4LZ-11(C230), 4LZ-11A(C230) Full-Feeder Combine

(Serial No. 010000 -)

JOHN DEERE

OPERATOR'S MANUAL

4LZ-11(C230), 4LZ-11A(C230) Full-Feeder Combine

OMYC27718 ISSUE I8 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere (Jiamusi) Agricultural Machinery Co., Ltd

English version

Print in U.S.A.

Introduction

Introduction

Dear users, John Deere (Jiamusi) Agricultural Machinery Co., Ltd. sincerely thanks you for the attention and interest in our products. Wish you and your organization prosperity and a successful business.

C230 full-feeder combine is a large and unconventional combine. This machine adopts international advanced CTS technology: Tangential flow threshing cylinder + dual axial flow spiked separation cylinder structure. Its advantages are better threshing and separation performance as well as lower grain crushing rate. The machine is notable with its new structural design, high-tech and multi-functional characteristics. Once launched in the market, it is recognized by the users. It primarily harvests rice, but also wheat. Its harvesting performance is at a leading position among other models in the domestic market. Its price performance ratio is higher than the others.

C230 full-feeder combine driving mode is of mechanical drive type. Users can also choose hydrostatic drive type.

Before using this machine, users should carefully read relevant component diagrams, technical manual, and operating instructions. Installation, operation, commissioning, maintenance, and service should be carried out according to technical requirements, to ensure proper use of machine, safety of operators, avoidance of machine failures, upkeep of machine service life, as well as saving of energy and maintenance costs, to maximize economic benefits.

Owing to technological advancement and product development, John Deere (Jiamusi) Agricultural Machinery Co., Ltd. may revise this manual, in later editions, according to the product changes in aspects of technical specifications, structure, accessories, and components, etc. Users are advised to inform us if there are any errors written in this manual. In addition, this manual has been corrected several times after we have spotted some compiling, printing, and proofreading mistakes. Yet, errors may still be inevitable. If you find any errors in this manual, please notify us, so that we will make corrections in the later editions.

Product performance standard number: Q/JDJ 040114

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September 2018

CP00718,0004144-19-05SEP18

Illustrations

Read this manual carefully to understand how to properly operate and maintain the combine harvester. Otherwise, personal injury or machine damage may be resulted.

This **operation manual** should be regarded as part of the harvester and be sold together with the machine.

The **units of measurement** this manual are metric units. Pay attention when using imperial components, i. e. use correct parts and fasteners when replacing components. Special imperial or metric wrenches may be required for imperial or metric fasteners respectively.

Right and **left** are based on the forward moving direction of the machine.

Record product identification code

Accurately record the product identification code. If the machine is lost, it can be traced. And, the code facilitates purchase of accessories. Please place the machine identification code in a relatively safe place away from the machine.

Warranty services are part of the support provided by John Deere (Jiamusi) Agricultural Machinery Co., Ltd. to its users. Users are required to operate and maintain the machine according to the manual. For the explanation of warranty services, please refer to the warranty services certificates of the dealer.

This form of **warranty services** ensures that**John Deere (Jiamusi) Agricultural Machinery Co., Ltd.** offers product support within the warranty period. Warranty services become invalid under certain circumstances, for instance, if the machine is not operated according to the requirements stipulated in the manual, or if the machine is modified in a way that its performance does not match the original factory specifications. When fuel delivery exceeds specified value or engine is overloaded by other means, warranty services become invalid.

C230 full-feeder combine primarily harvests rice, but also wheat; If users would like to harvest other crops, please consult technicians of the manufacturer.

Harvesting **different crops** must use the corresponding components specified by the company. Otherwise, the performance of machine will be affected. And, any machine failure or component damage caused will **not be covered by warranty services**.

Change to any products will not be notified if the products have been sold.

CP00718,0004145-19-14DEC17

General View



YC12700—UN—04SEP18
CP00606,0001998-19-29AUG18

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Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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Well-Trained Technicians IBC-1
Prompt Service IBC-1
John Deere (Jiamusi) Agricultural Machinery Co., Ltd. IBC-1

Safety Instructions and Safety Signs

Recognize Safety Information



T81389—UN—28JUN13

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

DX,ALERT-19-29SEP98

Understand Signal Words



TS187—19—30SEP88

DANGER; The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

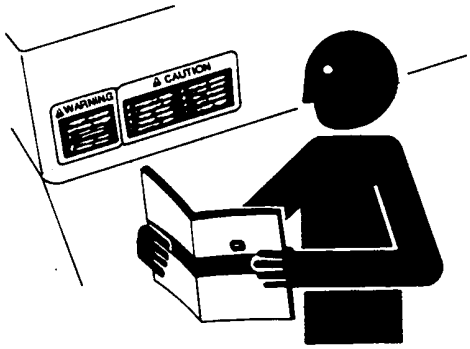
WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION; The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ-19-16JUN09

Use Proper Tools



TS779—UN—08NOV89

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

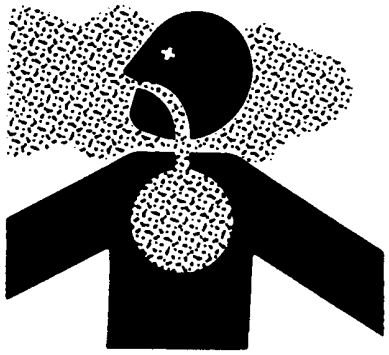
For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on

metric fasteners. Avoid bodily injury caused by slipping wrenches.

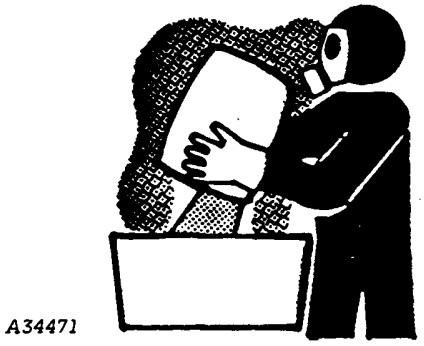
Use only service parts meeting John Deere specifications.

DX,REPAIR-19-17FEB99

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471—UN—11OCT88

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
  - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
  - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
  - Chemicals labeled **'Caution'**: Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.

DX,WW,CHEM01-19-24AUG10

Practice Safe Maintenance



TS218—UN—23AUG88

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing away from

power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

Falling while cleaning or working at height can cause serious injury. Use a ladder or platform to easily reach each location. Use sturdy and secure footholds and handholds.

DX,SERV-19-28FEB17

Welding Near Electronic Control Units



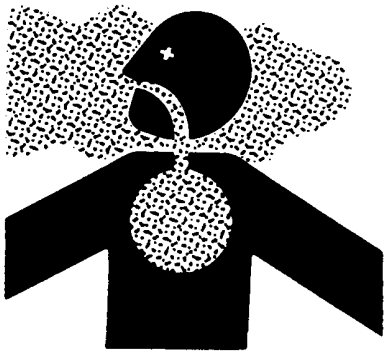
TS953—UN—15MAY90

IMPORTANT: Do not jump-start engines with arc welding equipment. Currents and voltages are too high and may cause permanent damage.

1. Disconnect the negative (-) battery cable(s).
2. Disconnect the positive (+) battery cable(s).
3. Connect the positive and negative cables together. Do not attach to vehicle frame.
4. Clear or move any wiring harness sections away from welding area.
5. Connect welder ground close to welding point and away from control units.
6. After welding, reverse Steps 1—5.

DX,WW,ECU02-19-14AUG09

Remove Paint Before Welding or Heating



TS220—UN—15APR13

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place.

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02

Avoid Heating Near Pressurized Fluid Lines



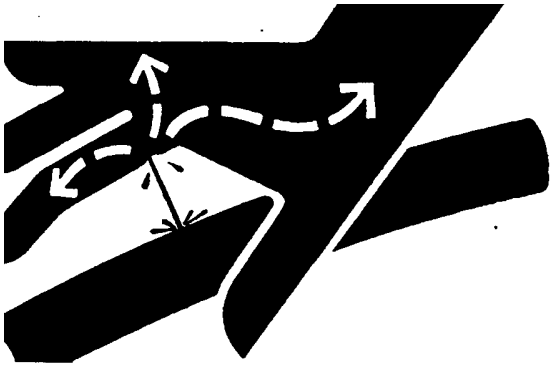
TS953—UN—15MAY90

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

yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.

DX,TORCH-19-10DEC04

Avoid High-Pressure Fluids



X9811—UN—23AUG88

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

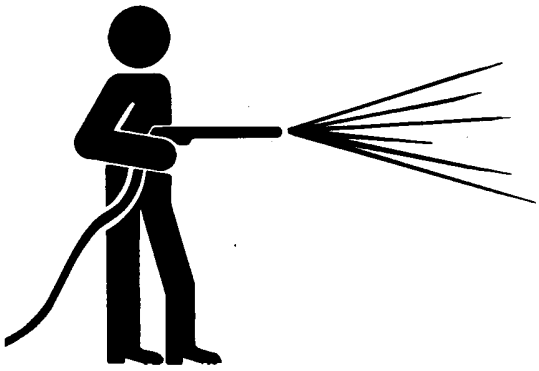
Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID-19-12OCT11

Work in Clean Area



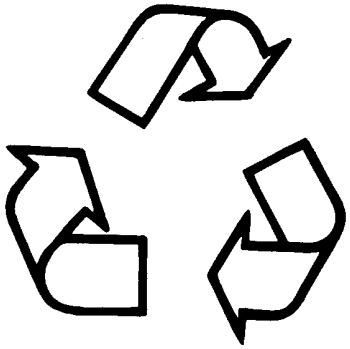
T6642EJ—UN—18OCT88

Before starting a job:

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.

DX,CLEAN-19-04JUN90

Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as

fertilizers and pesticides. Handle and dispose of these components appropriately.

- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.
- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid); filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.
- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN-19-01JUN15

Avoid Harmful Asbestos Dust



TS220—UN—15APR13

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

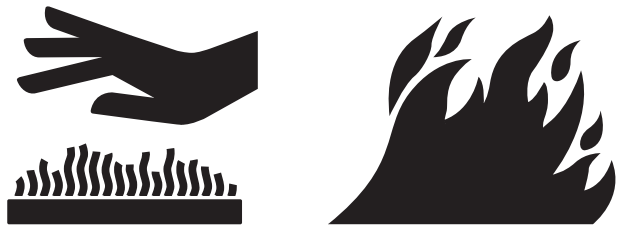
Components in products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding material containing asbestos. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, apply a mist of oil or water on the material containing asbestos.

Keep bystanders away from the area.

DX,DUST-19-15MAR91

Avoid Hot Exhaust



RG17488—UN—21AUG09

Servicing machine or attachments with engine running can result in serious personal injury. Avoid exposure and skin contact with hot exhaust gases and components.

Exhaust parts and streams become very hot during operation. Exhaust gases and components reach temperatures hot enough to burn people, ignite, or melt common materials.

DX,EXHAUST-19-20AUG09

Handle Starting Fluid Safely



TS1356—UN—18MAR92

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. Keep starting fluid away from batteries and cables.

To prevent accidental discharge when storing the pressurized can, keep the cap on the container, and store in a cool, protected location.

Do not incinerate or puncture a starting fluid container.

Do not use starting fluid on an engine equipped with glow plugs or an air intake heater.

DX,FIRE3-19-14MAR14

Handle Fluids Safely—Avoid Fires



TS227—UN—15APR13

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

DX,FLAME-19-29SEP98

Use of Fire Extinguisher



YC12282—UN—20DEC17



YC4693—UN—03JUL13

A—Fire Extinguisher

Machine is equipped with the portable dry powder fire extinguisher. Fire extinguisher (A) is on the left side of cab, near the front ladder. Extinguisher must be checked daily to be in place when entering or leaving the cab and when working around the machine. Fire extinguisher must be professionally serviced or replaced after use.

Portable dry powder fire extinguisher is used to put off fire with grease, oil, and chemicals.

Use fire extinguisher:

The diagram shows the recommended method to extinguish a fire. Always aim the nozzle at the base of fire.

Basic steps to use fire extinguisher are as below:

1. Remove fire extinguisher from its holder and take it to the fire scene.
2. Approach the fire in leeward direction of wind.
3. Pull safety pin from top of the fire extinguisher.
4. Hold its handle and keep fire extinguisher upright, and aim the nozzle at the fire base.
5. Squeeze handle to discharge powder from the fire extinguisher.
6. Move nozzle back and forth so that powder covers the flames.

Inspection checklist:

Check fire extinguisher at least once a month to ensure the following:

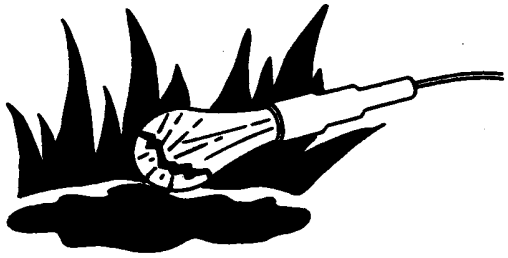
1. Is fire extinguisher placed at required location near cab ladder?
2. Is there any obstruction to the access to or the visibility of the fire extinguisher?
3. Are the operating instructions visible and facing outward?
4. Is the safety seal broken or missing?
5. Is the fire extinguisher full? (Lift it or weigh it to verify)
6. Is the nozzle damaged, corroded, leaking or clogged?

When inspection of the fire extinguisher reveals any deficiency, fire extinguisher must be serviced or replaced.

NOTE: If there is a fire, operator considers using the fire extinguisher first.

CP00718,000442E-19-20DEC17

Illuminate Work Area Safely



TS223—UN—23AUG88

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

DX,LIGHT-19-04JUN90

Install All Guards



TS677—UN—21SEP89

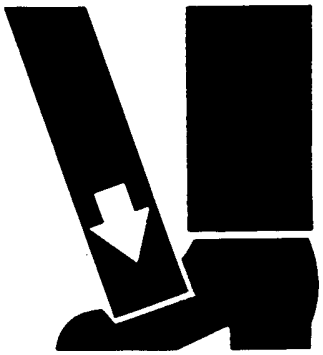
Rotating cooling system fans, belts, pulleys, and drives can cause serious injury.

Keep all guards in place at all times during engine operation.

Wear close-fitting clothes. Stop the engine and be sure fans, belts, pulleys, and drives are stopped before making adjustments, connections, or cleaning near fans and their drive components.

DX,GUARDS-19-18AUG09

Use Proper Lifting Equipment



TS226—UN—23AUG88

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.

DX,LIFT-19-04JUN90

Live With Safety

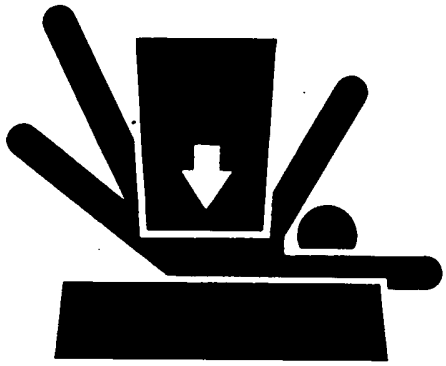


TS231—19—07OCT88

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

DX,LIVE-19-25SEP92

Support Machine Properly



TS229—UN—23AUG88

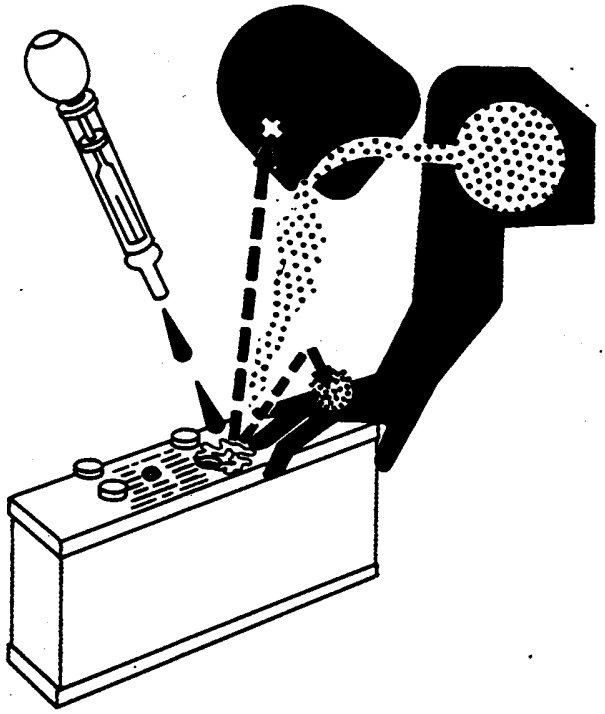
Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.

DX,LOWER-19-24FEB00

Prevent Acid Burns



TS203—UN—23AUG88

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

Avoid the hazard by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

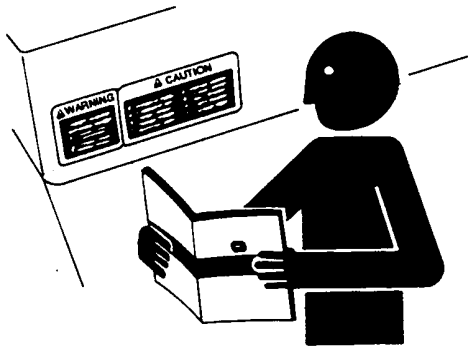
1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.

DX,POISON-19-21APR93

Replace Safety Signs



TS201—UN—15APR13

Replace missing or damaged safety signs. Use this operator’s manual for correct safety sign placement.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

DX,SIGNS-19-18AUG09

Service Accumulator Systems Safely



TS281—UN—15APR13

Escaping fluid or gas from systems with pressurized accumulators that are used in air conditioning, hydraulic, and air brake systems can cause serious injury. Extreme heat can cause the accumulator to burst, and pressurized lines can be accidentally cut. Do not weld or

use a torch near a pressurized accumulator or pressurized line.

Relieve pressure from the pressurized system before removing accumulator.

Relieve pressure from the hydraulic system before removing accumulator. Never attempt to relieve hydraulic system or accumulator pressure by loosening a fitting.

Accumulators cannot be repaired.

DX,WW,ACCLA2-19-22AUG03

Do Not Open High-Pressure Fuel System



TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt repair of fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system.

Only technicians familiar with this type of system can perform repairs. (See your John Deere dealer.)

DX,WW,HPCR1-19-07JAN03

Wait Before Opening High-Pressure Fuel System

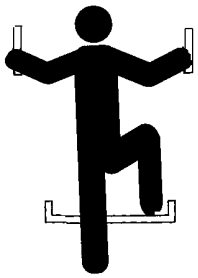


TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. Only technicians familiar with this type of system should perform repairs. Before disconnecting fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High-Pressure Common Rail (HPCR) fuel system, confirm that the fuel pressure is relieved.

DX,WW,HPCR2-19-09SEP14

Use Steps and Handholds Correctly



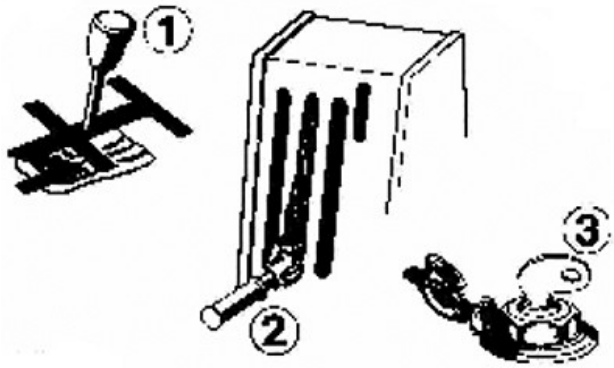
T133468—UN—15APR13

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

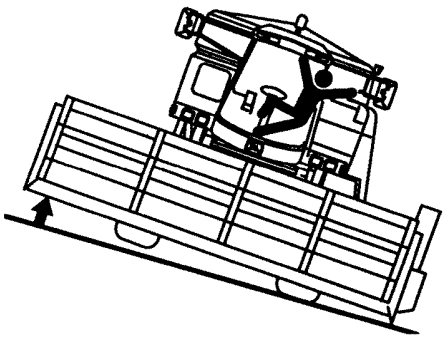
Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.

DX,WW,MOUNT-19-12OCT11

Drive Combine



YC1285—UN—29NOV12



ZX002461

ZX002461—UN—16JUN95

Keep all shields and guards in place at all time during operation. Only qualified driver can drive the combine.

Before starting the machine, operator is note if there are any bystanders around. Honk the horn and alert them. Be cautious when attaching the header to the machine. Follow instructions in Operator's Manual of header when attaching or detaching it.

Before starting the engine, gear-shift lever is in neutral position and threshing clutch in disengaged position.

Ground speed need match road or field conditions. When driving uphill or downhill, never make sharp turns. Especially if grain tank is full, be careful when making a turn on slope.

When making turns, always consider the width of the attachment and the fact that the rear end of the machine swings out. Attachments and ground conditions affect the driving characteristics of the combine.

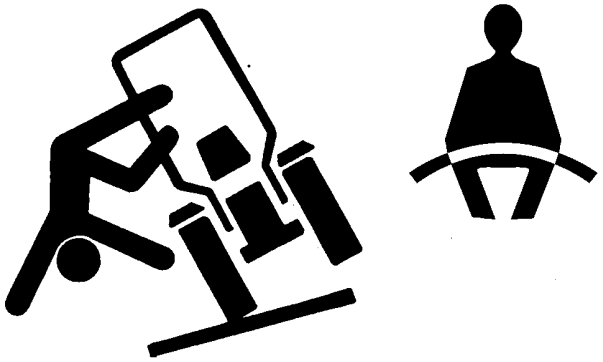
Reduce ground speed while driving on slopes and uneven roads or before making a sharp turn. When driving down a steep slope, use low gear.

Avoid holes, ditches, and obstructions which cause combine to roll over, particularly on slopes.

CAUTION: Keep hands, feet, and clothing away from power-driven parts. Never run the engine in a closed room.

CP00718,0003C58-19-07DEC17

Use Seat Belt Properly



TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

This machine is equipped with a rollover protective structure (ROPS). USE a seat belt when you operate with a ROPS.

- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.

CP00718,0003C59-19-07DEC17

Keep Riders and Children off Machine



TS253—UN—23AUG88

Only allow the operator on the machine. Keep riders off the machine except for periods of training or short periods of observation.

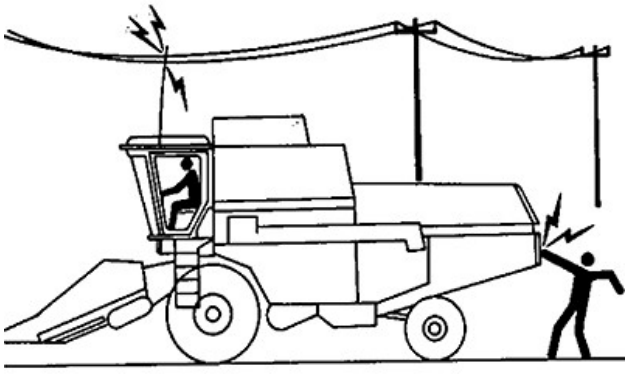
Riders are subject to injury such as being thrown off the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

Children never be allowed on the machine or in the combine cab when the engine is running.

The instructional seat only is used for instruction or short periods of machine observation, and not for the accommodation of children.

CP00718,0003C5A-19-07DEC17

Avoid Electrical Power Lines



YC1287—UN—29NOV12

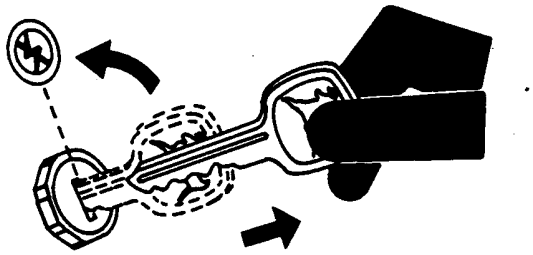
Put the grain tank unloading auger in transport position and lock it firmly.

When driving through the low-hanging cables in the

transport position, ensure that a safe distance is kept between the highest point of the machine and the cables. Absolutely avoid touching and electric shock.

CP00718,0003C5B-19-07DEC17

Park and Leave the Machine



TS230—UN—24MAY89

Lower header onto ground.

Before leaving machine, disengage header and threshing device. Set multi-function lever to neutral position and stop the machine. Apply park brake. Remove key, and lock the cab.

Never leave machine unattended if engine is running.

Never leave cab while driving.

CP00718,0003C5C-19-07DEC17

Handle Fuel Safely—Avoid Fires



TS202—UN—23AUG88

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.

Use only an approved fuel container for transporting flammable liquids.

Never fill fuel container in pickup truck with plastic bed liner. Always place fuel container on ground before refueling. Touch fuel container with fuel dispenser nozzle before removing can lid. Keep fuel dispenser nozzle in contact with fuel container inlet when filling.

Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.

DX,FIRE1-19-12OCT11

In Case of Fire



TS227—UN—15APR13

CAUTION: Avoid personal injury.

Stop machine immediately at the first sign of fire. Fire may be identified by the smell of smoke or sight of flames. Because fire grows and spreads rapidly, get off the machine immediately and move safely away from the fire. Do not return to the machine! The number one priority is safety.

Call the fire department. A portable fire extinguisher can put out a small fire or contain it until the fire department arrives; but portable extinguishers have limitations. Always put the safety of the operator and bystanders first. If attempting to extinguish a fire, keep your back to the wind with an unobstructed escape path so you can move away quickly if the fire cannot be extinguished.

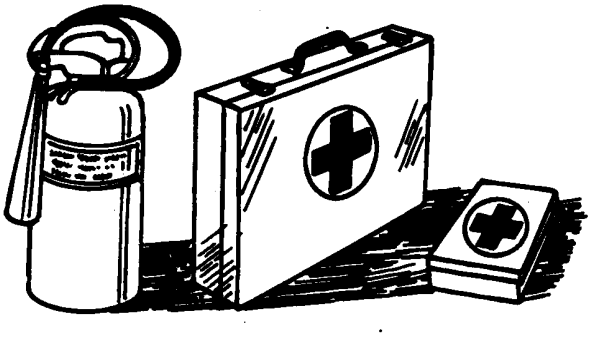
Read the fire extinguisher instructions and become familiar with their location, parts, and operation before a fire starts. Local fire departments or fire equipment distributors may offer fire extinguisher training and recommendations.

If your extinguisher does not have instructions, follow these general guidelines:

1. Pull the pin. Hold the extinguisher with the nozzle pointing away from you, and release the locking mechanism.
2. Aim low. Point the extinguisher at the base of the fire.
3. Squeeze the lever slowly and evenly.
4. Sweep the nozzle from side-to-side.

DX,FIRE4-19-22AUG13

Prepare for Emergencies



TS291—UN—15APR13

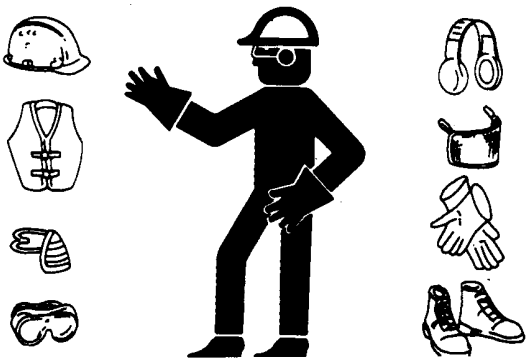
Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

DX,FIRE2-19-03MAR93

Wear Protective Clothing



TS206—UN—15APR13

Wear close fitting clothing and safety equipment appropriate to the job.

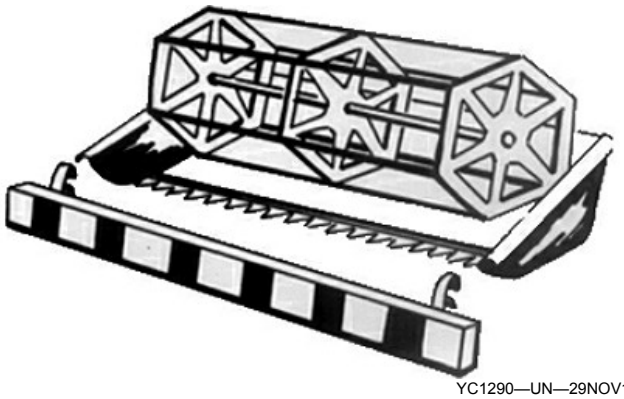
Prolonged exposure to loud noise can cause impairment or loss of hearing.

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

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

DX,WEAR-19-10SEP90

Transport Combine with Header Safely



YC1290—UN—29NOV12

Whenever possible avoid transporting on public roadways with the header attached.

If the combine must be transported with the header attached, make sure that the flashing warning lights on the header are operating and the reflective material is clean and visible.

Provided that traffic regulations allow for transportation with header, dismount the crop divider and put the guard on the blade protection device.

Lift the header before riding on the road, but do not block the sight of the operator. Lock header, see Lock Header Height in Operator's Station section.

CP00718,0003C5D-19-07DEC17

Transport Combine Without Header Safely



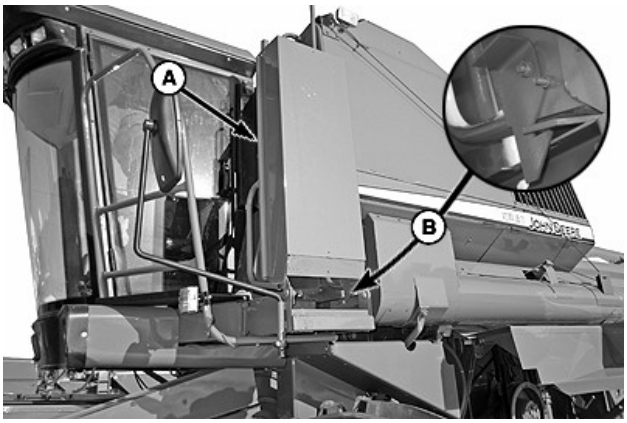
YC1291—UN—29NOV12

In some countries, transporting combine wider than 3 m is not allowed. In this case, the header is dismounted and is transported separately. After getting special permission, the header can be attached to the rear of

the combine. But additional lights or other devices be used as alarm signals according to local requirements.

CP00718,0003C5E-19-07DEC17

Fixing Ladder at Transportation Position



YC8107—UN—21JAN15

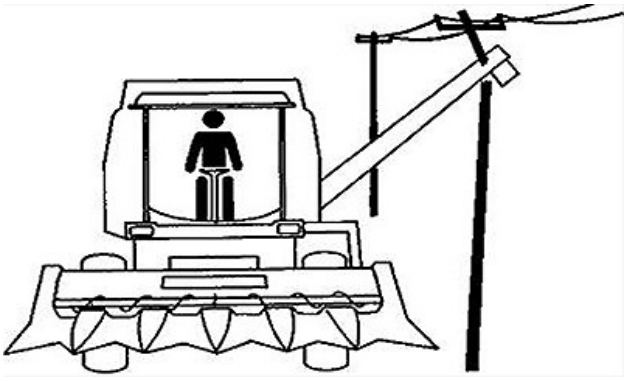
A—Ladder
B—Locking Tab

Upon transportation, fold up the cab ladder (A) and use locking tab (B) to fix it.

Pay attention to safety when unfolding the ladder.

CP00718,0003C71-19-07DEC17

Transportation Position of Unloading Auger



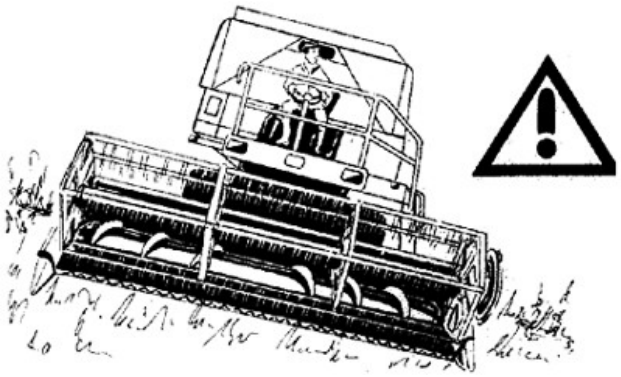
YC2739—UN—11DEC12

Before transporting, unload all the grains inside the cylinder. Fold the unloading auger to the transportation position and lock firmly.

When the combine is driven on roads, turn the grain unloading cylinder back to the transportation position.

CP00718,0003C6F-19-07DEC17

Drive on a Slope

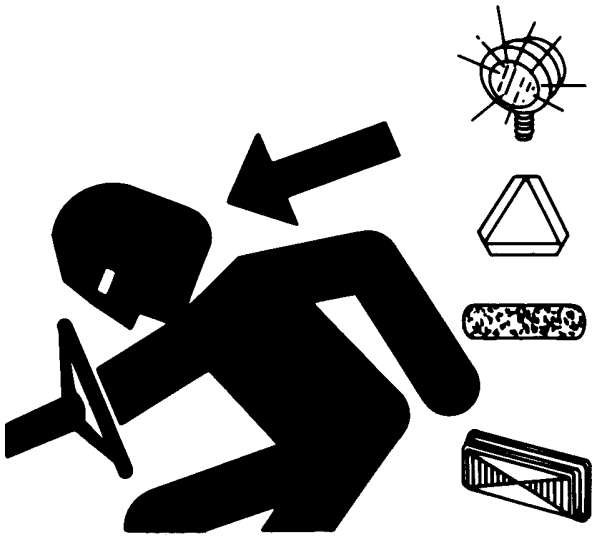


YC1295—UN—29NOV12

Be particularly cautious when driving on a slope to prevent the combine from rolling over. Never use neutral gear when driving the combine on a slope.

CP00718,0003C6E-19-07DEC17

Use Safety Lights and Devices



TS951—UN—12APR90

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.

DX,FLASH-19-07JUL99

Do Not Get Close to the Header



YC1602—UN—29NOV12

Many moving parts, such as: central auger of the header, reel, cutterbar, cannot be shielded due to their function. When these parts are running, do not get close to them. Before servicing and clearing blockage of the header, disengage the header engage lever, switch off the engine, set park brake, and remove the key.

CP00718,0003C5F-19-07DEC17

Keep Hands Away from Blades



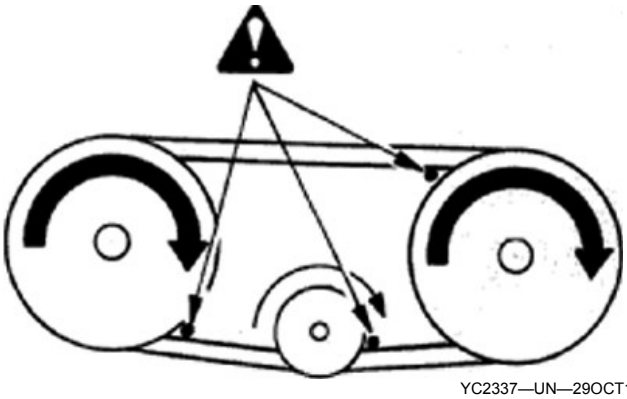
TS254—UN—23AUG88

Never attempt to clear obstructions in the front of or on header. Unless separator is disengaged, park brake is set, engine is shutoff, and key is removed.

Everyone must be clear of machine before starting engine.

CP00718,0003C60-19-07DEC17

Ensure all shields are installed



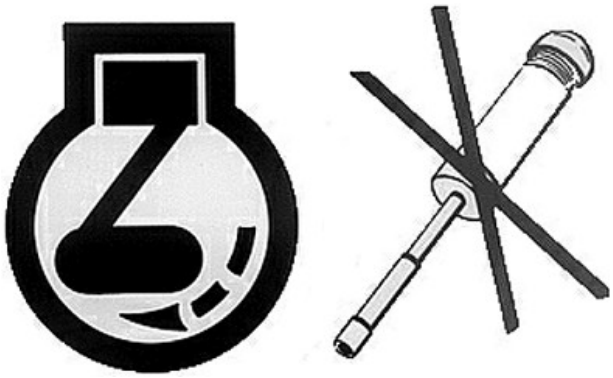
YC2337—UN—29OCT12

Ensure all shields are installed before operating combine harvester.Before removing shields, separate the threshing clutch and switch off the engine.

CAUTION: Keep hands, feet and clothing away from moving parts.

CP00834,00001EE-19-17OCT12

General Maintenance



YC1605—UN—29NOV12

Switch off the engine before carrying out lubrication and calibration.

CP00718,0003C61-19-07DEC17

Avoid Contact with Moving Parts



TS256—UN—23AUG88

Keep hands, feet, and clothing away from power-driven parts. Never clean, lubricate, or adjust machine when it is running.

CP00718,0003C62-19-07DEC17

Cleaning Grain Tank and Removal of Blockages Safely



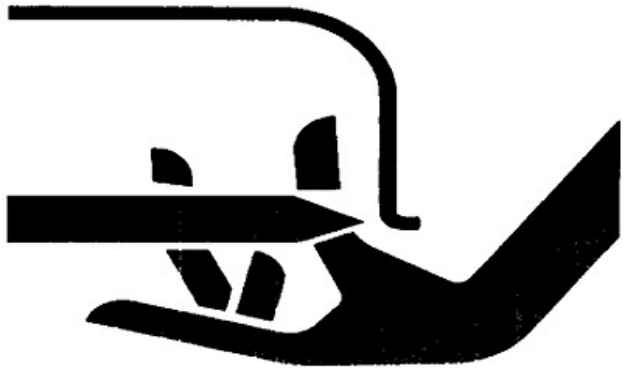
YC1607—UN—29NOV12

Avoid serious injury or death from entanglement in the grain tank cross augers. For functional purposes, the cross augers cannot be covered. Do not enter the grain tank when the engine is running. Before entering the tank to clean out residual grain, always shutoff the engine, set park brake and remove the key.

If grain bridges and fails to flow into the cross augers, shut off the engine. Remove the key and from a position on the engine compartment door use a rod, broom, or shovel to break the bridge and restore grain flow.

CP00718,0003C63-19-07DEC17

Stay Away from the Chopper

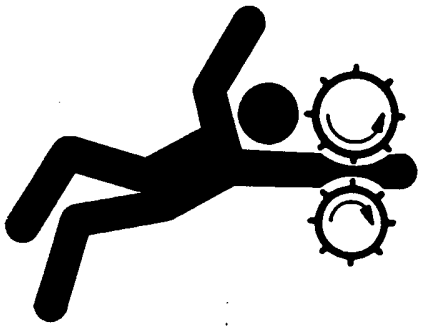


YC1608—UN—29NOV12

There are safety guards around the dangerous moving blades of the chopper. However, when the power is switched off, the blades may continue spinning for a short time. When the blades are still spinning, stay away from the chopper. Disconnect the power, switch off the engine, and remove the key. Wait until the moving parts stop spinning and then carry out maintenance of the chopper.

CP00718,0003C64-19-07DEC17

Service Machines Safely



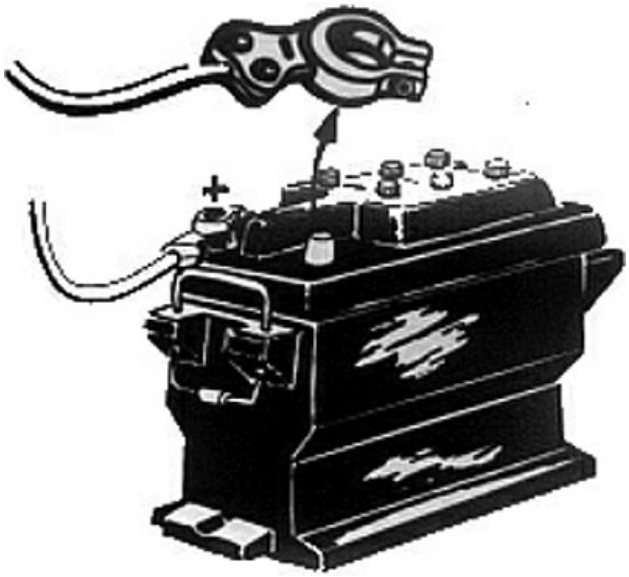
TS228—UN—23AUG88

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.

DX,LOOSE-19-04JUN90

Maintenance of electrical parts



YC1611—UN—29NOV12

When carrying out maintenance of the combine harvester electrical parts, first separate the battery grounding wire.

OUYC401,00003A8-19-14MAR12

Prevent Battery Explosions



TS204—UN—15APR13

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

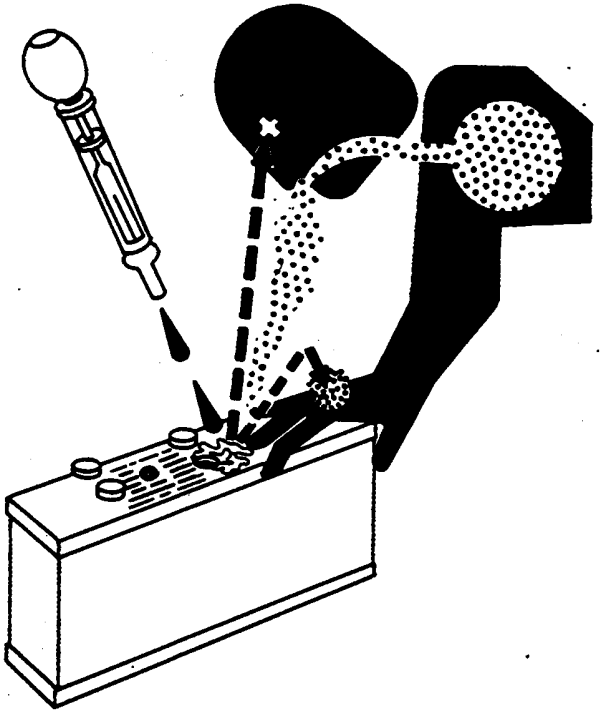
Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

DX,SPARKS-19-03MAR93

Handling Batteries Safely



TS204—UN—15APR13



TS203—UN—23AUG88

Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

Always remove grounded (-) battery clamp first and replace grounded clamp last.

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

Avoid hazards by:

- Filling batteries in a well-ventilated area
- Wearing eye protection and rubber gloves
- Avoiding use of air pressure to clean batteries

- Avoiding breathing fumes when electrolyte is added
- Avoiding spilling or dripping electrolyte
- Using correct battery booster or charger procedure.

If acid is spilled on skin or in eyes:

1. Flush skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush eyes with water for 15—30 minutes. Get medical attention immediately.

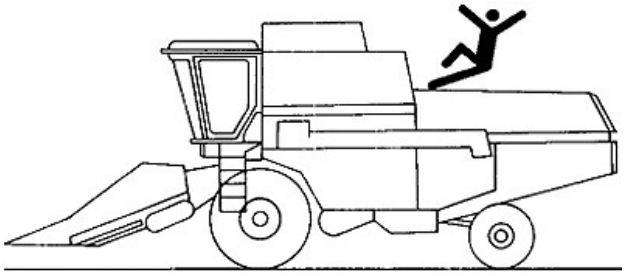
If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 qt.).
3. Get medical attention immediately.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

DX,WW,BATTERIES-19-02DEC10

Service Engine



YC1612—UN—29NOV12

Maintenance platform can be used when servicing the engine. Ensure safety and avoid accidents when climbing onto other parts of the machine, for example, falling down from the machine.

CP00718,0003C65-19-07DEC17

Remove Accumulated Crop Debris



TS227—UN—15APR13

The buildup of chaff and crop debris in the engine compartment, on the engine, and near moving parts is a fire hazard. Check and clean these areas frequently. Before performing any inspection or service, shut off the engine, set the park brake and remove the key.

CP00718,0003C66-19-07DEC17

Service Cooling System Safely



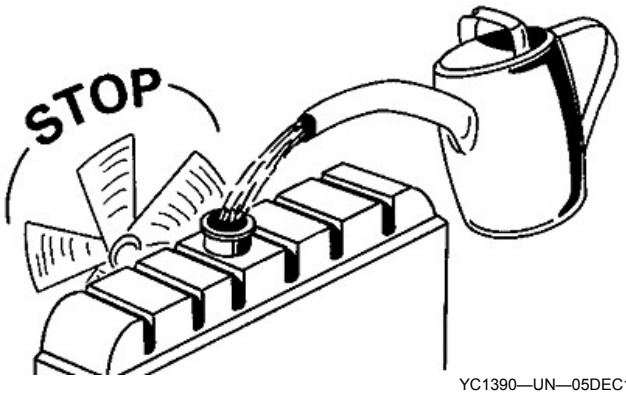
TS281—UN—15APR13

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

CP00718,0003C67-19-07DEC17

Coolant

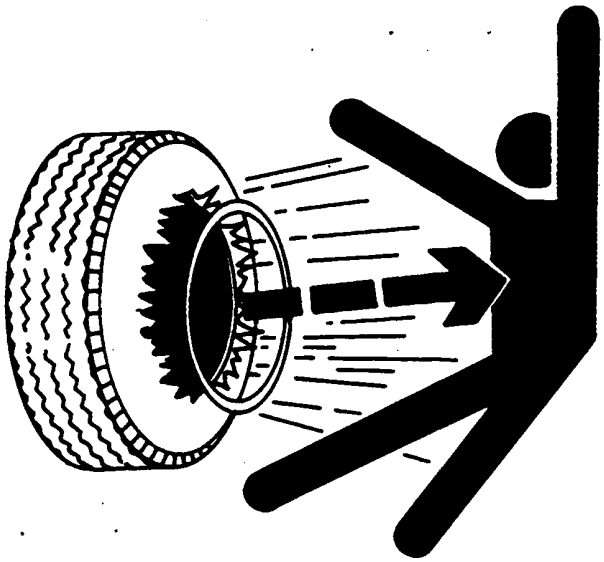


YC1390—UN—05DEC12

Before adding coolant, switch off the engine first.

CP00834,00001EF-19-05JAN13

Service Tires Safely



TS211—UN—15APR13

CAUTION: Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure.

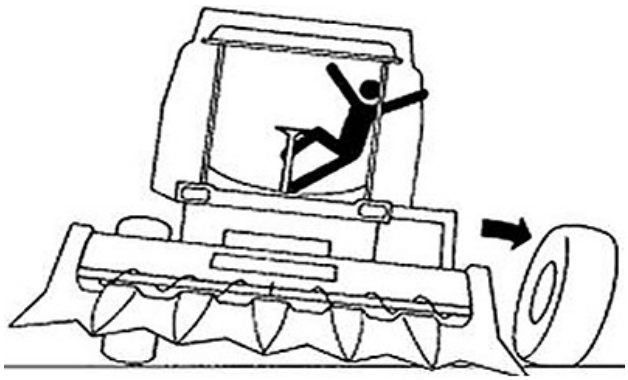
Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

DX,RIM1-19-27OCT08

Retighten Nuts of Front and Rear Wheels

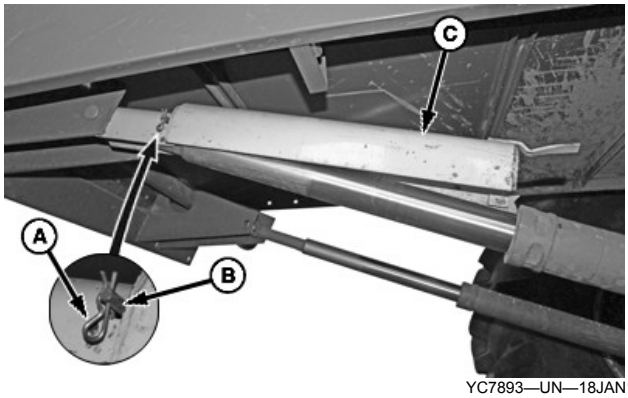


YC2754—UN—11DEC12

Refer to Wheel Bolts in 25 section and retighten the nuts and bolts of front and rear wheels. Otherwise, the wheels may fall off and the machine rollover. Lead to serious injury to the operator, and excessive damage to the machine.

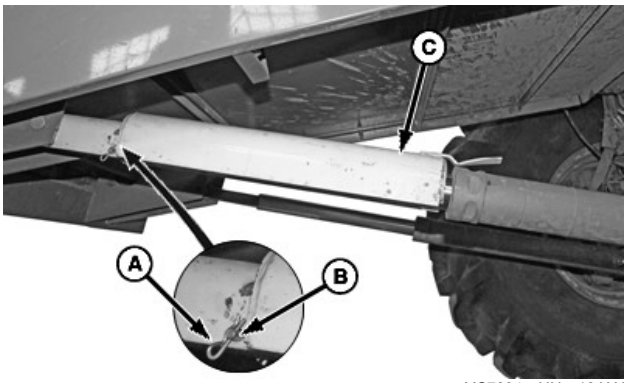
CP00718,0003C68-19-07DEC17

Lock the Feeder House Lift Cylinder Safety Stops



YC7893—UN—18JAN15

Cylinder at "Unlocked" State



YC7894—UN—18JAN15

Cylinder at "Locked" State

A—Spring Pin
B—Latch
C—Safety Stop

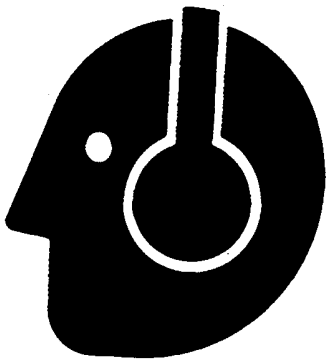
When transporting with header, or entering the header, or working under the feeder house, in order to avoid personal injuries caused by the fall of header. Lock the header height lever and safety stop (C) . Follow the procedures:

1. Lift header cylinder to highest position. Stop the machine and remove the key.
2. Place timber under lifted header or feeder house, to support header or feeder house.
3. Remove spring pin (A). Remove latch (B).
4. Place one end of the safety stop (C) on cylinder plunger.
5. Install latch (B) into the hole of the safety stop (C). Use spring pin to lock.

IMPORTANT: Before operation, set header cylinder at "unlocked" state.

CP00718,0003C69-19-07DEC17

Protect Against Noise



TS207—UN—23AUG88

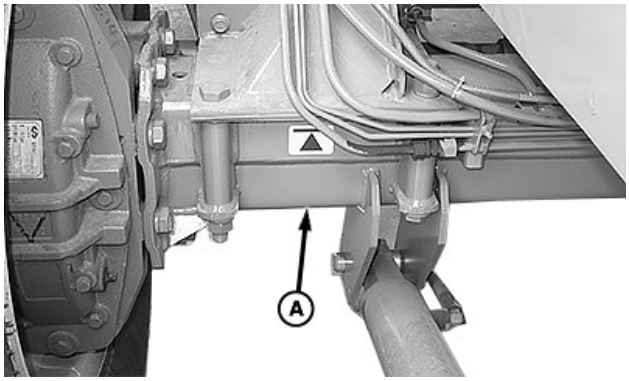
There are many variables that affect the sound level range, including machine configuration, condition and maintenance level of the machine, ground surface, operating environmental, duty cycles, ambient noise, and attachments.

Exposure to loud noise can cause impairment or loss of hearing.

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

DX,NOISE-19-03OCT17

Support Front Axle



YC12629—UN—30AUG18

A—Support Point (2 used, 1 per side)

CAUTION: The machine is heavy. If it falls or rolls over, serious injury and death be caused to you or others. In case, there are no grains in the grain tank. The machine must rest on a flat and level surface, gear-shift lever, or hydraulic driven lever set in neutral position. Engage park brake and remove the key. Secure the rear wheels.

IMPORTANT: Improper jacking can damage machine. Jack can only be applied at specific location of the machine.

1. Park machine on a flat, level surface. Switch off the engine and remove the key.
2. Place the jack at support points (A) under the front axle.

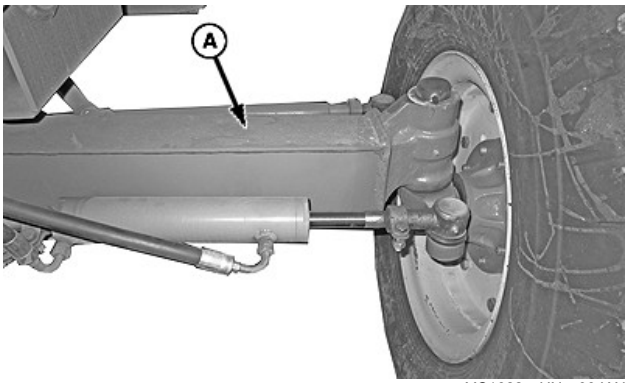
CAUTION: The machine is heavy. If it falls or rolls over, serious injury and death be caused to you or others. Before jacking up the machine, all bystanders must stay away from the machine.

3. All bystanders stay away from the machine. Lift the machine with the jack (see Use and Precautions of Hydraulic Jack in Electrical, Hydraulic, and Drive Systems section) only to the height which is enough for removing the vehicle or for repairing tires.

4. Tighten the torque tire and the side connecting bolts in accordance with the technical specifications.
5. Lower the machine to the ground.

CP00718,0003C6A-19-05SEP18

Support Rear Axle



YC1622—UN—03JAN14

A—Support Points (2 used)

CAUTION: The machine is heavy. If it falls or rolls over, serious injury and death be caused to you or others. In case, there are no grains in the grain tank. The machine must rest on a flat and level surface, gear-shift lever, or hydraulic driven lever set in neutral position. Engage park brake and remove the key. Secure the front wheels.

IMPORTANT: Improper jacking can damage machine. Jack can only be applied at specific location of the machine.

1. Park machine on a flat, level surface. Switch off the engine and remove the key.
2. Place the jack at support points (A) underneath the rear axle.

CAUTION: The machine is heavy. If it falls or rolls over, serious injury and death be caused to you or others. Before jacking up the machine, all bystanders must stay away from the machine.

3. All bystanders stay away from the machine. Lift the machine with the jack (refer to the use and precautions of jack) only to the height which is enough for removing the vehicle or for repairing tires.
4. Tighten the torque tire and the wheel connecting bolts in accordance with the technical specifications.
5. Lower the machine to the ground.

CP00718,0003C6B-19-07DEC17

Safety Signs

Pictorial Safety Signs

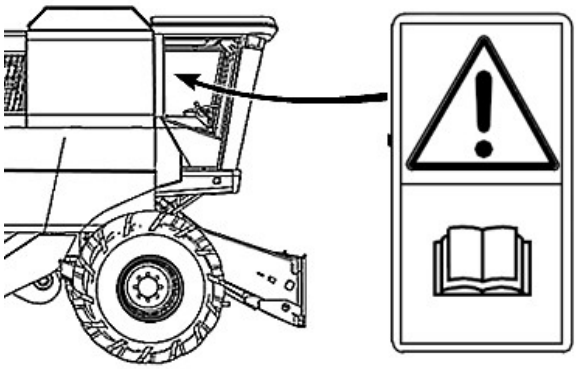


TS231—19—07OCT88

Pictorial Safety Signs

At several important places on these machine safety signs are affixed intended to signify potential hazards. The warning triangle identifies a hazard. An adjacent pictorial provides information how to avoid personal injury. These safety signs, their placement on the machine and a brief explanatory text are shown following.

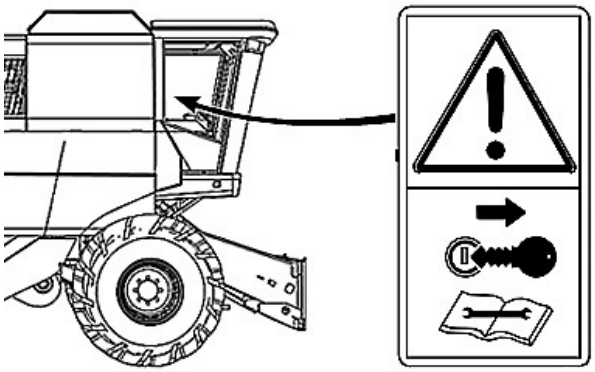
Operator's Manual



YC11193—UN—05JAN17

This operator’s manual contains all important information necessary for safe machine operation. Carefully observe all safety rules. Avoid accidents.

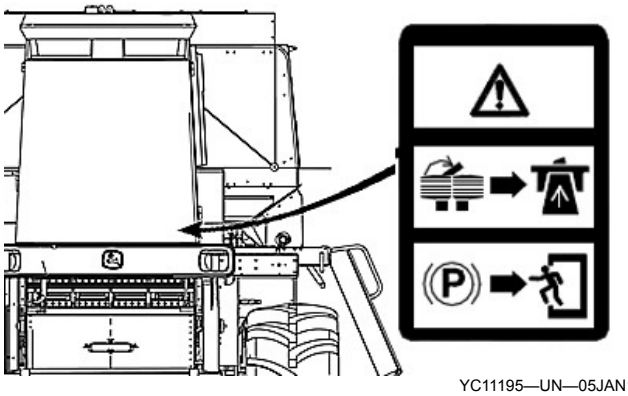
Repair and Maintenance



YC11194—UN—05JAN17

Before carrying out repair and maintenance work, shut off engine, set park brake and remove key. Refer to operator manual for all maintenance work.

Park Brake

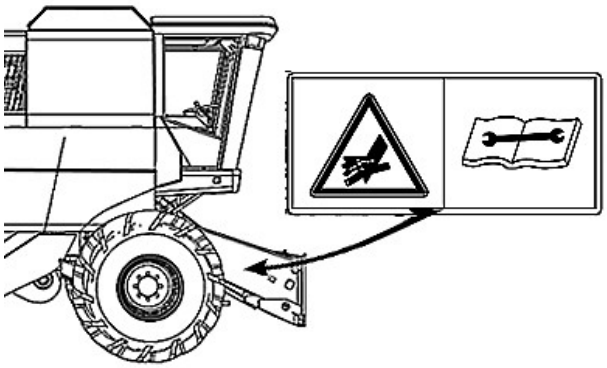


YC11195—UN—05JAN17

Lock service brakes together before driving on roadway. Set park brake before leaving machine.

Hydraulic Oil and Gas Under Pressure

NOTE: Decals are on the feeder house's left-hand and right-hand, four pieces.



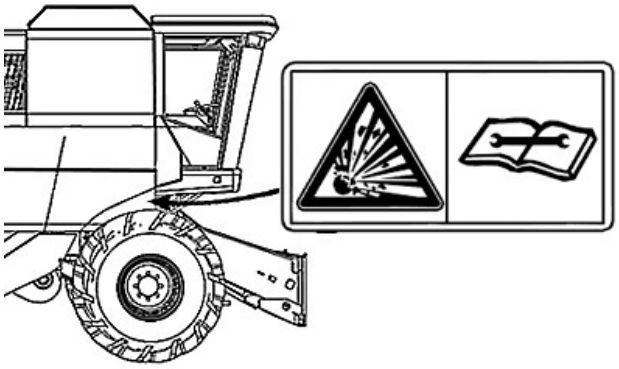
YC11196—UN—05JAN17

Avoid serious injury from contact with hydraulic oil and gas under pressure.

Before removing hydraulic components, disassembling or charging accumulators:

1. Relieve system hydraulic pressure. Refer to the operator's manual and repair manual for system information.
2. Stop engine and remove key.

Accumulator

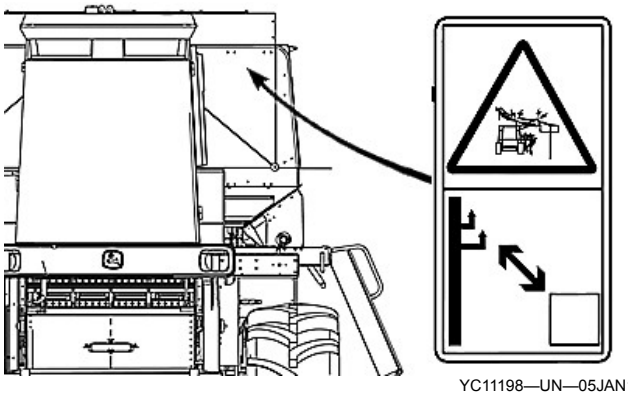


YC11197—UN—05JAN17

To prevent the risk of injury as well as possible damage to the accumulator or hydraulic system, maintain recommended nitrogen gas pressure.

Refer to Pressure Accumulator in Electrical, Hydraulic, and Drive Systems section.

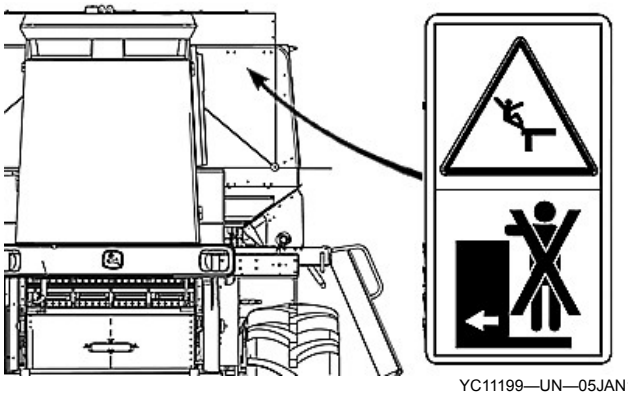
Avoid Low Hanging Power Lines



YC11198—UN—05JAN17

Avoid serious injury or death from electrocution. Do not contact electric lines. Keep the unloading auger in transport position.

Grain Tank

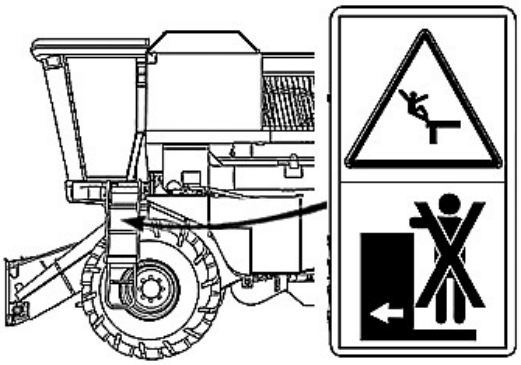


YC11199—UN—05JAN17

Avoid serious injury from falling. Do not enter grain tank in this area.

Do not allow people to stay in the operator's platform and grain tank during operation the machine.

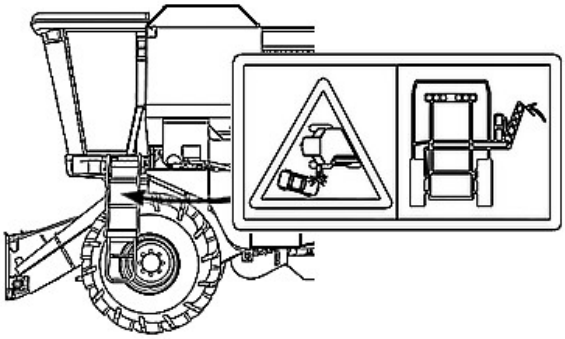
Cab/Platform Access Ladder



YC11200—UN—05JAN17

Avoid serious injury from falling. Do not allow riders on the ladder or platform area while machine is moving.

Avoid Motor Vehicle Collisions

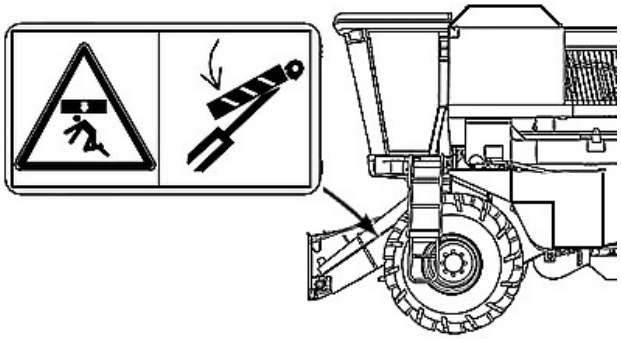


YC11201—UN—05JAN17

Avoid motor vehicle collision and serious injury or death. Always lift and lock ladder before driving machine on roadway.

Feeder House Safety Stop

NOTE: Decal is on outside and inside of shielding and on both sides of the feeder house.

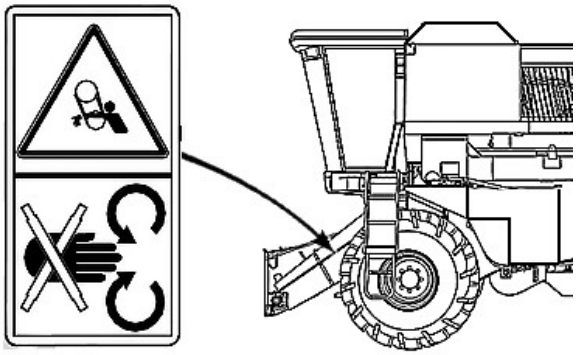


YC11202—UN—05JAN17

Avoid crushing injury. Rest header on ground or set safety stop, on the feeder house lift cylinder before getting under header.

Feeder House Guard

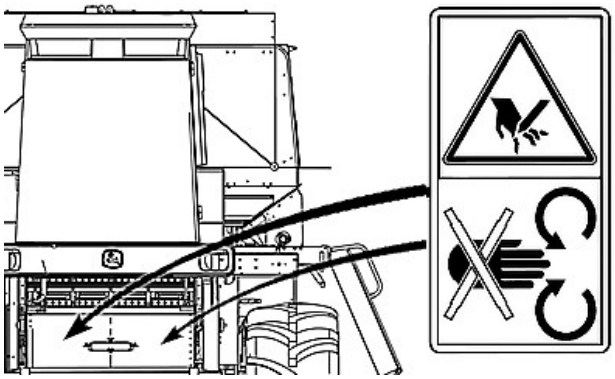
NOTE: This decal is on both sides of the feeder house.



YC11203—UN—05JAN17

Avoid serious injury or death from entanglement. Never raise shield with the engine running. Stop engine and remove key.

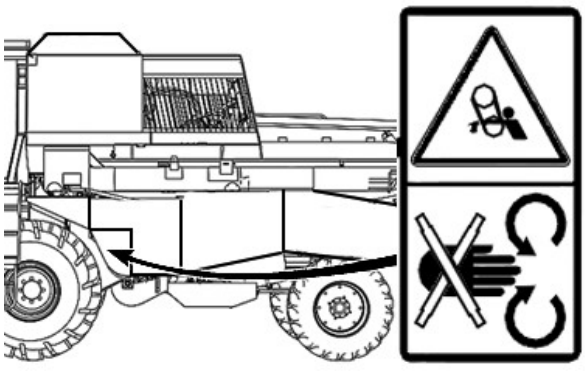
Feeder House Conveyor Chain



YC11204—UN—05JAN17

Potential hazard caused by rotating machine parts.

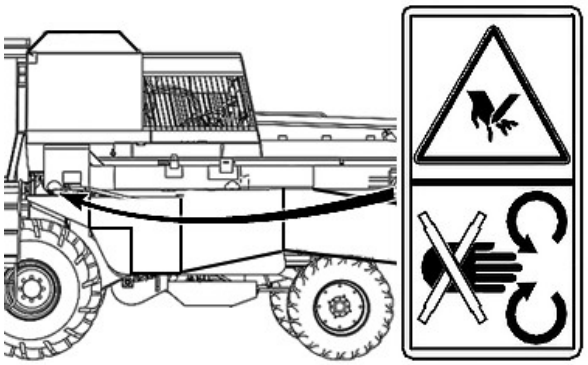
Left-Hand Guard



YC11205—UN—05JAN17

Avoid serious injury or death from entanglement. Never open shield or access the area with engine running. Stop engine and remove key.

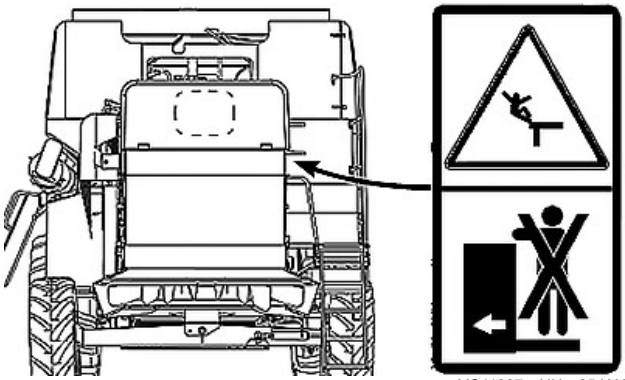
Grain Tank Cleanout Doors



YC11206—UN—05JAN17

Avoid serious injury or death from entanglement. Stop engine and remove key before opening cleanout doors.

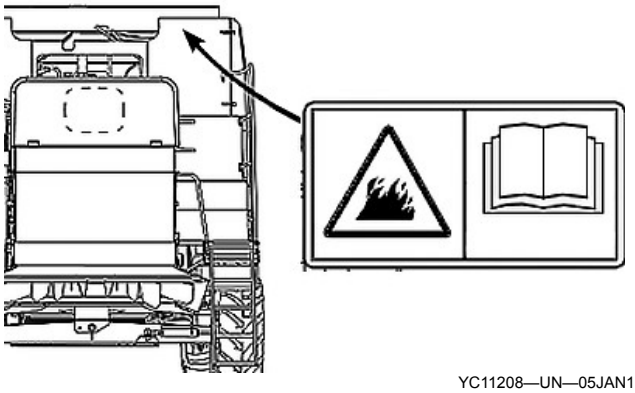
Rear Access Ladder and Service Platform



YC11207—UN—05JAN17

Avoid serious injury from falling. Do not ride ladder or engine platform while machine is moving.

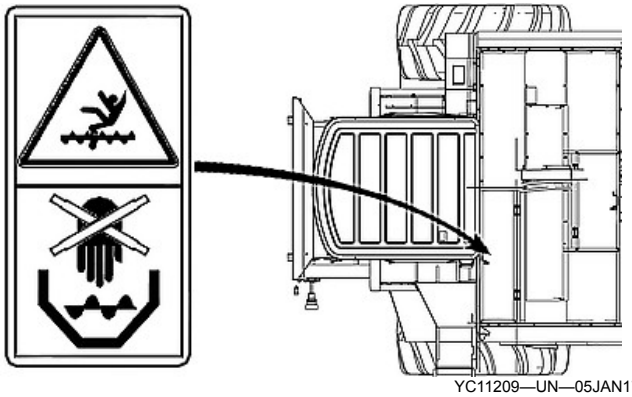
Avoid Fires



YC11208—UN—05JAN17

Avoid equipment fires. The accumulation of chaff, leaves, and other crop material in the engine compartment, on the engine or near moving parts can cause a fire. Inspect and clean these areas frequently.

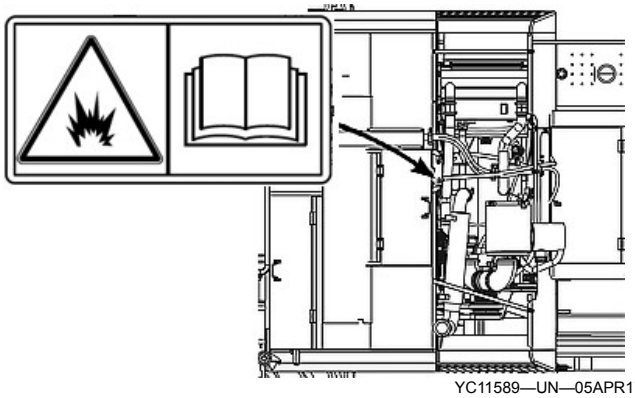
Grain Tank



YC11209—UN—05JAN17

Avoid serious injury or death from entanglement. Do not enter grain tank when engine is running.

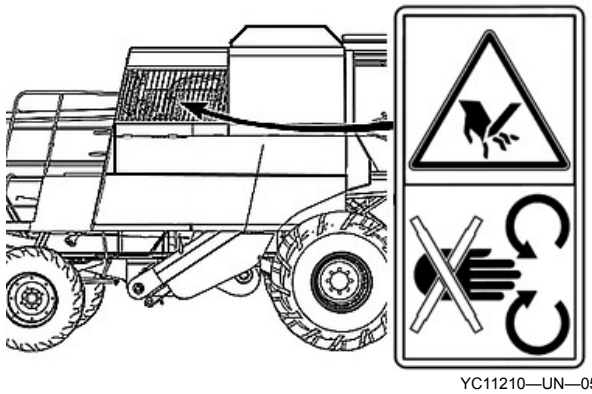
Cooling System



YC11589—UN—05APR17

Cooling system is pressurized. To prevent burn injury due to uncontrolled release of steam and hot coolant, wait until system is cool. Loosen cap slowly. Allow pressure to release before removing cap.

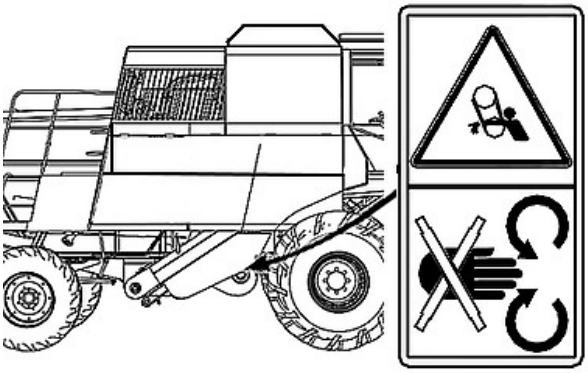
Rotary Screen Door and Radiator Fan



YC11210—UN—05JAN17

Avoid bodily injury from the rotating fan and screen components. Shut off engine and remove key before opening rotary screen door.

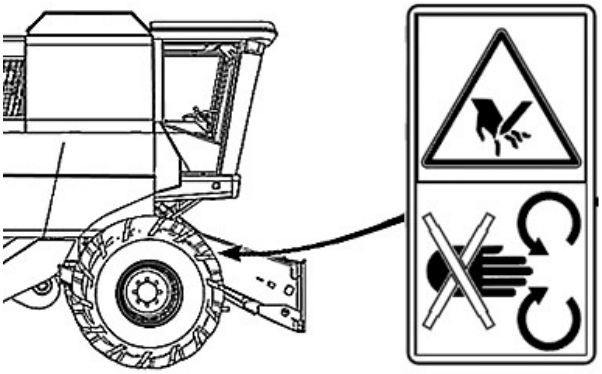
Clan Grain Elevator



YC11211—UN—05JAN17

Avoid serious injury or death from entanglement. Never raise shield with the engine running. Stop engine and remove key.

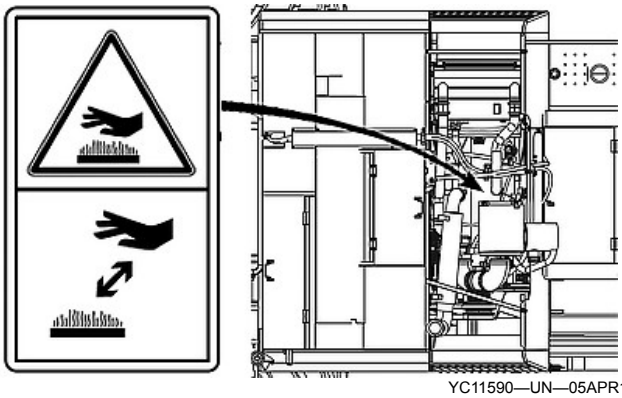
Stone Trap



YC11212—UN—05JAN17

Do not clean out stone trap until all separator and feeder house motion has stopped.

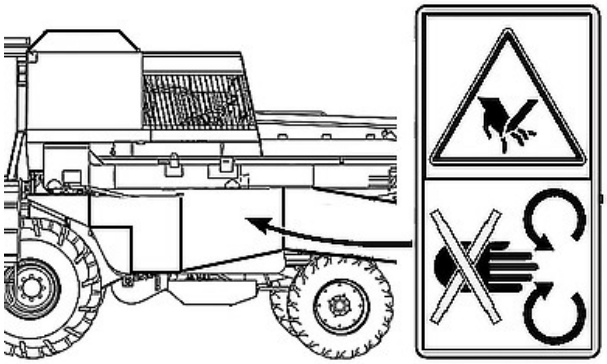
Exhaust Temperature



YC11590—UN—05APR17

Exhaust system components be hot. To avoid severe burns, keep away from the exhaust system components.

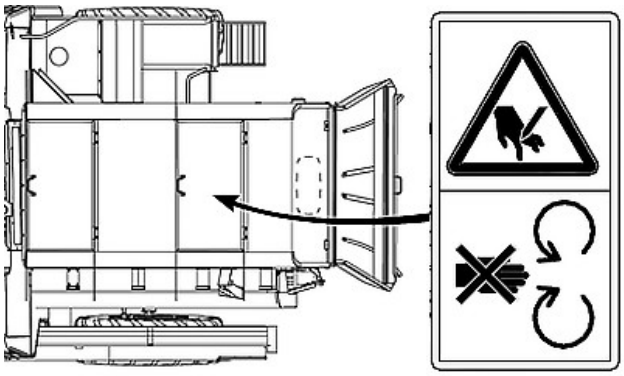
Inspection Door



YC11213—UN—05JAN17

Avoid serious injury from contact with moving components. Do not open inspection door until all motions have stopped.

Rear Door



YC11214—UN—05JAN17

Do not open door when the combine is running.

CP00606,000178A-19-25MAY18

Controls and Instruments



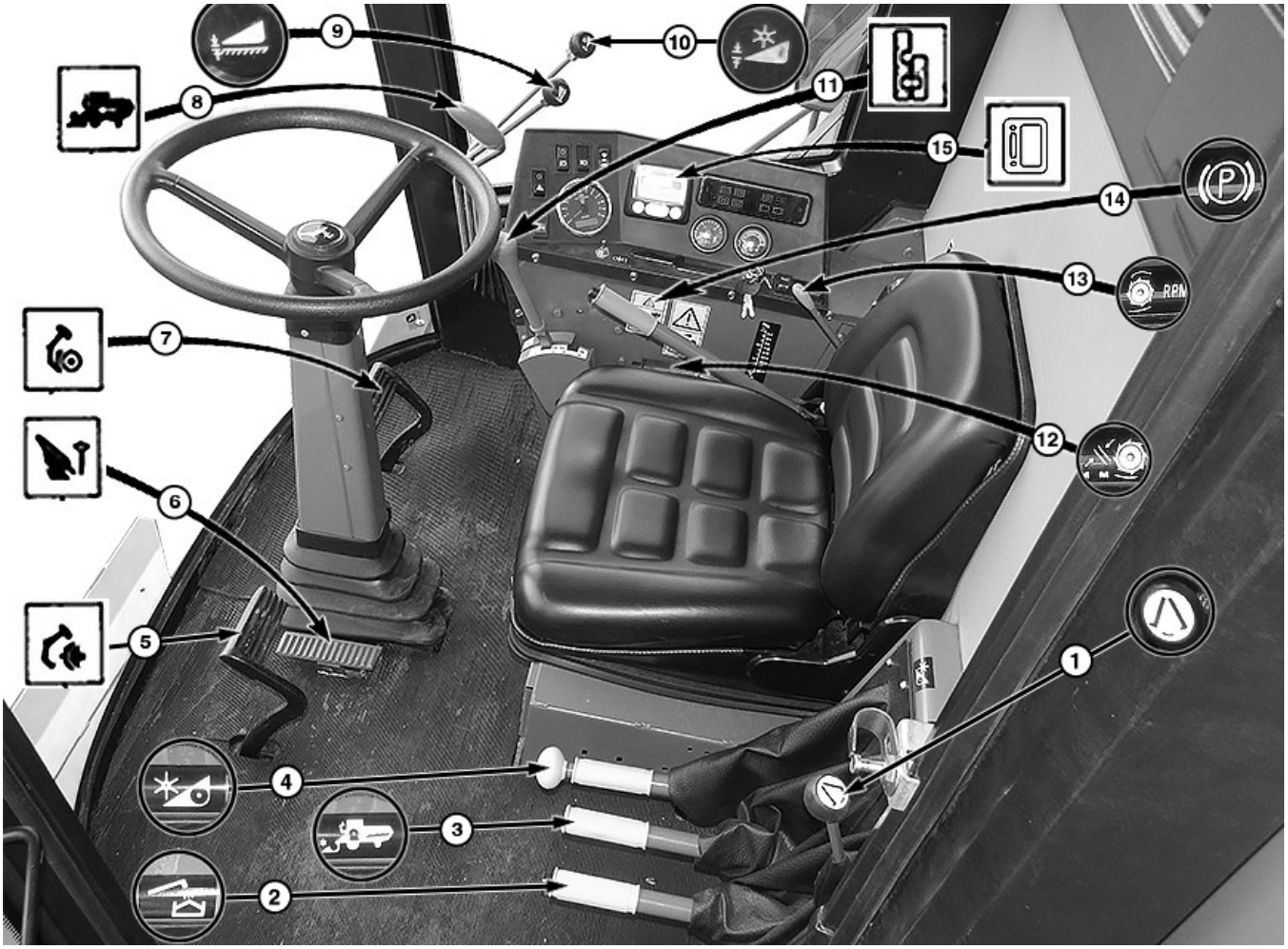
YC1536—UN—25NOV13

Before operating a new combine, make yourself familiar with the position and use of each control and instrument, in order to facilitate proper operation of combine.

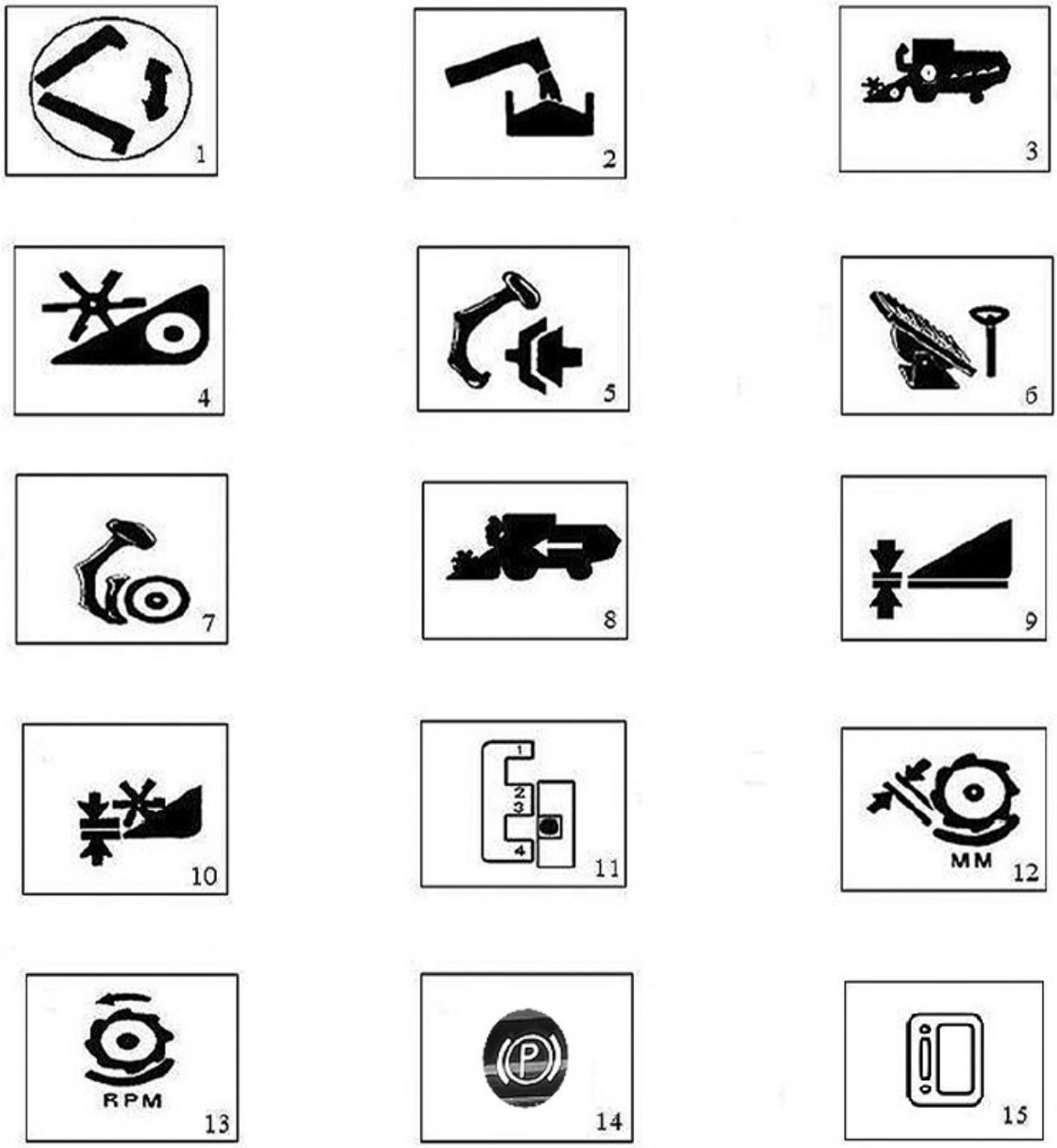
CP00718,0003A7F-19-28NOV17

Control Devices in Operator's Station

Operator's Station of Mechanical Drive Type Combine



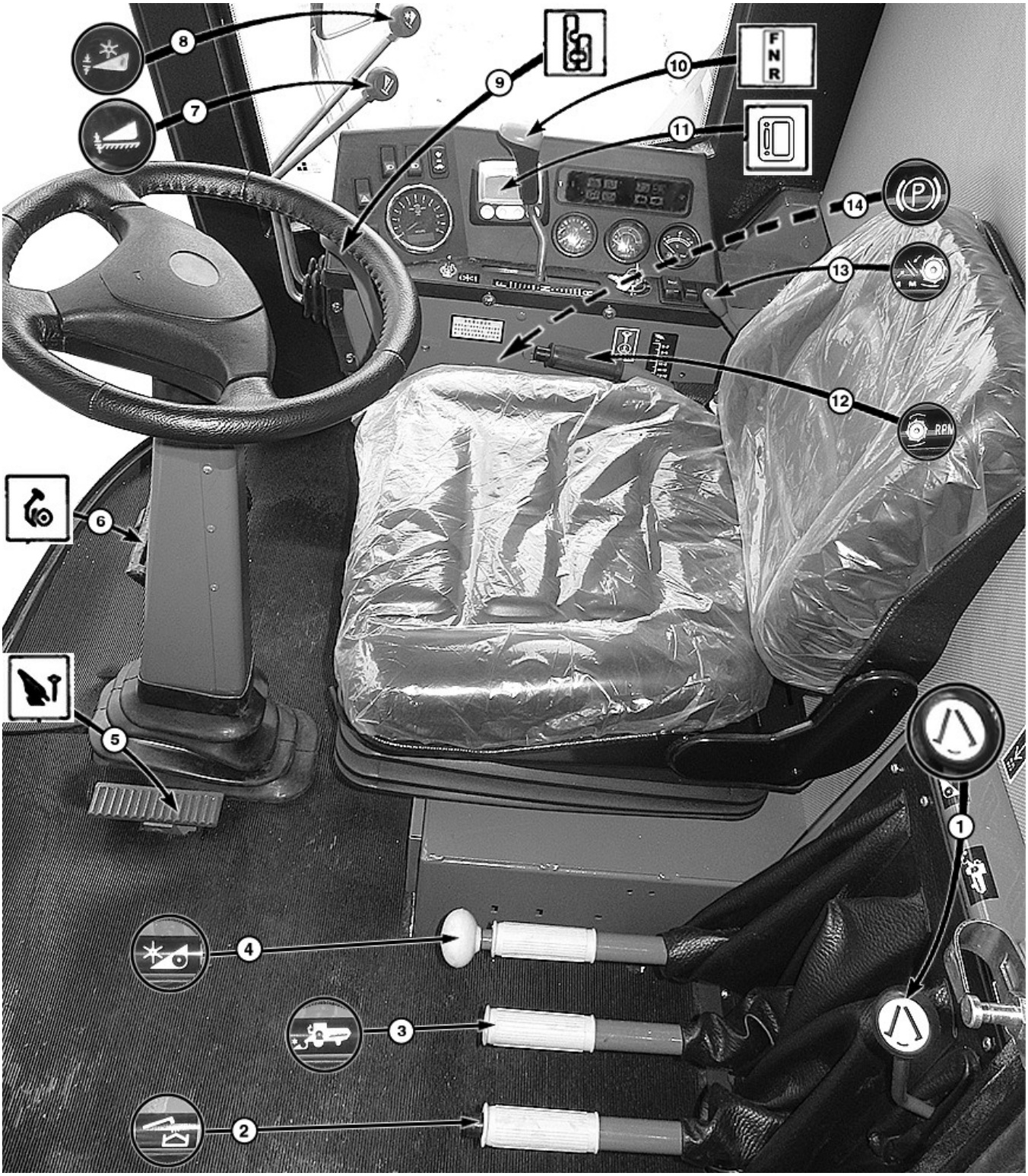
YC12259—UN—08MAR18



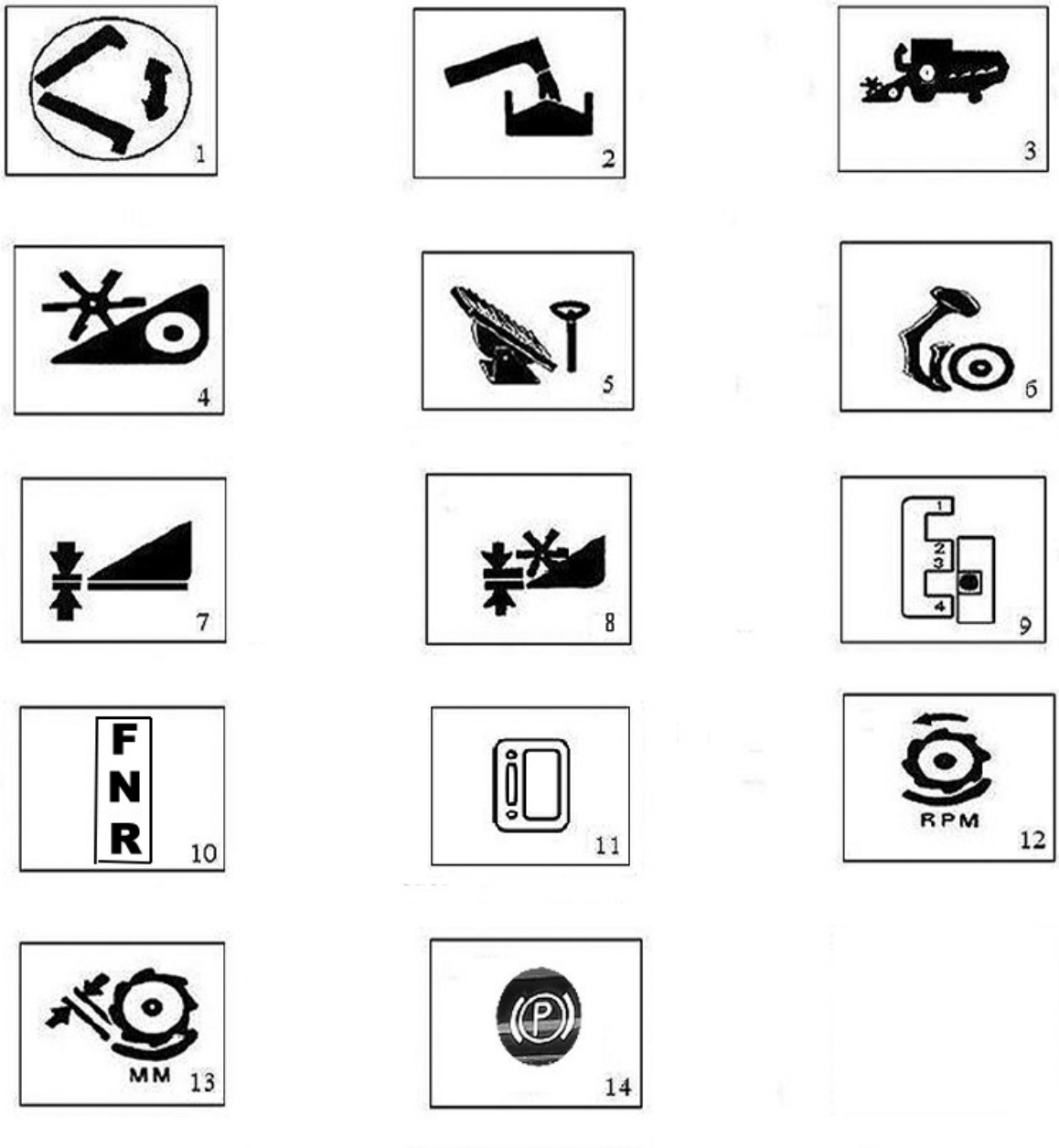
YC12266—UN—06DEC17

1—Unloading Auger Swing Lever
2—Unloading Auger Engage Lever
3—Separator Engage Lever
4—Header Engage Lever
5—Clutch Pedal
6—Steering Column Lock Pedal
7—Brake Pedals
8—Ground Speed Lever
9—Header Raise/Lower Lever
10—Reel Raise/Lower Lever
11—Gear-Shift Lever
12—Threshing Clearance Adjust Lever
13—Threshing Speed Level
14—Park Brake
15—Murphy Gauge

Operator's Station of Optional Hydrostatic Drive Type Combine



YC12265—UN—08MAR18



YC12264—UN—06DEC17

1—Unloading Auger Swing Lever
2—Unloading Auger Engage Lever
3—Separator Engage Lever
4—Header Engage Lever
5—Steering Column Lock Pedal
6—Brake Pedals
7—Header Raise/Lower Lever
8—Reel Raise/Lower Lever
9—Gear-Shift Lever
10—Hydrostatic Drive Lever
11—Murphy Gauge
12—Threshing Speed Level
13—Threshing Clearance Adjust Lever
14—Park Brake

CP00718,0004146-19-15DEC17

Reel Raise/Lower Control



YC12200—UN—21NOV17

Reel raise/lower lever (A) is at the right side of the operator's seat.

Move lever backward—Raise the reel.

Move lever forward—Lower the reel.

CP00718,0004428-19-19DEC17

Reel Speed Adjustment

IMPORTANT: Avoid damage to the machine. Adjust reel speed only when reel is rotating.



YC12203—UN—21NOV17

A—Reel Speed Control Switch

The Reel speed control switch (A) is at the instrument panel.

Increase speed—Toggle the switch away from the driver.

Decrease speed—Toggle the switch toward the driver.

After reel speed adjustment, release the switch. The switch returns automatically to neutral position.

CP00718,0004173-19-18DEC17

Threshing Speed Adjustment



YC12204—UN—21NOV17

A—Threshing Speed Adjust Lever
B—Threshing Tachometer

IMPORTANT: Avoid damage to the machine. Adjust threshing speed only when the separate cylinder is rotating.

Threshing speed adjust lever (A) and threshing tachometer (B) are at the right side of the operator's seat.

Move lever upward—Increase threshing speed.

Move lever downward—Decrease threshing speed.

Threshing speed displays on the threshing tachometer (B).

Threshing speed (rpm)= value × 100

CP00718,0004429-19-19DEC17

Threshing Clearance Adjustment



YC12206—UN—21NOV17

A—Threshing Clearance Adjust Lever
B—Button

Threshing clearance adjust lever (A) is at the right side of the operator's seat.

Press button (B), move lever downward—Increase clearance.

Press button (B), move lever upward—Decrease clearance.

CP00718,000414A-19-15DEC17

Park Brake

IMPORTANT: Avoid damage to the machine. Disengage park brake when the vehicle is walking.

IMPORTANT: Be certain to engage park brake when engine is running and machine is parked or before leaving machine with engine turned OFF.



YC12207—UN—21NOV17

A—Park Brake Lever
B—Button

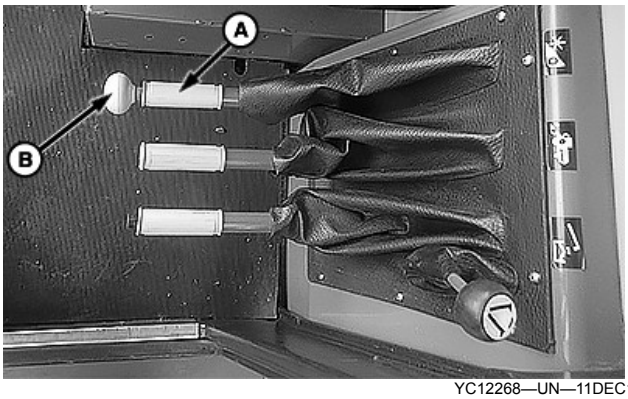
To activate the park brake, pull the park brake lever (A) until effective braking is achieved.

To disengage the park brake, push the button (B) and return the lever fully downward.

CP00718,000414B-19-15DEC17

Header Engage Lever

IMPORTANT: Avoid damage to the machine. Before engage the header, engage threshing unit first.



YC12268—UN—11DEC17

A—Header Engage Lever
B—Button

The header engage lever (A) is at the left side of the operator's seat.

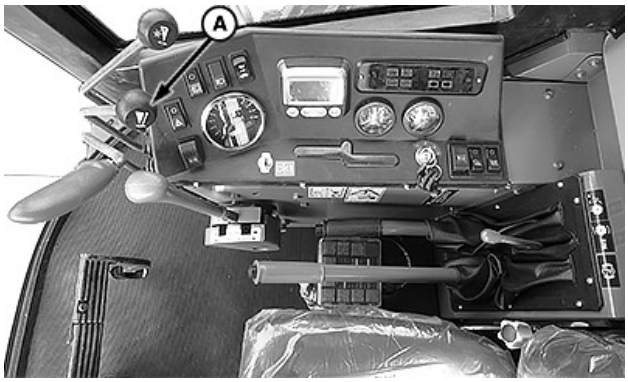
Hit the button (B) with palm, lever quickly disengages.

Move lever upward—Engage header drive.

Move lever downward—Disengage header drive.

CP00606,000176B-19-24MAY18

Header Raise/Lower Lever



YC12227—UN—21NOV17

A—Header Raise/Lower Lever

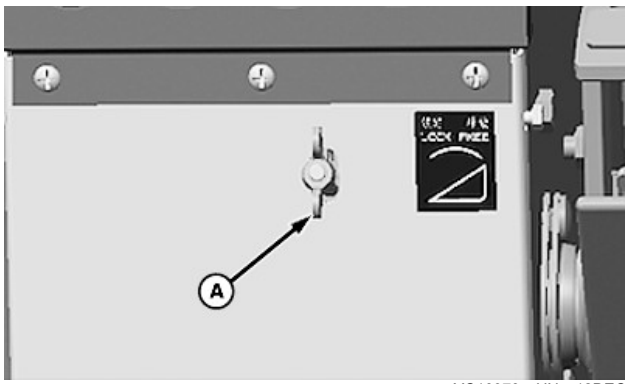
Header raise/lower Lever (A) is at the right side of the operator's seat.

Move lever backward—Lift the header.

Move lever forward—Lower the header.

CP00718,000442B-19-19DEC17

Lock Header Height



YC10970—UN—12DEC16

Lock Position Shown

A—Locking Pin

The locking pin (A) is at the front of the instrument box.

When driving combine on the road with header, raise the header and lock header raise/lower lever with locking pin (A).

Turn locking pin (A) to the left, header raise/lower lever is set in LOCK position.

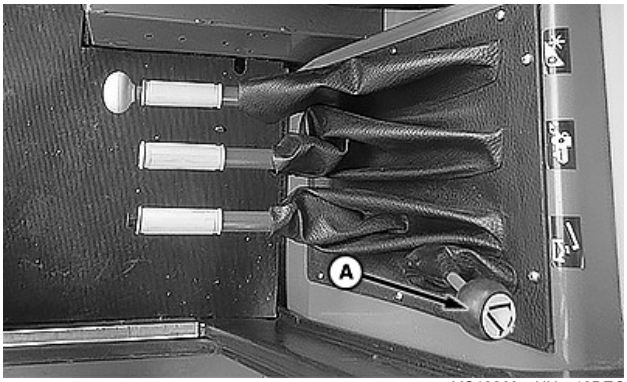
Turn locking pin (A) to the right, header raise/lower Lever be set at UNLOCK position.

Before harvesting, ensure locking pin (A) is in UNLOCK position.

CP00718,0003A8A-19-28NOV17

Unloading Auger Swing Lever

CAUTION: To avoid casualties, swing unloading auger back to transport position when driving combine on the road.



YC12269—UN—12DEC17

A—Unloading Auger Swing Lever

Unloading auger swing lever (A) is at the left side of the operator's seat.

Move lever upward—Unloading auger turns to unloading position.

Move lever downward—Unloading auger turns to transport position.

CP00606,000176C-19-24MAY18

Separator Engage Lever

IMPORTANT: Before harvest starts, while engine is at low speed, engage threshing unit, then increase to high engine speed. After harvest ends, decrease to low engine speed, then disengage threshing unit.



YC8773—UN—10JUN15

A—Separator Engage Lever

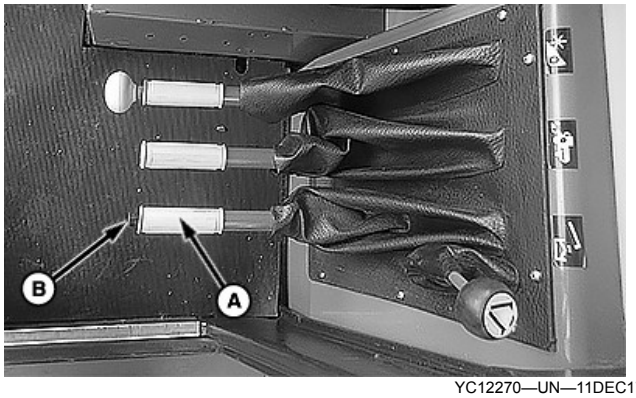
The separator engage lever (A) is at the left side of the operator's seat.

Move lever upward—Engage threshing unit.

Move lever downward—Disengage threshing unit.

CP00718,0004171-19-18DEC17

Unloading Auger Engage Lever



YC12270—UN—11DEC17

A—Unloading Auger Engage Lever
B—Button

IMPORTANT: Avoid damage to the machine. Before engage the unloading auger, ensure that unloading auger is at operation position.

IMPORTANT: Avoid damage to the machine. Disengage unloading auger only when grain is unloaded completely. Complete unloading process at one time.

NOTE: The combine can be unloaded while it is moving. The grain can be unloaded during the harvesting process.

The unloading auger engage lever (A) is at the left side of the operator's seat.

Press button (B), move lever upward—Engage unloading auger.

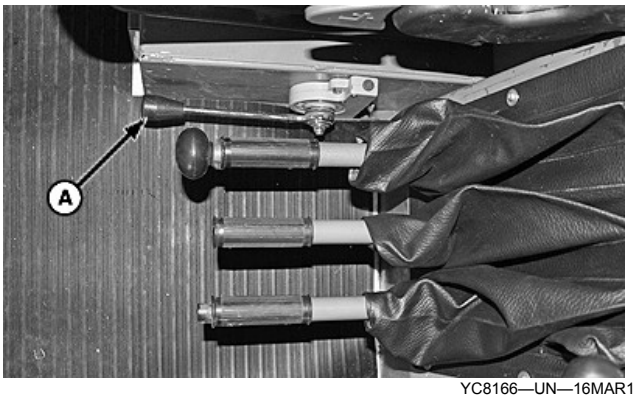
Press button (B), move lever downward—Disengage unloading auger.

To engage unloading auger, pull the unloading auger engage lever (A) slowly. Pull the unloading auger engage lever (A) quickly, when unloading auger is rotating.

CP00718,000414F-19-15DEC17

Rear Drive Engage Lever (Optional)

IMPORTANT: When driving on roads, do not engage rear drive. Otherwise, tires wear quickly.



YC8166—UN—16MAR15

A—Rear Drive Engage Lever

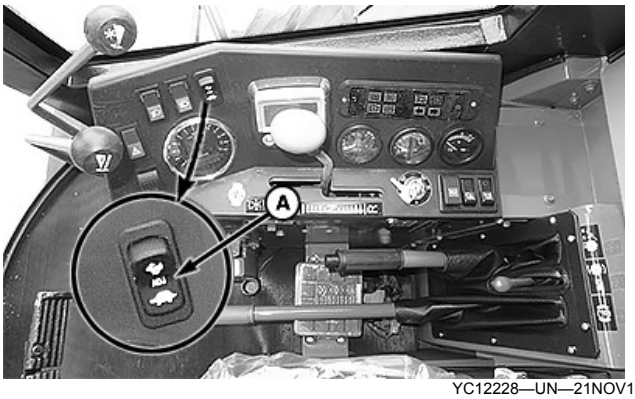
Rear drive engage lever (A) is on the left bottom side of the operator's seat.

Pull the lever upward—Engage rear drive.

Push the lever downward—Disengage rear drive.

CP00606,000176D-19-24MAY18

Throttle Switch



YC12228—UN—21NOV17

A—Throttle Switch

Throttle switch (A) is used to increase or decrease engine speed.

To increase speed—Set switch position at rabbit.

To decrease speed—Set switch position at turtle.

CP00718,000417B-19-18DEC17

Ground Speed Lever (Mechanical Drive Type Combine)

IMPORTANT: Avoid damage to the machine. Adjust ground speed by operating gear-shift lever and ground speed Lever, do not use the throttle switch to control ground speed.

IMPORTANT: Avoid damage to the machine. Before shutoffs engine or parks combine, move lever backward. Make Pois-Torq lower unit is at closed status. It protects the belt and Posi-Torq unit.

NOTE: Lever returns to neutral position automatically, if do not operate it.



YC12229—UN—21NOV17

A—Ground Speed Lever

Ground speed lever (A) is at the right side of operator's seat.

Select suitable gear and move lever forward to increase ground speed. Move lever backward to decrease ground speed.

CP00718,0004151-19-15DEC17

Hydrostatic Drive Lever (Option)

IMPORTANT: Hydrostatic drive lever must be set at neutral position when the combine is braked.

IMPORTANT: If the machine is equipped with a hydrostatic drive unit, it does not have a clutch pedal. Stop the machine and move the hydrostatic drive lever to neutral before shifting gears.



YC12230—UN—21NOV17

A—Hydrostatic Drive Lever

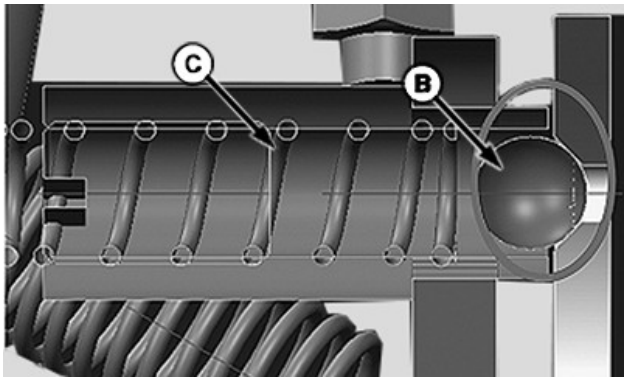
Hydrostatic drive lever (A) is at the right side of the operator's seat, on the instrument box.

Move the lever to the front to drive the machine forward. Push the lever further to the front to increase the speed.

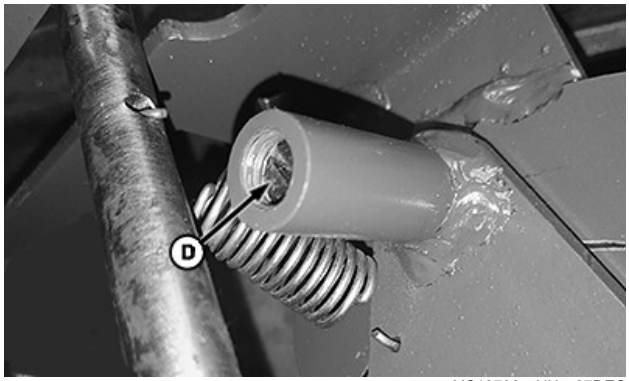
Move the lever to the rear to drive machine backward. Push the lever further to the rear to increase the speed.

Put the lever in neutral position to stop the combine.

While the combine is in operation, ground speed may need to be set as slow as possible without stopping the machine. To do this, set the hydrostatic drive lever (A) slightly ahead of the neutral position. If the machine is equipped with a hydrostatic drive unit, a lever holding mechanism in the instrument box prevents the lever from moving.



YC10797—UN—07DEC16



YC10798—UN—07DEC16

B—Ball
C—Spring
D—Screw

If the lever holding mechanism does not work, check the ball for wear and replace it, if necessary. Modify the compression pressure of spring (C) by turning screw (D).

NOTE: If the customer does not need holding mechanism, remove screw (D), spring (C), and ball (B).

CP00606,000176E-19-24MAY18

Instruments

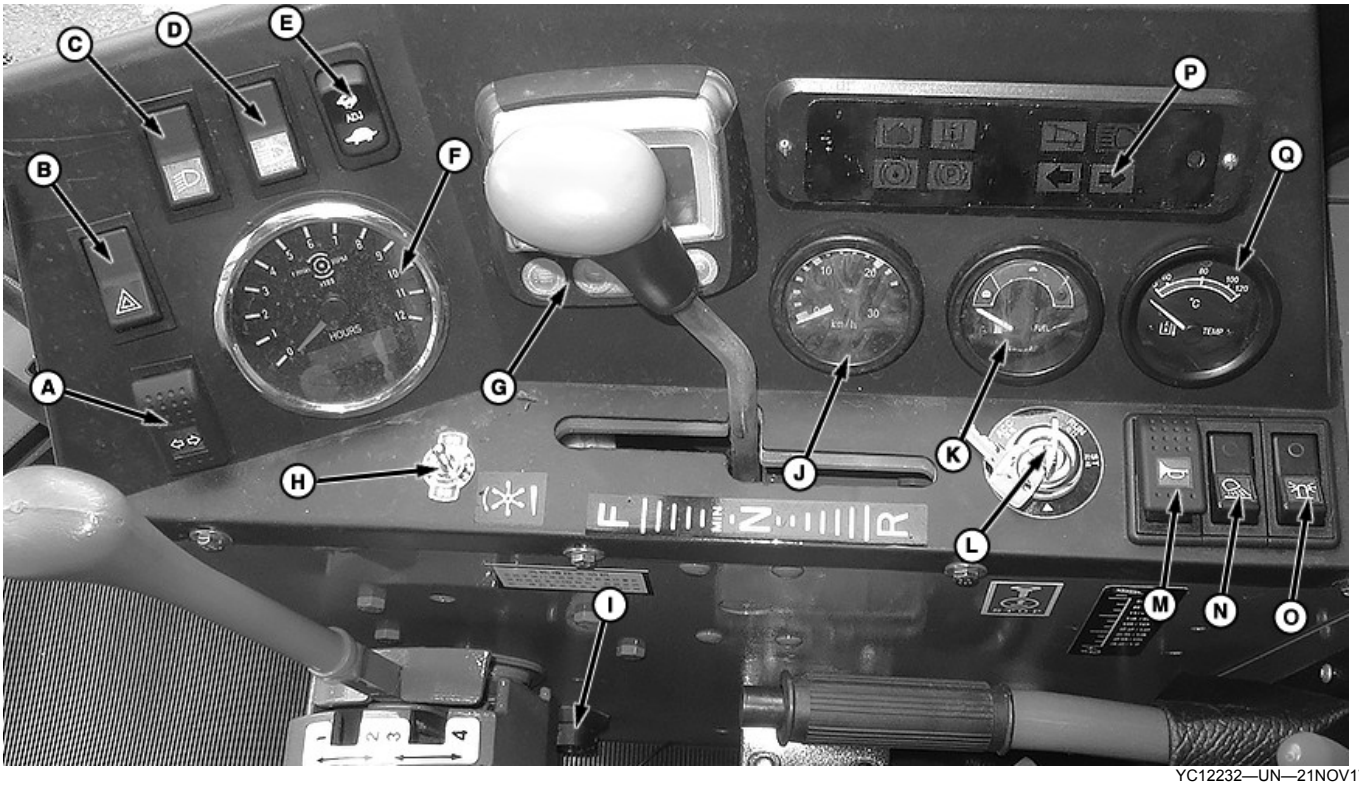
Instrument (Mechanical Drive Type)



YC12231—UN—21NOV17

A—Turning Lights Switch
B—Hazard Lights Switch
C—Low Beam Switch
D—High Beam Switch
E—Throttle Switch
F—Threshing Speed Meter
G—Murphy Gauge
H—Reel Speed Switch
I—Diagnostic Connector
J—Ground Speed Meter
K—Fuel Gauge
L—Key Switch
M—Horn Switch
N—Working Lights Switch
O—Unloading Beacon and Light Switch
P—Signal Light Module

Instrument (Optional Hydrostatic Drive Type)



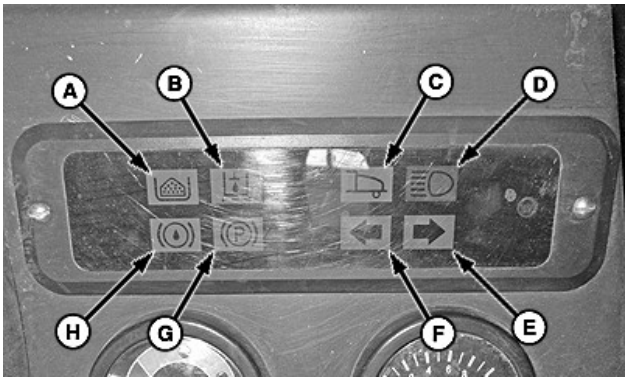
YC12232—UN—21NOV17

A—Turning Lights Switch
B—Hazard Lights Switch
C—Low Beam Switch
D—High Beam Switch
E—Throttle Switch
F—Threshing Speed Meter
G—Murphy Gauge
H—Reel Speed Switch
I—Diagnostic Connector
J—Ground Speed Meter
K—Fuel Gauge
L—Key Switch
M—Horn Switch
N—Working Lights Switch
O—Unloading Beacon and Light Switch
P—Signal Light Module
Q—Hydrostatic Oil Temperature Gauge

CP00718,0004153-19-19DEC17

Modular Signal Light

Modular signal light contains full grain tank warning light (A), hydraulic oil filter pressure warning light (B), rear cover blockage warning light (C), high beam indicator (D), right turn signal indicator (E), left turn signal indicator (F), park brake indicator (G), and brake fluid level warning light (H).

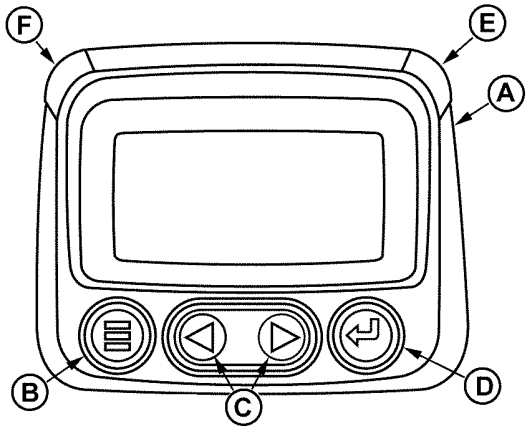


YC8388—UN—20MAY15

A—Full Grain Tank Warning Light
B—Hydraulic Oil Filter Pressure Warning Light
C—Rear Cover Blockage Warning Light
D—High Beam Indicator
E—Right Turn Signal Indicator
F—Left Turn Signal Indicator
G—Park Brake Indicator
H—Brake Fluid Level Warning Light

CP00718,0003C7A-19-07DEC17

Murphy Gauge



RG13132—UN—09SEP03

A—Murphy Gauge
B—Menu Button
C—Arrow Buttons(2 used)
D—Enter Button
E—Red Indicator
F—Orange Indicator

Through Murphy Gauge (A), operator can check the engine functional data and diagnostic trouble codes (DTCs). Murphy Gauge is connected with the electronic control system and the sensors. Operator can monitor engine operation and carry out checks and troubleshooting when needed.

Press menu button (B) and various engine functions are shown in order. Imperial or metric units can be chosen. Following engine parameter menus are displayed in the Murphy Gauge diagnosis window:

- Throttle Switch Position
- Current Speed Load Percentage
- Engine Actual Torque
- Engine Speed
- Total Engine Hours
- Total Fuel Consumption
- Coolant Temperature
- Fuel Temperature
- Fuel Pressure
- Engine Oil Pressure
- Fuel Consumption Rate
- Intake Manifold Temperature
- Battery Voltage
- Engine Rated Speed
- Machine Operating Hours
- Engine Configuration Parameters
- Current Diagnostic Trouble Codes
- Saved Engine Diagnostic Trouble Codes

NOTE: Engine parameters that can be accessed relate to engine applications. Chinese and English languages can be chosen when configuring the gauge.

Diagnostic instrument includes a back-lit liquid crystal display (LCD). It can display a single parameter or up to four at the same time. Press two arrow buttons (C) on diagnostic instrument, scroll the engine parameter list to view the menu. Press the enter button (D) and select required items. Red (E) and orange (F) indicators display the valid trouble codes received at Murphy Gauge. When orange indicator is lit, a fault has occurred. It is recommended to check the machine while it can continue to run. When red indicator is lit, stop the machine at once and carry out checks.

JL31334,000178E-19-07MAY18

Main Menu Navigation

NOTE: Engine does not need to run when using the diagnosis gauge screen. To start the engine, refer to Start the Engine in Control of Combine section. All engine parameters displayed in the Murphy Gauge show that the engine is running.



YC7300—19—11DEC14

Menu Button

1. Turn key switch to the D position. A single engine parameter or four engine parameters are displayed first. Then press the Menu button.



YC7292—19—11DEC14

Menu Display

2. First, various options of Main Menu are displayed.



YC7293—19—11DEC14

Arrow Buttons

3. Press Arrow buttons, scroll, and view menu options.



YC7294—19—11DEC14

Right Arrow Button

4. Press the right arrow button to scroll down to the last option of Main Menu. Select the desired menu option.



YC7490—19—11DEC14

Use Arrow Buttons to Scroll/Display Quadrant Mode

5. Use arrow buttons to select the desired menu option. Or, press the Menu button to leave the main menu and return to the engine parameter display.

CP00718,0003C7C-19-07DEC17

Engine Configuration Data

NOTE: Engine configuration data is for read only.



YC7300—19—11DEC14

Menu Button

1. Turn key switch to the D position. A single engine parameter or four engine parameters are displayed first. Then press the Menu button.



YC7291—19—11DEC14

Select Engine Configuration

2. Main menu appears. Use Arrow buttons to scroll to Engine Configuration.



YC7295—19—11DEC14

Enter Button

3. When Engine Configuration is selected, press Enter button to view engine configuration data.



YC7300—19—11DEC14

Menu Button

4. Press Menu button, exit the main menu and return to the engine parameter interface.

CP00718,0003C7D-19-07DEC17

View Stored Codes



YC7491—19—11DEC14

Normal Operation

1. In normal operation, a single-parameter or a four-parameter interface is displayed



YC7296—19—11DEC14

Stored Codes

2. Use Arrow buttons to scroll to Stored codes.



YC7297—19—11DEC14

Enter Button

3. When Stored codes are selected, press Enter button to view stored code information.



YC7298—19—11DEC14

Arrow Buttons

4. If Next appears above the Arrow buttons, there are more fault codes. Use Arrow buttons to scroll to the next fault code and continue viewing.



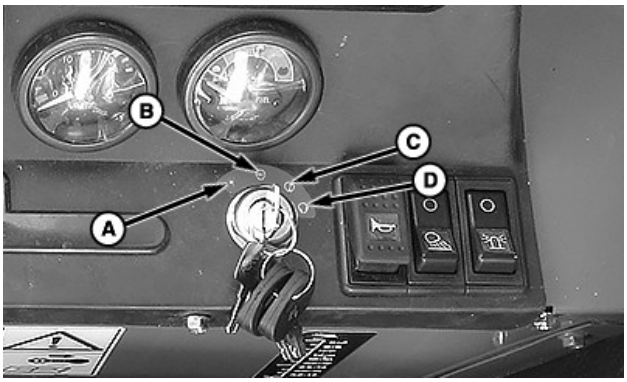
YC7299—19—11DEC14

Menu Button

5. To view corrective actions, press Menu button and return to the engine parameter interface.

CP00718,0003C7E-19-07DEC17

Key Switch



YC12247—UN—05DEC17

A—First Position
B—Second Position
C—Third Position
D—Forth Position

Key positions are:

First position (A):

ACC—Lights, wipe, horn, radio, and air conditioning are working.

Second position (B):

STOP—Stop engine.

Third position (C):

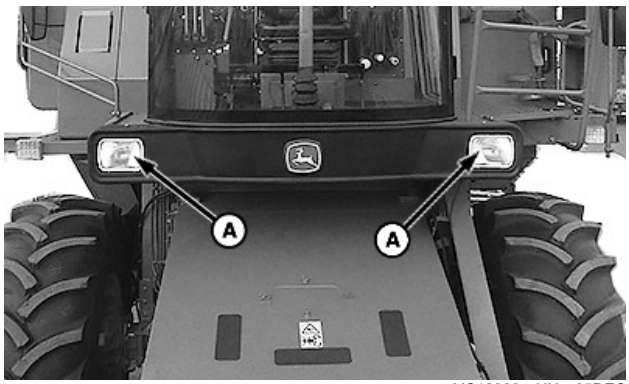
ON—Turn on the power, lights, wipe, horn, fuel pump, ECU, murphy gauge, radio, and air conditioning are working.

Forth position (D):

ST—Start engine.

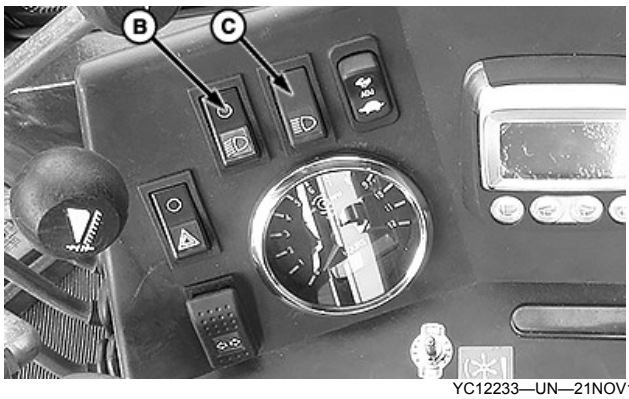
CP00718,000415D-19-15DEC17

Headlights



YC12263—UN—05DEC17

A—Headlights (2 used)



YC12233—UN—21NOV17

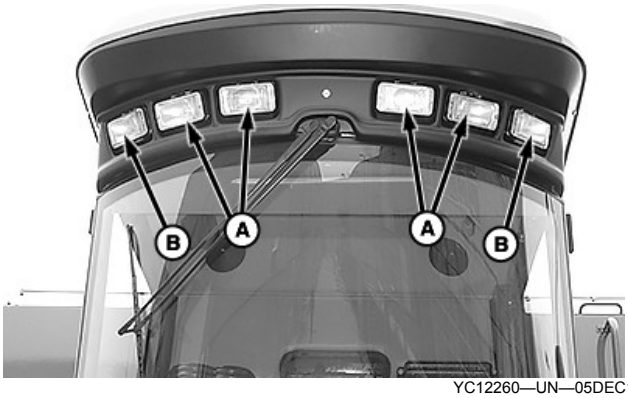
B—Low Beam Switch
C—High Beam Switch

Headlights (A) include high beam and low beam.

Use low beam when approach other vehicles.

CP00606,000176F-19-24MAY18

Working Lights



YC12260—UN—05DEC17

A—Working Lights (4 used)
B—Working Lights (2 used)



YC12234—UN—21NOV17

C—Working Lights Switch

When working lights switch (C) is on neutral position, working lights (A) are working.

When working lights switch (C) is on second position, working lights (A and B) are working.

When working lights switch (C) is on OFF position, working lights (A and B) are off.

JL31334,0001790-19-07MAY18

Front Turn-Signal Lights and Marker Lights



YC12261—UN—05DEC17

A—Front Turn-Signal Lights (2 used)
B—Front Marker Lights (2 used)

Front turn-signal lights (A) and front marker lights (B) are modular light.

Upper lights are front turn-signal lights (A) ; lower lights are front marker lights (B).



YC12235—UN—04DEC17

C—Turn-Signal Lights Switch
D—Low Beam Switch

Turn-signal lights switch (C) control front turn-signal lights (A). Turn on front turn-signal lights (A) before turning.

Low beam switch (D) control front marker lights (B). Turn on the front marker lights (B) in dark, warn vehicles.

CP00606,0001770-19-24MAY18

Rear Turn-Signal Lights, Marker Lights, and Brake Lights



YC10572—UN—08DEC16

A—Rear Turn-Signal Lights (2 used)
B—Brake Lights (2 used)
C—Rear Marker Lights (2 used)



YC12236—UN—05DEC17

D—Low Beam Switch
E—Turn-Signal Lights Switch

Rear turn-signal lights (A), brake lights (B), and rear marker lights (C) are modular light.

When depress brake pedal, brake lights (B) are working.

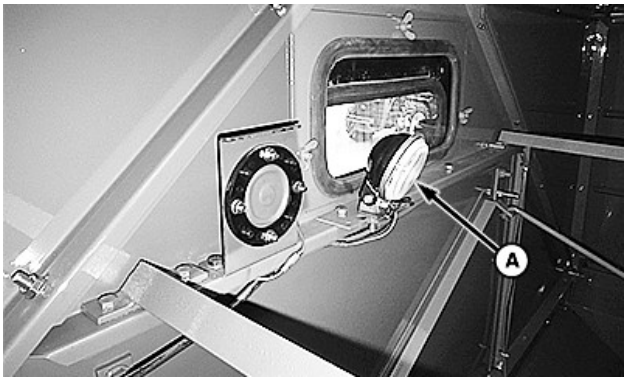
When the gear-shift lever is in reverse position, brake lights (B) are working, meantime horn is working.

Low beam switch (D) control rear marker lights (C).

Turn on the rear marker lights (C) in dark, warn vehicles.

JL31334,0001792-19-07MAY18

Grain Tank Light



YC10575—UN—08DEC16

A—Grain Tank Light



YC12262—UN—05DEC17

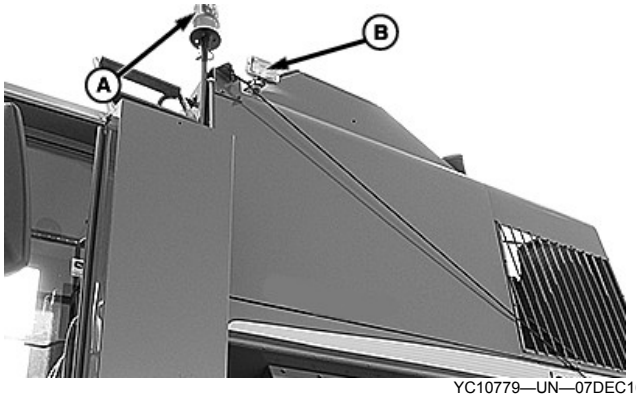
B—Low Beam Switch

Grain tank light (A) is in the grain tank.

Low beam switch (B) controls grain tank light (A).

JL31334,0001793-19-07MAY18

Unloading Beacon Light and Unloading Light



YC10779—UN—07DEC16

A—Unloading Beacon Light
B—Unloading Light



YC12238—UN—21NOV17

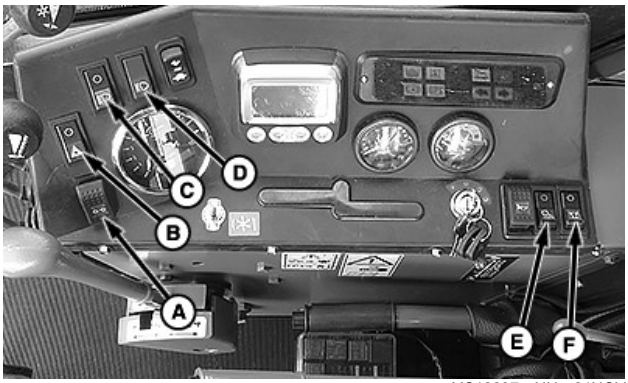
C—Unloading Beacon and Light Switch

Unloading beacon light (A) and unloading light (B) are at the left of combine, controlled by unloading beacon and light switch (C).

JL31334,0001794-19-07MAY18

Lights Switch

CAUTION: When the machine fails or is in danger, stop and engage the hazard lights switch (B). Turn on hazard lights in foggy day.



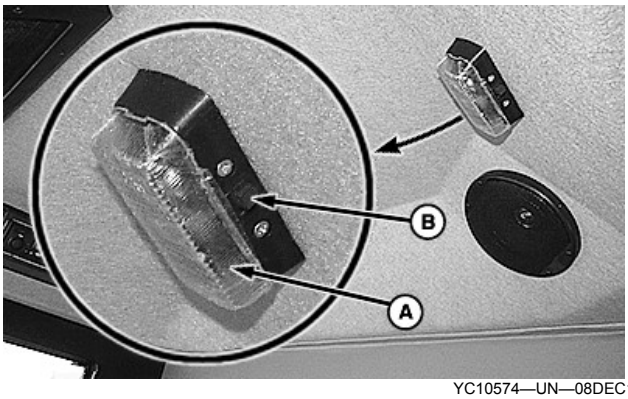
YC12237—UN—21NOV17

A—Turn-Signal Lights Switch
B—Hazard Lights Switch
C—Low Beam Switch
D—High Beam Switch
E—Working Lights Switch
F—Unloading Beacon and Light Switch

- Turn-signal lights switch (A)—Control front and rear turn-signal lights.
- Hazard lights switch (B)—Control front and rear turn-signal lights.
- Low beam switch (C)—Control low beam lights, grain tank light, and mark lights.
- High beam switch (D)—Control high beam lights.
- Working lights switch (E)—Control working lights.
- Unloading beacon and light switch (F)—Control unloading beacon light and unloading light.

CP00606,0001771-19-24MAY18

Dome Light



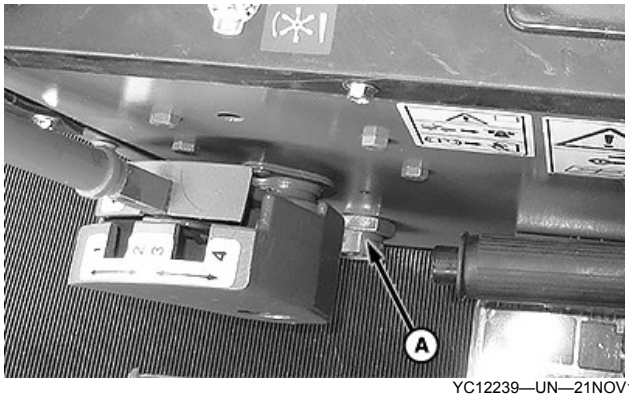
YC10574—UN—08DEC16

A—Dome Light
B—Switch

Dome light (A) is on the cab roof and above the operator's seat, switch (B) is on the side of light.

CP00606,0001772-19-24MAY18

Diagnostic Connector



YC12239—UN—21NOV17

A—Diagnostic Connector

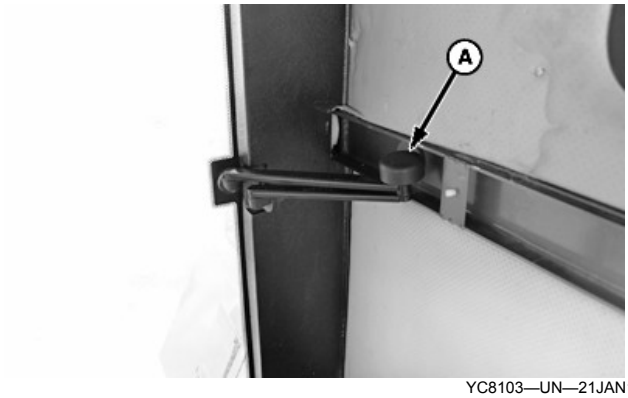
Diagnostic connector (A) is located at lower of the instrument panel.

Connect diagnostic connector (A), diagnose engine failure.

CP00606,0001773-19-24MAY18

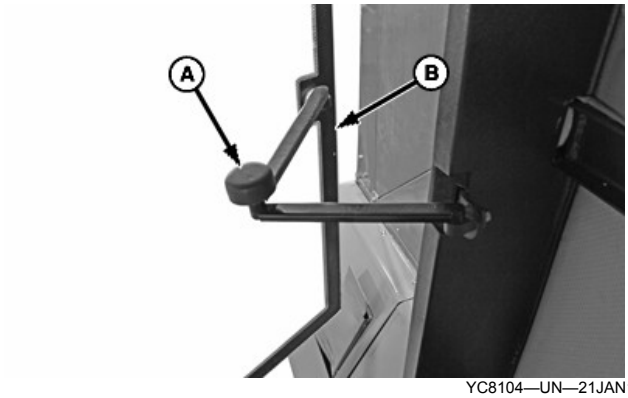
Cab Right Side Window (Emergency Exit)

⚠ CAUTION: If an emergency occurs and cab door cannot be opened, use right window to escape.



YC8103—UN—21JAN15

A—Handle



YC8104—UN—21JAN15

Right Window Opens

A—Handle
B—Right Side Window

When right side window (B) is closed, hold handle (A) and turn it clockwise to open right side window (B). Close right window by turning handle in reverse direction.

CP00606,0001774-19-24MAY18

Adjustment of Steering Column

CAUTION: Adjust steering column only when machine is stopped. Hold steering wheel, step on pedal.

CAUTION: Avoid personal injury. Lock steering column after adjustment.



YC10577—UN—08DEC16

A—Steering Column Pedal
B—Steering Column

Release steering column:

Step forward on the steering column pedal (A) to release the steering column (B), and move it to desired position.

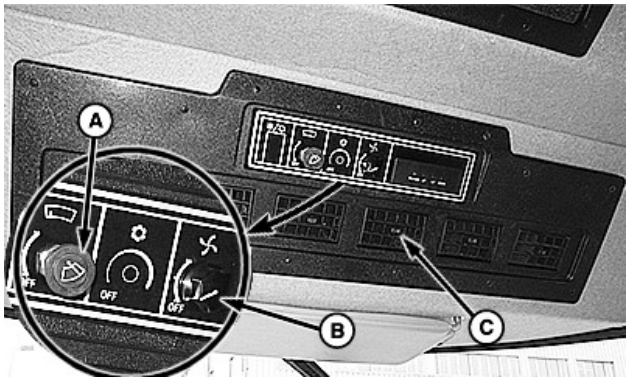
Lock steering column:

Step backward on the steering column pedal (A) to lock the steering column (B).

CP00606,0001775-19-24MAY18

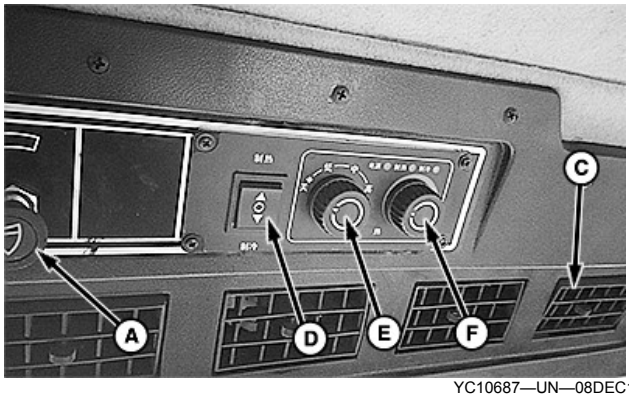
Cab Ceiling Control Panel

The cab ceiling control panel is at the front upper part of the cab. It controls wiper and fan.



YC10579—UN—08DEC16

Cab Ceiling Control Panel



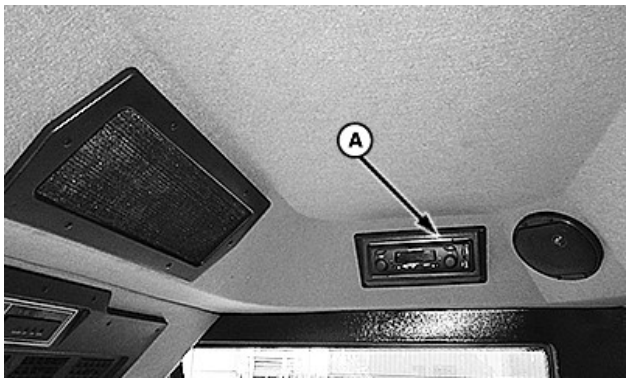
YC10687—UN—08DEC16

Cab Ceiling Control Panel (option)

A—Wiper Switch
B—Air Flow Knob
C—Adjustable Air Inlet
D—Air-conditioner Cooling/Heating Control Switch
E—Air-conditioner Air Flow Control Knob
F—Air-conditioner Temperature Adjustment Knob

CP00606,0001776-19-24MAY18

Digital FM Radio



YC10580—UN—08DEC16

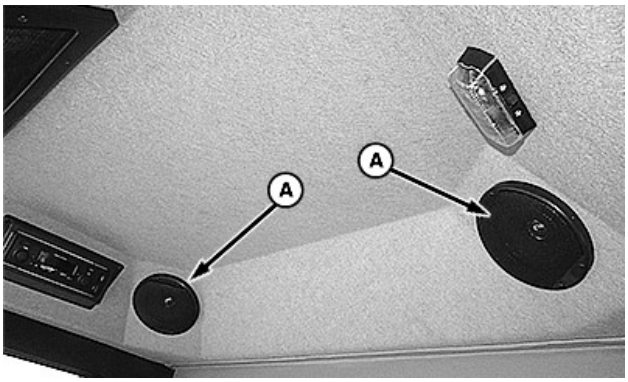
A—Radio

Combine is equipped with a radio (A).

For more information about the radio (A), refer to the manufacturer's manual.

CP00718,0003C8C-19-07DEC17

Speakers



YC10590—UN—08DEC16

A—Speakers (2 used)

Cab ceiling is equipped with two speakers (A) at the rear.

CP00718,0003C8D-19-07DEC17

Operator's Seat

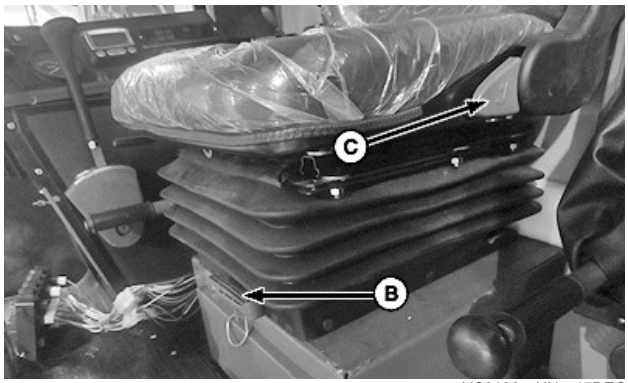
Operator seat is suspended.



YC3181—UN—23DEC13

A—Forward/Backward Adjustment Handle

Fore/Aft Adjustment Handle (A) — Pull up on the handle to slide seat forward or rearward for the best working position.



YC3182—UN—17DEC12

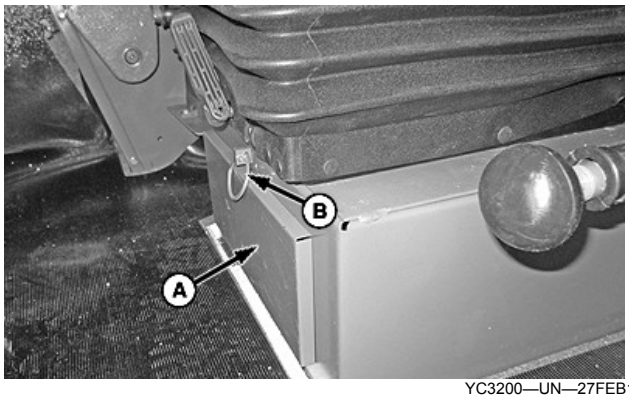
B—Height Adjustment Handle
C—Backrest Angle Adjustment Handle

Height Adjustment Handle (B) — Pull up on the handle to raise seat, or push down on the handle to lower seat.

Backrest Angle Adjustment Handle (C) — Adjust the seat back angle. Pull up on handle, adjust backrest to desired position and release handle.

CP00606,0001777-19-24MAY18

Toolbox below Seat



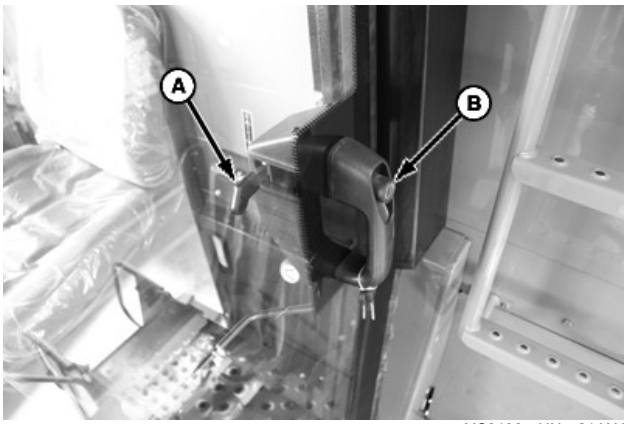
YC3200—UN—27FEB14

A—Toolbox Door
B—Door Latch

Open toolbox door (A) by moving door latch (B) upward.

CP00718,0003C8F-19-07DEC17

Cab Door Locker



YC8106—UN—21JAN15

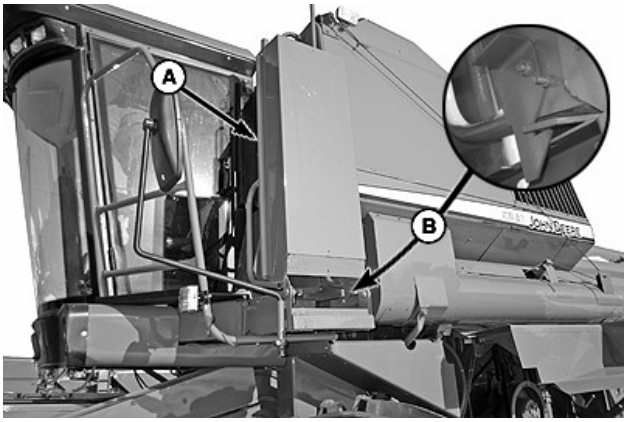
A—Handle
B—Door Locker

If the cab door is not locked, press door locker (B) to open the cab door. If the cab door is locked, first use the key to unlock and door can then be opened.

In the cab, operator can open cab door by pressing handle (A).

CP00718,0003C90-19-07DEC17

Secure Ladder in Transportation Position



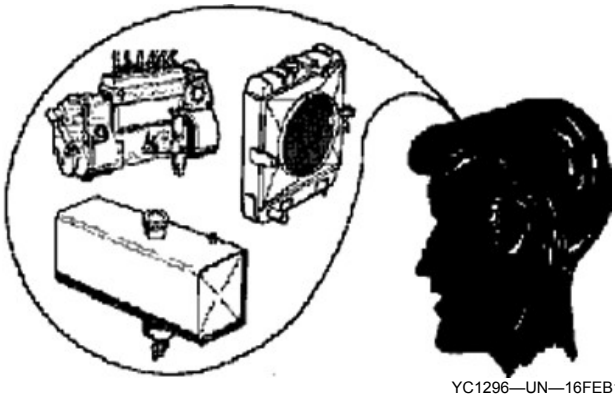
YC8107—UN—21JAN15

A—Ladder (Transportation Position)
B—Locking Tab

Before driving on roads, fold up ladder (A) and use locking tab (B) to secure it in transportation position. Avoid hurting others when unfolding the ladder.

CP00718,0003C91-19-07DEC17

Pre-Start Checks



YC1296—UN—16FEB12

Check Daily:

Before starting the combine, check the following:

- Engine
- Cooling system
- Hydraulic system
- Fuel system
- Lubrication
- Start combine in cool weather conditions

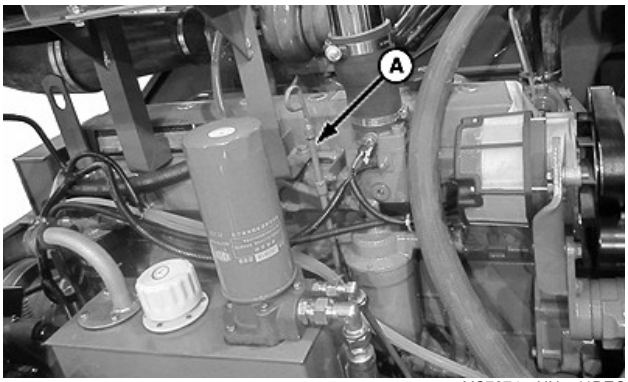
Check Engine Oil Level

Before starting the engine for the first time everyday, carry out following checks:

IMPORTANT: Keeping proper engine oil level is vital for the service life of the engine. Check engine oil level when combine is parked on level ground.

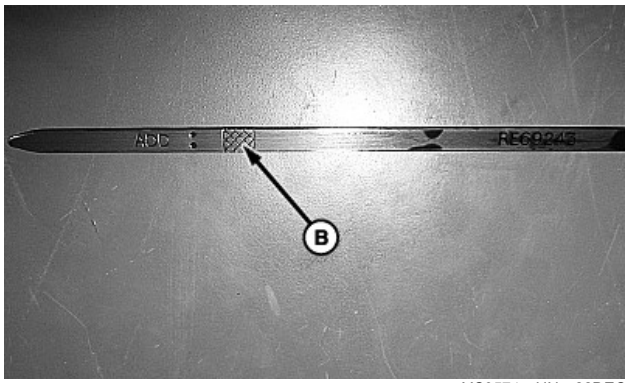
IMPORTANT: Never refill engine oil before engine oil level falls below the ADD mark.

IMPORTANT: Never fill engine oil above the top of the crosshatch pattern of the dipstick. Engine oil level should be correct if it is within the crosshatch mark. Do not operate engine when oil level is below the ADD mark on dipstick.



YC7874—UN—11DEC14

A—Oil Dipstick



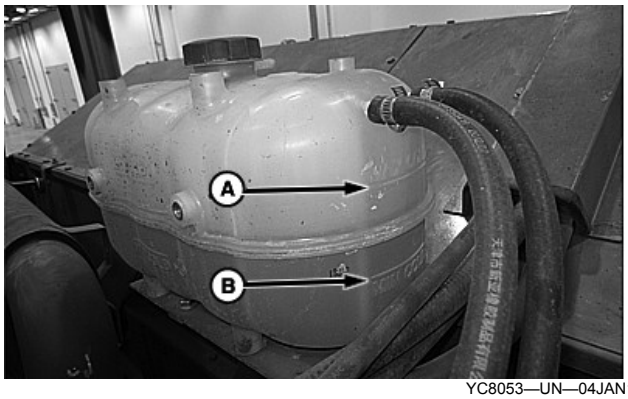
YC9574—UN—22DEC15

B—Crosshatch Mark on Dipstick

Check engine oil level with the oil dipstick (A). Refill engine oil as necessary. Use appropriate engine seasonal viscosity grade oil. For technical specifications of engine oil, see Diesel Engine Break-In Oil—Non-Emissions Certified and Certified Tier 1, Tier 2, Tier 3, Stage I, Stage II, and Stage III in Fuel, Coolant, and Lubricants section.

Check Coolant Level

CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. If radiator cap must be removed, wait engine cooled down. Switch off engine. Wait until radiator cap is cooled down so that it can be touched by bare hands. Before fully loosening the cap, first loosen it slowly to the first pause point to release pressure. Never add coolant when engine is overheated. The coolant regulator can cause serious injury or death. Never inhale or drink coolant regulator, and avoid contact with skin or eyes. When adding coolant regulator, observe the precautions on the container.



YC8053—UN—04JAN15

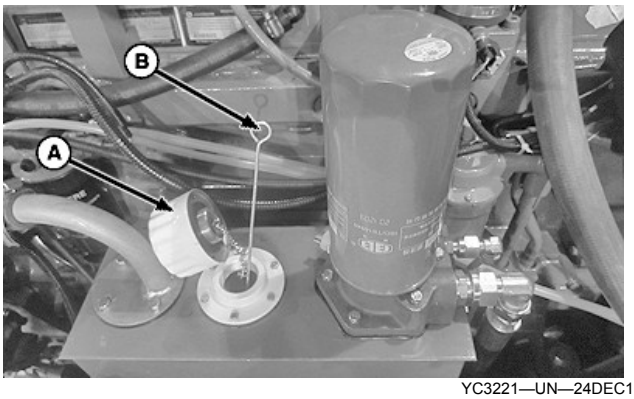
A—MAX Mark
B—MIN Mark

Coolant level need to be between the MIN mark (B) (when engine is cool) and the MAX mark (A) (when engine is hot) on the expansion tank. See Engine Coolant in Operating Engine section.

Add coolant as necessary. Coolant can normally be

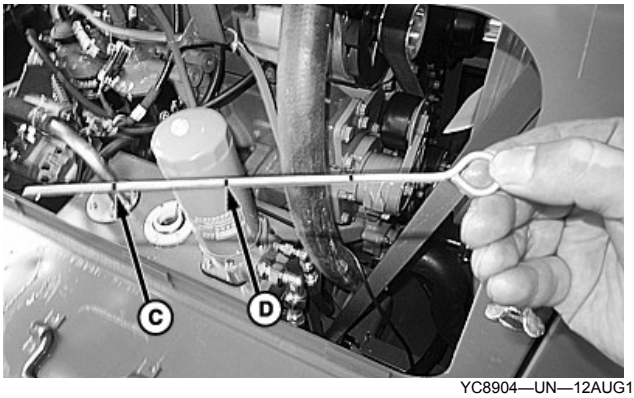
added to the expansion tank. If expansion tank is empty, add coolant directly to the radiator. For technical specifications of coolant, see Diesel Engine Coolant (engine with wet sleeve cylinder liners) in Fuel, Coolant, and Lubricants section.

Check Hydraulic Oil Level



YC3221—UN—24DEC13

A—Hydraulic Oil Reservoir Cap
B—Dipstick



YC8904—UN—12AUG15

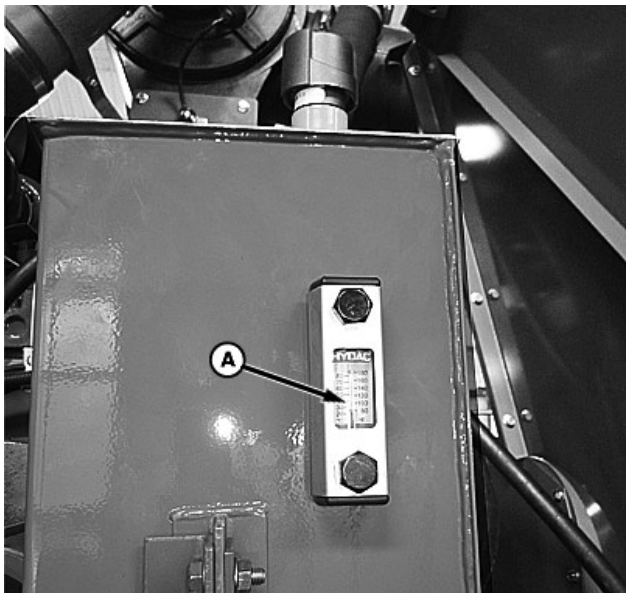
C—MIN Mark
D—MAX Mark

Retract all hydraulic cylinders and lower header onto the ground. Open hydraulic oil reservoir cap (A) and use dipstick (B) to check the oil level.

Hydraulic oil level need to be between MAX and MIN mark on dipstick (B).

For technical specifications of hydraulic oil, see Hydraulic Oil in Fuel, Coolant, and Lubricants section.

Check Hydrostatic Oil Level (Hydrostatic Drive)



YC10736—UN—12SEP16

A—Hydrostatic Oil Level Gauge

Check hydrostatic oil level by observing hydrostatic oil level gauge (A). Hydrostatic oil level should be on the upper mark of hydrostatic oil level gauge (A).

If hydrostatic oil level is below the lowest mark, add oil as necessary.

To fill hydrostatic oil, see Hydrostatic Reservoir and Filter (Optional Hydrostatic Drive Type) in section 25.

For technical specifications of hydrostatic oil, see Hydrostatic Drive Oil in Fuel, Coolant, and Lubricants section.

Check Fuel Tank Level



YC12242—UN—21NOV17

A—Fuel Level Guage

Before starting the engine, turn the key to D position, check level through the fuel level guage (A).

Fill fuel tank as necessary. See Fuel Tank Filler in Operating Engine section.

Check fuel tank level before starting the machine.

Fill fuel in the fuel tank:

IMPORTANT: Fuel is highly flammable and can cause serious injury or death. Do not refuel machine while smoking or near an open flame or spark. Always stop engine before refueling. Always fill the fuel tank in an open air . Be sure to reinstall fuel filler cap and rear screen after filling. Always clean up spilled fuel. Do not overfill fuel tank.

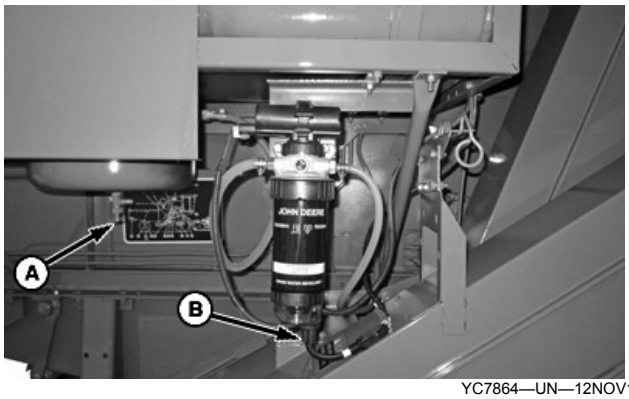


YC8789—UN—30JUN15

B—Drain Valve

1. If engine does not work for a long time, remove drain valve (B) to drain water from the fuel tank. Retighten drain valve.
2. Fill with specified fuel. See Diesel Fuel in Fuel, Coolant, and Lubricants section.

Fuel System



YC7864—UN—12NOV14

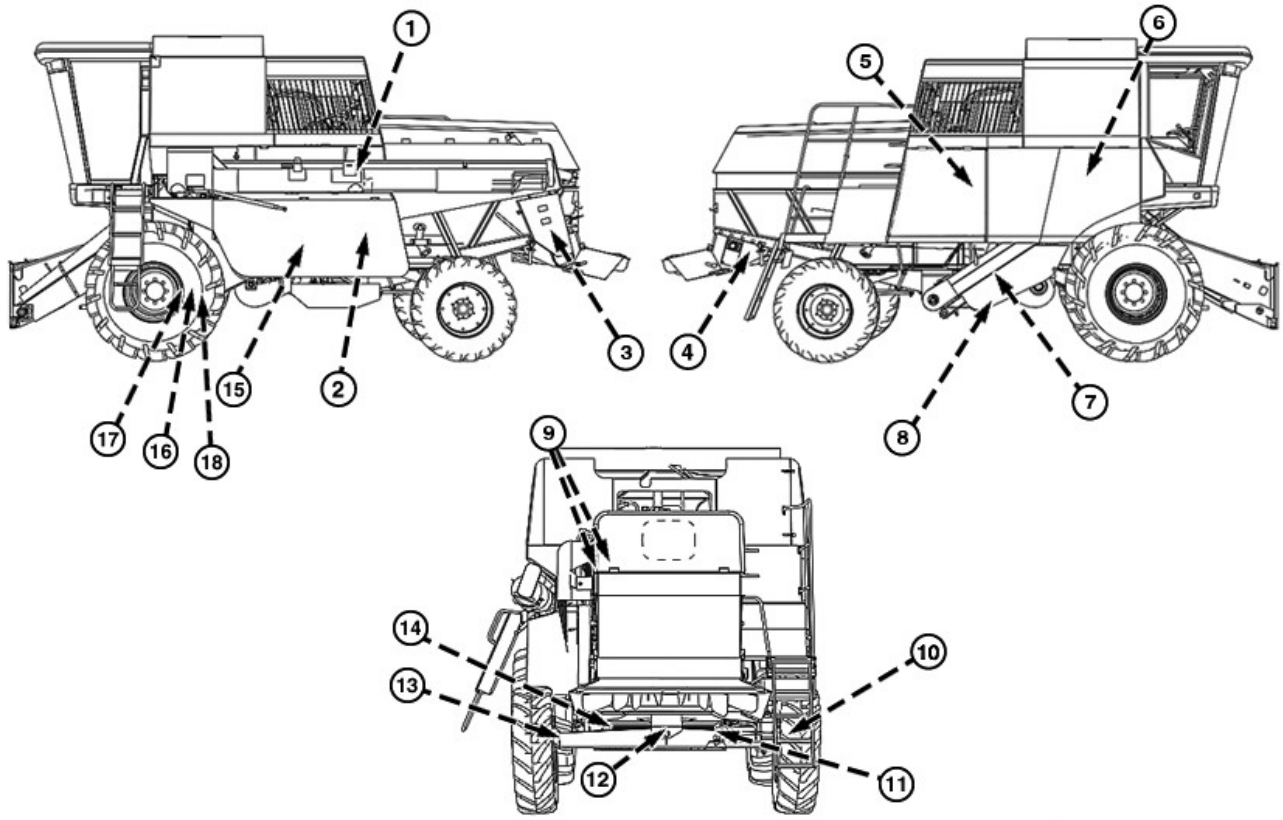
A—Drain Valve
B—Drain Valve

Before operating the combine everyday, open drain valve (A) to drain water and sediment. See Fuel Tank Sediment Bowl in Operating Engine section.

Before operating the combine everyday, open drain valve (B) to drain water and sediment. See Primary Fuel Filter in Operating Engine section.

After storing combine for a long time, bleed air from the fuel system. See Bleed the Fuel System in Operating Engine section.

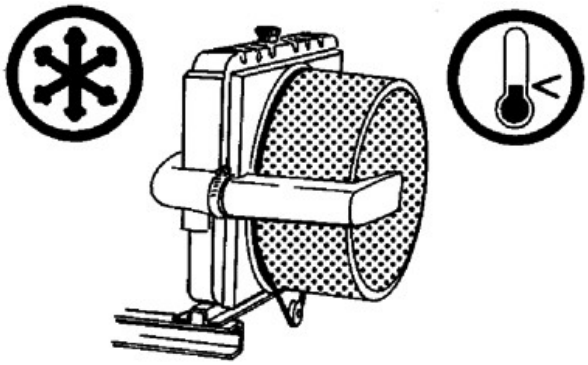
Lubricate Combine



YC10776—UN—07DEC16

Lubricate combine according to the lubrication diagrams. For the position numbers in diagram, see Lubrication Points in Lubrication and Maintenance section.

Start in Winter



YC1302—UN—16FEB12

Before starting combine in winter, ensure that rotary screen can rotate freely (no ice and snow).

CP00606,0001778-19-24MAY18

Start the Engine

Before Starting the Engine

CAUTION: Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove exhaust fumes from area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open doors and get outside air into area.

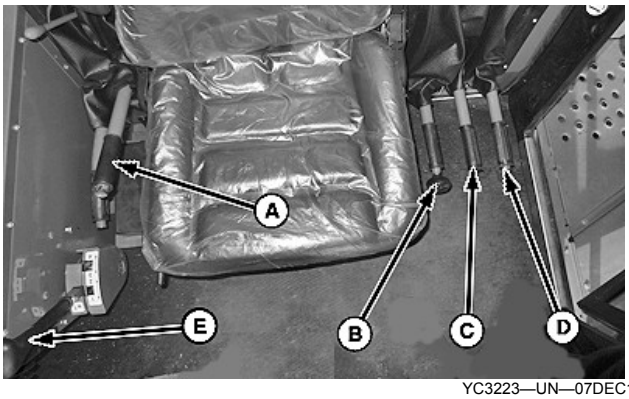
CAUTION: Sound horn before starting engine, warn others to stay clear from machine.

Start engine ONLY from the operator's seat. Do not start engine by shorting across starter terminals.

CAUTION: If the combine suddenly starts moving forward, serious personal injury can occur. Before starting the engine, make sure that park brake is engaged, and gear-shift lever is in neutral position.

IMPORTANT: To prevent damaging the starter , do not operate the starter for more than 30 seconds at a time. If engine does not start, wait at least two minutes before trying again.

Start the Engine



YC3223—UN—07DEC16

A—Park Brake
B—Header Engage Lever
C—Separator Engage Lever
D—Unloading Auger Engage Lever
E—Gear-Shift Lever

1. Set park brake (A).
2. Disengage the header engage lever (B).
3. Disengage the separator engage lever (C).
4. Disengage the unloading auger engage lever (D).

NOTE: Engine can be started when separator is disengaged.

5. Set gear-shift lever (E) in neutral position.



YC12244—UN—11DEC17

A—Throttle Switch

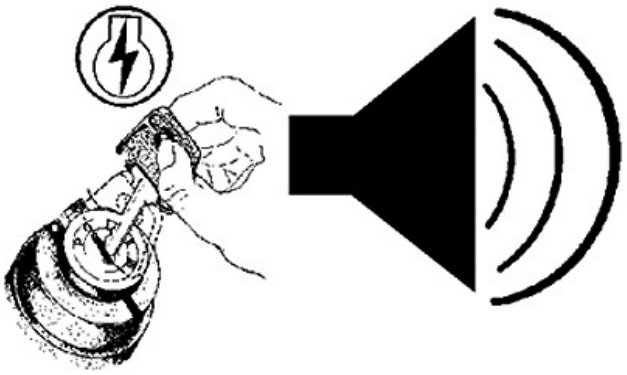
6. Set throttle switch (A) in low speed (turtle) position.



YC8050—UN—30DEC14

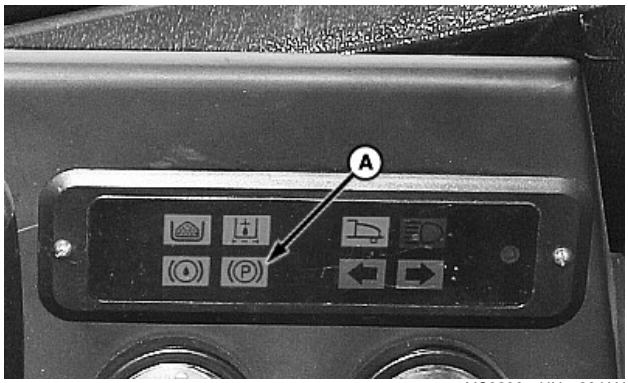
A—Clutch Pedal

7. Press clutch pedal (A) fully.



YC1306—UN—25DEC12

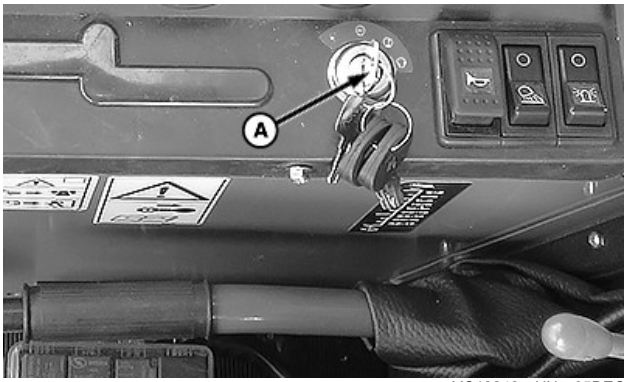
8. Insert key. When the key is inserted, an intermittent buzzer sounds due to following reasons:
   - Set park brake.
   - If the rear cover blockage warning switch is engaged, horn sounds continuously.



YC8206—UN—23JAN15

A—Park Brake Light

9. Turn the key to D position. If park brake is set, park brake light (A) comes on.
10. Indicators on the Murphy Gauge go off.
11. Sound horn 5 seconds, and warn others to stay clear from machine.
12. Turn the key to Q position.



YC12246—UN—05DEC17

A—Key Switch

13. If the key returns to D position before engine starts, wait until engine stops and restart the engine.

NOTE: When outdoor temperature is below 0ºC, use auxiliary start-up device. Each starting time cannot exceed 30 seconds. See Use Auxiliary Start-up Device to Start the Engine in Control of Combine section.

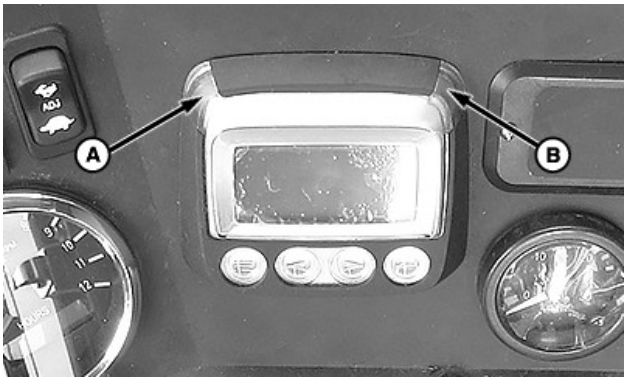
IMPORTANT: If engine is not started within 30 seconds, wait for at least 2 minutes before restart. Do not start engine after four consecutive attempts.

IMPORTANT: To avoid damaging machine, never run engine at idle speed for more than 5 minutes.

14. Set throttle switch in low speed (turtle) position, run the engine 1-2 minutes to warm oil. If temperature is below 0 ºC, extended to 2-4 minutes.
15. Other indicators are off after engine has started. See Other Indicators in Control of Combine section.

CP00606,0001779-19-24MAY18

Murphy Gauge Indicator



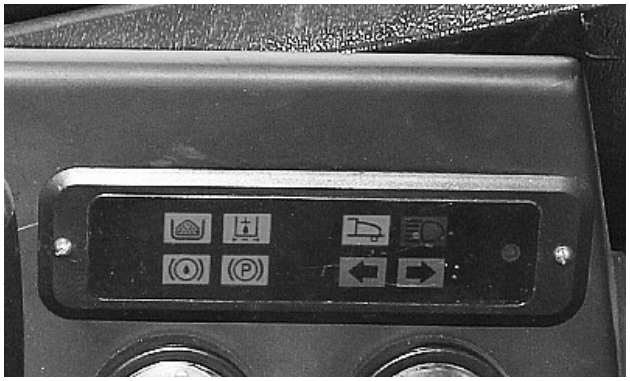
YC12248—UN—21NOV17

A—Orange Indicator
B—Red Indicator

After turning key switch to D or Q position, orange (A) and red (B) indicators go off. Otherwise, check for additional anomalies, and repair as needed as shown in Murphy Gauge.

CP00718,0004160-19-15DEC17

Other Indicators



YC8209—UN—23JAN15

After engine has started, all other indicators go off.

NOTE: After park brake is set, park brake light also goes off. If other indicators are still on, check diagnostic trouble codes and repair as needed.

CP00718,0003CCD-19-08DEC17

Preheat the Engine



YC12244—UN—11DEC17

A—Throttle Switch

After engine has started, set throttle switch (A) to low speed (turtle) position (engine speed is about 1300 r/m). Run engine for 1—2 minutes. If weather is cold, increase running time to 2—4 minutes.

IMPORTANT: Never run engine at idle speed for longer than 5 minutes.

CP00718,0004161-19-15DEC17

Use Auxiliary Start-Up Device to Start the Engine



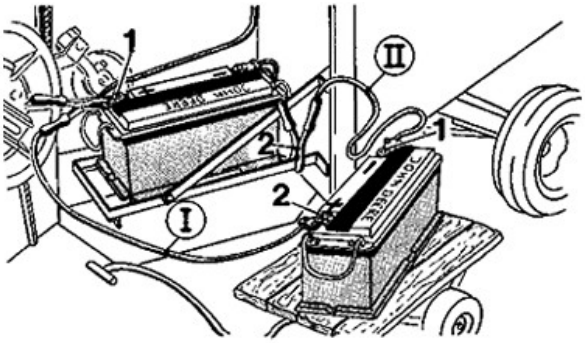
YC12251—UN—21NOV17

A—Throttle Switch
B—Key Switch
C—Murphy Gauge

1. Set throttle switch (A) in low speed (turtle) position.
2. Turn key switch (B) to ON position, and keep this position for 15—20 seconds.
3. Observe reading changes on Murphy Gauge (C).
4. Quickly turn the key switch to ST position.
5. After engine has started, make sure that the switch returns to ON position (key switch automatic resets).

CP00718,0004163-19-15DEC17

Using Parallel Battery to Start



YC2394—UN—29OCT12

In cold weather condition, a 12-volt battery can be used in parallel with the original 12-volt electrical system of combine.

CAUTION: Gases discharged from battery can cause explosion. Keep flame and fire away from battery. Make sure that battery connection is good. Wrong connection of cables can cause serious damage to the electrical system. Remember to connect ground cable to the negative electrode.

Start up procedures of using the auxiliary battery:

1. Connect auxiliary battery.
2. Start engine and run it till charging indicator goes off.
3. Disconnect and remove auxiliary battery.
4. If needed, turn lights on.

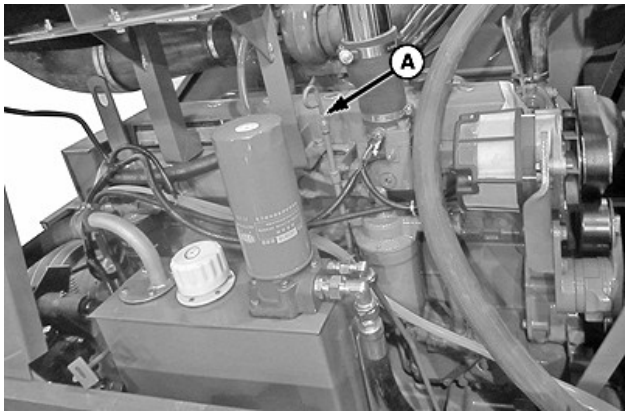
NOTE: This start-up procedure is only applicable in emergency situations.

CP00718,0003CD0-19-08DEC17

Engine Break-In

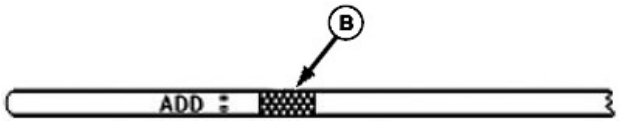
The engine is ready for normal operation. However, extra care during the first 100 hours of operation will result in more satisfactory long-term engine performance and life. DO NOT exceed 100 hours of operation with break-in oil.

1. This engine is factory-filled with John Deere DIESEL ENGINE BREAK-IN OIL (SAE 10W-30). Operate the engine at heavy loads with minimal idling during the break-in period.
2. If the engine has significant operating time at idle, constant speeds, and/or light load usage, or makeup oil is required in the first 100 hour period, a longer break-in period may be required. In these situations, an additional 100 hour break-in period is recommended using a new change of John Deere DIESEL ENGINE BREAK-IN OIL and a new John Deere oil filter.



YC6033—UN—26DEC13

A—Oil Dipstick



YC6034—UN—26DEC13

B—Crosshatch Mark on Oil Dipstick

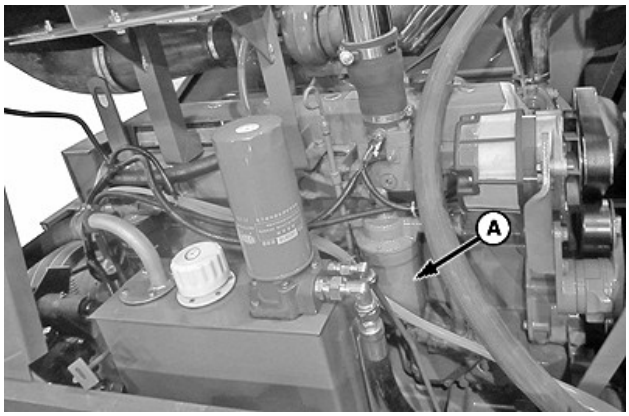
IMPORTANT: DO NOT add makeup oil until the oil level is BELOW the "ADD" mark. DO NOT fill above the crosshatch mark (B) on oil dipstick (A), whichever is present. Oil levels anywhere within the crosshatch are considered in the acceptable operating range. John Deere ENGINE BREAK-IN OIL should be used to make up any oil consumed during the break-in period.

3. Check engine oil level more frequently during engine break-in period. If oil must be added during this period, John Deere DIESEL ENGINE BREAK-IN OIL is preferred. See Diesel Engine Break-In Oil—Non-Emissions Certified and Certified Tier 1, Tier 2, Tier 3, Stage I, Stage II, and Stage III in Fuel, Coolant, and Lubricants section.
4. If John Deere engine break-in oil is not available, use engine oil of 10W-30 viscosity grade which is recommended by the American Society of Automotive Engineers and meets one of the following criteria. Change engine oil and filter after 100 operating hours:
   a. API classified CE grade;
   b. API classified CD grade;
   c. API classified CC grade;
   d. ACEA engine oil E2 series;
   e. ACEA engine oil E1 series.
5. During the first 20 hours, avoid prolonged periods of engine idling or sustained maximum load operation. If engine will idle longer than 5 minutes, stop engine.

IMPORTANT: Some increase in oil consumption may be expected when low viscosity oils are used. Check oil levels more frequently.

If temperature is below 0°C (32°F), it may be necessary to use cold weather starting aids (see Cold Weather Start in Control of Combine section).

If air temperature is below -10°C (14°F), use an engine block heater.



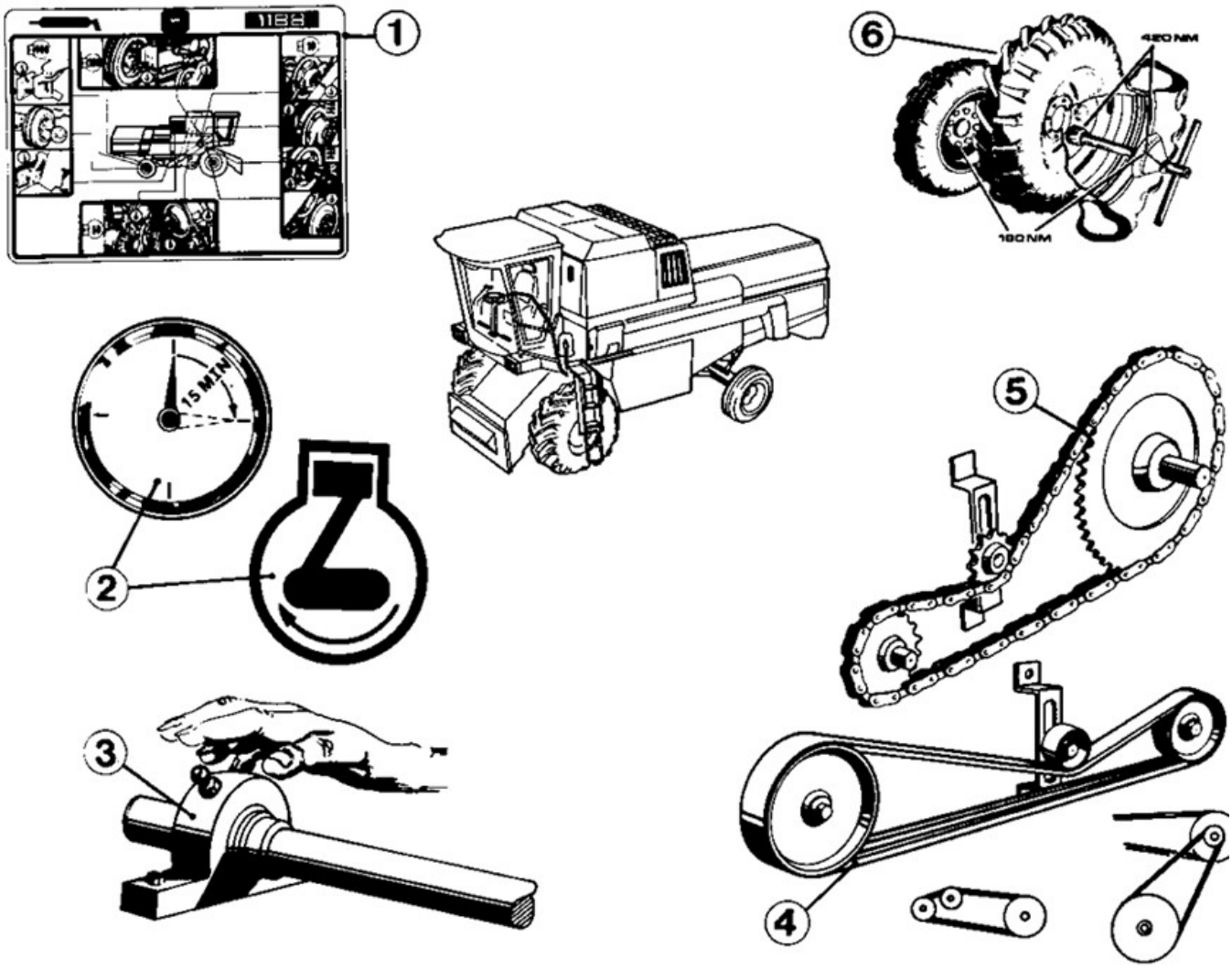
YC6032—UN—26DEC13

A—Engine Oil Filter

6. Before the first 100 hours (maximum), change engine oil and replace engine oil filter (A). (Refer to Engine Oil and Filter Service Intervals in Fuel, Coolant, and Lubricants section.) Fill crankcase with the normal seasonal viscosity grade oil. (See Diesel Engine Oil — Tier 3 and Stage III in Fuel, Coolant, and Lubricants section.)
7. Closely monitor coolant temperature in Murphy Gauge. If coolant temperature rises above 110°C, reduce load on engine. Unless temperature drops quickly, stop the engine and determine the cause of failure before resuming operation.
8. Monitor engine oil pressure in Murphy Gauge. When engine is running at low idling speed, minimum pressure is maintained at 103 kPa (1.03 bar). After engine is warmed up, pressure is increased to at least 241 kPa (2.41 bar). Maintain rated speed under full load.
9. Check alternator and fan drive V-belt for proper alignment and seating in pulley grooves.

CP00606,000177A-19-24MAY18

Machine Break-In



YC1309—UN—16FEB12

1. Switch off the engine, lubricate all lubrication points.
2. After engine has run for 15 minutes, engage and disengage all levers. If unusual sound is heard, immediately disengage separator and switch off the engine. Check diagnostic trouble codes and repair. Restart the engine and engage separator again.
3. If all transmission parts work normally, after the combine has run for 15—30 minutes, disengage the separator and switch off the engine. Check all bearings if they are over-heated.
4. Check the tension of V-belt. Adjust as necessary.
5. Check the tension of the drive chain, adjust as necessary.
6. Retighten front-wheel nuts with a torque of 420 N·m. Retighten rear-wheel bolts with a torque of 180 N·m.

NOTE: After engine has started for a few hours, check again the tension of belts and chains.

CP00718,0003CD2-19-08DEC17

Stop the Engine



YC12227—UN—21NOV17

A—Header Raise/Lower Lever

1. Push header raise/lower lever (A) forward to lower header slowly onto solid level ground.



YC8051—UN—21JAN15

A—Gear-Shift Lever

2. Press clutch pedal. Set gear-shift lever (A) in neutral position.

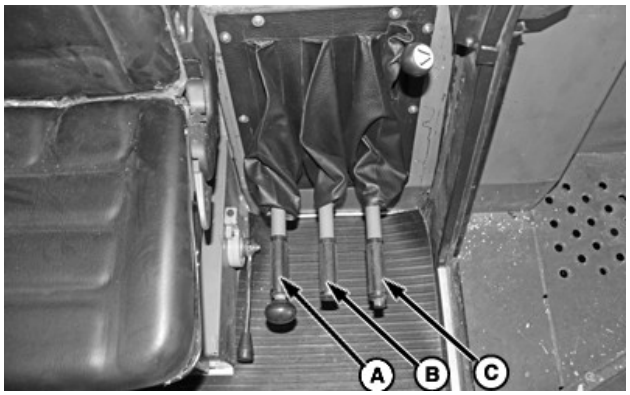


YC12244—UN—11DEC17

A—Throttle Switch

3. Set throttle switch (A) in low speed (turtle) position.

IMPORTANT: After full load operation, do not stop engine suddenly.



YC8211—UN—21JAN15

A—Header Engage Lever
B—Separator Engage Lever
C—Unloading Auger Engage Lever

4. Before stopping the engine, disengage header engage lever (A), separator engage lever (B), and unloading auger engage lever (C).
5. Before stopping the engine, run it at idle speed for 2 minutes.

IMPORTANT: If the engine is suddenly stopped, some components of the engine are over heated. Immediately restart the engine. Remove the key and stop the engine after engine runs at idle speed for 1—2 minutes,



YC12246—UN—05DEC17

A—Key Switch

6. Turn key switch (A) to shut off engine.

IMPORTANT: Set park brake, and remove the key before leaving machine.



YC11134—UN—17DEC17

A—Park Brake

7. Set park brake (A).

CP00606,000177B-19-24MAY18

Start Engine in Cold Weather Conditions

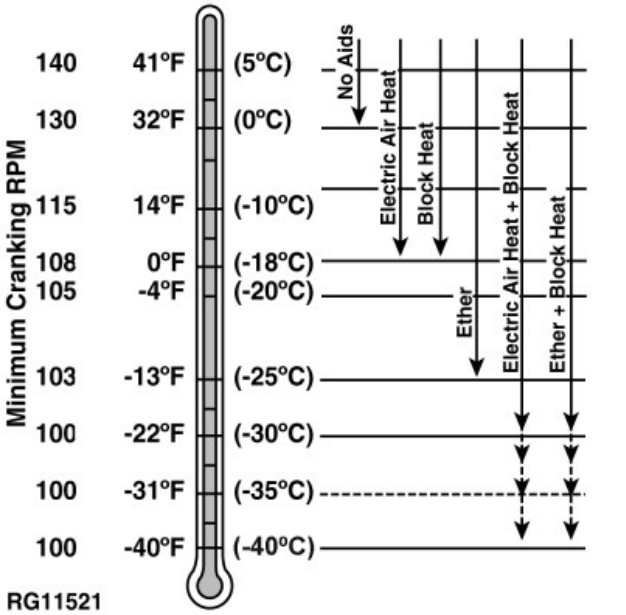


YC1314—UN—29NOV12



TS1356—UN—18MAR92

Use Starting Fluid with Caution



RG11521—19—10JAN01

Cold Working Start Guide

CAUTION: If engine has air intake heater or preheat plug, never use starting fluid. Ether injection starting fluid is highly flammable and potentially explosive and can cause serious personal injury.

Do not use starting fluid near flames, sparks, or fire. Never burn or puncture a starting fluid can.

Engine is equipped with cold weather start aid such as the intake air heater, coolant heater, fuel heater, or ether injector.

Starting aids are required below 0°C (32°F). When temperature is higher, using auxiliary start aid can improve starting performance. Auxiliary start aid is also needed if load is too high when starting or idling.

Use specified engine oil (see Diesel Engine Oil — Tier 3 and Stage III in Fuel, Coolant, and Lubricants section) to start the engine in cold weather conditions.

Synthetic oil has better low temperature fluidity, especially in cold weather conditions.

If temperature is below -30°C (-22°F) or altitude is above 1500 m (5000 feet), use auxiliary start aid. (See Using Booster Battery or Charger in Control of Combine section.)

1. Carry out all checks required in Pre-Start Checks in Control of Combine section.
2. Set throttle button to low speed (turtle) position.
3. Turn key to D position, but never start the engine before engine preheat reading becomes correct.
4. Turn key switch clockwise to Q position and start the engine. After engine has started, release key switch so that it returns to D position.

5. After engine has started, run engine at idle speed (not over 1200 rpm) to preheat. (See Preheat the Engine in Control of Combine section.)

For more information about working in cold weather conditions, contact an authorized service dealer.

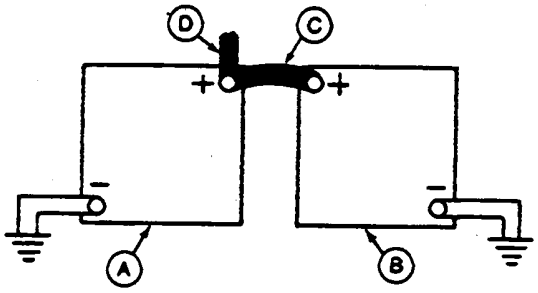
CP00718,0003CD4-19-08DEC17

Using Booster Battery or Charger



TS204—UN—15APR13

Battery Explosion



RG4678—UN—14DEC88

12-Volt System

A—12-volt Machine Battery
B—12-volt Booster Battery
C—Booster Cable
D—Starter Cable

Connect a 12-volt booster battery in parallel with the machine battery and aid starting in cold weather condition. A heavy load jumper cable must be used.

CAUTION: Gas released from battery can cause explosion. Keep battery away from sparks and flames. Shut off charger first before connecting or disconnecting battery charger. Make last connection and first disconnection at a position away from battery. Negative (-) cable must be connected last and disconnected first.

CAUTION: Battery terminals, connectors, and related accessories contain lead and lead compounds, as well as chemicals known to cause cancer or reproductive disease. Wash hands after contact.

IMPORTANT: Be sure that polarity is correct. Positive electrode must be connected to the positive terminal and negative electrode must be connected to the ground. Use a 12-volt booster battery for 12-volt electrical system.

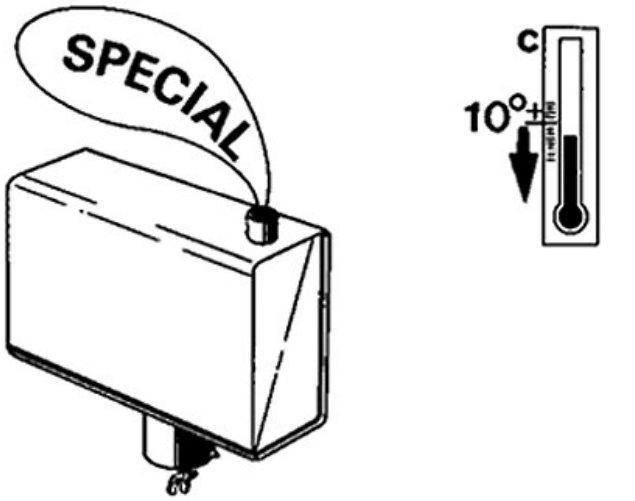
1. Connect to the booster battery to provide required voltage for the engine.

NOTE: To avoid sparks, make sure that the free end of the jumper cable does not contact the engine.

2. Connect one end of the jumper cable to the positive (+) terminal of the booster battery.
3. Connect another end of the jumper cable to the positive (+) terminal of the machine battery (connecting with starter).
4. Connect one end of another jumper cable to the negative (-) terminal of the booster battery.
5. After cable is connected, connect the negative (-) cable to the ground on the engine frame which is away from the battery.
6. Start the engine. After switching on the engine, disconnect jumper cable. First disconnect negative (-) cable.

CP00718,0003CD5-19-08DEC17

Fuel System



YC1315—UN—29NOV12

Drain water and impurities from the fuel tank, the sediment bowl, and the primary fuel filter every day before starting the engine.

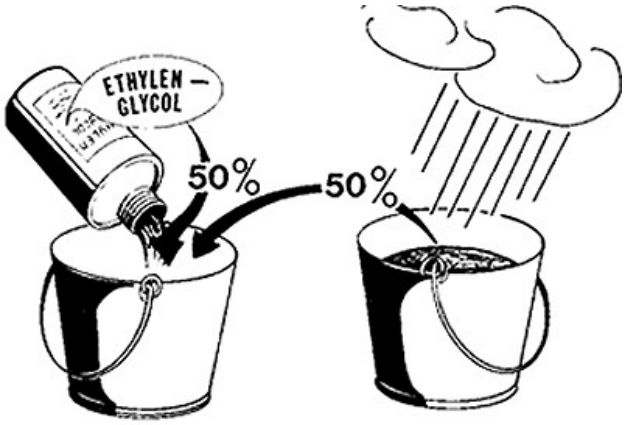
Refill fuel tank to prevent condensation and corrosion every day after harvesting, particularly after a harvest season.

In winter, when temperature is below 10°C, use special fuel or add anti-gelling compound to fuel to maintain proper viscosity.

See Diesel Fuel in Fuel, Coolant, and Lubricants section.

CP00718,0003CD6-19-08DEC17

Engine Cooling System



YC2395—UN—29NOV12

Coolant has been added into the engine cooling system in the factory to prevent corrosion and freezing (if air temperature is below -37°C).

It is recommended to use John Deere Cool-Gard™ II coolant.

See Diesel Engine Coolant (Engine with Wet sleeve Cylinder Liners) in Fuel, Coolant, and Lubricants section.

CP00718,0003CD7-19-08DEC17

Reminder

IMPORTANT: Only trained operators should be allowed to operate the combine.

Comply with relevant laws and regulations when driving on public roads.

CP00606,000177C-19-24MAY18

Avoid Excessive Engine Idling

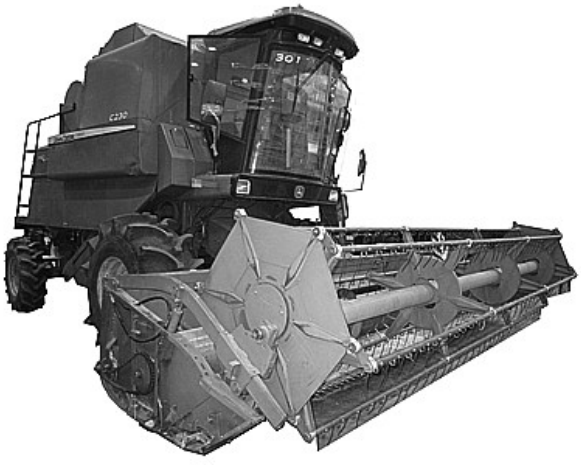


YC1316—UN—24DEC12

Excessive idling causes engine coolant temperature to drop below the normal range. This, in turn, causes crankcase oil dilution , due to incomplete fuel combustion, and permits the formation of gummy deposits on valves, pistons and piston rings. It also promotes rapid accumulation of the engine sludge and unburned fuel in the exhaust system. When heated to normal temperature, engine can run at low idling speed. Factory setting of low idling speed is 1300 rpm. If the engine has been idling over 5 minutes, stop the engine first and restart it later.

CP00718,0003CD9-19-08DEC17

Header Lifting Device



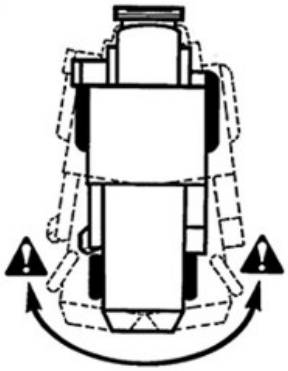
YC8052—UN—30DEC14

Lift the header to transport or operation position.

CP00718,0003CDA-19-08DEC17

Cool-Gard is a trademark of John Deere

Steer and Drive



YC2755—UN—29OCT12

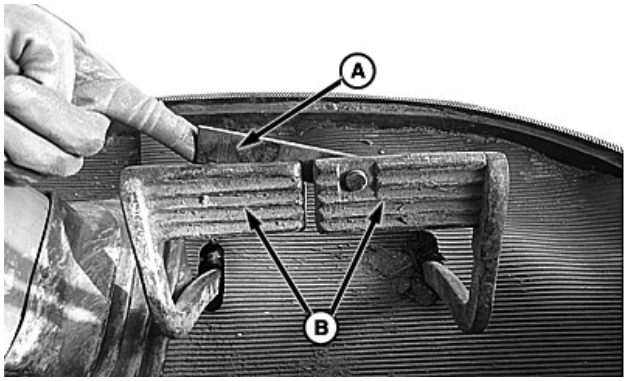
The steering wheels are at the rear of combine. Operator must be familiarized with steering.

The area at the rear of combine must have enough space to steer in both directions.

NOTE: Steering wheel is hard to turn when the combine is not running.

CP00606,000177D-19-24MAY18

Brake Pedals



YC8055—UN—21JAN15

A—Latch
B—Brake Pedals (2 used)



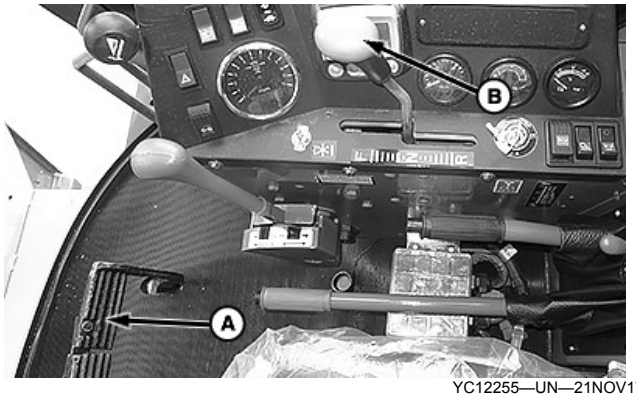
YC8056—UN—04JAN15

Lock brake pedals (B) together with latch (A) when driving on roads.

IMPORTANT: If the brake did not work, release the pedals and quickly step on it again.

CP00606,000177E-19-24MAY18

Brake the Combine (Optional Hydrostatic Drive Type)



YC12255—UN—21NOV17

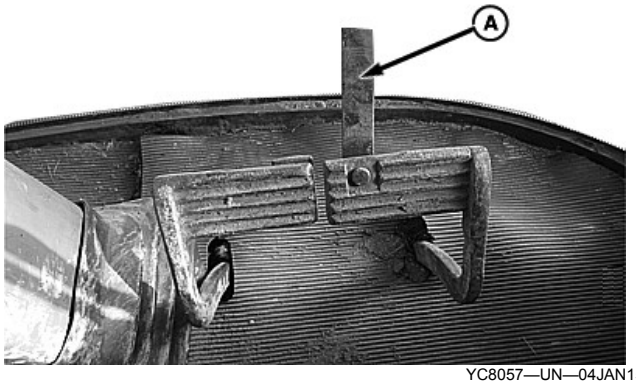
A—Brake Pedal
B—Hydrostatic Drive Lever

1. Set hydrostatic drive lever (B) to neutral position.
2. Engage brake pedals (A).

NOTE: Before braking an optional hydrostatic drive type combine, set the hydrostatic drive lever (B) to neutral position.

CP00718,0004165-19-15DEC17

Operate Combine in the Field



YC8057—UN—04JAN15

A—Latch

Lift latch (A), unlock brake pedals to assist machine in sharp turns.

Press right brake pedal for a sharp turn to the right.

Press left brake pedal for a sharp turn to the left.

IMPORTANT: To brake the combine, press both pedals at the same time.

CP00718,0003CDE-19-08DEC17

Clutch Pedal



YC8050—UN—30DEC14

A—Clutch Pedal

Shift gears after pressing clutch pedal (A). When driving the combine, do not press the clutch pedal (A) to prevent damaging transmission mechanism.

NOTE: Never press the clutch pedal when driving downward.

CP00718,0003CDF-19-08DEC17

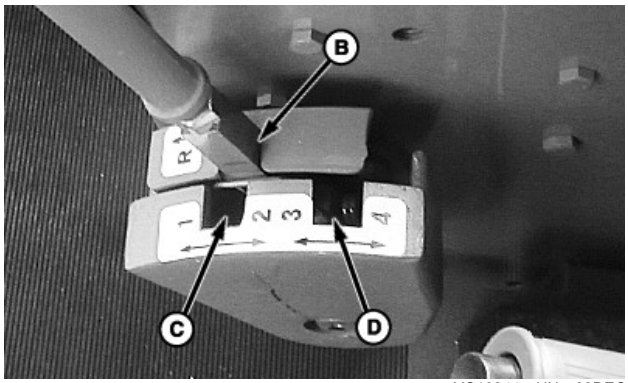
Gear-Shift Operation

IMPORTANT: Shift gears when the combine is stopped steadily. Do not shift gears when the combine is moving.



YC8051—UN—21JAN15

A— Gear-Shift Lever



YC10844—UN—08DEC16

B— Slot R
C— Slot One—Two
D— Slot Three—Four

After disengaging clutch pedal, place gear-shift lever (A) in required positions:

Slot R (Reverse): Place gear-shift lever in slot R (B), push forward.

Slot One—Two: Place gear-shift lever in slot one—two (C), push forward to gear one. Pull backward to gear two.

Slot Three—Four: Place gear-shift lever in slot three—four (D), push forward to gear three. Pull backward to gear four.

- Shift directly the gear-shift lever (A) to gear four for road transportation.
- Shift directly the gear-shift lever (A) to required gears when the combine is harvesting.

JL31334,000179A-19-07MAY18

Throttle Switch



YC12244—UN—11DEC17

A—Throttle Switch

There are three engine speed positions on the throttle switch (A). Low-speed position (engine speed: 1300 rpm), medium-speed position (engine speed: 1800 rpm), high-speed position (engine speed: 2400 rpm). Set throttle switch at required position to change engine speed (lower speed to high speed: turtle to rabbit).

CP00718,0004166-19-15DEC17

Ground Speed Control (Mechanical Drive Type Combine)

NOTE: Before moving combine forward or backward, stop machine, set ground speed lever in lowest speed position, and shift into desired gear.

1. Start the engine.
2. Raise the header to operation or transport position.
3. Observe obstacles and people around combine.
4. Sound horn and warn people around the machine.



YC12229—UN—21NOV17

A— Ground Speed Lever

5. **Move forward:** Set ground speed lever (A) in lowest speed position. Disengage clutch pedal, shift into desired gear, and engage clutch pedal. Push ground speed lever forward to get required speed.

IMPORTANT: Select appropriate speed for road transport and operation.

6. **Move backward:** Set ground speed lever (A) in lowest speed position, Disengage clutch pedal, shift into reverse gear, and engage clutch pedal. Push ground speed lever forward to get required speed.

CP00718,0004167-19-15DEC17

Ground Speed Control (Optional Hydrostatic Drive Type Combine)

NOTE: Before moving combine forward or backward, stop machine, set hydrostatic drive lever in neutral position, shift into desired gear.

1. Start the engine.
2. Raise the header to operation or transport position.
3. Observe obstacles and people around combine.
4. Sound horn and warn people around the machine.



YC12230—UN—21NOV17

A— Hydrostatic Drive Lever

5. **Move forward:** Set hydrostatic drive lever (A) in neutral position, shift into desired gear, and push hydrostatic drive lever forward to get required speed.

IMPORTANT: Select appropriate speed for road transportation and operation. The reverse range provides a large number of selectable speeds. Select the appropriate reverse speed for moving backward

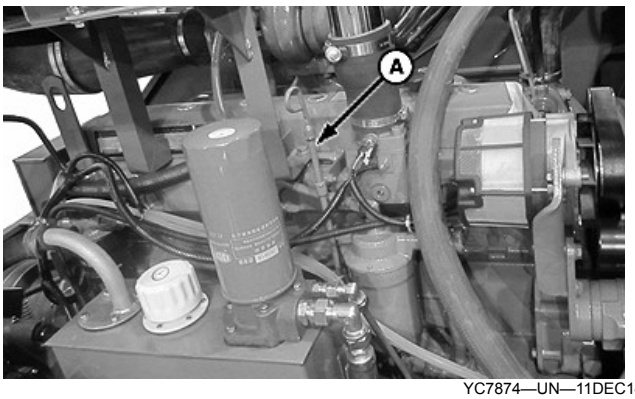
6. **Move backward:** Set hydrostatic drive lever (B) in neutral position, shift into desired gear, and pull hydrostatic drive lever backward to get required speed.

CP00606,000177F-19-24MAY18

Check Engine Sump Oil Level

CAUTION: To prevent interruption of oil circulation when engine is in inclined position, oil level does not fall below the "MIN" marks on oil dipstick.

IMPORTANT: Checking engine oil level frequently can extend the engine service life.



YC7874—UN—11DEC14

A—Oil Dipstick

Oil level is kept within required range of the oil dipstick (A). Check every 10 hours (or everyday). Before removing oil dipstick (A), completely clean the area around the oil dipstick.

For more detailed information, see Pre-start Checks in Control of Combine section.

CP00606,0001780-19-24MAY18

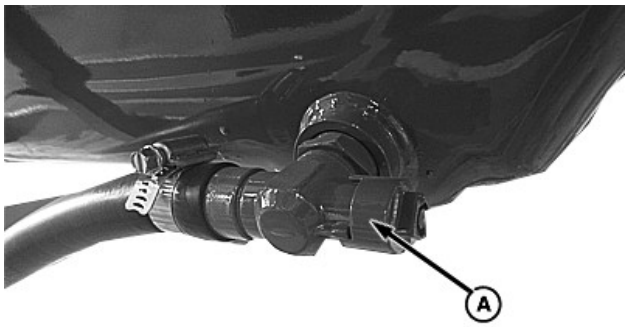
Change Engine Oil and Replace Filter

NOTE: During break-in, change engine oil and filter for the first time before 100 hours maximum of operation.

Change engine oil and filter according to the requirements, see Engine Oil and Filter Service Intervals in Fuel, Coolant, and Lubricants section. Change oil also after a harvest season.

Change engine oil and filter as follows:

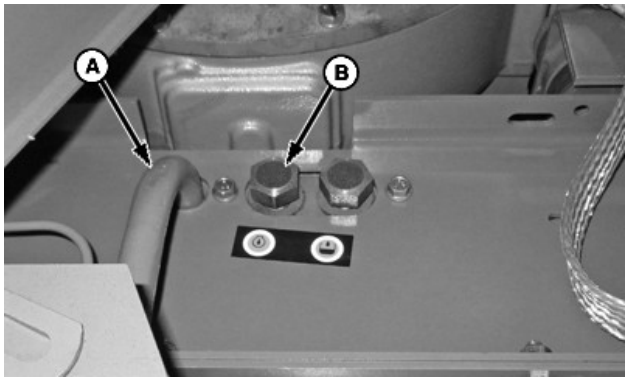
1. Warm up oil by running engine approximately 5 minutes. Shut off engine.



YC8631—UN—28FEB16

A— Drain Plug

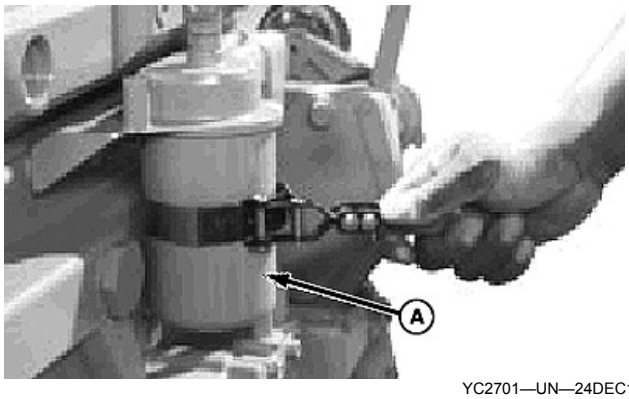
2. Loosen the drain plug (A).



YC8109—UN—26JAN15

A—Guide Pipe
B—Engine Oil Drain Plug

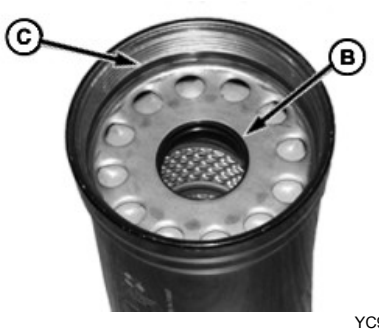
3. Loosen the engine oil drain plug (B), oil flows out from the guide pipe (A) to a suitable container.
4. Drain the crankcase oil from engine while warm.



YC2701—UN—24DEC12

A—Filter Element

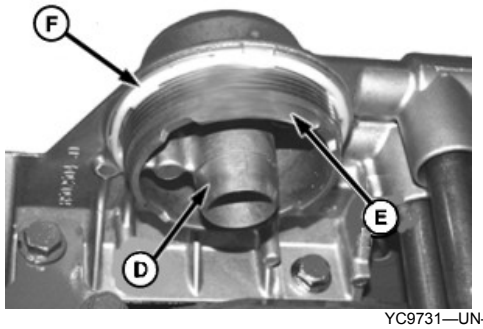
5. Turn and remove the filter element (A) using a suitable filter wrench. Discard the oil filter element.



YC9730—UN—21MAR16

B—Inner Seal
C—Outer Seal

6. Apply the clean engine oil to the new filter at the inner (B) and outer (C) seals , and the filter threads.



YC9731—UN—21MAR16

Filter and Mounting Header

D—Sealing Surface of Header
E—Sealing Surface of Header
F—Dust Seal

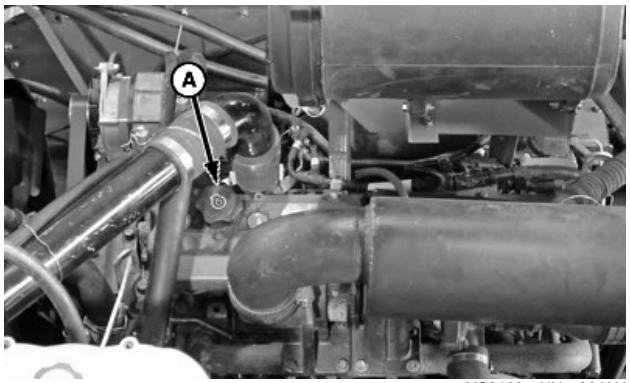
7. Wipe both sealing surfaces of header (D and E) with a clean rag. Ensure the notches in the dust seal (F) are properly installed in the slots in the housing. Replace the dust seal if damaged.

IMPORTANT: When installing the filter element, Hand tighten only. A filter wrench is used for removal only.

8. Install and tighten the oil filter by hand until firmly against the dust seal (F). DO NOT apply an extra 3/4 to 1-1/4 turn after gasket contact as done with the standard filters.
9. Tighten the drain plug.
10. Tighten the engine oil drain plug on the left-hand side of the machine.

IMPORTANT: Immediately after completing any oil change, crank engine for 30 seconds without permitting engine to start. Ensure adequate lubrication to the engine components before engine starts.

NOTE: Crankcase oil capacity varies slightly. ALWAYS fill the crankcase within the crosshatch marks on dipstick. DO NOT overfill.

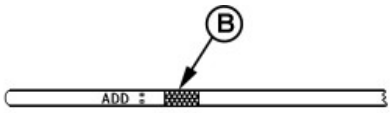


YC8108—UN—26JAN15

A—Oil Filler Cap

11. Fill engine crankcase with specified engine oil through the oil filler cap (A). (See Diesel Engine Oil — Tier 3 and Stage III in Fuel, Coolant, and Lubricants section.)

    To determine the correct oil quantity for your engine, see Engine in Table of Technical Parameters section.
12. Start engine and run to check for possible leaks.



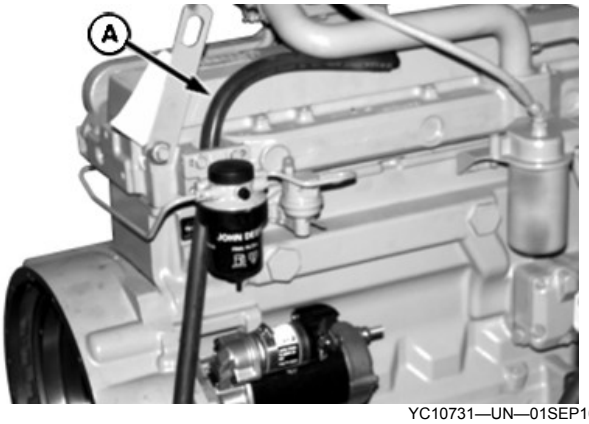
RG13730—UN—11NOV04

B—Crosshatch Marks

13. Stop engine and check oil level after 10 minutes. Ensure that oil level is within the crosshatch marks (B) on dipstick.

CP00606,0001781-19-24MAY18

Check Crankcase Ventilation System



YC10731—UN—01SEP16

A—Crankcase Ventilation Tube

If you operate the engine in the dusty conditions, check the system at shorter intervals.

1. Remove and clean the crankcase ventilation tube (A).
2. Install the ventilation tube. Ensure that the O-ring fits

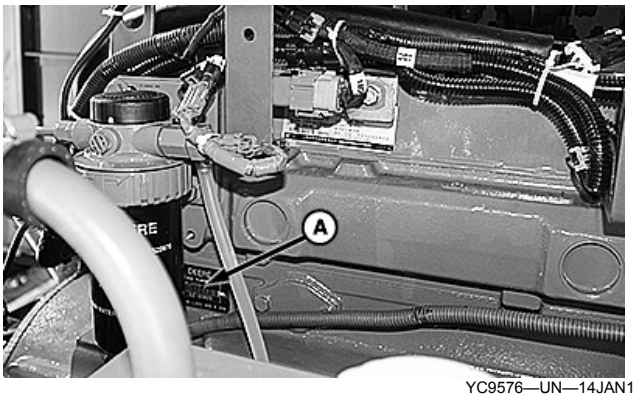
correctly the elbow adapter in the rocker arm cover. Tighten the hose clamp securely.

CP00718,0003EFA-19-12DEC17

Engine Serial Number

Record Engine Serial Number

Each engine has a John Deere engine serial number.



YC9576—UN—14JAN16

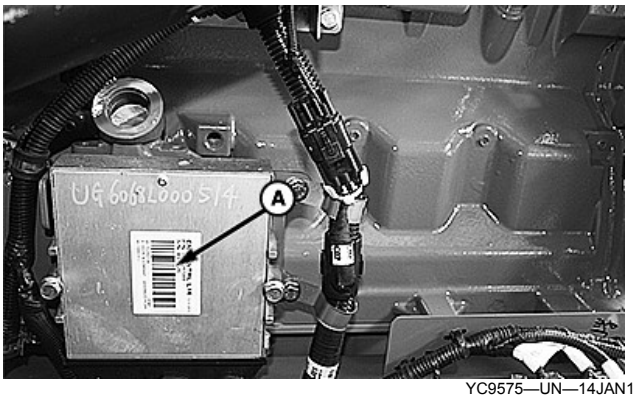
A—Engine Serial Number Plate

The engine serial number plate (A) is on the right-hand side of the cylinder block behind the fuel filter.

Record all of the numbers and letters found on your engine serial number plate in the spaces provided.

Engine Serial Number:	

Record Engine Control Unit (ECU) Serial Number



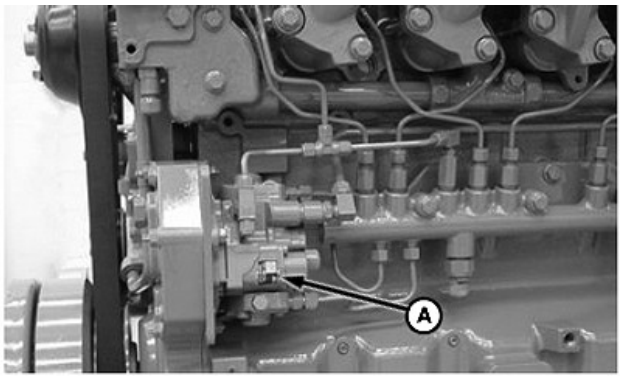
YC9575—UN—14JAN16

A—ECU Serial Number Label

Record the parts number and serial number information found on the serial number label (A) on the engine control unit (ECU) mounted on the engine.

Part No.	
Serial No.	

Record High-Pressure Fuel Pump Model Number



YC9732—UN—21MAR16

A—Serial Number Plate

Record the high-pressure fuel pump model and serial number information found on the serial number plate (A).

Model No.:	
RPM:	
Manufacture's No.:	
Serial No.:	

CP00606,0001782-19-24MAY18

Avoid Injury



YC2706—UN—29OCT12

CAUTION: Under sufficient pressure, emitted diesel can penetrate the skin, causing serious injury or death. Avoid hazard by relieving pressure before disconnecting lines. Before pressurizing this system, make sure that all joints are tightened and pipes are without damage. Fuel leak from the tiny hole is almost invisible. Use cardboard or wood plate to check for leaks, instead of using the hand. If injured by leaked fuel, immediately go to hospital for treatment.

CP00718,0003EFC-19-12DEC17

Do Not Open High-Pressure Fuel System



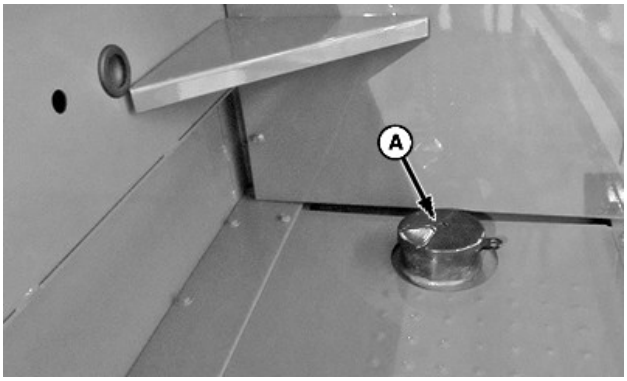
TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt repair of fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system.

Only technicians familiar with this type of system can perform repairs. (See your John Deere dealer.)

DX,WW,HPCR1-19-07JAN03

Fuel Tank Filler



YC3212—UN—23DEC13

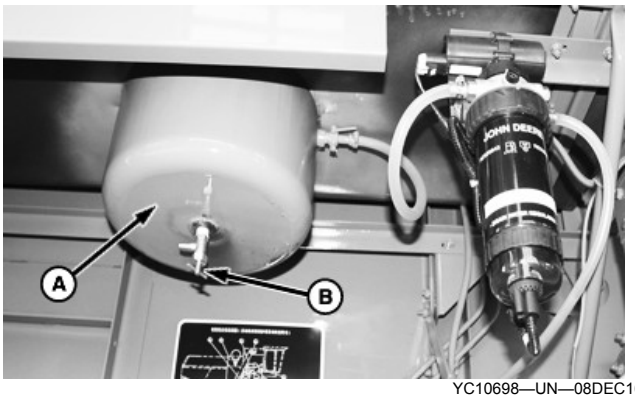
A—Filler Cap

Filler cap (A) of the fuel tank is at the lower part of the rear platform. The fuel tank filler has a vent.

Clean surrounding area before opening the filler cap.

CP00718,0003EFE-19-19DEC17

Fuel Tank Sediment Bowl



YC10698—UN—08DEC16

A—Sediment Bowl
B—Drain Valve

Sediment bowl (A) is at the lower part of the fuel tank for draining water and sediments.

Open the drain valve (B) daily before work starts. After all sentiments and water are drained out, close the drain valve.

CP00718,0003EFF-19-12DEC17

Electronic Fuel Transfer Pump

IMPORTANT: Avoid that material buildup leads to a fire or over-heating of the fuel transfer pump, clean area around the fuel transfer pump frequently.



YC3214—UN—03JAN14

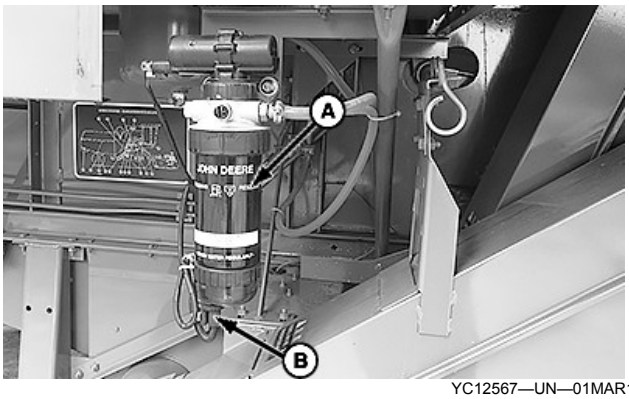
A—Electronic Fuel Transfer Pump

Electronic fuel transfer pump (A) is located above the primary fuel filter.

The engine control unit (ECU) controls electronic fuel transfer pump. When the key switch is turned to D position, electric fuel pump starts. If engine does not start within 2 minutes, engine control unit (ECU) stops the electric fuel transfer pump.

CP00718,0003F00-19-12DEC17

Primary Fuel Filter



YC12567—UN—01MAR18

A—Primary Fuel Filter
B—Drain Plug

Primary fuel filter (A) is located in the front of the fuel tank.

IMPORTANT: Drain water into a suitable container and dispose of properly.

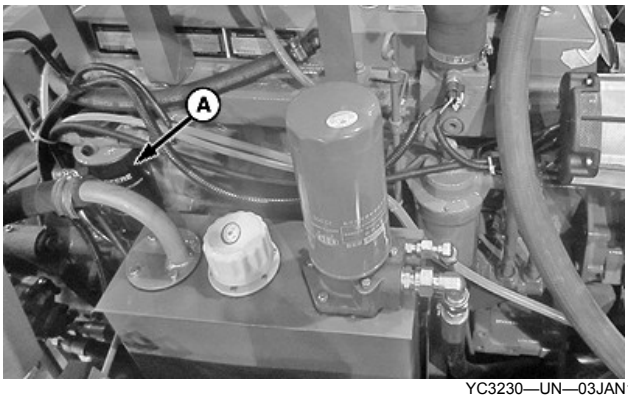
Primary fuel filter separates water from the fuel. If the filter is fitting with a see-through bowl, drain as needed based on a daily visual inspection.

Primary fuel filter has the alarm function regarding water in fuel. If too much water is in fuel, alarm indicator on the cab dashboard is on.

CP00606,0001783-19-24MAY18

Final Fuel Filter

IMPORTANT: Never fill the unfiltered fuel into the injection pump.



YC3230—UN—03JAN14

A—Final Fuel Filter

Final fuel filter (A) is located at the rear side of engine.

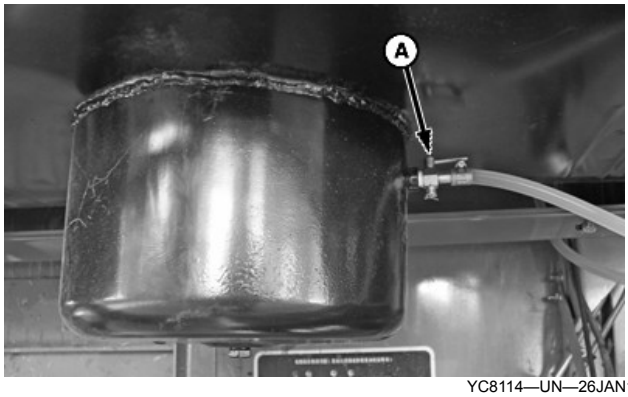
CP00718,0003F02-19-12DEC17

Replace Fuel Filter Elements

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting fuel or other lines. Tighten all connectors before applying pressure. Keep hands and body away from pinholes or nozzles from which fluids eject under high pressure. Search for leaks using a piece of cardboard or wood plate. Do not use bare hands to check for leaks.

If any fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene result. Doctors unfamiliar with this type of injury call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.

For engine equipped with the primary fuel filter and final fuel filter, change both filter elements every 200 hours.

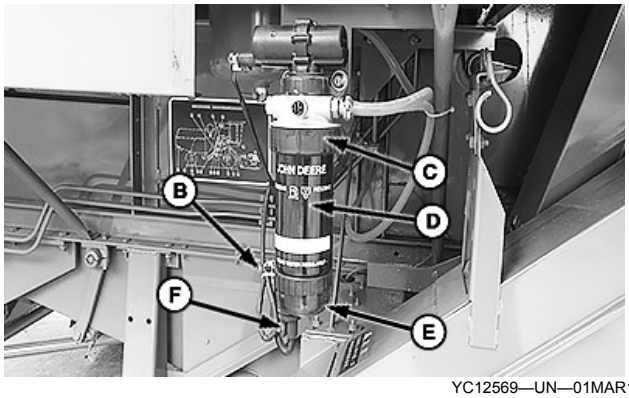


YC8114—UN—26JAN15

Open Position Shown

A—Fuel Shutoff Valve

1. Close the fuel shutoff valve (A).
2. Thoroughly clean the fuel filter assemblies and surrounding areas.



YC12569—UN—01MAR18

Primary Fuel Filter

B—Connector
C—Retaining Ring
D—Filter Element

E—Water Separator Bowl
F—Fuel Drain Plug



YC8116—UN—26JAN15

Final Fuel Filter

G—Retaining Ring
H—Filter Element
I—Fuel Drain Plug

3. Disconnect the connector (B) of the sensor.
4. Remove the fuel drain plugs (F and I) and drain fuel into a suitable container.

NOTE: Lifting the retaining rings as they are rotated helps to get them pass raised locators.

5. Firmly grasp the retaining rings (C and G), rotate them 1/4 turn clockwise (when viewed from the top). Remove the retaining rings (C and G) and filter elements (D and H) together.
6. Inspect the filter mounting base for cleanliness. Clean as required.
7. Remove the water separator bowl (E) from filter. Drain and clean the water separator bowl. Dry with the compressed air. Install bowl onto the new filter element. Tighten securely.
8. Install the new filter elements onto the mounting bases. Be sure that filter elements are properly indexed and firmly seated on bases. It is necessary to rotate filters for correct alignment.
9. Align keys on the filter elements with slots in the filter bases.

NOTE: The proper installation is indicated when a "click" is heard and a release of the retaining ring is felt.

10. Install retaining rings onto the mounting bases, make sure that dust seals are in place on the filter base. Hand tighten rings counterclockwise (about 1/3 turn) to snap into the detents. Do not overtighten the retaining rings.
11. Reconnect the connector of the sensor.
12. Open the fuel shutoff valve and bleed the fuel system. Tighten the bleed plug.

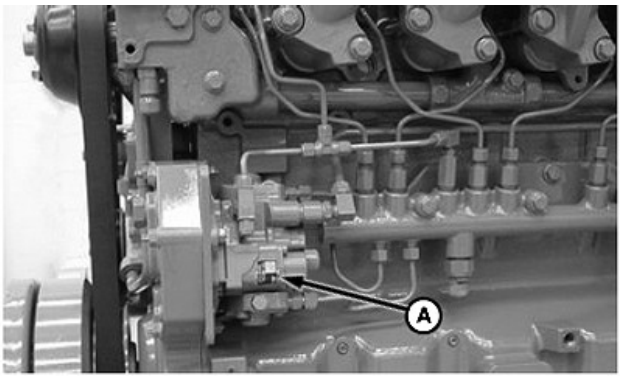
CP00606,0001784-19-24MAY18

Do Not Modify Fuel System



TS1343—UN—18MAR92

High-Pressure Fuel Lines



YC9732—UN—21MAR16

A—High-Pressure Fuel Pump

CAUTION: Do not open high-pressure fuel system. High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt repair of fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system.

IMPORTANT: Avoid causing seizure of pump parts, NEVER steam clean or pour cold water on an injection pump while it is still warm.

Modification or alteration of the high-pressure fuel pump (A), the injection timing, or the fuel injectors in ways not recommended by the manufacturer terminates the warranty obligation to the purchaser.

In addition, tampering with the fuel system which alters emission-related equipment on engines results in fines or other penalties, per EPA regulations or other local emission laws.

Do not attempt to service injection pump or fuel injectors yourself. Special training and special tools are required. (See your authorized servicing dealer or engine distributor.)

CP00718,0003F04-19-12DEC17

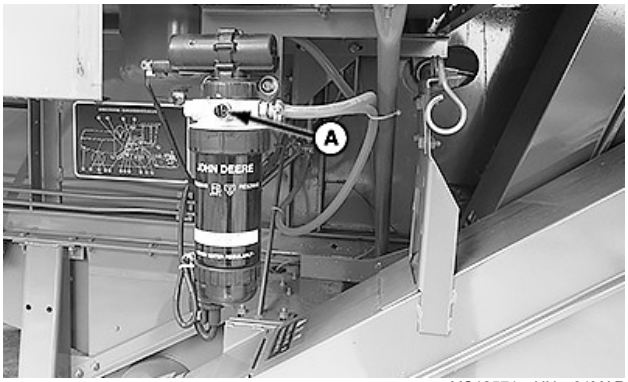
Bleed the Fuel System

Bleed the fuel system in the following situations:

- Fuel filter element is changed.
- Fuel in the tank is used up.
- Fuel line and fuel injector are removed, or fuel pump is cleaned.
- Engine is idling for a long time.

CP00718,0003F05-19-12DEC17

Bleed at the Primary Fuel Filter



YC12571—UN—01MAR18

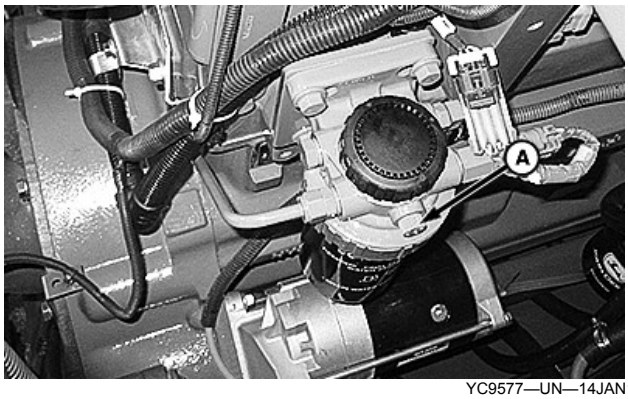
A—Bleed Screw

Bleed the low-pressure fuel system according to following steps:

1. Fill fuel tank to the full level.
2. Turn the key switch to D position, start the electronic fuel transfer pump.
3. Loosen the bleed screw (A).
4. When no air bubbles emerge, tighten the bleed screw.

CP00606,0001786-19-24MAY18

Bleed at the Final Fuel Filter



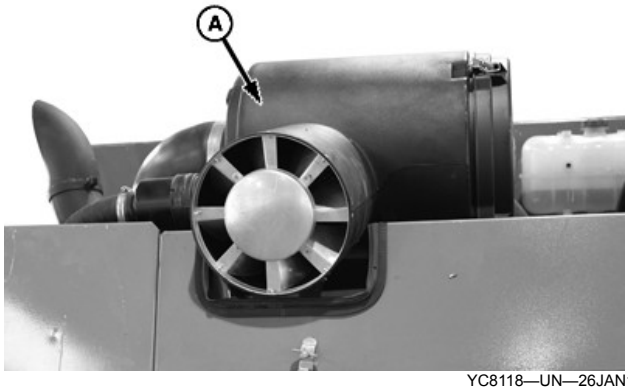
YC9577—UN—14JAN16

A—Bleed Screw

Turn the key switch to D position, start electronic fuel transfer pump. Loosen the bleed screw (A) and observe the bleed hole. When no air bubbles emerge, tighten the bleed screw.

CP00718,0003F07-19-12DEC17

Air Filter



YC8118—UN—26JAN15

A—Air Filter

IMPORTANT: DO NOT start engine without the air filter.

Air filter (A) is located above the engine compartment.

When the Murphy Gauge shows that air filter is plugged, clean up immediately.

CP00718,0003F08-19-12DEC17

Air Filter Elements



YC8134—UN—26FEB15

A—Primary Filter Element
B—Secondary Filter Element

IMPORTANT: When installing the primary filter element and secondary filter element, make sure that the positions are correct and keep them clean.

Each filter has one dry-type primary filter element (A) and one secondary filter element (B). If the primary filter element is damaged, the secondary filter element can prevent dust from entering the engine.

CP00718,0003F09-19-12DEC17

Clean the Primary Air Filter Element

CAUTION: Shut off engine, set park brake and remove key.



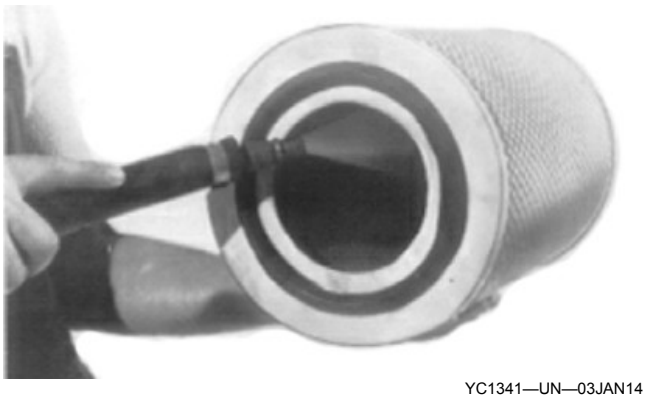
YC8135—UN—26FEB15

Cleaning in the field (simple cleaning):

When filter element is cleaned in the field, place it onto a soft surface, and use hand to pat it.

CP00718,0003F0A-19-12DEC17

Use Compressed Air to Clean the Air Filter

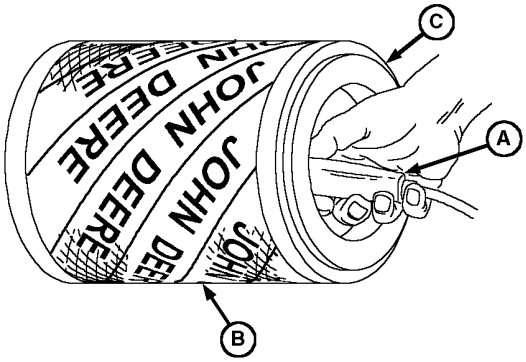


YC1341—UN—03JAN14

When using compressed air to clean the filter, blow from the inside and the pressure does not exceed 500 kPa (5 bar). After ten times of the simple cleaning, use compressed air to clean again.

CP00718,0003F0B-19-12DEC17

Check Primary Air Filter Element



H59771—UN—31AUG99

A—Light
B—Outer Screen
C—Filter Gasket

1. Check carefully for holes holding a bright light (A) inside the filter element. Scrap filter element even if it only has a tiny hole.
2. Make sure that the outer screen (B) is not bent. Vibration quickly wears the filter and even makes a hole.
3. Make sure that filter gasket (C) is in good condition. If the gasket is damaged or missing, replace the primary air filter element.

CP00718,0003F0C-19-12DEC17

Store Air Filter Element

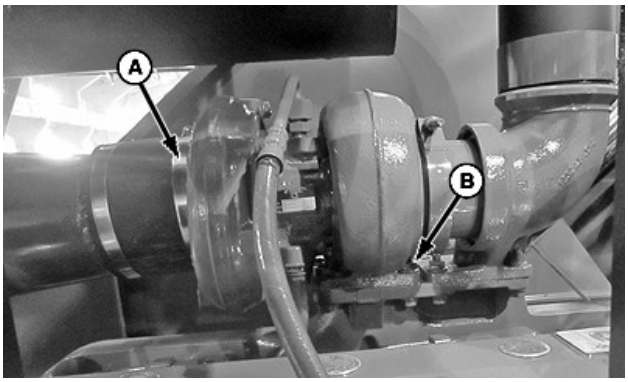


YC1343—UN—03JAN14

To prevent dust and damage, store the clean filter element in a plastic bag.

CP00718,0003F0D-19-12DEC17

Turbocharger



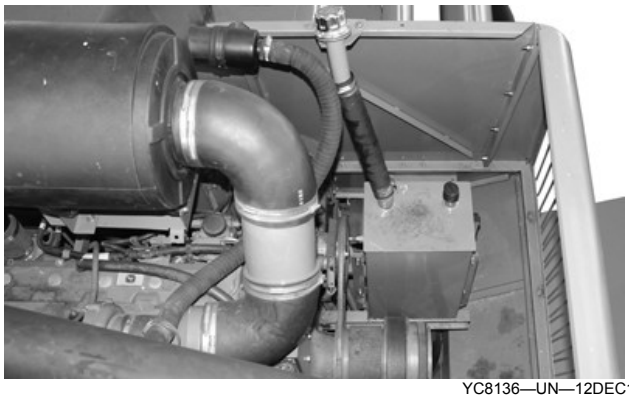
YC3232—UN—23DEC13

A—Connector
B—Connection point

Carefully check all connectors (A) and connection points (B) every 200 hours, ensure that the turbocharger and lubricant pipes do not leak.

CP00718,0003F0E-19-12DEC17

Air Intake Hose



YC8136—UN—12DEC17

Hose clamps are used to seal and connect the steel pipes and rubber hoses. Check at least once a year if all hose clamps are sealed and tight. Replace hoses and hose clamps as necessary.

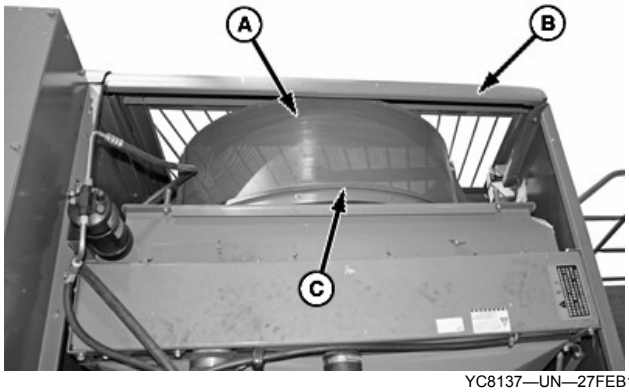
CP00718,0003F0F-19-12DEC17

Cooling System

Cooling system is composed of the radiator, fan, rotary screen, vacuum tube, coolant pump, thermostat, and connection hoses.

CP00718,0003F10-19-12DEC17

Clean Rotary Screen



YC8137—UN—27FEB15

A—Rotary Screen
B—Shield
C—Drive Belt

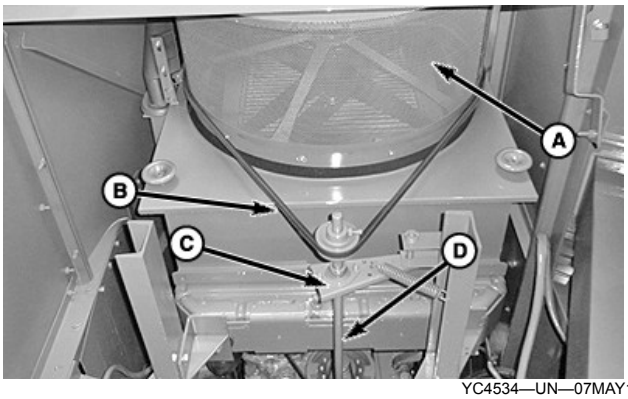
Keep the rotary screen (A) clean. Remove the chaff and dust from the outside of rotary screen daily.

Clean several times a day during the harvest period when it is dusty.

When cleaning the radiator, open the shield (B) and remove the drive belt (C).

CP00718,0003F11-19-12DEC17

Rotary Screen Drive



YC4534—UN—07MAY13

A—Rotary Screen
B—Drive Belt
C—Bracket
D—Drive Shaft

The middle pulley drives rotary screen (A) by the drive belt (B).

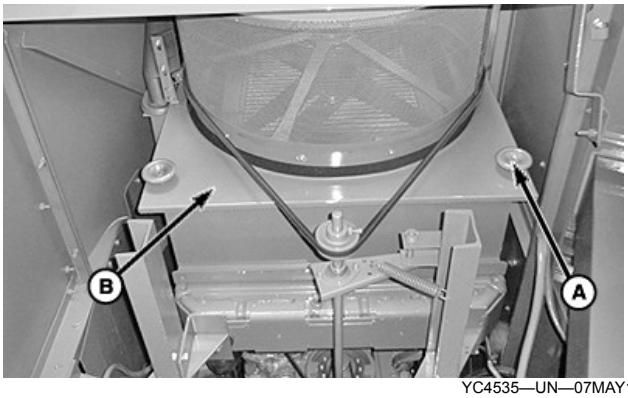
To clean the radiator, remove the drive belt.

NOTE: Avoid that the drive belt contacts oil or grease.

The V-belt is tensioned by a spring.

CP00718,0003F12-19-12DEC17

Clean Radiator



YC4535—UN—07MAY13

A—Bolt (2 used)
B—Rotary Screen Assembly

1. Remove the drive belt.
2. Remove the bolts (A).
3. Fold up and support the rotary screen assembly (B).
4. Clean the outside of radiator by using a brush. If the radiator is dirty, use the compressed air or low-pressure water to clean the radiator from inside to outside.

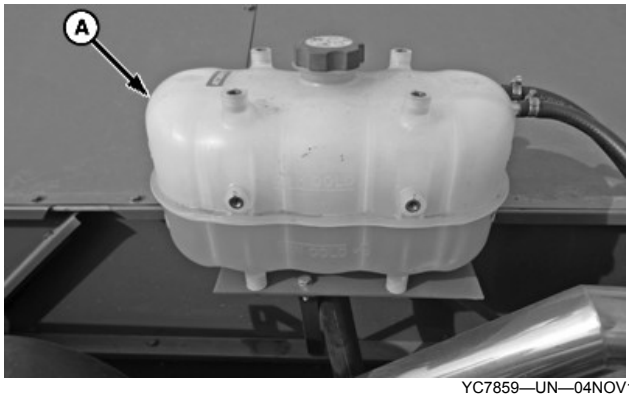
CP00718,0003F13-19-12DEC17

Engine Coolant

CAUTION: When engine is hot, cooling system is at hot state under high pressure. To avoid burning, NEVER open the expansion tank cap at the hot state.

CAUTION: Only add coolant when engine is at cold state, to avoid damage to the engine.

IMPORTANT: Before winter comes, check the condition of coolant mixture. Engine is filled with DEERE antifreeze at factory, to prevent engine from freezing at temperatures above -37° C.



YC7859—UN—04NOV14

A—Expansion Tank

Expansion tank (A) is located outside of the rear wall of the grain tank.

Expansion tank is a translucent plastic container. Maximum (MAX) and minimum (MIN) marks are on the side of the tank, so that the coolant level can be checked without opening the tank cover.

Daily check the coolant level (or every 10 hours of operation). The coolant level is between MAX and MIN marks at the cold state.

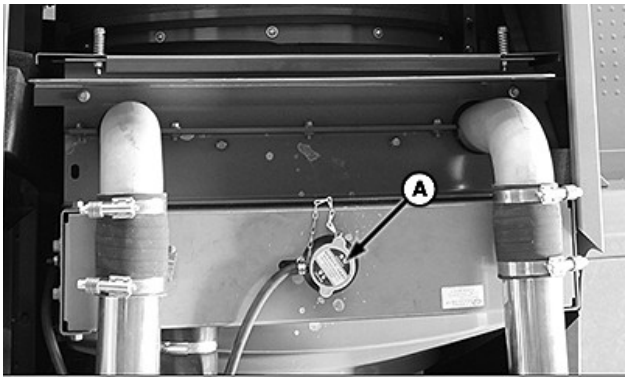
CP00606,0001787-19-24MAY18

Radiator Cap



TS281—UN—15APR13

CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. Shut off engine. Only remove radiator cap when cool enough to touch with bare hands. Slowly loosen cap to relieve pressure before removing completely.



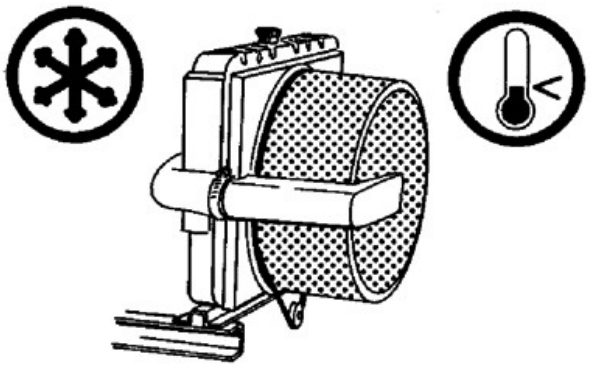
YC10767—UN—07DEC16

A—Radiator Cap

Radiator cap (A) is located above the radiator, open radiator cap to fill with coolant as needed. There is a pressure relief valve at the radiator cap. It opens when the pressure is 0.3—0.4 bar.

CP00606,0001788-19-24MAY18

Winter Operation of Rotary Screen

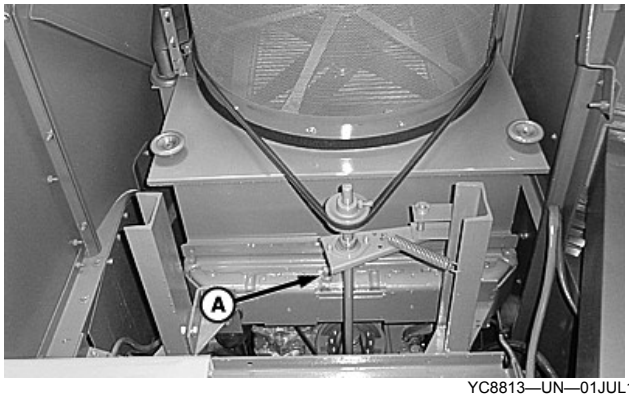


YC1302—UN—16FEB12

IMPORTANT: If the ice and snow accumulate on the rotary screen, the rotary screen belt breaks easily when engine starts. When temperature is below 0°C, ALWAYS check if the rotary screen can rotate smoothly before starting the engine.

CP00718,0003F16-19-12DEC17

Water Drain Valve



YC8813—UN—01JUL15

A—Water Drain Valve

Water drain valve (A) is located at the bottom of the radiator. Drain out the coolant by opening water drain valve as needed.

CP00606,0001789-19-24MAY18

Cooling System Flushing Procedure

IMPORTANT: It is recommended to use John Deere Cool-Gard coolant. Change interval is 2 years if using other coolant.

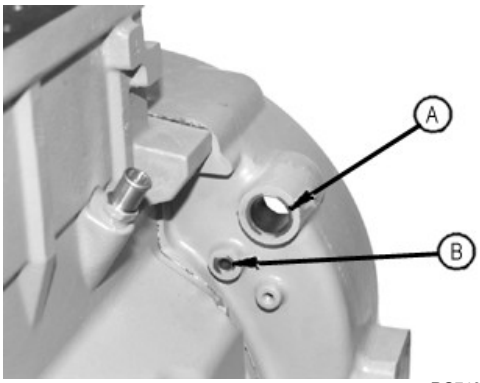
1. Flush the cooling system once every 6 years.
2. After draining all coolant, close drain valve (or plug) and add clean water.
3. Start the engine, warm the oil to the normal working temperature. Shut off engine.
4. Turn on the heater in the cab (if equipped) and keep it on until cleaning of cooling system ends.
5. Drain water before the rust and sediment settle.
6. Open the drain valve and use general cooling system cleaning agent to clean the cooling system.
7. After using cleaning agent to clean the cooling system, refill clean water into the system. When engine runs and water temperature reach normal working level, shut off engine, drain water away.
8. Close the drain valve and add the appropriate amount of John Deere Cool-Gard coolant.

CP00718,0003F18-19-12DEC17

Check and Adjust Engine Valve Clearance

CAUTION: To prevent accidental starting of engine while performing valve adjustments, always disconnect the NEGATIVE (—) battery terminal.

IMPORTANT: Valve clearance MUST BE checked and adjusted with engine COLD.



RG7408—UN—06AUG96

Flywheel Housing Timing Holes

A—Timing/Rotating Hole
B—Timing Pin Hole

1. Remove the rocker arm cover and crankcase ventilator tube.

IMPORTANT: Visually inspect contact surface of the valve tips and wear pads of rocker arm . Check all parts for excessive wear, breakage, or cracks. Replace parts that show visible damage.

Inspect valve clearance of rocker arms. If the clearance is too big, inspect thoroughly to identify damaged parts.

2. Remove plastic plugs or cover plate from the engine timing/rotation hole (A) and timing pin hole (B).
3. Use JDE83 or JDG281A flywheel turning tool. Rotate the engine flywheel in running direction (clockwise viewed from front) until No. 1 cylinder is at TDC compression stroke. Insert JDG1571 Timing Pin in flywheel.

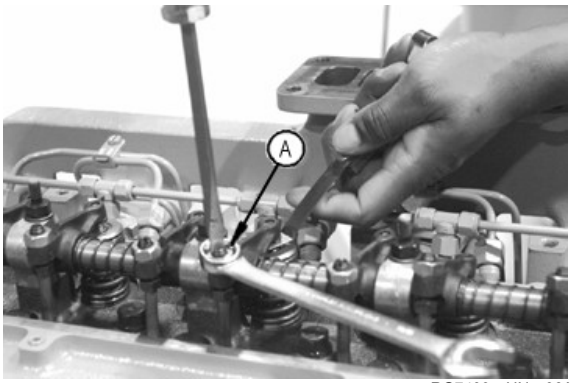
   If No. 1 cylinder rocker arms are loose, the engine is at No. 1 TDC compression.

   If No. 1 cylinder rocker arms are not loose, rotate engine one full revolution (360°) to No.1 TDC compression.

4. With engine lock-pinned at TDC of No. 1 compression stroke of piston. Check valve clearance to following specifications.

Specification

Intake Valve Clearance for Checking (Rocker Arm-to-Valve Tip) (Engine Cold)—Clearance	0.31—0.38 mm
Exhaust Valve Clearance for Checking (Rocker Arm-to-Valve Tip) (Engine Cold)—Clearance	0.41—0.48 mm



RG7409—UN—06AUG96

A—Jam Nut

5. If valves need adjusting, use the adjustment procedure of valve clearance on the next page and adjust to the specification. Loosen the lock nut (A) on the rocker arm adjusting screw. Turn adjusting screw until feeler gauge slips with a slight drag. Hold the adjusting screw from turning with screwdriver and tighten the lock nut to specifications. Recheck the clearance again after tightening the lock nut. Readjust the clearance as necessary.

Specification

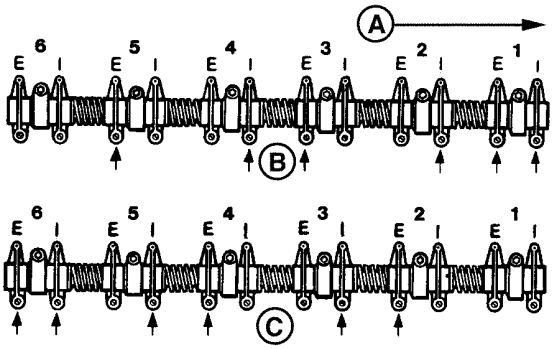
Intake Valve Clearance for adjusting (Rocker Arm-to-Valve Tip) (Engine Cold)—Clearance	0.36 mm
Exhaust Valve Clearance for adjusting (Rocker Arm-to-Valve Tip) (Engine Cold)—Clearance	0.46 mm
Screw Jam Nut—Torque	27 N·m

6. Replace the rocker arm cover and crankcase vent tube.

CP00718,0003F19-19-12DEC17

Valve Clearance Adjustment Procedure

NOTE: Fire order is 1-5-3-6-2-4



RG4777—UN—31OCT97

A—Front of Engine
B—No. 1 Piston TDC Compression
C—No. 6 Piston TDC Compression
D—Exhaust Valve
E—Intake Valve

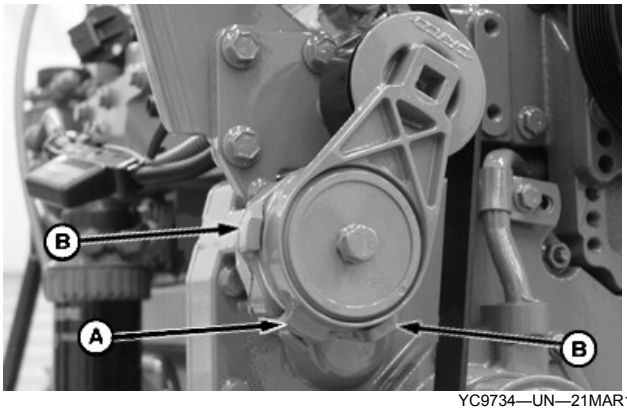
1. Lock No. 1 piston at TDC compression stroke (B).
2. Adjust valve clearance on No. 1, 3, and 5 exhaust valves and No. 1, 2, and 4 intake valves.
3. Turn crankshaft 360°. Lock No. 6 piston at TDC compression stroke (C).
4. Adjust valve clearance on No. 2, 4, and 6 exhaust valves and No. 3, 5, and 6 intake valves.

CP00718,0003F1A-19-12DEC17

Check Belt Tensioner Spring Tension and Belt Wear

Belt drive systems equipped with automatic (spring) belt tensioners cannot be adjusted or repaired. The automatic belt tensioner is designed to maintain proper belt tension over the life of the belt. If tensioner spring tension is not within specification, replace tensioner assembly.

Check Belt Wear



YC9734—UN—21MAR16

Belt Tensioner

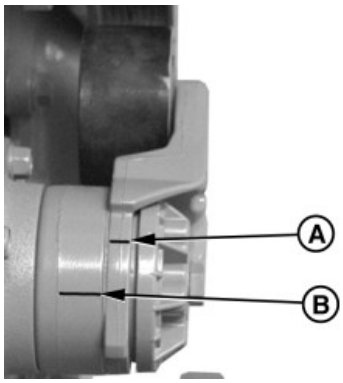
A—Cast Stop
B—Cast Stops(2 used)

The belt tensioner is designed to operate within the limit of arm movement provided by the cast stops (A and B) when correct belt length and geometry are used. Visually inspect cast stops (A and B) on belt tensioner assembly.

If the tensioner stop on the swing arm (A) is hitting the fixed stop (B), check mounting brackets (alternator, belt tensioner, idler, and so on) and the belt length.

Replace belt as needed.

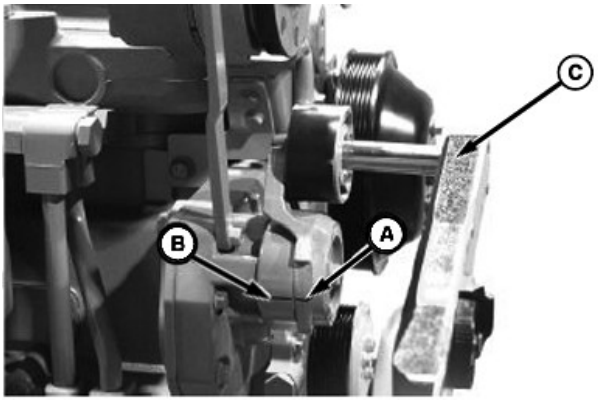
Check Tensioner Spring Tension



RG7977—UN—14NOV97

Marks on Tensioner

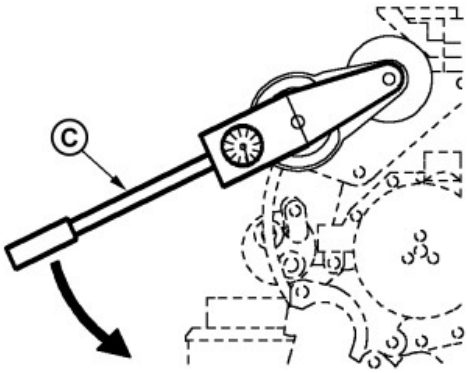
A—Mark
B—Mark



YC9735—UN—21MAR16

Align Marks

A—Mark
B—Mark
C—Torque Wrench



RG12065—UN—28JAN02

Align Torque Wrench with Pulley and Tensioner

C—Torque Wrench

A belt tension gauge does not give an accurate measure of the belt tension when the automatic spring tensioner is used. Measure tensioner spring tension using a torque wrench and procedure outlined:

NOTE: While belt is removed, inspect pulleys and bearings. Rotate and feel for hard turning or any unusual sounds. If pulleys or bearings need replacement, see your John Deere dealer.

1. Release tension on belt using a long-handled 1/2 inch drive tool in the square hole on the tensioner arm. Remove belt from pulleys.
2. Release tension on the tensioner arm and remove drive tool.
3. Put a mark (A) on the swing arm of the tensioner as shown.
4. Measure 21 mm from mark (A) on the swing arm and put a mark (B) on tensioner mounting base.
5. Install torque wrench (C) so that it is aligned with centers of pulley and tensioner. Rotate the swing arm using a torque wrench until marks (A and B) are aligned.

NOTE: Threads on the belt tensioner roller cap screw are LEFT-HAND threads.

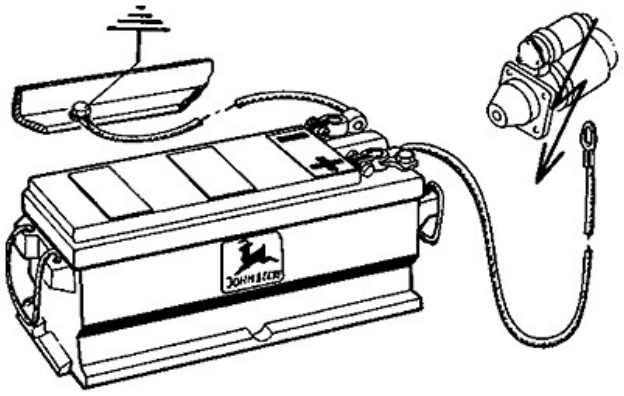
6. Record the torque wrench measurement and compare with specification. Replace tensioner assembly as required.

Specification

Spring Tension—Torque. . . . . 18—22 N·m
13—16 lb·ft

JL31334,00017CB-19-07MAY18

Precautions of Using Battery



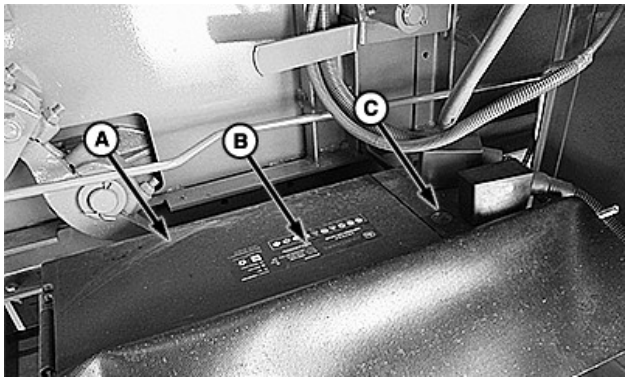
YC3152—UN—30NOV12

1. Check if battery has cracks and leakage of electrolyte.
2. Always check if the connection of cables is firm. If necessary, use a steel brush or scraper to clear oxides on the binding post and the post head. Smear a thin layer of vaseline or lubricate grease to prevent formation of sulfate.
3. If voltage is too high, switch on the headlight. Check the voltage after headlight is lit for 30 seconds. If voltage is too low, charge the battery. Check the voltage again.
4. Use the multimeter to measure the battery terminal voltage. Usually the terminal voltage is ≥12.6 V.
5. Negative electrode of battery is grounded through the main switch (grounding), and positive electrode is connected to power supply. Do not reverse polarity of electrodes.
6. Never use wire-spark method to check the voltage. When the alternator is running, never disconnect the wiring to the battery.
7. When the battery becomes almost discharged, remove and recharge it. Never forcibly start the machine. Forcibly starting the machine may result in bending the electrode plate, falling off active materials and premature scrapping of battery.
8. Before repairing electrical components, disconnect the battery main switch. Otherwise, electrical components can be damaged.
9. When the combine requires welding, grounding wire of the welding machine is as close as possible to the weld. Disconnect battery main switch and remove alternator positive wire (red).
10. Measure the battery voltage. When the alternator is not working, the voltage is 12—12.5 volts. When the alternator is working, the voltage is 12.8—13.8 volts.
11. When the electrolyte level drops too fast, check for leakage or if the output voltage of alternator is too high.
12. Battery must be placed securely on the combine.

IMPORTANT: When the battery is not in use for a long time, remove and store it indoor.

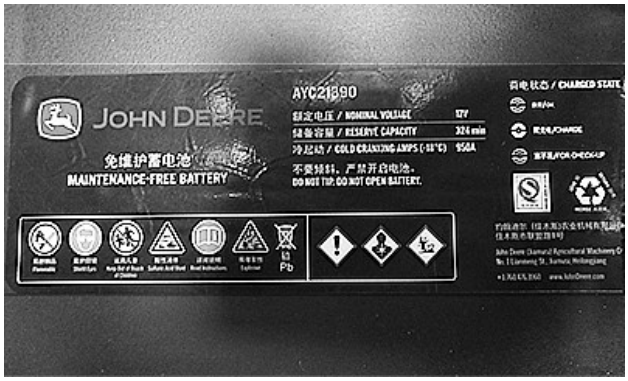
CP00718,0004098-19-13DEC17

Check Battery Charge



YC10875—UN—07NOV16

A—Maintenance-Free Battery
B—Label
C—Electric Eye



YC10876—UN—08DEC16

IMPORTANT: It is forbidden to add electrolyte to the maintenance-free battery. Battery cannot be tilted.

Maintenance-free battery (A) is in the left side of the machine. Often check the color through the electric eye (C) according to information of label (B). Recharge or change the battery according to the color.

Color	Charge state
Green	Good
White	Recharge
Red	Lack of electrolytes , change the battery.

JL31334,000179E-19-07MAY18

Basic Electrical Component Handling / Precautions for Vehicles Equipped with Computer Controlled Systems

- When the key switch is on, it is forbidden to connect jumper cable.

  Reason: That generates voltage spikes which can damage electronic components.

- Disconnect battery connections before charging (if possible).

  Reason: Electric load of machine can slow down charging process. Battery charger can generate voltage spikes which can damage electronic components.

- When starting the machine, never exceed rated working voltage.

  Reason: Operation can damage electronic components.

- When the key switch is on or machine is running normally, never connect or disconnect electrical connector.

  Reason: Operation can interrupt the computer program and cause computer system failure, and can generate voltage spikes which can damage electronic components.

- Except for special requirements, it is forbidden to do system test when electrical components are charged or grounded.

  Reason: Incorrect voltage connected to incorrect place of the electronic system can damage electronic components.

- When welding on machine, make sure that ground connector is connected to the welded components. For best protection, disconnect all electronic control units before welding.

  Reason: Welding produces high current which can damage wiring harness of ground circulation. Welding also generates voltage spikes which can damage electronic components.

CP00718,000409A-19-13DEC17

Starter

NOTE: When repairing electrical system, disconnect the ground cable.

When starting, if the starter does not run or runs slowly, refer to the following table to carry out checks. If the starter is faulty, contact the John Deere dealer.

Service the starter once a year.

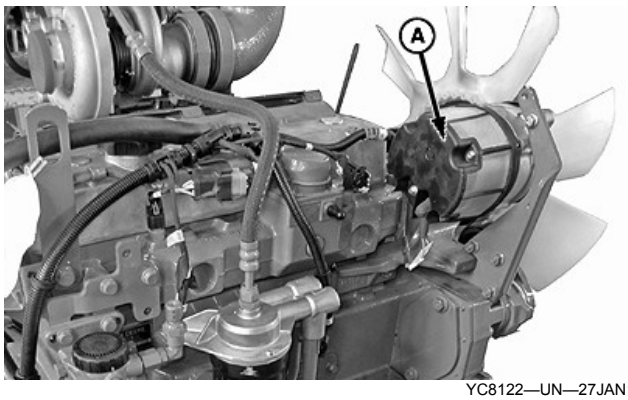
IMPORTANT: Total time for starting and preheat cannot exceed 10 seconds. Otherwise, the pre-heater, starter, and wiring can be damaged.

Cause	Maintenance measures
Ground wire is loose, dirty, or corroded.	Clean and tighten all binding posts.
Battery voltage is low.	Charge the battery.
Viscosity of engine oil is not correct.	Drain original engine oil and fill in specified engine oil.

CP00718,000409B-19-13DEC17

Alternator

IMPORTANT: If positive and negative terminals of battery are reversely connected, that can damage the alternator. When connecting the battery, ensure that positive and negative terminals are not reversed.



YC8122—UN—27JAN15

A—Alternator

Before operating the alternator (A), disconnect the ground cable.

Never ground the terminals or connect the jumper wire to any alternator terminal.

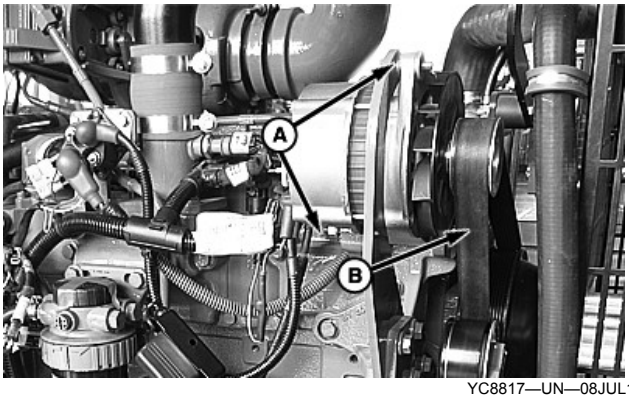
Do not connect or disconnect alternator wires when battery is connected or alternator is running.

Regularly clean up debris on the alternator cover and ensure good heat dissipation.

Avoid overloading the alternator, prohibit connecting other load or electrical equipment.

CP00606,000178B-19-25MAY18

Adjust and Check Tension of Alternator Drive Belt



YC8817—UN—08JUL15

A—Nuts (2 used)
B—Belt

IMPORTANT: Do not adjust belt too tight. Avoid damages to the belt.

Loosen nuts (A). Turn alternator downward, so that belt (B) is tensioned. Exert force of 39 N on the belt. Keep a belt deflection of 10-15 mm.

Check Alternator:

Check the alternator once annually by a qualified technician.

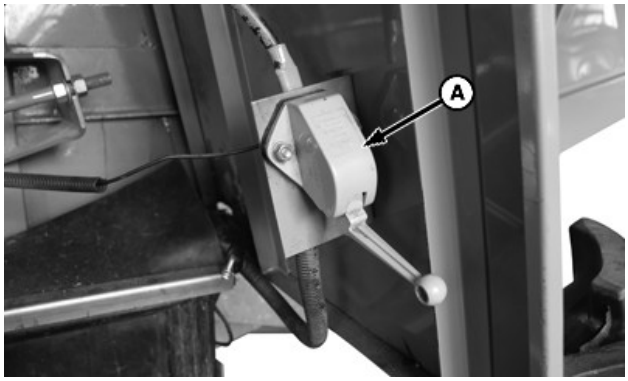
NOTE: Before servicing electrical system, disconnect battery ground cable.

JL31334,000179F-19-07MAY18

Main Switch

IMPORTANT: Main Switch does not control power to ECU. If machine is not used for a long period, disconnect battery ground cable.

IMPORTANT: In order to prevent ECU data loss, firstly turn key switch to OFF position, then set main switch back in OFF position in 30 seconds .



YC8120—UN—26JAN15

Main Switch—OFF Position Shown

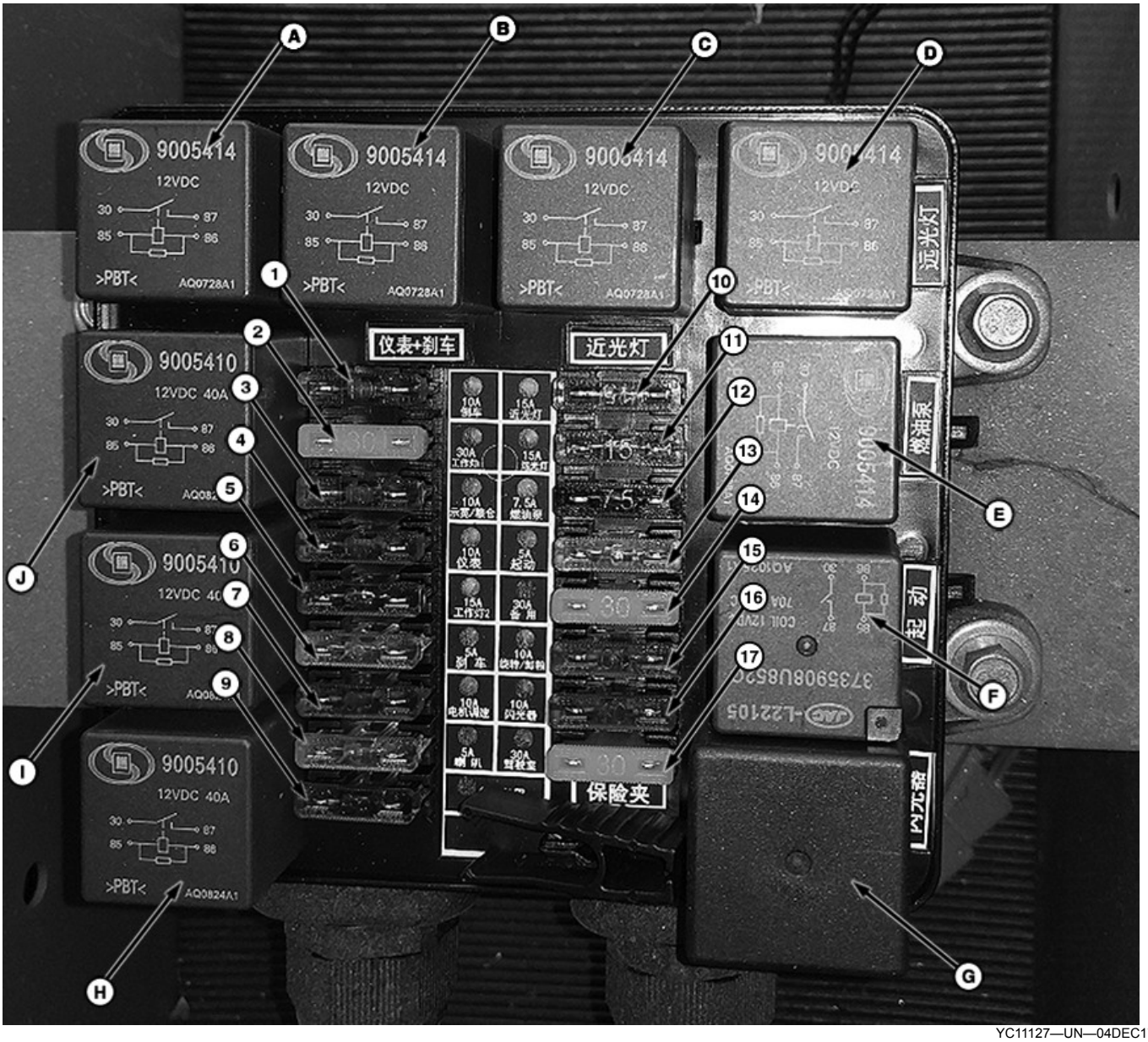
A—Main Switch

Main Switch (A) is near the battery.

At the end of operating day, set main switch back in OFF position.

CP00606,000178C-19-25MAY18

Fuse Center



YC11127—UN—04DEC17

A—Reverse Light Relay
B—Instrument Power/Brake Light Relay
C—Low Beam Light Relay
D—High Beam Light Relay
E—Transfer Pump Relay
F—Start Relay
G—Flasher Relay
H—Horn Relay
I—Side Working Light Relay
J—Working Light Relay

1. Reverse Light Fuse (10A)
2. Working Light Fuse (30A)
3. Marker Light/Grain Tank Fuse (10A)
4. Instrument Power Fuse (10A)
5. Side Working Light Fuse (15A)
6. Brake Light Fuse (5A)
7. Reel Speed Motor Fuse (10A)
8. Horn Fuse (5A)
9. Spare Fuse (15A)
10. Low Beam Light Fuse (15A)
11. High Beam Light Fuse (15A)
12. Transfer Pump Fuse (7.5A)
13. Start Fuse (5A)
14. Spare Fuse (30A)
15. Unloading Beacon/Unloading Light (10A)

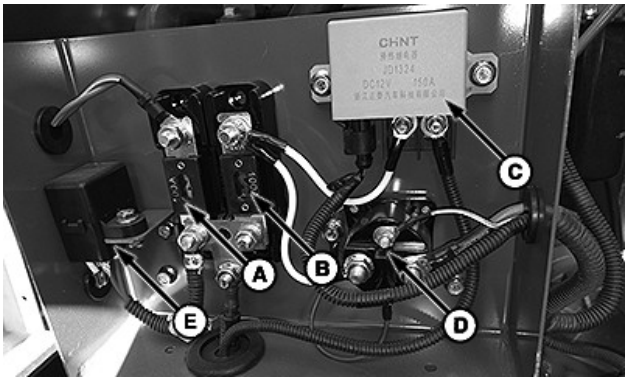
16. Flasher Light (10A)
17. Cab Power Fuse (30A)

Different fuse specifications are differentiated by colors.

IMPORTANT: Never use fuses that exceed the specified values.

CP00718,0004169-19-15DEC17

Electrical Box on Engine



YC11126—UN—04DEC17

A—Main Fuse
B—Heater Fuse
C—Start Relay
D—Heater Relay
E—Transfer Pump Relay

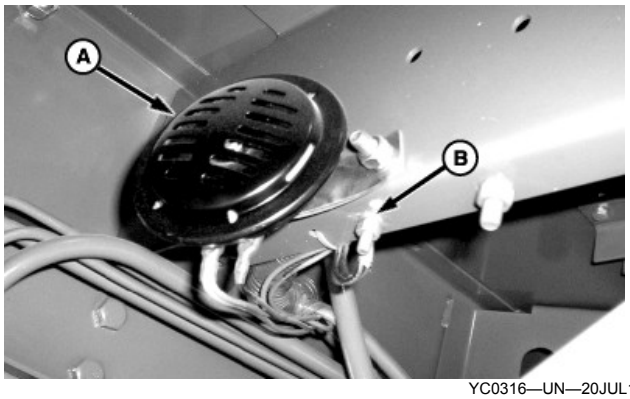
The electrical box is on the left of the engine, includes main fuse (A), heater fuse (B), start relay (C), heater relay (D), and transfer pump relay (E).

When starting the machine and the temperature is below 0°C, ECU sends out a command and heater relay is connected. Engine warms up.

NOTE: When replacing the fuse, make sure to disconnect the main switch to avoid grounding of repair tools and damaging battery.

CP00606,000178D-19-25MAY18

Horn



YC0316—UN—20JUL11

A—Horn
B—Ground Cable

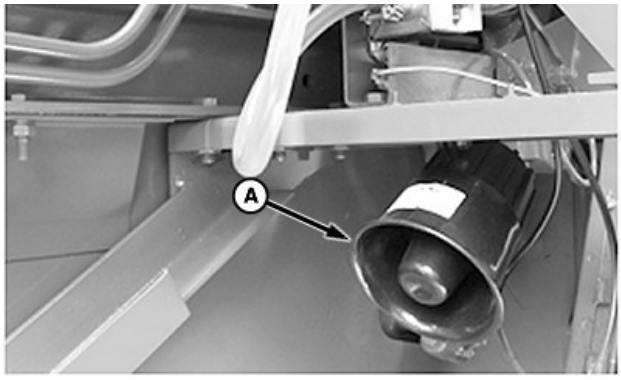


YC11125—UN—04DEC17

C—Horn Switch
Horn (A) is under the cab, controlled by the horn switch (C) on the instrument box.

JL31334,00017A0-19-07MAY18

Backup Alarm



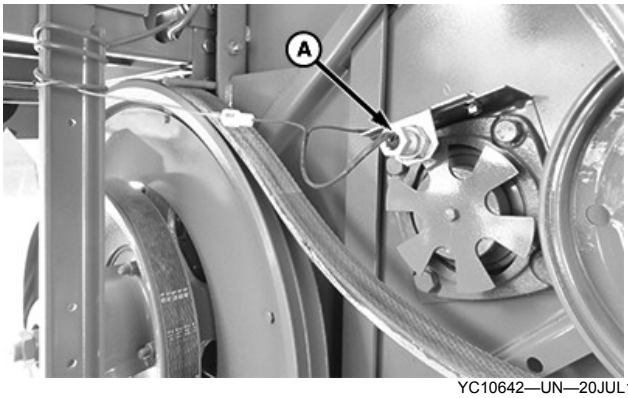
YC0319—UN—21JUL11

A—Backup Alarm

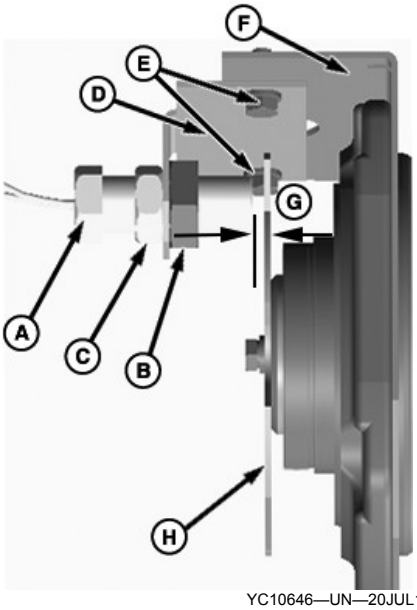
Backup alarm (A) is located at the right rear side of machine. When reverse gear is engaged, backup alarm (A) sounds to remind bystanders to stay away from the machine .

CP00718,00040A0-19-13DEC17

Threshing Speed Sensor



YC10642—UN—20JUL16



YC10646—UN—20JUL16

A—Sensor
B—Nut
C—Nut
D—Guide
E—Bolts (2 used)
F—Plate
G—Clearance (2 mm)
H—Tone Wheel

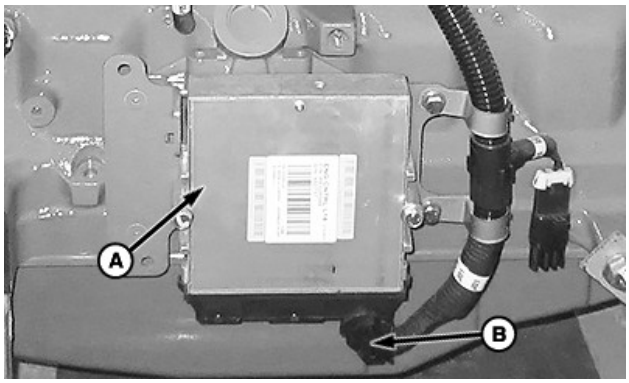
Threshing speed sensor (A) is located at the left side of machine.

If the position of tone wheel (H) and sensor (A) changes, adjust the clearance of the threshing speed sensor (A) .

Adjustment: Adjust clearance (G) between sensor (A) and tone wheel (H) by adjusting nuts (B and C). Check clearance for avoid interference. Adjust slowly to minimize clearance. If necessary, loosen bolt (E), adjust position of guide (D) on plate (F), Align sensor (A) with tone wheel (H) are parallel. Tighten bolts (E).

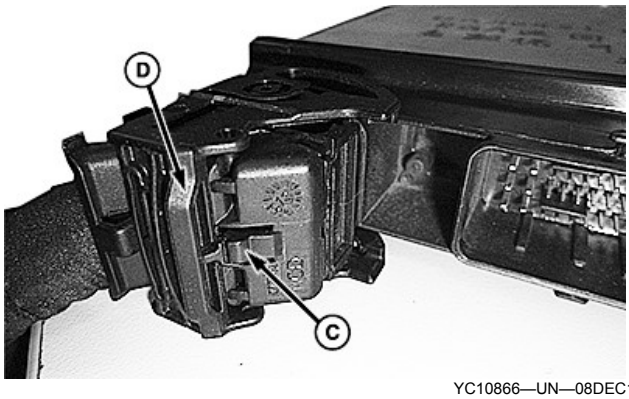
CP00606,000178E-19-24AUG18

Disconnection and Connection of ECU Connectors



YC10840—UN—13DEC16

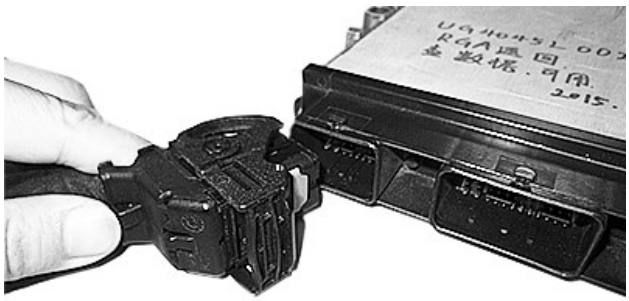
A—ECU
B—Connector



YC10866—UN—08DEC16

Connection State

C—Fastener
D—Locker



YC10867—UN—08DEC16

Disconnection State



YC10868—UN—01NOV16

NOTE: The connector shown in the figure may not be the same as the actual, subject to the actual machine.

IMPORTANT: When disconnecting the connector (B), press down fastener (C) fully.

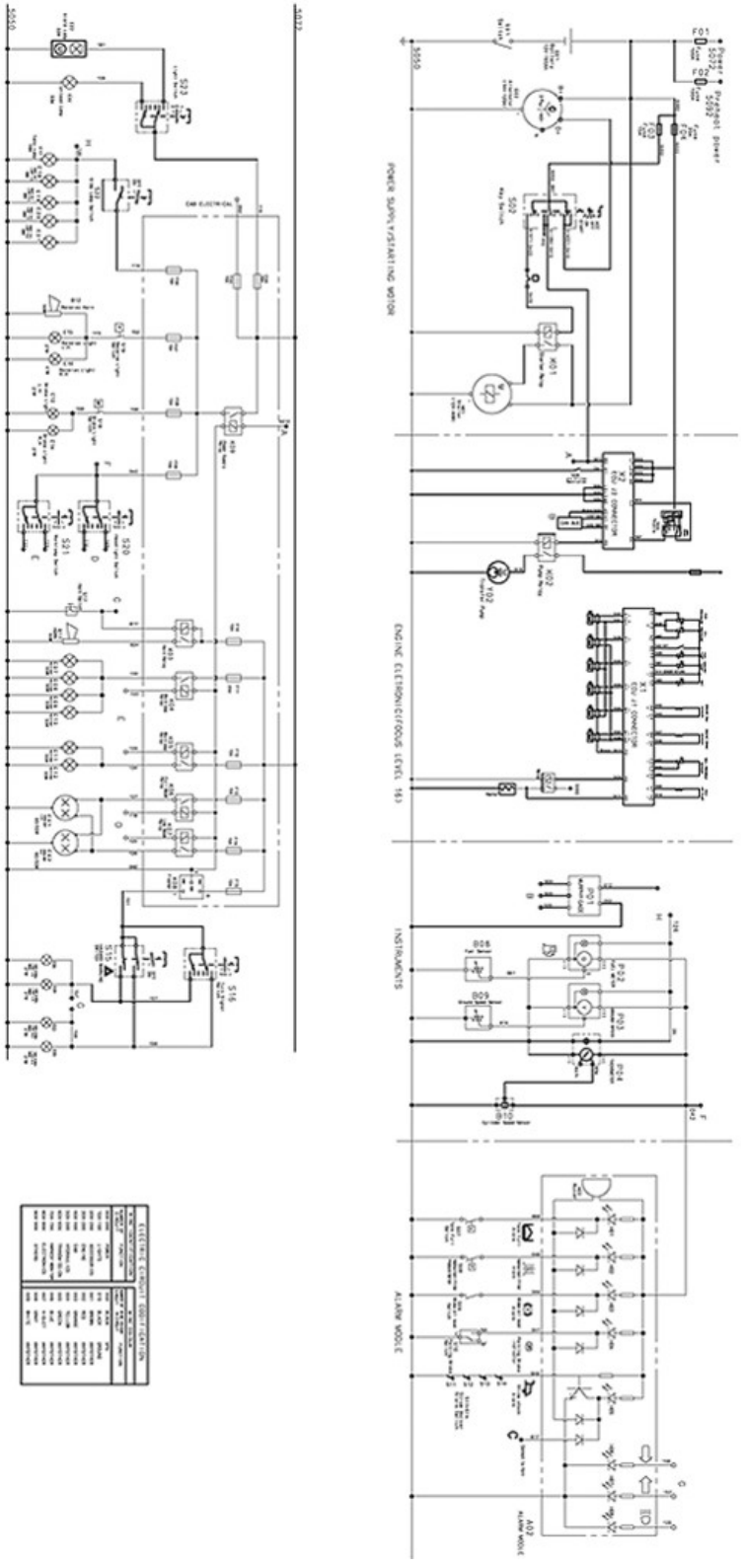
IMPORTANT: Because the pins of ECU are different in shape, it is necessary to ensure that the pin holes are aligned with the pins when connecting the connector (B) . When the connector (B) is locked, hear a click sound.

Disconnection of ECU Connector (B): Press down the fastener (C) , then disconnect connector (B) and ECU (A) by pulling the locker (D).

Connection of ECU Connector (B): Align pin holes of the connector (B) and pins of ECU (A), and connect connectors. Pull the locker (D) to ensure the fastener (C) is locked.

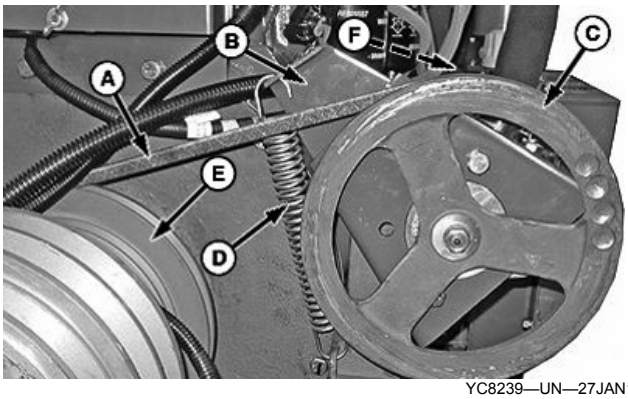
JL31334,00017A2-19-07MAY18

Electrical schematic



YC6408—UN—04NOV14
CP00596,0000637-19-12FEB14

Hydraulic Pump Drive Belt Tension



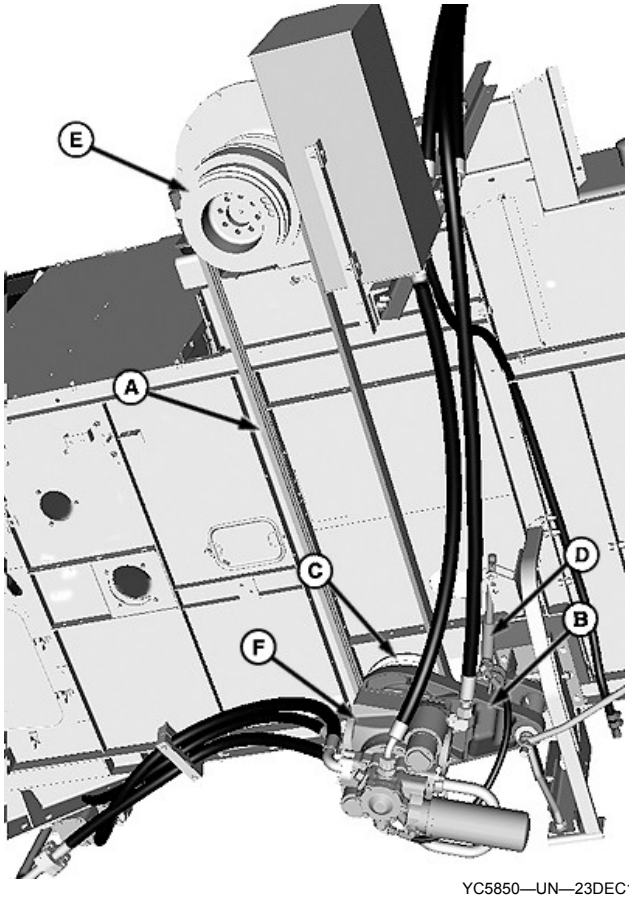
YC8239—UN—27JAN15

A—Drive Belt
B—Hydraulic Pump Bracket
C—Pulley
D—Tension Spring
E—Engine Output Terminal
F—Hydraulic Pump

Power from the engine output terminal (E) is transmitted to pulley (C) through drive belt (A), and drives the shaft of the hydraulic pump (F). Hydraulic pump drive belt (A) is automatically tensioned by tension spring (D).

CP00718,00040A3-19-13DEC17

Variable Pump Drive Belt Tension (Optional Hydrostatic Drive Type)



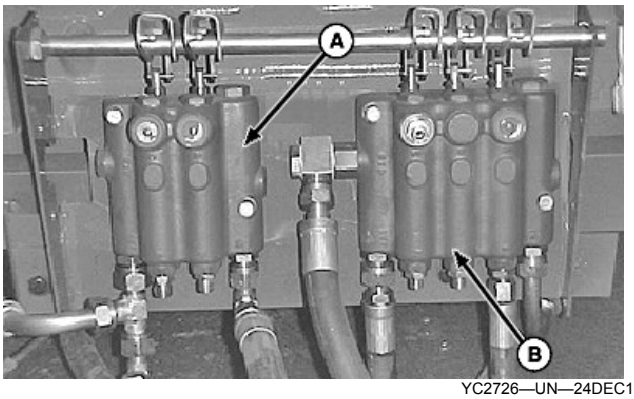
YC5850—UN—23DEC13

A—Belt
B—Hydrostatic Pump Bracket
C—Pulley
D—Tension Cylinder
E—Engine Output Terminal
F—Hydrostatic Pump

The power from the engine output terminal (E) is transmitted to pulley (C) through belt (A), goes to the shaft of the hydrostatic pump (F). The belt (A) is automatically tensioned by tension cylinder (D).

CP00718,00040A4-19-13DEC17

Hydraulic Control Valve



YC2726—UN—24DEC13

A—2-Paths Control Valve
B—3-Paths Control Valve

IMPORTANT: If hydraulic control valve fails, ask professional technician to repair it.

Hydraulic control valve is installed on the engine. The lever pulls the cable to control the raise/lower function of the header and reel, threshing speed, swing of the unloading auger, and ground speed. Follow the signs on operating levers, push the lever forward or pull it backward to carry out corresponding operations.

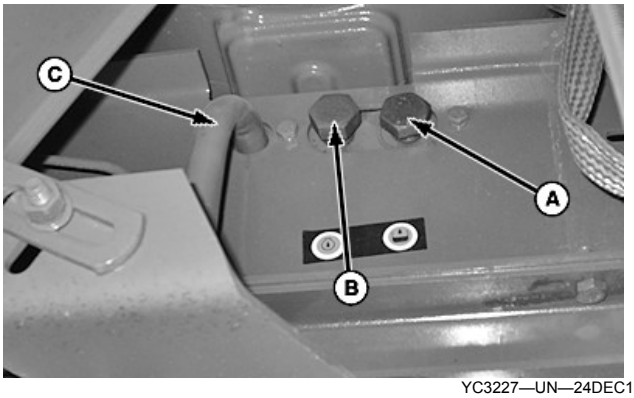
Carry out maintenance following the instructions on the cover on the grain tank near the engine.

CP00718,00040A5-19-13DEC17

Change Oil of Hydraulic System

Change hydraulic oil after first 100 hours of machine operation after that change oil every 500 hours of operation or at the end of every harvest season.

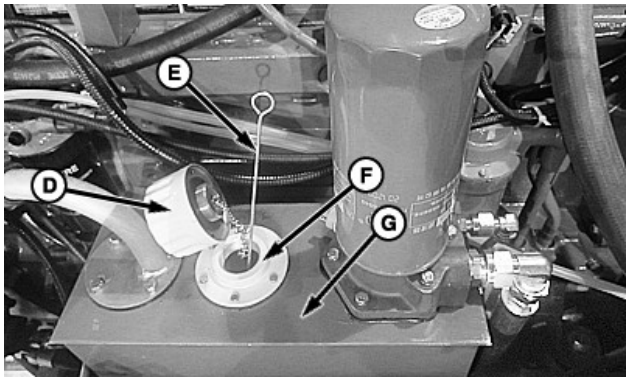
NOTE: When changing hydraulic oil, lower header and reel to the lowest position and turn grain unloading auger to transport position.



YC3227—UN—24DEC13

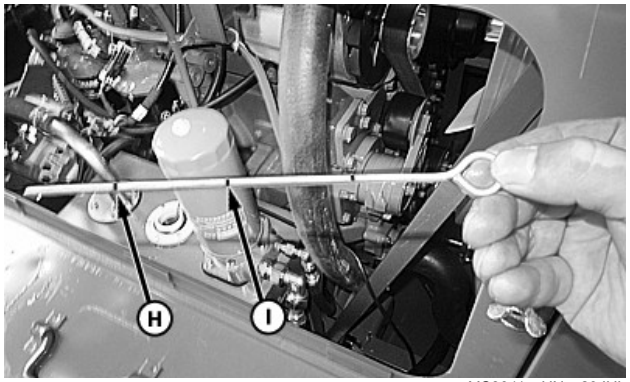
A—Hydraulic Oil Drain Plug
B—Engine Oil Drain Plug
C—Oil Drain Tube

Drain Oil: Loosen hydraulic oil drain plug (A) for 1—2 turns. Oil flows through the oil drain tube (C) to the container.



YC8912—UN—14JUL15

D—Filler Cap
E—Oil Dipstick
F—Filler Neck
G—Hydraulic Oil Reservoir



YC8911—UN—29JUL15

H—Minimum Mark on Oil Dipstick
I—Maximum Mark on Oil Dipstick

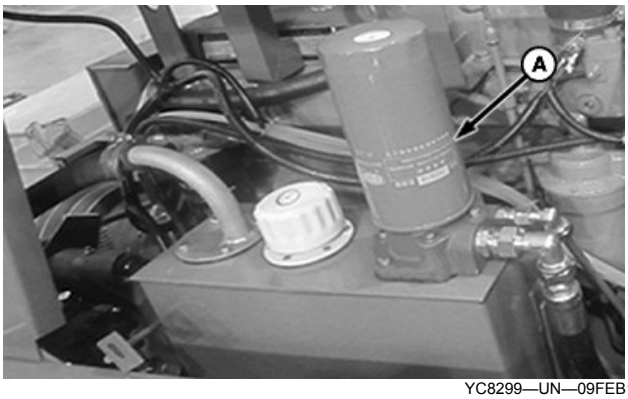
Check Hydraulic Oil Level: Open filler cap (D). Use oil dipstick (E) to check hydraulic oil level. Refill hydraulic oil as necessary.

Fill Oil: Open filler cap (D). Fill hydraulic oil through the filler neck (F) to the hydraulic oil reservoir (G). Clean filler neck (F) before filling. Fill hydraulic oil until oil level is between the maximum (I) and minimum (H) marks on dipstick.

Always use a specified oil. See Hydraulic Oil in Fuel, Coolant, and Lubricants section.

CP00606,000178F-19-25MAY18

Hydraulic Oil Filter



YC8299—UN—09FEB15

A—Filter

Replace filter (A) after first 100 hours of machine operation. After that replace filter every 500 hours of operation or at the end of every harvest season.

Install new filter following next steps:

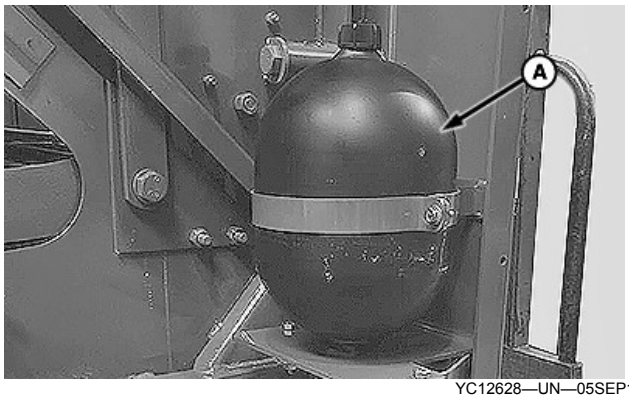
1. Grease the seal surface.
2. Tighten filter elements: First set seal ring so that it contacts mounting surface. Then tighten 3/4—5/4 turns, but not too tight.

Start engine and check for oil leaks. Tighten if necessary .

IMPORTANT: Keep clean when installing the filter and prevent impurities entering the reservoir and filter.

CP00718,00040A7-19-13DEC17

Accumulator



YC12628—UN—05SEP18

A— Accumulator

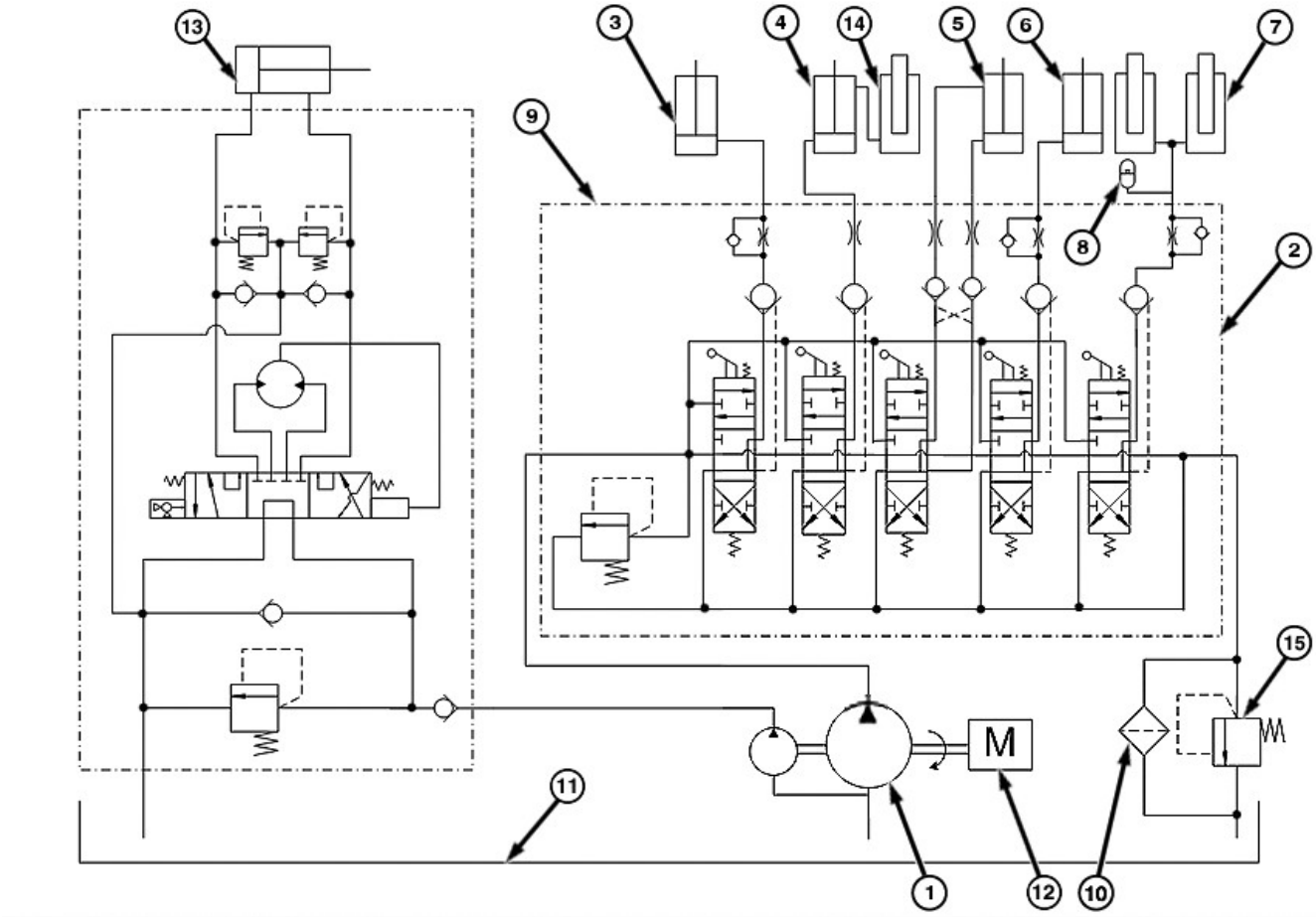
To buffer against impact load from the header and protect the header cylinder, combine is equipped with the hydraulic accumulator (A).

Charge accumulator with nitrogen, refer to parameters in following table:

Pressure Chamber Capacity	2.8 L
Nitrogen Charging Pressure	4.5 MPa

JL31334,0001733-19-30AUG18

Hydraulic Schematic

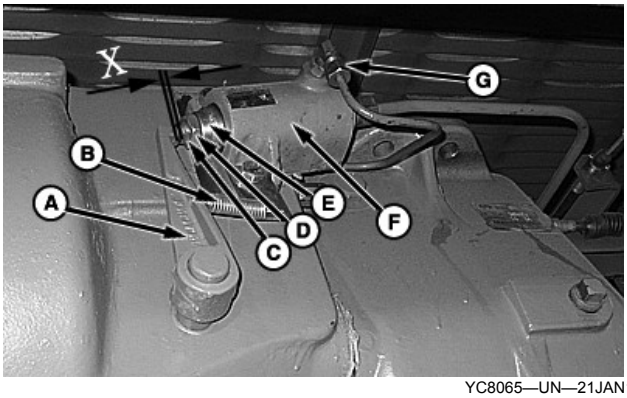


YC1717—UN—24OCT17

1—Hydraulic Pump
2—Control Valve
3—Threshing Speed Adjustment Cylinder
4—Reel Raise/Lower Cylinder (right-hand)
5—Grain Unloading Auger Swing Cylinder
6—Ground Speed Adjustment Cylinder
7—Header Raise/Lower Cylinder
8—Accumulator
9—Steering Metering Valve
10—Oil Return Filter
11—Reservoir
12—Engine
13—Steering Cylinder
14—Reel Raise/Lower Cylinder (left-hand)
15—Filter Bypass Valve

CP00718,00040A9-19-13DEC17

Adjust Clutch Clearance



YC8065—UN—21JAN15

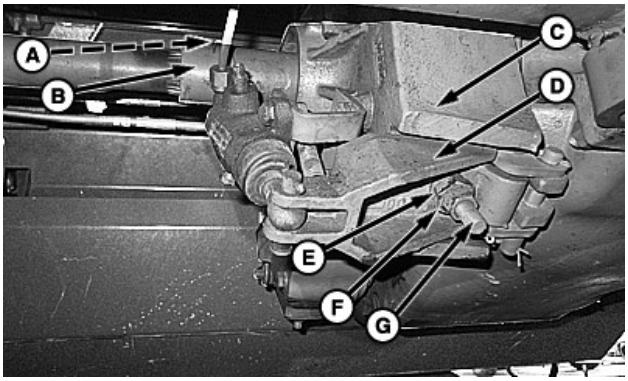
A—Clutch Lever
B—Return Spring
C—Adjustment Screw
D—Bolt
E—Cylinder Piston Rod
F—Clutch Cylinder
G—Nut
X—Clearance (5 mm)

Pull clutch lever (A) away from the clutch cylinder (F). Clearance (X) between the front surface of the adjustment screw (C) and the surface of clutch lever (A) is 5 mm.

IMPORTANT: Ground speed clutch and gear device must be engaged or disengaged completely. Half-engaging is not allowed.

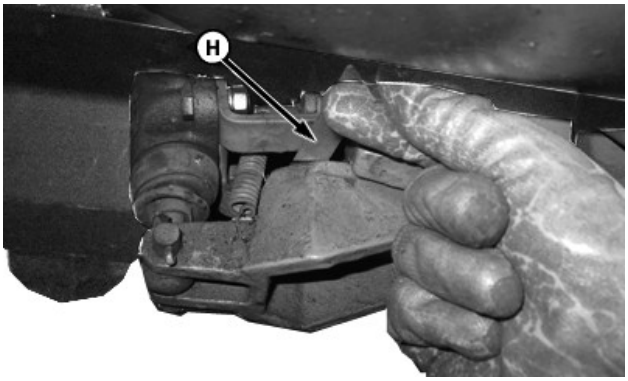
CP00718,00040AA-19-13DEC17

Adjust Service Brake



YC8066—UN—21JAN15

A—Spring Pin
B—Coupling
C—Brake Housing
D—Brake Lever
E—Nut
F—Lock Nut
G—Adjustment Spindle



YC8099—UN—21JAN15

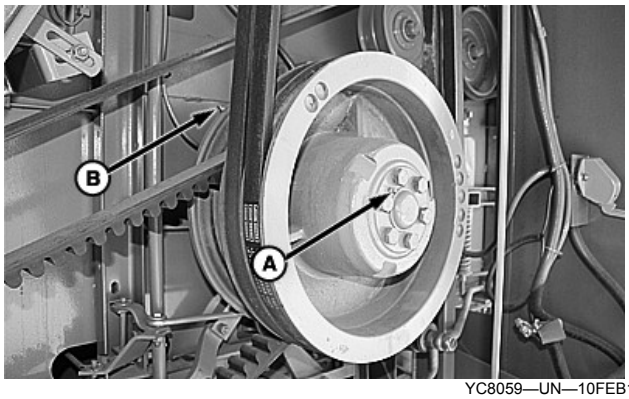
H—Feeler Gauge (3 mm)

Adjust service brake as follows:

1. Set gear-shift lever to neutral position.
2. Remove spring pin (A) and slide coupling (B) outward.
3. Place 3 mm feeler gauge (H) between the brake housing (C) and the brake lever (D).
4. Turn nut (E) on the adjustment spindle (G) until brake is engaged (by turning final driveshaft to check).
5. Tighten nut (E) with the lock nut (F) .
6. After adjustment, remove feeler gauge (H). Reinstall coupling (B) and secure with spring pin (A).

JL31334,00017A5-19-07MAY18

Posi-Torq Upper Unit Lubrication



YC8059—UN—10FEB15

A—Outer Pulley Half Bearing Lubrication Fitting
B—Inner Pulley Half Bearing Lubrication Fitting

Apply grease to the lubrication fittings (A and B) until feeling some resistance at the manual pump. Grease every 10 hours of operation.

IMPORTANT: Never lubricate upper unit with pulley halves opened.

JL31334,00017A6-19-07MAY18

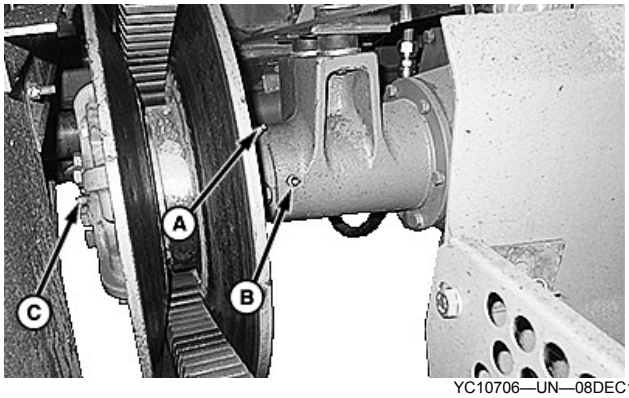
Posi-Torq Lower Unit Lubrication

IMPORTANT: Use Mobil XHP222 grease or a better one to lubrication points of the Posi-Torq lower unit.

Lubricate lower unit as follows (when halves are fully closed):

1. Cam housing

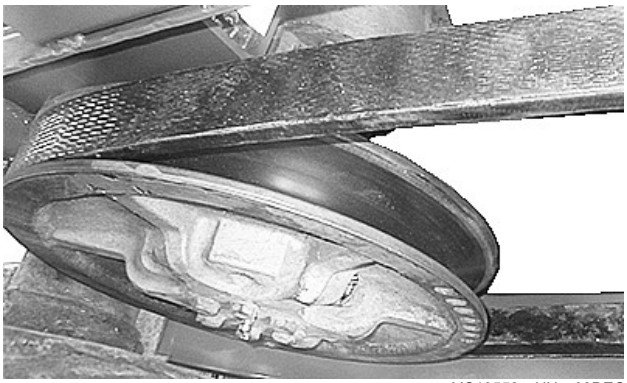
   Cam housing is filled with 200—220 g grease in factory. Grease every 10 hours of operation. Apply grease to the lubrication fitting (A) until feeling some resistance at the manual pump.



YC10706—UN—08DEC16

Posi-Torq Lower Unit Open State

A—Cam Housing Lubrication Fitting
B—Input Housing Lubrication Fitting
C—Spring Housing Lubrication Fitting



YC10558—UN—08DEC16

2. Input housing

   Grease every 10 hours of operation. Apply grease to the lubrication fitting (B) until feeling some resistance at the manual pump.

3. Spring housing

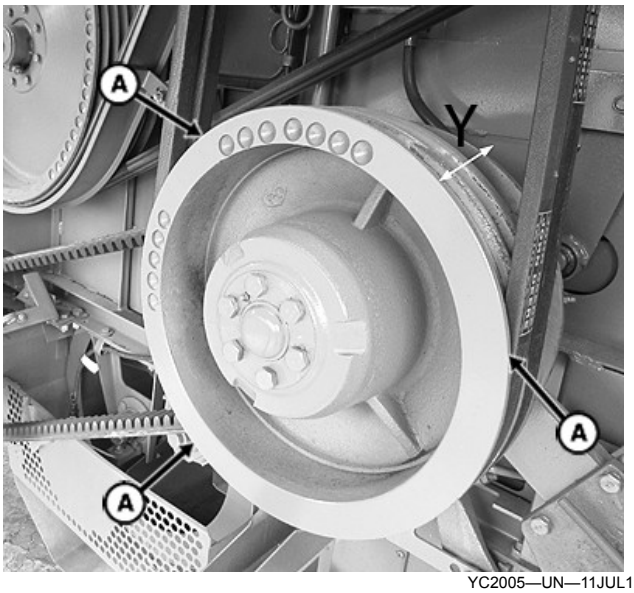
   Spring housing is filled with 150—160 g grease in factory. Grease every 10 hours of operation. Apply grease to the lubrication fitting (C) until feeling some resistance at the manual pump.

IMPORTANT: Never lubricate lower unit with pulley halves opened.

CP00606,0001790-19-25MAY18

Posi-Torq Upper Unit Parallel

Pulley must be in parallel with the sidewall, to prevent the belt from wearing or flipping.



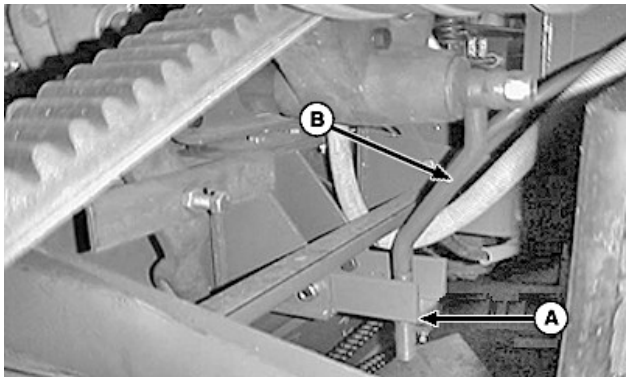
YC2005—UN—11JUL12

A—Measuring Points(3 used)
Y—Distance

To check if pulley is parallel, measure the distance (Y) with the ruler between measuring points (A) on the edge of pulley half with sidewall. All three measurements are less that 3 mm.

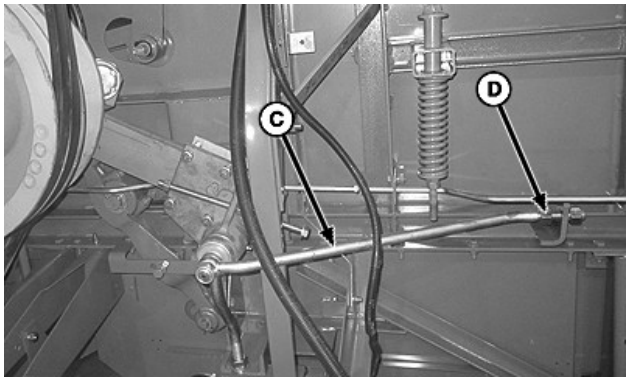
Adjust Parallel

If deviation is more than 3 mm, adjust as follows:



YC1371—UN—30DEC13

A—Hex Nut
B—Adjustment Lever



YC1560—UN—25DEC12

C—Adjustment Lever
D—Hex Nut

Adjust hex nuts (A and D) on adjustment levers (B and C) until pulley half is parallel to the sidewall within the limit of 3 mm. Retighten hex nuts (A and D).

CP00606,0001791-19-25MAY18

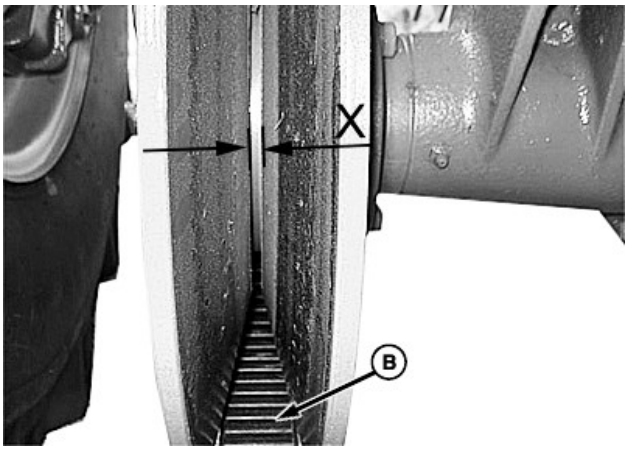
Posi-Torq Lower Unit Clearance

CAUTION: Avoid personal injury, shut off engine. Do not adjust clearance until all parts stop working.



YC12229—UN—21NOV17

A—Ground Speed Lever



YC10860—UN—08DEC16

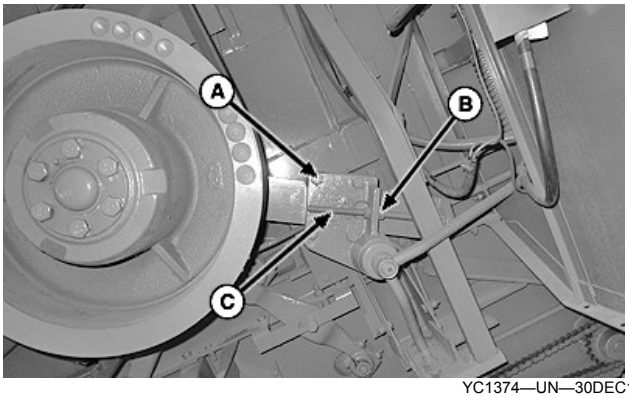
B—Belt
X—Clearance (5 ± 1.5 mm)

Requirement:

Start engine and pull ground speed lever (A) backward until pulley halves are fully closed. Shut off the engine. Clearance (X) between lower pulley halves is 5 ± 1.5 mm.

IMPORTANT: Under any circumstances, clearance must not exceed 6.5 mm. Check clearance after every 50 hours of operation and adjust as necessary.

Adjustment:



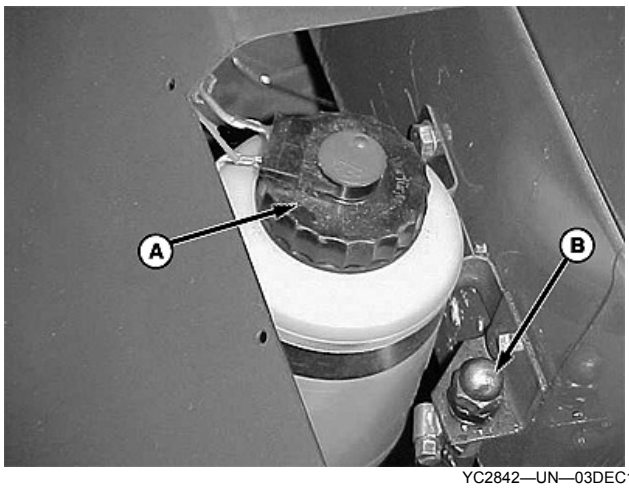
YC1374—UN—30DEC13

A—Bolt (4 used)
B—Nut (2 used)
C—Tension Screw

Loosen bolts (A) and nuts (B). Adjust nuts (B) on the tension screw (C) until specified clearance has been obtained. Finally tighten nuts (B) and bolts (A). Restart engine and push ground speed lever forward, then pull ground speed lever backward. Shut off engine and recheck clearance.

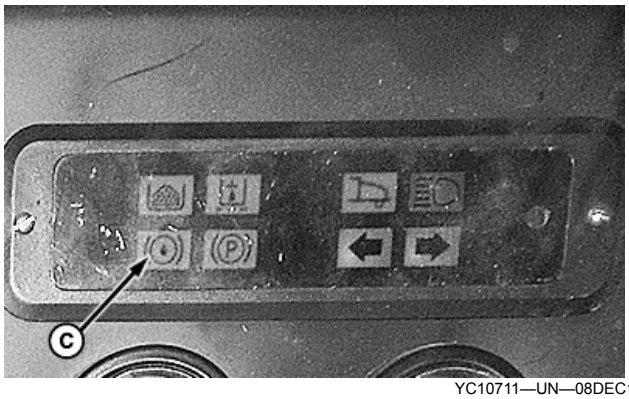
JL31334,00017A9-19-07MAY18

Brake Fluid Can



YC2842—UN—03DEC12

A—Brake Fluid Can
B—Bleed Screw



YC10711—UN—08DEC16

C—Brake Fluid Level Indicator

NOTE: Brake oil specification: 10# aviation hydraulic oil.

Brake fluid can (A) is equipped with an alarm device. When brake fluid is inadequate, brake fluid level indicator (C) lights.

Always use a specified brake oil. See Brake Fluid in Fuel, Coolant, and Lubricants section.

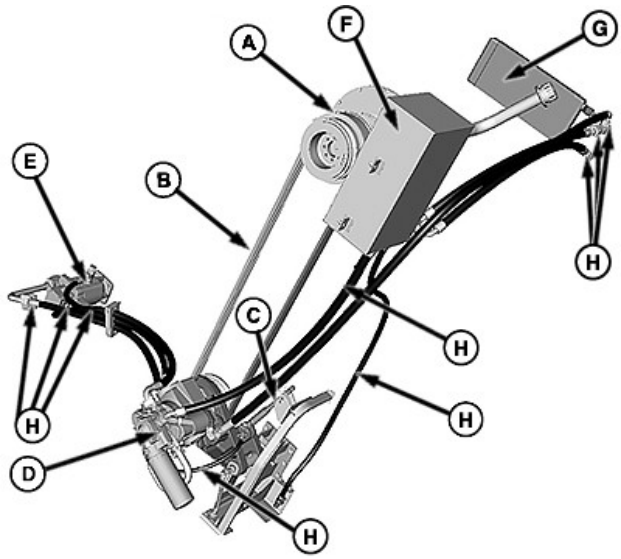
Always bleed air after changing or repairing parts of the braking system. Proceed as follows:

1. Loosen bleed screw (B). Press clutch pedal fully and then tighten the bleed screw (B).

2. Repeat three times, until the clutch cylinder stroke reaches maximum 28 mm.

JL31334,00017AA-19-07MAY18

Variable Speed Drive (Optional Hydrostatic Drive Type)



YC12620—UN—07MAR18

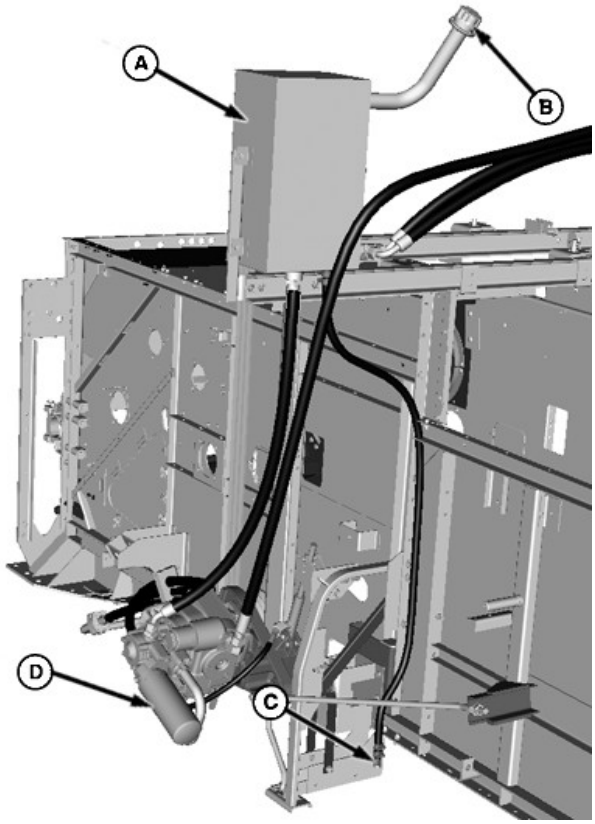
A—Engine Output Terminal
B—Drive Belt
C—Tension Cylinder
D—Variable Pump
E—Motor
F—Hydrostatic Reservoir
G—Oil Cooler
H—Oil Hoses(9 used)

Engine output terminal (A) rotates. Power is transmitted through the drive belt (B) to the variable pump (D). Variable pump (D) pumps oil from the hydrostatic reservoir (F). High-pressure oil from the variable pump (D) reaches motor (E) through oil hoses (H). The motor (E) drives the transmission which transmits engine power to the final drive and the front wheels of the combine.

IMPORTANT: Hydraulic oil of the whole system is cooled upon returning through the oil cooler. Regularly clean the oil cooler and the housing.

CP00606,0001792-19-25MAY18

Hydrostatic Reservoir and Filter (Optional Hydrostatic Drive Type)



YC10782—UN—23NOV17

A—Hydrostatic Reservoir
B—Filler Neck
C—Oil Drain Plug
D—Oil Filter

Always use a specified oil. See Hydrostatic Drive Oil in Fuel, Coolant, and Lubricants section.

The capacity of the hydrostatic reservoir (A) is 30 L.

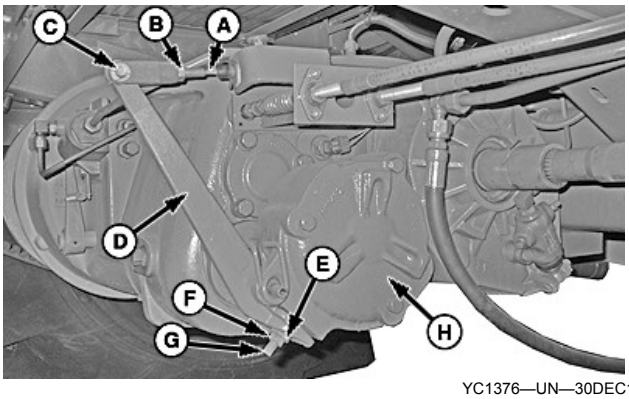
Change oil and filter after the first 100 hours of operation. After that, change oil and filter after 500 hours of operation or at the end of every harvest season.

Drain oil: Open oil drain plug (C), and drain the oil into an appropriate container.

Fill oil: Before filling oil, clean the filler neck (B). Fill oil through the filler neck (B).

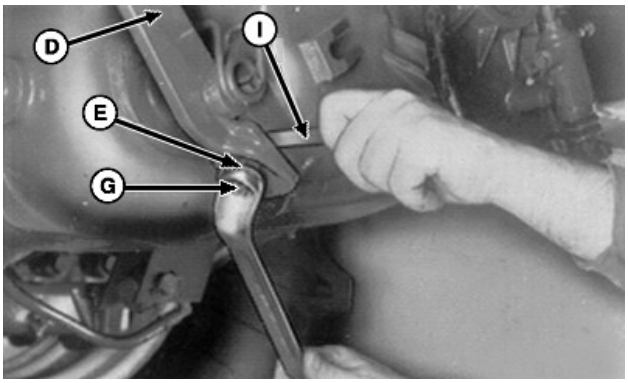
CP00718,00040B2-19-13DEC17

Adjust Park Brake



YC1376—UN—30DEC13

A—Park Brake Cable
B—Nut
C—Yoke
D—Brake Lever
E—Nut
F—Lock Nut
G—Adjustment spindle
H—Brake Housing



YC1377—UN—24DEC12

D—Brake Lever
E—Nut
G—Adjustment spindle
I—Feeler Gauge (3 mm)

There are two methods for adjusting the park brake:

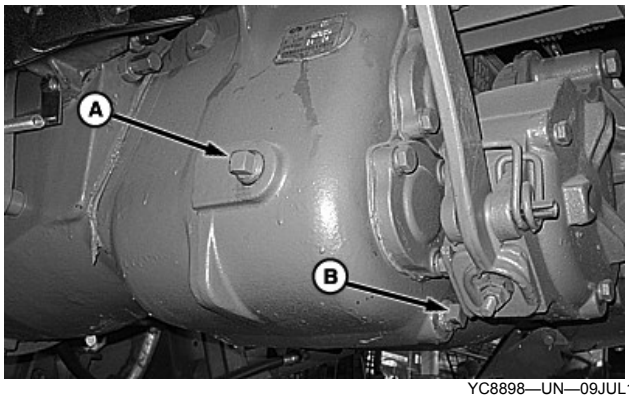
1. Loosen nut (B), remove the cotter pin and adjust the yoke (C) .
2. Adjust length of the adjustment spindle (G) by loosening lock nut (F) and turning nut (E).

NOTE: When carrying out either of adjustments, place a 3 mm feeler gauge (I) between the brake housing (H) and brake lever (D).

JL31334,00017AC-19-07MAY18

Transmission

IMPORTANT: Under certain operating conditions, such as traveling on a slope, always fill transmission with specified oil.



YC8898—UN—09JUL15

A—Oil Filler and Level Plug
B—Oil Drain Plug

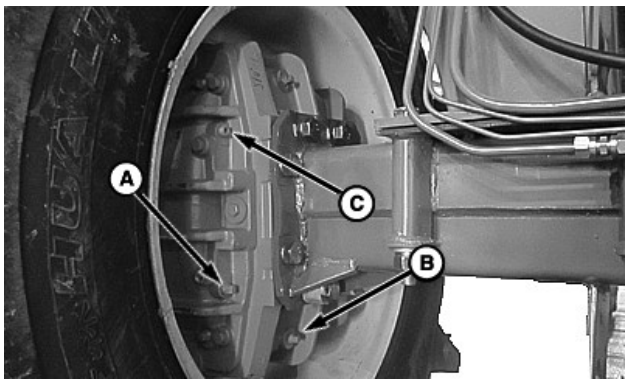
Always use a specified oil. See Gear Oil in Fuel, Coolant, and Lubricants section.

Check oil level after every 100 hours of operation. Change oil after the first 100 hours of operation. Change oil after every 500 hours of operation.

CP00718,00040B4-19-13DEC17

Final Drive

IMPORTANT: Always use the specified oil.



YC10651—UN—26JUL16

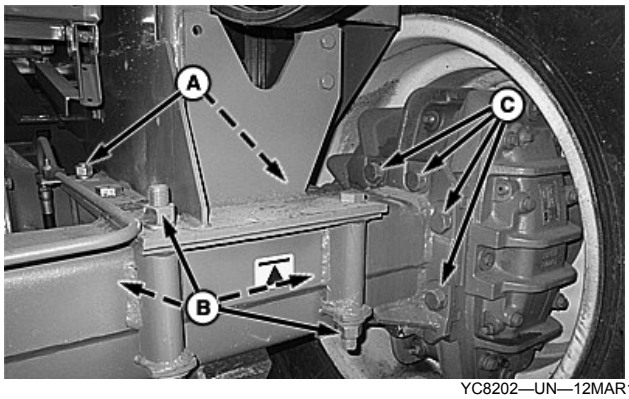
A—Oil Level Plug
B—Oil Drain Plug
C—Oil Filler and Vent Plug

Always use a specified oil. See Gear Oil in Fuel, Coolant, and Lubricants section.

Check oil level after every 100 hours of operation. Change oil after the first 100 hours of operation. Change oil after every 500 hours of operation.

CP00718,00040B5-19-13DEC17

Front Axle



YC8202—UN—12MAR15

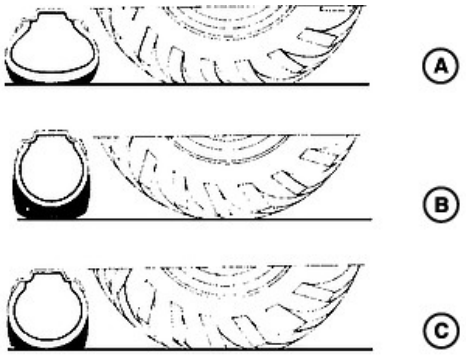
A—Nuts (2 used)
B—Nuts (4 used)
C—Bolts (8 used)

Check the torque of attaching bolts and nuts of the front axle after the first 25 hours of operation,

1. Torque of nuts (A) is 240 N·m.
2. Torque of nuts (B) is 435 N·m.
3. Torque of nuts (C) is 435 N·m.

CP00718,00040B6-19-13DEC17

Tire Maintenance



YC12576—UN—01MAR18

A—Under Inflation
B—Over Inflation
C—Proper Inflation

Tire service life depends on proper inflation.

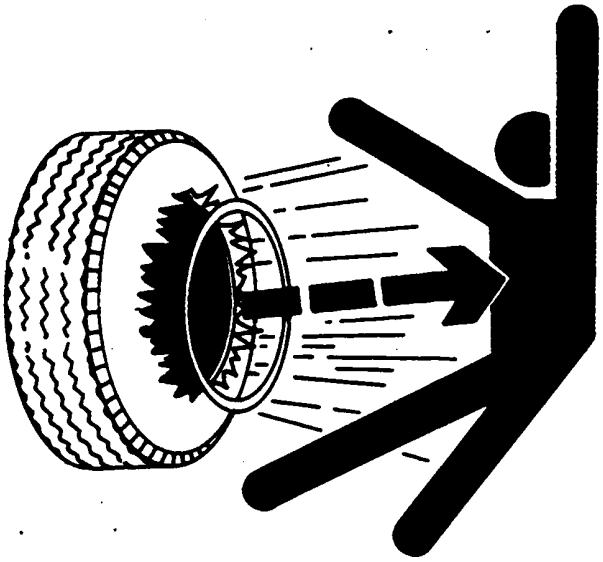
1. Check tires daily for damage and the correct pressure.
2. Repair any cuts or brakes as soon as possible or change tire.
3. Avoid tires from exposure to sunlight and chemicals.

Inflation pressure of the front wheel tire 23.1-26 is 170 kPa.

Inflation pressure of the rear wheel tire 12.00-18 is 420 kPa.

CP00606,0001793-19-25MAY18

Service Tires Safely



TS211—UN—15APR13

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

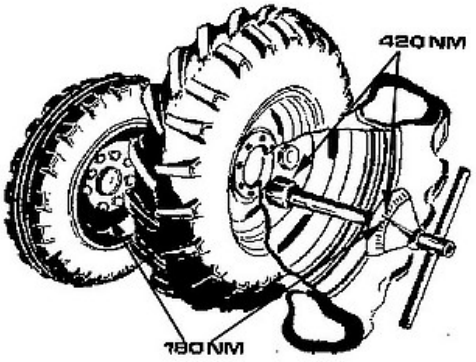
Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

CP00718,00040B8-19-13DEC17

Wheel Bolts



YC12577—UN—01MAR18

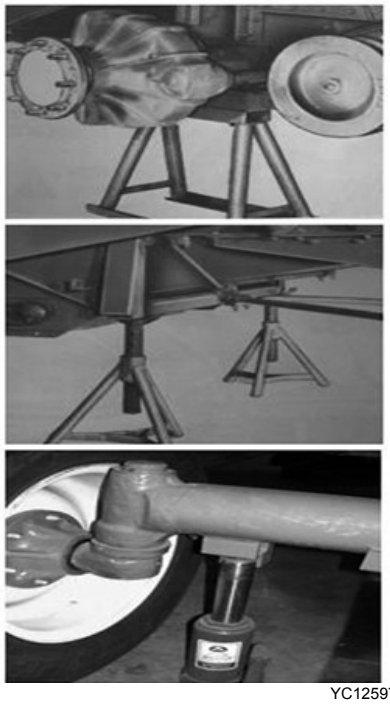
Front Wheels: Check and tighten front wheel nuts to 420 N·m torque after the first hour of operation and again after the first 20 to 25 hours of operation,

Rear Wheels: Check and tighten rear wheel bolts to 180 N·m torque after the first hour of operation and again after the first 20 to 25 hours of operation,

CP00606,0001794-19-25MAY18

Use and Precautions of Hydraulic Jack





YC12597—UN—01MAR18

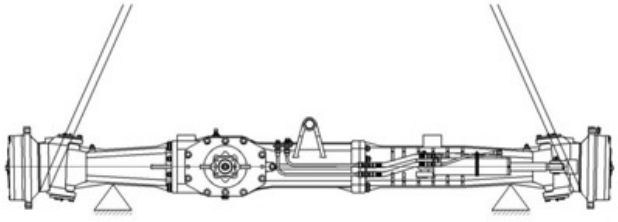
1. Before lifting, insert the slotted end of handle into the oil returning valve stem. Tighten the oil returning valve stem in clockwise direction.
2. Insert the handle into the press-hand-hole and move it up and down. The piston rod moves up steadily and lifts the load. As the jack has a limit device, the load can only be lifted to a certain height.
3. To lower the piston rod, use the slotted end of handle to turn the oil returning valve stem slightly in counterclockwise direction. The piston rod descends slowly. If there is the load, the oil returning valve stem cannot be turned too quickly.
4. Before lifting, estimate the weight of the object. Overloading is prohibited.
5. To use a jack, determine the center of gravity of the object. Choose the focal point of the jack. Place the object in a balanced way and consider the hardness of the ground. When needed, lay hard wood plates underneath to prevent the object from being skewed or even falling over when being lifted.
6. After the heavy object has been lifted, lay hard wood plates or other supporting materials under the jack, to avoid any danger caused by jack failure.(as shown in the diagram)
7. When using the jack, avoid abrupt vibrations.

NOTE: Use jacks to lift the combine and use frames to support it firmly. First loosen the front or rear wheel nuts, and remove the wheels. The frames in the diagram can be self-made.

CP00606,0001795-19-25MAY18

Rear Drive Axle Precautions (Optional)

1. Hoist the axle, but not the tie rod. When storing, use dedicated shelves. Do not stack randomly, to avoid damage and oil leakage.



YC7571—UN—16JUL14

2. To avoid accidents, check the swing angle of rear axle before leaving factory.
3. Adjust the toe-in follow instructions, to avoid abnormal wear of tires.
4. When the combine is driving on roads of good conditions, power of the real drive axle is cut off.
5. Prohibit carrying out repairs or maintenance under the machine when power is not cut off, machine is not parked, safety measures are not ready.

6. Always check the bolts, nuts, and other components that are easily loose. For example, drive wheel hub nuts, main decelerator and half shaft sleeve connecting nuts. If they are loose, tighten them promptly.
7. When servicing the machine, strictly follow the required intervals and steps stated in the operator's manual, to avoid abnormal wear of gears and bearings. If operating conditions are poor, shorten the service intervals.
8. As required, use recommended brands of lubricants. When changing lubricants, never mix new and oil lubricants, different brands or lubricants from different manufacturers.
9. Performance of the rear drive axle gradually deteriorates after a certain period. Proper use and operation extend service life and maintain the reliability.
10. Nuts through riveting treatment (such as nuts at final drive) must not be loosened or removed. Be handled by professional technicians.
11. Rear drive axle must not be placed upside down when transport or installation.

JL31334,00017AD-19-07MAY18

Rear Drive Axle Break-In (Optional)

Carry out rear drive axle break-in as requirement. If the drive axle break-in is not done before use, parts and components are seriously worn, so that service life is shortened.

Preparation Before Use

1. Check if all bolts, nuts, and steering limit bolts of the rear drive axle are tightened. If they are loose, tighten them at once.
2. Lubricant the fittings on the wheel hub and drive axle.
3. Through the inspection hole, check the rear axle central drive and final drive oil level.

Break-In

1. Run the machine without load. Meanwhile, carefully check the condition of rear drive axle to see if there is any abnormal sound, oil leakage, water spillage, or other abnormalities. If abnormality is found, immediately stop the machine and carry out troubleshooting before starting again.
2. After no-load break-in, if the rear drive axle is at normal state, break-in with load can be done.
3. When machine is static, start the engine, turn steering wheel steadily to the left and right. Observed the steering of rear wheels.

NOTE:

1. During machine gear I or gear II with load break-in, rear drive axle is engaged. During break-in at other gears, rear drive axle is disengaged.

2. After adding new lubricant, bleed air after 4 operating hours. Otherwise, bleeding is not needed.

Operation After Break-In

1. After machine stops, drain lubricant from the rear drive axle. Meanwhile, add some kerosene or light diesel for cleaning (together with the whole drive system). After draining the cleaning agent, fill new GL-5 (85W/90) gear oil with amount: Center drive 18L, final drive 1.5L per side.
2. Check rear drive axle toe-in, adjust it if necessary.
3. Check and tighten all bolts, nuts, and screws.
4. Add lubricant at all lubricating fittings.

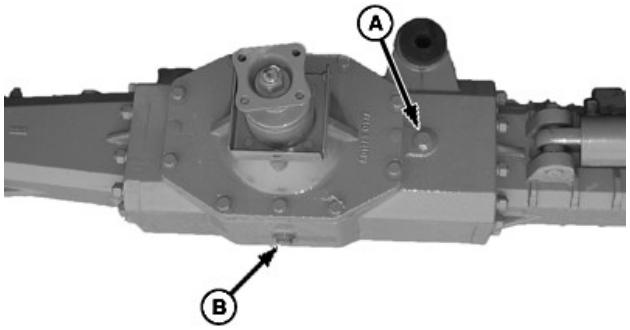
JL31334,00017AE-19-07MAY18

Rear Drive Axle Service (Optional)

IMPORTANT: For extending the service live, regularly maintain the rear drive axle.

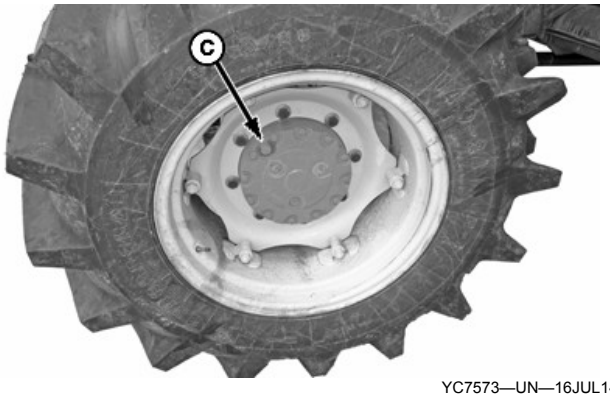
Lubrication of Rear Drive Axle

1. Apply GL-5 85W/90 gear oil to lubricate the rear drive axle.



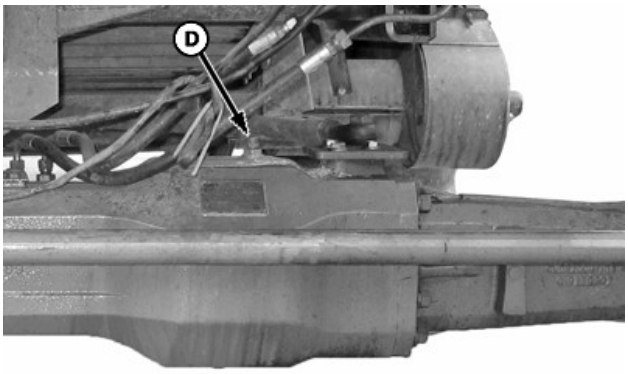
YC7572—UN—16JUL14

A—Oil Level Plug
B—Oil Drain Plug



YC7573—UN—16JUL14

C—Plug



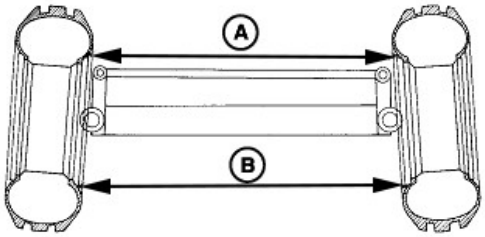
YC7574—UN—16JUL14

D—Retaining Vent Plug

2. **Central drive service:** Change lubricant every 1600 operating hours. Check oil level after 400 operating hours. Unscrew the oil level plug (A) to check. Oil level reaches the plug hole. Refill oil as needed. When changing lubricant, drain off used oil from the oil drain plug (B). Then, tighten oil drain plug. Add new lubricant through the retaining vent plug (D).
3. **Final drive service:**
   - Change lubricant every 800 operating hours. Check oil level after 200 operating hours, to prevent abnormal wear of gears caused by not enough lubricating oil.
   - When changing lubricating oil, turn wheel hub so that the plug (C) is at the lowest position. Remove oil drain plug, drain off used oil. Turn wheel hub again so that the plug is at level position. Add new lubricant through the inspection hole.
4. **Transfer case service:** To keep good working condition of the rear drive axle, add a reasonable amount of oil.
   - Fill GL-5 80W/90 gear oil to the transfer case, amount 3.2 kg.
   - After first 100 operating hours, change gear oil. Change oil every 400 operating hours thereafter.

Adjust Toe-In

NOTE: Toe-in is measured at the rear drive axle contour centerline.



YC10910—UN—10NOV16

A—Distance
B—Distance

Toe-in adjustment method: Drives combine to a level ground, straight-ahead. At the same height through the centerline of rear wheel, measure the distance (A and B) between the front end and the rear end of rear wheels. Loosen lock nuts on tie rod and assembly. Turn the tie rod so that it extends or shortens. When B-A = 2—8 mm, tighten the lock nuts.

Daily Checks

Check the bolts, nuts, and other components that are easily loose. Tighten as needed.

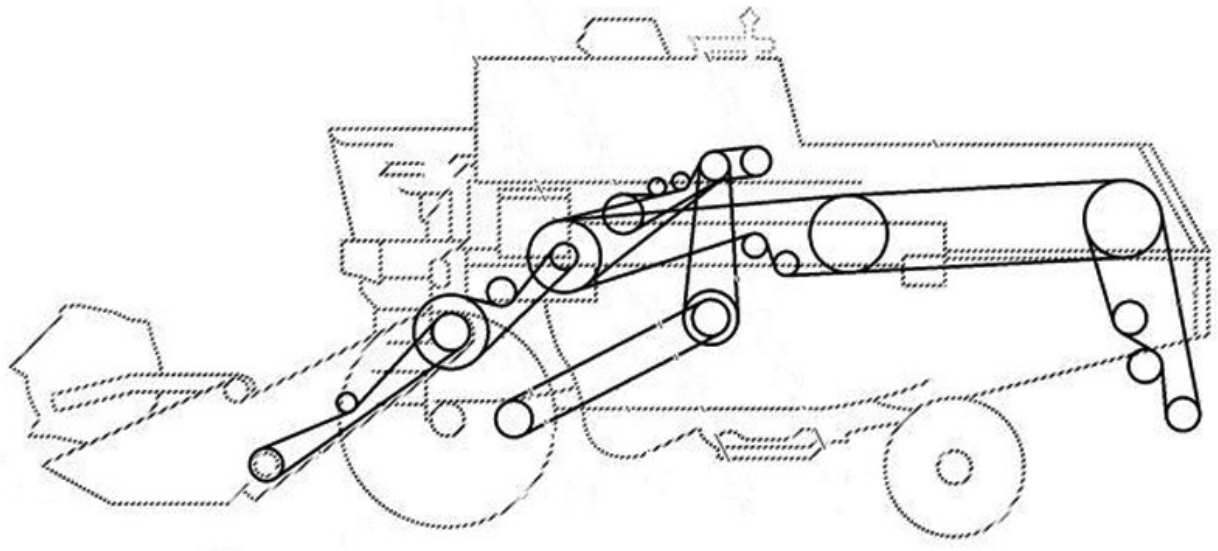
CP00606,0001796-19-25MAY18

Torque Requirements of Rear Drive Axle Fasteners (Optional)

Name and assembly parts	Thread specifications	Tightening torque (N·m)
Large bevel gear and differential housing connecting bolt	M12×1.25×30	110—130
Differential holder bearing cover fastening bolt	M12×1.25×70	110—130
Small bevel connecting flange fastening nut	M20×1.5	Small bevel gear rotation torque is 1—2 N·m
Knuckle bearing pre-fastened nut	M75×2	Apply 300 N·m to tighten and return 8° to lock
Left and right half tube and fastening nut	M14×1.5	130—150
Differential holder assembly and center drive connecting bolt	M12×1.25×40	80—95
Steering shaft and knuckle connecting bolt	M12×1.25×30	110—130
Planetary gear carrier and wheel housing connecting bolt	M10×1.25×30	60—75
Steering tie rod lock nut	M30×2	220—250
Steering tie rod ball joint lock nut	M20×1.5	180—220
Stop bolt lock nut	M14×1.5	110—130
Vent valve assembly, vent plug assembly, oil drain plug	M22×1.5	50—60

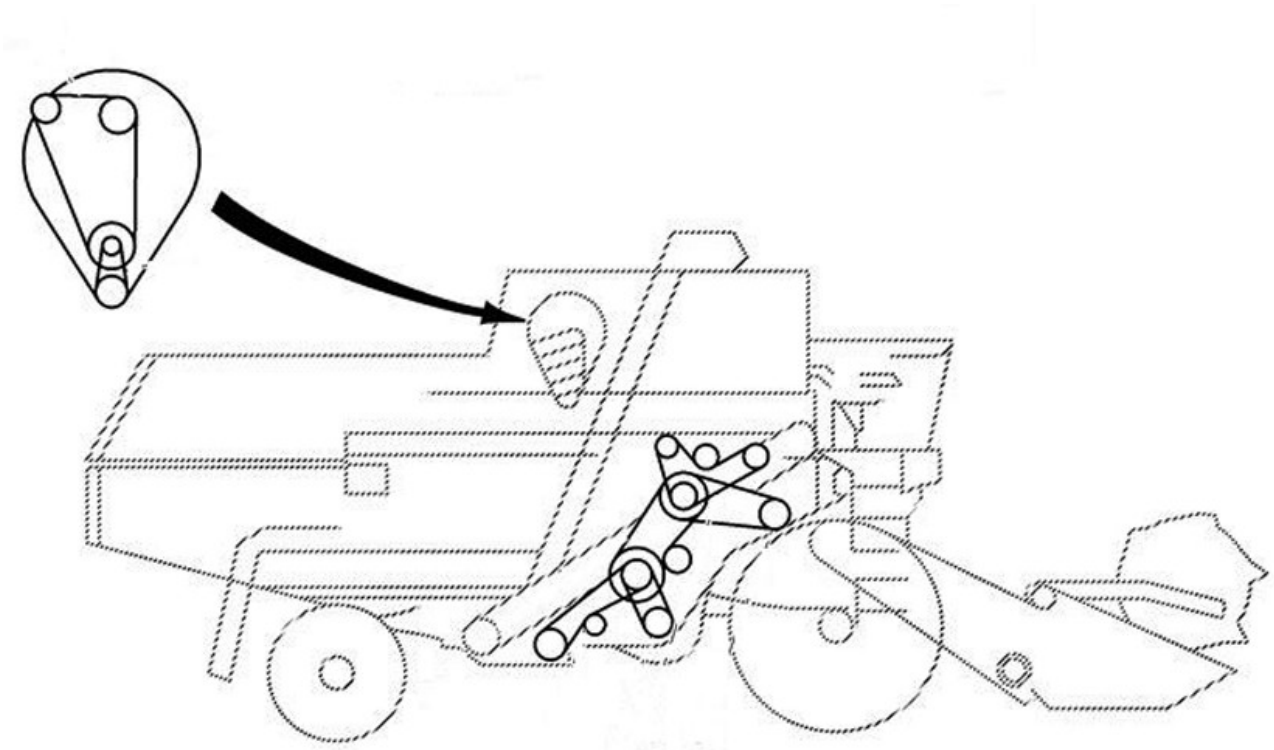
JL31334,00017CE-19-07MAY18

Left Hand Transmission Route Diagram



YC6410—UN—12FEB14
CP00718,00040BF-19-13DEC17

Right Hand Transmission Route Diagram



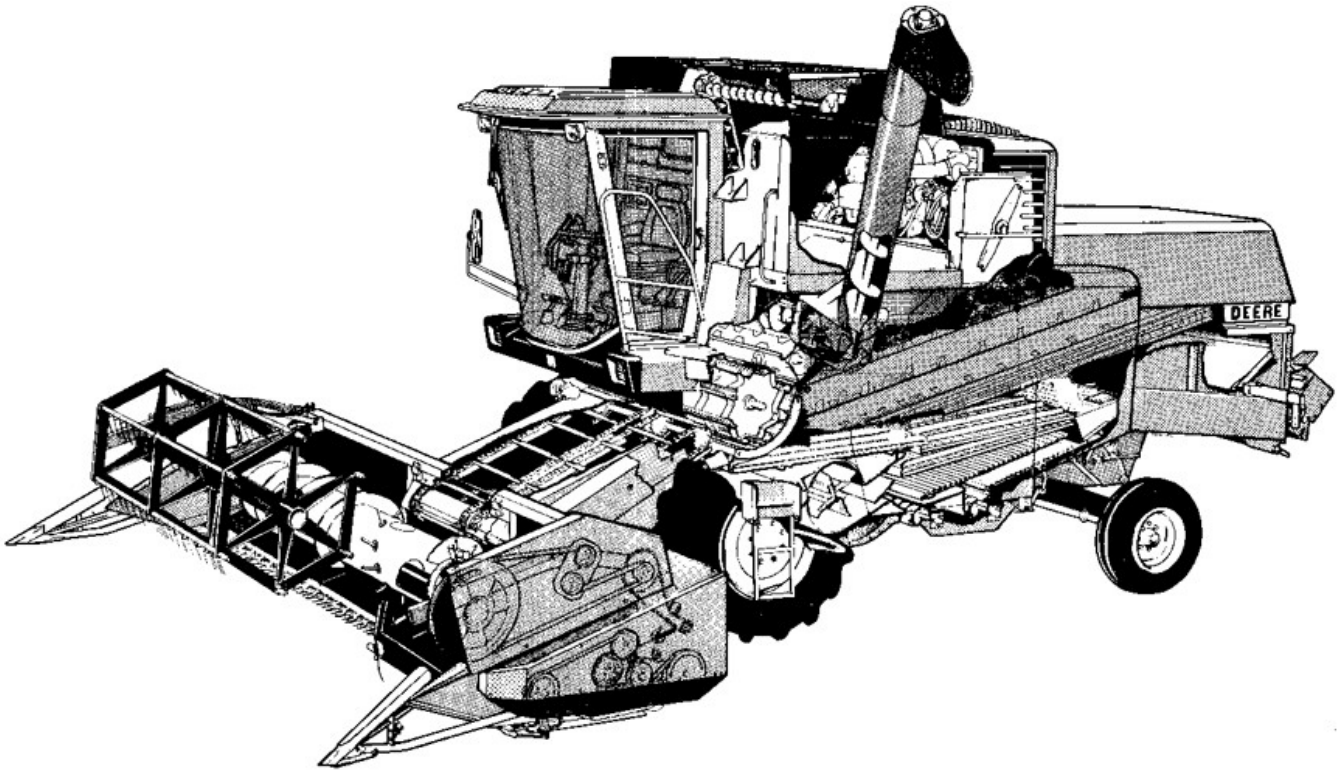
YC6411—UN—12FEB14
CP00718,00040C0-19-13DEC17

Choice of Harvesting Time

Ensure that crop is ripe. Otherwise, the harvesting quality of combine is affected.

CP00718,0004362-19-19DEC17

Avoid Grain Losses



YC1426—UN—19MAR14

Basic principle of adjusting the combine is to reduce losses and failures.

To achieve the objectives, pay particular attention to timely harvest. Early or late harvesting results in unnecessary losses and failures.

Make necessary adjustments to the combine according to harvest conditions and moisture content of crops.

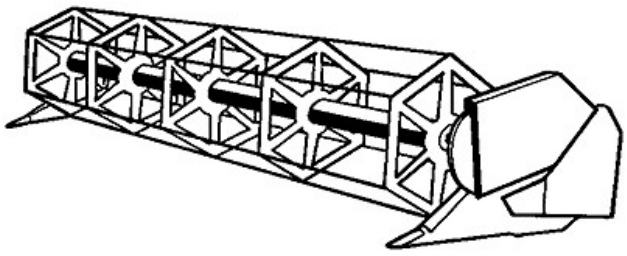
Pay particular attention to the following losses and situations:

1. Header loss
2. Excessive tailings
3. Cracked grain
4. Excessive chaff in the grain tank
5. Separation loss
6. Cleaning loss
7. Nature grain loss
8. Unthreshed loss

CP00718,0004363-19-19DEC17

Header Operation

Header operation is described in a separate operator's manual.

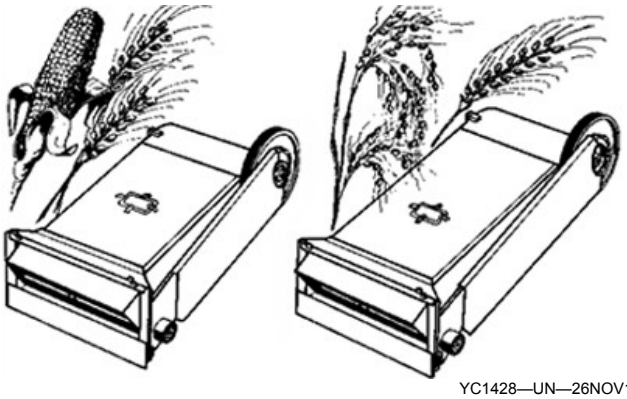


YC1427—UN—26NOV12

CP00718,0004364-19-19DEC17

Feeder House

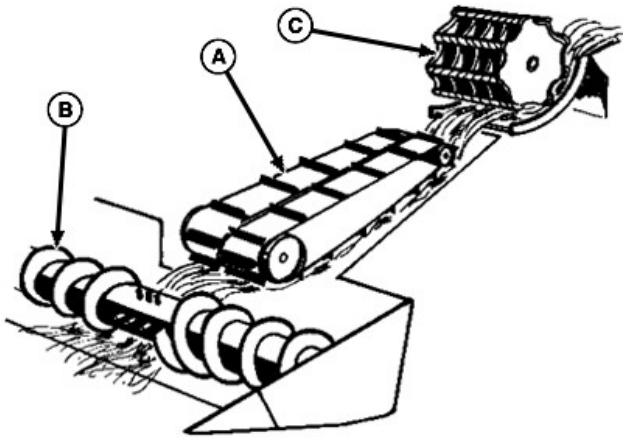
When connecting header, pay attention to the connection of hydraulic hoses and wire harness.



YC1428—UN—26NOV12

CP00718,0004365-19-19DEC17

Work Process of Feeder House



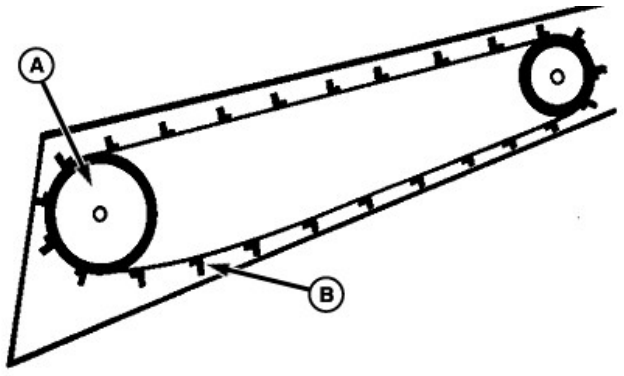
YC1429—UN—11DEC12

A—Conveyor Chain
B—Auger
C—Threshing Cylinder

Conveyor chain (A) receives the crop from auger (B) and transmits to threshing cylinder (C).

CP00606,0001798-19-25MAY18

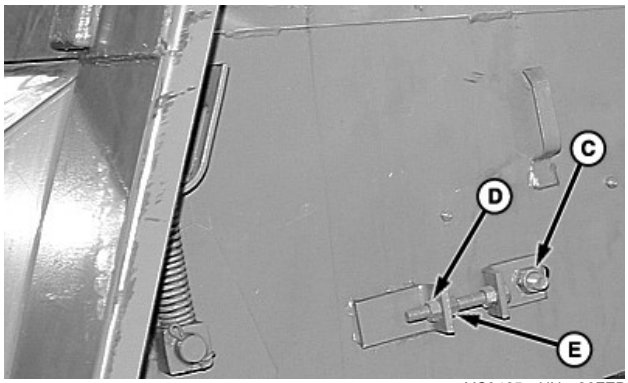
Adjustment of Conveyor Chain Tension



YC9669—UN—26FEB16

A—Feeder Conveyor Drum
B—Third Slat

Adjust tension of the conveyor chain, until the third slat (B) (seen from the front) below the feeder conveyor drum (A) touches the bottom of the feeder house.



YC9465—UN—26FEB16

C—Nut (2 used, 1 per side)
D—Nut (2 used, 1 per side)
E—Nut (2 used, 1 per side)

Adjustment Method: Loosen nuts (C) on both sides of the feeder house. Adjust nuts (D and E), until correct tension is obtained. Retighten all nuts.

NOTE: When adjusting tension of the conveyor chain, make an adjustment at both ends.

CP00606,0001799-19-25MAY18

Adjustment of Feeder Conveyor Drum

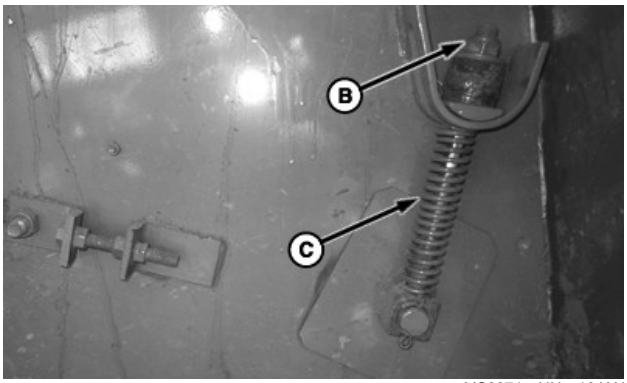


YC4376—UN—24APR13

A—Ordinary Crop (wheat, rice)
X—140 mm

When harvesting ordinary crops (A), adjust feeder conveyor drum.

NOTE: When adjusting feeder conveyor drum, do that on both sides synchronously.



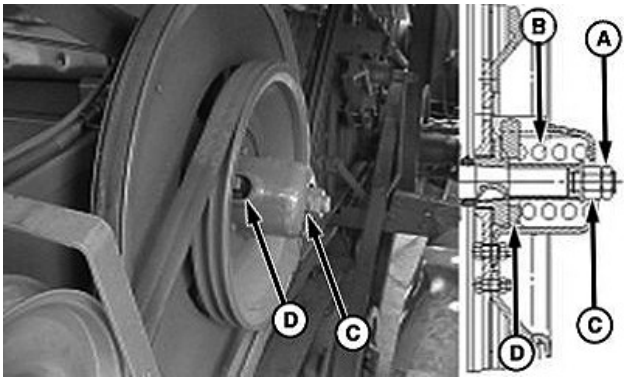
YC8071—UN—16JAN15

B—Nut (2 used, 1 per side)
C—Tension Spring (2 used, 1 per side)

Adjustment Method: Adjust nuts (B) alternately at both ends of the feeder house until the length of tension springs (C) is as specified at both ends.

CP00606,000179A-19-25MAY18

Feeder House Slip Clutch



YC8072—UN—20JAN15

A—Nut
B—Spring
C—Nut
D—Jaw

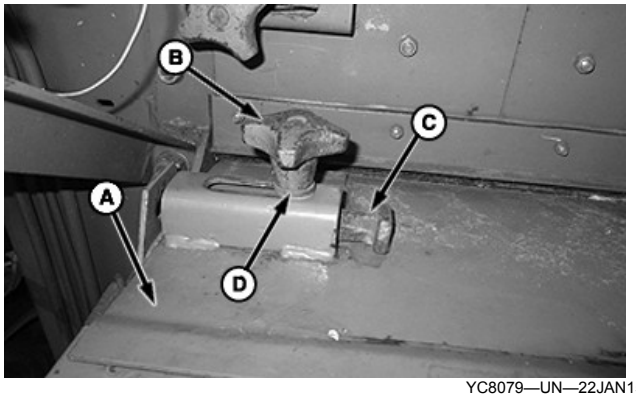
Torque of the feeder house upper shaft is transmitted through the pressure of spring (B) on a pair of jaws (D).

During the operation of the feeder house, if the load is greater than the pre-tightening force, the jaws (D) compress the spring (B) to slip the clutch.

Adjustment: Adjust nuts (A and C), until spring (B) reaches the specified pre-tightening force. Retighten nuts (A and C).

CP00606,000179B-19-25MAY18

Upper Feeder House Cover



YC8079—UN—22JAN15

A—Cover
B—Grip Nut (2 used, 1 per side)
C—Latch (2 used, 1 per side)
D—Lock Washer (2 used, 1 per side)

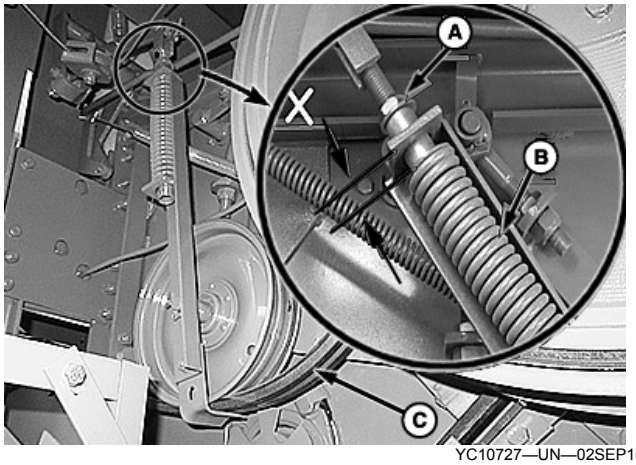
Service upper part of the feeder house through the upper feeder house cover (A).

To remove cover (A), loosen grip nuts (B), slide latches (C) together with grip nuts (B) inward and remove. Install cover (A) in reverse order.

NOTE: Make sure that lock washers (D) are located under grip nuts (B).

CP00606,000179C-19-25MAY18

Feeder House Drive



YC10727—UN—02SEP16

A—Lock Nut
B—Tension Spring
C—Belt
X—Length (7—12 mm)

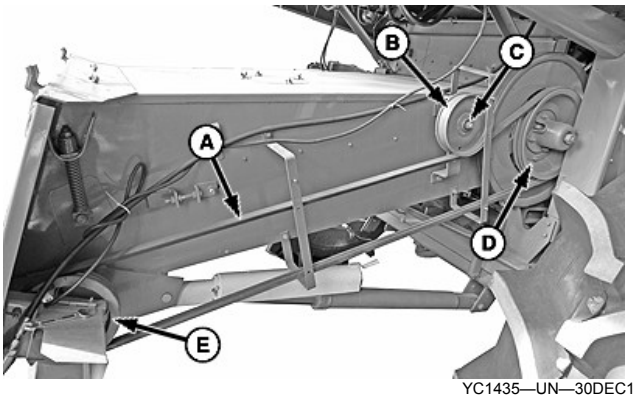
When the feeder house drive is engaged, the belt (C) is tightened.

Adjustment Method: Adjust lock nut (A), until the length (X) is 7—12 mm. Retighten lock nut (A).

CP00606,000179D-19-25MAY18

Header Drive

NOTE: Remove the safety guard when adjusting belt. For clarity, the safety guard has been removed in the illustration.



YC1435—UN—30DEC13

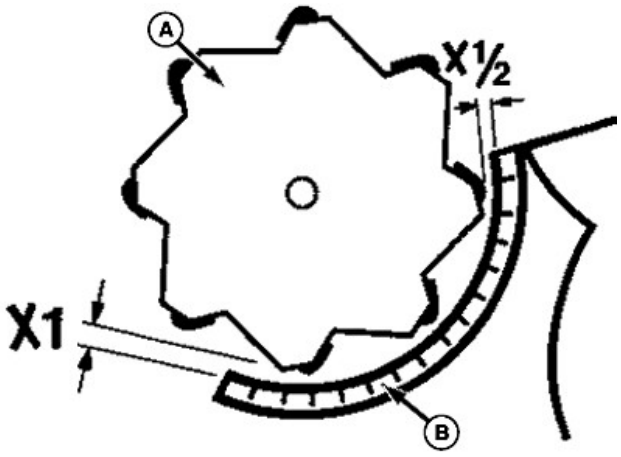
A—Belt
B—Idler
C—Nut
D—Drive Pulley
E—Driven Pulley

Power goes from drive pulley (D) to driven pulley (E) through belt (A), then to header. Belt (A) is tensioned by idler (B).

Adjustment: Loosen nut (C). Tension the belt (A) by adjusting idler (B). Retighten nut (C).

CP00606,000179E-19-25MAY18

Threshing Unit



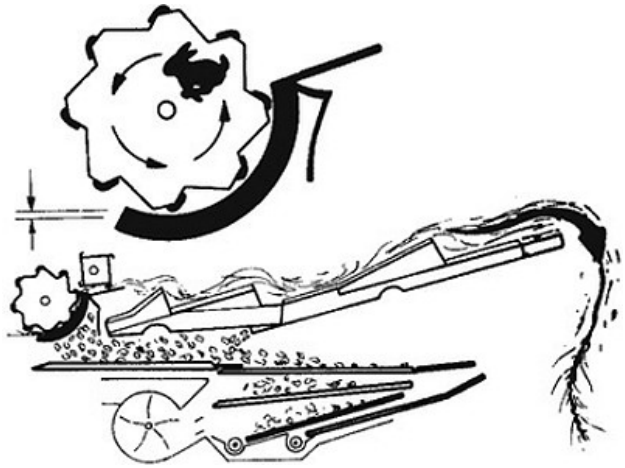
YC1436—UN—11FEB14

A—Threshing Cylinder
B—Concave

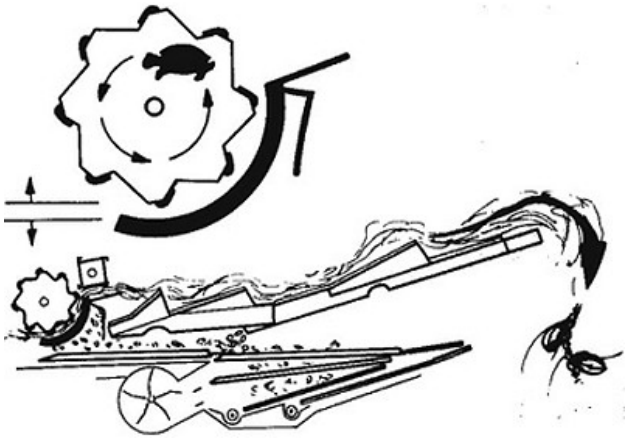
Threshing unit is the most important component of the combine, so adjust the clearance carefully between threshing cylinder (A) and concave (B).

CP00606,00017A0-19-25MAY18

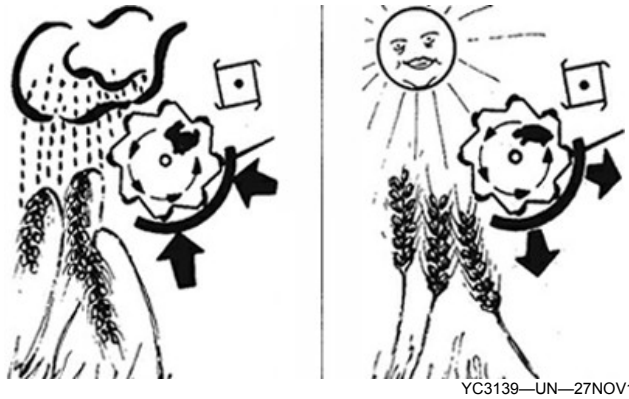
Adjustment of Threshing Cylinder and Concave



YC3114—UN—26NOV12



YC3115—UN—26NOV12



YC3139—UN—27NOV12

1. Higher cylinder speed and smaller threshing clearance produce a stronger threshing.

NOTE: When cylinder speed is too high and threshing clearance is too small, cracked grain results.

2. When cylinder speed is low and threshing clearance is large, a lower cracked rate results.

NOTE: When cylinder speed is low and threshing clearance is too large, threshing becomes ineffective.

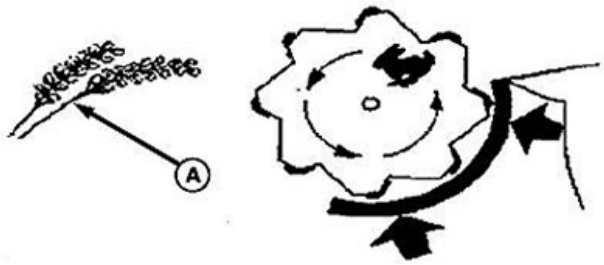
3. **Basic Adjustment:**

- Moist crops: Increase cylinder speed and/or reduce threshing clearance.
- Dry crops: Reduce cylinder speed and/or increase threshing clearance.

IMPORTANT: To get a good threshing result, it is essential to adjust cylinder speed and threshing clearance properly.

CP00718,000436E-19-19DEC17

Adjust Threshing Clearance Depending on Crops



YC7463—UN—28JUL14

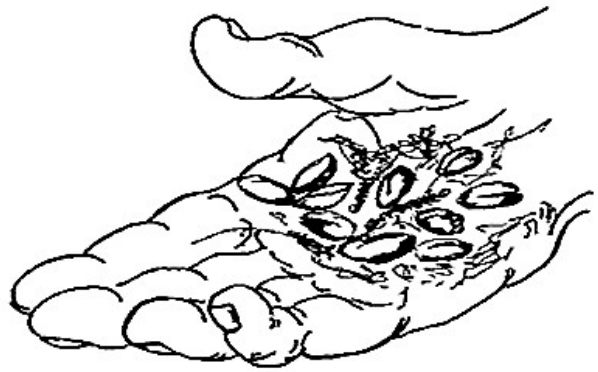
A—Wheat

Small grain and ordinary crops: The cylinder speed is high, and threshing clearance is small.

CP00718,000436F-19-19DEC17

Determine Threshing Effect

To determine threshing effect, pay attention to the following:



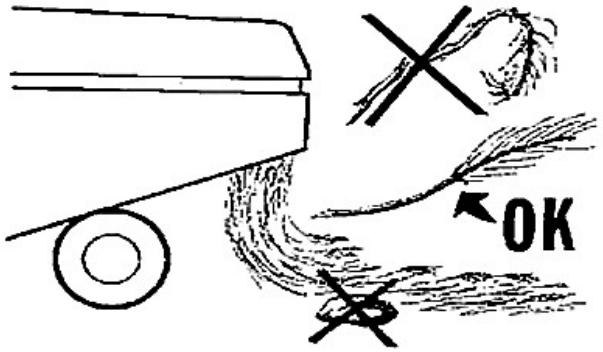
YC1442—UN—27FEB12

- Threshed straw
- Grain loss at the rear of combine
- Grain in the grain tank
- Tailings

CP00718,0004370-19-19DEC17

Check Threshed Straw and Grain at the Rear of Combine

Check threshed straw and grain at the rear of combine, required as follows:

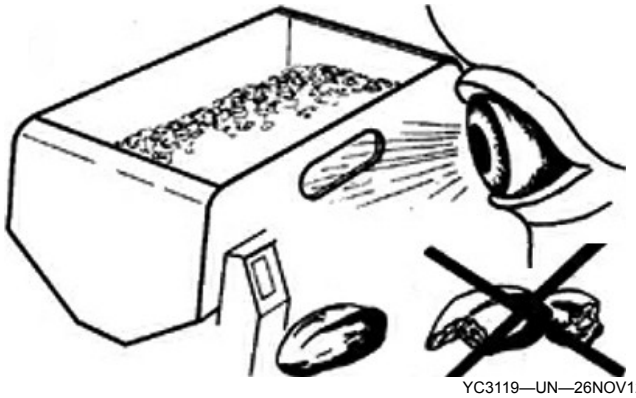


YC1443—UN—27FEB12

- Straw threshed is intact.
- Grain dropped on the ground is less.

CP00718,0004371-19-19DEC17

Grain in Grain Tank



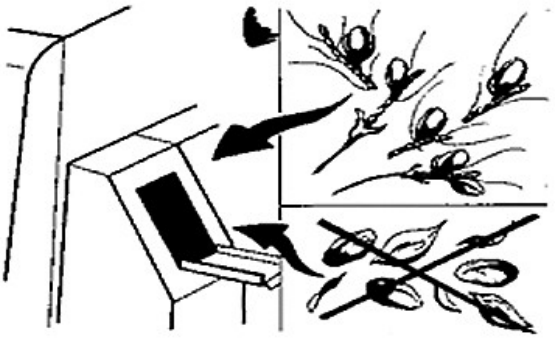
YC3119—UN—26NOV12

Amount of cracked grain in the grain tank is kept minimal. If not, check the following:

- Are tailings excessive?
- Is cylinder speed too high?
- Is threshing clearance too small?

CP00718,0004372-19-19DEC17

Check Tailings

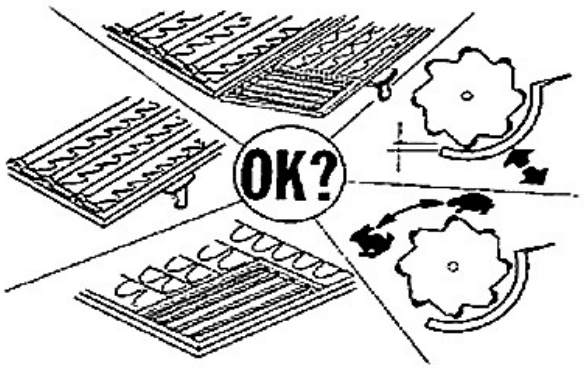


YC1445—UN—27FEB12

- None of the tailings elevator paddles are transporting too many tailings.
- Most tailings are mostly unthreshed heads.
- Tailings do not contain grains, straw, and chaff.

CP00718,0004373-19-19DEC17

Excessive Tailings



YC1446—UN—27FEB12

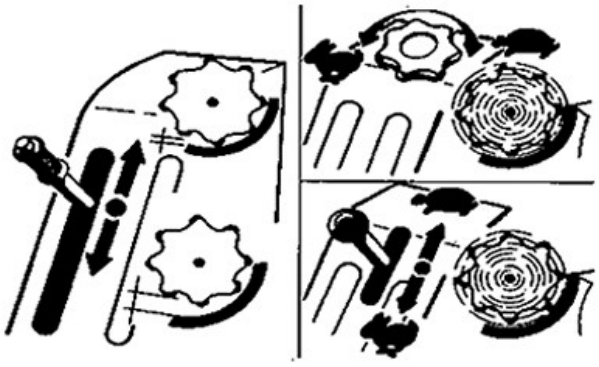
Check the following:

- Are chaffer and sieve adjusted properly?
- Is chaffer extension placed properly?
- Is grain pan extension placed properly?
- Is threshing clearance properly adjusted according to different crops?
- Is cylinder speed correct?

CP00718,0004374-19-19DEC17

Solve Threshing Problem

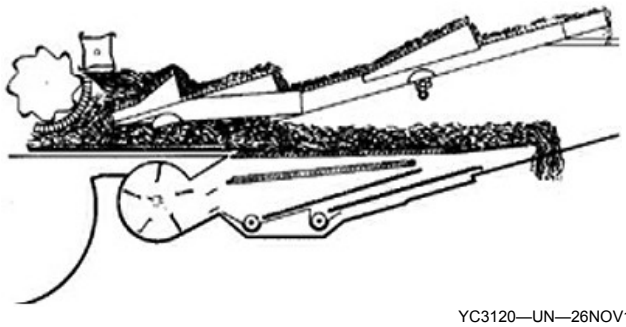
If threshing results are not satisfactory (excessive tailings, cleaning unit is not adjusted properly or other problems), refer to the followings.



YC2730—UN—29OCT12

CP00718,0004375-19-19DEC17

Over-Threshing



YC3120—UN—26NOV12

Over-threshing is due to excessively high cylinder speed and small threshing clearance.

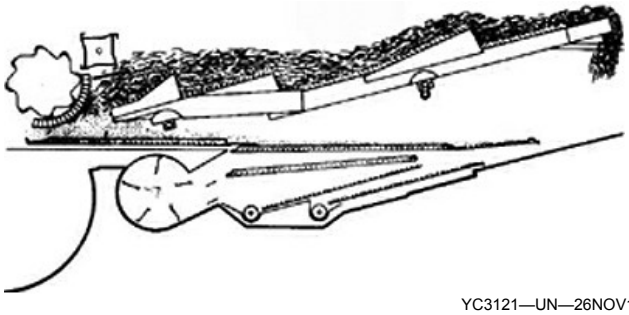
Over-threshing can be solved by lowering the cylinder speed. Reduce the speed by 5% first. Before the second adjustment, check the result of the previous adjustment. If the result is not satisfactory after reducing cylinder speed by 10%, increase threshing clearance.

If over-threshing still cannot be solved, reduce ground speed. Large feeding amount can also lead to over-threshing.

NOTE: Check the result of the previous adjustment before making another adjustment.

CP00718,0004376-19-19DEC17

Insufficient Threshing



YC3121—UN—26NOV12

Insufficient threshing is due to excessively low cylinder speed and too large threshing clearance.

Insufficient threshing can be solved by increasing cylinder speed. Increase the speed by 5%. If the adjustment still cannot solve the problem, gradually reduce threshing clearance. After adjustment, check the result of adjustment.

Under the certain harvesting conditions, it is possible that the problem cannot be solved. Increase ground speed in this situation.

NOTE: Check the result of the previous adjustment before making another adjustment.

CP00718,0004377-19-19DEC17

Basic Adjustment—Wheat

Threshing clearance has been adjusted in the factory. Inlet clearance is 7—8 mm while outlet clearance is 4—5 mm.

Threshing clearance adjust lever is then set at the second slot from above (maximum deviation must not be over 1 mm).

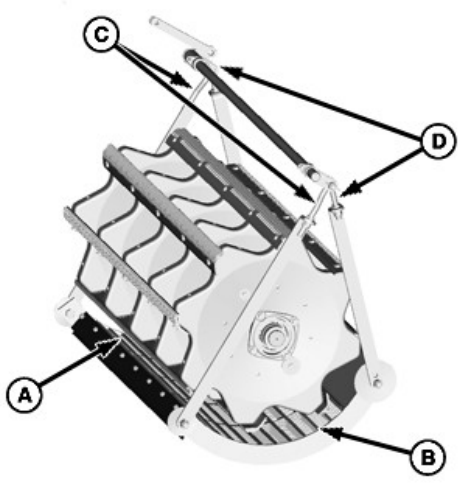
If harvest need is not met, use threshing clearance adjust lever to change inlet clearance to 7—29 mm, outlet clearance to 4—19 mm.

Measurement Locations: At the top of cylinder rasp bar, and on the concave horizontal rod.

Inlet—Measure from the second front horizontal rod on concave.

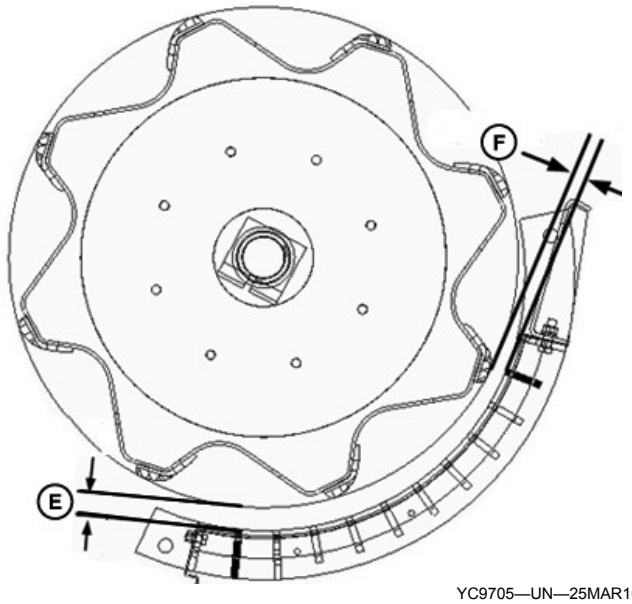
Outlet—Measure from the second rear horizontal rod on concave.

If clearance is not met, adjust threshing clearance adjust lever or turn the nut of adjustment screws (C and D) to adjust threshing clearance. For more details, see Threshing Clearance Adjustment in Operating Machine section.



YC9708—UN—24MAR16

A—Inlet Clearance Measurement Location
B—Outlet Clearance Measurement Location
C—Inlet Adjustment Screws (2 used)
D—Outlet Adjustment Screws (2 used)



YC9705—UN—25MAR16

E—Inlet Minimum Clearance (7—8 mm)
F—Outlet Minimum Clearance (4—5 mm)

JL31334,00017B3-19-07MAY18

Basic Adjustment—Rice

NOTE: When harvesting rice, use the spike tooth cylinder.

Threshing Clearance has been adjusted in the factory. Inlet clearance is 22—23 mm while outlet clearance is 19—20 mm.

Threshing clearance adjust lever is then set at the second slot from above (maximum deviation must not be over 1 mm).

If harvest need is not met, use threshing clearance

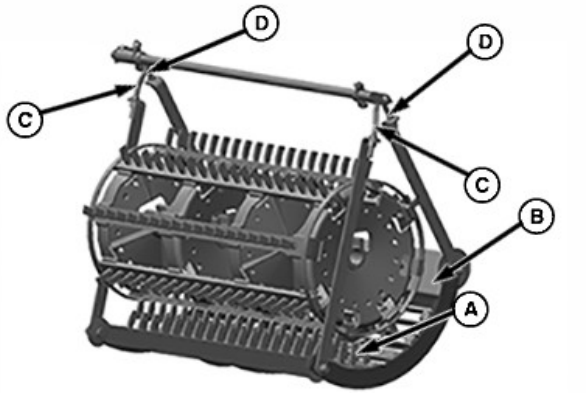
adjust lever to change inlet clearance to 22—44 mm, outlet clearance to 19—34 mm.

Measuring Locations: At the top of cylinder rasp bar, and on the concave horizontal rod.

Inlet—Measure from the second front horizontal rod on concave.

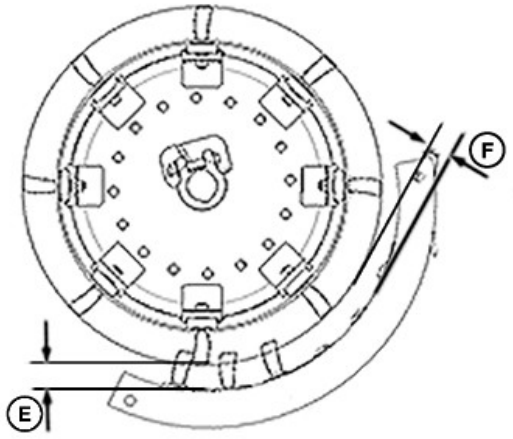
Outlet—Measure from the second rear horizontal rod on concave.

If the requirements are not met, adjust threshing clearance adjust lever or turn adjustment screws (C and D) to adjust threshing clearance. For more details, see Threshing Clearance Adjustment in Operating Machine section.



YC10790—UN—07DEC16

A—Inlet Clearance Measurement Location
B—Outlet Clearance Measurement Location
C—Inlet Adjustment Screws (2 used)
D—Outlet Adjustment Screws (2 used)

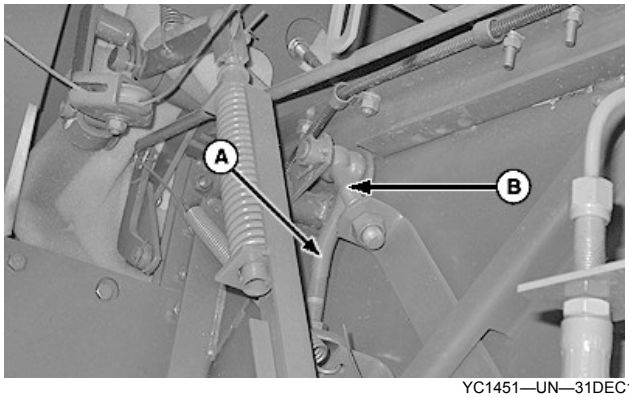


YC10791—UN—07DEC16

E—Inlet Minimum Clearance (22—23 mm)
F—Outlet Minimum Clearance (19—20 mm)

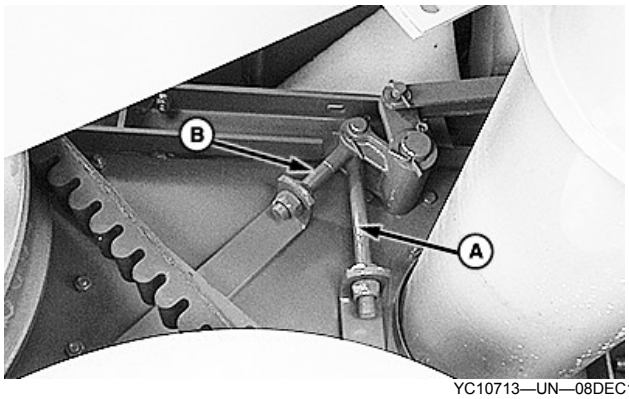
JL31334,00017B4-19-07MAY18

Threshing Clearance Adjustment



YC1451—UN—31DEC13

Left Side



YC10713—UN—08DEC16

Right Side

A—Adjustment Screw
B—Adjustment Screw

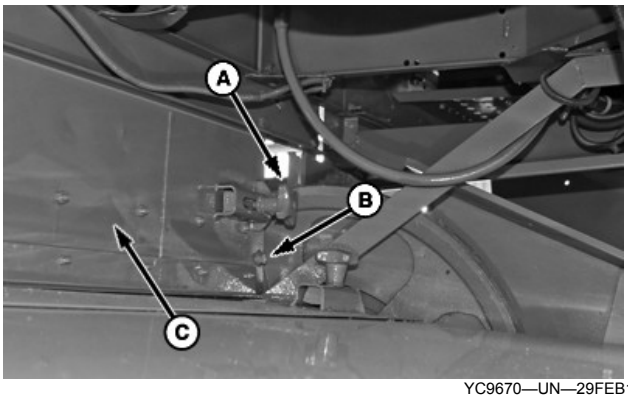
Adjust inlet clearance by adjusting the nuts on the adjustment screws (A).

Adjust outlet clearance by adjusting the nuts on the adjustment screws (B).

IMPORTANT: Adjust left and right sides simultaneously, make sure that clearance along the whole cylinder is consistent. The concave always is parallel to the cylinder. Speed and clearance determine threshing effectiveness.

CP00606,00017A1-19-25MAY18

Front Cylinder Inspection Cover



YC9670—UN—29FEB16

A—Grip Nut (2 used, 1 per side)
B—Bolt (2 used, 1 per side)
C—Cover

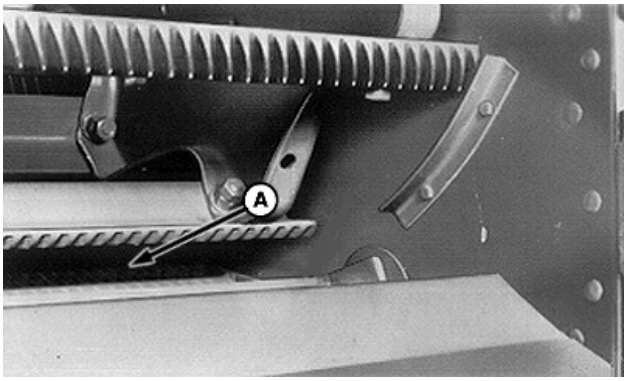
Open the cover (C), check if the cylinder is clogged.

Open the cover (C), remove the bolts (B), loosen grip nuts (A), slide the latches inward, and remove the cover (C).

Reinstall the cover (C) in reverse order.

CP00718,000437B-19-19DEC17

Stone Trap



YC8069—UN—22JAN15

A—Stone Trap

Stone trap (A) collects stones and prevents stones from damaging threshing cylinder and concave.

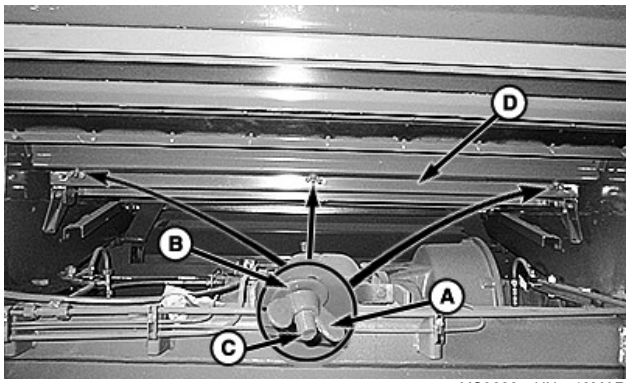
Periodically clean the stone trap (A).

CP00718,000437C-19-19DEC17

Empty Stone Trap

CAUTION: Avoid accidents. Be aware of falling stones when opening stone trap.

IMPORTANT: Clean the stone trap timely, prevent component failure and grain loss.



YC9630—UN—13MAR16

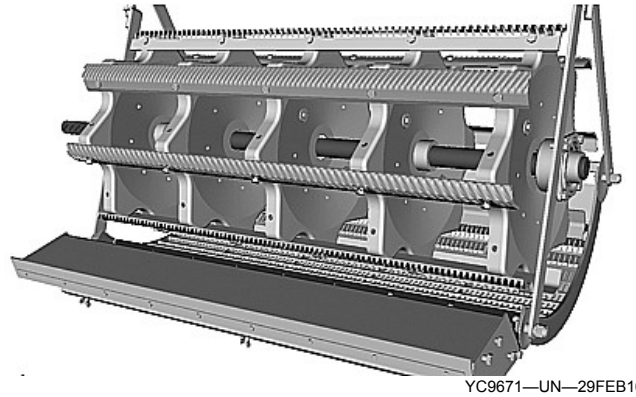
A—Nut
B—Bolt
C—Washer
D—Stone Trap

Loosen nuts (A), turn bolts (B) backward, and turn stone trap (D) downward to empty.

CP00606,00017A2-19-30AUG18

Cylinder Rasp Bar

Cylinder is fitted with rasp bars with knurls to the left and to the right, and placed alternately. If replacing a bar, the opposite bar must also be replaced to balance the cylinder. Rasp bars can be removed or installed without removing the cylinder.



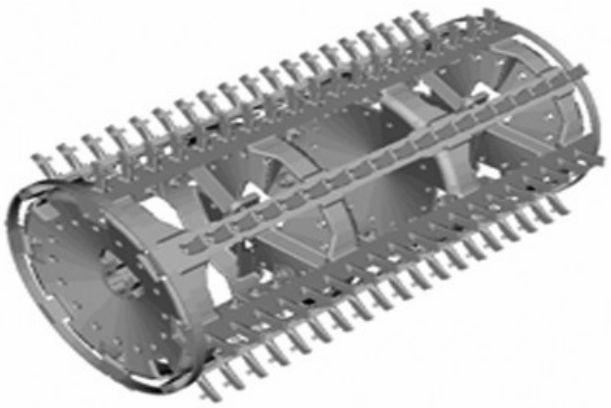
YC9671—UN—29FEB16

IMPORTANT: Retighten the fixing bolts of replaced rasp bar after the first 10 hours of operation.

CP00718,000437E-19-19DEC17

Rice Harvesting Accessories

Rice harvesting accessories include the rice cylinder and the rice concave. Rice threshing is done by the friction movement between the spike teeth of cylinder and concave.



YC1464—UN—27FEB12



YC1465—UN—20FEB14

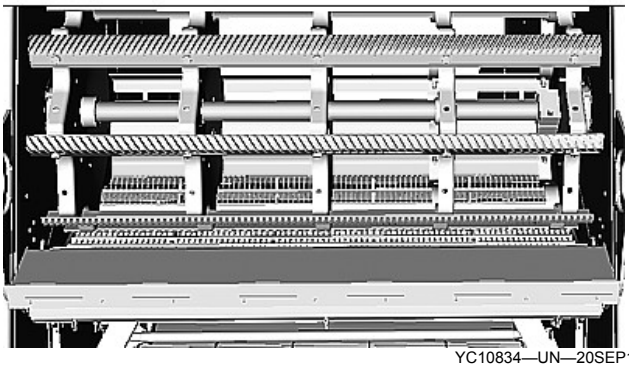
IMPORTANT: Replace lost or damaged spike teeth.

Install a new spike tooth using a hammer and a piece of hardwood. Tighten firmly using a nut. Spike tooth is installed with the long side at the rear in regard to direction of rotation.

CP00718,000437F-19-19DEC17

Turning Cylinder

CAUTION: Never clean cylinder when engine is running. Be sure to install cover before starting combine.



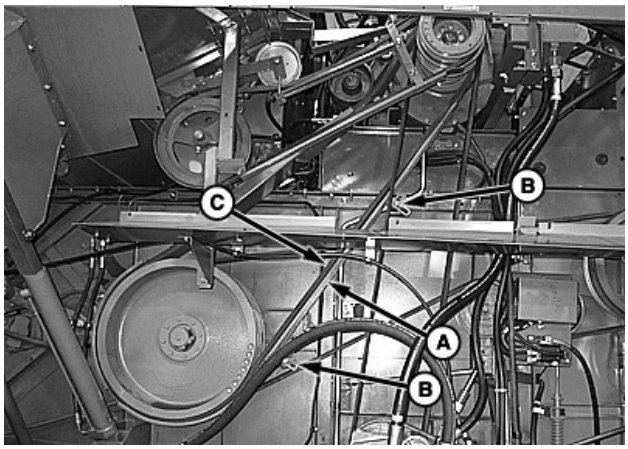
YC10834—UN—20SEP16

Open front cylinder inspection cover, and use an appropriate rod to turn the cylinder.

CP00606,00017A3-19-25MAY18

Threshing Unit Belt Guide Adjustment

NOTE: When harvesting, regularly adjust the belt guide to prevent interference with the belt.



YC9481—UN—05NOV15

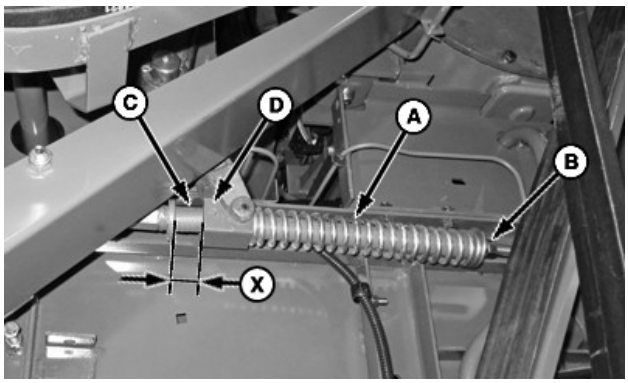
A—Belt Guide
B—Bolts (4 used)
C—Belt

Engage the separator. Loosen bolts (B). Adjust belt guide (A) until the clearance is 2—5 mm between the belt (C) and the belt guide. Retighten bolts (B).

CP00606,00017A4-19-25MAY18

Threshing Unit Belt Tension Adjustment

CAUTION: Avoid accidents. Do not adjust the combine while engine is running.



YC10732—UN—07SEP16

A—Spring
B—Nut (2 used)
C—Adjusting screw
D—Guide Block
X—Clearance (23— 27 mm)

Shut off engine and engage separator. Tension is correct

when clearance (X) between adjusting screw (C) and guide block (D) is 23—27 mm. Adjust tension as needed by adjusting screw (C).

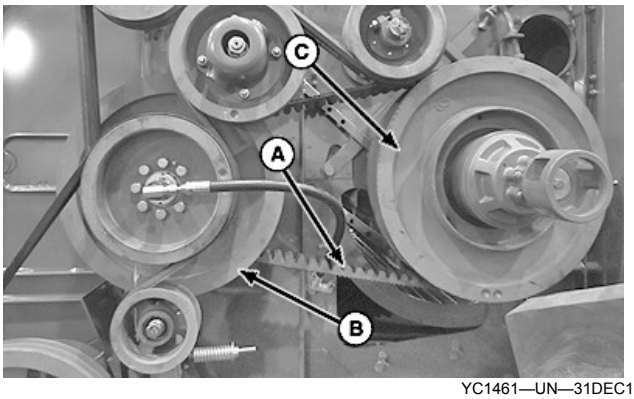
Adjustment Method: Engage separator. Loosen nuts (B) and turn adjusting screw (C). Tighten nuts (B) until the clearance (X) between adjusting screw (C) and guide block (D) is 23—27 mm. Recheck the clearance (X). Readjust if necessary.

IMPORTANT: Keep separator disengaged when the combine is not working.

CP00606,00017A5-19-25MAY18

Variable Threshing Cylinder Speed Drive

CAUTION: Avoid accidences. The internal spring has a greater pressure. Be careful when servicing.



YC1461—UN—31DEC13

A—Belt
B—Drive Pulley
C—Threshing Cylinder Pulley

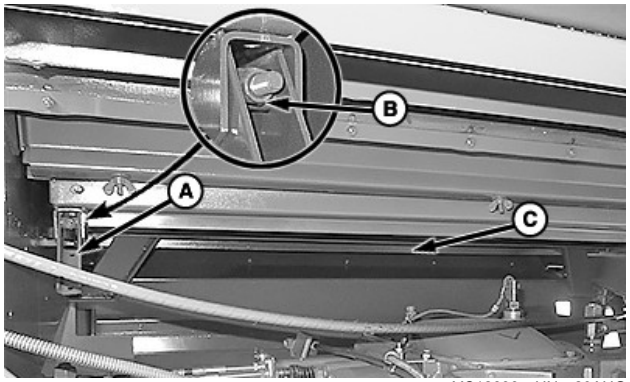
Variable threshing cylinder speed drive is composed of drive pulley (B), threshing cylinder pulley (C), and belt (A).

Variable threshing cylinder speed drive must be serviced by professionals.

CP00606,00017A6-19-25MAY18

Threshing Cleaning Unit

IMPORTANT: Clean the machine in time, prevent component failure and loss.



YC12833—UN—29AUG18

A—Clip (2 used)
B—Nut (2 used)
C—Front Grain Pan

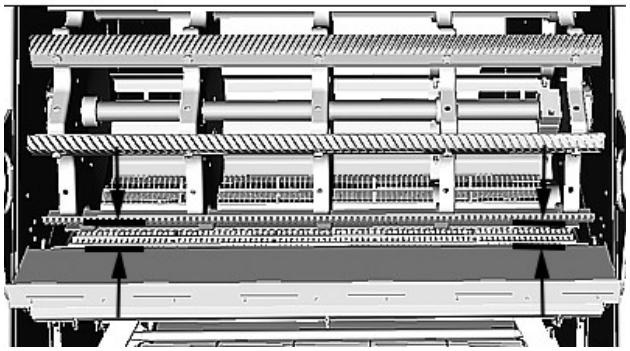
Lower the grain pan to clean the threshing unit.

Loosen the nuts (B) and open the clips (A), lower the grain pan (C) to clean the threshing unit.

CP00606,00017A7-19-30AUG18

Adjust Concave

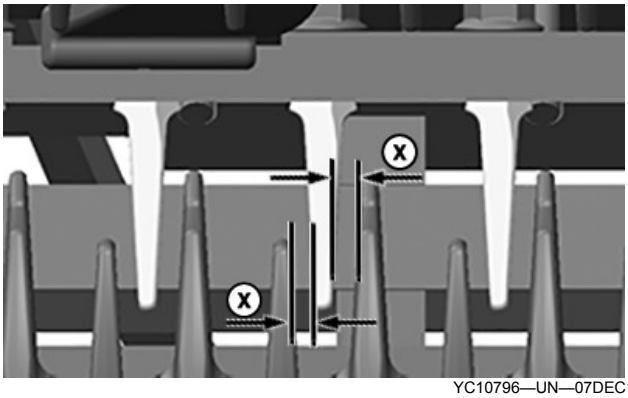
The concave is adjusted in the factory. Regularly check the concave. Ensure that the concave is in parallel with the cylinder. Related to the adjustment method, see Threshing Clearance Adjustment in Operating Machine section.



YC9673—UN—10MAR16

CP00718,0004385-19-19DEC17

Adjustment of Rice Concave and Cylinder

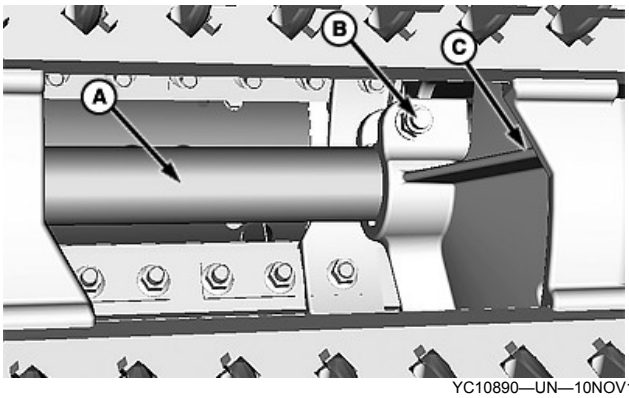


YC10796—UN—07DEC16

X—Clearance (4 mm)

When adjusting, adjust the cylinder closed to the concave, see Concave Clearance Adjustment in Operating Machine section. The clearance (X) between spike teeth of cylinder and concave is not less than 4 mm.

When rotating, clearance between spike teeth of cylinder and concave all rows should be the same.



YC10890—UN—10NOV16

A—Cylinder Shaft
B—Bolt
C—Cylinder spoke plate

Adjustment :

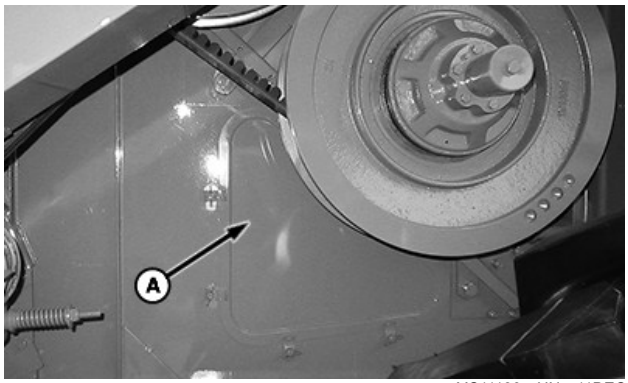
Loosen the bolt (B), adjust the position of cylinder spoke plate (C) on the cylinder shaft (A). After the clearance meet the need, retighten bolt.

CP00606,00017A8-19-25MAY18

Concave De-Awning Plates

NOTE: It is not necessary to remove the concave to install the plates.

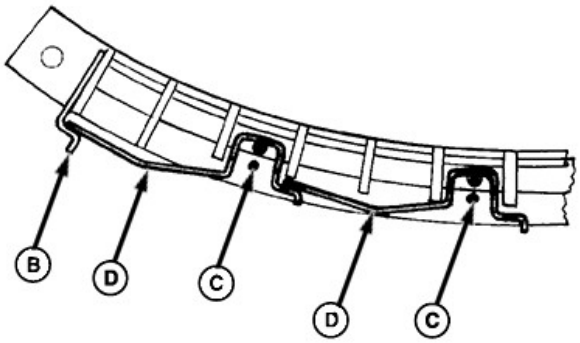
Concave de-awning plates are recommended for some crops such as barley and peas.



YC11130—UN—11DEC17

A—Cover (2 used, 1 per side)

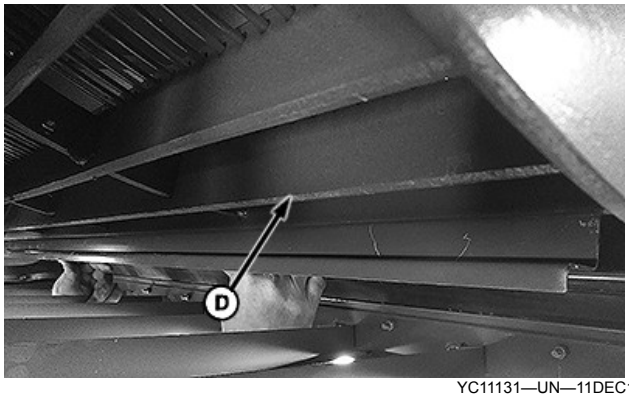
1. Remove the covers (A) at both sides of machine.



YC11132—UN—11DEC17

B—Front Support
C—Cotter Pins(2 used)
D—De-Awning Plates(2 used)

2. Clean the chaff from the front support (B) to ensure that the de-awing plate fits properly in the concave.



YC11131—UN—11DEC17

D—De-Awning Plates

3. Attach the de-awing plate (D) with the cotter pins (C).
4. Use one plate to begin. Then install the second if needed.

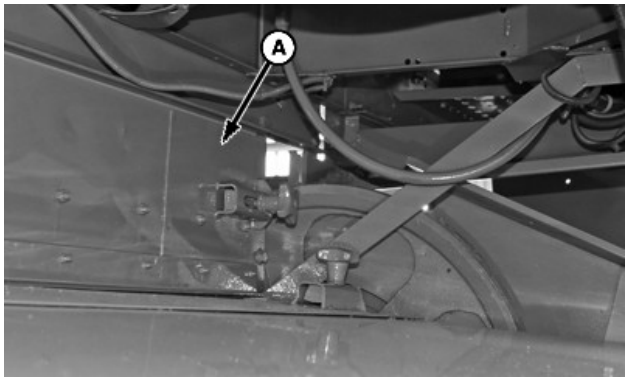
CP00606,00017A9-19-25MAY18

Clean Cylinder

CAUTION: Always warn bystanders when rotating the cylinder.

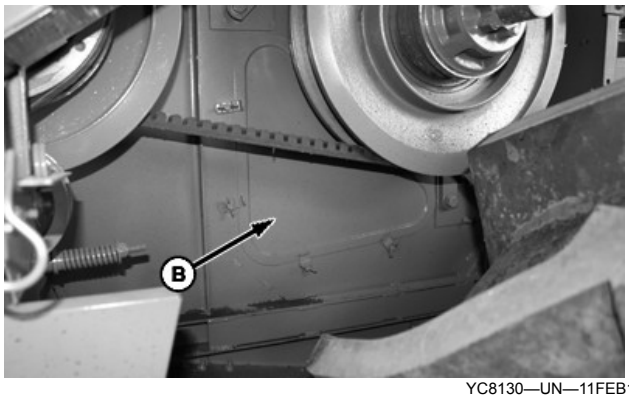
Before cleaning cylinder, ensure that the following are reliably implemented:

1. Put the header on the ground. Disengage the separator.
2. Set the gear-shift lever in neutral position and set park brake.
3. Shut off the engine.
4. Remove the key.
5. Turn off the battery disconnect switch.
6. Set the threshing clearance adjust lever in the maximum position.



YC8129—UN—11FEB15

A—Front Cover



YC8130—UN—11FEB15

B—Side Cover (2 used)

7. Open the cylinder front cover (A) and the side covers (B) for cleaning.
8. Use hooks and other tools for cleaning when needed.
9. When cleaning, remind bystanders not to rotate the cylinder.
10. Reinstall the parts removed.

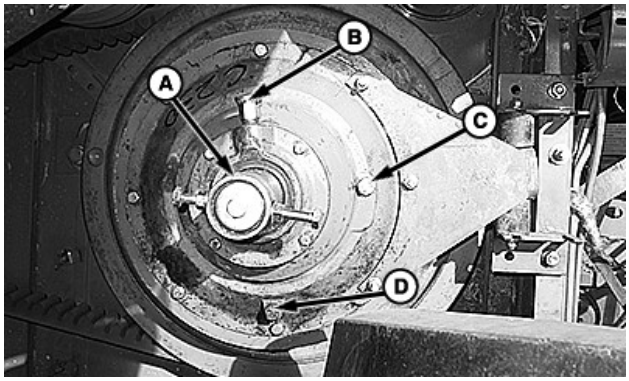
Cleaning method:

1. Open the cylinder front cover (A) and the side covers (B) for cleaning.
2. Use hooks and other tools for cleaning when needed.
3. When cleaning, remind bystanders not to rotate the cylinder.
4. Check and solve the troubles which result in the blockage. Reinstall the parts removed.

CP00606,00017AA-19-25MAY18

Threshing Cylinder Speed Reduction (Optional)

Combine can be equipped with threshing cylinder speed reduction. With this reduction, the cylinder speed can be reduced about 50%.



YC10836—UN—20SEP16

A—Shift Collar
B—Vent Plug
C—Oil Filler Plug
D—Oil Drain Plug

Cylinder speed range:

- Shift collar (A) pushed in 515—1100 rpm
- Shift collar (A) pulled out 205—435 rpm

Change oil :

Change oil after the first 100 hours of operation. Change oil after every 500 hours of operation or at the end of every harvest season.

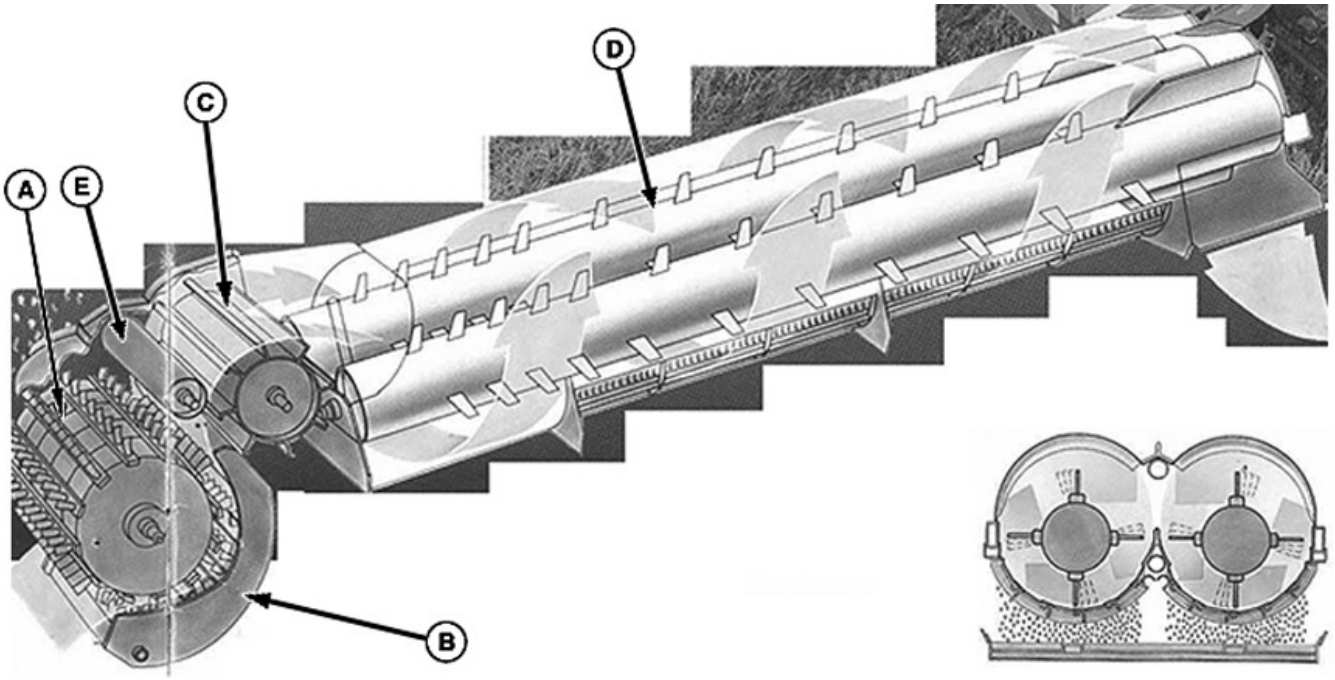
Check oil level after every 100 hours of operation.

Factory oil: 00# lithium grease. Capacity: 0.8 kg.

IMPORTANT: Close pulley halves when checking oil level or refilling, As oil flows slowly, check again after 15 minutes. Refill oil if necessary.

CP00718,0004389-19-19DEC17

Separation Device



YC2731—UN—11DEC12

A—Threshing Cylinder
B—Threshing Concave
C—Stripper Beater
D—Separator
E—Overshot Beater

Materials from header go through feeder house to threshing cylinder (A) and threshing concave (B).

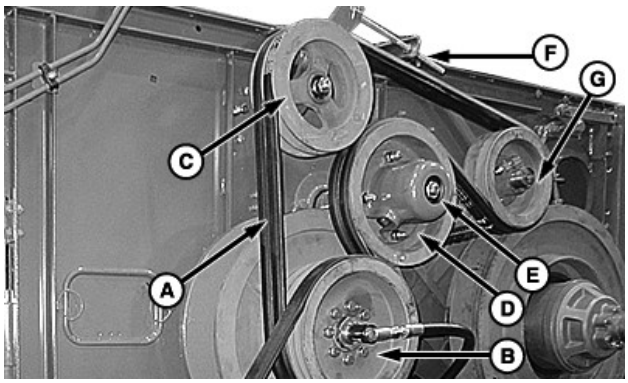
The stripper beater (C) and overshot beater (E) transport the material from the threshing cylinder to the separator (D). Separator separates, rotates, and transports the materials further. Tines on the separator rub and brush the materials.

Guide vanes mounted on the inner side wall of separator generate spiral movements of materials. The brushing function of rotating tines and the centrifugal force together generate the maximum separation of heavy grains.

During this process, separated grains fall onto shaker which is at lower part of the separation baffle. When materials reach the rear part of separation baffle, there is no entrained grains. Shaker transports grains to the cleaning shoe for final cleaning.

CP00718,000438A-19-19DEC17

Beater Drive



YC9578—UN—23DEC15

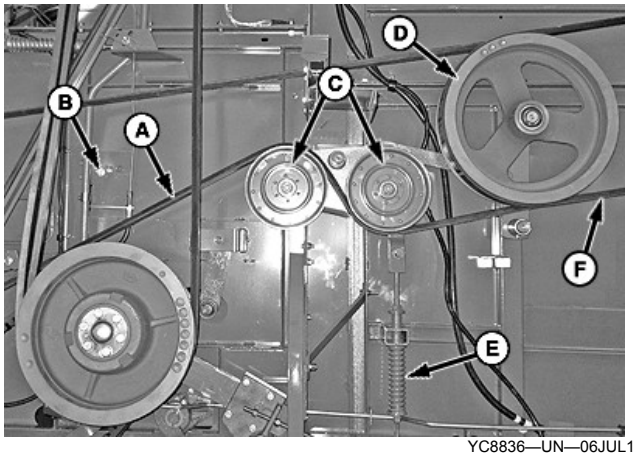
A—Belt
B—Drive Pulley
C—Tension Pulley
D—Overshot Beater Pulley
E—Slip clutch
F—Tension Lever
G—Stripper Beater Pulley

Beater drive is composed of belt (A), drive pulley (B), tension pulley (C), overshot beater pulley (D), and stripper beater pulley (G). Safety clutch protects the drive device when beater overloads.

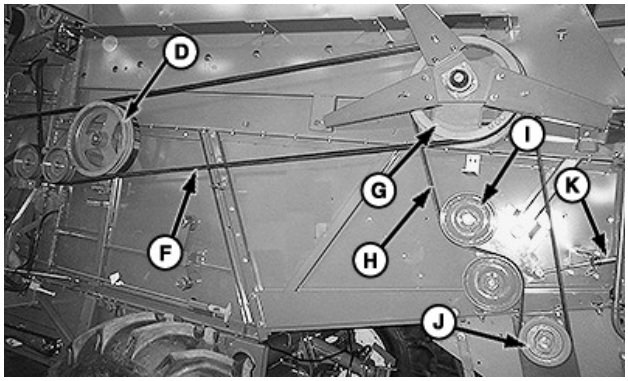
The beater is driven by the belt (A). Use the tension lever (F) to tension the belt.

CP00606,00017AB-19-25MAY18

Separator and Chopper Belt Drive



YC8836—UN—06JUL15



YC10734—UN—07SEP16

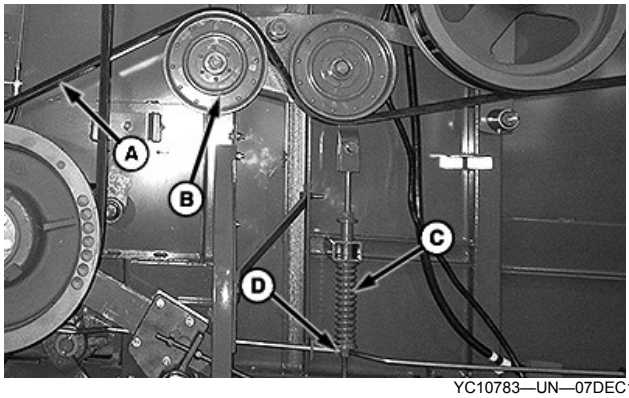
A—Belt
B—Separator Fixed Points (2 used, 1 per side)
C—Tension Pulleys (2 used)
D—Intermediate Pulley
E—Spring
F—Belt
G—Separator Drive Pulley
H—Belt
I—Tension Pulley
J—Chopper Drive Pulley
K—Spring

Separator drive is composed of belts (A and F), tension pulleys (C), and the intermediate pulley (D). Adjust tension of the belt (A) by changing the length of spring (E). The length of spring (E) is 200 mm. Both separator fixed points (B) are on the side wall of the machine.

Chopper drive is composed of belts (F and H), tension pulleys (I), intermediate pulley (D), and chopper drive pulley (J). Adjust tension of the belt (H) by changing the length of spring (K).

CP00606,00017AC-19-25MAY18

Tighten Separator Drive Belt



YC10783—UN—07DEC16

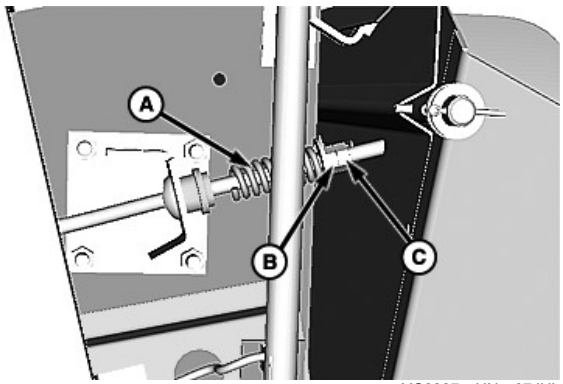
A—Drive Belt
B—Tension Pulley
C—Spring
D—Nut (2 used)

Separator drive belt (A) is tensioned by spring (C). To tension the belt, adjust the length of spring to change the position of the tension pulley (B).

Adjustment Method: Adjust nuts (D), until length of spring (C) is 130-160 mm. Retighten nuts.

CP00606,00017AD-19-25MAY18

Tighten Chopper Drive Belt



YC8887—UN—07JUL15

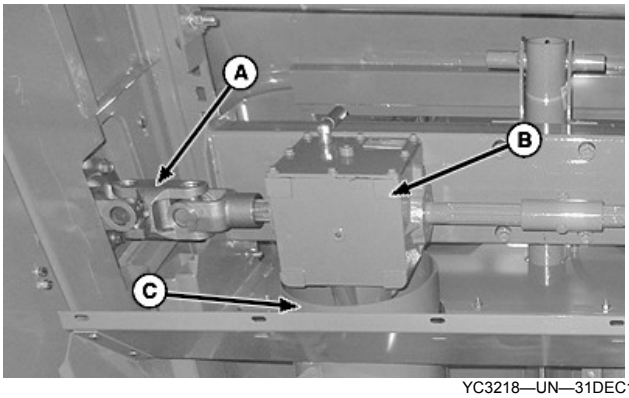
A—Spring
B—Nut
C—Nut

Chopper drive belt is tensioned by spring (A). Length of spring is adjusted according to belt working conditions. **Principle:** Under normal load, drive belt does not overheat.

Adjustment Method: Adjust nut (B) and nut (C), till length of spring (A) meets tensioning requirement of the chopper drive belt. Tighten nuts.

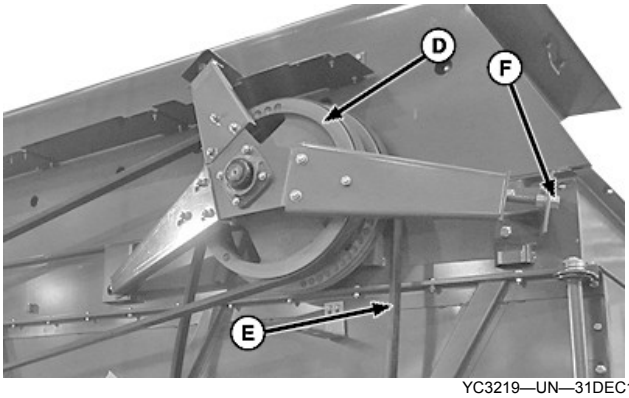
CP00606,00017AE-19-25MAY18

Rear Separator Drive



YC3218—UN—31DEC13

A—Universal Joint
B—Gear Case
C—Separator



YC3219—UN—31DEC13

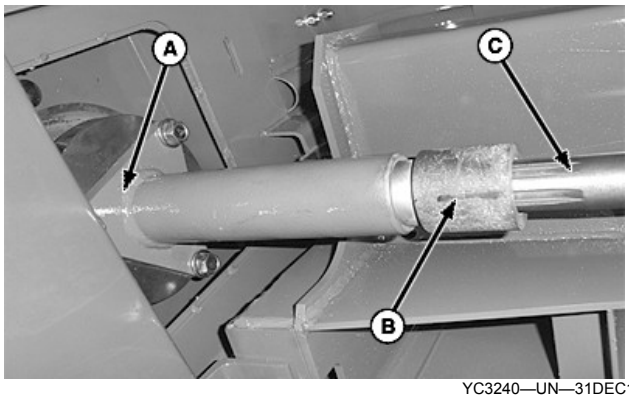
D—Separator Power Input Pulley
E—Drive Belt
F—Nut (3 used)

Power from the drive belt (E) transmits from universal joint (A) to gear case (B), and to separator (C). When installing universal joint (A), use specific tools to ensure its coaxiality. Adjust the parallelism of the input shaft through adjusting nuts (F) (at three positions).

For use of specific tools, see Use of Specific Tools in Operating Machine section.

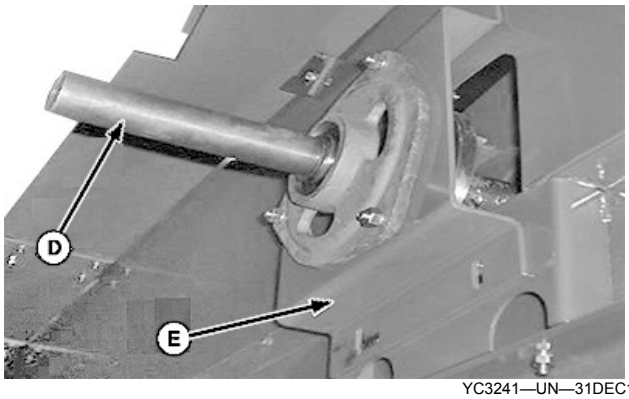
CP00606,00017AF-19-25MAY18

Use of Specific Tools



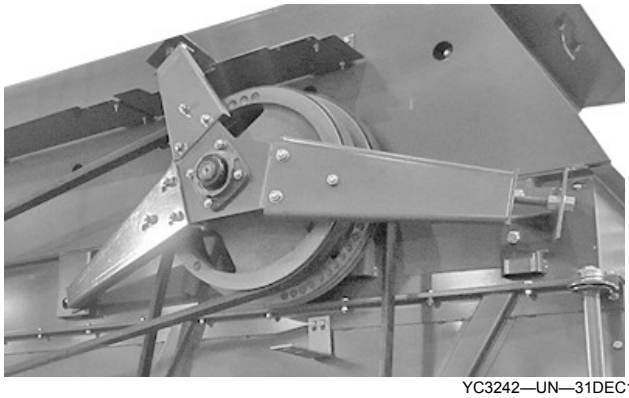
YC3240—UN—31DEC13

A—Specific Tool
B—Specific Tool
C—Gear Case Shaft



YC3241—UN—31DEC13

D—Driveshaft
E—Support Plate



YC3242—UN—31DEC13

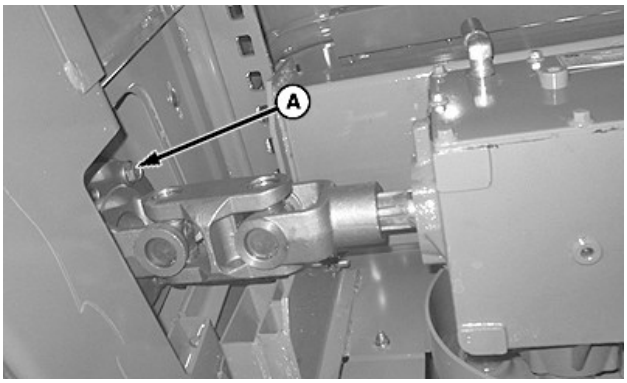
Install specific tool (A) on the driveshaft (D). Insert specific tool (B) on the gear case shaft (C).

Adjust the driveshaft (D) by hand. When the central point is found, fix support plate (E). Install other components in order.

Remove the tools. Install universal joint. When removing tools, separate specific tools (A and B). First remove specific tool (A) and then specific tool (B).

JL31334,00017BB-19-07MAY18

Replace Bearing, Tines or Deflector at the Front of Separator



YC2734—UN—31DEC13

Rear Cover Bolt

A—Bolt (3 used)

Open the rear cover. Remove bolts (A). Move coupler to the right and remove.

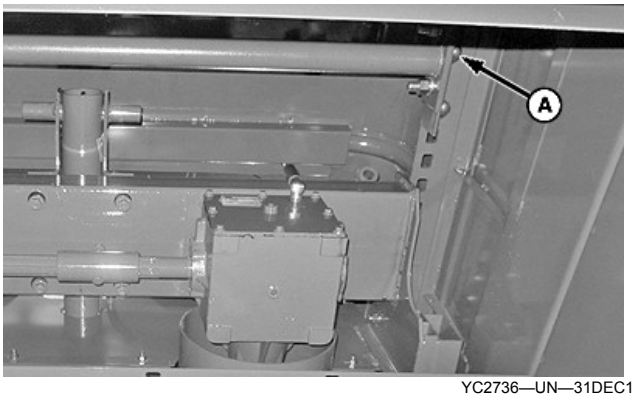


YC2735—UN—31DEC13

Front and Sidewall Retaining Bolts

A—Bolts (2 used, 1 per side)

Remove sidewall retaining bolts.

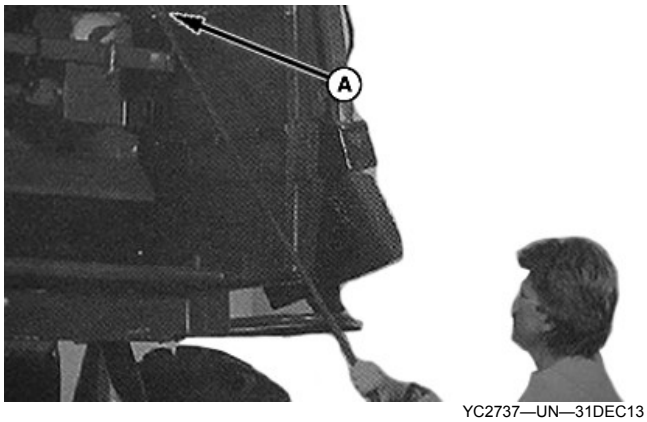


YC2736—UN—31DEC13

Separator Rear Retaining Bolts

A—Bolt

Remove retaining bolts (A) at the rear of machine.



YC2737—UN—31DEC13

Coupler

A—Coupler

NOTE: Clean the track before moving out the separator.

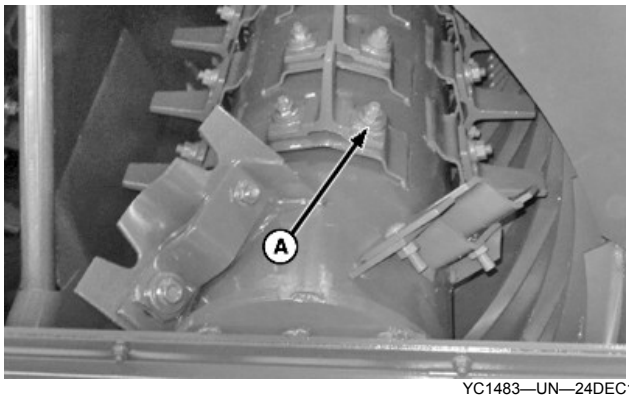
Connect handle and coupler (A) with bolts. Turn the handle counter clockwise to move cylinder to the maintenance position (a stopper is at this position on the track).

NOTE:

1. *Make sure that the separator contacts the track properly to prevent separator from falling off. When needed, use strengthened rods to prevent separator out of the rack.*
2. *Avoid moving the separator too much to prevent it from being tilt and dropping off.*
3. *Prohibit any people staying under the cylinder.*
4. *Avoid moving the separator out of the machine frequently, particularly when cleaning blockage.*

CP00718,0004391-19-19DEC17

Replace Tines



YC1483—UN—24DEC13

A—Nuts

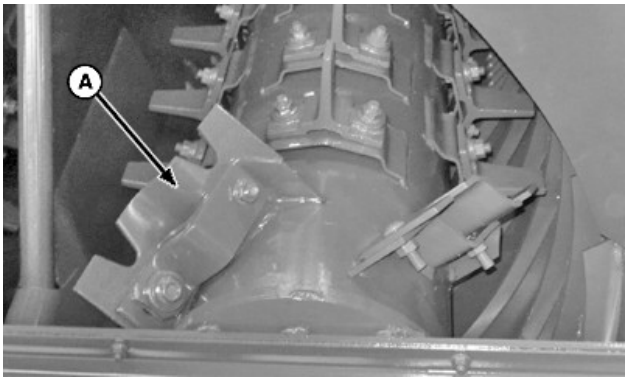
Remove bolts and nuts (A) which attach the tines.

Replace damaged and seriously worn tines.

NOTE: Replace the tines symmetrically on both sides to keep the separator balance.

CP00718,0004392-19-19DEC17

Replace Deflector



YC1484—UN—24DEC13

A—Deflector

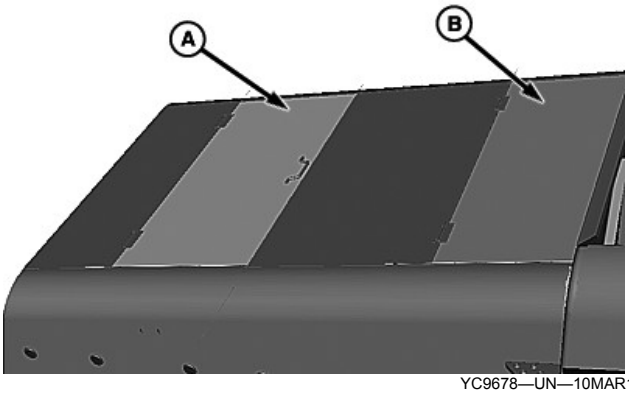
Remove bolts and nuts (A) which fix deflector (B).

Replace damaged and seriously worn tines deflector.

NOTE: Replace the deflectors symmetrically on both sides to keep the separator balance.

JL31334,00017CF-19-07MAY18

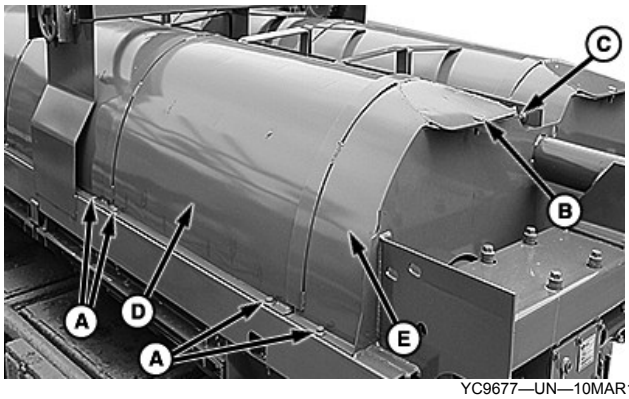
Clean Separator



YC9678—UN—10MAR16

A—Upper Panel
B—Upper Panel

1. When cleaning serious blockage or replacing tines, open the upper panels (A and B) from the rear.



YC9677—UN—10MAR16

A—Bolts(4 used)
B—Bolt
C—Nut
D—Upper Panel
E—Upper Panel

2. Remove bolts (A and B). Remove nuts (C), and remove the upper panels (D and E).

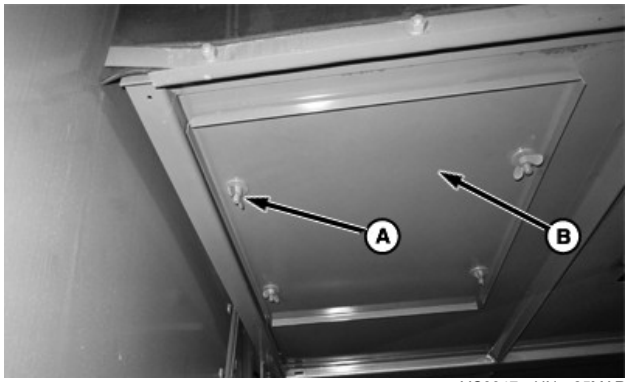
JL31334,00017BC-19-07MAY18

Clean Concave

When harvesting lodging crops, avoid soil from entering the machine and blocking concave, resulting in increased separation loss. Check concave regularly. Clear blockages as required.

⚠ CAUTION: Avoid injury. When removing cowl, be aware of falling soil and debris.

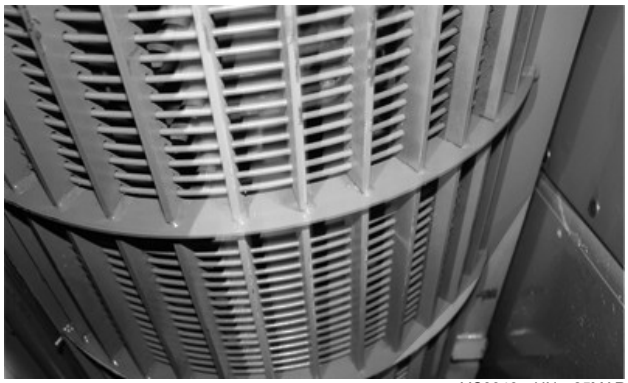
Unscrew wing nuts (A). Remove cowl (B).



YC8347—UN—25MAR15

A—Wing Nut (4 used)
B—Cowl

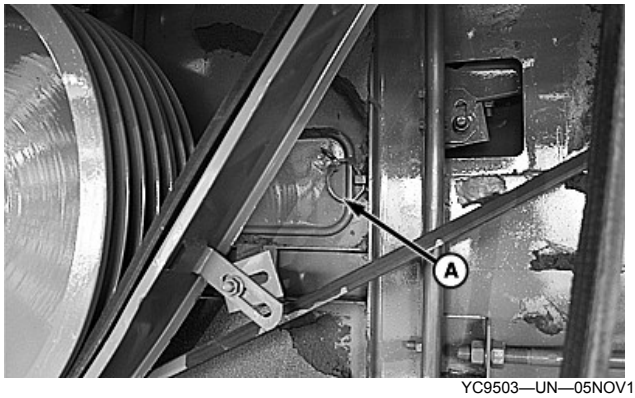
Clear blockage in concave.



YC8348—UN—25MAR15

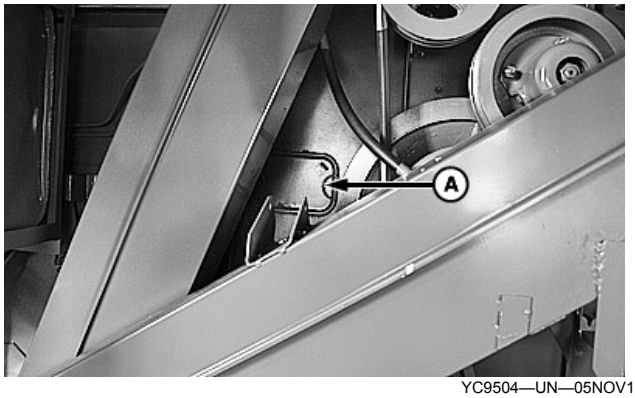
JL31334,00017D0-19-07MAY18

Lubricate Front Separator Bearing



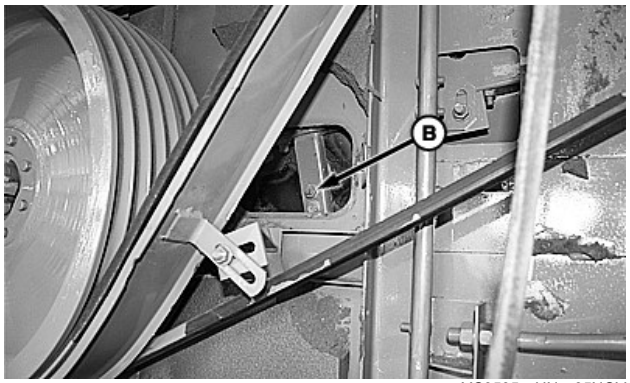
YC9503—UN—05NOV15

A—Cover (2 used, 1 per side)



YC9504—UN—05NOV15

A—Cover (2 used, 1 per side)



YC9505—UN—05NOV15

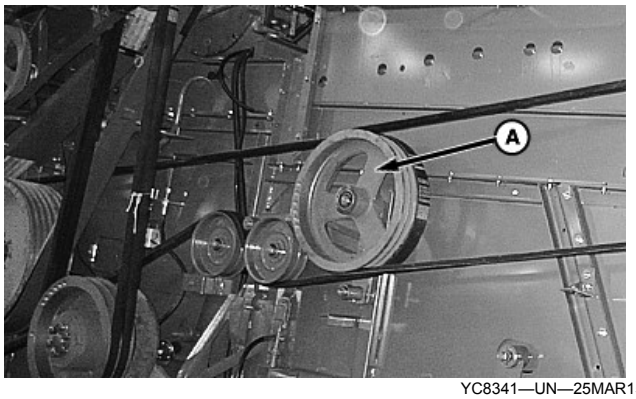
B—Fitting (2 used, 1 per side)

On both sides, open the covers (A), lubricate front separator bearing by fitting (B). Lubricate the bearing every 100 hours of operation. It is required to use No. 3 molybdenum disulphide lithium base lubrication grease.

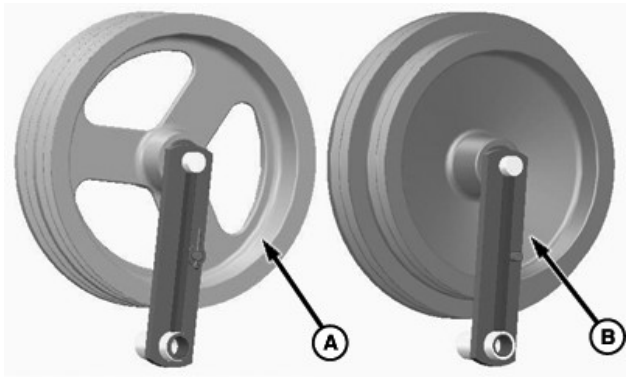
CP00606,00017B0-19-25MAY18

Adjust Speed of Separator (Non-adjustable Gear Case)

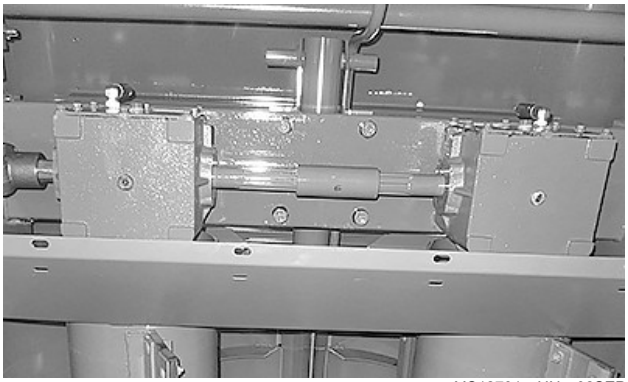
CAUTION: Improper operation causes personal injury. Stop the machine, before adjust the speed of Separator. Change the pulley when all components are still.



YC8341—UN—25MAR15



YC9548—UN—30NOV15



YC12701—UN—02SEP18

A—Pulley (standard configuration, 700 rpm)
B—Pulley (optional configuration, 800 rpm, or 500 rpm)

The standard configuration of the pulley (A) is 700 rpm. In the actual harvesting process, replace the pulley (B) to change the speed of separator.

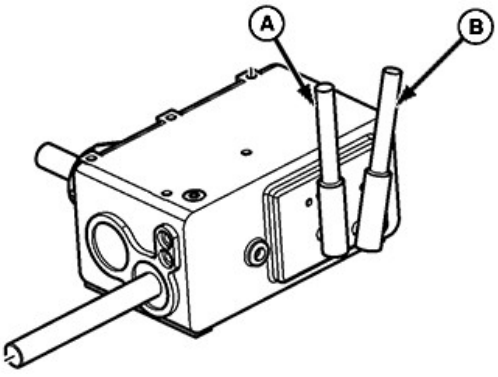
When replace the pulley (B), place the small wheel of the pulley (B) toward the outside of the body, the speed of separator is 500 rpm.

When replace the pulley (B), place the small wheel of the pulley (B) toward the inside of the body, the speed of separator is 800 rpm. It is used to harvest rice that is damp and difficult to harvest.

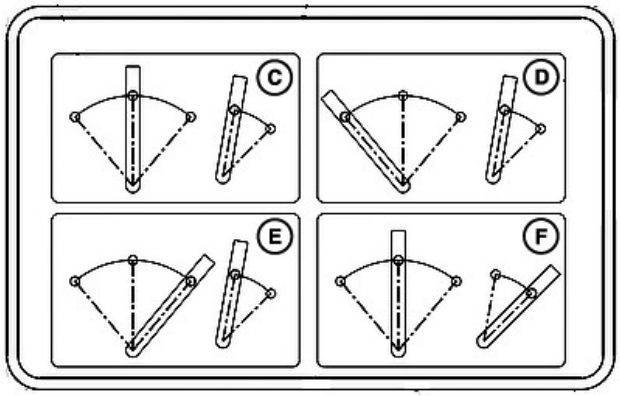
CP00606,000192A-19-03SEP18

Adjust Speed of Separator (Adjustable Speed Gear Case)

CAUTION: Improper operation causes personal injury. Stop the machine, before adjust the speed of Separator. Change the pulley when all components are still.



YC12463—UN—22AUG18



YC10730—UN—28DEC17

A—Shift Lever
B—Shift Lever
C—Neutral Position
D—500 rpm
E—700 rpm
F—800 rpm

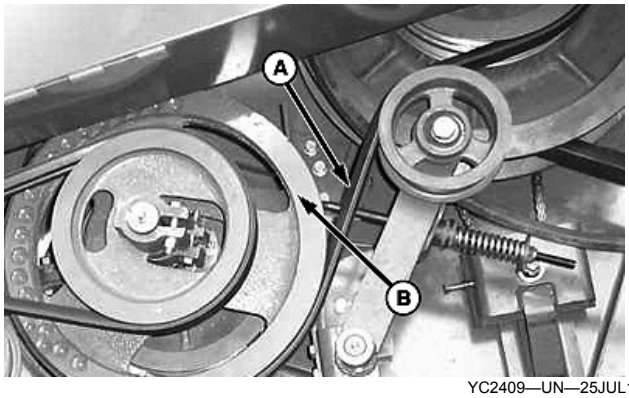
Change the position of shift levers (A and B), change the speed of separator.

NOTE: Set one of shift levers at neutral position before change the speed of separator.

- C position: Neutral Position
- D position: 500 rpm
- E position: 700 rpm
- F position: 800 rpm

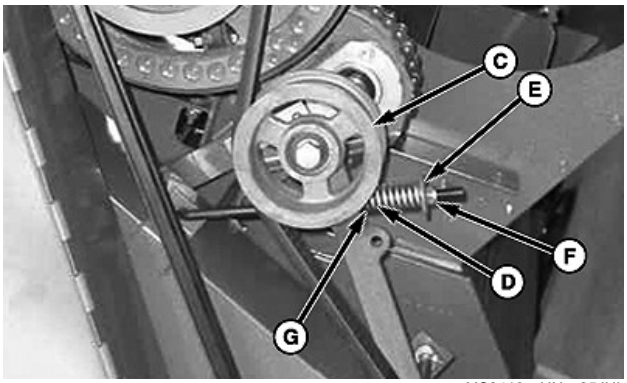
CP00606,000192C-19-05SEP18

Cleaning Shoe, Grain Elevator, and Tailings Elevator Drive



YC2409—UN—25JUL14

A—Belt
B—Drive Pulley



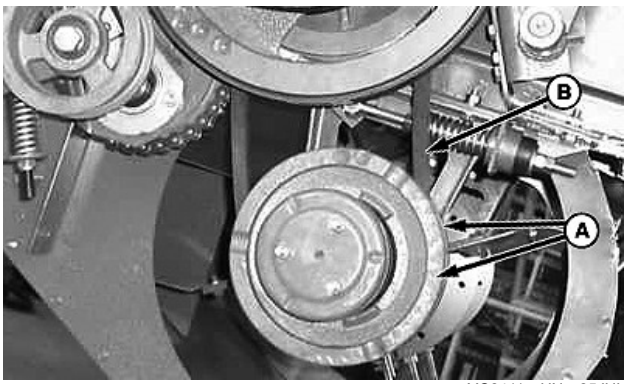
YC2410—UN—25JUL14

C—Tension Pulley
D—Spring
E—Washer
F—Nut
G—Spring Seat

The power from drive pulley (B) goes to tailings elevator, grain elevator, and cleaning shoes by belt (A). The belt (A) is automatically tensioned by spring (D). The length of the tension spring is compressed to 59 mm. Change the length of spring to adjust the tension of the belt with nut (F).

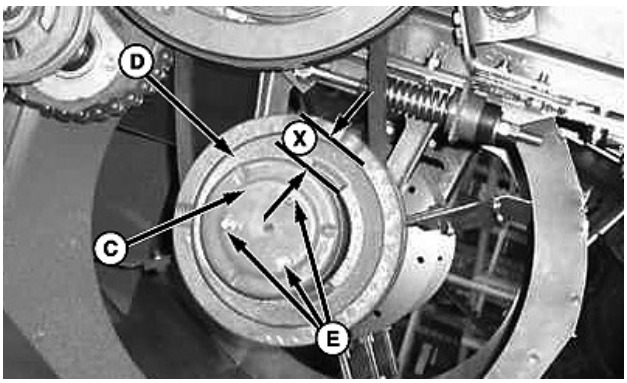
CP00606,00017B1-19-25MAY18

Variable Fan Speed Drive



YC2411—UN—25JUL14

A—Variable Fan Speed Pulley(2 used)
B—Drive Belt



YC2412—UN—25JUL14

C—Spring Seat
D—Outer Half Pulley
E—Bolts (3 used)
X—Dimension (103—105 mm)

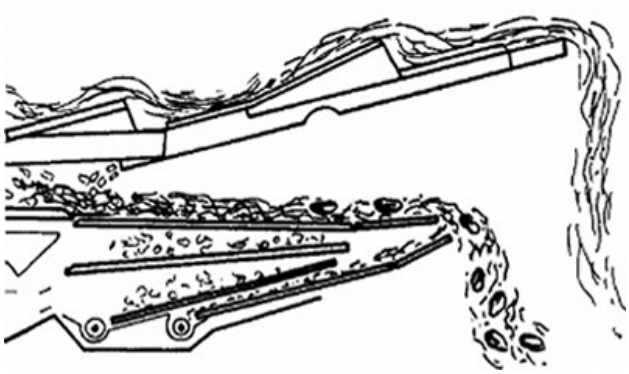
The variable fan speed pulleys (A) are adjusted under following conditions: When outer half pulley and inner half pulley are fully closed, measure dimension (X): from the outer surface of spring seat (C) to outer surface of the outer half pulley (D).

Adjust bolts (E) to change the dimension.

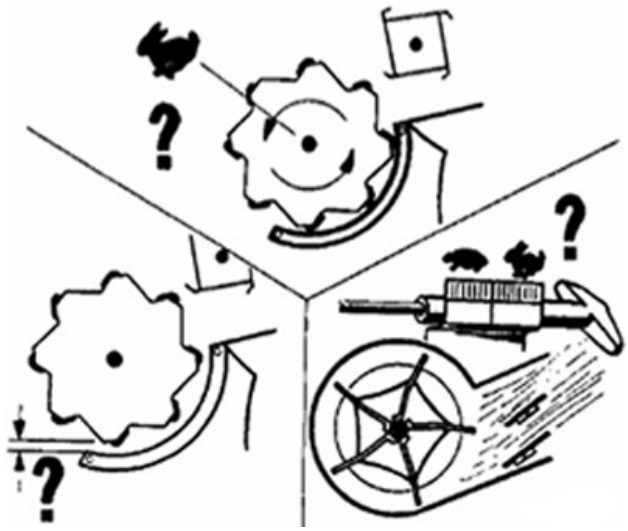
CP00606,00017B2-19-25MAY18

Cleaning Process

With cleaning shoe movement and fan blast, short straw is cast outside the combine, chaff is blown out. Clean grain passes through the sieve, and enters the grain auger from the upper pan. Tailings enter the tailings auger through lower pan.



YC2756—UN—26NOV12



YC2757—UN—26NOV12

As a result of over-threshing, the cleaning unit becomes overloaded, resulting in poor separation of grain from the chaff. A considerable amount of grain is lost, dropping to the ground at the rear of combine.

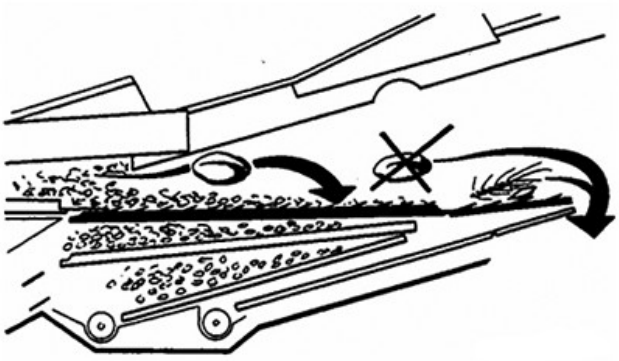
NOTE: The blast is as strong as possible, but grain loss is kept to a minimum.

If over-threshing, check the following:

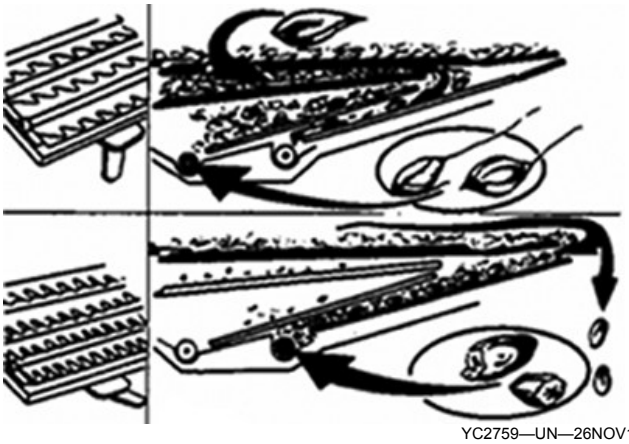
- Is threshing clearance too small?
- Is cylinder speed too high?
- Are fan speed and direction appropriate to sieve load?

CP00718,000439A-19-19DEC17

Adjustment of Chaffer



YC2758—UN—30OCT12



YC2759—UN—26NOV12

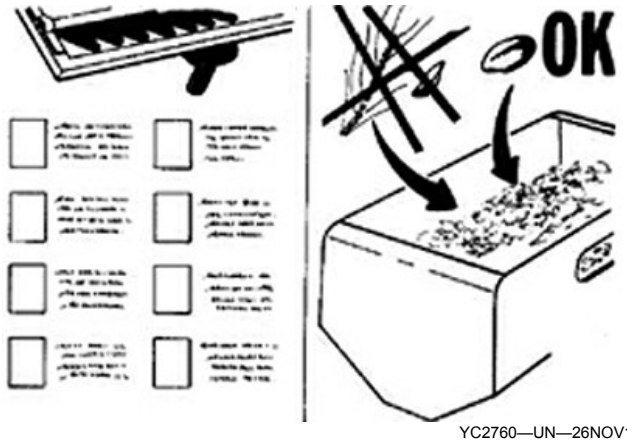
Adjust the chaffer opening wide enough so that the grain falls off before passing the length of the chaffer.

If the chaffer is opened too wide, the sieve overloads.

If the chaffer is not opened wide enough, some grain falls onto the tailings pan. There is cracked grain and some good grain is lost out of the rear of the combine.

CP00718,000439B-19-19DEC17

Adjustment of Sieve



YC2760—UN—26NOV12

Refer to combine adjustment chart, carry out basic adjustments. The grain falls onto the pan in the front sieve. Always check the result of previous adjustment before carrying out next adjustment, ensure only little chaff or no chaff is in the grain tank.

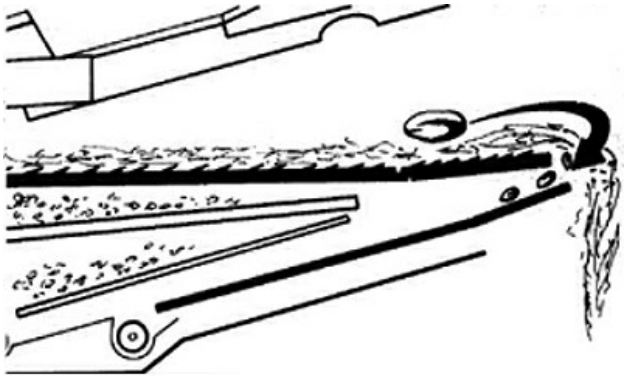
If the sieve is opened too wide, there is too much chopped straw in the grain tank.

If the sieve is not opened wide enough, there are too many grains in the tailings, and too many cracked grains in the grain tank.

CP00718,000439C-19-19DEC17

Return Pan Extension

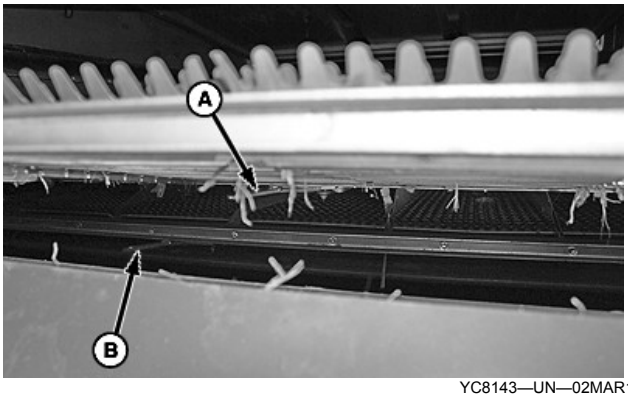
When adjusting extension, under normal harvesting conditions, it is a bit longer than chaffer extension for reducing grain loss.



YC1493—UN—26NOV12

CP00718,000439D-19-19DEC17

Chaffer, Sieve, and Chaffer Extension

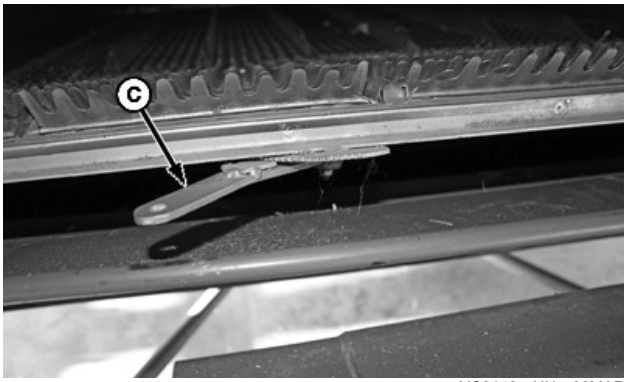


YC8143—UN—02MAR15

A—Chaffer Adjustment Lever
B—Sieve Adjustment Lever

Adjust chaffer opening at chaffer adjustment lever (A) .

Adjust sieve opening at sieve adjustment lever (B).



YC8142—UN—02MAR15

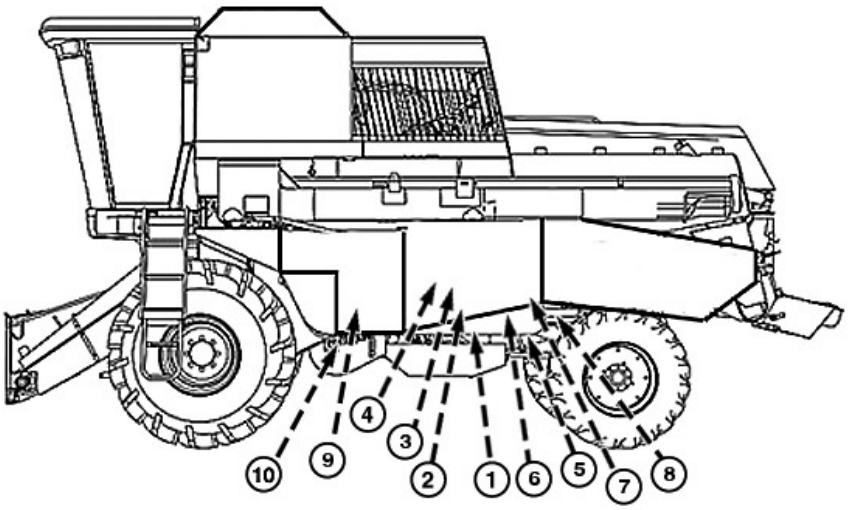
C—Chaffer Extension Adjustment Lever

Adjust chaffer extension opening at chaffer extension adjustment lever (C).

For three levers, move to the left to increase opening, move to the right to decrease opening. Adjust opening for different crops. See Recommended Adjustment Diagrams in Loss Evaluation and Adjustment Diagrams section.

CP00606,00017B3-19-25MAY18

Shoe Pitman and Hanger



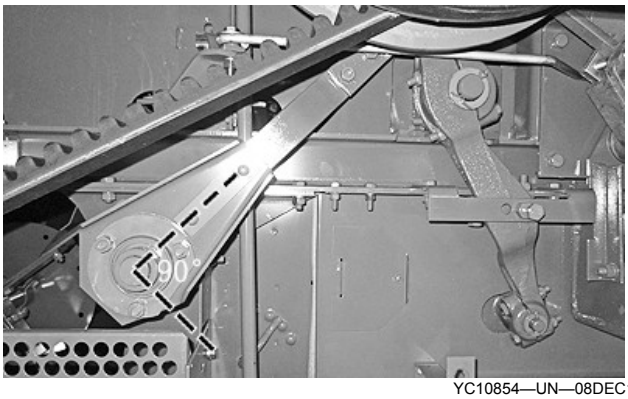
YC10855—UN—29SEP16

Rubber Mount Position-Left Hand Side

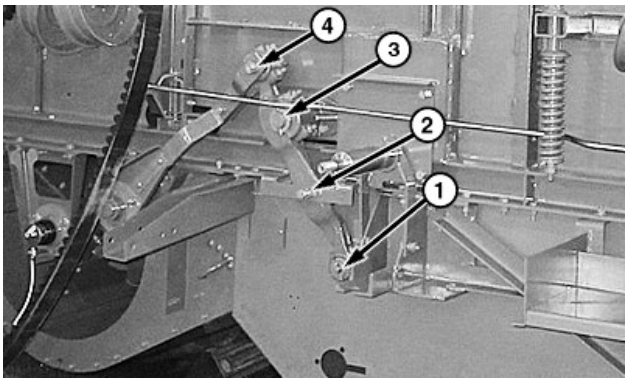
IMPORTANT: Change rubber bushings regularly.

NOTE: Rubber bushing positions on the right-hand side of combine are same as on the left-hand side.

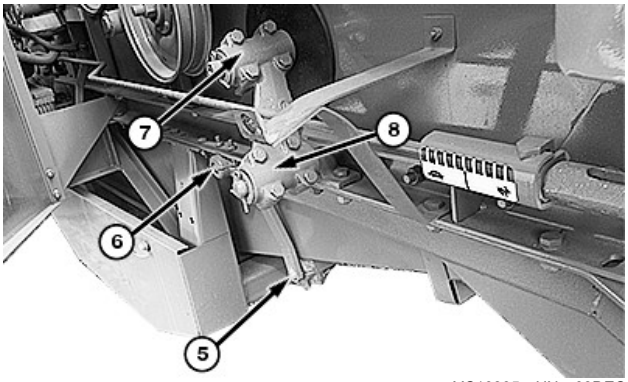
IMPORTANT: To avoid failure, change rubber bushings according to the order as shown in the diagram.



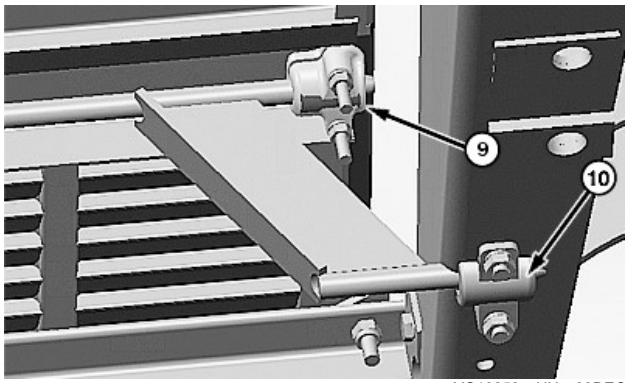
YC10854—UN—08DEC16



YC10804—UN—08DEC16



YC10805—UN—08DEC16



YC10853—UN—08DEC16

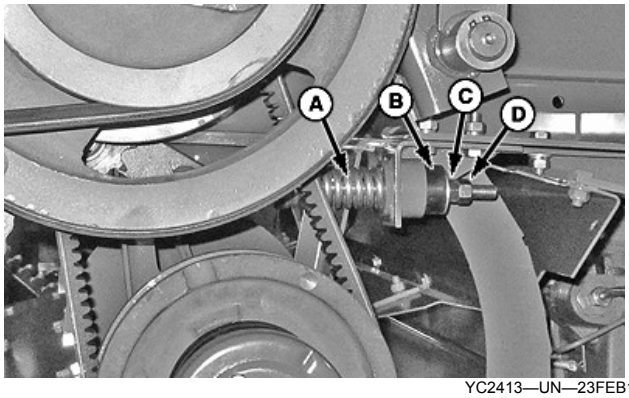
When replacing the rubber bushings on the shoe pitman and hangers, ensure that the shoe pitman is in center position.

The center position is determined as follows:

Rotate the main drive sheave by hand until the centerline through the pitman forms 90° angle with the line connecting the pivot shaft hub and the center of the crankshaft.

CP00718,000439F-19-19DEC17

Shoe Drive Tension



YC2413—UN—23FEB14

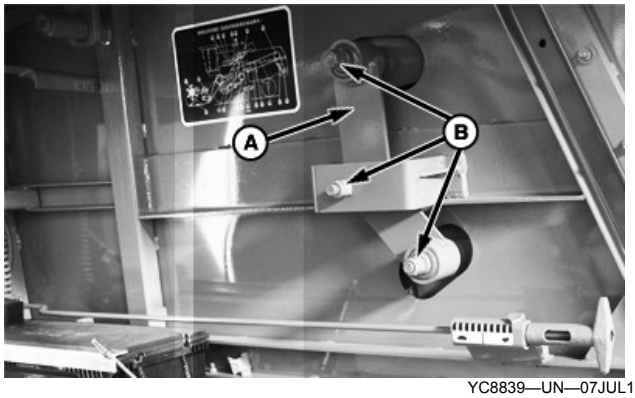
A—Spring
B—Rubber Bushing
C—Nut
D—Nut

Shoe chain drive is tensioned by spring (A). Adjust the tightness of the chain by adjustment nuts (C and D). The principle of adjusting the length of spring (A) is to minimize the impact under working conditions.

The chain drives sieve and chaffer, shaker pan, and other components. The impact load is rather large and the shoe is worn quickly. Regularly replace it according to the usage conditions.

CP00606,00017B5-19-25MAY18

Shaker Pan Drive Arm



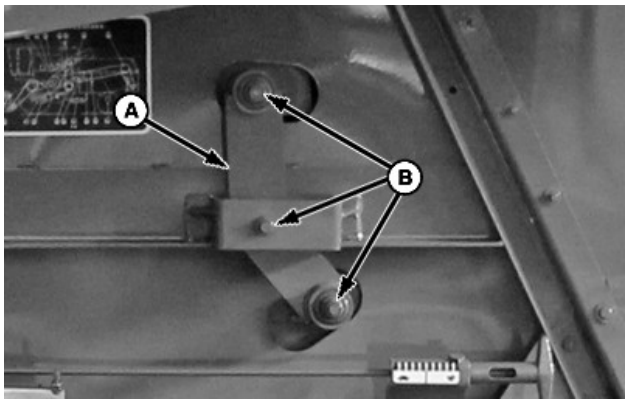
YC8839—UN—07JUL15

A—Drive Arm
B—Nuts (6 used)

The drive arm (A) drives shaker pan. Regularly check the tightness of nuts (B).

CP00606,00017B6-19-25MAY18

Shaker Drive Arm



YC8145—UN—02MAR15

A—Drive Arm
B—Nuts (3 pieces)

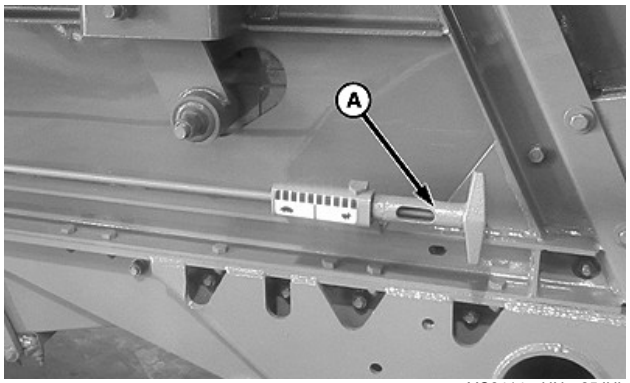
Shaker pan is driven by drive arm (A). Regularly check the tightness of nut (B) when working.

CP00606,00017B7-19-25MAY18

Adjust Fan Speed

IMPORTANT: Adjust fan speed only when the fan is running.

For recommended fan speed, see Recommended Adjustment Diagrams in Loss Evaluation and Adjustment Diagrams section.



YC2414—UN—25JUL14

A—Knob

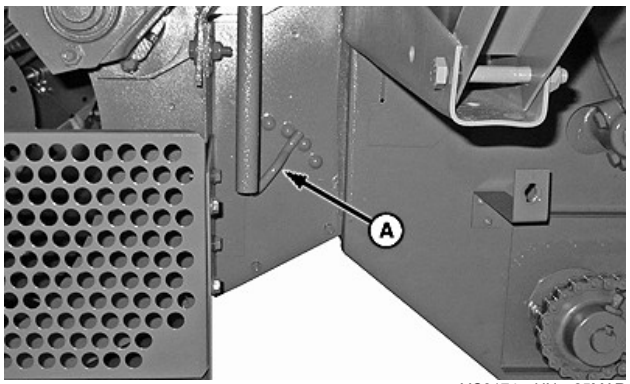
Adjust fan speed at knob (A).

Increase speed — Turn knob (A) counterclockwise.

Decrease speed — Turn knob (A) clockwise.

CP00606,00017B8-19-25MAY18

Adjustment of Air Flow Direction



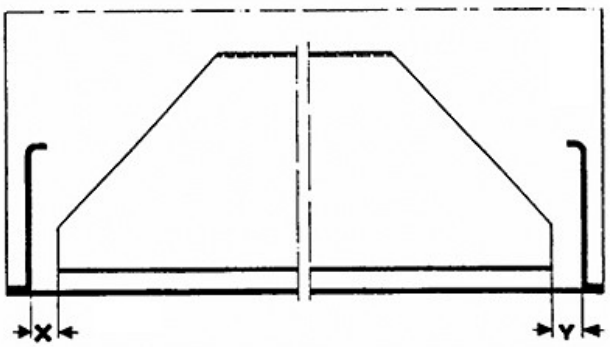
YC8174—UN—25MAR15

A—Deflector Adjustment Lever

Change air flow direction by adjusting the deflector adjustment lever (A) on the left side of combine.

CP00606,00017B9-19-25MAY18

Fan Side Clearance

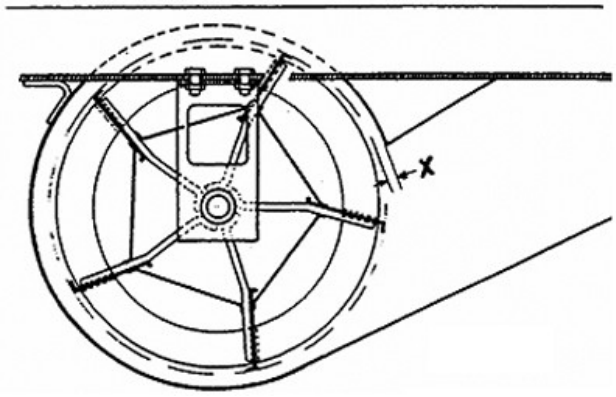


YC8301—UN—10FEB15

Fan side clearance between fan blades and housing is the same. That is, X=Y.

CP00718,00043A5-19-19DEC17

Fan Radial Clearance



YC2769—UN—26NOV12

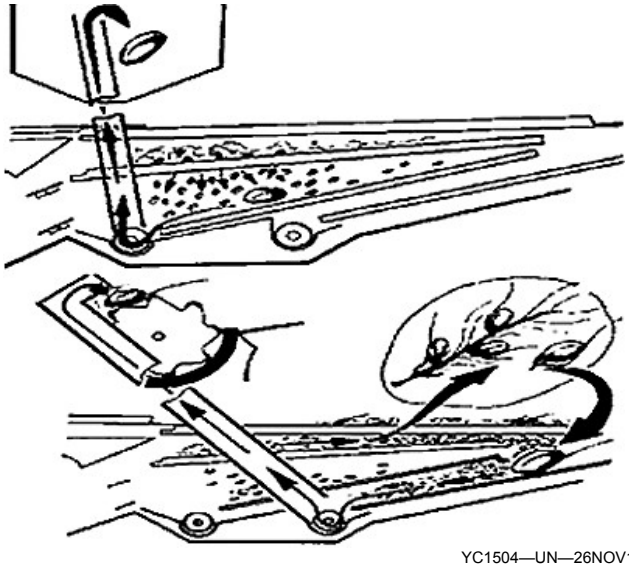
X—Clearance (12 mm)

Radial clearance (X) between fan blades and front edge of housing is 12 mm, and equal over entire width.

CP00718,00043A6-19-19DEC17

Grain Conveyor

Grain falls onto the return pan, primarily in the first half of sieve. Grain is passed on to the grain auger elevator and finally to the grain tank.

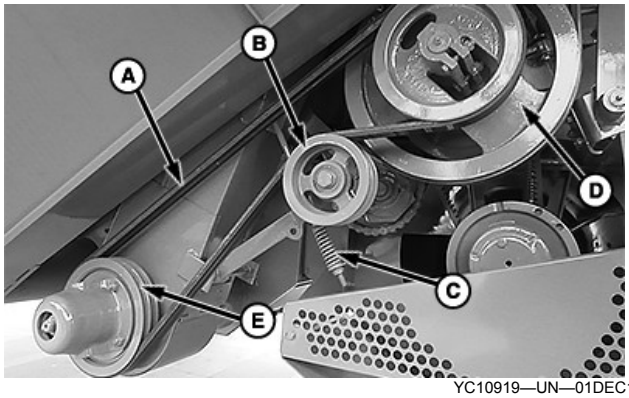


YC1504—UN—26NOV12

Unthreshed grain heads and a small amount of chaff are passed to the end of the sieve and forward to the tailings auger through the return pan. The tailings elevator conveys material back to the threshing cylinder where it is rethreshed.

CP00718,00043A7-19-19DEC17

Grain and Tailings Elevator Drive



YC10919—UN—01DEC16

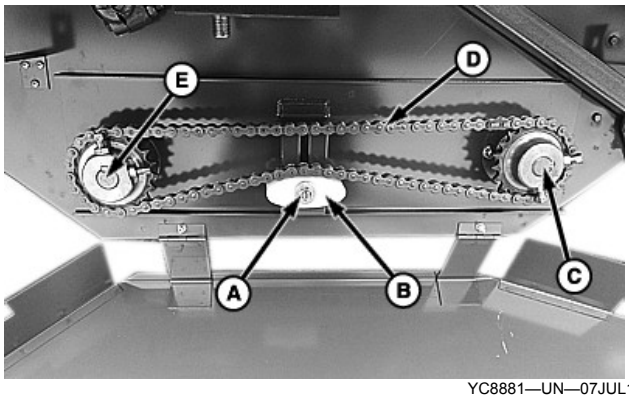
A— Belt
B— Idler
C— Spring
D— Drive Pulley
E— Pulley

The power from drive pulley (D) goes to grain and tailings elevator by belt (A). The belt is tensioned by idler (B) automatically. For tensioning the belt, adjust the length of spring (C) to 79—81 mm.

NOTE: Avoid belt damaging and transmitting ineffectively, Must adjust drive pulley (D), pulley (E), and idler (B) in the same plane.

CP00606,00017BA-19-25MAY18

Grain and Tailings Auger Drive



YC8881—UN—07JUL15

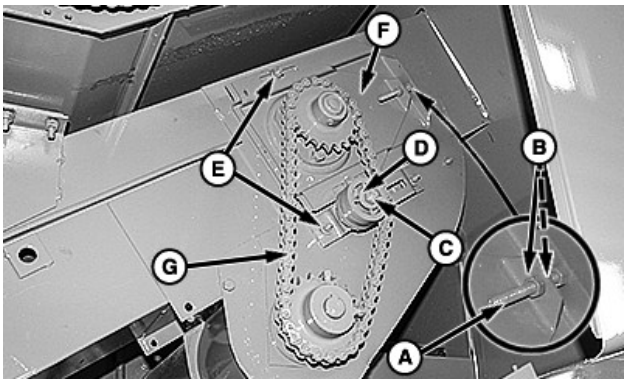
A— Nut
B— Idler
C— Lower Tailings Auger Shaft
D— Chain
E— Lower Grain Auger Shaft

The power from the lower grain auger shaft (E) goes through lower tailings auger shaft (C) by chain (D), goes to tailings auger. The chain is tensioned by idler (B).

Adjustment: Loose nut (A), adjust the idler (B) to the tension chain (D). Retighten nut.

CP00606,00017BB-19-25MAY18

Adjust Tension of Tailings Elevator Conveyer Chain



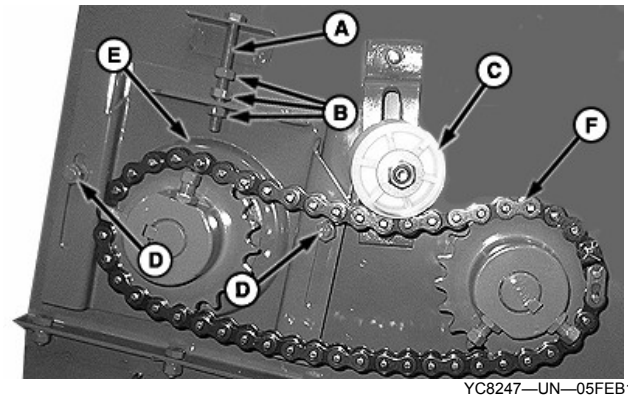
YC9680—UN—15MAR16

A— Bolt
B— Nuts (2 used)
C— Nut
D— Idler
E— Nuts (2 used)
F— Bearing Housing
G— Chain

Loosen nut (C) on idler (D). Loosen nuts (E). Adjust nuts (B) on bolt (A), Adjust the bearing housing (F) to tension tailings elevator conveyer chain. Retighten all nuts and tension chain (G) by adjusting idler as required.

CP00606,00017BC-19-25MAY18

Adjust Tension of Grain Elevator Conveyer Chain



YC8247—UN—05FEB15

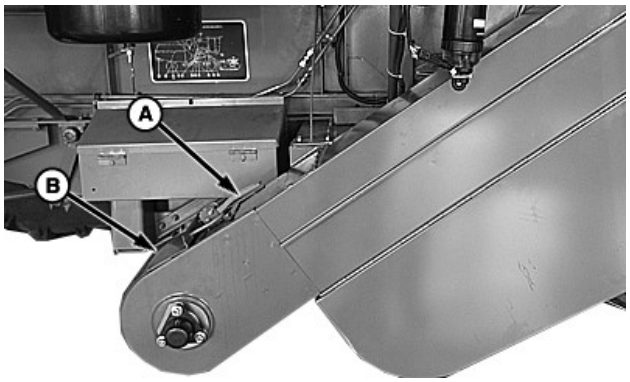
A— Bolt
B— Nuts (3 used)
C— Idler
D— Nuts (2 used)
E— Bearing Housing
F— Chain

Loosen idler (C). Loosen nuts (D). Adjust nuts (B) on bolt (A), tighten grain elevator conveyer chain by adjusting the bearing housing (E). Retighten all nuts and tension chain (F) by adjusting idler as required.

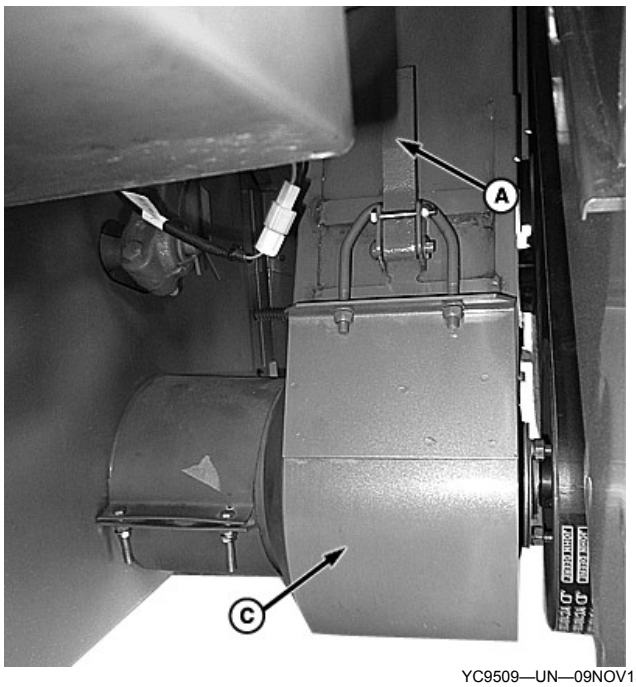
CP00606,00017BD-19-25MAY18

Elevator Lower Inspection Doors

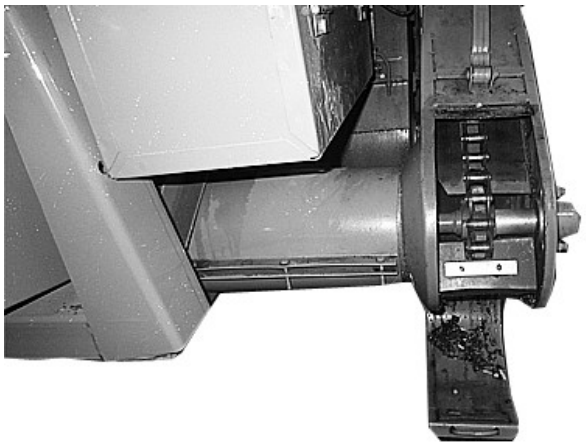
CAUTION: Avoid accidences when cleaning elevators.



YC9510—UN—09NOV15



YC9509—UN—09NOV15



YC9511—UN—09NOV15

A— Handle
B— Tailings Elevator Lower Inspection Door
C— Grain Elevator Lower Inspection Door

Open inspection doors (B and C) by pulling handle (A) to clean elevators at the end of each harvesting day or storing combine a longer period.

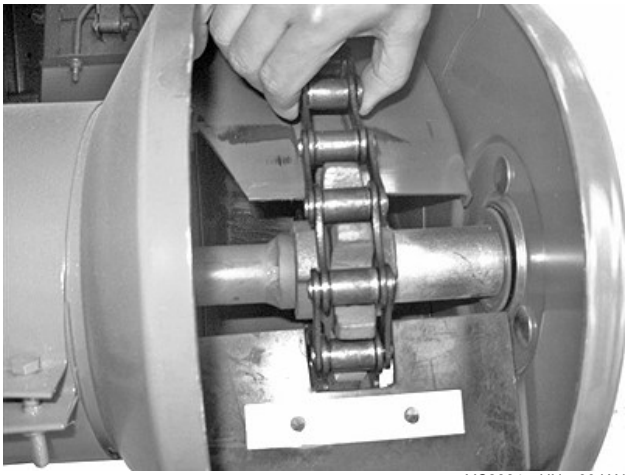
When changing crops, open doors and thoroughly clean the elevators.

Open doors and run engine, check if the chain or paddles are damaged.

CP00606,00017BE-19-25MAY18

Adjustment of Elevator Conveyor Chain

Adjustment: Tension elevator chain so that at the bottom of the chain there is 6—15 mm movement at the first link behind the chain sprocket.



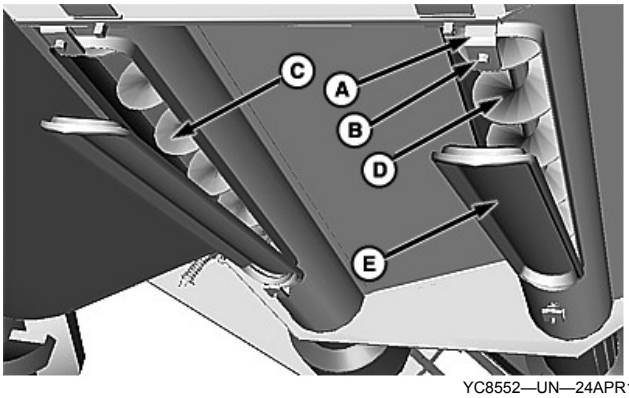
YC2884—UN—03JAN14

NOTE: If conveyor chain is too loose or too tight, the transmission efficiency and service life of relevant components are affected.

CP00718,00043AD-19-19DEC17

Clean Grain Auger and Tailings Auger

IMPORTANT: It is important to clean this area when harvesting seed and before changing crop.



YC8552—UN—24APR15

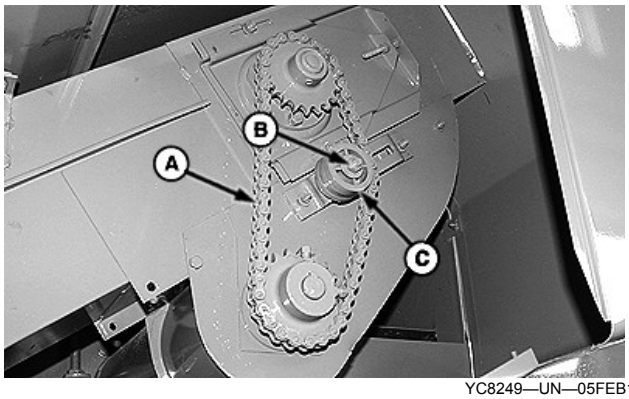
A— Retaining Clip
B— Nut
C— Tailings Auger
D— Grain Auger
E— Auger Cover

Remove nuts (B) and retaining clips (A), open cover (E), and clean grain auger (D). Install in reverse order after cleaning.

NOTE: Tailings auger (C) is cleaned in the same way as the clean grain auger.

CP00606,00017BF-19-25MAY18

Upper Tailings Auger Drive



YC8249—UN—05FEB15

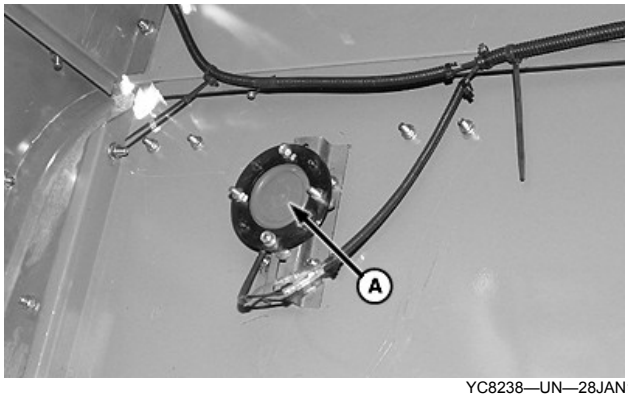
A—Chain
B—Nut
C—Idler

The chain (A) drives tailings auger. The chain is tightened by the idler (C).

Adjustment: Loosen nut (B), adjust idler (C) to tension the chain (A) as required. Retighten nut (B).

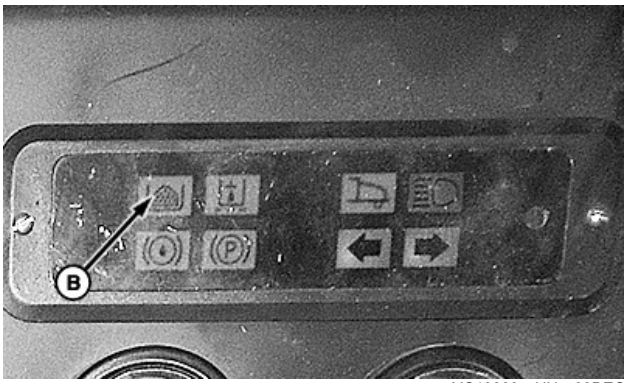
CP00606,00017C0-19-25MAY18

Full Grain Tank Indicator



YC8238—UN—28JAN15

A— Sensor



YC10809—UN—08DEC16

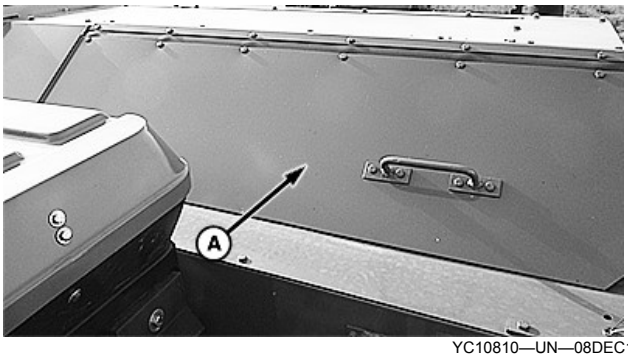
B— Full Grain Tank Indicator

Combine is equipped with the full grain tank indicator. It is composed of sensor (A) in the grain tank and full grain tank indicator (B) on the instrument box. Full grain tank indicator (B) lights up to warn the operator when the grain tank is full.

CP00606,00017C1-19-25MAY18

Grain Tank Leveling Auger Guard

CAUTION: Avoid accidents. NEVER enter the grain tank when the engine is running. Shut off the engine, remove the key, and set the park brake before entering the grain tank. Do not remove the leveling auger guard when the combine is in operation.



YC10810—UN—08DEC16

A— Grain Tank Cover



YC10811—UN—08DEC16

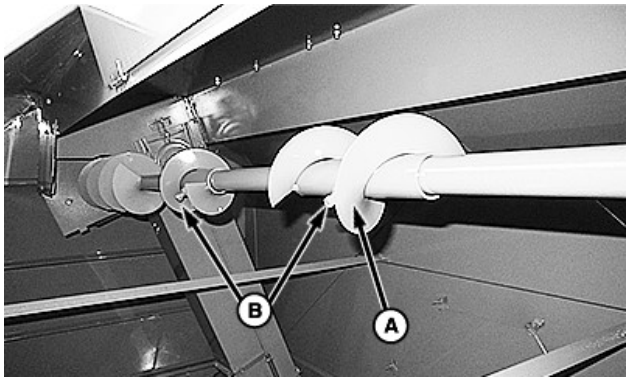
B— Leveling Auger Guard

Open grain tank cover (A), leveling auger guard (B) is found.

CP00606,00017C2-19-19-25MAY18

Grain Tank Leveling Auger

CAUTION: Avoid accidents. NEVER enter the grain tank when the engine is running. Must shut off the engine, remove the key, and set the park brake before entering the grain tank. Do not remove the leveling auger guard when the combine is in operation.



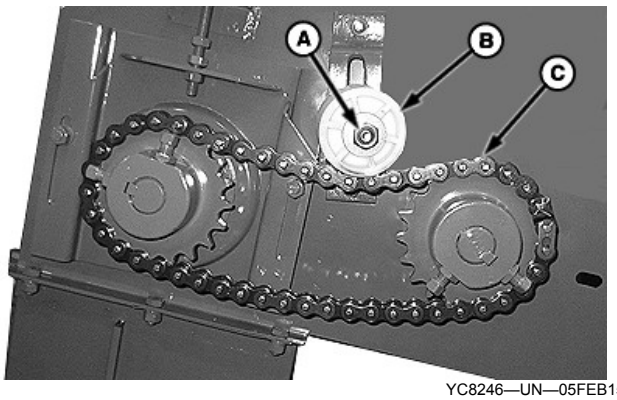
YC10812—UN—08DEC16

A— Leveling Auger Blade
B— Bolts(2 used)

Adjustment: Loosen bolts (B), adjust the position of leveling auger blades (A) for grain distributed evenly.

JL31334,00017C4-19-07MAY18

Grain Tank Leveling Auger Drive



YC8246—UN—05FEB15

A— Nut
B— Idler
C— Chain

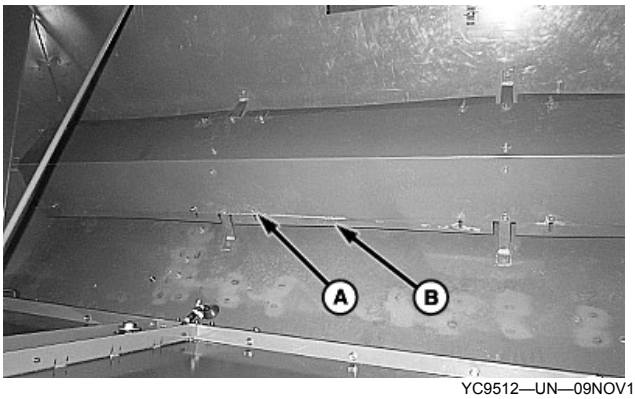
The chain (C) drives grain tank leveling auger. The chain is tightened by the idler (B).

Adjustment: Loosen nut (A), adjust the idler (B) to the tension chain (C) as required. Retighten nut.

CP00606,00017C3-19-25MAY18

Grain Tank Unloading Auger Cover

NOTE: Prevent causing blockage and damaging unloading components, NEVER stopping unloading grains before the grain tank is empty. Do not lift unloading auger covers too high to avoid overload.



YC9512—UN—09NOV15

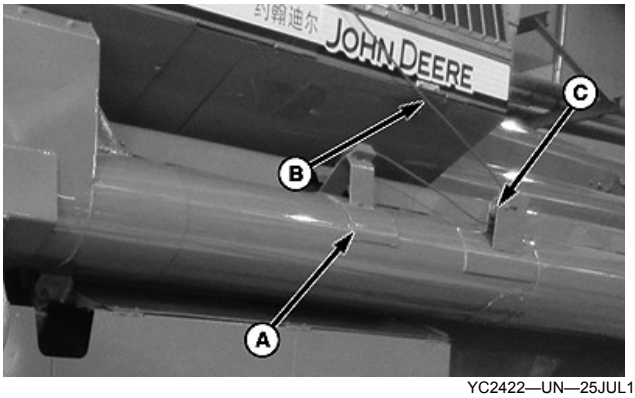
A— Nut (12 used)
B— Unloading Auger Cover (6 used)

Loose nuts (A), lift or lower unloading auger covers (B) to adjust unloading speed as required.

NOTE: Six unloading auger covers are used in the grain tank.

CP00606,00017C4-19-25MAY18

Long Unloading Auger



YC2422—UN—25JUL14

A— Long Unloading Auger
B— Wire Rope
C— Idler

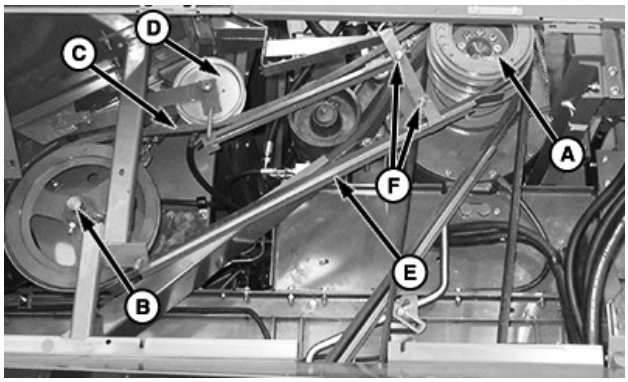
Combine can optionally be equipped with an extra-long unloading auger (A).

The wire rope (B) supports the long unloading auger. The tension of wire rope is adjusted by adjusting idler (C).

CP00718,00043B5-19-19DEC17

Unloading Auger Drive (Left Hand)

CAUTION: Avoid accidents. Shut off the engine when adjusting.



YC9684—UN—15MAR16

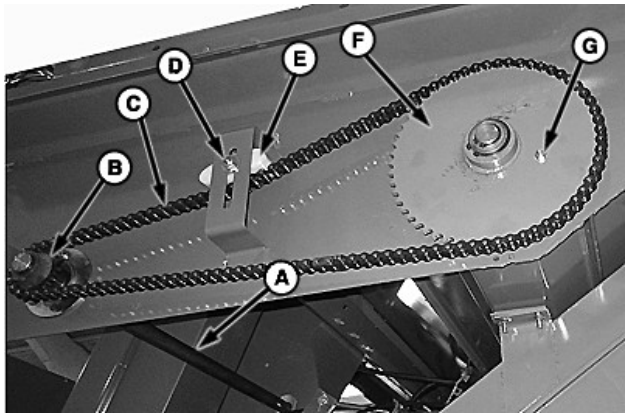
A— Engine Pulley
B— Countershaft
C— Belt
D— Idler
E— Belt Guide
F— Nuts (2 used)
X— 3—5 mm

On the left hand of combine, the power from the engine pulley (A) goes to countershaft (B) by belt (C).

Adjustment: Tension belt (C) by adjusting idler (D). Loosen nuts (F), adjust belt guide (E) until the clearance between the belt guide (E) and belt (C) is 3—5 mm. Retighten nuts (F).

CP00606,00017C5-19-25MAY18

Unloading Auger Drive (Right Hand)



YC8078—UN—22JAN15

A— Intermediate Shaft
B— Sprocket
C— Chain
D— Nut
E— Idler
F— Sprocket
G— Shear Screw

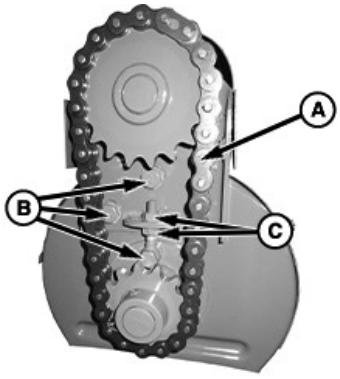
On the right hand of the machine, the power from intermediate shaft (A) goes through sprocket (B), sprocket (F), and goes to unloading auger.

To adjust the tension of chain, loosen nut (D), adjust idler (E) to tension chain (C) as needed. Retighten nut (D).

IMPORTANT: The shear screw (G) is a safety feature, broken when overloaded. Replace only with original type of screw. Torque screw to 15 N·m, once it is replaced.

CP00606,00017C6-19-25MAY18

Unloading Auger Drive (at One End)



YC9679—UN—15MAR16

A— Chain
B— Nuts (3 used)
C— Nuts (2 used)

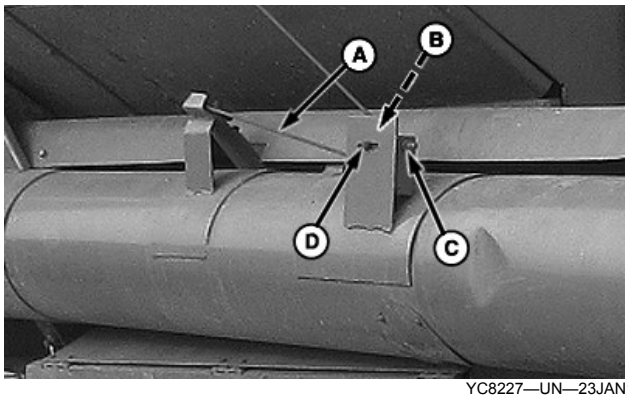
Unloading auger is driven by a universal joint shaft above the grain unloading auger and chain (A)at one end.

Open cover in the end of unloading auger, adjust the tension of chain (A). Loosen nuts (B), adjust the tension through nuts (C). Retighten nuts (B) and reinstall cover after adjustment.

CP00606,00017C7-19-25MAY18

Adjust Length of Wire Rope

Before using combine for the first time and at least once a week, check the length of wire rope.



YC8227—UN—23JAN15

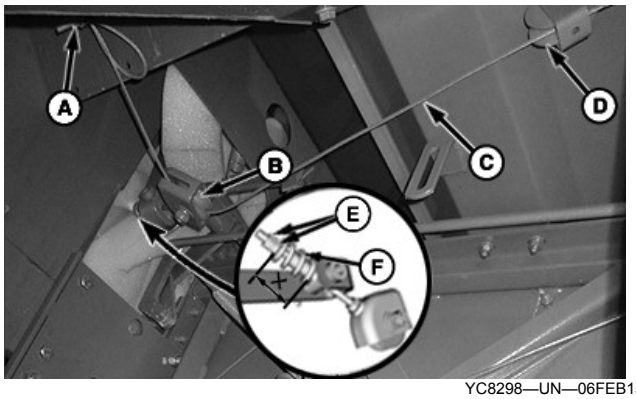
A— Wire Rope
B— Idler
C— Nut
D— Nut

Adjustment:

Swing the unloading auger in. Loosen nut (D). Adjust nut (C) to adjust idler (B). Tighten wire rope (A) until the wire rope can be pressed approximately 30—40 mm apart. Retighten nut (D).

CP00606,00017C8-19-25MAY18

Unloading Auger Automatic Cut-Out Device



YC8298—UN—06FEB15

A— Clamp
B— Pulley
C— Wire Rope
D— Guide Pulley
E— Nuts (2 used)
F— Spring
X— Length (39 mm)

For the safe operation of unloading auger, an automatic cut-out device is installed. The wire rope (C) must always be under tension when unloading auger is swung out.

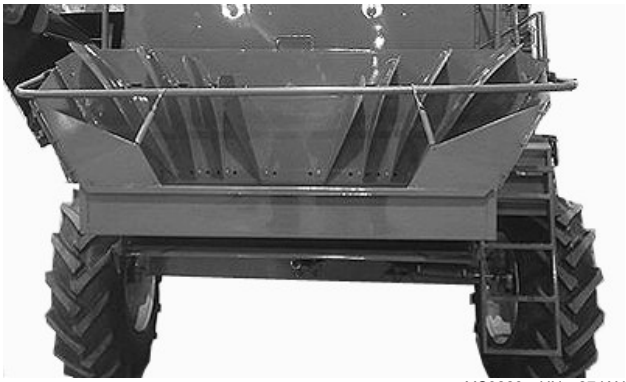
Adjustment: Swing out the unloading auger. Adjust nuts (E) to change length of spring (F) until the length (X) is 39 mm. If wire rope has stretched too much, adjust the clamp (A) to shorten.

CP00606,00017C9-19-25MAY18

Straw Chopper Equipped with Combine

CAUTION: Avoid accidents. Disengage separator drive and shut off the engine before attempting to adjust and repair.

When the chopper is in use, do not allow any person to stay behind the machine.



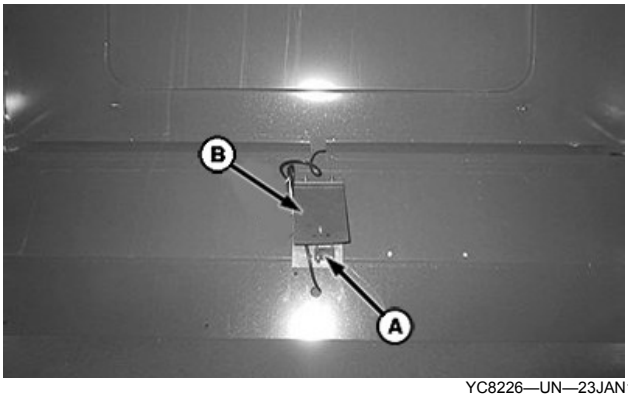
YC8228—UN—27JAN15

Combine is optional to be equipped with a straw chopper.

NOTE: Straw chopper is an optional device.

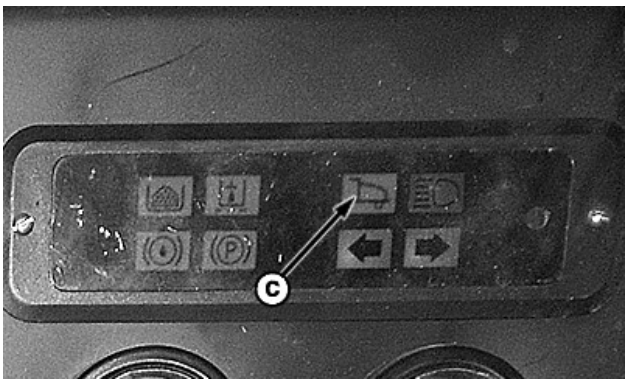
CP00606,00017CA-19-25MAY18

Rear Cover Blockage Warning Device—Daily Check



YC8226—UN—23JAN15

A—Sensor
B—Induced Plate



YC11005—UN—12DEC16

C—Rear Cover Blockage Warning Indicator

Rear cover blockage warning device is composed of sensor (A) and rear cover blockage warning indicator (C). When rear cover in grain tank is blockage, the rear cover blockage warning indicator (C) lights up and the horn sounds.

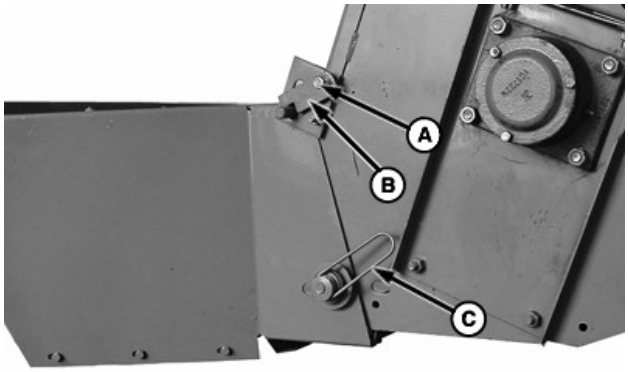
Check the rear cover blockage warning device daily before operating combine with engine switched off.

Inspection Method: Press the induced plate (B) down, make sure that the horn sounds.

CP00606,00017CB-19-25MAY18

Secure Straw Chopper in Operation Position

NOTE: Operate on both side of machine synchronously.



YC8296—UN—09FEB15

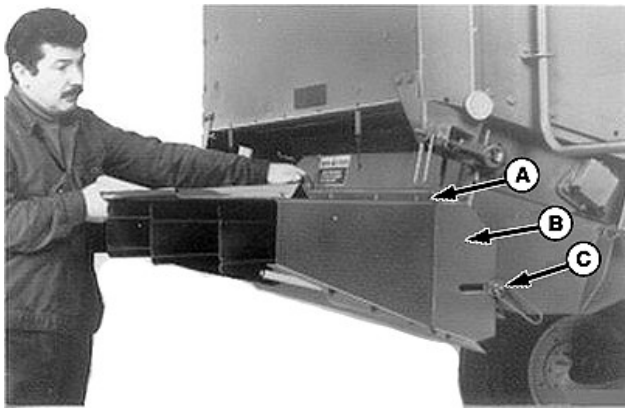
A— Nut (2 used, 1 per side)
B— Plate (2 used, 1 per side)
C— Latch (2 used, 1 per side)

Position plates (B), tighten nuts (A), and lock latches (C).

CP00606,00017CC-19-25MAY18

Attach Straw Distributor

NOTE: Must install the straw distributor before operating with straw chopper as it also serves a guard.



YC2429—UN—30DEC13

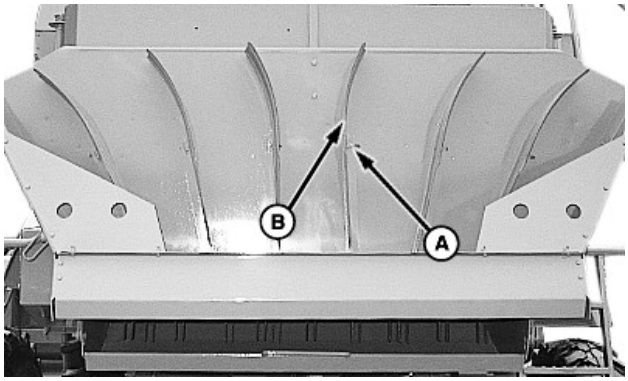
A— Rail
B— Straw Distributor
C— Bolt

Hang straw distributor (B) in rail (A). When tightening

bolts (C), adjust distributor angle to regulate how far the chopped material is thrown.

CP00606,00017CD-19-25MAY18

Adjust Straw Deflectors



YC10817—UN—08DEC16

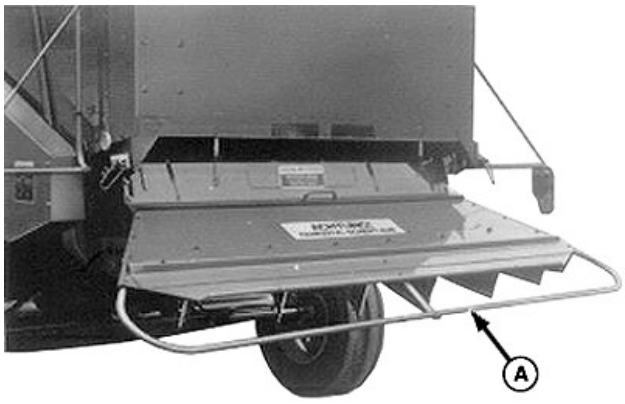
A— Bolt
B— Deflector

Loosen bolts (A). Adjust deflectors (B) as required to regulate width of chopped material.

CP00606,00017CE-19-25MAY18

Keep Guard Rail in Position

NOTE: In certain countries, the removal of the guard rail (A) is prohibited when the straw chopper is in operation.

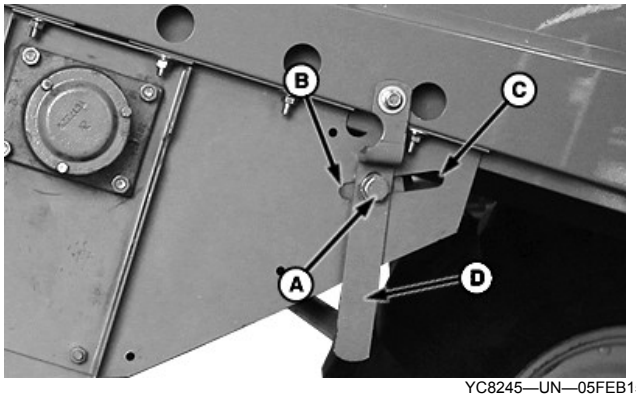


YC2431—UN—30DEC13

A— Guard Rail

CP00718,00043C0-19-19DEC17

Adjust Length of Cut



YC8245—UN—05FEB15

A— Bolt (2 used)
B— Position for Maximum Length of Cut
C— Position for Minimum Length of Cut
D— Hand Grip (2 used)

Adjust to the required length by swing stationary blades in or out. The stationary blades pivot on their attaching bolts (A).

NOTE: Adjust synchronously on both sides.

IMPORTANT: To avoid waste of engine power, never set stationary blades steeper than necessary.

Set stationary blades at position for minimum length of cut when chopping beans, rape, or other bulky crops. Remove the stationary blades when harvesting corn.

Adjustment: Loosen bolts (A) on both sides. Adjust hand grips (D) to required position. Tighten the bolts.

CP00606,00017CF-19-25MAY18

Straw Chopper Drive

IMPORTANT: Chopper and separator run synchronously. Must remove the chopper when not in use.

NOTE: When transporting combine, chopper must be secured in the transportation position.

The chopper is powered by the separator drive and runs synchronously with the separator. See Separator and Chopper Drive in Operating Machine section.



YC8237—UN—27JAN15

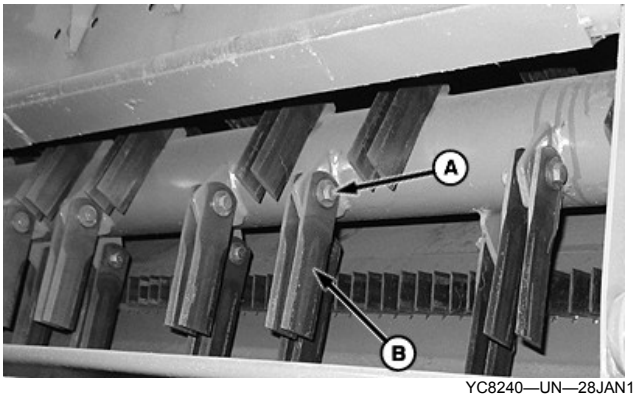
CP00718,00043C2-19-19DEC17

Replace Rotary Blades

⚠ CAUTION: Avoid accidents. Always jam the rotor when changing rotating blades.

Broken chopper blades can cause vibration. Replace the broken blade and the blade that is directly opposite immediately.

Do not sharpen blunt blades, turn, or replace blunt blades. Replace blades with new ones only. Ensures that all the blades on the rotor weigh the same.



YC8240—UN—28JAN15

A— Bolt
B— Rotary Blade

Removal: Remove bolt (A), remove the rotary blade (B). Install in reverse order.

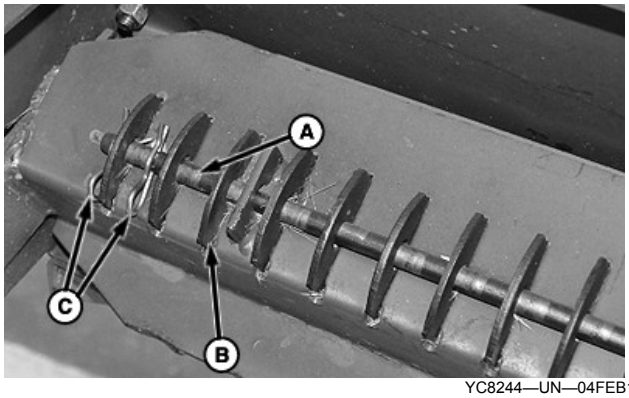
Use only 10.9 grade bolts M10×50 with self-locking nuts.

Specification

Bolt—Torque. . . . . 50 N·m

CP00606,00017D0-19-25MAY18

Replace Stationary Blades



YC8244—UN—04FEB15

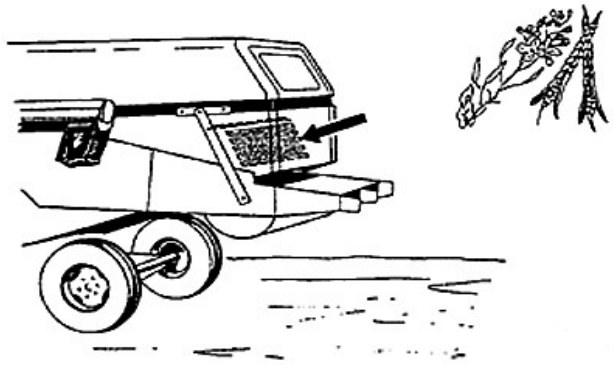
A— Rod
B— Stationary Blade
C— Cotter Pins (2 used)

Remove cotter pins (C), pull rod (A) backward as far as possible and remove. Replace the stationary blade (B).

CP00606,00017D1-19-25MAY18

Install Deflector (Optional)

When chopping bulky crops such as rape, installing deflector is recommended.



YC1529—UN—07MAR12

CP00718,00043C5-19-19DEC17

Air Conditioner General Checking Guidelines (Optional Air Conditioner System)

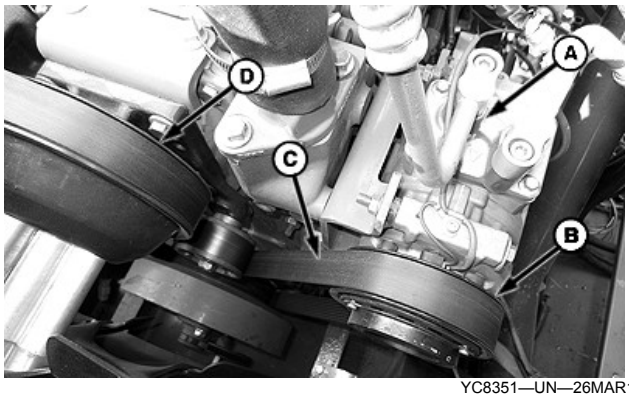
Checking as followings:

1. Check the tension of the compressor drive belt.
2. Ensure compressor clutch engaged.
3. Check if the condenser is clogged with dirt. Clean use compressing air as needed.
4. Check if the evaporator is clogged with dirt. Clean use compressing air as needed.
5. Check if the air filter cover is clogged with dirt. Clean use compressing air as needed.

6. Ensure all electrical harnesses connected.
7. Ensure all pipes connectors connected.
8. Check refrigerant level and fill as needed.

CP00718,00043C6-19-19DEC17

Air Conditioner Compressor Drive (Optional Air Conditioner System)



YC8351—UN—26MAR15

A— Compressor
B— Compressor Pulley
C— Belt
D— Fan Pulley

The power from the fan pulley (D) goes to compressor pulley (B) and finally drives compressor (A) through belt (C). Periodically inspects the tension of the compressor drive belt as needed.

CP00606,00017D2-19-25MAY18

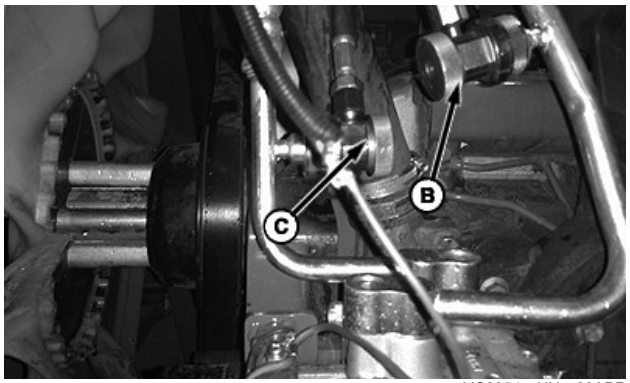
Refrigerant and Drier Filter (Optional Air Conditioner System)

Drier filter locates near the engine fan rotary screen. The function is storing the refrigerant, absorbing the water in the air conditioner system, and drying the refrigerant.



YC8353—UN—26MAR15

A— Drier Filter



YC8354—UN—02APR15

B— Filler Connector
C— Filler Connector

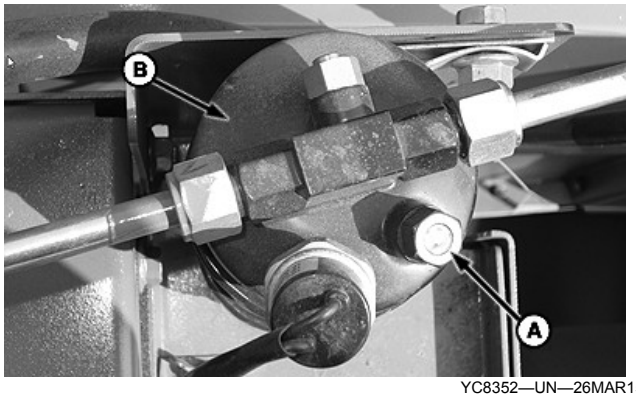
Fill the refrigerant through the filler connector (B) and filler connector (C) when the refrigerant level is lower.

CP00606,00017D3-19-25MAY18

Check Refrigerant Level and Replace Drier Filter (Optional Air Conditioner System)

Check refrigerant level as followings:

1. Start cold mode of air conditioner.
2. Rotate air temperature adjust button, set air conditioner system for maximum cooling.
3. Rotate recirculation fan speed adjust button, set recirculation fan for maximum speed.



YC8352—UN—26MAR15

A—Sight Glass
B—Drier Filter

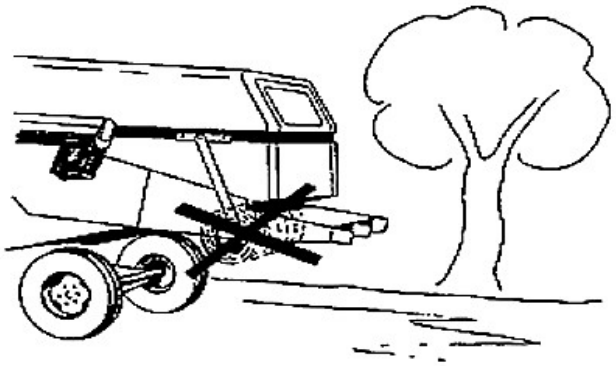
4. After several minutes, check sight glass (A) at the drier filter (B).
5. If the refrigerant appears cloudy or foamy, refrigerant level is low and system should be recharged.

IMPORTANT: Check the colors at the drier filter, replace drier filter when the colors changed to pink.

IMPORTANT: When repairing air conditioner system parts for several hours, drier filter absorbs the water in the air and ineffective, results in clogging of the expansion valve. Replace drier filter as needed.

CP00606,00017D4-19-25MAY18

Road Transportation



YC1531—UN—07MAR12

NOTE: Never engage the chopper when transporting the combine on the road.

CP00718,00043CA-19-19DEC17

Diesel Fuel

Consult your local fuel distributor for properties of the diesel fuel available in your area.

In general, diesel fuels are blended to satisfy the low temperature requirements of the geographical area in which they are marketed.

Diesel fuels specified to EN 590 or ASTM D975 are recommended. Renewable diesel fuel produced by hydrotreating animal fats and vegetable oils is basically identical to petroleum diesel fuel. Renewable diesel that meets EN 590, ASTM D975, or EN 15940 is acceptable for use at all percentage mixture levels.

Required Fuel Properties

In all cases, the fuel shall meet the following properties:

Cetane number of 40 minimum. Cetane number greater than 47 is preferred, especially for temperatures below –20 °C (–4 °F) or elevations above 1675 m (5500 ft.).

Cloud Point should be below the expected lowest ambient temperature or **Cold Filter Plugging Point** (CFPP) should be a maximum 10°C (18°F) below the fuel cloud point.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

Diesel fuel quality and sulfur content must comply with all existing emissions regulations for the area in which the engine operates. DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

E-Diesel fuel

DO NOT use E-Diesel (Diesel fuel and ethanol blend). Use of E-Diesel fuel in any John Deere machine may void the machine warranty.

CAUTION: Avoid severe injury or death due to the fire and explosion risk from using E-Diesel fuel.

Sulfur content for Interim Tier 4, Final Tier 4, Stage III B, Stage IV Engines, and Stage V engines

- Use ONLY ultra low sulfur diesel (ULSD) fuel with a maximum of 15 mg/kg (15 ppm) sulfur content.

Sulfur Content for Tier 3 and Stage III A Engines

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 1000—2000 mg/kg (1000—2000 ppm) REDUCES the oil and filter change interval.
- BEFORE using diesel fuel with sulfur content greater than 2000 mg/kg (2000 ppm), contact your John Deere dealer.

Sulfur Content for Tier 2 and Stage II Engines

- Use of diesel fuel with sulfur content less than 2000 mg/kg (2000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 2000—5000 mg/kg (2000—5000 ppm) REDUCES the oil and filter change interval.[1]
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.

Sulfur Content for Other Engines

- Use of diesel fuel with sulfur content less than 5000 mg/kg (5000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm) REDUCES the oil and filter change interval.

IMPORTANT: Do not mix used diesel engine oil or any other type of lubricating oil with diesel fuel.

Improper fuel additive usage may cause damage on fuel injection equipment of diesel engines.

DX,FUEL1-19-13JAN18

Handling and Storing Diesel Fuel

CAUTION: Reduce the risk of fire. Handle fuel carefully. DO NOT fill the fuel tank when engine is running. DO NOT smoke while you fill the fuel tank or service the fuel system.

Fill the fuel tank at the end of each day's operation to prevent water condensation and freezing during cold weather.

Keep all storage tanks as full as practical to minimize condensation.

Ensure that all fuel tank caps and covers are installed properly to prevent moisture from entering. Monitor water content of the fuel regularly.

When using biodiesel fuel, the fuel filter may require more frequent replacement due to premature plugging.

Check engine oil level daily prior to starting engine. A rising oil level may indicate fuel dilution of the engine oil.

IMPORTANT: The fuel tank is vented through the filler cap. If a new filler cap is required, always replace it with an original vented cap.

When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize the fuel. Keeping the free water drained and treating the

[1] *See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2,EXT for more information on Engine Oil and Filter Service Intervals.*

bulk fuel storage tank quarterly with a maintenance dose of a biocide will prevent microbial growth. Contact your fuel supplier or John Deere dealer for recommendations.

DX,FUEL4-19-13JAN18

Fuel Filters

The importance of fuel filtration cannot be overemphasized with modern fuel systems. The combination of increasingly restrictive emission regulations and more efficient engines requires fuel system to operate at much higher pressures. Higher pressures can only be achieved using fuel injection components with very close tolerances. These close manufacturing tolerances have significantly reduced capacities for debris and water.

John Deere brand fuel filters have been designed and produced specifically for John Deere engines.

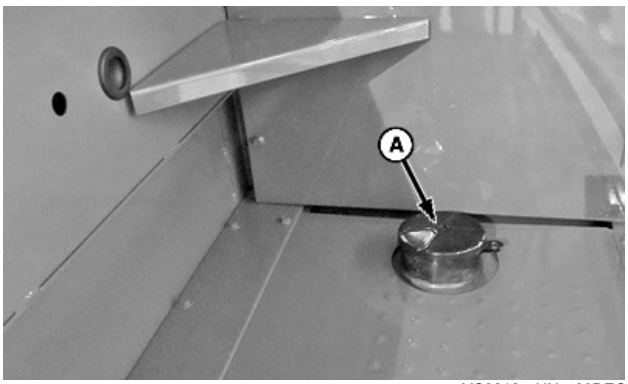
To protect the engine from debris and water, always change engine fuel filters as specified in this manual.

DX,FILT2-19-14APR11

Fill Fuel Tank

CAUTION: Be careful when handling fuel. Never fill tank when engine is running. Smoking or making flames nearby is strictly prohibited during filling tank.

Fill fuel tank at the end of each day. This prevents condensation in fuel tank as moist air cools.



YC3212—UN—23DEC13

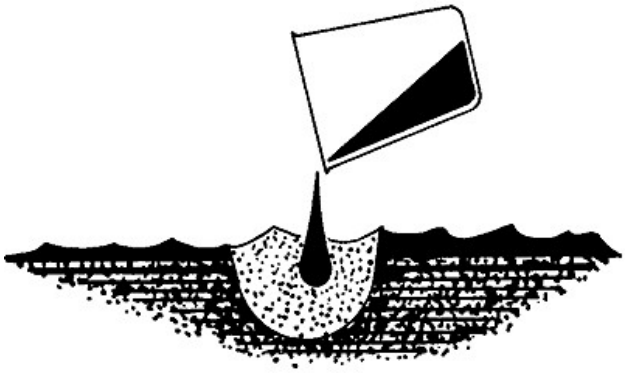
A— Filler Cap

About the position of filler cap (A) and the method of filling, see Fuel Tank Filler in Operating Engine section.

Fuel tank capacity: 300 L.

CP00606,00017D5-19-25MAY18

Comply with Rules and Regulations of Environmental Protection



YC1389—UN—07DEC12

Have environmental and ecological awareness.

Determine the correct disposal methods before discarding any liquids.

Always comply with rules and regulations of environmental protection when handling engine oil, fuel, coolant, brake fluid, filter elements, and batteries.

CP00718,00043CC-19-19DEC17

Diesel Engine Break-In Oil — Non-Emissions Certified and Certified Tier 1, Tier 2, Tier 3, Stage I, Stage II, and Stage III

New engines are filled at the factory with either John Deere Break-In™ or John Deere Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In™ or Break-In Plus™ Engine Oil, respectively, as needed to maintain the specified oil level.

Operate the engine under various conditions, particularly heavy loads with minimal idling, to help seat engine components properly.

If John Deere Break-In™ Engine Oil is used during the initial operation of a new or rebuilt engine, change the oil and filter at a maximum of 100 hours.

If John Deere Break-In Plus™ Engine Oil is used, change the oil and filter at a minimum of 100 hours and a maximum equal to the interval specified for John Deere Plus-50™ II or Plus-50™ oil.

After engine overhaul, fill the engine with either John Deere Break-In™ or Break-In Plus™ Engine Oil.

If John Deere Break-In™ or Break-In Plus™ Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following and change the oil and filter at a maximum of 100 hours of operation:

- API Service Classification CE
- API Service Classification CD

Break-In is a trademark of Deere & Company.
Break-In Plus is a trademark of Deere & Company
Plus-50 is a trademark of Deere & Company.

- API Service Classification CC
- ACEA Oil Sequence E2
- ACEA Oil Sequence E1

IMPORTANT: Do not use Plus-50™ II, Plus-50™, or engine oils meeting any of the following for the initial break-in of a new or rebuilt engine:

API CK-4	**ACEA E9**
API CJ-4	**ACEA E7**
API CI-4 PLUS	**ACEA E6**
API CI-4	**ACEA E5**
API CH-4	**ACEA E4**
API CG-4	**ACEA E3**
API CF-4	
API CF-2	
API CF	

These oils do not allow the engine to break in properly.

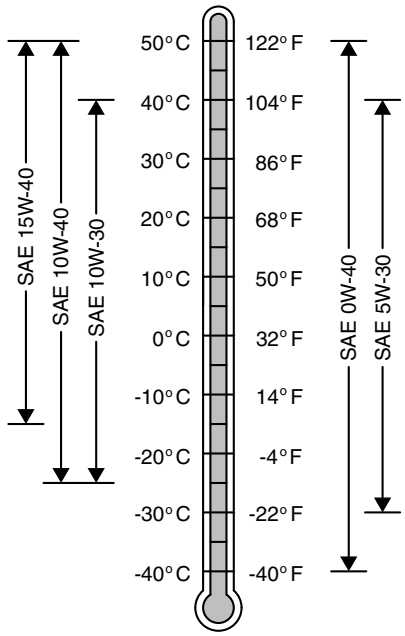
John Deere Break-In Plus™ Engine Oil can be used for all John Deere diesel engines at all emission certification levels.

After the break-in period, use John Deere Plus-50™ II, John Deere Plus-50™, or other diesel engine oil as recommended in this manual.

DX,ENOIL4-19-02NOV16

Diesel Engine Oil — Tier 2 and Stage II

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.



TS1689—UN—18JUL07

Oil Viscosities for Air Temperature Ranges

Use oil viscosity based on the expected air temperature range during the period between oil changes.

John Deere Plus-50™ II oil is preferred.

John Deere Plus-50™ is also recommended.

Other oils may be used if they meet one or more of the following standards:

- John Deere Torq-Gard™
- API Service Category CK-4
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- API Service Category CH-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E7
- ACEA Oil Sequence E6
- ACEA Oil Sequence E5
- ACEA Oil Sequence E4

Multi-viscosity diesel engine oils are preferred.

Diesel fuel quality and fuel sulfur content must comply with all existing emissions regulations for the area in which the engine operates.

DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

DX,ENOIL7-19-13JAN18

Plus-50 is a trademark of Deere & Company
Torq-Gard is a trademark of Deere & Company

Engine Oil and Filter Service Intervals

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel. Actual service intervals also depend on operation and maintenance practices.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

Diesel fuel sulfur content affects engine oil and filter service intervals.

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 1000—5000 mg/kg (1000—5000 ppm) REDUCES the oil and filter change interval.
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.
- DO NOT use diesel fuel with sulfur content greater than 10000 mg/kg (10000 ppm).

IMPORTANT: To avoid engine damage:

- **Reduce oil and filter service intervals by 50% when using BioDiesel blends greater than B20. Oil analysis may allow longer service intervals.**
- **Use only approved oil types.**

Approved Oil Types:

- “Plus-50 Oils” include John Deere Plus-50™ II and John Deere Plus-50™
- “Other Oils” include John Deere Torq-Gard™, API CK-4, API CJ-4, API CI-4 PLUS, API CI-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, and ACEA E4.

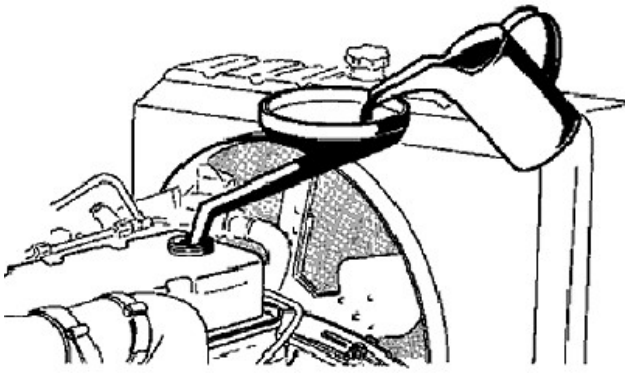
PowerTech™ Engine oil and filter change intervals	
Oil pan capacity	6068HYC60
Sulfur content of fuel	Lower than 1000 mg/kg (1000 ppm)
Plus-50 oil	500 hours
Other oils	250 hours
Fuel sulfur content	1000-2000 mg/kg (1000-2000 ppm)
Plus-50 oil	500 hours
Other oils	250 hours
Fuel sulfur content	2000-5000 mg/kg (2000-5000 ppm)
Plus-50 oil	500 hours
Other oils	250 hours
Fuel sulfur content	5000-10000 mg/kg (5000-10000 ppm)
Plus-50 oils	250 hours
Other oils	125 hours
Oil analysis may extend service interval of ”Other oils”, to a maximum not exceeding the interval of Plus-50 Oils.	

CP00718,00043CD-19-19DEC17

Plus-50 is a trademark of Deere & Company

Torq-Gard is a trademark of Deere & Company

Engine Crankcase Capacity (Including Filter)



YC1388—UN—07DEC12

Engine crankcase capacity (including filter) is about 19.5 L.

CP00718,00043CE-19-19DEC17

Oil Filters

Filtration of oils is critically important for proper operation and lubrication. John Deere brand oil filters have been designed and produced specifically for John Deere applications.

John Deere filters adhere to engineering specifications for quality of the filter media, filter efficiency rating, strength of the bond between the filter media and the element end cap, fatigue life of the canister (if applicable), and pressure capability of the filter seal. Non-John Deere branded oil filters might not meet these key John Deere specifications.

Always change oil filters regularly as specified in this manual.

DX,FILT1-19-11APR11

Diesel Engine Coolant (engine with wet sleeve cylinder liners)

Failure to follow applicable coolant standards and drain intervals can result in severe engine damage that may not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere coolants, parts or service.

Preferred Coolants

Failure to follow applicable coolant standards and drain intervals can result in severe engine damage that may not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere coolants, parts, or service.

The following pre-mix engine coolants are preferred:

- **John Deere COOL-GARD™II**

COOL-GARD is a trademark of Deere & Company

- **John Deere COOL-GARD II PG**

COOL-GARD II pre-mix coolant is available in several concentrations with different freeze protection limits as shown in the following table.

COOL-GARD II Pre-Mix	Freeze Protection Limit
COOL-GARD II 20/80	-9°C (16°F)
COOL-GARD II 30/70	-16°C (3°F)
COOL-GARD II 50/50	-37°C (-34°F)
COOL-GARD II 55/45	-45°C (-49°F)
COOL-GARD II PG 60/40	-49°C (-56°F)
COOL-GARD II 60/40	-52°C (-62°F)

Not all COOL-GARD II pre-mix products are available in all countries.

Use COOL-GARD II PG when a non-toxic coolant formulation is required.

Additional Recommended Coolants

The following engine coolant is also recommended:

- John Deere COOL-GARD II Concentrate in a 40—60% mixture of concentrate with quality water.

IMPORTANT: When mixing coolant concentrate with water, do not use less than 40% or greater than 60% concentration of coolant. Less than 40% gives inadequate additives for corrosion protection. Greater than 60% can result in coolant gelation and cooling system problems.

Other Coolants

Other ethylene glycol or propylene glycol base coolants may be used if they meet the following specification:

- Pre-mix coolant meeting ASTM D6210 requirements
- Are nitrite-free
- Coolant concentrate meeting ASTM D6210 requirements in a 40—60% mixture of concentrate with quality water

If coolant meeting one of these specifications is unavailable, use a coolant concentrate or pre-mix coolant that has a minimum of the following chemical and physical properties:

- Provides cylinder liner cavitation protection according to either the John Deere Cavitation Test Method or a fleet study run at or above 60% load capacity
- Is formulated with a nitrite-free additive package
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion

Water Quality

Water quality is important to the performance of the

cooling system. Deionized or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

Coolant Drain Intervals

Drain and flush the cooling system and refill with fresh coolant at the indicated interval, which varies with the coolant used.

When COOL-GARD II or COOL-GARD II PG is used, the drain interval is 6 years or 6000 hours of operation.

If a coolant other than COOL-GARD II or COOL-GARD II PG is used, reduce the drain interval to 2 years or 2000 hours of operation.[2]

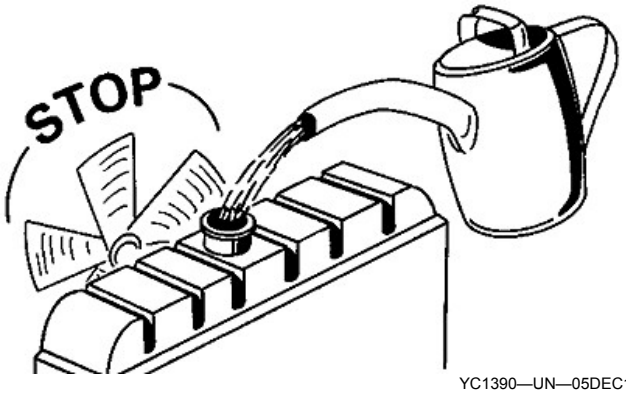
IMPORTANT: Do not use cooling system sealing additives or antifreeze that contains sealing additives.

Do not mix ethylene glycol and propylene glycol base coolants.

Do not use coolants that contain nitrites.

DX,COOL3-19-13JAN18

Fill Coolant



YC1390—UN—05DEC12

IMPORTANT: Do not use cooling system sealing additives or antifreeze that contains sealing additives.

NOTE: Fill recommended coolant. Never pour cold liquid into a hot engine that causes crack the cylinder head or the block. DO NOT operate engine without coolant for even a few minutes.

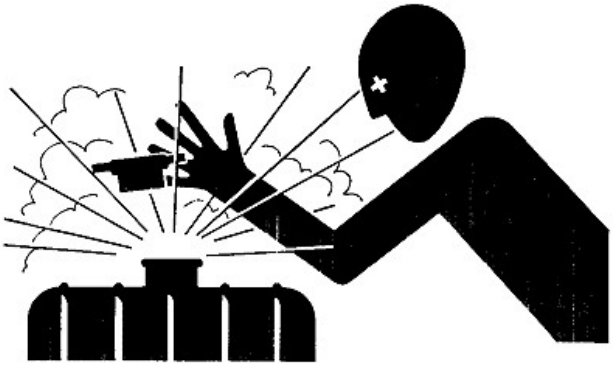
Fill coolant after the cooling system has cooled down. Coolant level is about 20—30 mm below the upper edge of the tank.

CP00718,00043CF-19-19DEC17

Safety Maintenance of Cooling System

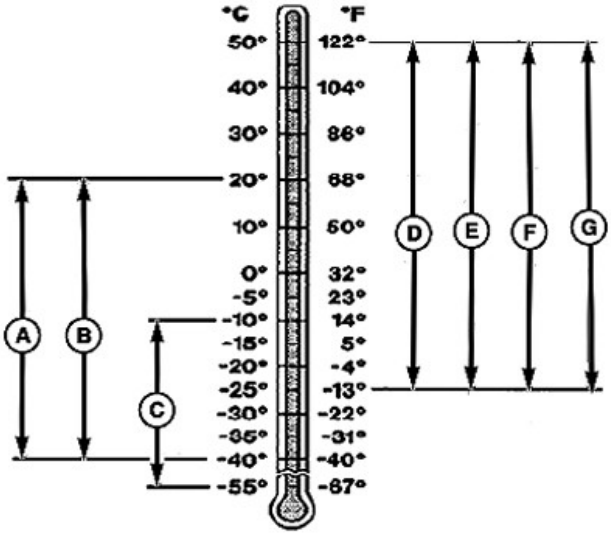
Engine cooling system is pressurized. Explosively released fluids can cause serious burns.

Switch off the engine. Open the filler cap only after the radiator has cooled down till bare hands touch. Before filler cap is fully opened, slowly loosen it to the first stopping point in order to release pressure.



YC2445—UN—16OCT12
CP00718,00043D0-19-19DEC17

Hydraulic Oil



YC3383—UN—30DEC13

A— Low Viscosity
B— JDM J20B
C— Arctic Oil
D— Hy-Gard
E— JD UNIVERSAL OIL
F— JDM J20A
G— QUATROL

Selection of hydraulic oil:

[2] Coolant analysis may extend the service interval of other "Coolants" to a maximum not to exceed the interval of Cool-Gard II coolants. Coolant analysis means taking a series of coolant samples at 1000 hour increments beyond the normal service interval until either the data indicate the end of useful coolant life or the maximum service interval of Cool-Gard II is reached.

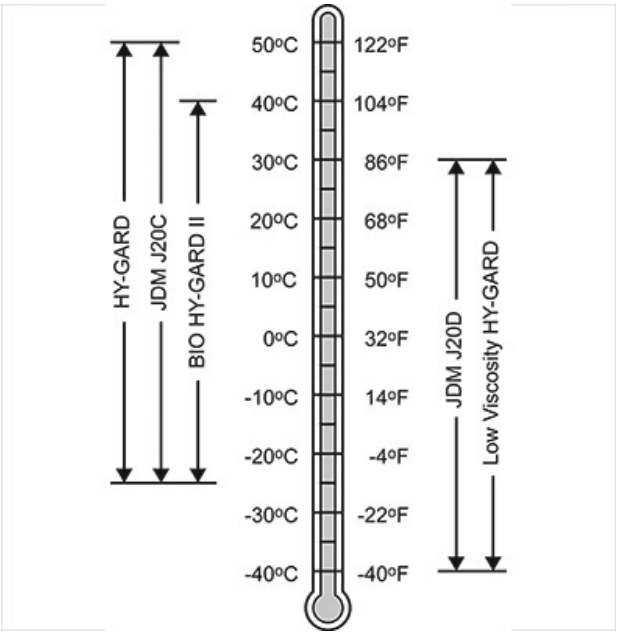
Factory oil: YC - N68 (low condensation point and high viscosity hydraulic oil).

Deere Hy-Gard™ oil is recommended.

QUATROL oil or other oil can also be used. But the oil meets the Deere JDMJ20C or JDMJ20D standard. When temperature is below -40°C, use Arctic oil (APICC/SC, MIL-L-46167).

CP00718,00043D1-19-19DEC17

Hydrostatic Drive Oil



RG30204—UN—08MAR18

Oils for Air Temperature Ranges

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere Hy-Gard™
- John Deere Low Viscosity Hy-Gard™

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

Use John Deere Bio Hy-Gard™ II oil when a biodegradable fluid is required.[3]

DX,HYOIL-19-13JAN18

Hy-Gard is a trademark of Deere & Company.
Bio Hy-Gard is a trademark of Deere & Company

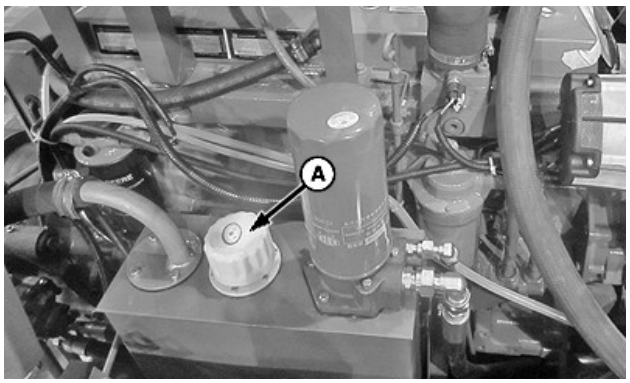
[3] *Bio Hy-Gard II meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. Bio Hy-Gard II should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.*

Hydraulic Lift System Capacity

Complete hydraulic systems: 25 L.

Reservoir capacity: 21.8 L.

NOTE: Loosen filler cap (A) and use oil dipstick to check oil level.

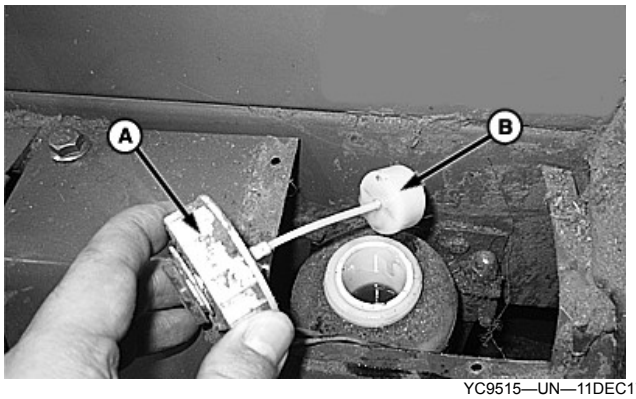


YC2446—UN—03JAN14

A— Filler Cap

CP00718,00043D2-19-19DEC17

Brake Fluid



YC9515—UN—11DEC17

A— Reservoir Cap
B— Oil Level Indicator

Complete capacity: 3 L.

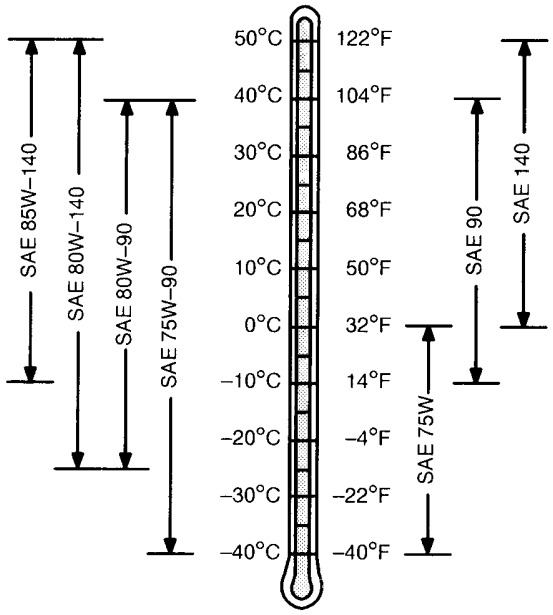
Reservoir capacity: 0.75 L.

NOTE: Add 10# aviation hydraulic oil.

The new machine has worked for first 100 hours, change brake fluid. Thereafter, change it every 500 hours or at end of the harvest season.

CP00718,00043D3-19-19DEC17

Gear Oil



TS1653—UN—14MAR96

Oil Viscosities for Air Temperature Ranges

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere GL-5 Gear Lubricant
- John Deere EXTREME-GARD™

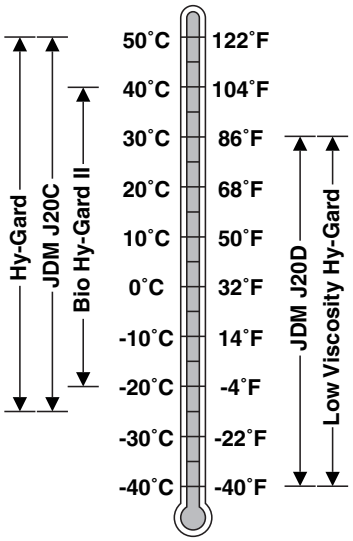
Other oils may be used if they meet the following:

- API Service Category GL-5

DX,GEOIL-19-14APR11

EXTREME-GARD is a trademark of Deere & Company

Transmission Oil



TS1739—UN—13SEP16

Oils for Air Temperature Ranges

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere Hy-Gard™
- John Deere Low Viscosity Hy-Gard™

If they meet one of the following, other oils are used :

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

Use John Deere Bio Hy-Gard™ II oil when a biodegradable fluid is required.[4]

CP00718,00043D4-19-19DEC17

Gear Case Factory Oil

Location	Gear Lubricant	Capacity
Front axle gear case	GL-5 80W/90 gear lubricant	5.5 L
Front axle final drive	GL-5 80W/90 gear lubricant	3.1 L (single side)
Separator drive gear	HY-GARD™	1.6 L (left-hand); 1.6 L (right-hand)

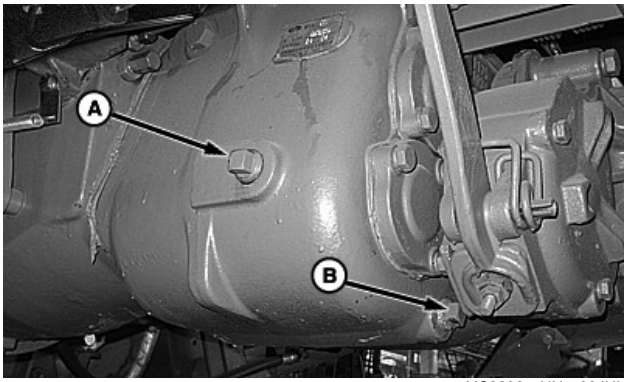
Hy-Gard is a trademark of Deere & Company
Bio Hy-Gard is a trademark of Deere & Company

[4] *Bio Hy-Gard II meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. Bio Hy-Gard II should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.*

Location	Gear Lubricant	Capacity
case (non-speed adjustable)		
Separator drive gear case (adjustable speed)	HY-GARD™	1.6 L (left-hand); 2.5 L (right-hand)
Cylinder Decelerator (optional)	00# Universal Lithium Lubrication Grease	0.8 kg

CP00606,0001928-19-02AUG18

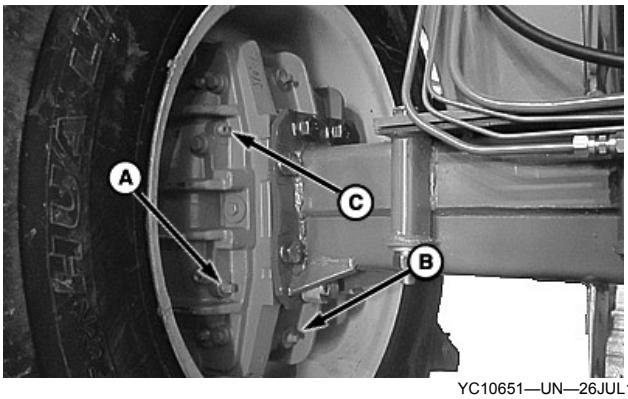
Gear Oil Capacity



YC8898—UN—09JUL15

Transmission

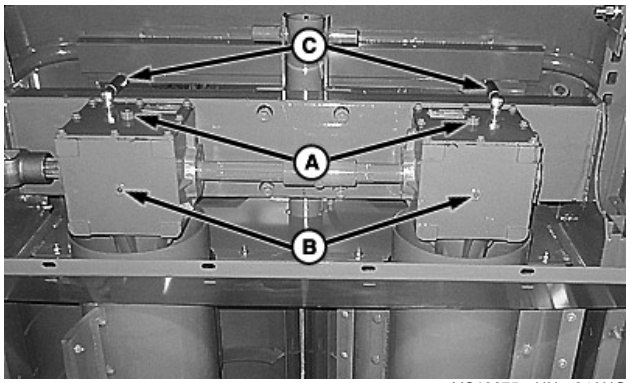
A—Filler Port and Oil Level Plug
B—Oil Drain Plug



YC10651—UN—26JUL16

Final Drive

A—Filler Port and Oil Level Plug
B—Oil Drain Plug
C—Bleed Screw



YC10675—UN—04AUG16

Separation Cylinder Gear Case

A—Filler Port and Oil Level Plugs(2 used)
B—Oil Drain Plugs(2 used)
C—Bleed Screws(2 used)

Transmission gear case capacity: 5.5 L.

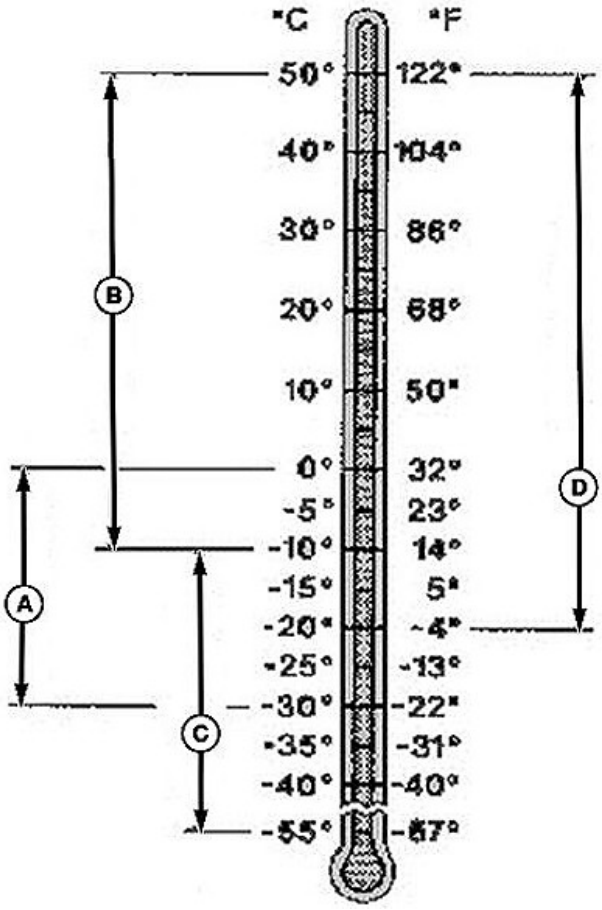
Final drive capacity (single): 3.1 L.

Separator drive gear case capacity (non-speed adjustable): 1.6 L (left-hand); 1.6 L (right-hand).

Separator drive gear case capacity (adjustable speed): 1.6 L (left-hand); 2.5 L (right-hand).

CP00606,0001929-19-01AUG18

Pressure Resistant Universal Lubricate Grease



YC3384—UN—30DEC13

A—SAE(NLGI) No.0 or No.1
B—SAE(NLGI) No.2
C—Arctic Lubricate Grease
D—Deere Universal Lubricate Grease

Use the following lubricate grease:

Domestic brands:

1. Molybdenum disulphide lithium lubricate grease: to be used on general lubrication surface with all specifications in the below table .
2. Mobil XHP222 lubricate grease: Must use Mobil XHP222 lubricate grease at Posi- torq variable speed lower device.

Foreign brands:

1. SAE universal lubricate grease.
2. Add 3 ~ 5% molybdenum disulfide to SAE universal lubricate grease. When temperature is below -30°C, use arctic lubricate grease (MIL-G-10924C).

	Dropping point (℃)	Work penetration	Copper corrosion	Mechani-cal impurities	Moisture, % (m) ≤	Free organic acid	Free alkali, NaOH% m ≤	Enterprise standards of haerbin petrochemical plant
No. 3 molybdenum disulphide lithium lubricate grease	1 8 0	2 2 0 - 2 5 0	Passed	Nil	Trace	Nil	0.15	Q/SHB12-1996

CP00718,00043D7-19-19DEC17

Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

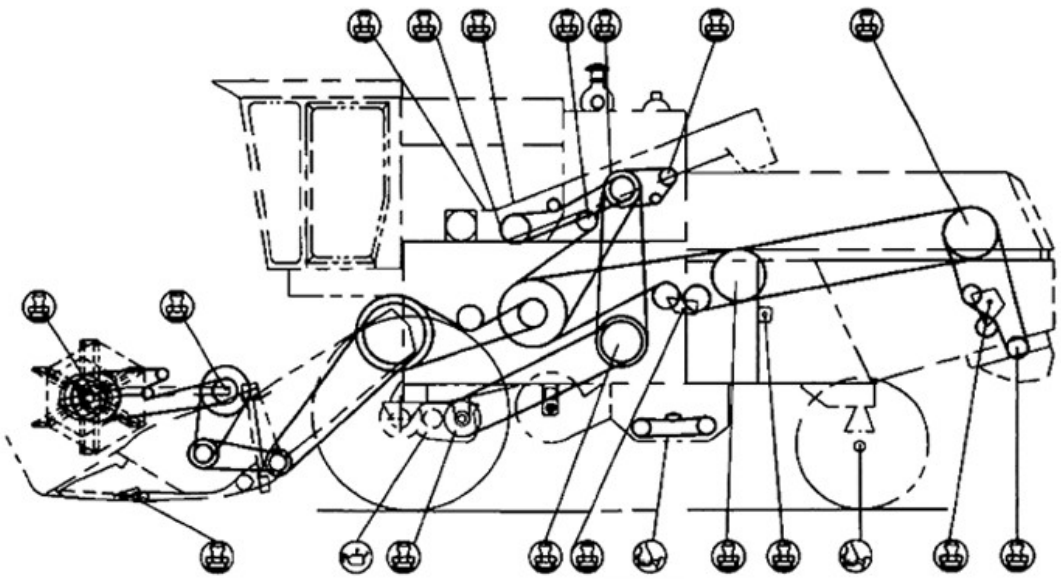
Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

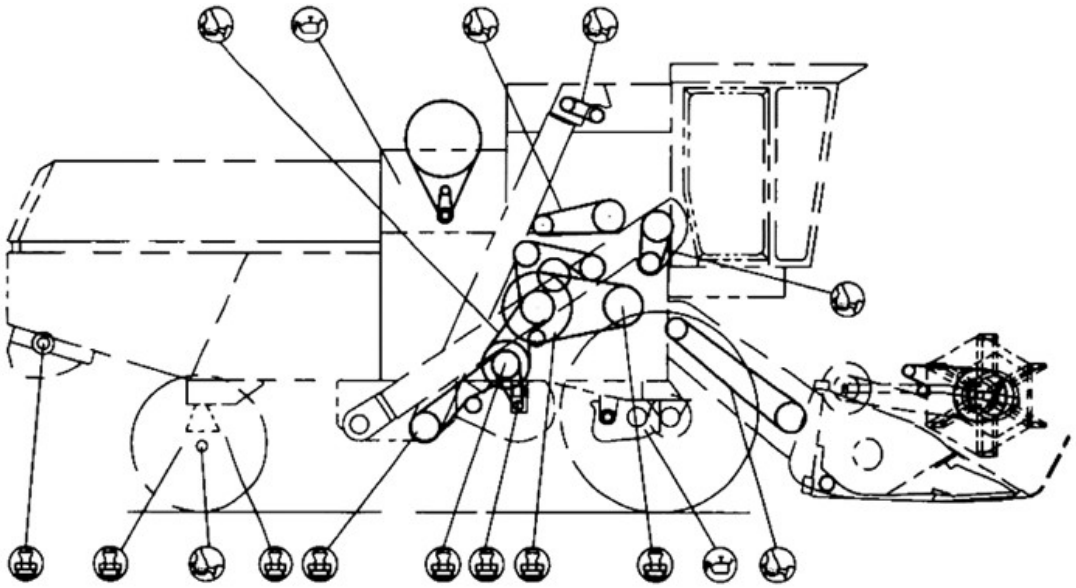
DX,LUBST-19-11APR11

Left-Hand Lubrication Chart



YC12696—UN—24MAY18
CP00606,00017D7-19-25MAY18

Right-Hand Lubrication Chart



YC12697—UN—24MAY18
CP00606,00017D8-19-25MAY18

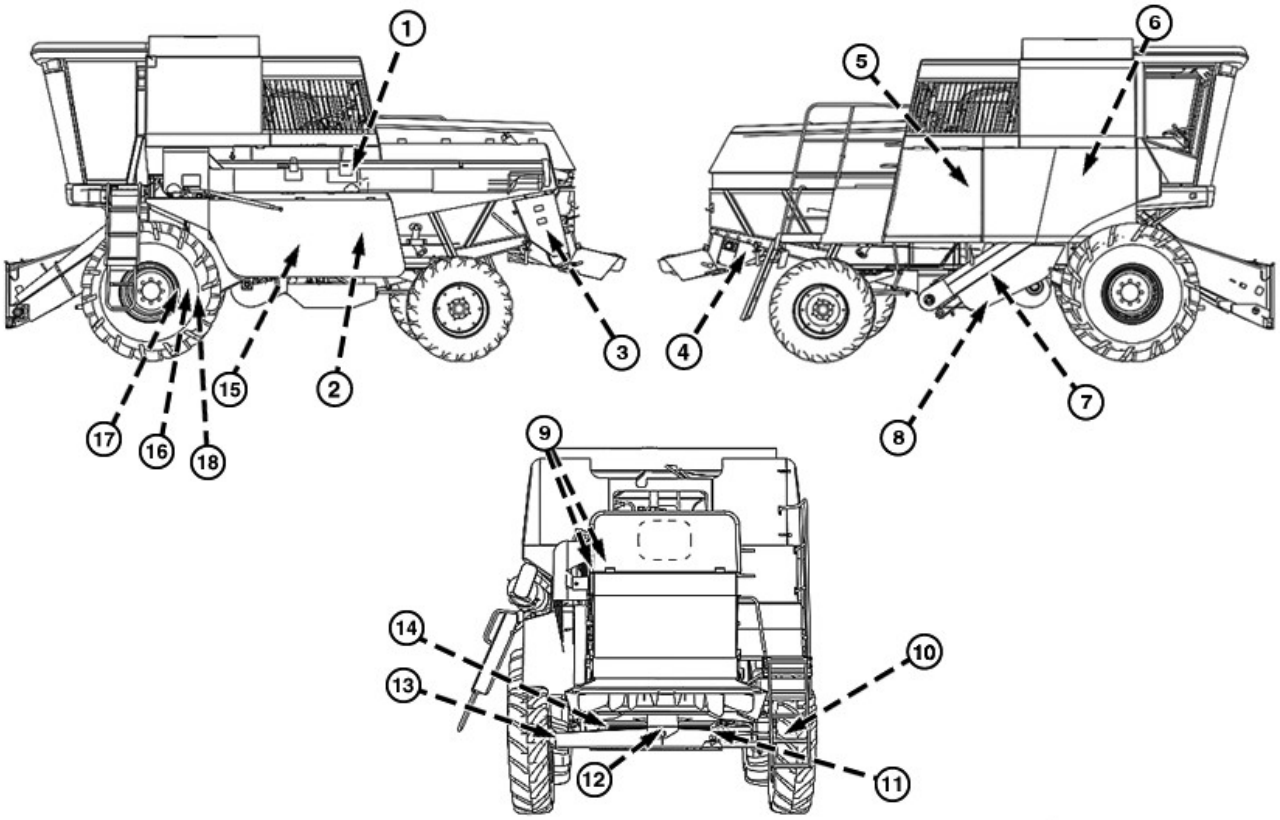
Lubrication Points

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

CAUTION: Switch off the engine and remove the key, lubricate machine after moving parts stopping.

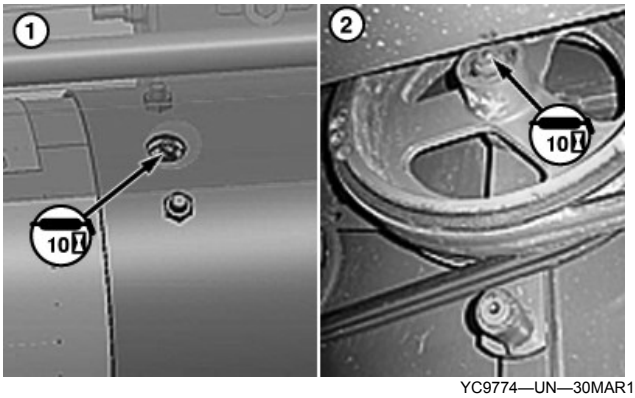
NOTE: Filling grease through lubrication points until feeling pressure returned.

Every 10 Hours



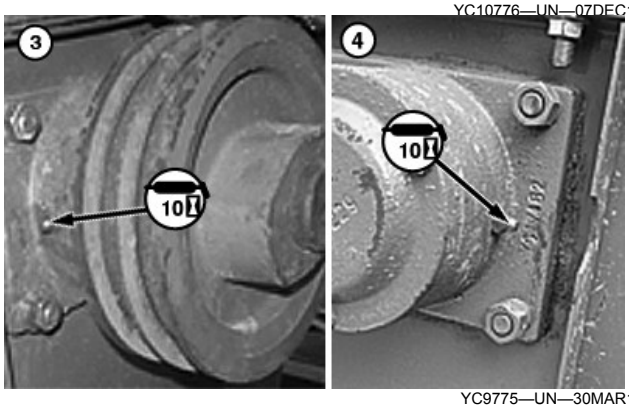
YC10776—UN—07DEC16

NOTE: Before lubricating unloading auger telescopic segment, swing out the unloading auger, switch off the engine and remove the key.



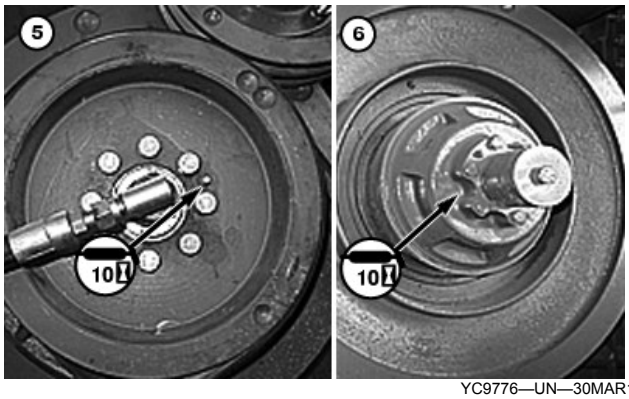
YC9774—UN—30MAR16

1. Unloading auger telescopic segment.
2. Straw chopper drive pulley.



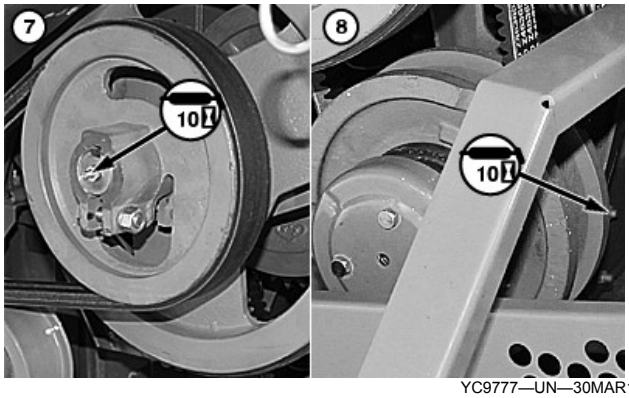
YC9775—UN—30MAR16

3. Straw chopper bearing (left-hand).
4. Straw chopper bearing (right-hand).



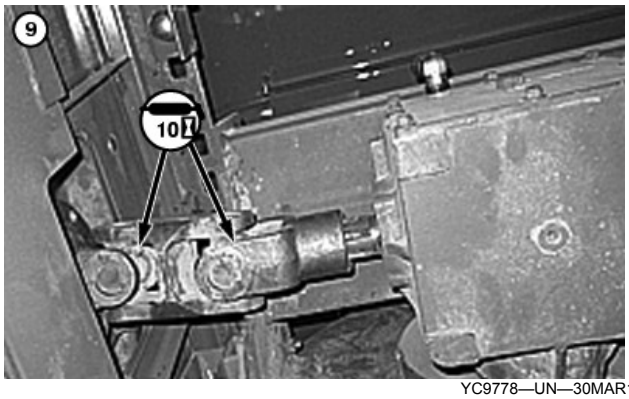
YC9776—UN—30MAR16

5. Threshing cylinder drive pulley.
6. Threshing cylinder pulley.



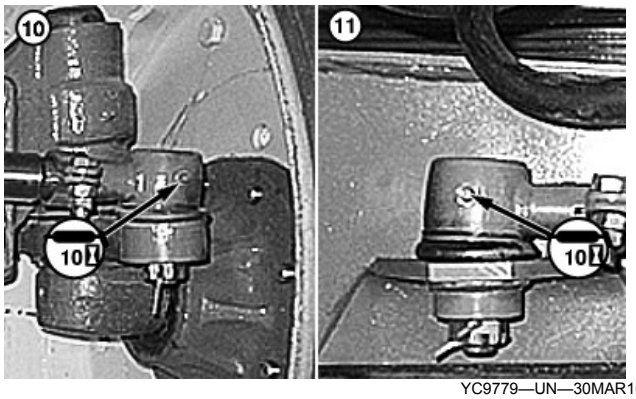
YC9777—UN—30MAR16

7. Fan variable speed drive pulley and bearing.
8. Fan variable speed pulley.



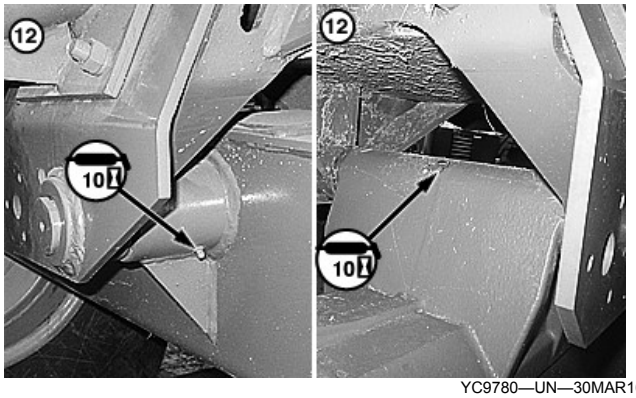
YC9778—UN—30MAR16

9. Separator drive universal joint.



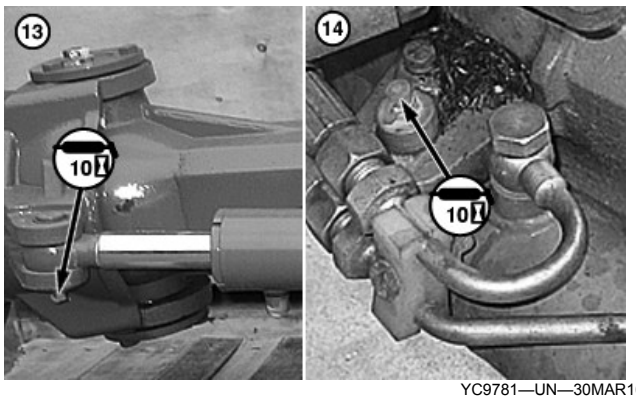
YC9779—UN—30MAR16

10. Steering cylinder universe joint.
11. Steering tie rod pivots.



YC9780—UN—30MAR16

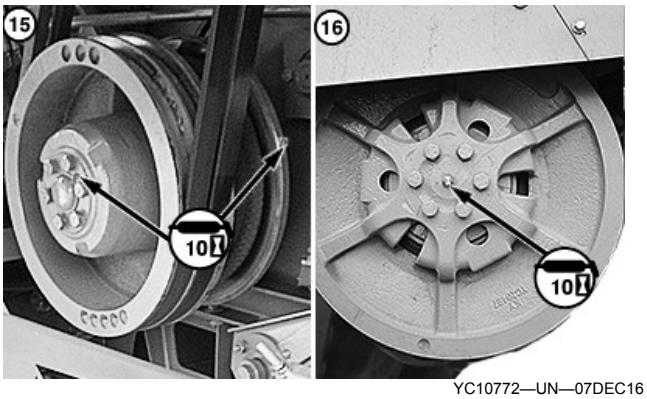
12. V-type tie rod pivot.



YC9781—UN—30MAR16

13. Steering cylinder universe joint (optional rear wheel drive combine).
14. Steering tie rod pivots (optional rear wheel drive combine).

NOTE: Lubricating Posi-Torq variable speed upper unit and support arm with Posi-Torq variable speed upper pulley fully closed.

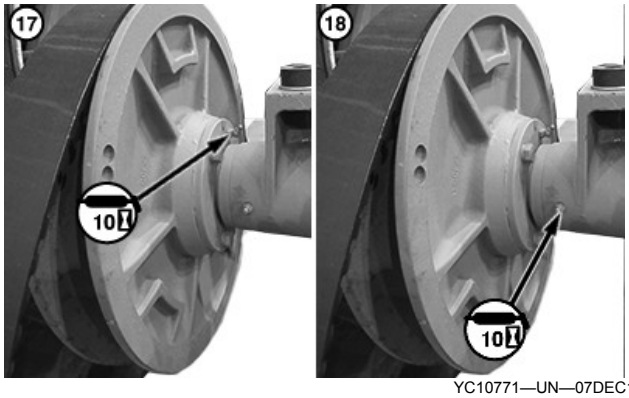


YC10772—UN—07DEC16

15. Posi-Torq variable speed upper unit.

NOTE: Lubricating Posi-Torq variable speed lower unit with the Posi-Torq variable speed lower pulley fully closed. Must use Mobil XHP222 or more better grease. For more details, see Posi-Torq Lower Unit Lubrication in Electrical, Hydraulic, and Drive Systems section.

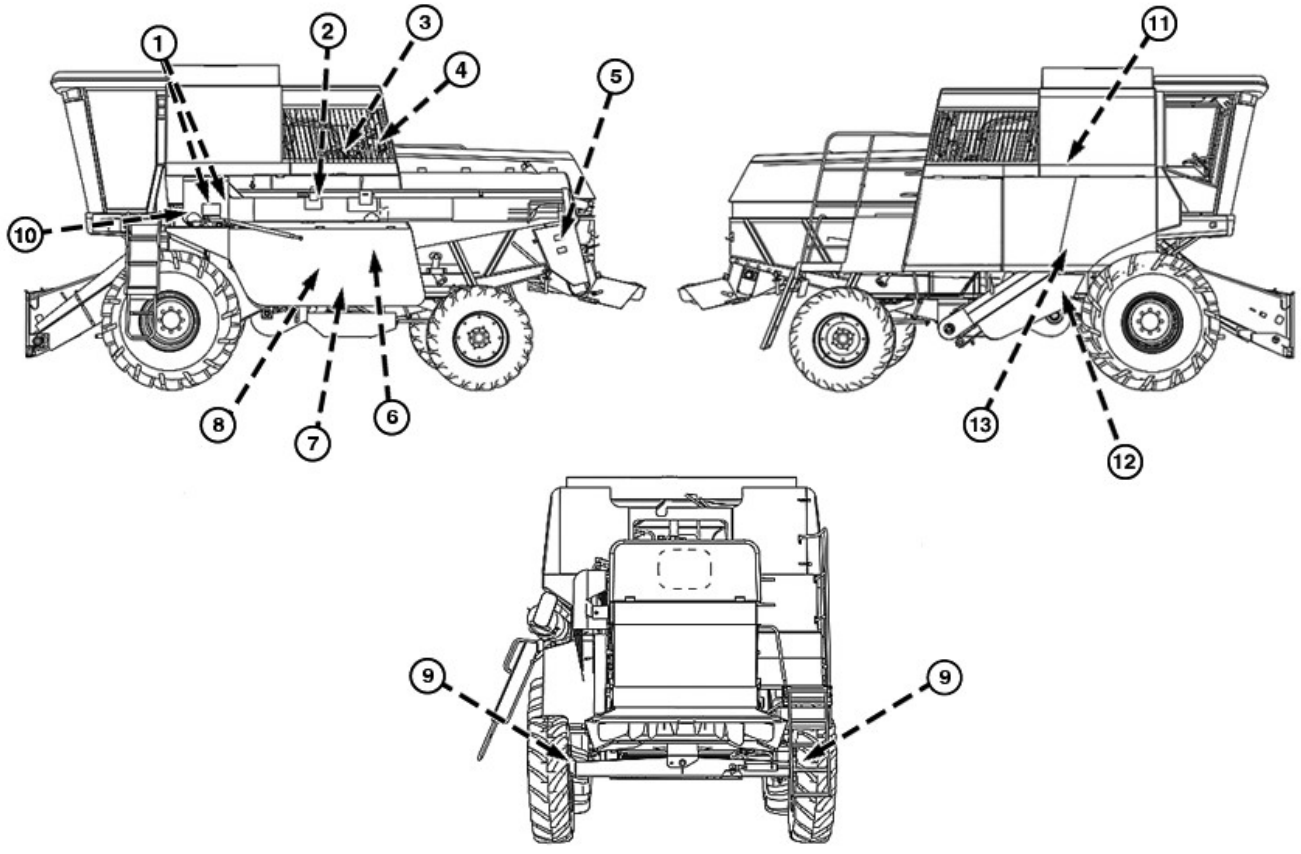
16. Posi-Torq variable speed lower unit spring.



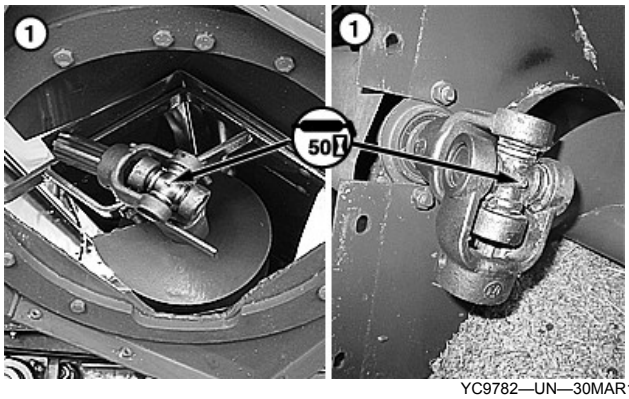
YC10771—UN—07DEC16

17. Posi-Torq variable speed lower unit inner pulley half cam.
18. Ground drive input housing bearing.

Every 50 Hours

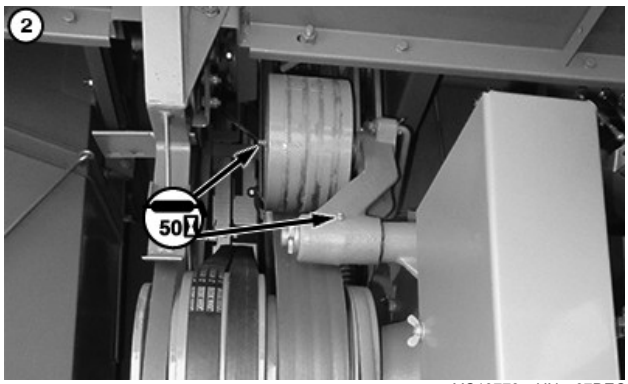


YC12698—UN—02SEP18



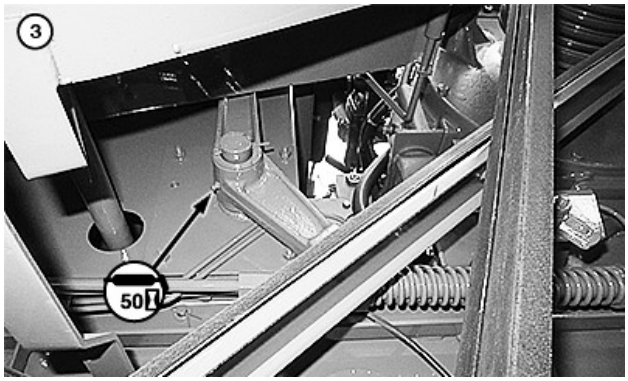
YC9782—UN—30MAR16

1. Unloading auger universal joint.



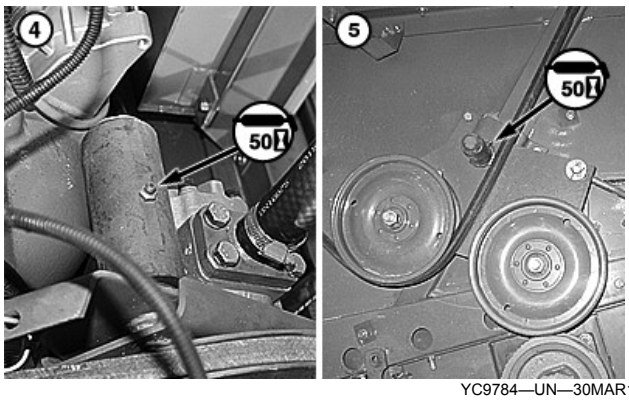
YC10773—UN—07DEC16

2. Separator engage idler and idler arm.



YC10528—UN—08DEC16

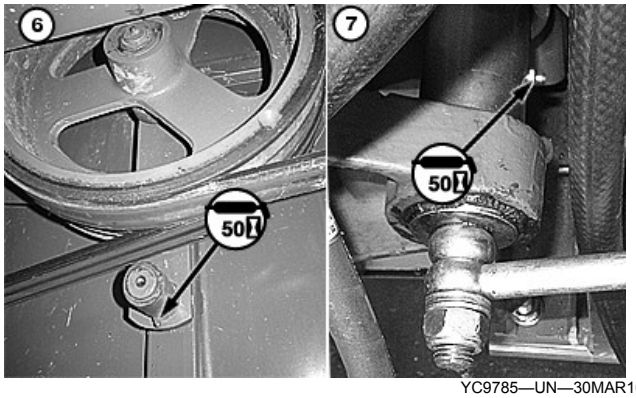
3. Separator engage support arm.



YC9784—UN—30MAR16

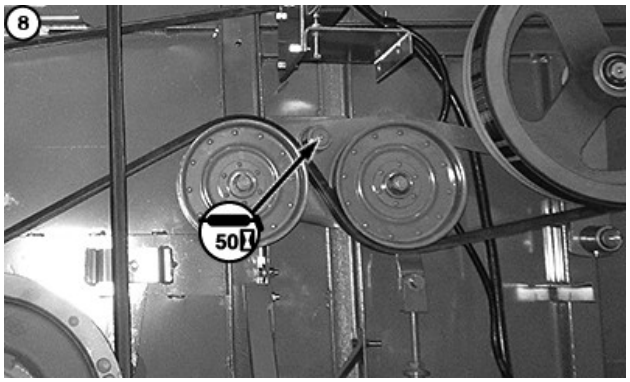
4. Hydraulic pump support arm.

5. Separator idler arm.



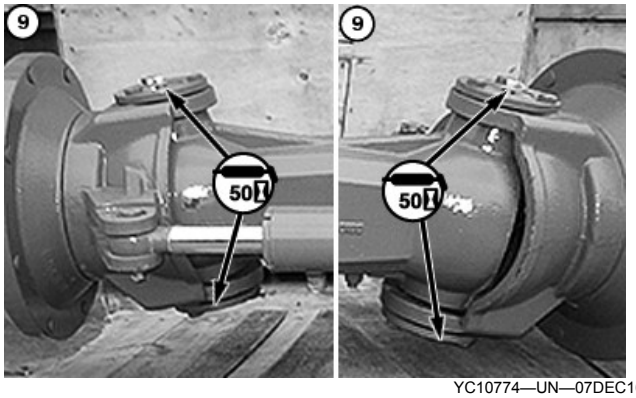
YC9785—UN—30MAR16

6. Separator drive pulley support arm.
7. Separator engage support arm.



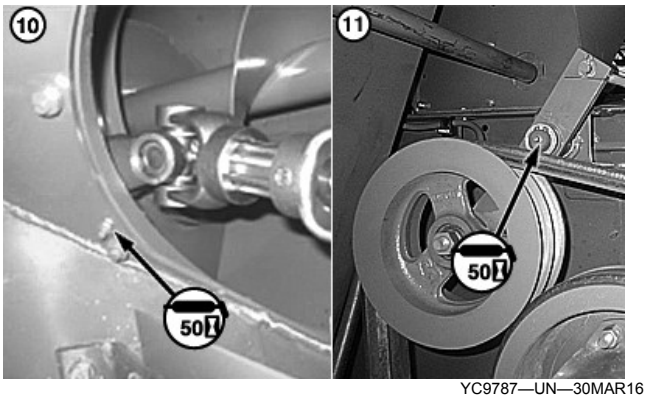
YC10784—UN—07DEC16

8. Chopper drive idler arm.



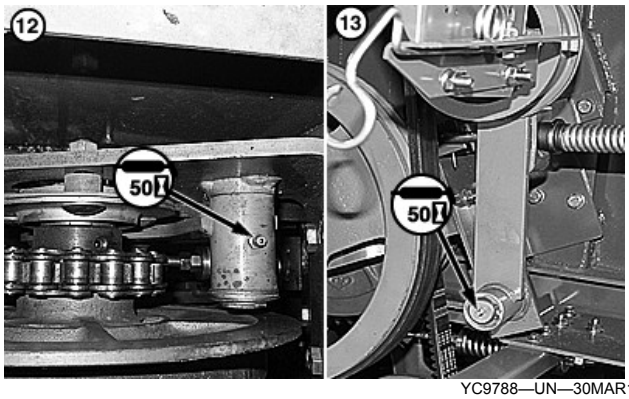
YC10774—UN—07DEC16

9. Rear axle bearing and pivot (optional rear wheel drive combine).



YC9787—UN—30MAR16

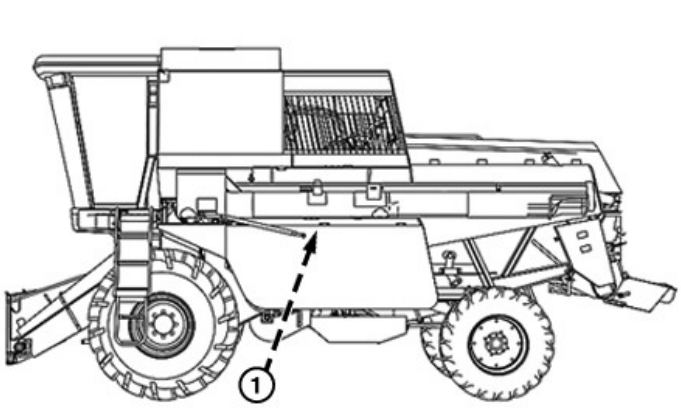
10. Unloading rotator.
11. Beater drive idler arm.

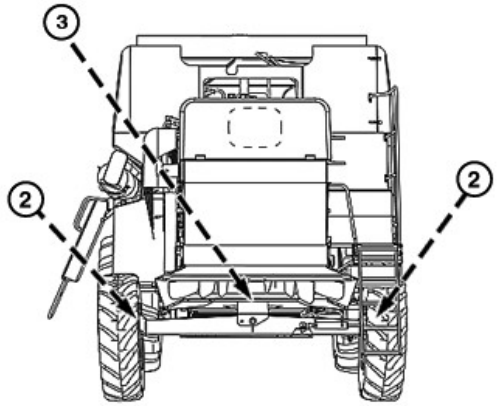


YC9788—UN—30MAR16

12. Cleaning fan idler arm.
13. Cleaning shoe idler arm.

Every 100 Hours



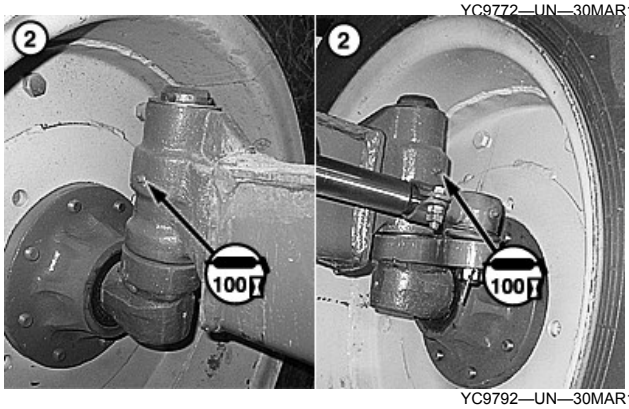


YC9772—UN—30MAR16



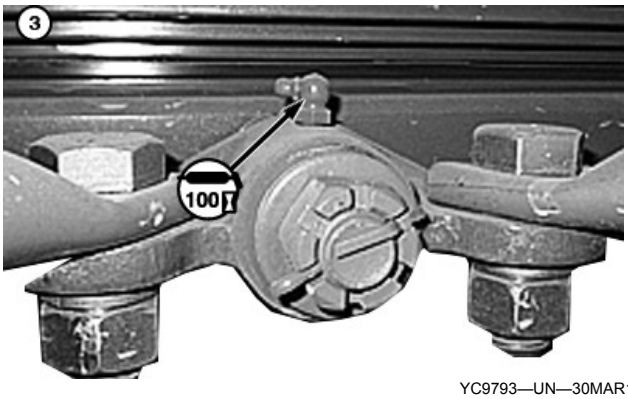
YC9791—UN—30MAR16

1. Front separator bearing.



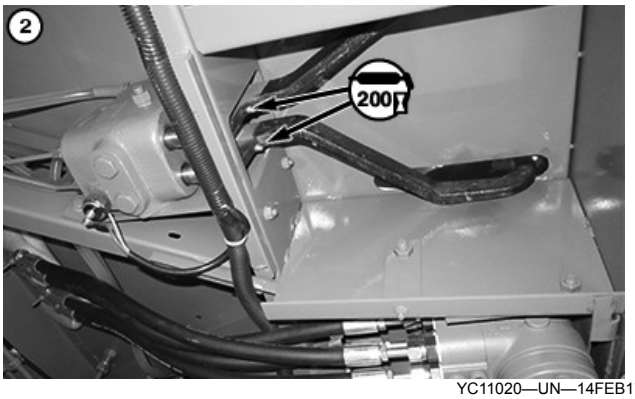
YC9792—UN—30MAR16

2. Rear axle bearing and pivot.



YC9793—UN—30MAR16

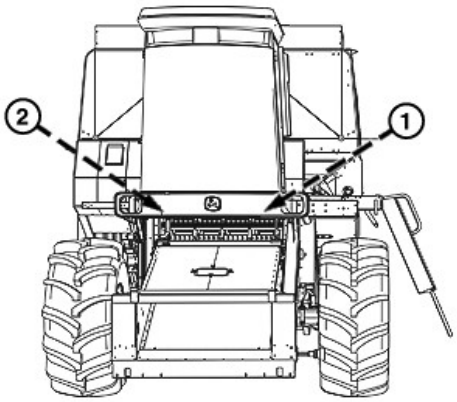
3. Rear axle support pivot.



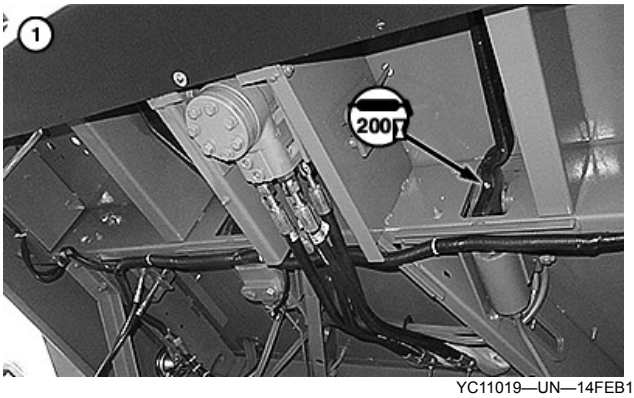
YC11020—UN—14FEB17

2. Service brake pedal.

Every 200 Hours



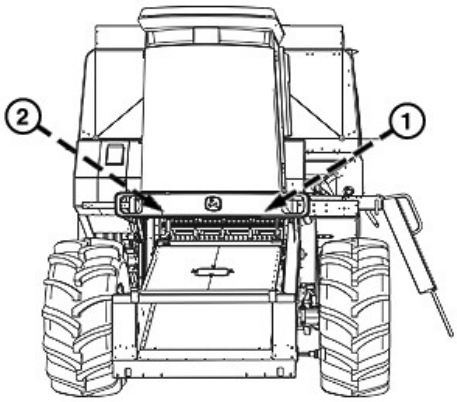
YC10777—UN—07DEC16



YC11019—UN—14FEB17

1. Clutch pedal.

Every 500 Hours

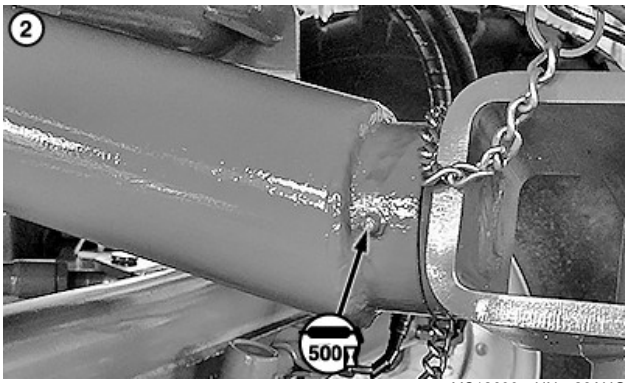


YC10777—UN—07DEC16



YC9794—UN—30MAR16

1. Rear wheel bearings.



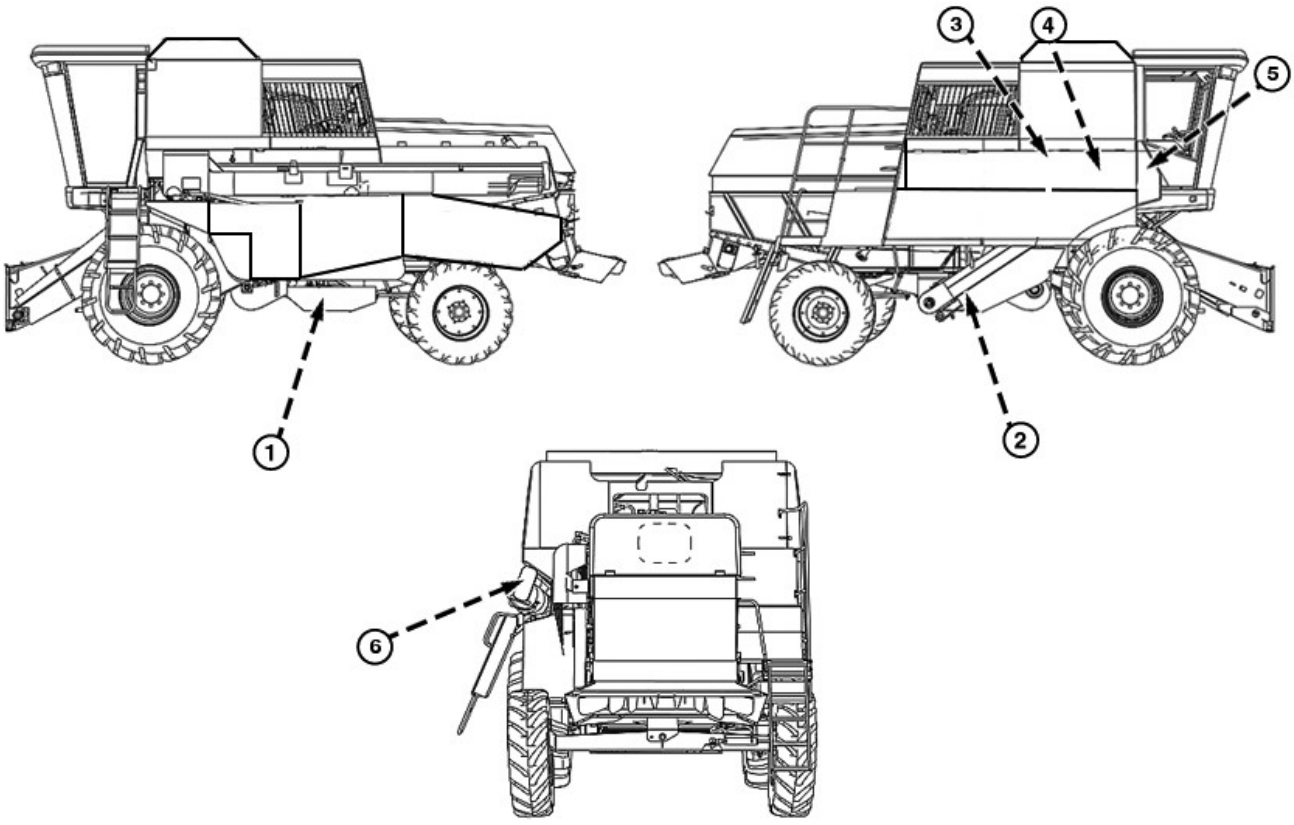
YC12699—UN—28AUG18

2. Rear axle hitch.

CP00718,00043DA-19-28AUG18

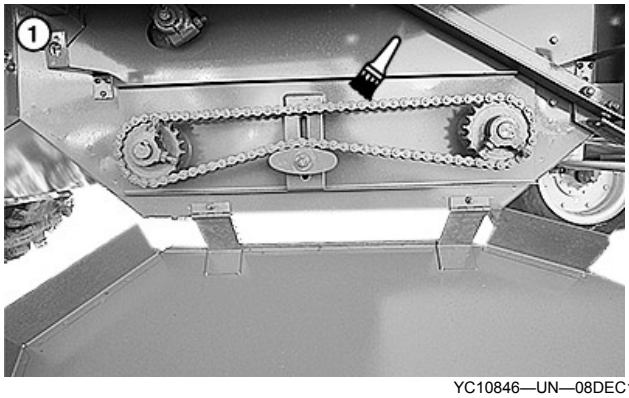
Lubrication Chains

Lubricate chains at the start or at the end of every day.



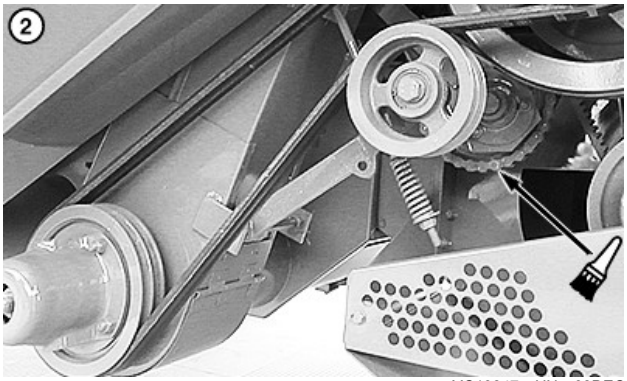
YC10845—UN—25OCT16

Chart of Chain Position



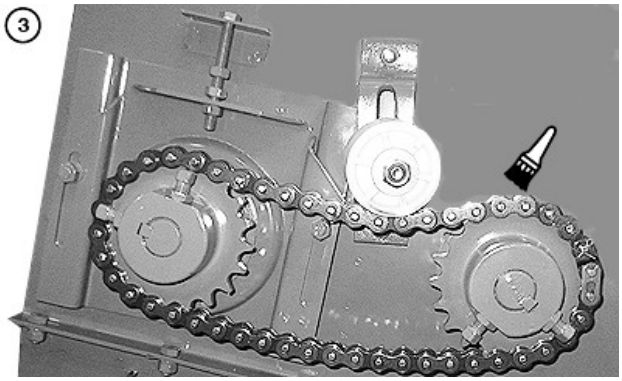
YC10846—UN—08DEC16

Elevator Drive Chain



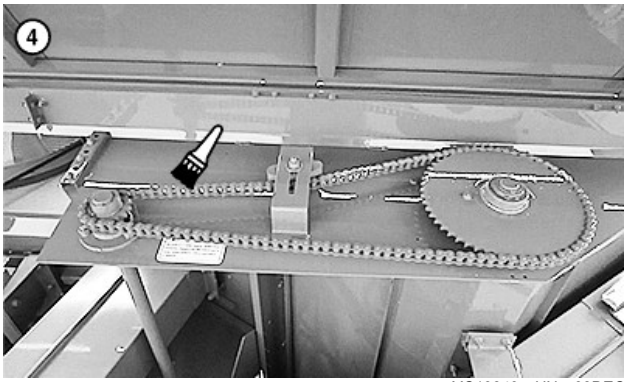
YC10847—UN—08DEC16

Cleaning Shoes Drive Chain



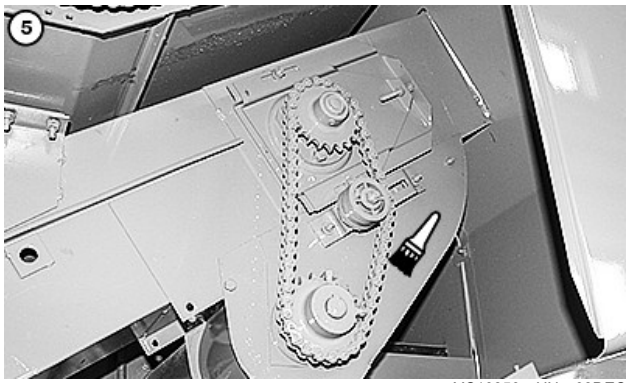
YC10848—UN—08DEC16

Grain Elevator Drive Chain



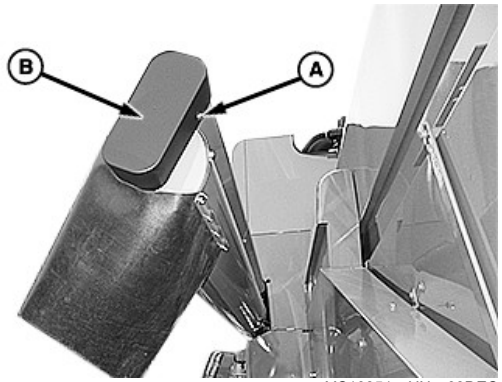
YC10849—UN—08DEC16

Unloading Auger Drive Chain



YC10850—UN—08DEC16

Tailing Elevator Drive Chain



YC10851—UN—08DEC16

A— Cap Screw (2 used)
B— Cover



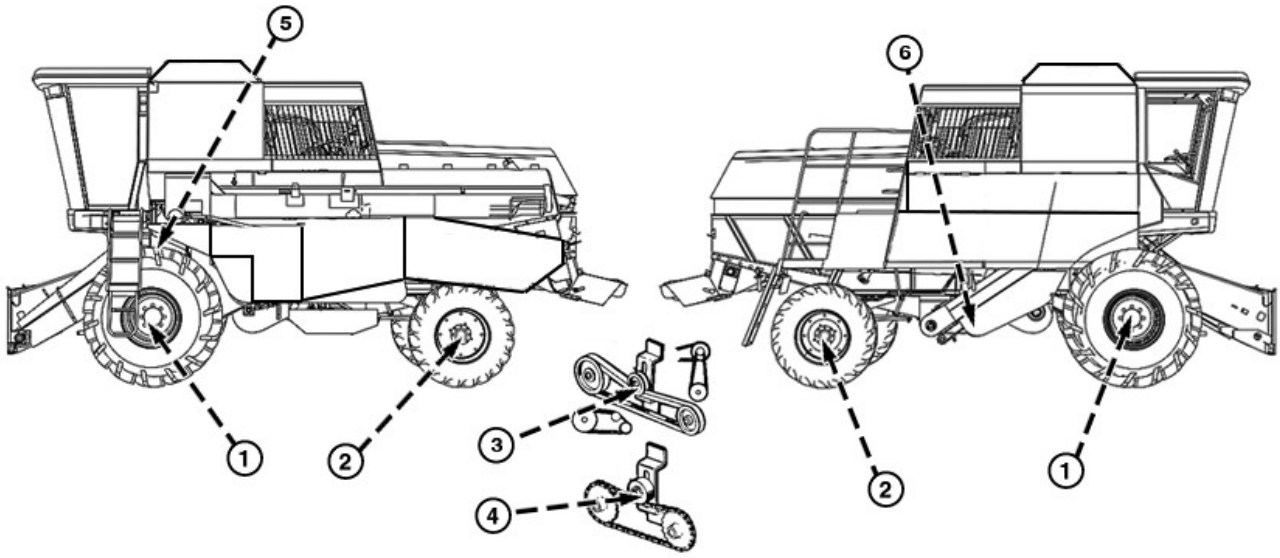
YC10852—UN—08DEC16

Unloading Auger Drive Chain (In End)

NOTE: Before lubricating unloading auger drive chain (in end), remove cap screws (A) and open cover (B).

CP00606,00017D9-19-25MAY18

First Several Hours

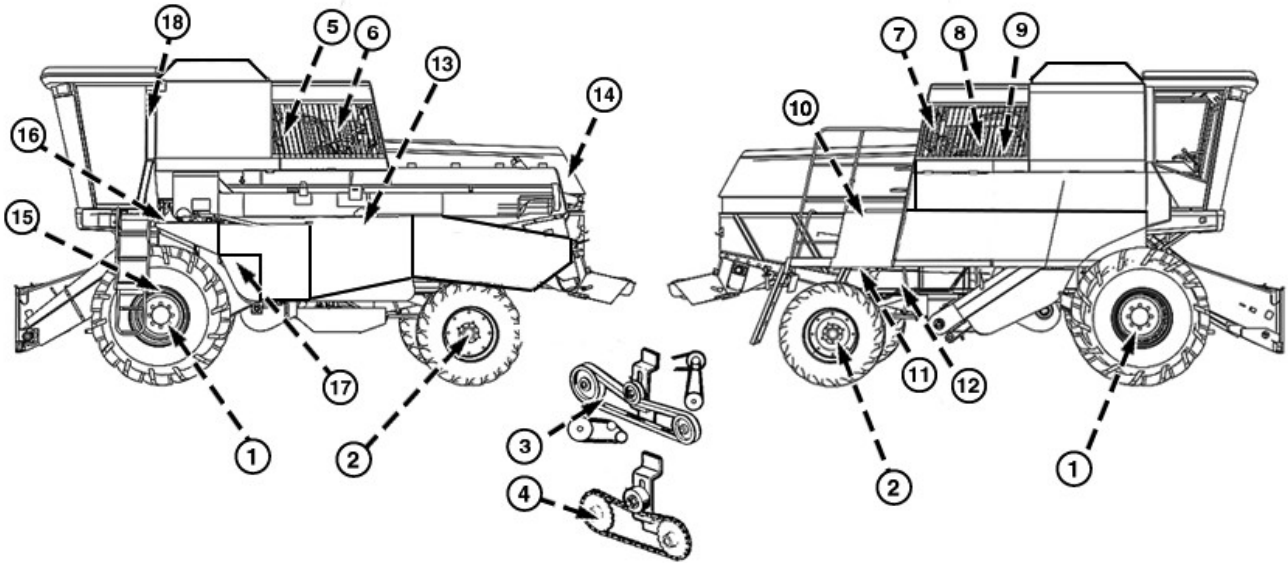


YC10901—UN—13NOV16

1. Tighten front wheel attaching nuts with torque 420 N·m.
2. Tighten rear attaching wheel bolts with torque 180 N·m.
3. Check and adjust the tension of V-belts.
4. Check and adjust the tension of drive chains.
5. Check and adjust feeder house slip clutch spring as needed.
6. Check and adjust elevator slip clutch spring as needed.

CP00718,00043DC-19-19DEC17

Every 10 Hours (Daily)



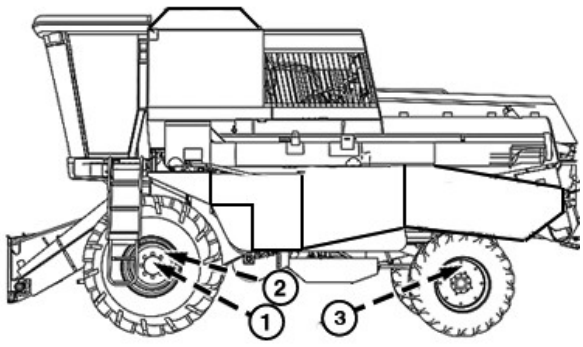
YC10903—UN—10NOV16

1. Check front wheel attaching nuts with torque 420 N·m, check tires, and pressures.
2. Check rear wheel attaching bolts with torque 180 N·m, check tires, and pressures.
3. Check and adjust the tension of V-belts.
4. Check and adjust the tension of drive chains.
5. Check coolant level and fill as recommended. See Engine Coolant in Operating Engine section.

6. Clean air filter elements. See Clean the Primary Air Filter Element in Operating Engine section.
7. Clean around the hydraulic reservoir filler neck and check hydraulic oil level. See Change Oil of Hydraulic System in Electrical, Hydraulic, and Drive Systems section.
8. Clean radiator and rotary screen. See Clean Radiator and Clean Rotary Screen in Operating Engine section.
9. Check engine crankcase oil level. For related operation, see Pre-Start Check in Operating Engine section.
10. Fill fuel tank. See Fuel Tank Filler in Operating Engine section.
11. Check and clean fuel tank sediment bowl. See Fuel Tank Sediment Bowl in Operating Engine section.
12. Check fuel filter. Empty water and impurity. See Primary Fuel Filter in Operating Engine section.
13. Check and adjust the tension of the separator clutch drive belt. See Threshing Unit Belt Tension Adjustment in Operating Machine section.
14. Check tailing volume sensor. See Rear Cover Blockage Warning Device in Operating Machine section.
15. Check and adjust ground drive clutch clearance. See Adjust Clutch Clearance in Electrical, Hydraulic, and Drive Systems section.
16. Check and adjust the tension of the feeder house drive belt. See Feeder House Drive in Operating Machine section.
17. Check and clean the stone trap, grain pan and return pan.
18. Clean air conditioner system.

CP00718,00043DD-19-30AUG18

First 25 Hours

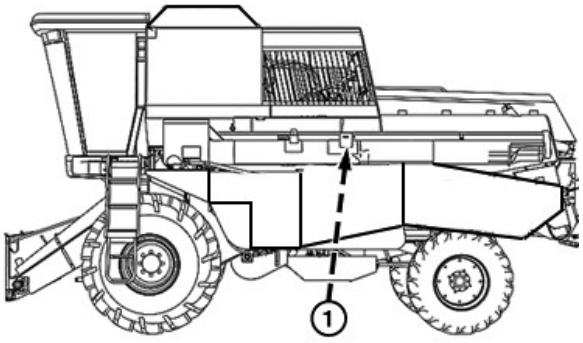


YC10908—UN—10NOV16

1. Check front axle bolts attached to frame. See Front Axle in Electrical, Hydraulic, and Drive Systems section.
2. Check and tighten front wheel attaching nuts with torque 420 N·m.
3. Check and tighten rear wheel attaching bolts with torque 180 N·m.

CP00718,00043DE-19-19DEC17

First 50 Hours

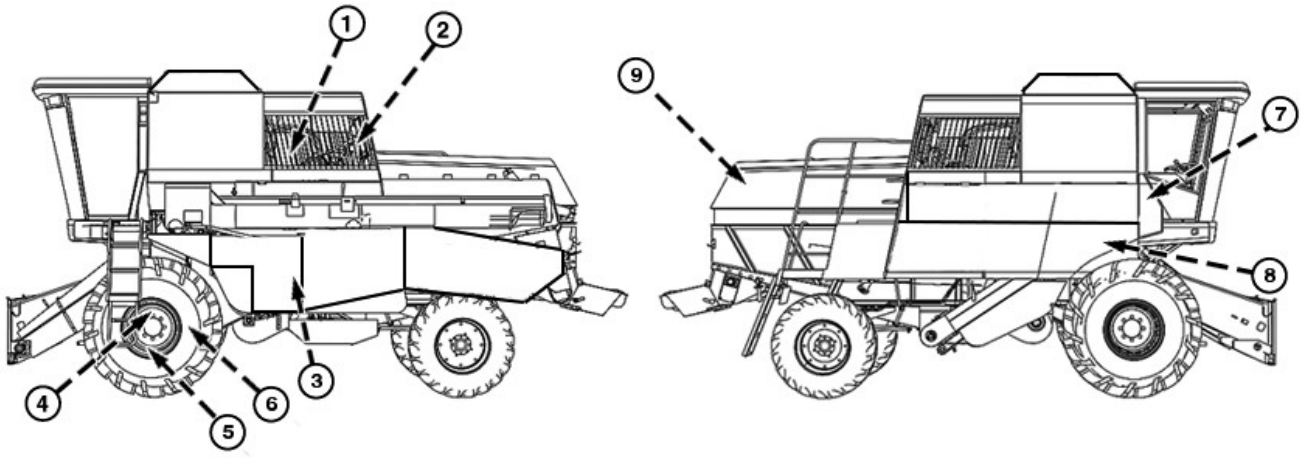


YC10909—UN—05JAN17

1. Check the tension of steel rope. See Adjust Steel Rope in Operating Machine section.

CP00718,00043DF-19-19DEC17

First 100 Hours

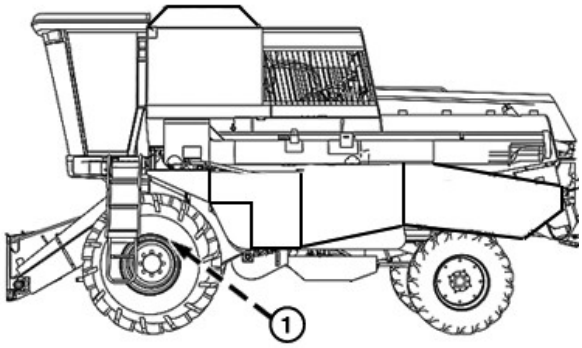


YC11021—UN—14FEB17

1. Change engine break-in oil and filter, fill oil as recommended. See Change Engine Oil and Replace Filter in Operating Engine section.
2. Change hydraulic oil and filter. See Change Oil of Hydraulic System and Hydraulic Oil Filter in Electrical, Hydraulic, and Drive Systems section.
3. Change hydrostatic oil and filter. See Hydrostatic Reservoir and Filter (Optional Hydrostatic Drive Type) in Electrical, Hydraulic, and Drive Systems section.
4. Change transmission oil. See Transmission in Electrical, Hydraulic, and Drive Systems section..
5. Change final drive oil. See Final Drive in Electrical, Hydraulic, and Drive Systems section..
6. Check and adjust ground drive clutch clearance. See Adjust Clutch Clearance in Electrical, Hydraulic, and Drive Systems section..
7. Change brake fluid. See Brake Fluid in Electrical, Hydraulic, and Drive Systems section.
8. Change separator speed reducer gear oil. See Threshing Cylinder Speed Reduction (Optional) in Operating Machine section.
9. Change separator drive gear oil. See Transmission Oil and Gear Oil Capacity in Operating Machine section.

CP00718,00043E0-19-19DEC17

Every 50 Hours

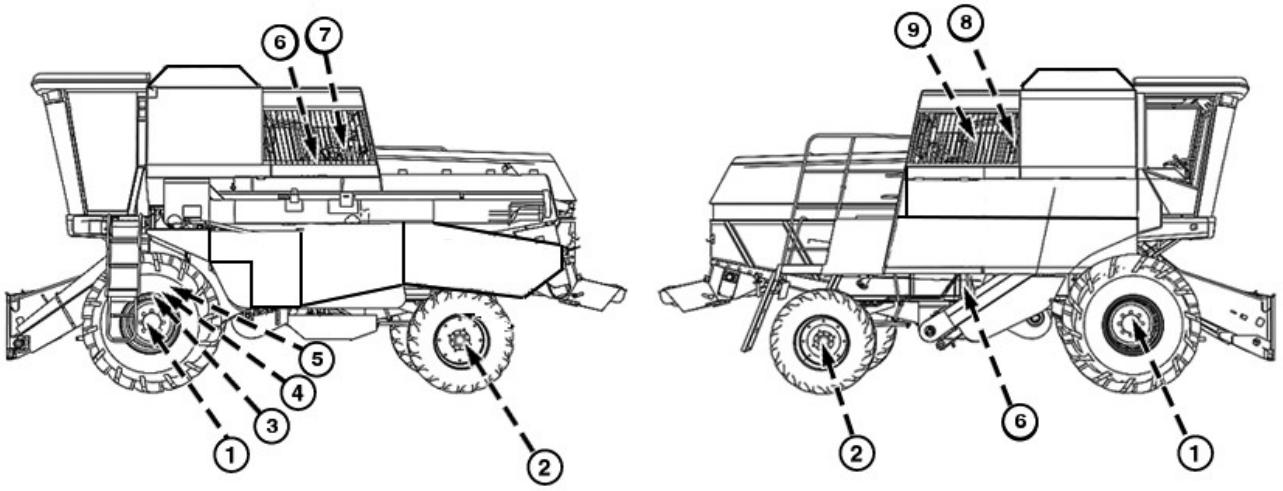


YC12071—UN—23AUG18

1. Check the clearance between the Posi-Torq lower unit, when it is fully closed.

CP00606,0001953-19-06AUG18

Every 200 Hours (Every Season)

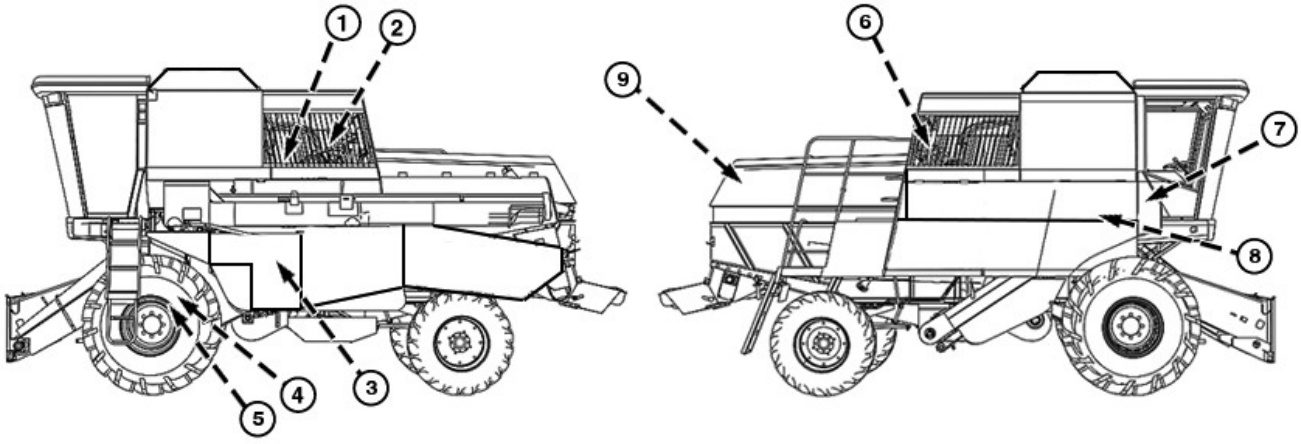


YC10906—UN—06JAN17

1. Tighten front attaching wheel nuts with torque 420 N·m.
2. Tighten rear wheel attaching bolts with torque 180 N·m.
3. Check and adjust service brake clearance. See Adjust Service Brake in Electrical, Hydraulic, and Drive Systems section.
4. Adjust the flexible cable of the park brake. See Adjust Park Brake in Electrical, Hydraulic, and Drive Systems section.
5. Check front axle bolts attached to frame. See Front Axle in Electrical, Hydraulic, and Drive Systems section.
6. Change primary fuel filter and final fuel filter elements. See Replace Fuel Filter Elements in Operating Engine section.
7. Change engine oil and filter. See Change Engine Oil and Replace Filter in Operating Engine section.
8. Check coolant level and fill as recommended. See Engine Coolant in Operating Engine section.
9. Check and tighten all clamps and connections of the turbocharger. See Turbocharger in Operating Engine section.

CP00718,00043E1-19-19DEC17

Every 500 Hours



YC11022—UN—14FEB17

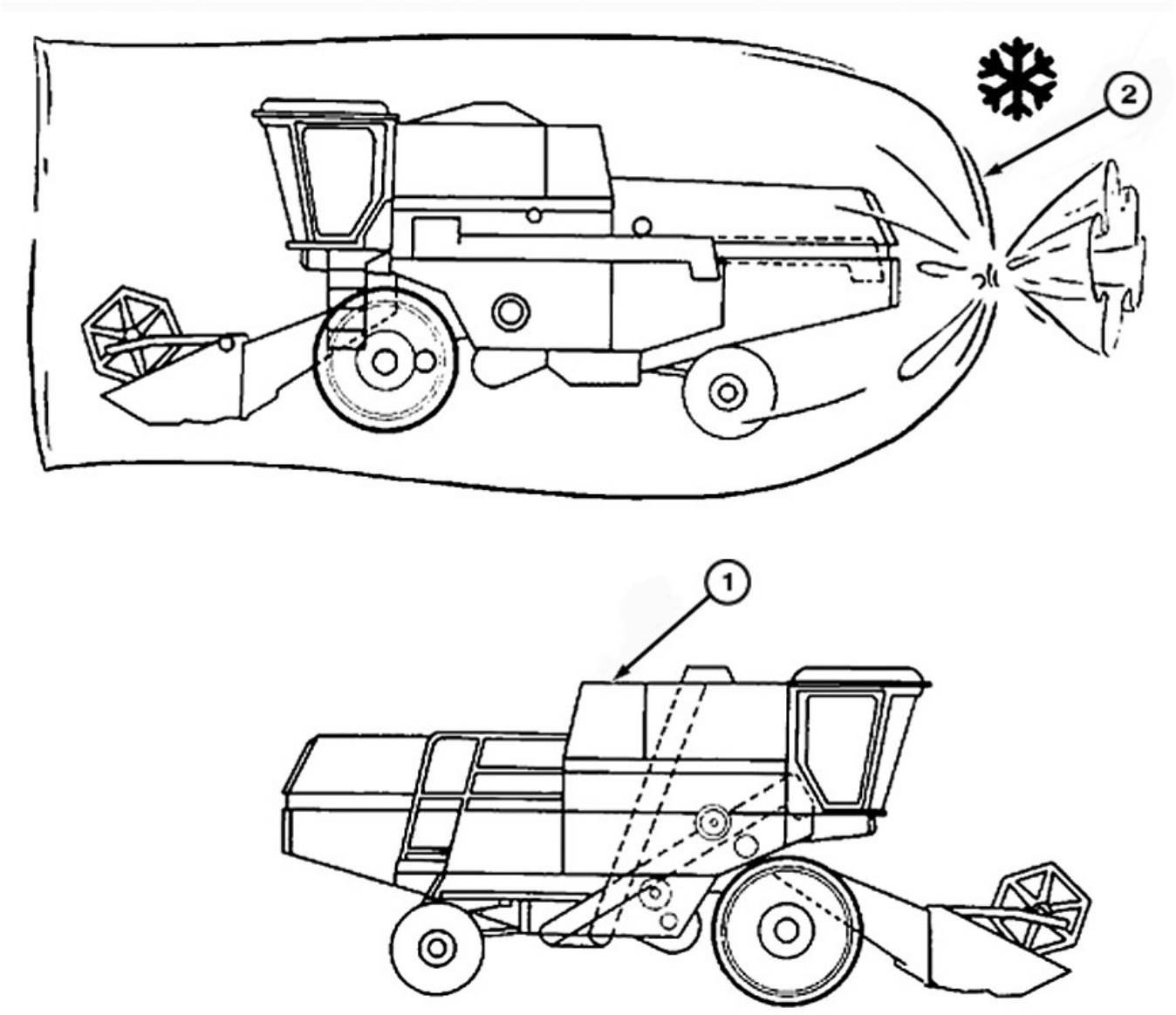
1. Check the starter. See Starter in Electrical, Hydraulic, and Drive Systems section.
2. Change engine oil and filter, fill oil as recommended.

See Change Engine Oil and Replace Filter in Operating Engine section.

3. Change hydrostatic oil and filter. See Hydrostatic Reservoir and Filter (Optional Hydrostatic Drive Type) in Electrical, Hydraulic, and Drive Systems section.
4. Change final drive oil. See Final Drive in Electrical, Hydraulic, and Drive Systems section.
5. Change transmission oil. See Transmission in Electrical, Hydraulic, and Drive Systems section.
6. Change hydraulic oil and filter. See Change Oil of Hydraulic System and Hydraulic Oil Filter in Electrical, Hydraulic, and Drive Systems section.
7. Change brake fluid. See Brake Fluid in Electrical, Hydraulic, and Drive Systems section.
8. Change separator speed reducer gear oil. See Threshing Cylinder Speed Reduction (Optional) in Operating Machine section.
9. Change separator drive gear oil. See Transmission Oil and Gear Oil Capacity in Operating Machine section.

CP00718,00043E2-19-19DEC17

Every Harvest Season



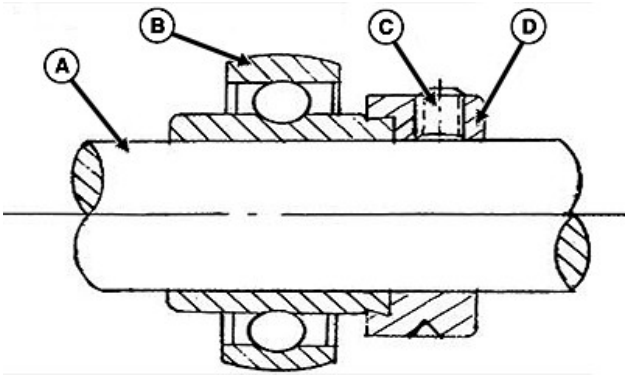
YC8233—UN—26JAN15

1. Clean engine rotary screen and radiator thoroughly.
2. Prevent the machine from corrosion.
3. Others see Storage Combine at the End of Harvest

Season in Maintenance, Storage, and Transportation of Combine section.

CP00718,00043E3-19-19DEC17

Removal and Installation of Bearings (390 xxx Series) with Eccentric Sleeve



YC2448—UN—03MAR13

A— Shaft
B— Bearing
C— Set Screw
D— Eccentric Sleeve

To Install:

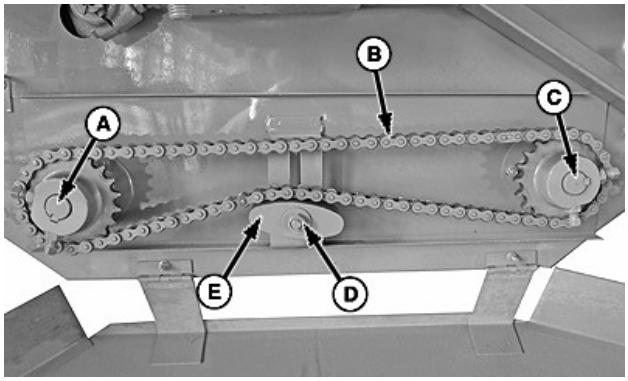
1. Install bearing (B) onto the shaft. Fasten it with the sidewall of the machine. (Before tightening the bearing seat mounting bolts, rotate the shaft for several rounds.)
2. Put on the eccentric sleeve (D). After determining the rotation direction of the shaft, tighten the eccentric sleeve (D) according to the rotation direction.
3. Put a punch against the blind hole on eccentric sleeve (D). Use a hammer to hit the punch until eccentric sleeve locks tightly.
4. Fasten set screw (C) with a hexagon wrench.

To remove:

1. Loosen set screw (C) with a hexagon wrench.
2. Put punch against the blind hole on eccentric sleeve (D). Use hammer to hit the punch, in the reverse direction of shaft rotation, until eccentric sleeve is loosened.
3. Remove eccentric sleeve (D). Remove bearing seat and bearing.

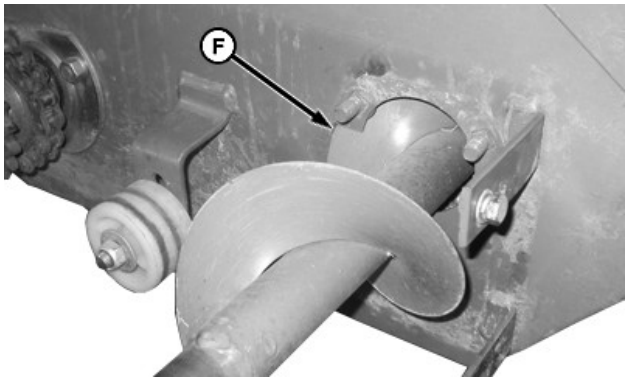
CP00718,00043E4-19-19DEC17

Removal and Installation of Grain and Tailing Auger



YC6030—UN—26DEC13

A— Grain Auger Shaft
B— Drive Chain
C— Tailing Auger Shaft
D— Nut
E— Tension Block



YC8150—UN—04MAR15

F— Gap

To remove:

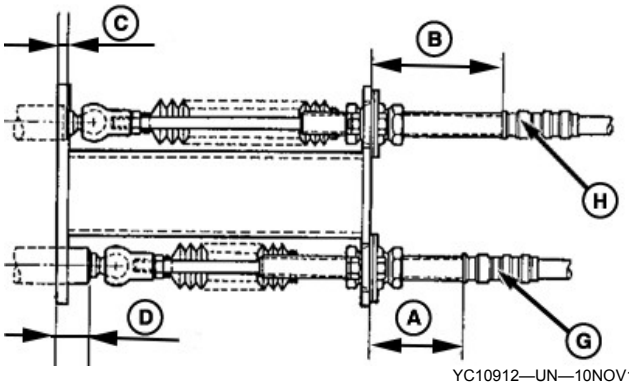
1. On the right side, remove bearing housing, bearing, elevator chain, and sprocket. On the left side, remove tension block (E), drive chain (B), sprocket, bearing housing, bearing, and cover. A gap (F) on the left sidewall is found.
2. Align auger blade with gap (F). Slowly swing auger out.

To install:

1. Align auger blade with gap (F) on the left sidewall, slowly swing auger in.
2. On the right side, install sprocket, elevator chain, bearing, and bearing housing. On the left side, install cover, bearing, bearing housing, sprocket, drive chain (B), tension block (E).

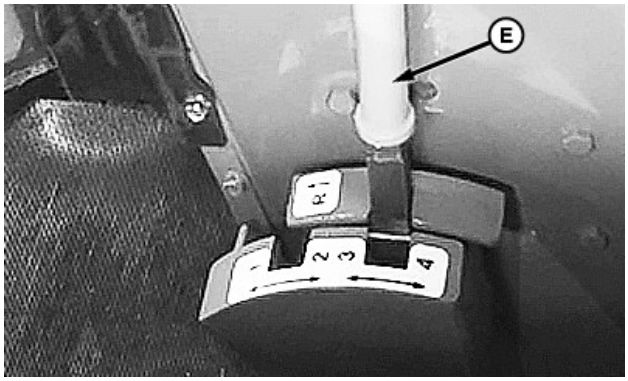
JL31334,00017C8-19-07MAY18

Adjustment of Variable Speed Cable



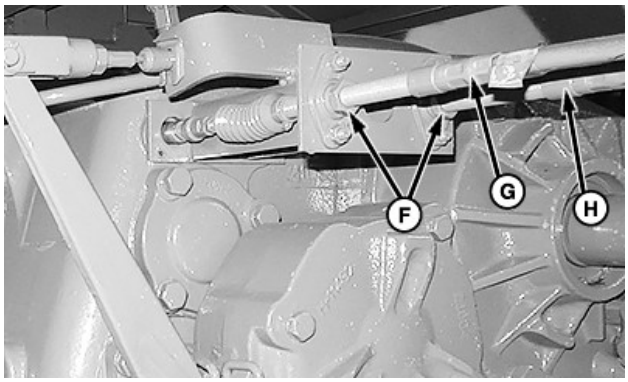
YC10912—UN—10NOV16

A— 65 mm
B— 85 mm
C— 5.56 mm
D— 17.29 mm
G— Cable
H— Cable



YC10877—UN—08DEC16

E— Gear-Shift Lever



YC10913—UN—08DEC16

F— Nuts (4 Used)
G— Cable
H— Cable

For a new machine, check the size of (A) and (B), as shown in the right diagram: A = 65 mm, B = 85 mm.

For a used machine, the length of cable has changed, adjust as follows:

1. Set gear-shift lever (E) at neutral position between three gear and four gear.

NOTE: Pull cables (G and H) separately because there is interlocking mechanism between the two shifting fork shafts.

2. Loosen nuts (F), make cable (G and H) in a free state.
3. Pull cables (G and H) until shifting fork shaft protrudes from gear case with required size: C = 5.56 mm, D = 17.29 mm.
4. Adjust the position of cable until A = 65 mm, B = 85 mm.
5. Tighten nuts (F) at both ends of the cable bracket.
6. Check and readjust as need.

JL31334,00017C9-19-07MAY18

Storage of Combine at the End of Harvest Season

Machine: If possible, store the combine in a dry, sheltered place. Before storing, check the following:

1. Clean thoroughly the inside of the combine and its outside. Prevent residue and dust from corroding or damaging machine.
2. Remove or loosen all V-belts.
3. Thoroughly clean all chains and grease them with a brush of thick oil to avoid corrosion.
4. Thoroughly clean augers, elevators, and shoes.
5. Take protective measures under the feeder house to avoid corrosion.
6. Thoroughly lubricate the combine according to the lubrication charts.
7. Grease threads of adjusting bolts and safety clutch.
8. Relieve tension on the springs.
9. Touch up all places where paints are damaged.
10. Leave the lower and top elevator openings open.
11. Lubricate all the metallic surfaces on the hydraulic cylinder pistons and retract them.
12. Lower the header onto blocks.
13. Strut the machine with wood blocks so that the wheels do not touch the ground. Leave tires inflated.
14. Due to limitations, the combine is parked in the open air, raise it and remove the wheels. Store the wheels in a ventilated and dry place.
15. Lubricate all the linkages and friction points that need lubrication.

Engine: Protect engine against corrosion, take the following measures:

1. Clean outside of the engine with a good solvent.

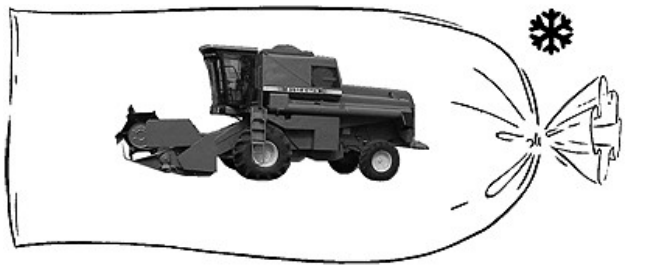
NOTE: Do NOT use gasoline.

2. Drain, wash the engine cooling system, refill recommended coolant.
3. Drain the engine oil and replace the filter, refill recommended oil .
4. Place cardboards between the fan belt and pulley to avoid adhesion.
5. Fill the tank full with fuel. Empty water and impurity in the primary filter.
6. Clean the engine air intake, replace the air filter elements.

Other: Remove and clean the battery. Store it in a proper place after charging.

CP00718,00043E7-19-19DEC17

Re-Use Combine



YC2449—UN—18OCT12

After long period of storage, the combine must be serviced in detail before the start of each season. Ensure that the machine is in good work condition.

Machine:

1. Install belts and properly adjust tension.
2. Adjust drive chain tension properly.
3. Adjust safety clutch spring pressure properly.
4. Close elevator openings .
5. Thoroughly lubricate the combine according to the lubrication charts.
6. Check battery and recharge the battery if needed. Install battery to the machine.
7. Check the tire inflation pressures.
8. Check fire extinguisher and charging as specification in the label.

CAUTION: Do not start the engine in a closed place to avoid suffocation. Tighten attaching bolts and nuts of front and rear wheels.

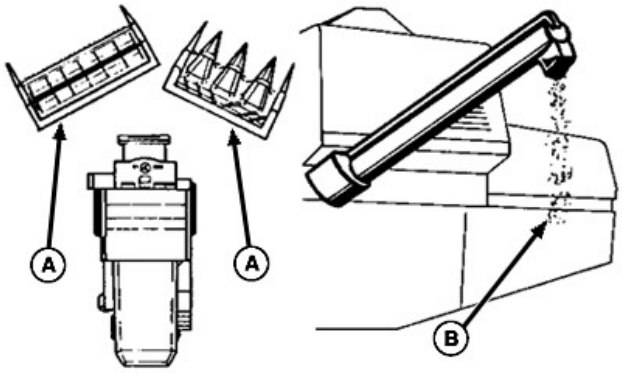
9. Run the combine at half throttle for an hour.
10. Check all bearings for overheating.

Engine:

1. Remove seal plugs in the filler cap and cardboards between the fan belt and pulleys.
2. Check coolant level.
3. Check engine oil level.
4. Run engine at lower idle speed until oil pressure indicator light goes out (about 5 seconds). Run the engine at half throttle for 5 minutes.
5. Run the engine with loaded and check for abnormal noise. Immediately switch off the engine and checks and repairs if abnormal.
6. Check all the hose and clamps. Contact the service center if leakage.

CP00718,00043E8-19-19DEC17

Transport Combine Under Own Power



YC2450—UN—05DEC12

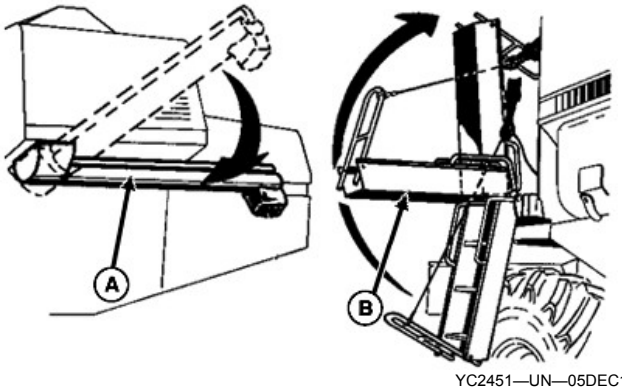
A— Header
B— Empty Grain Tank

Remove header (A) .

Empty grain tank (B).

CP00718,00043E9-19-19DEC17

Unloading Auger and Operator Station Ladder



YC2451—UN—05DEC12

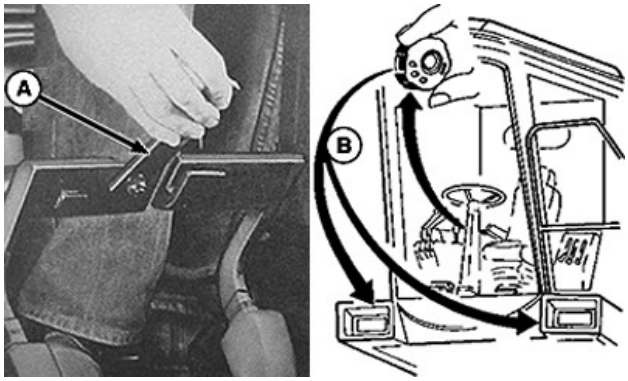
A— Unloading Auger
B— Operator Station Ladder

Swing in unloading auger (A).

Fold operator station ladder (B) upward and secure.

CP00718,00043EA-19-19DEC17

Service Brake Pedals and Lights



YC1687—UN—09DEC12

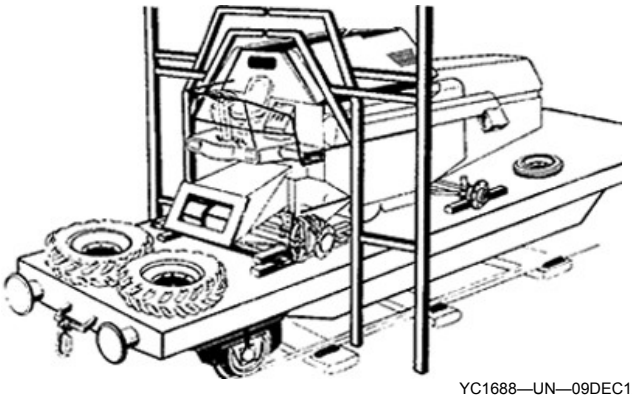
A— Service Brake Pedal
B— Lights

Couple service brake pedals (A) together for driving on public roads.

Switch on lights (B) when necessary.

CP00718,00043EB-19-19DEC17

Transportation Preparation of Combine



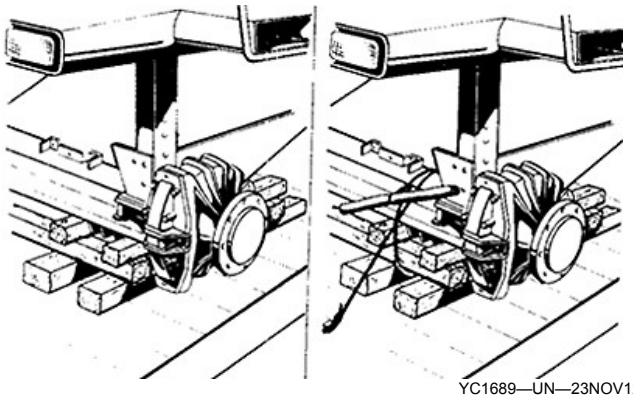
YC1688—UN—09DEC12

CAUTION: Place the combine in horizontal state on trailer for avoiding tilting.

If the combine is too high or too wide to be transported, remove front and rear wheels and secure the combine safely onto the trailer.

CP00718,00043EC-19-19DEC17

Secure Combine



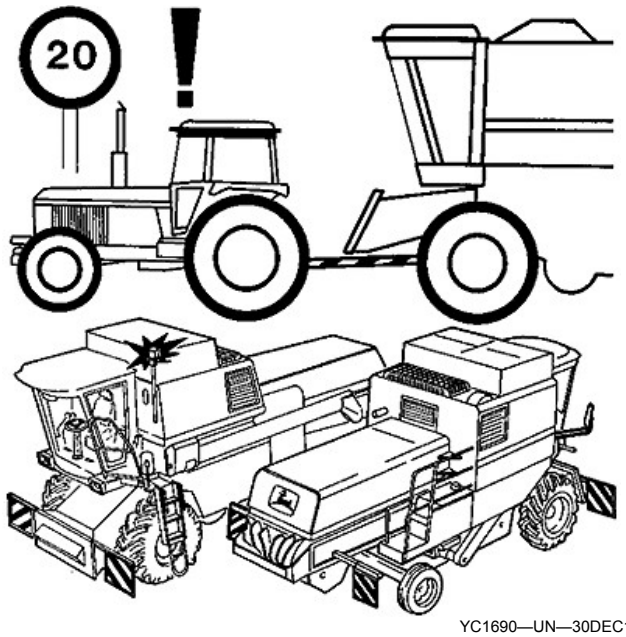
YC1689—UN—23NOV12

IMPORTANT: Lower the combine to wooden blocks for supporting. Never place final drives on trailer.

Use appropriate bindings and wooden blocks to secure front and rear axles of combine on the trailer.

CP00718,00043ED-19-19DEC17

Tow Combine



YC1690—UN—30DEC13

CAUTION: Never tow combine with a wire rope. Always use a suitable tow bar. Reliably connect tow bar to the suitable locations of front axle.

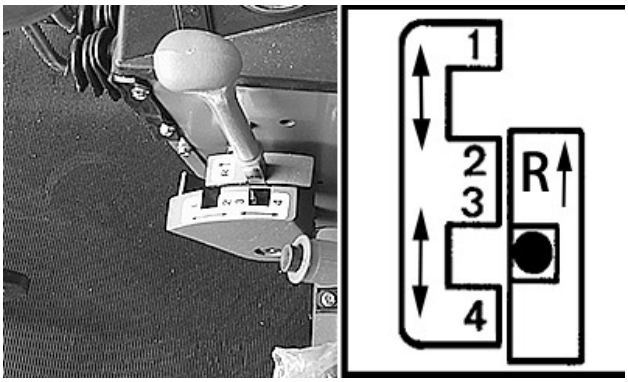
IMPORTANT: Towing at speeds higher than 20 km/h could damage tires, transmission, and final drive.

Turn warning lights ON when towing the machine.

IMPORTANT: Towing hitch on the rear axle is only for header towing. Never attempt to tow the machine from the header towing hitch.

CP00718,00043EE-19-19DEC17

Place Gear-Shift Lever at Neutral Position



YC12592—UN—01MAR18

IMPORTANT: Disengage park brake.

NOTE: Move gear-shift lever to neutral position as shown.

CP00606,00017DA-19-25MAY18

Fire Prevention

Fire Prevention Recommendations

Machine must be inspected periodically throughout the working day. Build up of crop material and other debris must be removed to ensure proper machine function and to reduce the risk of fire.

Regular and thorough cleaning of machine, combined with other routine maintenance procedures listed in this Operator's Manual greatly reduces risk of fire, chance of costly downtime and improves machine performance.

Always follow all safety procedures posted on the machine and in the Operator's Manual. Before carrying out any inspection or cleaning, switch off the engine, set park brake and remove key.

Machine is equipped with the fire extinguisher. Extinguisher must be checked daily when entering or exiting cab and when working around the machine to ensure that it is in working condition. Fire extinguishers must be replaced or professionally serviced after any use.

For additional information, see related contents in Machine Cleanout section.

CP00718,00043F0-19-19DEC17

Use Fire Extinguisher

About how to use the fire extinguisher, see Use Fire Extinguisher in Safety Instructions and Safety section.

CP00718,00043F1-19-19DEC17

Handle Fluids Safely—Avoid Fires



TS227—UN—15APR13

When you work around fuel, do not smoke or work near heaters or other fire hazards.

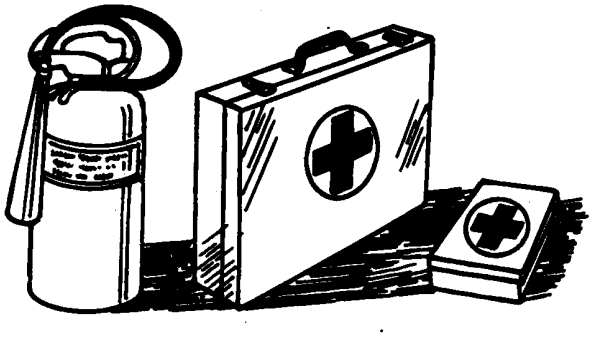
Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

DX,FLAME-19-29SEP98

Prepare for Emergencies



TS291—UN—15APR13

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

DX,FIRE2-19-03MAR93

Handle Starting Fluid Safely



TS1356—UN—18MAR92

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. Keep starting fluid away from batteries and cables.

To prevent accidental discharge when storing the pressurized can, keep the cap on the container, and store in a cool, protected location.

Do not incinerate or puncture a starting fluid container.

Do not use starting fluid on an engine equipped with glow plugs or an air intake heater.

DX,FIRE3-19-14MAR14

Remove Accumulated Crop Debris



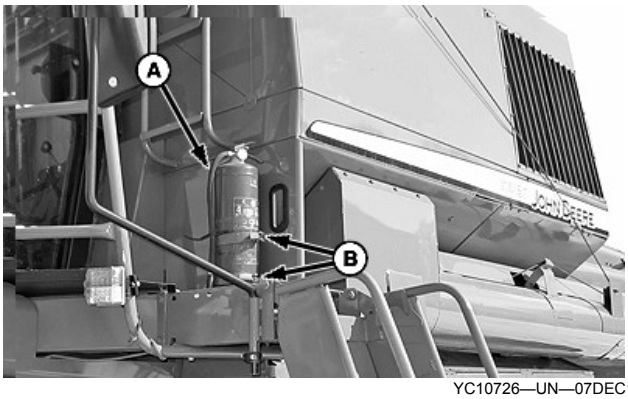
TS227—UN—15APR13

The buildup of chaff and crop debris in the engine compartment, on the engine, and near moving parts is a fire hazard. Check and clean these areas frequently. Before performing any inspection or service, shut off the engine, set the park brake and remove the key.

CP00718,00043F4-19-19DEC17

Fire Extinguisher Locations

NOTE: If fire extinguisher is not equipped with machine, must order from the local dealer.



YC10726—UN—07DEC16

A— Fire Extinguisher
B— Clamp (2 Used)

The fire extinguisher (A) is on the left side of cab, closed to the grain tank. To remove fire extinguisher, loosen clamps (B) on the bracket and remove fire extinguisher from the bracket.

CP00606,00018C7-19-29MAY18

In Case of Fire

Stop harvesting immediately at first sign of fire. This may be the smell of smoke or the sight of smoke or flames.

Do not risk personal injury. If a fire is too far advanced, do not try to extinguish it.

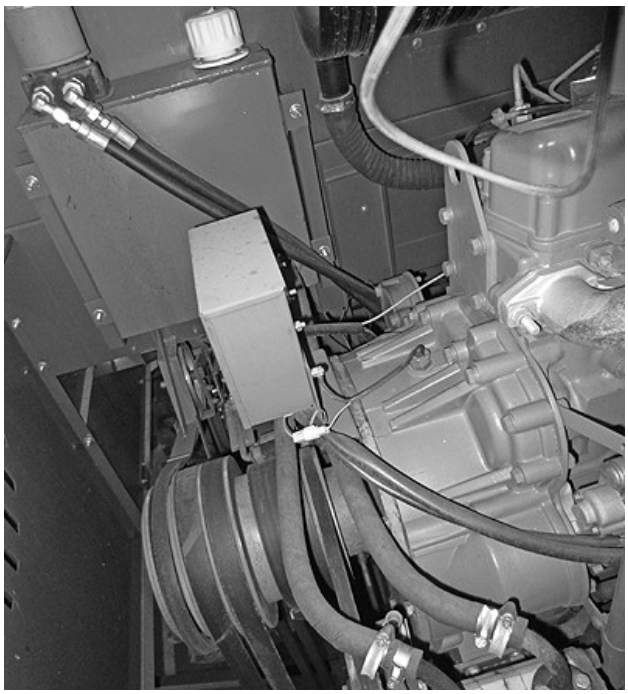
If fire can be safely extinguished, proceed carefully and follow these guidelines:

1. Remove fire extinguisher from the bracket and carry to area of fire.
2. Approach area of fire with wind to your back.
3. Pull safety pin from top of extinguisher.
4. Hold extinguisher upright by handles and aim hose at the base of flames.
5. Squeeze handles to discharge fire extinguisher.
6. Move nozzle back and forth, covering flames with a cloud of powder or water.

CP00718,00043F6-19-19DEC17

Clean Engine Compartment

CAUTION: Do not clean engine or engine compartment with engine running.



YC6000—UN—17DEC13

Dirt, oil, chaff, and crop debris in the engine compartment and on the engine is a fire hazard. Direction of wind, type of crop and its moisture content can all have an effect on where and how much chaff and debris accumulate. Check and clean these areas frequently.

CP00718,00043F7-19-19DEC17

Machine Cleanout

General Cleaning Guidelines

Machine must be inspected periodically throughout the harvest days. Buildup of crop material and other debris must be removed to ensure proper machine function and to reduce the risk of fire.

Frequency of inspections and cleanings vary depending on a number of factors, including operating conditions, machine settings, crop conditions, operating speeds, and weather conditions. Inspections and cleanings are required multiple times throughout the harvest day, particularly in dry, hot, and windy conditions.

Some of these photographs show accumulations of crop material and other debris before cleaning. This type of accumulation is not normal; it was allowed for illustrative purposes only.

IMPORTANT: Regular and thorough cleaning of machine combined with other routine maintenance procedures listed in the Operator's Manual greatly reduce the risk of fire, chance of costly downtime, and improve machine performance.

Crop material and other debris can accumulate in various areas. Direction of wind, type of crop, and crop moisture content can all impact where and how much crop material and debris can accumulate. Be aware of harvest conditions and adjust your cleaning schedule to ensure proper machine function and to reduce the risk of fire. Inspect and clean these areas as needed throughout the harvest day.

Main areas that required to be inspected and cleaned frequently are:

- Engine compartment
- Engine cooling system
- Fuel tank
- Cleaning fan
- Trough
- Separating device
- Wiring harnesses and oil lines
- Gear case

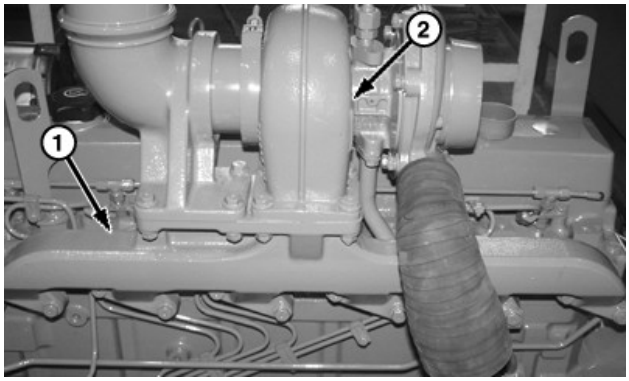
Although some other areas also are required to clean regularly, but these areas are more frequently to clean with compressed air.

Always follow all safety procedures posted on the machine and in the Operator's Manual. Before carrying out any inspection or cleaning, always shut OFF engine, set park brake and remove key.

CP00718,00043F8-19-19DEC17

Engine Compartment

These areas around engine compartment are inspected and cleaned throughout the entire harvest day.



YC6908—UN—20MAY14



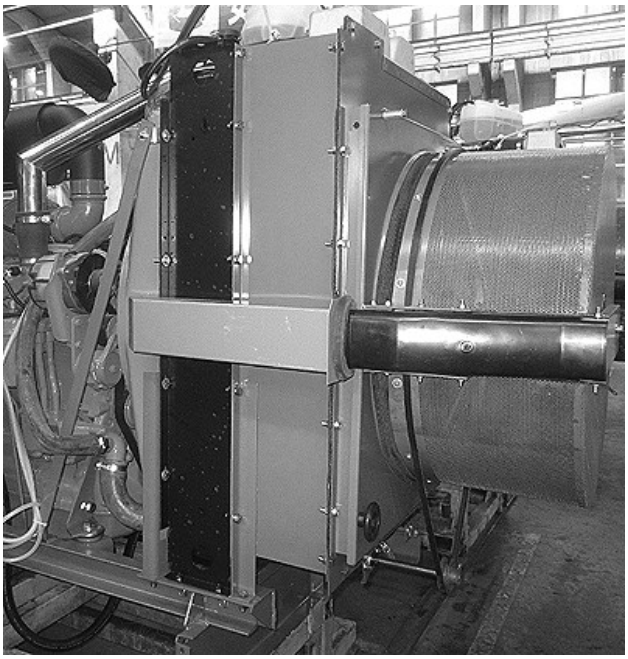
YC6002—UN—18DEC13

1. Exhaust manifold
2. Turbocharger
3. Below the engine

CP00718,00043F9-19-19DEC17

Engine Cooling System

These areas around engine cooling system are inspected and cleaned throughout the entire harvest day.



YC3958—UN—01APR13

CP00718,00043FA-19-19DEC17

Fuel Tank

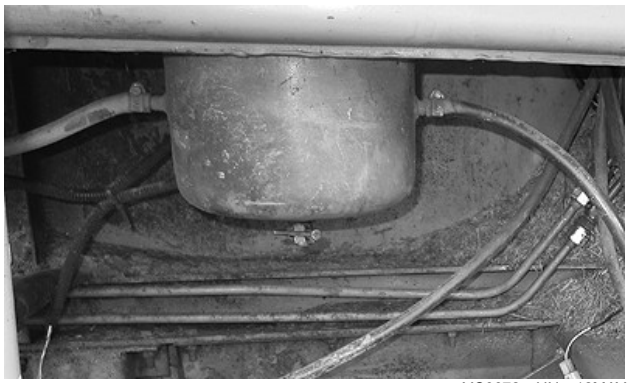
CAUTION: If oil leakage is found, stop the machine immediately. Locate the leak. Never start the machine before it has been repaired.

Regularly inspect and clean the upper part, lower part, and sides of the fuel tank and around the fuel transfer pump throughout the entire harvest day.



YC6693—UN—14MAY14

Upper



YC6672—UN—12MAY14

Lower



YC6694—UN—14MAY14

Side



YC6682—UN—14MAY14

Fuel Transfer Pump

CP00606,00017DB-19-25MAY18

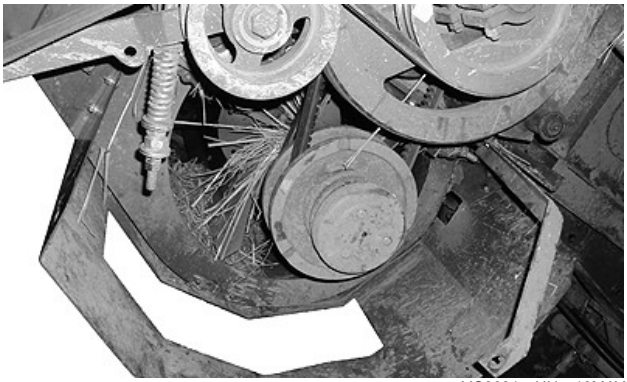
Cleaning Fan

These areas around cleaning fan are inspected and cleaned throughout the entire harvest day.



YC6686—UN—13MAY14

Left-Hand Side



YC6681—UN—13MAY14

Right-Hand Side

CP00606,00017DC-19-25MAY18

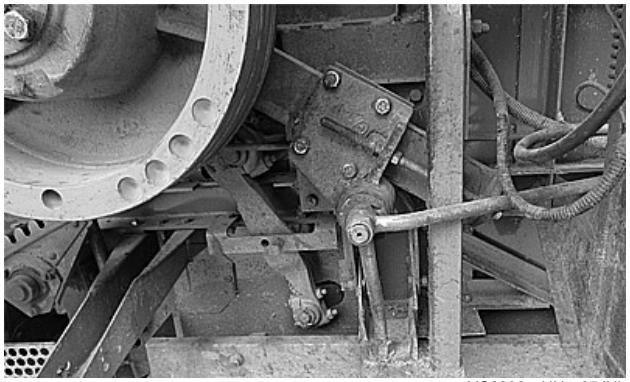
Trough

These areas around trough are inspected and cleaned throughout the entire harvest day.



YC6683—UN—13MAY14

Right-Hand Side



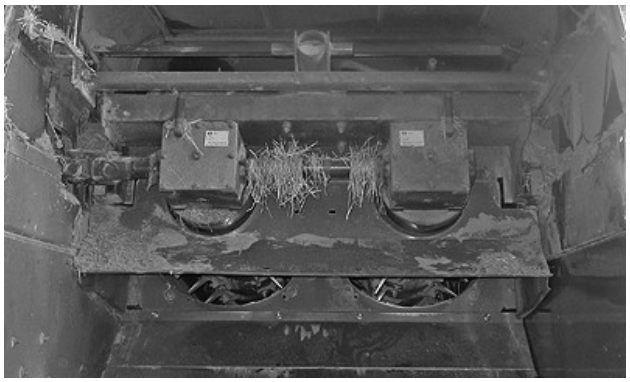
YC8892—UN—07JUL15

Left-Hand Side

CP00606,00017DD-19-25MAY18

Separator

These areas around the separator are inspected and cleaned throughout the entire harvest day.

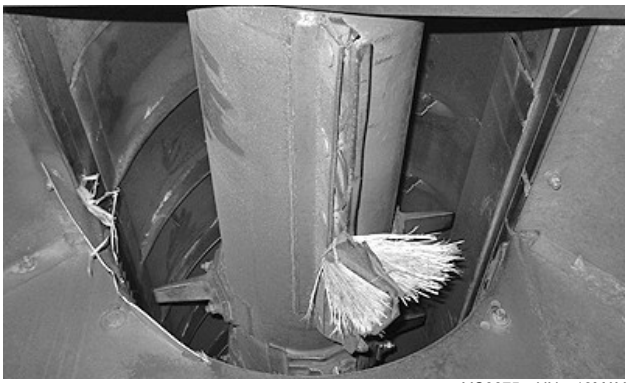


YC6695—UN—20MAY14

Gear Case

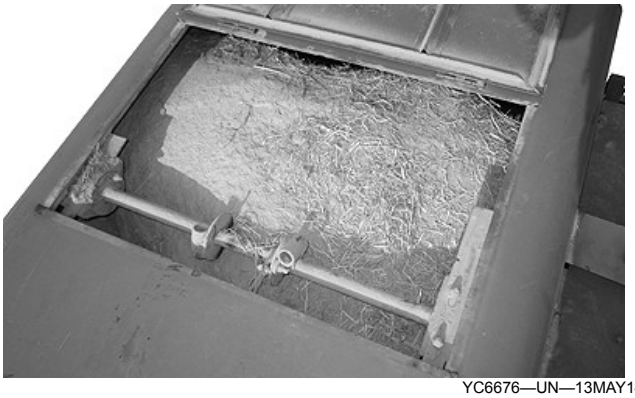


YC6696—UN—20MAY14



YC6675—UN—13MAY14

Separator



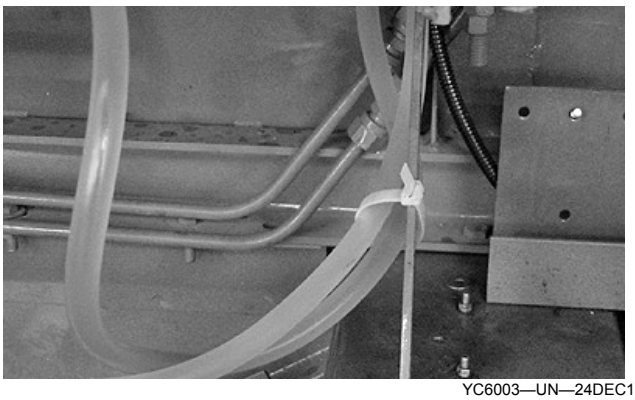
YC6676—UN—13MAY14

Upper

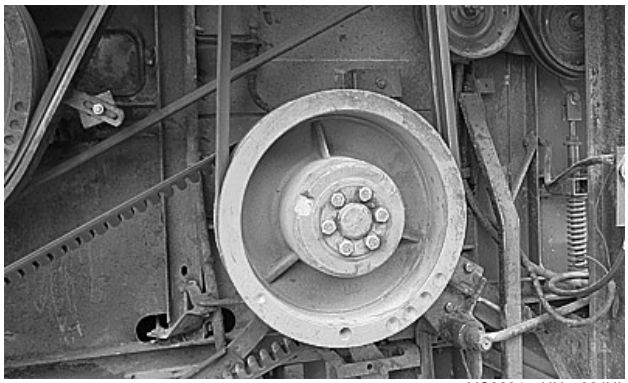
CP00606,00017DE-19-25MAY18

Wiring Harnesses and Oil Lines

These areas around wiring harnesses and oil lines are inspected and cleaned throughout the entire harvest day.



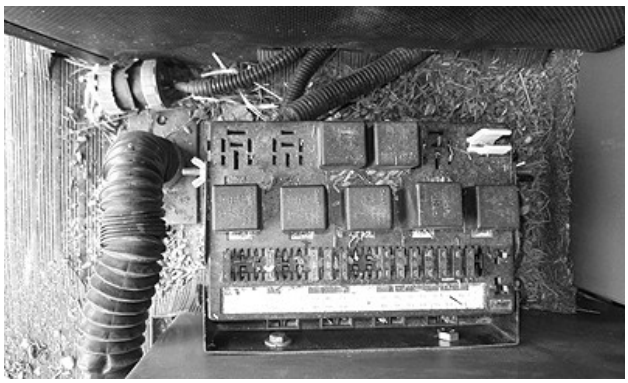
YC6003—UN—24DEC13



YC8894—UN—08JUL15



YC6677—UN—13MAY14

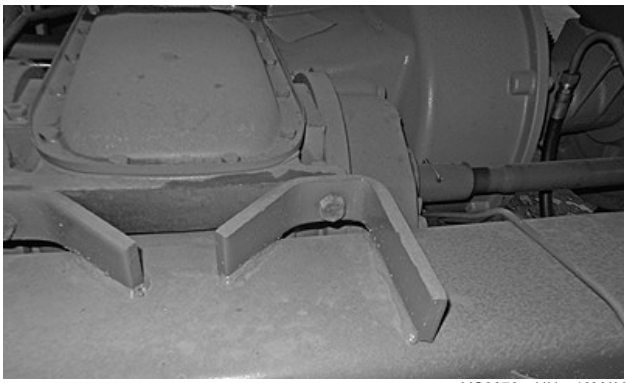


YC6692—UN—13MAY14

CP00606,00017DF-19-25MAY18

Gear Case

These areas around gear case and oil lines are inspected and cleaned throughout the entire harvest day.

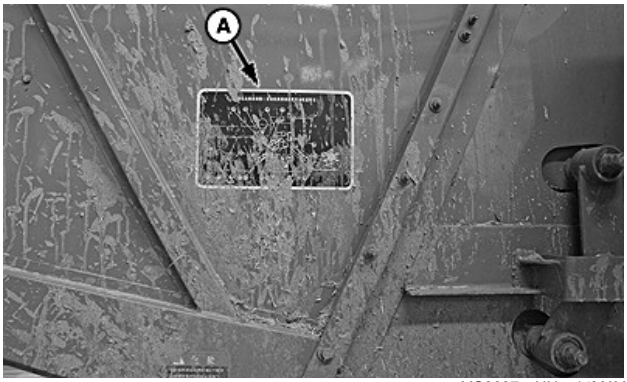


YC6673—UN—13MAY14

CP00718,0004400-19-19DEC17

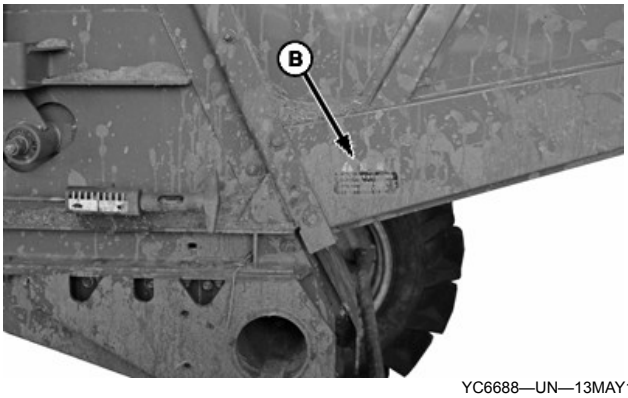
Labels

All labels are inspected and cleaned throughout the entire harvest day.



YC6687—UN—14MAY14

A— Lubrication Label



YC6688—UN—13MAY14

B— Safety Sign

JL31334,00017CA-19-07MAY18

Analysis and Troubleshooting of Common Failures

Analysis and Troubleshooting of Failures

Most harvester usage problems are due to incorrect adjustments.

In failure analysis, potential problems are listed with corresponding recommended solutions for the operator.

CP00718,0004139-19-14DEC17

Feeder House

Symptom	Problem	Solution
Uneven or bundle-like feeding to cylinder.	Cutter central auger is too high.	Adjust central auger downward. Refer to header operator's manual.
	Front part of feeder house chain is adjusted too high.	Adjust the feed rolls so that conveyor chain plate is separated from feeder house floor with appropriate clearance.
	Feeder house chain is too tight. Feed rolls are pulled upwards.	Adjust conveyor chain with proper tension.
	Cutter drive belt slips.	Spring tensioner pulley should press on drive belt properly and firmly.
	Central auger, compared to the anti-wrapped board, is too much forward.	Adjust auger backward towards anti-wrapped board. Refer to header operator's manual.
	Feeder house drive belt slips.	Adjust tension of drive belt.
	Feeder house chain slat is damaged.	Straighten or replace the feeder house chain slat.
	Dirt, stems, and leaves accumulate on feeder house floor.	Clean feeder house floor.
Cutter or reel cannot be lifted correctly.	Air is in the hydraulic system.	Fix leaks and bleed air from reel lifting system.

CP00718,000413A-19-14DEC17

Threshing and Cleaning System

Symptom	Problem	Solution
Cylinder fails to operate in high speed.	Drive belt is loose.	Adjust drive belt.
Cylinder is clogged or overloaded.	Engine speed is not correct.	Ask professionals to repair it.
	Clearance between concave and cylinder is too small or too big.	Adjust clearance between concave and cylinder.
	Cylinder rotation speed, relative to the crop, is too low.	Increase cylinder rotation speed.
	Too much crop entering the cylinder.	Reduce driving speed.

Symptom	Problem	Solution
Cylinder suffers from reverse feeding.	Engine speed is not correct.	Ask professionals to repair it.
Grain is not threshed completely.	The crop is not suitable for threshing.	Test crop humidity before harvest.
	Cylinder rotation speed is too slow.	Increase cylinder rotation speed until a good threshing result is achieved, but do not increase the speed to a critical point where grain is crushed.
	Clearance between cylinder and concave is too big.	Reduce clearance between cylinder and concave to enhance threshing.
	Feeding to cylinder is uneven.	Check the tightness of feeder house chain and its floating state during conveying.
	Not enough materials enter the harvester. Threshing is not good.	Increase driving speed.
Grain in the grain tank is seriously crushed.	Cylinder rotation speed, relative to the crop, is too high.	Reduce cylinder rotation speed until grain is not crushed, but good threshing should still be kept. And/Or, slightly widen the threshing clearance.
	Clearance between cylinder and concave is too small.	Increase the clearance between cylinder and concave until crushing stops.
	Too much grain is in the tailings. Grain is crushed during rethreshing.	Slightly increase the opening degree of sieve, to reduce tailings.
		Reduce fan speed.
	Not enough materials enter the harvester.	Increase driving speed.
	Damaged auger trough or bent auger flighting.	Straighten the auger trough, auger flighting, or auger shaft. Replace it as needed.
Grain is lost in the separator.	Grain is lost in the separator. Loss in cleaning chamber is zero or low.	Remove the closed cover on separation cylinder concave and change the tines (starting with 2—3 pieces per side).
		Reduce driving speed.
There is nearly no bran in tailings. Grain in grain tank is clean.	Fan speed is too high and/or the opening degree of chaffer is not enough.	Reduce fan speed and/or increase the opening degree of chaffer.
There is some bran in the tailings. Grain in grain tank is clean.	Opening degree of sieve is too small.	Increase the opening degree of sieve.

Symptom	Problem	Solution
There is a large amount of bran in the tailings. Cleanliness of grain in grain tank is low.	Opening degree of sieve is too small. Fan speed is too low.	Increase the opening degree of sieve. Increase fan speed.
There is too much debris (grated weeds) in tailings.	Opening degree of chaffer and chaffer extension is too much when there are many weeds.	Reduce the opening degree of chaffer and chaffer extension.
	Cylinder rotation speed is too high and threshing clearance is too little.	Reduce cylinder speed and/or increase the clearance between cylinder and concave.
Grain in grain tank is not clean (incompletely threshed spikes).	Opening degree of sieve is too much.	Reduce opening degree of sieve.
	Incomplete threshing occurs in cylinder.	Increase cylinder rotation speed and/or decrease clearance between cylinder and concave.
Grain in grain tank is not clean (mostly bran).	Fan speed is too low.	Increase fan speed.
Grain is lost in cleaning chamber (grain in grain tank is clean).	Chaffer is closed.	Open chaffer.
	Fan speed is incorrect.	Adjust fan speed. Check tailings, loss, and cleanliness of grain in grain tank.
	Separation cylinder drops too many materials resulting in grain loss in cleaning chamber (no grain loss in separation cylinder).	Remove some finger plates from the rear of separation cylinder concave. Replace them with blocking plates.
Serious grain loss happens (when feed rate is low or high).	Fan speed is too high.	Reduce fan speed.
	Opening degree of chaffer is not enough.	Increase the opening degree of chaffer.
Serious grain loss happens (only when feeding volume is high).	Fan speed is too low.	Increase fan speed.

CP00718,000413B-19-14DEC17

Ground Drive System

Symptom	Problem	Solution
Ground drive belt (in the entire speed range) is too tight.	CVT speed does not adjust.	Fully lubricate the moving plate cam. Remove rust. Replace worn parts.
It is difficult or fails to change speed.	Clutch is not separated.	Check the oil level in oil tank and check if the clearance at separate lever is correct. Take appropriate actions to solve the problem.
	Variable speed cable is adjusted improperly.	Adjust variable speed cable.

Symptom	Problem	Solution
	Variable speed cable is damaged, dirty, corroded, or pressed.	Check, clean, adjust, or replace cable.
	Gearbox has internal problem.	Ask professionals to repair it.

CP00718,000413C-19-14DEC17

Rear Drive Axle (Optional)

Symptom	Problem	Solution
Noise of central drive increases	Small bevel gear shaft bearing clearance is too large	Readjust
	Gears mesh abnormally	Readjust meshing prints
	Differential shaft is worn, stuck	Replace
	Planetary gear or pad is worn	Replace
	Differential bearing is worn or damaged	Replace
Bearing is overheated	Bearing preload is too much	Readjust
	Lubrication is inadequate	Check oil level and refill when needed
	Bearing or gear clearance is too small	Readjust
Final drive has abnormal sound	Final drive gears are not meshed	Replace
	Bearing is worn or damaged	Replace
Steering is difficult	Steering cylinder oil leaks	Repair or replace
Steering fails	Steering cylinder piston is damaged	Replace
Final drive oil leaks	Rotary seal is damaged	Replace
Central drive oil leaks	Oil seal collar and seal ring are damaged	Replace
Small bevel gear or spiral bevel gear is stuck	Small bevel gear shaft and spiral bevel gear are not installed correctly	Replace
Rear tires are seriously worn	Rear wheel rim or spoke is seriously deformed	Adjust rear wheel rim or spoke
	Toe-in is not adjusted correctly	Adjust toe-in
	Knuckle is seriously worn	Replace pin shaft
	Tire pressure is insufficient during transport operations	Inflate tires as required

Symptom	Problem	Solution
	Rear drive power input is not cut off during transport operations	Disengage Rear Drive Axle Power Input During Transport

CP00718,000413D-19-14DEC17

Steering System

Symptom	Problem	Solution
Rear wheels swing in transport speed.	Toe-in is not adjusted properly.	Adjust toe-in.
When steering at the limit position, steering arm does not contact the stopper.	Steering cylinder is not adjusted properly.	Adjust steering cylinder.

CP00718,000413E-19-14DEC17

Braking System

Symptom	Problem	Solution
Brake pedals are soft and weak.	Brake fluid level is low and/or there is air in the system.	Check for leakage. Add brake fluid or bleed air from the system.
Braking force is insufficient.	Worn parts and improperly adjusted brakes.	Ask professionals to repair it.

CP00718,000413F-19-14DEC17

Engine

Symptom	Problem	Solution
It is difficult or fails to switch on the engine.	There is no fuel.	Fill and bleed air from fuel system.
	Water separator bowl is blocked.	Replace filter element.
	There is water, dirt, or air in the fuel system.	Drain water. Clear away the dirt. Refill oil and bleed air from the system.
	Fuel filter element is blocked.	Replace filter element and bleed air.
	Fuel brand is not correct.	Use appropriate fuel according to the conditions of use.
	Fuel pump has wire coupling problem.	Check fuel pump wires.
	Fuel injector nozzle is dirty or defective.	Ask professionals to repair it.
	Actuation circuit impedance is too high.	Clean and tighten battery as well as circuit of start relay.
	Viscosity of crankcase oil is too high.	Drain it away and refill oil of suitable viscosity and quality.

Symptom	Problem	Solution
	System pressure is insufficient.	Ask professionals to repair it.
Engine vibrates too much.	Engine oil is insufficient.	Fill in engine oil of suitable viscosity.
	Fuel system has gases inside.	Bleed air from the fuel system.
	Fuel pump has problem.	Ask professionals to repair it.
	Injector valve is stuck.	Ask professionals to repair it.
	Engine has internal problem.	Ask professionals to repair it.
Engine operates unstably and often stops.	Coolant temperature is low.	Run the preheat engine.
	Water separator bowl is blocked.	Replace filter element.
	Fuel filter element is blocked.	Replace filter element and bleed air.
	There is water, dirt, or air in the fuel system.	Drain water. Clear away the dirt. Refill oil and bleed air from the system.
	Fuel injector nozzle is dirty or defective.	Ask professionals to repair it.
	Fuel pump has problem.	Ask professionals to repair it.
	Valve push rod is bent or valve is stuck.	Ask professionals to repair it.
Power is insufficient.	Water separator bowl is blocked.	Replace filter element.
	Engine is over-heated.	Refer to "Engine is over-heated" below.
	Intake air is restricted.	Clean air filter.
	Fuel filter element is blocked.	Replace filter element and bleed air from the system.
	High altitude operation is required.	With increasing altitude, engine will lose part of the power. Use correct high-altitude fuel.
	Fuel injector is dirty or defective.	Ask professionals to repair it.
	Fuel pump has problem.	Ask professionals to repair it.
	Intake air leaks.	Check for leakage and repair.
Engine is over-heated.	Coolant is insufficient.	Add sufficient coolant to radiator.
		Check hose or radiator for leakage. Check if joints are loose.

Symptom	Problem	Solution
	There is dirt on radiator or rotary screen.	Clean radiator and rotary screen.
	Rotary screen does not move.	Drive belt is broken.
		Drive belt is off the pulley groove.
	Fan drive belt is loose or broken.	Replace the worn drive belt.
	Scale forms in cooling system.	Drain and flush cooling system.
	Thermostat is defective.	Remove and check thermostat.
	Vacuum duct is clogged.	Clean vacuum duct.
	Fan speed is low.	Increase fan speed.
Engine oil pressure is low.	Engine oil level is low.	Check crankcase oil level and refill oil when needed.
	Engine oil brand is incorrect.	Drain the oil away. Refill engine oil of appropriate viscosity to crankcase.
	Engine oil radiator is clogged.	Ask professionals to repair it.
Engine oil consumption is too high.	Air intake system has high resistance.	Check air filter and clean air inlet.
	Engine oil leaks.	Check pipes, sealed components, and the area near drain plug for leakage.
	Viscosity of crankcase oil is too low.	Drain the oil away. Refill engine oil of appropriate viscosity to crankcase.
	Engine oil radiator is clogged.	Clean engine oil radiator.
	Cylinder scuffs.	Ask professionals to repair it.
	Internal parts are worn.	Ask professionals to repair it.
Engine fuel consumption is too high.	Air filter is dirty or clogged.	Clean air filter.
	Fuel brand is not correct.	Use correct fuel brand according to the conditions of use.
	Fuel injector is dirty or defective.	Ask professionals to repair it.
	Engine timing fails.	Ask professionals to repair it.
Engine emits black or gray smoke.	Air filter is dirty or clogged.	Check if air filter is clogged. Clean filter element.
	Fuel brand is not correct.	Use correct fuel brand according to the conditions of use.

Symptom	Problem	Solution
	Fuel injector is dirty or defective.	Ask professionals to repair it.
	Air is inside the fuel supply system.	Bleed air from the fuel supply system.
	Muffler is defective.	Check if muffler is damaged that generates back pressure.
	Engine timing fails.	Ask professionals to repair it.
Engine emits white smoke.	Temperature of engine block is low.	Pre-heat the engine to operating temperature.
	Fuel brand is not correct.	Fuel with low cetane number cannot start the engine. Use fuel with correct cetane number.
	Thermostat is defective.	Remove and check thermostat.

CP00718,0004140-19-14DEC17

Electrical System

Symptom	Problem	Solution
Battery cannot be charged.	Alternator belt is loose or defective.	Adjust the tightness of the belt or replace the damaged belt.
	Wiring connections are loose or corroded.	Clean and tighten battery wiring.
	Alternator or voltage regulator functions improperly.	Ask professionals to repair it.
Starter starts slowly or cannot start.	Start relay does not work.	Check the relay and wiring.
	Battery wiring connections are loose or corroded.	Clean and tighten the loose wiring connections.
	Key switch is worn or wiring terminal is loose.	Check switch and wiring.
	Viscosity of crankcase oil is too high.	Drain the oil away. Refill engine oil of appropriate viscosity to crankcase.
	Battery is insufficiently charged.	Charge the battery.
	Starter is defective.	Repair or replace the starter.
Alternator fails to generate power.	Wiring connections are bad or wrongly connected.	Refer to schematics and wiring diagram to check and ensure that all points are properly contacted.
	Starter coil is damaged.	Replace with a new alternator.

Symptom	Problem	Solution
	Diode is damaged.	Change diode.
	Brush contact is bad.	Adjust or replace it with a new carbon brush.
	Belt is too loose.	Tighten the belt.
Meters do not display any indications.	Wiring connections are bad.	Check and tighten screws.
	Sensor is damaged.	Replace sensor of same specifications.
Light bulb is not lit.	Switch is defective or wiring connections are bad.	Replace it with a new switch.
	Fuse blows or light bulb is defective.	Replace fuse and light bulb of same specifications.

CP00718,0004141-19-14DEC17

Hydraulic System

Symptom	Problem	Solution
Slow or no hydraulics.	Oil level in oil tank is too low.	Check oil level and add hydraulic oil.
	Gear pump functions badly. Relief valve is adjusted and sealed improperly.	If oil pump is sealed badly or is excessively worn, replace it with a new pump. Otherwise, adjust or replace the relief valve in control valve.
Cutter ascends or descends slowly.	Relief valve is sealed badly or is adjusted improperly.	Replace or adjust the relief valve in control valve.
	Orifice is installed in a wrong position.	Reinstall orifice in the correct position.
	Suction pipe is badly bent and does not work smoothly.	Smoothen the pipe or replace it with a new one.
Reel fails to ascend.	Quick connector of oil pipe is not screwed tightly.	Tighten quick connector.
	Orifice of control valve is blocked.	Clear the orifice of control valve.
When engine speed is low, the helm saves power. When engine speed is high, the helm is overloaded.	Seal tape of oil return ball valve is worn.	Remove long tail fixing bolts. Use a hammer and punch to hit the steel ball of ball valve to connect it with the seal tape below.
Control valve is defective.		Refer to the hydraulic control valve user's manual.

CP00718,0004142-19-14DEC17

Air Conditioner System (Optional)

Symptom	Problem	Solution
Air conditioning cannot start, neither heating nor cooling.	Machine is without electricity or power supply is disconnected.	Charge power, switch on power.
	Air-conditioner panel assembly is damaged.	Check air-conditioner panel parts. Repair or replace damaged parts.
	Air-conditioning compressor clutch cannot engage.	Check air-conditioning compressor. If necessary, repair or replace it.
	Water valve of heating system is damaged.	Check, repair, or replace it.
Air-conditioning cooling mode temperature is too high.	Refrigerant is inadequate.	Check and fill refrigerant.
	Temperature sensor is at wrong position.	Adjust position of temperature sensor.
	Compressor drive belt is too loose.	Tension compressor drive belt.
Air-conditioning heating mode temperature is too low.	Temperature sensor is at wrong position.	Adjust position of temperature sensor.
Clutch engagement and disengagement are frequent.	Evaporator fan does not work.	Check, repair, or replace evaporator fan.
	Air intake filter and recirculation filter have dust.	Clean with compressed air.
	Evaporator has dust.	Clean with compressed air.
	Pressure control switch malfunctions.	Replace with new control switch.
	Temperature sensor is installed at wrong position.	Adjust temperature sensor position.

CP00718,0004143-19-14DEC17

Specifications

4LZ-11 (C230), 4LZ-11A (C230) Full-Feeder Combine

4LZ-11 (C230) Full-Feeder Combine

Machine Specifications			
Structure Type		Wheeled Self-propelled Full-feeder	
Hourly Productivity (hm^2/h)		1.0-1.7 (rice), 1.2-2.0 (wheat)	
Fuel Consumption per Hectare (kg/hm^2)		16-35 (rice), 11-30 (wheat)	
Feeding Rate (kg/s)		11	
Total Loss Rate (%)		≤1.2% (wheat), ≤3.0% (rice)	
Threshing Loss Rate (%)		≤1.0% (wheat), ≤2.5% (rice)	
Crushing Rate (%)		≤1.0% (wheat), ≤1.5% (rice)	
Impurity Rate (%)		≤2.0% (wheat), ≤2.0% (rice)	
Cutting Width (mm)		5405 (218R/218F)	
Dimensions (mm) (LxWxH)	Working State	9710×5800×3960 (218R/218F)	
	Transport State	7640×3600×3960 (without cutter)	
Ground Clearance (mm)		470~520	
Machine Mass	Without Cutter	Mechanical	9870
		Hydraulic	10260
	With Cutter	Mechanical	11370 (218R)
			11470 (218F)
		Hydraulic	11760 (218R)
			11860 (218F)
Reliability	Mean Time Between Failures MTBF (h)	≥50	
	Validity	≥93%	
Noise dB (A)	Dynamic Ambient Noise	≤87	
	Noise at Operator Ears	≤93	

NOTE: 1.Hourly productivity and fuel consumption may vary according to different ground status, crops, and other natural conditions. Parameters are for reference only!

Operating performance of combine is under conditions of standard feed rate, no weeds above cutting line, crops upright, wheat-straw ratio of 0.6-1.2, grain moisture content of 12%-20%; rice-straw ratio of 1.0-2.4, grain moisture content of 15%-28%.

4LZ-11A (C230) Full-Feeder Combine Specifications

Machine Parameters			
Structure Type		Wheeled Self-propelled Full-feeder	
Hourly Productivity (hm^2/h)		1.0-1.7 (rice), 1.2-2.0 (wheat)	
Fuel Consumption per Hectare (kg/hm^2)		16-35 (rice), 11-30 (wheat)	
Feeding Rate (kg/s)		11	
Total Loss Rate (%)		≤1.2% (wheat), ≤3.0% (rice)	
Threshing Loss Rate (%)		≤1.0% (wheat), ≤2.5% (rice)	
Crushing Rate (%)		≤1.0% (wheat), ≤1.5% (rice)	
Impurity Rate (%)		≤2.0% (wheat), ≤2.0% (rice)	
Cutting Width (mm)		4610 (215R/215F)	
Dimensions (mm) (LxWxH)	Working State	9710×5000×3960 (215R/215F)	
	Transport State	7640×3600×3960 (without cutter)	
Ground Clearance (mm)		470~520	
Machine Mass	Without Cutter	Mechanical	9870
		Hydraulic	10260
	With Cutter	Mechanical	11070 (215R)
			11190 (215F)
		Hydraulic	11460 (215R)
			11580 (215F)

Machine Parameters		
Reliability	Mean Time Between Failures MTBF (h)	≥50
	Validity	≥93%
Noise dB (A)	Dynamic Ambient Noise	≤87
	Noise at Operator Ears	≤93

NOTE: 1.Hourly productivity and fuel consumption may vary according to different ground status, crops, and other natural conditions. Parameters are for reference only!

Operating performance of combine is under conditions of standard feed rate, no weeds above cutting line, crops upright, wheat-straw ratio of 0.6-1.2, grain moisture content of 12%-20%; rice-straw ratio of 1.0-2.4, grain moisture content of 15%-28%.

CP00718,000412D-19-14DEC17

Threshing Device

Threshing cylinder type: Intermittent flow rasp-bar type / Intermittent flow spike tooth type

Cylinder diameter (mm): 610

Cylinder width (mm): 1280

Cylinder rotation speed (rpm): 420 ± 50 ~ 1150 ± 50 (CVT type)

Concave type: Grid type / Spiked type

Concave area (m^2): 0.66

CP00718,000412E-19-14DEC17

Separator

Type of separation mechanism: Tines longitudinal dual-axial-flow separation cylinder

Total separation area (m^2): 2.76

Separation cylinder gear case: 1.75 (L) two pieces

CP00718,000412F-19-14DEC17

Diameter of Feed Rolls / Row Number of Tines

Diameter of feed rolls / Row number of tines: 418 (mm)/8

CP00718,0004130-19-14DEC17

Cleaning Device

Chaffer area (m^2): 2.42 (with extension)

Sieve area (m^2): 1.87

Fan type: Straight shell type

Number of fan vanes: 4

CP00718,0004131-19-14DEC17

Grain Tank and Grain Unloading

Grain unloading type: Grain tank unloading, hydraulic mechanical grain unloading

Volume (m^3): 4.8

Conveyor type: Scraper chain type

Grain unloading time (min): ≤2.5

CP00718,0004132-19-14DEC17

Ground Drive System

Drive mode: 4 × 2

Steering type: Rear-wheel steering

Brake type: Hydraulic

Driving tire specification: 28L-26 R2

Driving tire pressure: 170 KPa

Steering tire specification: 14.9-24-R1-10PR /14.9-24-R2-10PR (rear drive)

Steering tire pressure: 180 KPa

Ground driving speed (km/h): 1.05-20 (mechanical belt type)

Ground driving speed (km/h): ≤24 (hydraulic drive type)

Driving wheel tread (mm): 2820

Steering wheel tread (mm): 2600

Front and rear wheelbase (mm): 3717

Crawler belt (length x width x height): 2600x700x1260 (working state)

Gearbox capacity (L): 5.5

Final Drive (single side): 3.1 (L)

Minimum Passing Radius (m): 8.5 (218 cutting platform); 8.3 (215 cutting platform)

CP00718,0004133-19-14DEC17

Engine

Machine Serial No.	010000 - 019999	020000 -
Manufacturer	John Deere (Tianjin) Co., Ltd.	John Deere (Tianjin) Co., Ltd.
Model No.	6068HYC52	6068HYC54
Structure Type	Inline 6-cylinder 4-stroke direct injection	Inline 6-cylinder 4-stroke direct injection
Emission Level	China Stage II	China Stage III
Rated Power (kW)	148	148
Rated Speed (rpm)	2400	2400
Maximum Idle Speed (rpm)	2400	2400
Maximum Torque (N.m)	760	760
Bore × Stroke (mm)	106.5×127	106.5×127
Number of Cylinders	6	6
Displacement (L)	6.8	6.8
Compression ratio	19.0 : 1	19.0 : 1
Thermostat Opening Temperature (℃)	82	82
Fuel Consumption at Rated Power (g/kw.h)	≤235	≤235
Diesel Tank Volume (L)	300	300
Engine Oil Volume (L)	19.5	19.5
Cooling System Volume (L)	39	39

CP00718,0004134-19-14DEC17

Electrical System

Working voltage (V): 12

Battery model: 6-QA-165

Start Relay: JD1320

CP00718,0004135-19-14DEC17

Hydraulic System

Hydraulic system (initial oil filling): 25 (L)

Oil tank volume (L): 20

Hydraulic pump model: G5-15.9/6.4

Rated pressure (MPa): 25/25

Rated speed (rpm): 1100~3300

Displacement (ml/rev): 15.9/6.4

Full hydraulic steering gear model: BZZ1-100

Relief valve opening pressure (MPa):12.5

Displacement (ml/rev): 100

Control valve model: 31523-CAN/31532-AAV

Relief valve opening pressure (MPa): 13.8 ~ 14.5

Flow rate (L/min): 40

Specifications of optional hydraulic drive type combine are as follows:

Ground drive system oil tank capacity (L): 33

Variable pump model: 3923-388-R1

Displacement (ml/rev): 63.7

Relief valve opening pressure (MPa): 43.8

Fixed displacement motor model: 3933-118-R1

Displacement (ml/rev): 63.7

Relief valve opening pressure (MPa): 46.6

CP00718,0004136-19-14DEC17

Air Conditioner System (Optional)

Air-conditioning Mode: Cooling / Heating

Refrigerant (Chlorofluorocarbons) Capacity (Kg): 1.8

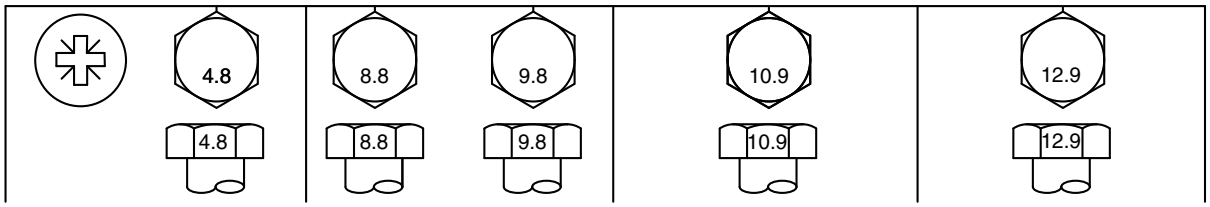
CP00718,0004137-19-14DEC17

Cab

People allowed in cab (person): 1

CP00718,0004138-19-14DEC17

Metric Bolt and Screw Torque Values



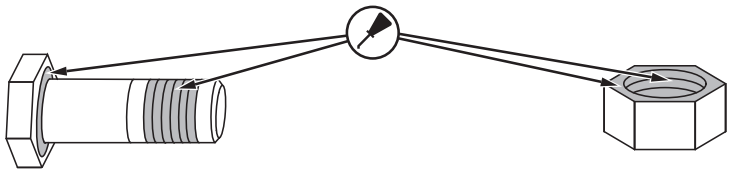
TS1742—UN—31MAY18

Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497
M24	—	—	—	—	468	345	518	382	666	491	738	544	780	575	864	637
M27	—	—	—	—	683	504	758	559	973	718	1080	797	1139	840	1263	932
M30	—	—	—	—	932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265
M33	—	—	—	—	1258	928	1398	1031	1788	1319	1986	1465	2092	1543	2324	1714
M36	—	—	—	—	1617	1193	1789	1319	2303	1699	2548	1879	2695	1988	2982	2199

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench.
DO NOT use these values if a different torque value or tightening procedure is given for a specific application.
For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.

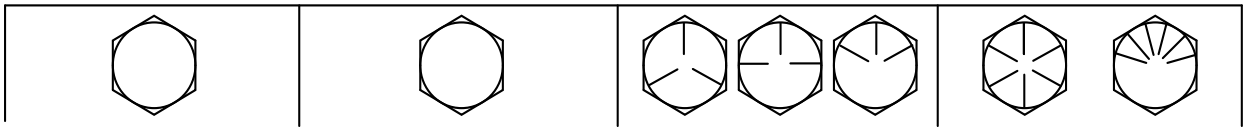


TS1741—UN—22MAY18

[a]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[b]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2-19-30MAY18

Unified Inch Bolt and Screw Torque Values



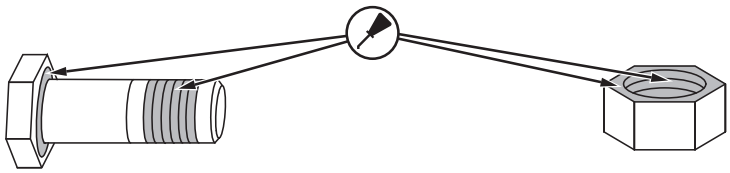
TS1671—UN—01MAY03

Bolt or Screw Size	SAE Grade 1[a]				SAE Grade 2[b]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
1/4	3.1	27.3	3.2	28.4	5.1	45.5	5.3	47.3	7.9	70.2	8.3	73.1	11.2	99.2	11.6	103
													N·m	lb·ft	N·m	lb·ft
5/16	6.1	54.1	6.5	57.7	10.2	90.2	10.9	96.2	15.7	139	16.8	149	22.2	16.4	23.7	17.5
									N·m	lb·ft	N·m	lb·ft				
3/8	10.5	93.6	11.5	102	17.6	156	19.2	170	27.3	20.1	29.7	21.9	38.5	28.4	41.9	30.9
					N·m	lb·ft	N·m	lb·ft								
7/16	16.7	148	18.4	163	27.8	20.5	30.6	22.6	43	31.7	47.3	34.9	60.6	44.7	66.8	49.3
	N·m	lb·ft	N·m	lb·ft												
1/2	25.9	19.1	28.2	20.8	43.1	31.8	47	34.7	66.6	49.1	72.8	53.7	94	69.3	103	75.8
9/16	36.7	27.1	40.5	29.9	61.1	45.1	67.5	49.8	94.6	69.8	104	77	134	98.5	148	109
5/8	51	37.6	55.9	41.2	85	62.7	93.1	68.7	131	96.9	144	106	186	137	203	150
3/4	89.5	66	98	72.3	149	110	164	121	230	170	252	186	325	240	357	263
7/8	144	106	157	116	144	106	157	116	370	273	405	299	522	385	572	422
1	216	159	236	174	216	159	236	174	556	410	609	449	785	579	860	634
1-1/8	305	225	335	247	305	225	335	247	685	505	751	554	1110	819	1218	898
1-1/4	427	315	469	346	427	315	469	346	957	706	1051	775	1552	1145	1703	1256
1-3/8	564	416	618	456	564	416	618	456	1264	932	1386	1022	2050	1512	2248	1658
1-1/2	743	548	815	601	743	548	815	601	1665	1228	1826	1347	2699	1991	2962	2185

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench.
DO NOT use these values if a different torque value or tightening procedure is given for a specific application.
For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.



TS1741—UN—22MAY18

[a]Grade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.
[b]Grade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.
[c]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[d]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ1-19-30MAY18

Machine Identity and Crime Prevention Techniques

Machine Identity



YC11784—UN—09AUG17

Record serial number:

When ordering parts, provide the machine model and serial number on the serial number decal. Mark that number in the blank space for later use.

CP00718,0004402-19-19DEC17

Crime Prevention Measures



YC1679—UN—06DEC12

Properly keep the proof of ownership, prevent theft, and avoid troubles.

CP00718,0004403-19-19DEC17

Recording Identification Number



YC1680—UN—07DEC12

Record identification number:

1. Mark your machine in accordance with your unique numbering system.
2. Record product identification number (PIN) and the identification numbers of engine, chassis, pumps, and other components. Mark the product identification number (PIN) in all documents, such as insurance policy, invoices, and warranty certificate.

CP00718,0004404-19-19DEC17

Keep Proof of Ownership



TS1680—UN—09DEC03

1. Maintain in a separate, secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:
   - Mark your machine with your own numbering system

- Take color photographs from several angles of each machine

CP00718,0004405-19-19DEC17

Parking Indoor

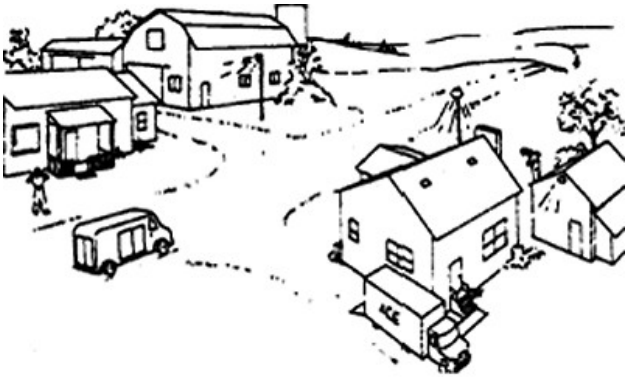


YC1682—UN—06DEC12

1. Park large equipment at the exit.
2. Lower equipment onto the ground and take out the key.
3. Remove batteries during the storage period.
4. Lock cab door, windows, and hangar door.
5. Park in a well-lit and fenced region.
6. Lower all equipment onto the ground.
7. Take out the start-up key. Remove batteries during the storage period.
8. Lock cab door, windows, and guarding devices.
9. Put the wheels in a place furthest away, so that it is difficult to mount them.

CP00718,0004406-19-19DEC17

Avoid Damages



YC1683—UN—06DEC12

Avoid damages:

1. Install guarding devices.
2. Participate in neighborhood watch-out activities. Keep a written record of suspicious vehicles or people. Report timely to the security or police when problems are found.
3. Check if the machine identification plate is stolen. If that is so, immediately notify the security or police. Order a copy of the identification plate from the dealer.

CP00718,0004407-19-19DEC17

Immediately Report Theft



YC1684—UN—06DEC12

Report theft immediately:

1. Immediately notify the local security or police and insurance agent.
2. Provide a complete description of the machine, all the archived identification numbers and color photos.
3. After providing the identification numbers to any local or national crime reporting centers, request to verify the identification numbers. Verify these numbers carefully to ensure accuracy.
4. Notify the local John Deere dealer of the theft and request the publication of a detailed description and identification number of the stolen machine.

CP00718,0004408-19-19DEC17

Loss Evaluation and Adjustment Diagrams

Limit of Grain Loss

The current minimum limit of permitted grain loss is 1 ~ 2% (harvesting wheat). This value is determined by the following factor:

1. Whether harvest conditions are normal.
2. Whether harvest time is tight.
3. Whether combine operator checks the grain loss promptly.
4. Whether combine is properly adjusted.

CP00718,0004409-19-19DEC17

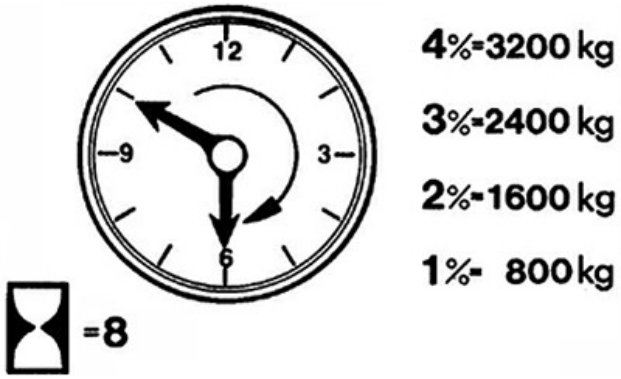
Meaning of Grain Loss

Grain loss (%)	1	2	3	4
Yield (kg/ha)	kg	kg	kg	kg
3000 4000 5000	30 40 50	60 80 100	90 120 150	120 160 200

If yield per hectare is 5000 kg, 1% grain loss equals to 50 kg loss. If adjustment is improper, combine operates at 4% loss rate, loss per hectare is 200 kg. This example shows that spending 30 minutes to adjust the combine properly can save a lot of grains.

CP00718,000440A-19-19DEC17

First Example of Loss Calculation



YC1645—UN—26NOV12

Combine works under the condition of 4% loss. If adjustment is correct, grain loss may reduce by 1%. If yield per hectare is 5000 kg, 2 hectares are harvested per hour, 16 hectares are harvested in 8 hours.

4% 16 hectares × 200 kg = 3200 kg

3% 16 hectares × 150 kg = 2400 kg

800 kg less grain is lost.

CP00718,000440B-19-19DEC17

Second Example of Loss Calculation

In the previous example, grain loss is reduced to 3% but the loss rate is still high. By reducing driving speed, the loss can decrease to 1.5%. After reducing speed, 1.8 hectares are harvested per hour, 14.4 hectares can be harvested in 8 hours.

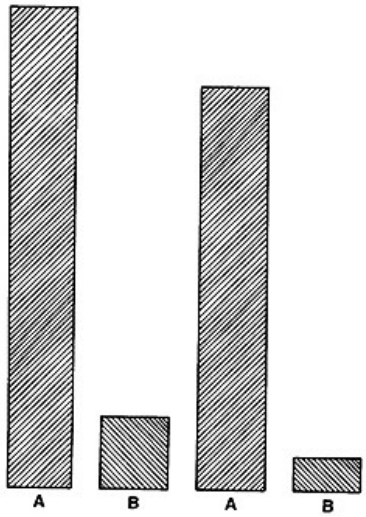
3% 16 hectares × 150 kg = 2400 kg

1.5% 14.4 hectares × 75 kg = 1080 kg

1320 kg grain loss can be reduced.

CP00718,000440C-19-19DEC17

Example Illustration



YC1646—UN—20FEB12

A—Area covered
B—Loss percentage

8 hours 16 hectares 4% loss = 3200 kg

8 hours 14.4 hectares 1.5% loss = 1080 kg

Reduced loss = 2120 kg

Reducing grain loss of 2120 kg equals to the cost of harvesting 10 hectares.

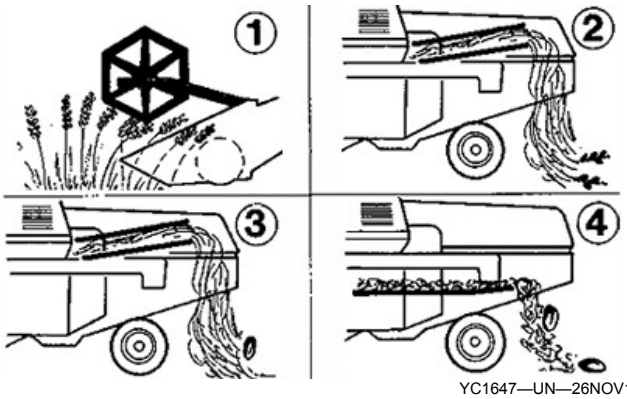
Reducing driving speed and loss appropriately can save more grains. If the operator or other personnel can check grain loss three times a day, loss can be reduced to 1 ~ 1.5%. Checking only takes half an hour.

Reducing loss by 1% means (if works 8 hours daily) saving 800 ~ 1000 kg of grains per day.

If a designated person is deployed to check loss, the harvesting result of combine is better (especially when several combines are working in the field at the same time).

CP00718,000440D-19-19DEC17

Confirming Grain Loss



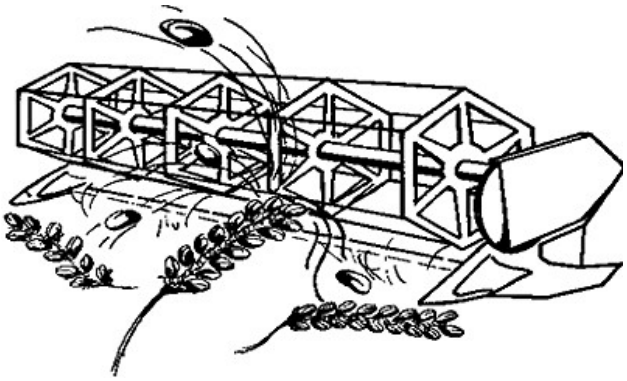
YC1647—UN—26NOV12

When combine is adjusted to its optimal, grain loss still occurs. This loss can be classified in four aspects, as follows:

1. Head loss
2. Threshing loss
3. Separation loss
4. Cleaning loss

CP00718,000440E-19-19DEC17

Header Loss



YC1648—UN—23NOV12

Header loss: It includes fallen spikes and shattered seeds blown by the reel.

The method of confirming header loss is to compare the number of grains (deduct naturally fallen grain) before and after cutting in a certain area.

CP00718,000440F-19-19DEC17

Threshing Loss

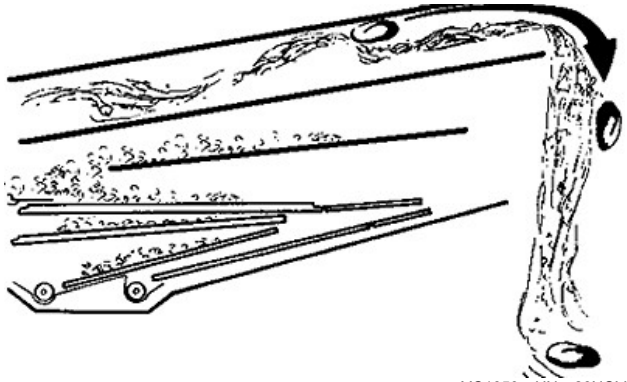


YC1649—UN—23NOV12

Threshing loss refers to non-threshed grains on spikes behind the combine. To calculate threshing loss, count the number of grains remaining on 10 threshed spikes. If three grains are found, that is equivalent to 1% loss (assuming an average of 30 grains on a spike).

CP00718,0004410-19-19DEC17

Separation Loss



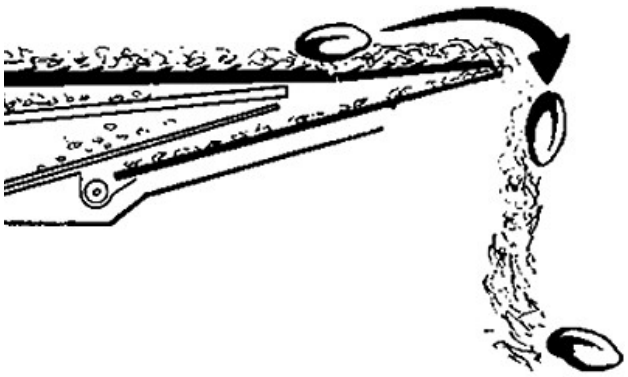
YC1650—UN—26NOV12

Separation loss is the grain mingled in stems. Insufficient threshing and excessive tailings may increase separation loss.

If after adjusting the cylinder rotation speed and threshing clearance, separation loss still does not drop, then reduce the driving speed.

CP00718,0004411-19-19DEC17

Cleaning Loss

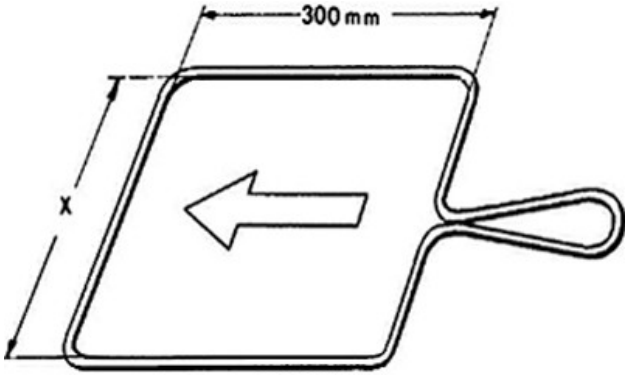


YC1651—UN—23NOV12

Cleaning loss is caused by improper adjustment of chaffer, sieves, and fan, so that grains fall onto the ground after passing through the machine. If adjustment is done correctly, cleaning loss decreases.

CP00718,0004412-19-19DEC17

Use Wire Frames to Evaluate Grain Loss: (Example A)



YC1652—UN—09DEC12

Use wire frames (self-made) to measure according to the method below:

Place wire frames on the ground separately in the front of the header and behind the header.

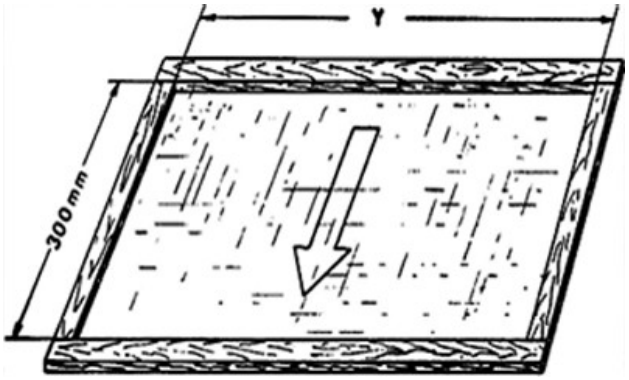
1. Count the number of grains in front of the header.
2. Count the number of grains behind the combine (within the width of separator).

When calculating loss, deduct the counted number at the front from the counted number at the rear. Multiply this value by 5. And, that is total loss.

X = 250 mm

CP00718,0004413-19-19DEC17

Use Canvas Frame to Evaluate Grain Loss: (Example B)



YC1653—UN—09DEC12

Using canvas frame to measure is more accurate, but it requires two people to do it.

Place canvas frame below combine (within separation width). After machine has passed, remove stems and chaff from frame. Then count the number of grains in the frame.

Y—Greater than the width of combine separation device

CP00718,0004414-19-19DEC17

Operating Performance of Full-Feeder Crop Combine

Operating standard: The People's Republic of China Machinery Industry Standard JB/T 5117-2006

Under the conditions of standard feed rate, no weed above the cutting line, crops upright, wheat-straw ratio of 0.6—1.2, grain moisture content of 12%—20%, rice-straw ratio of 1.0—2.4, grain moisture content of 15%—28%, its performance meets the following requirements.

Items	Wheat	Rice
Model	Self-propelled	Self-propelled
Tailing content rate %	≤2.0	≤2.0
Total loss rate %	≤1.2	≤3.0
Crushing rate %	≤1.0	≤1.5

Note: Recommended test water content of the wheat stem is 10%—25%, that of rice is 20%—60%.

CP00718,0004415-19-19DEC17

Grain Loss

Grain loss is usually calculated based on loss rate. That refers to the ratio between lost grains (quality and number of grains, etc.) to receivable grain (quality and number of grains, etc.).

Use the following table to easily evaluate loss rate from the number of lost grain.

The table below shows the relationship between yield and number of lost grains (each area is 10 cm x 20 cm (similar to the size of a hand) within machine body width):

Table 1: Rice harvest: mount a cutter of size 4.57 m (15 ft) or 5.49 m (18 ft), 1 gram equals to 35 grains, loss rate ≤ 3.0%

Loss rate (%)	Yield per acre (kg)															
	300		350		400		450		500		550		600		650	
	Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter	
	15	18	15	18	15	18	15	18	15	18	15	18	15	18	15	18
	Number of grains (piece)															
0.50%	6	7	6	8	7	9	8	10	9	11	10	12	11	13	12	14
1.00%	11	13	13	15	15	18	17	20	18	22	20	24	22	27	24	29
1.50%	17	20	19	23	22	27	25	30	28	33	30	37	33	40	36	43
2.00%	22	27	26	31	30	35	33	40	37	44	41	49	44	53	48	58
2.50%	28	33	32	39	37	44	42	50	46	55	51	61	55	66	60	72
3.00%	33	40	39	46	44	53	50	60	55	66	61	73	66	80	72	86

Table 2: Wheat harvest: mount a cutter of size 4.57 m (15 ft) or 5.49 m (18 ft), 1 gram equals to 27 grains, loss rate ≤ 1.5%

Loss rate (%)	Yield per acre (kg)															
	250		300		350		400		450		500		550		600	
	Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter		Cutter	
	15	18	15	18	15	18	15	18	15	18	15	18	15	18	15	18
	Number of grains (piece)															
0.50%	4	4	4	5	5	6	6	7	6	8	7	9	8	9	9	10
1.00%	7	9	9	10	10	12	11	14	13	15	14	17	16	19	17	21
1.50%	11	13	13	15	15	18	17	21	19	23	21	26	23	28	26	31

NOTE: When calculating, the loss within body width should be converted to the loss for the entire cutting width.

NOTE: The data in this table is calculated under normal conditions, according to the People's Republic of China Machinery Industry Standard, for users' reference. Users may refer to the Machinery Industry Standard on page 75-4.

CP00718,0004416-19-19DEC17

Feeding Volume

Feeding volume: refers to the total mass of all materials (crops, weeds, etc.) fed into the threshing body per unit time. It is closely related to cutting width, operating speed, yield per acre and ratio of grain/straw (ratio between mass of grain and mass of stems, chaff, and bran of harvested materials).

Feeding volume is an important indicator to measure the machine performance.

CP00718,0004417-19-19DEC17

Evaluation of Feeding Volume

Feeding volume can be calculated through testing the basic data of machine and field.

Feeding volume (kg/s) = yield per acre (kg) × speed (m/s) × cutting width × (1 + grain-straw ratio) / 667

It can also be evaluated by using the table below:

Table 1: Combine harvester C230 uses 4.57 m (15 ft) cutter to harvest crops. Grain/straw ratio is 1:1

Speed (m/s)	Yield per acre (kg)								
	250	300	350	400	450	500	550	600	650
	Feeding volume (kg/s)								
Gear I low speed: 0.292	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6
Gear I medium speed: 0.486	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0	4.3
Gear I high speed: 0.681	2.3	2.8	3.3	3.7	4.2	4.7	5.1	5.6	6.1

Gear II medium-low speed: 0.778	2.7	3.2	3.7	4.3	4.8	5.3	5.9	6.4	6.9
Gear II medium speed: 0.972	3.3	4.0	4.7	5.3	6.0	6.7	7.3	8.0	8.7
Gear II high speed: 1.361	4.7	5.6	6.5	7.5	8.4	9.3	10.3	**11.2**	**12.1**
Gear III medium-low speed: 1.566	5.4	6.4	7.5	8.6	9.7	10.7	**11.8**	**12.9**	**13.9**
Gear III medium speed: 1.951	6.7	8.0	9.4	10.7	**12.0**	**13.4**	**14.7**	**16.0**	**17.4**
Gear III medium-high speed: 2.337	8.0	9.6	**11.2**	**12.8**	**14.4**	**16.0**	**17.6**	**19.2**	**20.8**

Table 2: Combine harvester C230 uses 4.57 m (15 ft) cutter to harvest crops. Grain/straw ratio is 1.25:1

Speed (m/s)	Yield per acre (kg)								
	250	300	350	400	450	500	550	600	650
	Feeding volume (kg/s)								
Gear I low speed: 0.292	1.1	1.4	1.6	1.8	2.0	2.3	2.5	2.7	2.9
Gear I medium speed: 0.486	1.9	2.2	2.6	3.0	3.4	3.7	4.1	4.5	4.9
Gear I high speed: 0.681	2.6	3.1	3.7	4.2	4.7	5.2	5.8	6.3	6.8
Gear II medium-low speed: 0.778	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	7.8
Gear II medium speed: 0.972	3.7	4.5	5.2	6.0	6.7	7.5	8.2	9.0	9.7
Gear II high speed: 1.361	5.2	6.3	7.3	8.4	9.4	10.5	**11.5**	**12.6**	**13.6**
Gear III medium-low speed: 1.566	6.0	7.2	8.4	9.7	10.9	**12.1**	**13.3**	**14.5**	**15.7**
Gear III medium speed: 1.951	7.5	9.0	10.5	**12.0**	**13.5**	**15.0**	**16.5**	**18.0**	**19.5**
Gear III medium-high speed: 2.337	9.0	10.8	**12.6**	**14.4**	**16.2**	**18.0**	**19.8**	**21.6**	**23.4**

Table 3: Combine harvester C230 uses 4.57 m (15 ft) cutter to harvest crops. Grain/straw ratio is 1.5:1

Speed (m/s)	Yield per acre (kg)								
	250	300	350	400	450	500	550	600	650
	Feeding volume (kg/s)								
Gear I low speed: 0.292	1.3	1.5	1.8	2.0	2.3	2.5	2.8	3.0	3.3
Gear I medium speed: 0.486	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.0	5.4
Gear I high speed: 0.681	2.9	3.5	4.1	4.7	5.2	5.8	6.4	7.0	7.6
Gear II medium-low speed: 0.778	3.3	4.0	4.7	5.3	6.0	6.7	7.3	8.0	8.7
Gear II medium speed: 0.972	4.2	5.0	5.8	6.7	7.5	8.3	9.2	10.0	10.8
Gear II high speed: 1.361	5.8	7.0	8.2	9.3	10.5	**11.7**	**12.8**	**14.0**	**15.2**

Gear III medium-low speed: 1.566	6.7	8.0	9.4	10.7	**12.1**	**13.4**	**14.8**	**16.1**	**17.4**
Gear III medium speed: 1.951	8.4	10.0	**11.7**	**13.4**	**15.0**	**16.7**	**18.4**	**20.1**	**21.7**
Gear III medium-high speed: 2.337	10.0	**12.0**	**14.0**	**16.0**	**18.0**	**20.0**	**22.0**	**24.0**	**26.0**

Table 4: Combine harvester C230 uses 5.49 m (18 ft) cutter to harvest crops. Grain/straw ratio is 1:1

Speed (m/s)	Yield per acre (kg)								
	250	300	350	400	450	500	550	600	650
	Feeding volume (kg/s)								
Gear I low speed: 0.292	1.2	1.4	1.7	1.9	2.2	2.4	2.6	2.9	3.1
Gear I medium speed: 0.486	2.0	2.4	2.8	3.2	3.6	4.0	4.4	4.8	5.2
Gear I high speed: 0.681	2.8	3.4	3.9	4.5	5.0	5.6	6.2	6.7	7.3
Gear II medium-low speed: 0.778	2.1	2.6	3.0	3.4	3.8	4.3	4.7	5.1	5.5
Gear II medium speed: 0.972	4.0	4.8	5.6	6.4	7.2	8.0	8.8	9.6	10.4
Gear II high speed: 1.361	5.6	6.7	7.8	9.0	10.1	**11.2**	**12.3**	**13.4**	**14.6**
Gear III medium-low speed: 1.566	6.4	7.7	9.0	10.3	**11.6**	**12.9**	**14.2**	**15.5**	**16.8**
Gear III medium speed: 1.951	8.0	9.6	**11.2**	**12.8**	**14.5**	**16.1**	**17.7**	**19.3**	**20.9**
Gear III medium-high speed: 2.337	9.6	**11.5**	**13.5**	**15.4**	**17.3**	**19.2**	**21.2**	**23.1**	**25.0**

Table 5: Combine harvester C230 uses 5.49 m (18 ft) cutter to harvest crops. Grain/straw ratio is 1.25:1

Speed (m/s)	Yield per acre (kg)								
	250	300	350	400	450	500	550	600	650
	Feeding volume (kg/s)								
Gear I low speed: 0.292	1.4	1.6	1.9	2.2	2.4	2.7	3.0	3.2	3.5
Gear I medium speed: 0.486	2.3	2.7	3.2	3.6	4.1	4.5	5.0	5.4	5.9
Gear I high speed: 0.681	3.2	3.8	4.4	5.0	5.7	6.3	6.9	7.6	8.2
Gear II medium-low speed: 0.778	3.6	4.3	5.0	5.8	6.5	7.2	7.9	8.6	9.4
Gear II medium speed: 0.972	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	**11.7**
Gear II high speed: 1.361	6.3	7.6	8.8	10.1	**11.3**	**12.6**	**13.9**	**15.1**	**16.4**
Gear III medium-low speed: 1.566	7.3	8.7	10.2	**11.6**	**13.1**	**14.5**	**16.0**	**17.4**	**18.9**
Gear III medium speed: 1.951	9.0	10.8	**12.6**	**14.5**	**16.3**	**18.1**	**19.9**	**21.7**	**23.5**
Gear III medium-high speed: 2.337	10.8	**13.0**	**15.1**	**17.3**	**19.5**	**21.6**	**23.8**	**26.0**	**28.1**

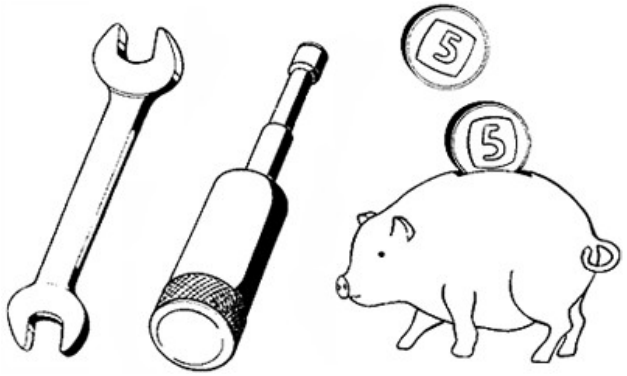
Table 6: Combine harvester C230 uses 5.49 m (18 ft) cutter to harvest crops. Grain/straw ratio is 1.5:1

Speed (m/s)	Yield per acre (kg)								
	250	300	350	400	450	500	550	600	650
	Feeding volume (kg/s)								
Gear I low speed: 0.292	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9
Gear I medium speed: 0.486	2.4	2.8	3.3	3.8	4.3	4.7	5.2	5.7	6.1
Gear I high speed: 0.681	3.5	4.2	4.9	5.6	6.3	7.0	7.7	8.4	9.1
Gear II medium-low speed: 0.778	4.0	4.8	5.6	6.4	7.2	8.0	8.8	9.6	10.4
Gear II medium speed: 0.972	5.0	6.0	7.0	8.0	9.0	10.0	**11.0**	**12.0**	**13.0**
Gear II high speed: 1.361	7.0	8.4	9.8	**11.2**	**12.6**	**14.0**	**15.4**	**16.8**	**18.2**
Gear III medium-low speed: 1.566	8.1	9.7	**11.3**	**12.9**	**14.5**	**16.1**	**17.7**	**19.3**	**20.9**
Gear III medium speed: 1.951	10.0	**12.0**	**14.1**	**16.1**	**18.1**	**20.1**	**22.1**	**24.1**	**26.1**
Gear III medium-high speed: 2.337	**12.0**	**14.4**	**16.8**	**19.2**	**21.6**	**24.0**	**26.4**	**28.9**	**31.3**

NOTE: In Tables 1 to 6, information in bold are examples under the operating conditions of rice harvest and rated feeding volume (11 kg/s) being exceeded.

NOTE: Check values in tables. Example 1: Under conditions of 18 ft cutter, gear II medium speed of 0.972 m/s, yield 400 kg per acre, grain/straw ratio 1:1, feeding volume now is: 6.4 kg/s.

CP00718,0004418-19-19DEC17



YC1654—UN—26NOV12

Prevent Grain Loss

Working process of combine is complicated. Factors leading to grain loss are varied. To get the best value of money, therefore, you should carefully adjust the machine according to combine diagrams and actual situations.

IMPORTANT: Separation loss of combine can be resolved by reducing the driving speed, but do not neglect adjusting other aspects to reduce loss.

Follow requirements below to reduce separation loss:

- Keep separation cylinder grid panel free of obstruction.
- Reduce weeds (lift the header).
- Avoid excessive threshing (reduce cylinder rotation speed).
- Avoid overloading the separation cylinder (reduce driving speed).

Follow requirements below to reduce cleaning loss:

- If broken stems accumulate on the sieve surface, increase fan speed.
- When grain is blown out of the sieve chamber, reduce fan speed.
- Use wind deflector to adjust the direction of air flow. If air is not blowing on the sieves, broken stems accumulate on sieves.
- Increase the opening degree of sieve. Lift or lower the chaffer extension (when needed, use finger-shaped chaffer according to harvest conditions).
- Keep sieve surface clean.
- Remove rear baffle.
- Reduce chaff on the sieve surface and avoid excessive threshing. When sieves are overloaded, reduce grain on them (by reducing driving speed of combine).

CP00718,0004419-19-19DEC17

Threshing Adjustment of Combine



YC1661—UN—27NOV12

NOTE: Combine adjustment diagrams are only for the general operating conditions. Carry out different adjustments for varied crops or operating conditions.

Opening size (X) of chaffer and sieves are measured by the method in the right diagram.

NOTE: When harvesting different crops, use dedicated harvest components. Data above are recommended values. Users should base on the ground conditions, crop varieties, and other natural conditions to adjust the combine appropriately.

CP00718,000441A-19-19DEC17

Recommended Adjustment Diagrams



YC10887—UN—08DEC16

Rice

Rice

Cylinder speed (rpm) 500—950

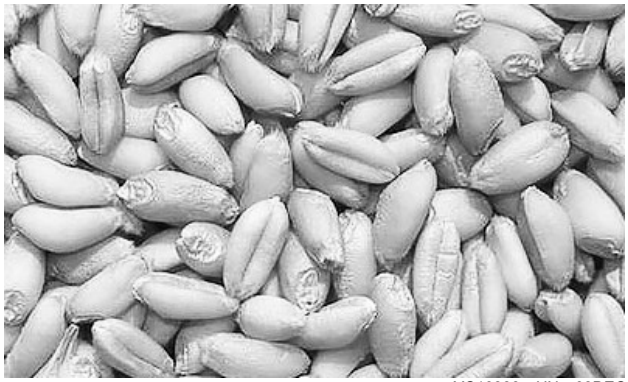
Threshing clearance:

- Inlet 14 mm
- Outlet 10 mm

Chaffer adjustment 16—19 mm

Sieve adjustment 6.5—9.5 mm

Fan speed (rpm) 800—1100



YC10886—UN—08DEC16

Wheat

Wheat

Cylinder speed (rpm) 850—1100

Threshing clearance:

- Early stage inlet 7—8 mm
- Early stage outlet 4—5 mm
- Mid-late stage inlet 9—12 mm
- Mid-late stage outlet 7—10 mm

Chaffer adjustment 14—16 mm

Sieve adjustment 10—13 mm

Fan speed (r/m) 850—1100

NOTE: 1. When harvesting different crops, use dedicated harvest components. 2. Data above are recommended values. Users should base on the ground conditions, crop varieties, and other natural conditions to adjust the combine appropriately.

CP00606,00017E0-19-25MAY18

List of Easily Worn Parts and Accessories

Easily Worn Parts

IMPORTANT: It is recommended to use original parts for repair and maintenance. Otherwise, machine may be damaged or machine service life may be shortened.

Serial Number	Part Number	Name
1	AYC20547	Fuel filter
2	AH148879	Air filter
3	AYC18013	Hydraulic air filter
4	AYC12492	Battery
5	YC20022	Antifreeze (L)JDM H24
6	YC25104	Belt HM3854
7	YC12444	V-belt HA2321
8	YC11368	V-belt 2HB4560
9	YC10136	V-belt 60 MM2660.5
10	Z46365	Belt HJ1280
11	H165708	Belt 2HB2120
12	AYC10133	V-belt 2 MOD-D3601
13	YC10135	V-belt 2 HB2385
14	AYC10132	Belt HCC2700
15	YC10134	V-belt HC2422
16	YC10137	V-belt 2 HC5231
17	YC10138	V-belt 2HB3813
18	YC10139	V-belt 4HC3816
19	AYC19644	Tapered roller bearing
20	AYC19643	Tapered roller bearing
21	AYC19647	Tapered roller bearing
22	JD9913	Needle bearing
23	AYC22839	Bearing 6205-2Z GB/T276-1994
24	AYC19565	Release bearing 55×90×21
25	AYC19646	Tapered roller bearing
26	AYC19645	Tapered roller bearing
27	JD10087	Bearing
28	AYC23122	Tapered roller bearing
29	AYC23123	Tapered roller bearing
30	AYC23124	Tapered roller bearing
31	AYC23125	Tapered roller bearing
32	YC20261	Tapered roller bearing outer ring 30210(7210) GB/T 297-1994
33	AYC18046	Tapered roller bearing inner ring 30210(7210) GB/T 297-1994
34	AYC18076	Thrust ball bearing 51110 (8110) GB/T 301-1995
35	JD10052	Bearing
36	AYC18069	Tapered roller bearing inner ring 30204 (7204EA) GB/T 297-1994
37	AYC18071	Tapered roller bearing inner ring 30206 (7206EA) GB/T 297-1994
38	YC20264	Tapered roller bearing outer ring 30204 (7204EB) GB/T 297-1994
39	YC20266	Tapered roller bearing outer ring 30206 (7206EB) GB/T 297-1994
40	AYC22650	Tapered roller bearing
41	AYC22648	Tapered roller bearing
42	AYC22649	Tapered roller bearing

Serial Number	Part Number	Name
43	AYC18039	Deep groove ball bearing 6204-2RS1 (180204) GB/T 276-1994
44	AYC18067	Bearing 688910K
45	AYC18032	Deep groove ball bearing 6206-RS1 (160206) GB/T 276-1994
46	AYC18042	Deep groove ball bearing 6303-2RS1 (180303) GB/T 276-1994
47	AYC18038	Deep groove ball bearing 6203-2RS1 (180203) GB/T 276-1994
48	AYC15089	Tapered roller bearing inner ring 32014X (2007114A) GB/T 297-1994
49	YC20260	Tapered roller bearing outer ring 32014X (2007114B) GB/T 297-1994
50	YC20346	Tapered roller bearing outer ring 32207 (7507EB) GB/T 297-1994
51	AYC18073	Tapered roller bearing inner ring 32207 (7507EA) GB/T 297-1994
52	AYC10538	Chain T=38 L=107
53	AYC10539	Chain T=38 L=107
54	AYC10540	Chain T=19.05 L=13
55	AYC12156	Chain T=15.875 L=56
56	AYC12428	Chain T=38 L=157
57	AYC12452	Chain T=38 L=176
58	AYC12647	Chain T=15.875 L=123
59	AYC16508	Chain T=19.05 L=53
60	AYC17256	Chain T=15.875 L=49
61	AYC10635	Seal ring Φ110XΦ90X8
62	AYC19566	Seal ring
63	AYC22505	Seal ring
64	L53825	O-shaped ring
65	YC10667	Seal ring
66	YC12197	O-shaped ring 20x1.9
67	YC12798	O-shaped seal ring 44x3.5 (GB1235-76)
68	YC12807	O-shaped seal ring 20x2.4 (GB1256-76)
69	YC13006	O-shaped seal ring 24x2.4 GB1235-76
70	YC13007	O-shaped seal ring 16x2.4 GB1235-76
71	YC16678	O-shaped seal ring
72	YC17302	O-shaped ring
73	YC18766	O-shaped ring Φ22*2.4 GB1235-76
74	YC20339	O-shaped ring 50x3.55 GB/T 3452.1-2005
75	YC23133	O-shaped ring
76	YC23139	O-shaped ring
77	Z34562	O-shaped ring
78	Z42027	O-shaped ring 53x45x4
79	Z42028	O-shaped ring 68x60x4
80	Z42030	O-shaped ring 88x80x4
81	AYC16123	Start relay NJ3-12
82	AYC18907	Reversing relay 12 V
83	AL62707	Power switch
84	AYC10033	Magnetic proximity switch
85	AYC10160	Oil circuit switch
86	AYC10585	Switch JK260
87	AYC10654	Switch (JK107)
88	AYC10697	Main power switch JK861
89	AYC10735	Magnetic alarm switchgear

Serial Number	Part Number	Name
90	AYC10866	Turn signal switch JK812-1
91	AYC13693	Handbrake light switch JK931
92	AYC14347	Hydraulic brake switch JK613B
93	AYC16124	Neutral switch KN1-223
94	AYC19951	Power conversion switch
95	AZ22892	Filter oil pressure switch
96	AZ34292	Magnetic switch
97	DQ26315	Air filter vacuum alarm switch

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Accessories

IMPORTANT: It is recommended to use original parts for repair and maintenance. Otherwise, machine may be damaged or machine service life may be shortened.

Serial number	Part number	Name
1	3061YC	212P-12 belt type pickup unit
2	BYC10040	HT-10 cutter transporter
3	BYC10005	Wheat threshing device
4	BYC10009	Rice threshing device
5	BYC10029	14.9-24 steering wheel
6	BYC10034	28L-26 driving wheel

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Corn Kernel Accessories

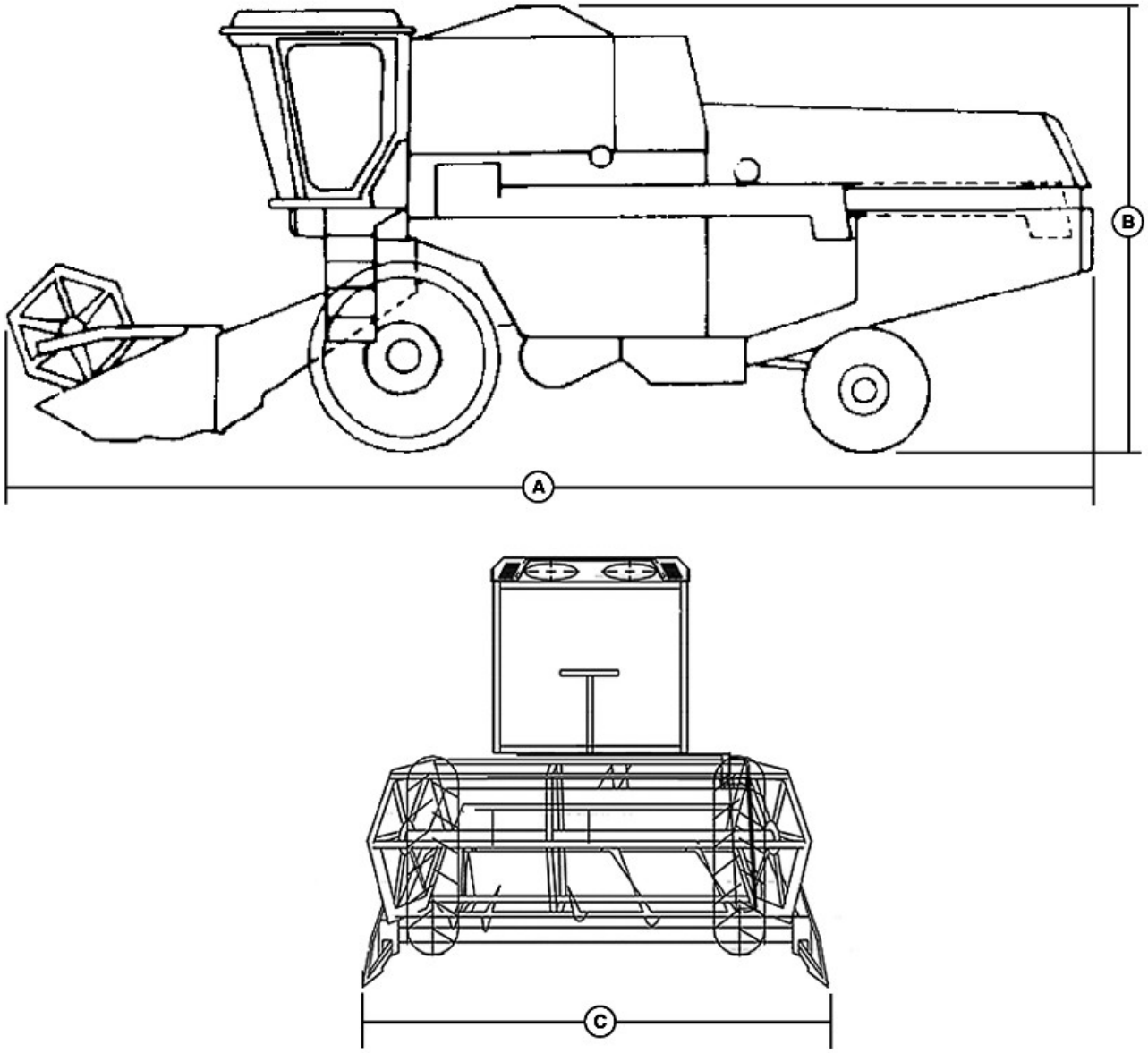
When harvesting corn kernels, change to following accessories. For changing procedures, read installation instructions: Installing Corn Harvest Components (INSYC33559).

Machine Model	Corn Harvest Component No.	Information	Remarks
C230	BDX10006	Corn Comb Separation Concave	*NOTE:* *1. Choose either cylinder decelerator or cylinder chain drive;* *2. 600 r/m roller driveshaft only applies to cylinder chain drive.*
	BYC10044	Corn Functional Components(non-adjustable speed gear case)	
	BDX10039	Corn Functional Components (adjustable speed gear case)	
	BYC10037	Cylinder Decelerator	
	BYC10045	Cylinder Chain Drive	
	BYC10049	Cylinder Closure Plate	
	BYC10050	Stone Trap Cover	
	BYC10052	Hex Shaft	
	BYC10081	Feeder House Chain Drive	
	BDX10008	600 r/m Roller Drive Wheel	
	BDX10016	Square Hole Sieve (recommended)	
	BDX10043	Long Tooth Sieve	

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Dimensions

Dimension Diagrams



YC7890—UN—24DEC14

A—9710 mm (with cutting platform); 7640 mm (without cutting platform)
B—3960 mm
C—5800 mm (218R/218F); 5000 mm (215R/215F); 3600 mm (with cutting platform)

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Configuration Table

IMPORTANT: The following is recommendation. Use different configurations according to the actual situation.

Harvest quality can be improved by changing different components.

Model	Main Applications	Main Configurations	Main Features	Main Machine Sales Code	Remarks
C230	Mainly for areas of rice and wheat	Rice threshing device, cutting plate separation cylinder + comb separation concave	Harvest rice mainly, can also harvest wheat if equipped with wheat threshing device (BYC10005)	All rice models	
	Mainly for areas that are larger and for harvesting wheat first and then rice or corn	Wheat threshing device, cutting plate separation cylinder + comb separation concave	Harvest wheat / barley / millet mainly, can also harvest rice if equipped with rice threshing device (BYC10009); can harvest also soybean and corn if equipped with soybean / corn accessory (refer to INSYC33559)	All wheat models	
	Mainly for areas of harvesting corn kernels	Corn kernel harvest model	Harvest corn kernels mainly, can harvest soybeans if equipped with flexible cutting platform	All corn kernel harvest models	Refer to Operator's Manual (OMYC32464)

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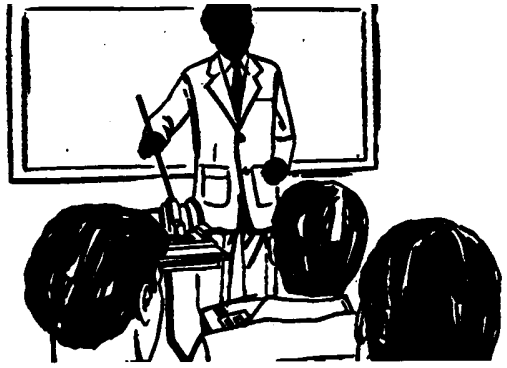
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