CONTENTS

SAFETY

SAFETY REQUIREMENTS FOR FLUID POWER SYSTEMS AND COMPONENTS – HYDRAULICS (EUROPEAN STANDARD PR EM 982)

Flexible hose assemblies must not be constructed from hoses which have been previously used as part of a hose assembly.

Do not weld hydraulic piping.

When flexible hoses or piping are damaged, replace them immediately.

It is forbidden to modify a hydraulic accumulator by machining, welding or any other means.

Before removing hydraulic accumulators for servicing, the liquid pressure in the accumulator must be reduced to zero.

Pressure check on hydraulic accumulators shall be carried out by method recommended by the accumulator manufacturer.

Care must be taken not to exceed the maximum allowable pressure of the accumulator. After any check of adjustment there must be no leakage of gas.

SAFETY PRECAUTIONS

Farm accidents can be prevented with your help

No accident prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

To read accident reports from all over the country is to be convinced that a large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it.

It is said that “The best kind of safety device is a careful operator who with care and mature consideration can save more lives and limbs than any accident prevention program which is not adhered to”.

Further in this chapter you will find a list of the most important safety precautions.

Take time to read and follow the instructions and furthermore, be careful!

Some pictures in this manual may show the safety guarding open or removed to better illustrate a particular feature or adjustment.

Ensure to close or replace all guards before operating the machine.

General and Operating Safety

Most farm machinery accidents can be avoided by the observance of a few simple safety precautions.

1. The machine must only be used by a skilled operator familiar with all the controls and harvesting techniques on cultivated land with slopes up to maximum 26% (15°) uphill and downhill.
   In the listed below you can find the “MAXIMUM %” sideways driving that is permitted [provided good even ground and sufficient tyre adherence conditions exist] .

Drive Tire	Overall Width	Side Slope
650/75R32	3.5m	35% (19°)
650/75R32	3.75m	40% (22°)
710/70R38	3.5m	35% (19°)
710/70R38	3.75m	40% (22°)
800/65R32	3.75m	40% (22°)
800/65R32	4.0m	40% (22°)
900/60R32	4.1m	40% (22°)
1050/50R32	4.3m	40% (22°)

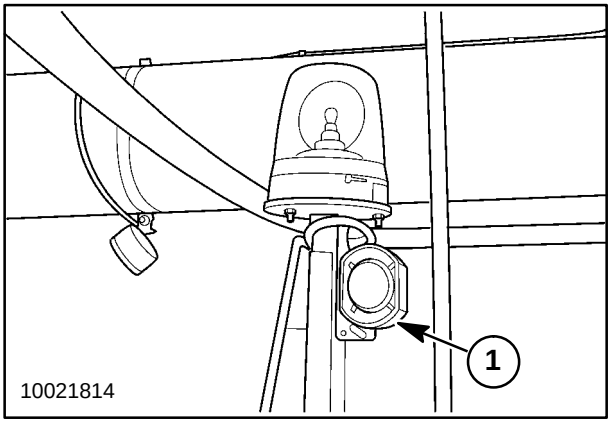
2. Do not permit anyone other than the operator to ride on the combine.
3. Before starting the engine, ensure everyone is clear of the combine.

   Warn bystanders by sounding the horn several times.
4. Keep children away from and off the combine at all times.
5. No-one should be standing on the ladders when the machine is moving.
6. When driving on public roads, observe traffic regulations, adapt your speed to road and traffic conditions and ensure that all lights and other safety mechanisms on the machine (if they are required) are fitted and work properly.

   The grain tank must be empty when driving on the road. Ensure that the unloading tube is locked in its closed position.
7. Ensure that both brake pedals are locked together when travelling on public roads.

Buzzer

On the top of the straw hood a buzzer is installed to inform people that there will follow an action with the combine. When the ignition key is in “contact” position the buzzer sounds once. When the combine is placed in reverse, the buzzer, 1, sounds intermittently.



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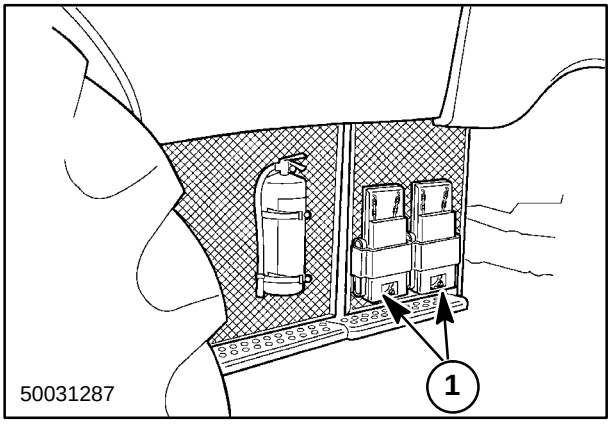
Straw elevator additional support

For certain countries there is a legal obligation to have an additional support installed on the side of the straw elevator. This support must be installed whenever the machine is driven on public roads.

When not in use, the support can be stored latched to the feeder frame.

Wheel chock

For some countries metal wedges are stored at the side of the combine, 1.



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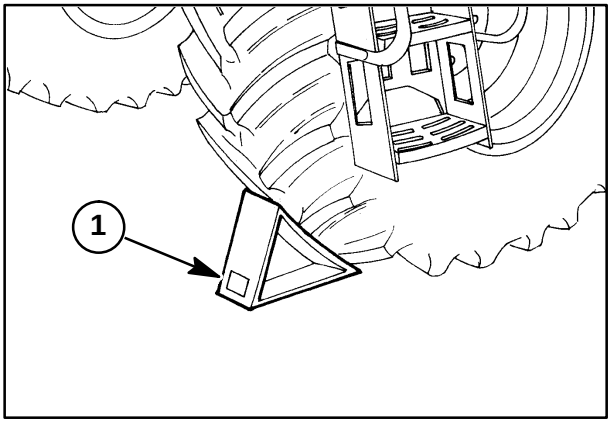
When the machine is parked on a nonlevel surface, wedge 1 has to be placed at the lowest side, against the traction wheel.

NOTE: *Do not place the wedges against the steering wheels.*



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SECTION 2

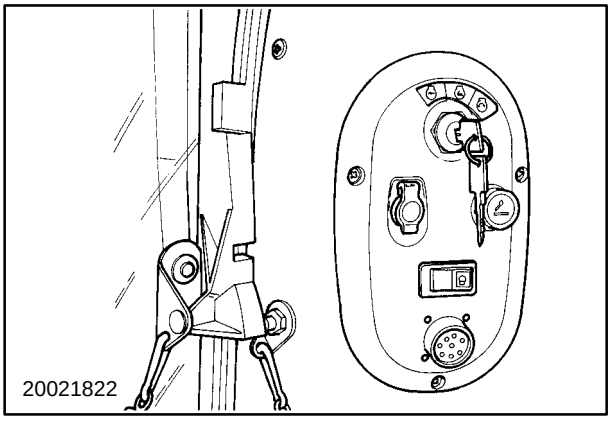
CONTROLS, INSTRUMENTS AND OPERATION

CAB AND CONTROLS

Emergency Exit
The emergency exit is to be found on the right-hand side of the operator's seat, opposite to the door that gives access to the cab.

To escape from the cab through the emergency exit, proceed as follows:

- Unlock the emergency exit door handle in three steps.
  1. Flip down the handle until it is in horizontal position.
  2. Push the door slightly open until the metal pin that is attached to the cab frame is visible through the notch in the handle.
  3. Flip up the handle in order to release the handle from the pin.
- Open the emergency exit door completely (is secured with a chain).
- Step over the right hand console and leave the cab.
- Use handrail, 1, as handholds, step on step, 2.



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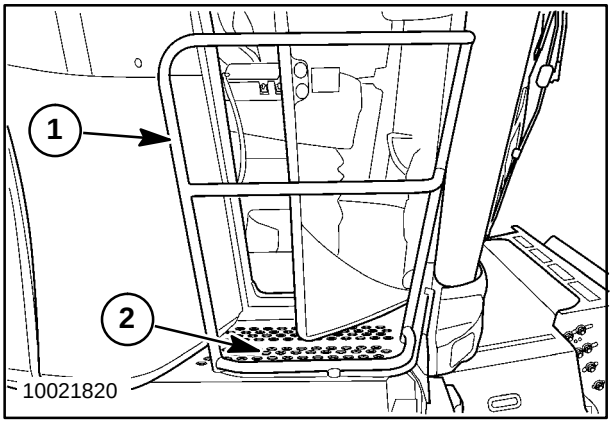

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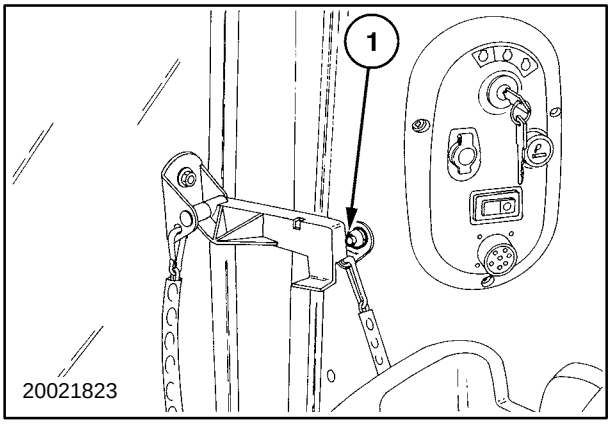
An additional notch, 1, is provided in the emergency exit door handle to set the door in a fixed open position.



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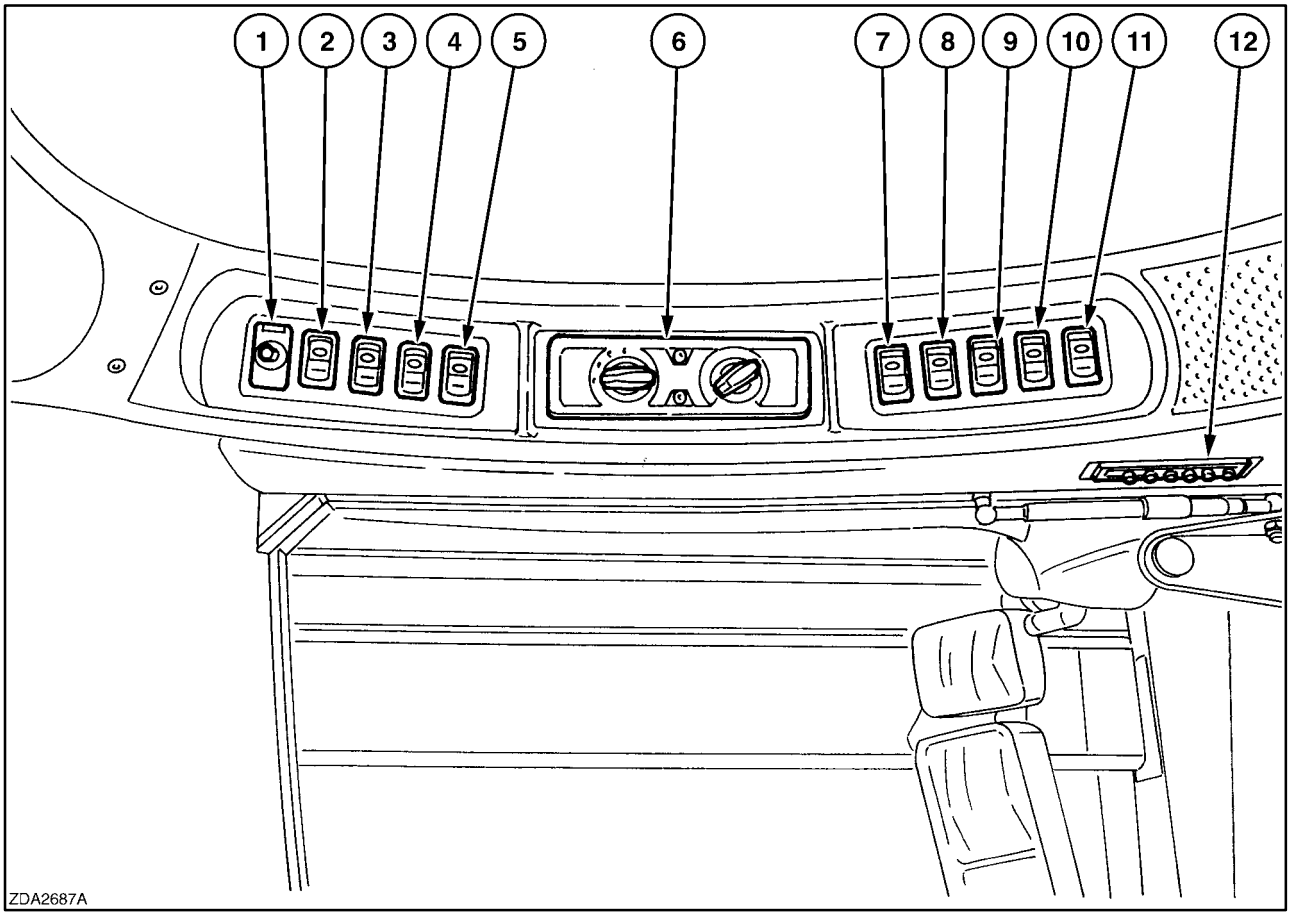
Cab Roof Controls



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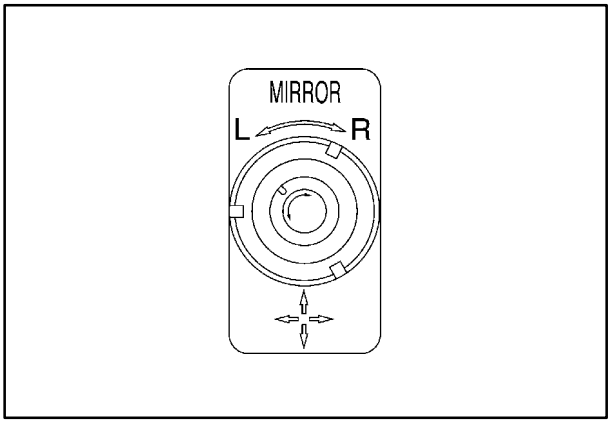
1. Mirror adjustment switch
   - Arrow to the left: left-hand mirror
   - Arrow to the right: right-hand mirror



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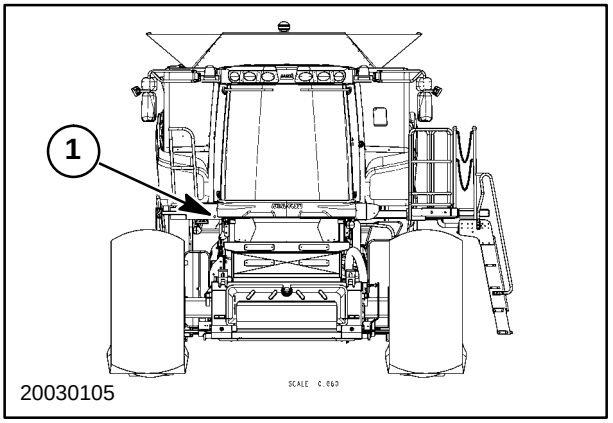
OTHER COMPONENTS

- 12-Volt DC socket, 1, (right operator platform)

Live at all times.



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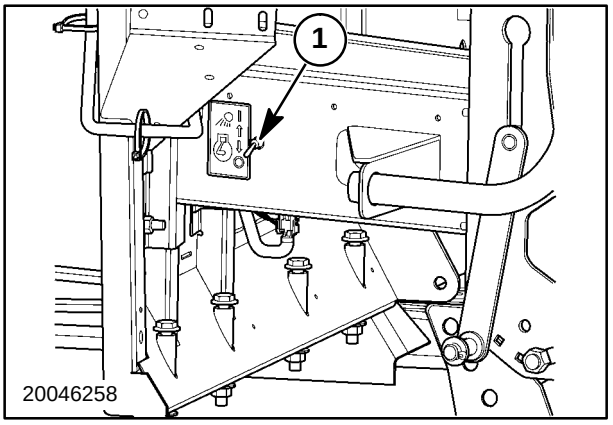
Engine compartment light switch, 1.

Live at all times.



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%M –– (Black) Indicates that the manual moisture override (found on the HARV> HARV* Screen) has been turned on.

Warning Indicators alert the operator by flashing the window and providing a periodic audible alarm that a critical setting or signal status has changed. The warning indicators flash at two different speeds. This provides the operator with a quick visual indication as to the severity of the warning. Items which the operator can manually activate, or adjust, will flash once per second.

Items which relate to system performance flash at a faster rate. since these items are critical to the operation of the system. They will be displayed at the top of the status/ warning box, when active.

Warning Indicators

ALARM –– (Flashing Black, slow rate) Indicates that a alarm type alarm is active.

AREA –– (Flashing Black, slow rate) = Indicates that area control has been turned OFF (HARV> HARV*).

CARD –– (Flashing Black, fast rate) Indicates that a valid card with a valid file is not inserted into the display.

CUT –– (Flashing Black, slowrate) = Indicates that the cutting width/ rows are manually set less than or greater than the default setting on the SETUP> COMBINE — HEADER screen.

ERROR –– (Flashing Black, slow rate) Indicates that a error type alarm is active.

GPS –– (If Equipped) (Flashing Black, fast rate) — Indicates that full GPS/DGPS signal is NOT present.

HEAD –– (Flashing Black, fast rate) Indicates that crop flow has been detected without all conditions for .REC. being met.

LOAD –– (Flashing Black, slow rate) Indicates that a load has not been created for the current field and machine operation is detected.

MARK –– (Flashing Black, slow rate) = Indicates that at least one field marker has been set and is still active .MARK. will flash and provide an audible warning every 10 seconds until all markers are turned off.

STOP –– (Flashing Black, fast rate) = Indicates that a shutdown alarm type alarm is active.

YMIU –– (Flashing Black, fast rate) = Indicates that the display cannot detect the appropriate communication from the YMIU.

SECTION 3
FIELD OPERATION

GENERAL

BEFORE DRIVING THE COMBINE

1. Read this Operator's Manual carefully; especially the paragraphs headed "safety precautions" and "starting the engine".
2. Check all chain and belt tensions (refer to section 4 – "LUBRICATION AND MAINTENANCE".
3. Check all the pressures daily. Keep the tires inflated to the pressures given in section 8 – "SPECIFICATIONS".
4. Check the wheel nuts torque daily during the first week of operation and thereafter on a weekly basis.
5. Check the coolant level (ensure the machine is standing on level ground). Refer to section 4 – "LUBRICATION AND MAINTENANCE" .
6. Check the hydraulic and hydrostatic oil reservoir level with all hydraulic cylinders retracted and the header lowered to the ground (machine standing on level ground). Add oil if necessary. Refer to section 4 – "LUBRICATION AND MAINTENANCE".
7. Lubricate the combine completely as described in section 4 – "LUBRICATION AND MAINTENANCE".
8. Sit down on the operator's seat and adjust it according to your weight and size.
9. Adjust the steering wheel to the desired position. Adjust the rear-view mirrors, if necessary.
10. Start the engine. Refer to the next paragraph headed "Starting the engine".
11. Turn the ladder of the operator platform in front of the traction wheel when driving on public roads.
12. Raise the ladder of the engine compartment.
13. Ensure the unloading tube is in the closed position.
14. Disengage the parking brake.
15. Move the throttle into the maximum speed.
16. Raise the feeder to its highest position.
17. Before driving on public roads, select road mode on right-hand console.

IMPORTANT: *To prevent the hydraulic oil from overheating, do not hold the header height control switch in the operating position longer than is necessary. The same applies to the hydraulic controls for the reel height, and the reel fore and after adjustment.*

STARTING THE ENGINE

Ensure you are thoroughly familiar with the instruments and controls before starting the engine for the first time.

To start the engine safely, follow the points as outlined below.

⚠ CAUTION ⚠

Before starting the engine, ensure there is enough ventilation and everyone is standing clear of the combine.

SEPARATION

Once the grain has been threshed, it must be separated from the trash that came into the combine with it. This function begins to occur as soon as the crop enters the rotor cage. About 90% of the grain will be separated in the threshing area of the rotor cage. This is a secondary function of the threshing section. The more that can be separated here, the more material the machine can handle. Separation in an Axial Flow occurs due to the centrifugal force created by the spinning rotor. The heavy particles (grain) will be thrown out of the rotor cage openings onto the shaker pan, which lies under the rotor.

Separator Modules

Grain that does not separate in the threshing area will be separated in the rear half of the rotor cage. This is the separation area. The modules provide agitation and relatively large openings for any grain left in the crop material. They are in a set of four, (same units as described in the threshing section), and are rigidly bolted into place. The modules may be removed by removing the bolts on the outside, (right or left), and pulled off the center support. The grates are nonadjustable and are normally associated with the Skip Wire, Slotted, Solid and Round bar modules.

CROP SPEED CONTROL

One of the most important aspects of running an Axial Flow correctly is to have the proper control of the crop speed through the machine. Crop speed is controlled completely by the rotor and rotor cage assemblies. As a general rule, the crop material will travel through the machine at about half the rotor speed.

Four basic adjustments for crop speed control are available to the operator once the machine is **properly equipped** for the crop to be harvested.

1. Rotor Speed
2. Concave Clearance
3. Cage Vane Position
4. Number of straight separator bars.

The most common mistake is running the rotor speed too slow. The rotor in an Axial Flow can be run faster than a conventional cylinder for the following reasons:

1. Multiple passes over the modules allow for a more relaxed and/or less sensitive module setting. This is greatly aided by the deep relief area between rasp bars which gives crop to crop threshing.
2. The relaxed setting allows for faster rotor speed with lower risk to grain damage as compared to a conventional cylinder with tight, critical concave setting.
3. The relaxed clearance and high rotor speed with lower risk to damage, allows for more capacity. Keeping the combine at full capacity minimizes loss and damage because of the crop to crop threshing effect.
4. Prior conventional combine owners tend to be conservative on rotor speed when operating their Axial Flow because of prior experiences. Slower rotor speeds will effect damage, slow ground travel, and reduce capacity. This occurs because the material is staying in the cage too long. The crop flow is reduced and rolling or roping of the crop can occur. This is signaled by a rumbling noise. The horsepower required to run the machine is also increased when this occurs. A faster rotor speed will require less horsepower because the rotor momentum helps move the crop. Separation is also increased because centrifugal force is increased.

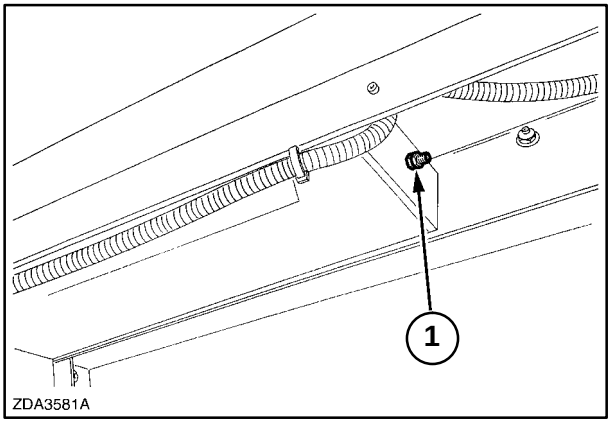
Change Rotor Speed

The single easiest way to increase or decrease crop speed is by changing the rotor speed. This is accomplished by pushing the rotor INCREASE/DECREASE switch in the RHC. This adjustment can be made on the go. When adjusting this, use increments of 20–30 RPM at a time until the desired result is accomplished. This will prevent missing the correct operating speed for the crop condition. If the grain scan monitor is set properly, the effect of the rotor speed change can be observed on the monitor. If uncertainty exists, or the machine does not have a grain scan monitor, stop and check the ground. **Rotor Speed provides for machine capacity and separation.**

Change Module Clearance

A second way to change crop speed is to adjust the module clearance. The more relaxed, or open the modules are, the slower the material will flow through the machine. This occurs because the rotor does not have as much traction against the material. The crop mat will become thicker. A closed module setting produces faster crop movement and a thinner mat of material. The extreme ends of module adjustment for a given crop will produce similar results. Usually, over threshing, cleaning system overload, excessive power requirements, and grain damage occur. The acceptable module clearance range will be somewhere between these extremes, and compared to a conventional machine, the range is very wide. **Module clearance provides for threshing ability, keeping the modules clean and controlling the material.**

3. Loosen jam nut, 1, and adjust distance x with the second nut (located inside the grain tank).
4. When distance x equals 0 – 1 mm (0 – 3/64″), tighten jam nut, 1, and four bolts, 1, Figure 129. Torque the four bolts to 290 – 375 N·m (215 – 275 ft. lbs.).



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UNLOADING MECHANISM

To engage the unloading mechanism press the unload engagement button (first time) on the multi function handle.

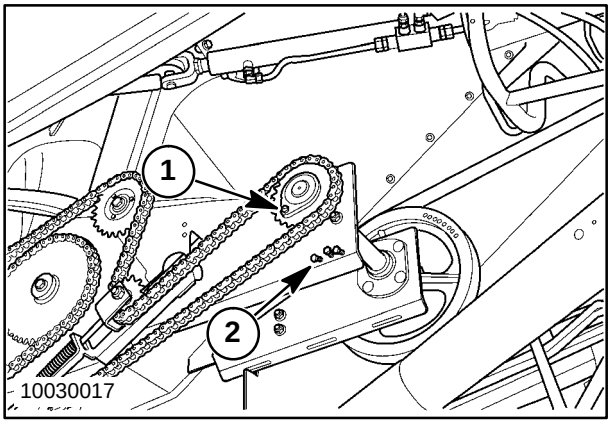
To disengage press again the unload button (second time) or:

- Depress the emergency stop button.
- Select the road mode with the road mode selector switch.

The unloading system drive is protected by a shearbolt, 1.

Spare shearbolts, 2, are located below the sprocket.

NOTE: *If repetitive failures occur, adjust cross auger covers down.*



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Crop Weight Calibration (Flow Sensor)

A crop weight calibration needs to be performed in order for the machine to accurately learn the relationship between crop hitting the flow sensor and converting that information into crop weight. This is accomplished by harvesting several samples and then physically weighing the samples (at a grain elevator or with a grain cart with scales) to get the actual weight for each sample. The actual weights are then entered into the appropriate load and the system adjusts to the correct weight. These are referred to as calibration loads. When correctly performed, the system is capable of accuracy levels between 1 to 3 percent. The following is the recommended process for obtaining calibration loads and performing the weight calibration:

- Moisture sensor calibration is performed before harvesting the calibration loads.
- Start a new load to ensure there is currently no harvest data in the load (HARV*).
- Harvest the calibration loads. One is the minimum, four is recommended, and ten is the maximum number of loads that can be used. If only one load is to be used, ensure that the sample is collected at what is expected to be the "normal" crop flow rate (bu/hr). When multiple loads are used, each load must be harvested at a different flow rate ranging from the maximum rate expected down to 30 percent of maximum. Try to maintain the target flow rate while harvesting each load. Use the "FLOW–D" value as a guide for obtaining the calibration loads. Either vary machine ground speed, or reduced swath width in order to vary the harvest rate.
- Ensure the vehicle to be used to haul or measure the loads is empty at the start of each load, prior to unloading into the vehicle.
- Ensure a new load is immediately selected on the display after unloading into the weigh vehicle, prior to collecting any additional harvest information.
- A calibration load does not have to be a single tank, wagon or truck load. It can be part of, or several of, any of these.
- Calibration load should be large enough to obtain accurate weight readings by the scale system being used. The minimum sample size should be 1359 kg (3000 lbs.) and the recommended sample size is 4536 kg (10,000 lbs.).
- The key is to have all the calibration loads be equal size ± 5 %.
- Harvest calibration loads in a condition that is consistent with field operation. Try to avoid using headlands, or areas which have a lot of stop and go operation, as calibration loads.
- Enter the actual weight (obtained by weighing the load) in the monitor for the correct corresponding load. (CAL>LOAD — YIELD).
- Select loads to be used for calibration that have an initial error of less than ten percent. If collected loads are slightly higher but are consistent or grouped, the data can still be used.
- Select loads that have % errors that appear to be grouped. Avoid outlying loads having % higher or lower than the majority of the other loads.

  Example 1: Four loads were collected. Error % was –2.3, 2.5, 3.8, 9.7. Avoid using the 9.7% value or rerun that load for data verification.

  Example 2: Four loads were collected. Error% was 8.5, 9.7, 11.2, 10.3. All data can be used as the values are tightly grouped.

NOTE: *Additional calibration loads can be added during the harvest season. This will allow the system to learn if crop condition changes.*

MEMORY SCREENS

The memory screen provides functionality that allows the operator to manage the harvest information located on the PC data card while in the machine. Care must be taken when making and executing selections, as data can be deleted or altered. When used correctly, these selections provide the operator with the ability to manage PC card records at the machine.

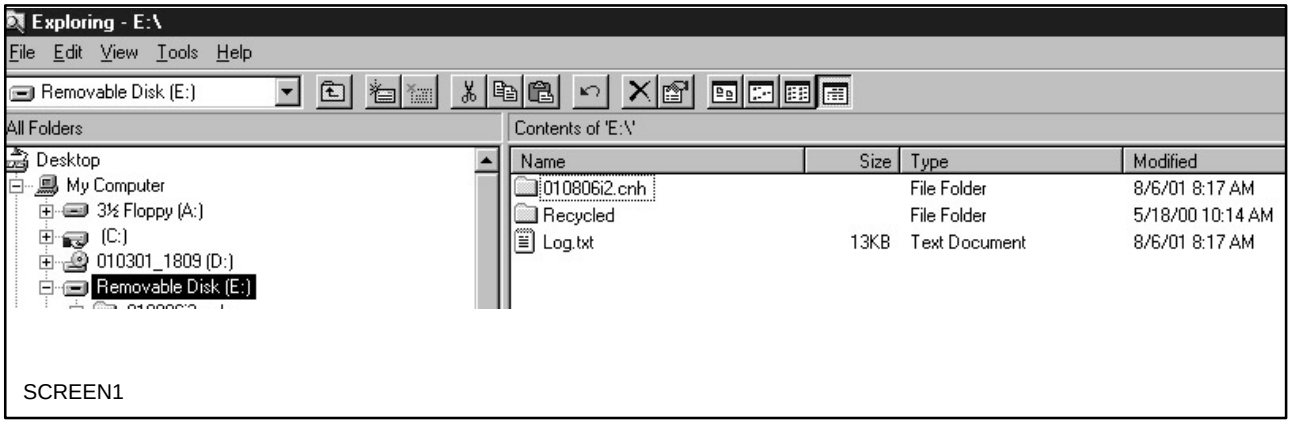
PC Data Card

The ATA Flash, PC data card is the primary storage media that also serves as the only means to transfer harvest information between the machine and the desktop computer. Ensure that the PC card is installed into the display prior to starting the machine. When the display is powered, it reads the data file on the card and makes the FARM/FIELD/LOAD information available. During harvest, summary information is logged every second (GPS related data is recorded every one, two, or three seconds). This data is temporarily stored in the AFS display and then recorded directly to the PC card once every minute. DO NOT remove the PC card during operation without first powering down the system or data will be lost. Turning the key switch to the OFF position will automatically launch the shutdown procedure. The AFS display will notify the operator when it is safe to remove the PC card.

The shutdown procedure automatically backs up your most recent FARM/FIELD/ LOAD summary data and machine calibration data to the AFS display. GPS records are not backed up on the display; they only reside on the PC data card. The backup file on the display will be overwritten each time the display is shutdown, so you will only have backup information available since the last time you harvested.

NOTE: *This backup data is not as secure as the data on your PC card; therefore, always treat your PC card as the primary storage media.*

The PC card contains the FARM/FIELD/LOAD names, calibration information, machine setup information, GPS records, and harvest information. This data is contained within a file structure on the card and is automatically created at power-up, updated while harvesting, and updated at shutdown. The file structure uses a directory hierarchy, which have folders automatically named and created by the Universal Display. If the PC data card were to be viewed in windows explorer, the highest level files on the card would appear as shown the figure below.



SCREEN1

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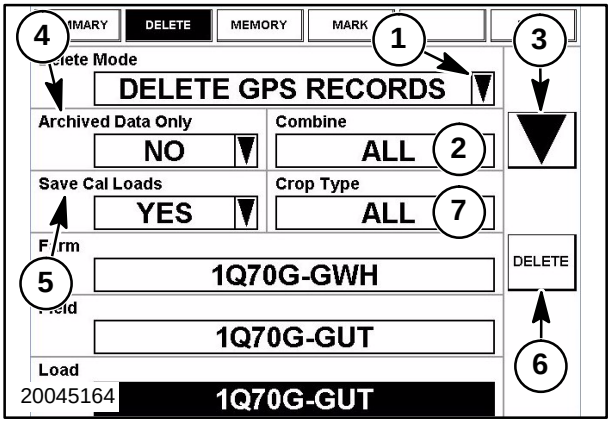
From the UTILITY>DELETE screen press the Selection List box, 1, until “DELETE GPS RECORDS” is displayed.



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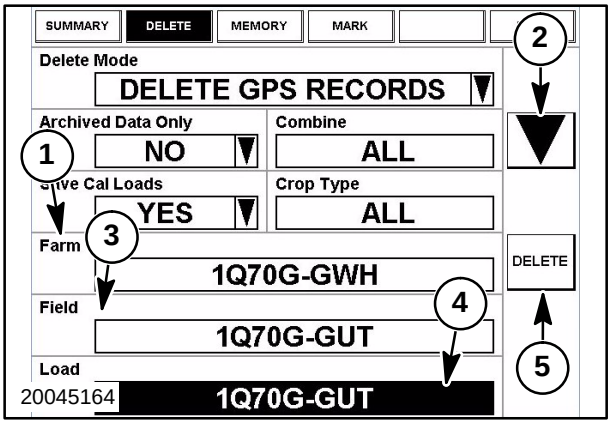
1. Press and blacken the Combine selection box, 2. Press the down arrow, 3, that appears which will bring up the Combine selection screen. Select these Combine from which the GPS records are located that are to be deleted.
2. Select whether or not to delete Archived Data Only, 4.
3. Select whether to Save Cal Loads, 5.
4. If all GPS records are to be deleted from the card, select ALL. Press the enter button to return to the Delete screen. If all GPS records are to be deleted, press the Delete button, 6. A warning message will come up stating “Warning deleting data, continue”. Press the Yes button if you wish to delete all GPS data or the No button if you wish to cancel the delete request. If required, go to the next step.
5. Press and blacken the Crop Type selection box, 7. Press the down arrow that appears, which will bring up the Crop selection screen. Select the Crop on which you have GPS information recorded for the required load, or if more than one crop is harvested with GPS information, select All. Press the enter button to return to the Delete screen.



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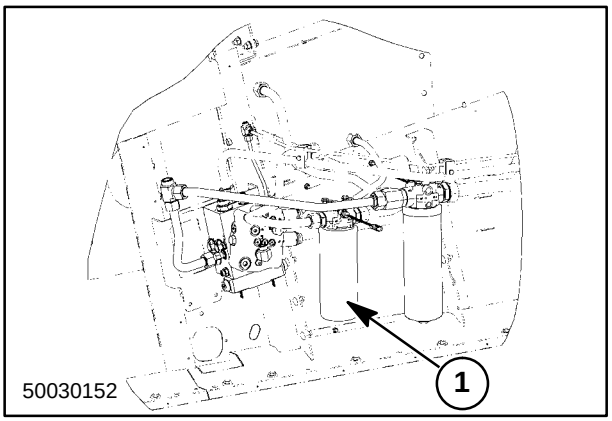
6. Press the Farm selection box, 1. Press the down arrow, 2, that appears, which will bring up the Farm selection screen. Select the Farm from which GPS information is recorded that is to be deleted. Press the enter button to return to the Delete screen.
7. With the desired farm showing in the Farm selection box, press the Field selection box, 3. Press the down arrow that appears, which will bring up the Field selection screen. Select the Field with GPS information that you require to delete. Press the enter button to return to the Delete screen.
8. With the desired field showing in the Field selection box, press the Load selection box, 4. Press the down arrow that appears which will bring up the Load selection screen. Select the load which you require to delete the GPS information, or if all GPS information for all loads for this selected field are to be deleted, select All. Press the enter button to return to the Delete screen. With the required load selected, press the Delete button, 5. A warning message will come up stating “Warning deleting data, continue”. Press the Yes button if you wish to delete the GPS information or the No button if you wish to cancel the delete request.

4. Remove the Hydro Pressure filter, 1.
5. Apply a film of oil to the gasket of the new filter.
6. Screw on the new filter by hand. Tighten firmly but do not use tools.



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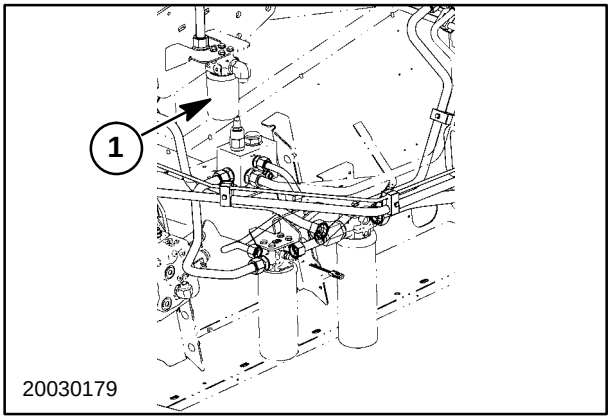
7. Every second oil change, remove the PTO Lube filter, 1.
8. Apply a film of oil to the gasket of the new filter.
9. Screw on the new filter by hand. Tighten firmly but do not use tools.



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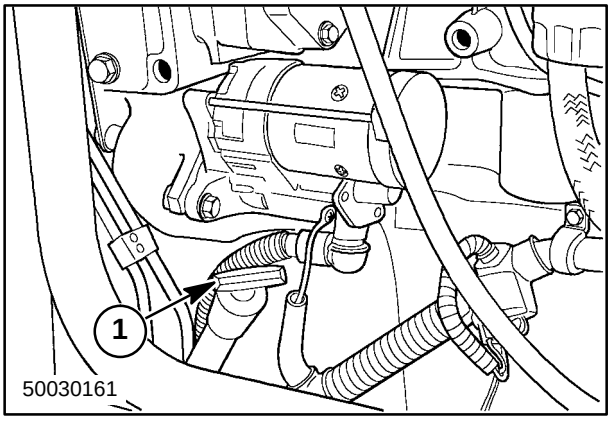
10. Fill the gearbox through filler hole, 1.
11. Start the engine. Run it at idle speed for five minutes and move the ground speed control lever slowly forward and backward with the gearshift in neutral position and the rear wheel drive (if installed) disengaged.
12. Turn the engine off.
13. Remove the dipstick, wipe clean and re-insert fully. Pull the dipstick out again and check the oil level. The oil level should be between the minimum and the maximum marks.



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Oil specification

- Use Case IH AKCELA HY-TRAN ULTRA

IMPORTANT: *Oil quality and cleanliness is of utmost importance for the reliability and life of the hydraulic and hydrostatic system. Deviation from the prescribed oil specification may lead to severe damage and void warranty.*

Fuse No.	Amperage	Function
F1	20A	ECU power (Electronic engines only)
F2	20A	Accessory 2
F3	20A	Accessory 1
F4	15A	Wiper
F5	15A	Cigar Lighter
F6	15A	Left-hand outer road/work lights
F7	15A	Right-hand outer road/work lights
F8	15A	Accessory Outlets
F9	10A	Washer/Mirror
F10	10A	Accessory socket
F11	5A	Radio
F12	5A	Future Options
F13	10A	Aux. Radio power
F14	10A	Service Lights
F15	15A	Service sockets
F16	20A	Seat pump
F17	15A	Separator blower
F18	25A	Main blower
F19	10A	A/C clutch
F20	7.5A	Left-hand marker/tail lights
F21	7.5A	Right-hand marker/tail lights
F22	20A	Shoe levelling actuator
F23	20A	Rotary screen brush
F24	20A	Concave/grain tank covers
F25	25A	Transmission gearshift motor
F26	15A	Starting fuse
F27	15A	Sieves
F28	15A	Fuel pump