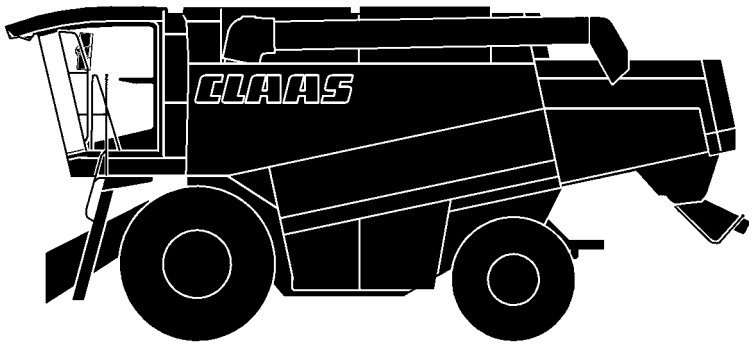
OPERATOR'S MANUAL

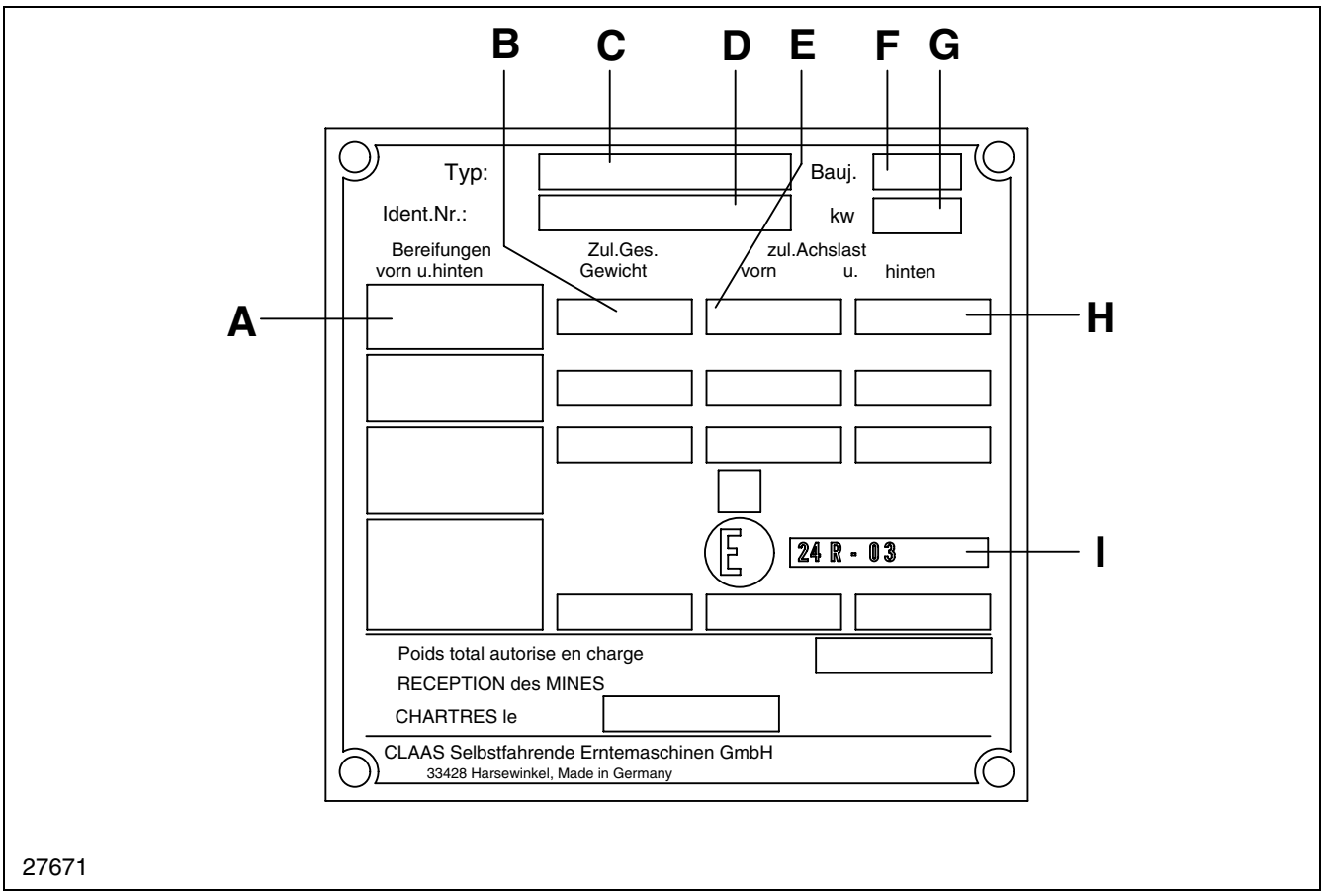
CLAAS



LEXION 460 / LEXION 450
LEXION 440 / LEXION 430
LEXION 420 / LEXION 410

CEBIS

10. Maintenance – basic machine



1

IDENTIFICATION PLATE / SERIAL NUMBER

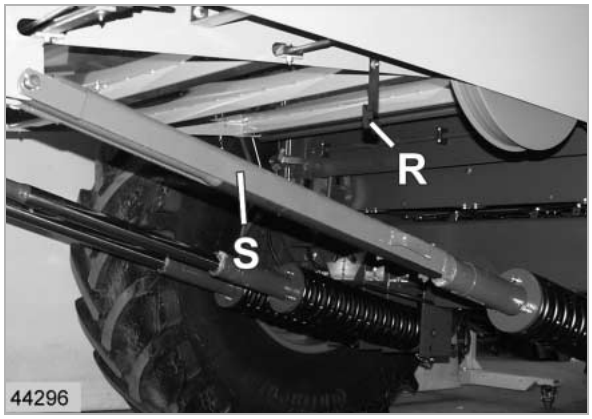
A = Tyres
B = Authorized gross weight
C = Type
D = Identification No. (serial number of machine)
E = Authorized front axle load
F = Year of manufacture
G = Rated capacity of engine (kW)
H = Authorized rear axle load
I = ECE-engine designation

(Fig. 1)

Safety lock

DANGER!

Work under raised attachment (cutterbar, maize picker head etc.) only when you are sure that the front attachment is safely supported!

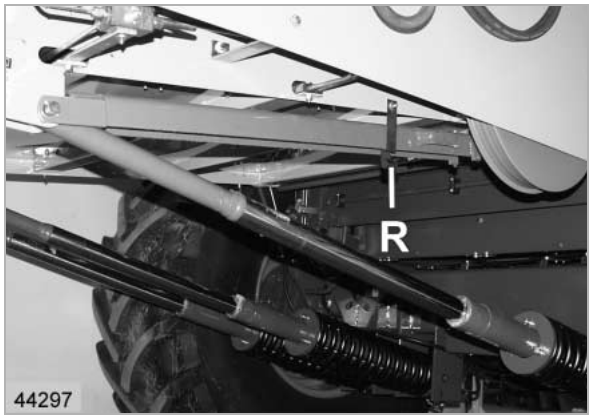


1

Completely raise the feeder housing.

Release safety lock (S) at latch (R) and fold onto the hydraulic piston.

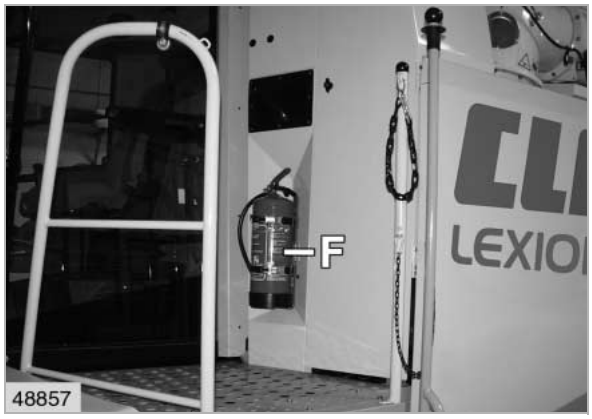
(Fig. 1)



2

During combine operation, the safety lock must be secured with latch (R).

(Fig. 2)



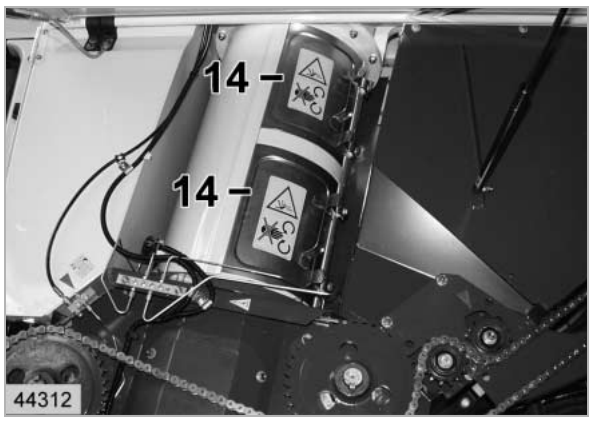
3

Fire extinguisher

The agent for the fire extinguisher manufacturer should check the extinguisher (F) at least every other year. The date of manufacture or the date last checked is shown on the extinguisher.

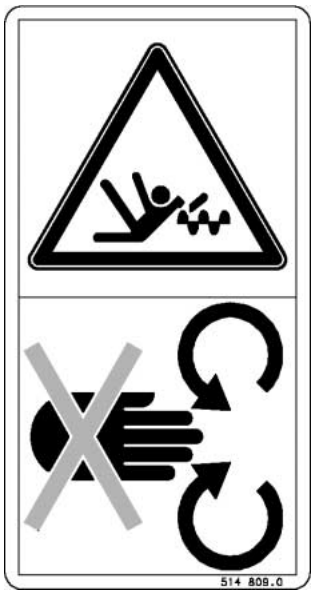
The fire extinguisher (F) must be installed on the left side of the machine, next to the engine compartment.

(Fig. 3)



24

25



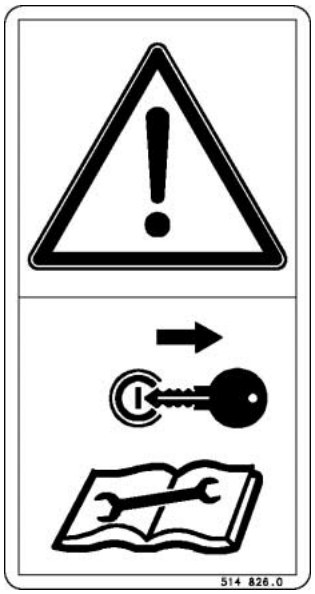
26

514 809.0 (14)

Keep hands away from rotating augers.

(Fig. 24, 25, 26)

57



58

514 826.0 (35)

Before carrying out repair and maintenance work, shut off the engine and remove the ignition key.

(Fig. 57, 58)

CLAAS LEXION 460 / 450 / 440

Cleaning unit

Forced air cleaning fan	6-section turbine fan
Wind volume control	by electrically controlled infinitely variable fan speed
Sieve pan	under-ventilated cleaning step in preparation floor, preparation floor sections can be removed from the front
– Standard sieve pan	split
– 3-D sieve pan (option)	dynamic side hill levelling, effective in 3 dimensions
Upper sieve	long-lipped frogmouth sieve
Lower sieve	short-lipped frogmouth sieve
Total cleaning area	5.80 m² (62.6 ft²)

Returns — returned to accelerator

Grain tank

Capacity	LEXION 460	9600 litres (approx. 7.6 metric tons of wheat)
	LEXION 450	8600 litres (approx. 6.9 metric tons of wheat)
	LEXION 440	8100 litres (approx. 6.5 metric tons of wheat)
Unloading tube	electro-hydraulic position control	

CLAAS LEXION 430 / 420

Specifications being determined on a machine equipped with 6-cylinder engine, full fuel tank, cabin with driver and 800/65 R 32 167 A8 R1 and 16.5/85 - 24 - 10 PR tyres.

Cutterbar	3.90 m (13'), 4.50 m (15'), 5.40 m (18'), 6.00 m (20'), 6.60 m (22'), 7.50 m (25')
Height adjustment	electro-hydraulic
Cutting height	
– Cutterbar with Auto Contour	from 595 mm* below ground level to 1440 mm* above ground level
– Cutterbar without Auto Contour	from 625 mm* below ground level to 1410 mm* above ground level
Clearance height (under cutterbar skids)	
– Cutterbar with Auto Contour	980 mm* with floatation springs in use 1270 mm* with floatation springs blocked
– Cutterbar without Auto Contour	950 mm* with floatation springs in use 1240 mm* with floatation springs blocked
	* may be as much as 50 mm less, depending on make of tyre
Intake auger	
– Speed	176 rpm with 13-tooth sprockets 204 rpm with 15-tooth sprockets
Spring tine reel	6 sections
Reel drive	V-belt-operated variable speed drive, electrically controlled
Reel speed:	
– via universal drive shaft	14-tooth sprocket infinitely variable from 12 – 47 rpm
	17-tooth sprocket infinitely variable from 15 – 57 rpm
– via intake auger	64-tooth sprocket infinitely variable from 15 – 60 rpm
	52-tooth sprocket infinitely variable from 12 – 49 rpm
Reel height adjustment	electro-hydraulic
Fore and aft reel adjustment	electro-hydraulic
Feed rake conveyor	chain conveyor
Cutterbar clutch	electro-hydraulically operated

CLAAS LEXION 410

Specifications being determined on a machine equipped with 6-cylinder engine, full fuel tank, cabin with driver and 800/65 R 32 167 A8 R1 and 16.5/85 - 24 - 10 PR tyres.

Cutterbar	3.90 m (13'), 4.50 m (15'), 5.40 m (18'), 6.00 m (20')
Height adjustment	electro-hydraulic
Cutting height	
– Cutterbar with Auto Contour	from 595 mm* below ground level to 1440 mm* above ground level
– Cutterbar without Auto Contour	from 625 mm* below ground level to 1410 mm* above ground level
Clearance height (under cutterbar skids)	
– Cutterbar with Auto Contour	980 mm* with floatation springs in use 1270 mm* with floatation springs blocked
– Cutterbar without Auto Contour	950 mm* with floatation springs in use 1240 mm* with floatation springs blocked
	* may be as much as 50 mm less, depending on make of tyre
Intake auger	
– Speed	176 rpm with 13-tooth sprockets 204 rpm with 15-tooth sprockets
Spring tine reel	6 sections
Reel drive	V-belt-operated variable speed drive, electrically controlled
Reel speed:	
– via universal drive shaft	14-tooth sprocket infinitely variable from 12 – 47 rpm
	17-tooth sprocket infinitely variable from 15 – 57 rpm
– via intake auger	64-tooth sprocket infinitely variable from 15 – 60 rpm
	52-tooth sprocket infinitely variable from 12 – 49 rpm
Reel height adjustment	electro-hydraulic
Fore and aft reel adjustment	electro-hydraulic
Feed rake conveyor	chain conveyor
Cutterbar clutch	electro-hydraulically operated

SAFETY FEATURES

Slip clutch	Slip clutch torque (cold state)	Spring length
Reel	430 ± 30 Nm	26 mm
Main table auger	700 Nm	
Upper feed rake shaft	840 ± 40 Nm	

Shear bolt	
Grain tank unloading	M 8 x 45 DIN 931-8.8 hex. bolt VM 8 self-locking nut Torque setting 25 Nm

Putting the Climatic into operation

DANGER!

Important notes regarding the compressor cooling system.

1. Avoid any contact with refrigerants!
2. Consult a physician immediately if refrigerant contacts the eye!
3. Maintenance and repairs must only be executed by a professional refrigerant workshop.
4. Welding must not be carried out on sections of the refrigerant circulation and their immediate neighbourhood. **– Danger of poisoning!**
5. The maximum ambient temperature for refrigerants is 80 °C.

Oil for the compressor and refrigerants – see Maintenance section.

Note:

When the motor is at a standstill and the ignition is switched on, the evaporator blower speed is reduced to 30% of the nominal speed after 10 minutes.

This occurs to prevent high discharge of the battery.

Switch on the ignition (start the motor).

After the ignition is switched on, the software version is displayed for 3 seconds.

Climatic self-test:

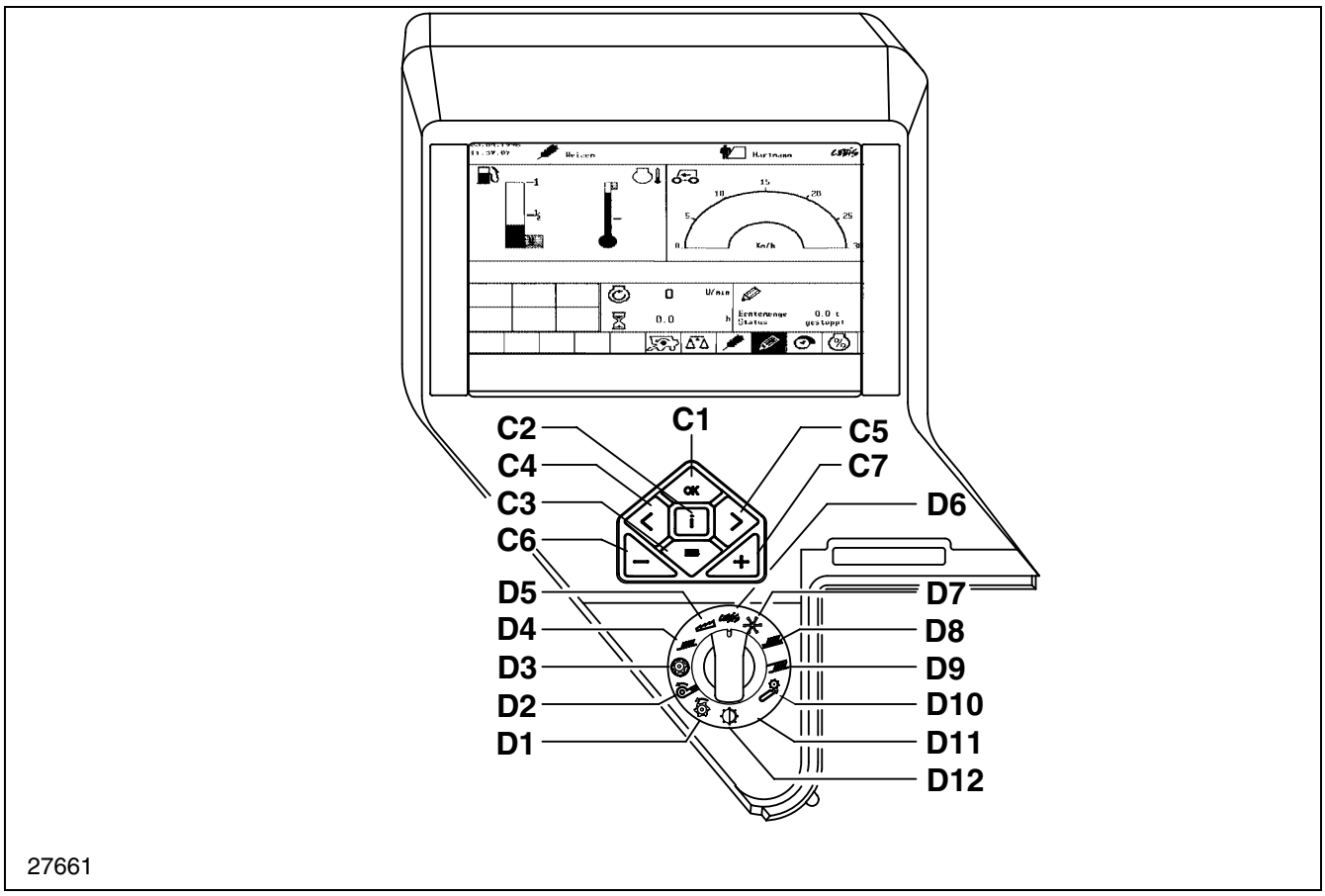
After start-up, the controller carries out a self-test. The self-test takes approximately 20 seconds.

Note:

To avoid incorrect temperature control by the automatic air conditioning system, close refrigerating box lid (8, Fig. 1) immediately after use.

Problem, possible cause and / or remedy – Compressor-type air conditioner

Problem	Possible cause and / or remedy
Air conditioning system switches off automatically. The symbol will then appear on the screen.	1. Extremely high outside temperature. Allow the system to cool down, then turn on again. Close doors and windows.
Compressor-type air conditioning system does not cool. Only uncooled air comes out of air louvres.	1. Magnetic clutch does not engage. Have clutch replaced. 2. Drive belt slack. Tension or replace V-belt. 3. Cable connections loose. Tighten loose or disconnected cables. 4. Fuses (F 33) blown. Install new fuse. 5. Compressor not pumping refrigerant. Expansion valve iced. Saturation point of moisture indicator reached (blue ball has turned pink). Have filter-receiver replaced. For this, the system has to be discharged by use of the correct recovery equipment and then recharged.
Cool air is blown through the air louvres, but air flow is insufficient to cool the cabin.	1. Evaporator in cabin roof clogged. Clean evaporator. 2. Evaporator defective. Install new evaporator. (Have air conditioning system discharged by use of the correct recovery equipment and then recharged with refrigerant.) 3. Condenser (in front of radiator) is soiled. Clean condenser. 4. Refrigerant level too low. White ball does not float and is at bottom of indicator. Have air conditioning system checked by qualified refrigeration services. 5. Outside air getting into the cabin. Close doors and windows completely.
Air conditioning system provides cool air for a time, then discharges warm air again.	1. Ice forming in the expansion valve. Saturation point of filter-receiver reached. Blue ball has turned pink. Have filter-receiver replaced. (Have air conditioning system discharged with refrigerant.)
Compressor too noisy.	1. Compressor bearings damaged. Have compressor repaired or replaced. For this, the refrigerant has to be discharged from the system by use of the correct recovery equipment and then recharged. 2. Oil level in compressor too low (indicated by external leakage). Have repair work carried out by a specialist workshop. Check oil level in compressor only with system drained. For this, the system has to be discharged.



5

C-keys

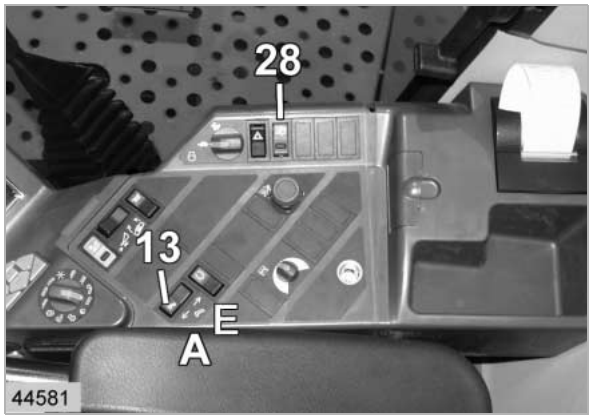
C 1 Enter key
C 2 Help (displays help text for the current menu topic)
C 3 Return key to return to the next higher menu level
C 4 Moves cursor to the left for menu selection
C 5 Moves cursor to the right for menu selection
C 6 – key reduces a setting
C 7 + key increases a setting

Rotary switch D

D 1 Threshing drum speed
D 2 Cleaning fan speed
D 3 Concave position
D 4 Sensitivity – sieve pan performance monitor
D 5 Sensitivity – separation system performance monitor
D 6 CEBIS menu bar
D 7 Reel speed
D 8 Position of upper sieve*
D 9 Position of lower sieve*
D 10 Feed rake speed
D 11 blank
D 12 Screen contrast setting

* Extra equipment

(Fig. 5)



18

Swing grain tank unloading tube out and in

DANGER!

Ensure that no one is in the swing area during swinging of the unloading tube!

Swinging the grain tank unloading tube in / out:

Start the engine and turn on safety rocker switch (28).

A = Swing out unloading tube
E = Swing in unloading tube

Press the rocker switch (13) into the required end position.

The unloading tube will move to the selected end position. A timer relay will switch off this function after 25 seconds.

The movement of the tube can be interrupted at any time by pressing rocker switch (13) to its middle position.

(Fig. 18)

Safety feature

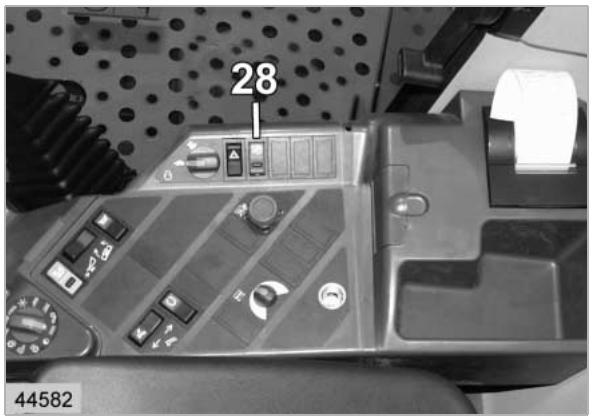
Threshing mechanism on:

When the unloading tube is swung out, the buzzer will sound once and symbol will appear in window.

Threshing mechanism off:

An alarm will be given when the unloading tube is swung out. The alarm generates an intermittent horn warning and information is displayed on the monitor.

Also refer to group 8 «Alarms and displays».

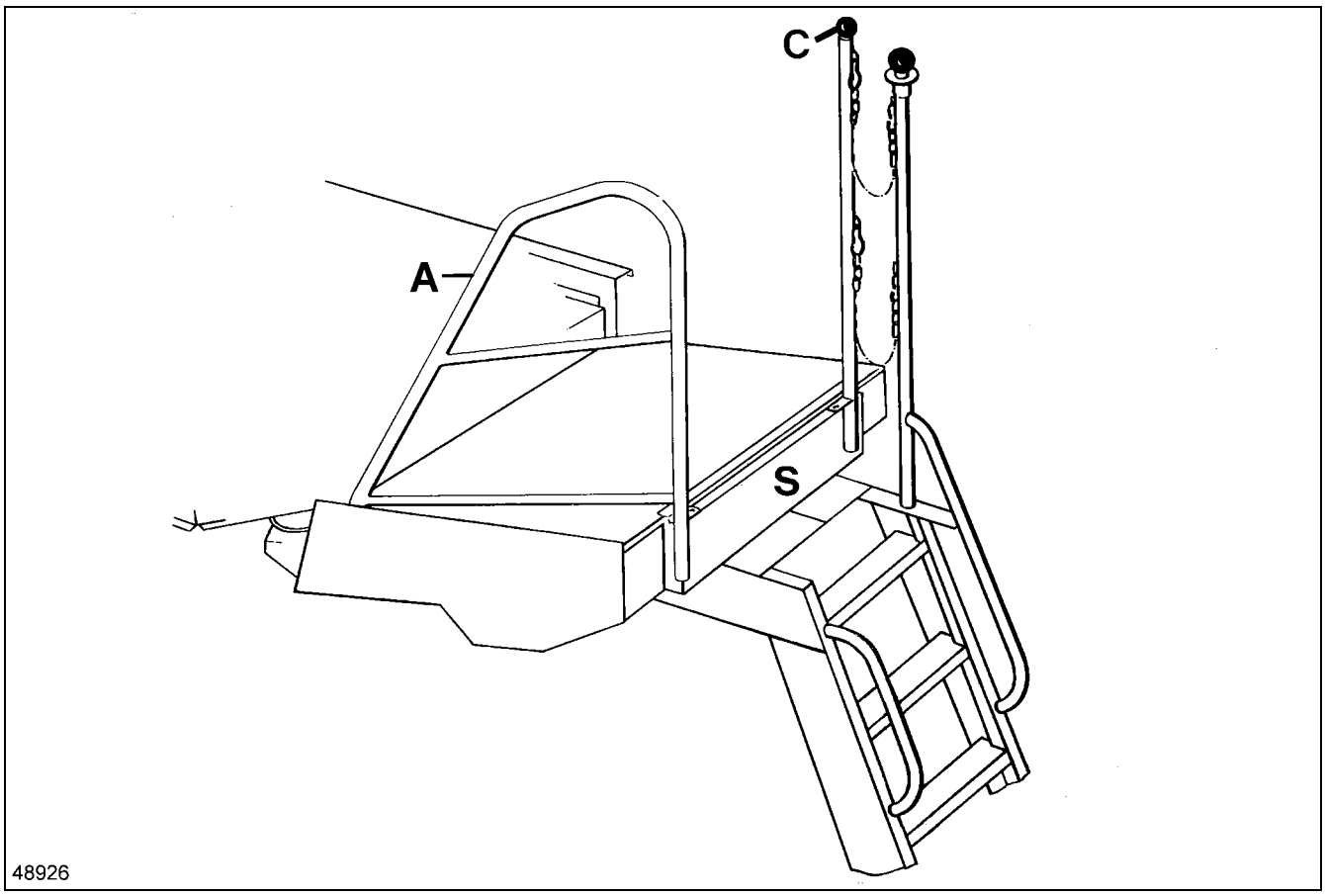


19

DANGER!

During transport on public roads and lanes, the grain tank unloading tube must be completely swung in and safety switch (28) turned off.

(Fig. 19)



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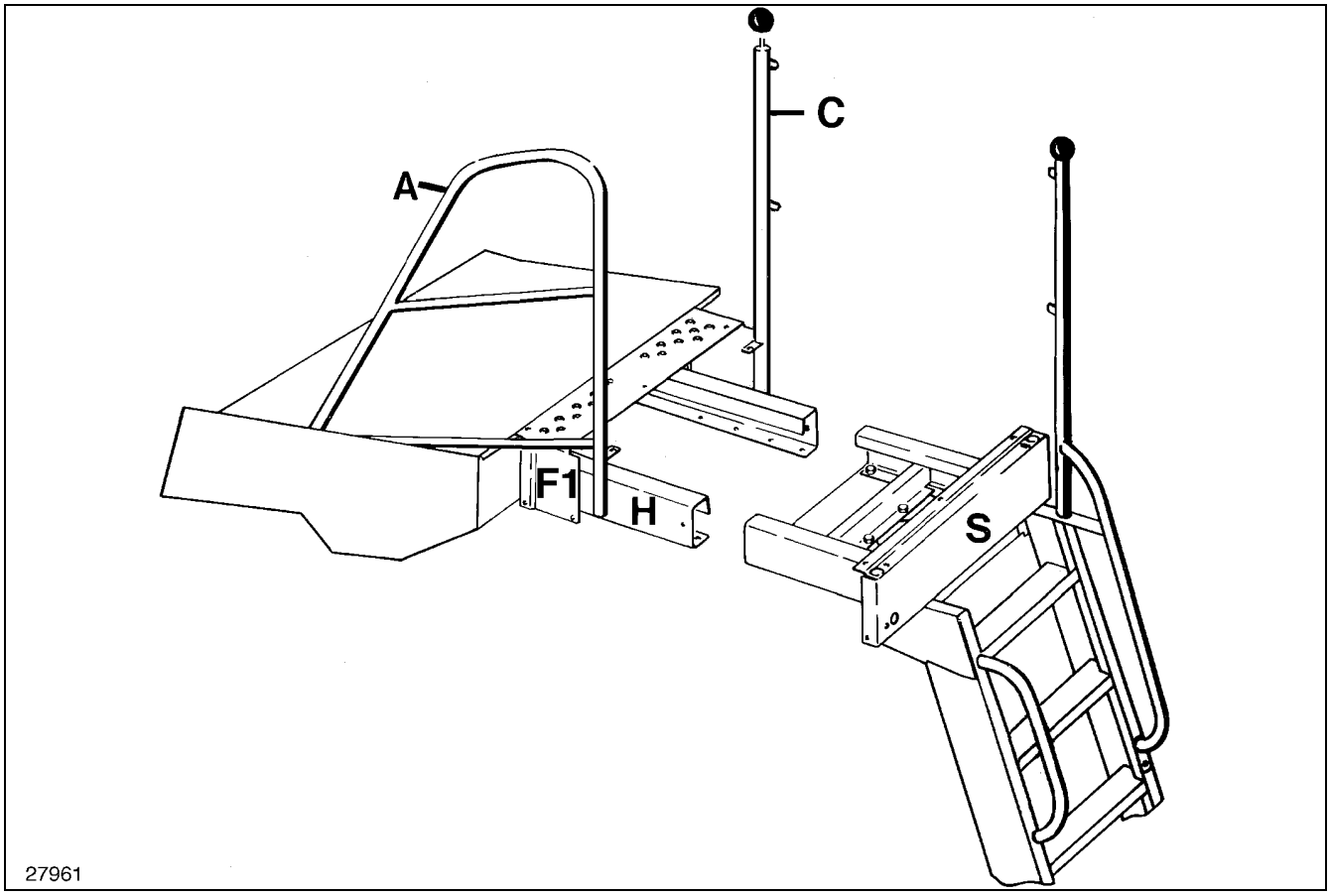
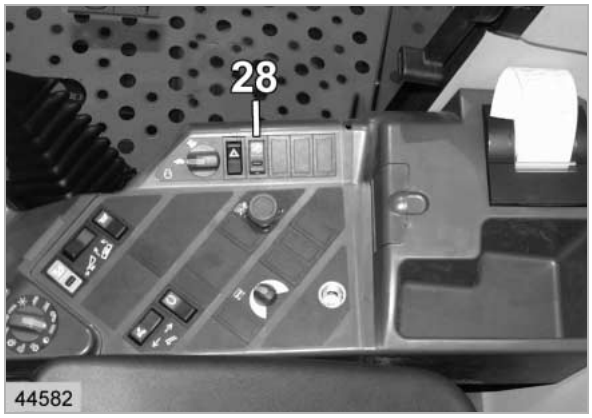


31

DRIVING THE COMBINE



1

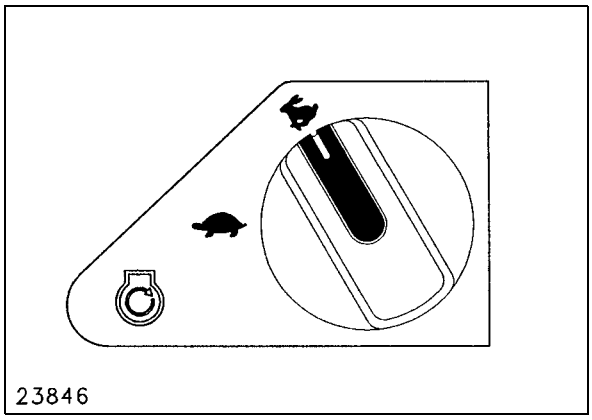
DANGER!

When driving on public roads and lanes with the front attachment raised, safety rocker switch (28) must be locked to prevent lowering.

Before leaving the combine, lower the front attachment completely to the ground, switch off the engine and remove the ignition key.

Do not drive in 3rd gear on gradients of more than 7%. Never disengage the gears and allow the combine to roll.

(Fig. 1)



2

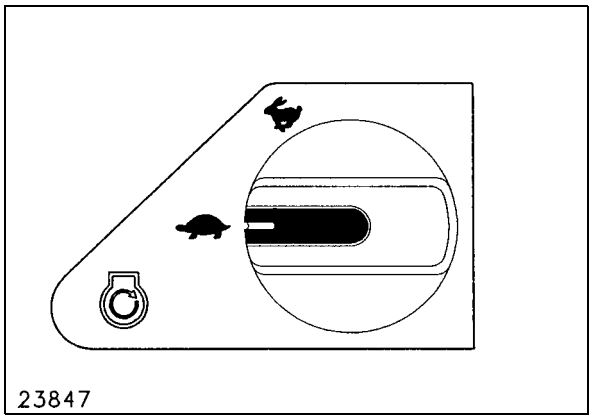
Engine speed rotary switch

Function of rotary switch (26):

= Slow idle speed

= Maximum no-load speed

(Fig. 2)



3

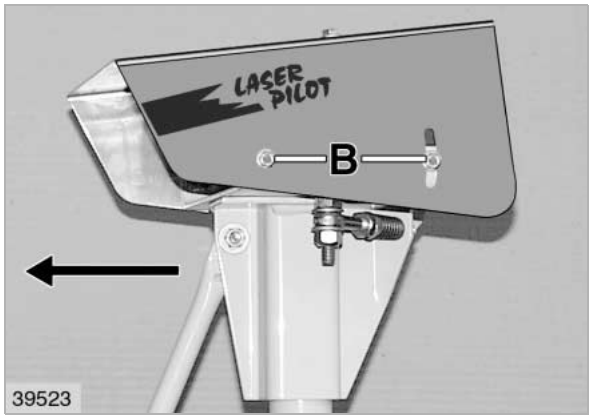
Manoeuvring

When manoeuvring in 1st or 2nd gear, e.g. when picking up a front attachment or hooking up the cutter-bar trailer, engine speed switch (26) can be turned to position . This is easier on the engine and drives.

NOTE: When engaging the 3rd gear with the engine speed switch in position the engine speed is automatically reduced.

During work, rotary switch (26) must always be in position .

(Fig. 2, 3)



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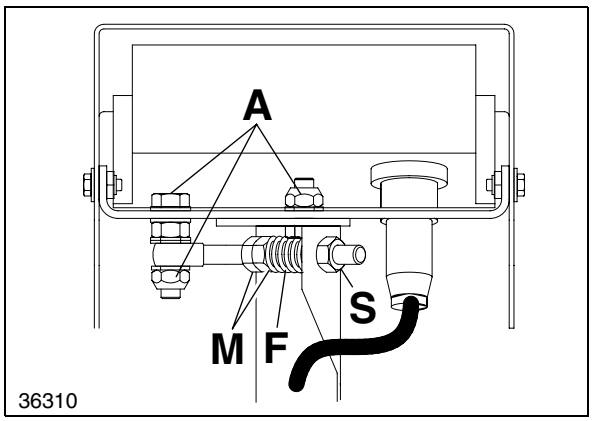


21

Horizontal alignment of laser beam:

The cutterbar must be in working position.

The invisible laser beam scans the crop edge.

Adjust the laser sensor so that the invisible laser beam scans the crop edge.

When the correct setting has been achieved, the two inside LEDs of the horizontal LED bar (H) will light up green (= dark fields in Fig. 19).

Adjust the spring-loaded eyebolt beneath the sensor support by turning the lock nut (S).

Tightening the lock nut =
the combine will drive more closely to the crop edge.

Loosening the lock nut =
the combine will drive at a greater distance from the crop edge.

NOTE!

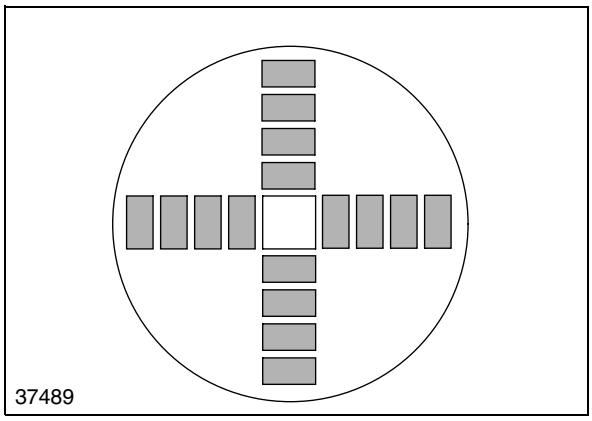
The compression spring (F) on the eyebolt must permanently be pre-stressed. Re-adjust the hexagon nuts (M) if necessary.

The mechanical basic setting of the laser sensor is correct when the inside LEDs light up green on both LED bars (V and H).

NOTE!

The bolts at (A) must be firmly tightened and must not rattle.

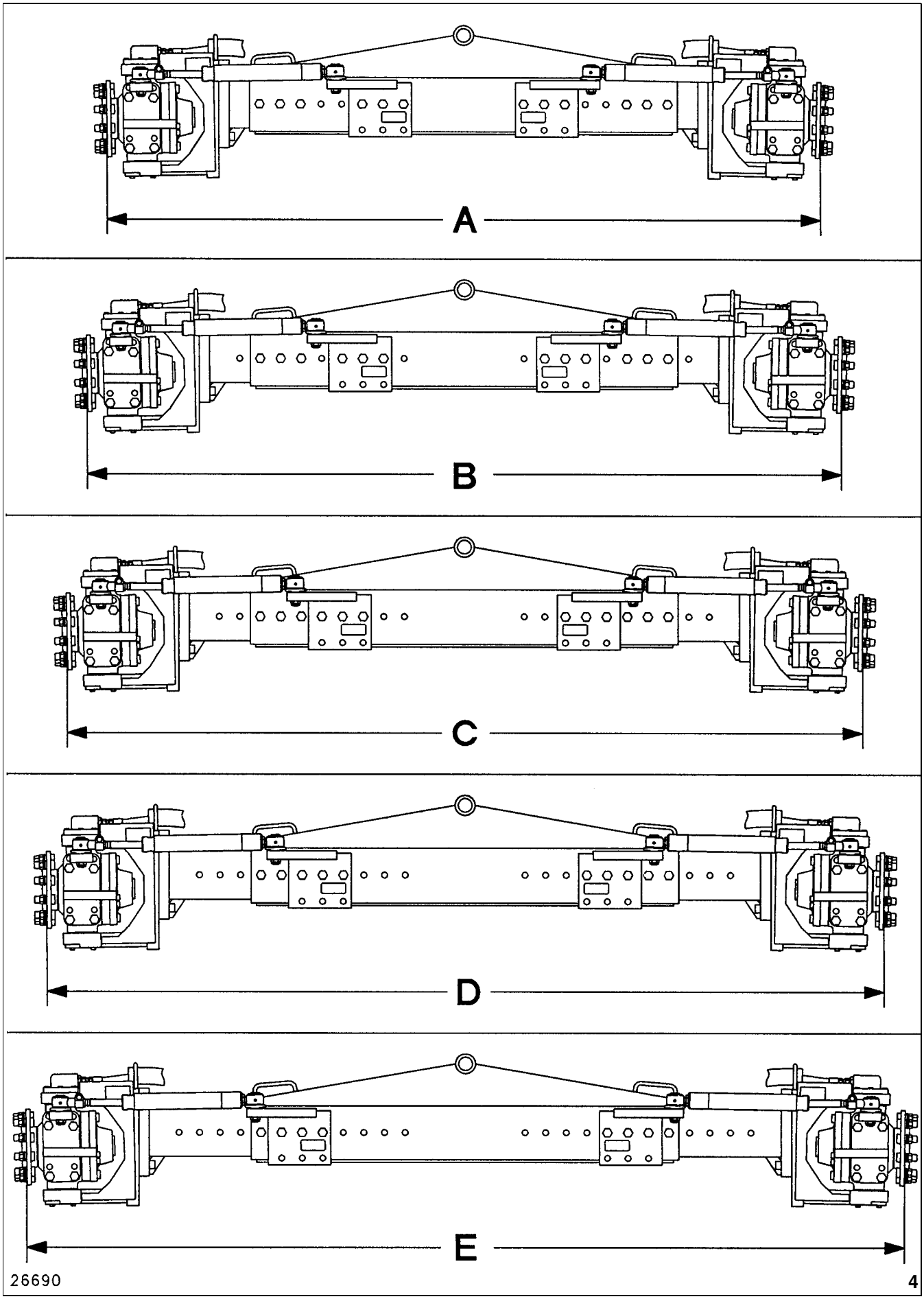
(Fig. 19, 20, 21)



22

When all LEDs light up during field use, the laser sensor has lost the crop edge from its visual range. The combine must now be steered manually and be driven to a crop edge.

(Fig. 22)

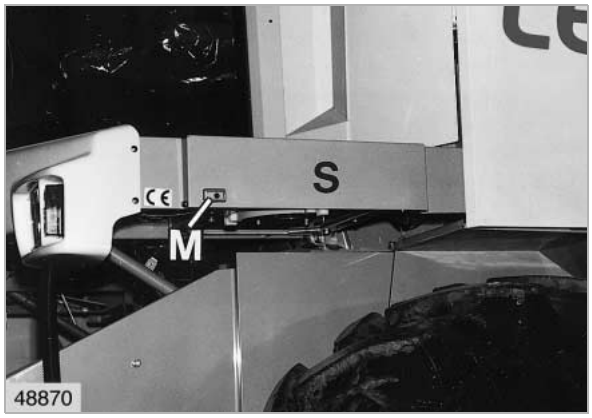

A
B
C
D
E
26690
4

INSTALLING DUAL WHEELS

1

Remove ladder (L) by unscrewing the four mounting bolts of the swivelling flange.

(Fig. 1)

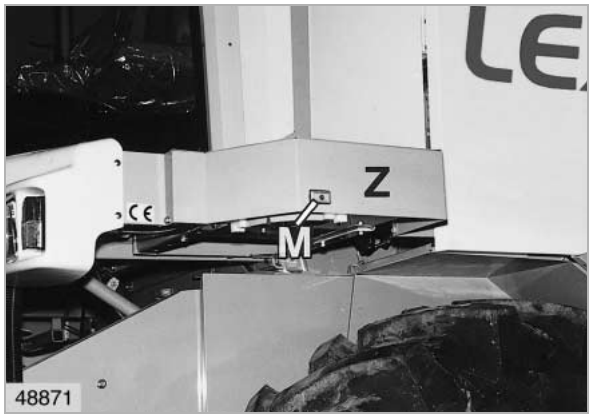


2

Remove additional flasher light (M) and separate the cable at the connector.

Unbolt ladder support (S) at the centre sections and remove the ladder support.

(Fig. 2)



3

Fasten ladder support (Z) for dual tyres to the centre sections again using the existing bolts (do not pull out the centre sections).

Install additional flasher light (M) and reconnect the cable.

(Fig. 3)

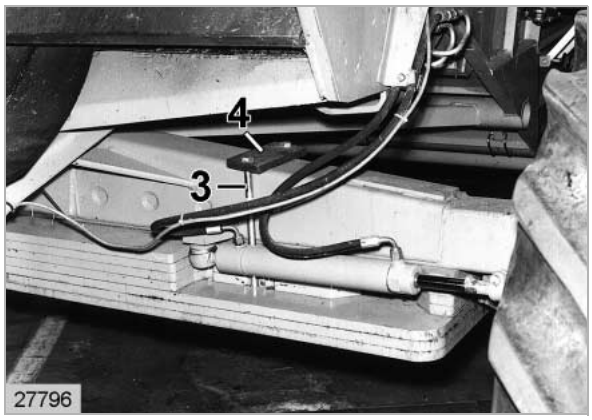
4

Lift the ladder under the ladder support (Z) and bolt on with the existing nuts and washers.

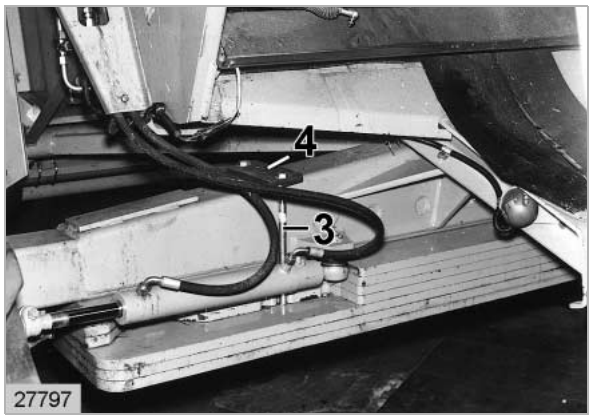
Tighten all bolts securely.

(Fig. 4)

Liquid filling for rear axle tyres			
To guarantee freezing resistance of the water filling in the rear axle tyres down to -20 °C, the following quantities of magnesium chloride shall be mixed to the water filling. The specified quantities refer to both rear axle tyres.	Rear axle tyres	Group / Version Magnesium chloride kg	Total weight of filling (Magnesium chloride plus water) kg
	600/55 - 26.5	S09 / 0014 300 kg	660
	16.5/85 - 24	S09/ 0012 200 kg	520
	15.5/80 - 24	S09 / 0010 100 kg	400
	500/70 R24	S09 / 0012 200 kg	658



1



2

Installing the rear axle weights

Adjustable and fixed rear axles:

DANGER!

Be careful when installing the rear axle weights – Danger of injury!

Before installing the rear axle weights, first support them with squared timber or the like.

Place the weights (1 and 2) on top of each other, see Fig. 3.

Lift the weights under the axle, using a safe hoisting device (fork lift truck or similar).

Bolt the weights down at the centre under the rear axle using four hexagon bolts (3) and two mounting plates (4).

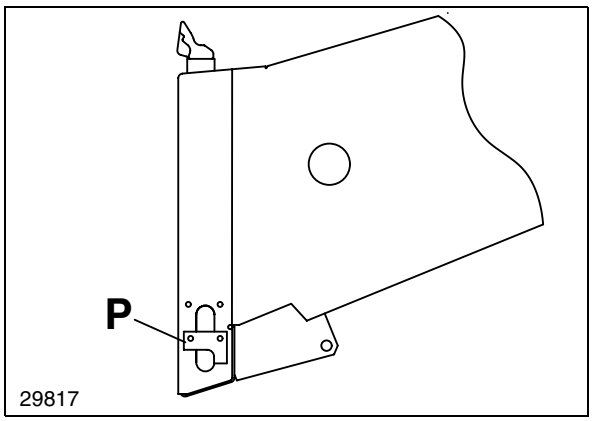
Tightening torque of hexagon bolts:
The tightening torque is **195 Nm**.

(Fig. 1, 2, 3)

Check free movement of rear axle:

Lift the machine slightly at the rear so that the rear axle wheels are relieved.

Fully steer the rear axle wheels to both sides and check free movement at the steering tie rod and steering cylinder. Extend the rear axle stops accordingly if required.



10

Locking cutterbars and maize pickers

(Cutterbars without Auto Contour)

The top locks at the coupling pins are dropped on cutterbars without Auto Contour.

The plates (P) must therefore be bolted on both sides of the feeder housing.

Maize pickers cannot be locked at the coupling pins. For this reason, the plates (P) must be bolted on both sides on maize pickers as well.

Please observe installation position of plates. Otherwise, problems may occur in the lock pin area when taking up the front attachment.

Firmly tighten the mounting bolts.

(Fig. 10)

11

Connecting the quick release coupling:

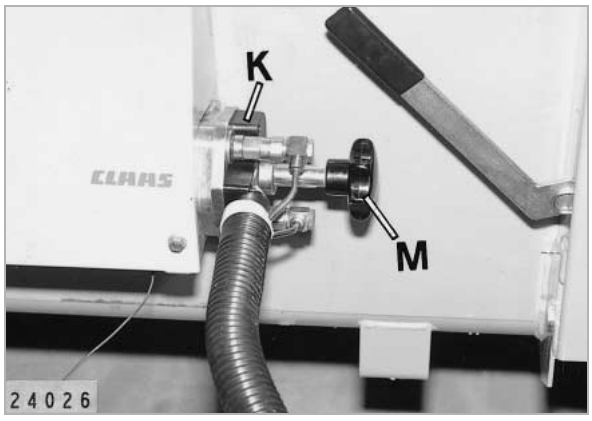
Remove dust cap (T) from cutterbar.

Remove quick release coupling (K) from feed rake and fit it to cutterbar.

Fit dust cap (T) to feed rake.

Tighten the coupling using the handwheel (M).

(Fig. 11, 12)



12

CLAAS ON-BOARD INFORMATION SYSTEM (CEBIS)

The **C**LAAS **E**LECTRONIC ON-**B**OARD **I**NFORMATION **S**YSTEM (CEBIS) is a computer- aided control, monitoring, registering and information system for self-propelled combines.

CEBIS is sub-divided into **Vehicle information display**, **Harvest display** and the menus **GPS, Presettings reel, Presettings front attachment, Partial width adjustments, Yield measurement, Adjusting to crop, Recording harvest works, Adjustments and Engine load.** The menus are sub-divided into submenus each with several levels.

Turn the rotary switch to position (D6, CEBIS) to display the above mentioned menu bar.

Via a keypad the operator can call up all the information he requires for display on a 10" monitor, can enter, edit and save machine data and settings as well as storing, processing, managing and printing out data on operation planning and working results of the combine.

Help key (C2) brings up the help text for the current menu topic.

CEBIS comprises:

One LCD 10“ screen, 7 keys (C) to enter and control menu functions and rotary switch (D) for manual adjustments on the machine.

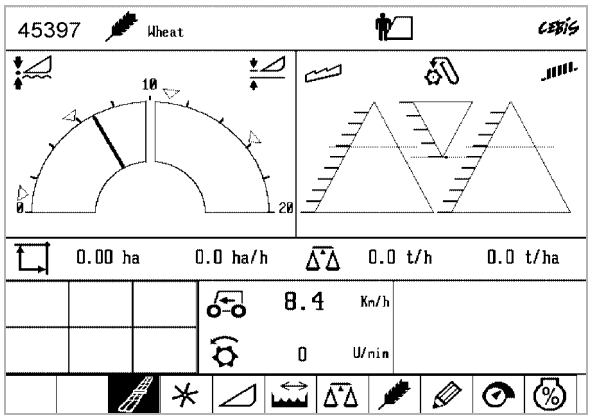
How the system works:

CEBIS is used for machine adjustments and for system settings to be performed.

When the starter key is switched on, **CEBIS** automatically checks the function of all components, sensors, modules and monitors connected to the system.

Before carrying out any adjustments by means of **CEBIS**, start the engine and run the engine at maximum no-load speed. Engage the threshing mechanism and the cutterbar.

(Abb. 1,, 2)



7

GPS

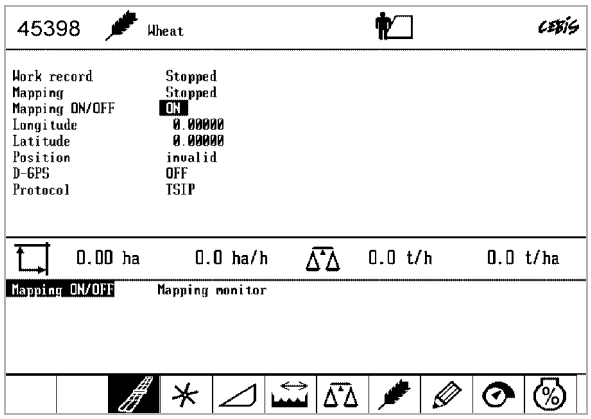
Activate by pressing the OK key (C1)

This menu shows whether the fieldwork recording and yield mapping are functioning correctly.

SUBMENU OPTIONS:

Mapping ON/OFF Mapping monitor

(Fig. 1, 6, 7, 8, 9)



8

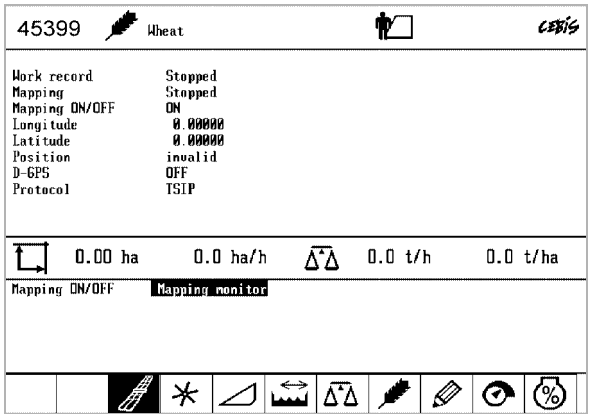
Mapping ON/OFF

Activate by pressing the OK key (C1)

Use the +/- keys (C6 or C7) to switch the yield mapping ON or OFF.

This does not affect the work record processing.

(Fig. 1, 6, 8)



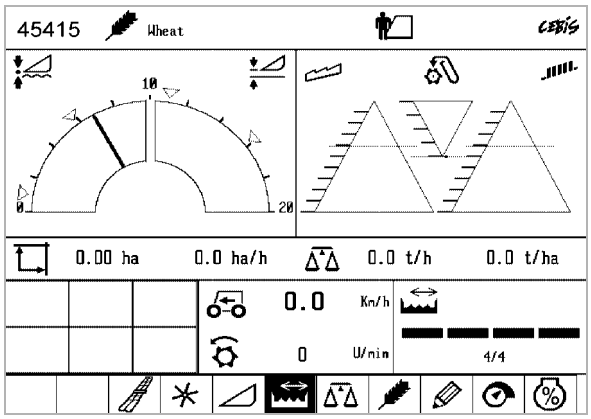
9

Mapping monitor

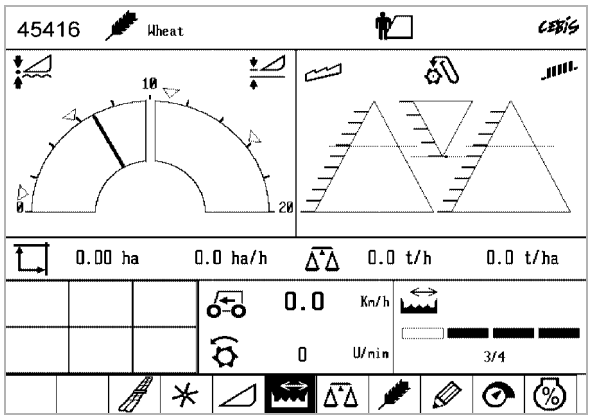
Activate by pressing the OK key (C1)

With the mapping switched on (path: GPS / MAPPING ON/OFF) this menu topic displays the continuos wheel track of the combine on the actual harvest area. There will be current updates of the position points. After switching the ignition off and on again, a new area map will be generated.

(Fig. 1, 6, 9)



26



27

PARTIAL WIDTH SELECTION

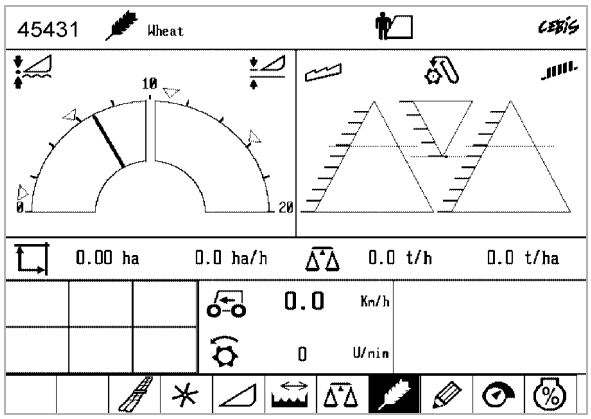
Select from the harvest display with cursor keys (C4 or C5) the menu topic (E19).

In this menu topic the working width can be set in steps to the effective width for correct calculation of the fieldwork rate and yield using the +/- keys (C6 or C7).

When the cutterbar is lifted out of work or the threshing mechanism is switched off, the system automatically returns to the full working width.

To set the different partial width proportions (4, 5, 6) see section: „Adjusting cutterbar / Partial width proportions.“ (path: ADJUSTMENTS / CUTTERBAR / WORKING POSITION and PARTIAL WIDTH PROPORTIONS).

(Fig. 1, 2, 25, 26, 27)



42

SETTING COMBINE TO TYPE OF CROP

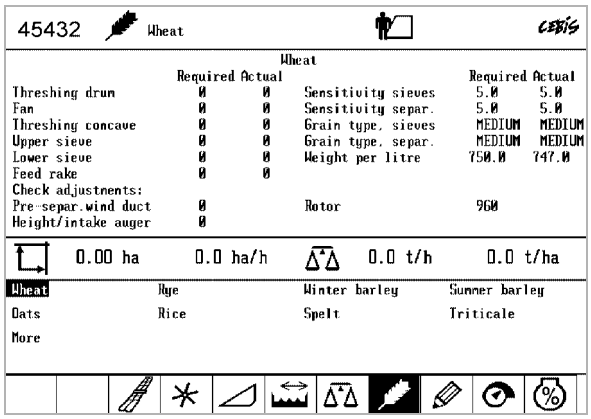
Use cursor keys (C4 or C5) to select menu topic (E21) in the harvest display and call up the menu by pressing the OK key (C1).

In this menu either the recommended CLAAS settings or your own settings for a total of 24 threshable crops can be entered, saved, displayed and printed.

SUBMENU OPTIONS:

List of various threshable crops

(Fig. 1, 2, 41, 42)



43

List of threshable crops

Activate by pressing the OK key (C1)

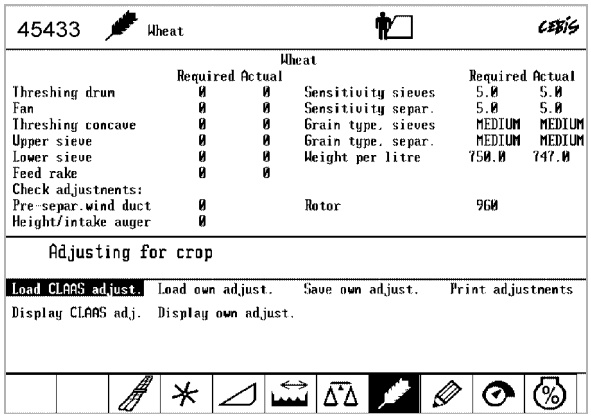
The threshable crops are divided into 3 menu bars which can be masked in by activating the menu topics "MORE" or "PREVIOUS" with the OK key (C1).

Use the cursor keys (C4 or C5) to select the desired threshable crop and confirm with the OK key (C1).

SUBMENU OPTIONS:

Load CLAAS adjust. / Load own adjust. / Save own adjust. / Print adjustments / Display CLAAS adj. / Display own adjust.

(Fig. 1, 41, 43)



44

Load CLAAS adjustments

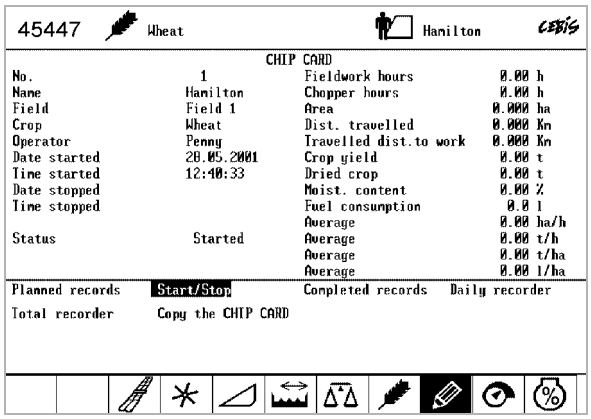
Activate by pressing the OK key (C1)

Threshing mechanism and cutterbar must be engaged, the machine must run at max. speed - no load.

In this menu the standard machine settings will be activated. Pressing the OK key (C1) sets the machine for the crop selected. The values will be displayed.

Note the message »Check adjustments:« in the L/H section of the screen. These settings will not be carried out automatically, but must be performed manually. Recommended settings: path »ADJUSTMENTS / OPERATOR'S MANUAL / BASIC ADJUSTMENTS«.

(Fig. 1, 41, 44)



61

Start / Stop

To start: press the OK key (C1); to stop: press the OK key (C1).

This menu is used to start or stop a work record. Without a chip card, up to 10 work records are stored in the memory. When a chip card is used, the work record can be selected in the menu "PLANNED WORK RECORDS". When the work record is stopped, the data is automatically saved on the chip card.

Confirming "START / STOP" with the OK key (C1) starts recording of fieldwork. Exit the menu by pressing return key (C3).

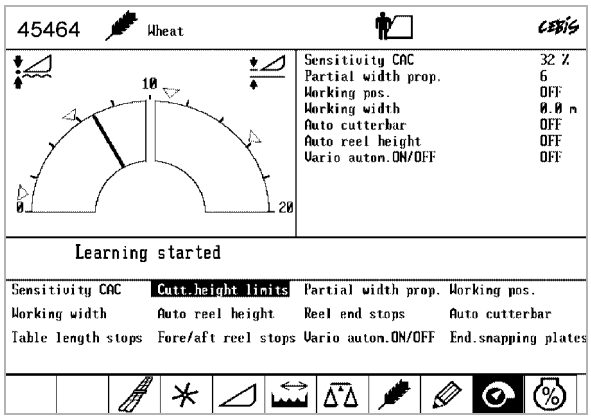
To stop recording of work call up the menu "RECORDING HARVEST WORK" (E22) and confirm with the OK key (C1).

Confirming "START / STOP" with the OK key (C1) stops recording of data for the current work record. The next work record can be started.

(Fig. 1, 2, 60, 61)

Data recorded:

Date started; Time started; Date stopped; Time stopped; Fieldwork hours (starts with threshing mechanism and cutterbar engaged); Chopper hours; Area (area harvested [ha or ac]); Distance travelled (distance travelled between Start and Stop [km or miles]); Travelled distance to work (km or miles); Fuel consumption (litres or gallons).



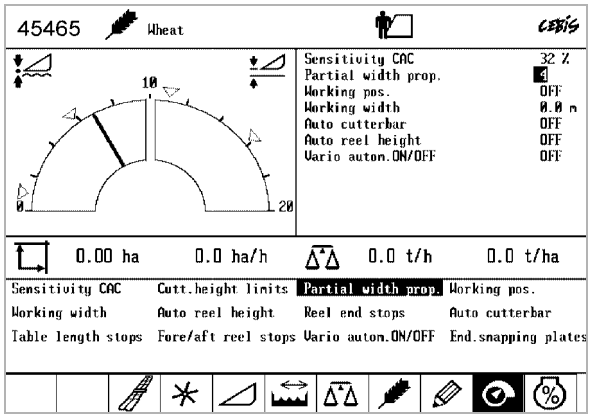
79

Cutterbar upper and lower limits

Make the system learn the upper and lower limits of the cutterbar as follows. Ensure that the threshing mechanism and the cutterbar are engaged for this:

Activate the menu topic by pressing the OK key (C1). The information displayed on the screen tells you how to proceed.

(Fig. 1, 78, 79)



80

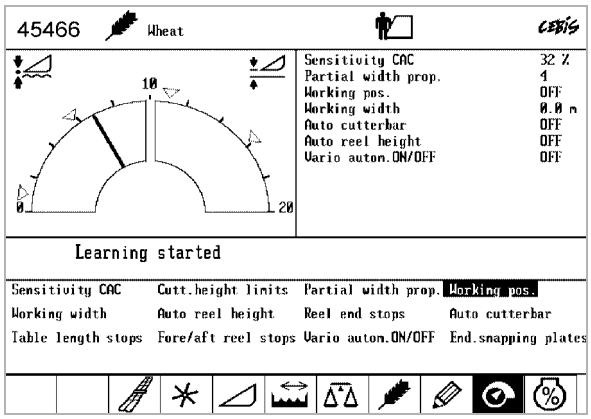
Partial width proportions

Activate by pressing the OK key (C1)

Use the +/- keys (C6 or C7) to enter the desired partial width proportions (4, 5, 6 proportions) and confirm with the OK key (C1).

We recommend using 4 proportions for cutterbars, 4 proportions for 4-row or 8-row corn heads, 5 proportions for 5-row corn heads and 6 proportions for 6-row corn heads. For correct area calculations, set for partial width in the harvest display too, so that the system realizes that the full working width is not used. The system automatically returns to the full working width when the cutterbar is lifted.

(Fig. 1, 78, 80)



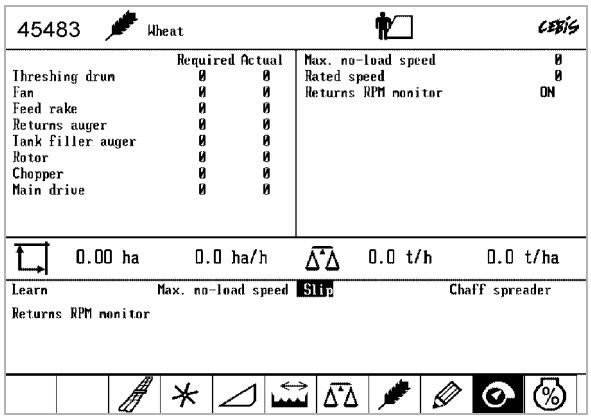
81

Working position

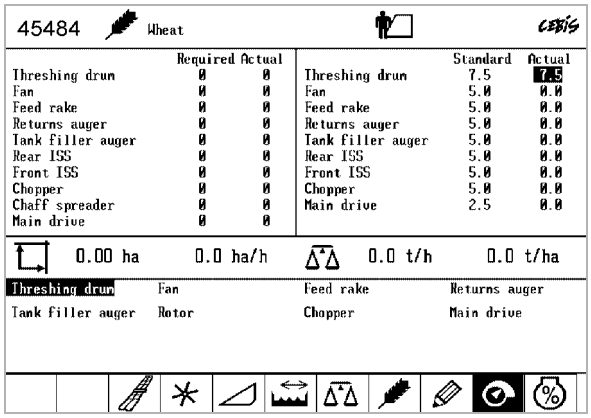
Activate by pressing the OK key (C1)

The display »Learning started« appears and the actual or desired cutterbar lift height setting is loaded to mark the cutterbar's operating and out-of-work position. This setting makes CEBIS recognize when the cutterbar is lifted out of work to ensure correct area calculations. CEBIS then interrupts the area calculations and automatically resets the system from partial width (if in use) to full working width.

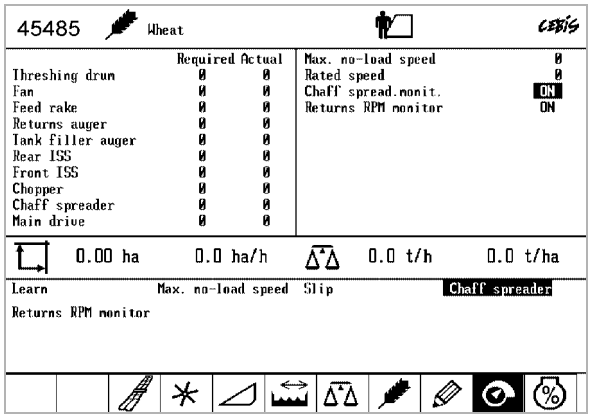
(Fig. 1, 78, 81)



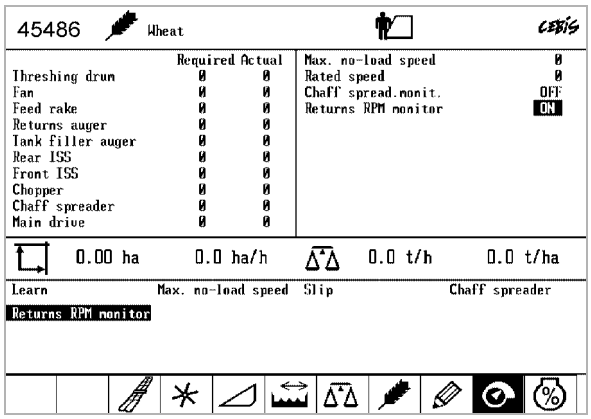
98



99



100



101

Belt slip limit indicator

Activate by pressing the OK key (C1)

Select the operating components with the cursor keys (C4 or C5) and confirm. Enter percentage of slip (X%) to be monitored using the +/- keys (C6 or C7).

Guide:

Threshing drum = 7,5%
Main drive = 2,5%
Other components = 5,0%

Excessive belt slip means overloading and/or incorrectly tensioned, worn or damaged belts. Check belt tension regularly (see menu: MAINTENANCE). Immediately replace a worn or damaged belt.

SUBMENU OPTIONS (rotor machine):

Threshing drum / Fan / Feeder chain / Returns auger / Tank filler auger / Rotor / Chopper / Main drive

SUBMENU OPTIONS (straw walker machine):

Threshing drum / Fan / Feeder chain / Returns auger / Tank filler auger / Rear ISS / Front ISS / Chopper / Main drive

(Fig. 1, 97, 98, 99)

Chaff spreader speed monitor
(no function on rotor machines)

Activate by pressing the OK key (C1)

Use the +/- keys (C6 or C7) to switch the chaff spreader speed monitor on or off to prevent the respective alarm being triggered if a chaff spreader has not been installed, or if the chaff spreader is removed.

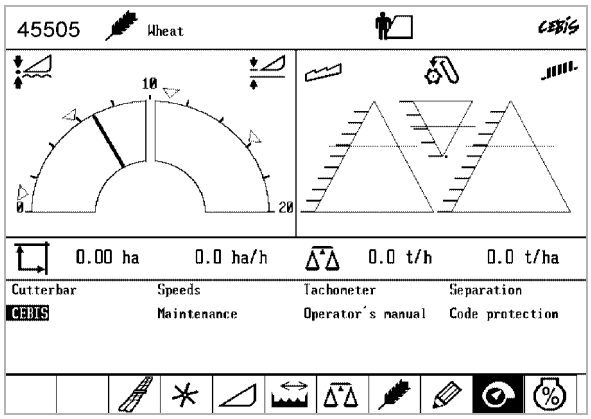
(Fig. 1, 97, 100)

Returns RPM monitor

Activate by pressing the OK key (C1)

Use the +/- keys (C6 or C7) to switch the returns elevator speed monitor on or off to prevent the respective alarm being triggered if, for instance, the elevator chain has been removed for maize harvest.

(Fig. 1, 97, 101)



120

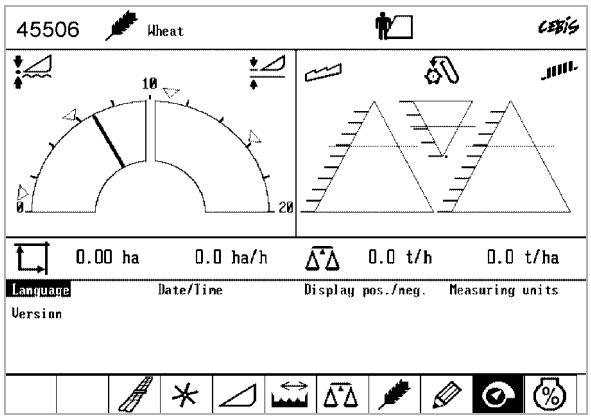
CEBIS

This menu topic is used to select the national language, change the date and time, set the display mode of the monitor to light or dark and select the measuring units (metric or imperial). In addition you will find information on the CEBIS version installed in your machine.

SUBMENU OPTIONS:

Language Date/Time Display pos./neg.
Measuring units Version

(Fig. 1, 119, 120)



121

Language

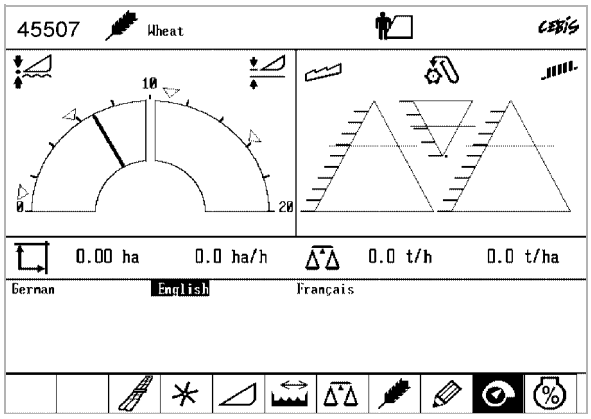
Activate by pressing the OK key (C1)

Select the desired language by pressing the cursor keys (C4 or C5) and confirm with OK key (C1). You can choose between German, English and any other laguage.

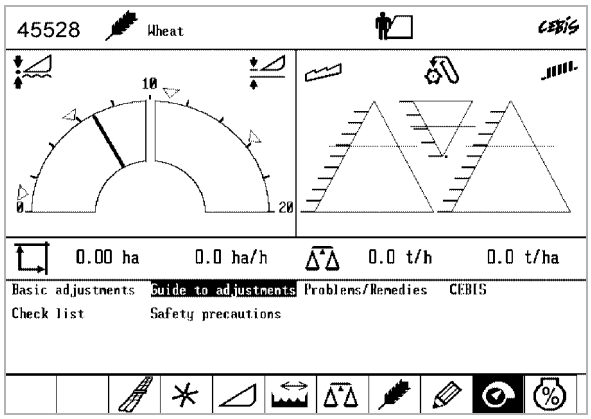
SUBMENU OPTIONS:

German English French

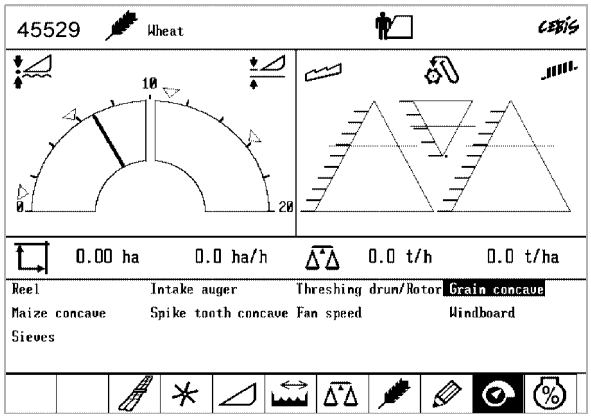
(Fig. 1, 119, 121, 122)



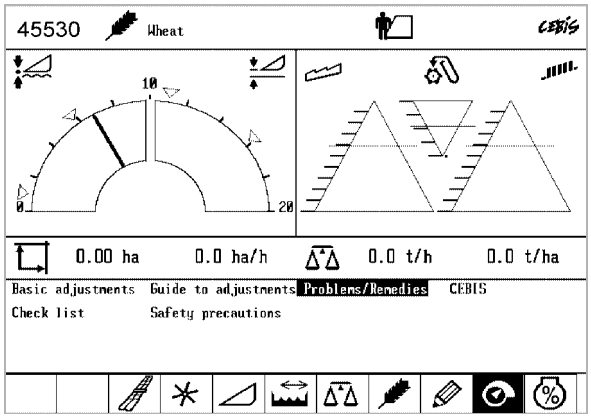
122



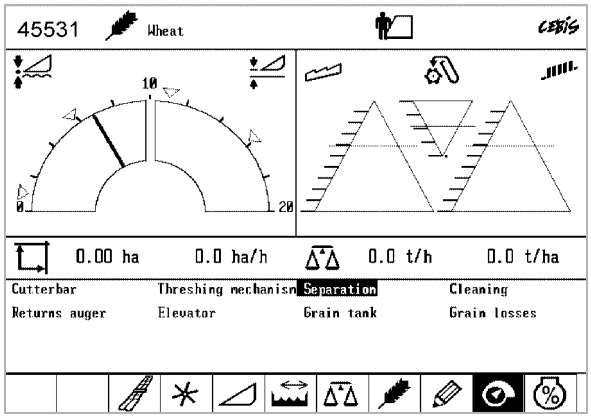
143



144



145



146

Guide to adjustments

Activate by pressing the OK key (C1)

Reference guide to essential component adjustments in varying harvest conditions and their effects on combine performance.

SUBMENU OPTIONS:

Reel / Intake auger / Threshing drum/rotor / Grain concave / Corn concave / Spike tooth concave / Fan speed / Windboard / Sieves

(Fig. 1, 142, 143, 144)

Problems/Remedies

Activate by pressing the OK key (C1)

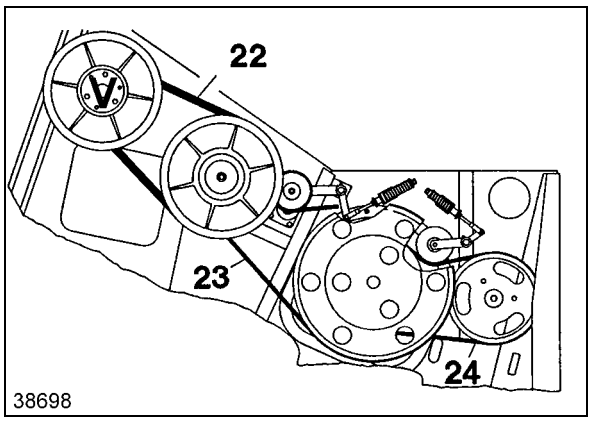
This menu shows the causes or remedies to problems that may occur during harvesting.

SUBMENU OPTIONS:

Cutterbar / Threshing mech. / Separation / Cleaning unit / Returns / Elevator / Grain tank / Grain losses

(Fig. 1, 142, 145, 146)

INDEX



19

Threshing drum speed

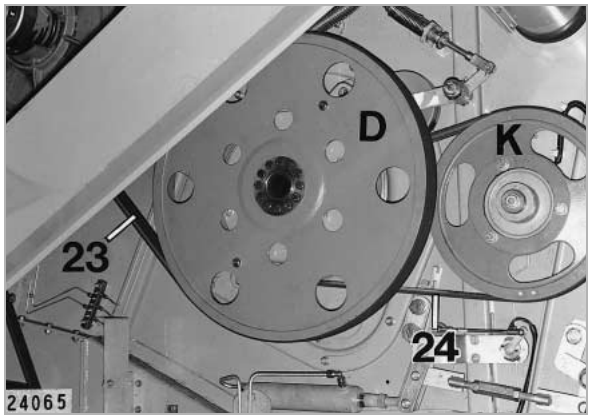
Drum variable speed pulleys:

Variation of drum speed combined with the direct adjustment facility of the concave allows quick changes of threshing operations in order to match crop conditions.

Damp, long-strawed crops as well as crops difficult to thresh and disawn require faster drum speeds than dry and brittle crops.

Adjusting the threshing drum speed:

See group 8 «Adjusting the threshing drum speed».



20

Threshing drum drives

The main intermediate shaft powers the threshing drum. Power is supplied by way of the variable speed pulleys, the wide-section V-belt (22), the power band belt (23) and V-belt pulley (D).

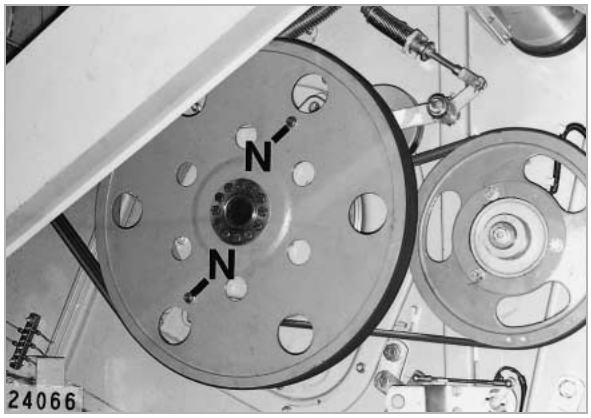
The accelerator is driven from the threshing drum via power band belt (24) and pulley (K).

(Fig. 19, 20)

Threshing drum two-step variable speed drive

To thresh delicate crops it is possible, through the two-step variable speed drive, to adjust drum speed in two separate ranges.

Speeds: see «Specifications»



21

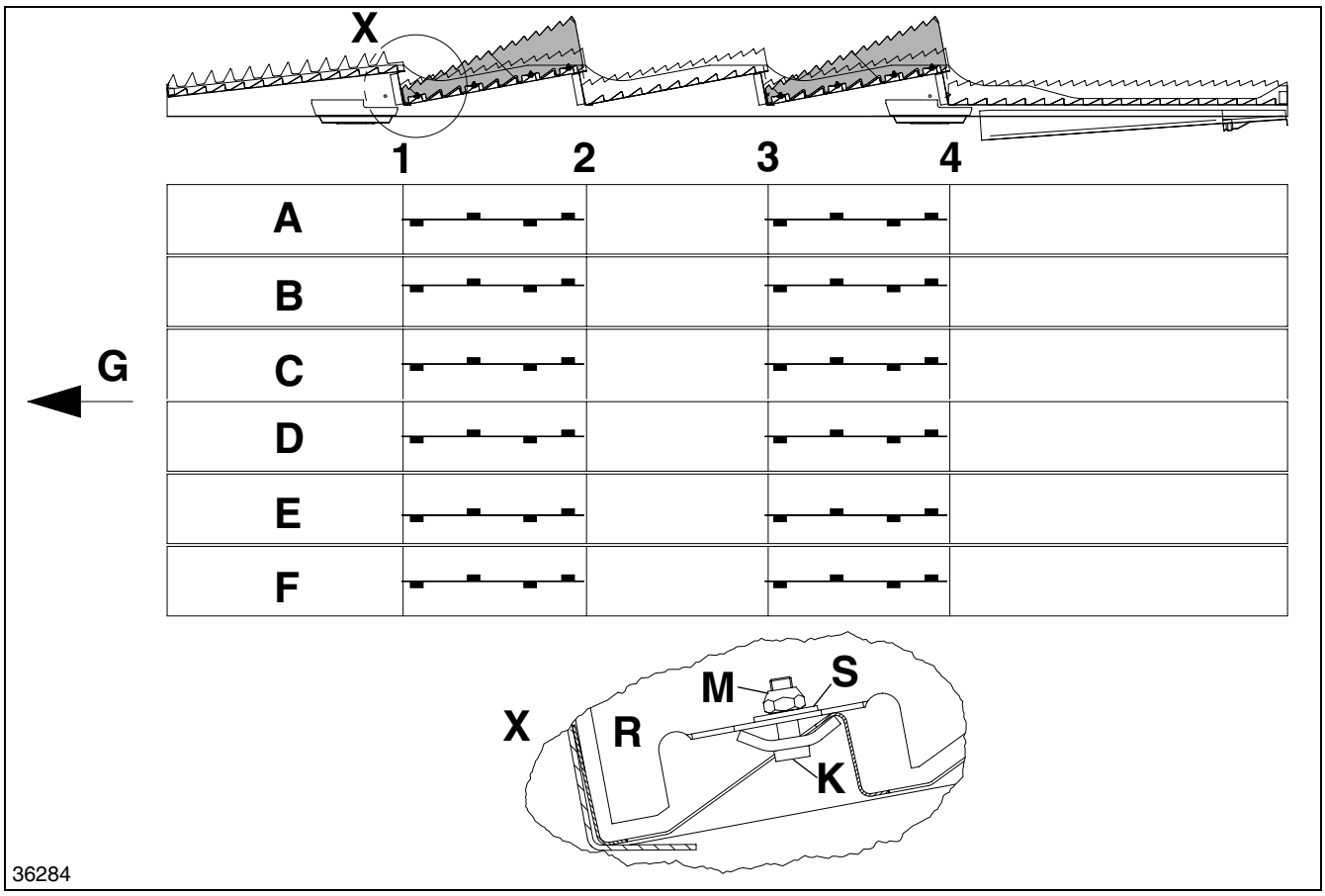
Speed range adjustment:

1st step:

Screw in **both** tapered bolts into the small holes of the pulley at (N) and into the bridge piece of the reduction gearbox.

The bridge piece of the gearbox is driven.

(Fig. 21)



9

Straw walker risers

Rice risers

For a more intensive shaking effect, particularly with wet and heavy rice straw, risers can be installed on the straw walker racks.

The risers must be installed as shown in figure 9.

Install the risers with the clamping screw system according to detail (X).

ATTENTION!

Ensure that the straw walker risers have sufficient distance to the intensive separation system!

Arrangement of straw walker risers:

	LEXION 460 – 440		LEXION 430 – 410
A	5th hole from the left	A	–
B	6th hole from the left	B	5th hole from the left
C	5th hole from the left	C	5th hole from the left
D	5th hole from the left	D	5th hole from the left
E	4th hole from the left	E	4th hole from the left
F	5th hole from the left	F	5th hole from the left

X = Detail:

K = Clamping plate, complete
M = Lock nut VM 6
S = Contact washer B 6
R = Riser
G = Direction of travel

(Fig. 9)

ATTENTION!

When using the multiple finger separation system, the rice risers must be installed one straw walker step further towards the rear.

Installing the sieves

The sieves are installed in the reverse order of removal.

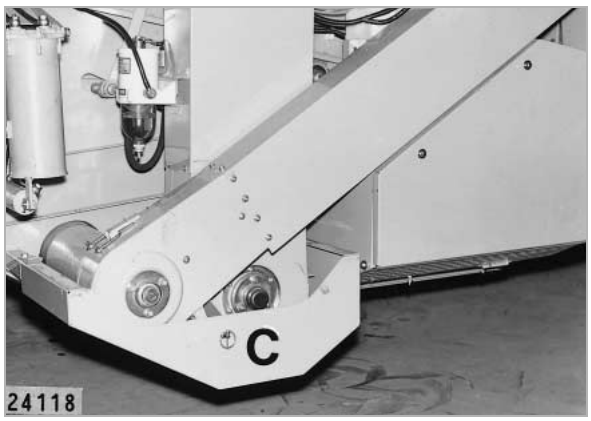
During installation, first tighten the axial mountings to the specified torques and then tighten the side clamps.

Ensure that all bolts are securely tightened!

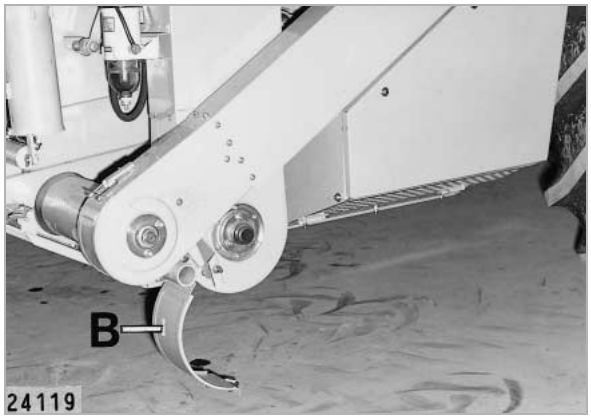
Tightening torques of axial mountings for the upper and lower sieves

Upper sieve = 45 Nm (M 12 hex. bolts)
Lower sieve = 23 Nm (M 10 hex. bolts)

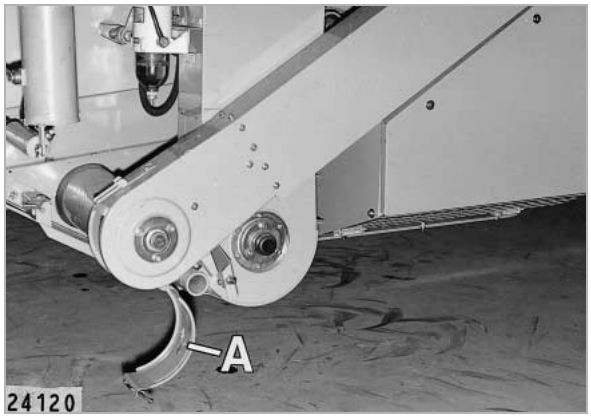
Fold chaff spreader back in (if provided).



2



3



4

Elevators

Sweep elevators with rubber paddles move the material up in the lower and, respectively, front half of the housings.

To check the chain tension, open the boot doors (A and B) of the clean grain and the returns elevators. Where installed, guard (C) must be removed first.

In the event of plugging, open the auger troughs as well as the elevator boot doors (A and B).

Before clearing a blockage ensure that all mechanisms have stopped rotating and then remove material with the hands if possible. Subsequently allow the machine to clear all material by running the threshing mechanism. Always ensure that the troughs and doors are correctly refitted and tightly closed.

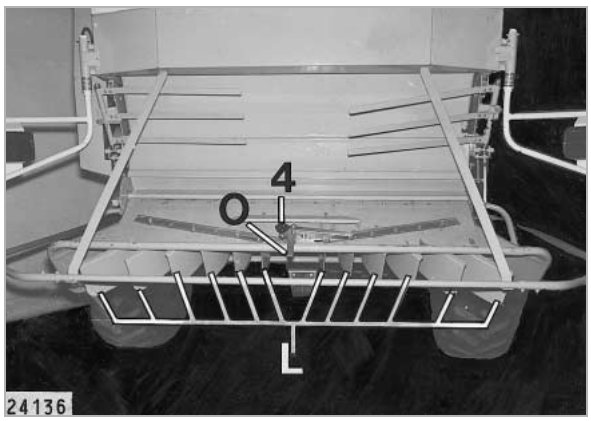
(Fig. 2, 3, 4)

DANGER!

At all times beware of sharp edges on the augers. Risk of injury!

ATTENTION!

On machines equipped with a yield meter, steel conveyor plates must not be fitted on the elevator chains as used e.g. for threshing peas and soybeans.



1

Adjusting spreading width

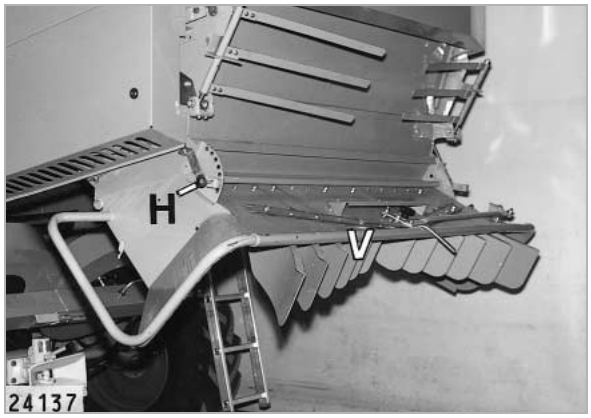
The spreading width of the straw chopper can be adapted to the cutterbar width by adjusting the deflectors (L) with lever (O).

To adjust the width, loosen turn lock (4) and move lever (O) to the left or right, depending on the desired spreading width.

Lever to left = wide spreading pattern
Lever to right = narrow spreading pattern

After adjusting the deflectors, retighten the turn lock knob.

(Fig. 1)



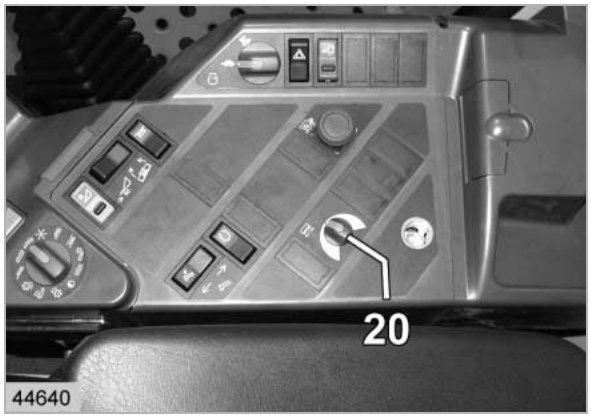
2

Spreader hopper height adjustment

The lever (H) allows adjusting the height of the spreader hopper (V).

With heavy cross-winds, it is advantageous to adjust the spreader hopper to a lower position. This helps prevent the chopped straw from falling into the standing crop.

(Fig. 2)



3

Electric deflector adjustment

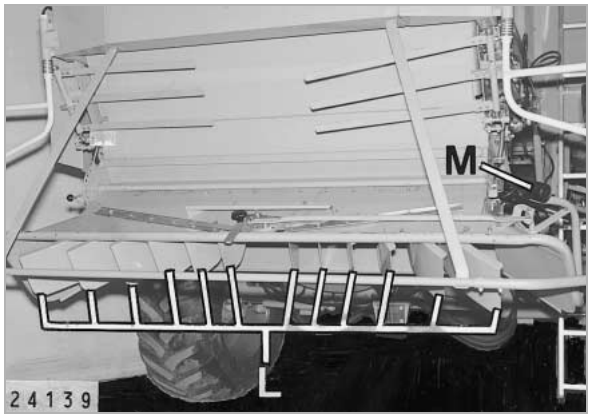
Using the electric deflector adjustment it is possible to alter the chopped straw discharge to the left or right. This is particularly advantageous when combining on a hillside or with a strong sidewind as it helps to prevent the chopped straw being discharged into the still standing crop.

Adjusting the deflectors:

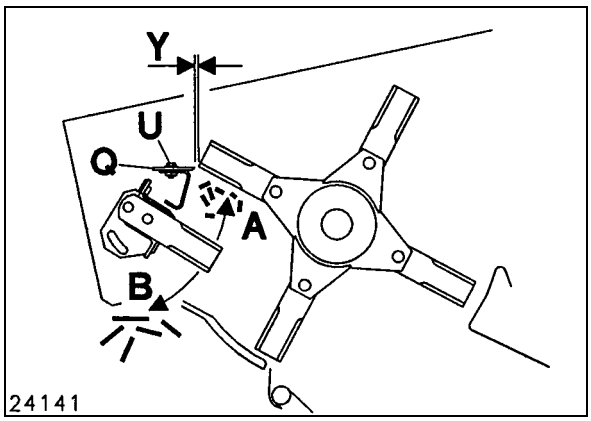
When centralizing switch (20) is activated, the deflectors (L) are adjusted by motor (M).

The direction in which the centralizing switch is turned is also the direction in which the deflectors are adjusted.

(Fig. 3, 4)



4



7

Adjusting cross knife

DANGER!

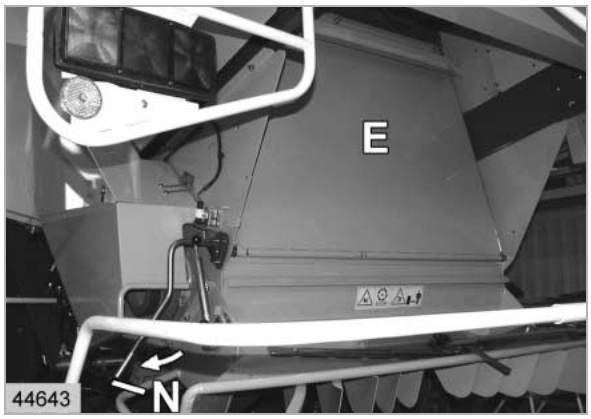
Caution – Risk of personal injury –
Wear gloves.

To adjust the cross blade, loosen securing bolts (U) in the slots.

Adjust the cross knife (Q) so that the distance (Y) with the knives fully extended is 5 mm.

After adjustment, retighten all securing bolts (U) tightly.

(Fig. 7)



8

Putting the straw chopper into operation

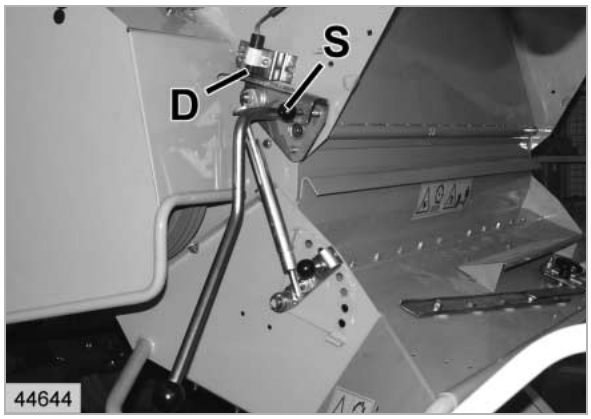
Pull out lock (S) and move the straw guide plate (E) to the rear, using lever (N).

Allow lock (S) to re-engage.

Switch (D) engages the straw chopper drive once straw guide plate (E) has been moved fully back.

Engaging the main drive (with the engine running) will engage the chopper drive at the same time and operate the straw chopper.

(Fig. 8, 9)



9

Crop / seed Unit	Field beans	Dwarf beans	Peas	Soybeans
Front attachment	Grain cutterbar	Grain cutterbar	Grain cutterbar	Soybean cutterbar
Reel tine setting	Vertical	Vertical	Vertical	Vertical
Clearance [mm] between auger flights and cutterbar trough	20	20	15	15
Position of auger fingers Hole from the bottom (Reel drive via universal drive shaft)	3	3	3	3
Position of auger fingers Hole from the bottom (Reel drive via intake auger)	2	2	2	2
Feed rake speed [rpm]	410	410	410	410
Threshing drum speed [rpm] LEXION 460 – 420	400	400	400	400
Threshing drum speed [rpm] LEXION 410	450	450	450	450
Fan speed [rpm] LEXION 460 – 420	1300	1300	1300	1300
Fan speed [rpm] LEXION 410	900	900	750	900
Chopper speed [rpm]	3387	3387	3387	3387
Disawner ON / OFF	OFF	OFF	OFF	OFF
Perforations of preconcave segments	Maize 19 x 42	Maize 12 x 42	Grain 6.5 x 42	Maize 19 x 42
Threshing segment installed / removed	Removed	Removed	Removed	Removed
Concave-to-cylinder clearance	25	25	25	25
Primary wind dust deflector (Hole from the front)	6	6	6	6
Frogmouth sieve opening in upper sieve [mm]	16	16	16	15
Frogmouth sieve opening in lower sieve [mm]	12	12	12	10
Frogmouth sieve opening Returns pass-through area [mm]	16	16	16	15
Special equipment	Possibly use rape cutterbar, possibly use threshing drum drive reduction	Possibly use threshing drum drive reduction gearbox		Possibly use threshing drum drive reduction gearbox
Remarks * See after the suggested combine adjustments	Possibly without lower sieve, returns pan covered	Possibly without lower sieve, returns pan covered		Possibly without lower sieve, returns pan covered

Problem	Possible cause and / or remedy
Grain losses	Losses of grain may have different reasons. Therefore, always determine first where the losses occur. Check combine for leakage losses. Check whether grain is lost where working parts join, especially check auger troughs, elevators etc. Extra care should be taken to check the working parts for good fitting when combining small seeds. Seal all leaks as necessary. Losses that are caused by overripe crops or poor weather conditions prior to cutting must not be taken for combine losses. Grain losses originating from the combine-harvester are subdivided into four categories: – Losses of grain over the cutterbar and cutting losses – Losses of grain caused by insufficient threshing – Grain losses via the straw walkers – Grain losses over the sieve pan
– Losses of grain over the cutterbar and cutting losses	1. Adjust reel tine angle to suit crop conditions. 2. Adjust reel speed to match ground speed. 3. Adjust reel for correct clearance to main table auger. 4. Adjust reel horizontally to match crop conditions. 5. In crops with hanging grain heads fit a grain lifter to every second cutterbar finger. 6. Adjust dividers to avoid build-up of material. 7. Adjust main table auger position to match crop conditions.
– Losses caused by insufficient threshing	1. Have damaged or worn threshing drum repaired. 2. Adjust drum speed to crop conditions. 3. Adjust concave-to-drum clearance to crop conditions. 4. Correct basic adjustment of concave. 5. Adjust cutterbar to ensure even crop feed. 6. Possibly engage disawner plates.

Hydraulic system

DANGER!

Before working on the hydraulic system it is essential to release all hydraulic pressure and to lower the front attachment, if fitted, to rest on the ground.

High pressure exists in the hydraulic system!

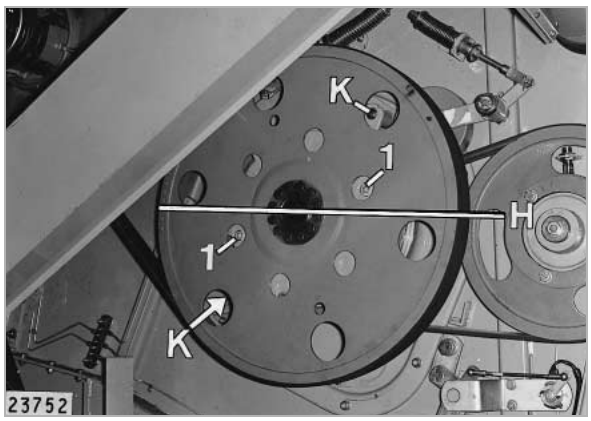
Escaping fluid (fuel or hydraulic oil) under high pressure can penetrate the skin and cause serious injury. If any fluid is injected into the skin, consult a doctor immediately as otherwise serious infections may result.

☞ Checking for leaks is hazardous. Use the correct equipment to search / check for possible leaks. NEVER use your hands to detect pressure leaks. Beware of personal injury.

☞ When working on the hydraulic system always stop the engine, withdraw the ignition key and secure the machine by applying the parking brake and using the wheel chock to prevent the combine from rolling away.

☞ Inspect hydraulic hoses regularly and replace damaged and deteriorated hoses by new ones! Replacement hoses must meet the technical requirements specified by the manufacturer!

Repair work on the hydraulic system must only be carried out by authorized CLAAS workshops.



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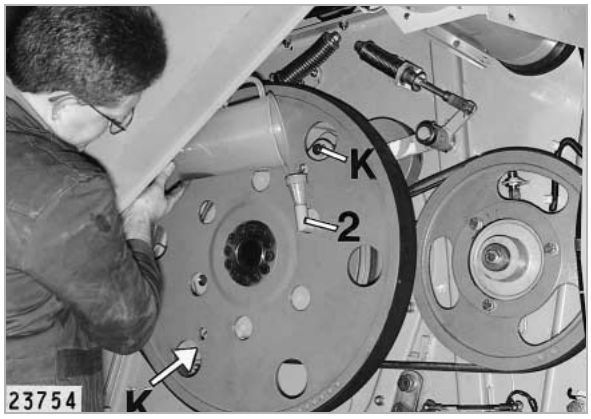


10

Threshing drum two-step variable speed drive

Oil change

1. Unscrew both conical plugs (K).
2. Turn the two-step variable speed drive until plugs (1) are horizontal (H), then unscrew both plugs.
3. Screw elbow union (2) into one of the bores.
4. Turn the two-step drive so that elbow union (2) is facing downwards and drain the oil into a sufficiently large container.
5. After draining the oil, turn the two-step drive so that the elbow union is facing upwards. Screw in both conical plugs (K) with the unit in position «Speed reduction engaged».
6. Fill the gearbox with oil at elbow union until the oil runs out at the lower bore.

   After filling with oil, unscrew the elbow union and screw in the filler plugs again tightly.

NOTE!

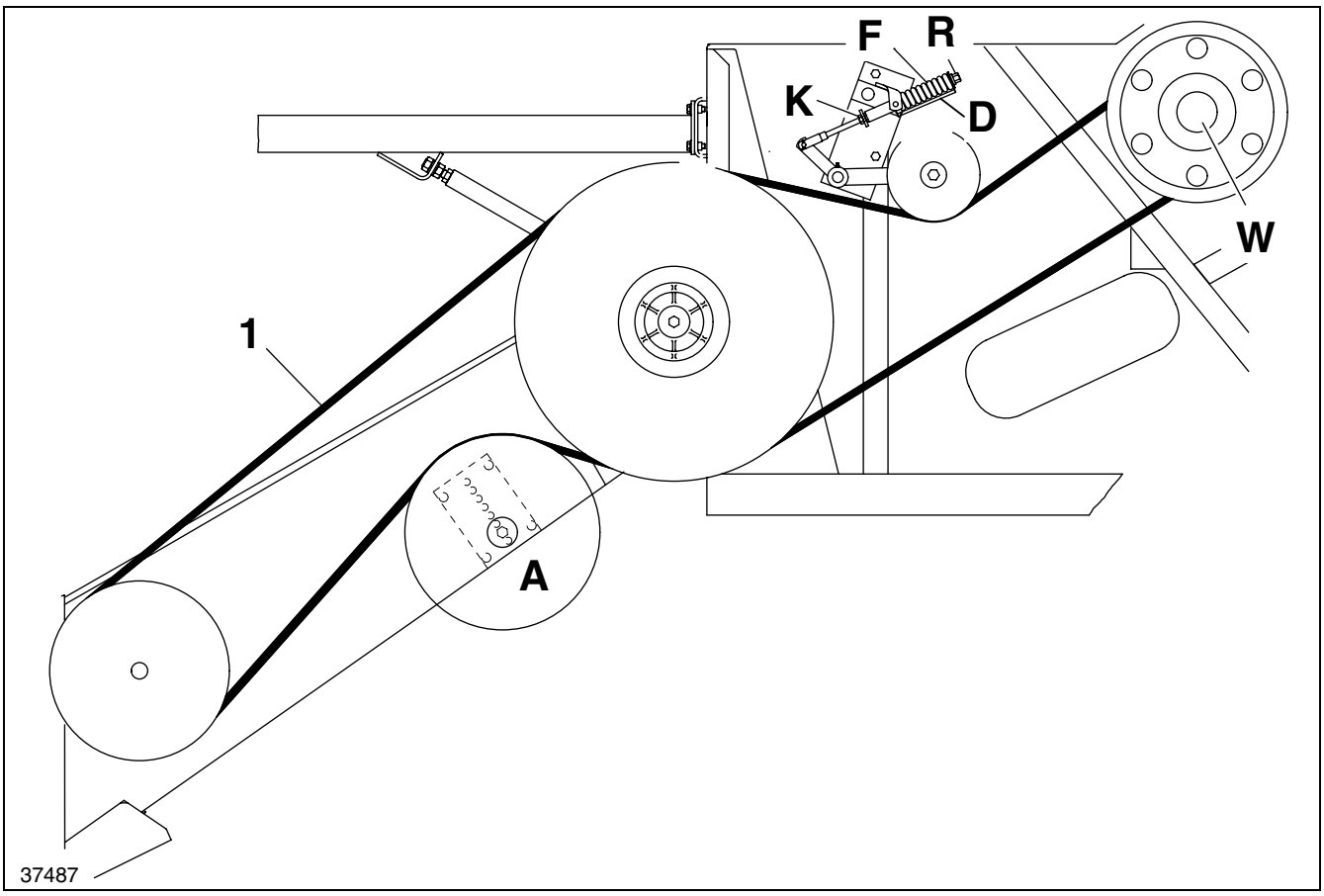
Oil grade and capacity – see page 10.2.4, *Lubricants charts*.

(Fig. 8, 9, 10)

Checking the oil level

In position «Speed reduction engaged», the transmission oil must run out at the lower bore (1) when it is opened.

(Fig. 8, 9, 10)



3

4

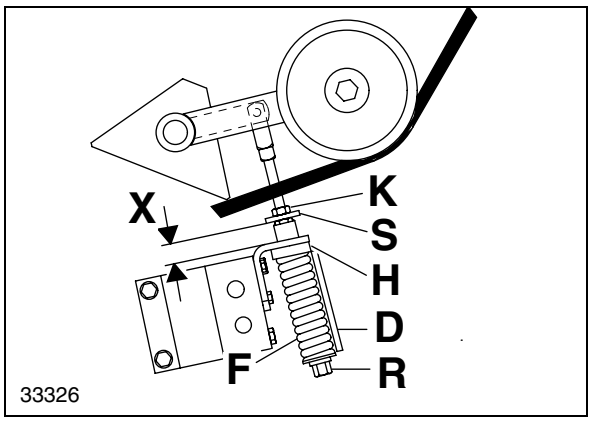
Removing the cutterbar drive belt (1)
(Cutterbar drive without variable-speed drive)

DANGER!

Switch off the engine and turn off the battery isolating switch!

– Remove drive belt (35) of reel drive.
– Remove drive belt (5) from the front V-belt pulley.
– Remove guards (V).

(Fig. 1, 3, 4)



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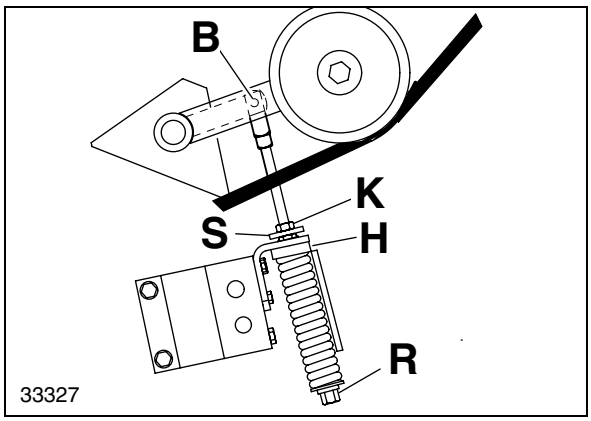


20

Relieve tension on spring-loaded cylinder.
To do this, proceed as follows:

1. Determine distance (X).
2. Loosen lock nut (K).
3. Slacken off the spring guide tube (R) by the previously determined distance (X), and at the same time tighten the nut (K) until the washer (S) is up against the bracket (H).

   The pin (B) should now be tension-free. Should there be still a little tension on the pin, then a little bit of adjustment may still be required at the spring guide tube (R) and the nut (K).
4. Remove pin (B).

(Fig. 17, 19, 20)

Installing and adjusting the cutterbar intermediate drive belt (5)

Install belt.

Install pin (B) and secure with split pin.

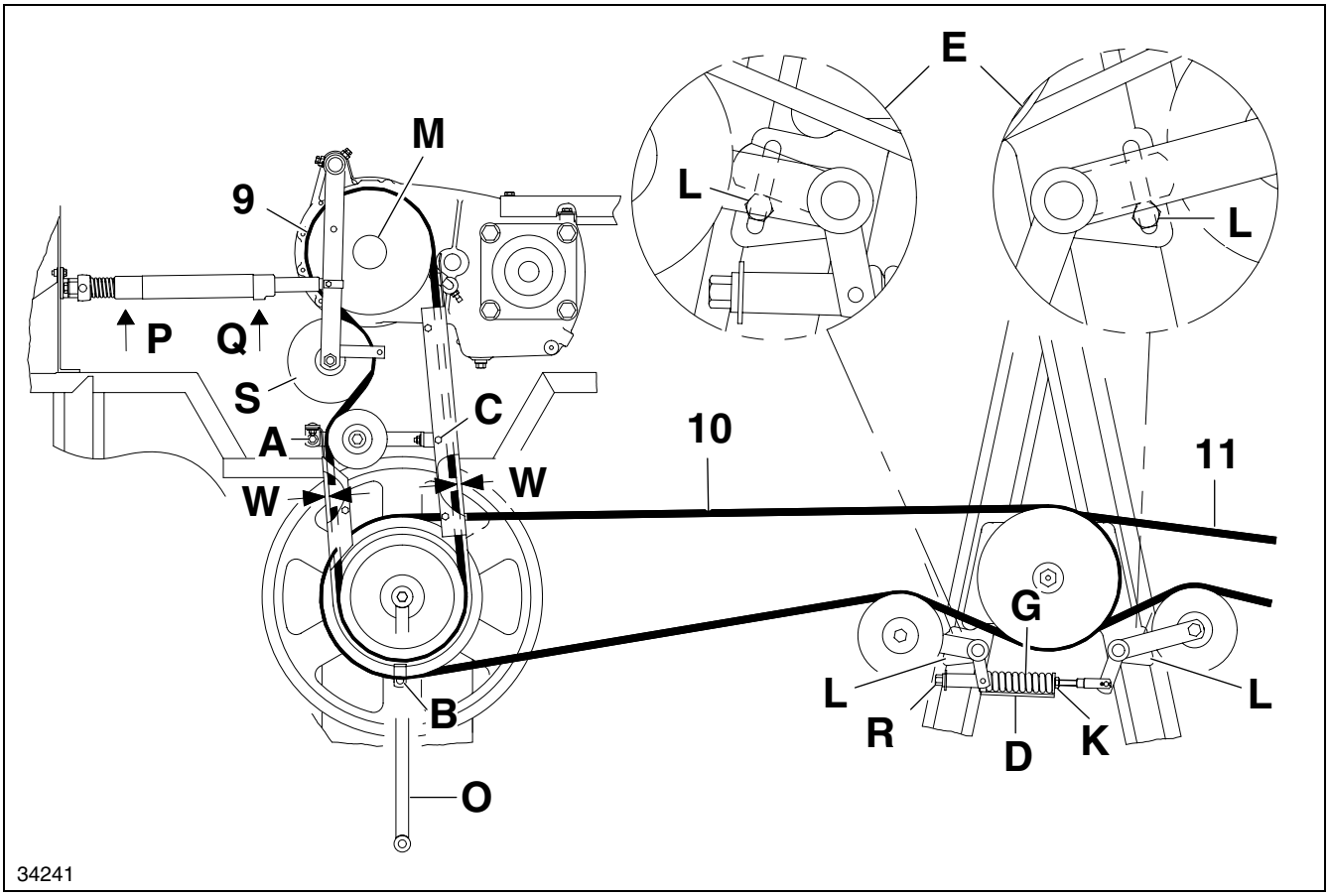
Re-fit hoses (S and T).

Adjusting the spring-loaded cylinder (F):

Loosen lock nut (K) and adjust the spring guide tube (R) so that the end of the gauge rod (D) is level with the end of the spring. Tighten lock nut (K).

Spring length = 130 mm

(Fig. 17, 18, 19, 20)



39

Straw chopper drive adjustment

9 Chopper intermediate drive belt
10 Chopper intermediate drive belt
11 Chopper intermediate drive belt

M = Engine output assembly

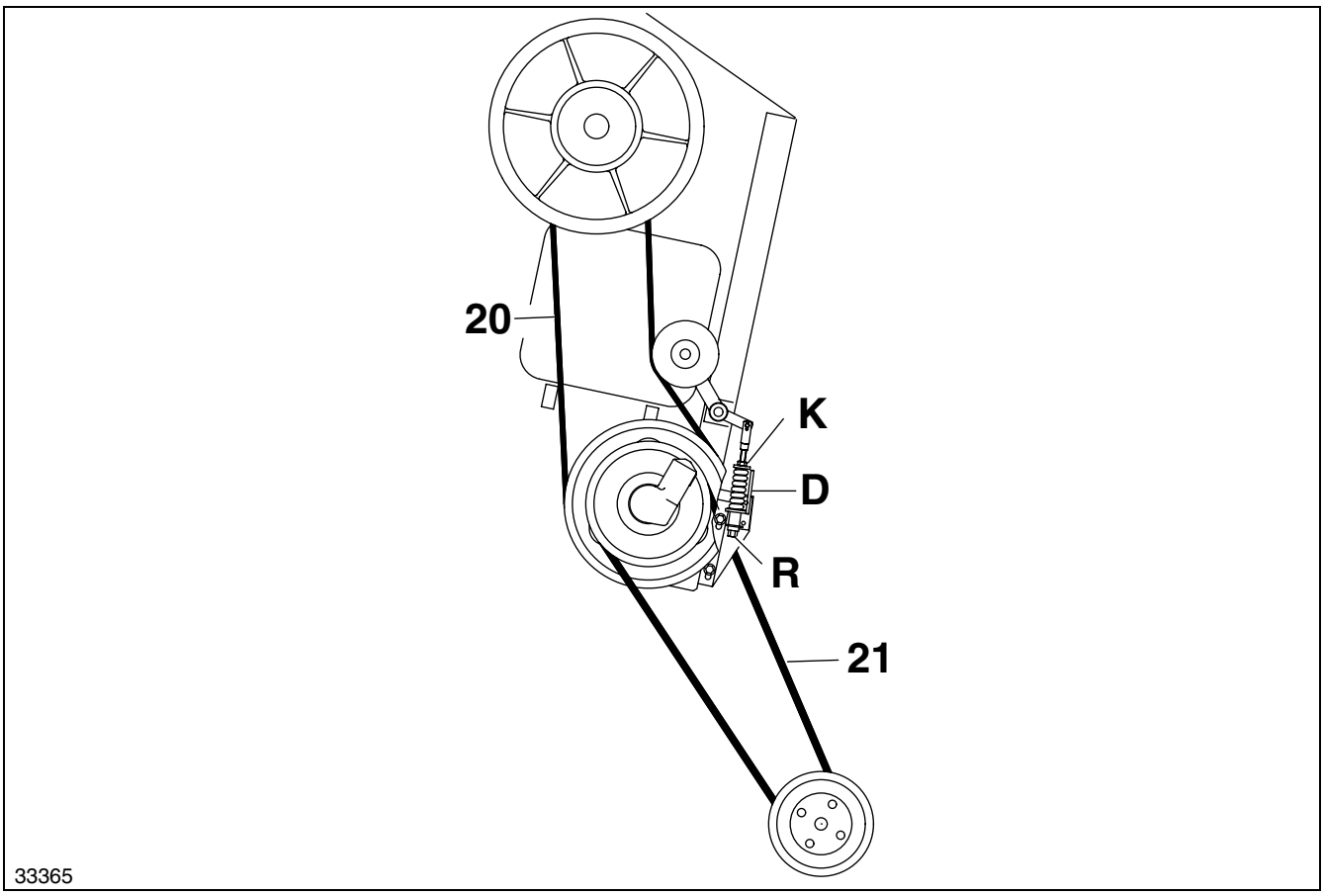
DANGER!

Carry out adjustment only with the engine shut down and the ignition key removed.

When the engine is running, a constant pressure of 20 bar is applied to the rod end of the low-pressure hydraulic cylinder through port (Q). This disengages the chopper drive by way of jockey pulley (S).

When the chopper drive is engaged, 20 bar oil pressure is applied to the face end (P) of the piston. The oil pressure thus acts on the larger piston area and forces out the piston rod. The drive belt is tensioned by way of jockey pulley (S).

(Fig. 39)



55

Removing the fan intermediate drive belt (20)

DANGER!

Switch off the engine and turn off the battery isolating switch!

Remove threshing mechanism variable-speed drive belt (22).

Remove fan drive belt (21).

Relieve the tension of fan intermediate drive belt (20):

DANGER!

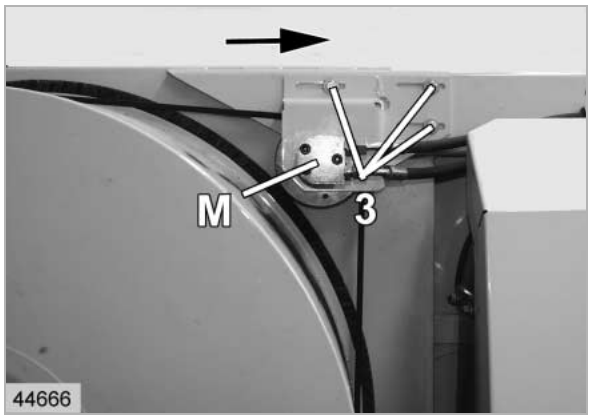
To avoid **risk of personal injury**, follow the correct order of assembly!

Installing and adjusting the rotary radiator screen suction drive belt (28)

1. Install belt (28).
2. Turn lock nut (K) fully downwards.
3. Tighten nut (A) until the gauge rod (F) makes contact with stop (G) without exerting any pressure.
4. The distance between stop (G) and gauge rod (F) may be up to 1 mm.
5. Tighten lock nut (K).

   Length of gauge rod = 58 mm
6. Install and adjust fan intermediate drive belt (20).
7. Install fan drive belt (21).

(Fig. 67)



68

Tensioning the rotary radiator screen drive belt (32)

– Slightly loosen the bolts (3).

– Push hydraulic motor in direction of the arrow and at the same time re-tighten the bolts (3).

(Fig. 68)

69

Tensioning the suction blower drive belt (34)

– Slightly loosen the bolts (2).

– Push the suction blower in direction of the arrow and at the same time re-tighten the bolts (2).

(Fig. 69)

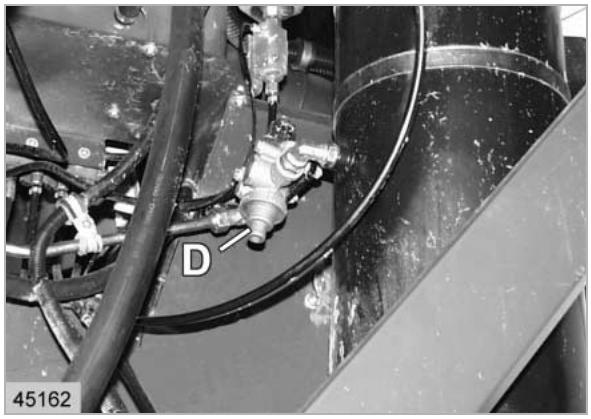
4

Draining the compressed air accumulator

The accumulator is drained automatically at the drain valve (E).

Remove the drain valve once a year and clean if necessary.

(Fig. 4)



5

Pressure controller

The pressure may be adjusted at the pressure controller (D).

The cutting-off pressure and the supply range (difference between cutting-off pressure and opening pressure) must be checked once a year.

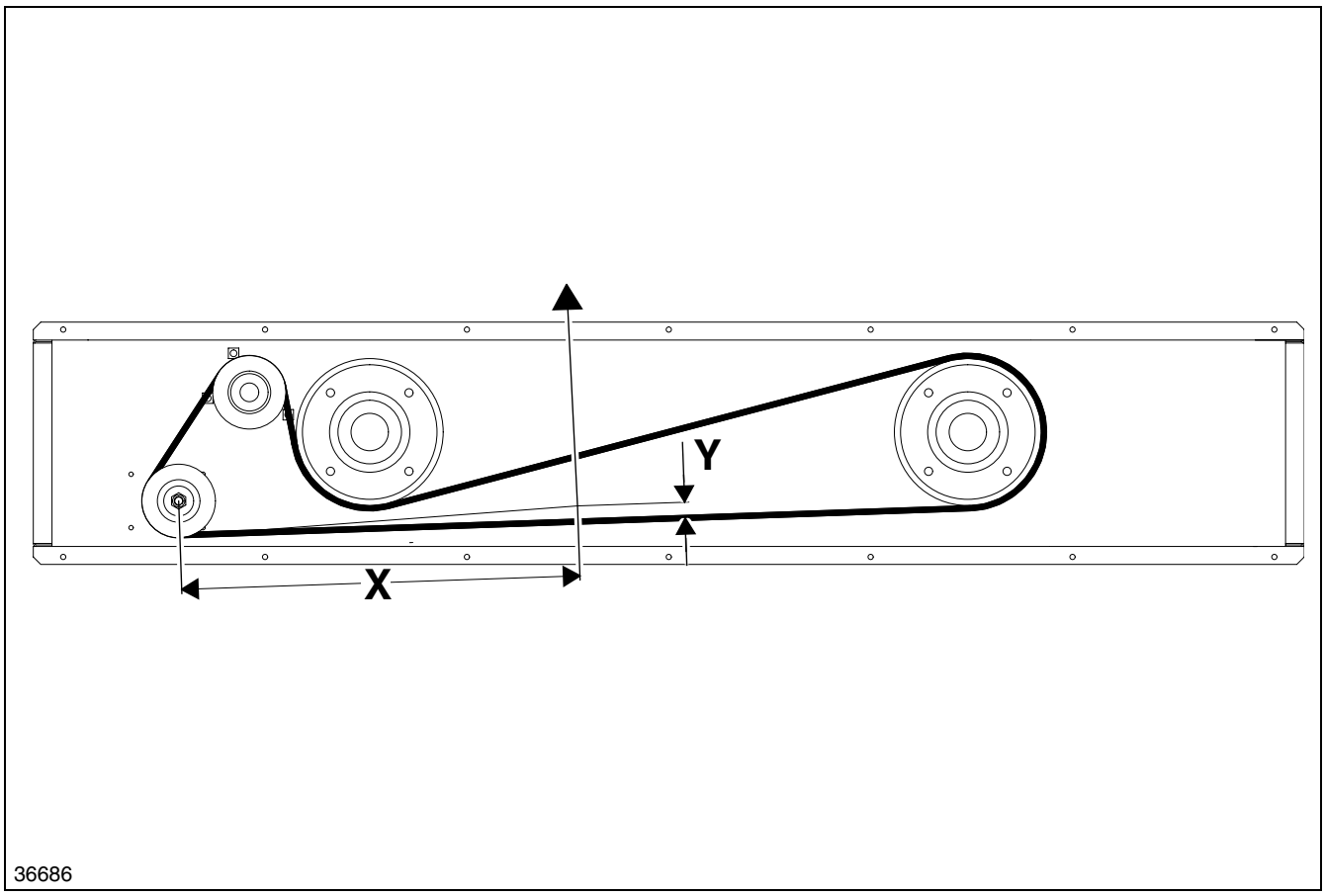
Target values:

Cutting-off pressure = 9 ± 0.2 bar
Supply range = 0.7 + 0.5 bar

DANGER!

Only authorized workshops are allowed to perform these adjustments!

(Fig. 5)



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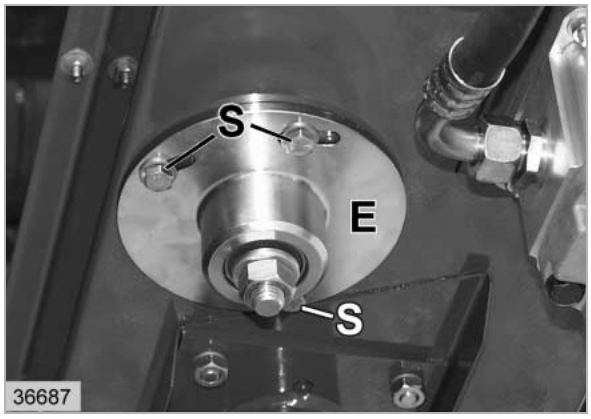


3

Adjusting the toothed belt:

At (X), the belt must make contact with 58 ± 5 N for an excursion of 21 mm (distance Y).

For adjustment, loosen bolts (S) and rotate the eccentric housing (E) accordingly.

After the adjustment, retighten the bolts (S).

X = 530 mm
Y = 21 mm

(Fig. 2, 3)

Lubricants chart

Component	Type of Lubricant	Capacity	Viscosity	Change Intervals	Check
Engine					
CATERPILLAR C9 CATERPILLAR 3126 B	Engine oil according to Caterpillar API-CG 4 or API-CH 4	32 litres 28 litres	15 W-40 10 W-40 10 W-30 0 W-30	See Maintenance Schedule	See Maintenance Schedule
Preservation of engine**					
Cooling system	Corrosion inhibiting anti-freeze	50% corrosion inhibiting anti-freeze and 50% water see «Specifications» for filling capacities	For long-term coolant (ELC) see below	ELC 6000 hours or 6 years DEAC 3000 hours or 2 years Commercially available HD cooling / anti-freezing agents: 3000 hours or 1 year	See Maintenance Schedule

* Use only fuels which meet the Caterpillar fuel specifications. See operating manual of engine manufacturer.

If diesel fuels with a sulphur content exceeding 1.0% by weight are used, it is essential to change the engine oil at shorter intervals.

** See operating manual of engine manufacturer.

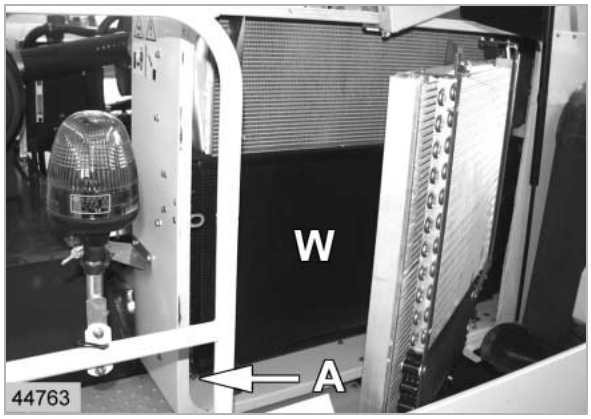
Coolant: Caterpillar-approved coolant or commercially available HD cooling / anti-freezing agents meeting ASTM D 4985 or ASTM D 53 45 standards.

NOTE!

Do not use commercially available HD cooling / anti-freezing agents meeting only the ASTM D 3306 classification. Optimum efficiency of long-term coolant (ELC) and of HD cooling / anti-freezing agent is obtained with the 50% mixture of water and glycol recommended by CLAAS.

ATTENTION!

Mixing with commercially available coolant is not allowed.
Use only specified coolant for refilling.



1

Water cooler

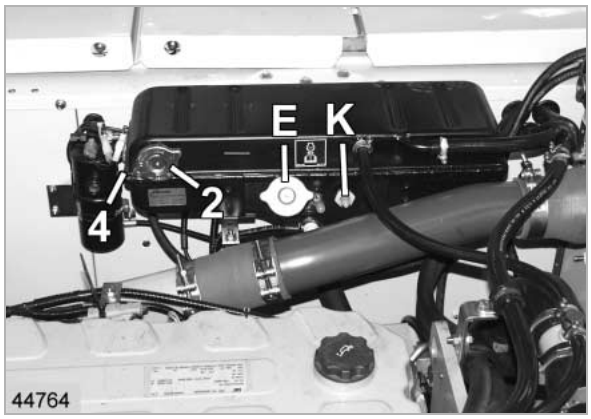
DANGER!

Be careful when opening the hot radiator – **Danger of scalding!**

☞ Only loosen the radiator cap up to the stop and allow the excess pressure to escape.

W = Water cooler
A = Water drain tap

(Fig. 1)



2

Filling the cooling system with coolant

DANGER!

Be careful when opening the hot radiator – **Danger of scalding!**

☞ Only loosen the radiator cap up to the stop and allow the excess pressure to escape.

Fill coolant through filler neck (E) into the system. Fill up to the brim.

Close the radiator filler cap tightly. Never put cold water into a hot engine. Take care the cooling water is clean, and does not contain too much lime and chlorine. Whatever containers are used for cooling water should be absolutely clean.

Run engine for a short time. Stop the engine. Check cooling water level once more and top up if necessary.

K = Water level check glass

Coolant – see page 11.2.2, *Lubricants chart*.

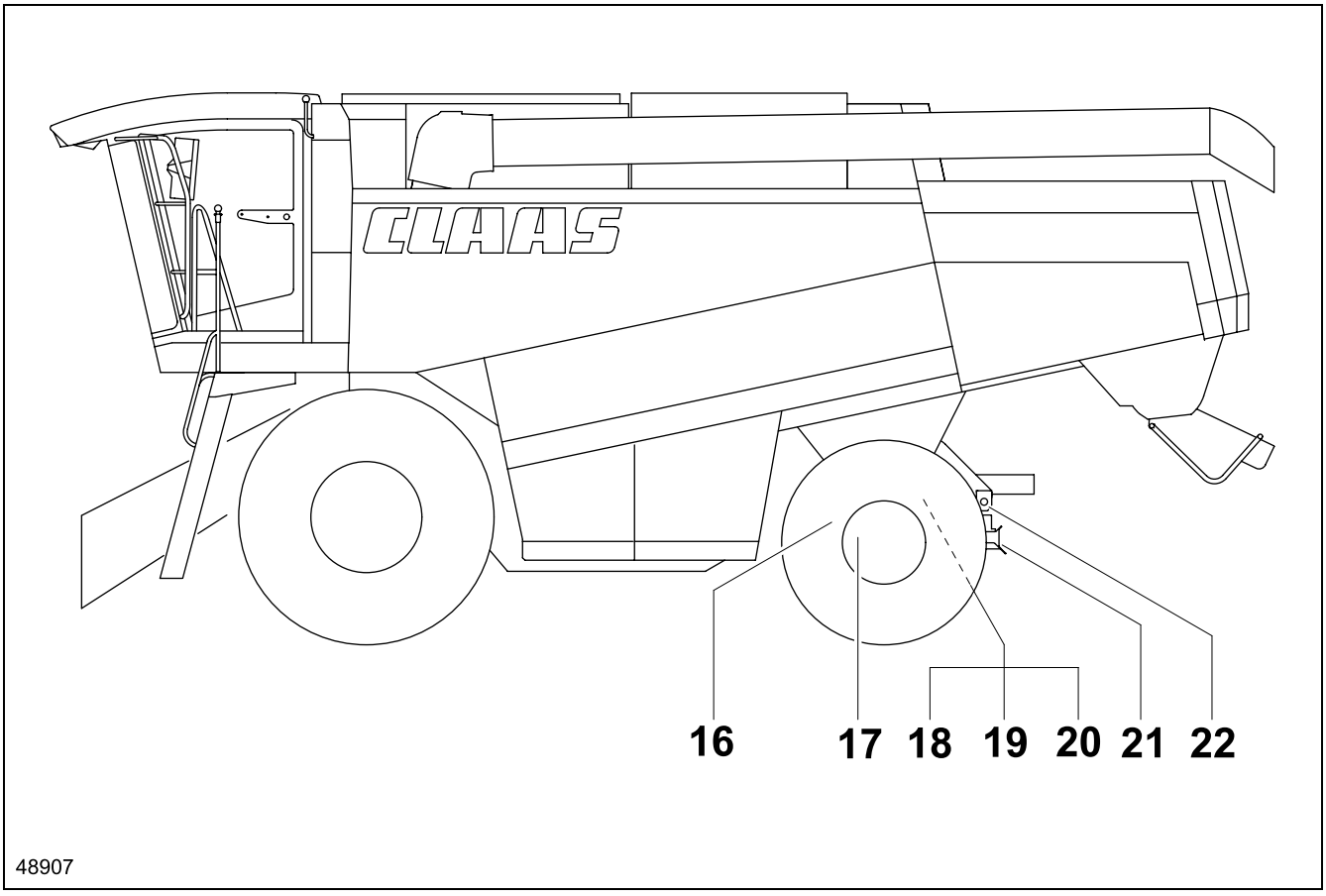
(Fig. 2)

Overpressure

The diaphragm beneath the radiator cap (2) is compressed if there is an overpressure in the cooling system.

This allows the steam to escape through the overflow pipe (4).

(Fig. 2)

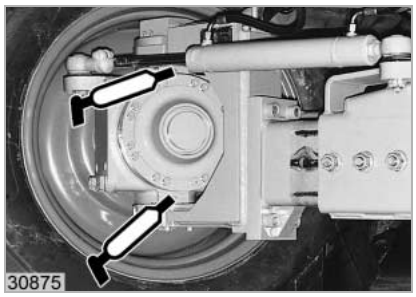


h100

● 16

● 17

● 18



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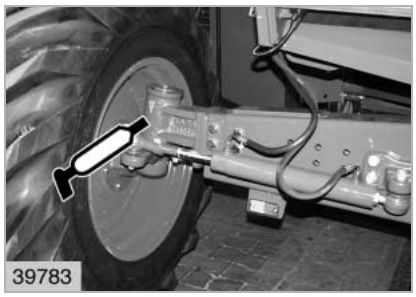

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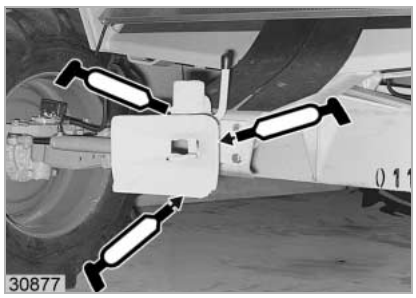
● 21



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