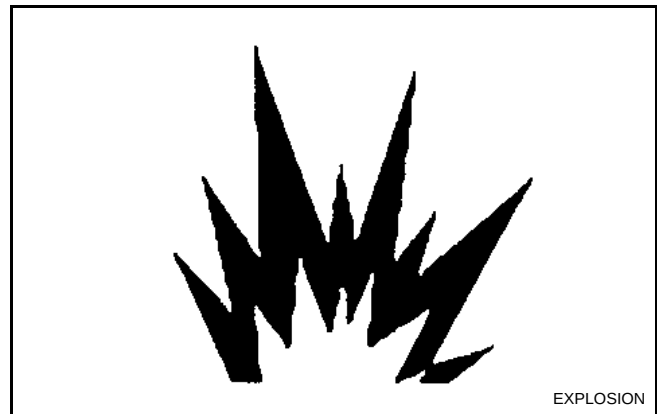
Be sure that all bystanders are clear of the combine before starting the engine.



Wc1955

FIG. 25

FIG. 26: 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.



EXPLOSION

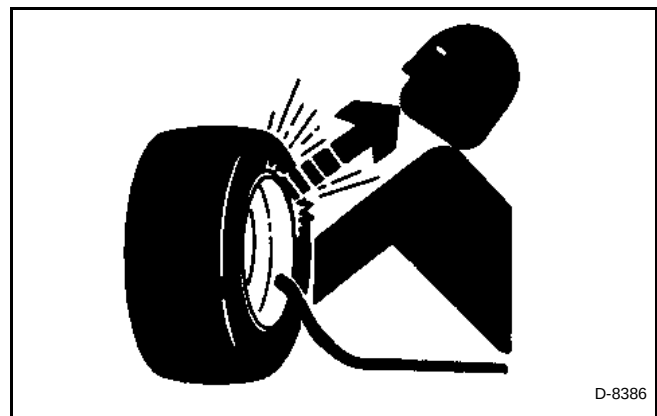
FIG. 26

TIRE SAFETY

FIG. 27: Tire explosion and/or serious injury can result from over inflation. Do not exceed the tire inflation pressures. See the Specifications Section 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 Specifications Section 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.



D-8386

FIG. 27

Safety

BATTERY SAFETY

FIG. 28: 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 booster cables to combine batteries. Electrical component damage or battery explosion can result if booster cables are not installed correctly.

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

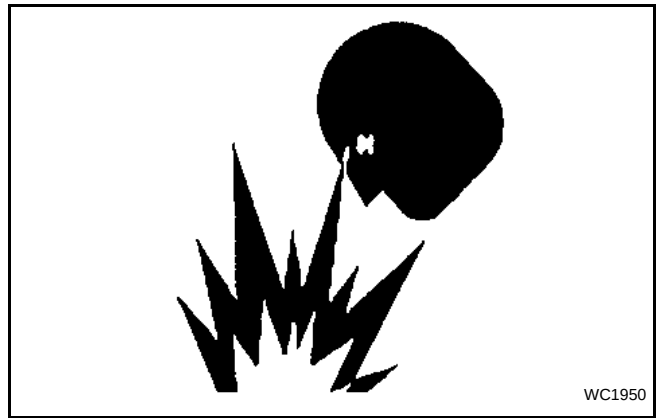


FIG. 28

FIG. 29: Fluid in 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.

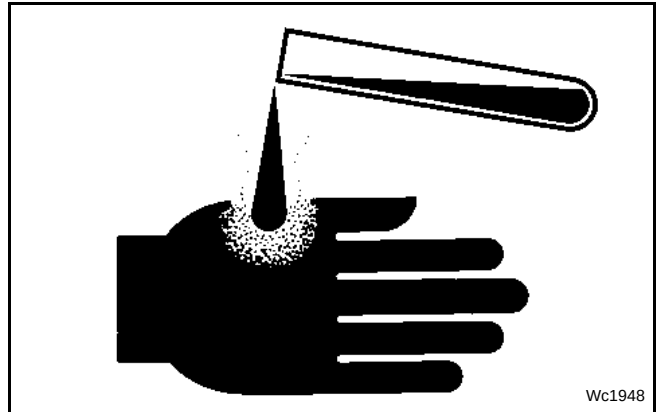


FIG. 29

ACCUMULATOR SAFETY

FIG. 30: 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.

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.



CAUTION: Service of the accumulator must be done by authorized personnel only. Nitrogen gas when released can cause localized freezing and injury.

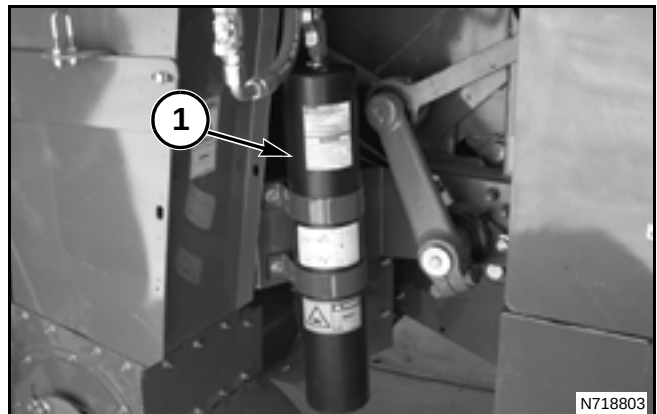


FIG. 30

HEADER LIFT CYLINDER STOP

A header lift cylinder stop is provided on the left-hand header lift hydraulic cylinder.

FIG. 31: Header lift cylinder stop (1) in the disengaged position.



FIG. 31

FIG. 32: 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 whatsoever.

To engage the header lift cylinder stop:

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

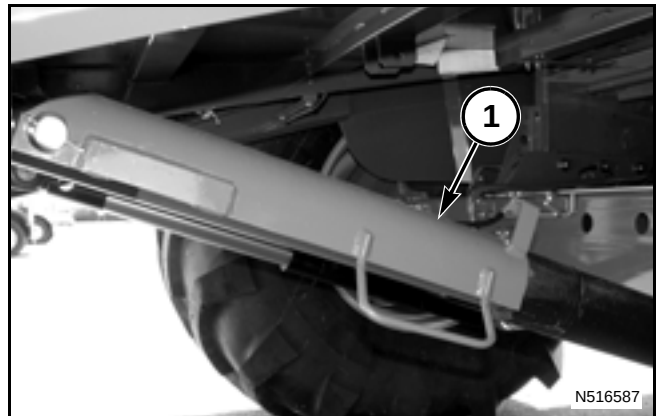


FIG. 32

Safety

SHIELDS

NOTE: Some pictures in this manual will show shields removed for visibility or access to parts of the combine. Numerous shields must be opened and/or removed to perform normal service and adjustment procedures.



WARNING: Never operate the combine or allow others to operate the combine unless all shields supplied with the combine and the combines attachments are properly in place.

Feeder House

FIG. 33: Left-hand feeder housing shield (1) shown in latched position. To remove, release latch (2) and lift shield off mounting brackets.

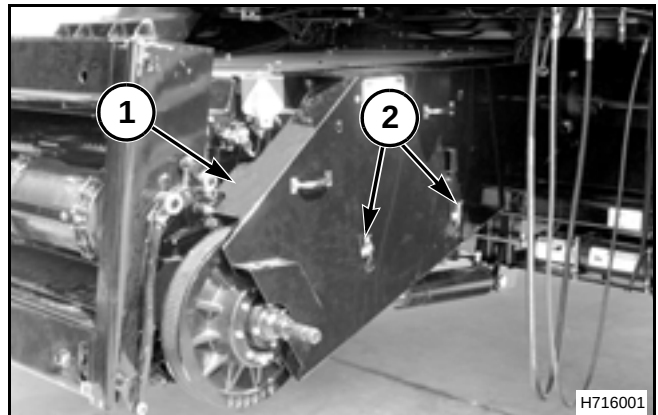


FIG. 33

FIG. 34: Left-hand feeder housing shield (1) shown removed with tether (2).

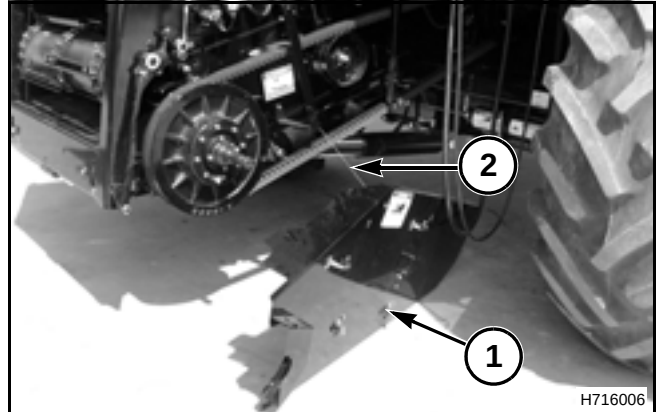


FIG. 34

FIG. 35: Right-hand feeder housing shield (1) shown in latched position. To remove, release latch (2) and lift shield off mounting brackets.

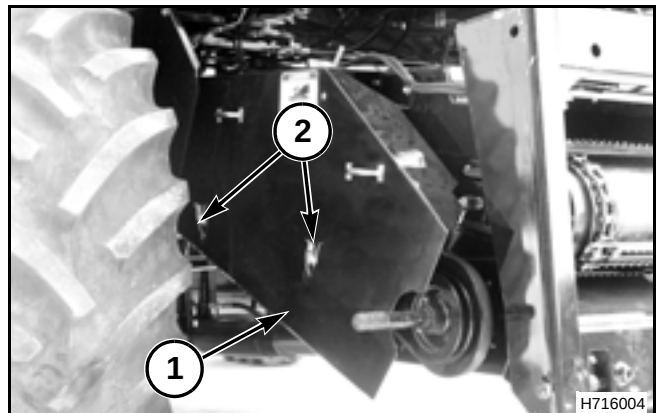


FIG. 35

FIG. 36: Right-hand feeder housing shield (1) shown removed with tether (2).

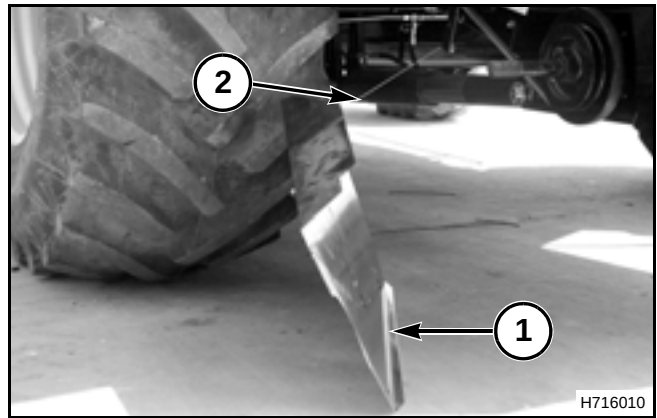


FIG. 36

Left-hand Shields

FIG. 37: To open shields:

1. Position unloader tube in the out position.
2. Unlatch lower swing-up shield (1) and raise the shield up fully.
3. Unlatch upper swing-up shield (3) and swing the shield up.

NOTE: The lower swing-up shield (1) can be opened or closed with the unloader tube in the out or in the stored position.

NOTE: The upper swing-up shield (3) can be opened or closed only with the bin unloader tube in the out position and the lower swing-up shield fully open.

NOTE: Top swing-down shield (2) can only be opened when the unloader tube is in the out position.



CAUTION: The top swing-down shield is not equipped with a gas spring and must be lowered slowly and carefully to prevent injury or damage to shield.

FIG. 38: To close shields:

1. Close upper top swing-down shield (1) and latch in place.
2. Close the upper swing up shield (2) and latch in place.
3. Close down lower swing-up shield (3) and latch in place.

NOTE: Moving the bin unloader tube from the OUT position to the STORED position with the shields open will result in damage to the shields and/or to the bin unloader tube.

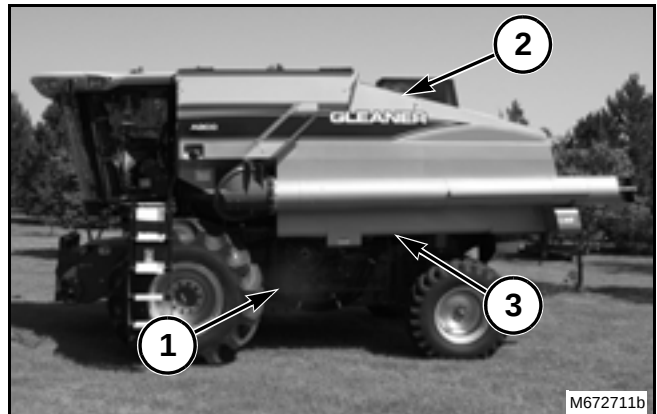


FIG. 37

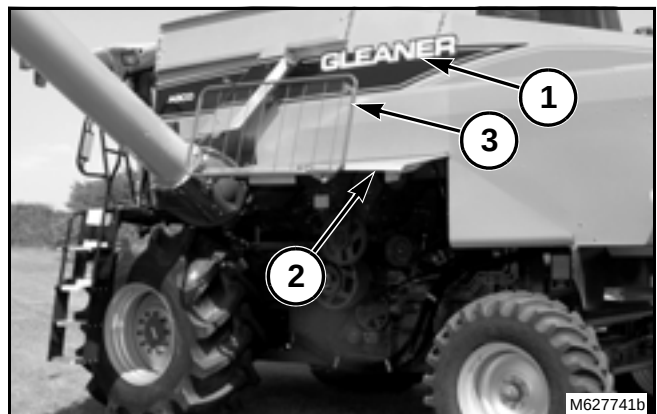


FIG. 38

Safety

Right-Hand Shields

FIG. 39: To open shields:

1. Unhook swing-down shield/step (1) and swing shield down.
2. Open swing-up shield (2) at the front of the shield. Pull down on release handle and raise the shield.

NOTE: Only raise or lower swing-down shield/step with the swing-up shield in closed and latched position.

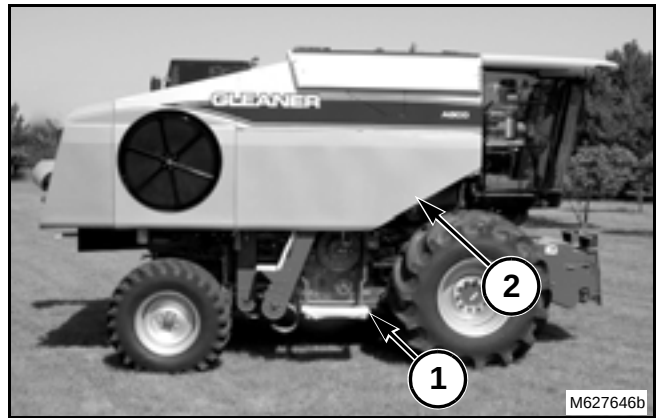


FIG. 39

FIG. 40: To close shields:

1. Using the handle provided, close and latch the swing-up shield (2).

IMPORTANT: Do not pull on gas spring to close the shield.

2. Swing up the swing-down step/shield (1) and hook the shield in place.

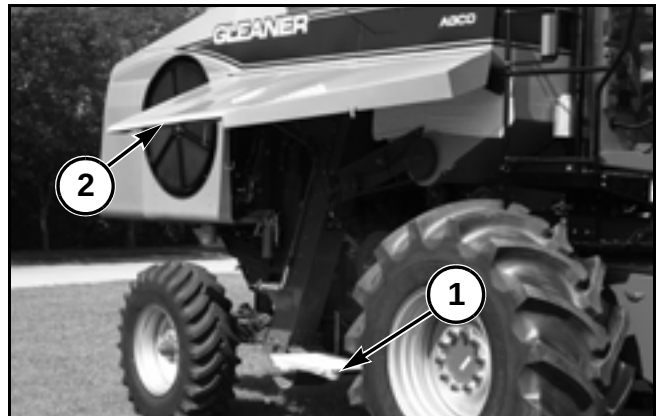


FIG. 40

BACKUP ALARM

FIG. 41: The combine is factory equipped with a backup alarm (1) that activates when the control handle is moved into reverse and the back up lights engage.

The backup alarm is located forward of the batteries next to the battery jumper post.

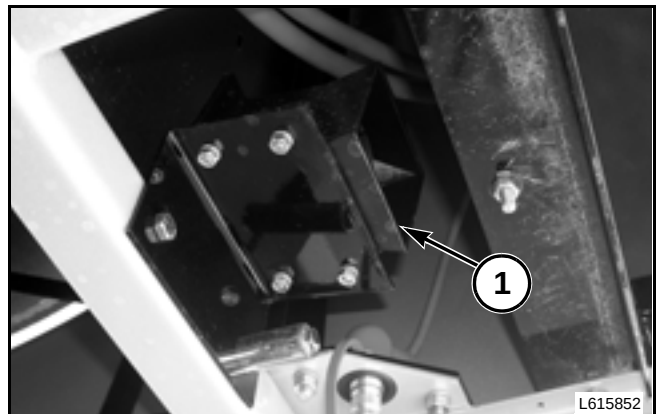


FIG. 41

FAN LEAF SCREEN

FIG. 42: To open:

1. Make sure everything is cleared from under the machine.
2. Locate release handle on either side of combine separator frame.
3. Pull release handle. Doors will open rapidly and automatically.

To close:

1. Hold front door in closed position and swing rear door shut with enough force to latch the doors together.



CAUTION: Make sure hands and fingers are clear when shutting the doors. NEVER operate or transport or allow others to operate or transport the combine unless ALL SHIELDS supplied with the combine and its attachments are PROPERLY IN PLACE AND PROPERLY LATCHED.



FIG. 42

TRANSMISSION SCREEN

FIG. 43: To open:

1. Make sure everything is cleared from under the machine.
2. Locate release handle on either side of combine separator frame.
3. Pull release handle. Doors will open rapidly and automatically.

To close:

1. Hold rear door in closed position and swing front door shut with enough force to latch the doors together.



CAUTION: Make sure hands and fingers are clear when shutting the doors. NEVER operate or transport or allow others to operate or transport the combine unless ALL SHIELDS supplied with the combine and its attachments are PROPERLY IN PLACE AND PROPERLY LATCHED.

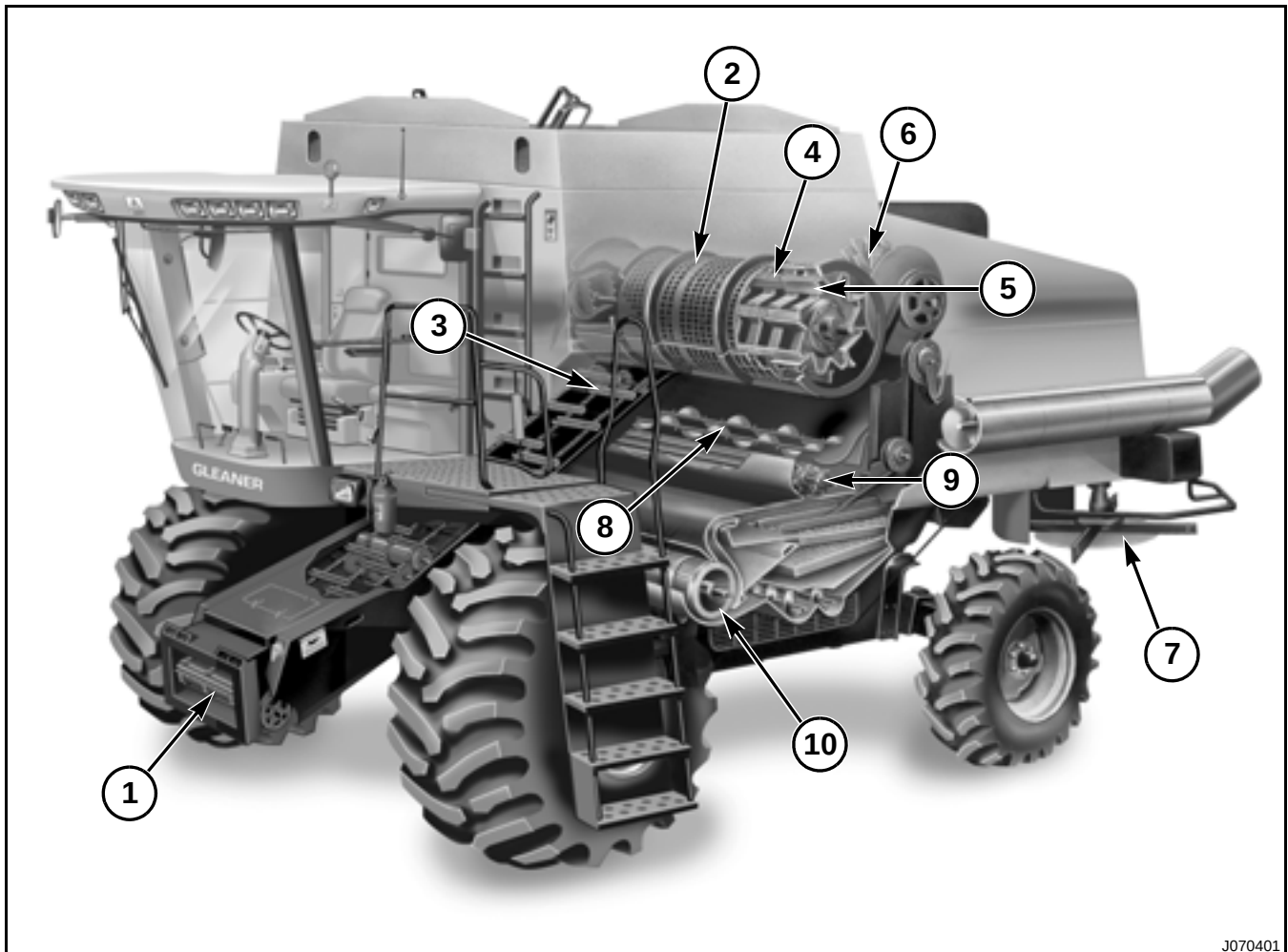


FIG. 43

NOTES

GENERAL INFORMATION

HOW A COMBINE WORKS



J070401

FIG. 44

FIG. 44: A combine removes the grain from not wanted material. This operation is divided into three parts.

- Material Handling
- Threshing and Separating
- Cleaning

Material Handling

Material handling begins as soon as the reel, pick-up attachment, or corn header touches the grain. Material handling continues until the grain is in the bin and the chaff is on the ground behind the combine.

Feeding can have a major change on what occurs in every part of the combine. Feeding must be as smooth and even as possible by making use of the adjustments on the reel, header conveyor, and feeder conveyors.

Retractable fingers on the header conveyor comb and feed the crop to the feeder conveyors (1) and then to the cylinder (2). The angle of feed from the rear feed conveyor (3) to the cylinder is always the same, supplying even feeding.

A thresher concave door is located at the front of the threshing concave area. If a rock enters the cylinder area, a spring loaded latch will trip permitting the door to open, ejecting the rock. The warning system in the cab alerts the driver when the door is open.

An optional stone trap door is located at the front of the threshing concave area. The stone trap assemblies stones that enter the cylinder area. The stone trap door can be easily opened by an over center lever on the right-hand side of the combine.

General Information

Threshing and Separating

Threshing and separating occur in a 229 cm (90 in) cylinder and cage assembly mounted from left to right between the front and rear axles. The standard cylinder is an open design with eight equally spaced rows of cylinder bars (4). An optional cylinder is a closed design with six equally spaced rows of cylinder bars. The cylinder is driven by a torque sensing variable speed belt drive and a two speed gearbox (speed range of 200 rpm to 1096 rpm). The cylinder is mounted inside a perforated metal cylindrical cage assembly. Material is fed into the cylinder by a 99.1 cm (39 in) wide feed conveyor to the cylinder. The first section of the cage reached by the crop is an adjustable, open concave section where most of the threshing action occurs. Helical bars on the inside of the cage and the angled rasps on the cylinder bars then move the material from right to left in a spiral route around the cylinder. Grain is separated from the material by centrifugal force. At the left-hand end of the cage, paddles (5) on the cylinder direct the material to an impeller or optional high speed fine cut chopper (6) which sends the material to the straw spreader (7) at the rear of the machine.

Cleaning

Material passing through the perforated cage assembly falls into distribution augers (8) which provide even distribution of material to the accelerator rolls (9) which start the first stage of cleaning. The rolls have flutes that overlap and turn in opposite directions to accelerate the material through a band of high velocity air onto the shoe grain pan. The air blast removes a large amount of material from the grain, reducing the volume of material to be cleaned by the shoe. Also, accelerating the material reduces the effects of gravity when operating on slopes.

In the second stage of cleaning, the lower fan outlet sends a controlled volume of air to the end shaker type shoe. Here, an equal distribution of air across the complete width and length of the shoe does the cleaning.

The fan (10) has curved blades and runs at a constant speed. Air is taken in from directly in front of the fan and across the fans complete width, for straight in straight out air control...no corner turning. The ends of the fan are closed and the inlet has a screen to prevent trash from entering. Air flow is controlled from the platform, quickly and easily, to keep more grain and get a cleaner sample. In general, as wide an opening as possible on the chaffer and as much air as possible without blowing grain out will give the most shoe capacity. If grain is being blown out, the grain can be found in the air stream about 300 mm (12 in) behind the end of the chaffer. If too little air is being used or the shoe is over loaded, the grain will be carried out with bunches of chaff and can be found at the end of the chaffer. The tailings are returned through the accelerator rolls for cleaning again, to prevent grain damage.

COMBINE IDENTIFICATION

The combine is identified by serial numbers which are important for service and repair parts.

NOTE: References to left-hand and right-hand, used in this manual, refer to position when seated in operator seat and facing forward

Machine Serial Number

FIG. 45: The machine serial number plate is located on the combine left-hand side frame at the rear corner.

Consecutive serial numbers starting with T6101 indicate an R66.

Consecutive serial numbers starting with T7101 indicate an R76.

Model Year

- HU - 2009



FIG. 45

Engine Serial Number

FIG. 46: The engine serial number is located on the engine serial number plate (1). The serial number plate is located on the left-hand rear of the engine block near the starter.



FIG. 46

Fuel Injection Pump Dataplate

FIG. 47: The fuel injection pump dataplate (1) is located on the back of the injection pump.

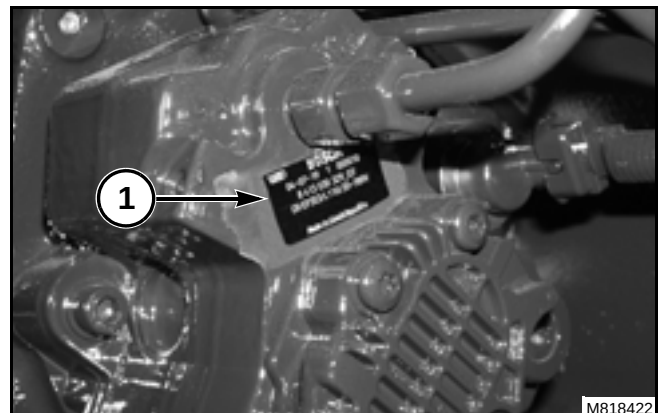


FIG. 47

General Information

ECM Dataplate

FIG. 48: The Electronic Control Module (ECM) dataplate (1) shows important information about the ECM and how the ECM is programmed. The dataplate is located on the ECM right-hand side of the ECM connectors under a protective cover.

The following information is found on the ECM dataplate:

- ECM part number (PN)
- ECM serial number (SN)
- ECM date code (DC)
- Engine serial number (ESN)
- ECM code showing the software number that indicates how the ECM is programmed.

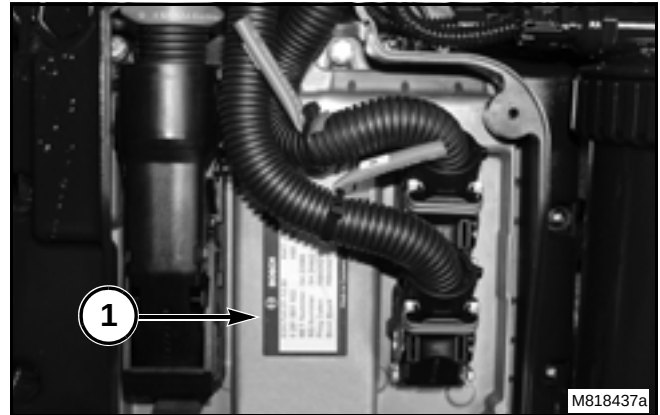


FIG. 48

Transmission Serial Number

FIG. 49: 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).

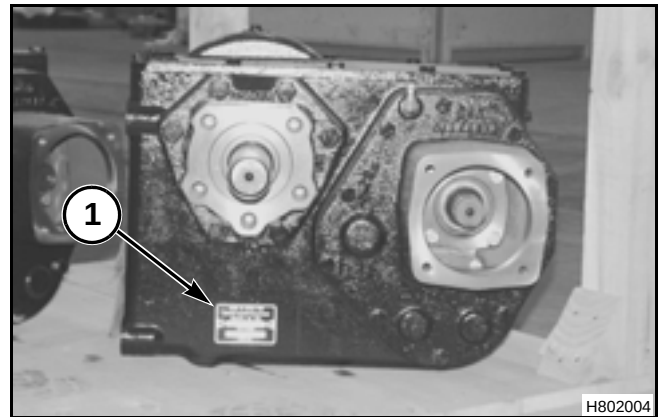


FIG. 49

Final Drive Serial Number

FIG. 50: The final drive serial number is stamped on the plate that is fastened on the inner half of the final drive housing at location (1).

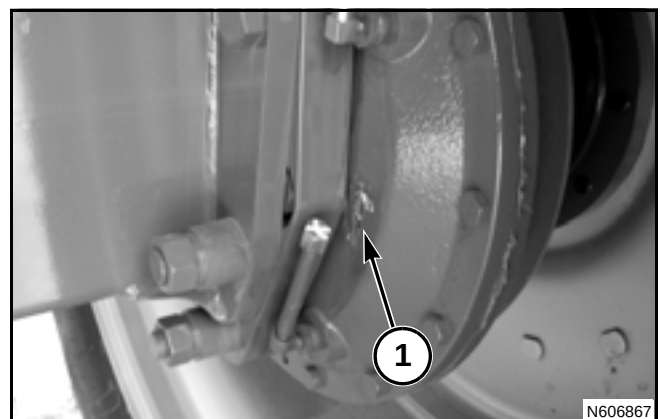


FIG. 50

Gearbox Serial Number Plate

FIG. 51: The gearbox serial number plate (1) is located on the rear surface of the gearbox.

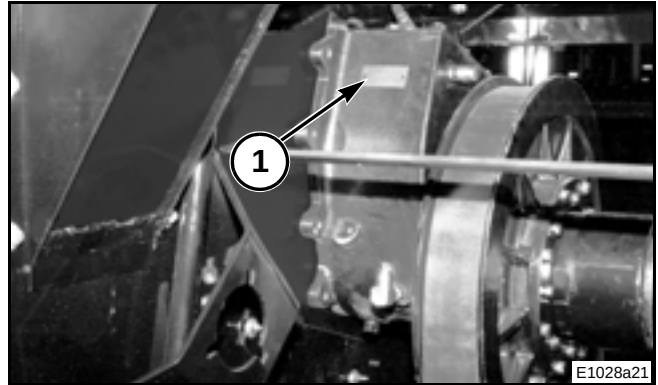


FIG. 51

HEADERS

The combine is equipped with a quick-attach feeder for fast and easy hook-up of headers. The quick-attach feature helps with the service, transport, and storage of both the header and the combine.

The combine can be equipped with the following type of headers:

- Rigid Grain Headers
- Flexible Cutterbar Headers
- Pickup Headers
- Corn Headers
- Stripper Headers
- Draper Headers

NOTE: Refer to the operator manual, supplied with header, for installation and operating information.

LUBRICATION AND MAINTENANCE

For efficient and low cost operation of any machine proper lubrication and maintenance is needed. Follow the instructions in this section of the 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.

LUBRICANTS

Use quality oils and greases and make sure to use the proper lubricant for the job. Refer to the Specifications section for lubricant specifications.

General Information

SERVICE PROCEDURES

Keep lubricants in clean, closed containers. Clean funnels, measures, and other handling equipment before and after use. Clean fittings, plug openings, and other lubrication points before servicing. Inspect and clean plugs and other fittings before installing.

SERVICE PERIODS

Frequency specifications, shown in the Lubrication and Maintenance charts, are according to normal operating conditions. If the combine is being operated in extreme weather or dust conditions, lubricate more frequently. Change engine oil filter every oil change.

NOTE: Monitor the engine hour meter to make sure that all maintenance intervals are met.



WARNING: Lower header or feeder to ground or raise and engage header lift cylinder stop. Stop combine engine and remove start key before doing any lubrication or maintenance function.

LUBRICATION AND MAINTENANCE

NEW MACHINE LUBRICATION AND MAINTENANCE		
Component	Action Required	General Information
Engine Air Cleaner	Check and tighten all connections	
Drive Chains and belts	Check tension and alignment	Refer to the adjustment section
Brake Fluid Level	Check fluid level, with combine parked on level ground, and fill if necessary	Fluid level to be 6 mm (1/4 in) from top.
Bolts (attaching wheels, final drives, front and rear axles, feeder elevator brackets, straw chopper hammers and beater bearing housings)	Check torque	Refer to appropriate sections of manual
Rear (Steering) Wheels	Check Toe in	
Feeder Reverser	Check fluid level.	Initial fill only.

NEW MACHINE LUBRICATION AND MAINTENANCE		
10 Hour Lubrication		
Component	Action Required	General Information
Cylinder Driven Sheave	Lubricate two fitting	One fitting on right side of combine.
Variable Speed Corn Header Drive Sheave - If equipped	Lubricate two fittings	Two fittings at front left side of feeder house.
Feeder House Pivot Bushing	Lubricate two fittings	Two fittings on each side of feeder house - lubricate with header sitting on the ground.
Cylinder Coupling	Lubricate two fittings	Two fittings on right side of combine.
Drive Chains	Oil drive chains (oil more often when operating in extremely dusty conditions)	Refer to Drive Chains in this section.

10 Hour Maintenance		
Component	Action Required	General Information
Air Conditioning Air Filter and Secondary Filter	Remove element from top of cab and a/c unit on bottom of cab and clean	
Air Conditioning Condenser	Check coil for chaff and dust accumulation. Clean as necessary	Condenser located in front of radiator.
Drive Chains and Belts	Conduct general inspection of all drive chains and belts	Refer to this section.
Engine Air Intake Screen and Aspirated pre-cleaner	Check clamps on ends of aspirated tube	
Engine Compartment	Check for accumulation of chaff, leaves, trash, etc. Clean as necessary.	Chaff, leaves and trash, which are allowed to accumulate can create a fire hazard.
Engine Oil Level	Check oil level and fill if necessary	
Hydraulic Oil Level	Check hydraulic oil level	Refer to Checking Oil Level in this section.

General Information

10 Hour Maintenance		
Component	Action Required	General Information
Radiator Coolant	Check level of coolant in radiator coolant recovery tank, with combine parked on level ground, and add coolant if necessary	Use solution of 50% water and 50% diesel type low silicant antifreeze. Do not use Organic Acid type antifreeze.
Radiator Core and Rotary Screen Air Intake	Check to ensure screen and radiator core are clear of chaff and dust	Check twice daily in extremely dusty conditions. Check that screen is free to turn before starting engine.
Shoe Grain Pan	Check for buildup of material	
Transverse Fan	Check for buildup of dirt or trash	
Wheel Lug Nuts and Bolts	Check torque every 10 hours or until they remain tight	

50 Hour Lubrication		
Component	Action Required	General Information
Jackshaft Drive Idler Hub	Lubricate one fitting	
Bin Unloader Elbow (turret only)	Lubricate one fitting	One fitting at top of unloader (turret only)
Fan Drive Idler	Lubricate one fitting	One fitting behind fan drive.
Rear Feed Conveyor Drive Idler Hub	Lubricate one fitting	One fitting behind right front tire.
Jackshaft Drive Idler	Lubricate one fitting	One fitting between elevators.
Axle Pivot	Lubricate two fittings	One fitting each side of combine, in front of rear axle.
Separator Drive Idler Hub	Lubricate one fitting	One fitting front of clean grain elevator.
Bin Unloader Auger Universal Joint	Lubricate one fitting	One fitting inside elbow - Swivel only.
Bin Unloader Auger Inner Bearing	Lubricate one fitting	One fitting inside unloader tube housing.
Bin Unloader Jackshaft Idler Hub	Lubricate one fitting	One fitting left side of combine.
Swing Hydraulic Cylinder	Lubricate one fitting	One fitting near unloader.
Tie Rod Ball Socket	Lubricate one fittings	One fitting on each end of rear axle.
Wheel Spindle	Lubricate one fittings	One fitting on each end of rear axle.
Pivot Drive Idler Hub	Lubricate one fittings	One fitting on each side of feeder house.
Feeder Housing Drive Idler Hub	Lubricate one fitting	One fitting on left side of feeder house.
Bin Unloader Elbow Pivot	Lubricate one fitting	One fitting on top of elbow - Turret only.
Unloader Auger Outer Bearing	Lubricate one fitting	One fitting outer end of unloader tube.
Tailings Drive Idler	Lubricate one fitting	One fitting right side of combine.
Hydro Drive Idler Hub	Lubricate one fitting	One remote lube line behind engine near oil drain hose.

General Information

50 Hour Lubrication		
Component	Action Required	General Information
Front Feed Conveyor Drive Hub and Torque Limiter	Lubricate two fittings	Two fittings above front axle on right side of combine.
Steering Cylinder Ball Socket	Lubricate four fittings	Two fittings on each end of rear axle.
Trunnion - Rear Wheel Assist Axle only	Lubricate four fittings	Two fittings on each side of rear axle.
Bin Unloader at swivel	Lubricate six fittings	Six fittings around pivot.
Main Drive Idler Hub	Lubricate one fitting	Below processor housing, left side of combine.
Accelerator Roll Jackshaft U-joint	Lubricate two fittings	Below Processor housing, left side of combine.
Impeller Drive Idler Hub	Lubricate one fitting	End of processor housing, left side of combine.
Chopper Drive Idler Hub - If equipped	Lubricate one fitting	End of processor housing, left side of combine.
Straw Spreader Drive Idler Hub	Lubricate one fitting	In Engine Compartment.

50 Hour Maintenance		
Component	Action Required	General Information
Air Cleaner (Engine)	Check hose connections for tightness.	Clean or replace main element when indicated by monitor light.
Air Conditioning Air Filter and Secondary Filter	Remove element from top of cab and a/c unit on bottom of cab and clean	
Alternator Belt	Check Tension	Refer to appropriate section of manual.
Batteries	Clean off top of batteries and make sure cable connections are tight.	
Cab Air Filter	Remove element from air conditioning unit and clean	May require more frequent cleaning in extremely dusty conditions.
Cab Recirculating Air Filter	Remove grille and clean	Located inside cab under right-hand console.
Drive Chains and Belts	Check tension. Replace or adjust as necessary.	
Engine Oil and Oil Filters (Change after the first 50 hours, and every 250 hours thereafter.)	Drain crankcase, install new filters. Fill crankcase to correct level with new oil of type recommended.	If the combine operates under heavy loads and extremely dusty conditions, change the oil and filters 125 hours.
Hydraulic Oil Pressure Filter Element	Change the filter after the first 50 hours and every 250 hours thereafter	
Hydraulic System	Check for leaks	
Hydrostatic Oil Cooler	Check core for chaff and fiber and clean as necessary.	
Lateral Tilt Filter	Change the filter after first 50 hours of operation and every 250 hours thereafter.	

General Information

50 Hour Maintenance		
Component	Action Required	General Information
Primary Engine Fuel Filter	Drain any accumulated water from fuel filter	Place cloth or container under filter to catch any fluids before opening drain valve.
Shaker Shoe Chaffer and Sieve	Remove and accumulated straw, cobs, etc.	
Tire Pressure	Check and inflate as needed	Refer to Specifications section.

100 Hour Lubrication		
Component	Action Required	General Information
Lateral Tilt Pivot Pin - If Equipped	Lubricate one fitting	One fitting at bottom center of lateral tilt frame.
Lateral Tilt Rollers - If Equipped	Lubricate one fittings	One fitting on each end of lateral tilt frame.
Axle Couplers	Lubricate four fittings	One fitting on each inner and outer coupler, both sides.
Tailings Return Torque Limiter	Lubricate two fittings	Two fittings located right side of combine.
Clean Grain Elevator Torque Limiter	Lubricate two fittings	Two fittings right side of combine.
Rotary Screen Drive Idler	Lubricate one fitting	Fitting inside rotary screen.

100 Hour Maintenance		
Component	Action Required	General Information
Wheel Lug Nuts and Bolts	Check wheel lug torque.	

250 Hour Maintenance		
Component	Action Required	General Information
Engine Oil and Oil Filters (If the combine operates under heavy loads and extremely dusty conditions, change the oil and filters 125 hours)	Drain crankcase, install new filters. Refill crankcase to correct level with new oil of type recommended.	Clearly indicate that the engine oil has been drained and the combine engine must not be started.
Final drive Housings	Check oil level and fill if necessary. Check breather.	
Hydraulic Oil Pressure Filter Element	Replace the filter	
Lateral Tilt Filter	Replace filter element.	
Transmission Housing	Check oil level and fill if necessary. Check breather.	

500 Hour Lubrication		
Component	Action Required	General Information
Transmission Shift Linkage	Lubricate one fitting	One fitting on right-hand side of transmission
Brake Shaft Bearings	Lubricate two fittings	Two fittings under cab floor.

General Information

500 Hours or Once a Season		
Component	Action Required	General Information
Brake Fluid	Check fluid level in auxiliary reservoir and fill as necessary.	Fluid level to be 6 mm (0.25 in) from top.
Cleanout Procedure		Refer to this section.
Cylinder Gearbox	Change Oil	Refer to Cylinder Gearbox in this section.
Engine Air Cleaner Elements	Replace inner and outer air cleaner elements.	Replace elements annually or when indicated by monitor. Outer element only can be cleaned.
Engine Fuel Filter	Remove and discard filters when loss of power or the water separator is cleaned. Install new filter.	
Final Drive Housing	Drain gearbox, flush and refill to correct level with clean oil.	
General	Inspect combine for worn, damaged, or broken parts. Torque all bolts.	
Hydraulic Oil System	Drain oil, replace filter elements, breather, clean metal suction screen in reservoir, and refill to correct level with clean oil.	
Inline Fuel Filter	Remove strainer and clean when replacing engine fuel filters.	
Straw Chopper	Check knife wear and replace if necessary. Install new blades in sets of two, 180 degrees apart from each other.	
Transmission Housing	Drain gearbox, flush and refill to correct level with clean oil.	

1000 Hours		
Component	Action Required	General Information
Engine Fan Belt, Tensioner and Pulleys	Check belt for damage. Check tensioner and fan pulley bearings for excessive play and smooth operation.	
Engine Valves	Check and adjust clearances.	See your dealer.
Radiator	Replace coolant and filter and flush system	Use mixture of 50% clean water and 50% low silicate diesel antifreeze. Do not use Organic Acid type antifreeze.
Rear Wheel Bearings (Non-Powered Rear Axle)	Remove hubs, clean and check bearings. Repack before assembly.	

General Information

LUBRICATION DETAILS

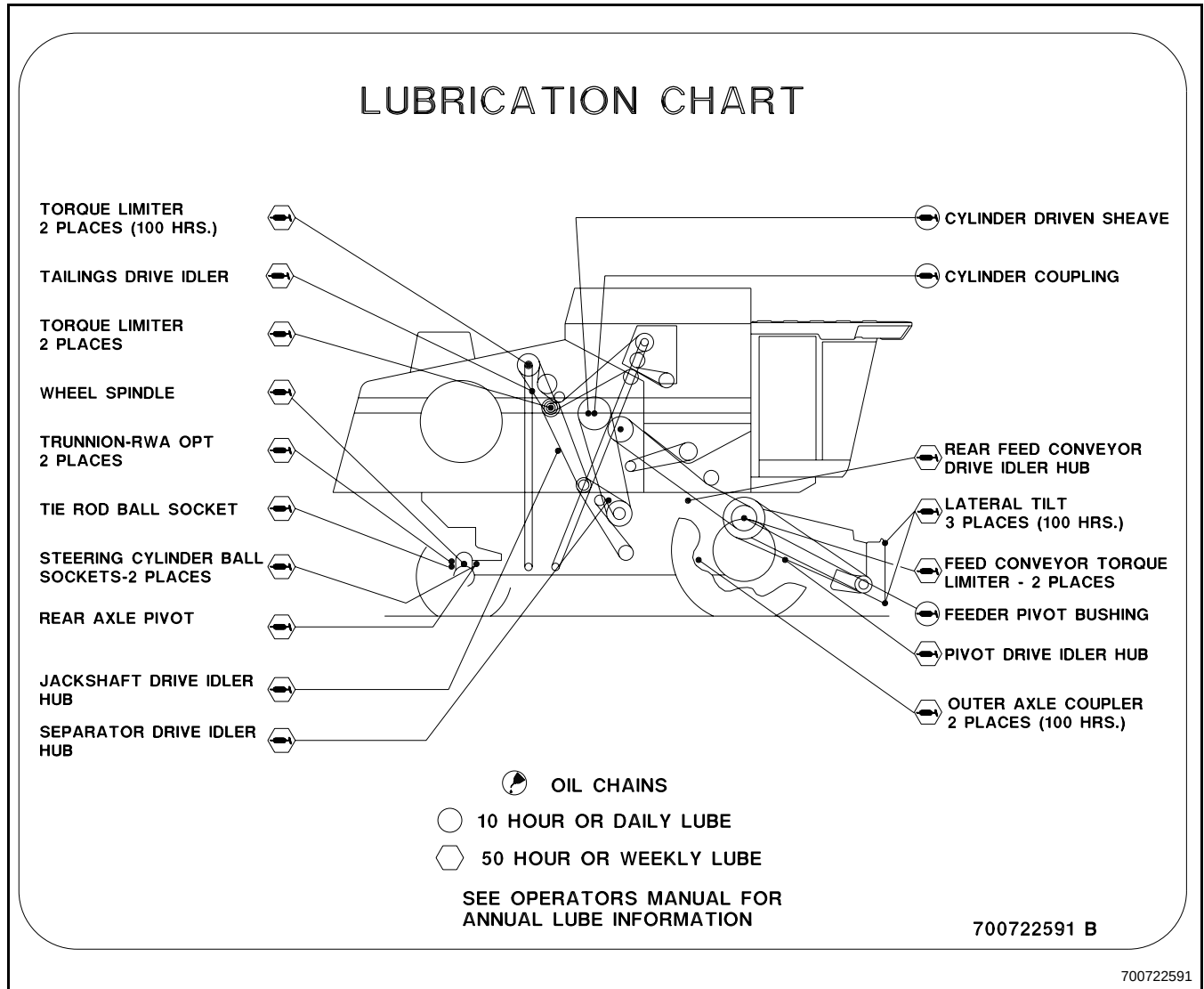


FIG. 52

FIG. 52: The efficient and economical operation of any machine depends on proper lubrication and maintenance at recommended intervals. Follow the instructions in this manual and on the lubrication charts, located on the right and left sides of the machine to assure timely lubrication.

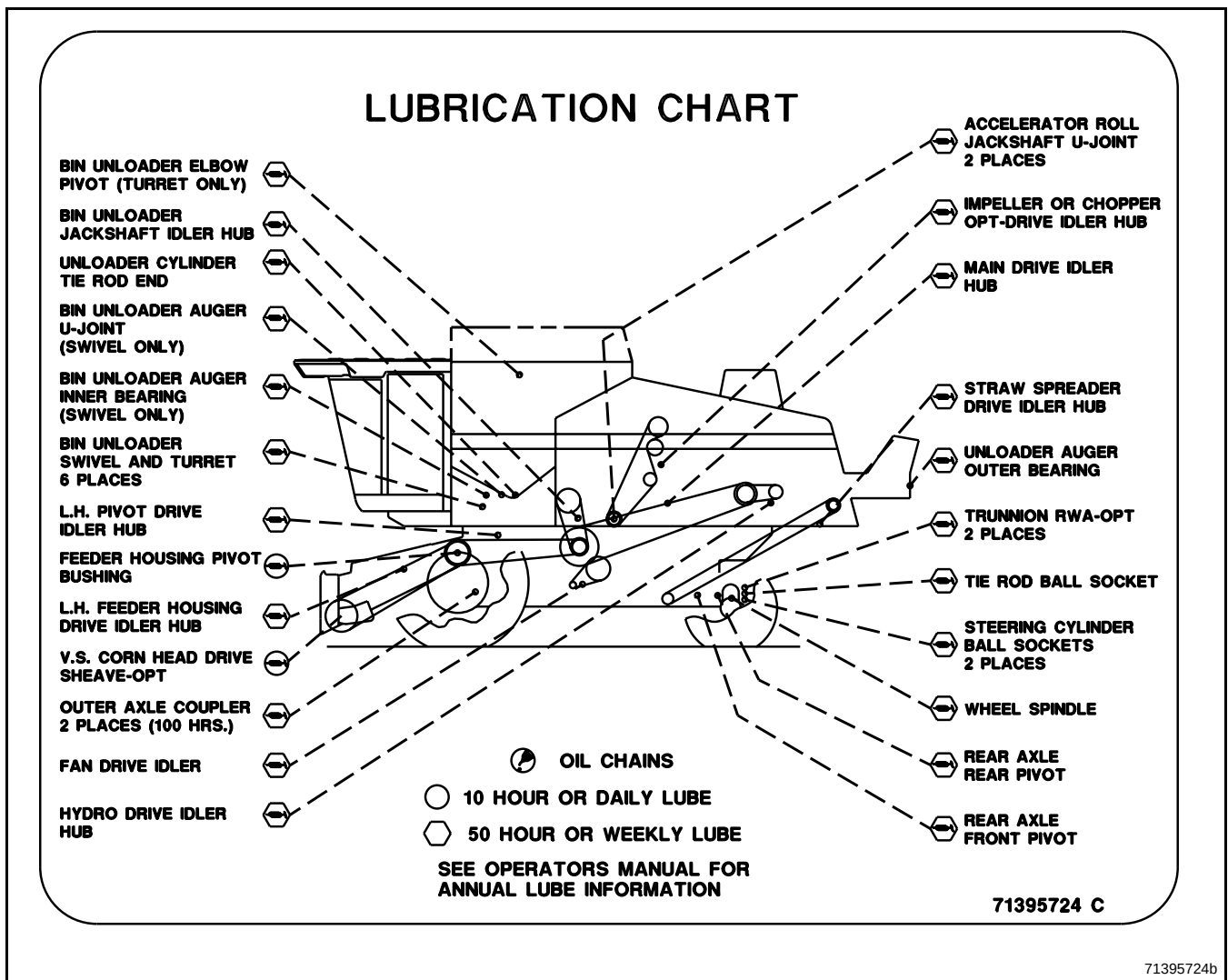


FIG. 53

FIG. 53: The efficient and economical operation of any machine depends on proper lubrication and maintenance at recommended intervals. Follow the instructions in this manual and on the lubrication charts, located on the right and left sides of the machine to assure timely lubrication.

General Information

Right Hand Feeder House

FIG. 54: In front of front axle.

Pivot Drive Idler Hub (1) - (50 hours or weekly).

Remote fitting above front axle.

Feeder Housing Pivot Bushing (2) - (10 hours or daily).

Lubricate with the header sitting on the ground.

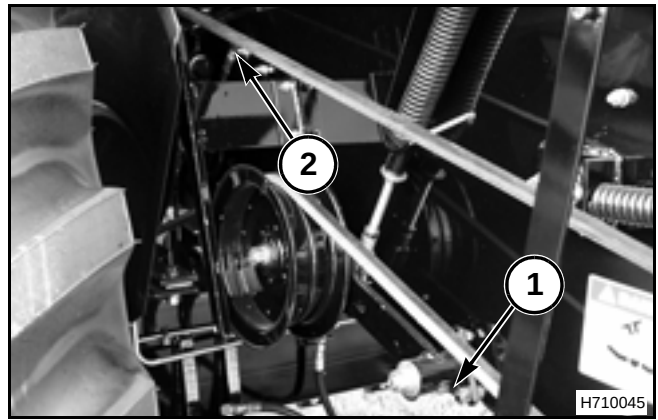


FIG. 54

FIG. 55: Above front axle.

Front Feed Conveyor Drive Hub and Torque Limiter - Two fittings (1) - (50 hours or weekly).

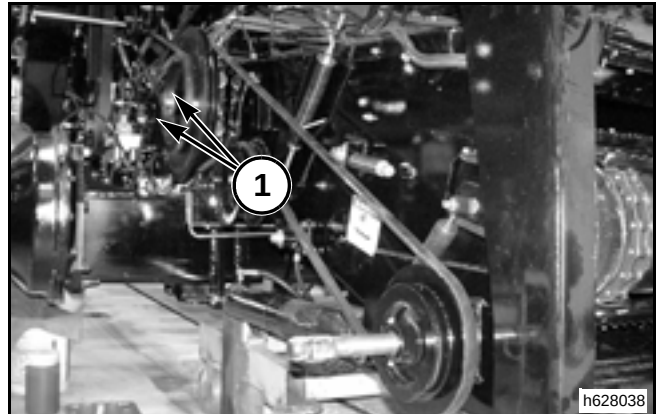


FIG. 55

Left Hand Feeder House

FIG. 56: Front of feeder house.

Variable Speed header Drive sheaves (1) - (10 hours or daily).

NOTE: There are no lube fittings on variable speed drive idler.

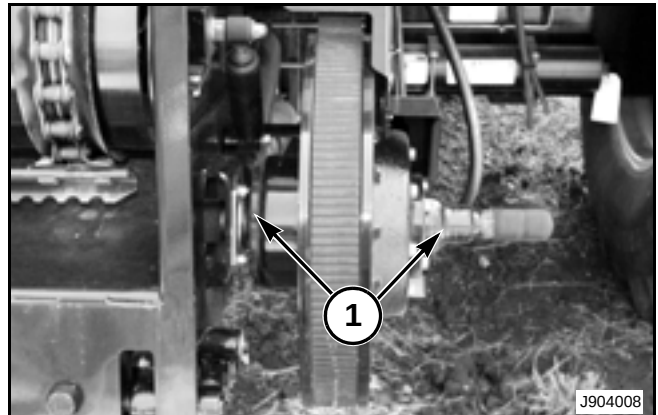


FIG. 56

FIG. 57: Above axle.

Feeder Housing Pivot Bushing, remote, (1) - (10 hours or daily).

Lubricate with header sitting on the ground.

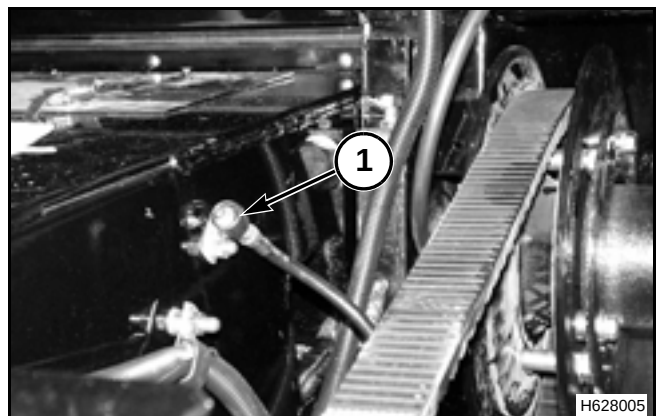


FIG. 57

FIG. 58: Left hand side of feeder house.

Left-hand feeder housing drive idler hub (1) - (50 hours).

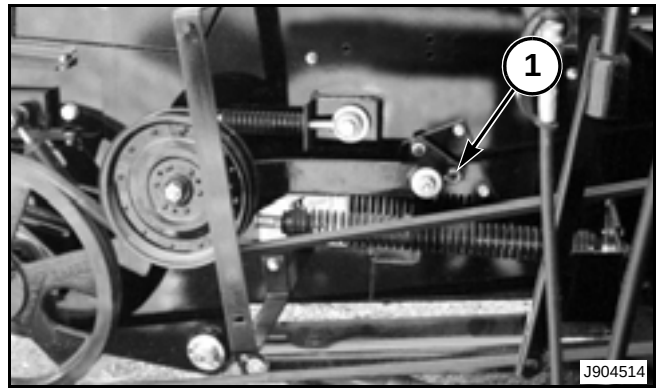


FIG. 58

Unloader Tube

Swivel Unloader - Standard

FIG. 59: Below grain bin.

Bin unloader drive idler hub (1) - (50 hours or weekly).

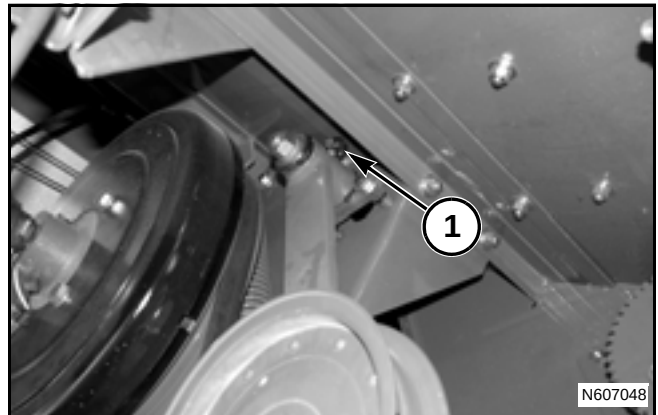


FIG. 59

FIG. 60: Inside unloader tube housing.

Unloading auger shaft inner bearing (1) - (50 hours or weekly).

Inside Unloader Elbow Housing Universal joint (2) - (50 hours or weekly).

Unloader Swivel - Six fittings (3) - (50 hours or weekly).

Swing Hydraulic Cylinder (4) - (50 hours or weekly).

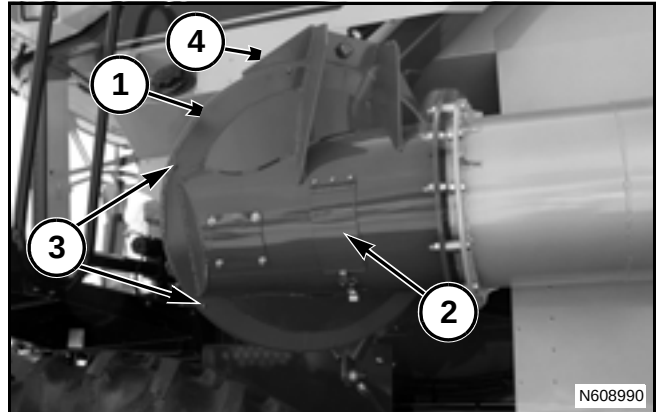


FIG. 60

FIG. 61: Outer end of unloader tube.

Unloader auger shaft outer bearing (1) - (50 hours or weekly).

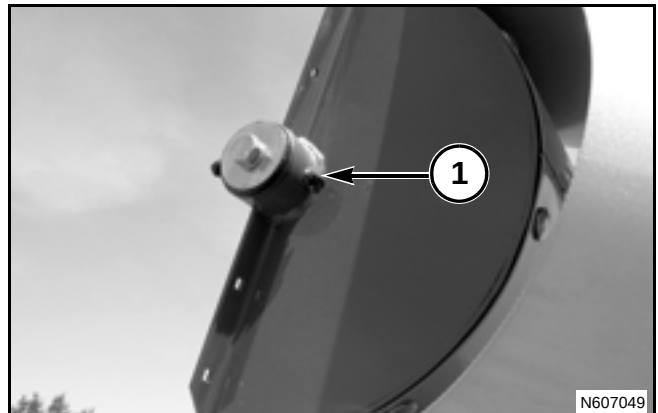


FIG. 61

General Information

Turret Unloader (Optional)

FIG. 62: Top of elbow.

Bin unloader elbow (1) - (50 hours or weekly).

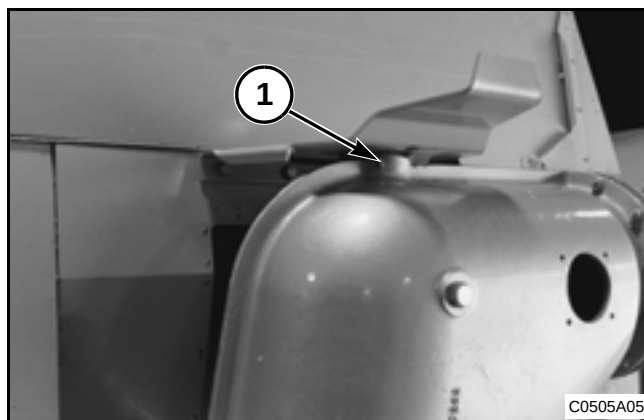


FIG. 62

FIG. 63: Unloader at swivel - Six fittings (1) - (50 hours or weekly).

Swing Cylinder (2) - (50 hours or weekly).

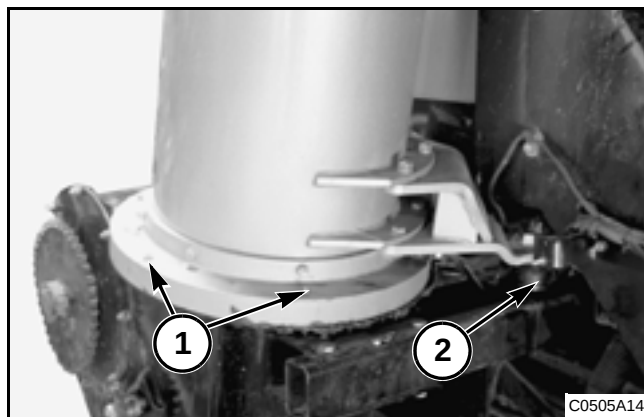


FIG. 63

FIG. 64: Outer end of turret unloader tube, remote, (1) - (50 hours or weekly).

Unloader auger shaft outer bearing.

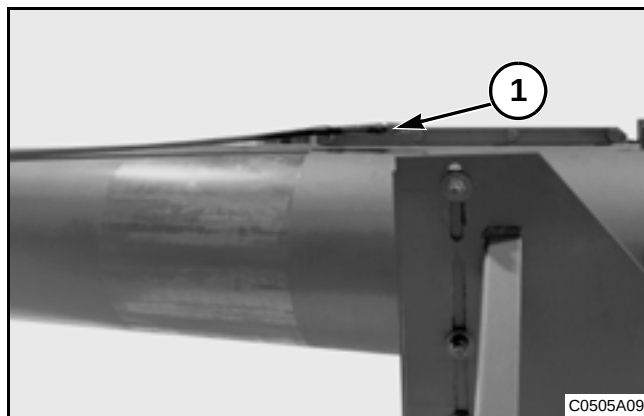


FIG. 64

Left-hand Side

FIG. 65: Below grain tank, behind the left-hand front tire.

Pivot drive idler hub (1) - (50 hours or weekly).

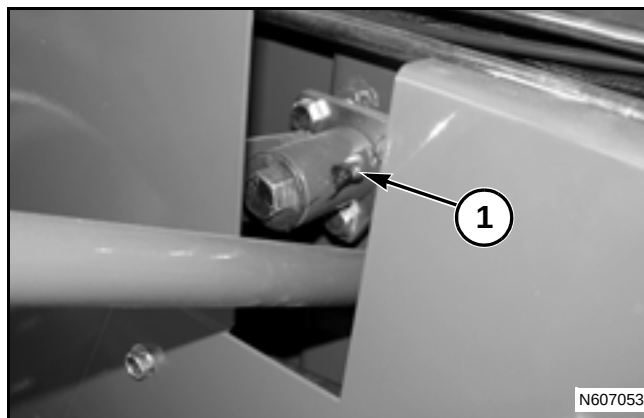


FIG. 65

FIG. 66: Below processor housing.

Accelerator roll jackshaft U-joint (1) - Two fittings, (50 hours or weekly).

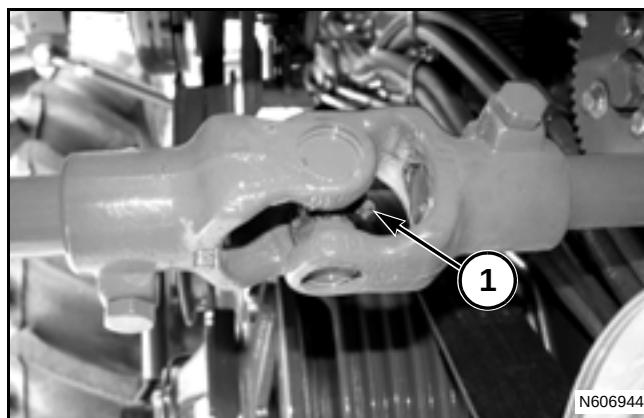


FIG. 66

FIG. 67: On the left-hand rear shield.

Impeller drive idler hub (1) - (50 hours or weekly).

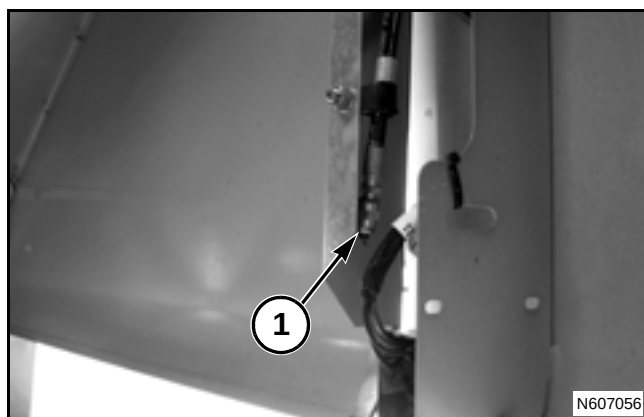


FIG. 67

FIG. 68: End of processor housing (Optional) - Remote Chopper drive idler hub (1), if equipped - (50 hours or weekly).

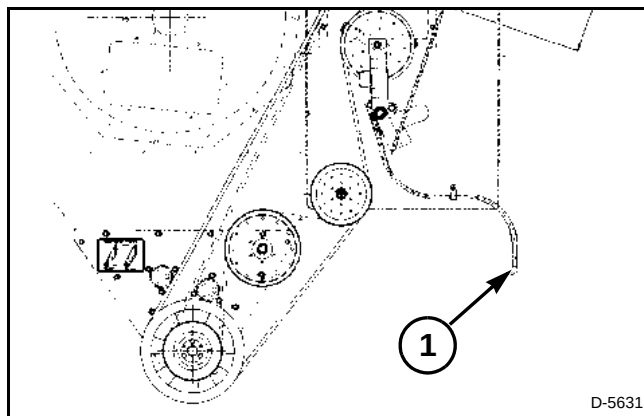


FIG. 68

FIG. 69: Below processor housing.

Main Drive Idler (1) - (50 hours or weekly).

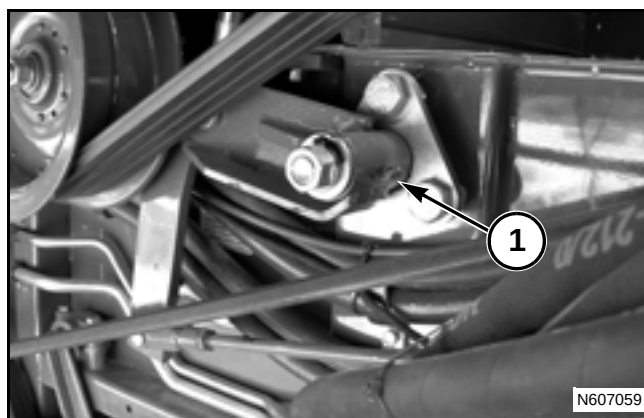


FIG. 69

General Information

FIG. 70: Behind fan drive.

Fan Drive Idler (1) - (50 hours or weekly).

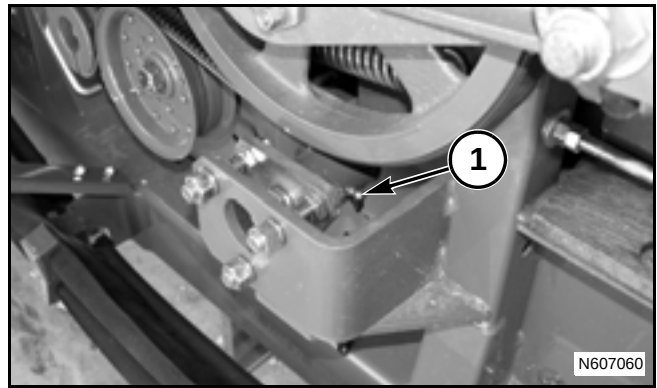


FIG. 70

FIG. 71: In engine compartment.

Straw Spreader Drive Idler (1) - (50 hours or weekly).

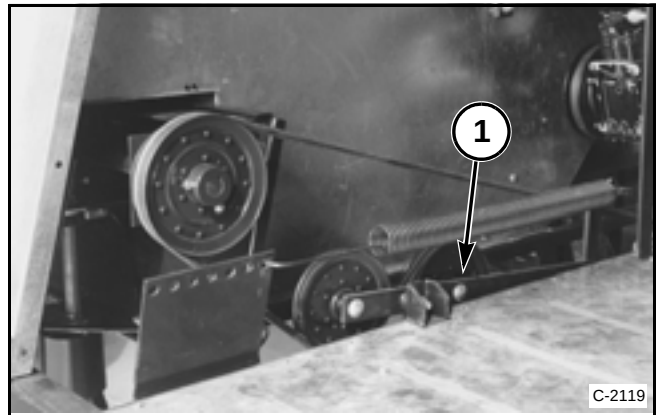


FIG. 71

FIG. 72: In front of rear axle (left and right hand).

Axle Pivot - Two fittings (1) - (50 hours or weekly).

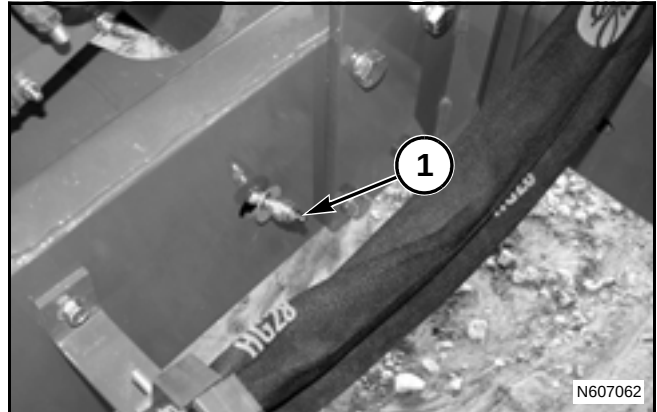


FIG. 72

Standard Rear Axle

FIG. 73: Left-hand end.

Spindle Housing (1) - (50 hours or weekly).

Tie Rod Ball Socket (2) - (50 hours or weekly).

Steering Cylinder Ball Sockets - Two fittings (3) - (50 hours or weekly).

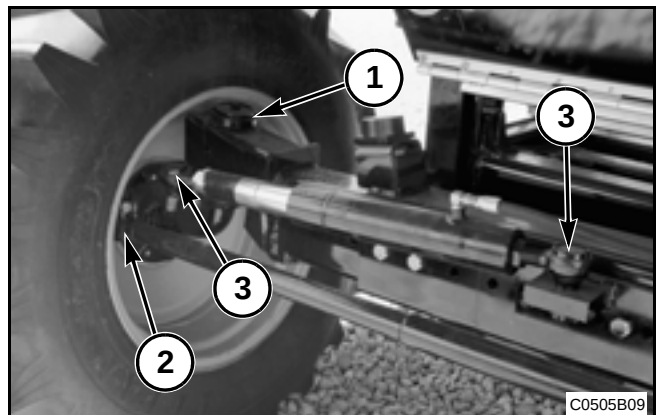


FIG. 73

FIG. 74: Right-hand end.

Spindle Housing (1) - (50 hours or weekly).

Tie Rod Ball Socket (2) - (50 hours or weekly).

Steering Cylinder Ball Sockets - Two fittings (3) - (50 hours or weekly).

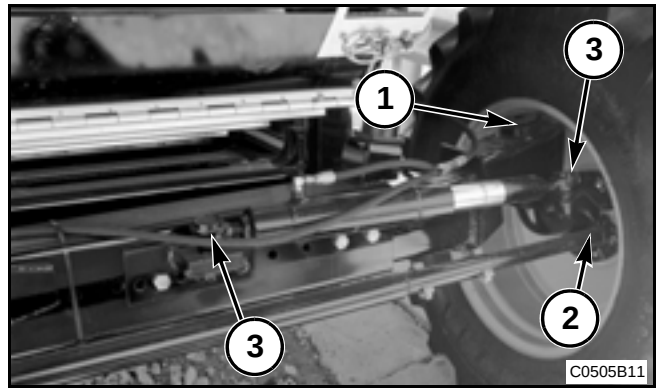


FIG. 74

Rear Wheel Assist Rear Axle

FIG. 75: Left-hand end.

Trunnion upper (1) - (50 hours).

Trunnion lower (2) - (50 hours).

Tie Rod Ball Socket (3) - (50 hours).

Steering Cylinder Ball Sockets - Two fittings (4) - (50 hours).

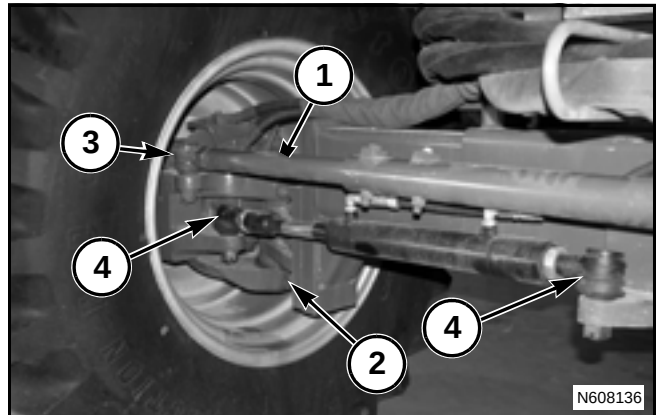


FIG. 75

FIG. 76: Right-hand end.

Trunnion upper (1) - (50 hours).

Trunnion lower (2) - (50 hours).

Tie Rod Ball Socket (3) - (50 hours).

Steering Cylinder Ball Sockets - Two fittings (4) - (50 hours).

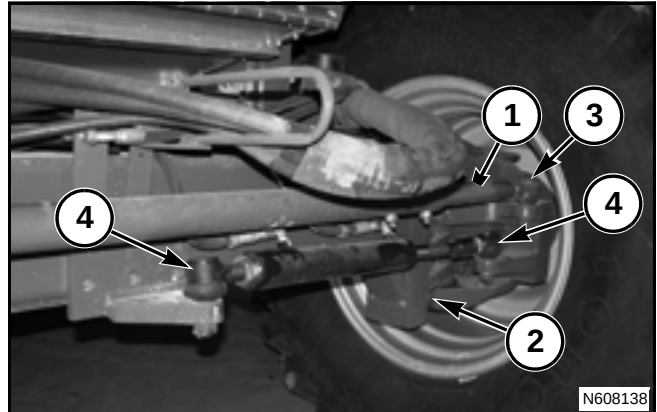


FIG. 76

Right Hand Side

FIG. 77: Transmission shift linkage (1) - (500 hours).

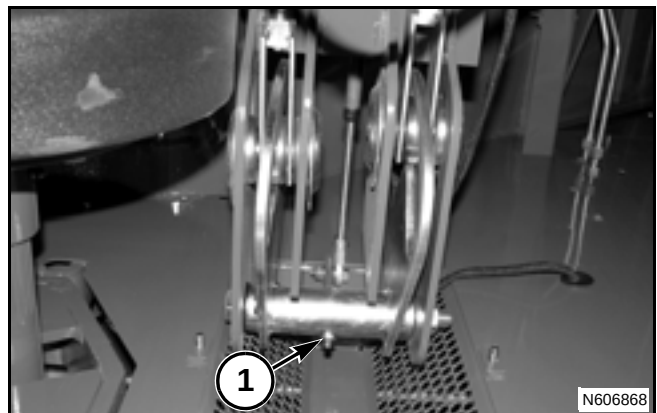


FIG. 77

General Information

FIG. 78: Elevator Drives.

Tailings elevator torque limiter (1) - (100 hours).

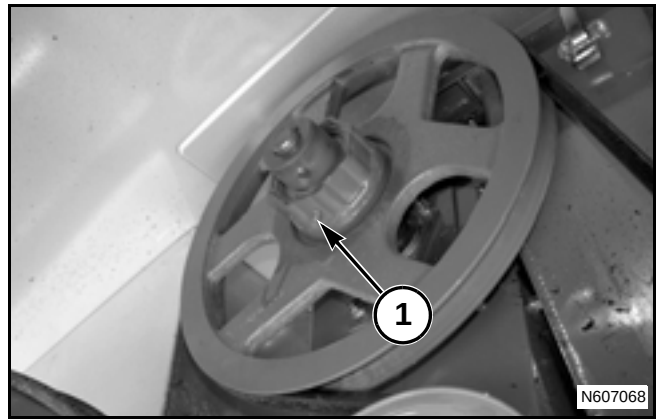


FIG. 78

FIG. 79: Clean grain elevator torque limiter - Two fittings (1) - (100 hours).

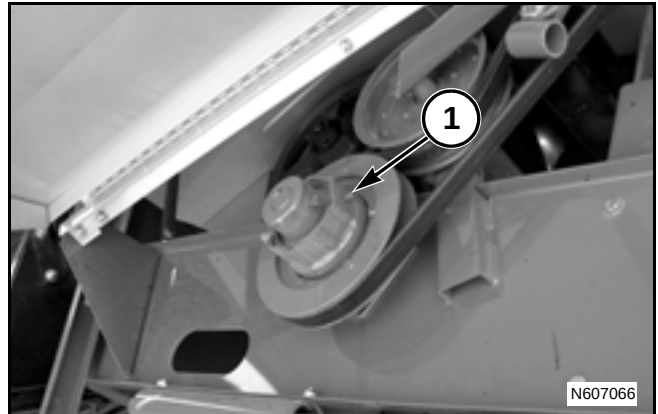


FIG. 79

FIG. 80: Behind rotary screen.

Rotary screen drive idler pivot (1) (100 hours).

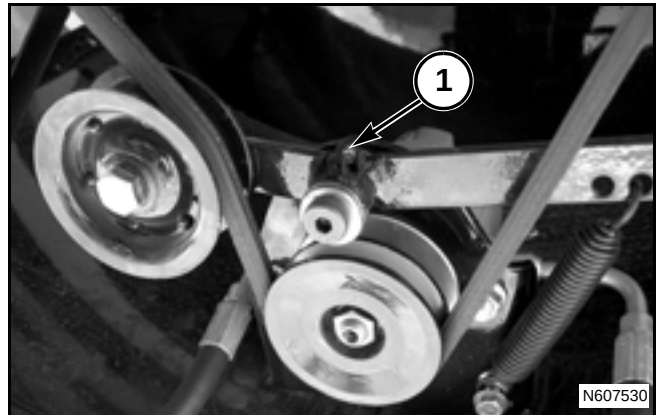


FIG. 80

Idlers

FIG. 81: Idler - One fitting (1) - (50 hours).

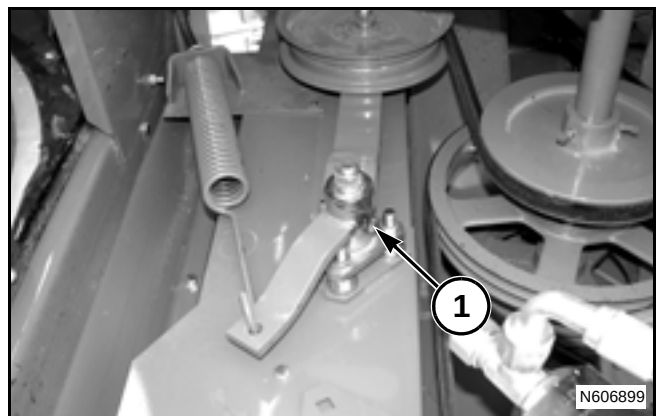


FIG. 81

FIG. 82: Idler for optional tailing return - One fitting (1) - (50 hours).

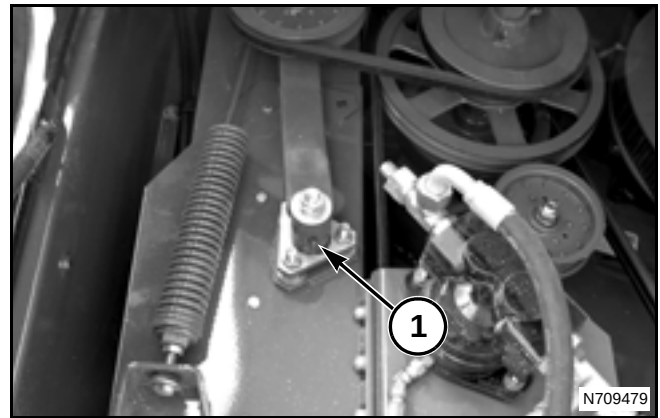


FIG. 82

FIG. 83: Front of clean grain elevator.
Separator Drive Idler Hub (1) - (50 hours).

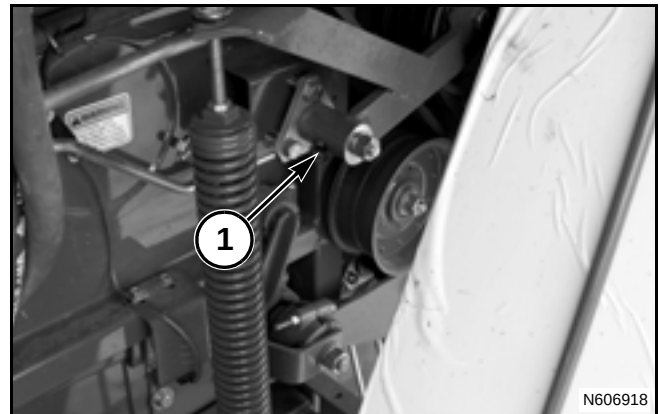


FIG. 83

FIG. 84: Behind right front tire.
Rear feed conveyor drive idler (1) - (50 hours).

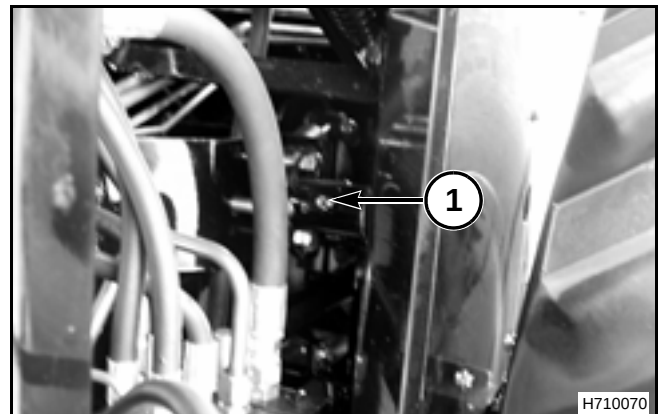


FIG. 84

FIG. 85: Between Elevators.
Jackshaft Drive Idler (1) - (50 hours).

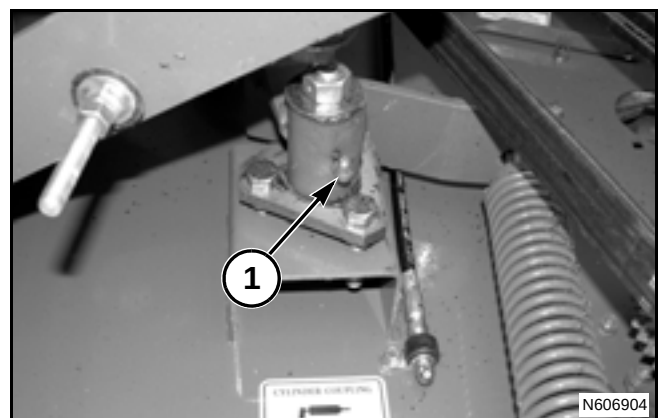


FIG. 85

General Information

Cylinder Gearbox

FIG. 86: Cylinder gearbox to cylinder shaft drive coupler. Remote, use grease gun, approximately 10 pumps. Located on the right hand end of the processor housing (1) - (10 hours).

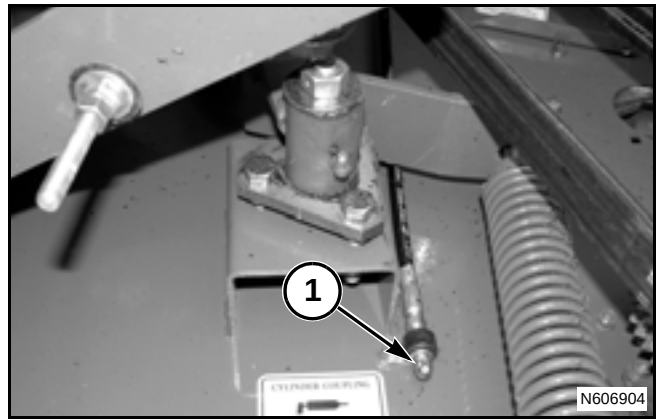


FIG. 86

FIG. 87: Cylinder driven sheave and torque sensor. Pump as much grease as possible in the two fittings (1) - (10 hours). Run variable speed to highest speed and then lowest speed after greasing. Reset cylinder speed to original speed.

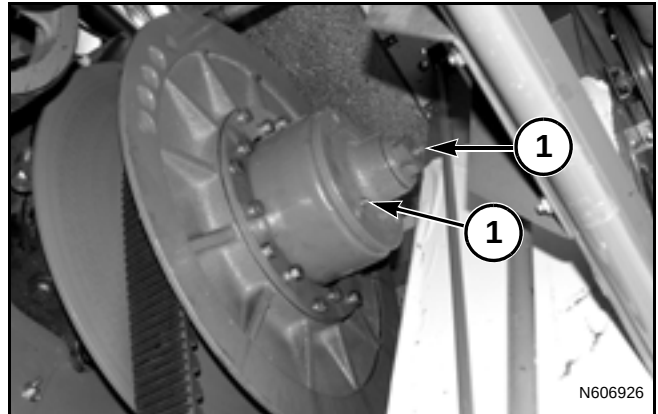


FIG. 87

Front of Combine

FIG. 88: Under Cab Floor.

Brake shaft bearings - two fittings (1) - (500 hours).

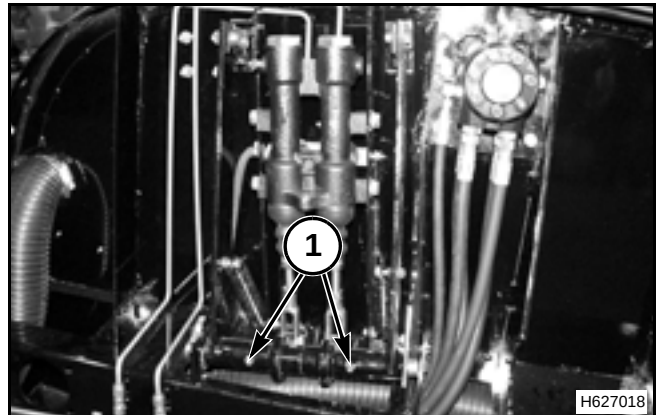


FIG. 88

Rear of Combine

FIG. 89: Rear of combine on left-hand side near oil drain hose.

Hydro-Traction drive idler hub (1) - (50 hours).

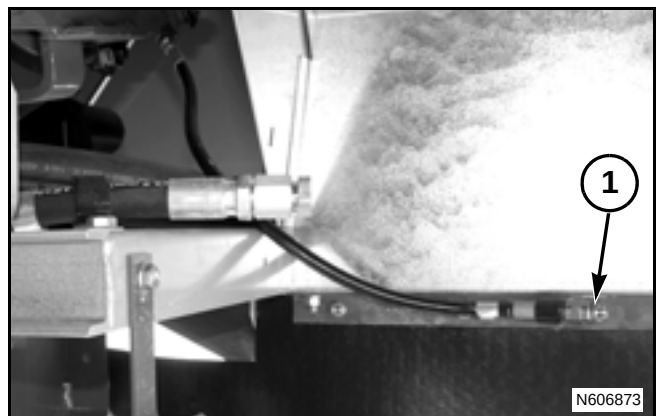


FIG. 89

Lateral Tilt

FIG. 90: Lateral tilt rollers (1) - (Every 100 hours).

Pivot pin (2) - (Every 100 hours).

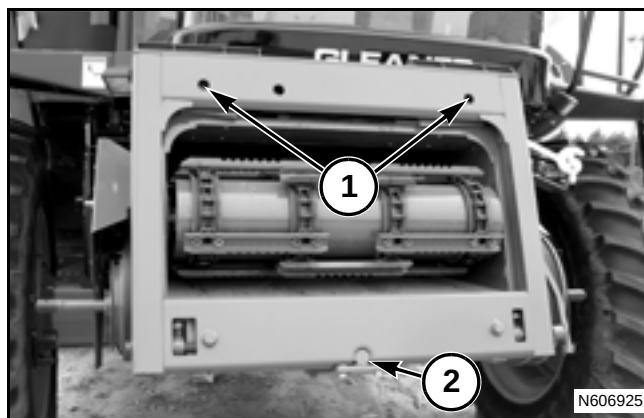


FIG. 90

Main Drive Axle

Outer Axle

FIG. 91: Main drive axle outer coupler, left-hand side shown, right-hand opposite. One lube fitting each coupler (1) - (100 hours).

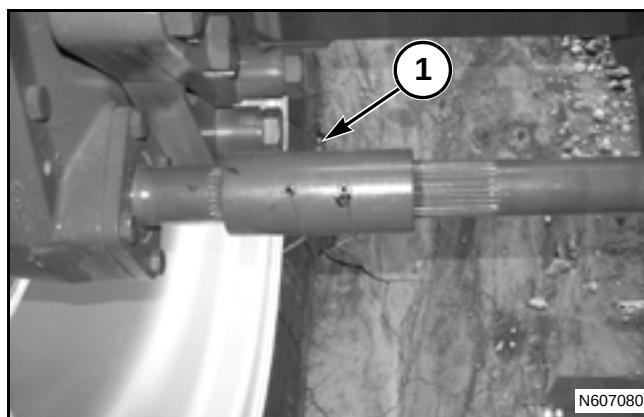


FIG. 91

Inner Axle

FIG. 92: Right-hand and left-hand inner coupler (1) - (100 hours).

Also when lubricating the under carriage of the combine, check for any damage or looseness of parts in steering linkage, drive shafts, brake rods, etc.

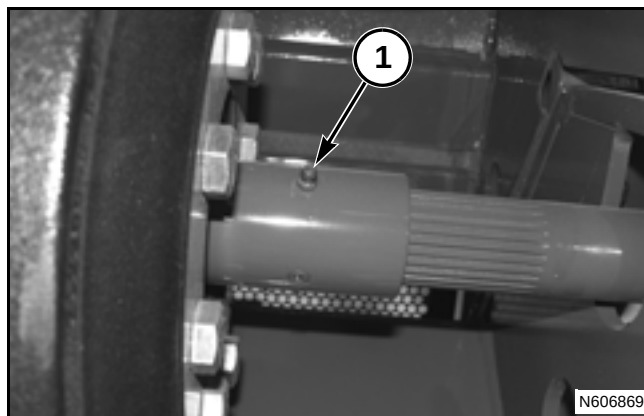


FIG. 92

General Information

AUTO LUBE

FIG. 93: The optional Auto Lube system lubricates certain components automatically.

The following components are not lubricated automatically:

- Variable speed drive (If equipped)
- Cleaning fan fitting
- Pitman arm fitting
- Inner and outer axle couplers
- Transmission linkages
- Clean grain elevator head
- Cylinder driven sheave
- Clean elevator torque limiter
- Tailings elevator torque limiter
- Accelerator roll jackshaft U-joint
- Unloader Auger U-joint

The auto lube system consists of a pump unit, a primary distribution block, and multiple secondary distribution blocks. The primary distribution block is connected to each of the secondary distribution blocks with separate lube lines.

The secondary distribution blocks are connected to each component with lube lines and fittings. The number of lube lines is dependant on the location of the distribution block.

FIG. 94: The grease reservoir (1) is located above the pump unit (2). When the pump unit is activated a stir paddle inside the reservoir prevents air pockets from developing in the grease and draws grease towards the pump unit.

Fill the auto lube reservoir periodically as needed with the recommended grease.

Fill the reservoir using the grease fitting (3) located on the pump unit and a hand operated grease pump.



FIG. 93

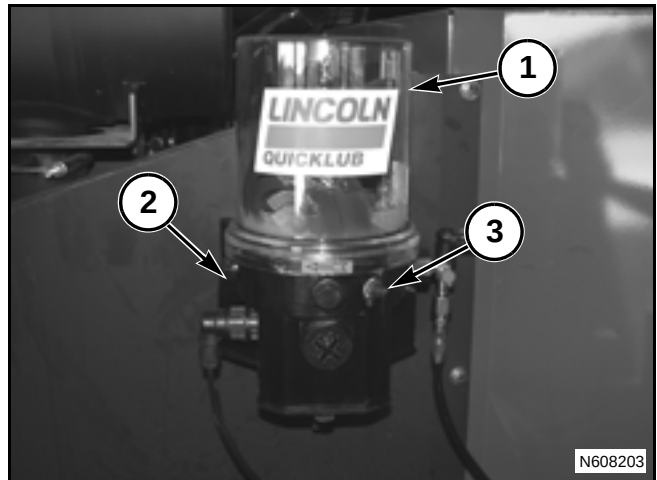


FIG. 94

Auto Lube Intervals

FIG. 95: The amount of time between the auto lube system lubricates and the amount of time the system lubricates can be adjusted.

To adjust the time remove the sealing plug (1) from the pump housing by turning counterclockwise. Below the sealing plug is the on time rotary switch, the off time rotary switch, and the manual lube switch.

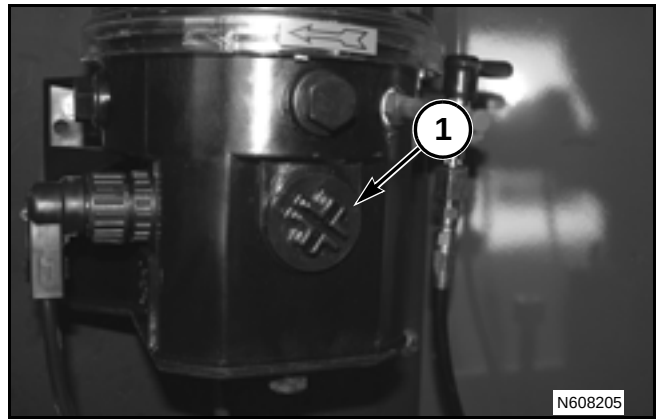


FIG. 95

FIG. 96: The on time rotary switch (1) controls the length of time the auto lube system lubricates components. The on time rotary switch adjusts the on time in two minute increments.

The off time rotary switch (2) controls the length of time between the auto lube system lubricates components. The off time rotary switch adjusts the off time in one hour increments.

The manual lube switch (3) when pressed for two seconds manually lubricates components and resets the timing sequence of the auto lube system.

IMPORTANT: Do not use the zero position located on the on time or off time rotary switches.

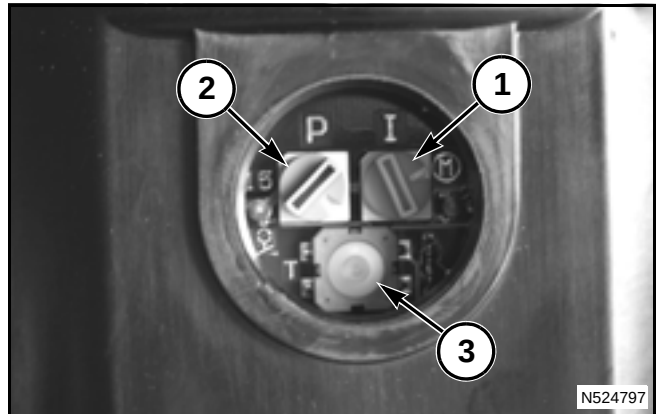


FIG. 96

General Information

FIG. 97: To adjust the times, rotate either of the rotary switches (1) until the notch in the switch is over the desired time. The recommended settings for the auto lube system is two minutes of on time every 6 hours. Use the following tables to adjust the times.

After the desired intervals are set, install the sealing plug in the pump housing.

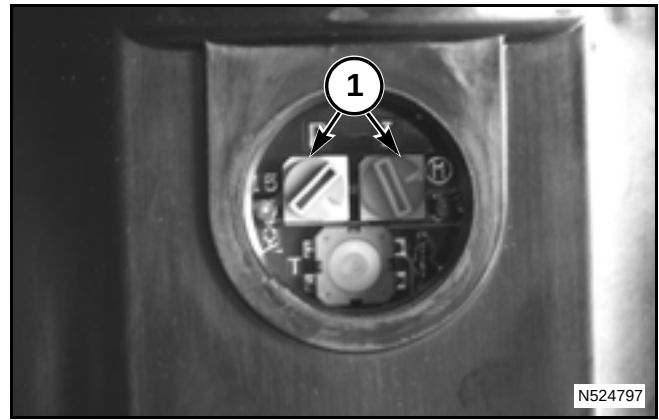


FIG. 97

Auto Lube Interval Settings Table

Off Time Rotary Switch Setting	Interval Between Lube Cycles	On Time Rotary Switch Setting	Pump will run for:
0	will not run	0	will not run
1	1 hour	1	2 minutes
2	2 hours	2*	4 minutes
3	3 hours	3	6 minutes
4	4 hours	4	8 minutes
5	5 hours	5	10 minutes
6*	6 hours	6	12 minutes
7	7 hours	7	14 minutes
8	8 hours	8	16 minutes
9	9 hours	9	18 minutes
A	10 hours	A	20 minutes
B	11 hours	B	22 minutes
C	12 hours	C	24 minutes
D	13 hours	D	26 minutes
E	14 hours	E	28 minutes
F	15 hours	F	30 minutes

* Recommended Setting

Auto Lube Diagnosis

FIG. 98: To check for proper operation of the auto lube system, check for movement of the plunger (1) in each of the distribution blocks (2) of the auto lube system. The plunger will slowly move in and out with each pump of the auto lube system.

If the plunger is not moving, check for broken or disconnected line between the main distribution block and the distribution block in question or air in the lube lines.

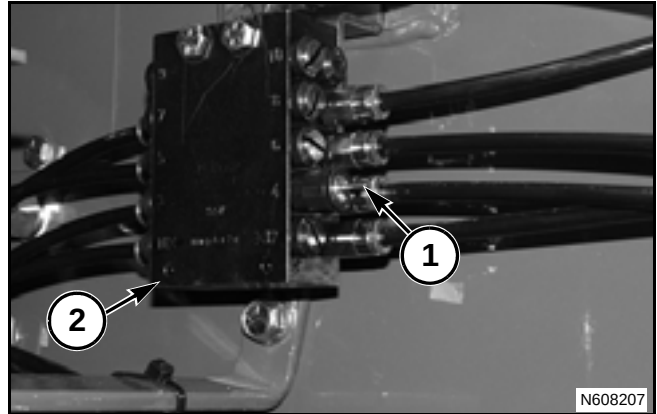


FIG. 98

FIG. 99: When the combine is running, the battery LED (1) under the sealing plug must be illuminated for the auto lube to operate. If the LED is not on then the system is not receiving battery voltage.

The motor LED (2) will light when the auto lube pump is activated. If the LED is on and the pump is not operating then there is an internal electrical failure inside the system pump.

Contact your dealer for repair.

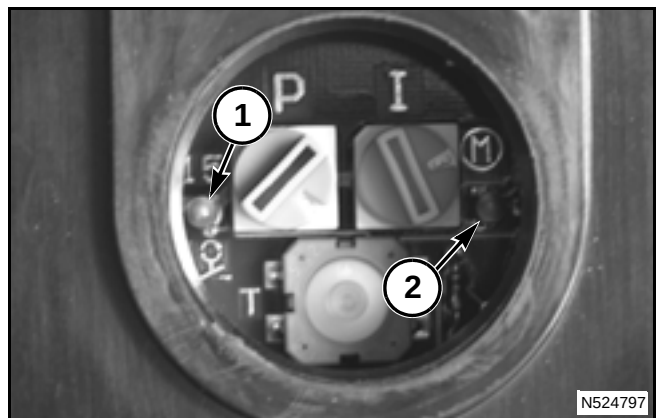


FIG. 99

FIG. 100: In the event of a pump failure, each distribution block is equipped with a grease fitting to manually lubricate components.

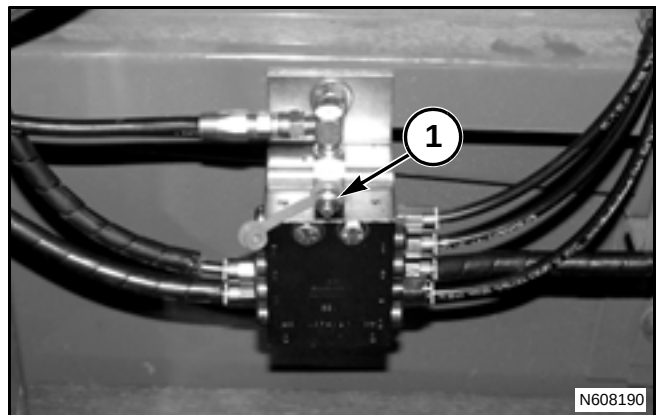


FIG. 100

General Information

ENGINE COMPARTMENT

Standard Ladder

FIG. 101: To open shields, use the handle (1) and open the swing-down shield/steps (2) and swing the shield down.

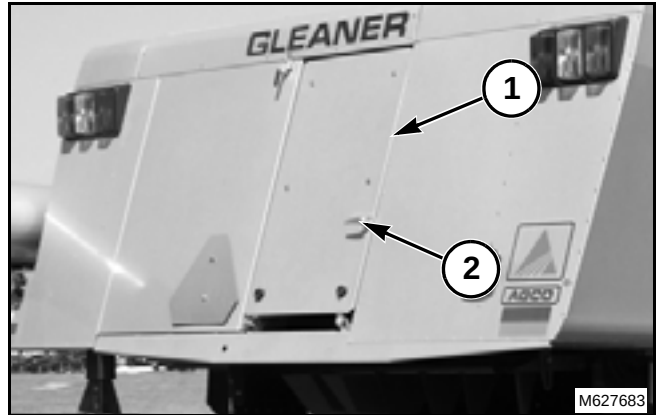


FIG. 101

FIG. 102: Release step extension (1) by holding the left-hand ladder extension frame between the first and second step, pressing the release latch (2) and slowly lowering ladder extension.

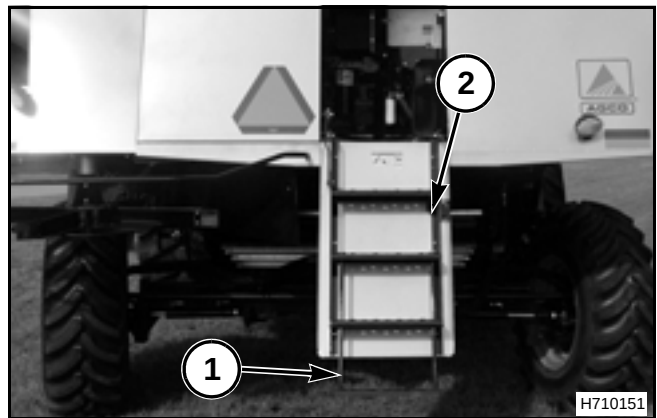


FIG. 102

FIG. 103: Climb the steps and using the handle (1) open and raise the engine cover (2).

To close shields, reverse the procedure.

NOTE: Adjustment is provided on swing-up shield, where the shield interlocks with swing-down shield/steps.

NOTE: To close shield use handle provided. Do Not pull on gas cylinder.



WARNING: BE AWARE that the surfaces in and around the engine compartment will be hot if the combine has been operating in the field for a long period of time.

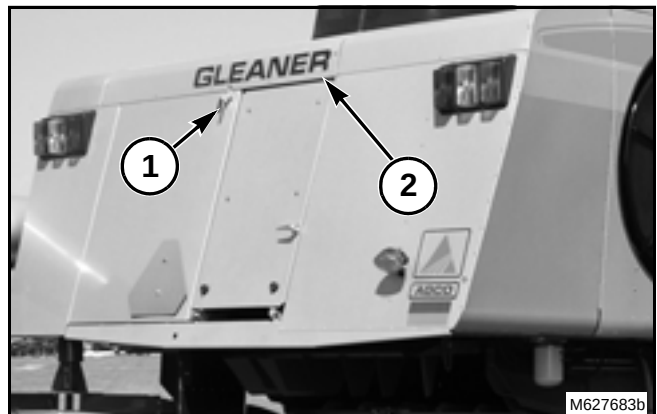


FIG. 103

Rear Powerfold Ladder

FIG. 104: The optional rear powerfold ladder is designed to let the operator raise and lower the ladder while standing on the ground. Using electrical controls, the ladder can be lowered to gain access to the engine compartment.



FIG. 104

FIG. 105: The powerfold ladder control consists of a switch (1) located under the rear deck on the right-hand side of the combine. An electric linear actuator, located on the rear deck, raises or lowers the ladder when the switch is activated.

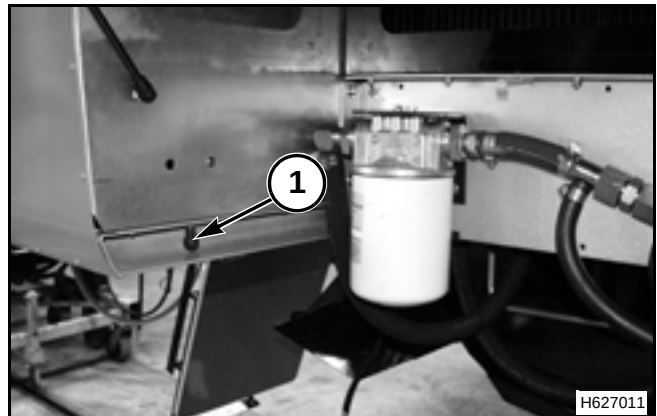


FIG. 105

ENGINE

Type of Engine Oil

Lubricating oils must meet the demanding standards for a turbocharged after cooled engine. The use of quality lubricating oils along with timely oil and filter changes will maintain engine durability and performance standards.

Use only AGCO approved oil or oil to American Petroleum Institute (API) performance classification CI4.

IMPORTANT: Do not use an oil with an API performance classification lower than CI4.

A limit of 1% by weight sulfated ash content is recommended to control oil consumption and valve/piston deposits. Sulfated ash content must never exceed 1.85% by weight.

IMPORTANT: Non-detergent or straight mineral type motor oils must not be used.

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