CTL Forwarder
PIN: 1WJ1910E_ _D001465-

OPERATOR'S INSTRUCTIONS
John Deere 1910E
Tier 3

Rotating & Leveling Cabin

F075026 (09/2020) ENGLISH

Worldwide Construction
And Forestry Division

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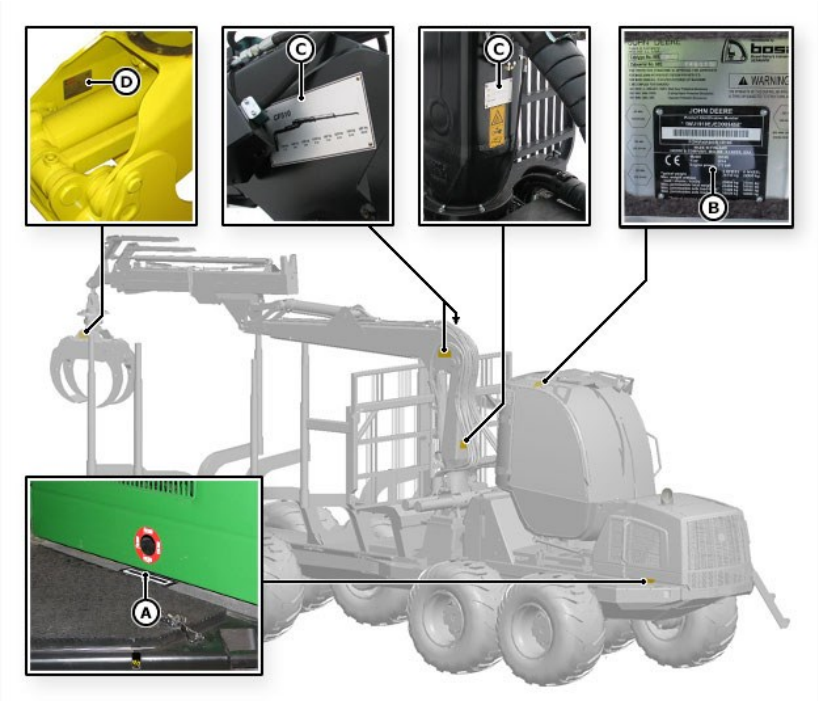
Original Instructions

MACHINE IDENTIFICATION

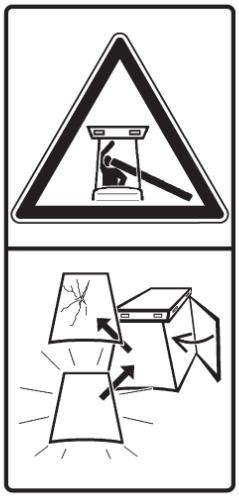
A. Punched serial number is located on the front frame.
B. Machine and cabin type plates aer located inside the cabin behind the first aid kit.
C. Boom type plate is located on the front side of the boom pillar. Plate for lifting capacities for different boom lengths is located on the side of the main boom.
D. Grapple type plate is located on the inner surface of the grapple frame.

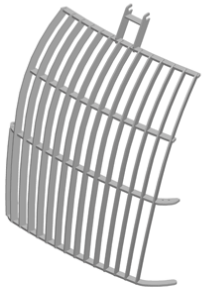
Punched serial number identification, for example 1WJ1510EVDE003004 where:

1	Character placeholder	Always 1
WJ	Factory code	Joensuu
1510E	Model number	1510E forwarder
V	Check letter	
D	Year manufactured	A = 2010, B = 2011, C = 2012, D = 2013, E = 2014, F = 2015, G = 2016, H = 2017, J = 2018, K = 2019, etc.
E	Engine emission level	C = Tier 2, D = Tier 3, E = Interim Tier 4, F = Final Tier 4
00	Character placeholder	Always 00
3004	Serial number	



CABIN PROTECTIVE STRUCTURES





Cabin is tested according to international ROPS, FOPS and OPS standards.

Do not operate the machine with the door open, secondary exit open or any of the safety covers or protective devices removed.

It is important to keep the operator protective structure in place (doors, screens, windows, windshield, etc.) to minimize hazards from whipping or intruding objects.

The protection offered by ROPS, FOPS and OPS will be impaired if cabin

- is subjected to structural damage
- is involved in an overturn incident
- is in any way altered by welding, bending, drilling, or cutting

To maintain ROPS, FOPS and OPS protection, replace damaged cabin parts immediately. A damaged structure should be replaced, not reused. It is forbidden to modify the window fastening.

Following issues must be considered when the machine is used or equipped for other purpose than it is designed for by the manufacturer:

- Overall weight of the machine without load (towed equipment and any load excluded) must not exceed the maximum weight defined for the cabin and mentioned below the machine type plate (ROPS-weight, Roll Over Protection Structure). Contact manufacturer's representative to clarify the demands of the ROPS standard when necessary.
- If the machine's center of gravity is changed due to machine buildup the maneuverability of the machine will also change and does not necessarily correspond to the original demands determined by the manufacturer.

The manufacturer can not guarantee machine safety if the machine has been used contrary to the operator's instructions given or has been equipped with accessories not approved by the manufacturer.

NOTE: *An optional heavy duty window guard is recommended for operations in late thinning and regeneration felling sites.*

ROPS LEVELS

Cabin type plate defines approval levels and standards for ROPS (Roll-Over Protective Structures).

⚠ CAUTION

AVOID POWER LINES

⚠ CAUTION

Avoid operating under overhanging electrical power lines for a high voltage can 'jump' over a distance of several meters in the air.

When planning the work, check with the local power company to find out if there are any overhead cables in the working zone and the safe distance to them.

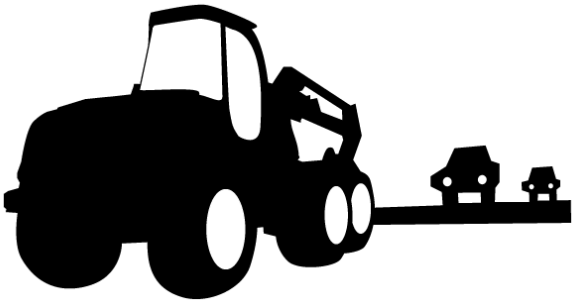
If the machine comes in contact with a power line and engine runs normally, stay in the cab and back up from the power line.

If the engine stops and the machine is in contact with a power line and you have to come out of the machine do as follows:

Grip firmly with a bare hand on the wrist of the other hand holding a handle while pushing the door open. Jump out of the cab both feet together. Keep on jumping feet together until you are at least 10 meters (33 ft) from the machine and the power line. If you fall earlier do not stand up, but keep on rolling on the ground toward the same direction.

You run the greatest risk if you are in simultaneous contact with the machine and the ground. Jump clear from the machine to the ground.

DRIVING/TRANSPORTING ON PUBLIC ROADS



Ensure that the machine is safe for driving. Adhere to local and national traffic regulations.

When traveling on public roads, use accessory lights and other cautionary devices to bring your approach to the attention of other vehicle operators. Ensure that the vehicle meets all regulatory requirements.

Bogie tracks or chains may not be fitted when driving on a public road.

Secure the boom and harvester head or grapple in the transport position and ensure that the boom cannot move during the drive.

By observant of the height of the machine when driving, e.g., tunnels, viaducts, bridges.

If the machine must be transported, make sure it is adequately secured to the transporting vehicle.

BEWARE OF EXHAUST FUMES

Engine exhaust fumes can cause sickness or asphyxiation.

If you must operate in a building, be positive there is adequate ventilation. Either use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring enough outside air into the area.

AVOID HIGH PRESSURE FLUIDS

⚠ CAUTION

Diesel fuel or hydraulic fluid under pressure can penetrate the skin and cause serious personal injury, blindness, or death. 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.

Fluid leaks under pressure may not be visible. Escaping fluid can penetrate the skin causing serious injury. When searching for leaks, wear work gloves and use a piece of cardboard or wood. Never use your bare hand. Protect body and wear safety goggles for eye protection.

Pressure can be maintained in a hydraulic system long after the power source and pump have been shut down. Lower the hydraulic working units safely to the ground, apply parking brake and shut off the engine. Relieve all hydraulic pressure and discharge accumulators before disconnecting any hoses or performing work on components. Tighten all connections before applying pressure.

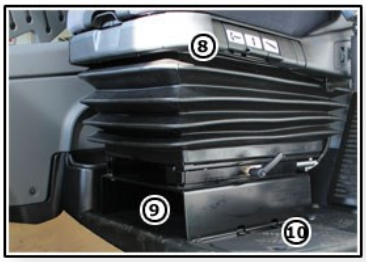
Do not change any pressure setting unless authorized instruction has been obtained.

ROTATING AND LEVELING CABIN

The cabin can be equipped with optional equipment according to base machine and operator requirements.

1. Keyboard and mouse
2. HPC and integrated screen for control system
3. Radio (remote is attached to the right arm rest)
4. Right-hand side storage box (accessory switches and connectors)
5. Dashboard
6. Bracket for scaler calliper or boom weight scale
7. Food heater
8. Seat
9. Printer
10. Floor storage box
11. Fire extinguisher
12. Storage compartments

The first aid kit, preheater control panel and fire protection control panel are located on the cabin ceiling.



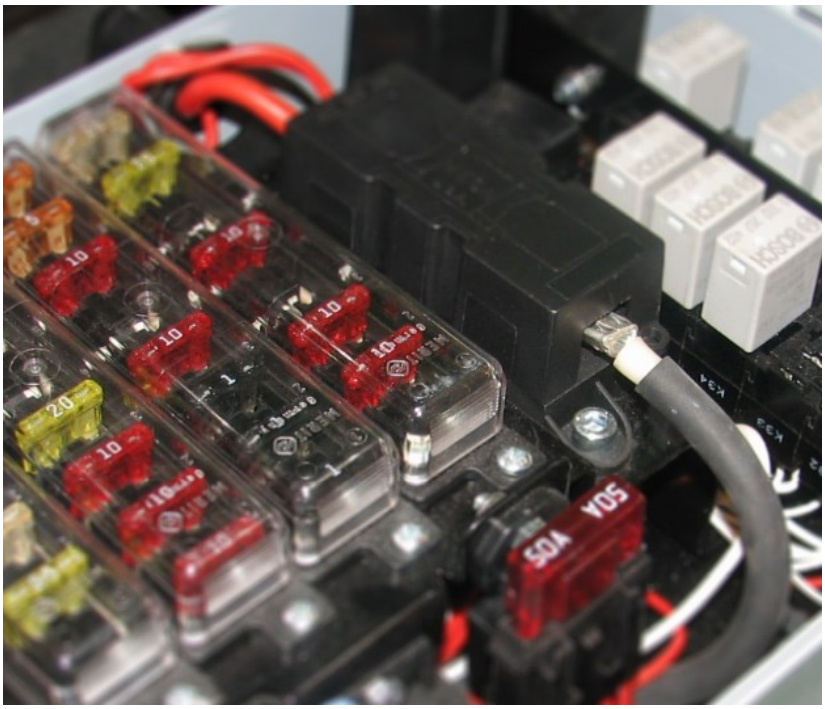
FUSES AND RELAYS

The electric system of an E-model forwarder contains dozens of fuses and relays. They are mainly located on circuit boards in the engine room and in the cabin.

The current from the battery to all equipment on the front and rear frames is divided between 40 A and 60 A main fuses on the main switch panel. The current to the cabin is supplied through the 125 A main fuse on the main switch panel and two 50 A fuses in the wiring harnesses. The rest of the fuses can be found in a fuse box above the main switch, on the main switch panel or on the cabin circuit board, there are also some in the wiring harnesses.

The fuses protect the system against the effects of short-circuits or other kinds of overloads. In case of overload, a fuse breaks the electric circuit, preventing the components from overheating, melting or burning.

Relays are electromechanical switches. The function of a relay is based on an electromagnet. With relays it is possible to control higher currents and voltages with lower control voltage, and they are used to control various functions in forwarders.



XL4 PC (HIGH SPEC)

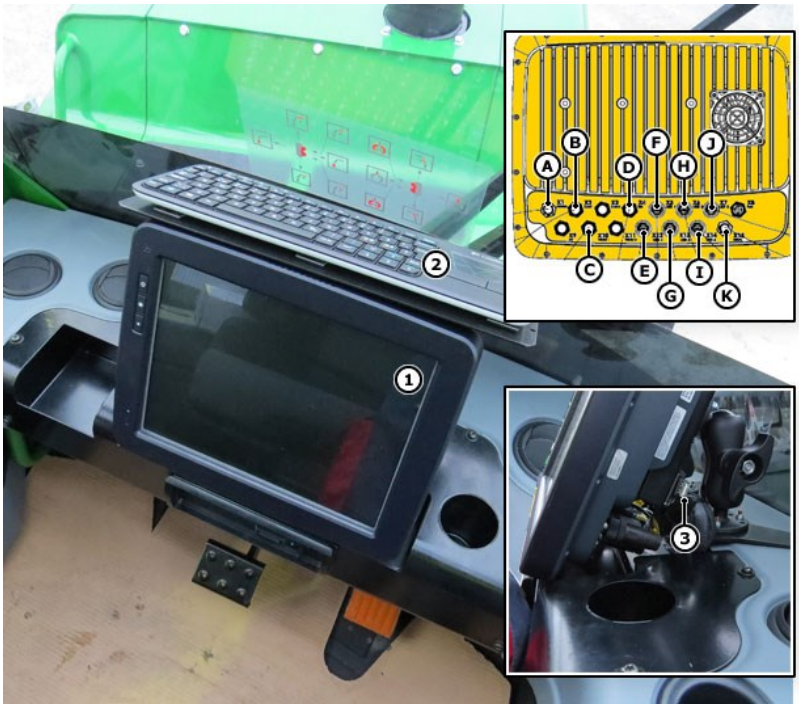
XL4 PC is equipped with an integrated 12.1" screen (1), wireless keyboard (2) with built-in touchpad and additional USB port (3) for connectivity.

NOTE: *PC starts automatically when the ignition key is turned to the RUN1 position.*

This High Spec PC (HPC) is standard equipment in the CTL harvesters and optional in the CTL forwarders. PC is equipped with the Intel Core i7 processor, 64 GB or 32GB flash hard drive, 4 GB RAM and Windows™ 7 operating system enables improved performance for the TimberMatic™ H and F control systems, as well as for other forest machine software applications.

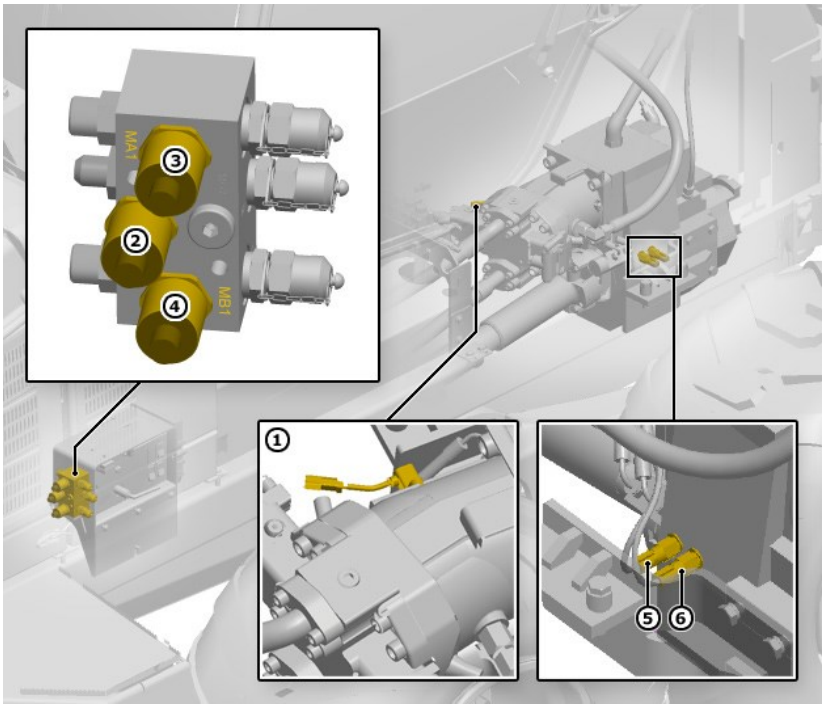
XL4 PC's back panel contains following connectors:

A. Power (X1); connector X19
B. CAN (X2); terminator XC38B and connector XC8
C. Video 1 (X10); connector X16, cabin camera and rear camera
D. ETH (X4); MTG
E. USB 4 (X12); printer and connector X17
F. USB 1 (X5); keyboard receiver
G. USB 5 (X13); COM3 and COM4, GPRS modem and connector X171
H. USB 2 (X6); USB connector behind PC
I. USB 6 (X14); USB connector in storage box
J. USB 3 (X7); GPS
K. Serial (X15); scales connector X73



SENSORS, TRANSMISSION

1. Drive motor speed sensor (B14A)
   - The signal is used for the calculation of speed and distance and for controlling the work brake.
2. Drive pump charge pressure sensor (B4)
   - Triggers an alarm if the drive pump charge pressure drops below 1.5 MPa.
3. Drive pressure sensor A (B86)
   - Measures the driving pressure when driving forwards or backwards, depending on which line is connected to the sensor.
4. Drive pressure sensor B (B87)
   - Measures the driving pressure when driving forwards or backwards, depending on which line is connected to the sensor.
5. Low gear sensor (S82)
   - Detects whether low gear is engaged.
6. High gear sensor (S81)
   - Detects whether high gear is engaged.



CENTRAL GREASING SYSTEM

The machine can be equipped with an automatic lubrication system. The system consists of a grease pump with integrated grease reservoir (1), grease dispenser blocks (2) for distributing the grease to the right locations and grease lines (3) between the pump, dispensers and greasing points.

Direct supply lines from the pump go to a main dispenser and to boom dispenser. Grease supply to secondary dispensers for frame bearing, middle joint, cabin leveling and rotating unit and rear frame go via the main dispenser.

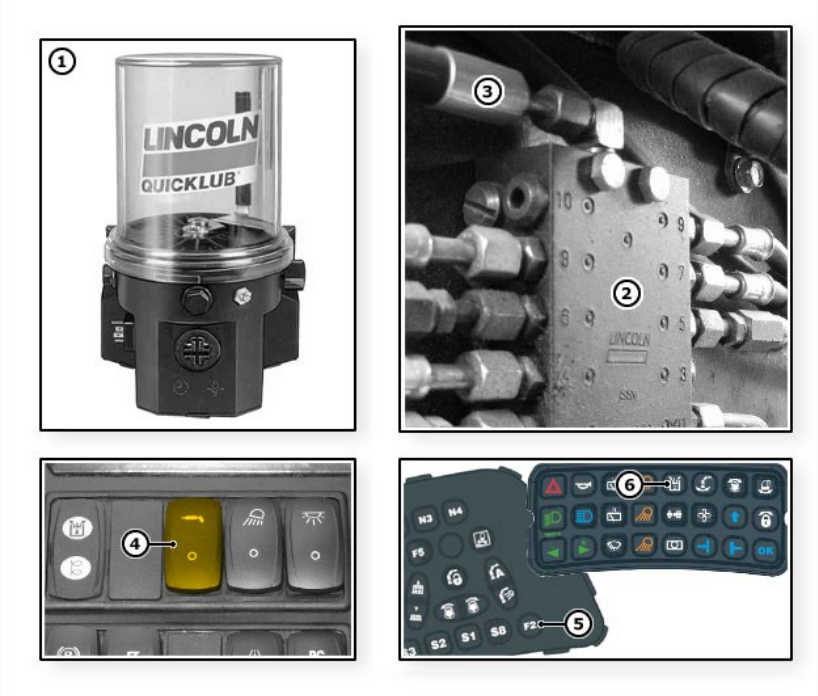
Operation

The greasing pump works only when the machine's diesel engine is running. Once the needed greasing interval is set from the pump unit the system operates fully automatically. Signal light on the operating switch (4) on the dashboard is lit when the pump is operating. When the grease level in the reservoir gets low the TimberMatic™ gives an alarm.

NOTE: *The alarm function is not available in 810E and 1010E machines.*

The grease pump can be forced to run for four minutes by holding down the operating switch (4) on the dashboard for two seconds.

NOTE: *The machines equipped with fixed forwarder cabin do not have the operating switch (4) and signal light. The forced greasing is activated by pressing simultaneously F2 function (L14) and vacuum pump (R56) buttons (5, 6).*



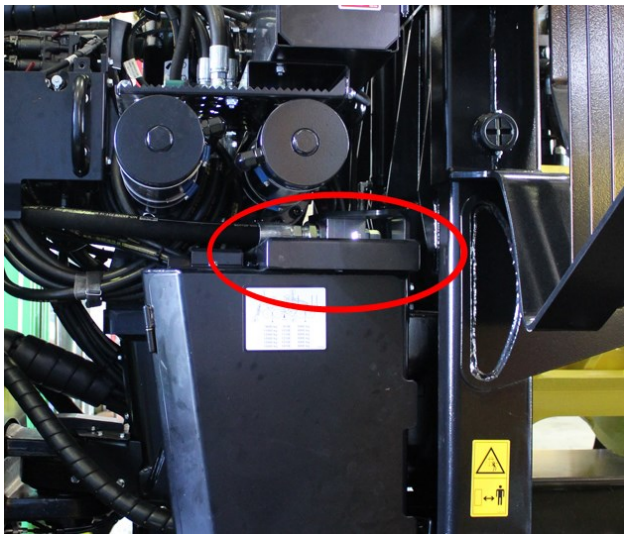
SAFETY INSTRUCTIONS

Appropriate use

- Use of the lubrication pump and progressive divider valves only for dispensing lubricants in centralized lubrication systems. The system is designed for intermittent operation.

IBC CONTROLLER

The IBC system utilises a separate 64 MHz flexbox to control the IBC specific boom movements. The controller design is the same as for other controllers in the machine. The IBC controller is mounted to a special casing on the left-hand side of the machine next to the boom base.



CAMERAS

The machine can be equipped with one or two cameras:

1. Cabin camera.
2. Rear frame camera. The image from the camera is automatically transmitted to the computer screen when the machine starts moving backwards. The screen display returns to normal once the machine has stopped.

The camera can be activated by pressing long the R40 button on the extra keypad. Short press changes the view between the two cameras.

LEFT KEYPAD IN FORWARDER

- (L02) Left side stake extension down/Valve Y221 (for dual clambunk)
- (L03) Left side stake extension up/Valve Y222 (for dual clambunk)
- (L04) ALS reset
- (L05) Load space narrowing (VLS)/Timbergate forward (ALS)
- (L06) Load space widening (VLS)/Timbergate backward (ALS)
- (L07…L13 and L17) Tree species buttons
- (L14 and L21) Additional function buttons
- (L18) Boom activation
- (L19) Cabin rotation (R&L cabin) or electrical seat locking (Fixed cabin)
- (L20) Work RPM
- (L22) Intermittent wiper
- (L23) Boom tilt up
- (L24) Timbergate down/backward
- (L25) Timbergate up/forward
- (L26) Cabin rotation left (configuration in TimberMatic menu 3.1.2)
- (L27) Cabin rotation right (configuration in TimberMatic menu 3.1.2)
- (L28) Slew floating, passive (810E)
- (L29) Boom lights
- (L30) ASF, Active slew floating (810E)
- (L31) Steering stick
- (L32) Boom tilt down
- (L33, L34, L39) TimberNavi buttons
- (L40) Inclination display ON/OFF button

All these buttons do not exist in CommandCenter machines.

temperature unit will then be shown on the digital display.

A comfortable set point for heating is between 22°C (72°F) and 26°C (78°F). Change the temperature set point in small amounts for best results. Once a comfortable temperature is reached, this temperature will be maintained without adjusting the set point.

Automatic fan speed control

The fan speed is determined by the system as required. The fan speed is based on the difference between the set point temperature and the actual cab temperature. The greater the difference, greater the fan speed.

If the cab temperature is “too hot” and heating is occurring, or if the cab temperature is “too cold” and cooling is occurring, the fan speed will be held at minimum. This condition can occur when the cab is heating or cooling quickly, and the temperature “overshoots” the set point temperature. In auto fan speed mode, all fan speed changes are done gradually.

When the fan speed setting is on auto mode, A/C system regulates the temperature using the water valve, the A/C unit and fan speed.

Manual fan speed control

Fan speed will directly correspond to fan speed control setting. In automatic or manual mode, the initial fan speed on startup will gradually increase from “off” to the desired fan speed. Manual fan speed control allows lower fan speeds than can be achieved in AUTO fan speed mode.

When the fan speed is selected manually, A/C system regulates the temperature using only the water valve and the A/C unit.

Automatic fan speed control

The fan speed is determined by the system as required. The fan speed is based on the difference between the set point temperature and the actual cab temperature. The greater the difference, the greater the fan speed.

A/C compressor clutch control

The A/C clutch will be active when the system A/C mode is enabled. In defrost mode, the clutch is also forced on to provide cab air dehumidification. In the event of a cab temperature sensor error, the system will operate in a "manual" temperature control mode with a set point of 16°C (60°F) corresponding to full air conditioning, 24°C (75°F) corresponding to neutral (no cooling or heating), and 32°C (90°F) corresponding to full heat. Set point settings in-between will generate the proportional amount cooling or heating.

In any mode, the clutch activation can be disabled by the evaporator temperature sensor, or the high refrigerant pressure transducer.

The evaporator temperature sensor trip points will be determined by the system to maintain the desired cab temperature. As less cooling is required, the evaporator temperature sensor trip points will increase, so as to maintain a fairly constant core temperature. In the case of full A/C or in the case of defrost mode, the evaporator temperature sensor trip points will be 1°C (34°F) clutch off and 4°C (40°F) clutch on.

Pre-heat blower mode

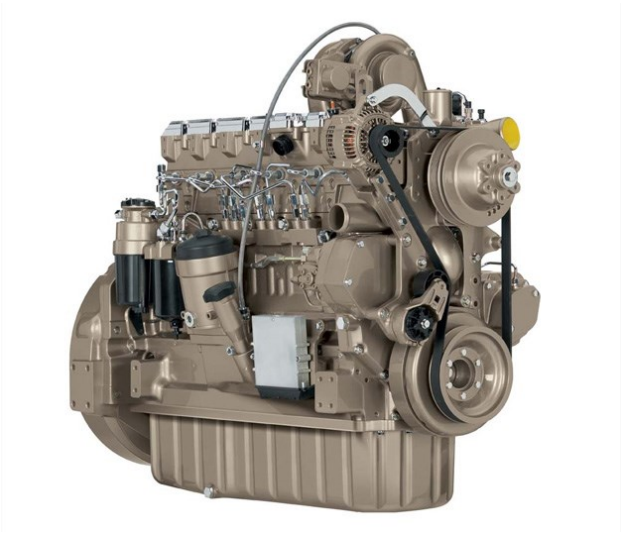
The ATC system will engage the blower on low speed when a 24V input signal is received and the ignition signal is off. The system will open the electronic water valve fully. When the ignition on signal is received, the ATC system will return to normal operation mode regardless of the state of the pre-heat blower signal.

Engine fan reverse mode

When the system receives an engine fan reverse signal, the fresh/recirc door will be forced into the recirculation position to prevent excessive dust from entering the fresh air filter.

ENGINE

Follow the instructions for proper starting, running and turning off of the engine.



STARTING THE ENGINE

Before starting the engine take an overall look at the machine (joints, hoses, etc). Make sure that the daily maintenance has been carried out as instructed (fluid levels etc).

⚠ CAUTION

Make sure that there are no people within the danger zone around the machine.

1. Turn on the main switch and check following.
   A. Check the fire extinguishing system indications (if equipped).
   B. Check the emergency exit.
   C. Parking brake is on.
   D. Emergency stop is in the upper position.
   E. Door is closed.
   F. Driving direction switch is in neutral
   G. Pre-heater is disengaged.
2. Activate easy start turning the ignition key to RUN2 position. Wait until the CAN-bus network is initialized and running. This is indicated by buzzer's short peep sound.

   IMPORTANT: *Easy start means that the load on engine is reduced. Hydraulic fan, work hydraulic and brake unloading valves are activated. Harvester models 1270 and 1470 only have one unloading valve.*

   NOTE: *Avoid starting the diesel engine during the computer's start-up. The computer must be kept closed when cold-starting the engine if the sufficiency of the starting power is in doubt and the system's voltage could drop considerably (to below 20 V) as a result.*

3. Hold the accelerator pedal in the idle position. Start the engine with ignition key and release the key immediately when the engine starts.

   IMPORTANT: *Do not operate the starter for more than 15 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, wait at least 2 minutes before trying again.*

   IMPORTANT: *If the key switch is released before the engine starts, turn key to stop position, wait until the starter and the engine stop turning before trying again. This will prevent possible damage to the starter and/or flywheel.*

   NOTE: *New XL4 and XM2 PC starts automatically after the engine is running.*

CRUISE CONTROL

IMPORTANT: *Cruise control is an optional feature requiring separate license.*

Cruise control automation enables to drive the machine using constant speed.

Activation

- Cruise control (R22) button (1) is pressed.

Speed adjustment

- With Plus/Minus buttons
- According to ECO mode percentage (%)

Deactivation

- Cruise control (R22) button (1) is pressed. Auto cruise icon disappears from the work mode display.
- Brake pedal is pressed.
- Drive direction is switched to neutral.
- Cabin is rotated to opposite position than driving direction while high gear is active.
- System fault (secondary steering etc.)

NOTE: *Cruise control status is indicated with Auto cruise icon in TimberMatic™ work mode display.*

DECKING BLADE

Decking blade controls:

1. Decking blade up/down switch: The height adjustment of the blade is done by means of a rocker switch. The blade is hydraulically secured in the desired position as soon as the switch is released.
2. Decking plate floating on-off button: The blade can also be switched to a flotation mode. Flotation mode results that the blade is pressed downwards by its own mass only.
3. Proportional control: The height adjustment of the blade can also be done via proportional valve control by means of the machine's right-hand side joystick when the loader has been disengaged and the slow speed is on.

The system also involves a manual lowering valve which allows the operator to lower the blade to the ground when the engine is not running.

BOOM AND GRAPPLE

You can activate the boom using button "L18". The boom symbol appears on the display when active. The boom is disabled when the high gear is on or when the parking brake is on.

AT THE END OF THE WORK DAY

1. Clean the machine. Inspect all covered compartments, including engine bay, belly plates etc. It is particularly important to clean the machine in the winter because snow and debris easily gets stuck to the machine.
2. Inspect the cabin protective structure including doors, windows, windshield, etc. It is important to replace broken or cracked windows immediately to minimize hazards from whipping or intruding objects.
3. Make sure that there are no defects or leaks. Check the machine in daylight. Repair any defects found or contact the service personnel.
4. Renew oils and grease (if necessary) the machine while it is still warm.
5. Check the tightness and mounting of the possible chains.
6. Lock the cab door.
7. Turn off the main switch. If the machine is equipped with an automatic fire extinguishing system, the system will be engaged when the main switch is turned off.
8. If the machine is intended to leave for extended period of time (e.g. longer transportation or service interval) read instructions Preparing machine for storage.

- API Service Classification CE
- API Service Classification CD
- API Service Classification CC
- ACEA Oil Sequence E2
- ACEA Oil Sequence E1

After the break-in period, use John Deere PLUS-50™ or other diesel engine oil as recommended in this manual.

IMPORTANT: *Do not use PLUS-50 oil or engine oils meeting any of the following during the first 250 hours of operation of a new or rebuilt engine:*

- API CJ-4
- API CI-4 PLUS
- API CI-4
- API CH-4
- API CG-4
- API CF-4
- API CF-2
- API CF
- ACEA E7
- ACEA E6
- ACEA E5
- ACEA E4
- ACEA E3

These oils will not allow the engine to break-in properly.

ADDITIONAL ENGINE OIL INFORMATION

OIL FILTERS

- Filtration of oils is critical to proper operation and lubrication.
- Always change filters regularly as specified in this manual.
- Use filters meeting John Deere performance specifications.

ALTERNATIVE AND SYNTHETIC LUBRICANTS

- Conditions in certain geographical areas may require lubricant recommendations different from those given in these instructions.
- 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 oils.
- Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

LUBRICANT STORAGE

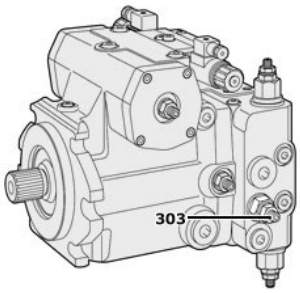
- Your equipment can operate at top efficiency only when clean lubricants are used.
- Use clean containers to handle all lubricants.
- Whenever possible, store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and 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.

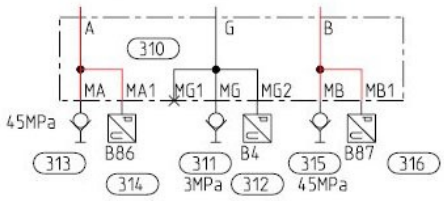
MIXING OF LUBRICANTS

- In general, avoid mixing different brands or types of oil.
- Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.
- Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.
- Consult your John Deere dealer to obtain specific information and recommendations.

CHARGE PRESSURE

1. Connect a gauge (10 MPa) to measuring point (311 / MG)
2. Start the diesel engine
3. Set the revs to 1500 rpm in the TimberMatic or using the accelerator pedal
4. The charge pressure must be 3.0 ± 0.2 MPa.
5. If needed, adjust the charge pressure from screw (303) in the drive pump.
6. Check the pressure after locking the adjusting screw.
7. Increase the revs of the diesel engine to maximum. The pressure must increase to 3.5 MPa maximum.





NOTE: *The pressure should return to 0 MPa*

Work brake

1. Switch off the parking brake. The work brake is now on and read the gauge.

   NOTE: *The pressure should increase from 0 MPa to maximum.*

2. Switch on the parking brake.

   NOTE: *The pressure should fall to 0 MPa.*

Maximum brake pressure for different models:

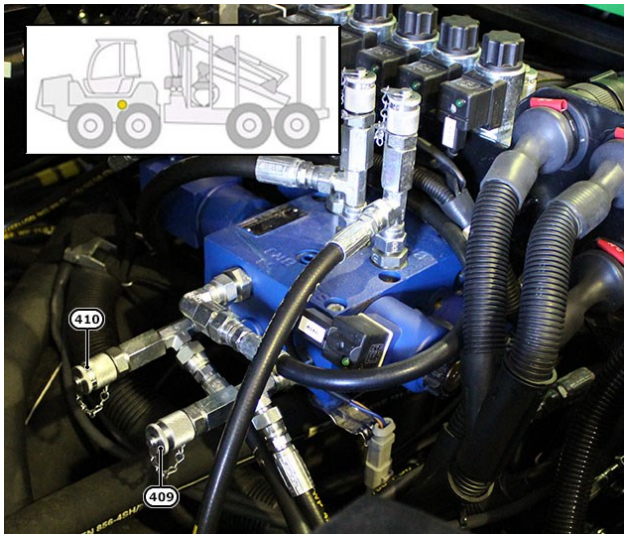
Model	Maximum pressure
1070 / 1170 (E/G)	7 MPa (1015 psi)
1270 / 1470 (E/G)	10 MPa (1460 psi)
810E / 910G	7 MPa (1015 psi)
1010/ 1110 / 1210 / 1510 (E/G)	7 MPa (1015 psi)
1910 (E/G)	10 MPa (1460 psi)

LOADING RANGE PRESSURES

The measuring points (409 and 410) are under the cabin.

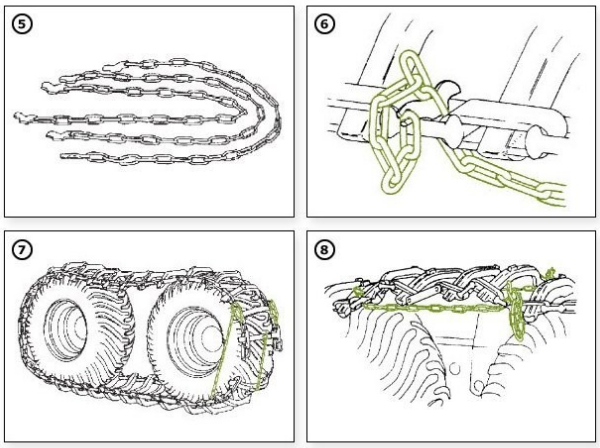
- Attach a 40 MPa (5801 psi) gauge to measuring point (409) at the brake valve.
- Start the diesel engine.
- Switch off the parking brake.
- Depress the brake pedal repeatedly. Read the pressures at which loading starts and ends.
- Loading should start at approximately 14 MPa (2030 psi), and end at approximately 16 MPa (2320 psi).
- Attach the gauge to measuring point (410) and repeat the test.

If the pressure drops from 16 MPa (2320 psi) below 14 MPa (2030 psi) after just few pressings on the pedal, it is likely that system has leakages or at least one of the accumulators is not in proper condition.



TRACKS FITTING 3/4

- Fit the chains (fig 5 and 6) to the links between the second and third track links on each side of the joint. Make sure the chains are the same length on both sides (fig 7). Make sure you tighten both sides equally, otherwise the track will be unbalanced.
- Fit one chain in the middle (fig 7).
- Reverse the machine carefully until the joint is midway between the wheels (fig 8). The track is now stretched and the chain in the middle should be slack. If the track needs to be tightened more, shorten these, reverse and fit a suitable track lock.

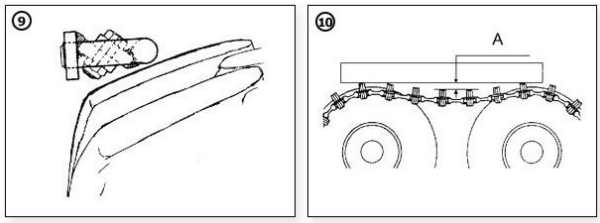


⚠ CAUTION

Make sure no-one is nearby when you tighten the tracks.

TRACKS FITTING 4/4

1. Fit the track lock with the loop on the inside, nut against the tire (fig 9).
2. Then drive forward until the tensioning chains are slack. Remove them.
3. Drive the machine forward and back a couple of times. Check the track tension (fig 10). Dimension A should be 50 — 100 mm (2 — 4 in).



NOTE: *Do not over-tighten the tracks.*

NOTE: *If the tensioning chains do not pull the track together enough: Fit an extra chain between the ends and then drive forward again. This will now hold the track together so that the tensioning chains can be tightened more.*

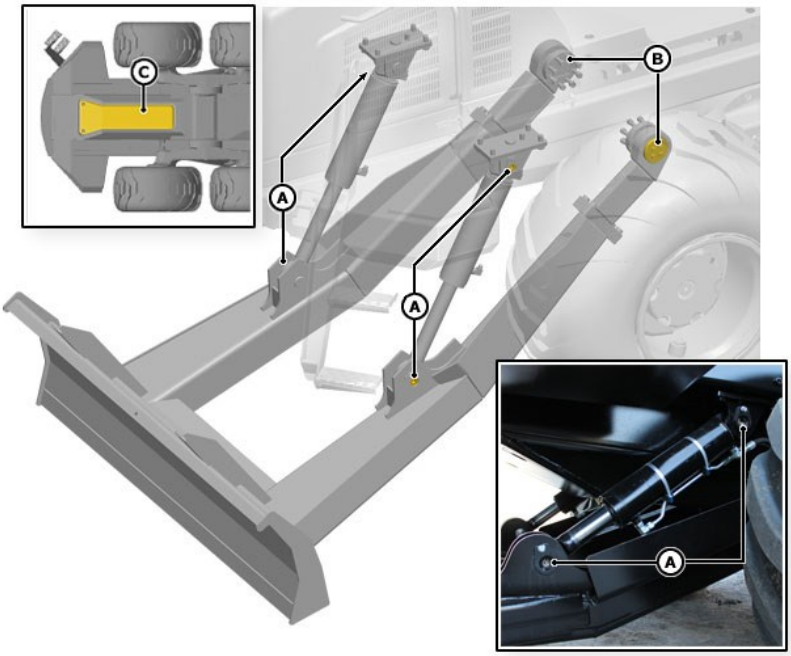
DECKING BLADE

Grease decking blade after every 50 operating hours.

There are six greasing points on the decking blade. Each operating cylinder has a greasing point (A) at each end. Decking blade hinge pin greasing (B) points are accessed by opening the front frame belly plate (C).

A. Operating cylinder greasing points
B. Hinge pin greasing points
C. Front frame belly plate

Purpose	Tool	Size
Front frame belly plate locking screw	Socket wrench	24 mm
Belly plate operating winch	Ratchet spanner	½ in



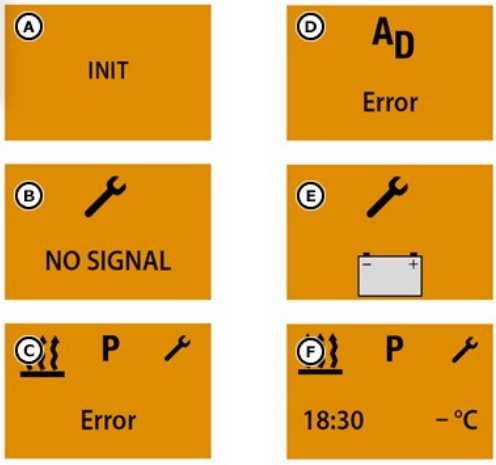
FAULT DISPLAY DESCRIPTIONS

In the event of a fault the following dipslays are possible:

	Description	Action
A.	Automatic detection is active. The EasyStart Timer has been disconnected from the power supply and then reconnected.	Wait until the automatic detection has finished, then set the time and weekday. For example after the battery switch is used.
B.	No communication.	Check and if necessary renew the heater fuse. Contact to your local John Deere Dealer.
C.	First heater fault.	Contact to your local John Deere Dealer.
D.	Second heater fault.	No second heater attached to the system. Contact to your local John Deere Dealer.
E.	Voltage level too low.	Charge the machine batteries, if necessary contact to your local John Deere Dealer.
F.	Temperature sensor is defective	No temperature sensor attached to the system. Contact to your local John Deere Dealer.

NOTE: *The hidden Workshop menu can be access from the setting view (5) by pressing the Cancel button (2) for longer than five seconds. Below is listed some of the Workshop menu items. Contact to your local John Deere Dealer for for further details.*

- 1.1.1. Display current fault code.
- 1.2.1. Read out fault memory F1 - F5
- 2. Select temperature unit (Celsius or Fahrenheit)
- 8. Select language (English or German)



CHECK DIFFERENTIAL OIL LEVEL

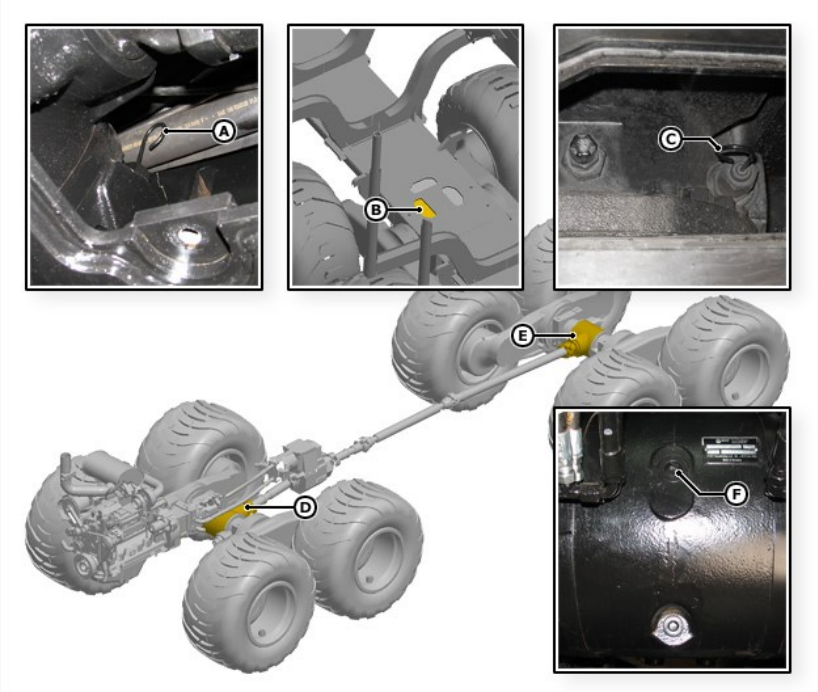
The front differential dipstick can be accessed by opening small access cover next to front frame belly plate.

The rear differential dipstick can be accessed by opening the left-hand side access cover above the rear axle.

If necessary, add oil through the filler port.

A. Front differential dipstick
B. Rear differential dipstick cover
C. Rear differential dipstick
D. Front differential
E. Rear differential
F. Filler plug

Purpose	Tool	Size
Front frame access cover	Allen key	10 mm
Rear frame access cover	Socket wrench	13 mm
Rear frame access cover	Allen key	5 mm
Differential filler plug	Allen key	17 mm

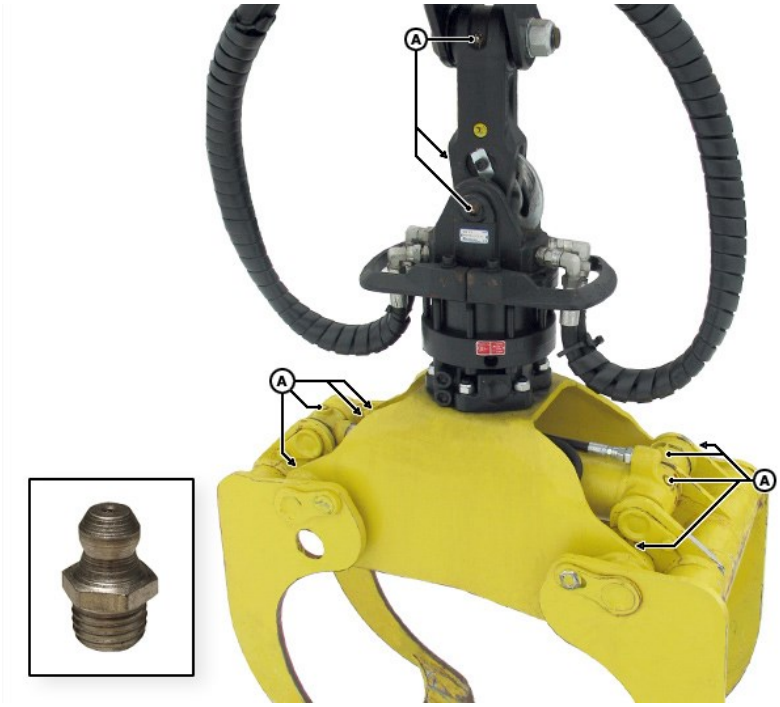


GREASE LINK AND GRAPPLE

Grease the bearings of the link and grapple via the grease fittings seen in the picture.

NOTE: *Use adequate grease. Continue greasing until pure grease seeps from the sealing faces of the bearings.*

NOTE: *John Deere grapples have sealed bushings and greasing interval can be extended to 100 hours.*



EVERY 250 HOURS

- Check the high/low gear oil level
- Check tire pressures
- Check door switch
- Check secondary exit
- Check cabin fresh-air filters*

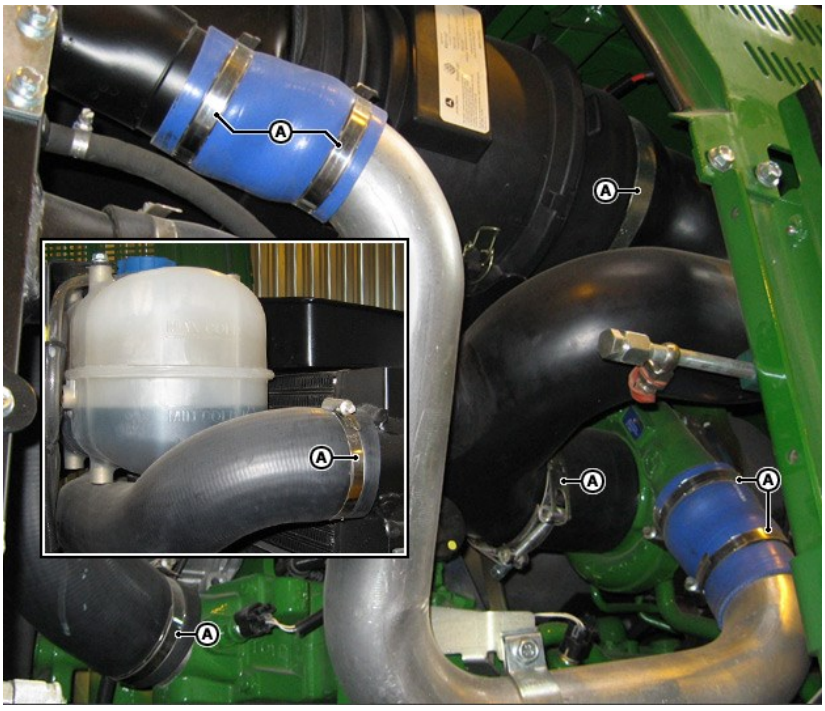
*Recommended to be done every 250 hours when working in extremely dusty conditions.

CHECK AIR INTAKE SYSTEM

IMPORTANT: *The air intake system must not leak. Any leak, no matter how small, may result in internal engine damage.*

1. Inspect intake piping and after cooler for cracked hoses. Replace as necessary.
2. Check clamps on intake piping. Tighten clamps as necessary.

A. Intake piping clamps



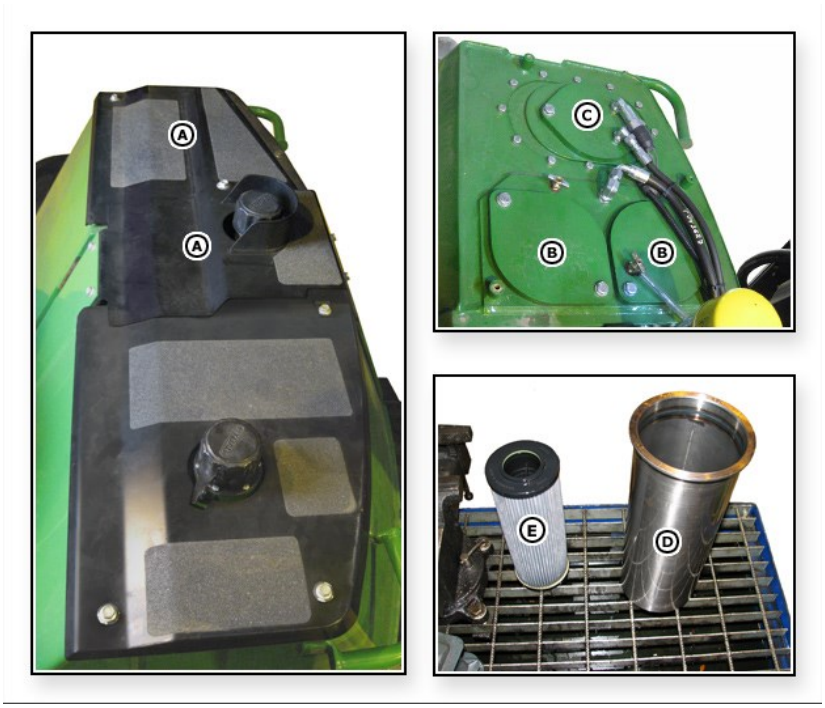
REPLACE HYDRAULIC TANK OIL FILTERS

IMPORTANT: *The return case and off-line filter are equipped with pressure sensors for detecting clogging. If the pressure sensor sets off an alarm, renew the filters. Otherwise, adhere to the maintenance intervals.*

1. Remove the hydraulic tank cover plates.
2. Clean the hydraulic tank around the cover.
3. Unscrew the filter cover fastening screws and remove the cover.
4. Remove the filter assemblies. The filter element and canister must be lifted from the tank together. If the filter element is removed from the canister in or on the tank, the dirt in the filter may contaminate the hydraulic fluid.
5. Put the filter elements and the canisters into a proper container. Remove the filter elements from canisters by twisting them counterclockwise.
6. Clean the canisters.
7. Replace the filters. Filter elements lock easier if pressed slightly while twisting. Make sure that the filter elements are locked inside the canisters before introducing the filter assemblies into the tank.
8. Place the springs on the filter assemblies, close the cover and screw the fastening bolts in. The spring serves to secure the filter joint, thus ensuring that no oil can bypass the filter.

A. Hydraulic tank cover plates
B. Return filter cover
C. Off-line filter cover
D. Filter canister
E. Filter element

Purpose	Tool	Size
Hydraulic tank cover plate fastening screw	Ring spanner/socket wrench	13 mm
Hydraulic tank filter cover fastening screw	Ring spanner/socket wrench	17 mm
Hose on offline filter cover	Ring spanner	19 mm



TIGHTEN ROTATOR SCREWS

1. Detach the grapple from the rotator by loosening six mounting screws (A).

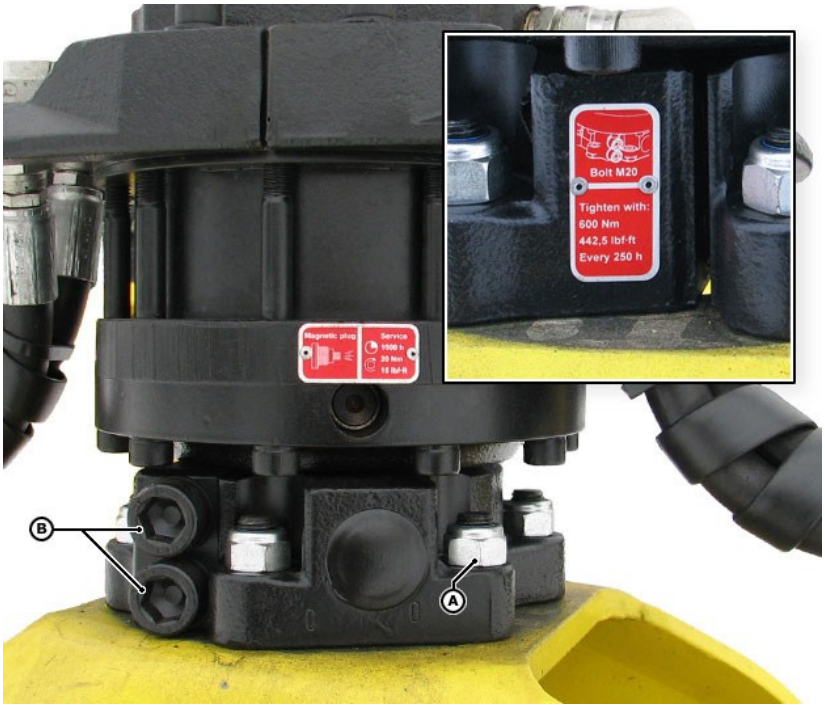
   ⚠ CAUTION

   Support the boom and the grapple well before detaching grapple from the rotator for the grapple can weigh up to three hundred kilos.

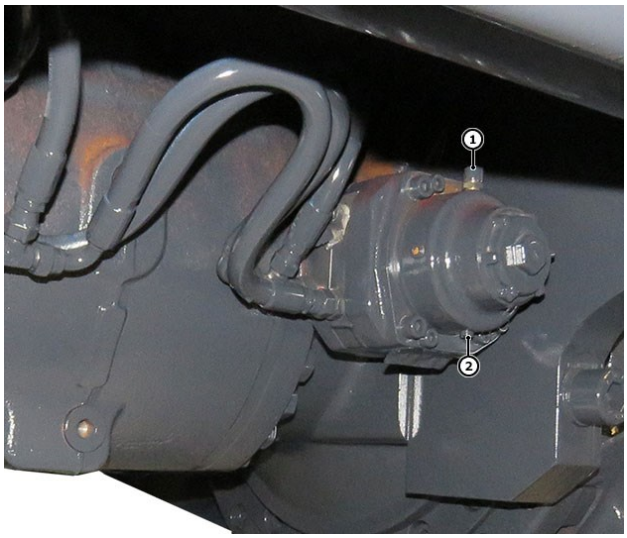
2. Check torque on the two M20 allen head screws (B) of the rotator bottom. Tighten the screws to 600 Nm (442.5 lb-ft)
3. Attach the grapple back to the rotator by tightening the mounting screws (A) to 290 Nm (214 lb-ft).

A. Six rotator mounting screws
B. Two rotator clambing screws (Indexator)

Purpose	Tool	Size
Rotator mounting screws	Allen key	14 mm
Rotator mounting nuts	Fork spanner	24 mm
Rotator clambing screws	Allen key	17 mm
Rotator clambing screws	Torque wrench	600 Nm



DRAIN BRAKE CYLINDERS



The compartment of brake cylinders may fill and lead to oil leak through the breather (1).

Check the brake cylinders requlary and drain oil through the drain plug (2).

NOTE: *In cold conditions the brake cylinders may need special attention. If operating temperatures are below minus 25 °C, monitor the brake cylinder areas of the front and rear axles on weekly basis. If necessary, drain excessive oil more often.*

IMPORTANT: *Normally the brake disc compartment should not fill before 2000 hours. But leakage might occure even with lower hours of 500-1000 hours. First drain the oil out and if the leakage rate stays high, contact an authorised service workshop.*

CHANGE BOGIE CASING OIL

Change oil in both bogie casings as follows:

1. Clean the surrounding area of the bogie casing drain and filling plugs.
2. Open the drain plug and drain oil into a barrel and close the plug.

   IMPORTANT: *This oil is not reusable.*

3. Carry out the same procedure at both ends of the bogie casing.
4. Tighten the drain plugs and refill with new oil to the level of the filling port (plug) in both bogie casings.

A. Bogie casing drain plug
B. Bogie casing filling plug

Purpose	Tool	Size
Bogie casing drain and filling plugs	Allen key	17 mm

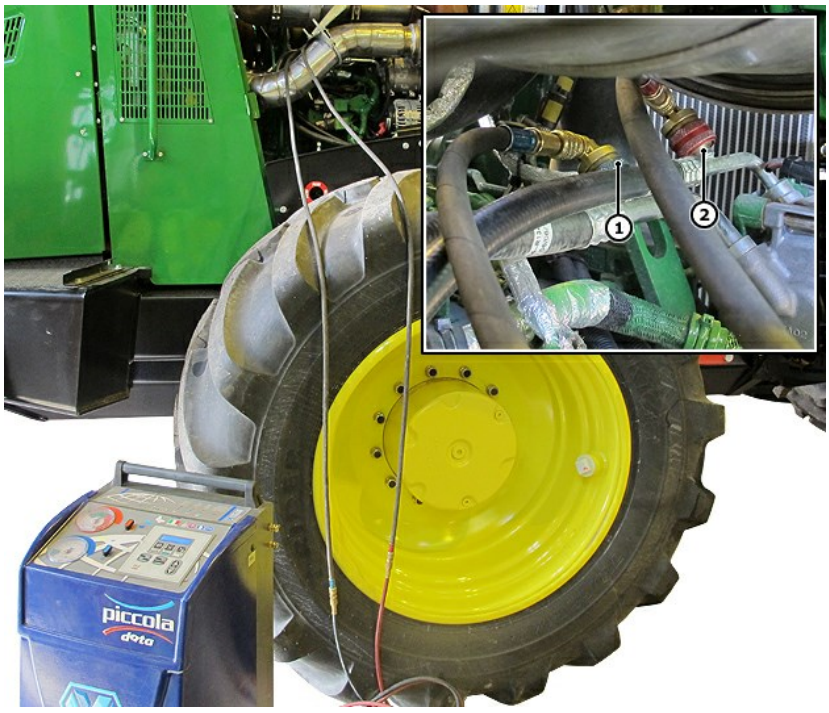
Step 2

Turn the cabin into service position before switching off the engine. In a forwarder, the cabin is turned sideways to the chassis.

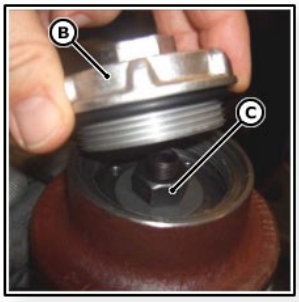
Step 3

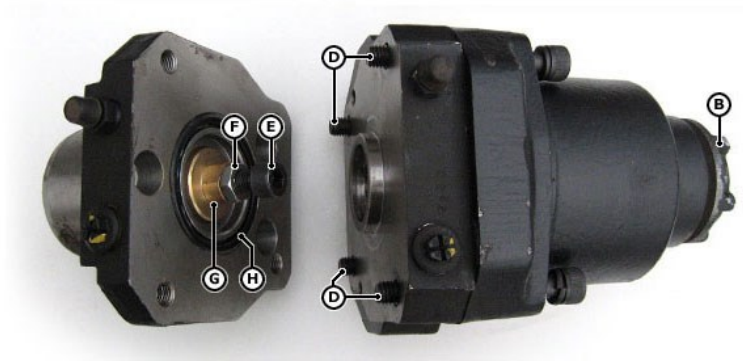
Empty the air conditioner refrigerant. Connect the service unit hoses into service connections (1) and (2).

NOTE: *Refrigerant removal can be facilitated by running the air conditioner unit at full power approximately 15 minutes before switching off the machine, weather permitting.*



Usage	Tool	Size
Protective cover	Ring spanner/socket wrench	24 mm
Release screw	Allen key	8 mm
Release locking nut	Ring spanner	16 mm
Cylinder fastening screws	Allen key	8 mm
Locking nut	Ring spanner	17 mm
Adjusting screw	Allen key	8 mm





one month, remove the batteries from the machine.

NOTE: *Follow the battery manufacturer's instructions for correct storage and service.*

IMPORTANT: *The fire extinguisher system does not work once the batteries are disconnected.*

17. If batteries are left on the machine during storage, press the battery switch. It switches off power supply to all electrical equipment connected directly to the batteries except the optional fire extinguisher system.

    IMPORTANT: *Check that the fire extinguisher system is in working condition.*

    NOTE: *It is recommended to use trickle charge, if the batteries are left to the machine equipped with the fire extinguisher system.*

A. Steering interlock
B. Primary filter element of the air cleaner

NOTE: *John Deere engines expected to be stored more than six months MUST have long term storage preparation. (See Preparing Engine for Long Term Storage, in separate John Deere Diesel Engines Operator's manual.)*

JOHN DEERE

EU Declaration of Conformity

Deere & Company

Moline, Illinois USA

The undersigned hereby declares that:

Machine Type:

Model(s):

Serial Number(s):

fulfill(s) all relevant provisions and essential requirements of the following directives:

DIRECTIVE	NUMBER	CERTIFICATION METHOD
Machinery Directive	2006/42/EC	Self-certified, per Article 5 of the Directive
Electromagnetic Compatibility (EMC)	2014/30/EU	Self-certified, per Annex II of the Directive

The product is in conformity with the following standards and/or other normative documents:

EN ISO 11850

EN ISO 14982

Name and address of the person in the European Community authorized to compile the technical construction file:

Brigitte Birk
John Deere GmbH & Co. KG
Mannheim Regional Center
John Deere Strasse 70
D-68163 Mannheim, Germany

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Place of Declaration: John Deere Forestry Oy
Pyhäselänkatu 18
80101 Joensuu
Finland

Signed: _____

Date of Declaration:

Name:

Manufacturing Unit: John Deere Forestry Oy
Pyhäselänkatu 18
80101 Joensuu
Finland

Title:

CE

Original

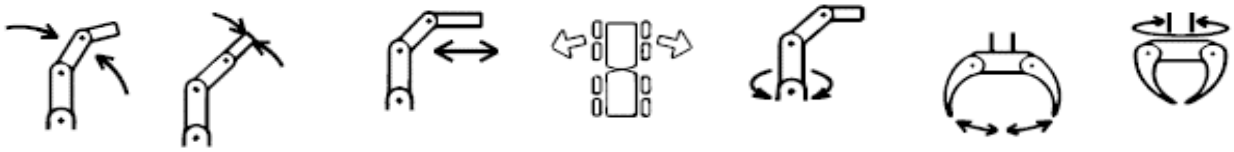
English

Boom valve LS-pressures

E-series Forwarders

MPa	LS-pressure in schematic		LS-pressure in gauge	
810E				
	A	**B**	**A**	**B**
Slew	21.5		20.85	
Grapple	19	19	18.5	18.5
1010E				
	A	**B**	**A**	**B**
Steering	21.5		20.4	
Slew	21.5		20.85	
Grapple	19	19	18.35	18.35
1010E IBC				
	A	**B**	**A**	**B**
Steering	21.5		20.85	
Slew	21.5		20.85	
Grapple	21	19	20.45	18.35
1110E / 1210E / 1510E				
	A	**B**	**A**	**B**
Steering	21.5		20.85	
Slew	21.5		20.85	
Grapple	19	19	18.35	18.35
Rotator	28		MAX	
1110E IT4 / 1210E IT4 / 1510E IT4				
	A	**B**	**A**	**B**
Steering	21.5		20.85	
Slew	21.5		20.85	
Grapple	21	19	20.45	18.35
Rotator	28		MAX	
1910E				
	A	**B**	**A**	**B**
Steering	21.5		20.85	
Slew	21.5		20.85	
Grapple	21	19	19.9	17.9
Rotator	28		MAX	

MAIN BOOM OUTER BOOM EXTENSION STEERING SLEW GRAPPLE ROTATOR



22.2.2019