

Combine 1175 Hydro (DEC 13)



OPERATOR'S MANUAL 1175 Hydro Combine OMCQ100130 ISSUE L3 (INGLÊS)

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 Horizontina
LITHO IN U.S.A.



Introduction

Foreword

READ THIS MANUAL carefully in order to learn how to correctly operate and service your machine. Bodily injury or damage to the machine may occur if this procedure is not followed. This manual as well as the safety signs on your machine may be available in other languages (contact your John Deere dealer for more information).

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and it should accompany the machine if sold.

Measurements in this manual are presented both in the metric system and in the commonplace measurement system used in the United States. Only use system the correct replacement parts and attaching accessories. Bolts and screws in inches and millimeters may require a drive tool in inches or millimeters.

RIGHT-HAND AND LEFT-HAND sides are determined with reference to the direction of forward travel.

WRITE DOWN THE P.I.N.'s (Product Identification Numbers) in the Specifications or I.D. Numbers section. Note down all numbers precisely in order to aid in the location of the machine in the case of theft. Your John Deere dealer shall also require that these numbers are provided when you request parts. Archive the I.D. numbers in a safe place, exterior to the machine.

SETTING FUEL INJECTION BEYOND PUBLISHED factory specifications, or any other modification made with the purpose of increasing engine power, will result in loss of warranty cover for the machine.

BEFORE DELIVERING THIS MACHINE, your dealer performed a predelivery inspection. The machine was first used operationally after the dealer had carried out the Technical Delivery. The dealer monitored the machine during its first few hours of operation. Before completing 600 operating hours or 12 months of use, schedule a post-sales inspection by your dealer to tune the machine to perform at its best.

This machine was designed solely for use in regular agricultural operations or similar such operations ("INTENDED USE"). Its use in any other way is deemed contrary to the intended use. The manufacture accepts no liability for damage or injury resulting from misuse, such risks must be borne solely by the user. Compliance with and strict adherence to the operating, service and repair conditions specified by the manufacturer also constitute essential elements of the intended use.

THIS MACHINE SHOULD BE OPERATED and repaired only by persons familiar with all its particular characteristics and acquainted with the relevant safety rules (accident prevention). Accident prevention regulations, all other generally recognized regulations on safety and occupational medicine as well as road traffic regulations must always be complied with at all times. Any arbitrary modifications carried out on this machine will release the manufacturer of all liability for any resulting damage or injury.

ML70882,0000516 -19-06JUN05-1/1

Interpreting the Serial Number of Your Machine - 17 digits PIN

Interpreting the Serial Number of Your Machine		
1	World Manufacturer Code	CQ — Machines produced at JD Horizontina NW — Machines produced at JD Catalão BM — Machines produced at JD Montenegro
2	Machine model	
3	Model Identifier Suffix	N, T, W...
4	Check Letter	A, B, C, D...
5	Year of manufacture	According to the Year of manufacture table
6	Additional information	
7	Sequential Manufacturing Serial Number	000001, 000127....

1CQ1450XC9A123456

① ② ③ ④ ⑤ ⑥ ⑦

1CQ0600XC9A123456

CQ282811—UN—21MAY09

Year of Manufacture Code							
Year	Code	Year	Code	Year	Code	Year	Code
2008	8	2018	J	2028	W	2038	8
2009	9	2019	K	2029	X	2039	9
2010	A	2020	L	2030	Y	2040	A
2011	B	2021	M	2031	1	2041	B
2012	C	2022	N	2032	2	2042	C
2013	D	2023	P	2033	3	2043	D
2014	E	2024	R	2034	4	2044	E
2015	F	2025	S	2035	5	2045	F
2016	G	2026	T	2036	6	2046	G
2017	H	2027	V	2037	7	2047	H

Each model has its own "sequential number". The sequential number restarts at 000001 with the first machine produced each year.

Each model has its "Serial code of Machine". This code will change whenever there is a significant change of the machine's configuration.

GB52027,0000B34 -19-21MAY09-1/1

Company Info

John Deere Brasil Ltda.

Av. Eng. Jorge A. D. Logeman, 600
Cep: 98920-000 - Horizontina-RS - Brasil
CNPJ: 89.674.782/0001-58



JOHN DEERE

CQ291459—UN—23JAN12

BL04947,0000458 -19-13JAN12-1/1

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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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Identification View

1175 Hydro Combine



C0291376—UN—28NOV11

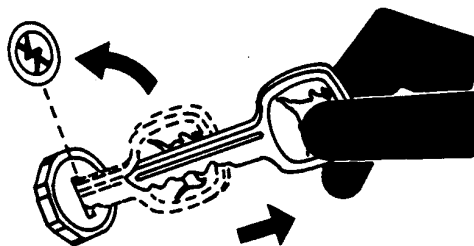
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Safety

Park Machine Safely

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



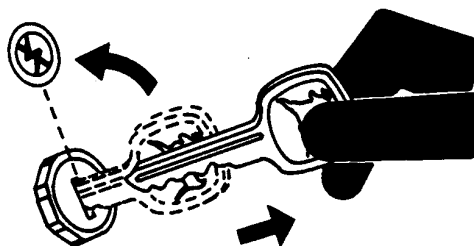
TS230 —UN—24MAY89

DX,PARK -19-04JUN90-1/1

Park Machine Safely

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



TS230 —UN—24MAY89

DX,PARK -19-04JUN90-1/1

Acknowledge the Safety Information

This is the safety prevention symbol. When you see this on your machine or in this publication, always be alert to the risk of injury or accidents related to operating the equipment.



T81389 —UN—28JUN13

CQ,SGALERTA -19-13MAR02-1/1

Follow Safety Instructions

Read the safety information in this publication and on your machine carefully. Maintain the decals in good condition. Replace worn or damaged decals. Make sure that new components and replacement parts have their safety decals. Replacement safety decals are available from your John Deere Dealer.

Learn how to operate the machine and how to use controls properly. Do not allow anyone with no instructions to operate the machine.

Keep your machine in proper working condition. Unauthorized modifications impair the operation and/or safety, and affect machine life.



TS201—UN—15APR13

CQ,SGMENSEG -19-13MAR02-1/1

Observe the Traffic Norms

⚠ CAUTION: Always observe local road traffic regulations when driving the machine on public roads.



H28930—UN—30JUN89

AG,GG05155,8 -19-13MAR02-1/1

Avoid Accidentally Starting the Machine.

Avoid possible accidents or death by accidentally starting the machine.

Do not start the machine by short circuiting the terminals.

Machine may start in gear if normal circuitry is bypassed.

NEVER start the engine while standing beside the machine.

Start the engine only from the operator seat and with the transmission in neutral.

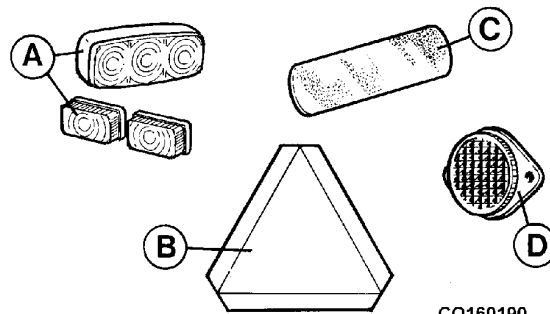
CQ,STBYPASS -19-14JUL98-1/1

Use the Lights and Other Safety Devices

Slow vehicles such as Tractors, self driven machines and trailers can create a dangerous situation while traveling on public roads. They are difficult to be seen, especially at night. Collisions with other vehicles can result in injury or even death.

If permitted by law, use the flashing hazard lights when driving on highways. To increase visibility at night, use the lights and any other warning devices the machine is equipped with. For certain equipment, the installation of additional flashing lights may be necessary.

Maintain the decals in good condition. Replace missing or damaged items. See your John Deere Dealer for purchasing a safety lights kit.



CQ160190

CQ160190 —UN—08SEP98

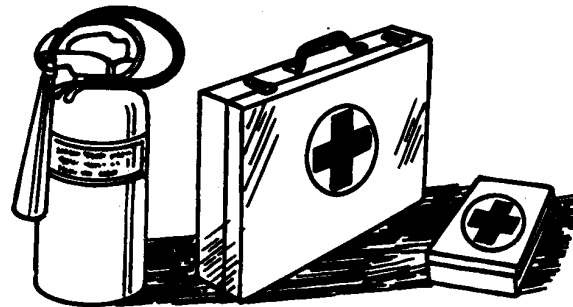
CQ,SGLUZ -19-13MAR02-1/1

Prepare for Emergencies

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.



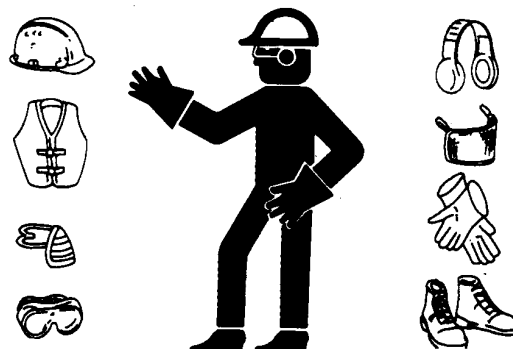
TS291 —UN—15APR13

DX,FIRE2 -19-03MAR93-1/1

Wear Protective Clothing

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

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



TS206 —UN—15APR13

DX,WEAR2 -19-03MAR93-1/1

Handle Fuel Safely—Avoid Fires

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 -19-12OCT11-1/1

TSS202 —UN—23AUG88

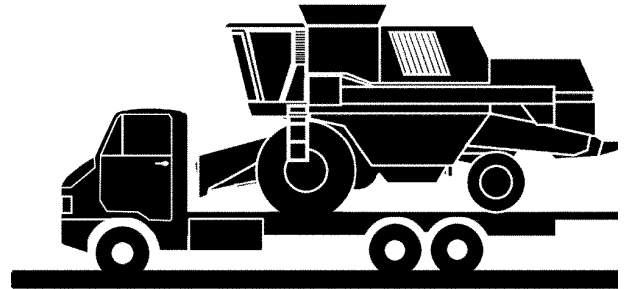
Check the Safe Operation of the Combine

Always remember to service the combine to ensure its safe operation and running, and also regarding the traffic regulations.

AG,GG05155,9 -19-22JAN99-1/1

Transport on a Truck

When transporting the combine on trucks, make sure the side shields are well fastened and cannot open accidentally during transportation.



CQ203970

CO03622,0000061 -19-13MAR02-1/1

CQ203970 —UN—09APR01

Driving the Combine

Operate machine only with all shields correctly installed.

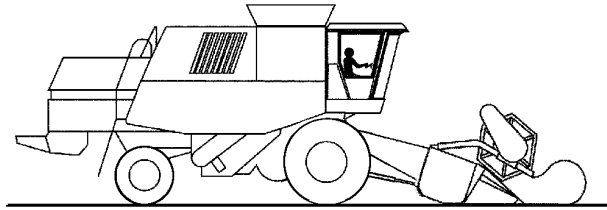
Before starting the engine make sure no one is standing close to the Combine (pay special attention to children). Ensure there is adequate visibility. Sound the horn as a safety measure before starting the engine.

Drive at a speed appropriate to the conditions of the terrain. Avoid making sharp turns when driving up or down slopes or when driving across a slope. Take care when going along slopes with a full grain tank.

Fasten the cutting platform to the machine very carefully.

When making turns, always take into consideration the width of the Header and the fact that the rear end of the Combine swings out. The header and ground conditions affect the driving characteristics of the Combine.

Reduce speed when traveling over rough or uneven terrain or when making sharp turns.



CQ203780

CQ203780 —UN—06APR01

Use reduced gear when driving downhill.

Drive cautiously when going past ditches or other obstacles, particularly on slopes, which could tip the Combine.

CQ,SGCACOND -19-13MAR02-1/1

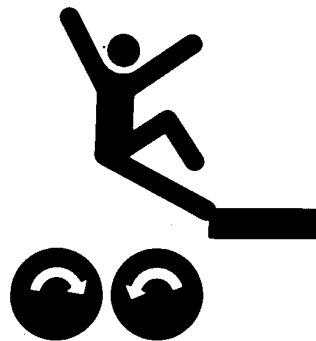
Keep Riders and Children Away From the Machine

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

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

The instructional seat should only be used for instruction or short periods for machine observation, and not for seating children.

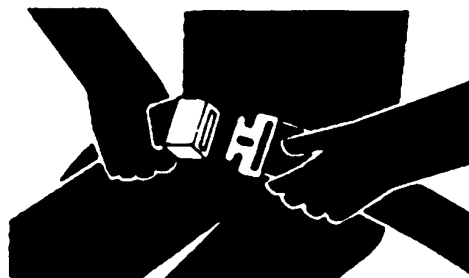


TS253 —UN—23AUG88

HX,AG,SF6904 -19-22JUL99-1/1

Use Seat Belts

Use the seat belt whenever you operate the combine or ride as an observer.



H47137

H47137 —UN—25OCT95

HX,STSSA,I -19-22JUL99-1/1

Stay Clear of Rotating Drivelines

Entanglement in rotating driveline can cause serious injury or death.

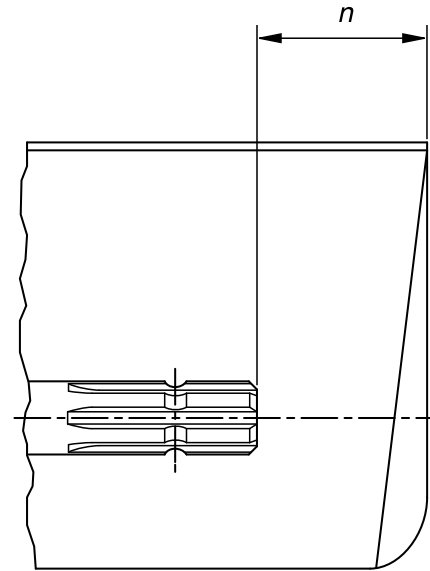
Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Wear close fitting clothing. Stop the engine and be sure that PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

Do not install any adapter device between the tractor and the primary implement PTO drive shaft that will allow a 1000 rpm tractor shaft to power a 540 rpm implement at speeds higher than 540 rpm.

Do not install any adapter device that results in a portion of the rotating implement shaft, tractor shaft, or the adapter to be unguarded. The tractor master shield shall overlap the end of the splined shaft and the added adaptor device as outlined in the table.

PTO Type	Diameter	Splines	$n \pm 5 \text{ mm (0.20 in.)}$
1	35 mm (1.378 in.)	6	85 mm (3.35 in.)
2	35 mm (1.378 in.)	21	85 mm (3.35 in.)
3	45 mm (1.772 in.)	20	100 mm (4.00 in.)



DX,PTO -19-30JUN10-1/1

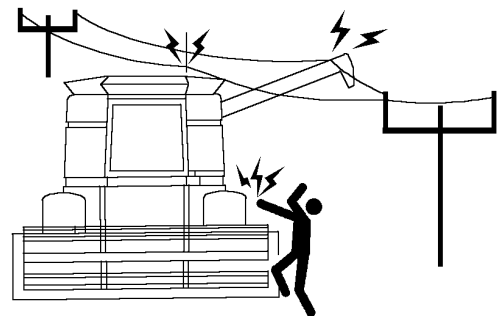
T51644 —UN—22AUG95

H96219 —UN—29APR10

Avoid Power Lines

Put the grain tank unloading auger in transport position and lower the grain tank access handrail before driving on public roads.

Fasten the radio aerial in its transport position before driving on public roads, it may come into contact with low-hanging power lines. This would result in the operator suffering a severe electrical shock.



HX,STSSA,D -19-22JUL99-1/1

H52022 —UN—14APR99

Protection Device

Always shut off threshing system and engine; remove ignition key and wait for complete stop of moving components before opening or removing any protection.

Always install and properly secure all guards and shields using all available fasteners before operating the equipment.

Make sure they are in good condition and properly attached.

Keep hands, feet and clothing away from moving parts.



CQ290162 —JUN—28NOV13

DF67602,000021C -19-28NOV13-1/1

Stay Clear of Harvesting Units

Cutterbars, auger, reel and rollers cannot be completely armored due to their function. Stay away from these elements during operation. Always disengage the threshing, shut off the engine and remove key switch before removing any guards.



ES 118 704

ES118704 —JUN—21MAR95

CQ,SGCAPLATA -19-13MAR02-1/1

Care with the Cutter Blades

Never attempt removing any obstructions from the header unless the threshing and the engine are shut off and the key switch removed.

Make sure no one is standing nearby before moving the Combine.

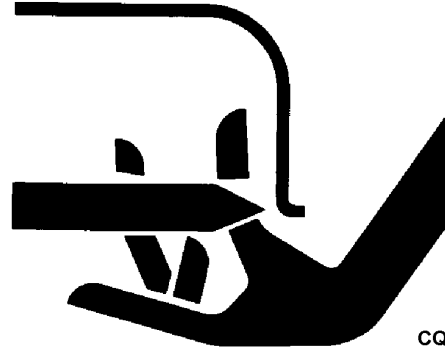


TS254 —JUN—23AUG88

AG,SGCALAMIN -19-13MAR02-1/1

Safe operation of Straw Chopper

The straw chopper has safety guards that surround the rotating blades. The blades may continue to rotate for some time after drive has been switched off. Stay clear of moving components during operation of the straw chopper. Disengage drive, shut off engine, remove starter key and wait until drive parts have stopped moving prior to servicing straw chopper.



CQ172130

CQ172130 —UN—11SEP98

MB03730,0001BD2 -19-01SEP04-1/1

Cleaning the Grain Tank and Removal of Obstructions

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

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

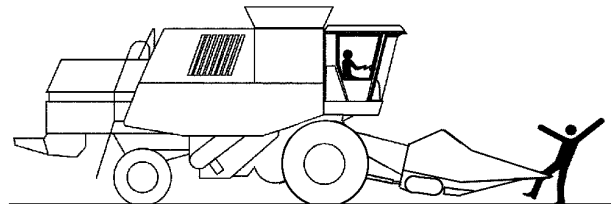


TS256 —UN—23AUG88

HX,STSSA,M -19-22JUL99-1/1

Driving with the Cutting Platform Coupled

When driving along public roads the header must be raised. However, it should not obstruct the operator view. The header height control must be in the blocked position.



CQ203760

CQ203760 —UN—06APR01

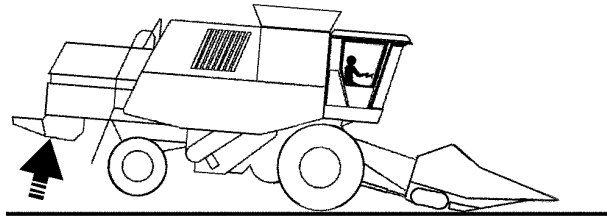
MB03730,0001BD6 -19-29AUG02-1/1

Use of Counterweights

Operating, steering and braking performance of the combine may be affected by the header used because its weight can alter the center of gravity of the combine.

To maintain stability, the use of counterweights may be necessary on the rear part of the Combine.

Observe the maximum axle weight and total weight allowed.



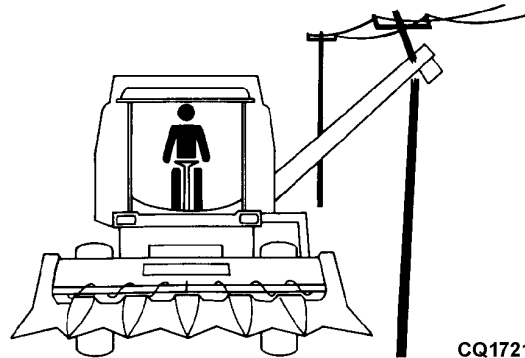
CQ203770

CQ203770 —UN—06APR01

MB03730,0001BD7 -19-20AUG02-1/1

Close the Grain Tank Unloading Auger

Close the grain tank unloading auger in the transport position before driving on public roads. This way prevents collision with installations on the sides of the roads, such as posts.



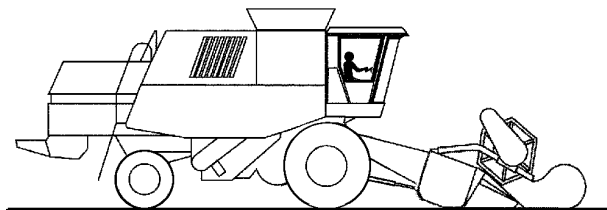
CQ172140

CQ172140 —UN—11SEP98

CQ,SGCATQ -19-13MAR02-1/1

Stopping the Combine

Lower the header and other equipment to the ground when parking the combine. Turn off the threshing, the header and the engine, put the gear shift in 1st gear, set the hand brake, remove the key switch and close the cab (if equipped). Place blocks under the wheels. Never leave the Combine while the engine is running. Do not exit the Cab while the machine is moving.



CQ203780

CQ203780 —UN—06APR01

MB03730,0001BD8 -19-22OCT03-1/1

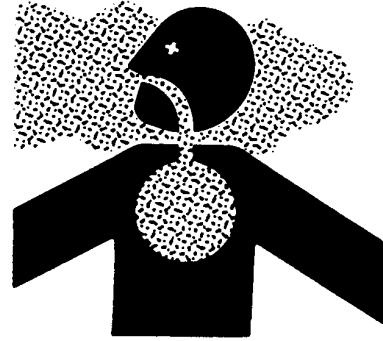
Operation of the Engine

Never operate the engine inside an enclosed area.

Danger of asphyxiation!

When starting the engine, the lever must be in neutral and the parking brake set. Switch off the threshing, cutting platform and unloading auger switches.

The engine system is protected by these switches.



TS220 —UN—15APR13

AG,SGCAFUNC -19-22OCT03-1/1

Maintenance Safety

Familiarize yourself with the maintenance procedures before servicing. Keep area clean and dry.

Do not perform lubrication or adjustment services while the machine is moving.

Keep hands, feet and clothing away from moving parts.

Position all the Controls in neutral and disconnect all electrical functions. Lower the header to the ground. Stop the engine. Remove the key switch. Wait for the machine to cool down.

Firmly prop up any element that requires to be in a raised position for servicing.

Keep all parts in good condition and properly installed.

Repair damaged parts immediately. Replace worn or damaged parts.

Remove all excessive dirt and oil.

Disconnect the mass (-) cable from the Battery before servicing the Electrical System or before performing any welding services on the Combine.



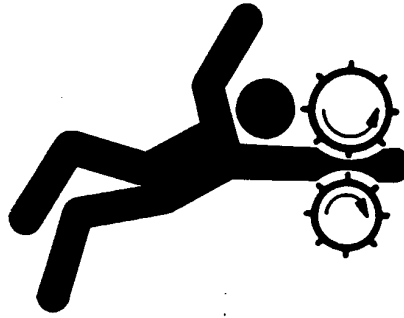
TS218 —UN—23AUG88

CQ,SGCAMANU -19-13MAR02-1/1

Service Machines Safely

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.



TS228 —UN—23AUG88

DX, LOOSE -19-04JUN90-1/1

Remove Built-up Crop Debris

The build up 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.



TS227 —UN—15APR13

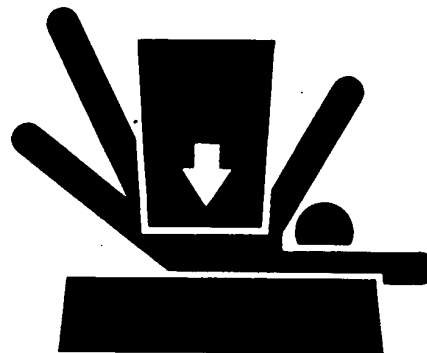
HX, STSSA, N -19-22JUL99-1/1

Support Machine Safely

Always lower the header to the ground before carrying out any work on the Combine. When it is necessary to work under the header, Reel or Combine, make sure they are blocked securely.

Do not use stone blocks or other material that could collapse under a continuous weight.

Do not work under any Combine that is only supported by a jack. Always observe the handling instructions given in this manual.



TS229 —UN—23AUG88

CQ, SGCAAPOIO -19-24SEP03-1/1

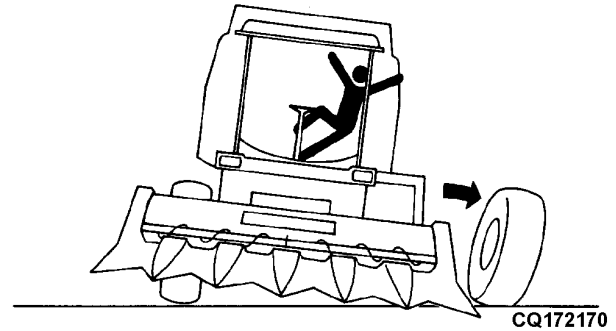
Engine Maintenance

Always use the rear header to perform maintenance work on the engine. Do not climb on any other part of the Combine for there is a risk of falling off.

AG, GG05155, 11 -19-25JAN99-1/1

Tightening the Wheel Nuts

Tighten the wheel nuts at the time intervals indicated in the "Break In Period" chapters. Do not skip the periodic tightening to avoid the loss of a wheel, which could tip the Combine over, causing serious injuries to the operator and considerable damage to the machine.



CQ172170 —UN—11SEP98

CQ,SGCAPORCA -19-13MAR02-1/1

Avoid High-Pressure Fluids

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.

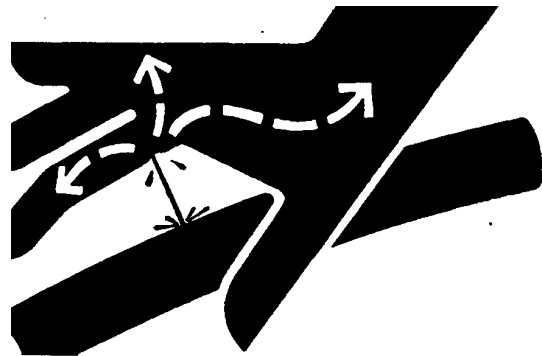
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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.

X9811 —UN—23AUG88

DX,FLUID -19-12OCT11-1/1

Prevent Battery Explosions

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).



TS204 —UN—15APR13

DX,SPARKS -19-03MAR93-1/1

Handle Batteries Safely

Sealed batteries

The combines are originally equipped with sealed batteries, that is, they do not require maintenance.

A visual indicator on the top of the battery displays the charge level.

Lead-calcium batteries do not require water.

Conventional batteries

Sulfuric acid in Battery electrolyte is toxic. It is strong enough to burn skin, burn holes in clothing, and cause blindness if it affects the eyeballs.

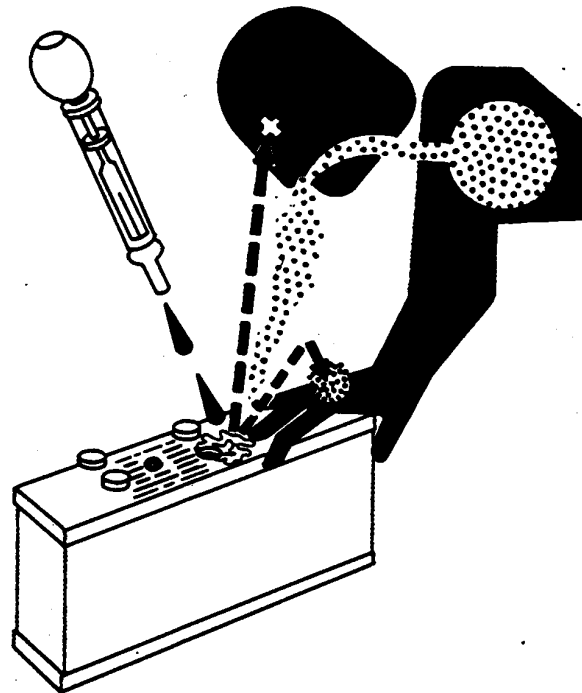
1. Refill the battery in a well ventilated place.
2. Wear safety goggles and gloves.
3. Do not inhale the fumes while adding electrolyte.
4. Do not spill any electrolyte.
5. When starting the engine with a booster Battery, take care not to invert the polarity.

In case acid gets into contact with the skin:

1. Clean the affected area with water.
2. Prepare a sodium carbonate solution or any other base agent to neutralize the acid.
3. Flush eyes with water during 10 to 15 minutes.
4. Call a physician immediately.

In case of electrolyte ingestion:

1. Drink large amounts of water or milk.



2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Call a physician immediately.

TS203 —UN—23AUG88

CQ,SGCAMANUS -19-13MAR02-1/1

Service Tires Safely

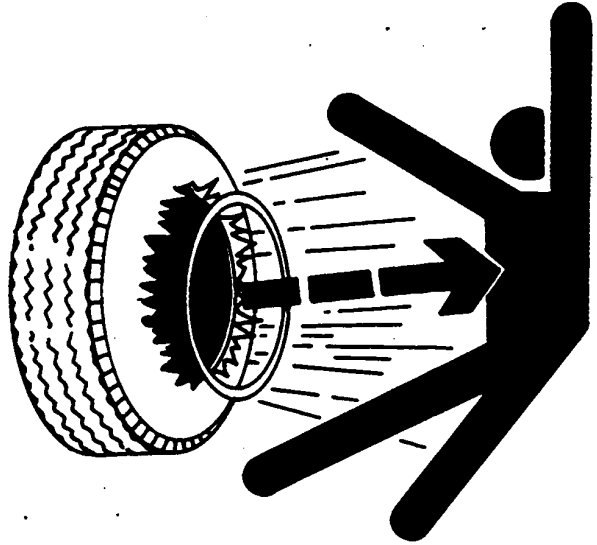
Explosive separation of a tire and rim parts can cause serious injury or death.

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.



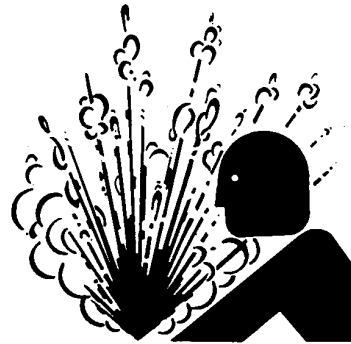
TS211 —UN—15APR13

DX,RIM -19-24AUG90-1/1

Safe Maintenance of the Radiator

Danger of burns!

With the engine turned off, loosen the expansion tank cap to the first stage to relieve the pressure before removing it completely.



TS281 —UN—15APR13

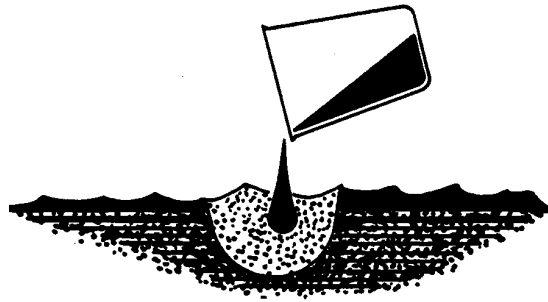
AG,GG05155,13 -19-13MAR02-1/1

Observe the Environment Protection Laws

Be conscious of ecology and the environment.

Before draining any fluid, learn about the correct way to dispose of it.

Observe the environment protection norms when disposing of oil, fuel, coolant, filter and batteries.



TS222 —UN—23AUG88

CQ,SGCAMEIO -19-13MAR02-1/1

Remove Paint Before Welding or Heating

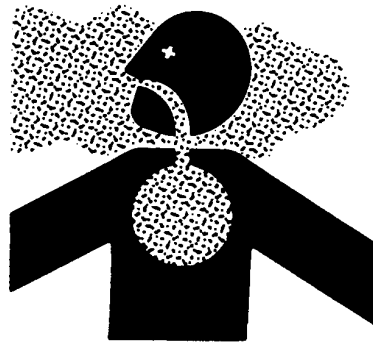
Avoid potentially toxic fumes and dust.

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.



TS220 —UN—15APR13

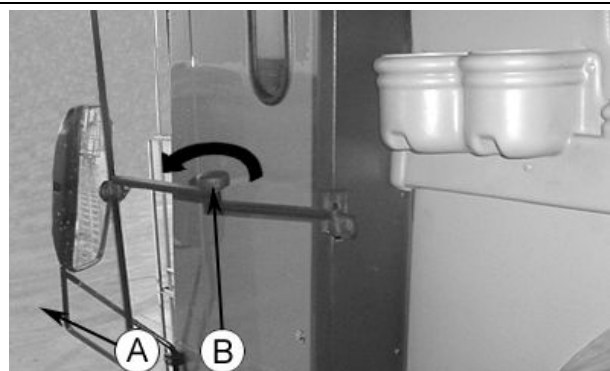
Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

DX,PAINT -19-24JUL02-1/1

Emergency Exit

The right-hand cab window (A) may be used as an emergency exit. Release opening arm by turning knob (B) as indicated by arrow.

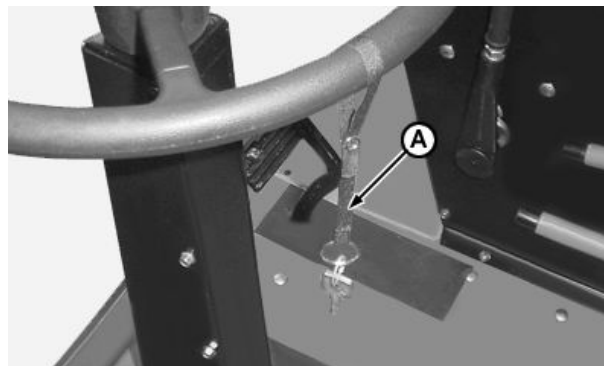


CQ220200 —UN—29SEP03

OU83340,0000400 -19-11JUL08-1/1

Use Safety Key-Ring

When leaving machine, remove ignition key and clip it onto steering wheel using safety key-ring (A) to prevent possible accidents.



CQ279307 —UN—06DEC06

GB52027,00000F0 -19-07DEC06-1/1

Safety Labels

Safety Decals

On many important areas of the machine there are safety signs stuck aimed at alerting on potential accident hazard.

The hazard is identified by a symbol in the shape of a triangle. A symbol on the side is aimed at illustrating how to proceed to avoid accidents. These safety decals, their location on the machine, and a brief explanation on their meaning are shown below.

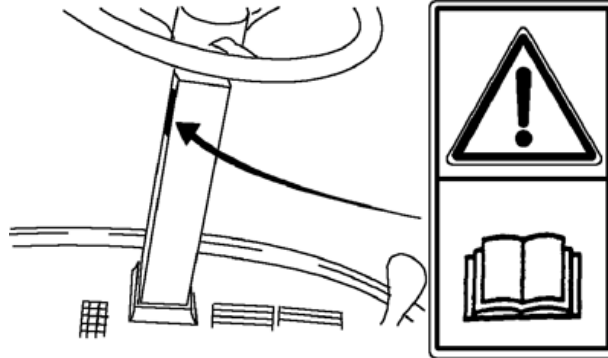


TS231 —19—07OCT88

AG,GG05155,14 -19-24OCT03-1/1

Operator's Manual

This Operator's Manual contains all important information necessary for totally safe operation of the machine. Carefully observe all safety rules to avoid accidents.

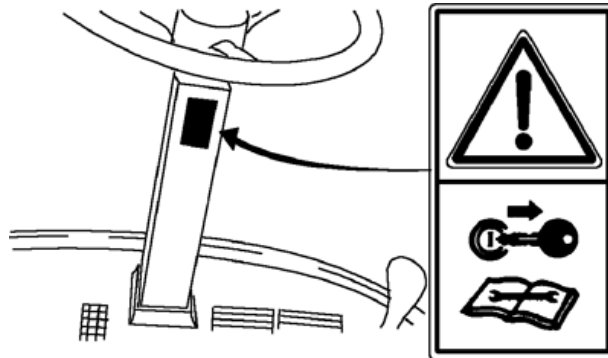


CQ293223 —UN—26SEP12

AS60558,0002985 -19-25SEP12-1/1

Repairs and Servicing

Before carrying out any repair or service on the machine, shut off engine and remove ignition key.



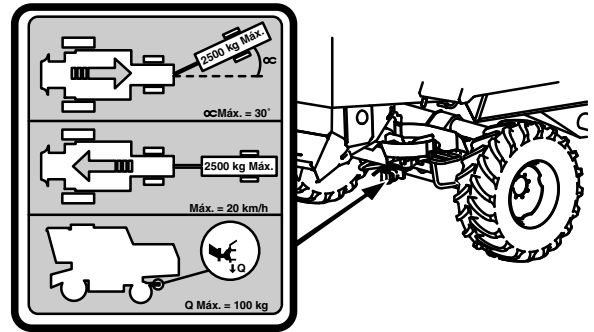
CQ293224 —UN—26SEP12

AS60558,0002986 -19-25SEP12-1/1

Trailer Hitch

Make sure maximum load and maximum angle of lateral tilt are within specification.

DO NOT exceed these values.

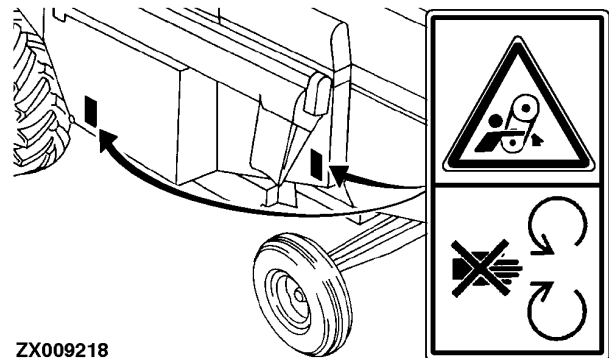


CQ275480 —UN—11AUG06

ML70882,0000949 -19-11JUL06-1/1

Left Side Combine Shields

Do not open or remove the left side combine shields when the engine is running.



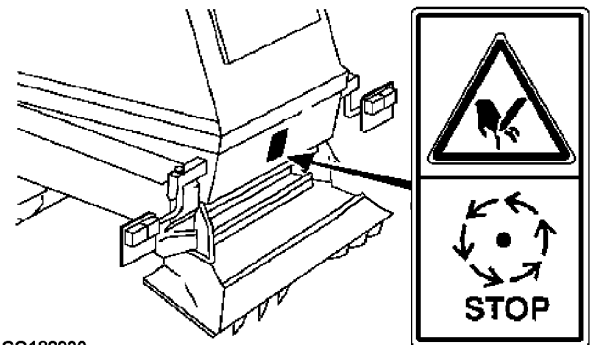
ZX009218

ZX009218 —UN—10JUN96

AG,GG05155,29 -19-27JAN99-1/1

Chopper

Do not touch moving parts. Wait for all parts to stop.



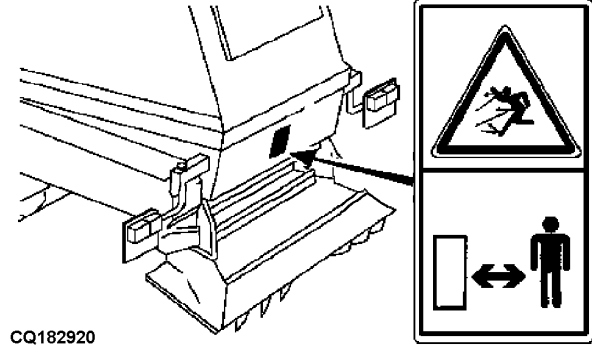
CQ182930

CQ182930 —UN—11MAR99

AG,GG05155,31 -19-27JAN99-1/1

Chopper

Stay clear of this mechanism when the engine is running.



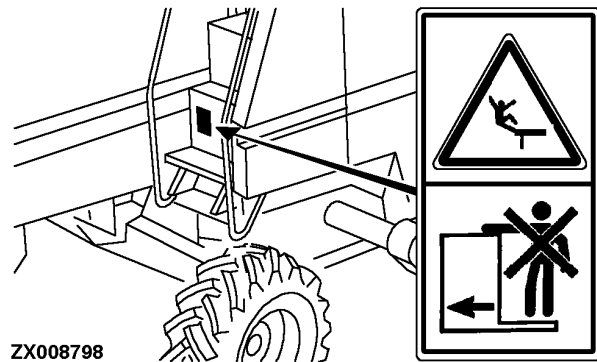
CQ182920

CQ182920 —UN—11MAR99

AG,GG05155,32 -19-27JAN99-1/1

Work Platform Access Ladder

Do not allow any person on work platform access ladder.



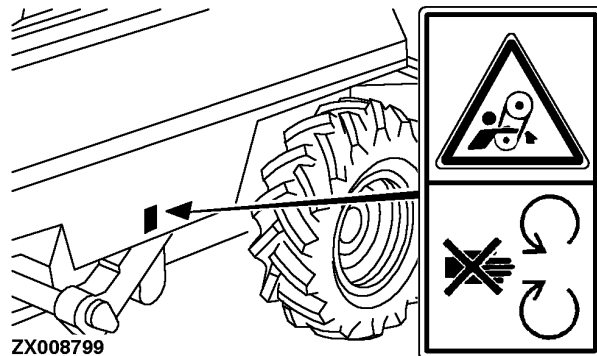
ZX008798

ZX008798 —UN—22MAY96

AG,GG05155,33 -19-27JAN99-1/1

Right Side Combine Shields

Do not open or remove the right side combine shields when the engine is running.



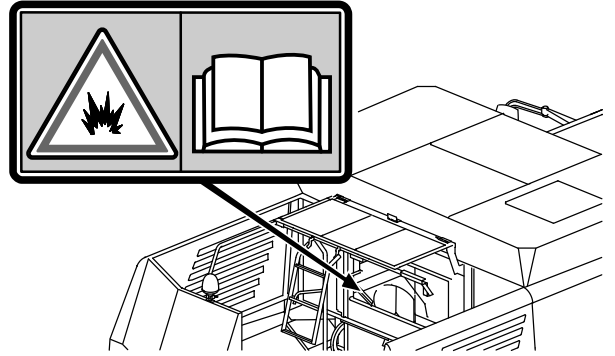
ZX008799

ZX008799 —UN—22MAY96

AG,GG05155,34 -19-28JAN99-1/1

Radiator cooling system

Cooling package is pressurized. To avoid burns caused by uncontrolled release of vapour or hot coolant, wait until the radiator is completely cold before touching it. Slowly remove radiator cap.

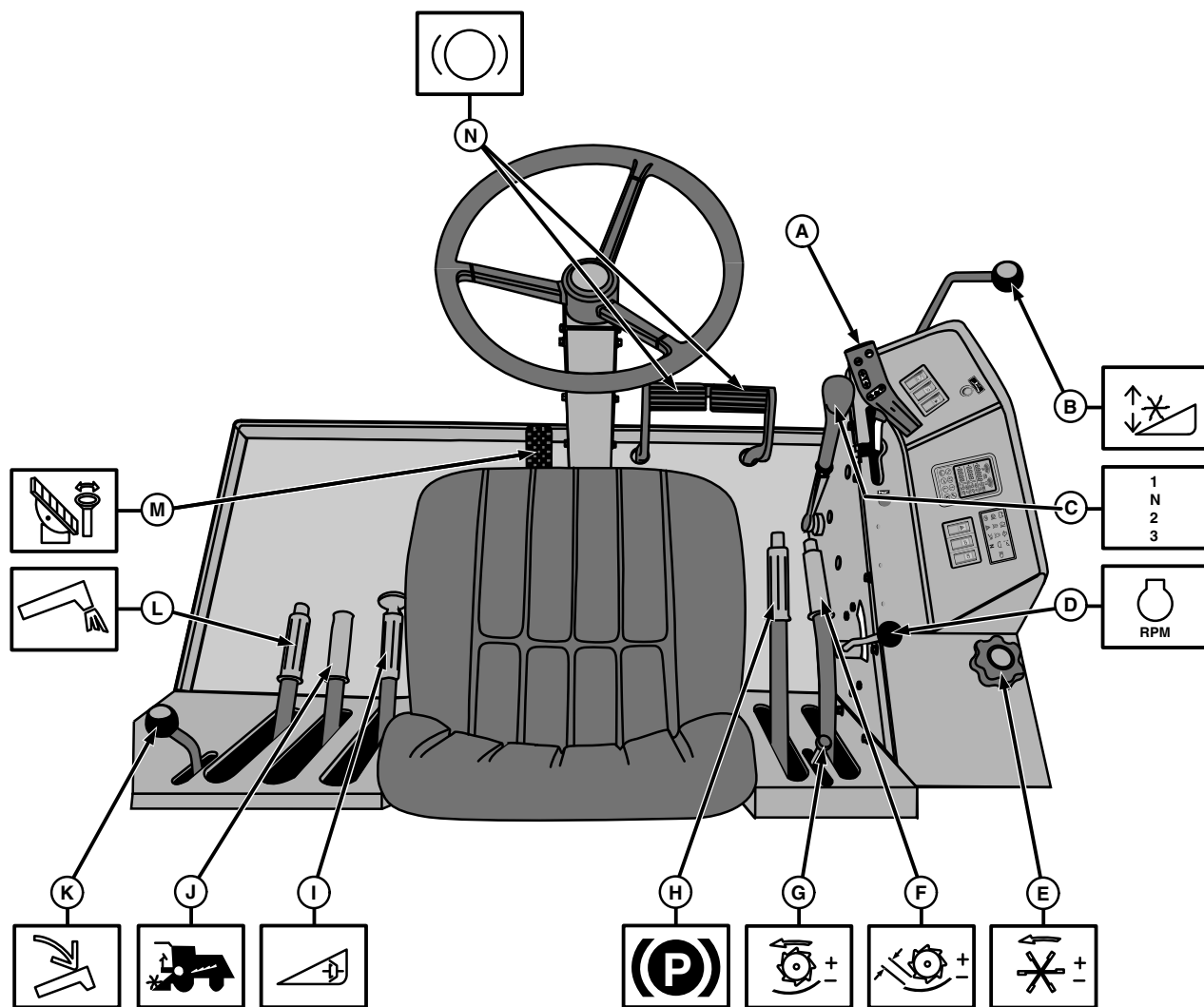


CQ283364 —UN—16SEP10

AS60558,0001619 -19-10AUG09-1/1

Controls and Instruments

General View of Controls and Instruments



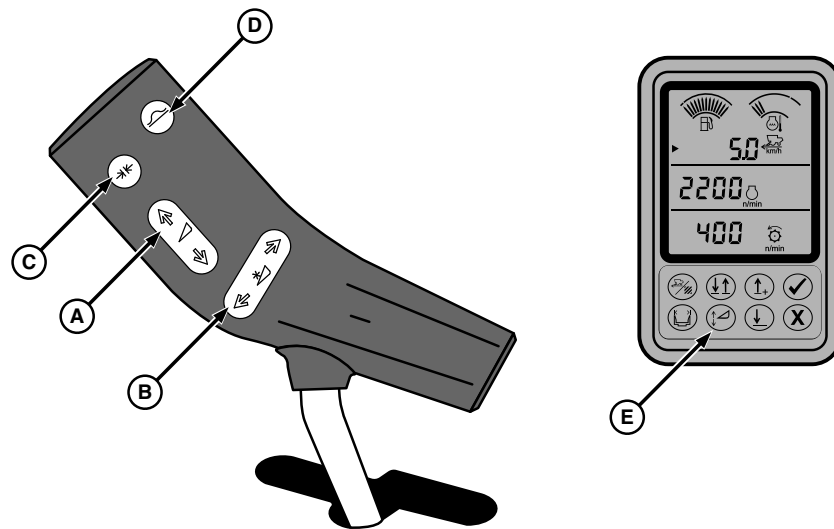
- | | | | |
|----------------------------------|--------------------------------------|-------------------------------------|------------------------------|
| A—Multi-Function Control Handle* | F—Concave Clearance Adjustment Lever | J—Threshing Unit Drive Engage Lever | M—Steering Column Lock Pedal |
| B—Reel Height Control Lever | G—Cylinder Speed Control Lever | K—Unloading Auger Swing Lever | N—Brake pedals |
| C—Gearshift Lever | H—Parking Brake | L—Unloading Auger Engage Lever | |
| D—Throttle | I—Header Transmission Engage Lever | | |
| E—Reel Speed Control Knob | | | |

* See "Multi-function Control Handle" for more detailed information.

CQ291345—UN—08DEC11

BL04947,0000374 -19-24OCT11-1/1

Multi-Function Control Handle



A—Raising/Lowering Header Button
B—Header Lateral Tilt Manual Control Button (if equipped)

C—Return-to-Cut Knob
D—Break-Off Cut Button

E—Automatic Cutting Height Control Enable Key

Raise header— press button (A) upward.

Lower header— press button (A) downward.

NOTE: With engine at high speed, manual lowering of header starts at low speed. If button continues being pressed, it begins to lower at high speed. With engine at low speed, only low speed lowering is available.

Header tilt— press button (B) to the right or to the left to tilt header.

Return to cut— with key (E) selected in automatic mode and pressing button (C).

Break-off cut— with key (E) selected in automatic mode and pressing button (D).

*NOTE: For headers **without** control sensors the **return-to-cut (C)** and **break-off cut (D)** buttons have no function.*

BL04947,0000370 -19-15JUN12-1/1

Forward and Reverse Travel

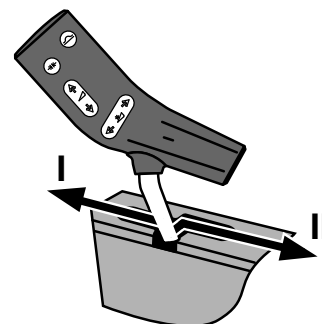
CAUTION: Always adapt combine ground speed to road or field conditions.

Forward travel (I)

Push multi-function control handle forward.

Reverse travel (II)

Pull multi-function control handle to the rear.



OU64006,00000A2 -19-21SEP05-1/1

CQ291367 —UN—09DEC11

CQ249820 —UN—21SEP05

Steering Column Locking Pedal

Unlock steering column (B) pressing pedal (A) into position (I).

Select desired position and lock steering column (B) pressing pedal (A) into position (II).

IMPORTANT: Always operate combine with steering column locked.



CQ292570 —UN—26SEP12

OU64006,000007D -19-26SEP12-1/1

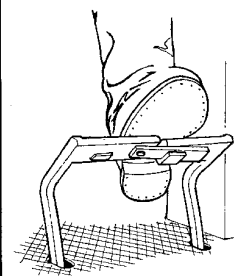
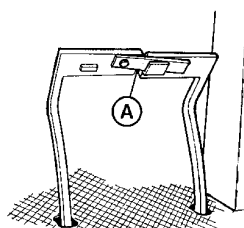
Service Brake Pedals

Road travel:

IMPORTANT: Join both pedals through lock (A) while traveling on public roads.

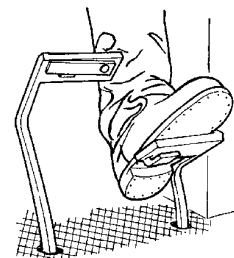
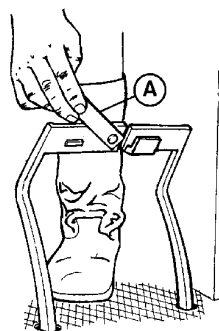
While harvesting, use pedals separately for sharp turns to help with steering. To do so, turn lock (A) upward.

IMPORTANT: When required, depress both pedals at the same time.



CQ176920

CQ176920 —UN—09FEB99



CQ176940

CQ176940 —UN—09FEB99

OU83340,000041D -19-09JUN06-1/1

Gearshift Lever

Shift into desired gear with combine stationary (Multi-function control handle in neutral position).

Engage preferentially 1st speed for rice harvesting.

Engage preferentially 2nd speed for harvesting other crops.

Engage 3rd speed for public road traveling.



CQ284874 —UN—09FEB12

AS60558,00027E8 -19-01FEB12-1/1

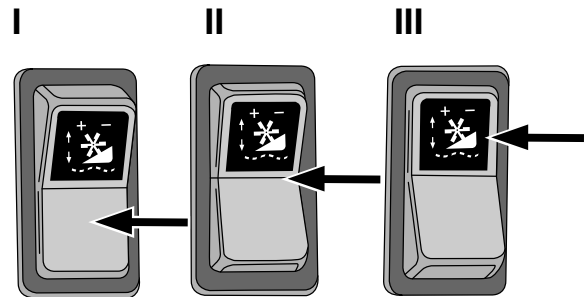
Cutterbar Pressure and Reel Height Control Lever

With selector switch in position (I) cutterbar pressure adjustment is controlled hydraulically through lever (A).

- **Increase pressure** — pull lever (A).
- **Decrease pressure** — push lever (A).

With selector switch in position (III) reel height adjustment is controlled hydraulically through lever (A).

- **Raise reel**— pull lever (A).
- **Lower reel**— push lever (A).



CQ291371 —UN—09DEC11



CQ291370 —UN—09FEB12

BL04947,000038E -19-28OCT11-1/1

Throttle

Lever (A) increases and reduces engine speed.

Increase engine speed— push lever (A).

Reduce engine speed— pull lever (A).



CQ284875 —UN—09FEB12

AS60558,00027E9 -19-01FEB12-1/1

Reel Speed Regulation Knob

Knob (A) changes reel speed.

Reduce reel speed— turn knob (A) clockwise.

Increase reel speed— turn knob (A) counterclockwise.



CQ284876 —UN—09FEB12

AS60558,00027EA -19-01FEB12-1/1

Unloading Auger Swing Lever

Lever (A) sets unloading auger to transport and working position.

IMPORTANT: Never drive machine with unloading auger in working position.



CQ285200 —UN—16FEB06

OU64006,0000084 -19-07FEB06-1/1

Unloading Auger Engage Lever

IMPORTANT: Only engage lever (A) with unloading auger in working position.

NOTE: Before engaging unloading auger, set accelerator to medium throttle to prevent possible damage to unloading mechanisms.

Lever (A) engages grain unloading. To unlock it, press button at end of lever.



CQ285210 —UN—16FEB06

OU64006,0000085 -19-31MAR06-1/1

Threshing Unit Drive Engage Lever

Lever (A) engages drive of threshing unit.

IMPORTANT: Only engage threshing system with combine at low speed to prevent excessive wear of transmission belt.

NOTE: Keep threshing system disengaged while combine is not operating.



CQ265220 —UN—16FEB06

OU64006,0000087 -19-05APR06-1/1

Header Transmission Engage Lever

Lever (A) engages header transmission if installed. Lower lever to disengage.

IMPORTANT: Only engage header with combine at low speed.

Lever (A) has an emergency button. Press button at end of lever to switch off header.



CQ265230 —UN—16FEB06

OU64006,0000088 -19-05APR06-1/1

Park Brake

Pull lever (A). To release brake, press button at end of lever and lower the lever.



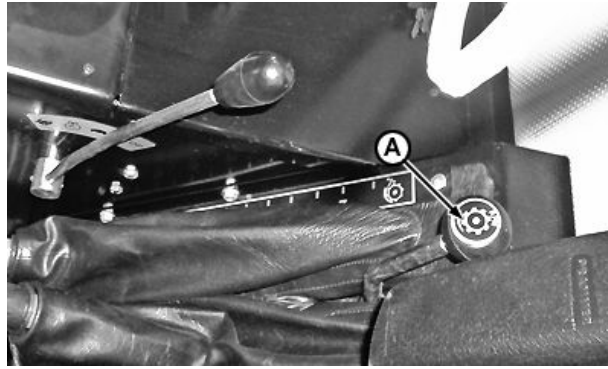
CQ284877 —UN—01FEB12

AS60558,00027EB -19-01FEB12-1/1

Threshing Cylinder Speed Variator Lever

Lower lever (A) to increase speed.

Standard cylinder speed variation range is from 380 to 1,100 rpm.



CQ284878 —UN—01FEB12

AS60558,00027EC -19-01FEB12-1/1

Concave Clearance Adjustment Lever

Through lever (A), clearance between concave and cylinder may be adjusted. The numbered scale located next to the lever represents approximate clearance in millimeters (mm) between concave and threshing cylinder.

Increase clearance— lever (A) downward.

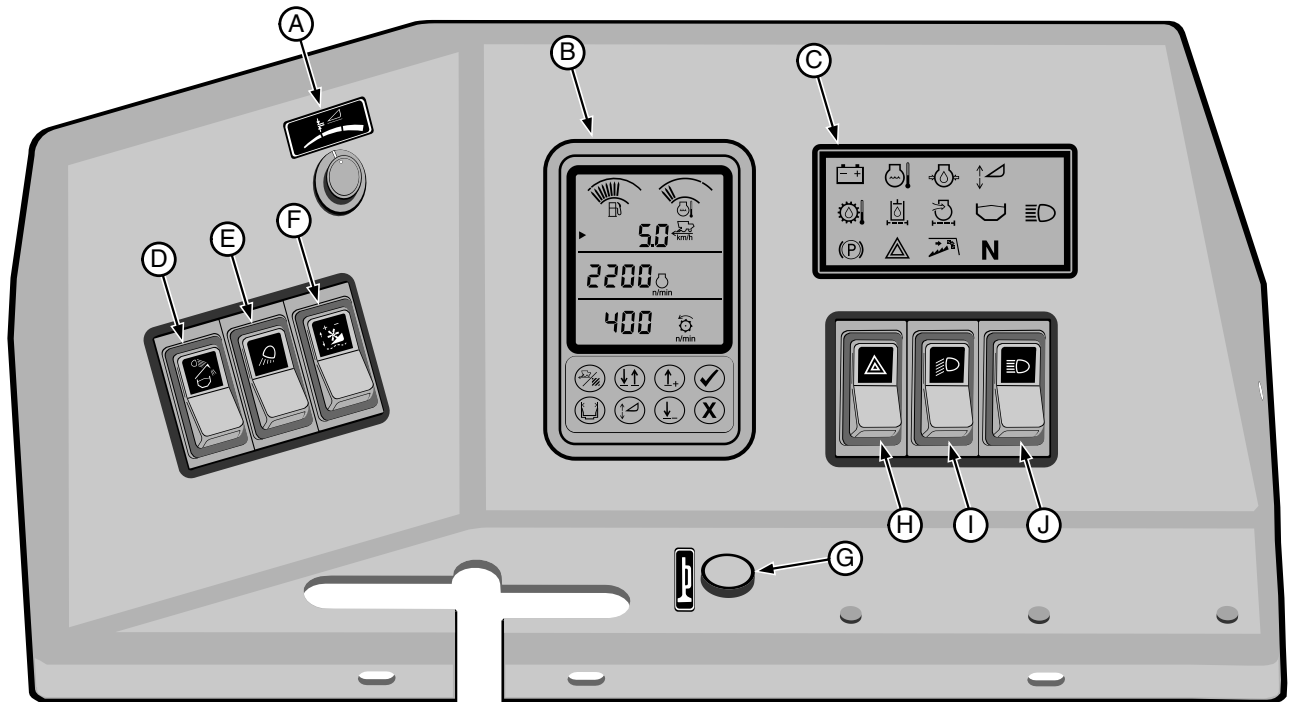
Reduce clearance— lever (A) upward. To unlock it, press button at end of lever.



CQ284879 —UN—01FEB12

AS60558,00027ED -19-01FEB12-1/1

Instrument Panel



A—Automatic Header Control
Selector
B—Display
C—Indicator Lights
D—Switch for Grain Tank Interior
Light and Unloading Auger
Lights

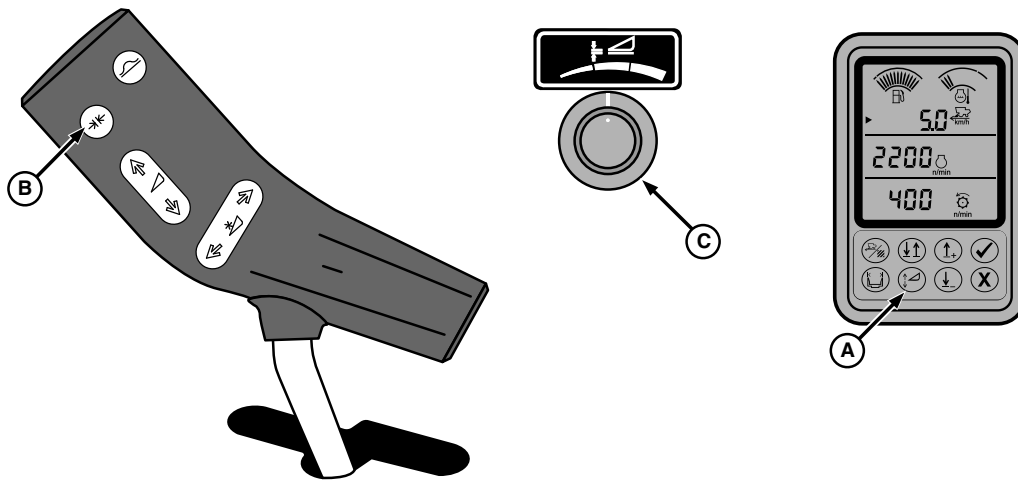
E—Auxiliary Work Lights Switch
F—Cutterbar Pressure
Adjustment and Reel Vertical
Adjustment Switch

G—Horn Button
H—Hazard Lights Switch
I— Position Lights and
Headlights Switch
J— Full-Beam and Low-Beam
Headlights Switch

CQ291346 —UN—09DEC11

BL04947,0000375 -19-24OCT11-1/1

Automatic Cutting Height Control



Cutting height control key (A) has the function to engage/disengage automatic mode of header cutting height control system.

Cutting height adjustment potentiometer (C) determines header position in relation to the ground in automatic mode. Turning potentiometer **clockwise** increases height in relation to the ground and **counterclockwise** reduces header height in relation to the ground.

Automatic mode initiates when "Return-to-cut" key (B) is pressed.

Flex headers have a height control sensor. Rigid headers do not have automatic cutting control.

Automatic height control ceases to operate whenever manual raise key is pressed.

Automatic header control mode may be reengaged in two different ways:

1. By pressing manual lower within less than five seconds after manual raise was engaged.
2. By pressing "Return-to-cut" key (B).

BL04947,0000393 -19-24MAY12-1/1

CQ291375—UN—09DEC11

Main and Starter Key

Main starter key (E) has four positions.

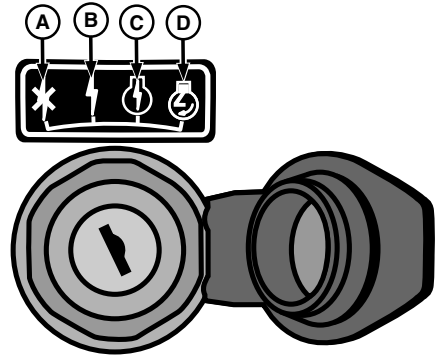
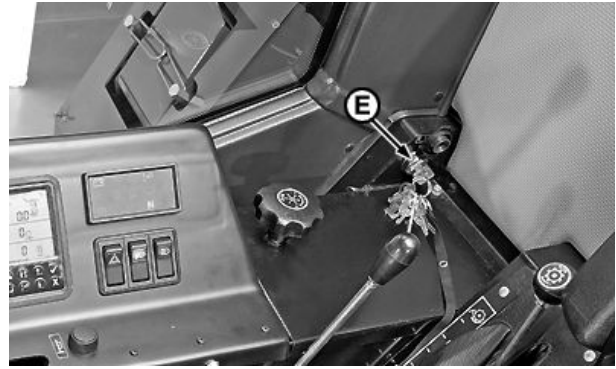
POSITION A and C: All electrical circuits are ON. Indicator lights are ON.

POSITION B: Neutral key position.

POSITION D: Engages engine starter motor (cranking) and starts the combine's engine.

CAUTION: Do not force the key in position (D) after the engine started. This may damage the starter motor.

NOTE: If the key is not in place, plug opening with its rubber cover.



AS60558,00027EE -19-01FEB12-1/1

CQ284883 —UN—09FEB12

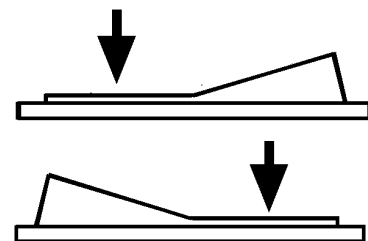
CQ269140 —UN—31MAR06

Types of Switches

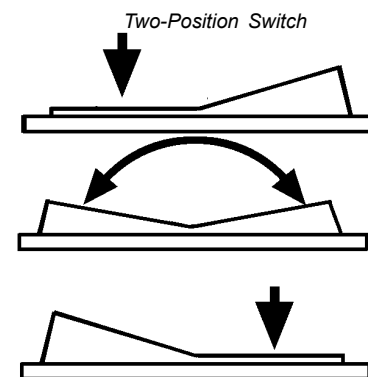
There are two types of switches on the combine console.

1. Two-Position Switch
2. Three-Position Switch

Carefully observe switch positions according to instructions provided in this manual.



CQ187960



CQ187970

Three-Position Switch

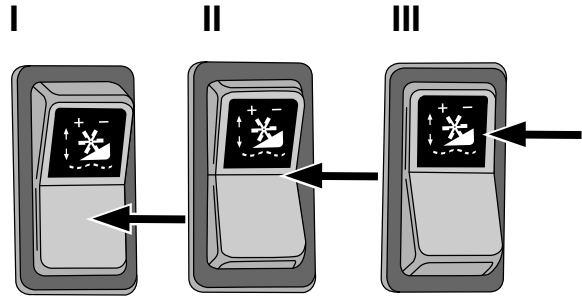
AG,CO03622,1392 -19-02FEB12-1/1

CQ187960 —UN—14JUL99

CQ187970 —UN—14JUL99

Cutterbar Pressure Selection or Reel Height Adjustment Switch

- I - Cutterbar Pressure
- II - Off
- III - Reel Height Adjustment



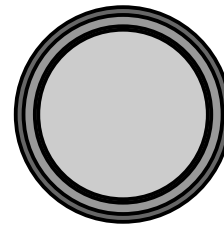
CQ291371 —UN—09DEC11

BL04947,000038D -19-27OCT11-1/1

Horn

Depress button to sound horn.

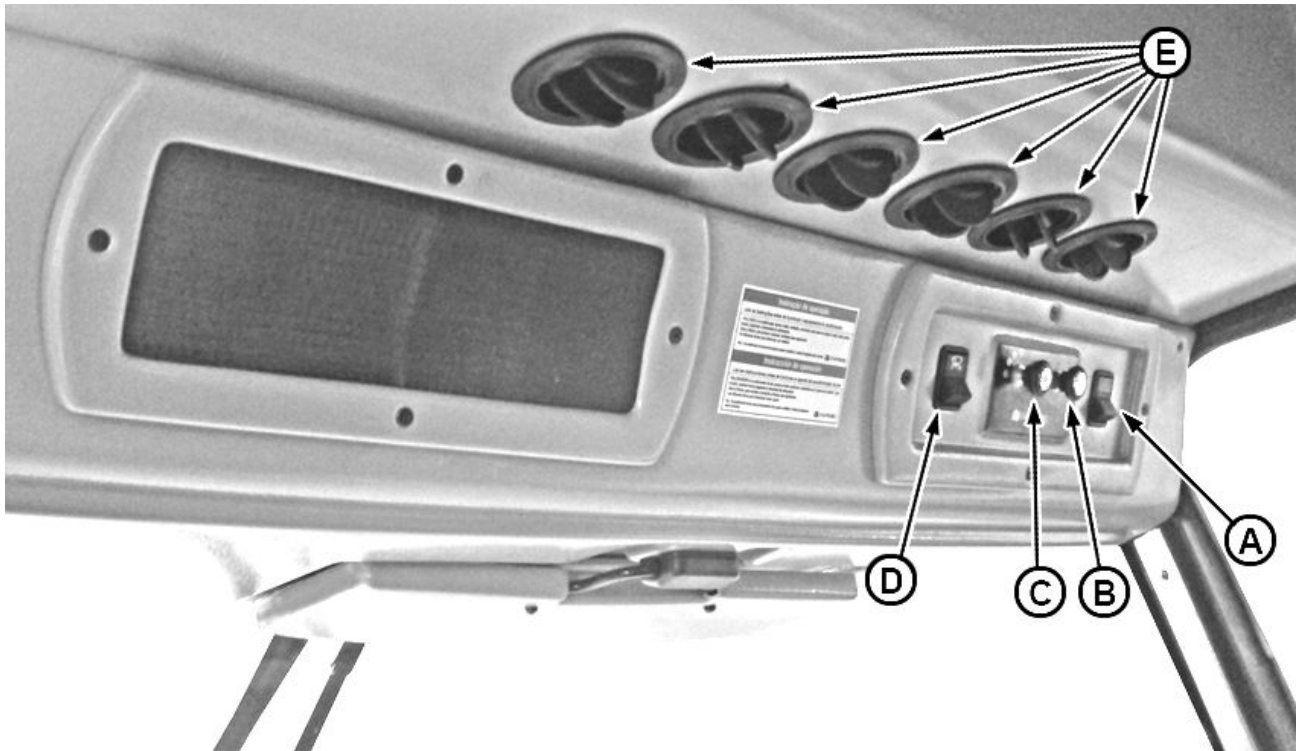
CAUTION: Always sound the horn before starting the engine. This warns other persons standing close to the combine and prevents possible accidents.



CQ285670 —UN—16FEB06

OU64006,00000AD -19-15FEB06-1/1

Cab Upper Panel Controls



- A—Cab Roof Work Lights Switch C—Rotary Switch for Fan Speed Adjustment E—Adjustable air louvers of fan
 B—Rotary Switch for Air Conditioning Temperature Adjustment (Thermostat) D—Windshield Wiper Switch

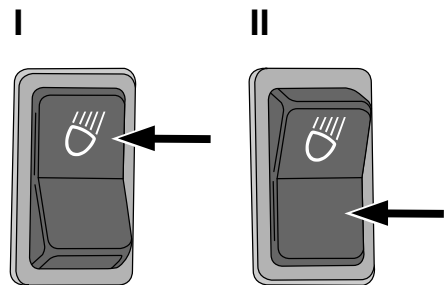
NOTE: Cab and combine electrical systems are independent. Lights, fan, windshield wiper and radio will operate without main key switch activated.

BL04947,00003DD -19-15DEC11-1/1

CQ291386—UN—06DEC11

Cab Work Lights Switch

- I— Switches Off Work Lights II— Switches On Work Lights

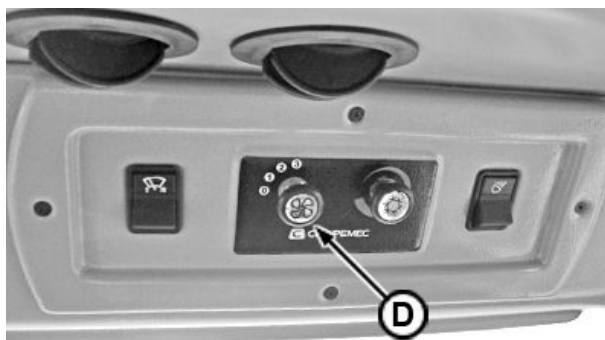


BL04947,00003DE -19-15DEC11-1/1

CQ291387—UN—09DEC11

Engaging Cab Fan

The fan has three speeds selected by means of rotary switch (D).



CQ291388 —UN—06DEC11

BL04947,00003DF -19-25NOV11-1/1

Adjustable Air Louvers of Cab Fan

Air flow can be controlled by means of adjustable air louvers (A). Adjust air louver position by turning or closing them.



CQ291389 —UN—06DEC11

BL04947,00003E0 -19-25NOV11-1/1

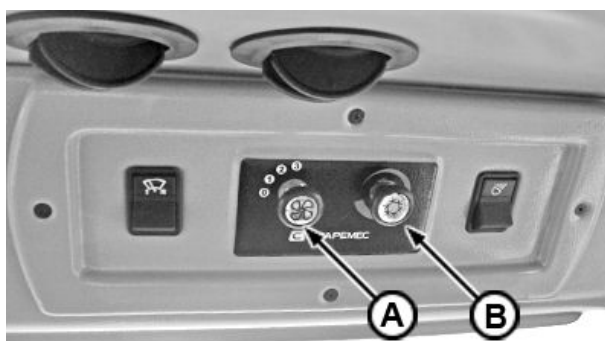
Engaging Air Conditioning

To switch on air conditioning system, fan must be activated by means of fan selector switch (A).

With fan engaged, cab inner temperature can be lowered by turning air conditioning potentiometer (B) clockwise.

NOTE: If you want to bring down cab interior temperature quickly, turn fan selector switch (A) to position 3, then turn air conditioning potentiometer (B) clockwise.

CAUTION: Never turn fan selector switch (A) from position 3 to position 1 with air conditioning potentiometer (B) at maximum. This could freeze the air conditioning evaporator.



CQ291390 —UN—06DEC11

A—Selector Switch

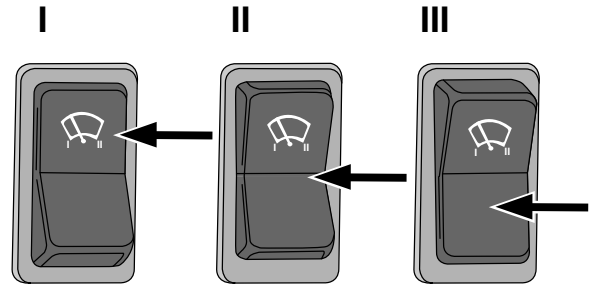
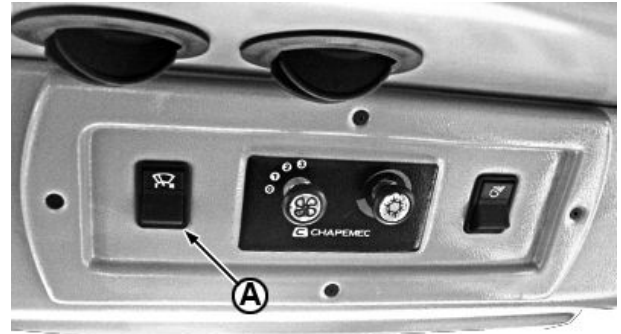
B—Air Conditioning Switch

BL04947,00003E1 -19-25NOV11-1/1

Windshield Wiper Switch

Windshield wiper switch (A) has two speed settings.

- I— Switches Off Windshield Wiper
- II— Slow Speed
- III— Fast Speed



CQ291392 —UN—06DEC11

CQ291391 —UN—09DEC11

BL04947,00003E2 -19-28NOV11-1/1

Various Controls—Outside of Operator's Platform

Cleaning System Fan

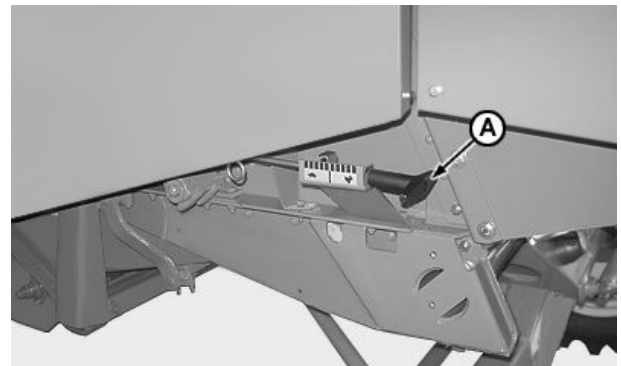
CAUTION: Danger of accidents! Keep away from moving parts.

IMPORTANT: The adjustment should be carried out with engine running and threshing unit engaged.

Adjust fan speed through knob (A).

Increase speed—Turn knob counterclockwise

Decrease speed—Turn knob clockwise



CQ265710 —UN—16FEB06

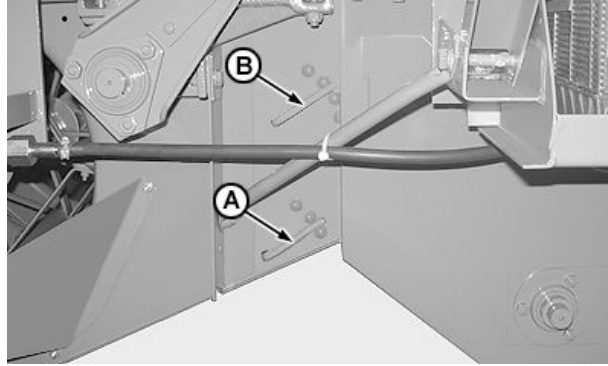
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OU64006,00000AF -19-09JUN06-1/3

Adjusting air flow deflectors

A—Lower baffle

B—Upper baffle



CQ265690 —UN—29MAR06

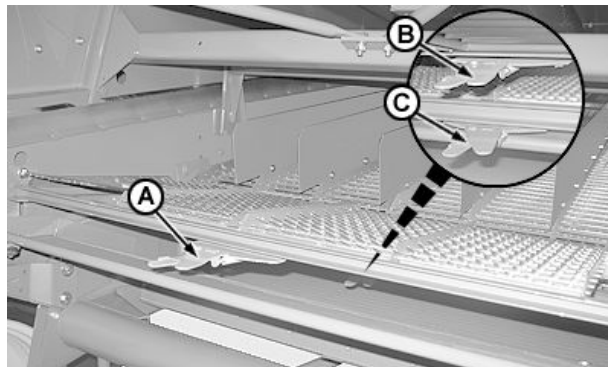
OU64006,00000AF -19-09JUN06-2/3

Cleaning Shoe Adjustment

A—Chaffer extension
adjustment lever

B—Chaffer adjustment lever

C—Grain sieve adjustment
lever

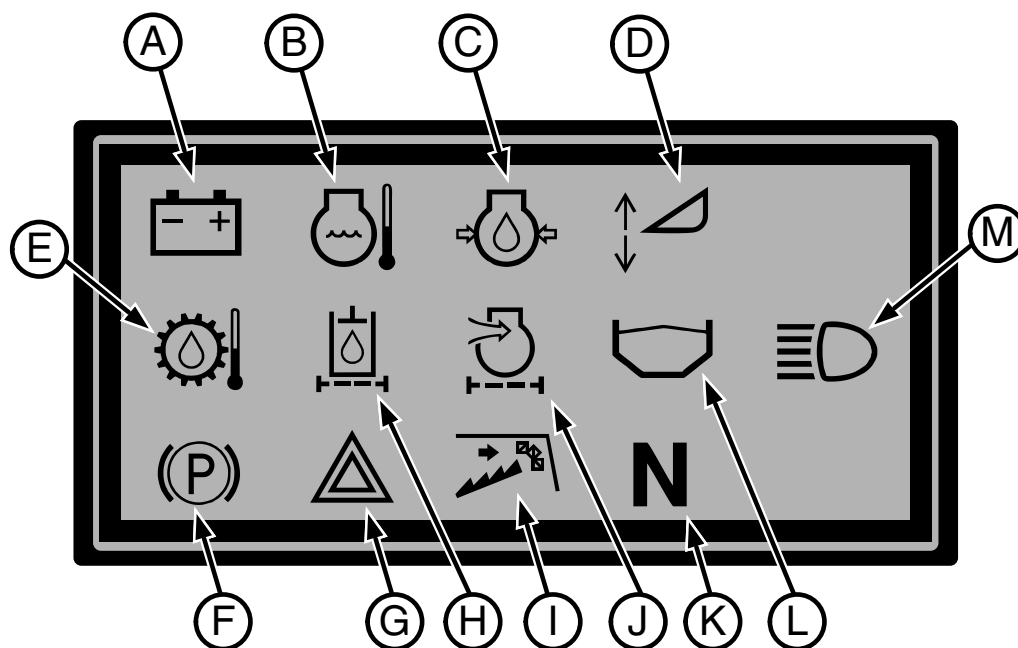


CQ265720 —UN—16FEB06

OU64006,00000AF -19-09JUN06-3/3

Indicator Lights and Monitors

Indicator Lights



- | | | | |
|--|---|--|------------------------------------|
| A—Alternator Indicator Light | E—Hydraulic Oil Temperature Indicator Light | I— Slugging Indicator Light | L— Full Grain Tank Indicator Light |
| B—Coolant Temperature Indicator Light | F—Parking Brake Indicator Light | J— Engine Air Filter Indicator Light | M—Full-Beam Indicator Light |
| C—Engine Oil Pressure Indicator Light | G—Hazard Warning Indicator Light | K—Indicator Light for Multi-Function Control Handle in Neutral | |
| D—Automatic Cutting Height Control Indicator Light | H—Hydraulic Oil Filter Indicator Light | | |

Indicator lights are monitoring combine functions.

NOTE: Alternator and engine oil pressure indicator lights should light up when starter key is in first position, they should switch off at engine start-up.

NOTE: If one of these lights should not go out, shut off engine immediately and resolve problem.

BL04947,0000394 -19-31OCT11-1/1

CQ291347 —UN—09DEC11

Cab Alarm Priorities

Cab alarm buzzer sounds in six different ways to indicate the problem's priority.

Priority 0 — One pulse with a duration of 0.3 seconds (not used).

Priority 1 — 0.07-second pulses at 0.07-second intervals between pulses. This sequence continues until the alarm condition is corrected or until removing supply.

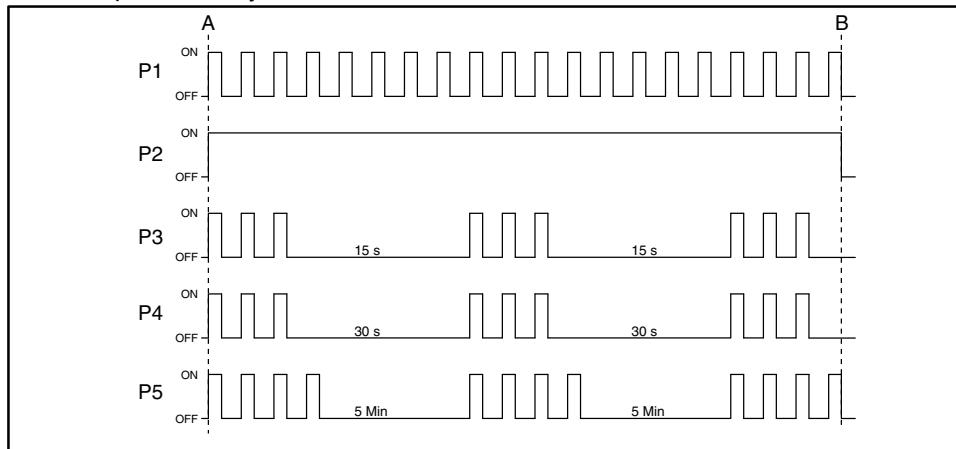
Priority 2 — Alarm sounds continuously until the alarm condition is corrected or until removing supply.

Priority 3 — A sequence of three pulses of 0.25 seconds each. This sequence is repeated every 15 seconds until

the alarm condition is corrected or until removing supply (not used).

Priority 4 — A sequence of three pulses of 0.5 seconds each. This sequence is repeated every 30 seconds until the alarm condition is corrected or until removing supply.

Priority 5 — A sequence of four pulses of 0.25 seconds each. This sequence is repeated every 5 minutes until the alarm condition is corrected or until removing supply.



A—Begin of Problem
B—End of Problem

P1—Priority 1
P2—Priority 2

P3—Priority 3
P4—Priority 4

P5—Priority 5

BL04947,00003A8 -19-06FEB13-1/1

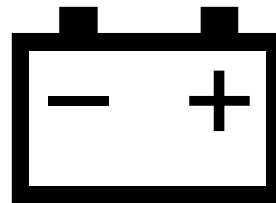
CQ291366—UN—09DEC11

Alternator Indicator Light

Lights up if alternator output voltage is not sufficient to charge the batteries.

Cab buzzer sounds with priority 5. See **Cab Alarm Priorities**.

- Check cables and connections at alternator and batteries.
- Check alternator belt tension.
- Check voltage regulator of alternator.



BL04947,0000395 -19-31OCT11-1/1

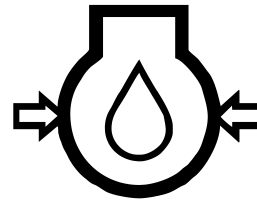
CQ291348—UN—09DEC11

Engine Oil Pressure Indicator Light

Lights up if engine oil pressure drops below 80 kPa (0.8 bar = 11.6 psi).

Cab buzzer sounds with priority 2. See **Cab Alarm Priorities**.

- Stop engine immediately.
- Remedy the fault.



CQ291349 —UN—09DEC11

BL04947,0000396 -19-31OCT11-1/1

Parking Brake Indicator Light

This indicator light comes on if parking brake is engaged.

Cab buzzer sounds with priority 2. See **Cab Alarm Priorities**.

With this light on, an intermittent warning signal will be heard.



CQ291350 —UN—09DEC11

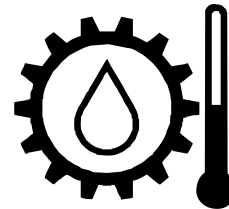
BL04947,0000397 -19-31OCT11-1/1

Hydrostatic Drive Oil Temperature Indicator Light

Lights up if hydrostatic drive oil temperature exceeds 95°C (203°F).

Cab buzzer sounds with priority 1. See **Cab Alarm Priorities**.

- Check oil level in reservoir. Clean oil cooler if necessary.
- Select a lower speed.



CQ291351 —UN—09DEC11

BL04947,0000398 -19-31OCT11-1/1

Indicator Light for Multi-Function Control Handle in Neutral

Lights up on engaging parking brake and when multi-function control handle is not in neutral position.



CQ291352 —UN—09DEC11

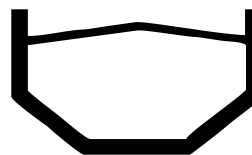
BL04947,0000399 -19-31OCT11-1/1

Full Grain Tank Indicator Light

Lights up when grain tank is completely filled. Besides the indicator light a five-second warning signal will sound.

Cab buzzer sounds with priority 5. See **Cab Alarm Priorities**.

— Empty the grain tank.



CQ291353 —UN—09DEC11

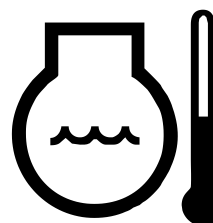
BL04947,000039A -19-31OCT11-1/1

Coolant Temperature Indicator Light

Lights up if coolant temperature exceeds 108°C (226°F) and/or if the intake air temperature exceeds 88°C (190°F).

Cab buzzer sounds with priority 1. See **Cab Alarm Priorities**.

— Run engine without load for a short period. If coolant temperature will not drop, stop engine and remedy the fault.



CQ291354 —UN—09DEC11

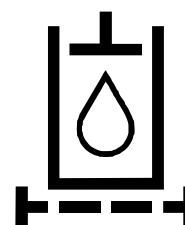
BL04947,000039B -19-31OCT11-1/1

Hydraulic Oil Filter Restriction Indicator Light

This indicator light comes on if the hydraulic oil filter is very dirty.

Cab buzzer sounds with priority 5. See **Cab Alarm Priorities**.

— Change hydraulic oil filter.



CQ291355 —UN—09DEC11

BL04947,000039C -19-31OCT11-1/1

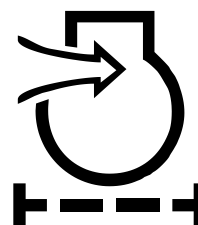
Engine Air Filter Indicator Light

Indicator light comes on if engine air cleaner primary element is clogged and air flow restricted.

Cab buzzer sounds with priority 5. See **Cab Alarm Priorities**.

— Clean filter elements.

For details see **Removing Engine Air Filter**.



CQ291356 —UN—09DEC11

BL04947,000039D -19-31OCT11-1/1

Full-Beam Indicator Light

This indicator light will come on when combine headlights are at full-beam.

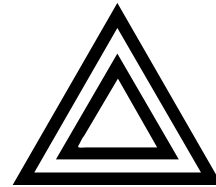


CQ291357 —UN—09DEC11

BL04947,000039E -19-31OCT11-1/1

Hazard Warning Indicator Light

This indicator light will come on if the hazard warning lights are engaged.



CQ291358 —UN—09DEC11

BL04947,000039F -19-31OCT11-1/1

Slugging Indicator Light

Slugging sensors are actuated when there is exaggerated accumulation of material in the area of the rear hood. After 2 seconds, indicator light comes on and cab buzzer sounds with priority 2. See **Cab Alarm Priorities**.

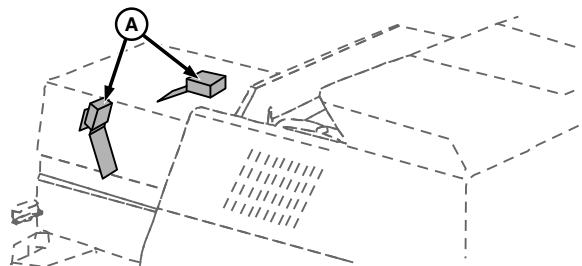
— Disengage threshing unit immediately.

— Shut off engine and wait until all moving parts have stopped, only then remove accumulated material.

NOTE: Check slugging alarm function daily by pushing manually on plate of sensor (A), before operating combine. Starter key must be in position I.



CQ291359 —UN—09DEC11

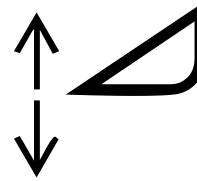


CQ264890 —UN—30JAN06

BL04947,00003A0 -19-31OCT11-1/1

Automatic Cutting Height Control Indicator Light

This indicator light comes on when automatic cutting height control key on display is engaged.



CQ291360 —UN—09DEC11

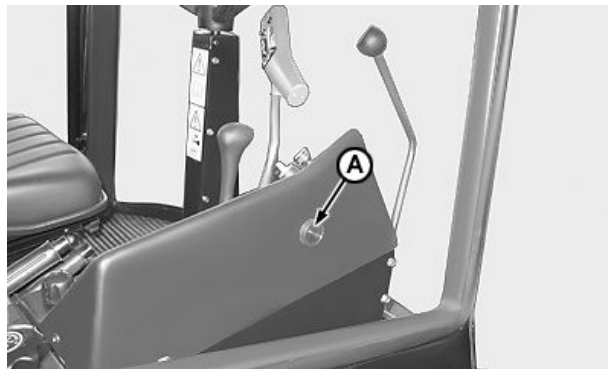
BL04947,00003A1 -19-31OCT11-1/1

Warning Buzzer

This warning buzzer (A) emits acoustic signals while the following indicator lights are on:

- Hydrostatic Drive Oil Temperature – Alarm Sounds at Priority 1
- Engine Coolant Temperature - Alarm Sounds at Priority 1
- Engine Oil Pressure - Alarm Sounds at Priority 2
- Parking Brake – Alarm Sounds at Priority 2
- Slugging – Alarm Sounds at Priority 2
- Alternator – Alarm Sounds at Priority 5
- Hydraulic Oil Filter Restriction – Alarm Sounds at Priority 5
- Engine Air Filter - Alarm Sounds at Priority 5

NOTE: Whenever you hear the buzzer, stop combine immediately and remedy the problem.



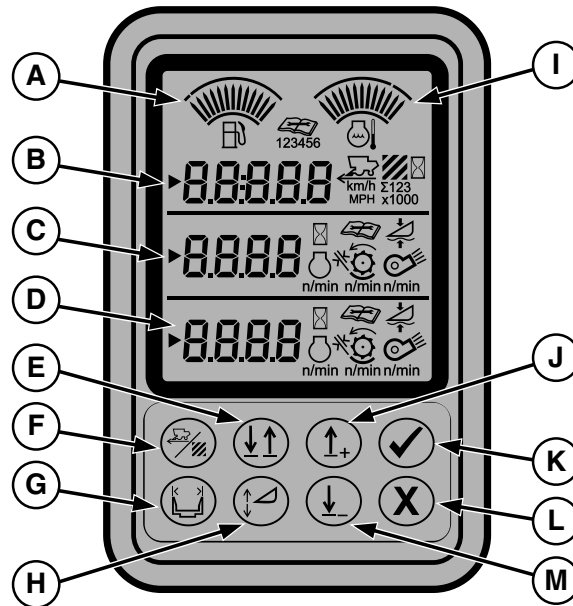
CQ265700 —UN—16FEB06

BL04947,00003A9 -19-27JAN12-1/1

Display

This display includes:

- Diagnosis
- Cutting Platform Calibration
- Error Codes
- Engine Temperature
- Fuel Level
- Engine RPM
- Separator RPM
- Engine Hours
- Threshing System Hours
- Cutterbar Pressure
- Harvesting Speed
- Optional Introduction of Hectaremeter



A—Fuel Gauge

B—Display 1

C—Display 2

D—Display 3

E—Browsing between Displays

F—Travel Speed/Hectaremeter Selector

G—Partial Header Width

H—Automatic Cutting Height Control Enable Key

I—Engine Coolant Temperature Gauge

J—Increment

K—Confirm

L—Cancel

M—Decrement Gauge

When switching on the machine, all functions are displayed for some seconds and then the following indicators are shown:

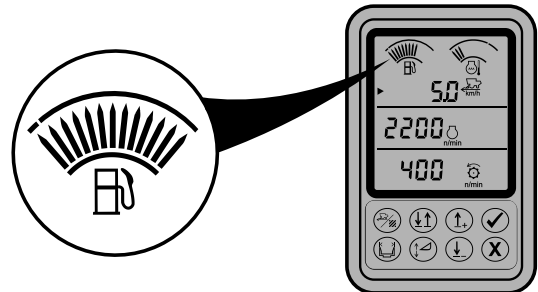
- **Display 1 (B):** Ground Travel Speed
- **Display 2 (C):** Engine Speed
- **Display 3 (D):** Threshing Cylinder Speed

BL04947,00003D8 -19-09DEC11-1/1

CQ291383 —UN—09DEC11

Fuel Gauge

When fuel level is close to 11% of total fuel tank capacity fuel indicator icon will flash on display and cab interior alarm will sound four times every five minutes (priority 5) until fuel is added.



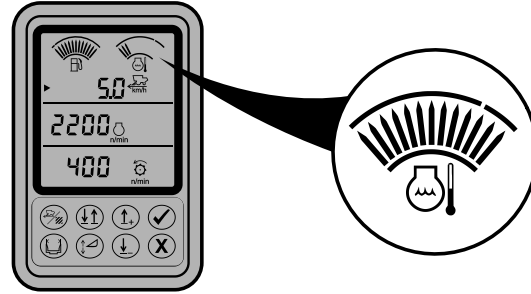
BL04947,00003D9 -19-09DEC11-1/1

CQ291377 —UN—09DEC11

Engine Coolant Temperature Gauge

When engine coolant temperature exceeds 108°C (226°F) and/or air intake temperature exceeds 88°C (190°F), temperature indicator icon will flash on display and cab interior alarm will sound continuously and intermittently at priority 1. See Section **Indicator Lights and Monitors - Cab Alarm Priorities**.

— Run engine without load for a short period. If coolant temperature will not drop, stop engine and remedy the fault.



CQ291374 —UN—09DEC11

BL04947,00003DA -19-09DEC11-1/1

Display Indicators

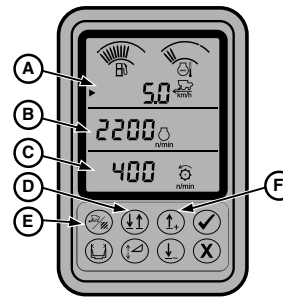
To select display 1 (A), display 2 (B) and display 3 (C), press display browsing key (D).

By pressing travel speed/hectaremeter selector key (E) it is possible to display the following indicators independently:

- Travel Speed (G)
- Hectaremeter Function (H)

By selecting display 2 (B) or display 3 (C) through display browsing key (D) it is possible to display the following indicators by browsing between them with increment key (F):

- Engine RPM (I)
- Engine Hours (J)
- Cutterbar Pressure (K)
- Diagnosis (L)
- Separator RPM (M)
- Threshing System Hours (N)



Browsing

CQ291401 —UN—09DEC11

CQ291404 —UN—09DEC11



Display 1



Display 2 and 3

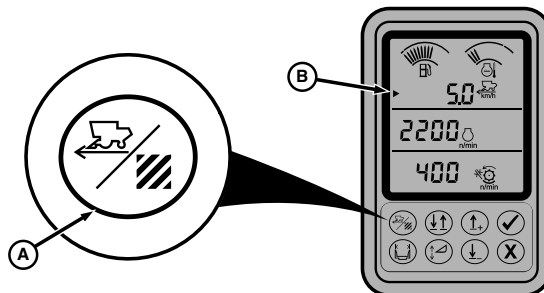
CQ291402 —UN—09DEC11

BL04947,00003EA -19-09DEC11-1/1

Ground Travel Speed Gauge

When switching on machine or pressing key (A) display 1 (B) shows ground travel speed.

To select Km/h or MPH in display 1 (B) access CDU address 08 and change. See Block **Diagnosis**, in this Section.



CQ291384 —UN—09DEC11

BL04947,00003DB -19-07DEC11-1/1

Hectaremeter Function

Accessing and Browsing Hectaremeter Functions

When switching on machine the display 1 (A) shows ground travel speed. Press key (C) to show hectaremeter functions on display 1 (A).

To browse hectaremeter functions, select display 1 (A) through display browsing key (B), then it is possible by using increment key (F) to browse the following hectaremeter functions:

- Total Area (G)
- Total Time (H)
- Partial Area (I)
- Partial Time (J)
- Actual Area 1 (K)
- Actual Time 1 (L)
- Actual Area 2 (M)
- Actual Time 2 (N)
- Actual Area 3 (O)
- Actual Time 3 (P)

Total Area (G)/Total Time (H)

These functions display total area and total time harvested by machine.

NOTE: These values can not be reset.

Partial Area (I)/Partial Time (J)

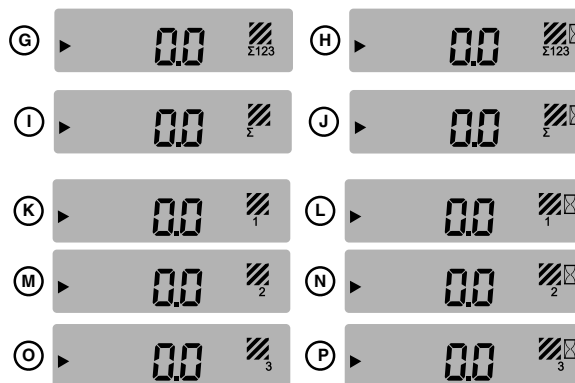
This function displays partial area harvested by summing up the 3 actual areas and partial harvesting time by summing up the 3 actual harvesting times.

This is used to check the amount harvested over the entire harvesting season, for instance.

To reset partial area (I) and partial time (J) values while they are active on display 1 (A), press Confirm key (E) and they will start flashing; press Confirm key (E) again to reset or press Cancel key (D) to cancel.

NOTE: When resetting partial area (I) and partial time (J), actual areas and actual times are also reset.

CQ291399 —UN—09DEC11



CQ291385 —UN—09DEC11

CQ291398 —UN—09DEC11

Actual Area 1, 2 and 3/Actual Time 1, 2, and 3

This function displays actual harvested area value and actual time is used to measure cutting area and the time spent in it; it may be divided into 03 distinct measurements and the sum of these measurements generates partial area (I) and partial time (J).

To reset actual area and time values select one of them on display 1 (A), press Confirm key (E) and the value will start flashing; press Confirm key (E) again to reset or press Cancel key (D) to cancel.

BL04947,00003DC -19-22OCT13-1/1

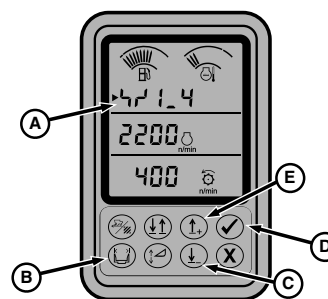
Setting Header Width

To check header width value press header width key (B).

Value on display 1 (A) appears as fraction, being 1/4, 1/2, 3/4 or 4/4 of total of header used.

If corn header is selected this value must correspond to number of rows.

To edit header width, press header width key (B) and then Confirm key (D). Adjust dimension using increment (E) and decrement (C) keys, then save by pressing Confirm key (D).



CQ291400 —UN—09FEB12

BL04947,00003E8 -19-06FEB13-1/1

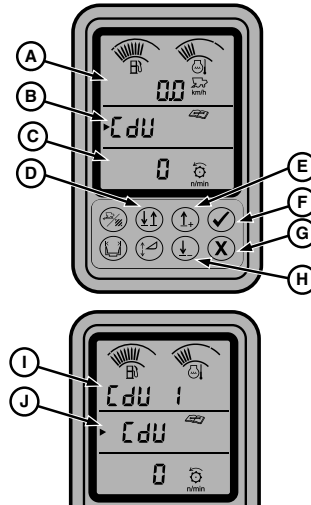
Accessing Diagnostic Mode

Display diagnostic mode is used as an interface with combine electronic control units. Addresses allow for readings, changing parameters and calibrations.

1. Selecting Diagnostic Mode:

- Select one of the screen displays (B or C) through key (D).
- Select diagnostic function through increment (E) or decrement (H) keys.
- Press confirmation key (F).
- Select required controller (HCU or CDU) through increment (E) or decrement (H) keys.
- Press confirmation key (D).
- On first display (I) appears controller name followed by address number.
- Browsing between addresses is done with increment (E) or decrement (H) keys.
- On selected display (J) appears the address value that can be edited or just displayed, depending on its type.
- Press confirmation key (F) to access address.

j. Press cancel key (G) to quit.



CQ291403—UN—27JAN12

AS60558,00027F0 -19-02FEB12-1/1

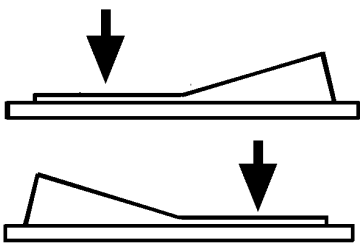
Lighting System and Lights

Types of Switches

There are two types of switches on the combine console.

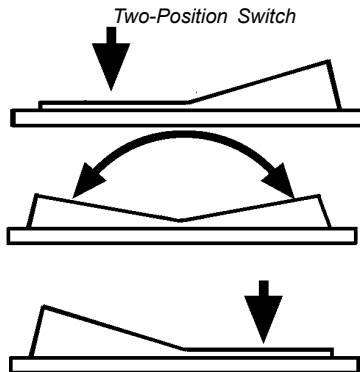
- 1. Two-Position Switch
- 2. Three-Position Switch

Carefully observe switch positions according to instructions provided in this manual.



CQ187960

CQ187960 —UN—14JUL99



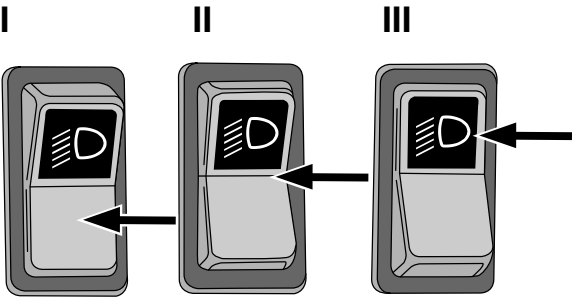
CQ187970

CQ187970 —UN—14JUL99

AS60558,00027F2 -19-02FEB12-1/1

Position Lights and Headlights Switch

- I— Off
- II— Position Lights
- III— Position Lights and Headlights (Low-Beam or Full-Beam)

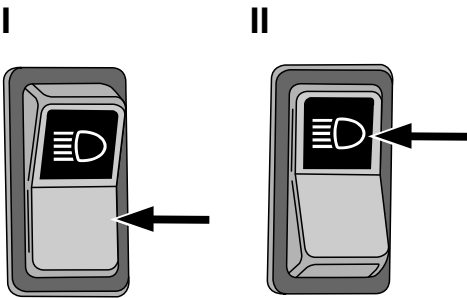


CQ291364 —UN—09DEC11

BL04947,00003A2 -19-31OCT11-1/1

Full-Beam Switch

- I— Low-Beam
- II— Full-Beam



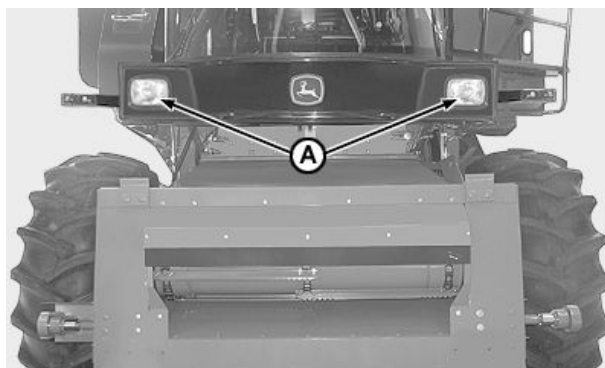
CQ291365 —UN—09DEC11

BL04947,00003A3 -19-31OCT11-1/1

Headlights

Headlights (A) are equipped with high beam and low beam lights.

A—Headlights



CQ252980 —UN—26SEP05

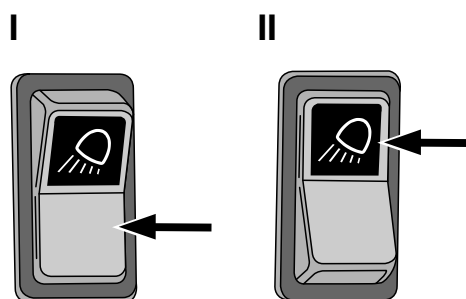
OU64006,00000CA -19-21SEP05-1/1

Auxiliary Work Lights Switch

This switch is located on instrument panel in operator cab.

I— Off

II— Switch On Auxiliary Work Lights

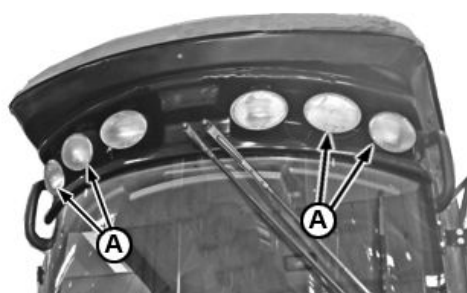


CQ291363 —UN—09DEC11

BL04947,00003A4 -19-19JAN12-1/1

Auxiliary Work Lights

A—Auxiliary work lights



CQ291415 —UN—15DEC11

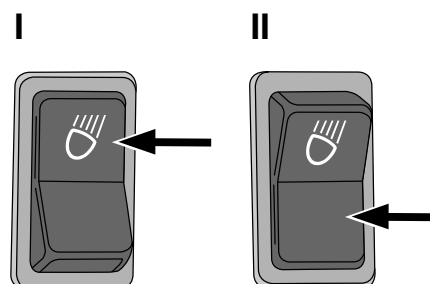
BL04947,00003F7 -19-08DEC11-1/1

Work Lights Switch

This switch is located on upper instrument panel in operator cab.

I— Switches Off Work Lights

II— Switches On Work Lights

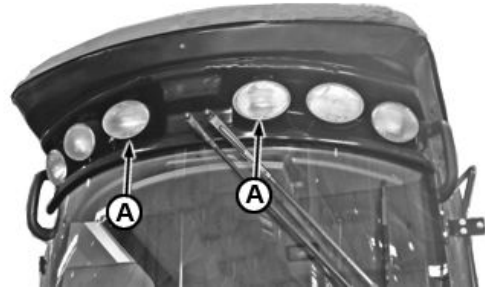


CQ291387 —UN—09DEC11

AS60558,0002786 -19-19JAN12-1/1

Work Lights

A — Work Lights

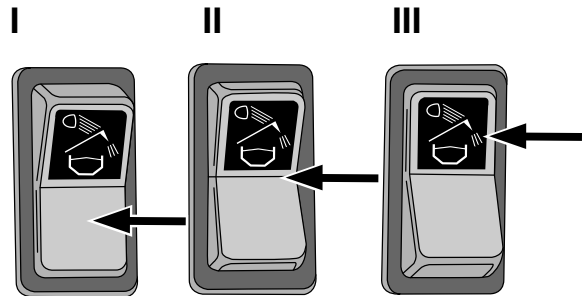


CQ284929 —UN—15DEC11

AS60558,0002777 -19-15DEC11-1/1

Switch for Grain Tank Interior Light and Unloading Auger Lights

- I— Off
- II— Switches On Grain Tank Interior Light
- III— Switches On Grain Tank Interior Light and Unloading Auger Lights

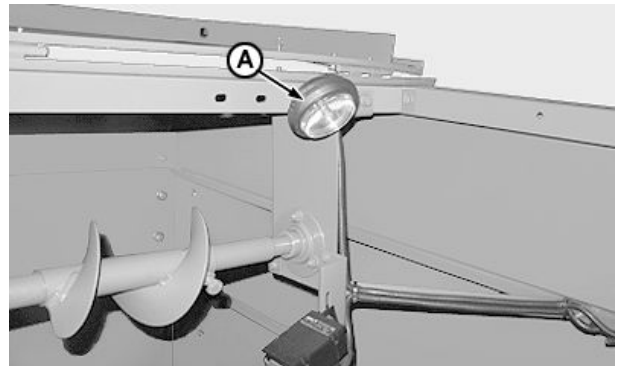


CQ291362 —UN—09DEC11

BL04947,00003A5 -19-31OCT11-1/1

Grain Tank Interior Light

Inside the grain tank there is a light (A) to illuminate its interior.

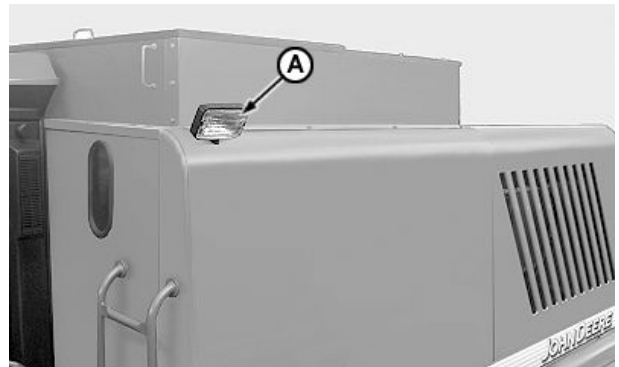


CQ266160 —UN—20FEB06

AG,GG05155,62 -19-05APR06-1/1

Unloading Auger Light

Unloading auger light (A) illuminates the unloading auger.



CQ266170 —UN—20FEB06

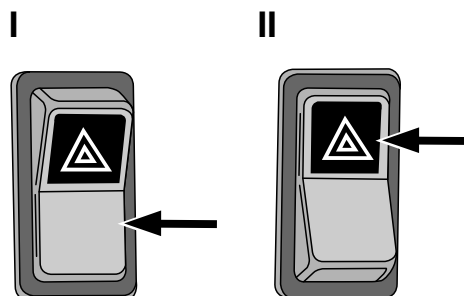
AG,GG05155,63 -19-31MAR06-1/1

Hazard Light Switch

Use hazard warning lights for signalization while traveling on public roads.

I— Off

II— Switches On Hazard Warning Lights



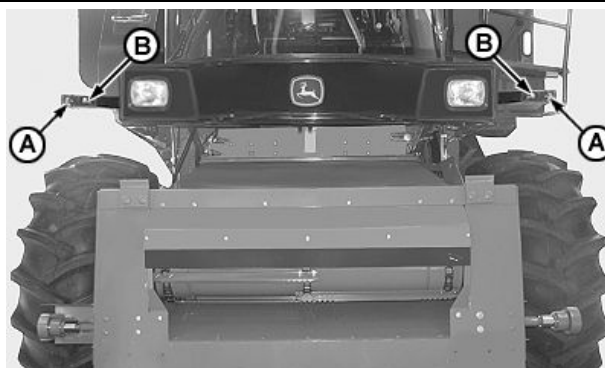
CQ291361 —UN—09DEC11

BL04947,00003A6 -19-31OCT11-1/1

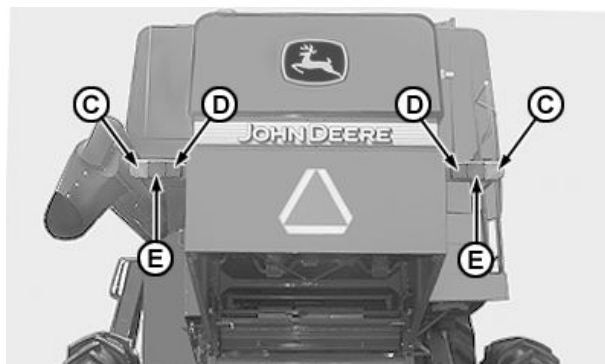
Clearance Lights, Hazard Warning Lights and Brake Lights

A—Hazard warning lights
B—Front clearance lights
C—Hazard warning lights

D—Brake lights ("Stop!")
E—Tail lights



CQ251220 —UN—19SEP05



CQ251230 —UN—27SEP05

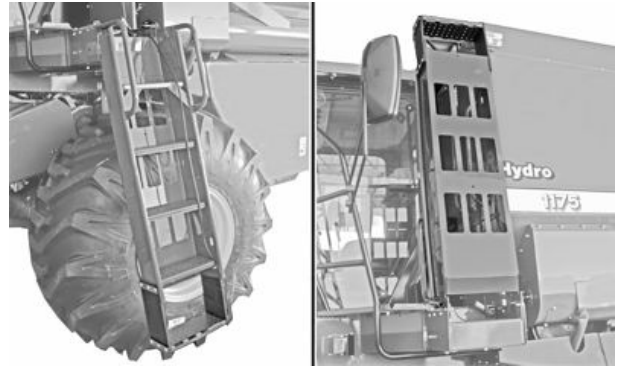
OU64006,00000D0 -19-21SEP05-1/1

Operator's Platform and Cab

Operator's Station Access Ladder

With the ladder lowered the operator's station can be comfortably accessed.

CAUTION: Always lower ladder carefully, using the rope. Before lowering ladder make sure there are no persons located in the area that might be hit by it.



CQ290157 —UN—25NOV13

BL04947,00003AB -19-25NOV13-1/3

Securing the Ladder

CAUTION: When travelling on public roads, first raise ladder and make sure it is secured by lock (A).

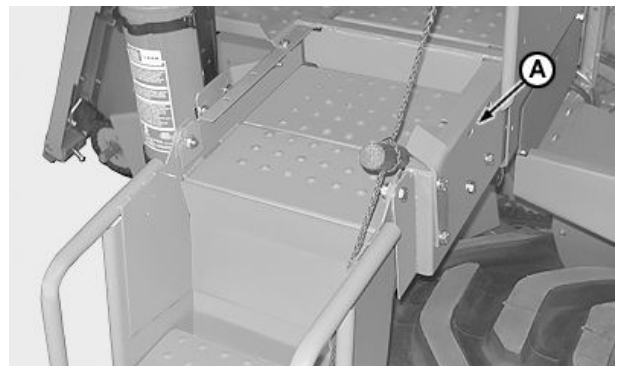


CQ290158 —UN—25NOV13

BL04947,00003AB -19-25NOV13-2/3

Adjusting the Ladder

The ladder has two mounting positions: one more inward (with narrow tires) and one more outward (with large tires or tracks). To change the position move intermediate section (A) of ladder (it will be necessary to remove the eight attaching bolts).

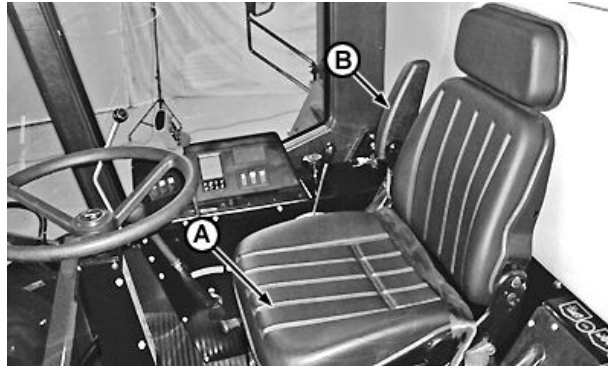


CQ265760 —UN—16FEB06

BL04947,00003AB -19-25NOV13-3/3

Operator's Seat

Seat (A) allows for horizontal and weight adjustment and is equipped with an armrest (B) at its right-hand side.



CQ284880 —UN—01FEB12

BL04947,00003AC -19-01FEB12-1/2

Horizontal Adjustment

Move lever (A) as indicated by arrow to adjust the seat closer or more distant to the pedals.

Weight adjustment

Adjust condition that best suits you with knob (B).



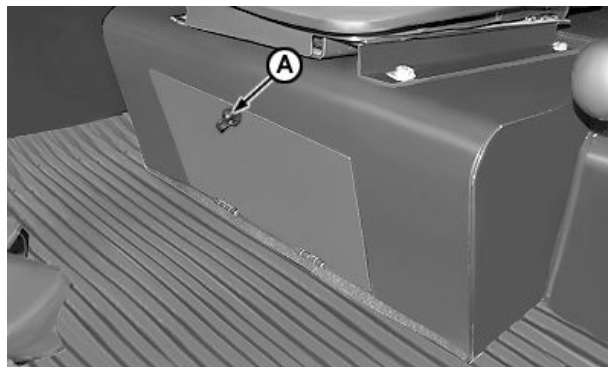
CQ251170 —UN—19SEP05

BL04947,00003AC -19-01FEB12-2/2

Useful Compartments

Glove Compartment

Loosen wing nut (A) to open.



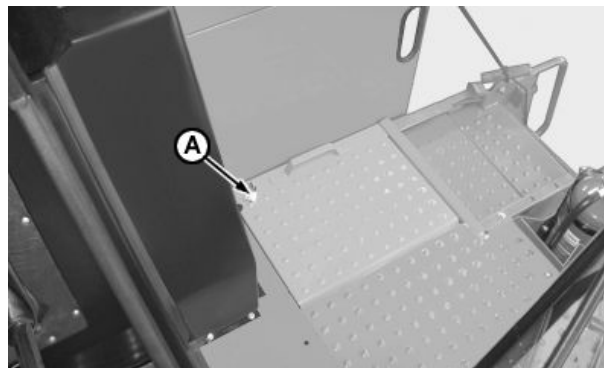
CQ265870 —UN—20FEB06

Continued on next page

BL04947,00003AD -19-31OCT11-1/3

Tool Box

Compartment with compressed air hose, wheel wrench, etc., located in the floor of the operator's station. Loosen padlock (A) to open.

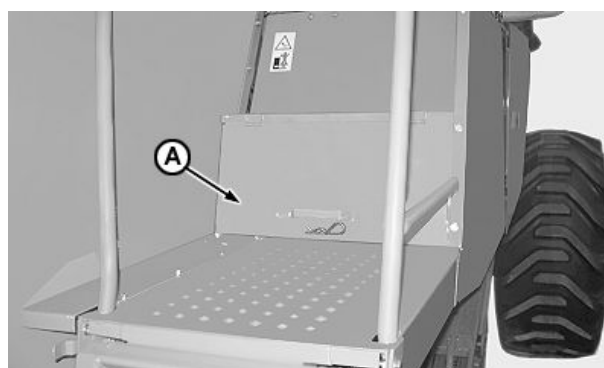


CQ265770 —UN—16FEB06

BL04947,00003AD -19-31OCT11-2/3

Rear Tool Box

Compartment located under one of the steps of the engine access ladder. Open cover (A).



CQ265780 —UN—16FEB06

BL04947,00003AD -19-31OCT11-3/3

Cup Holder

Located at right-hand side of cab.



CQ220300 —UN—30SEP03

OU64006,00000E5 -19-22SEP05-1/1

Manual Holder

Located at left-hand side of cab.

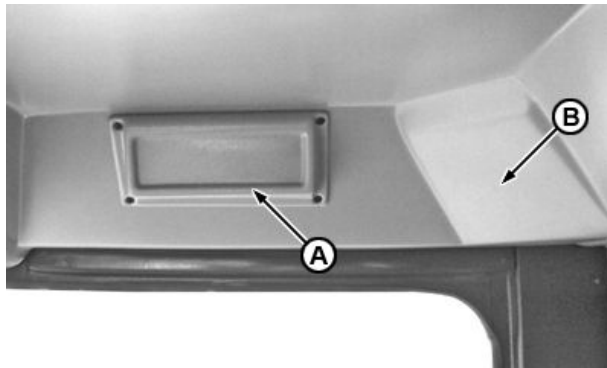


CQ220310 —UN—30SEP03

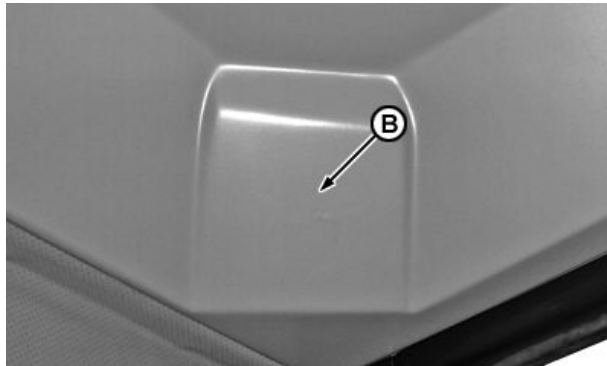
OU64006,00000E6 -19-22SEP05-1/1

Preparing Radio Installation

Located at right-hand side of cab roof. Radio installation opening cover (A) must be removed for installation. Speakers can be installed to areas (B).



CQ291405 —UN—07DEC11



CQ291408 —UN—07DEC11

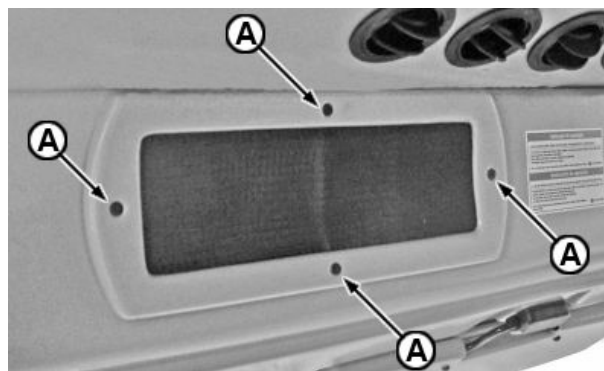
BL04947,00003EE -19-07DEC11-1/1

External and Internal Cab Air Filter

Clean cab filters periodically.

Interior air filter— For cleaning, remove four screws (A).

Exterior air filter— For cleaning, open protective cover by turning knob (B) counterclockwise.



Internal air filter



BL04947,00003E3 -19-29NOV11-1/1

CQ291393 —UN—06DEC11

CQ291394 —UN—06DEC11

Preliminary Checks

Daily Checks

- ☐ Check engine oil level.
- ☐ Air compressor oil level.
- ☐ Hydraulic system.
- ☐ Radiator screen.
- ☐ Cooling system.

- ☐ Tires.
- ☐ Fuel system.
- ☐ Indicator light test.
- ☐ Light functions.
- ☐ Brakes.
- ☐ Shaft speed monitoring alarm.

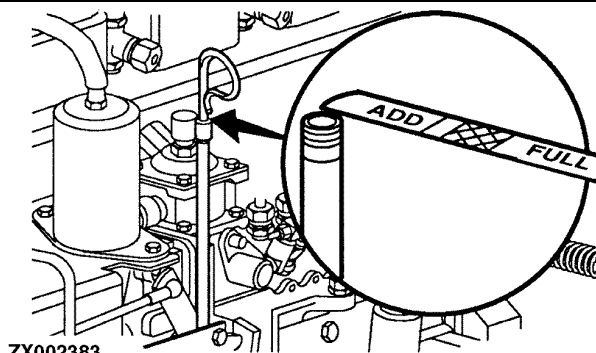
BL04947,00003BA -19-01NOV11-1/1

Engine Oil Level

Do not operate the engine when oil level is below the low-level mark on the dipstick (A).

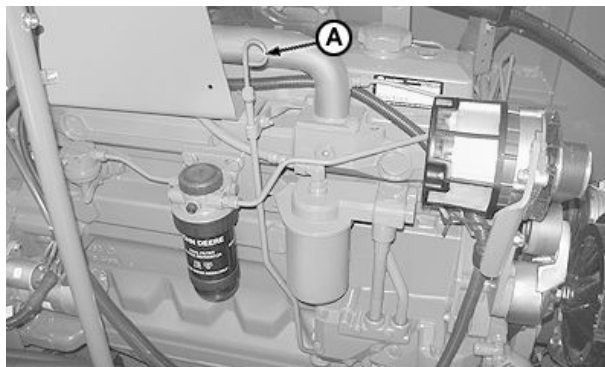
IMPORTANT: Before checking oil level, clean engine externally with compressed air.

Park the combine on level ground and switch off engine to check oil level.



ZX002383

ZX002383 —UN—16JUN95



CQ266190 —UN—16MAR06

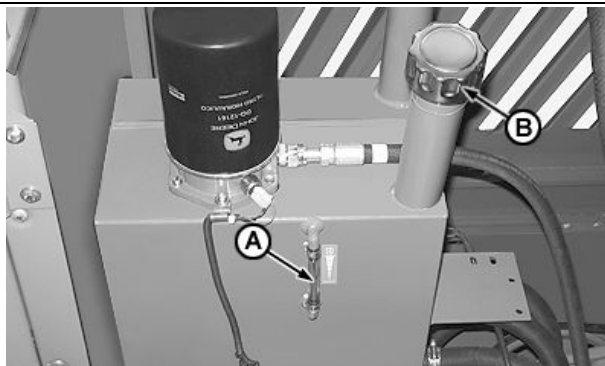
BL04947,00003BB -19-01NOV11-1/1

Hydraulic System Oil Level

Check oil level at sight glass (A). Oil level must be at center of sight-glass (A). If necessary, top up with recommended oil through cap (B).

Recommended oil: HY-GARD™

NOTE: Before checking the oil level, lower the header to the ground, place the unloading auger in the transport position and fully lower the reel, so that all respective hydraulic cylinders are totally retracted.



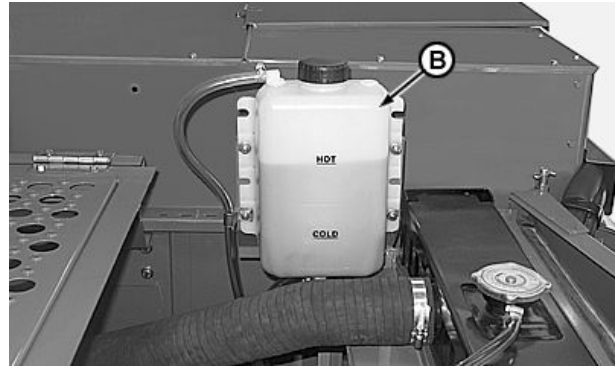
CQ266240 —UN—21MAR06

HY-GARD is a registered trademark of the Deere & Company

BL04947,00003BC -19-01NOV11-1/1

Engine Coolant Level

With cold engine, check coolant level in expansion tank (B) where fluid should be at mark COLD and make sure there are no leaks.

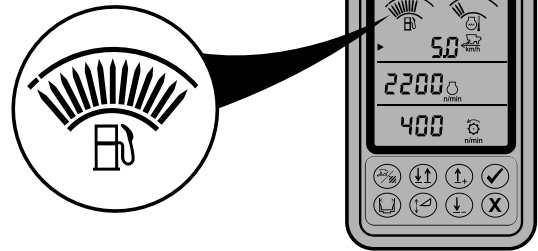


CQ252910 —UN—26SEP05

BL04947,00003BD -19-06FEB13-1/1

Fuel Level

Turn ignition on and check fuel level on fuel gauge on display.



CQ291377 —UN—09DEC11

BL04947,00003BE -19-01NOV11-1/1

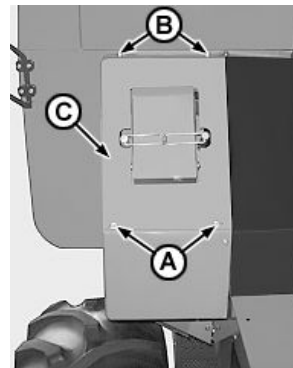
Brake System Fluid Level

The brake fluid reservoir is located at the front of the combine.

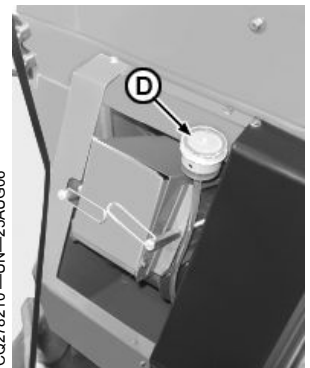
1. Loosen bolts (B).
2. Remove wing nuts (A).
3. Remove shield (C).
4. Check level of brake fluid in reservoir (D).

NOTE: If it is necessary to add fluid, see Section **Service — Adding Brake Fluid.**

5. Reinstall following inverse order of removal.



CQ278210 —UN—25AUG06



CQ278200 —UN—25AUG06

A—Wing Nuts
B—Bolt

C—Shield
D—Filler Neck

BL04947,00003BF -19-01NOV11-1/1

After Long Storage Period

Bleed fuel system.

See Section **Service — Bleeding Fuel Supply System.**

BL04947,00003C0 -19-01NOV11-1/1

Tires

In addition to wearing rapidly, an under-inflated tire can slip on the rim and cut the valve stem.

See **Service — Tire Inflation Pressure** for correct tire inflation pressure.

A—Pressure Too Low
B—Pressure Too High

C—Correct Pressure

A



B



C



ZCQD1100

ZCQD1100 —UN—26JUN96

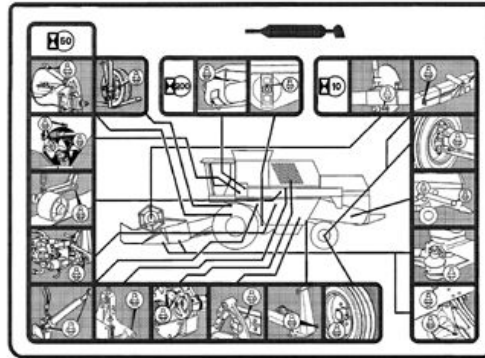
BL04947,00003C2 -19-01NOV11-1/1

Combine Lubrication

A correct lubrication means a better operation and greater durability of components. Lubricate following the lubrication tables (decals) fixed to the sides of the combine.

NOTE: Before lubrication, carefully clean the lubrication points.

Lubricate the chains as well (see the "Maintenance" section).



CQ176611 —UN—23OCT03

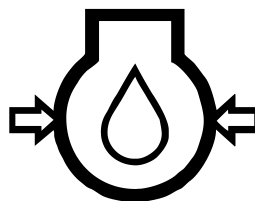
AG,GG05155,72 -19-24OCT03-1/1

Operating the Combine

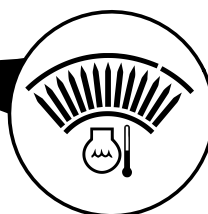
Breaking In The Engine

Your combine's engine is ready to operate normally, without need for break-in. However, it is convenient to be extra cautious during the first 100 hours:

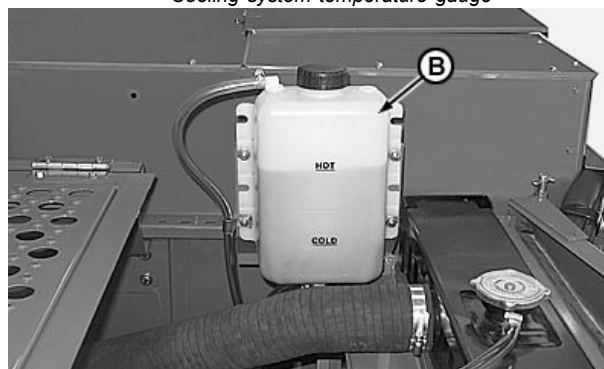
1. Watch engine oil pressure warning light and cooling system temperature gauge closely. If temperature gauge needle goes into the red range, reduce engine load. If needle does not return soon, shut off engine and determine cause of overheating.
2. Check coolant level in expansion tank (B) more often during this period and make sure there are no leaks.
3. Check engine lube oil level more frequently by means of dipstick (A) and make sure there are no leaks.
4. Avoid running engine unnecessarily under very high or very low load, as well as without load (never more than 5 minutes).



Engine oil pressure warning light



Cooling system temperature gauge



Check coolant level



Engine lube oil level

BL04947,0000392 -19-27OCT11-1/1

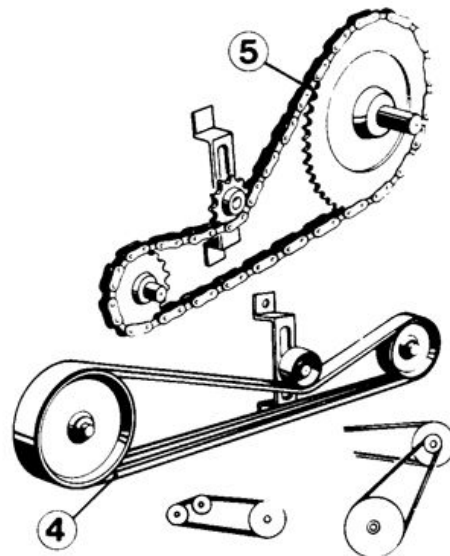
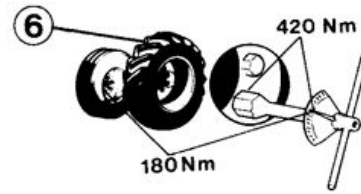
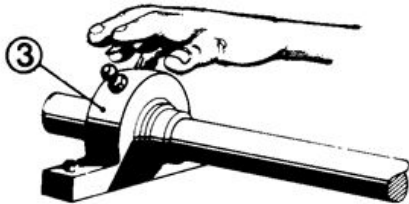
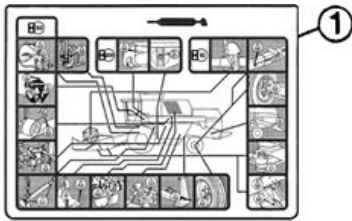
CQ291349 —UN—09DEC11

CQ291374 —UN—09DEC11

CQ252910 —UN—26SEP05

CQ266190 —UN—16MAR06

Service—Break-In Period



CAUTION: Engine must be turned off and key removed.

1. With engine turned off, lubricate all lubrication points.

CAUTION: Sound the horn before starting the engine to warn bystanders.

2. Operate engine for about 15 minutes and engage the various control levers. If there are any strange sounds, immediately disengage threshing system lever and engine. Determine and remedy the cause of faults before starting engine and threshing system again.
3. If all mechanisms operate satisfactorily, operate engine for about 15 to 30 minutes with all mechanisms

engaged. Then disengage all mechanisms and turn off engine. Check all bearings for overheating.

4. Check tension of all belts. Adjust if necessary.
5. Check tension of all chains. Adjust if necessary.
6. Retighten front wheel nuts to 420 Nm (42 kgm) (305 lb-ft). Retighten rear wheel nuts to 180 Nm (18 kgm) (130 lb-ft).

IMPORTANT: Wheel bolts must be clean and free of grease or any lubrication before installing.

Check tension of all belts and chains again after the first five hours of operation.

CQ266460—UN—21FEB06

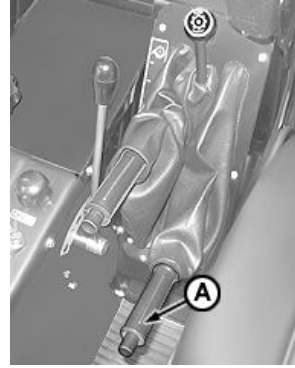
AG,GG05155,91 -19-31MAR06-1/1

Before Starting Up the Engine

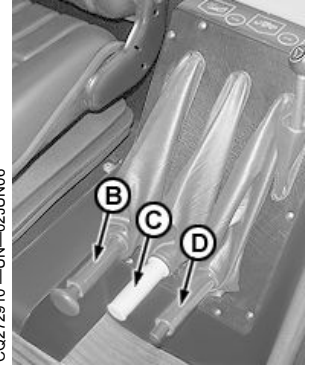
⚠ CAUTION: Never operate the engine indoors, exhaust fumes may cause intoxication.

Before starting up engine check position of the following levers:

- | | |
|----------------------------------|--|
| A— Parking brake engaged | C—Threshing transmission disengaged |
| B—Header transmission disengaged | D—Unloading system transmission disengaged |



CQ272910—UN—02JUN06



CQ272920—UN—02JUN06

AG,GG05155,76 -19-30MAY06-1/1

Starting the Engine

Multi-Function Control Handle

Move multi-function control handle (A) to neutral position.

Starting

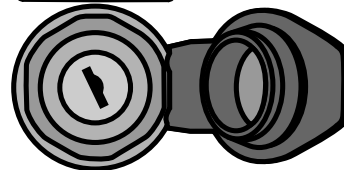
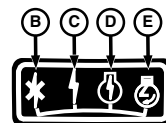
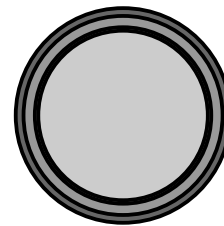
CAUTION: Always sound the horn before starting the engine. This warns other persons standing close to the combine and avoids possible accidents.

Insert starter key and turn it clockwise to position (E) to start up engine.

If engine does not start, repeat procedure once. If it still does not start, wait for two minutes before you try again. This will preserve the battery.

Warm-up

Run the engine at half throttle for approximately 2 to 4 minutes.



CQ176740

BL04947,000038F -19-01FEB12-1/1

CQ284881 —UN—09FEB12

CQ285670 —UN—16FEB06

CQ291372 —UN—09DEC11

CQ176740 —UN—09FEB99

Shutting Down Engine

Multi-Function Control Handle

Move multi-function control handle (A) to neutral position.

Throttle

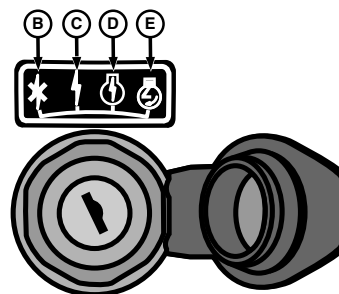
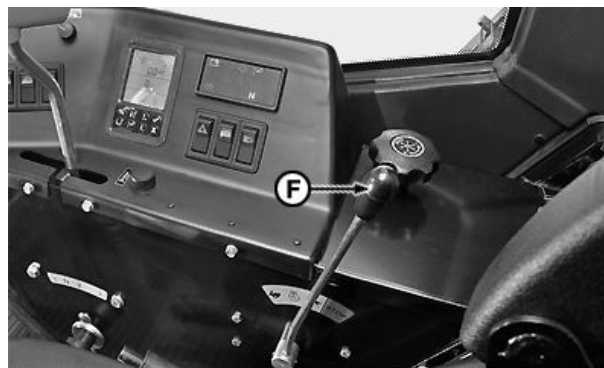
Move throttle (F) to slow engine speed position (tortoise).

Starter Switch

IMPORTANT: Before finally shutting off engine, run at slow idle for 1—2 minutes to allow engine to cool down properly.

Turn starter key to position (C) and remove it. Engage parking brake.

IMPORTANT: Always remove key before leaving operator's station.



BL04947,0000390 -19-01FEB12-1/1

CQ284881 —UN—09FEB12

CQ284882 —UN—09FEB12

CQ291372 —UN—09DEC11

Stalled Engine

IMPORTANT: If engine stalls at operating temperature, restart it immediately to prevent overheating of

certain engine parts. Before finally shutting off the engine, run at slow idle for 1-2 minutes.

AG.CO03622,1522 -19-30MAY06-1/1

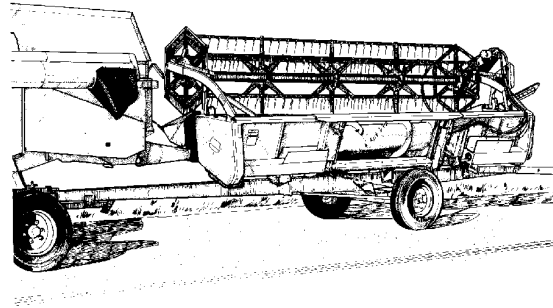
Driving on Public Roads

IMPORTANT: When traveling on public roads it is recommended to transport header on a trailer. This equipment provides practical and safe transportation and is in agreement with legal traffic requirements.

CAUTION: For safety reasons, always engage hazard warning lights switch when travelling on roads.

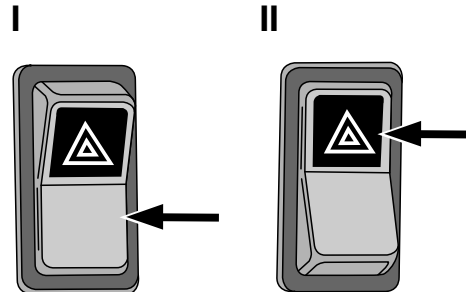
I— Off

II— On



CQ176800

CQ176800 —UN—09FEB99



Hazard Lights Switch

CQ291361 —UN—09DEC11

BL04947,0000391 -19-27OCT11-1/1

Transporting the Combine

When transporting the combine from one field to another, without harvesting, or on public roads, always raise header as high as possible, however, without restricting the operator's view.

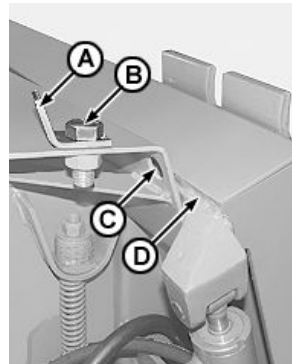
On combines with header lateral tilt system it is recommended do secure this system on both sides.

Procedure:

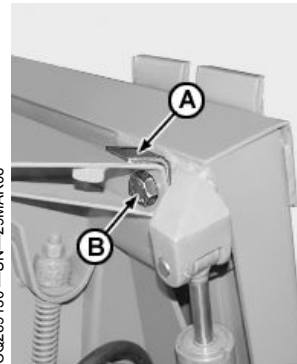
Align hole (C) with front side hole (D) of feeder house.

Remove bolt (B) and spacer (A).

Install spacer and bolt on both sides of combine as shown.



CQ269130 —UN—29MAR06



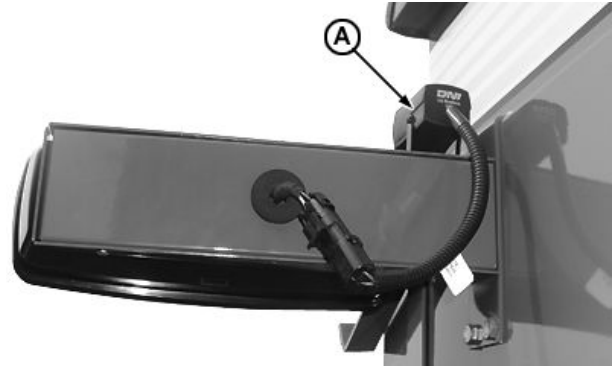
CQ269120 —UN—29MAR06

AG,GG05155,82 -19-05APR06-1/1

Back-up Alarm

If multi-function control handle is moved backward while engine is operating backup alarm (A) will sound to alert bystanders that machine operator is engaging reverse gear.

A—Back-up Alarm

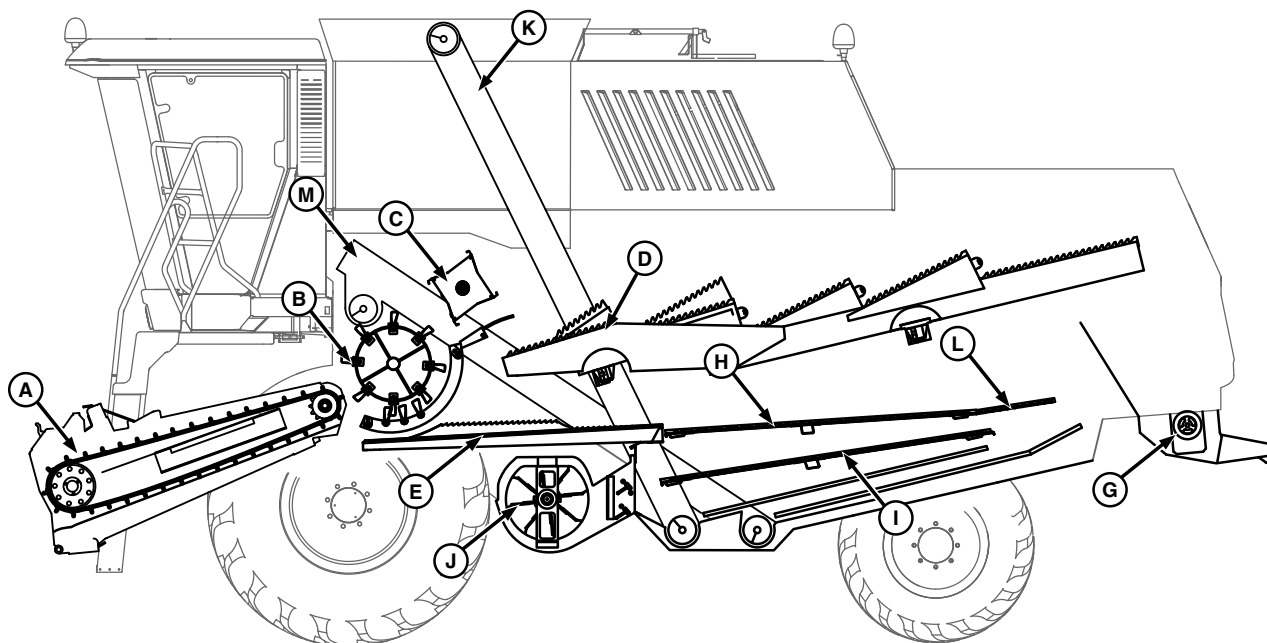


CQ284992 —UN—09FEB12

AS60558,0002845 -19-09FEB12-1/1

Fundamentals

Combine Operation



CQ266370 —UN—02MAR06

Crop cut by header is sent to feeder house (A) that has the function to transport crop into threshing cylinder (B) and concave.

NOTE: Cutting platform operation is described in the platform's Operator's Manual.

Threshed grain, fine straw and some tailings (ear tips or husks) fall through openings in concave onto grain pan (E).

The overshot beater (C) receives straw threshed by threshing cylinder and throws it on straw walkers (D).

The straw walkers separate the remaining grain from the straw. Grain falls into pan (E) and the straw leaves the combine via straw chopper (G) where straw is chopped.

Threshed grain and fines are carried to the cleaner which consists of upper (H) and lower (I) sieves and the fan (J). The fan blows out the fines and the clean grain falls through the sieves.

The clean grain elevator (K) transports the grain to grain tank.

Any tailings (ear tips or husks) fall through the upper screen extension (L) and are carried by the tailings elevator (M) for rethreshing.

BL04947,00003C3 -19-03NOV11-1/1

Cutting and Harvesting Unit

This unit cuts and harvests the crop and then passes it to the cylinder and concave.

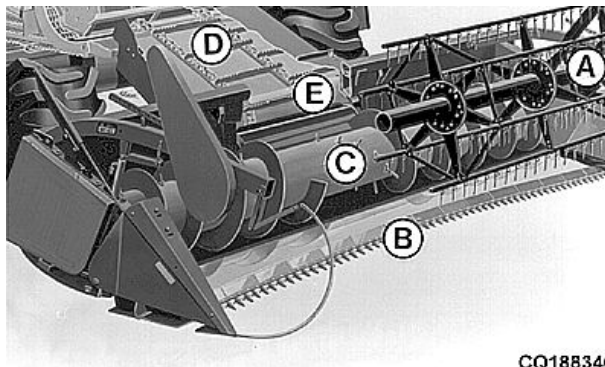
Components:

1. Header

- A. Reel
- B. Cutterbar
- C. Auger

2. Feeder house

- D. Conveyor



CQ188340

E. Floating roller

CQ188340 —UN—16AUG99

AG,CO03622,1553 -19-01AUG05-1/1

Header

NOTE: Header operation is described in corresponding Header Operating Manual.

When operating header please take the following points into account:

1. Combine Ground Travel Speed
2. Cutting Height
3. Reel Position
4. Reel Speed
5. Auger Position
6. Retractable pick-up position

Combine Ground Travel Speed

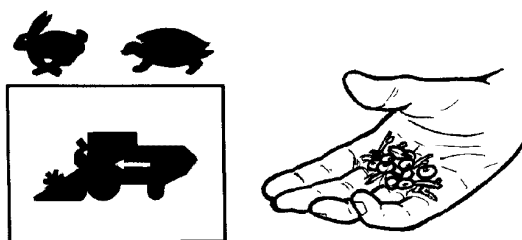
Ground travel speed depends largely in mass volume of product and ground conditions. Take into account weather, product humidity, established grain loss level, combine capacity and header width. When harvesting high productivity crops, reduce ground speed adequately.

Maximum combine operating speed depends on threshing system capacity, taking into account required degree of purity of harvested grains.

With very high ground travel speed combine is overloaded and there may be considerable grain loss. Even well adjusted a positive result may be uncertain. A consequence of high ground travel speed are ear tips, ears or husks not threshed as well as not chopped straw overloading straw walkers and sieves. "Grain loss" will result.

NOTE: Combine ground travel speed can be measured from operator's platform. To do so speedometer or tachometer selector at cylinder indicator should be at illustrated position; this will allow for speedometer or tachometer to supply ground travel speed readings (km/h).

Cutting Height



ZCQD1200



Adjust header so that the lowest husks or ears can be cut. In other words, adjust cutting height to crop conditions.

Continued on next page

BL04947,00003C4 -19-04NOV11-1/6

ZCQD1200 —UN—04APR96

CQ291378 —UN—09DEC11

Reel Position

Reel position will vary according to crop conditions.

Upright Crop

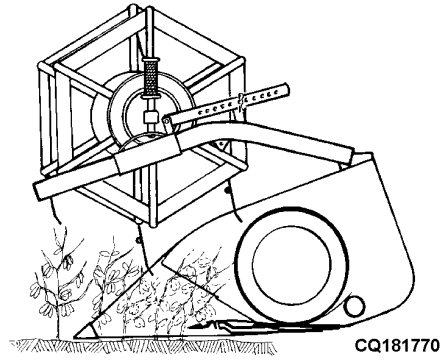
Adjust reel height so that reel bars will support crop at midpoint, in other words, between cutting point and upper part of crop. Also position reel slightly in front of cutterbar.

Laid Crop

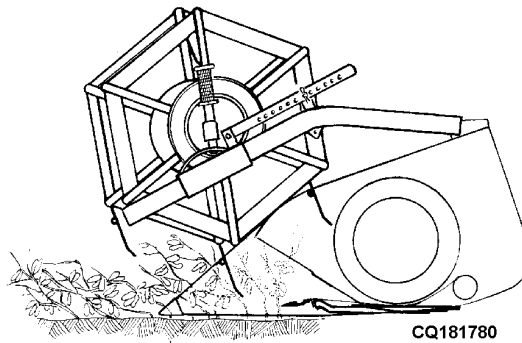
Move reel more in front of cutterbar and adjust height so that pick-up fingers will raise crop to permit reel bars sustain crop for cutting. When adjusting fingers, make sure crop does not wind around reel but is transported towards auger without interruptions.

Some Consequences of Incorrect Reel Position Adjustment:

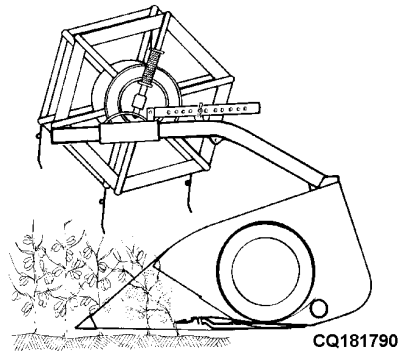
- Losses due to knocking down crop before cutting
- Losses due to shelling
- Losses due to winding cut crop around reel



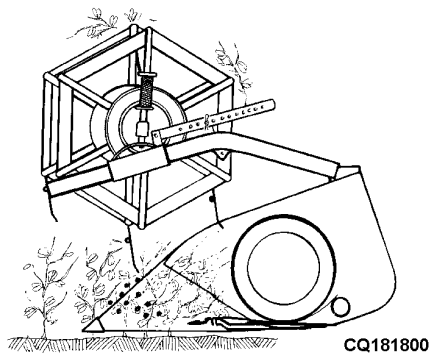
CQ181770 —UN—26FEB99



CQ181780 —UN—26FEB99



CQ181790 —UN—26FEB99



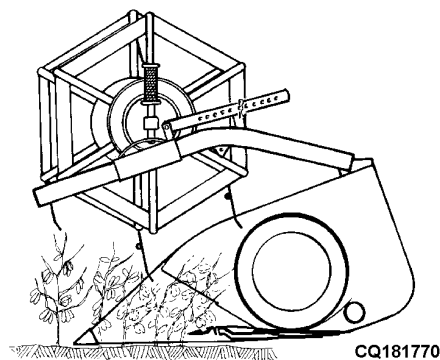
CQ181800 —UN—26FEB99

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BL04947,00003C4 -19-04NOV11-2/6

Reel Speed

NOTE: Reel speed is correct when product falls into header immediately.

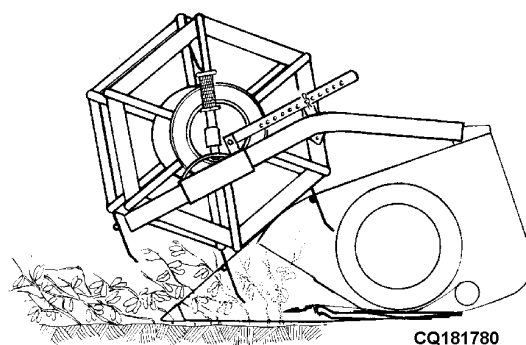


CQ181770—UN—26FEB99

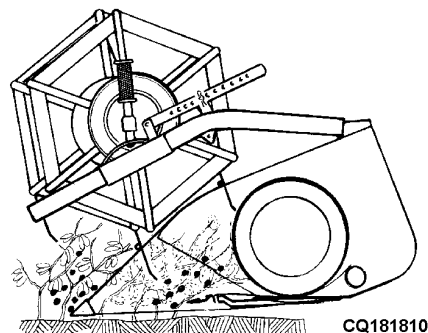
BL04947,00003C4 -19-04NOV11-3/6

General Rule

- For upright crop reel speed may be equal or slightly less than combine ground speed.
- For laid crop reel speed must be higher than combine ground speed.



CQ181780—UN—26FEB99



CQ181810—UN—26FEB99

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BL04947,00003C4 -19-04NOV11-4/6

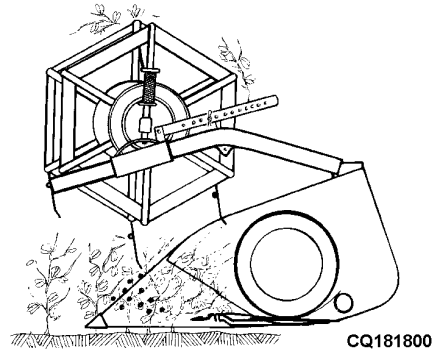
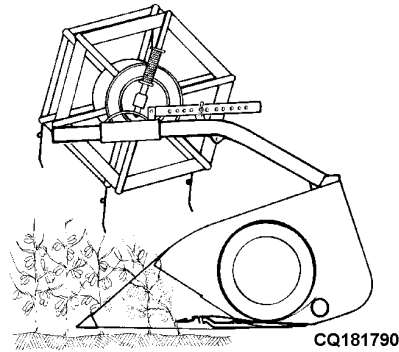
Some Consequences of Incorrect Reel Speed Adjustment

Low Reel Speed

- Losses due to product falling in front of cutterbar.
- Cut crop is winding around reel.

High Reel Speed

- Losses due to premature shelling caused by impact.
- Losses due to cut product thrown down to the ground.
- Losses due to pushing down crop before cutting.



CQ181790 —UN—26FEB99

CQ181800 —UN—26FEB99

BL04947,00003C4 -19-04NOV11-5/6

Auger Position

Auger should be adjusted so that product is evenly transported to feeder house.

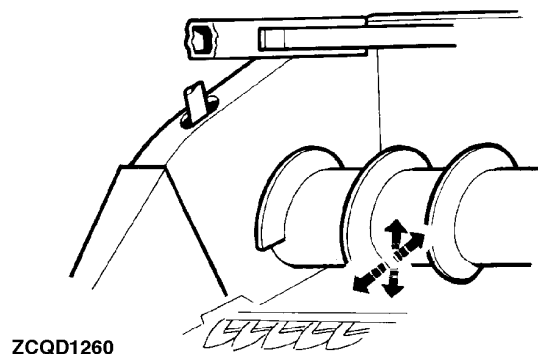
Excessive auger height in relation to header bottom will result in uneven feeding.

Insufficient clearance will provoke premature shelling - grain jumps out onto the ground. Stalks will be chewed.

Retractable Pick-Up Position

Retractable pick-up fingers should be adjusted so that product is entirely transported to feeder house without breaking and/or premature shelling.

Excessively extended retractable pick-ups may cause losses due to damages to product, such as breaking and/or premature shelling.



Excessively retracted pick-up fingers may cause losses due to insufficient feeding of small crops.

ZCQD1260 —UN—04APR96

BL04947,00003C4 -19-04NOV11-6/6

Automatic Cutting Height Control

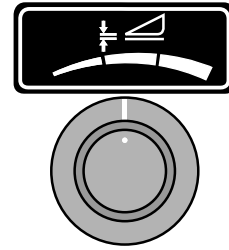
How it works

The flexible cutterbar floats vertically. Within this range of header floatation it is possible to adjust cutting height at any setting through a potentiometer as floatation increases when turning potentiometer counterclockwise. Select the most adequate floating according to soil conditions. Due to the force of the cutterbar towards the ground the rate of cutterbar movement will vary within the selected floating range.

The curved sealing plates between cutterbar and header bottom operate as a spring, supporting the cutterbar. As the cutterbar rises within its floating range, tension of sealing plates is released and cutterbar will become heavier thus causing a greater force towards the ground.

In dry soil conditions a greater force against the ground is allowed for cutting at ground level (Initial potentiometer

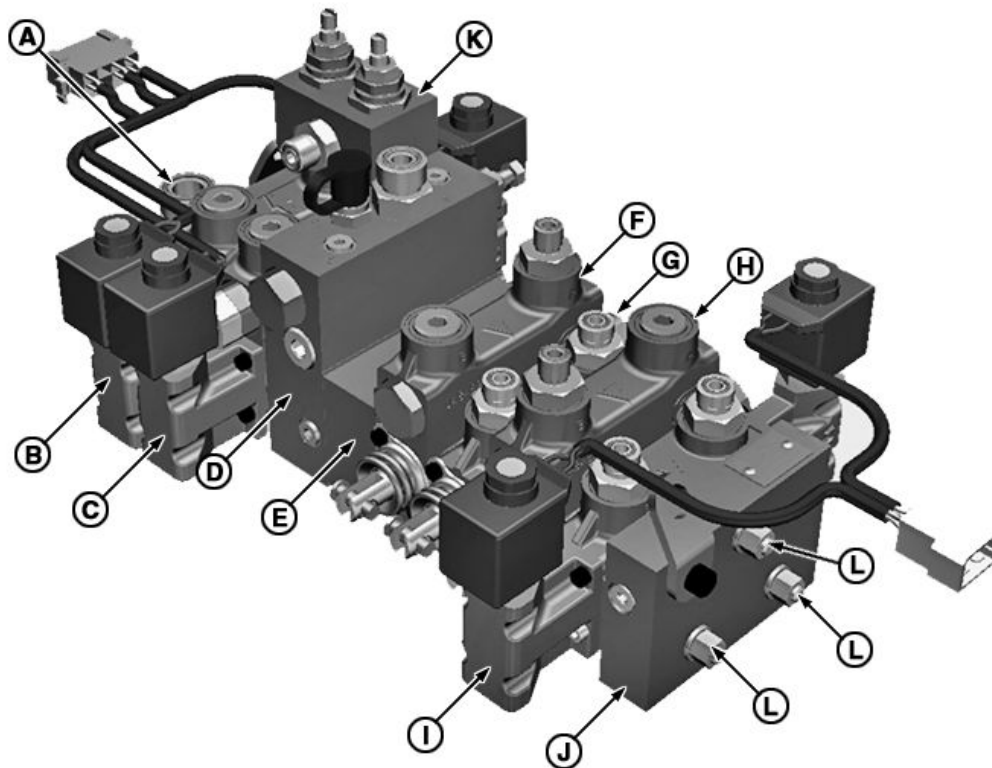
position). In wet soil conditions it is necessary to apply reduced force against the ground to prevent clogging of sliding shoes and collecting of earth (Intermediate and final potentiometer positions). Choose working height at potentiometer according to soil humidity, crop conditions and minimum harvesting height.



BL04947,00003C5 -19-04NOV11-1/1

CQ291368 —UN—09DEC11

Hydraulic Block



A—Return Section
B—Header Automatic Height Control Section
C—Header Section
D—Inlet Pressure Section

E—Spacer
F—Reel Raise and Lower Section
G—Unloading Auger Swing In and Out Section

H—Threshing Cylinder Variable Speed Drive Section
I—Header Lateral Tilt Section
J—Return Section

K—Flow Control Section
L—Attaching Bolt

Automatic Cutting Height Control Solenoids:

Automatic Cutting Height Control Solenoids are incorporated into the hydraulic valve block, located at the right-hand side of the combine. Electronic control unit acts on solenoids for height control according to header sensors.

Lateral Tilt System Solenoids:

Lateral tilt system solenoids are incorporated into the hydraulic valve block, located at the right-hand side of the combine. Electronic control unit acts on solenoids for tilt control according to header sensors.

CC284501—UN—04AUG10

BL04947,00003C6 -19-07FEB13-1/1

Lateral Tilt System

Operation

The lateral tilt system operates integrated to Automatic Header Height Control system.

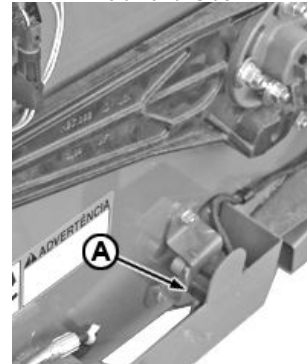
Header floats laterally up to an angle of 6° to each side.

Position Sensor

The position sensors (A) are located on both sides of the cutting platform, under the shields. Their function is to capture movements transmitted by the sliding shoes, located at the lower ends of the header and transmit them electrically to electronic control unit.



Left-Hand Side



Right-Hand Side

BL04947,00003CD -19-10NOV11-1/1

CQ291381 —UN—28NOV11

CQ291382 —UN—28NOV11

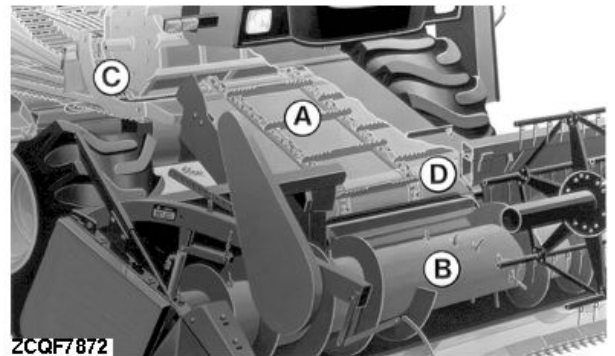
Feeder House

Feeder House

The feeder house conveyor (A) collects the product received from auger (B) and transports it to cylinder and concave (C).

A—Feeder House
B—Auger

C—Concave
D—Floating Roller



ZCQF7872

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BL04947,00003CE -19-14NOV11-1/4

ZCQF7872 —UN—04APR96

Safety Stop

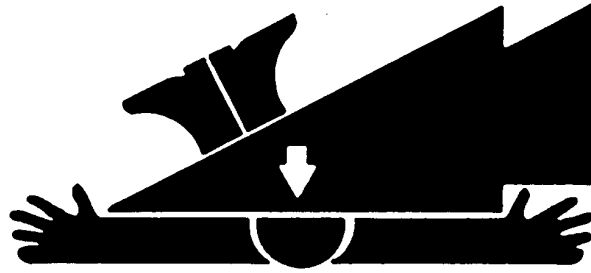
CAUTION: Raise the feeder house and put the safety stop (A) in place before initiating the installation process, in order to avoid serious injury or death. Some assembly stages demand that you work underneath the feeder house.

Without the safety stop (A) in place, the feeder house could fall without warning, causing serious injury by crushing or even death.

Raise the feeder house and insert the safety stop (A), as illustrated.

Then, turn off engine, remove starter key and apply parking brake.

A—Safety Stop



BL04947,00003CE -19-14NOV11-2/4

TS686 —UN—21SEP89

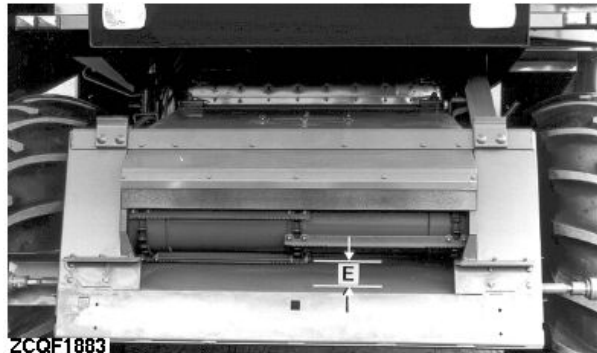
CQ222760 —UN—17MAR04

Floating Roller

Separation (E) between floating roller and feeder house bottom must be adjusted differently according to the crop being harvested.

A small opening for corn will cause whipping of the conveyor chain as the roller will jump up and down when corn ears are passing. This will provide irregular feeding as well as grain shelling and considerable grain damage.

On the other hand, if the floating roller is very high for a crop like soybeans, wheat and rice, feeding will not be uniform. This will cause crop accumulation that will prevent efficient operation of the threshing, separating and cleaning units (See Section **Basic Adjustments**).



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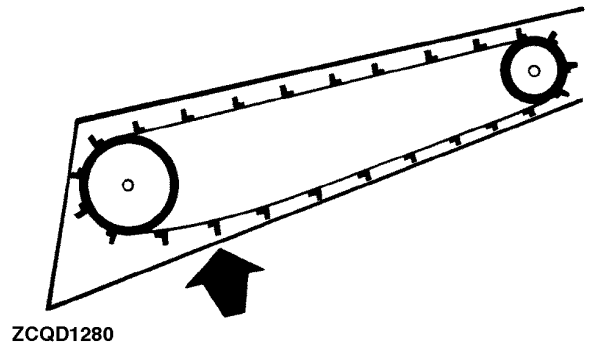
BL04947,00003CE -19-14NOV11-3/4

ZCOF1883 —UN—04APR96

Conveyor

Conveyor chains should be sufficiently tensioned to let crossmembers touch slightly on the feeder house bottom. With correct adjustment, the chain will bow to accept variable crop volumes and assure even feeding into the threshing system.

If the conveyor chains are too tight the conveyor will be too distant from the crop causing weak feeding and risk of clogging (See **Basic Adjustments**).



ZCQD1280 —UN—04APR96

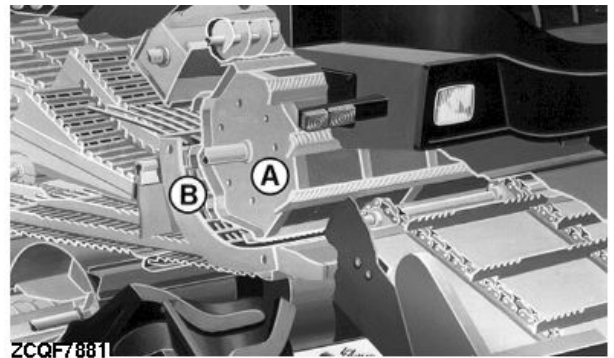
BL04947,00003CE -19-14NOV11-4/4

Threshing Unit

Components:

A - Cylinder

B - Concave



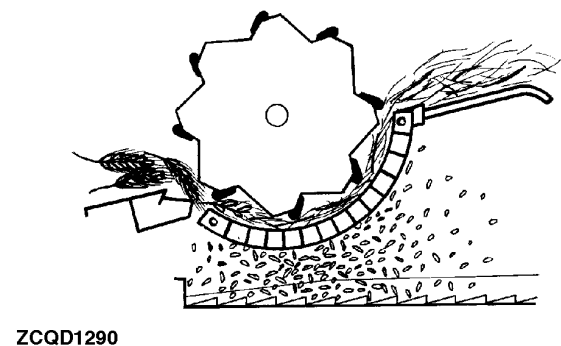
ZCQF7881 —UN—04APR96

AG,GG05155,107 -19-03FEB99-1/2

What is threshing?

To thresh means to remove the grains from their pods, ears or sheaves, as is the case with soy, corn and rice, respectively. Over 90% of the grain is separated in this area, that is, they go past the large pan concave. The remaining 10% are separated by the remaining units. It could be said that the operation of all the combine depends directly on the threshing unit, for if this operation is not well done, all the other machine functions will be affected. For example, if the amount of grain separated by the threshing unit is too small, an excessive amount of grain will be cast onto the straw walker, together with the straw. There is bound to be grain loss through the straw walker

The threshing action can be either through beating (cylinder and toothed concave) or through friction (cylinder and bar concave).



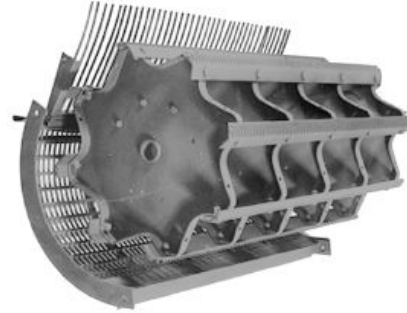
ZCQD1290 —UN—04APR96

AG,GG05155,107 -19-03FEB99-2/2

Cylinder and Bar Concave

Standard for the Basic Version

Recommended for harvesting soy, corn, wheat, oats, ryegrass, etc.



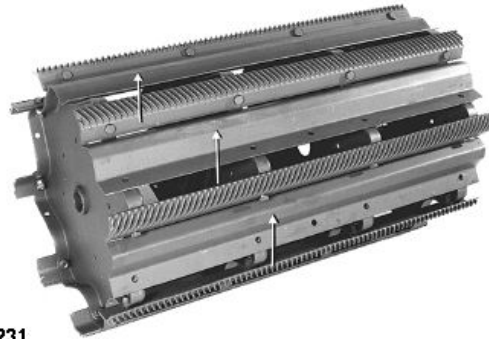
ZCQF1890

ZCQF1890—UN—04APR96

AG,GG05155,108 -19-03FEB99-1/3

Harvesting Corn With Cylinder and Bar Concave

When harvesting corn, use special plates to close the bar cylinder and keep the ears from getting inside it. Also close the stone trap with its special cover to keep the ears from being deposited there. These components are part of the "Special Corn Kit".



ZCQF1231

ZCQF1231—UN—04APR96

AG,GG05155,108 -19-03FEB99-2/3

Harvesting Wheat With Cylinder and Bar Concave

For harvesting bracteiferous varieties of wheat, we recommend mounting one or two concave closing plates, which serve to increase the threshing action and avoid excessive husks bracteifers over the large pan and shoes, affecting the separation. These plates must also be used for harvesting barley and general pasture seeds.

NOTE: The two concave closing plates come with the combines that are fitted with a cylinder and bar concave.



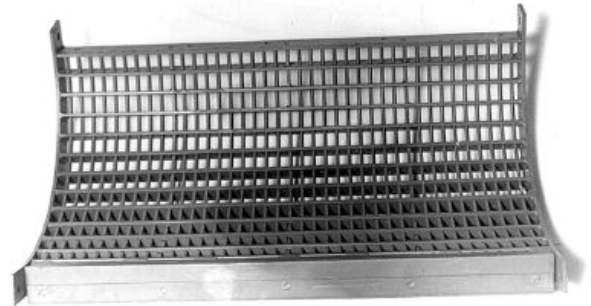
ZCQF1910

ZCQF1910—UN—04APR96

AG,GG05155,108 -19-03FEB99-3/3

Special Small Grain Bar Concave (Accessory)

Bar concave with less clearance between wires, recommended to optimize harvesting small grain, such as wheat and grasses in general.



ZCQF1920

ZCQF1920 —UN—04APR96

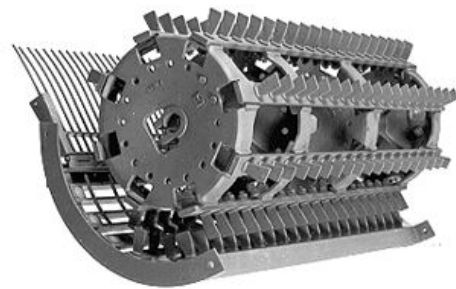
AG,GG05155,109 -19-03FEB99-1/1

Cylinder and Tooth Concave

Standard for the Rice Version

Indicated for harvesting: rice, beans and sorghum.

NOTE: The Rice Version Combines are fitted with anti wear, stainless steel plates mounted in the beater.



CQ177460

CQ177460 —UN—09FEB99

Continued on next page

AG,GG05155,110 -19-03FEB99-1/2

Harvesting Soy and Beans With Cylinder and Tooth Concave

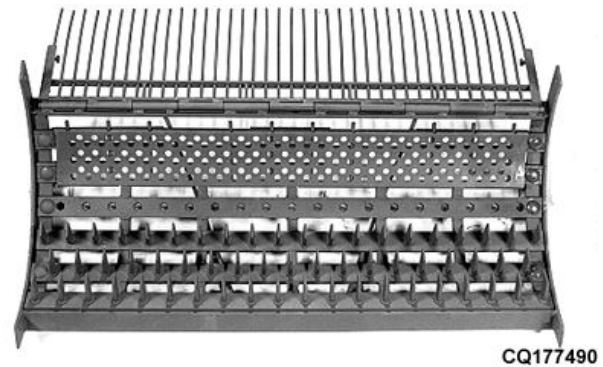
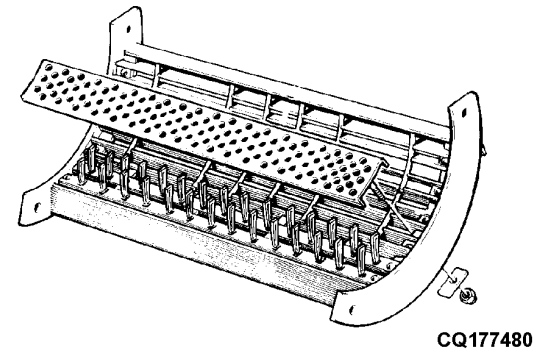
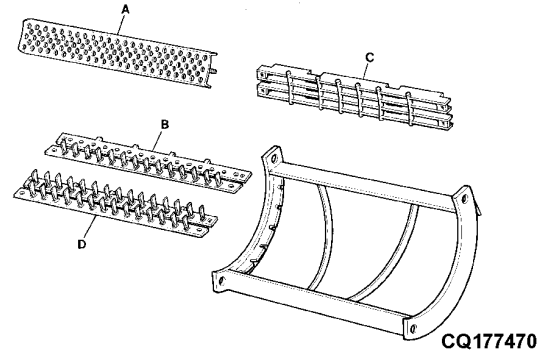
To harvest soy and beans with cylinder and tooth concave, we recommend the use of the concave closing plates (A) that close its back part. These plates reduce the quantity of chopped straw going through the concave and not overloading the shoes.

Also to reduce the amount of chopped straw, we recommend replacing the last comb of teeth (B) (single comb) on the concave for a grate (C).

If the product is hard to thresh due to being humid, unripe, etc, replace the single comb for a dual tooth comb (D), which will make threshing even more aggressive.

NOTE: The grade, double comb, and closing plates are loose components that come with the combine.

IMPORTANT: The above described is also indicated for harvesting rice, except for the closing plates.



AG,GG05155,110 -19-03FEB99-2/2

CQ177470 —UN—09FEB99

CQ177480 —UN—09FEB99

CQ177490 —UN—09FEB99

Threshing Evaluation

Threshing can be evaluated by checking:

1. The tailing
2. The grains in the grain tank
3. The straw over the straw walker
4. The grains lost behind the combine



ZCQD1310

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AG,GG05155,111 -19-24OCT03-1/12

ZCQD1310 —UN—04APR96

Examining Tailings

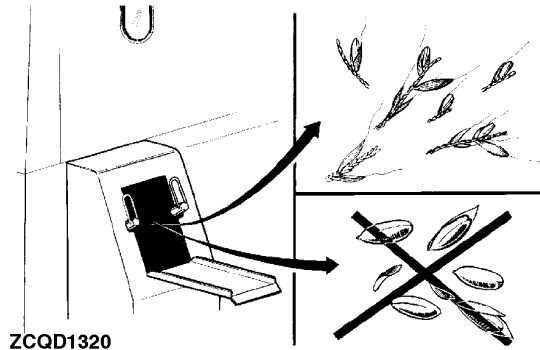
Usually the Tailings should have pods, ears or sheaves that were not threshed passing, and in a very small quantity, loose grains, wet straw and waste straw.

The amount of product in two blades of the elevator should be less than a handful.

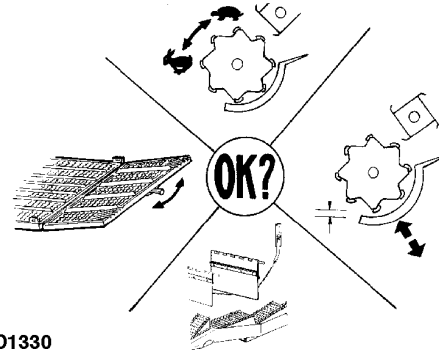
Poor Tailings

Check:

- Is the chaffer extension correctly adjusted?
- Is the straw walker curtain in the correct position?
- Is the clearance between the cylinder and the concave in accordance with the product being harvested?
- Is the cylinder speed correct?



ZCQD1320



ZCQD1330

AG,GG05155,111 -19-24OCT03-2/12

ZCQD1320 —UN—04APR96

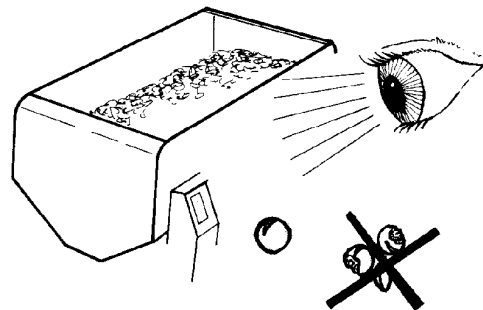
ZCQD1330 —UN—04APR96

Examining the Grains in the Grain Tank

A sample taken from the grain tank should have few broken or skinned grains.

If there are too many broken or husked grains, check:

- Excessive tailings?
- Cylinder speed too high?
- Clearance between the cylinder and the concave too small?



ZCQD1340

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AG,GG05155,111 -19-24OCT03-3/12

ZCQD1340 —UN—04APR96

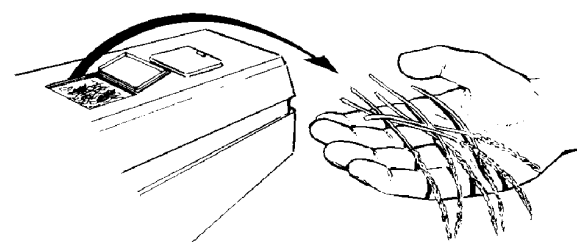
Examining Straw on the Straw Walker

The straw on the walker should be whole and the pods or sheaves fully aligned. If there is the presence of an excessive amount of unthreshed sheave, ear or pod ends, check:

- Cylinder revolution speed too slow?
- Clearance between the cylinder and the concave too large?

If the straw is overchopped, check:

- Cylinder revolution speed too high?
- Clearance between the cylinder and the concave too small?



ZCQD1350

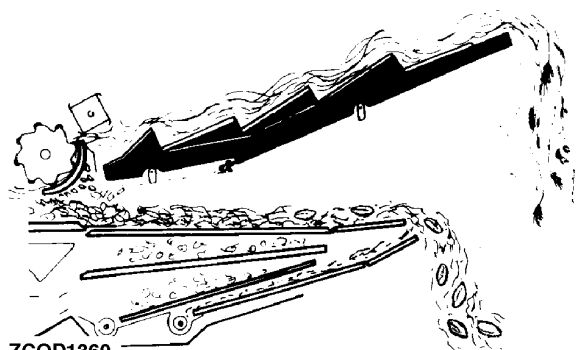
ZCQD1350—UN—04APR96

AG,GG05155,111 -19-24OCT03-4/12

Examining the Grains Lost Behind the Combine

The grains lost behind the combine may be either from the shoes or the straw walker.

If they come from the shoes, they fall around the rear combine axle. If they come from the straw walker, they fall farther away. Losses from the straw walker usually mean bad adjustment of the threshing unit.



ZCQD1360

ZCQD1360—UN—04APR96

Continued on next page

AG,GG05155,111 -19-24OCT03-5/12

Harvesting Small Grain

When harvesting very small grain or seeds (wheat, barley and pasture seeds) the opening between the concave and the cylinder must be adjusted so that the grains are completely removed from the straw or stalk. This can be judged from the condition of the straw on the straw walker.

If the clearance between the concave and the cylinder is too small, the straw will be excessively chopped and more power is required from the engine for threshing. If the opening is too small, the product will not be completely threshed.

Once the concave is correctly adjusted, the cylinder speed must be adjusted to obtain maximum threshing with the least damage to the product. If the product gets damaged, the clearance between the concave and the cylinder is not to be increased. Instead, the cylinder speed should be reduced. The clearance between the concave and the cylinder for these products has very little effect on grain damage.

NOTE: For initial adjustment, follow the basic adjustments table in the "Basic Adjustments" section.



ZCQD2060

Continued on next page

AG,GG05155,111 -19-24OCT03-6/12

ZCQD2060—UN—04APR96

Harvesting Large Grain

For harvesting large grains (soy, corn, sunflower) the same procedures apply, except that the opening between the concave is larger.

For corn, this opening is determined by the size (thickness) of the ear and how easy it is for threshing. Usually this opening is adjusted big enough to keep the ears whole, or as large as possible, during threshing.

NOTE: For initial adjustment, follow the basic adjustments table in the "Basic Adjustments" section.



ZCQD2070

ZCQD2070—UN—04APR96

AG,GG05155,111 -19-24OCT03-7/12

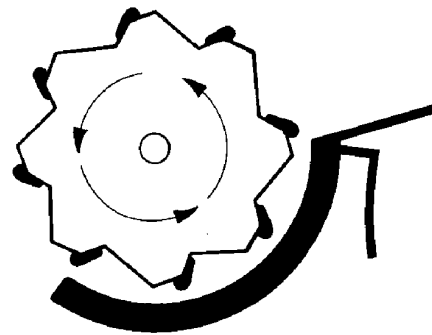
Cylinder Speed

The cylinder speed basically affects two things:

- The quality of the threshed grain.
- The quantity of broken or husked grain

The so-called easy to thresh products are those that need low impact to be threshed, but can tolerate high impact before breaking up. When threshing this type of product, adjusting the cylinder speed is easier.

On the other hand, when the impact needed to thresh the product is almost the same as the impact that breaks the grain, then the speed must be carefully adjusted to obtain the most complete threshing with the least breaks possible.



ZCQD1370

ZCQD1370—UN—04APR96

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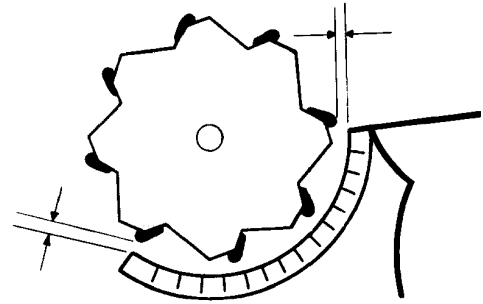
AG,GG05155,111 -19-24OCT03-8/12

Opening Between the Concave and the Cylinder

The clearance between the concave and the cylinder affects:

- The quality of the threshing action
- The quantity of grains separated from the straw by the concave

When threshing is difficult, the opening between the concave and the cylinder can be reduced to soften the layer of straw between the cylinder and the concave, causing most of the pods (or ears, or sheaves) make contact with the cylinder. A smaller clearance between the concave and the cylinder can also result in more separate grains from the straw. The grains will move easiest through the softer layer of straw with a narrow clearance than through thicker layers of larger clearances. With adequate clearance there is more threshing action on the front part of the concave and most grains will drop through the concave before being unloaded outside



ZCQD1380

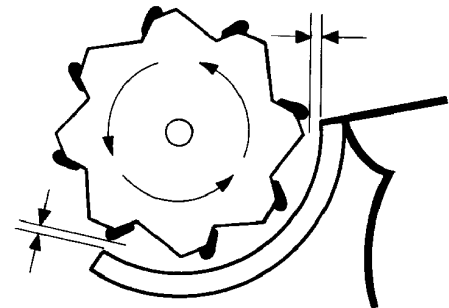
the concave and cylinder area. With a larger clearance between the concave and the cylinder, threshing takes place further back on the concave and there is no time to separate the grains by the concave, and they drop onto the straw walkers, overloading them.

AG,GG05155,111 -19-24OCT03-9/12

ZCQD1380 —UN—04APR96

Optimum Operation Between the Concave and the Cylinder

The cylinder speed and the adjustment of the opening between the concave and the cylinder are the most important factors in obtaining optimum results and they should be adjusted together before and while harvesting.



ZCQD1390

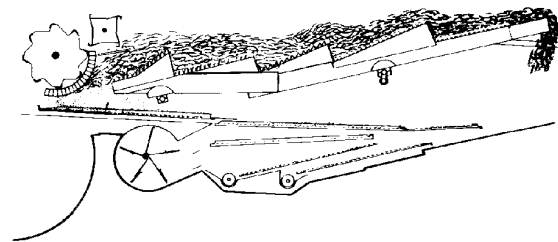
AG,GG05155,111 -19-24OCT03-10/12

ZCQD1390 —UN—04APR96

Excessive Threshing Action

Excessive threshing action is caused by excessive cylinder revolution as well as by a small clearance between the concave and cylinder. The excessive threshing action may be reduced by reducing the speed of the cylinder. Initially, reduce the speed by just 5%. Check the result of this change before making further adjustments. If reducing the cylinder speed by 10% still does not work, then open the concave slightly. If the excessive threshing action is not corrected through these means, try reducing the combine ground speed. A very large volume of material at very high speed may cause excessive threshing action.

IMPORTANT: Always check the results before making further adjustments. Each variation in the adjustment should not be above 5%.



ZCQD2080

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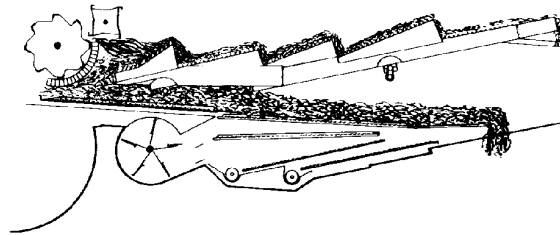
AG,GG05155,111 -19-24OCT03-11/12

ZCQD2080 —UN—04APR96

Lack of Threshing Action

Lack of threshing action is caused by very low cylinder revolution as well as by a large clearance between the concave and cylinder. In this case, the cylinder speed should be increased by 5%. If this does not work, reduce the clearance between the concave and the cylinder slightly. Check the result after each new adjustment. Under certain harvesting conditions (small quantity of straw), the lack of threshing action may not be corrected with these adjustments only. In this case, increase the combine ground speed engaging a fast gear.

IMPORTANT: Always check the results before making further adjustments. Each variation in the adjustment should not be above 5%.



ZCQD2090

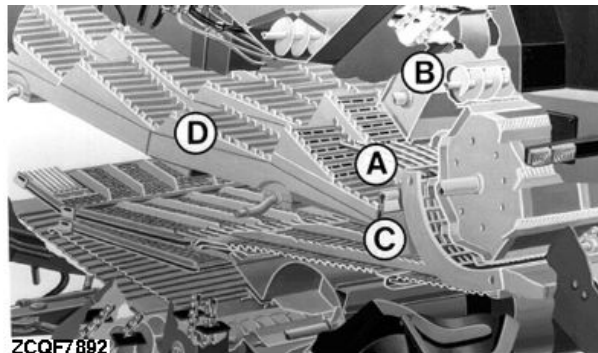
ZCQD2090 — UN — 04APR96

AG,GG05155,111 -19-24OCT03-12/12

Separation Unit

Components:

- A - Adjustable Extension of the Concave
- B - Beater
- C - Straw walker



ZCQF7892

ZCQF7892 — UN — 04APR96

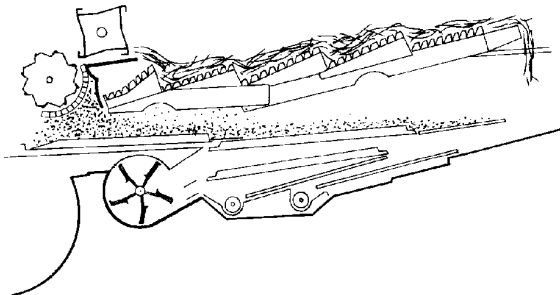
AG,GG05155,112 -19-24OCT03-1/2

Operation

The beater receives the material from the cylinder and concave and diverts the flow over the straw walker. The adjustable concave extension suspends the product so that the beater diverts it over the front end of the straw walker making use of all the separation area.

Without the concave extension, most of the product would fall directly over the large pan overloading the shoes. With the concave extension it is possible to have only the loose grains fall over the large pan.

Once the straw is deposited onto the straw walker, it is shaken and cast up and backwards. The loose grains drop through the openings on the straw walker grates and flow to the large pan. The straw continues to be cast behind the straw walker to reach the rear part of the combine and fall to the ground.



ZCQD2100

ZCQD2100 — UN — 04APR96

In this unit there is no threshing action. Therefore, unthreshed grains will remain so, resulting in loss of grain.

AG,GG05155,112 -19-24OCT03-2/2

Straw Walker Curtain

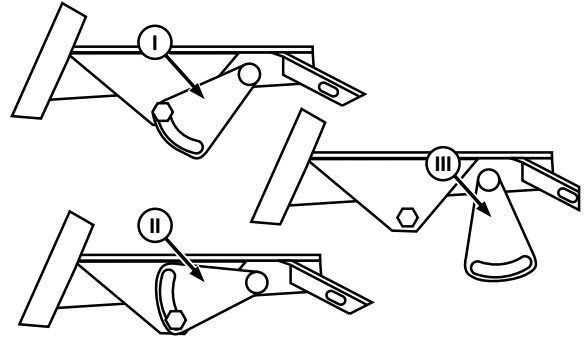
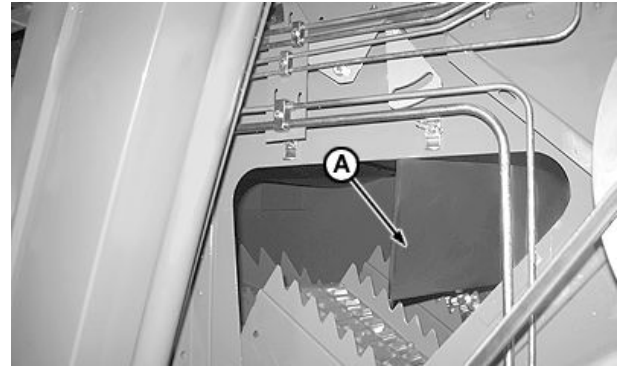
The straw walker curtain (A) helps to slow down material flow and allows for more time to separate grain from straw. It also prevents grain from being thrown out of the combine by the beater.

Under normal harvesting conditions, the curtain is free to swing in slot (I).

When crops with a heavy straw content are harvested, the recommended position for the curtain is position (II).

IMPORTANT: There are situations in which it is hard to separate grain (for example: corn). In these cases we recommend the use of a second curtain, available as an attachment.

NOTE: There is a third option, leaving the curtain to swing freely (III).



OU64006,00000CF -19-21SEP05-1/1

CQ251160 —UN—19SEP05

CQ247570 —UN—29JUL05

Separation Evaluation

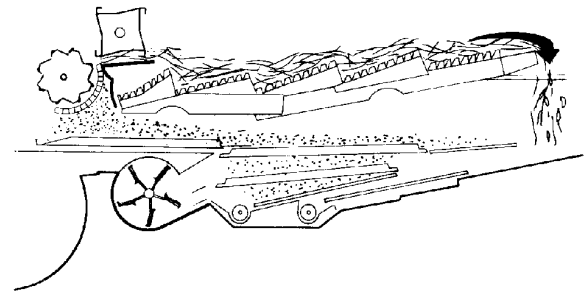
NOTE: Carry out this evaluation with the chopper or spreader not operating.

Observe the amount of grains coming out from the straw walker with the straw.

Losses through the straw walker may be a consequence of:

- Cylinder speed too low.
- Opening between the cylinder and the concave too large.
- Extension of the concave badly adjusted.
- Curtain incorrectly tilted.

IMPORTANT: Make an adjustment and check the results before making further adjustments.



ZCQD2110

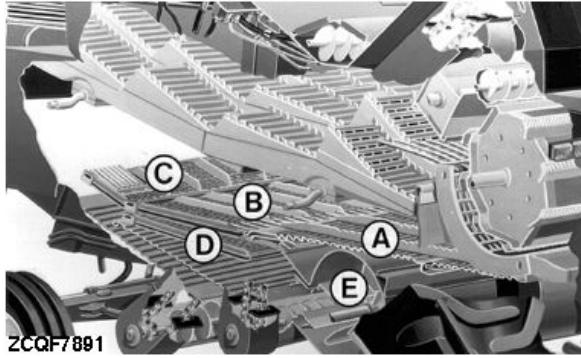
AG,GG05155,114 -19-03FEB99-1/1

ZCQD2110 —UN—04APR96

Cleaning Units

Components:

- A - Large Pan
- B - Chaffer
- C - Chaffer Extension
- D - Sieve
- E - Fan



ZCQF7891—UN—04APR96

AG,GG05155,115 -19-03FEB99-1/2

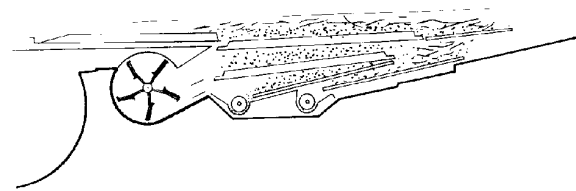
Operation

The cleaning unit is aimed at cleaning the threshed grain and capture the ends of pods, sheaves or ears not totally threshed.

A mixture of grain, humid straw and ends of pods, ears or sheaves drop onto the large pan. This moves back and forth and carries the product to its rear part, where a wire comb separates the grains from the straw, helped by the fan air current. The grains and the heavier straw drop onto the chaffer, which pre-cleans them. The grains and some straw drop onto the sieve. The straw is cast outside the combine and the unthreshed ends go past the chaffer extension and are carried back to the threshing.

The clean grains are sent to the grain tank.

The chaffers and the sieves have alternated movements in opposite directions to ensure greater cleaning efficiency and help avoid build up of straw and clogging.



ZCQD2120

ZCQD2120—UN—04APR96

AG,GG05155,115 -19-03FEB99-2/2

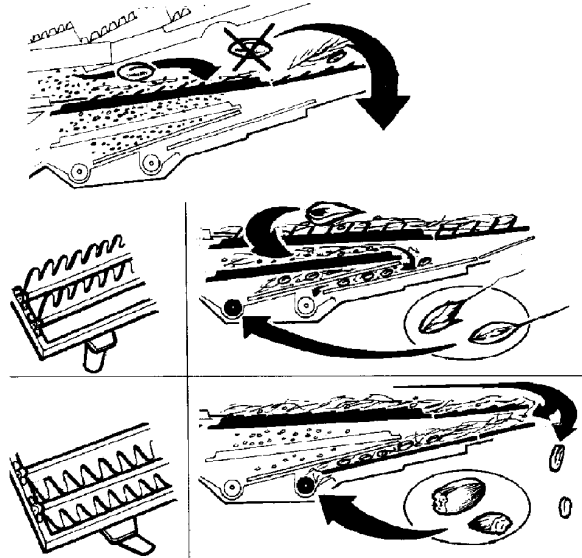
Chaffer

The chaffer makes a preliminary cleaning. The grains and smaller, heavier straw should go through it.

If the chaffer is opened too wide it will overload the sieve. The symptom is the tailing overloaded with straw.

On the other hand, if it is not open enough the tailing is loaded with grains, resulting in many broken grains in the grain tank. There are also more losses from the rear of the combine.

NOTE: For initial adjustment, follow the table in the "Basic Adjustments" section.



ZCQD2130

ZCQD2130 —UN—04APR96

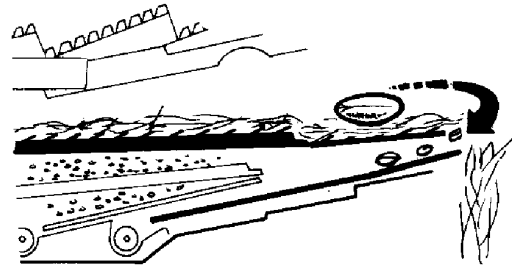
AG,GG05155,116 -19-03FEB99-1/1

Chaffer Extension

Its basic function is to recover the ends of pods, ears or sheaves not completely threshed to be threshed. It should be slightly wider than the chaffer.

On tilted ground, the opening may be wider than normal. Also, there are two openings with removable inserts (bars) on the side ends of the extension that capture the chaff that tends to build up in these regions when harvesting on slopes.

On excessively tilted ground, there is still the possibility of replacing the normal extension for the extension with a finger grate (see "Accessories").



CQ177520

CQ177520 —UN—09FEB99

AG,GG05155,117 -19-03FEB99-1/1

Sieve

The sieve separates all the remaining straw from the grain.

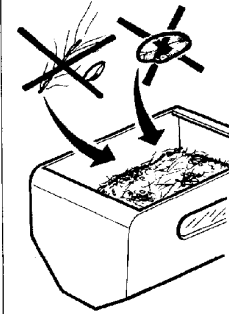
If it is opened too wide, there will be too much chopped straw in the grain tank.

If it is not opened wide enough, there will be too many grains in the taling and, consequently, too many broken grains in the grain tank.

NOTE: For initial adjustment, follow the basic adjustments table in the "Basic Adjustments" section.



ZCQD2150



Grain Catch Plate

Its function is to capture the ends of pods, ears or sheaves not completely threshed and that were not recovered by the chaffer extension.



CQ177530

AG,GG05155,118 -19-24OCT03-1/1

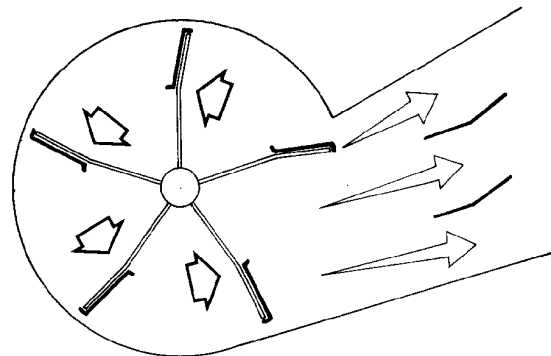
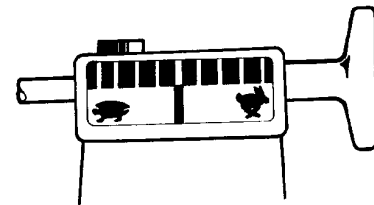
ZCQD2150 —UN—04APR96

CQ177530 —UN—09FEB99

Fan

Before starting the fan, adjust the openings on the shoes and direct the air through their deflectors. Begin with a relatively low speed and gradually increase it up to the point in which most of the straw is blown out, without losing grains.

Once the fan speed is set, make further corrections with small adjustments of the shoes and, if needed, adjust the speed once more until reaching the best results.



ZCQD1400

AG,GG05155,119 -19-03FEB99-1/1

ZCQD1400 —UN—04APR96

Cleaning Evaluation

The grains in the grain tank should be clean enough to obtain the best value in the marketplace. Losses in this unit should be minimum and acceptable.

Grain losses in the cleaning unit may be caused by:

1. Air current too strong

The indicator are grains blown out of the shoes and a small amount of straw over the chaffer.

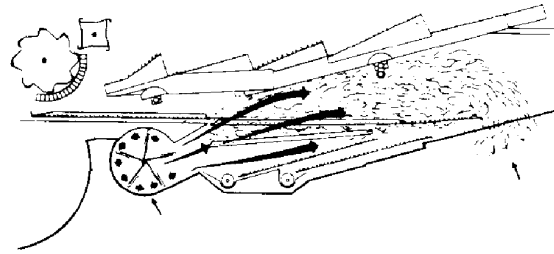
Solution: Reduce fan speed.

2. Air current too weak or chaffer open too wide

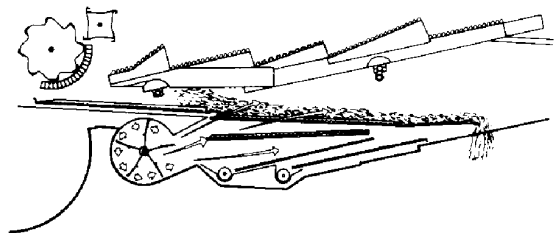
In this case, grain losses may be caused by excessive threshing (cylinder speed too high and insufficient opening between the concave and the cylinder). As well as by a weak air current or not enough opening of the chaffer.

Solution: Review the straw over the straw walker. If the straw is too broken or chopped, the cylinder and concave need adjusting. If the straw is whole, then more fan speed will be needed to suspend the straw so that the grain may fall through the shoes; or the chaffer should be opened slightly.

NOTE: Always review the results before making further adjustments.



ZCQD1410



ZCQD1420

ZCQD1410 —UN—04APR96

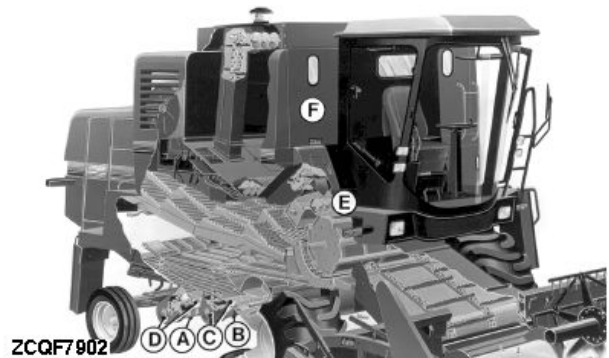
ZCQD1420 —UN—04APR96

AG,GG05155,120 -19-03FEB99-1/1

Grain Transport and Storage Unit

Components:

- A - Tailing chute
- B - Clean grain chute
- C - Lower auger and clean grain elevator
- D - Lower auger and tailings elevator
- E - Upper tailings auger
- F - Grain tank



ZCQF7902

ZCQF7902 —UN—04APR96

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AG,GG05155,122 -19-03FEB99-1/2

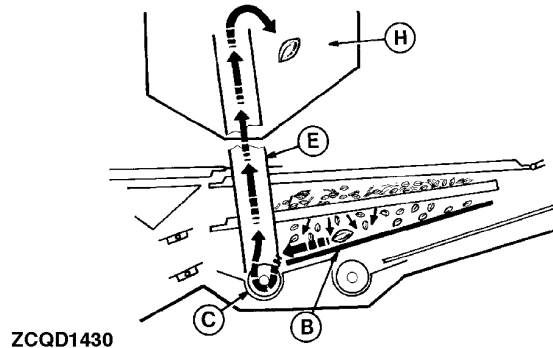
Operation

Clean Grains

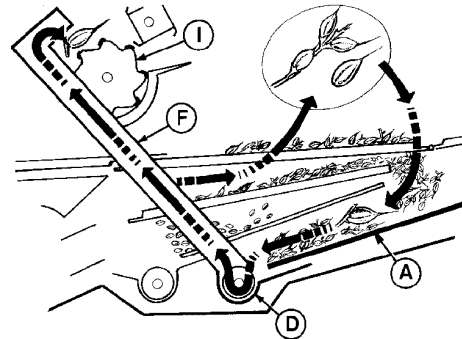
The grains that go through the sieve drop onto the clean grain return chute (B). They are then carried to the lower clean grain auger (C), which carries them to the clean grain elevator (E), which carries them to the grain tank (H).

Tailing

The ends of sheaves, ears or pods that are not threshed, which go through the chaffer extension and those carried beyond the end of the sieve drop onto the tailing chute (A). In turn, these slide down to the lower tailing auger (D). This material is then carried by the tailings elevator (F) to the front part of the threshing cylinder (I) where it is threshed.



ZCQD1430



ZCQD1440

ZCQD1430—UN—04APR96

ZCQD1440—UN—04APR96

AG,GG05155,122 -19-03FEB99-2/2

How to Avoid Grain Losses—Limiting Losses

Losses of between 2 and 3% are accepted. This loss estimate will depend on:

- Operator skill
- Harvest and ground conditions
- Combine ground speed
- Combine adjustments

AG,GG05155,123 -19-22OCT03-1/1

Determining Losses

Loss of grains is the result of incorrect adjustments and/or operation. If the losses are acceptable, the operator

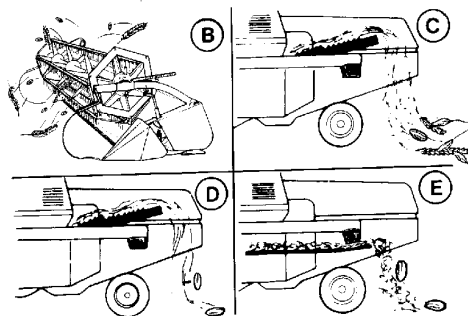
should reduce them by adjusting the components that cause them. To reduce losses, be aware of the following:

- 1 . The source of losses.
- 2 . How to measure losses.

AG,GG05155,124 -19-24OCT03-1/1

Source of Losses

- A - Pre-harvest losses
- B - Cutting platform losses
- C - Threshing unit losses
- D - Straw walker losses
- E - Shoe losses



CQ177540

CQ177540—UN—09FEB99

Continued on next page

AG,GG05155,125 -19-03FEB99-1/6

Pre-Harvest Losses

They take place in the field before harvesting with the combine, caused by wind and weather conditions.



CQ177550

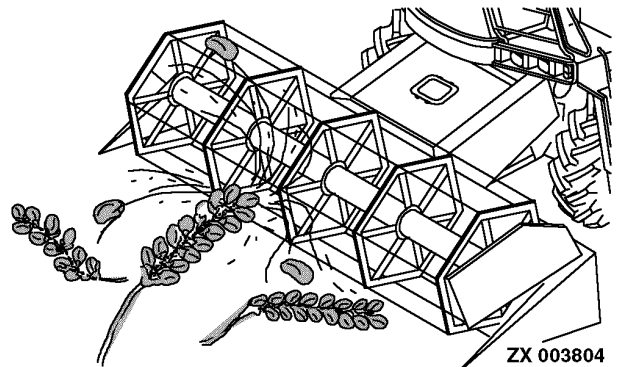
CQ177550 —UN—09FEB99

AG,GG05155,125 -19-03FEB99-2/6

Cutting Platform Losses

The usual causes for cutting platform losses are:

- Pods left on plants cut too high
- Threshed grains from the speed of the reel
- Pods, ears or sheaves cast to the ground by the high reel speed.
- Fallen plants or not captured due to incorrect reel height
- Grains cast to the ground due to high combine speed
- Grains cast to the ground due to cutterbar action



ZX 003804

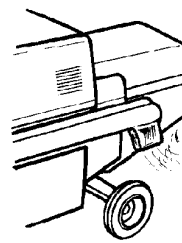
ZX003804 —UN—19JUN95

AG,GG05155,125 -19-03FEB99-3/6

Threshing Unit Losses

Those grains that remain in the pods, ears or sheaves and go out through the rear part of the combine. The usual causes for threshing losses are:

- Large opening between the concave and the cylinder
- Cylinder speed too low
- High combine speed



ZCQD2240

ZCQD2240 —UN—04APR96

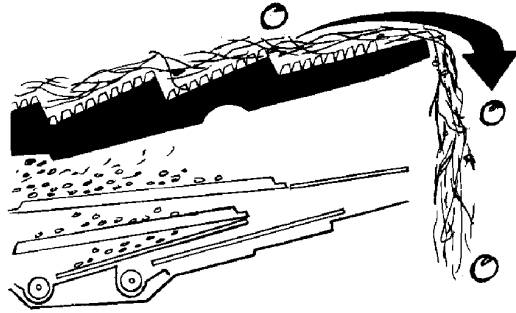
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AG,GG05155,125 -19-03FEB99-4/6

Straw Walker Losses

Those grains that could not be separated from the straw and leave the combine through the straw walker.

These losses are usually caused by low cylinder speed and wide concave clearance that overloads the straw walker. Excessive quantity of material over the straw walker keeps the grain from dropping through its shoes.



ZCQD1480

ZCQD1480—UN—04APR96

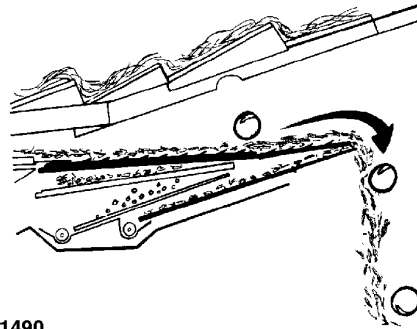
AG,GG05155,125 -19-03FEB99-5/6

Shoe Losses

Are loose grains that drop through the shoes out of the combine.

The usual causes for shoe losses are:

- Incorrect fan speed.
- Incorrect air direction
- Shoes badly adjusted
- Overloaded shoes by inadequate adjustment of the threshing unit



ZCQD1490

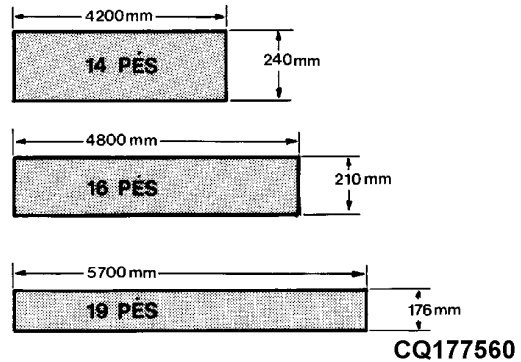
ZCQD1490—UN—04APR96

AG,GG05155,125 -19-03FEB99-6/6

Ways of Measuring Losses

a) Harvesting with the cutting platform

Make a string frame of an equal length to the cutting platform and of a width that will total an area of one square meter (see examples in the figure beside).



CQ177560—UN—09FEB99

Continued on next page

AG,GG05155,126 -19-03FEB99-1/2

b) Harvesting with the corn header

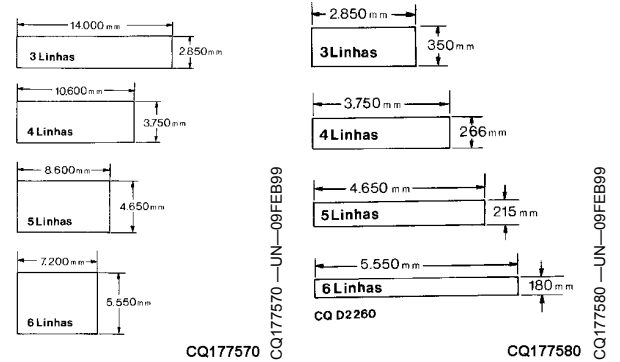
NOTE: The procedures to identify corn losses are the same as those used for soy, wheat, etc. The difference is in the use of two frames, one to determine the loss of ears and one for the grains.

- Loss of Ears

Make a string frame of an equal length to the corn header and of a width that will total an area of 40 square meters (see example beside).

- Loss of Grains

Make a string frame of an equal length to the corn header and of a width that will total an area of one square meter (see the figure beside).



AG,GG05155,126 -19-03FEB99-2/2

1º Step: Harvest Yield

NOTE: The combine must be totally free of grains in the grain tank, elevators and augers.

a) Harvest a 100 m² sample.

Distance (X) to be traveled to complete 100 m²:

14 feet (X) = 24 m

16 feet (X) = 21 m

19 feet (X) = 17.6 m

b) Be prepared with a container (bag) at the grain tank grain inlet to receive the harvested grains.

c) Weigh the harvested grains, for the harvesting yield is provided by the following formula:

Sample weight x 100 (kg/ha)

EXAMPLE:

A combine fitted with a 16 feet cutting platform should travel 21 m to complete 100 m². The weight of the harvested sample is of 24 kg. What is the yield per hectare?

Solution:

Sample weight x 100 = 24 x 100 = 2400 kg/ha

AG,GG05155,127 -19-24OCT03-1/1

2º Step: Pre-Harvest Losses

Before starting to harvest take three measurements at different places in the area to be harvested. Place the frame transversally to the line planting. Count the loose grains and those on the fallen ears or pods found within the frame.

Add up the total grains found by the three measurements and divide the result by three to obtain the average grain loss at pre-harvest.

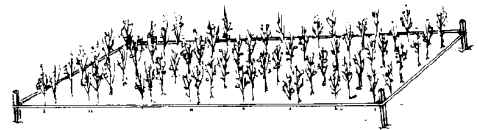
EXAMPLE:

First measurement = 30 grains

Second measurement = 10 grains

Third measurement = 20 grains

Total grains - 30 + 10 + 20 = 60 grains



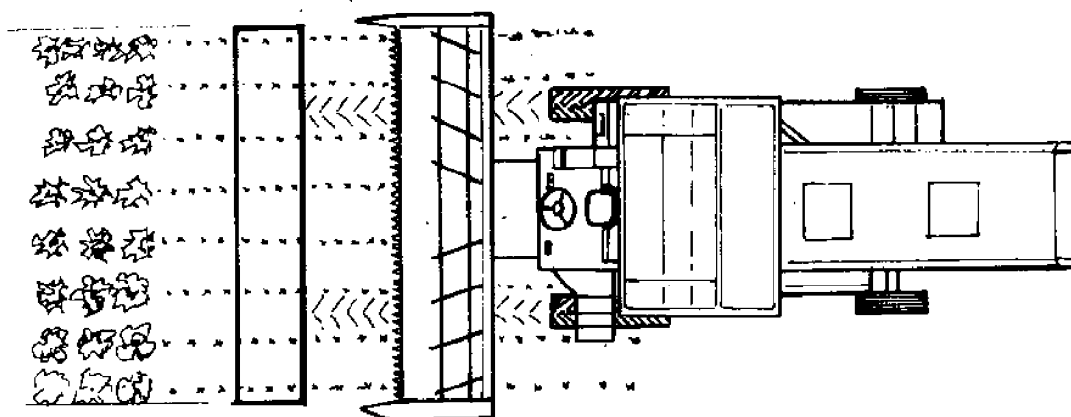
CQ177590

CQ177590 UN-09FEB99

Average pre-harvest Losses = 60 : 3 = 20 grains/m²

AG,GG05155,128 -19-03FEB99-1/1

3° Step: Cutting Platform Losses



CQ177600

CQ177600—JUN—09FEB99

Harvest a small area, about one quarter of the grain tank capacity. Stop the combine and allow it to run until all the straw has come out.

Then reverse the combine to a distance equal to its length.

Place the frame on the harvested part in front of the combine and count the loose grains and the grains that remain in the pods, on the ears or in sheaves inside the frame.

Repeat this operation in different areas three times. This way a more reliable figure for grain loss is obtained for this area of the combine.

Add up the total grains found by the three measurements and divide the result by three to obtain the average grain

loss. Subtract from this result the result of the pre-harvest grain loss. The figure found is the cutting platform loss.

EXAMPLE:

For the first measurement, 60 grains were found, 70 for the second and 80 grains for the third one. Previously, an average of 20 grains was found for the pre-harvest losses. What is the loss of grains at the cutting platform?

Solution:

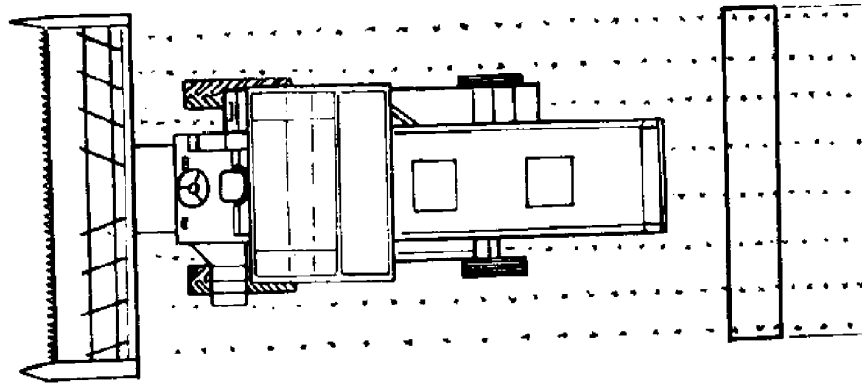
Total grains found = $60 + 70 + 80 = 210$

Average grains = $210 : 3 = 70$ grains

Cutting platform losses = $70 - 20 = 50$ grains/ m^2

AG,GG05155,129 -19-03FEB99-1/1

4° Step: Threshing, Straw Walker and Shoe Losses



CQ177610

NOTE: To make this measurement, the straw chopper or spreader must be turned off.

Place the frame behind the combine, on the harvested part, and count the grains attached to the pods, ears or sheaves inside the frame.

Repeat this operation in different areas three times.

Calculate the average grains lost by adding the results of the three measurements and dividing the result by three.

Subtract from this result the figures from the pre-harvest and cutting platform grain losses. The figure found is the threshing, straw walker and shoe loss figures.

EXAMPLE:

For the first measurement, 65 grains were found, 95 for the second and 80 grains for the third one. What are the threshing, straw walker and shoe losses?

Solution:

Total grains found = $65 + 95 + 80 = 240$

Average = $240 : 3 = 80$ grains

Threshing, straw walker and shoe losses = $80 - 20 - 50 = 10$ grains/m²

AG,GG05155,130 -19-03FEB99-1/1

5° Step: Total Combine Loss

The total combine loss will be:

Header losses + Threshing, straw walker and shoe losses

From the example:

Total combine loss = $50 + 10 = 60$ grains/m²

AG,GG05155,131 -19-03FEB99-1/1

6° Step: See the Guidance Chart

From the example:

60 grains/m² lost account for 1.5 bags of soy per hectare.

1.5 bags = 90 kg/ha

LOSS OF GRAINS				
Crop	Average Grains / m ²			
Soy	40	80	120	160
Wheat	120	240	360	480
Rice	170	340	510	680
Corn	19	38	57	76
Represent bags with 60 kg/ha	1	2	3	4
CORN EAR LOSSES				
Ears per m ²	kg/ha			
01 Ear of 0.160 kg	30			
01 Ear of 0.240 kg	45			
01 Ear of 0.320 kg	60			
01 Ear of 0.400 kg	75			

AG,GG05155,132 -19-03FEB99-1/1

7° Step: Loss Percentage

The loss percentage is:

$$\frac{\text{Total Combine Loss} \times 100}{\text{Harvest Yield}}$$

In the example given:

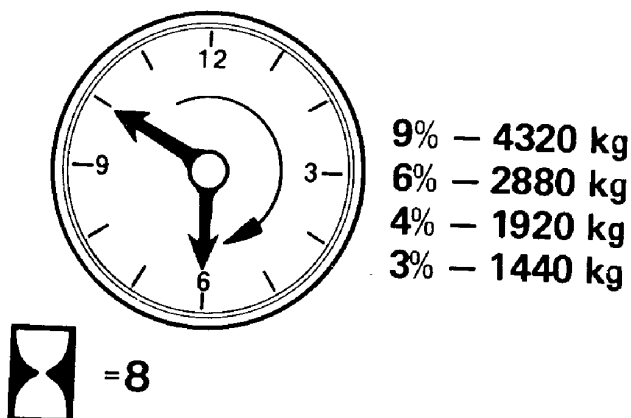
Total combine loss = 90 kg/ha

Harvest yield = 240 kg/ha

Loss percentage - $(90 \times 100) : 2400 = 3,75$

For a yield of 2400 kg/ha, a loss of 90 kg/ha equals 3.75%.

AG,GG05155,133 -19-24OCT03-1/1

Loss Calculation

CQ177620

CQ177620 — UN — 09FEB99

First Example:

Combine operating at a loss of 9%. By better adjustment, the loss is reduced to 6%. The average harvest yield is of 3000 kg/ha (50 bags of 60 kg per hectare). Harvesting 2 hectares per hour adds up to 16 hectares in 8 hours of harvesting.

Thus,

9% of 3000 kg/ha = 270 kg/ha

6% of 3000 kg/ha = 180 kg/ha

After an 8-hour shift, we get:

270 kg/ha x 16 ha = 4320 kg loss

180 kg/ha x 16 ha = 2880 kg loss

Difference = 1440 kg

That is: For a harvest that yields 3000 kg/ha in an 8-hour shift, by reducing the loss rate from 9% to 6%, another 1440 bags are harvested (or 24 60-kg bags).

Second Example:

The 6% loss of grains in the first example is still very high. Assuming that, by reducing the harvest speed, these losses are reduced to 3%.

Thus,

6% of 3,000 kg/ha = 180 kg/ha

3% of 3,000 kg/ha = 90 kg/ha

16 ha x 180 kg/ha = 2,880 kg/ha (6%)

12 ha x 90 kg/ha = 1,080 kg/ha (3%)

Difference = 1,800 kg.

That is: By reducing from 16 to 12 hectares harvested in the 8-hour shift, 1800 kg (30 bags with 60 kg) that would be lost were harvested.

What Does Loss of Grains Mean

Loss of grains = less money in your pocket

Correct operation + Adjusted combine = more money in your pocket

AG,GG05155,134 -19-03FEB99-1/1

Basic Adjustments

Basic Combine Adjustments Chart

IMPORTANT: This chart indicates initial values. Different terrain and crop conditions may need subsequent adjustments.

Adjustments of chaffer extension are not indicated, it is recommended to adjust the extension 2mm more open than the chaffer or according to the amount of tailings.

Before adjusting combine to desired crop, consult distances between concave and threshing cylinder in "Adjusting Concave-to-Cylinder Clearance" in "Service" section.

NOTE: Always adjust cylinder speed with engine at top speed.

Combine adjustments				
Crop	Threshing Cylinder Speed - rpm	Concave Clearance - Indication on lever decal	Chaffer Opening - mm (in.)	Grain Sieve Opening - mm (in.)
Soybeans	460—700	20—36	11—19 (0.43—0.75)	8—12,5 (0.31—0.49)
Wheat	900—1100	10—23	11—19 (0.43—0.75)	3—6,5 (0.11—0.25)
Rice	650—900	10—23	16—19 (0.63—0.75)	5—9,5 (0.2—0.37)
Corn	200—600	20—36	11—16 (0.43—0.63)	8—14 (0.31—0.55)
Beans	300—550	20—36	12,5—19(0.49—0.75)	9,5—11,5 (0.37—0.45)
Herbage	900—1100	7—16	12,5—16 (0.49—0.63)	3—6,5 (0.11—0.25)
Sorghum	800	10—23	9,5—16 (0.37—0.63)	6,5—12,5(0.25—0.49)
Oats	900—1100	10—23	16—19 (0.63—0.75)	6,5—12,5 (0.25—0.49)
Sunflowers	300—550	20—36	12,5—19 (0.49—0.75)	11—16 (0.43—0.63)
Barley	900—1000	10—23	12,5—19 (0.49—0.75)	6—12 (0.23—0.47)
Rape	400—900	7—16	5—10 (0.2—0.4)	3—5 (0.11—0.2)
Pea	200—600	20—36	11—16 (0.43—0.63)	8—14 (0.31—0.55)
Linseed	800—1000	7—16	12,5—16 (0.49—0.63)	3—6,5 (0.11—0.25)

OU64006,00000F5 -19-03OCT05-1/1

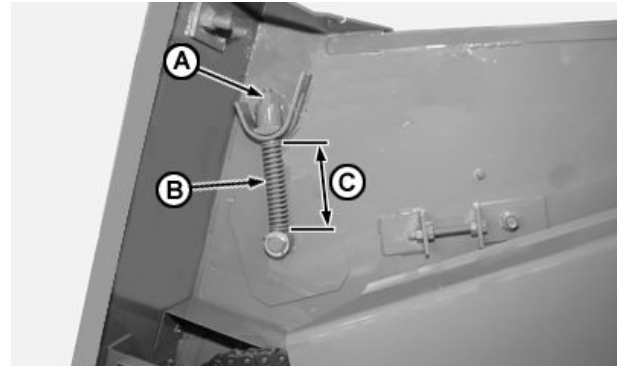
Adjusting Floating Roller Height (Except for Rice)

Adjust the height of spring (B) with nuts (A) on both sides of the feeder house.

Crop	Spring length (C):
For corn	107—113 mm (4.2—4.45 in.)
For other crops	137—143 mm (5.39—5.63 in.)

A—Adjusting Nuts
B—Spring

C—Spring Length



CQ246640 —UN—29JUL05

BL04947,00003D0 -19-19NOV11-1/1

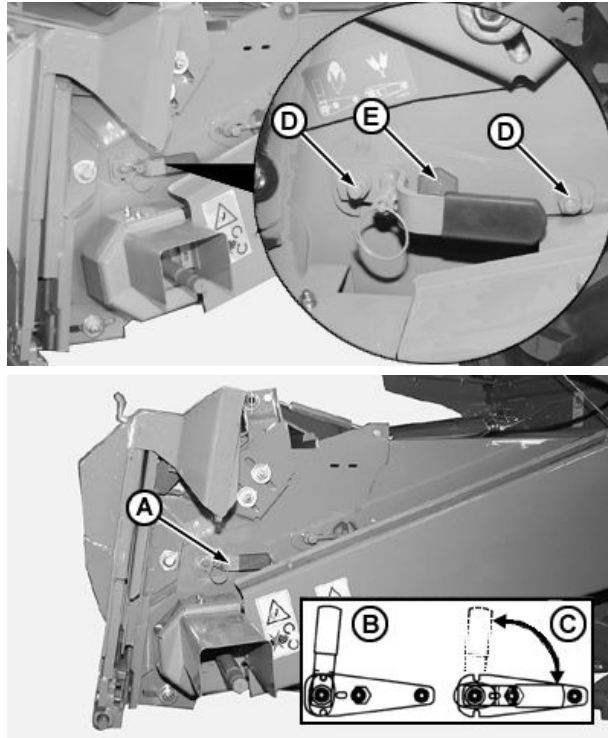
Adjusting Floating Roller Height (Rice)

1. Loosen nuts (D) and adjust floating roller height through eccentric nut (E), on both sides of feeder house.
2. Adjust position (B) or (C) through lever (A).

Crop	Lever position:
For large grain	B (vertical)
For medium and small grain	C (horizontal)

A—Lever
B—Position
C—Position

D—Nuts
E—Eccentric Nut



BL04947,00003D1 -19-19NOV11-1/1

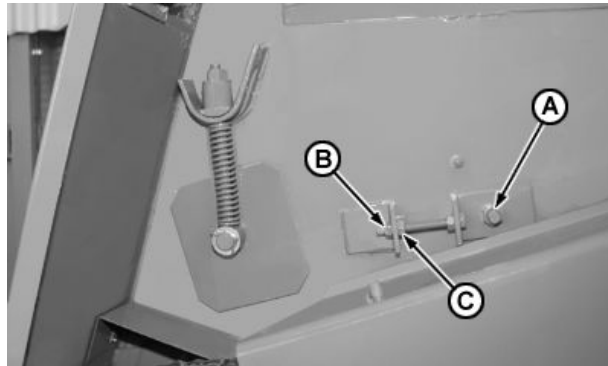
CQ271910 —UN—19MAY06

CQ246650 —UN—29JUL05

Tension of Conveyor Chains (Except for Rice)

Loosen nut (A) on both sides. Turn nuts (B) and (C) evenly on both sides of feeder house. Retighten them securely after the adjustment.

IMPORTANT: The chain tension will be ok, when the lowest slat slightly touches the floor of the feeder house.



BL04947,00003D2 -19-19NOV11-1/1

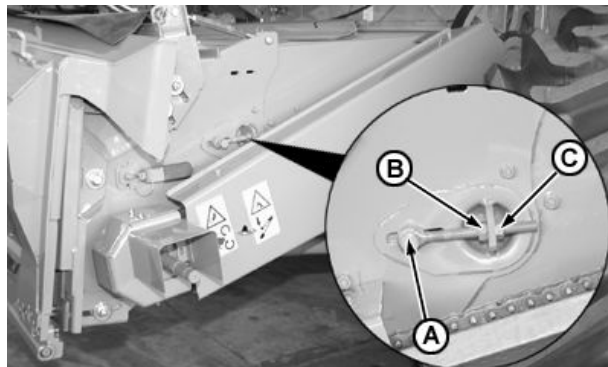
CQ246670 —UN—29JUL05

Tension of Conveyor Chains (Rice)

Loosen nut (B) and locknut (C) on both sides and move bolt (A) as needed to obtain a good tension of the conveyor chains.

Retighten them securely after the adjustment.

IMPORTANT: The chain tension will be ok, when the lowest slat slightly touches the floor of the feeder house.

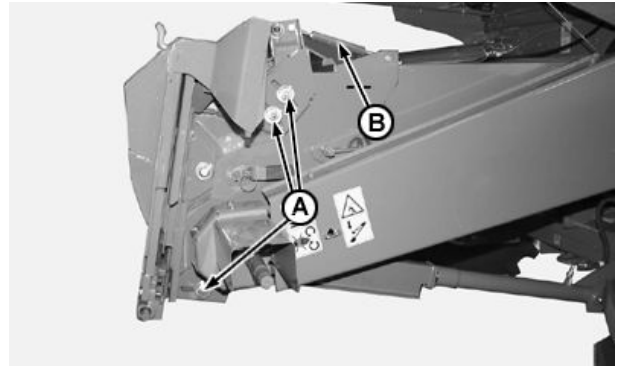


BL04947,00003D3 -19-19NOV11-1/1

CQ247040 —UN—29JUL05

Adjusting Feeder House Front Face Angle (Rice)

To adjust feeder house front face angle, bolts (A) must be loosened and adjustment made with nuts (B) on both sides of feeder house.



CQ246660 —UN—29JUL05

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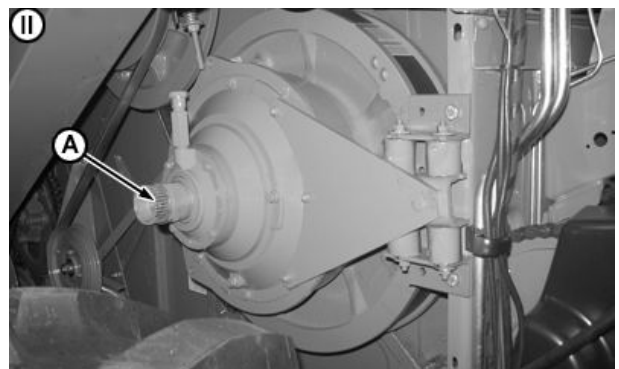
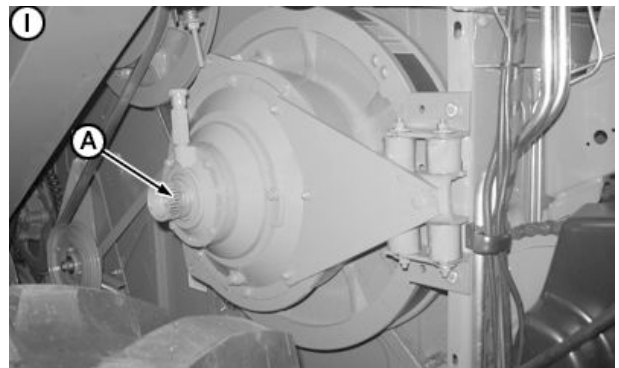
Operating Threshing Cylinder Speed Reduction Gear

IMPORTANT: Adjustments to both sheaves on threshing cylinder and overshot beater variable drive should only be performed by your John Deere dealer. Have the cylinder drive reduction gear serviced every 600 hours or once yearly by your John Deere dealer.

MOBILITH SHC 007 grease recommended. Consult quantity in the "Specifications" section.

Position I — Shifter collar (A) pushed in for speeds of 380 — 1100 rpm.

Position II — Shifter collar (A) pulled out for speeds of 130 — 420 rpm.



CQ250520 —UN—02SEP05

CQ250500 —UN—02SEP05

ML70882,000080A -19-01MAR06-1/1

Adjusting Concave Extension

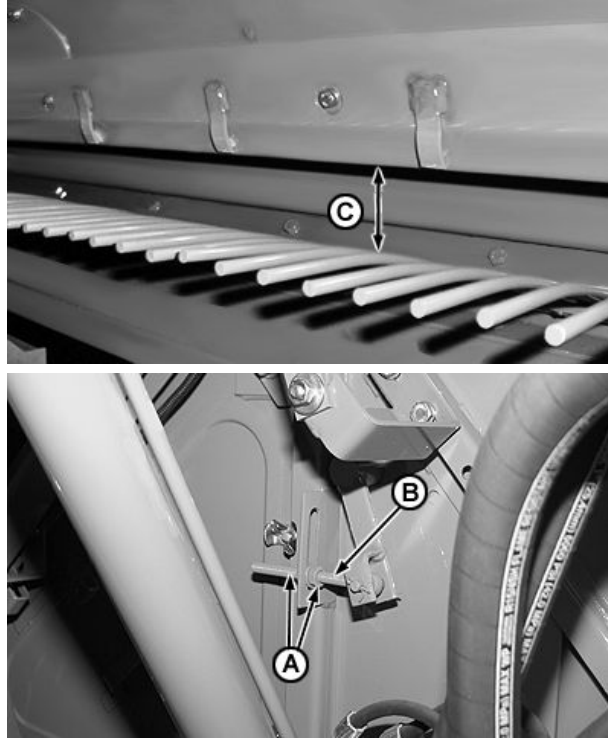
The concave extension helps threshing grains that do not separate from ear tips and helps separating grain from straw.

Adjust with bolt (B) using nuts (A) on the left side of the combine.

Distance (C) between beater and extension can be adjusted according to crop:

- 30 to 40 mm for medium and small grain.
- 70 to 100 mm for large grain.

NOTE: Height (C) must be measured always at the shortest distance between extension and beater.



AG,CO03622,1653 -19-24AUG09-1/1

CQ280595 —UN—22AUG07

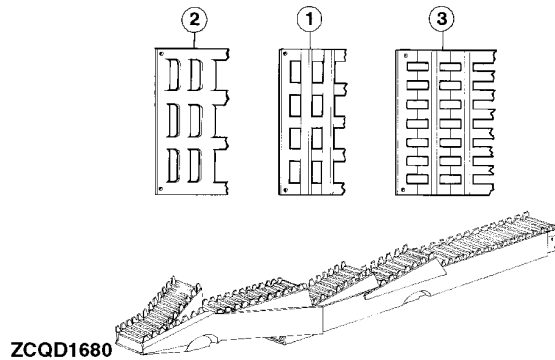
CQ246740 —UN—29JUL05

Straw Walker Type A - Cleaning Shoe

NOTE: Type A straw walker only has first and second stage cleaning shoes attached with bolts.

1. Straw walkers possessing grids with transverse rectangular openings are indicated for small grains such as rice, wheat, etc. They are standard on rice version combines.
2. Straw walkers possessing "frog mouth" type openings on the grid are indicated for large grains such as soybeans, corn and sorghum. They are supplied with the standard version combine.
3. Straw walkers possessing grids with longitudinal openings are especially suited for wheat and graminaceous crops.

On the three straw walker types the first and second stage cleaning shoes are attached with bolts and may be replaced for fast conversion for all types of products.



AS60558,0000E10 -19-12FEB08-1/1

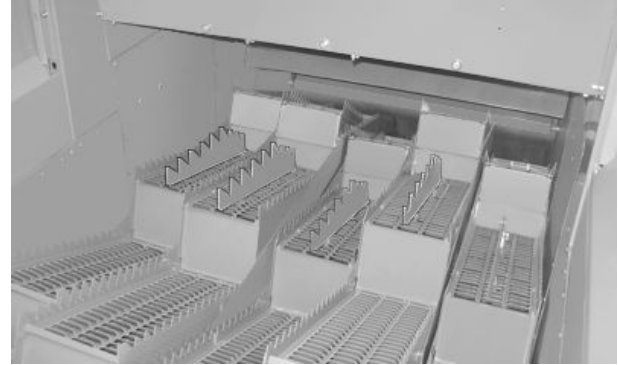
ZCQD1680 —UN—04APR96

Straw Walker Fishbacks - Type A

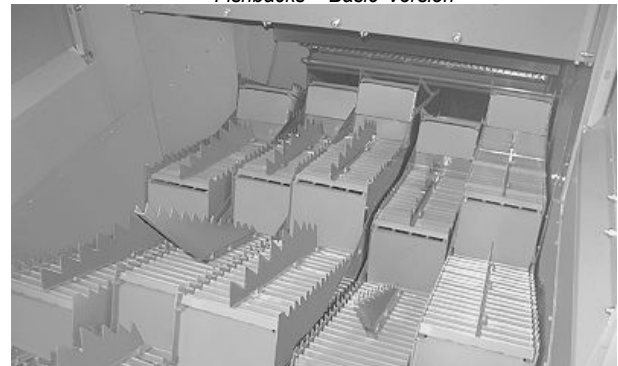
Fishbacks optimize loose grain separation from chaff by reducing the speed at which straw moves over the straw walkers.

There are two types of fishbacks, a bigger and a smaller one. On rice version combines both types are installed alternately in all stages beginning with the 2nd. In the basic version only the small ones are installed in the 2nd stage.

NOTE: To avoid loss, more fishbacks can be installed for conditions where it is difficult to separate the grain from chaff (e.g., weedy soy beans).



Fishbacks - Basic Version



Fishbacks - Rice Version

AS60558,0000E11 -19-12FEB08-1/1

CQ266550 —UN—15MAR06

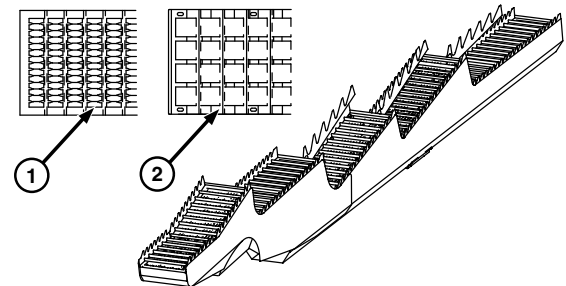
CQ266560 —UN—15MAR06

Straw Walker Type B - Cleaning Shoe

NOTE: Type B straw walker only has third and forth stage cleaning shoes attached with bolts.

1. Standard cleaning shoe with longitudinal openings. All stages are equipped with this cleaning shoe in factory.
2. CCM type cleaning shoes. This cleaning shoe increases straw walker flow and may be installed to third and forth stage.

Third and forth stage cleaning shoes are attached with bolts and may be replaced for fast conversion for different kinds of products.



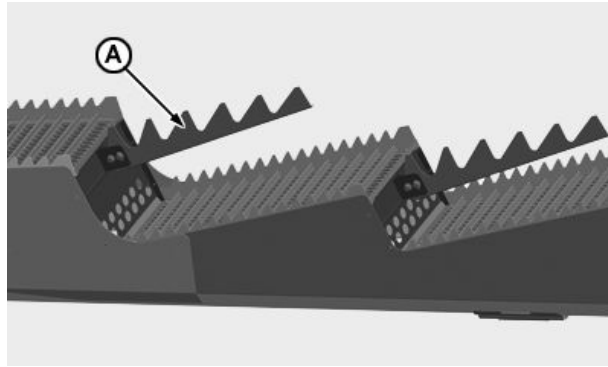
AS60558,0000E12 -19-13FEB08-1/1

CQ281045 —UN—15FEB08

Straw Walker Fishbacks - Type B

Fishbacks (A) optimize loose grain separation from chaff by increasing or reducing the speed at which straw moves over the straw walkers. Each straw walker has three fishbacks.

Fishbacks may be adjusted to obtain higher or lower inclination to allow for optimized separation of grain and straw according to harvesting conditions.



Fishbacks

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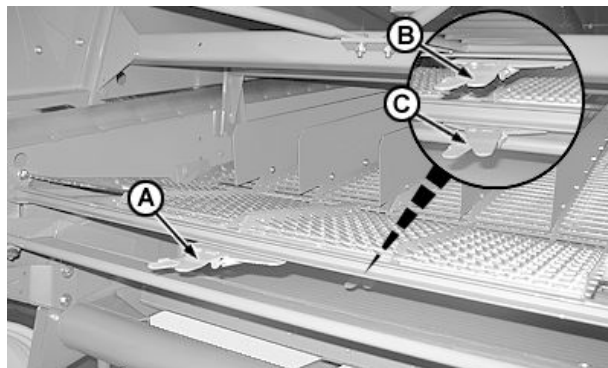
CQ281046 —UN—12FEB08

Cleaning System

The sieves can be adjusted in the rear of the combine. Adjust combine initially according to the "Combine Settings Chart" and then adapt to harvesting and ground conditions.

A—Chaffer extension
adjustment lever
B—Chaffer adjustment lever

C—Grain sieve adjustment
lever



AG,GG05155,164 -19-24FEB06-1/1

CQ265720 —UN—16FEB06

Chaffer Extension Angle

Loosen nuts (A) on both sides of chaffer extension.

- Lower: dry products and flat terrain.
- Higher: products that are difficult to shell (crops with weeds) or on hilly terrain.



AG,GG05155,165 -19-24FEB06-1/1

CQ266570 —UN—15MAR06

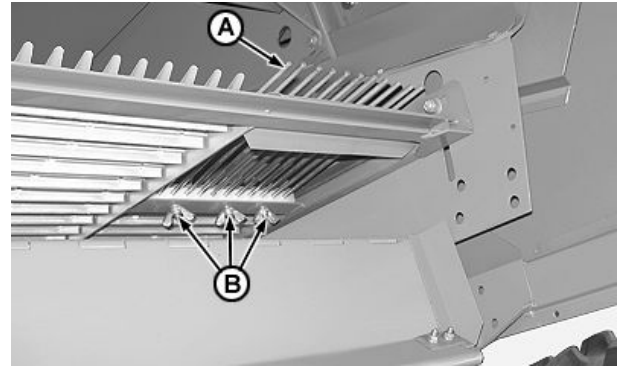
Slope Master System for Hilly Terrain

When operating on hilly terrain a large quantity of material accumulates at the sides of the cleaning shoe and extension. This material exits the combine without being threshed, thereby increasing grain loss.

To avoid losses, openings located on both sides and behind the chaffer extension collect material not totally threshed.

Depending on the inclination and harvesting conditions, regulate openings by adding or removing fingers (A), after loosening winged nuts (B).

NOTE: The combine is delivered from the factory with 11 fingers installed.



CQ266580 —UN—15MAR06

AG,GG05155,166 -19-31MAR06-1/1

Special Kit for Corn

This is a set of accessories recommended to optimize combine performance when harvesting corn.

Consult your John Deere dealer to obtain specific information and recommendations.

AS60558,00027F1 -19-02FEB12-1/1

Cutting Plate

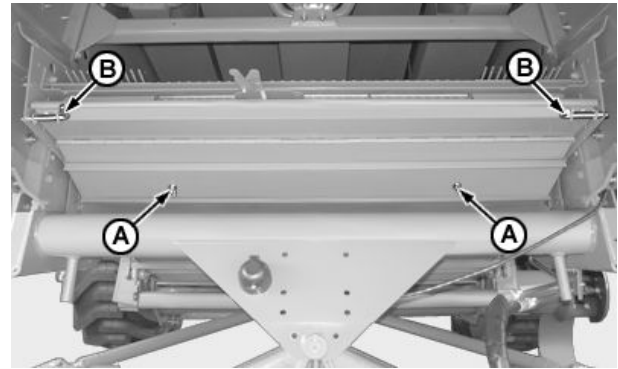
Release lock (B) on both sides and remove wing nuts (A) under the plate.

Retracted:

- dry product
- flat terrain

Extended:

- very humid product
- hilly terrain



CQ266610 —UN—15MAR06

AG,GG05155,168 -19-09FEB99-1/1

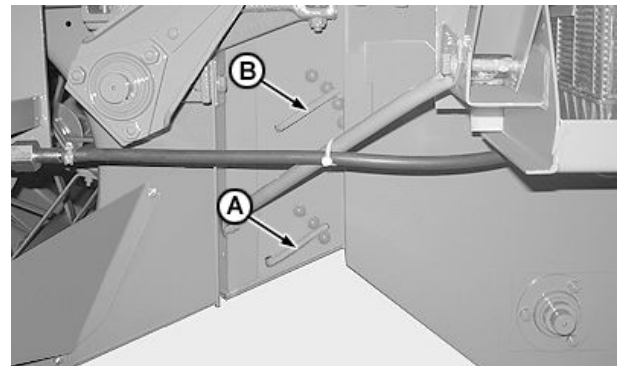
Air Flow Direction

A - Lower Deflector

B - Upper Deflector

NOTE: For soybeans, wheat, rice and corn, generally use deflectors in the second position (see figure).

IMPORTANT: To facilitate adjustment, we recommend you first adjust the deflectors and then regulate fan speed.



CQ266590 —UN—29MAR06

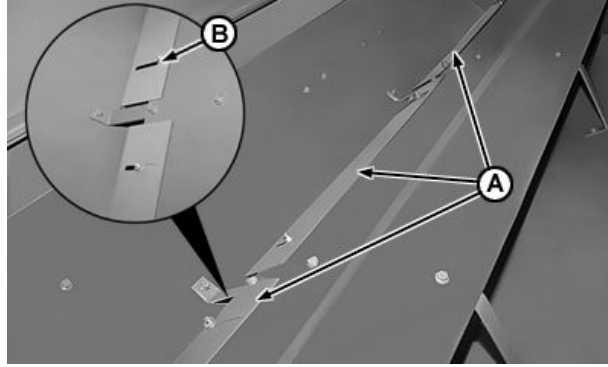
AG,GG05155,169 -19-09FEB99-1/1

Grain Tank Lower Auger Cover Plates

The cover plates (A) can be adjusted as required. Loosen nuts (B) to adjust.

NOTE: It is recommend that the covers are kept in a more closed position for wet conditions and more open for dry conditions.

The covers should be more closed on the right side (the clean grain elevator side).



CQ247180 —UN—29JUL05

AG,CO03622,2052 -19-01AUG05-1/1

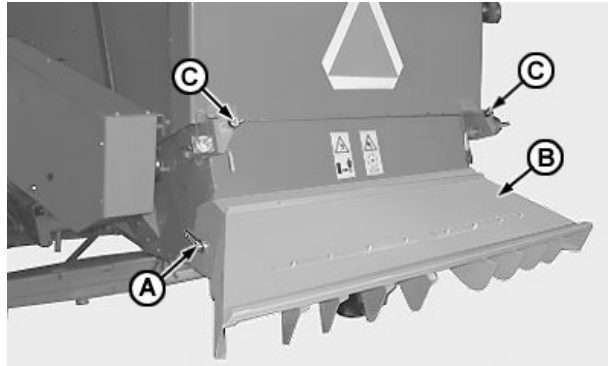
Straw Distributor—Setting to Transport and Operating Position

Transport Position

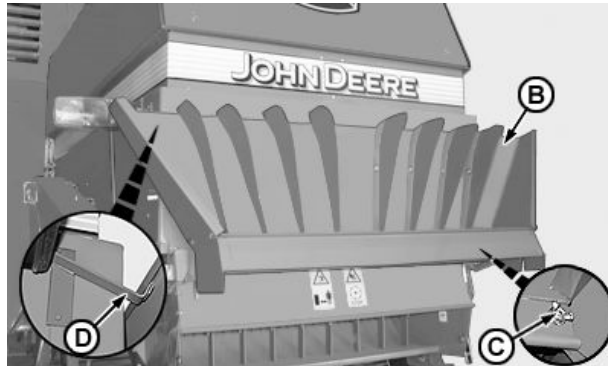
1. Release locks (A) on both sides of combine and remove straw distributor (B).
2. Remove wing nut, flat washer and rubber washer from bolts (C).
3. Position straw distributor (B) on brackets (D) and attach through bolts (C) with a rubber washer, flat washer and wing nut.

Operating Position

1. Set straw distributor to operating position by reverse procedure.



CQ269000 —UN—29MAR06



CQ269030 —UN—29MAR06

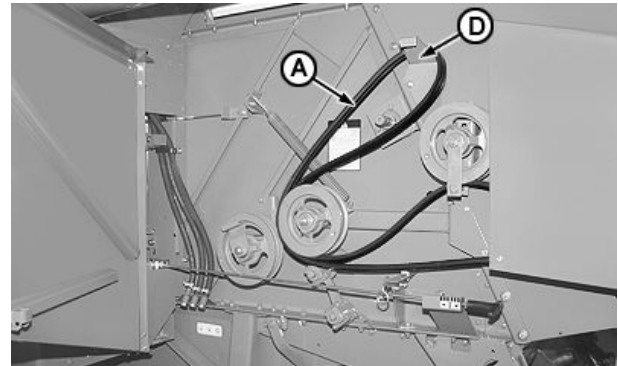
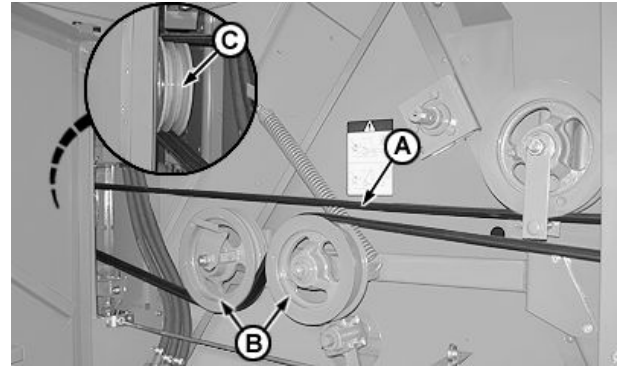
Transport position

AS60558,0000E14 -19-12FEB08-1/1

Straw Chopper—Disengaging

CAUTION: It is forbidden to drive combine on highways or public roads with straw chopper in action.

1. Release belt (A) from idler pulleys (B).
2. Release belt (A) from pulley (C) and pass over support (D). Refer to illustration.



OU64006,00000CC -19-17MAR06-1/1

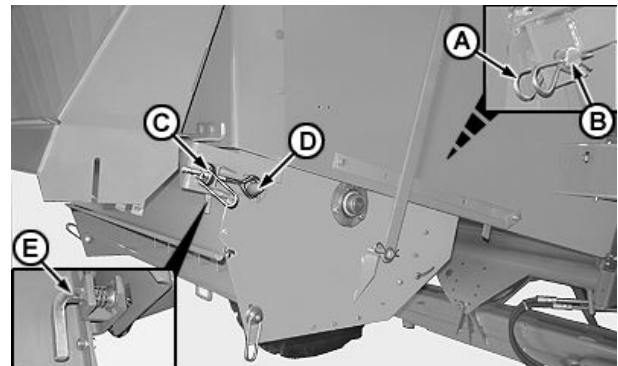
CQ268400 —UN—21MAR06

CQ268410 —UN—21MAR06

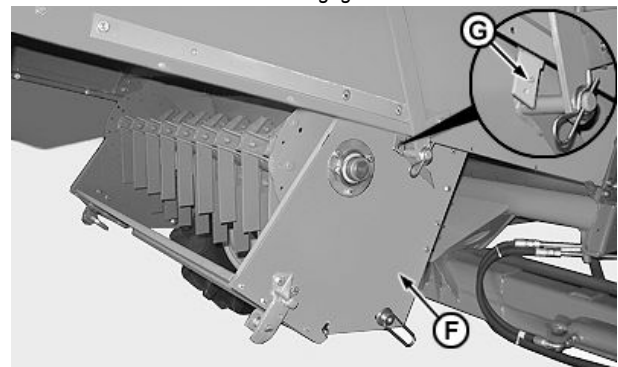
Straw Chopper—Disengaging and Engaging

Disengaging

1. Move straw distributor to transport position. See "Straw Distributor—Setting to Transport and Operating Position".
2. Remove cotterpin (A) and pin (B) on both sides of combine.
3. Release clip (C) of coupling (D) on both sides of combine.
4. Release coupling (E) on both sides of combine.
5. Set straw chopper (F) to position "Disengaged" and secure with locks (G), as shown.



Engaged



Disengaged

Engaging

1. Set straw chopper to position "Engaged" using reverse procedure.
2. Set straw distributor to operating position. See "Straw Distributor—Setting to Transport and Operating Position".

OU64006,00000D0 -19-31MAR06-1/1

CQ268920 —UN—28MAR06

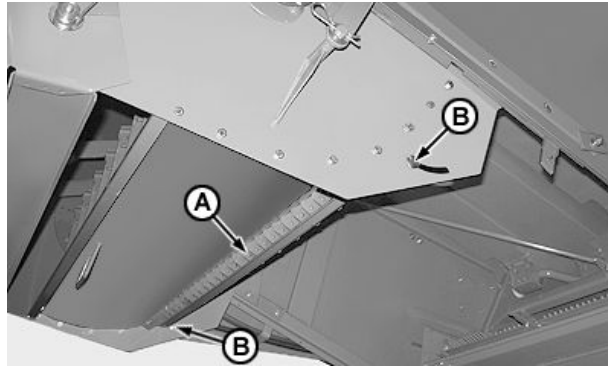
CQ268980 —UN—29MAR06

Adjusting Straw Chopper Counterknives

IMPORTANT: Counterknives should only be moved inwards as far as absolutely necessary to prevent waste of engine power.

Positions of counterknives	Utilization in accordance with the type of straw
Shallow angle	Dry straw
Slightly angled	Wet straw and weeds
Fully angled	Rape and bean straw in general

To adjust the counterknives (A), loosen screws (B) on both sides.



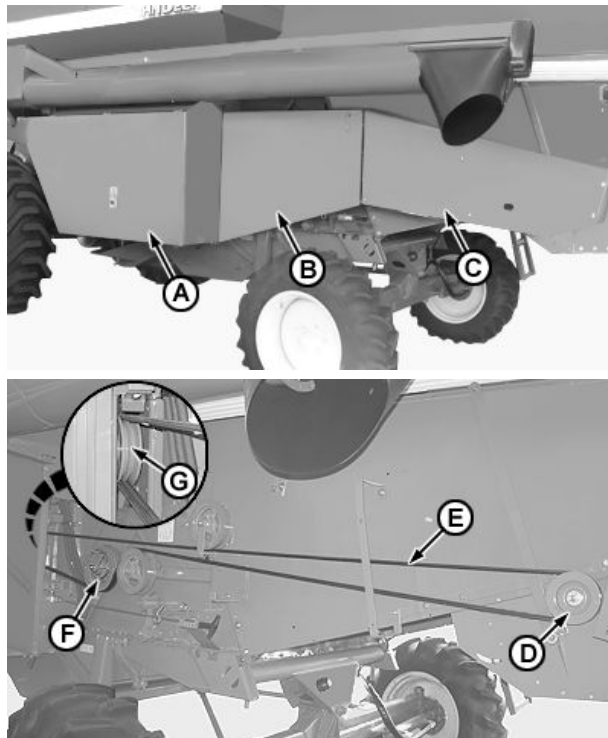
OU64006,00000D2 -19-27MAR06-1/1

CQ269060 —UN—29MAR06

Reducing Straw Chopper Speed

When harvesting corn or sunflowers, rotor speed should be reduced.

1. Open left-hand side shield (A), idler pulley shield (B) and remove shield (C).
2. Release belt (E) from idler pulley (F) and pulleys (D) and (G).
3. Remove drive pulley (bigger) (G) and driven pulley (smaller) (D) and invert them, i.e., install pulley (G) in place of (D) and (D) in place of (G).
4. Reinstall belt, tension it and reinstall shields.



AG,GG05155,179 -19-31MAR06-1/1

CQ266620 —UN—15MAR06

CQ269070 —UN—29MAR06

Straw Chopper Alarms

Straw chopper alarms are protected against faults in electrical circuit, including switch. Thus, in case of faults the alarm will operate (emitting an acoustic signal).

Before starting engine check daily on each alarm if contact plate is free and actuates switch correctly.



Alarm at rear part of tail



Alarm above straw walker

AG,GG05155,181 -19-31MAR06-1/1

CQ265980 —UN—29MAR06

CQ266640 —UN—15MAR06

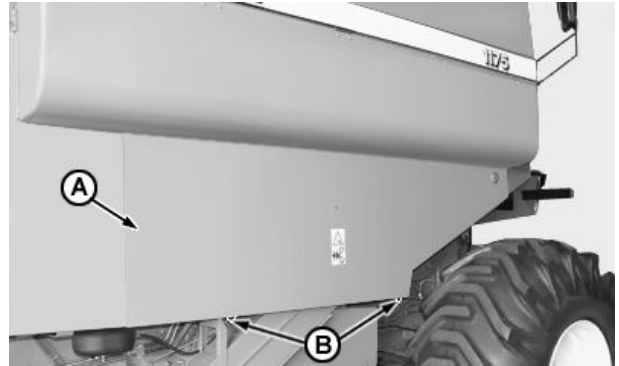
Opening Right-Hand Side Shields

Right-Hand Side Shield

Loosen bolts and pull two clips (B) downward.

Protecting shield (A) will lock automatically after being completely suspended.

NOTE: To unlock it suspend it slightly with one hand.
At the same time push support upwards with the other hand and unlock it.



Continued on next page

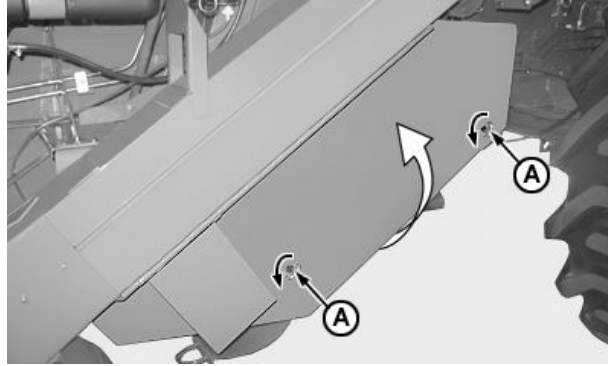
DF67602,0000214 -19-25NOV13-1/2

CQ269100 —UN—29MAR06

Fan Protection Shield

Loosen bolts and disengage latches (A) and suspend shield.

Secure to support (C) through hook (B), as shown



CQ266750 —UN—15MAR06



CQ266760 —UN—15MAR06

DF67602,0000214 -19-25NOV13-2/2

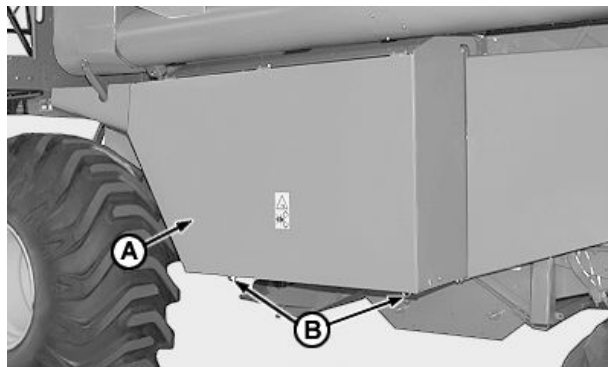
Opening Left-Hand Side Shields

Left-Hand Side Shield

Loosen bolts and pull clips (B) downward.

Protecting shield (A) will lock automatically after being completely suspended.

*NOTE: To unlock it, raise it slightly with one hand.
At the same time, push support upward with the other hand unlocking it.*



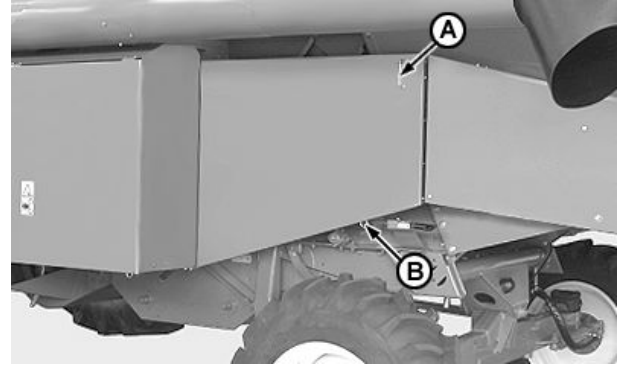
CQ266770 —UN—15MAR06

Continued on next page

DF67602,0000215 -19-25NOV13-1/2

Straw Chopper Idler Pulleys Shield

Release clip (B) and open shield (A).



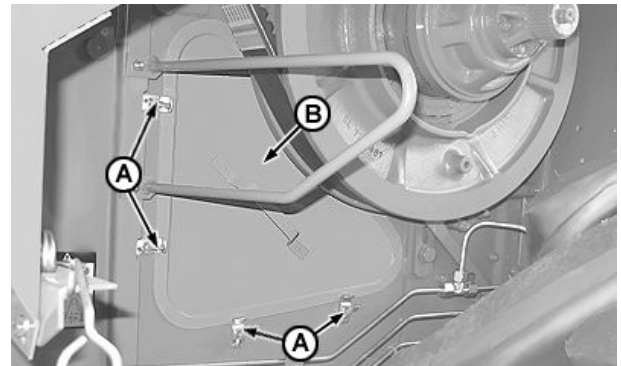
CQ266780 —UN—15MAR06

DF67602,0000215 -19-25NOV13-2/2

Cylinder Side Inspection Covers

Open the side inspection covers to work on the cylinder.

Remove wing nuts (A) and pull off cover (B).



CQ268380 —UN—21MAR06

AG,GG05155,307 -19-06MAR06-1/1

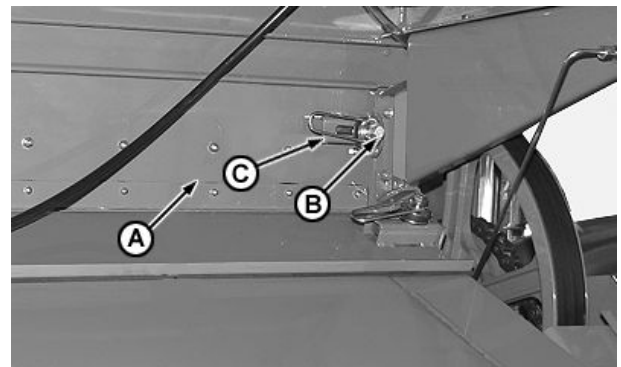
Threshing Cylinder Front Inspection Cover

CAUTION: Always switch off all drives (separator, unloading auger and header) and shut off engine. Wait until all moving parts have come to a complete halt before adjusting the machine or performing service work.

Remove the two nuts (B) and move pins (C) to open this cover (A).

A—Inspection cover
B—Nuts

C—Pins

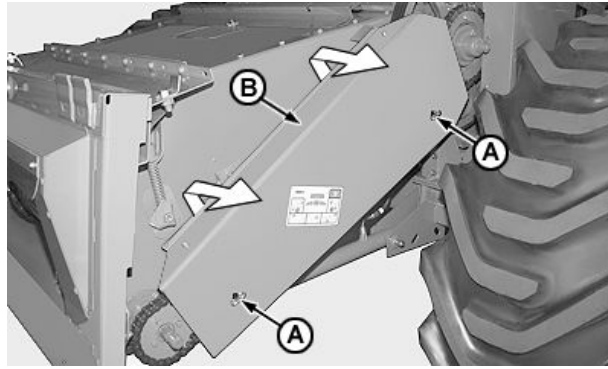


CQ246680 —UN—29JUL05

AG,GG05155,306 -19-17SEP05-1/1

Opening Feeder House Drive Shield

Turn locks (A) and remove shield (B).



CQ266790 —UN—15MAR06

BL04947,00003F3 -19-07DEC11-1/1

Tire Rolling Radius Code

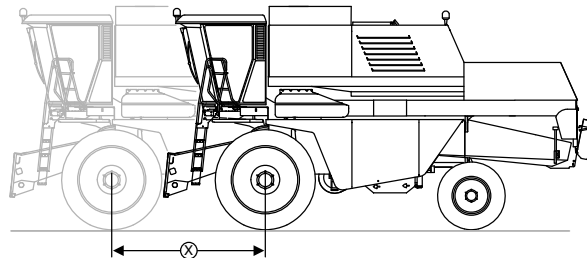
Front tire radius value should be informed on display, at diagnostic address CDU 19.

New Tire Rolling Radius

Drive Tire	Tire Rolling Radius (mm)	Drive Tire	Tire Rolling Radius (mm)
28.1 - 26 (750/65 R26)	756	28L26 R1 12L	767
18.4 - 30	741	23.1/18 - 26 R2 10L	780
18.4 - 38	805	23.1/18 - 30	804
24.5 - 32	849	800/65R 32 (Radial)	861
620/75R 30 (Radial)	810	30.5L32 R1	857
28.1/18 - 26 R1 14L	761	(650/75 R32)	863

Determining Rolling Radius of Used Tires

- The combine must be on a solid, flat surface.
 - Cutting platform connected.
 - Correct tire pressures.
 - Rear (steering) wheels in straight-ahead position.
1. Place mark on tire and ground. Marks must be in contact with each other.
 2. Drive combine until marked tire has completed one revolution (full circle).
 3. Transfer mark on tire to ground.
 4. Measure distance (X) between ground marks. Distance (X) should be measured in millimeters.
 5. **Divide measured distance (X) by 6.28.**



CQ284558 —UN—16SEP10

AS60558,00027A1 -19-27JAN12-1/1

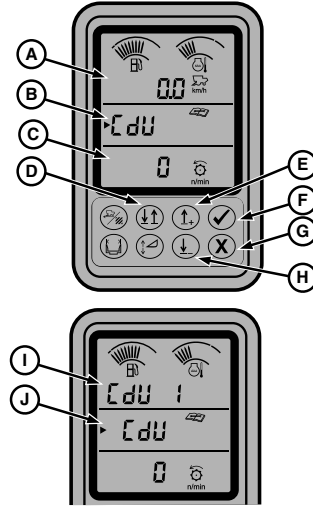
Error Codes and Calibrations

Accessing Diagnostic Mode

Display diagnostic mode is used as an interface with combine electronic control units. Addresses allow for readings, changing parameters and calibrations.

1. Selecting Diagnostic Mode:

- Select one of the screen displays (B or C) through key (D).
- Select diagnostic function through increment (E) or decrement (H) keys.
- Press confirmation key (F).
- Select required controller (HCU or CDU) through increment (E) or decrement (H) keys.
- Press confirmation key (D).
- On first display (I) appears controller name followed by address number.
- Browsing between addresses is done with increment (E) or decrement (H) keys.
- On selected display (J) appears the address value that can be edited or just displayed, depending on its type.
- Press confirmation key (F) to access address.



j. Press cancel key (G) to quit.

BL04947,00003ED -19-02FEB12-1/1

CQ291403 —UN—27JAN12

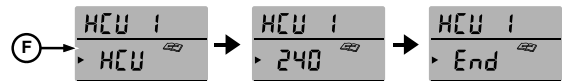
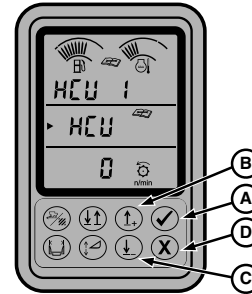
Displaying Error Codes

1. Checking for Existing Error Codes:

- Access diagnostic mode on display.
- Access address 01 of any controller.
- Press confirmation button (A).
- Press increment (B) and decrement (C) buttons to browse between existing codes.
- Error codes are finished when message End appears.

2. Excluding Stored Codes:

- Take note of existing codes.
- Browse to End code by using increment (B) or decrement (C) buttons.
- Press confirmation button (A) to delete or cancel button (D) to quit.



A—Confirmation Button
B—Increment Button
C—Decrement Button

D—Cancel Button
E—Display Sequence Without Active Error Code
F—Display Sequence With Active Error Code

AS60558,00027AF -19-26JAN12-1/1

CQ284858 —UN—26JAN12

Error Codes

Error Codes During Calibrations

Error Codes During Calibrations	
E8	Pressure at cutterbar too high for header calibration.
E71	Left-hand height sensor voltage lower than 0.25 V.
E72	Left-hand height sensor voltage greater than 4.75 V.
E73	Left-hand height sensor voltage value moving in the wrong direction.
E74	Left-hand height sensor voltage lower than 2.0 V.
E75	Left-hand height sensor minimum voltage greater than 2.5 V.
E76	Left-hand height sensor maximum voltage lower than 2.5 V.
E81	Right-hand height sensor voltage lower than 0.25 V.
E82	Right-hand height sensor voltage greater than 4.75 V.
E83	Right-hand height sensor voltage value moving in the wrong direction.
E84	Right-hand height position sensor voltage lower than 2.0 V.
E85	Right-hand height position sensor voltage greater than 2.5 V.
E86	Right-hand height position sensor voltage lower than 2.5 V.
E91	Header height sensor voltage lower than 0.25 V.
E92	Header height position sensor voltage greater than 4.75 V.
E93	Header height sensor voltage value moving in the wrong direction.
E94	Header height sensor voltage range lower than 2.0 V.
E95	Header height position sensor lower voltage greater than 2.5 V.
E96	Header height position sensor upper voltage lower than 2.5 V.

CDU Error Codes (Display)

CDU Error Codes (Display)	
E140	Engine speed sensor missing.
E141	Threshing cylinder speed sensor missing.
E142	Ground speed sensor missing.
E144	CDU supply voltage (12 V) out of range.
E145	CDU sensor supply voltage (5 V) out of range.
E175	Fuel tank pressure sensor. Voltage out of range.
E176	Atmospheric pressure sensor. Voltage out of range.
E179	Engine coolant temperature sensor. Voltage out of range.

HCU Error Codes

HCU Error Codes	
E180	Hydrostatic oil temperature sensor. Voltage out of range.
E210	Header slow lower solenoid circuit.
E211	Header raise solenoid circuit.
E212	Header fast lower solenoid circuit.
E213	Left-hand lateral header tilt solenoid circuit.
E214	Right-hand lateral header tilt solenoid circuit.
E218	HCU sensor supply voltage out of range.
E220	Cutting height adjustment potentiometer voltage out of range.
E225	Left-hand header height sensor circuit. Voltage out of range.
E226	Right-hand header height sensor circuit. Voltage out of range.
E228	Cutterbar pressure sensor circuit. Voltage out of range.
E240	Flex header height control sensor circuit. Voltage out of range.

AS60558,000279B -19-24JAN12-1/1

Diagnostic Addresses

CDU Diagnostic Addresses

CDU Diagnostic Addresses		
Address	Description	Nominal Value or Range
1	Error codes stored	
2	Software version and shortcut to address 24	
3	Battery voltage	12 V
4	Sensor supply voltage	5 V
5	Engine coolant temperature	105 °C
6	Fuel tank sensor	1.32 — 1.92 V
7	Atmospheric pressure sensor	1.6 V
8	Fuel density	850 g/L (800 — 950 g/L)
9	Fuel capacity calibration	0 — 400 liters
13	Hectaremeter engage switch status	0 — Off 1 — On
16	Engine speed	1000 — 2350 rpm
17	Threshing cylinder speed	150 — 1100 rpm
19	Tire radius	300 — 900 mm
32	Header type	1 — Flexible 2 — Rigid 3 — Corn header
33	Cutting platform width	4000 — 8000 mm
	Spacing between corn header rows	450 — 1000 mm
34	Number of corn header rows	4 — 12
37	Gearbox rotation speed	709
38	Display brightness setting	0 — 100

HCU Diagnostic Addresses

HCU Diagnostic Addresses		
Address	Description	Nominal Value or Range
1	Error codes stored	
2	Software version	
3	Battery voltage feed to logic circuit	12 V
4	Battery voltage feed to solenoid circuit	12 V
5	Battery voltage feed to solenoid circuit	12 V
6	Sensor supply voltage	5 V
8	Testing multi-function control handle switch positions	0000 — Disabled 0001 — Slow Raise 0002 — Slow Lower 0003 — Return To Cut 0010 — Left-Hand Tilt 0020 — Right-Hand Tilt 0030 — Break Off Cut
10	Cutting height adjustment potentiometer voltage	0.93 — 3.93 V
11	Hydrostatic oil temperature	95 °C
14	Left-hand header height sensor voltage	0.25 — 4.75 V
15	Right-hand header height sensor voltage	0.25 — 4.75 V
17	Cutterbar pressure	60 — 210 bar
18	Reverse travel switch position	0000 — Off 0001 — On
21	Central header height sensor voltage	0.25 — 4.75 V
25	Header raise/lower solenoids status	0000 — Disabled 0001 — Header raise 0002 — Header lower 0004 — Header fast lower

Continued on next page

AS60558,000279D -19-20JUN12-1/2

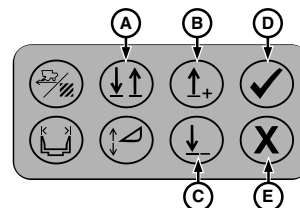
HCU Diagnostic Addresses		
26	Header lateral tilt solenoids status	0000 — Disabled 0010 — Left-hand lateral tilt 0020 — Right-hand lateral tilt
27	Overall cycle time	0 — 9999 seconds
28	Number of header raise valve cycles	0 — 9999
29	Number of header lower valve cycles	0 — 9999
30	Head calibration mode	
32	Displaying header type	0001 — Flex header 0002 — Rigid header 0003 — Corn header
33	Header raise time in break-off-cut function	0.5 — 3.0 seconds
34	Header height control potentiometer	50 — 200
35	Header height system deadband	0 — 255
36	Header lateral tilt system deadband	0 — 255
37	Header raise function during reverse travel	0001 — Header raises 0002 — Header does not raise
38	Number of left-hand lateral header tilt cycles	0 — 9999
39	Number of right-hand lateral header tilt cycles	0 — 9999
40	Engine Sensors Status	0000 — Nothing activated xxx1 — Alternator voltage (D+) low xx1x — Engine speed above zero x1xx — Engine oil pressure low 1xxx — Air filter restricted
41	Switch Status	0000 — Nothing activated xxx1 — Reverse travel switch xx1x — Lever in neutral x1xx — Parking brake engaged
42	Switch Status	0000 — Nothing activated xxx1 — Straw walker sensor actuated xx1x — Grain tank full x1xx — Hydrostatic oil filter
43	Output status	0000 — Nothing activated xxx1 — Cab interior alarm output actuated xx1x — Hydrostatic oil temperature indicator x1xx — Automatic header control indicator
44	Selecting type of header lateral tilt control	1 — With automatic lateral tilt control 2 — Without automatic lateral tilt control

AS60558,000279D -19-20JUN12-2/2

Address HCU-30 — Header Calibration

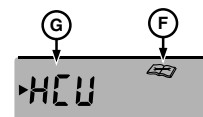
1. Preparing Header for Calibration:

- Couple header, electrical connector and hydraulic hoses to combine.
- Check that header height sensors are in working condition.
- Make sure machine is at a standstill and parked on a level surface.
- Check if header type is correctly set at CDU address 0032.
- Set engine to a speed above 2000 rpm.
- Flex Header:** Adjust pressure at cutterbar to a value below 70 bar. Value may be displayed at HCU address 0017.
- Header transmission must be disengaged.



2. Selecting Diagnostic Mode:

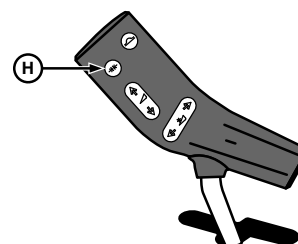
- Select one of the screen displays through key (A).
- Select diagnostic function (F) through increment (B) or decrement (C) keys.
- Press Confirm key (D).
- Select HCU controller (G) through increment (B) or decrement (C) keys.
- Press Confirm key (D).



NOTE: On upper screen display appears controller and address. On the selected screen the address value will appear.

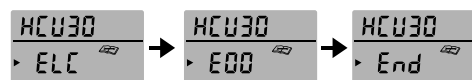
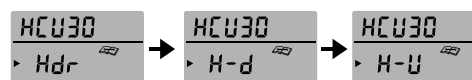
3. Selecting Calibration Address 30:

- Option 1:** Select address 0030 through increment (B) or decrement (C) keys.
- Option 2:** Select address 0002 and press Confirm key (D). That way you will jump directly to address 0030.



4. Calibration Procedure:

- When accessing address 0030, display reads Hdr.
- Press Confirm key (D). Display should read H - d.
- Lower header until it rests fully on ground. Left- and right-hand sides of header should contact ground at the same time.
- Press return-to-cut knob (H) on multi-function control handle. Display should read H - U.
- Totally raise header.
- Press return-to-cut knob (H) on multi-function control handle.
- Press Confirm key (D). Display should read EOL — E00 — End, in sequence.
- Calibration complete.



Address HCU-33 — Break-Off Cut Time Setting

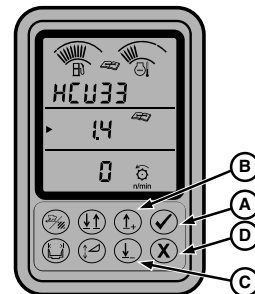
Diagnostic address 33 permits displaying and changing header raise time. Value set in this address represents header raise time on pressing break-off cut button in automatic mode. Default value is 1.4 seconds but it may be adjusted in the range from 0.5 to 3.0 seconds.

1. Displaying Break-Off Cut Time:

- Access diagnostic mode. See Diagnostic Mode Access Procedure.
- Go to address 33.
- Display shows actual value. Change value, if necessary.

2. Calibrating Break-Off Cut Time:

- Press confirmation button (A) to enable editing.



- Press increment (B) or decrement (C) key to adjust value.
- Press confirmation key (A) to save new value or cancel key (D) to quit without saving.

AS60558,00027A3 -19-26JAN12-1/1

CQ284853—UN—26JAN12

Address HCU-35 — Header Height System Deadband

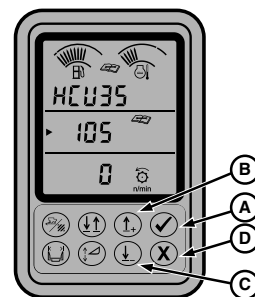
Diagnostic address 35 allows displaying and editing height system deadband. Automatic height control deadband is displayed in diagnostic mode 0035. Default deadband is 150. Reducing deadband improves height control system accuracy but reduces its stability. Increasing deadband improves system stability but reduces accuracy. Adjustment range varies from 50 to 250.

1. Displaying Deadband Value:

- Access diagnostic mode. See Diagnostic Mode Access Procedure.
- Go to address 35.
- Display shows actual value. Change value, if necessary.

2. Calibrating Deadband Value:

- Press Confirm key (A) to enable editing.



- Press increment (B) or decrement (C) key to adjust value.
- Press Confirm key (A) to save new value or Cancel key (D) to quit without saving.

AS60558,00027A4 -19-17OCT13-1/1

CQ284854—UN—26JAN12

Address HCU-36 — Header Lateral Tilt System Deadband

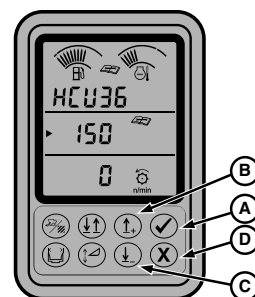
Diagnostic address 0036 allows displaying and editing lateral header tilt system deadband. Automatic tilt control deadband is displayed in diagnostic mode 0036. Default deadband is 150. Reducing deadband improves tilt system accuracy but reduces system stability. Increasing deadband improves system stability but reduces accuracy. Adjustment range varies from 50 to 250.

1. Displaying Deadband Value:

- Access diagnostic mode. See Diagnostic Mode Access Procedure.
- Go to address 36.
- Display shows actual value. Change value, if necessary.

2. Calibrating Deadband Value:

- Press Confirm key (A) to enable editing.



- Press increment (B) or decrement (C) key to adjust value.
- Press Confirm key (A) to save new value or Cancel key (D) to quit without saving.

AS60558,00027A5 -19-17OCT13-1/1

CQ284855—UN—26JAN12

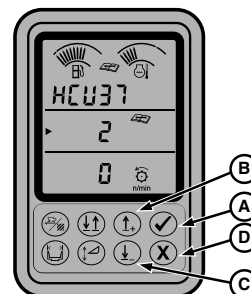
Address HCU-37 — Enable Header Raise Function During Reverse Travel

Diagnostic address 37 permits displaying and enabling or disabling header raise function when combine is in reverse gear. This feature avoids header damage when combine travels in reverse.

With function enabled header raise movement can be interrupted touching manual lower key.

NOTE: This function only is available with header operating in automatic height control mode.

1. **Displaying Address Value:**
 - a. Access diagnostic mode. See Diagnostic Mode Access Procedure.
 - b. Go to address 37.
 - c. Display shows actual value. Change value, if necessary.
 - 1 — Header rises
 - 2 — Header does not rise
2. **Changing Address Value:**
 - a. Press confirmation button (A) to enable editing.
 - b. Press increment (B) or decrement (C) key to adjust value.
 - c. Press confirmation key (A) to save new value or cancel key (D) to quit without saving.



CQ284856 —UN—26JAN12

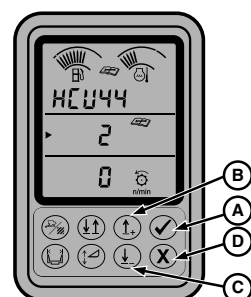
AS60558,00027A6 -19-20JUN12-1/1

Address HCU-44 — Selecting Type of Header Lateral Tilt Control

Diagnostic address 44 has the function to register type of header lateral tilt control used. For correct combine operation address value must be properly set, being:

- 1 — With automatic lateral tilt control
- 2 — Without automatic lateral tilt control

1. **Displaying Address Value:**
 - a. Access diagnostic mode. See Diagnostic Mode Access Procedure.
 - b. Go to address 44.
 - c. Display shows actual value. Change value, if necessary.
 - 1 — With automatic lateral tilt control
 - 2 — Without automatic lateral tilt control
2. **Changing Address Value:**
 - a. Press confirmation button (A) to enable editing.
 - b. Press increment (B) or decrement (C) key to adjust value.
 - c. Press confirmation key (A) to save new value or cancel key (D) to quit without saving.



CQ284857 —UN—03FEB12

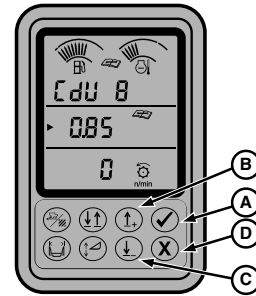
AS60558,00027A7 -19-03FEB12-1/1

Address CDU-8 — Setting Fuel Density

Diagnostic address 8 allows displaying and calibrating fuel density. Value set in this address is important for correct fuel level measurement. Default value is 850 grams per liter.

IMPORTANT: Check fuel density with your supplier, adjust if necessary.

1. **Displaying Fuel Density:**
 - a. Access diagnostic mode. See Diagnostic Mode Access Procedure.
 - b. Go to address 8.
 - c. Display shows actual value.
2. **Calibrating Fuel Density:**
 - a. Press confirmation button (A) to enable editing.
 - b. Press increment (B) or decrement (C) key to adjust value.



- c. Press confirmation key (A) to save new value or cancel key (D) to quit without saving.

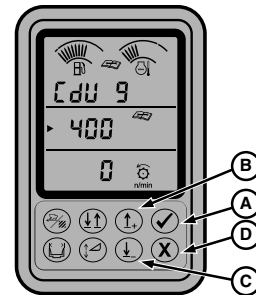
AS60558,00027A8 -19-26JAN12-1/1

CQ284846 —UN—25JAN12

Address CDU-9 — Setting Fuel Capacity

Diagnostic address 9 allows displaying and calibrating fuel capacity. Value set in this address is important for correct fuel level measurement. Fuel tank capacity is 400 liters.

1. **Displaying Fuel Capacity:**
 - a. Access diagnostic mode. See Diagnostic Mode Access Procedure.
 - b. Go to address 9.
 - c. With fuel tank completely filled, display should read 400 liters. Adjust value in case it is different.
2. **Fuel Capacity Calibration:**
 - a. Press confirmation button (A) to enable editing.
 - b. Press increment (B) or decrement (C) key to adjust value.



- c. Press confirmation key (A) to save new value or cancel key (D) to quit without saving.

AS60558,00027A9 -19-26JAN12-1/1

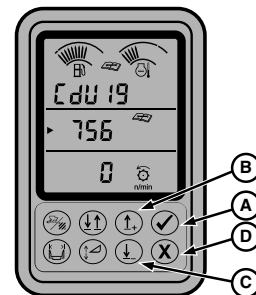
CQ284847 —UN—25JAN12

Address CDU-19 — Setting Tire Radius

Diagnostic address 19 allows displaying and editing tire radius code.

To determine the value to be inserted in this diagnostic address check Tire Rolling Radius Code determining procedure in Operator's Manual, in Section Basic Adjustments.

1. **Displaying Tire Radius:**
 - a. Access diagnostic mode. See Diagnostic Mode Access Procedure.
 - b. Go to address 19.
 - c. Display shows actual value. If radius is incorrect, change value.
2. **Calibrating Tire Radius:**
 - a. Press confirmation button (A) to enable editing.



- b. Press increment (B) or decrement (C) key to adjust value.
- c. Press confirmation key (A) to save new value or cancel key (D) to quit without saving.

AS60558,00027AA -19-26JAN12-1/1

CQ284848 —UN—25JAN12

Address CDU-32 — Selecting Header Type

Diagnostic address 32 has the function to register type of header used. For correct combine operation address value must be properly set, being:

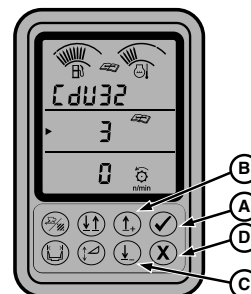
- 1 — Flex header
- 2 — Rigid header
- 3 — Corn header

1. Displaying Header Type:

- a. Access diagnostic mode. See Diagnostic Mode Access Procedure.
- b. Go to address 32.
- c. Display shows actual value. If header type is not correct, change value.

2. Calibrating Header Type:

- a. Press confirmation button (A) to enable editing.



- b. Press increment (B) or decrement (C) key to adjust value.
- c. Press confirmation key (A) to save new value or cancel key (D) to quit without saving.

AS60558,00027AB -19-26JAN12-1/1

CQ284849 —UN—25JAN12

Address CDU-33 — Setting Header Width

Value set in this address is important for correct hectaremeter function on display. Address function changes according to type of header set at address 32.

Header: Diagnostic address 33 permits displaying and changing header width. Adjustment range varies from 4000 mm to 8000 mm.

Corn Header: Diagnostic address 33 permits displaying and changing distance between corn header rows. Adjustment range varies from 450 mm to 1000 mm.

Determining Header Width

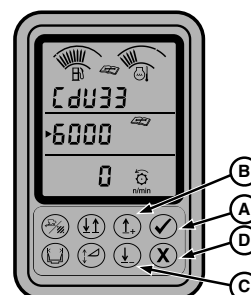
Obtain head width from decal or measure width using a tape measure. Value must be converted to millimeters (mm).

- Ex: 618R - Header is 18 feet.

Convert feet to mm multiplying the amount in feet by 304.8.

1. Displaying Address Value:

- a. Access diagnostic mode. See Diagnostic Mode Access Procedure.



- b. Go to address 33.
 - c. Display shows actual value. If width or distance are incorrect, change values.
- ### 2. Calibrating New Value:
- a. Press confirmation button (A) to enable editing.
 - b. Press increment (B) or decrement (C) key to adjust value.
 - c. Press confirmation key (A) to save new value or cancel key (D) to quit without saving.

AS60558,00027AC -19-26JAN12-1/1

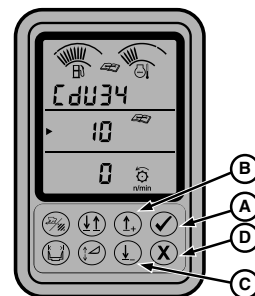
CQ284850 —UN—26JAN12

Address CDU-34 — Setting Number of Corn Header Rows

Diagnostic address 34 has the function to register number of corn header rows. Address allows to change values from 4 rows up to 12 rows.

1. Displaying Number of Rows:

- Access diagnostic mode. See Diagnostic Mode Access Procedure.
- Go to address 34.
- Display shows actual value. If number of rows is not correct, change value.



2. Calibrating Number of Rows:

- Press confirmation button (A) to enable editing.
- Press increment (B) or decrement (C) key to adjust value.

- Press confirmation key (A) to save new value or cancel key (D) to quit without saving.

AS60558,00027AD -19-26JAN12-1/1

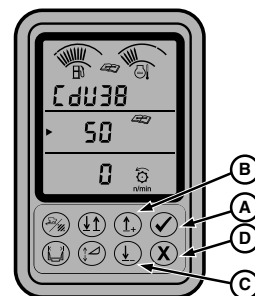
CQ284851—UN—26JAN12

Address CDU-38 — Adjusting Display Brightness

Diagnostic address 38 allows adjusting display backlighting brightness intensity. Brightness may be adjusted on a scale from 0 to 100.

1. Displaying Brightness Setting:

- Access diagnostic mode. See Diagnostic Mode Access Procedure.
- Go to address 38.
- Display shows actual value. Change value do adjust brightness.



2. Adjusting Display Brightness:

- Press Confirm key (A) to enable editing.
- Press increment (B) or decrement (C) key to adjust value.

- Press Confirm key (A) to save new value or Cancel key (D) to quit without saving.

AS60558,00027AE -19-07FEB13-1/1

CQ284852—UN—26JAN12

Fuel, Lubricants and Coolant

Handle Fuel Safely—Avoid Fires

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 -19-12OCT11-1/1

TS202 —UN—23AUG88

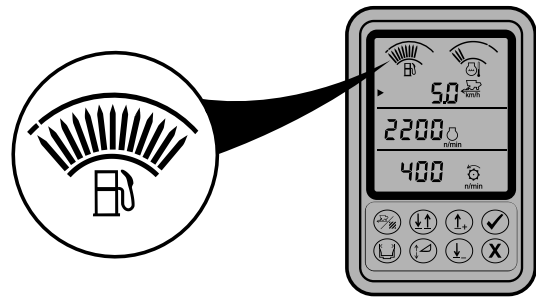
Filling Fuel Tank

CAUTION: Be careful when handling fuel. Stop the engine and, above all, do not smoke!

Fill the fuel tank at the end of each day of operation to avoid moisture condensation.

Total capacity: 400 L

When fuel gauge needle reaches reserve range there will be approximately 30 liters left.



BL04947,00003D5 -19-19NOV11-1/1

CQ291377 —UN—09DEC11

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 or ASTM D975 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 43 minimum. Cetane number greater than 47 is preferred, especially for temperatures below -20°C (-4°F) or elevations above 1500 m (5000 ft.).

Cold Filter Plugging Point (CFPP) should be at least 5°C (9°F) below the expected lowest temperature or **Cloud Point** below the expected lowest ambient temperature.

Fuel lubricity should pass a maximum scar diameter of 0.45 mm as measured by ASTM D6079 or ISO 12156-1.

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).

Sulfur content for Interim Tier 4 and Stage III B 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 1000–5000 mg/kg (1000–5000 ppm) REDUCES oil and filter change intervals.
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer

Sulfur Content for Tier 2 and Stage II Engines

- Use of diesel fuel with sulfur content less than 500 mg/kg (500 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 500–5000 mg/kg (500–5000 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

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 intervals.

IMPORTANT: Do not mix used diesel engine oil or any other type of lubricating oil with diesel fuel.

IMPORTANT: Improper fuel additive usage may cause damage on fuel injection equipment of diesel engines.

DX,FUEL1 -19-11APR11-1/1

Biodiesel Fuel

Biodiesel fuel is comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats. Biodiesel blends are biodiesel mixed with petroleum diesel fuel on a volume basis.

Before using fuel containing biodiesel, review the Biodiesel Use Requirements and Recommendations in this Operator's Manual.

Environmental laws and regulations can encourage or prohibit the use of biofuels. Operators should consult with appropriate governmental authorities prior to using biofuels.

All John Deere Engines with Exhaust Filter (Released 2011 and After)

While 5% blends (B5) are preferred, biodiesel concentrations up to a 20% blend (B20) in petroleum diesel fuel can be used. Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

Biodiesel concentrations above B20 can harm the engine's emission control systems and should not be used. Risks include, but are not limited to, more frequent stationary regeneration, soot accumulation, and increased intervals for ash removal.

John Deere approved fuel conditioners, which contain detergent and dispersant additives, are required when using B20, and are recommended when using lower biodiesel blends.

All John Deere Engines Excluding Exhaust Filter (Primarily Released Prior to 2012)

While 5% blends (B5) are preferred, biodiesel concentrations up to a 20% blend (B20) in petroleum diesel fuel can be used. Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

These John Deere engines can operate on biodiesel blends above B20 (up to 100% biodiesel). Operate at levels above B20 ONLY if the biodiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on biodiesel blends above B20 might not fully comply with or be permitted by all applicable emissions regulations. Expect up to a 12% reduction in power and an 18% reduction in fuel economy when using 100% biodiesel.

John Deere approved fuel conditioners, which contain detergent and dispersant additives, are required when using B20, and are recommended when using lower biodiesel blends.

Biodiesel Use Requirements and Recommendations

The petroleum diesel portion of all biodiesel blends must meet the requirements of ASTM D975 (US) or EN 590 (EU) commercial standards.

Biodiesel users in the U.S. are strongly encouraged to purchase biodiesel blends from a BQ-9000 Certified Marketer and sourced from a BQ-9000 Accredited Producer (as certified by the National Biodiesel Board). Certified Marketers and Accredited Producers can be found at the following website: <http://www.bq9000.org>.

Biodiesel contains residual ash. Ash levels exceeding the maximums allowed in either ASTM D6751 or EN14214 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present).

The fuel filter can require more frequent replacement, when using biodiesel fuel, particularly if switching from diesel. Check engine oil level daily prior to starting engine. A rising oil level can indicate fuel dilution of the engine oil. Biodiesel blends up to B20 must be used within 90 days of the date of biodiesel manufacture. If used, biodiesel blends above B20 must be used within 45 days from the date of biodiesel manufacture.

When using biodiesel blends up to B20, the following must be considered:

- Cold weather flow degradation
- Stability and storage issues (moisture absorption, microbial growth)
- Possible filter restriction and plugging (usually a problem when first switching to biodiesel on used engines.)
- Possible fuel leakage through seals and hoses (primarily an issue with older engines)
- Possible reduction of service life of engine components

Request a certificate of analysis from your fuel distributor to ensure that the fuel is compliant with the specifications provided in this Operator's Manual.

Consult your John Deere dealer for approved fuel conditioners to improve storage and performance with biodiesel fuels.

The following must also be considered if using biodiesel blends above B20:

- Possible coking or blocked injector nozzles, resulting in power loss and engine misfire if John Deere approved fuel conditioners are not used
- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures
- Possible compatibility issues with other materials (including copper, lead, zinc, tin, brass, and bronze) used in fuel handling equipment
- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to biodiesel

Continued on next page

DX,FUEL7 -19-29AUG12-1/2

- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system
- Because biodiesel blends above B20 contain more ash, using blends above B20 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present)

IMPORTANT: Raw pressed vegetable oils are NOT acceptable for use as fuel in any concentration in John Deere engines. Their use could cause engine failure.

DX,FUEL7 -19-29AUG12-2/2

Diesel Engine Coolant (engine with wet sleeve cylinder liners)

Preferred Coolants

The following pre-mix engine coolants are preferred:

- John Deere COOL-GARD™II
- 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

COOL-GARD is a trademark of Deere & Company

- 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. Distilled, 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.

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 -19-15MAY13-1/1

Operating in Warm Temperature Climates

John Deere engines are designed to operate using recommended engine coolants.

Always use a recommended engine coolant, even when operating in geographical areas where freeze protection is not required.

IMPORTANT: Water may be used as coolant in emergency situations only.

Foaming, hot surface aluminum and iron corrosion, scaling, and cavitation occur when water is used as the coolant, even when coolant conditioners are added.

Drain cooling system and refill with recommended engine coolant as soon as possible.

DX,COOL6 -19-15MAY13-1/1

John Deere COOL-GARD™ II Coolant Extender

Some coolant additives gradually deplete during engine operation. For COOL-GARD™ II pre-mix and COOL-GARD II Concentrate, replenish coolant additives between drain intervals by adding COOL-GARD II Coolant Extender.

COOL-GARD II Coolant Extender should not be added unless indicated by COOL-GARD II Test Strips. These test strips provide a simple, effective method to check the freeze point, additive levels, and pH of your engine coolant.

Test the coolant solution at intervals of 12 months and whenever excessive coolant is lost through leaks or overheating.

IMPORTANT: Do not use COOL-GARD II Test Strips with COOL-GARD II PG.

COOL-GARD II Coolant Extender is a chemically matched additive system for use with all COOL-GARD II coolants.

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COOL-GARD II Coolant Extender is not intended for use with nitrite-containing coolants.

IMPORTANT: Do not add a supplemental coolant additive when the cooling system is drained and refilled with any of the following:

- John Deere COOL-GARD II
- John Deere COOL-GARD II PG

The use of non-recommended supplemental coolant additives can result in additive drop-out, gelation of the coolant, or corrosion of cooling system components.

Add the recommended concentration of COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

DX,COOL16 -19-15MAY13-1/1

Water Quality for Mixing with Coolant Concentrate

Engine coolants are a combination of three chemical components: ethylene glycol (EG) or propylene glycol (PG) antifreeze, inhibiting coolant additives, and quality water.

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

All water used in the cooling system should meet the following minimum specifications for quality:

Chlorides	<40 mg/L
Sulfates	<100 mg/L
Total solids	<340 mg/L
Total dissolved hardness	<170 mg/L
pH	5.5—9.0

IMPORTANT: Do not use bottled drinking water because it often contains higher concentrations of total dissolved solids.

Freeze Protection

The relative concentrations of glycol and water in the engine coolant determine its freeze protection limit.

Ethylene Glycol	Freeze Protection Limit
40%	-24 °C (-12 °F)
50%	-37 °C (-34 °F)
60%	-52 °C (-62 °F)
Propylene Glycol	Freeze Protection Limit
40%	-21 °C (-6 °F)
50%	-33 °C (-27 °F)
60%	-49 °C (-56 °F)

DO NOT use a coolant-water mixture greater than 60% ethylene glycol or 60% propylene glycol.

DX,COOL19 -19-15MAY13-1/1

Diesel Engine Break-In Oil

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 250 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

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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 CJ-4	ACEA E9
API CI-4 PLUS	ACEA E7
API CI-4	ACEA E6
API CH-4	ACEA E5
API CG-4	ACEA E4
API CF-4	ACEA E3
API CF-2	
API CF	

These oils will 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 -19-20APR11-1/1

Diesel Engine Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

John DeerePlus-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:

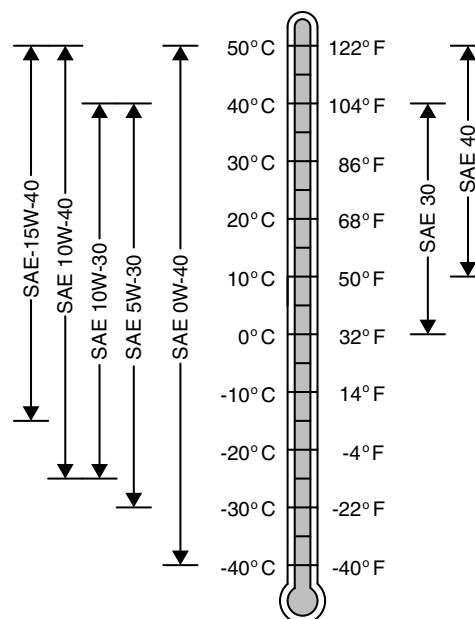
- John Deere Torq-Gard™
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- API Service Category CH-4
- API Service Category CG-4
- API Service Category CF-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E7
- ACEA Oil Sequence E6
- ACEA Oil Sequence E5
- ACEA Oil Sequence E4
- ACEA Oil Sequence E3
- ACEA Oil Sequence E2

If oils meeting API CG-4, API CF-4, or ACEA E2 are used, reduce the service interval by 50%.

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.

*Plus-50 is a trademark of Deere & Company
Torq-Gard is a trademark of Deere & Company*



Oil Viscosities for Air Temperature Ranges

If diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm) is used, reduce the service interval by 50%.

DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

DX,ENOIL -19-14APR11-1/1

Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as cetane number, fuel type, sulfur content, water content, appearance, suitability for cold weather

operations, bacteria, cloud point, acid number, particulate contamination, and whether the fuel meets specification.

Contact your John Deere dealer for more information on diesel fuel analysis.

DX,FUEL6 -19-14APR11-1/1

Lubricity of Diesel Fuel

Most diesel fuels manufactured in the United States, Canada, and the European Union have adequate lubricity to ensure proper operation and durability of fuel injection system components. However, diesel fuels manufactured in some areas of the world may lack the necessary lubricity.

IMPORTANT: Make sure the diesel fuel used in your machine demonstrates good lubricity characteristics.

Fuel lubricity should pass a maximum scar diameter of 0.45 mm as measured by ASTM D6079 or ISO 12156-1.

If fuel of low or unknown lubricity is used, add John Deere Fuel-Protect Diesel Fuel Conditioner (or equivalent) at the specified concentration.

Lubricity of Biodiesel Fuel

Fuel lubricity can improve significantly with biodiesel blends up to B20 (20% biodiesel). Further increase in lubricity is limited for biodiesel blends greater than B20.

DX,FUEL5 -19-14APR11-1/1

Gear Oil

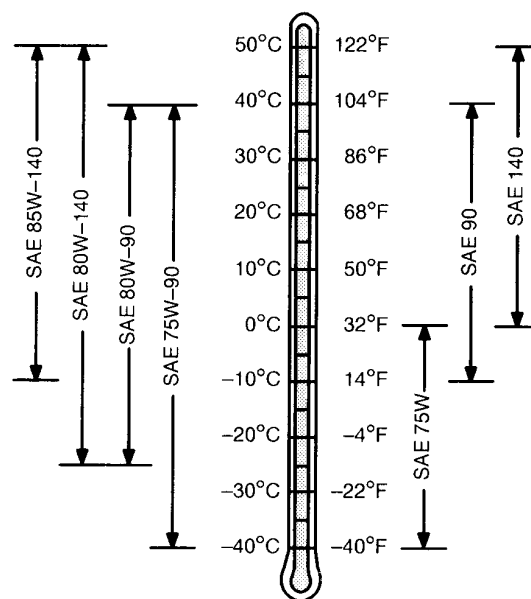
Use oil viscosity based on the expected air temperature range during the period between oil changes.

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



Oil Viscosities for Air Temperature Ranges

EXTREME-GARD is a trademark of Deere & Company

DX,GEOIL -19-14APR11-1/1

TS1653 —UN—14MAR96

Hydraulic System Oil

Use an oil viscosity suitable for 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®

The following oils are also recommended:

John Deere UNI-GARD™

John Deere BIO-HY-GARD™¹

Other oils may be used if they comply with one or more of the following standards:

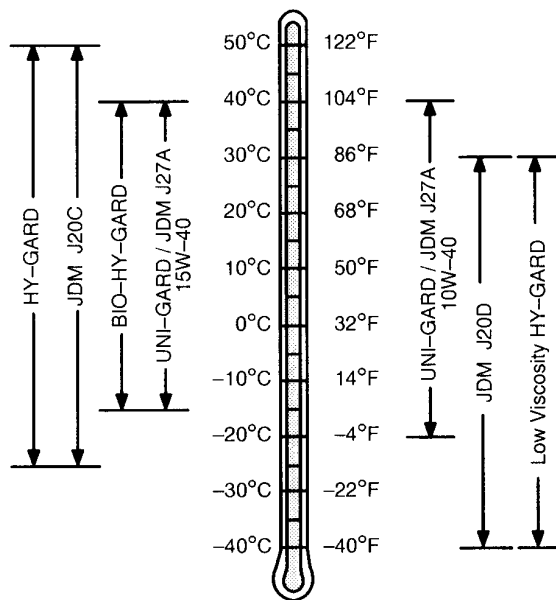
John Deere JDM J20C standard

John Deere JDM J20D standard

John Deere JDM J27A standard

IMPORTANT: Do not use engine oil in the hydraulic system.

Arctic oils (such as Military Specification MIL-L-46167B) may be used at temperatures below -30°C (-22°F).



HY-GARD is a trademark of Deere & Company

UNI-GARD is a trademark of Deere & Company

BIO-HY-GARD is a trademark of Deere & Company

¹ BIO-HY-GARD achieves or exceeds a minimum biodegradability of 80% in 21 days, according to the CEC L-32-T-82 test method. BIO-HY-GARD should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.

CQ, OLEOHIDR -19-26SEP03-1/1

TS1650 —UN—14MAR96

Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere SD Polyurea Grease is preferred.

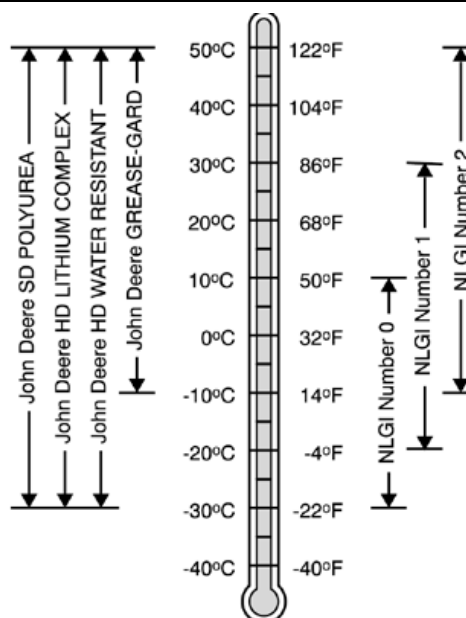
The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere HD Water Resistant Grease
- John Deere GREASE-GARD™

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB

IMPORTANT: Some types of grease thickeners are not compatible with others. Consult your grease supplier before mixing different types of grease.



Greases for Air Temperature Ranges

GREASE-GARD is a trademark of Deere & Company

DX,GREA1 -19-14APR11-1/1

TS1673 —UN—31OCT03

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 -19-11APR11-1/1

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Consult your John Deere dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to both conventional and synthetic lubricants.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

DX,ALTER -19-11APR11-1/1

Use Genuine John Deere Parts

Genuine John Deere parts have been specifically designed for John Deere machines.

Other parts are neither examined nor marketed by John Deere. Installation and use of such products could have negative effects upon the design characteristics of the machine and thereby affect its safety.

Avoid this risk by using only genuine John Deere parts.



CQ203420

CQ203420 —UN—22MAR01

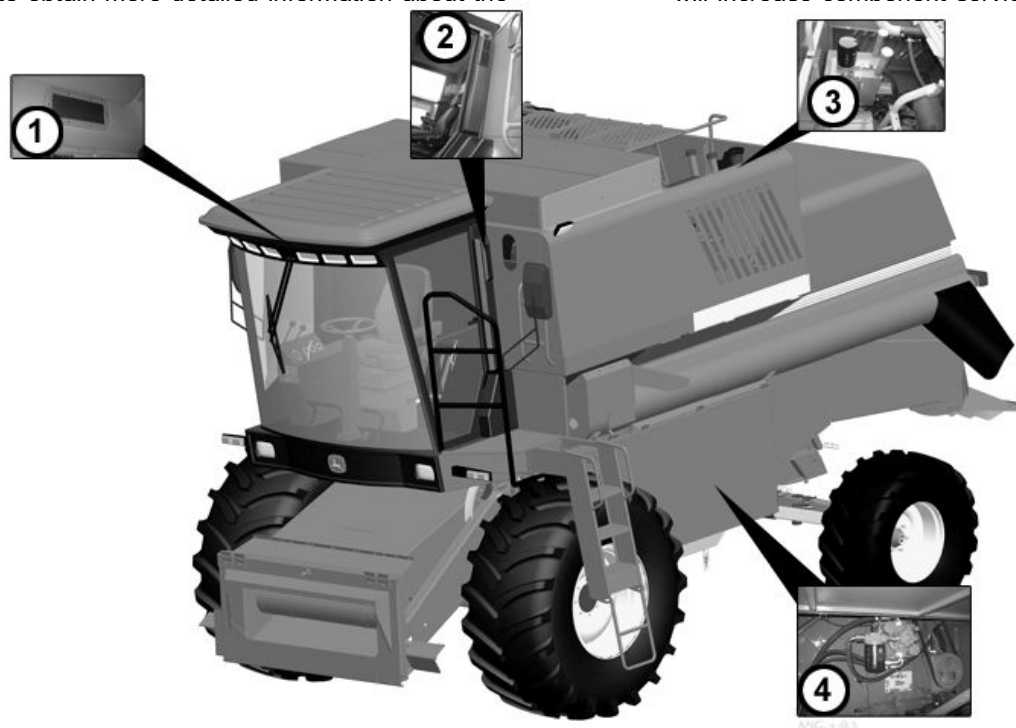
CQ,PCORIGIN -19-02SEP99-1/1

Maintenance

Periodic Filter Service and Replacement

NOTE: Observe the entire service section of the machine to obtain more detailed information about the

machine and its different forms of servicing. This will increase component service life.



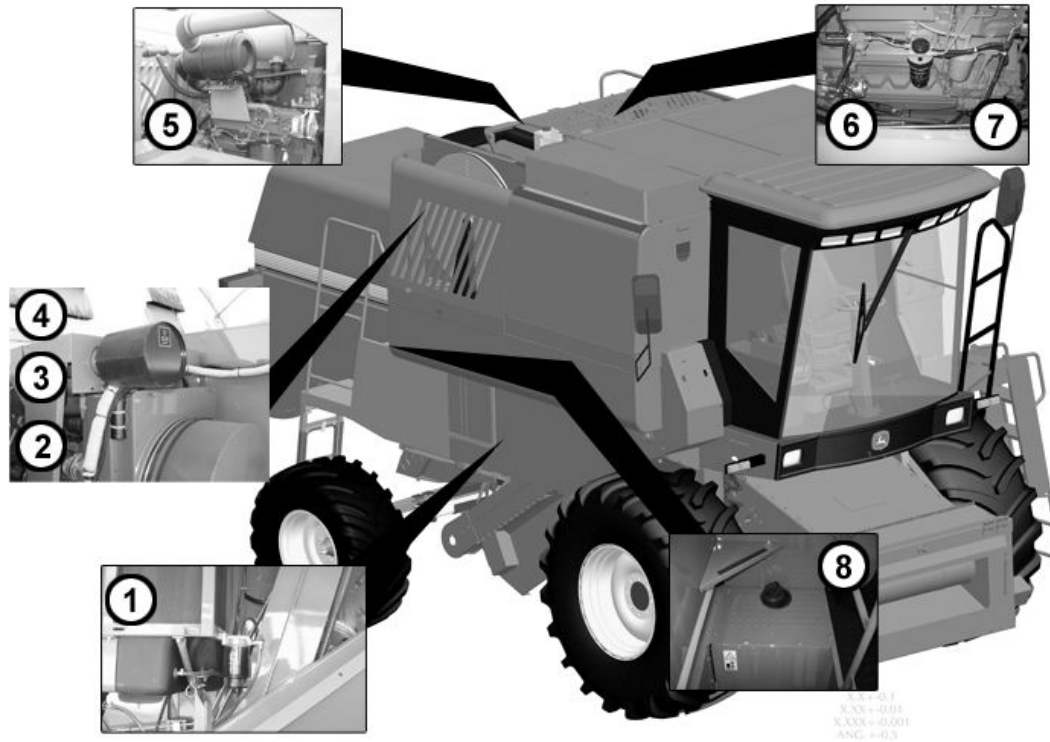
1. Check condition and cleanliness of air recirculation filter. **Clean filter every 50 hours.**
2. Air conditioning filter element. **Clean filter element every 200 hours.**
3. Hydraulic oil filter. **Replace after first 100 hours.** Further replacements must be carried out **every 500 hours.**

4. Hydrostatic transmission oil filter. **Replace after first 100 hours.** Further replacements must be carried out **every 500 hours.**

Continued on next page

JG50163,000027D -19-15JUN12-1/2

CQ291716—UN—05APR12



1. Primary fuel filter. Drain **daily** any water accumulated at primary fuel filter. Replace **after first 100 hours**. Further replacements must be carried out **every 500 hours**.
2. Change drier filter **every 100 hours**.
3. Clean air filter suction screen **daily**.
4. Clean rotatory filter **daily**.
5. Remove and clean primary filter **whenever** the restriction indicator light stays illuminated. Change air filters **at every third cleaning**.
6. Replace fuel filter after **first 100 hours**. Further replacements must be carried out **every 250 hours**.

7. Change engine oil filter after **first 100 hours**. Before changing oil, run engine for approximately 5 minutes to warm up oil. After first replacement, change filter **every 250 hours**.

NOTE: This interval can be extended to 375 hours for engines using John Deere Plus-50™ or oil meeting ACEA E5 specifications.

IMPORTANT: It is recommended to change engine oil filter and all fuel filters at the end of every harvesting season.

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JG50163,000027D -19-15JUN12-2/2

CQ291717 —UN—05APR12

Service Points—Daily

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

CAUTION: Shut off engine and remove starter key before executing any cleaning of machine.

Never perform any kind of work on fuel tank when engine is running. During this procedure it is extremely hazardous to smoke or switch on any electrical equipment!

1. Fully refill fuel tank at the end of each day of operation. This avoids the condensation of water inside the tank, which could clog the fuel injection nozzles.

IMPORTANT: The quality and cleanliness of fuel is an important factor in obtaining dependable performance and satisfactory engine life. Use commercial diesel fuel which should be in accordance with Standard EN590.

IMPORTANT: Clean fuel tank filler neck filter after filling.

2. Check the condition and cleanliness of the rotary screen daily.

3. Check the condition and cleanliness of the cab air conditioning and fan filter. Clean if necessary. **Filters must be cleaned every 50 hours.**

NOTE: This filter is located at right-hand side of cab access door.

4. Check vent plug condition on the front axle final drives. Clean if necessary.
5. Check condition and inflation of all tires. See ["Recommended Tire Inflation Pressures"](#).

NOTE: When combine is not being used, checks may be carried out weekly.

6. Bleed off water accumulated in the primary fuel filter.
7. Remove impurities deposited in the fuel tank decanter. To do so, loosen wing nut enough to allow sediment to bleed out.
8. Check cleaning shoe daily and clean if necessary. This will keep system performance high.

NOTE: Depending on the crop being harvested, it may be necessary to check the cleaning shoe during harvesting.

ML70882,00008B6 -19-26SEP05-1/1

Service Points—First 10 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Retighten steering hydraulic cylinder retaining bolts.
2. Carry out first retightening of front wheel nuts. **Thereafter, repeat this procedure every 200 hours.**

NOTE: See ["Tightening of Wheel Nuts"](#) for more details.

3. Carry out first retightening of final drive retaining bolts. **Thereafter, repeat this procedure every 50 hours.**

ML70882,00008B7 -19-26SEP05-1/1

Service Points—Every 10 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Check engine oil level by means of dipstick.

NOTE: Only check oil level after engine has been shut off for at least 30 minutes. See "Checking Engine Oil Level" for more details.

2. Check hydraulic system oil level. Check with header on ground. Oil level should be approximately at center of sight-glass. Add John Deere recommended oil if necessary.
3. Check hydrostatic drive oil level. Oil level should be approximately at center of sight-glass. Add John Deere recommended oil if necessary.
4. Check the air compressor oil level by means of the oil level plug. Add oil as needed.

NOTE: During the first 50 hours of operation the air compressor will have a higher oil consumption, therefore it is very important to check oil level daily and refill, if necessary. After the first oil change, consumption will be reduced.

IMPORTANT: In the event that the air compressor continues to consume a very large quantity of oil after 50 hours have expired, check for leaks in the connections and lines.

5. Check cooling system condition and coolant level. Check for more information in "Fuel, Lubricants and Coolant" Section.

IMPORTANT: Only refill cooling system with engine shut down and at ambient temperature.

NOTE: For information on changing coolant, see more information in "Fuel, Lubricants and Coolant" and "Service" Sections.

6. Lubrication points. One point at each variable threshing cylinder speed drive pulley (without reduction gear).

IMPORTANT: These points must be lubricated with GREASE and pulleys closed. MOBILITH SHC 007 grease recommended.

7. Lubrication points. One on engine fan bearing and the other on the air compressor and air-conditioning drive shaft bearing.
8. Lubrication points. One point on each bearing of intermediate transmission of straw chopper.
9. Lubrication points. One point on each idler pulley and one point on straw chopper drive pulley.
10. Check cleanliness and service condition of all of the machine's lights.

NOTE: After roughly cleaning the lamp lenses, wipe with a cloth moistened in household alcohol for better lamp performance.

ML70882,00008B8 -19-14NOV13-1/1

Service Points—First 50 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Change the air compressor oil for the first time, bleeding off oil through drain plug. **Thereafter, change the oil every 200 hours.**
2. Carry out the first transmission box oil change, removing oil through drain plug. **Thereafter, change transmission oil every 500 hours.**

3. Carry out first retightening of rear wheel nuts. **Thereafter, repeat this procedure every 200 hours.**
4. Lubrication points. One point on cleaning system fan bearing (on both sides of combine).

ML70882,00008B9 -19-26SEP05-1/1

Service points—Every 50 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Lubrication points. One point on each bearing of drive belt idlers (located next to the engine power takeoff).
2. Clean cab air filters with hand brush furnished with the machine.

⚠ CAUTION: When cleaning or changing air filter, shut down engine and remove starter key.

IMPORTANT: Clean these elements whenever air flow is noticeably reduced. The recirculation filter may not require as frequent cleaning as the fresh air (main) filter.

3. Lubrication points. One point on each feeder house linkage bearing.

NOTE: Remove existing plastic shield to access bearing.

4. Retighten final drive mounting bolts.

5. Lubrication points. One point on drive pulley of tailings elevator/fan.
6. Lubrication points. One point on each drive arm of cleaning shoe.
7. Lubrication points. One point on the upper bearing and one on the lower bearing of the swing cylinder of the unloading auger.
8. Lubrication points. One point on the header drive pulley.
9. Lubrication points. One point on the feeder house linkage bearing.
10. Lubrication points. One point on bearing of drive belt idler of hydrostatic pump.
11. Lubrication points. Two points on the unloading auger U-joints and two on auger linkage.

NOTE: To access these points the grain tank must be empty. Raise the end of the shield.

ML70882,00008BA -19-26SEP05-1/1

Service Points—First 100 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more often if combine is operated in extreme conditions.

1. Change engine oil filter and oil for the first time. Run the engine for approx. 5 minutes to heat up oil before you change it. **Further replacements must be carried out every 250 hours.**

IMPORTANT: Ensure that your hands and the engine are perfectly clean when installing replacement filter elements or changing the oil.

2. Check the entire fuel system.
 - a. Carry out first replacement of filter element of primary fuel filter (water separator). **Further replacements must be carried out every 500 hours.**
 - b. Carry out first replacement of final fuel filter. **Further replacements must be carried out every 250 hours.**
3. Carry out first replacement of hydraulic system oil filter. **Further replacements must be carried out every 500 hours.**

4. Carry out first replacement of hydrostatic system filter. **Further replacements must be carried out every 500 hours.**

5. Carry out first replacement of final drive oil. **Further replacements must be carried out every 1000 hours.**

NOTE: Clean vent plug of final drive.

6. Check play of final drive flanged axle bearings; to do so, remove wheel from machine and force axle end upward and downward. **Further replacements must be carried out every 500 hours and after each harvesting season.**

NOTE: If necessary have your John Deere dealership adjust bearings.

7. Carry out first retightening of front axle attaching bolts. **Thereafter, repeat this procedure every 500 hours.**

BL04947,00003D6 -19-19NOV11-1/1

Service points—Every 100 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

NOTE: Replace drier filter if the system becomes contaminated with air.

1. Change drier filter.

2. Check the tightness of hose clamps of engine air intake system. Retighten if necessary.

ML70882,00008BC -19-26SEP05-1/1

Service points—Every 200 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Retighten rear wheel attaching nuts.

2. Change air compressor oil.

3. Lubrication points. One point on the unloading auger drive gear.

4. Check level of brake fluid. Pull cap for access. Fill up if necessary. See "Oil Reservoir of Brake System and Clutch" for more details.

5. Retighten front wheel nuts.

NOTE: See "Tightening of Wheel Nuts" for more details.

6. Check oil level in transmission box. Fill up if necessary. See "Change Oil of Transmission Housing".

7. Lubrication points. One point on cleaning system fan drive pulley.

8. Check oil level of final drives. Fill up if necessary.

9. Check clamps and hoses of turbocharger feeder system. Retighten if necessary.

 **CAUTION: Avoid burns by contact with hot parts. Only carry out check with engine at ambient temperature.**

10. Lubrication points. One point on cleaning system fan bearing (on both sides of combine).

11. Check parking brake cable and readjust, if necessary.

12. Lubrication points. One point on external side of unloading auger.

ML70882,00008BD -19-26SEP05-1/1

Service points—Every 250 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

This interval can be extended to **375 hours** for engines using John Deere PLUS-50 or oil meeting ACEA E5 specifications.

1. Replace final fuel filter.

2. Carry out change of engine oil and oil filter. (engines that do not use John Deere PLUS-50 or ACEA E5 oil).

ML70882,00008BE -19-26SEP05-1/1

Service points—Every 500 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more often if combine is operated in extreme conditions.

1. Replace hydraulic system filter.
2. Replace filter element of primary fuel filter (water separator).
3. Lubrication points. One point on each wheel hub.
4. Check play of final drive flanged axle bearings; to do so, remove wheel from machine and force axle end upward and downward.

NOTE: If necessary have your John Deere dealership adjust bearings.

HY-GARD is a registered trademark of the Deere & Company

5. Retighten front axle retaining bolts.
6. Replace hydrostatic system filter.
7. Change hydraulic system oil. (Only if John Deere **Hy-Gard™** is not used).
8. Change hydrostatic system oil. (Only if John Deere **Hy-Gard™** is not used).
9. Change transmission housing oil.
10. Check the condition of the brake system. In case of any fault, consult your John Deere dealership.

BL04947,00003D7 -19-19NOV11-1/1

Service Points—First 750 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Carry out first adjustment of engine valves. See your John Deere dealer for this adjustment. **Afterwards, repeat every 2000 hours.**

ML70882,00008C0 -19-26SEP05-1/1

Service points—Every 1000 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Change oil of final drives.

ML70882,00008C1 -19-26SEP05-1/1

Service points—Every 1500 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

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1. Change hydraulic system and hydrostatic system oil. (If using John Deere **Hy-Gard™** oil).

ML70882,00008C2 -19-26SEP05-1/1

Service Points—Every 2000 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Carry out adjustment of engine valves. Consult your John Deere dealership for these adjustments.
2. Drain, wash and refill cooling system with new coolant at indicated interval, varying according to coolant in use.

IMPORTANT: See more information in “Fuel, Lubricants and Coolant” Section.

NOTE: If you are using COOL-GARD II or COOL-GARD II PG, the interval for changing is 6 years or 6000 hours of operation.

ML70882,00008C3 -19-18NOV13-1/1

Service Points—Every 6000 hours

IMPORTANT: Recommended service intervals are for average conditions. Service more frequently if combine is used in extreme conditions.

1. Carry out adjustment of engine valves. Consult your John Deere dealership for these adjustments.
2. Drain, wash and refill cooling system with new coolant at indicated interval, varying according to coolant in use.

IMPORTANT: See more information in “Fuel, Lubricants and Coolant” Section.

NOTE: If you are using a coolant other than COOL-GARD II or COOL-GARD II PG, the interval for changing is 2 years or 2000 hours of operation.

DF67602,0000213 -19-18NOV13-1/1

Belts

CAUTION: Never install belts with the engine running.

When installing a belt, loosen the idler pulleys. Never force the belt over the outside lip of the pulley as this could cause one or more strands to break and weaken the belt.

New belts stretch. For this reason check the tension of new belts several times during the initial days of use. Belts can be damaged by being fitted too loose as well as too tight.

Never use a harsh product to clean belts. Never use turpentine or similar solvents. Clean belts with a rag soaked in a solution of liquid ammonia or soap and water.

The service life of a belt also depends on pulley condition. A damaged pulley can also damage the belt.

Slight fraying of the outer belt layer does not mean a damaged belt. These frayed areas can be cut off.

IMPORTANT: After the end of harvesting, remove the belts and store them in a cool, dry area.

AG,GG05155,216 -19-16FEB99-1/1

Chains

CAUTION: Do not work on chains while the engine is running.

A chain drive will work longer without problems if correctly installed and serviced. The following information is important for keeping the machine in good condition and reducing repair costs.

During the first few hours of operation, check chains frequently. Adjust tensioners so as to maintain tension correct. If the distance between the shafts of the drive sprocket and idler sprocket, the chain should be able to oscillate by 2% of the distance.

For example:

If the distance between the shafts of the drive sprocket and idler sprocket is 250 mm (9.84 in.), the chain should not hang by more than 5 mm (0.20 in.). This measurement is to be read at the center of chain link opposite to idler sprocket. Make sure that there is no chain deflection at idler sprocket side before measuring deflection at opposite side.

A chain with excessive deflection will result in rapid and excessive wear of the chain rollers, sprocket teeth and chain-driven components.

A chain that is too tight can damage the bearings and shafts. It can also cause the chain itself to wear faster.

Proper chain lubrication is important. Lubrication primarily reduces friction, aids cooling and lessens the effect of minor impacts. The lubricant should penetrate between the plates in order to reach the remaining components (pins, caps and rollers).

The best moment for chain lubrication is after harvesting. The chains will be heated up, allowing good oil penetration and good run off of excess oil. If excess oil does not run off this will facilitate the deposit of earth and dirt on the chain.

A graphite lubricant, such as Mobil chain oil (produced by Mobiloil) or similar, or medium-viscosity pure mineral oil is recommended. Recommended oil: 15W40

In very dusty conditions use graphite spray. Graphite prevents build up of impurities on the chains.

AG,GG05155,217 -19-28OCT09-1/1

Track Maintenance and Precautions

- Check the fixing elements daily (bolts, nuts) for tightness.
- For the first 100 hours, check the tensioning every 20 working hours. After the first 100 hours, make a check every 50 hours.
- Check alignment every 100 hours.
- Retighten shoes every 100 hours.
- Every 300 hours check wear of support axle and its bushes.
- In case of shoe reassembly or replacement, note the correct side for mounting the shoe fixing nut. The flat face of the nut must make contact with the link.
- The chain, guide and drive wheels do not require lubrication.
- Making curves always to the same side will cause more wear on one steel track than the other. In the event that such a practice cannot be avoided, the steel tracks must be replaced when they are worn down to about 50%. For such, invert the position of the drive wheel and the support axle.
- Tensioning must be performed whenever the deflection is outside specifications. With abrasive materials and soils that cause deflection to build up, check tensioning more frequently.
- Do not slip with steel tracks. This will increase wear on shoes much more than on any other component.
- Use only original components. The use of non-original components will cause the steel track system to be unbalanced and will increase component wear.
- Visually inspect the equipment daily.
- Always use the narrowest possible shoe that provides adequate floating.
- Reverse operation increases wear on bushes and drive wheel. If this happens at high speed, wear will be increased.

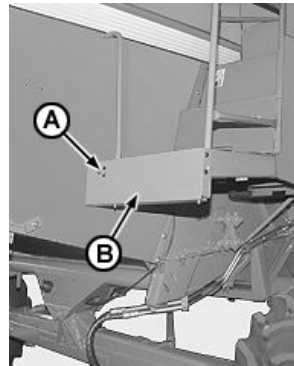
AG,AV04449,1204 -19-06JUN05-1/1

Access to Engine

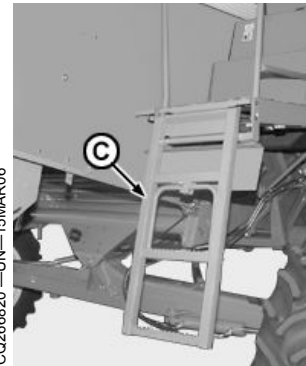
Access to the engine is via the rear service deck.

Release lock (A), open cover (B) and position ladder (C).

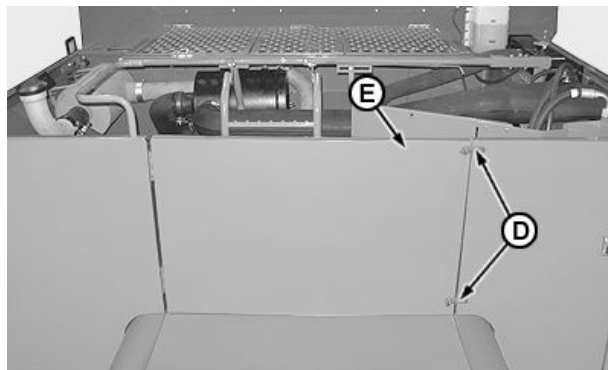
Release locks (D) and open shield (E).



CQ266820 —UN—15MAR06



CQ266830 —UN—15MAR06



CQ266840 —UN—15MAR06

OU64006,00000B3 -19-30MAR06-1/1

Adjusting the Engine Valves

Adjust the engine valves for the first time after 1000 hours or work, and then at every 2000 hours.

NOTE: If the combine does not clock 2000 hours of work within 2 years, the valves should be adjusted after a 2-year period.

This service is to be performed at your Dealer..

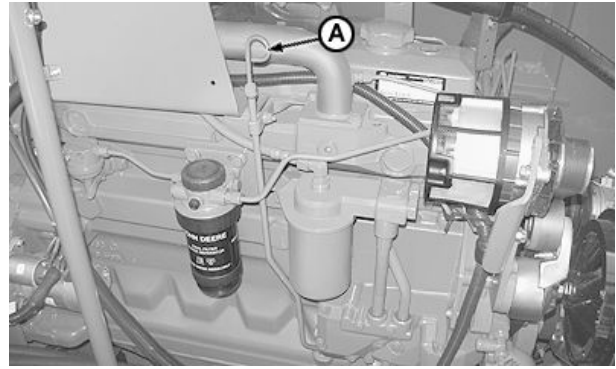
AG,GG05155,219 -19-08JUL02-1/1

Crankcase Oil Level

Check engine oil level daily prior to starting engine.

Oil level should be up to the upper mark on dipstick (A).

CAUTION: A warning light on the instrument panel will come on if there is lack of oil or low pressure. If it lights up, turn off engine and identify the cause. Running the engine with insufficient oil may damage it seriously.



CQ266190 —UN—16MAR06

AG,GG05155,220 -19-06MAR06-1/1

Changing Engine Oil Filter and Oil

IMPORTANT: Ensure that your hands and engine are perfectly clean when installing replacement filter elements or changing oil.

Run engine for approx. 5 minutes to heat up oil.

Shut off engine.

Open cap (A).

Open drain plug (B) and drain oil while it is still warm.

Remove engine oil filter (see arrow).

Remove O-ring and clean mounting surface where new O-ring will be fitted. Apply a thin coat of oil to new O-ring and install it together with the new oil filter. When O-ring is touching mounting surface, tighten filter manually by another 1/2 to 3/4 turn. Do NOT overtighten filter.

Close oil drain plug (B) again.

Refill crankcase with lubricating oil specified in "Fuel, Lubricants and Coolant" section.

Close cap (A).

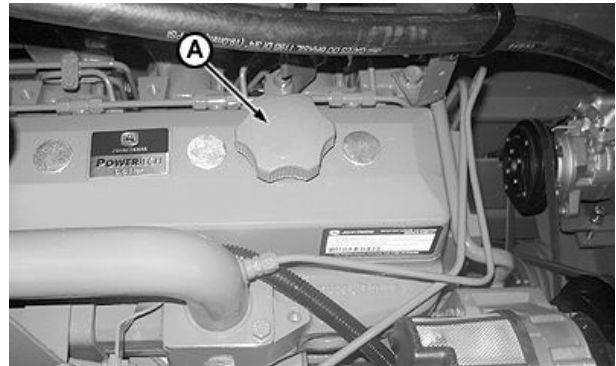
See engine oil capacity in the "Specifications" section.

NOTE: Actual capacity may vary slightly from figure stated above. Do NOT overfill.

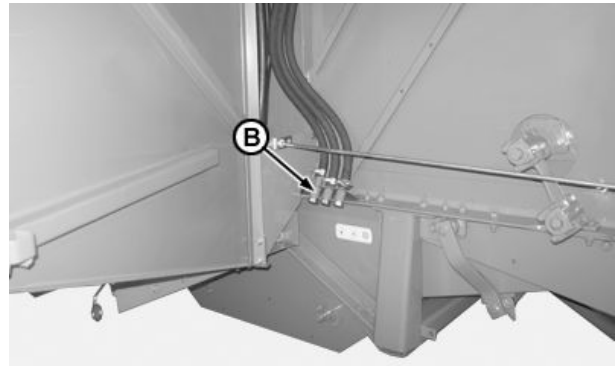
IMPORTANT: Directly after completing oil change and/or filter change, crank engine for 30 seconds. This ensures that all engine components are thoroughly lubricated when engine is started.

Start engine and check for leaks.

Shut off engine and wait 10 minutes before checking oil level. Oil should still be up to upper mark on dipstick.



CQ250050 —UN—30AUG05



CQ250060 —UN—30AUG05



CQ247930 —UN—29JUL05

OU64006,00000AC -19-21SEP05-1/1

Changing Transmission Oil

Remove bolt (D).

Remove cap (A) from transmission box and take out line (E).

Check filter (F) and rings (G), and replace if necessary.

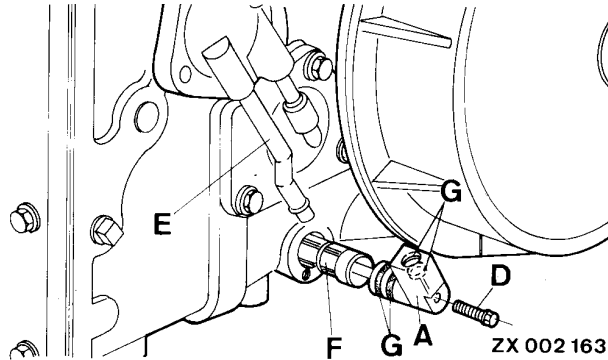
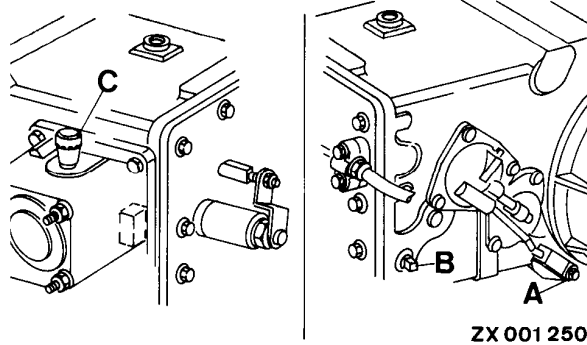
IMPORTANT: When reinstalling, make sure filter (F) is seated correctly in transmission housing.

Recommended oil - SAE 90.

IMPORTANT: Always use specified oil.

Consult capacity in the "Specifications" section.

- | | |
|------------------------------|----------|
| A—Cap | E—Line |
| B—Check plug | F—Filter |
| C—Filler neck and bleed plug | G—Rings |
| D—Bolt | |



AG,CO03622,2115 -19-01AUG05-1/1

Changing Final Drive Oil

Remove drain plug (D) to drain oil. Open filler cap (A).

After draining the oil, close drain plug (D) and remove oil level plug (C).

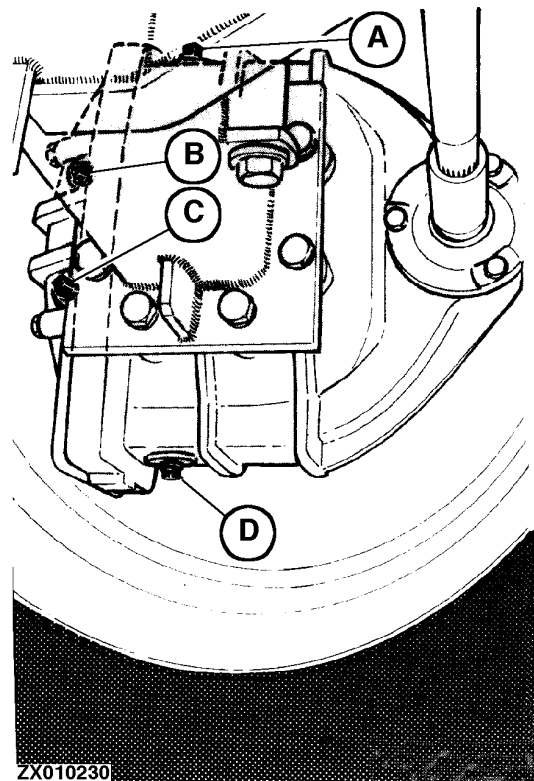
Fill up until oil reaches the level. Install oil level plug. Close filler cap.

IMPORTANT: Only use recommended oil and quantity. Carefully clean area around filler opening.

Recommended oil - SAE 90.

Consult final drive oil capacity in the "Specifications" section.

- | | |
|-------------------|------------------|
| A—Oil filler neck | C—Oil level plug |
| B—Vent plug | D—Drain plug |



OU64006,00000AB -19-21SEP05-1/1

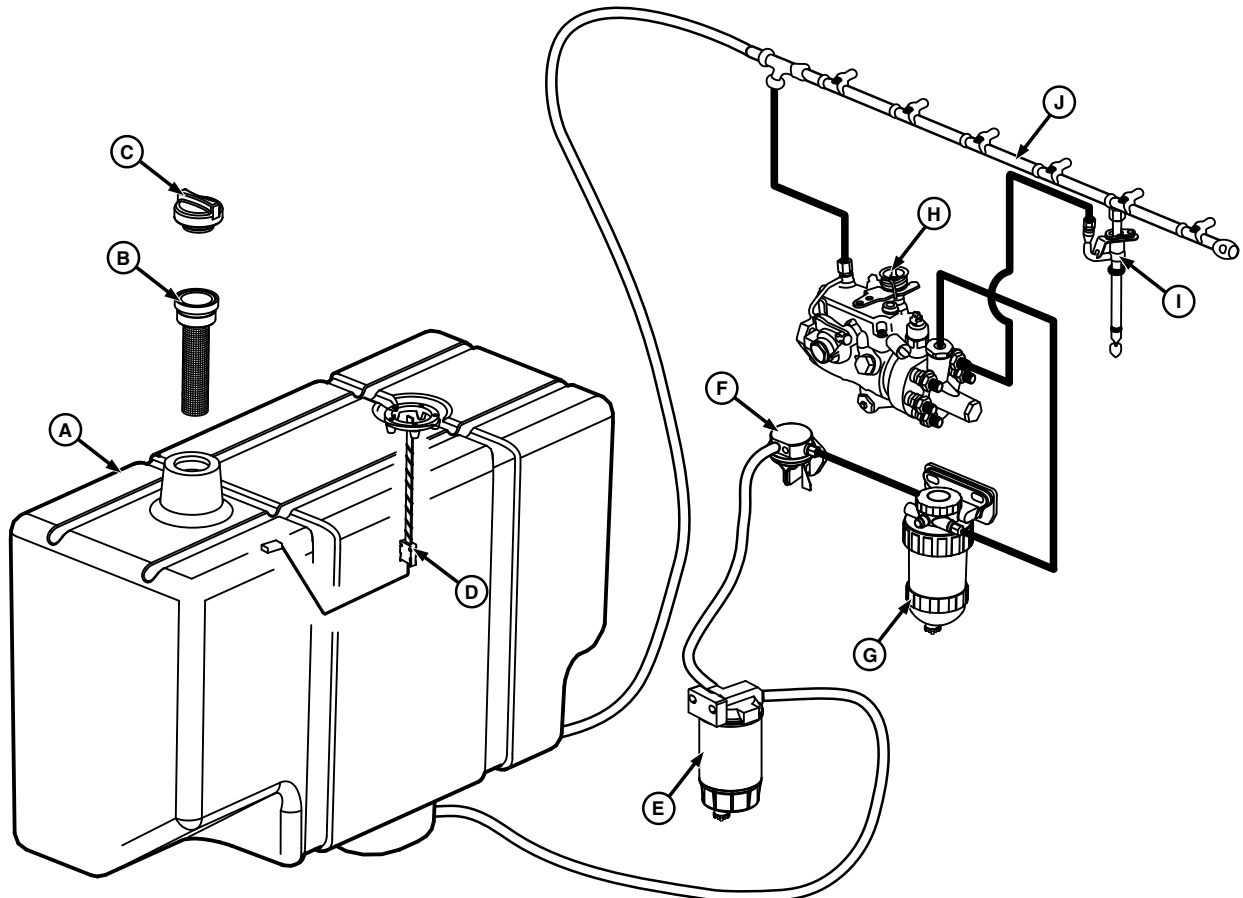
Do Not Alter the Fuel System

IMPORTANT: Any modification or alteration to the fuel system, injection pump or even the injection nozzles that is not approved by the manufacturer will imply in the cancelation of

the warranty for this machine. Do not attempt to service the injection pump or nozzles on your own. For such, your Dealer counts on factory trained mechanics as well as all the adequate tools to perform these services.

AG,GG05155,222 -19-22FEB99-1/1

Fuel System



A—Fuel tank
B—Filler neck filter screen
C—Cover

D—Fuel gauge sender
E—Primary fuel filter
F—Fuel transfer pump

G—Fuel filter
H—Injection pump
I— Injection nozzle

J— Return line

CQ267480 —UN—30MAR06

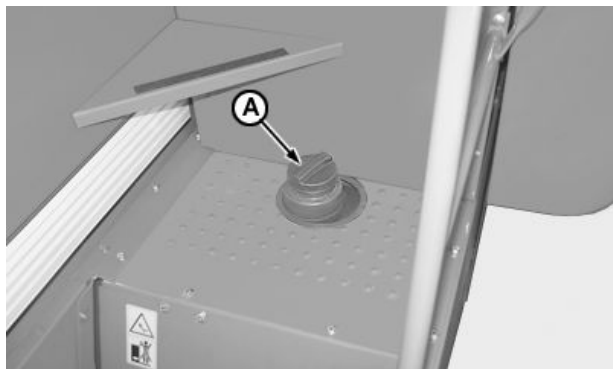
OU83340,000043D -19-06APR06-1/1

Fuel Tank

Fill tank through filler neck (A).

See capacity in section "Specifications".

Fill the fuel tank at the end of each day's operation to prevent condensation of humid air inside the tank.



CQ266880 —JUN—15MAR06

AG,GG05155,224 -19-06MAR06-1/1

Cleaning the Pre-Filter with Water Separator

If water and sludge accumulate in the cup (B), open the drain plug (A) with the engine stopped. Collect the contaminated fuel as it flows out with a suitable container. Close the drain plug (A). To clean the filter, proceed as described below:

Remove the cup (B).

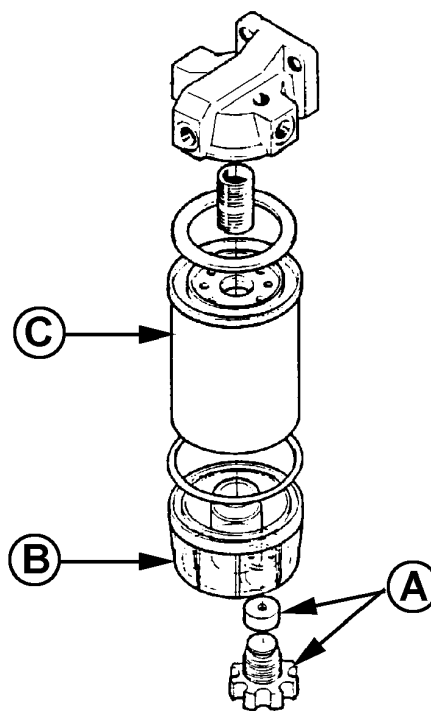
Remove the filtering element (C) and carefully wash it with clean fuel. After cleaning the filtering element 5 to 10 times, replace the water separator (complete) with a new one.

After cleaning the pre-filter, assemble it inverting the disassembly sequence.

A—Drain

B—Sight Glass (Cup)

C—Filtering element



CQ192580

CQ192580 —JUN—01NOV99

MB03730,0000003 -19-27JUN02-1/1

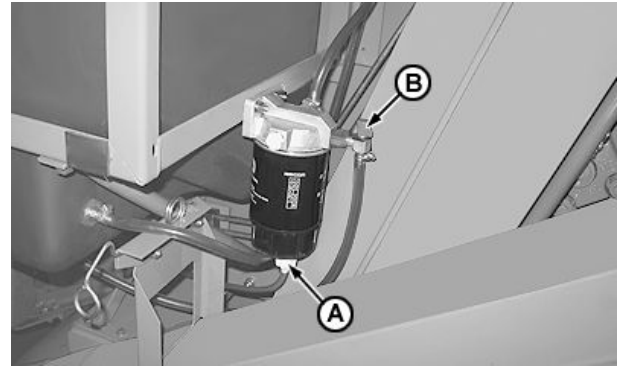
Bleeding off Water from Primary Fuel Filter

CAUTION: Always remove ignition key before performing maintenance work on fuel filter. Avoid fire hazards!

NOTE: Ensure fuel shut-off valve (B) is in position "ON".

Loosen drain screw (A).

Drain water from primary filter and retighten drain screw (A) as soon as clean fuel is observed.



Primary filter

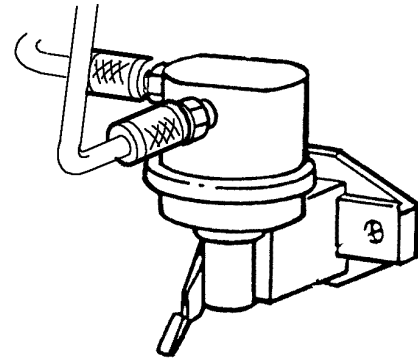
OU64006,00000CD -19-30MAR06-1/1

CQ268420 —UN—21MAR06

Mechanical Fuel Transfer Pump

This pump is maintenance-free.

If a defect occurs, consult your John Deere dealer.



ZX009249

OU64006,00000AD -19-21SEP05-1/1

ZX009249 —UN—10JUN96

Bleeding the Fuel System

Bleed the fuel system:

- After every filter change.
- Whenever the fuel tank has run dry.
- After repair work on the fuel system.
- If the engine has not been run for a while.

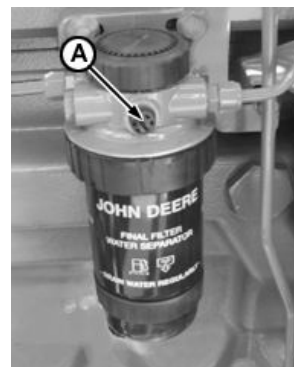
Bleeding Fuel in Fuel Filter

1. Loosen bleed screw (A).
2. Pump fuel by means of lever (B) at fuel transfer pump (C).

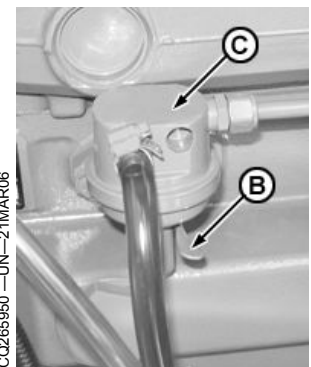
IMPORTANT: If no resistance is felt when moving lever (B) (of pump), crank engine through starter motor to change position of primer pump cam.

NOTE: Pump until fuel is free of air bubbles.

3. Retighten bleed screw (A).



Bleed screw



Fuel transfer pump

A—Bleed screw
B—Lever

C—Fuel transfer pump

Continued on next page

OU64006,00000B8 -19-31MAR06-1/2

CQ266010 —UN—21MAR06

CQ265950 —UN—21MAR06

Bleeding Fuel System at the Fuel Injection Nozzles

IMPORTANT: Always use a backup wrench when loosening or tightening fuel lines at injection nozzles and/or at the injection pump in order to avoid damaging the connectors.

1. Using two wrenches loosen the connections (A) of the two pressure lines at the injection nozzles.
2. Pump fuel by means of lever (B) at fuel transfer pump (C).

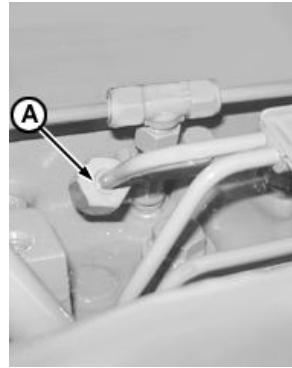
IMPORTANT: If no resistance is felt when moving lever (of pump), crank engine with starter motor to change position of primer pump cam.

NOTE: Pump until fuel is free of air bubbles.

3. Retighten connections according to specifications.

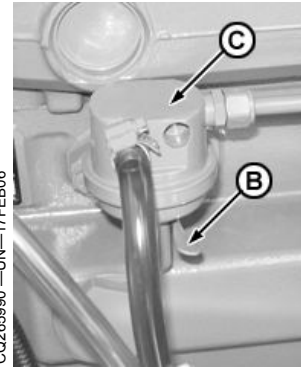
Specification

Connections of fuel injection nozzle pressure line —Torque..... 27 N.m (20 lb-ft)



Injection nozzle connection

A—Fitting
B—Lever



Fuel transfer pump

C—Fuel transfer pump

4. Repeat procedure for remaining injection nozzles (if necessary) until all air has been removed from fuel system.

OU64006,00000B8 -19-31MAR06-2/2

Checking Injection Nozzles

IMPORTANT: Never attempt to remove injection nozzles. Special tools are required to perform this task.

Check injection nozzles every 1500 hours.

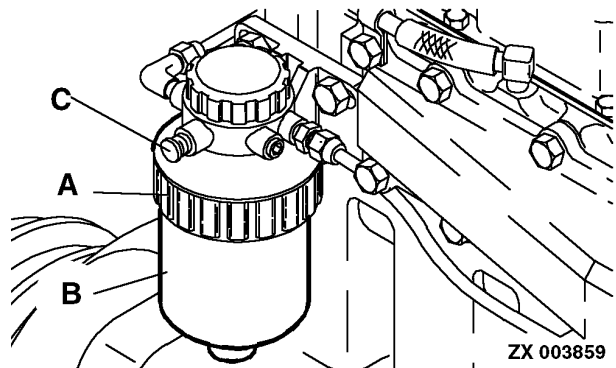
If the engine is running rough, this indicates that the injection nozzles are clogged or not operating correctly. Consult your John Deere dealer.

AG,CO03622,2091 -19-01FEB05-1/1

Replacing Fuel Filter

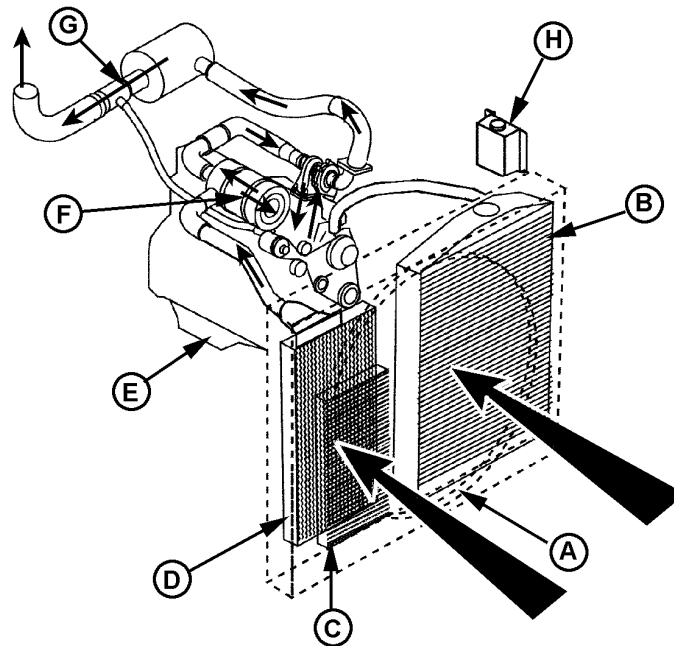
CAUTION: Always remove ignition key before performing maintenance work on fuel filter. Avoid fire hazards!

1. Unfasten ring (A) and remove filter (B).
2. Install new filter, correctly aligning marks on filter and filter base.
3. Tighten until retaining ring (A) slots into its lock position.
4. Loosen bleed screw (C) (see "Bleeding Fuel System"). Tighten bleed screw by hand.



ML70882,0000860 -19-17SEP05-1/1

Cooling System, Exhaust and Air Intake



CQ197150

A—Rotary screen
B—Radiator
C—Condenser (air conditioning system)

D—Hydrostatic oil cooler
E—Engine
F—Air filter

G—Exhaust system
H—Expansion tank (coolant)

OU64006,00000B1 -19-30MAR06-1/1

CQ197150 —UN—17JUL00

Checking Tension of Alternator V-Belt Tensioner Spring and Belt Wear

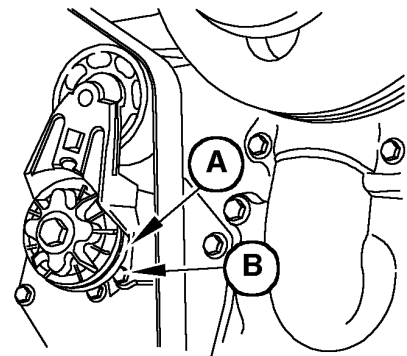
Belt drive systems equipped with automatic (spring) belt tensioners cannot be adjusted or repaired. The automatic belt tensioner is designed to maintain proper belt tension over the service life of the belt. If tensioner spring tension is not within specification, replace tensioner assembly.

Checking Belt Wear

The belt tensioner is designed to operate within the limit of arm movement checked by the cast stops (A and B) when a belt with the correct length and geometry is used.

1. Visually inspect cast stops (A and B) on belt tensioner assembly. If the tensioner stop on swing arm (A) is hitting the fixed stop (B), check mounting brackets (alternator,

ZX009274



belt tensioner, idler pulley, etc.) and the belt length. Replace belt as needed.

AG,CO03622,2199 -19-15MAR02-1/1

ZX009274 —UN—10JUN96

Replacing Fan/Alternator V-Belt

Refer to “[Checking Tension of Alternator V-Belt Tensioner Spring](#)” to determine if V-belt needs replacing.

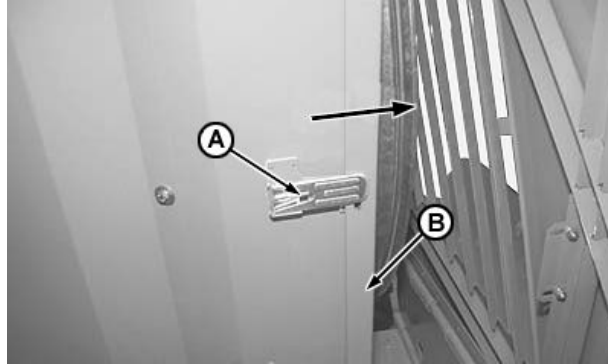
1. Relieve tension from V-belt.
2. Remove V-belt from pulleys.
3. Install a new V-belt and ensure that it is correctly seated in all pulley slots.
4. Apply tension to V-belt with tensioner.
5. Start engine and check V-belt alignment.

AG,CO03622,2201 -19-20AUG04-1/1

Cleaning Rotary Screen, Oil Cooler, Condenser and Radiator

CAUTION: Shut off engine and remove starter key before cleaning rotary screen.

Unfasten latch (A) and open rotary screen door (B).



CQ247100—UN—29JUL05

OU64006,00000CD -19-21SEP05-1/2

Check rotary screen daily to ensure that it turns freely, without obstructions.

Clean rotary screen with a brush and compressed air when dirt and chaff build up on or behind the screen.

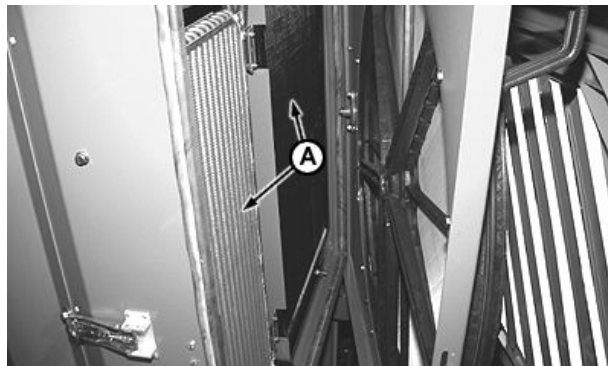
Remove oil cooler and condenser (A).

Clean oil cooler, condenser and radiator.

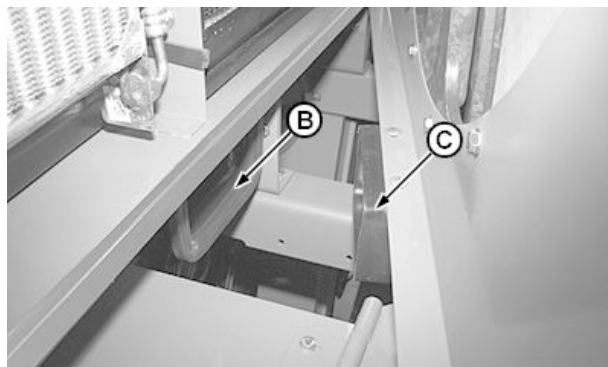
To clean with compressed air, blow from inside outwards.

Clean dirt from lower vacuum ducts (B) and (C).

IMPORTANT: When using high pressure air or water, be careful not to damage cooler fins. Use a fin comb to straighten bent fins. Bent fins will decrease cooler performance.



CQ251150—UN—23SEP05



CQ247710—UN—29JUL05

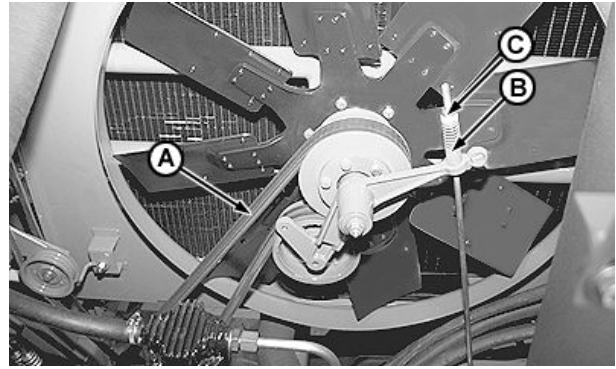
OU64006,00000CD -19-21SEP05-2/2

Replacing (Engine) Cooling Fan Belt

CAUTION: Shut off engine and remove key.

To remove belt (A), it is necessary to release spring (B) tension by loosening jam nut (C).

Remove pulley.

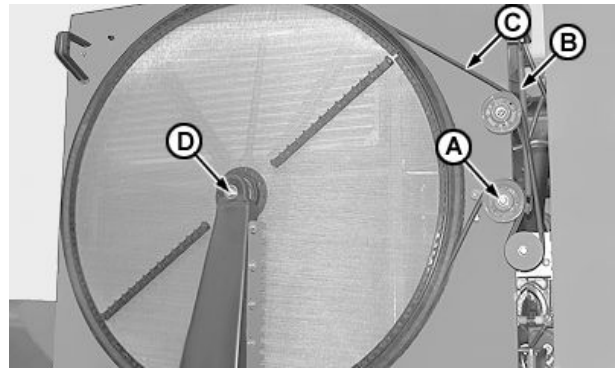


AG.CO03622,2202 -19-17AUG05-1/1

CQ247070 —UN—29JUL05

Replacing Rotary Screen Drive Belt

1. Loosen idler pulley (A) releasing spring (B).
2. Remove bolt (D) and belt (C).

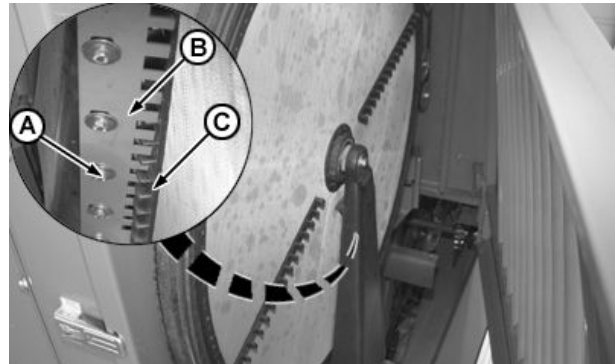


ML70882,0000916 -19-06MAR06-1/1

CQ266310 —UN—02MAR06

Adjusting Rotary Screen Rake Bar

Loosen bolts (A) and position rotary screen knife comb (C) so that rake bar (B) passes through comb unobstructed.



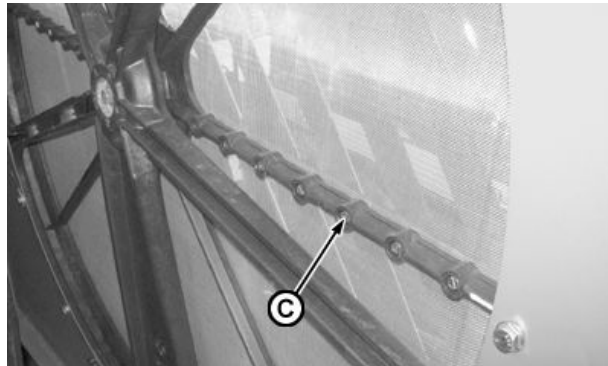
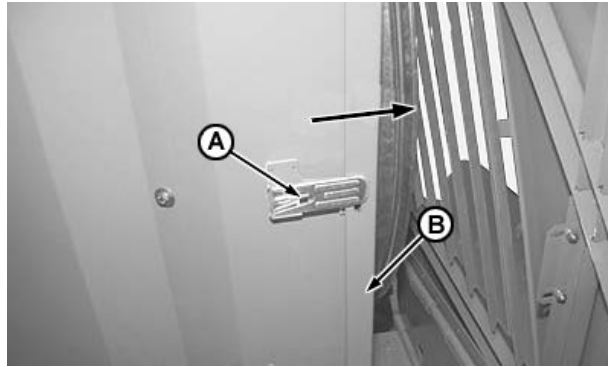
AG.CO03622,2103 -19-01AUG05-1/1

CQ248000 —UN—29JUL05

Replacement of Rotary Screen Knife Comb

⚠ CAUTION: Shut off engine and remove starter key.

1. Remove locking clamp (A) and open rotary screen door (B).
2. Remove screws (C).
3. Remove rotary screen knife comb.



AG,CO03622,2104 -19-21JUN06-1/1

CQ247100 —UN—29JUL05

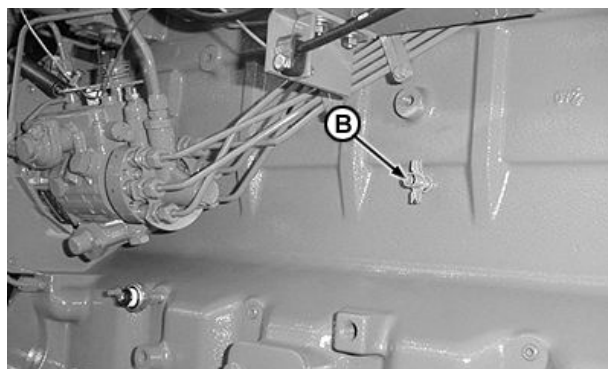
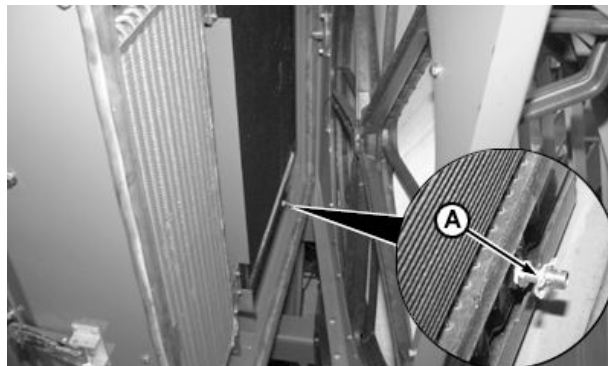
CQ248510 —UN—21JUN06

Draining Coolant

⚠ CAUTION: Danger of scalding! Do not loosen or remove the radiator filler cap when coolant temperature is near or above boiling point. Always loosen cap slightly to relieve pressure before removing cap completely.

Drain coolant through radiator drain plug (A) and engine block drain plug (B).

Close drain plugs (A) and (B).



OU64006,00000B3 -19-21SEP05-1/1

CQ247720 —UN—12JUL06

CQ250110 —UN—31AUG05

Interior Cleaning of Cooling System

Deposits of interior impurities can cause engine overheating.

Clean cooling system at least once yearly or as required. Drain coolant, see "Draining Coolant" for more details.

Fill radiator with clean distilled water, proceed slowly to remove air.

Run engine at half-throttle until it reaches operating temperature (green range on temp gauge on the instrument panel).

Stop engine and drain system to avoid sedimentation of impurities.

Fill system with a radiator cleaner, following the instructions supplied by manufacturer.

Drain system again.

Fill system with clean distilled water once more. Run engine at half-throttle until it reaches operating temperature.

Drain system again.

OU64006,00000B4 -19-21SEP05-1/1

Adding Coolant

IMPORTANT: Regardless of the season, use only John Deere COOL-GARD coolant in cooling system.

Check condition of coolant mixture before the winter season. Coolant should protect engine against frost down to -36°C (-33°F).

Coolant should be composed by clean fresh water and coolant concentrate in the proportions indicated in "Fuel, Lubricants and Coolant" section.

IMPORTANT: Only top up the radiator when the engine is shut off and cold.

Never use any cooling system additives.

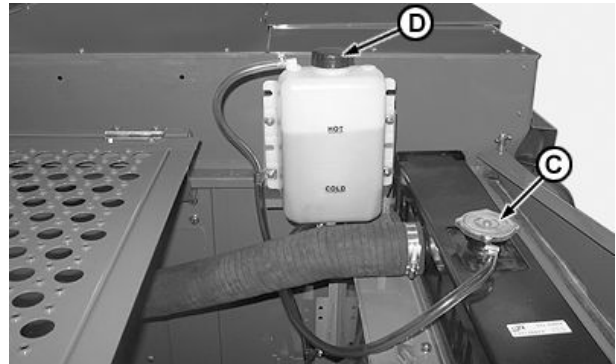
Maintain drain plug (B) half open to let the air leave the system, slowly add coolant until it comes out through plug (B), then close plug.

Fill radiator with coolant, close filler cap (C) and complete filling via filler neck (D) until intermediate level between marks "COLD" and "HOT" is reached. Close cap (D).

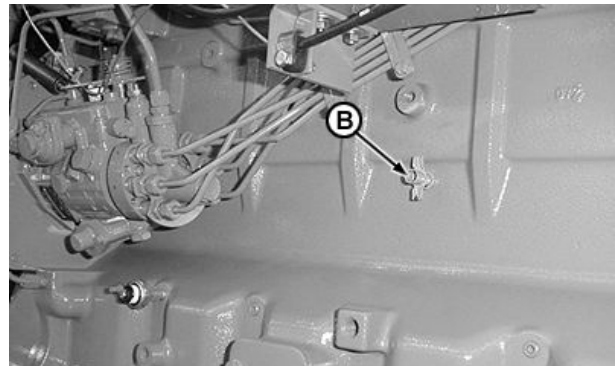
Start engine and run it during approximately 5 minutes. Stop engine and wait until engine has cooled down. Check coolant level in expansion tank. If necessary, add coolant to system and repeat procedure until air is eliminated from system.

When engine is cold, coolant level in expansion tank should be up to "COLD" mark.

NOTE: Check system for leaks.



CQ250120 —UN—31AUG05



CQ250110 —UN—31AUG05

OU64006,00000B2 -19-21SEP05-1/1

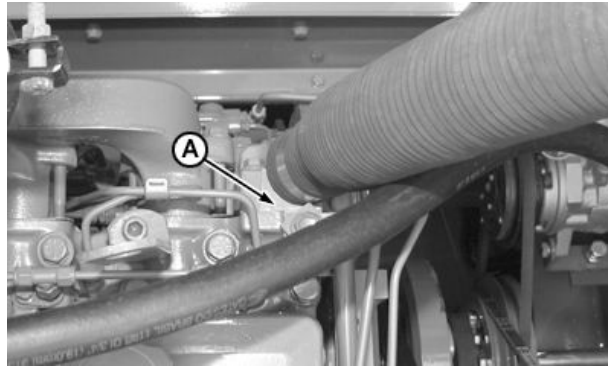
Replacing Thermostat

CAUTION: Danger of scalding! Before replacing the thermostat, release system pressure by turning expansion tank cap to first stop.

IMPORTANT: See your John Deere dealer to execute this job.

If engine is overheating very frequently, the thermostat may be damaged.

NOTE: When thermostat (A) is replaced it is also necessary to replace coolant.



ML70882,0000862 -19-24SEP05-1/1

CQ247690 —UN—29JUL05

Checking Tensioner Spring Tension

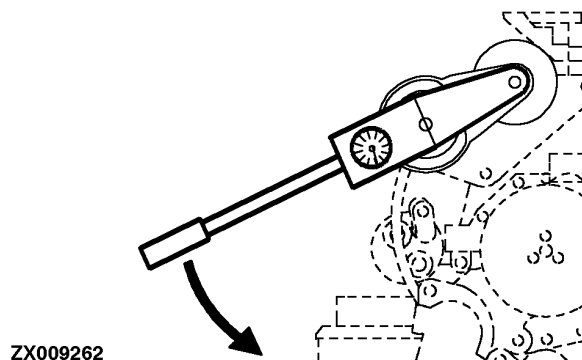
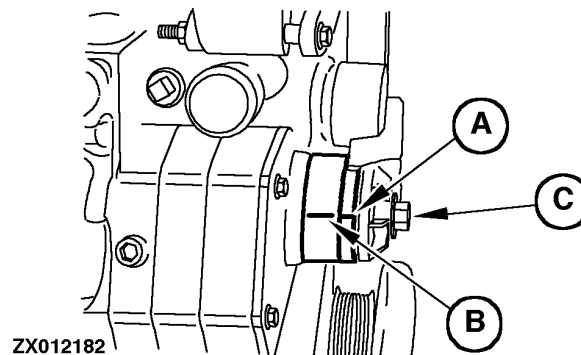
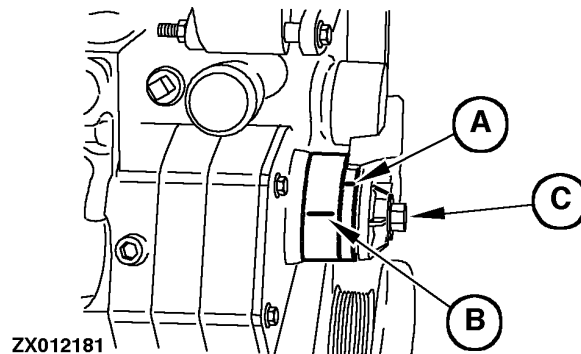
A belt tension gauge will not give an accurate measurement of the belt tension if an automatic spring tensioner is used. Measure tensioner spring tension using a torque wrench and procedure outlined below:

1. Release tension on belt using a long-bar and adequate wrench applied on cap screw (C) provided with left-hand thread. Remove belt from pulleys.
2. Release tension on cap screw (C), then remove bar and wrench.
3. Put a mark (A) on swing arm of tensioner as shown.
4. Measure 20 mm (0.79 in.) from (A) and put a mark (B) on tensioner mounting base.
5. Rotate the swing arm using a torque wrench applied on cap screw (C) until marks (A and B) are aligned.

NOTE: Before rotating, the torque wrench must be aligned with the tensioner fastening cap screw.

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

Spring Tension Specification - 20 N·m (14.8 lb-ft)



AG,CO03622,2200 -19-15MAR02-1/1

ZK012181 —UN—24SEP97

ZK012182 —UN—24SEP97

ZK009262 —UN—10JUN96

Removing Engine Air Filter

Perform service on the air filter in combines only when the air filter indicator light remains permanently on. The air filter has two filter inserts: filter insert and internal insert.

IMPORTANT: When cleaning or changing air filter, shut down engine and remove starter key.

Removing Filter Insert:

1. Remove cover (B) from air filter housing (C) releasing latches (A).
2. To free filter insert (D) remove nut (E) by turning it counterclockwise, remove also backing washer.
3. Grip sides of filter insert (D) and pull it out by hand.
4. Clean inside of housing with a dry rag and afterwards with a rag moistened in water. Also clean gasket on filter element edge.

Removing Internal Insert:

NOTE: Remove internal insert (F) only when filter insert cleaning is being carried out for the third time.

NEVER clean internal insert. Always replace it if removed.

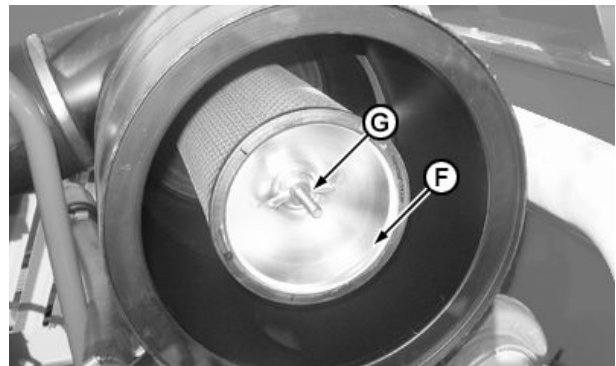
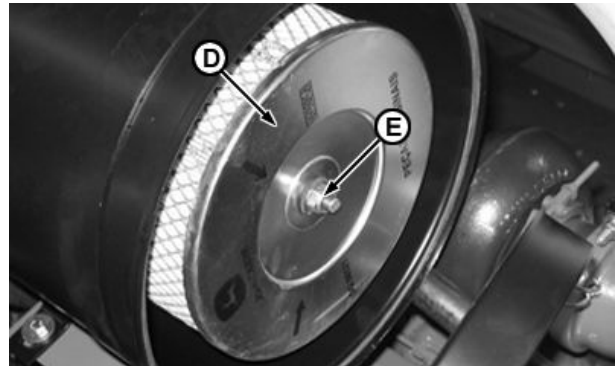
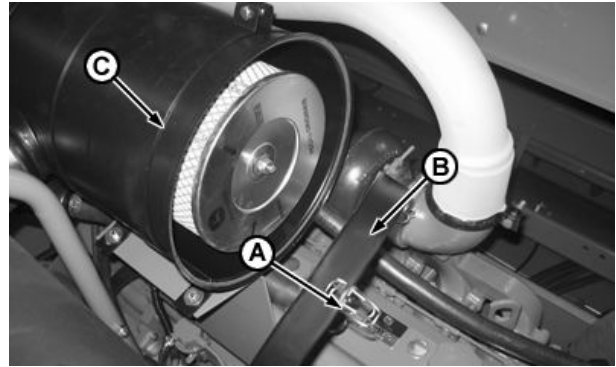
1. Unfasten nut (G) by turning it counterclockwise.
2. To remove internal insert (F), grip it by the sides with your hands and pull it out.
3. Clean inside of housing with a dry rag and afterwards with a rag moistened in water.
4. Install a new, genuine internal insert.

IMPORTANT: NEVER run engine without filters installed.

Use only genuine John Deere parts.

A—Locking clips
B—Cover
C—Housing
D—Filter insert

E—Nut
F—Internal insert
G—Nut



CQ220740 —UN—06JUN05

CQ220750 —UN—06JUN05

CQ250820 —UN—02SEP05

ML70882,0000863 -19-21SEP05-1/1

Cleaning and Inspecting Filter Insert

Cleaning Procedure:

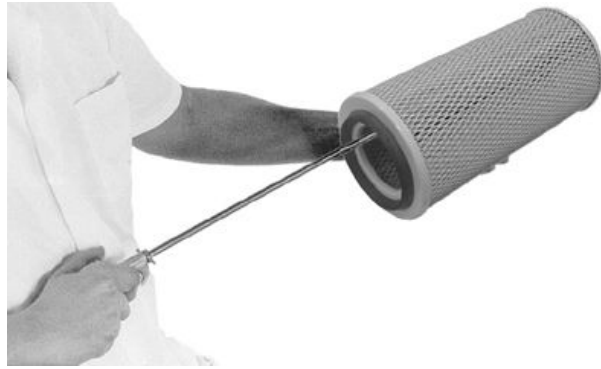
CAUTION: NEVER apply water directly to internal and filter inserts.

1. Shake filter insert carefully to loosen dirt on outside.

IMPORTANT: NEVER beat the filter insert against hard objects (tires, shields, etc.).

2. Blow dry with compressed air as shown in the figure. Compressed air blow should be parallel in relation to internal surface of filter insert. Pressure should not exceed 5 kg/cm^2 (70 lb/in^2 , 70 psi).
3. Clean the external screen of the filter insert with a damp rag .

IMPORTANT: This cleaning procedure should only be implemented on the filter insert a maximum of three times.



Cleaning filter insert

CQ219460 —UN—09SEP03

ML70882,00003FB -19-28NOV03-1/2

Inspection Procedure:

1. Insert a light inside filter insert as illustrated in the figure, and carefully look for holes or ruptures on paper part of insert.

IMPORTANT: Replace any filter insert containing a hole or rupture of any kind.

2. Check if the outside screen of the filter insert is crushed.

NOTE: If it is crushed then the vibration caused may, in a short time, create a hole in the screen.

3. Check if the rubber seal is in good condition.

IMPORTANT: If the rubber seal is damaged replace the insert.

4. Mark down the number of times upper part of insert was cleaned.



Inspecting filter insert

CQ219460 —UN—09SEP03

NOTE: The filter insert can be cleaned a maximum of three times. On the fourth occasion it must be replaced by a new and genuine filter insert.

ML70882,00003FB -19-28NOV03-2/2

Mounting Air Filter Components

1. Mount filter and internal insert, ensuring that nuts are tightened.

NOTE: Nuts are sufficiently tight when both filter insert and internal insert do not move when you try to turn them by hand.

2. Close housing.



Mounting filter insert

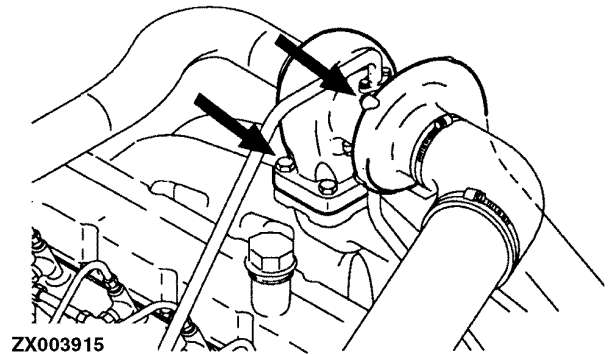
ML70882,0000864 -19-21SEP05-1/1

CO220770 —UN—05NOV03

Turbocharger

All engine types are equipped with a turbocharger.

Carefully check all connections and attaching points of the turbocharger every 250 hours. Any lube oil leaks at the turbocharger or its lube oil feed line must be rectified at once.



ZX003915

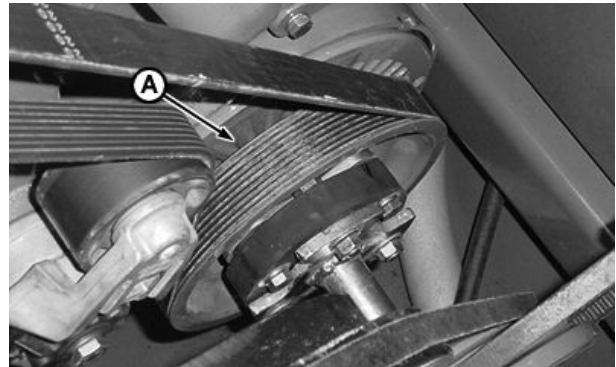
AG,CO03622,2122 -19-17APR02-1/1

ZX003915 —UN—19JUN95

Crankshaft Damper Inspection

IMPORTANT: The engine crankshaft damper cannot be repaired. It must be replaced after 4500 hours or 5 years, whichever occurs first.

See your John Deere dealer about replacement.



MB03730,00001E3 -19-01AUG05-1/1

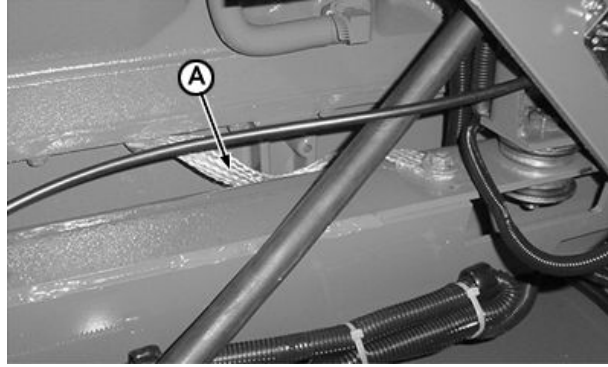
CO247730 —UN—28JUL05

Engine Grounding

IMPORTANT: Periodically inspect the condition of the engine ground cable (A) and check the tightness of the attaching nuts.

John Deere engines are seated on rubber dampers inside the machinery. These dampers, as well as reducing noise levels, also electrically insulate the engine. Nevertheless, it is necessary that the engine has a good ground connection, for which reason the ground cable (A) exists.

If this cable is not in perfect working order then the flow of excess current produced by the alternator may be redirected to the engine bearings, causing severe damage to the engine.



Engine Grounding

ML70882,00004C0 -19-28JUL04-1/1

CQ225000 —UN—28JUL04

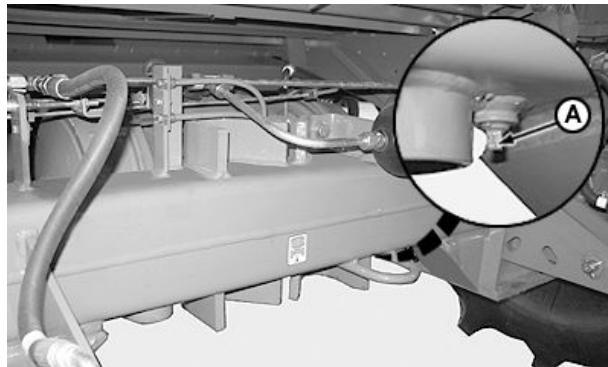
Compressed Air System Reservoir

The front axle is the reservoir.

Maximum pressure: 570 kPa; 5.7 bar; 82.7 psi.

Drain off impurities periodically.

With the engine off, drain accumulated water by turning the drain plug (A) located on the lower left side of the front axle.

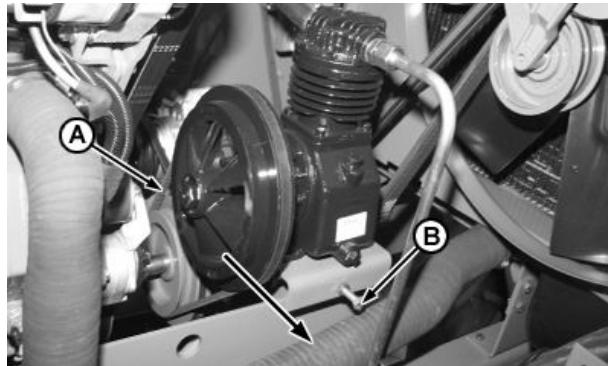


OU64006,00000DC -19-21SEP05-1/1

CQ251530 —UN—19SEP05

Adjusting Compressor Drive Belt Tension

Tension of compressor drive belt (A) can be adjusted by tightening bolt (B), sliding compressor in direction of the arrow.



AG,CO03622,2126 -19-30SEP05-1/1

CQ247740 —UN—29JUL05

Air Compressor Oil Change

Open the filler and oil level plug (A) and drain plug (B), and bleed off oil into a suitable container.

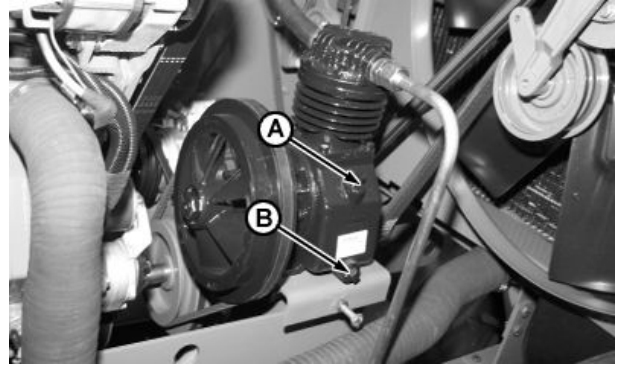
Install and tighten drain plug (B).

Fill up with SAE 15W-40 oil.

Consult capacity in the “Specifications” section.

Check oil level with dipstick.

Oil level should be between the upper and lower marks on the dipstick.



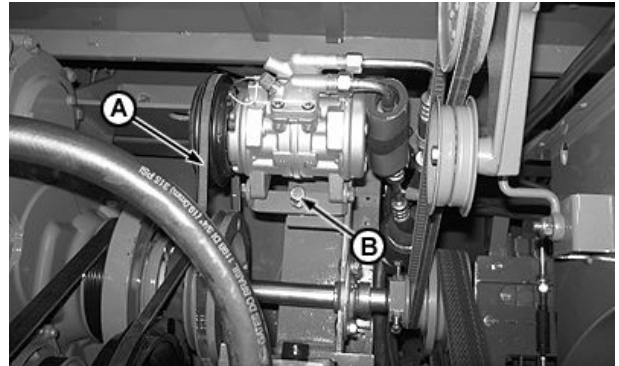
A—Filler and oil level plug B—Drain plug

AG,CO03622,2190 -19-24SEP05-1/1

CQ247230 —UN—29JUL05

Air Conditioning Compressor Drive Belt

Adjust tension of belt (A) of air conditioning compressor drive using set screw (B).



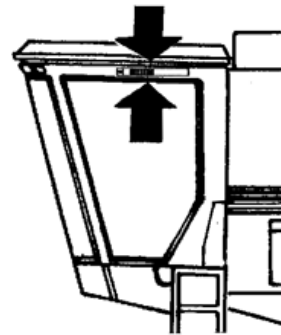
OU64006,00000EE -19-28SEP05-1/1

CQ250160 —UN—06SEP05

Primary Filter Screens

Primary filter screens are located at left-hand side of cab and retain coarse residue.

Clean as necessary, shaking or brushing them.



BL04947,00003EF -19-06DEC11-1/1

CQ291406 —UN—07DEC11

Removing Paper Filter Insert of Air Conditioning System (Main Filter)

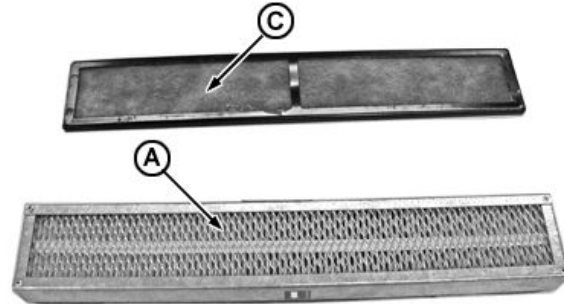
IMPORTANT: Clean paper filter insert every 200 hours of operation (using compressed air) or more frequently, even daily, if you work in very dusty conditions.

NOTE: Replace paper filter insert after cleaning it six times.

Turn knob (B) and release the entire compartment, remove filters (A) and (C).



CQ291394 —UN—06DEC11

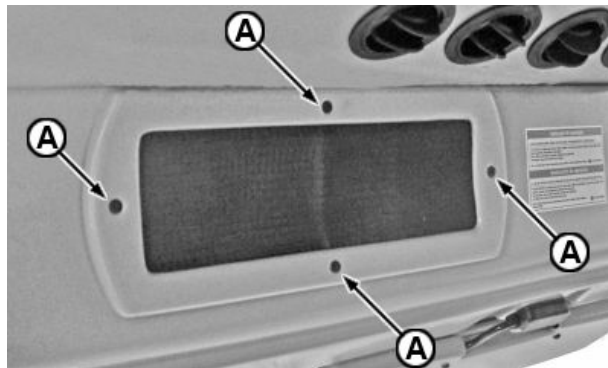


CQ291407 —UN—07DEC11

BL04947,00003F0 -19-06DEC11-1/1

Removing Air Recirculation Filter

Remove air recirculation filter inside roof, loosening screws (A).



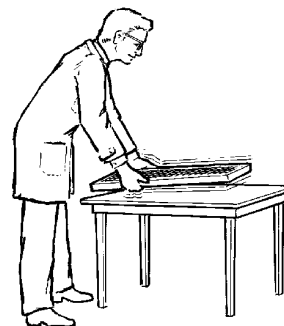
CQ291393 —UN—06DEC11

BL04947,00003F1 -19-06DEC11-1/1

Cleaning the Paper Filtering Element

Provisional Cleaning

As a provisional measure during operation, tap the element on palm of hand or on a flat soft surface.



CQ179230

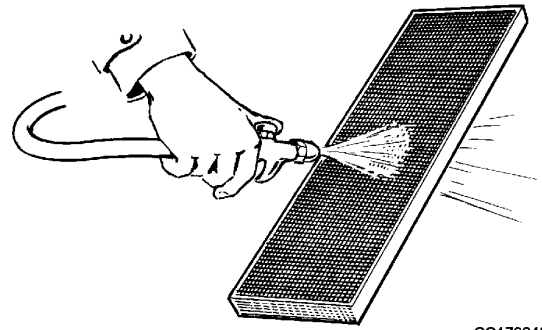
CQ179230 —UN—19FEB99

Continued on next page

OU83340,0000448 -19-24OCT03-1/2

Cleaning with Compressed Air

Direct the air stream over the filter in the opposite direction to the arrows on it with a maximum pressure of 7 bar (100 psi).



CQ179240

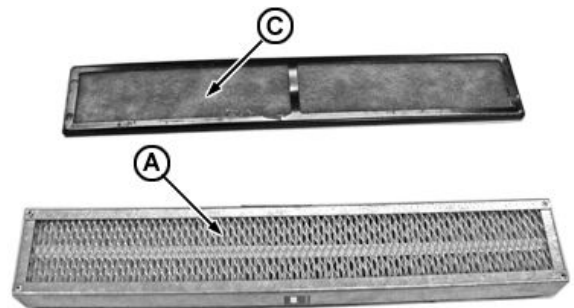
CQ179240 —UN—19FEB99

OU83340,0000448 -19-24OCT03-2/2

Reinstalling Paper Filter Insert (Main Filter)

Install paper (A) and felt (C) filters correctly to their compartment and install it to cab frame.

Turn knob (B) and secure filter compartment properly.



CQ291394 —UN—06DEC11

CQ291407 —UN—07DEC11

BL04947,00003F2 -19-06DEC11-1/1

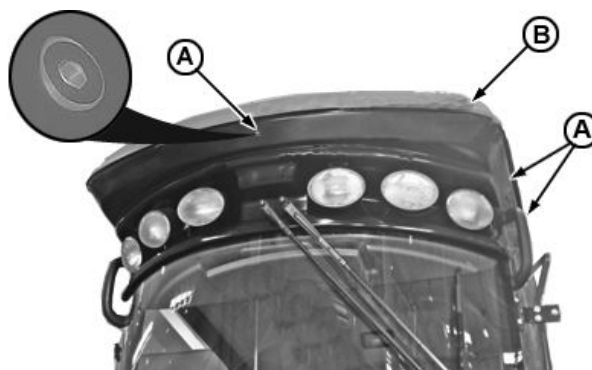
Cleaning the Evaporator

If cab is not cooled properly it is necessary to examine evaporator fins (F).

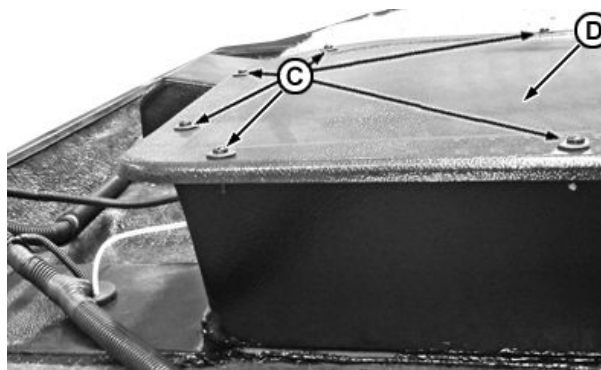
1. Remove cab roof (B) by removing all screws (A) on both sides of combine and one on combine front.
2. Remove all screws (C) and remove cover (D).
3. Clean evaporator fins (E) using compressed air.

Avoid restriction of condensation water drain hoses. Clean them with compressed air.

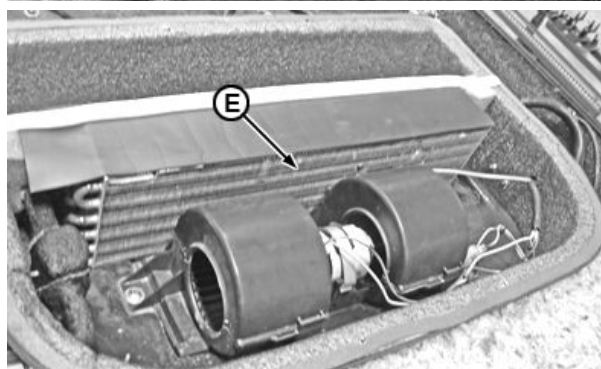
Evaporator fins must be in perfect condition.



CQ291409 —UN—13DEC11



CQ291410 —UN—13DEC11



CQ291411 —UN—13DEC11

BL04947,00003F4 -19-07DEC11-1/1

Coolant Level

IMPORTANT: Maintenance work on the air conditioning system must be carried out by your John Deere dealer.

With air conditioning system controls set for maximum cooling and with the engine running, check sight glass (A) at drier filter (B).

If refrigerant appears cloudy or foamy, refrigerant level is low and system should be recharged.



CO250440 —UN—24SEP05

OU64006,00000BB -19-21SEP05-1/1

Adjusting Foot Brakes

CAUTION: In case of any leakage or malfunction of the brake system see your nearest John Deere dealer.

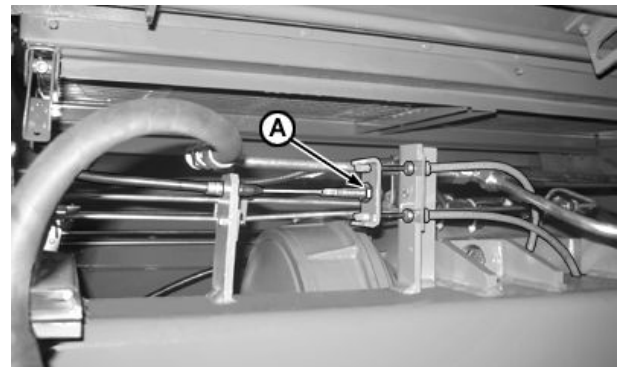
When depressing brake pedals drum brake is adjusted automatically and thus further adjustment is not necessary.

AG.CO03622,2252 -19-26NOV99-1/1

Adjusting Parking Brake

Park machine on a level surface, remove starter key and block wheels.

Adjust parking brake through nut and locknut (A).



CO250420 —UN—06SEP05

OU64006,00000BF -19-21SEP05-1/1

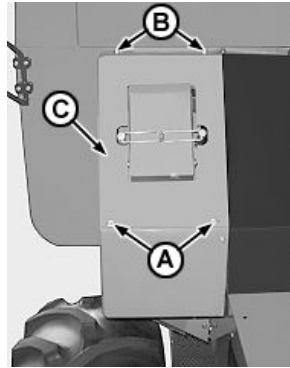
Adding Brake Fluid

The brake fluid reservoir is located at the front of the combine.

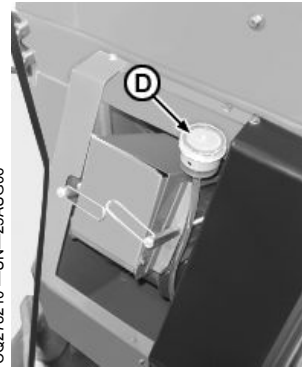
1. Loosen bolts "B".
2. Remove wing nuts "A".
3. Remove Shield "C".
4. Add brake fluid at filler neck "D".
5. Reinstall following inverse order of removal.

IMPORTANT: Use only brake fluid that meets the SAE J 1703 (DOT 4) standard.

Consult capacity in "Specifications" section.



CQ278210 —UN—25AUG06



CQ278200 —UN—25AUG06

A—Wing nuts
B—Bolts

C—Shield
D—Filler neck

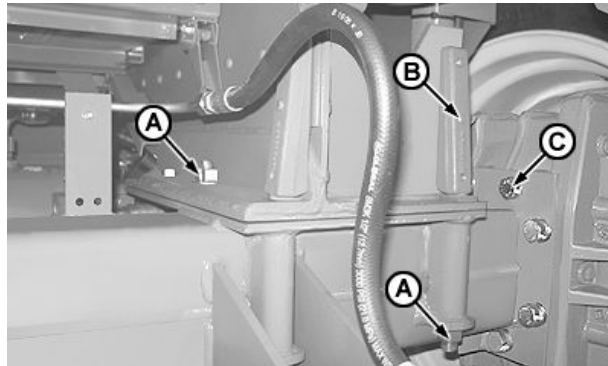
GB52027,0000096 -19-25AUG06-1/1

Front Axle

Retighten:

- Nuts (A) to a torque of 300 N.m (30 kgm)(218 ft-lb).
- Bolts (B) to a torque of 200 N.m (20 kgm)(145 ft-lb).
- Bolts (C) of final drives to a torque of 250 N.m (25 kgm)(182 ft-lb).

NOTE: Carry out retightening during the first 25 hours of operation and then at the start of each harvesting season.



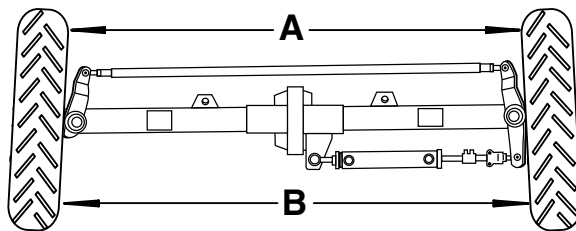
CQ266920 —UN—15MAR06

AG,GG05155,270 -19-24OCT03-1/1

Rear Axle Toe-In

Whenever combine becomes difficult to steer or rear tires begin to wear unevenly, check rear wheel toe-in.

1. On a flat surface, straighten rear wheels.
2. Mark a point at the upper center part of each tire. Measure distance (A).
3. Drive combine half turn back (180°), that is, marks on tires are now at lowest part of wheel.
4. Measure distance (B). It should be 10 mm (0.4 in.) bigger than distance (A).
5. To adjust, loosen locknuts at both ends of tie rod and adjust tie rod length.



CQ262560 —UN—03JAN06

A—Distance

B—Distance

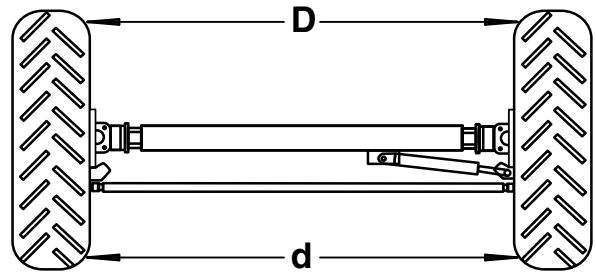
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AG,GG05155,271 -19-11JUL07-1/2

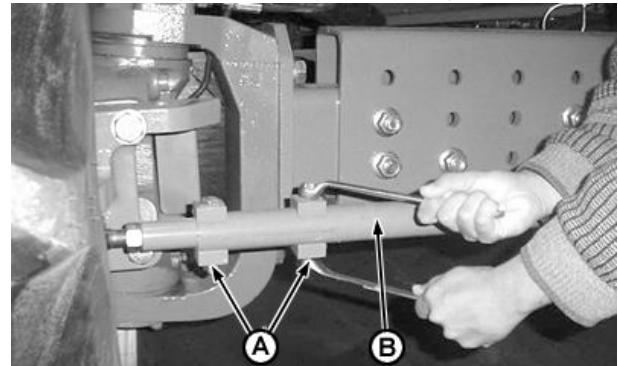
Combine with four wheel drive:

Distances (D and d) must be equal.

Adjust by loosening bolts (A) of steering rod (B).



Upper view - Alignment check points



AG,GG05155,271 -19-11JUL07-2/2

CQ247320 —UN—03JAN06

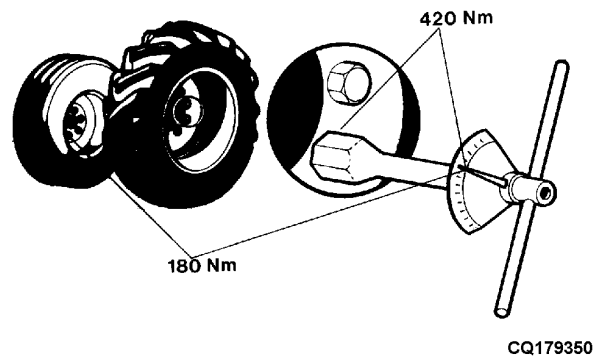
CQ219121 —UN—30JUL04

Tightening the Wheel Nuts

Retighten at the end of the first few hours of work and at the first 25 hours. After that, at the beginning of each season.

Front Wheels: Torque of 420 Nm (43 kgm)(305 ft-lb)

Rear Wheels: Torque of 180 Nm (18 kgm)(130 ft-lb).



CQ179350

AG,GG05155,272 -19-24OCT03-1/1

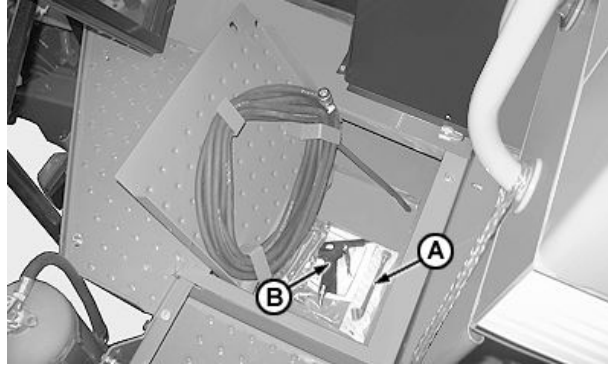
CQ179350 —UN—19FEB99

Compressed Air Hose and Using Compressed Air

The compressed air hose is wound up inside the tool box cover, located in the operator's station.

To inflate the tires, connect valve (A) to the hose quick-coupler.

To use compressed air for cleaning, connect nozzle (B) to the hose quick-coupler.



CQ267620 —JUN—15MAR06

OU64006,00000B6 -19-05APR06-1/1

Tire Inflation Pressures

FRONT TIRE INFLATION PRESSURES			REAR TIRE INFLATION PRESSURES		
Size	bar	psi	Size	bar	psi
18.4 -30 R1 10 PR.	2.3	34	10.5/80-18 L1 6 PR.	2.5	36
18.4-38 R1 10 PR.	2.3	34	12.4 -24 R1 6 PR.	1.9	28
18.4-38 R2 14 PR.	2.5	36	12.4 -24 R1 10 PR.	3.0	44
23.1-26 R2 12 PR.	1.8	26	14.9- 24 R1 8 PR.	2.3	34
23.1-30 R1 12 PR.	2.2	32	14.9- 24 R2 8 PR.	2.3	34
23.1-30 R2 10 PR.	1.8	26	16.9 -24 R1 8 PR.	1,8	26
28.1-26 R1 14 PR.	2.2	32	16.9- 24 R4 8 PR.	1,8	26
28.1L-26 R1 12 PR.	1.8	26	440/65 R 24	1,8	23
24.5-32 R1 12 PR.	1.8	26	540/65 R 24	1,8	23
24.5-32 R1 20 PR.	2.2	32			
30.5-32 R1 14 PR.	1.9	28			
750-65 R26	2.7	39			
620/75 R 30	1.6	23			
620/75 R 30	2.4	35			
800/65 R 32	2.2	32			
650/75 R 32	2.4	35	PR - Ply no		

ML70882,00004AC -19-15MAR07-1/1

Batteries

CAUTION: For safety reasons, before working on electrical system or engine, always disconnect battery negative cable.

Battery is located on left-hand side of machine.

Battery Charge

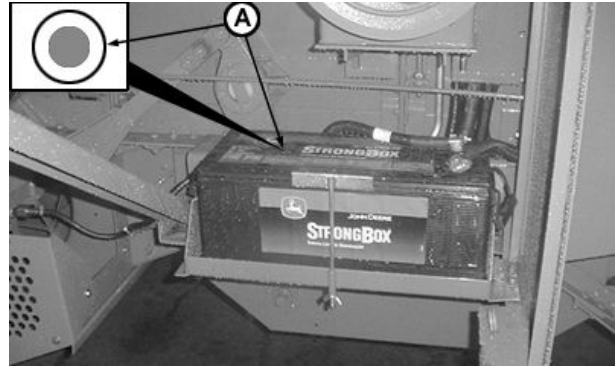
Check battery charge weekly.

Your combine's battery is equipped with a charge indicator (A) with thermal equalization. This indicator is embedded in battery lid. The charge indicator can indicate three different states (colors):

Green: Indicates that battery is 65% charged or above. The battery is sufficiently charged to operate. If recharging, interrupt as soon as indicator shows this state (green).

Dark: Indicates a charge below 65%. The battery must be recharged before commencing operations.

Light: Indicates that electrolyte level is low. This may have been caused by overcharging, a broken battery case or excessive tilting (more than 45°).



NOTE: When indicator is clear in color, battery must be replaced as recharging will have no effect.

AG,GG05155,274 -19-24OCT03-1/4

CQ177241—UN—21OCT03

Cleaning the Battery

Clean battery weekly.

- Remove any traces of terminal corrosion with a brush.
- Coat battery cable terminals and cables with petroleum jelly.
- Check lid vent plugs for obstructions. Clear any obstruction, if necessary.



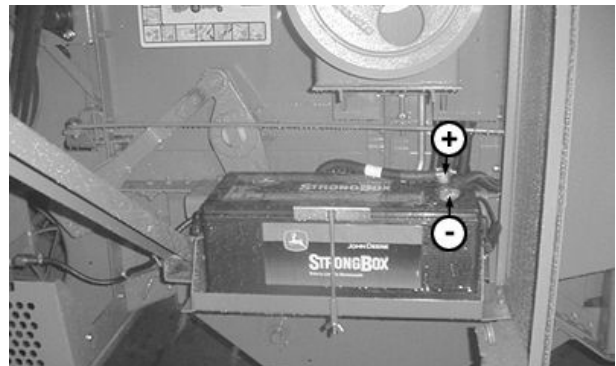
AG,GG05155,274 -19-24OCT03-2/4

CQ177242—UN—20OCT03

Removing Battery

When removing battery, first disconnect negative (-) cable and then positive (+) cable.

NOTE: When reconnecting the battery cables, first connect the positive (+) cable and then the negative (-) cable.



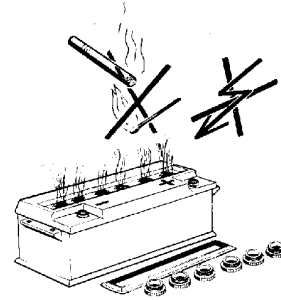
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AG,GG05155,274 -19-24OCT03-3/4

CQ177243—UN—20OCT03

Storing and Handling Battery

- Handle battery with care. Do not knock on nor incline battery more than 45°.
- Always stack batteries in correct manner to avoid tipping.
- Always perform battery recharging in a well ventilated space.



CQ179410

CQ179410—UN—19FEB99

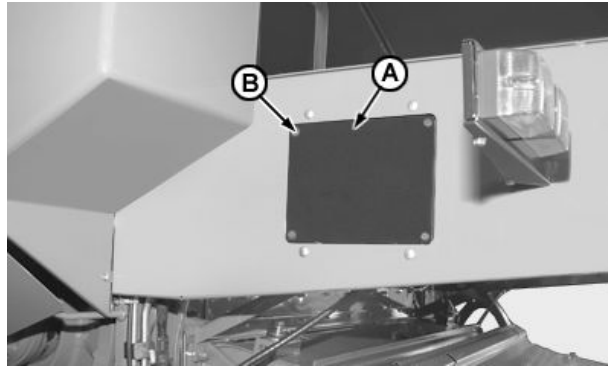
AG.GG05155,274 -19-24OCT03-4/4

Fuse and Relay Box

Fuse and relay boxes are located on the right-hand side of the operator's station.

Press in screws (B) and turn to open cover (A).

NOTE: There is another fuse box in the cab.



CQ266940—UN—15MAR06

OU64006,00000B7 -19-21MAR06-1/1

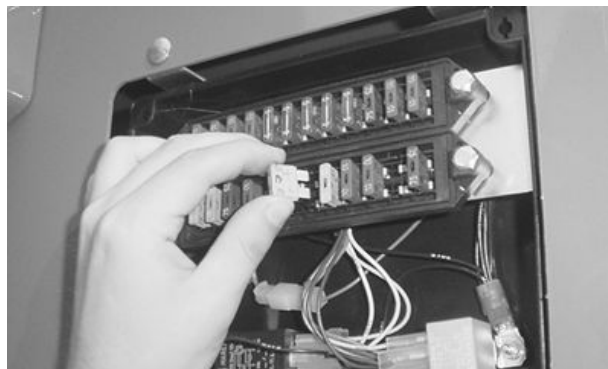
Replacing Fuses

IMPORTANT: Never use fuses of a higher capacity than the indicated. If fuses blow too often, there must be some problem in the electric circuit. In this case, contact the nearest John Deere Dealer.

NOTE: To remove a fuse or a relay, force it sideways as shown in the figure.

The fuses are color coded to represent their correct current capacity (amps). See the table:

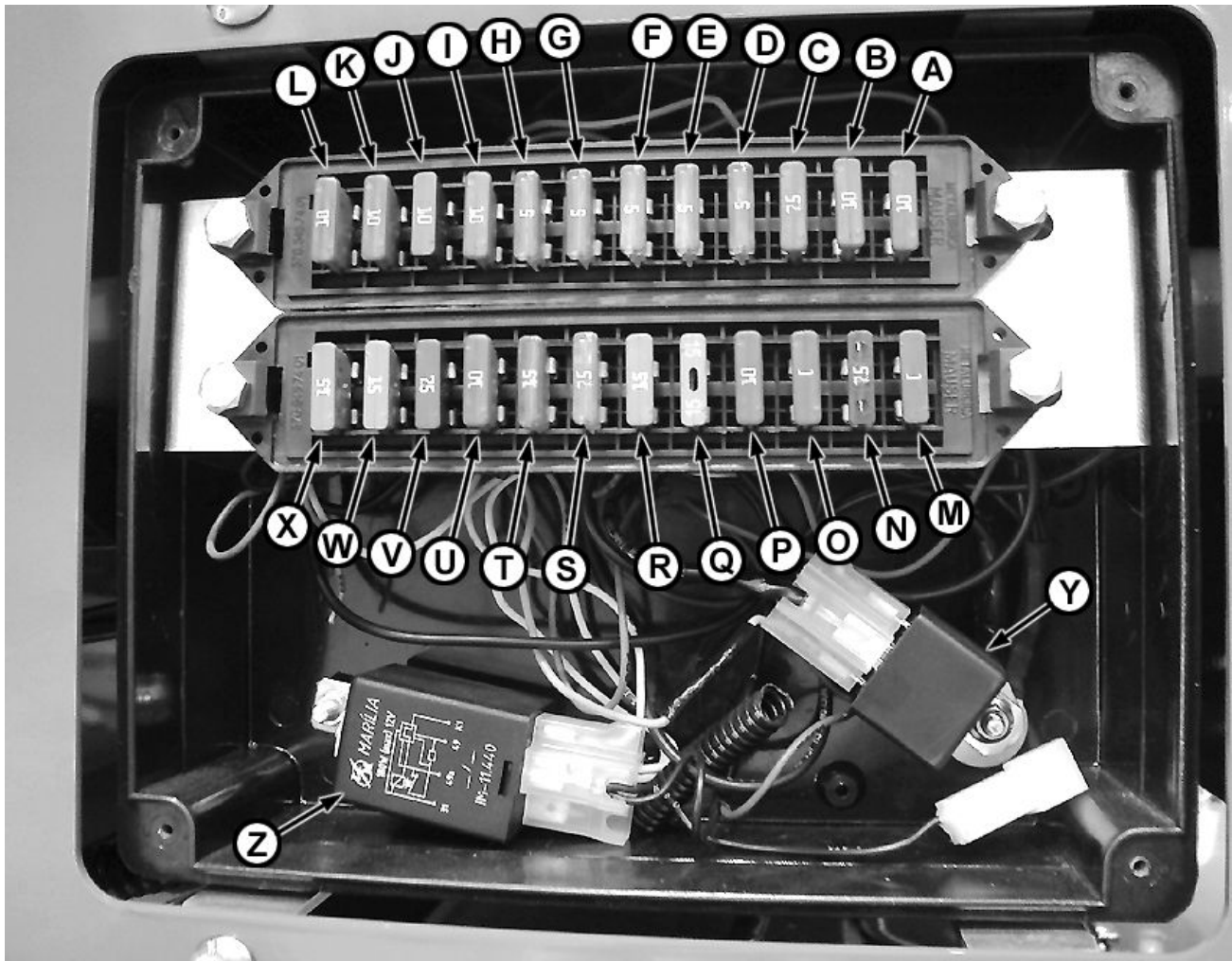
Color	Current (Amps)
Blue	15 A
Red	10 A
Brown	7.5 A
Yellow	5 A



CQ179421—UN—21OCT03

AG.GG05155,276 -19-21OCT03-1/1

Combine Fuse and Relay Box



- | | | | |
|--|--|--|--|
| A—Right-Hand Auxiliary Work Light (10A) | I—Left-Hand Headlight and Low-Beam Headlight (10A) | O—Indicator Lights Module Power Supply (1A) | U—Unloading Auger Light (10A) |
| B—Left-Hand Auxiliary Work Light (10A) | J—Right-Hand Headlight and Low-Beam Headlight (10A) | P—Brake Switch Power Supply (10A) | V—Grain Tank Light (7.5A) |
| C—Starter Motor Relay (7.5A) | K—Left-Hand Headlight and Full-Beam Headlight (10A) | Q—Turn Signal Relay Power Supply (15A) | W—Right-Hand Auxiliary Work Light (15A) |
| D—Display Power Supply (5A) | L—Right-Hand Headlight and Full-Beam Headlight (10A) | R—Backup Alarm and Horn (15A) | X—Left-Hand Auxiliary Work Light (15A) |
| E—Left-Hand Rear Trailer Clearance Light Connector (5A) | M—Display Power Supply and Header Position Switch (1A) | S—Reel Height Adjustment, Cutterbar Pressure Adjustment, Cab Interior Alarm and Multi-Function Control Handle (7.5A) | Y—Horn and Straw Walker/Chopper Relay |
| F—Right-Hand Front Clearance Light (5A) | N—HCCU Power Supply (7.5A) | T—HCCU Power Supply (15A) | Z—Hazard Warning Lights and Buzzer Relay |
| G—Left-Hand Front Clearance Light (5A) | | | |
| H—Right-Hand Rear Trailer Clearance Light Connector (5A) | | | |

IMPORTANT: Only use fuses of recommended values at the indicated position.

AS60558,0002846 -19-10FEB12-1/1

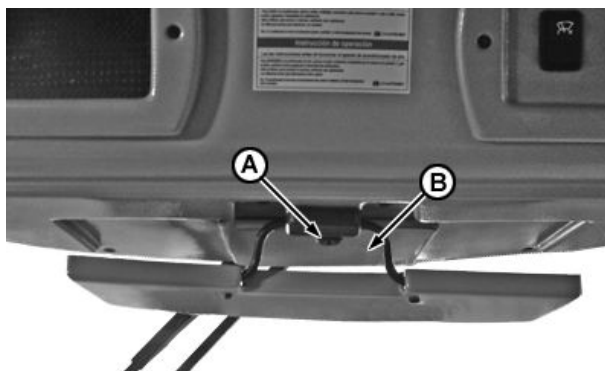
CQ289630 —UN—20DEC11

Cab Fuse and Relay Box

1. Turn lock (A).
2. Remove and retain cover (B).

A—Locking Bar

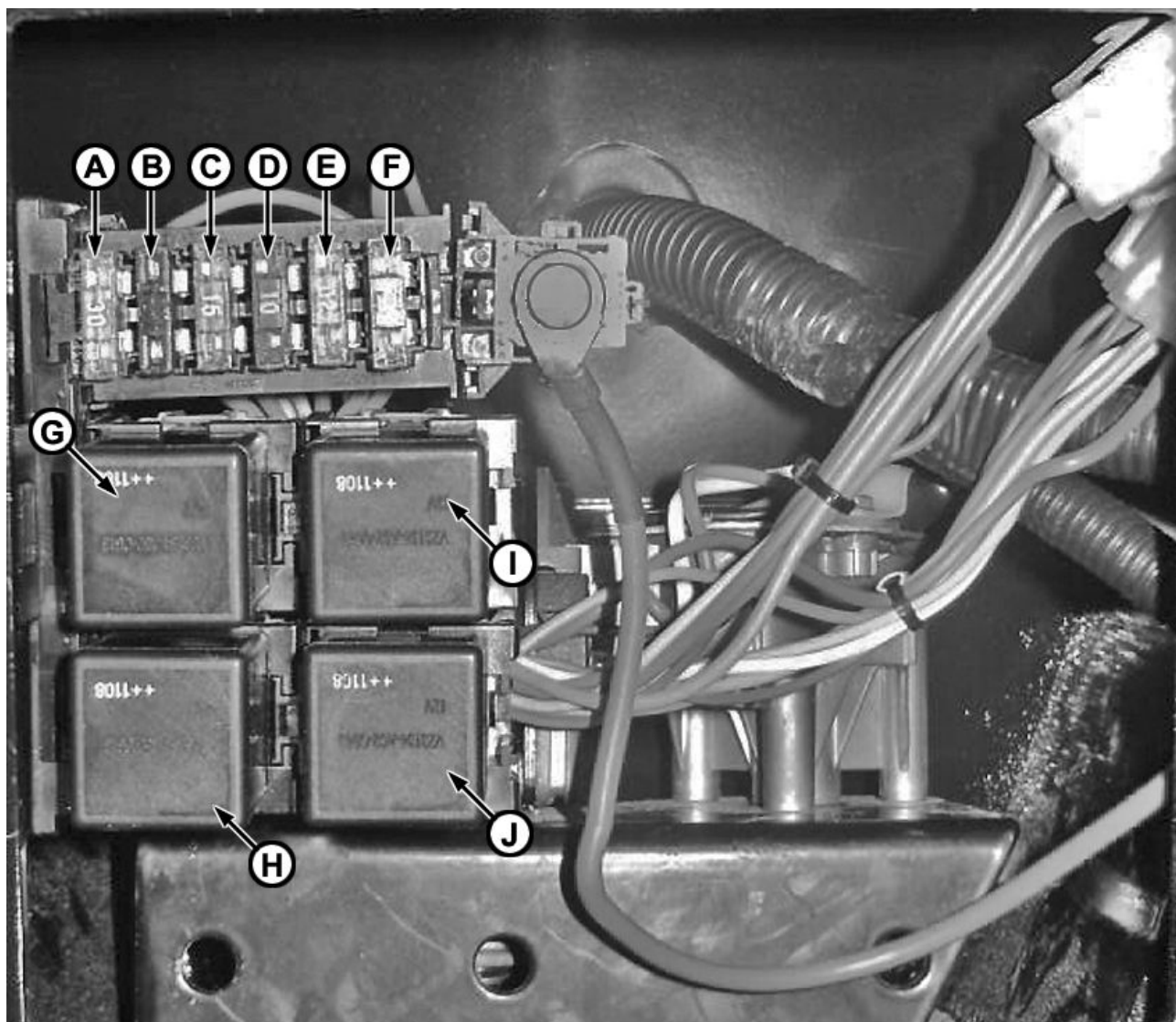
B—Cover



CQ291412—UN—13DEC11

Continued on next page

AS53436,000017F -19-30JAN12-1/2



A—Fan (30A)
 B—Interior Lighting and Auxiliary
 Work Lights (10A)
 C—Windshield Wiper (15A)
 D—Compressor (10A)
 E—Headlights (20A)
 F—Auxiliary (15A)
 G—Compressor Relay

H—Auxiliary Relay
 I— Air Conditioning Temperature
 Control Relay (Pressure
 Switch)
 J— Headlights Relay

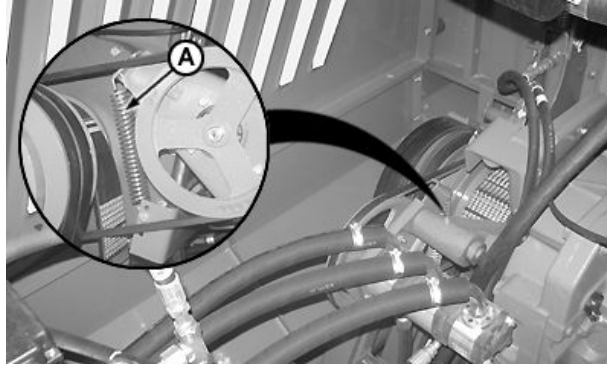
IMPORTANT: Only use fuses of recommended
 values at the indicated position.

AS53436,000017F -19-30JAN12-2/2

CQ284868—UN—31JAN12

Adjusting Triple Hydraulic Pump Belt Tension

Spring (A) maintains belt tension.



AG,CO03622,2131 -19-17SEP05-1/1

CQ248550 —UN—29JUL05

Changing Hydraulic Oil and Filter

Changing the hydraulic oil filter:

- ☐ According to intervals specified in this section.
- ☐ Whenever the hydraulic filter restriction warning light glows on the dash.

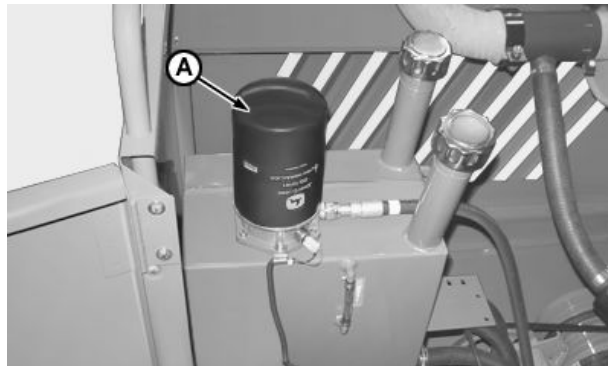
IMPORTANT: Observe utmost cleanliness when installing filter.

Loosen and remove filter (A).

Dispose of filter properly and replace with a genuine John Deere filter.

Coat filter sealing surface with a thin layer of oil.

Tighten filter (A) by hand until sealing ring touches filter housing sealing surface and then tighten a further 3/4 to 1-1/4 turns. Do not overtighten.



Start engine and check for leaks. Retighten filter if necessary.

OU64006,00000BE -19-10MAR06-1/1

CQ267170 —UN—15MAR06

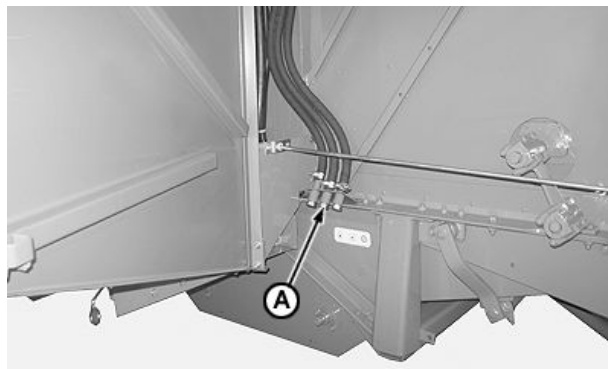
Changing Hydraulic Oil

Draining Oil:

1. Lower header to ground. Retract hydraulic cylinders of reel and unloading auger.
2. Remove drain plug (A) and drain the oil into an appropriate container.
3. Disconnect the hoses from all hydraulic cylinders, the control return hose and the reel drive system hoses from the flow regulating valve. Drain oil at all these points.

NOTE: Before disconnecting the hoses, clean the connections thoroughly.

4. After draining all oil, reconnect all connections and reinstall the reservoir drain plug (A).



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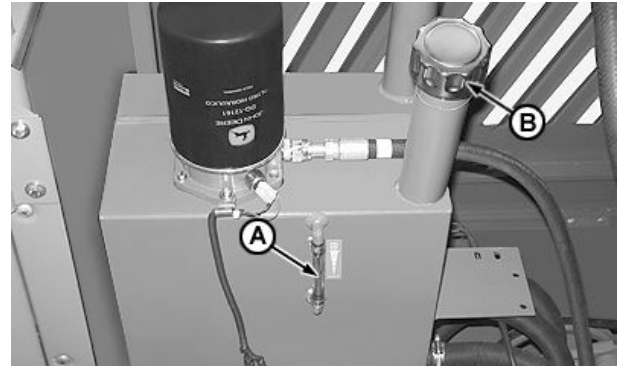
OU64006,00000C0 -19-21SEP05-1/2

CQ250390 —UN—06SEP05

Refilling:

NOTE: Only use recommended oil (see *"Fuel, Lubricants and Coolant"* section). Carefully clean area around filler opening.

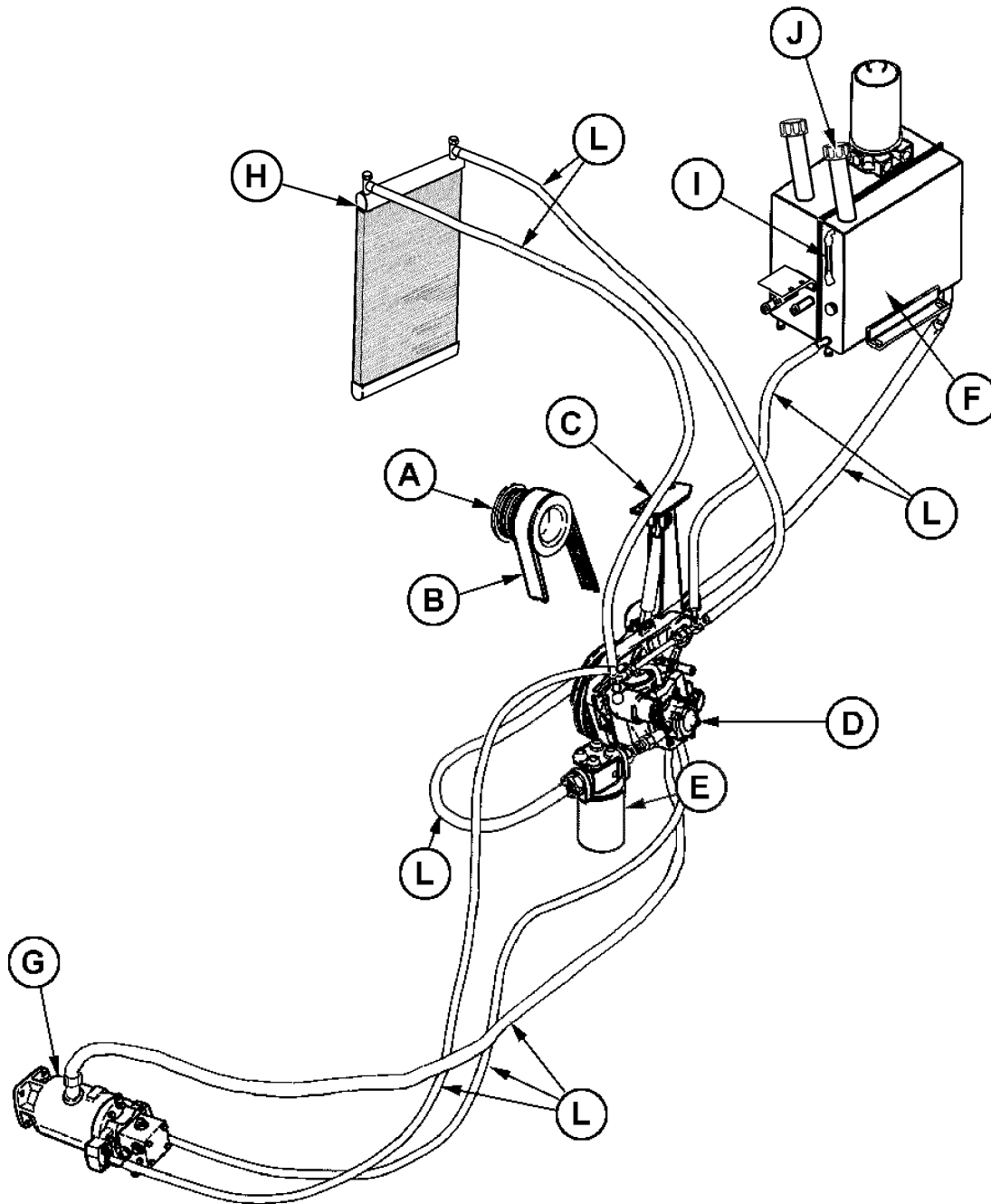
1. Refill with fresh hydraulic oil through filler neck (B) until oil reaches the center of sight glass (A).
2. Run engine. Raise and lower the unloading auger, reel and header a number of times and turn the steering wheel in both directions several times to bleed off remaining air from the circuit.
3. Engage the threshing unit and the header and activate the cylinder speed control several times.
4. Inspect all lines and connections for leaks. Comply with all safety rules.
5. Check oil level in reservoir with all hydraulic cylinders completely retracted. If necessary, add oil to reservoir until correct level is reached.



CQ266240—UN—21MAR06

OU64006,00000C0 -19-21SEP05-2/2

Hydrostatic Drive Components



A—Engine power takeoff
B—Belt
C—Tensioner hydraulic cylinder

D—Hydrostatic pump
E—Oil filter
F—Oil reservoir

G—Hydrostatic motor
H—Oil cooler
I—Level indicator

J—Oil filler neck
L—Hoses

CQ267700 —UN—22JUN06

OU64006.00000C1 -19-06MAR06-1/1

Changing Hydrostatic Drive Filter and Oil

Change hydrostatic oil and filter according to specified intervals in section Lubrication Chart, Periodic Service.

Filter change

IMPORTANT: Observe utmost cleanliness when installing filter. Install the new filter immediately after removing the used one.

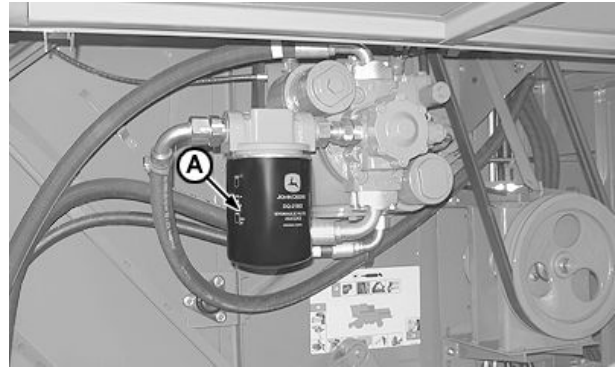
Loosen and remove filter (A).

Dispose of filter properly and replace with a genuine John Deere filter.

For installation of new filter, proceed as follows:

- Coat filter sealing surface with a thin layer of oil.
- Tighten filter by hand until sealing ring comes into contact with filter housing surface and then tighten a further 3/4 to 1-1/4 turns. Do not overtighten.
- Start engine and check for leaks. Retighten filter if necessary.
- Check oil level and refill system if necessary.

Oil change



CQ267880 —UN—15MAR06

Preferentially have this service carried out by your local John Deere dealer.

IMPORTANT: Only use recommended oil (see “Fuel, Lubricants and Coolant” section).

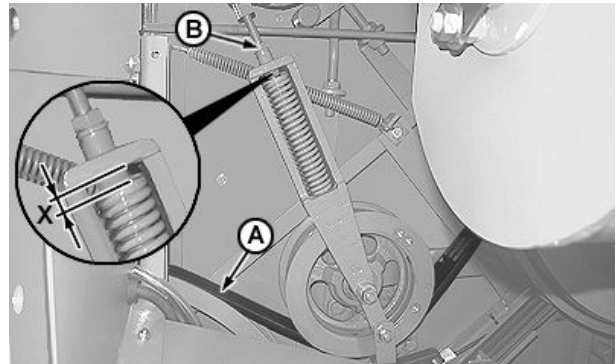
OU64006,00000C2 -19-31MAR06-1/1

Transmission from Beater to Feeder House

IMPORTANT: If the transmission is not engaged, double belt (A) remains without tension.

If the transmission is engaged, double belt (A) should be well tensioned. Distance (X) should measure 16—20 mm (0.63—0.79 in.). Check and adjust with engine turned off.

Adjust belt turning nut (B).



CQ267690 —UN—15MAR06

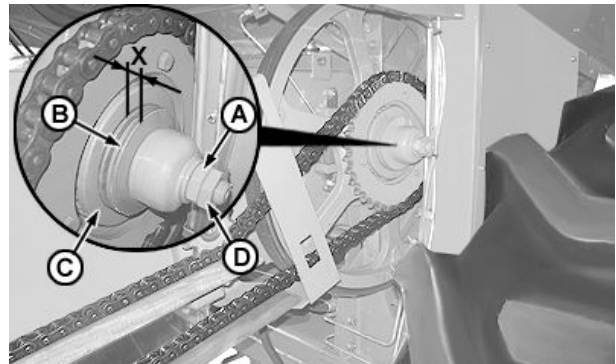
AG,GG05155,302 -19-05APR06-1/1

Adjusting Feeder House Slip Clutch

Safety slip clutch is adjusted through hex nut (A) pressure against three disk springs (B) which act on clutch (C).

To perform this adjustment, first loosen locknut (D) and hex nut (A). Then tighten hex nut (A) until distance (X) is 15—17,2 mm (0.6—0.68 in.).

Next, tighten locknut (D) to 140—160 N m (103.2—118 lb-ft).



CQ268480 —UN—21MAR06

AG,GG05155,303 -19-05APR06-1/1

Drive Chains Tension

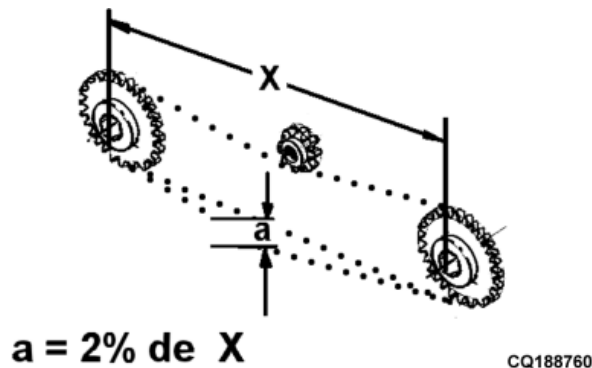
During the first few hours of operation, check that the tension on the chains is correct.

The flex on a chain should be about 2% of the distance between the shafts of the drive sprocket and idler sprocket, flexion being measured on a section of chain opposite the tensioner.

The chain must not flex on the tensioner side.

Example: If the distance between the shafts of the drive sprocket and idler sprocket is 250 mm (10 in.), the chain should not hang by more than 5 mm (0.2 in.).

Loose chains cause premature and excessive wear on the roller elements of the chain links, the sprocket teeth and possibly the drive components of the machine.



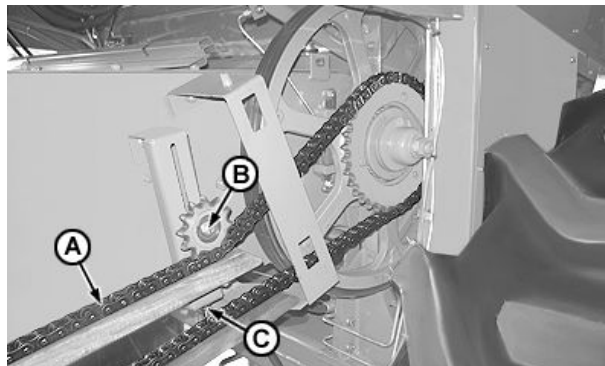
Chains that are too tight cause excessive pressure on the sprockets, the bearings and the shafts.

AG,GG05155,603 -19-04MAR02-1/1

CQ188760 —UN—19AUG99

Adjusting Feeder-House Drive for Header

Adjust tension of chain (A) by loosening bolt (B) and adjusting nuts (C).

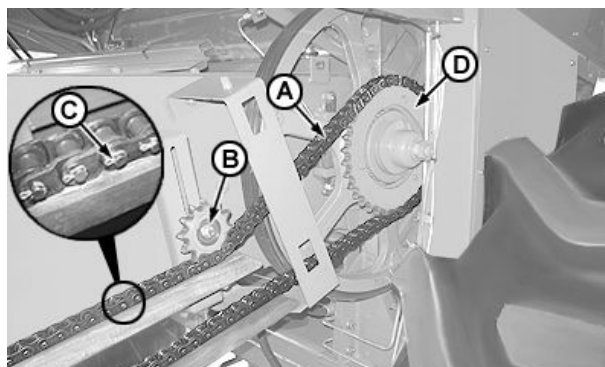


AG,GG05155,304 -19-20MAR06-1/1

CQ268070 —UN—21MAR06

Replacing Feeder House Drive Belt

1. Loosen tension of chain (A) through idler (B).
2. Disconnect chain (A) by removing cotter pin (B) and pin (C).
3. Remove chain (A) from sprocket (D).

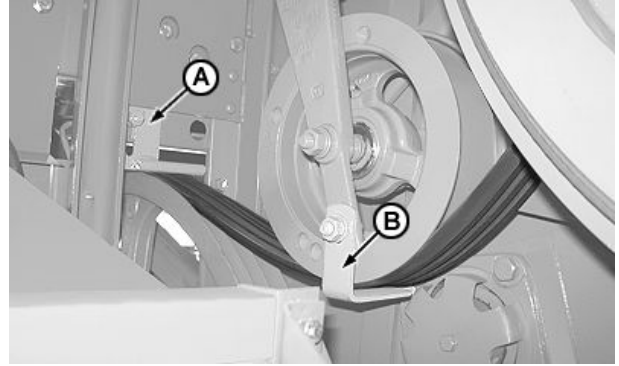


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OU64006,00000BC -19-05APR06-1/6

CQ267910 —UN—15MAR06

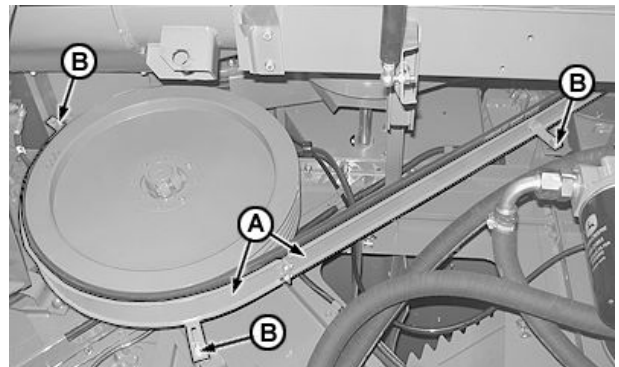
4. Remove guides (A) and (B).



CQ267920 —UN—15MAR06

OU64006,00000BC -19-05APR06-2/6

5. Remove bolts (B) and guides (A).



CQ262350 —UN—03JAN06

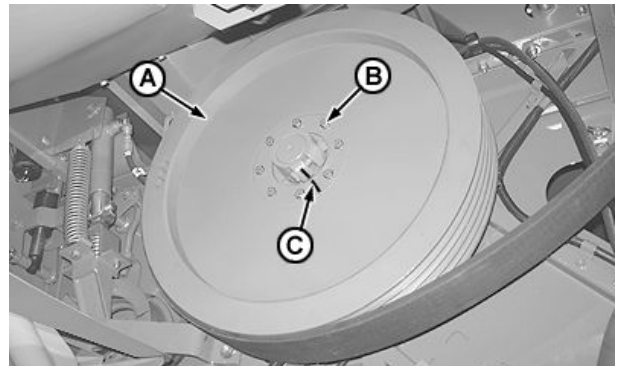
OU64006,00000BC -19-05APR06-3/6

6. Make a mark (C) on the pulley and hub.

NOTE: The mark will be used during installation to ensure balance.

⚠ CAUTION: The pulley (A) is heavy and awkward to handle. Danger of accidents!

7. Remove bolts (B) and pulley (A).

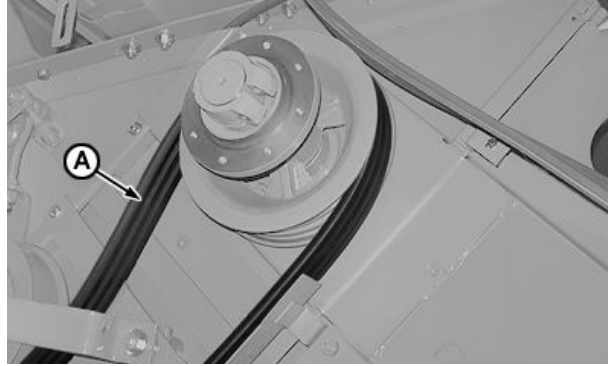


CQ262370 —UN—03JAN06

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OU64006,00000BC -19-05APR06-4/6

8. Replace belt (A).

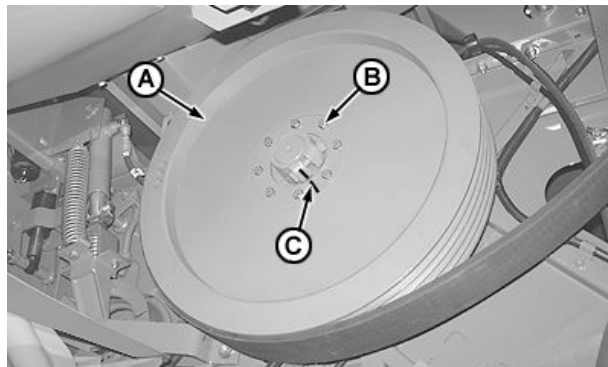


CQ268130 —UN—21MAR06

OU64006,00000BC -19-05APR06-5/6

9. Install all removed components following reverse procedure of removal. Observe the following points:

- Install pulley (A), align marks (C) and tighten bolts (B).
- After installing all components properly, carry out "Adjusting Threshing Unit Drive Belt Guide".



CQ262370 —UN—03JAN06

OU64006,00000BC -19-05APR06-6/6

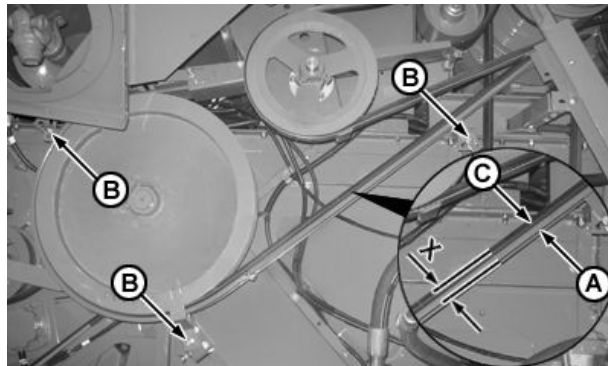
Adjusting Threshing Unit Drive Belt Guide

NOTE: To prevent accidents shut off engine before adjusting belt guide.

1. Start engine and engage threshing unit.
2. Turn off engine (with threshing unit engaged) and remove starter key.
3. Adjust play (X) between belt guide (A) and belt (C). Adjust through bolts of supports (B).

Specification

Play between belt guide and threshing unit drive belt—Play.....2—5 mm (0.08—0.2 in.)



CQ266590 —UN—15MAR06

AG,CO03622,2137 -19-05APR06-1/1

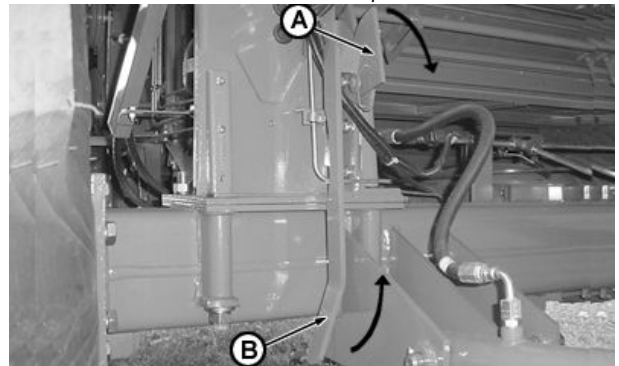
Stone Trap

Clean the stone trap periodically.

To clean, pull the latch (A) and then engage the lever (B) in the direction of the arrow until the trap opens completely.



Stone Trap



Stone trap opening lever

OU83340,0000444 -19-21OCT03-1/1

CQ220670 —UN—21OCT03

CQ220671 —UN—21OCT03

Cylinder Rasp Bars

The cylinder with bars is fitted with rasp bars with knurls to the left and to the right, placed alternately. If one bar needs replacing, the opposite bar must also be replaced not to unbalance the cylinder.

The bars have a small welding spot on each disk. To disassemble the bar, remove the welding with a grinder or a chisel. The new bar must also be welded the same way.

Tighten the bar fixing bolts to a torque of 78 Nm (7.8 kgm)(57 ft-lb).

IMPORTANT: Retighten the replaced bar fixing bolts after the first five hours work.

NOTE: When the bar grooves are under 4 mm deep replace them.



CQ179740

AG,GG05155,309 -19-23OCT03-1/1

CQ179740 —UN—19FEB99

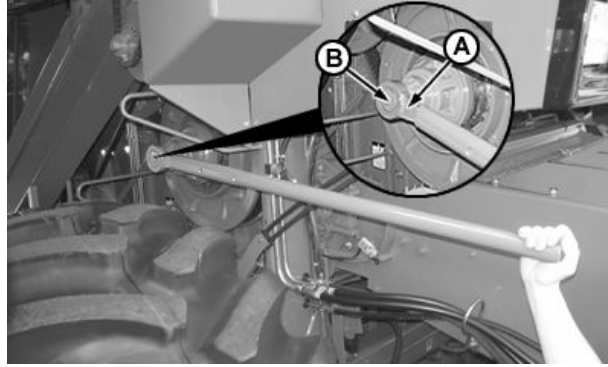
Rotating Threshing Cylinder by Hand

CAUTION: Shut off engine and remove starter key before turning back threshing cylinder.

Insert wrench (A) over spline (B) on threshing cylinder shaft.

Turn as required.

NOTE: The wrench is stored in box at rear ladder and the wrench extension is stored next to clean grain elevator housing.



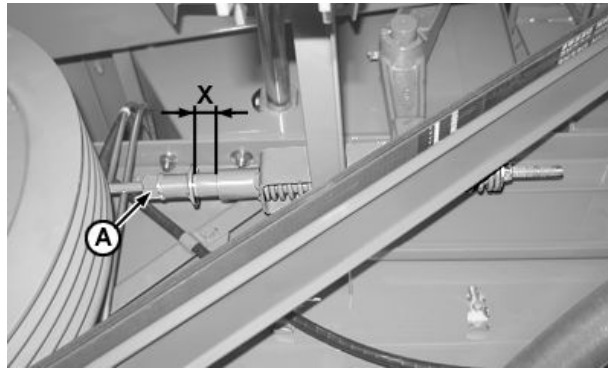
CQ260950 —UN—05SEP05

OU64006,00000C6 -19-06APR06-1/1

Threshing Unit Drive—Belt Tension

With engine shut off engage threshing unit lever. Belt tension is correct if distance (X) is between 20 and 30 mm. If necessary, readjust tension through adjustment screw (A).

IMPORTANT: Do not apply wax on belt.



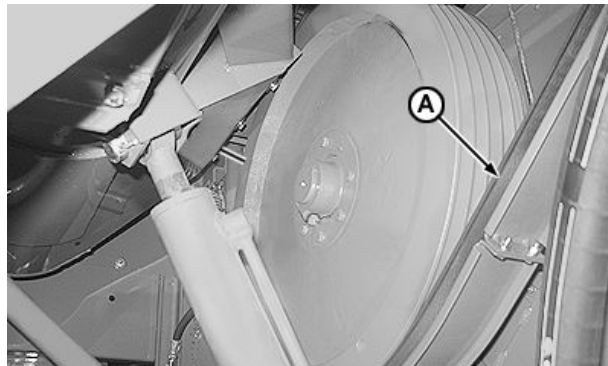
CQ267890 —UN—15MAR06

OU64006,00000BD -19-05APR06-1/1

Replacing Threshing Unit Drive Belt

NEVER replace belt (A) of threshing unit drive. Consult your John Deere dealer to perform this replacement.

A—Belt



CQ268520 —UN—24FEB06

AG,GG05155,313 -19-24FEB06-1/1

Adjusting Hydraulic Variable Speed Drive

IMPORTANT: When required, see your John Deere dealer for adjustment of the drive pulley halves on the cylinder and beater shaft.



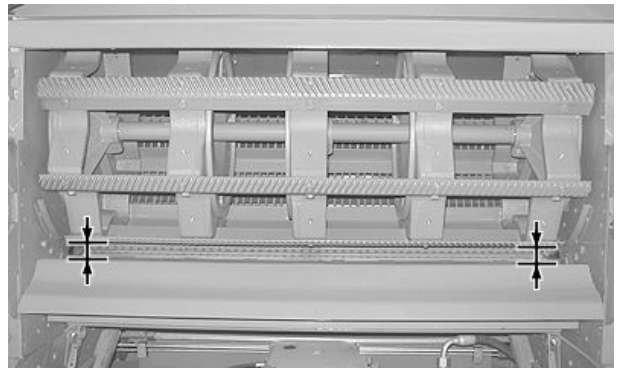
CQ247850 —UN—29JUL05

AG,CO03622,2138 -19-17AUG05-1/1

Concave and Cylinder Parallelism

At the factory the concave is horizontal and parallel to the cylinder.

Periodically check the concave-to-cylinder alignment so that the threshing unit operates optimally.



CQ267940 —UN—15MAR06

AG,GG05155,315 -19-30MAR06-1/1

Adjusting Concave-to-Cylinder Clearance

Adjust minimum clearance between concave and cylinder pulling up lever (A) completely.

Use threaded rod (B) to adjust rear part of concave and rod (C) to adjust front part of concave.

Rear clearance:

- **RASP BAR CYLINDER** Allow 4—5 mm (0.16—0.2 in.) of clearance between the highest cylinder bar (the one that projects the most) and the third concave bar from the rear.
- **SPIKE TOOTH CYLINDER:** Allow for a clearance of 8—10 mm (0.3—0.39 in.).

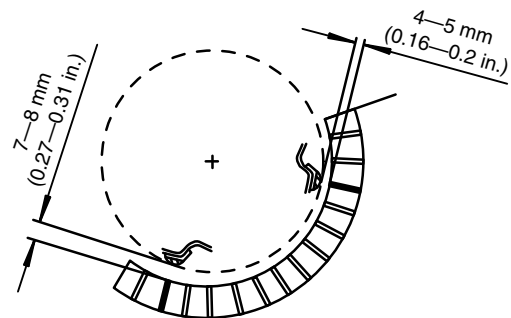
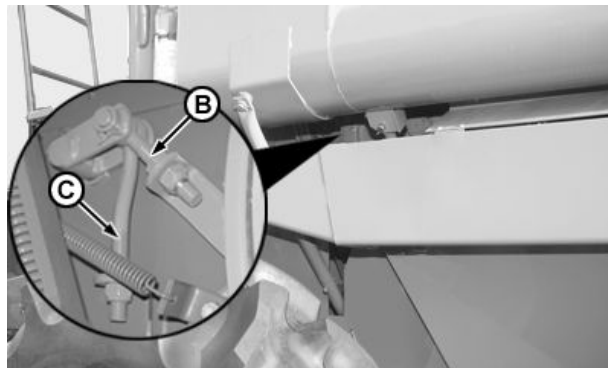
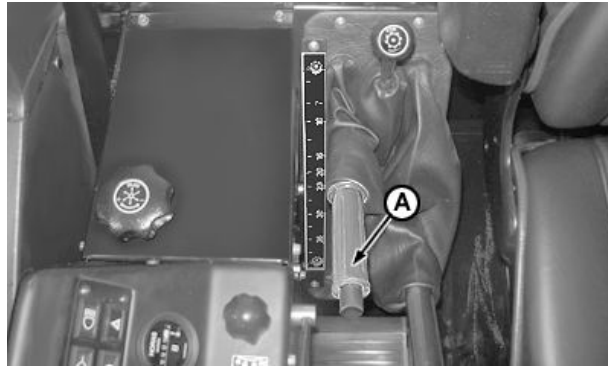
Front clearance:

- **RASP BAR CYLINDER** Allow 7—8 mm (0.27—0.31 in.) of play between the highest cylinder bar (the one that projects the most) and the second concave bar from the front.
- **SPIKE TOOTH CYLINDER:** Allow for a clearance of 11—13 mm (0.43—0.5 in.).

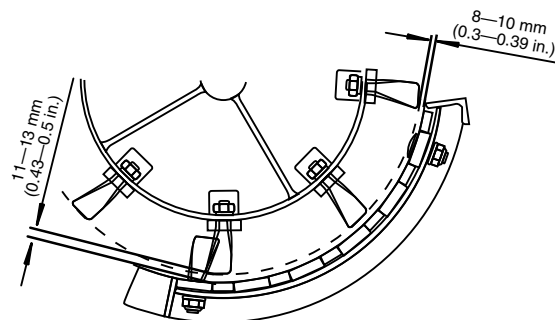
IMPORTANT: Carry out adjustment on both sides of combine.

NOTE: This adjustment should always be done when changing concave.

NOTE: All further clearance adjustments must be made via lever at operator's station. See "Concave Clearance Adjustment Lever" for more details.



Adjusting Concave-to-Rasp Bar Cylinder Clearance



Adjusting Concave-to-Spike Tooth Cylinder Clearance

OU64006,00000F3 -19-03OCT05-1/1

CQ253960 —UN—03OCT05

CQ253970 —UN—03OCT05

CQ247560 —UN—29JUL05

CQ248290 —UN—01AUG05

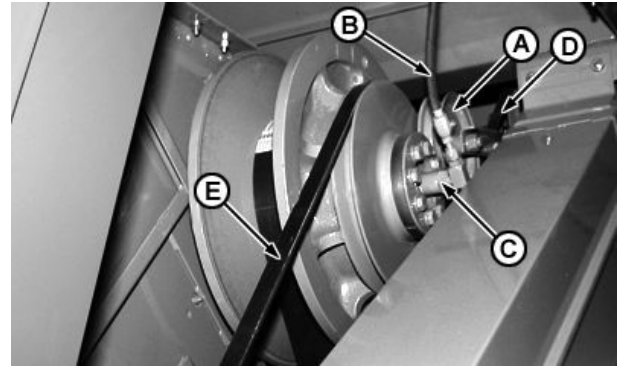
Preparing for Replacement of Cylinder Variable Speed Drive Belt

With the engine at top speed and the threshing unit engaged, use the cylinder speed control switch to fully open the beater shaft pulley (lowest cylinder speed). Disengage the threshing unit and stop the engine.

CAUTION: Do not adjust belt while the engine is running.

IMPORTANT: Before any disassembly, thoroughly clean the area around the connector (C) and hydraulic hose (B).

1. Remove hydraulic hose (B) and connector (C). Loosen and remove the clean grain elevator drive belt (D) and the separator and cleaner drive belt (E).
2. Remove the idler (A). Move support and bolt down and secure in this position.



A—Idler Pulley Wheel
B—Hydraulic hose
C—Connector

D—Clean grain elevator drive belt
E—Separator and cleaning unit drive belt

ML70882,0000867 -19-03SEP05-1/1

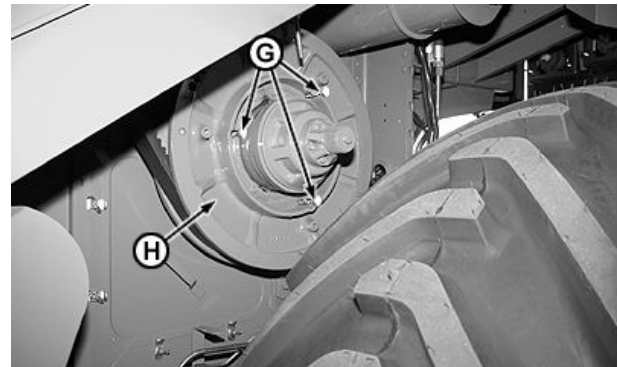
CQ247860 —UN—29JUL05

Removing Cylinder Variable Speed Drive Belt on Combines without Reduction Gear

1. On the beater's variable pulley, push the inner half pulley inward as far as possible.
2. There are three M12 x 150 bolts (G) in the tool box. Insert these into the threaded holes in the outer half pulley (H) of the cylinder shaft. When the bolt ends touch the inner half pulley wheel, evenly tighten them and the two halves will begin to separate and stay in that position.
3. Pull the belt with your hand over the outer half pulley wheel of the beater shaft pulley (do not force on belt).

NOTE: Before removing the belt, check that the belt is fully seated at the bottom of the cylinder shaft pulley wheel rim.

4. Pull the belt off over the cylinder shaft pulley. Dislocate the outer half pulley wheel of the cylinder shaft inward approximately 50 mm by unfastening the three bolts (G).



IMPORTANT: After changing the belt, remove the three bolts and store them in the tool box.

5. To install a new belt, follow this procedure in reverse order.

ML70882,0000868 -19-03SEP05-1/1

CQ248480 —UN—29JUL05

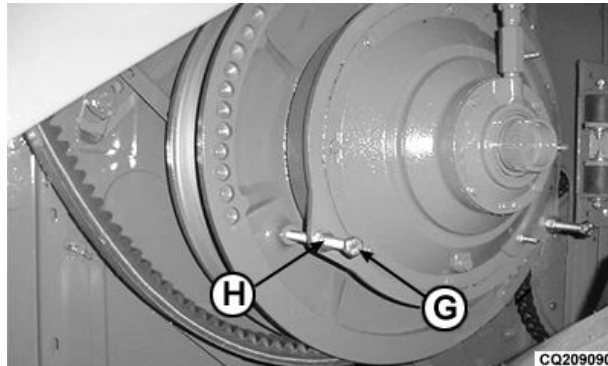
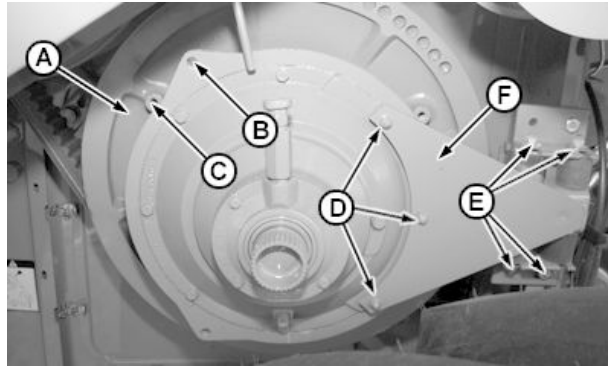
Removing Cylinder Variable Speed Drive Belt on Combines with Reduction Gear

1. Rotate half pulley (A) until hole (B) of reduction gear is aligned with threaded hole (C) of outer half pulley.
2. Remove nuts (D), (E) and support (F).
3. There are three M12 x 150 bolts (G) with nuts and washers in the tool box. Fully insert these bolts into the threaded bores in the outer half pulley (A) of the cylinder shaft. Evenly tighten three nuts (H) to fully separate the two halves.

NOTE: Before removing the belt, check it is fully seated at the bottom of the cylinder shaft pulley wheel rim.

4. Pull the belt with your hand over the outer half pulley wheel of the beater shaft pulley (do not force the belt).
5. Pull the belt off over the cylinder shaft pulley.
6. To install a new belt, follow this procedure in reverse order.

IMPORTANT: After changing the belt, remove the three bolts and store them in the tool box.



CQ247870 —UN—28JUL05

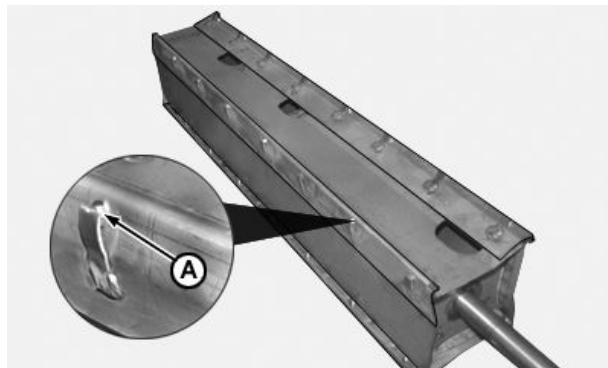
CQ209090 —UN—02OCT01

ML70882,0000869 -19-20JUN06-1/1

Special Beater Wear Plates

Rice combines are fitted with special wear plates in the beater.

IMPORTANT: Periodically check wear of plate and bolts (A) and replace any excessively worn bolts.



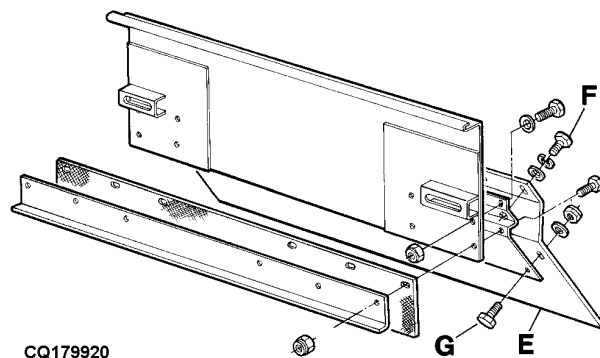
CQ252970 —UN—30SEP05

AG,GG05155,318 -19-24SEP05-1/1

Cylinder Deflector

IMPORTANT: Remove the cylinder deflector (E) bolted to the inside of the inspection cover before harvesting corn.

The deflector (E) is fixed by the hexagonal bolts (F) and (G).



CQ179920

CQ179920 —UN—22FEB99

AG,GG05155,319 -19-24FEB99-1/1

Tooth Concave Closure Plates

Closure plates are recommended for some crops such as barley and wheat, when these crops present threshing difficulties.

NOTE: *It is not necessary to remove the concave to install the plates.*

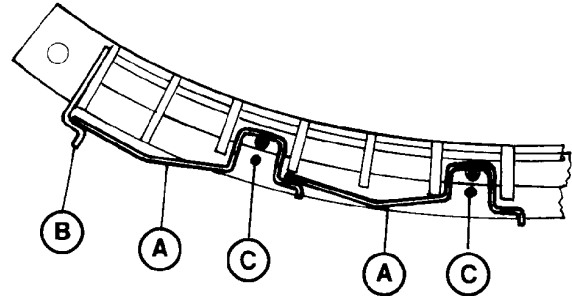
After harvesting, clean chaff from front support (B) to ensure that closure plate fits properly in concave.

Attach closure plate (A) with its fitting pins (C).

Begin harvesting with one cover plate. Then install the second if needed.



CQ179930



CQ179940

AG,GG05155,320 -19-24AUG09-1/1

CQ179930 —UN—22FEB99

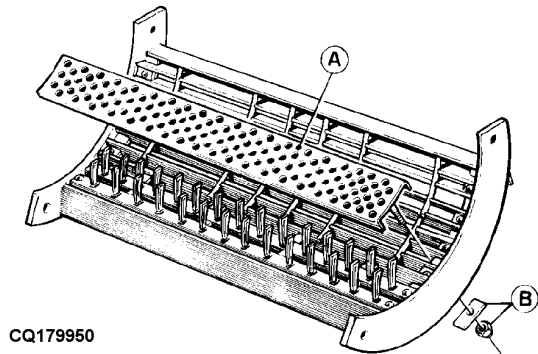
CQ179940 —UN—22FEB99

Toothed Concave Closure Plates

Can be used for harvesting soy and beans.

NOTE: *The concave does not need to be removed for their installation.*

- Fasten the closure plate (A) with fasteners and nuts (B).
- Begin harvesting with one closure plate. Later on, and if needed, install the second one.



CQ179950

AG,GG05155,321 -19-24FEB99-1/1

CQ179950 —UN—22FEB99

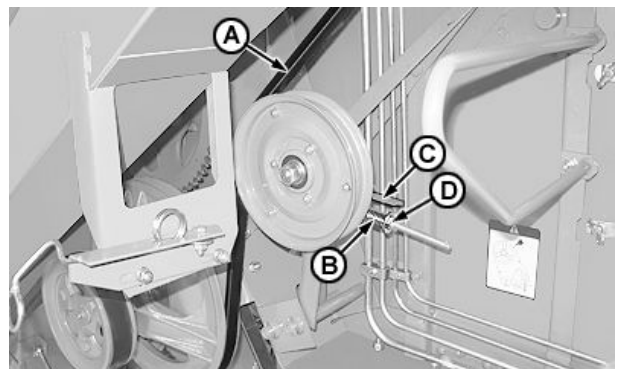
Straw Walker Drive

Belt Drive

Tension of belt (A) is correct when length of spring (B) is equal to length of tab (C). Adjustment is made by means of nut (D).

A—Belt
B—Spring

C—Indicator Tab
D—Nut



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OU64006,00000BF -19-05MAY06-1/2

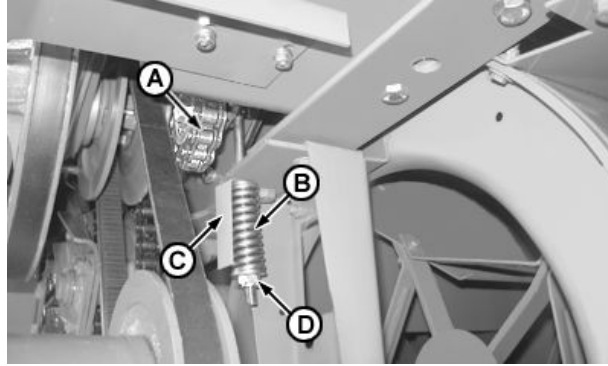
CQ267950 —UN—15MAR06

Chain Drive on Straw Walker Shaft

Chain tension (A) is correct when length of spring (B) is equal to length of tab (C). Adjustment is made by means of nut (D).

A—Chain
B—Spring

C—Indicator Tab
D—Nut



CQ267960 —UN—15MAR06

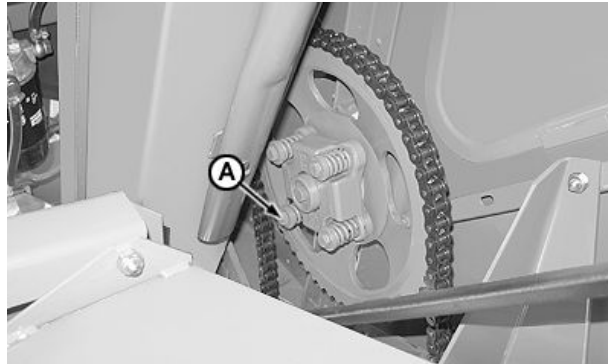
OU64006,00000BF -19-05MAY06-2/2

Slip Clutch

The straw walker is protected by a safety slip clutch. Adjust clutch through four bolts (A) tightening to specification.

Specification

Straw walker slip clutch
bolts—Torque..... 40 N·m (29.5 lb-ft)



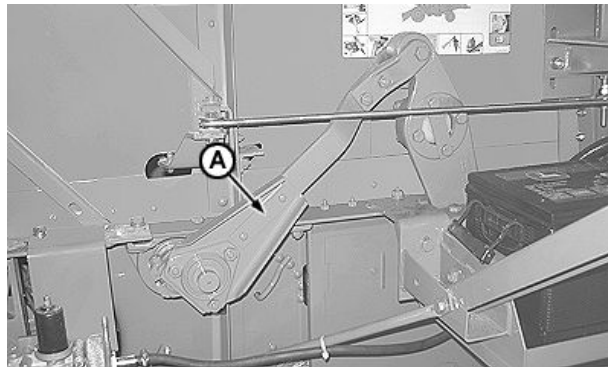
CQ267960 —UN—15MAR06

AG.GG05155,323 -19-30MAR06-1/1

Cleaner Arms and Connecting Rods

Whenever a rubber bushing of the arms and connecting rods (A) is replaced, place these in the center to tighten the bearings. Position them using the template. See your John Deere dealer.

IMPORTANT: While checking the combine after each harvest, inspect the arm and connecting rod rubber bushings and replace any damaged ones. Change the bushings every 500 hours.

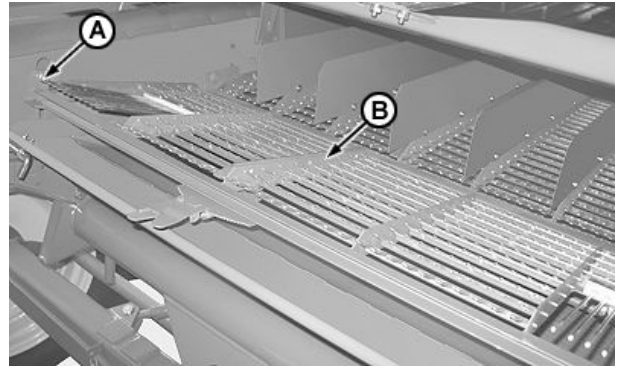


CQ268010 —UN—16MAR06

OU64006,00000C1 -19-14MAR06-1/1

Removing Chaffer Extension

1. Remove bolts (A) on both sides of combine.
2. Pull back extension (B).

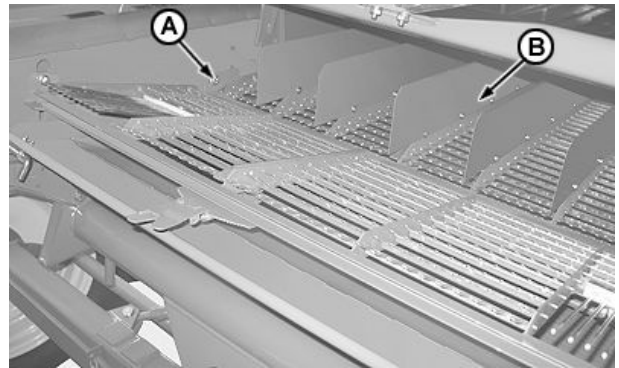


CQ268020 —UN—15MAR06

OU64006,00000C2 -19-30MAR06-1/1

Removing Chaffer

1. Carry out "Removing Chaffer Extension".
2. Remove bolt (A) on both sides of combine.
3. Pull back chaffer (B).

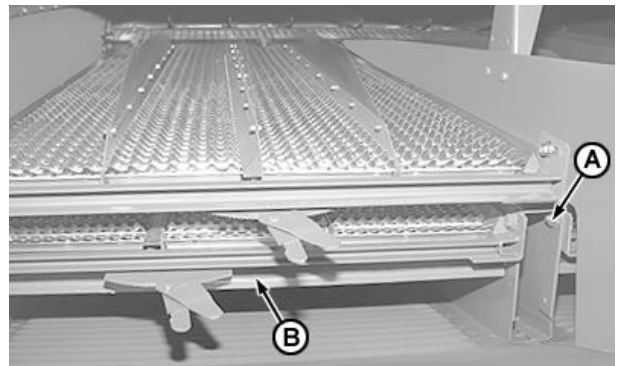


CQ268030 —UN—15MAR06

OU64006,00000C3 -19-02FEB12-1/1

Removing Grain Sieve

1. Carry out "Removing Chaffer".
2. Remove bolt (A) on both sides of combine.
3. Pull back grain sieve (B).



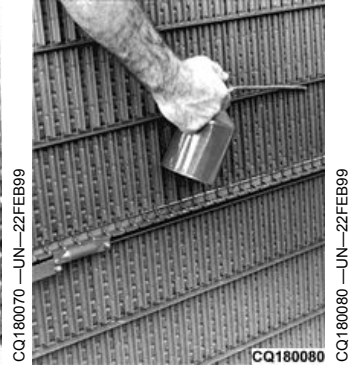
CQ268040 —UN—15MAR06

OU64006,00000C4 -19-02FEB12-1/1

Cleaning the Shoes

To clean them, use a steel brush.

NOTE: With the aid of an oiler, lubricate the scales articulations with a medium viscosity oil.



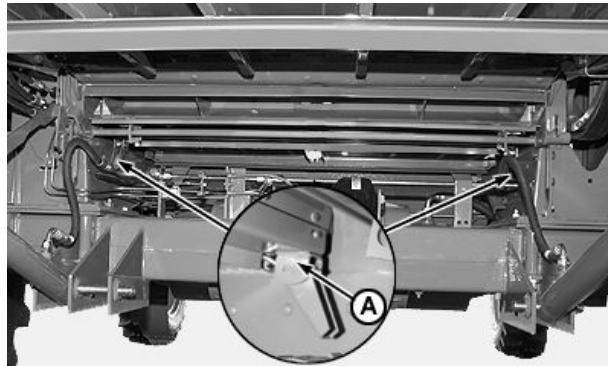
AG,GG05155,329 -19-24FEB99-1/1

Opening The Pan

The front of the pan (under the removable concave) can be removed for quick and easy cleaning.

NOTE: Clean the pan daily.

Push engage (A) manually.
Pull back the pan and remove it.

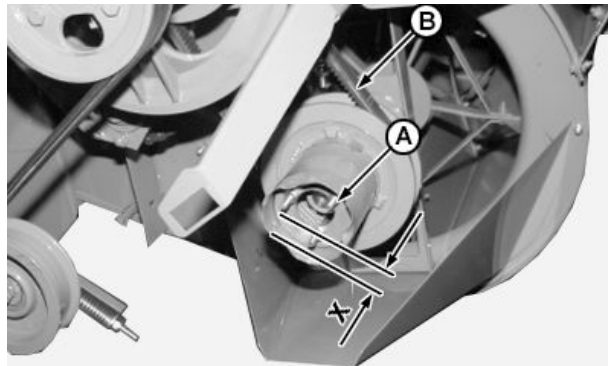


AG,GG05155,330 -19-21AUG09-1/1

Adjusting Fan Variable Speed Drive Belt

The fan drive belt (B) is correctly adjusted when the distance (X), as measured from the outer edge of the spring box to the spring retaining washer, is 20 to 30 mm (0.79 to 1.18 in.).

Use nuts (A) to adjust.

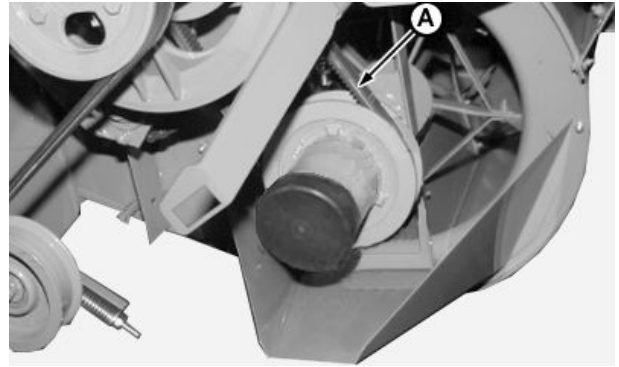


AG,CO03622,2142 -19-01AUG05-1/1

Replacing Fan Variable Speed Drive Belt

NEVER replace belt (A) of fan. Consult your John Deere dealer to perform this replacement.

A—Belt



CQ266540 —UN—02MAR06

AG.CO03622,2143 -19-02MAR06-1/1

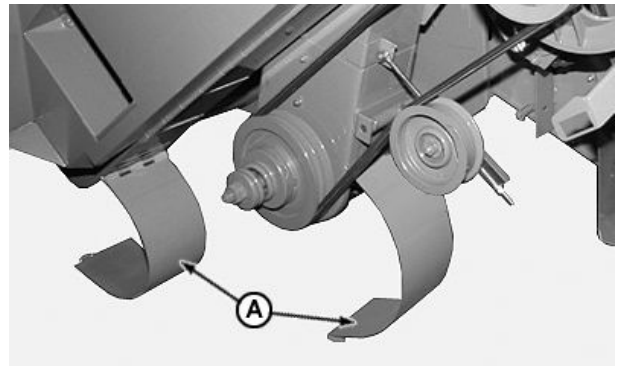
Tailings Elevator and Clean Grain Elevator

Open the elevator doors (A) at the end of each working day and run the elevators to clean them out. Clean them also before harvesting a different crop.

Leave the hatches open when not harvesting.

NOTE: When closing the lower inspection hatches make sure that they seal perfectly to avoid grain loss.

Check elevator chain tensioning after the first few hours of operation.



CQ248580 —UN—01AUG05

AG.CO03622,2049 -19-01AUG05-1/1

Adjusting Clean Grain Elevator Conveyor Chain Tension

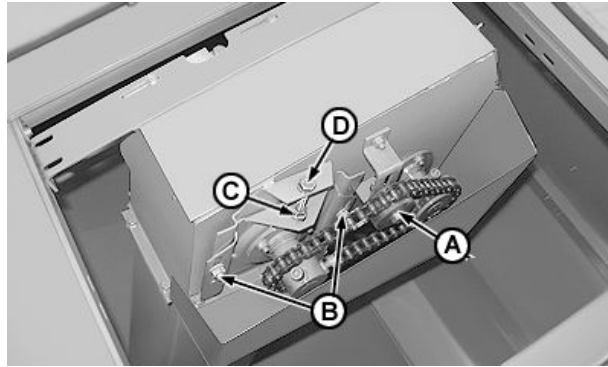
1. Loosen chain tension through idler (A).
2. Loosen nuts (B).
3. Loosen nuts (C).
4. Adjust conveyor chain tension through adjustment screws (D).

NOTE: Adjust maintaining the same distance (X) on both sides of elevator.

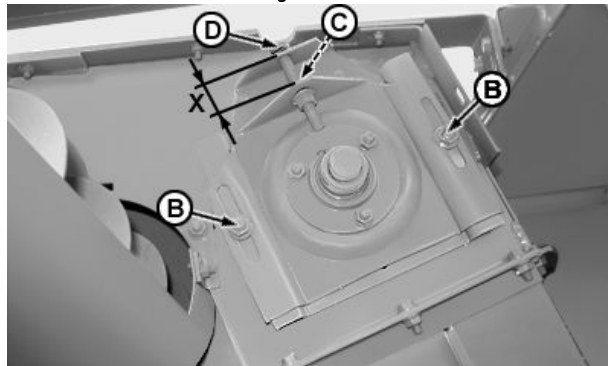
5. Retighten nuts (B) and (C).
6. Adjust tension of upper auger drive chain of grain tank. See "Adjusting Grain Tank Upper Auger Drive Chain".

A—Tensioner
B—Nuts
C—Nuts

D—Adjusting screws
X—Distance



Right-hand side



Left-hand side

AG,CO03622,2055 -19-24MAR06-1/1

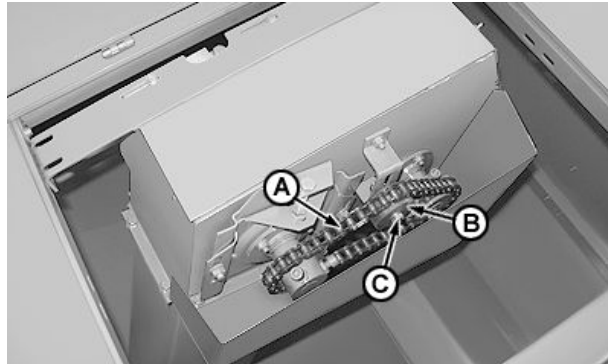
CQ266100 —UN—23MAR06

CQ266110 —UN—23MAR06

Adjusting Grain Tank Upper Auger Drive Chain

Remove wing nut and open cover.

Adjust tension of chain (A) through idler (B). Loosen nut of bolt (C) and move idler (B) as required.



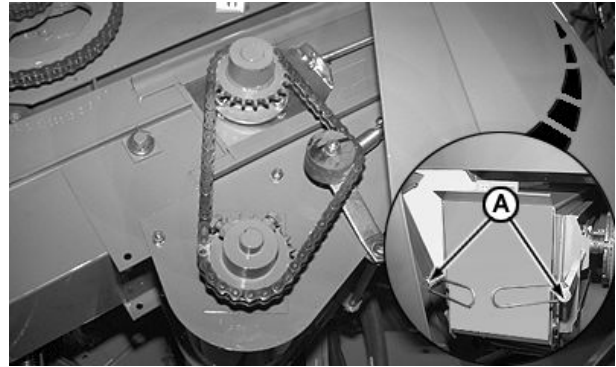
AG,GG05155,339 -19-31MAR06-1/1

CQ268050 —UN—15MAR06

Tailings Elevator Conveyor Chain Tension

The tailings elevator conveyor chain should be tightened so that the first chain link behind the sprocket can be moved 6 to 10 mm (0.2 to 0.4 in.).

To adjust tension, turn both handles (A) at elevator head.



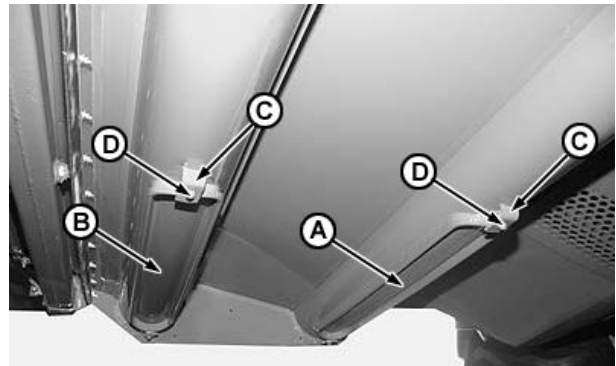
ML70882,0000810 -19-22MAR06-1/1

CQ268820 —UN—22MAR06

Elevator Augers

IMPORTANT: Thoroughly clean these areas when harvesting a different crop for seeds and at the end of the harvesting period.

Remove nuts (D) and clamps (C). Remove covers (A) and (B).



AG,GG05155,335 -19-01AUG05-1/1

CQ247110 —UN—29JUL05

Adjusting Tailings Elevator Drive Belt

The tailings elevator is driven by the beater pulley via the elevator slip clutch.

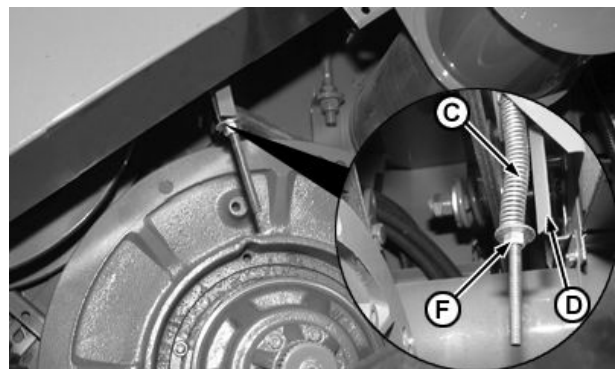
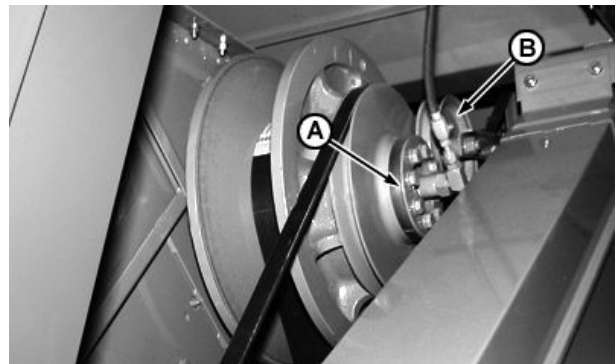
Belt (A) is automatically tensioned by the idler pulley wheel (B).

To obtain the appropriate tension, the spring backing washer (C) should be level with the indicator tab (D).

Effect adjustment with nut (F).

A—Belt
B—Idler pulley wheel
C—Spring

D—Indicator Tab
F—Nut



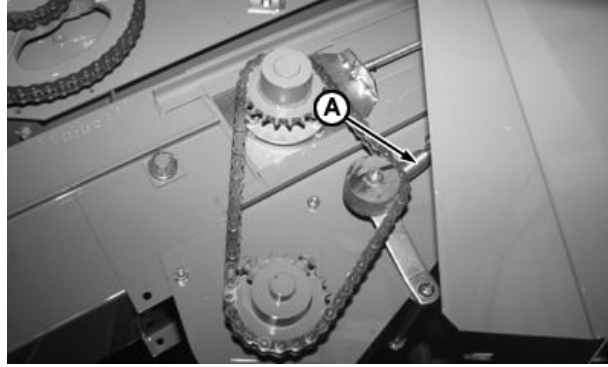
AG,CO03622,2144 -19-01AUG05-1/1

CQ248010 —UN—29JUL05

CQ248020 —UN—29JUL05

Adjusting Tailings Auger Drive

The chain is automatically tightened by spring (A).



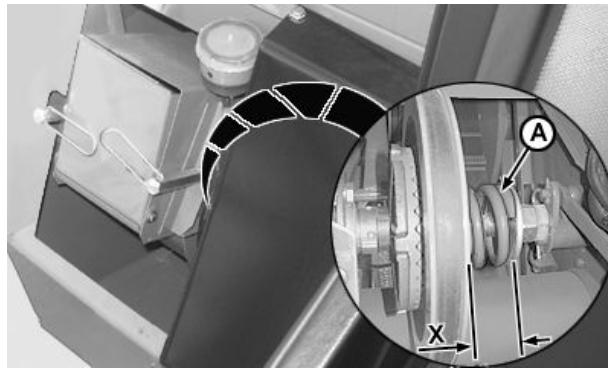
CQ247980 —UN—29JUL05

AG,CO03622,2146 -19-17AUG05-1/1

Adjusting Tailings Elevator Slip Clutch

The slip clutch is correctly adjusted when length (X) of spring (A) measures 60 mm (2.36 in.).

NOTE: Do not lubricate the slip clutch.



CQ253440 —UN—30SEP05

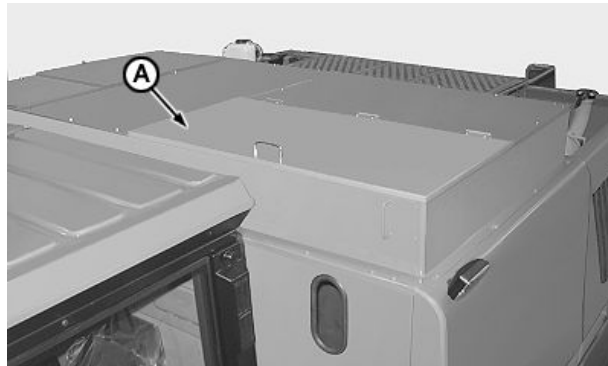
OU64006,00000ED -19-27SEP05-1/1

Grain Tank Cover

Grain Tank Cover - A-Type

Access to A-Type grain tank is through cover (A) using ladder at side of cab.

⚠ CAUTION: Avoid accidents, if it is necessary to enter the grain tank for any reason, shut off engine before doing so.



CQ288860 —UN—21MAR06

Continued on next page

DF67602,0000216 -19-20DEC13-1/2

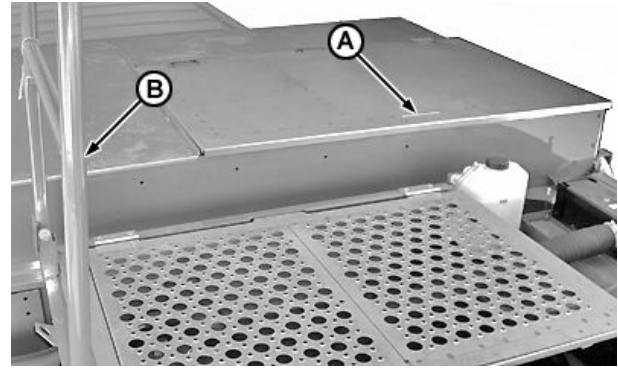
Grain Tank Cover - B-Type

Access to B-Type grain tank is through cover (A) using access via engine platform.

CAUTION: Avoid accidents, if it is necessary to enter the grain tank for any reason, shut off engine before doing so.

Use handrail (B) while walking on engine platform.

Do not walk or deposit weights on grain tank cover.

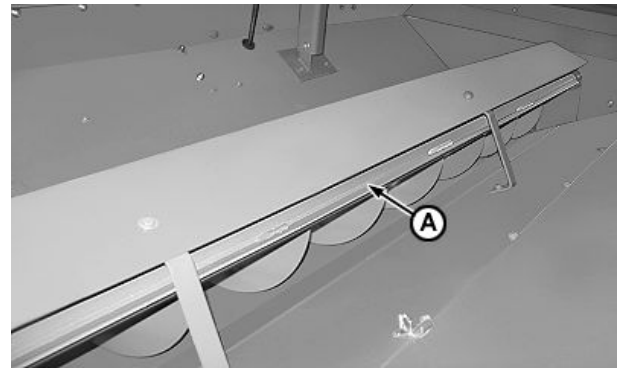


CQ290159 —UN—25NOV13

DF67602,0000216 -19-20DEC13-2/2

Unloading Auger Feeder

The grain tank unloading auger has a fluted cylinder (A) to ensure a continuous flow of material.



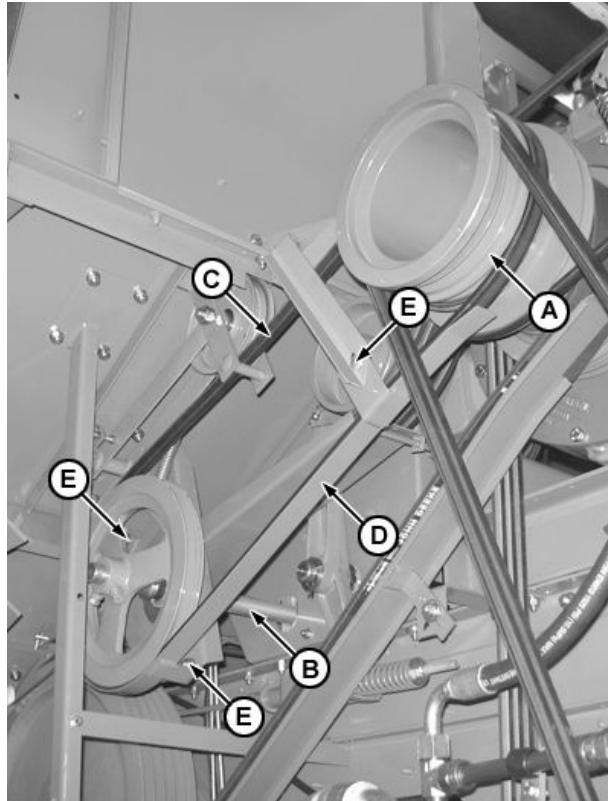
CQ268490 —UN—21MAR06

OU64006,00000CF -19-30MAR06-1/1

Unloading System Drive

The system is driven by belt (C) from the engine pulley (A) to jackshaft (B).

Adjust belt guide (D) after loosening bolts (E) to obtain uniform spacing of 3 to 5 mm between belt and guide with belt tightened.



CQ268350—UN—21MAR06

OU64006,00000CB -19-30MAR06-1/1

Unloading Auger Feeder Drive

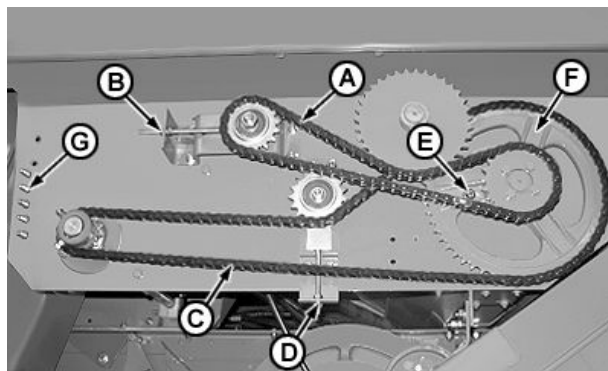
The drive of the unloading auger feeder is powered by chain (A). Adjustment is made by means of nut (B).

The drive of the unloading auger is powered by chain (C). Adjustment is made by means of nut (D).

Adjust the chains as described in “Chain Tensions”.

IMPORTANT: Bolt (E) is a safety (shear) bolt which will break on overload in order to protect the drive system. Always replace with original JOHN DEERE part. Tighten it sufficiently to bring the drag arm smoothly in contact with sprocket (F).

NOTE: The combine holds spare shear bolts (G).



CQ268060—UN—30MAR06

OU64006,00000C5 -19-30MAR06-1/1

Automatic Unloading Device

There is a safety device that is activated by a cable and does not allow the unloading auger to be driven if the tube is not in the working position. The steel cable must be tensioned when the unloading auger is open.

Before adjusting the cable, remove the side panel from the lever console, left hand side, and open the left hand side shield.

Adjust the cable (A) with the adjusting nut (B) so that length (X) is of 39 mm.

Once the adjustment is done, fasten the nut (B) with the jam nut (G).

If the cable is overstretched, shorten it with the clamp (E).

A - Cable

B - Adjusting Nut

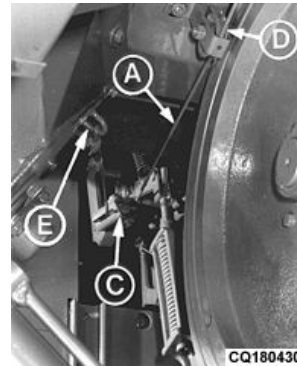
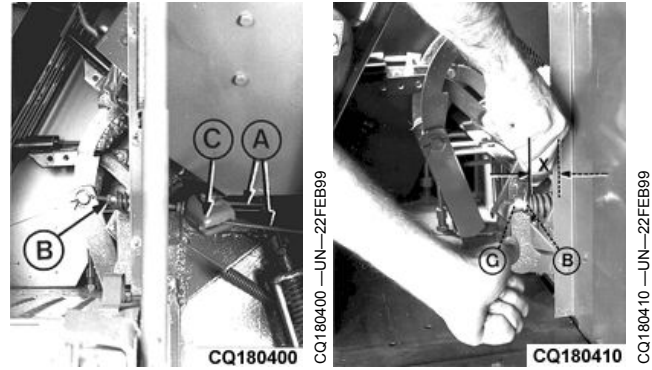
C - Sheave

D - Guide Sheave

E - Clamp

G - Jam Nut

X - 39 mm



AG,GG05155,341 -19-24OCT03-1/1

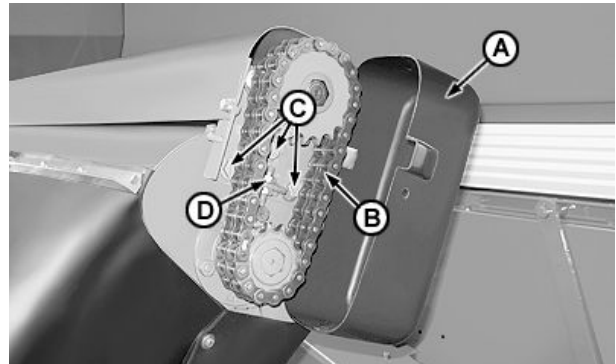
Unloading Auger Drive

The unloading auger is driven by a "U"-joint drive shaft located at its upper part.

Open cover (A).

To adjust tension of chain (B), loosen nuts (C) and perform adjustment through nuts (D).

Retighten nuts (C) and reinstall cover (A).



AG,GG05155,343 -19-30MAR06-1/1

Replacement of Straw Chopper Knives

CAUTION: Always jam the impeller to prevent accidents when replacing knives.

IMPORTANT: Note the following to avoid unbalancing the straw chopper:

Excessive vibration may be caused by broken impeller knives. Immediately remove the broken knife and the knife that is directly opposite, and install replacement knives.

Do not sharpen knives. Replace knives only. This ensures that all the knives on the impeller weigh approximately the same.

Only use grade 10.9 bolts with self-locking nuts.

Specification

Bolt—Torque..... 50 – 60 N·m (36 – 44 lb – ft)



Mount bolts from left to right (facing the direction of forward travel).

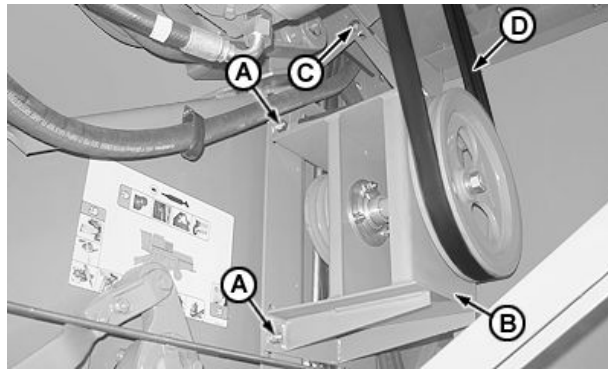
AG,CO03622,2047 -19-01AUG05-1/1

CQ247130 —UN—29JUL05

Straw Chopper Drive Belt Tension

Tensioning Main Belt

- Loosen four screws (A) that sustain support (B) of intermediate pulley.
- Loosen screw (C) of support bracket.
- Tension belt (D) and retighten previously loosened screws.



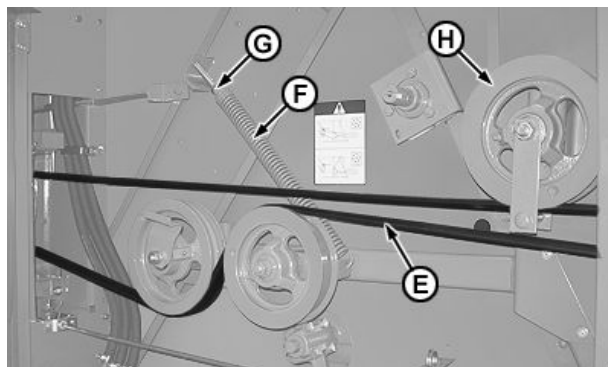
OU64006,00000C3 -19-30MAR06-1/2

CQ268100 —UN—21MAR06

Tensioning Intermediate Belt

Belt (E) is automatically tensioned by spring (F). Use nut (G) for tension adjustment.

Pulley (H) is not for tensioning. Its only function is to avoid belt misalignment or oscillation.



OU64006,00000C3 -19-30MAR06-2/2

CQ268110 —UN—21MAR06

Storage

At the End of Each Season

If possible, store the combine in a dry, sheltered place.

Clean thoroughly the inside of the combine (through the work windows) and its outside. Organic residue help build up humidity causing oxidation.

NOTE: If high pressure water is used (for example, from a car wash), to proceed with washing the combine, do not point the water stream towards the bearings.

Remove all trapezoidal belts.

Clean all belts. Do not use aggressive cleaners. Do not use cleaning agents based on gasoline, benzene or similar.

The recommended procedure is to use a cloth dipped in: liquid ammonia,

soap, or

a 1:10 base glycerin and solvent mixture.

Store the belts free of tension in a fresh, dark place, avoid deforming them.

Thoroughly clean all the transmission chains and grease them with a brush of thick oil to avoid oxidation.

Thoroughly clean all the augers and clean grain and tailings elevators, leave the lower and top elevator openings open.

Thoroughly clean the grain tank and the unloading auger.

Clean all shoes.

Lubricate the underside of the feeder house to avoid corrosion. Lubricate the combine according to the lubrication charts. Grease threads of adjusting bolts, etc. Relieve tension on the springs.

Touch up all places where paint is damaged.

Strut the combine onto blocks to level it or lower the header onto a horizontal dry base. Lower the feeder house.

Lubricate all the metallic surfaces on the hydraulic cylinder pistons and retract them as far as they go.

Strut the machine with wood blocks so that the wheels do not touch the ground. Leave tires inflated.

If the combine should be parked in the open air, raise it and remove the wheels. Store the wheels in a cool, dark and dry place.

Lubricate all the linkages and friction points that need lubrication.

List all the servicing and maintenance work to be carried out before the next season and perform it on time. Your Dealer can perform its part better between seasons.

AG,CO03622,2171 -19-30SEP99-1/1

At the End of Each Season—Engine

If the combine is to be stored for a long time (between seasons), the metallic engine parts should be protected against corrosion and deposits should be avoided in the fuel feeding system.

Protect the feeding system, etc as described below:

Clean outside of the engine with a good solvent.



CAUTION: DO NOT use gasoline!

Drain, wash and replenish the engine cooling system with clean coolant every two years (see the "Fuel, Lubricants and Coolant" Section).

IMPORTANT: Use only the recommended John Deere coolant in the cooling system.

Open the rotating radiator filter and clean thoroughly the radiator fins with compressed air or water without pressure..

Drain the engine oil and replace the filter. Drain oil while it is still warm. Replenish the engine crankcase with oil of quality and viscosity specified in the "Fuel, Lubricants and Coolant" Section).

Empty out the fuel tank completely and wash it with clean fuel, then fill it fully with fuel to avoid condensation.

Check the state of the fuel filters and clean them. Change them if needed.

Clean the engine air intake, replace the primary air filter and the safety elements.

Apply some petroleum jelly to the battery terminals and cables.

Periodically run the engine at half throttle.

AG,CO03622,2172 -19-17MAY02-1/1

At the End of Each Season—Air-Conditioner

Clean the condenser.

Remove the compressor belt and store it with the other belts.

AG,CO03622,2173 -19-30SEP99-1/1

At the Start of Each Season—Combine

Before the start of each season the combine must be serviced in detail. This way its good operation is ensured avoiding breakdowns that can cause trouble at harvesting time.

Clean the combine carefully inside and outside, if this procedure was not carried out at the end of the previous season. Reinstall all belts and check their tensions.

Adjust the tension of the belts and make sure the clean grain and tailings elevator chains are well clean.

Clean the slip clutch (ratchets). Then adjust the tension of the springs (see "Slip Clutches" in the "Maintenance - Transmissions/Guards" Section).

Close elevator covers.

Lubricate the combine thoroughly according to the lubrication chart.

After running the combine at half throttle for half an hour. Check the bearings for overheating.

Check the tire inflation pressures.

Service the combine and make sure that all bolts are tight and cotter pins are in their correct place.

AG,CO03622,2174 -19-17MAY02-1/1

At the Start of Each Season—Engine

Check all the hose clamps and the coolant level.

Drain the engine oil and fill with fresh oil, if this service was not carried out at the end of the season. See the "Fuel, Lubricants and Coolant" Section.

Check all seals and coolant level.

Check the battery charge and the electrolyte level. Recharge the battery if needed.

Crank the engine for 5 seconds without starting it. This will make the engine be correctly lubricated inside before starting.

AG,CO03622,2175 -19-09OCT03-1/1

At the Start of Each Season—Air-Conditioning System

To ensure good operation of the air-conditioning system a yearly servicing is necessary.

Clean or replace air filter.

Clean or replace recirculation filter.

Install and tension the compressor transmission belt.

It is more convenient if your Dealer checks the operation of the air-conditioning system completely before starting a new season.

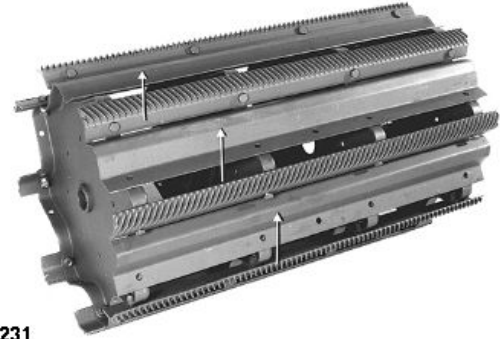
 **CAUTION: The air-conditioner system on your combine should be serviced only by specialized personnel at your Dealer.**

AG,CO03622,2176 -19-30SEP99-1/1

Accessories

Bar Cylinder Closure Plates

They are specially indicated for harvesting corn, and keep the ears out of the cylinder as well as increasing its inertia.



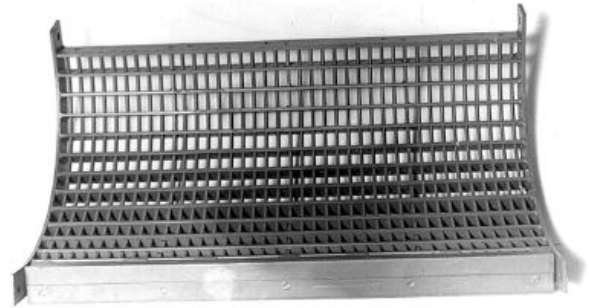
ZCQF1231

ZCQF1231 —UN—04APR96

AG,GG05155,345 -19-24FEB99-1/1

Small Grain Bar Concave

For small grain combines, such as wheat and grasses in general, we recommend replacing the special bar concave that features smaller spaces between the wires.



ZCQF1920

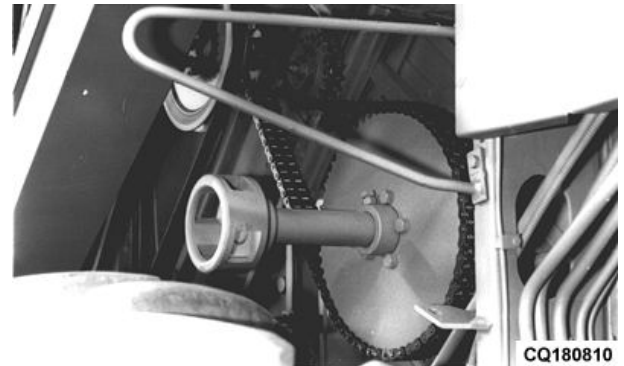
ZCQF1920 —UN—04APR96

AG,GG05155,346 -19-24FEB99-1/1

Chain Transmission to the Cylinder

Replaces the belt transmission, and is indicated for when cylinder speeds of under 500 rpm are desirable. According to the pair of gears used, the following cylinder speeds are obtained:

Number of Gear Teeth Beater Shaft-Cylinder Shaft	Cylinder RPM	Number of Chain Links
17-96	156	117
24-96	220	119
17-59	253	94
17-42	356	84
24-59	358	97
24-42	502	88



CQ180810

CQ180810 —UN—22FEB99

AG,GG05155,347 -19-24OCT03-1/1

Cover for the Stone Trap

It is indicated for corn harvesting, and keeps the ears from being deposited in the stone trap.



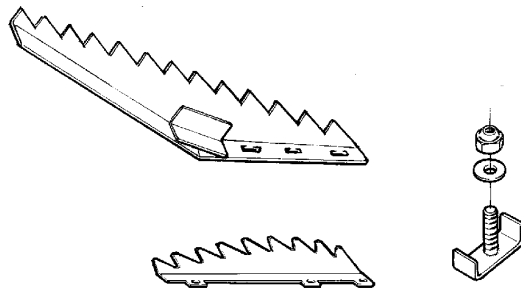
CQ180820

CQ180820 —UN—22FEB99

AG,GG05155,348 -19-24FEB99-1/1

Fishback Kit for Straw Walkers

This is a fishback kit with the corresponding hardware. Recommended for high-productivity crops with elevated volume of straw and chaff for straw walker performance optimization



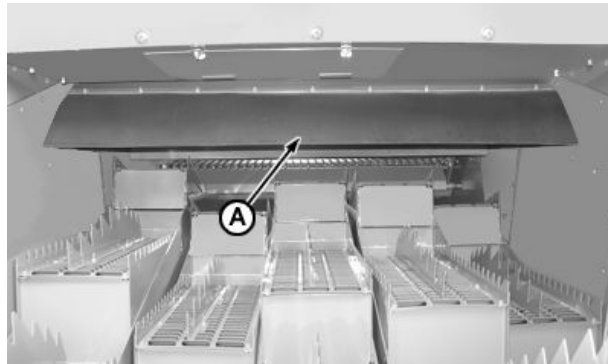
CQ180830

CQ180830 —UN—22FEB99

AS60558,0000E1F -19-11JUL08-1/1

Second Straw Walker Curtain

In case there are problems to separate grain and straw on straw walkers, it is recommended to install a 2nd curtain (A) that slows down straw flow and increases efficiency of separation. Also recommended for corn harvesting combines.

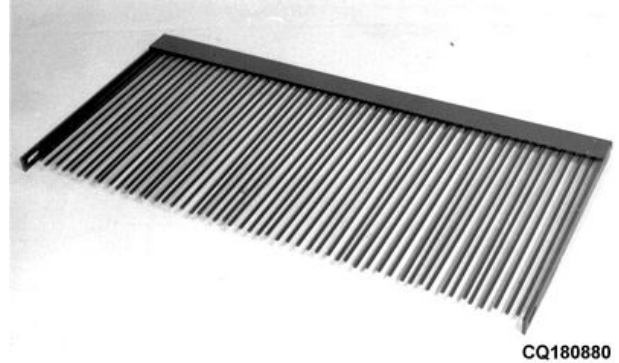


CQ251240 —UN—19SEP05

OU64006,00000D1 -19-21SEP05-1/1

Chaffer Extension

It is indicated for harvesting on very inclined crops minimizing the loss of grains.



CQ180880

CQ180880 —UN—22FEB99

AG,GG05155,352 -19-24FEB99-1/1

Special Kit for Corn

This is a set of accessories recommended to optimize combine performance when harvesting corn.

Consult your John Deere dealer to obtain specific information and recommendations.

AG,CO03622,2022 -19-30MAR06-1/1

Multiple Calibrator

Multiple calibrator (CQ80272) is a special adjustment tool that helps maintain factory performance of the brake, clutch and Posi-Torq mechanisms.

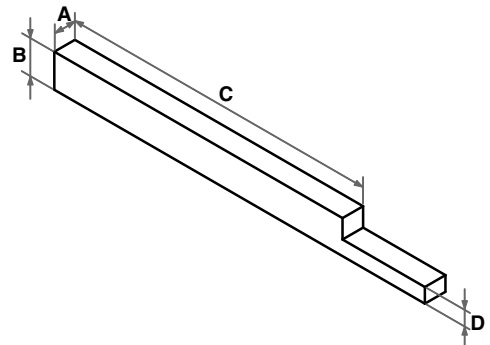
We recommend using it whenever adjusting these mechanisms.

Measurement "A" is 5 mm. It is used whenever carrying out adjustments to parking brakes, clutch and, as minimum play between pulley halves in Posi-Torq drive lower unit.

Measurement "B" is 8 mm. Use it as maximum play between pulley halves in Posi-Torq drive lower unit.

Measurement "C" is 70 mm. Use it whenever adjusting the chain tension of the straw walker drive to determine the spring length.

Measurement "D" is 3,5 mm. Use it whenever carrying out parking brake adjustment.



CQ274590 —UN—23JUN06

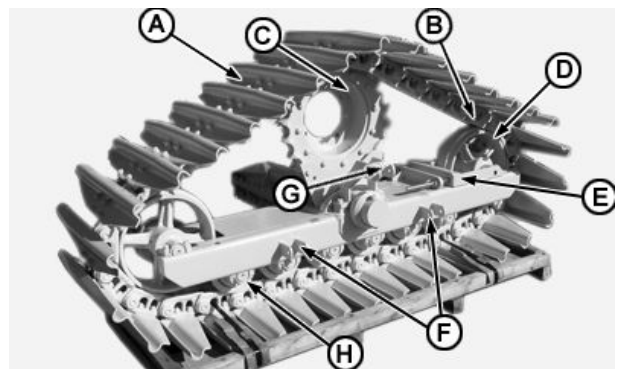
The multiple calibrator can be acquired through your John Deere dealer.

AG,GG05155,359 -19-23JUN06-1/1

Track Components

- A—Shoes
- B—Steel track chain
- C—Drive wheel
- D—Guide wheels

- E—Tensioner system
- F—Connection points for the lower arms of the tractor lift system
- G—Connection point for the third arm of the tractor lift system
- H—Lower rollers



CQ248441 —UN—01AUG05

OU64006,0000DD -19-21SEP05-1/1

Preparing the Combine

On level and flat ground, raise the Combine front axle so as to free one wheel.

CAUTION: Use equipment that is compatible with the Combine weight. In case a hydraulic jack is used, position it correctly under the axle, in the position shown.

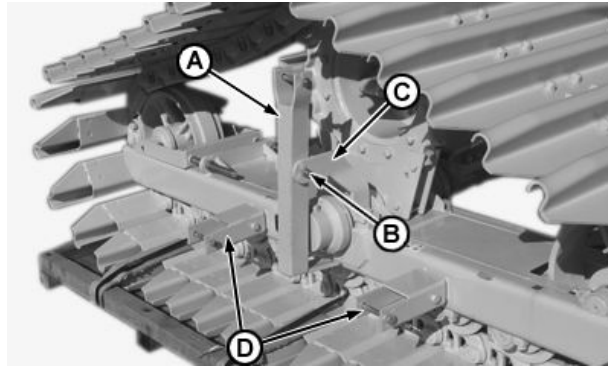


OU83340,00003E9 -19-07NOV03-1/1

CQ218750 —UN—14AUG03

Fastening Steel Track

1. In order to lift the steel track with aid of a tractor, attach support (A) with screw (B) to point (C), and supports (D) with their respective screws in positions shown. Then couple the tractor's lifting system to existing points.



OU83340,00003EC -19-13FEB06-1/2

CQ248443 —UN—29JUL05

2. Considering turning direction, approximate steel track to final drive, propping up drive wheel (E).
3. Position support axle (G) correctly on combine front axle by attaching it with twelve bolts (H) to following torque:

Specification

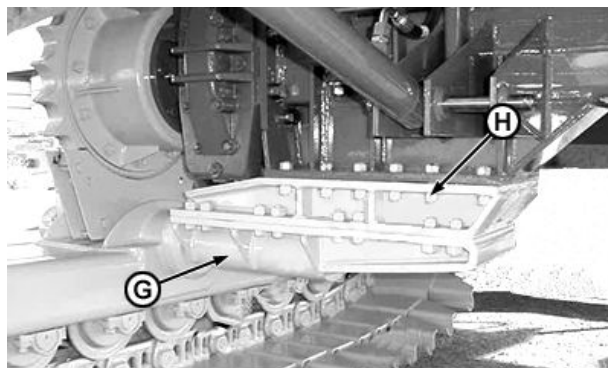
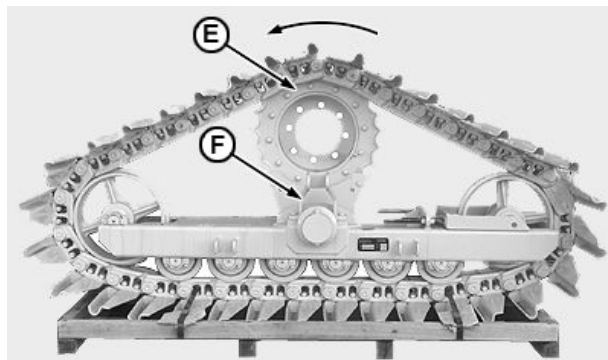
Steel track support axle
bolts—Torque..... 240 N·m (175 lb-ft)

4. Then attach steel track drive wheel to bolts and tighten to following torque:

Specification

Drive wheel
bolts—Torque..... 420 N·m (305 lb.ft)

5. Remove supports (previously positioned) from steel track lifting points and support (F).
6. **Repeat Combine wheel removal and steel track fastening procedure on other side of machine.** Lower Combine front axle to the ground.



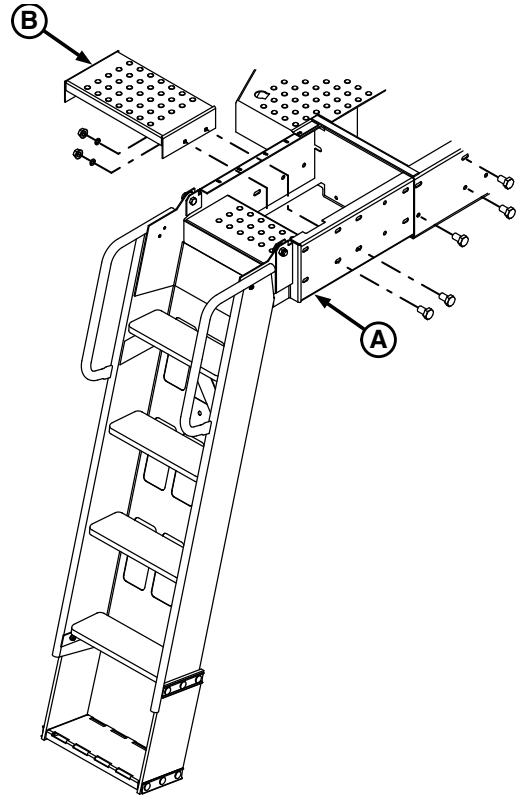
OU83340,00003EC -19-13FEB06-2/2

CQ265680 —UN—16FEB06

CQ248440 —UN—29JUL05

Adapting Combine Ladder

Release ladder base attaching bolts (A) and then pull ladder to a position that permits attaching a supplementary step (B) using four bolts M10 x 16. Finish by attaching base (A).



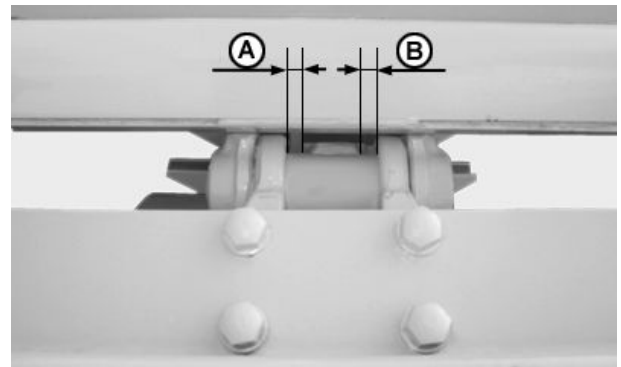
DF67602,0000217 -19-26NOV13-1/1

CQ290160—UN—26NOV13

Checking Drive Wheel Alignment

On a flat surface, move the combine about 10 to 15 m in a straight line. Then check distances (a and b). For the drive wheel to be aligned with the steel track chain link, these distances must match.

NOTE: If distances (a and b) are different, contact the dealer from whom the combine was purchased. Misalignment between the chain link and the drive wheel causes wear on the sides of the guide wheels and the drive wheel itself.



Steel track alignment check point

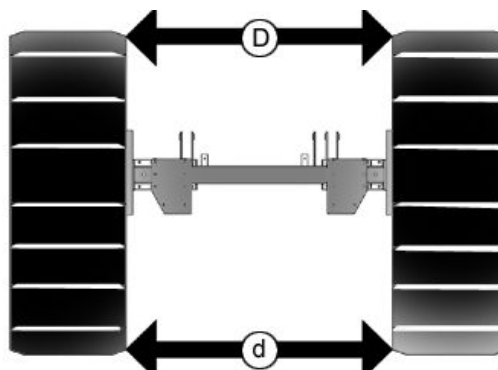
OU83340,0000002 -19-16AUG05-1/1

CQ248445—UN—29JUL05

Checking Parallelism Between Steel Tracks

Check distances (D and d), measuring them on points indicated by arrows. These distances must be equal.

IMPORTANT: If distances (D and d) are different, contact the dealer from whom the combine was purchased.



Top view of steel tracks - Parallelism test

OU83340,00003EB -19-02AUG04-1/1

CQ218850 —UN—18AUG03

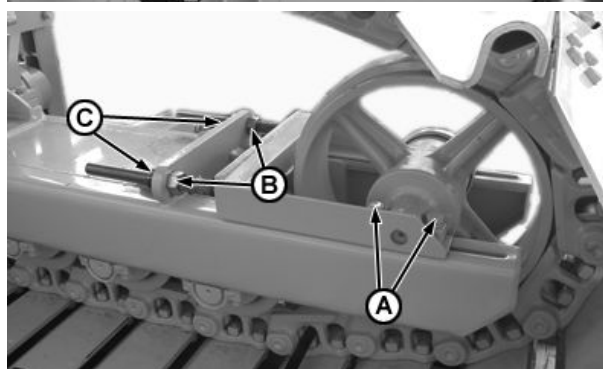
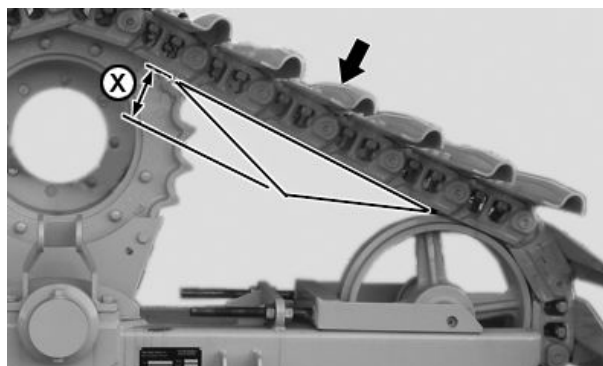
Tensioning Steel Track

To prevent unnecessary wear of chain links as well as guide wheels, drive wheels and bearings, tension the chain correctly on both steel tracks using the following procedure:

1. On flat and level ground move combine back slightly and then check deflection (X) by pressing chain at position indicated by the arrow.
2. With a ruler, measure deflection (X), which should be between 40 and 50 mm.
3. Tension chain if necessary. To tension the chain loosen bolts (A) on guide wheel bearings and then locknuts (B), tension chain by turning bolts (C) at the same time using the spanner included with steel track. Retighten bolts (A and B).

NOTE: Be careful to move bearings at the same time in order to maintain guide wheel alignment.

IMPORTANT: Never operate the combine with chains too tight, this not only stresses the whole assembly, it also causes excessive chain wear. Operation with a loose chain can also cause excessive wear of lower rollers and drive wheel teeth.



Tensioner system

AG,AV04449,4 -19-01AUG05-1/1

CQ248442 —UN—01AUG05

CQ248446 —UN—29JUL05

Specifications

Combines

Specification	
FEEDER	
HOUSE—Chains.....	3
Cross members.....	Serrated "T" bolted
SEPARATOR	
UNIT—Cylinder width.....	1300 mm
Cylinder, number of bars.....	08
Cylinder, drive.....	Hydraulic, with POSI – TORQ®
Concave width.....	1300 mm
Concave operating angle.....	112°
Concave area.....	0,77 m ²
Beater speed.....	850 – 880 rpm
Beater rotating diameter.....	380 mm
Beater, number of edges.....	04
STONE TRAP—Type.....	With pivoting opening in lower part
STRAW	
WALKER—Number of Straw Walkers.....	05
Number of steps on straw walker.....	05
Straw walker length.....	3715 mm
Straw walker travel.....	150 mm
Total separating area.....	5,61 m ²
CLEANING	
UNIT—Chaffer area including extension.....	2,45 m ²
Grain sieve area.....	1,88 m ²
Total Cleaning Area.....	4,60 m ²
Fan speed range.....	550 – 1150 rpm
Fan diameter.....	580 mm
Number of fan blades.....	05

GRAIN TANK—Capacity.....	4800 liters
Unloading flow rate.....	53 liters/s
ELECTRICAL	
SYSTEM—Alternator.....	12V/95A
Starter Motor.....	12V
Battery.....	12V – 150 A
TRANSMIS-	
SION—Type.....	Hydrostatic
STEERING	
SYSTEM—Type.....	Hydrostatic
Column.....	Tilt 15°
MASS—WITHOUT CUTTING	
PLATFORM—MASS.....	9200 kg
ENGINE—Model.....	6068TJ04
No. of Cylinders.....	6
Displacement.....	6.8 L (1.8 U.S. gal.)
Cylinder bore.....	106.5 mm (4.2 in.)
Cylinder travel.....	127 mm (5 in.)
Power.....	134 kW (179.7 hp)
Engine rated speed.....	2200 rpm
Radiator Screen.....	Self – cleaning
FUEL TANK—Capacity.....	
400 L	
WHEELS—Option 01.....	23.1 – 30R1 / 10.5 – 18I1
Option 02.....	28.1 – 26R1 / 10.5 – 18I1
Option 03.....	28.1 – 26R1 / 12.4 – 24R1
Option 04.....	23.1 – 26R2 / 12.4 – 24R1
Option 05.....	Track / 12.4 – 24R1

OU64006,00000C5 -19-21SEP05-1/1

Drive Track Specifications

Specification	
REVOLVING	
MATERIAL—Lubricating the chain.....	Sealed and lubricated
Number of rollers.....	6 and 7
Number of chain links.....	33 and 36
Maximum chain linear speed.....	3.05 m/s

TRACK CAR—Type.....	Drop-Axle
Chain tensioning (travel).....	210 mm
DRIVE ELE-	
MENT—Type.....	Gear
Number of teeth.....	23
TOTAL WEIGHT—With	
700 mm shoe.....	2,830 kg
With 800 mm shoe.....	2,960 kg
With 950 mm shoe.....	4,020 kg

OU83340,0000449 -19-24OCT03-1/1

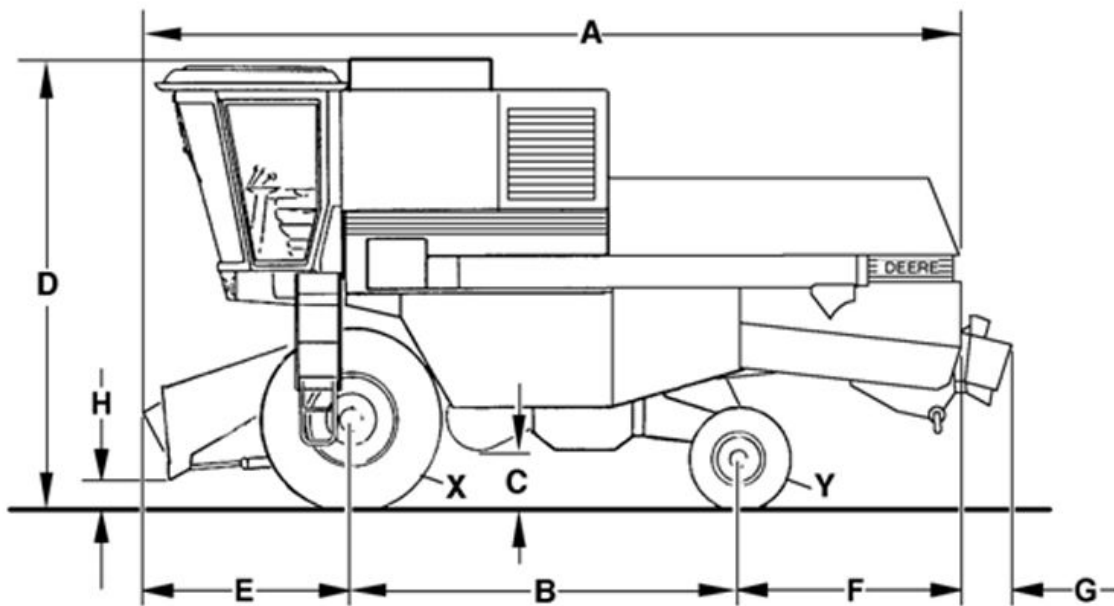
Specifications

Capacities

Systems	Capacities
Engine Crankcase (with filter)	20 L (5.28 U.S. gal)
Air Compressor	0.37 L (0.1 U.S. gal)
Gearbox and Differential Housing	7.5 L (1.98 U.S. gal)
Final Drive - Standard (each)	3.0 L (0.79 U.S. gal)
Hydraulic System (with filter)	39 L (10.3 U.S. gal)
Hydrostatic System	36 L (9.51 U.S. gal)
Cooling System (approximately)	16 L (4.23 U.S. gal)

AS60558,0002907 -19-25MAY12-1/1

Dimensions

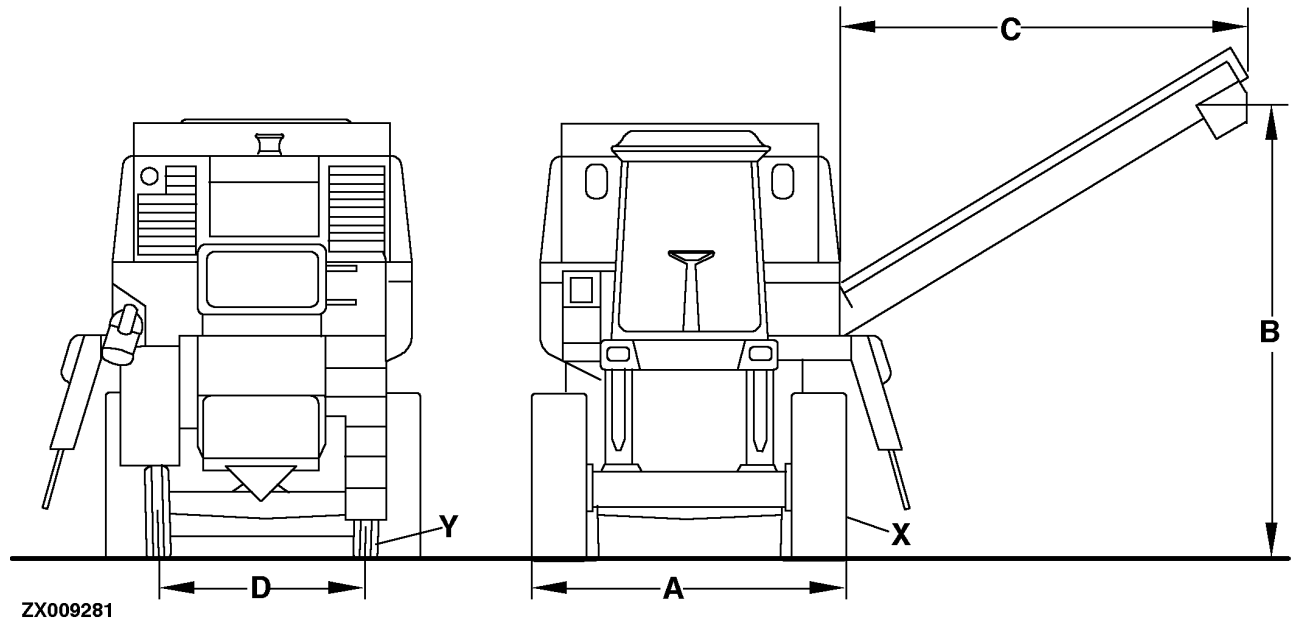


CQ291397—UN—06DEC11

	X	Y	A	B	C	D	E	F	G	H
1175	28.1-26	12.4-24	7150 mm	3600 mm	500 mm	3800 mm	1650 mm	1800 mm	430 mm	280 mm

BL04947,00003E6 -19-02DEC11-1/1

Dimensions

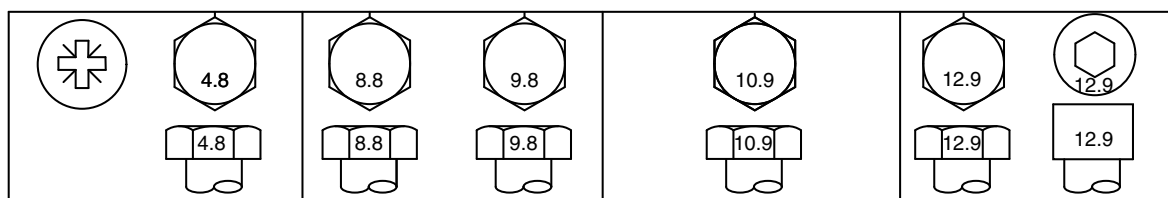


	X	Y	A	B	C	D
1175	28.1-26	12.4-24	3650 mm	4223 mm	3500 mm	3210 mm

BL04947,00003E7 -19-02DEC11-1/1

Metric Bolt and Screw Torque Values

TS1670 —UN—01MAY03



Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b	
	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									Nm	lb.-ft.	Nm	lb.-ft.	Nm	lb.-ft.	Nm	lb.-ft.
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			Nm	lb.-ft.	Nm	lb.-ft.	Nm	lb.-ft.								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	Nm	lb.-ft.														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. 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 fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

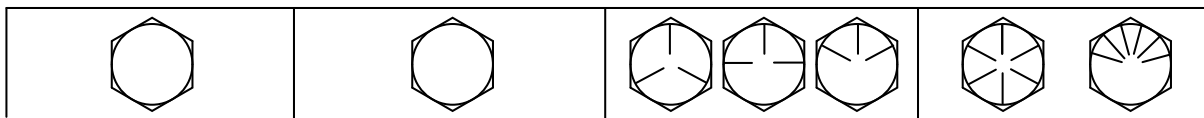
^a“Lubricated” means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

^b“Dry” means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.

DX,TORQ2 -19-12JAN11-1/1

Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



Bolt or Screw Size	SAE Grade 1				SAE Grade 2 ^a				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c	
	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.	Nm	lb.-in.
1/4	3.7	33	4.7	42	6	53	7.5	66	9.5	84	12	106	13.5	120	17	150
													Nm	lb.-ft.	Nm	lb.-ft.
5/16	7.7	68	9.8	86	12	106	15.5	137	19.5	172	25	221	28	20.5	35	26
									Nm	lb.-ft.	Nm	lb.-ft.				
3/8	13.5	120	17.5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			Nm	lb.-ft.	Nm	lb.-ft.	Nm	lb.-ft.								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	Nm	lb.-ft.														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

^aGrade 2 applies for hex cap screws (not hex bolts) up to 6 in. (152 mm) long. 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"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

^c"Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B, F13E or F13H zinc flake coating.

DX,TORQ1 -19-12JAN11-1/1

Serial Number

The Combine and cutting platform serial numbers are engraved on conveniently located plates.

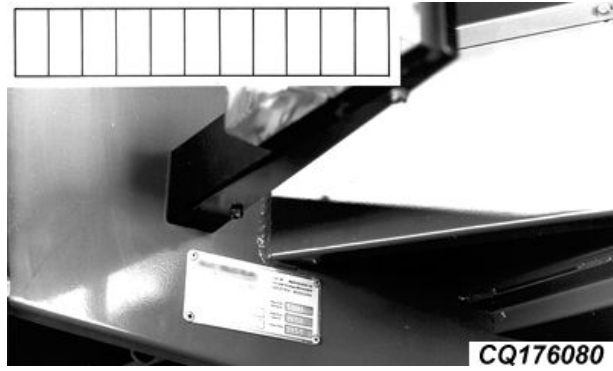
These numbers are to be informed to your Dealer when requesting replacement parts or servicing.

Note down the serial numbers in the spaces for such in the illustrations below.

AG,GG05155,365 -19-24FEB99-1/1

Combine

The plate with the serial number is located on the right-hand side of the operator header.

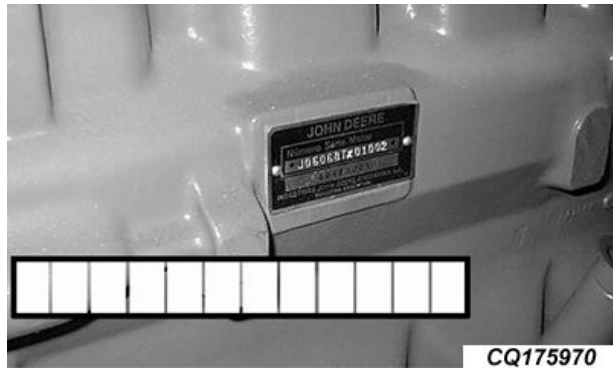


CQ176080 —UN—27MAR01

AG,GG05155,366 -19-24FEB99-1/1

Engine

The plate with the serial number is located on the right-hand side of the engine block.



CQ175970 —UN—09DEC98

AG,GG05155,367 -19-24FEB99-1/1

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