TUCANO 500

Information and Basic Field Settings

CLAAS

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What We Recommend

This guide has been produced as a reference to operator's training. The aim is to aid operator's with familiarisation and settings of CLAAS TUCANO combine harvester.

This guide does not replace the operator's manual. More in depth information is available within the operator's manual.

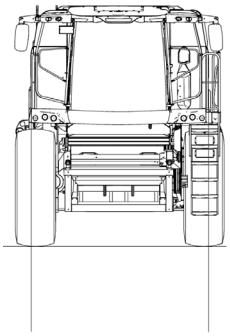
Your CLAAS combine is designed for output and efficiency but this can only be achieved with the correct operation and maintenance of the machine.

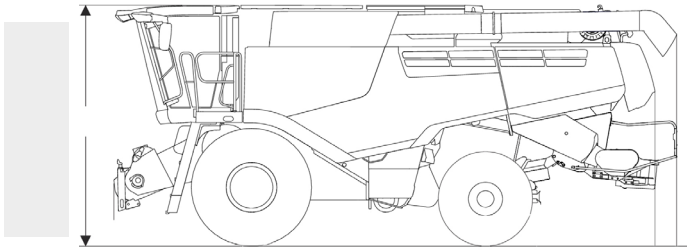
Make sure you are familiar with the operator's manual before using the machine.

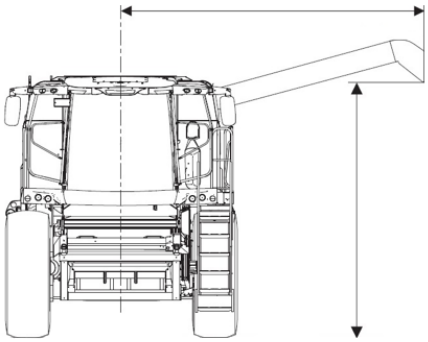
The operator's manual is an integral part of the machine. It addresses the user and contains safety relevant information. Only procedures specified in the operator's manual are safe.

Read and observe the operator's manual before starting work.

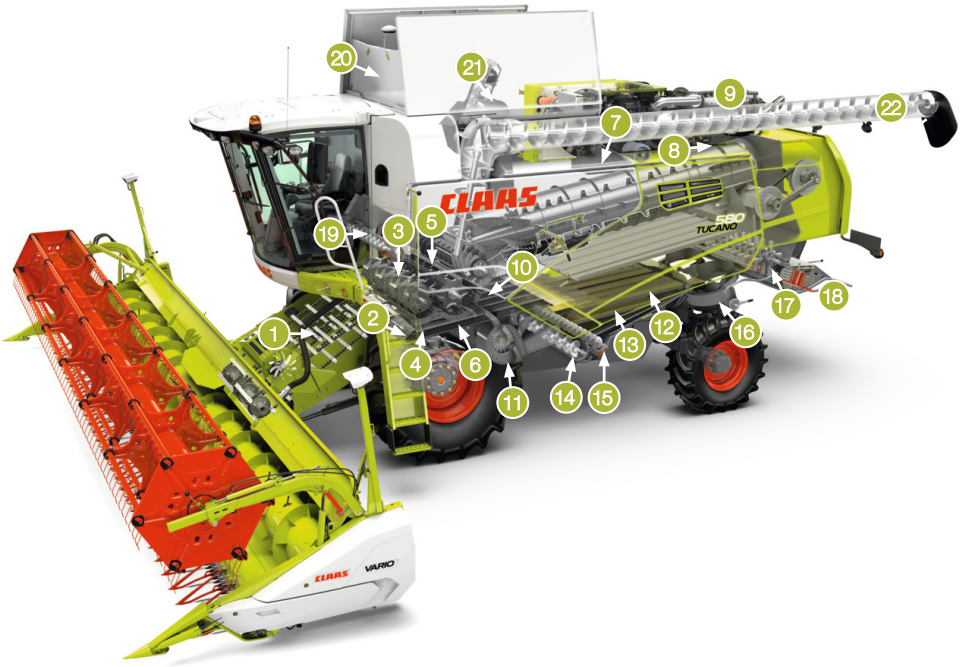
If you need help understanding the content, contact your local CLAAS Dealer.







Overview: Hybrid



1. Feeder chains

2. Stone trap

3. Accelerator drum

Applies to machine with APS threshing system.

4. Preconcave

Applies to machine with APS threshing system.

5. Threshing drum

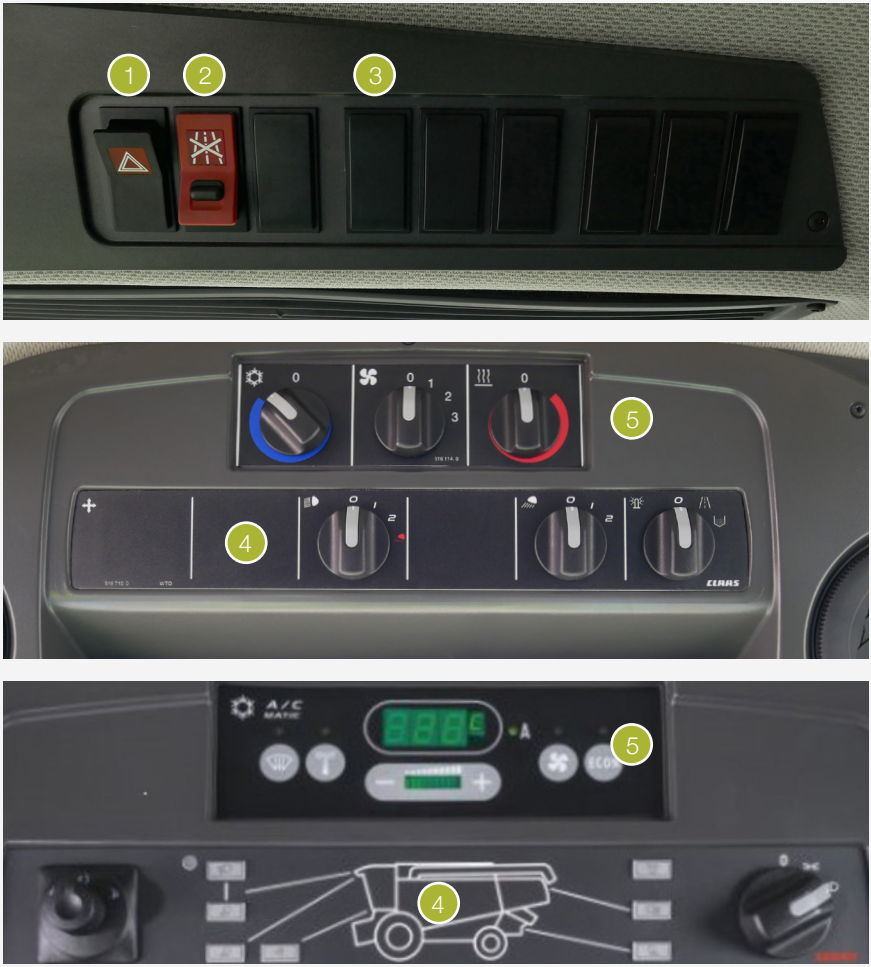
6. Main concave

7. Impeller
8. Rotor
9. Return pan
10. Preparation pan
11. Fan
12. Upper sieve
13. Lower sieve
14. Grain auger
15. Returns auger
16. Chaff spreader
17. Straw chopper
18. Deflector
19. Returns elevator
20. Grain elevator
21. Grain tank
22. Unloading auger

Cab Controls: Layout

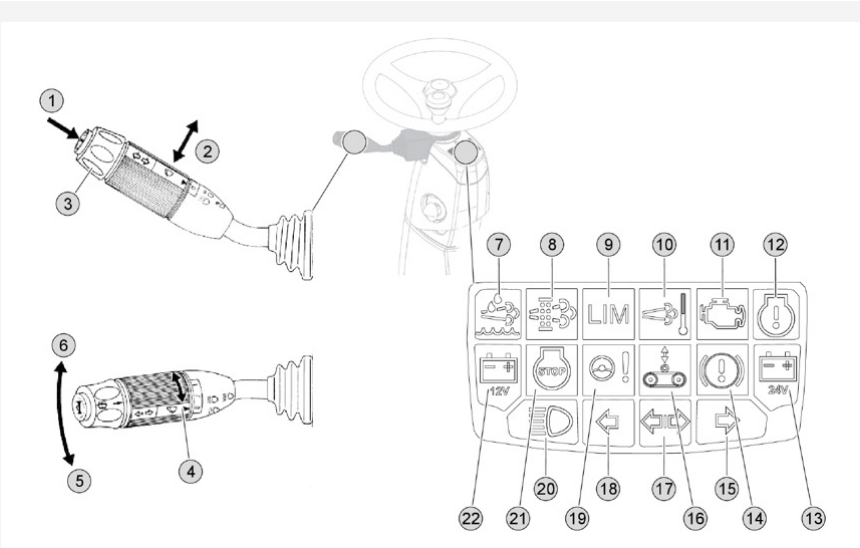
1. Rotary button
2. Quick adjustment button
3. Information button
4. Escape button

5. Front attachment
6. Threshing
7. Drum speed adjustment
8. Concave position adjustment
9. Fan speed adjustment
10. Upper sieve adjustment
11. Lower sieve adjustment
12. Rotor speed adjustment
13. 4 TRAC engage
14. Diff lock engage (MONTANA)
15. Overdrive (MONTANA)
16. Left rape knife
17. Open grain tank
18. Close grain tank
19. LASERPILOT left/right
20. Front attachment reverse

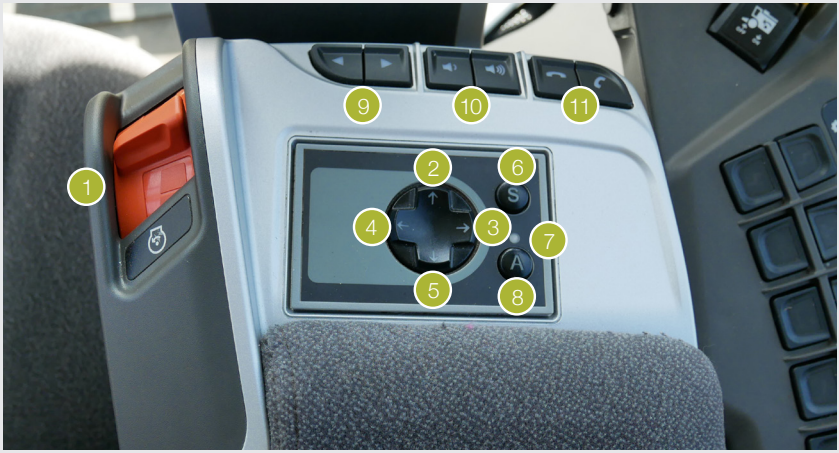


1. Hazard warning light
2. Road travel safety swtich
3. Fold maize picker (if fitted)
4. Lighting panel
5. Air conditioner

Cab Controls: Layout



1. Horn
2. Main beam
3. Windscreen washer
4. Windscreen wiper
5. Turn signal left
6. Turn signal right
7. Urea minimum level light
8. Diesel particulate filter loading too high
9. Diesel engine output reduction
10. Regeneration active exhaust temperature high
11. Diesel engine fault
12. Diesel engine fault
13. *Not used*
14. Park brake
15. Right indicator
16. *Not used*
17. Trailer indicator
18. Left indicator
19. *Not used*
20. Main beam
21. Diesel engine serious fault
22. Alternator



1. Throttle
2. Manual lower
3. Manual right tilt
4. Manual left tilt
5. Manual raise
6. MONTANA transport position
7. Automatic mode indicator
8. MONTANA automatic switch
9. Radio preselected channel change
10. Radio volume
11. Receive and end call

Tip: When [6] is pressed, the machine lowers to transport position.

When [8] is pressed, the machine is levelled horizontally and the cutterbar is then aligned with the ground.

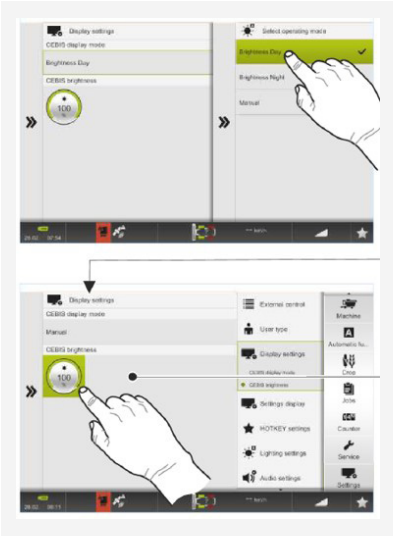
Cab Controls: C-MOTION Multifunction Lever

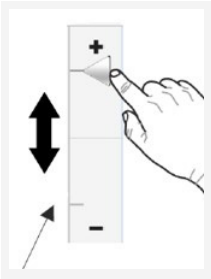
1. Lower reel
2. Reel forward
3. Raise reel
4. Reel back
5. Favourites selection
6. Favourites selection
7. HOTKEY
8. AUTOPILOT
9. Raise front attachment fast/slow
10. Cutting height control
11. Lower front attachment fast/slow
12. Preset height
13. Front attachment stop/quick stop
14. Grain tank unload
15. Swing out unloading tube
16. Swing in unloading tube
17. Multifunction button

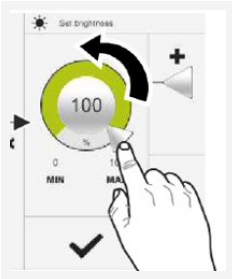
1. Change button
2. Secondary displays
   (different displays can be selected in user defined displays)
3. Main menus
4. HOTKEY selected menu
5. Direction and 4TRAC
6. Time display
7. Coolant temperature
8. AdBlue level
9. Fuel level
10. Ground speed
11. Engine RPM

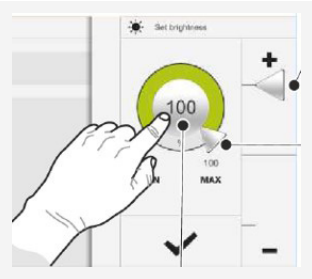
Cab Controls: CEBIS

1. Change display: field/road
2. Crop data and jobs
3. Upper secondary display
4. Centre secondary display *(can be changed in user defined display)*
5. Lower secondary display *(can be changed in user defined display)*
6. Main menus
7. Quick adjustment button
8. HOTKEY adjustment
9. Direction of travel and 4TRAC *(if fitted)*
10. Diesel engine load
11. Cleaning throughput monitor
12. Separation throughput monitor
13. Returns monitor
14. Ground speed
15. Outline buttons *direct access to settings*
16. Crop type and moisture display









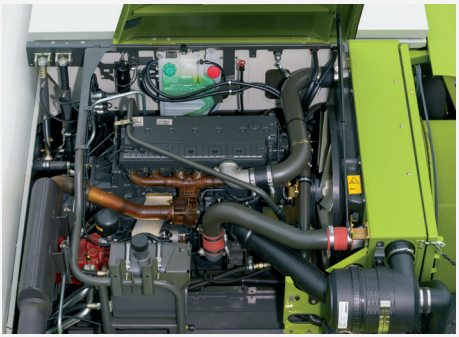
How to change settings in CEBIS:

1. Select the main menu to change
2. Select the sub menu
3. Select the operating menu
4. Select the dial
5. Use the slider (or)
6. The dial (or)
7. Double tap the dial
8. Type in the value

How to adjust combine settings in CEBIS:

1. Tap the appropriate area here, then adjust:
2. Front attachment
3. Threshing mechanism
4. Separation settings
5. Cleaning settings/system
6. Fan speed
7. Sieve settings (and)
8. Crop settings

9. To adjust the settings the other way, use switches (9) and (10).

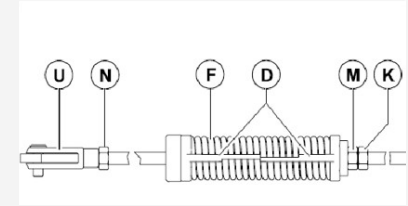


When carrying out any service operation, make sure that the correct procedures are followed. See the Operator's Manual [chapter 9.1] for the complete service requirements. In CEBIS there is also a quick guide to the service requirements.

Grease the appropriate grease points as per the Operator's Manual. It is recommended to grease the rotor bearings every day.

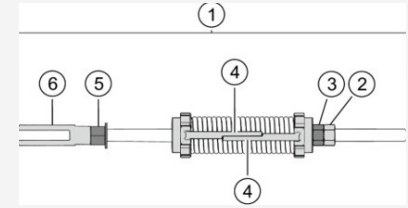
Tip: When blowing down the whole combine, taking extra care in the following areas:

- Engine
- Gearbox
- Cooling pack
- Stone trap
- Preparation trays



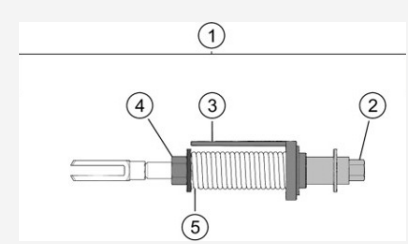
1 End to end guides:

Correct tension is achieved when the ends of [D] are end to end. To tension the belt, slacken nut [K] from [M] and wind [M] in a clockwise direction until the ends of [D] meet, then lock nuts [M] and [K]. If the belt needs removing, please consult the 'drives section' of the Operator's Manual.



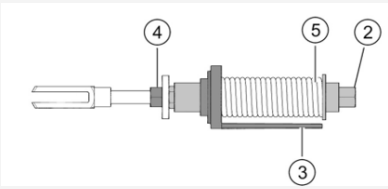
2 Centre to centre guides:

They work in exactly the same way as the end to end tensioners, except the belt is at the correct tension when the tabs overlap the full length of the recessed part of the tabs.



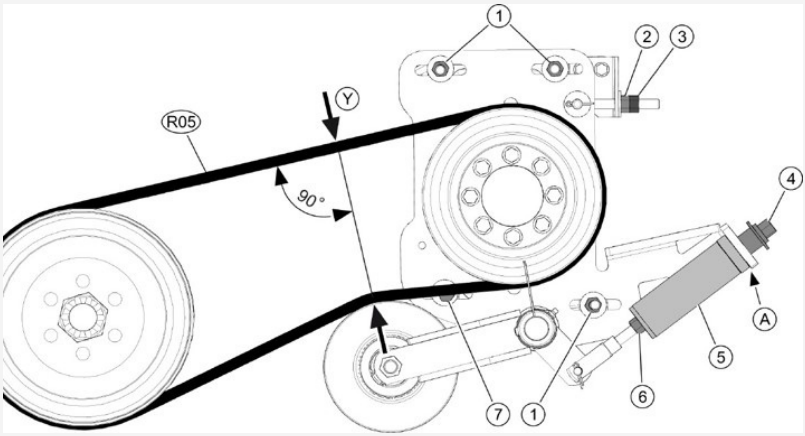
3 Gauge rod type:

Under the correct tension, gauge [3] should be in line with the end of the spring. To tension slacken nut [4], tighten nut [2] until the gauge meets the end of the spring. Lock off nut [4].



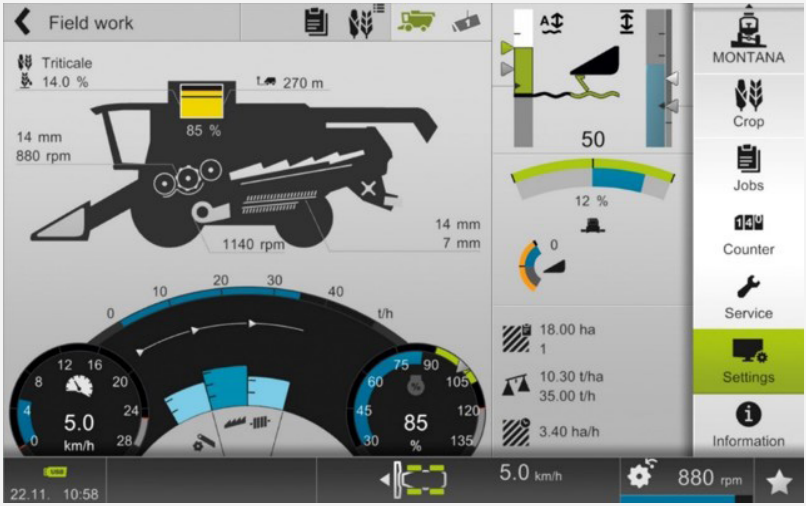
4 Gauge rod type:

Correct tension is achieved when the ends of [D] are end to end. To tension the belt, slacken nut [K] from [M] and wind [M] in a clockwise direction until the ends of [D] meet, then lock nuts [M] and [K]. If the belt needs removing, please consult the 'drives section' of the Operator's Manual.



Pump drive belt tension is done with a gold tube type tensioner.
Check distance Y is 205mm - if it is loose then adjust as follows:

Slacken off nut [6], slacken off [4], tighten nut [6] until the tube makes contact at position [A]. The tube must just be able to rotate. Tighten [4] to lock nut [6].



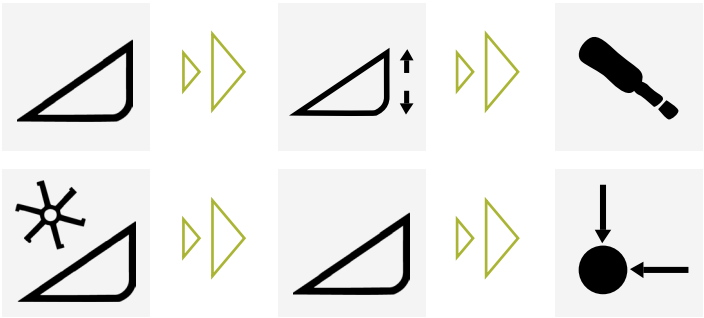
Daily zeroing:

This should be carried out with the machine running,
threshing engaged at maximum speed and with no material in the machine.
The following items need to be zeroed on a daily basis:

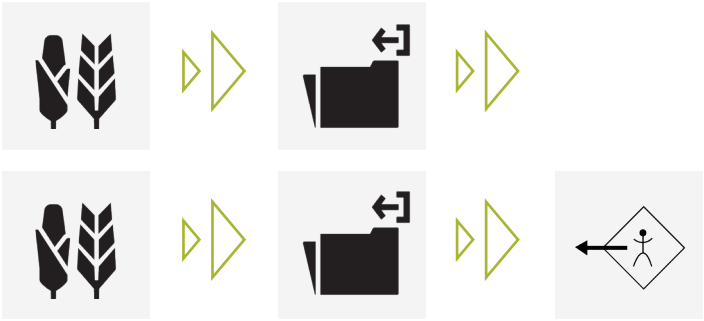
1. Set ‘zero returns’

2. Set ‘zero yield’

1 Learn the AUTOCONTOUR end stops at the start of the season.



2 At the start of each crop, make sure you have selected the correct crop type, or your personal crop settings.



Tip: Learn the working position of the cutterbar within CEBIS.

This may also need to be changed when combining different crops.

Settings: Cutterbar

The cutterbar is one of the most important parts of the combine harvester.
It is designed to cut and gather the crop from the field.

Dividing:

The first part of the cutterbar to make contact with the crop are the dividers.
There are two types, a standard and a long divider.

Lifters:

It is recommended that lifters should be fitted to CLAAS cutterbars.
The lifters should be fitted by placing the first one on the fifth finger from the RHS of the cutterbar and then on every fourth one thereafter.

Tips: To make the crop lie down before the auger to aid the feed into the centre of the cutterbar, move the table in or out.

Make sure that the height of the divider is set so it does not run on the ground. Set the height the same as the stubble.

Check the lifters everyday, if they are loose or bent remove and replace them.

Check that the knife is in good condition in order for it to work effectively. This involves replacing damaged or broken sections.

Table auger:

The table auger is important for the transportation of material to the front elevator.

The timing of the retractable fingers can be adjusted for different crops by opening up the guard on the RHS of the cutterbar and adjusting the lever with a spanner. Use the top holes for short crops and the lower holes for tall crops. The third hole from bottom is the standard setting.

Crop wrapping:

If an issue occurs with crop wrapping around the table auger in difficult conditions, there are a number of procedures that can be carried out (try one thing at a time): Adjust the stripper plates behind the auger. There is also a second scraper under the auger that can be accessed over the top of the auger.

Tip: Remove any knife play by adjusting the keeps, and make sure that the fingers are not rounded or bent. A cleaner cutting knife will reduce stress on the knife drive.

Check the height:

Check the height of the auger within the trough of the cutterbar. There should be a minimum gap of 20mm between the trough and the auger flights.

Sprockets:

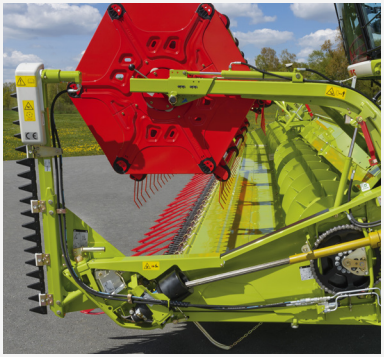
In exceptional wrapping conditions, the speed of the auger can be slowed by optional sprockets on the chain drive shaft. With the split reel cutterbar, two sets of sprockets are required.

Retractable fingers:

Remove the intermediate retractable fingers along the length of the auger leaving just the middle ones.

Lift the skids:

Lift the skids as high as possible to get as much movement for the sensor bands. The skids underneath the cutterbar should be set to suit the local conditions.



Both the side knife and the divider use the new fork locating and locking device.

Make sure the cutterbar VARIO table is pushed out to the side knife mark on the side of the cutterbar before fitting the knife.

For the side knife, simply slide into the lock and turn the handle to lock in place. Make sure the lever has locked into the locking device.

When fitting the side knife, make sure that the cradle is tight to the underside of the tube.

Once the side knife is fitted and locked, all that is required is for two hydraulic pipes to be connected to the quick release couplings on the side of the cutterbar. There is no need for a link pipe to be connected when the side knife is removed.

Tip: When placing the cutterbar on the trolley, put the cutterbar in ‘park position’. With the engine running and threshing disengaged, press and hold the AUTOCONTOUR button, the cutterbar will then go into park and there will be a beep from CEBIS when it is complete.

De-awning:

De-awning can be carried out by operating the lever on the right hand side of the machine, which in turn closes or opens a set of plates under the APS concave. This keeps the crop in until the main concave.

Stone Trap:

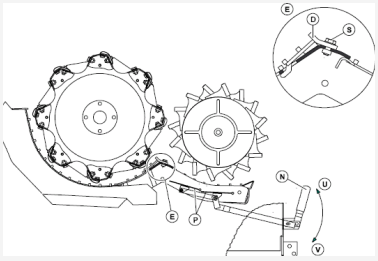
The stone trap is situated between the front elevator and the APS concave. It is important that the stone trap is emptied regularly to allow for foreign objects to be expelled before they enter the drum.

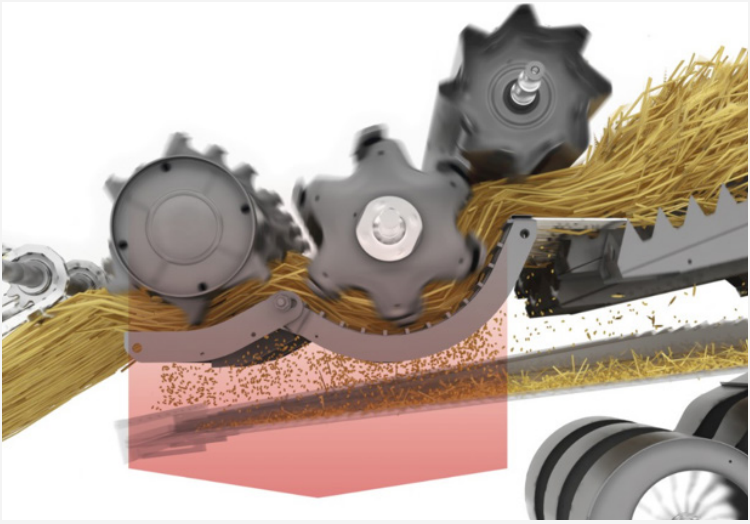
Further Information:

Only fit these plates if it is necessary.

Try other settings first.

More detailed information can be found in chapter 7.9 of the operators manual.





To obtain initial settings, it is recommended that the 'CLAAS settings' are loaded through CEBIS and these are to only be used as a starting point, then adjustments should be made from there.

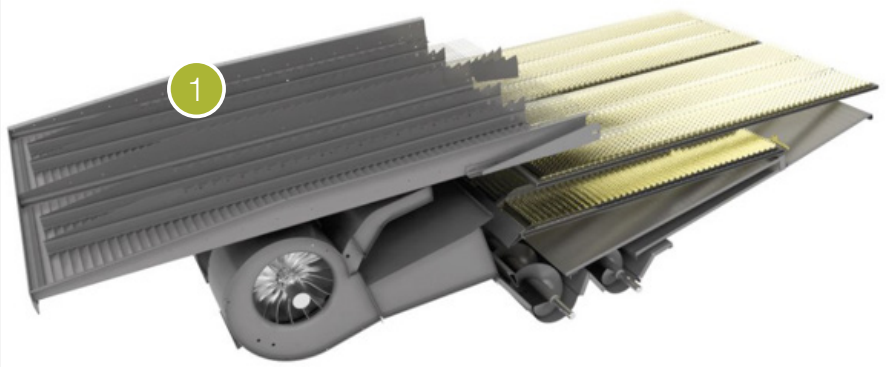
The prime objective here is to remove the maximum amount of grain with minimum damage to grain and straw. Over-threshing can crack grains, produce more chaff and use more power.

It is imperative for the performance of the machine that the concaves are kept clean. Generally, wider concave gaps are accepted when using a TUCANO.

Tips: Only make one adjustment at a time.

Only do just enough threshing, over threshing causes overloading of the sieves and uses power unnecessarily.

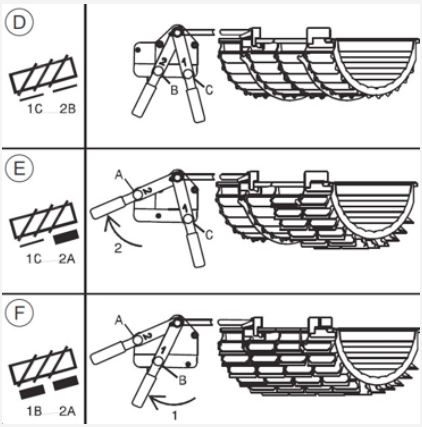
It is recommended that the drum speed is adjusted by 100rpm at a time.



The preparation pan [1] is the first part of the cleaning system that the grain will come into contact with. Its function is to separate the grain and the chaff. The grain is heavier and therefore goes to the bottom, the lighter chaff goes to the top.

It is important that this is kept clean, to allow this to happen effectively. A dirty preparation pan will cause a poor sample and reduce output.

Rotor cover plates position D both closed position E rear open front closed and position F both open.



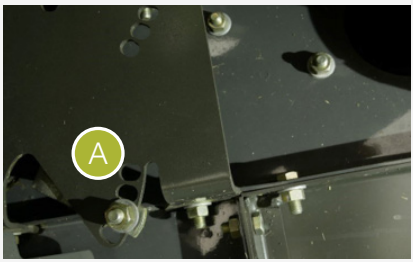
Tips: Clean the preparation trays daily, this will help in keeping a clean sample.

When removing the prep trays for cleaning, blow off the top of the gear box area to remove any chaff and dust.

The fan speed is shown on the CEBIS screen. The speed range of the fan is 750rpm – 1600rpm.

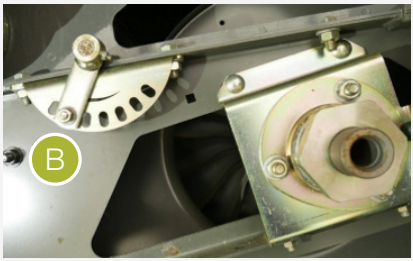
With the standard cleaning on the TUCANO machines, there are two other manual adjustments:

- The wind board
- The wind throttle



Wind board adjustment loosen nut [A] and adjust. Towards the rear of the machine, the more steeper the angle for the air.

To adjust the wind throttle, remove bolt [B] and move the lever. Refit bolt and tighten nut.



Use these two settings with the fan speed.

Approximately 60% of the grain needs to be separated from the straw by the time the crop leaves the drum. This means that the remaining 40% has to be separated by the rotors.

Tips: Only make adjustments of 50rpm at a time.

Steeper angle for heavier crops and a lesser angle for light crops.

Open the wind throttle for heavier crops and shut it for lighter crops.

Straw

Returns

Returns quantity and quality of grains OK

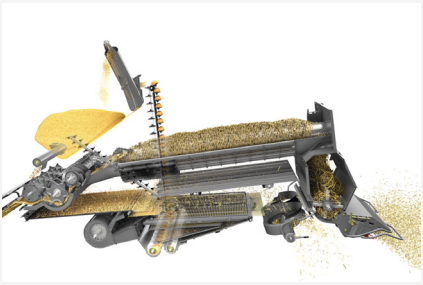
- Grains in the ears → 1. Close the concave; 2. Increase drum speed; 3. Increase the drum speed
- Poor straw quality → 1. Open the concave; 2. Reduce drum speed
- Unthreshed heads in the swath → 1. Increase drum speed; 2. Close the concave
- Threshed grains in the returns → 1. Increase the drum speed; 2. Close the concave position
- Too much grain in returns → 1. Open the lower sieve
- Returns volume below 40% → 1. Close the lower sieve or open the upper sieve
- Returns volume above 40% → 1. Close the upper sieve or open the lower sieve

When deciding what to adjust on the combine to reduce the amount of loss, it is important to understand where the loss is coming from and what is acceptable.

At the front of the machine:

Is the loss happening before or after the cutterbar?

If before, it is not cutterbar related.



At the rear of the combine:

Are the losses acceptable?

Are they coming from the sieves and/or walkers?

Tips: Adjust the reel position or check the knife for damage or wear.

Fit lifters to lift any laid crop.

Always check the losses behind the combine after making an adjustment and then set up the monitors to show what is happening.

There is a guide in the CEBIS screen. There is also a free app, CEMOS Advisor. This will give you another tool to set up the combine.

Where are the losses coming from?

To work out what is coming from the rotors engage the chaff spreader and carry out a check behind the combine, count the grains on the floor.

To check the losses from the sieves disengage the chaff spreader and engage the chopper and spread this as wide as possible and then count the grains.

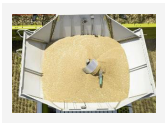
Take into account what the grains look like, unthreshed heads etc. Now make the corresponding adjustments.

After adjusting the combine, make sure that the monitors also reflect what you will accept as a loss. Adjust monitor sensitivity so that the blue area is approaching the limit lines, the black line.

Tips: The easiest way to check for losses is in the swath with the chaff spreader and chopper disengaged.

Count the number of grains within your hand print. 1 grain per foot of cutterbar is close to 1% loss.

Losses



Grain tank

- Pieces of straw
  1. Reduce drum speed
  2. Open concave
  3. Close lower sieve
  4. Close upper sieve
  5. Close lower sieves
- Unthreshed heads
  1. Close the concave
  2. Close the disawning plates
  3. Increase the drum speed
  4. Close the lower sieve
- Broken grains
  1. Reduce drum speed
  2. Open the concave gap
  3. Open the disawning plates

Sieves

- High sieve losses
  1. Open upper sieve
  2. Reduce fan speed
  3. Reduce rotor speed
  4. Open lower sieve

Rotors

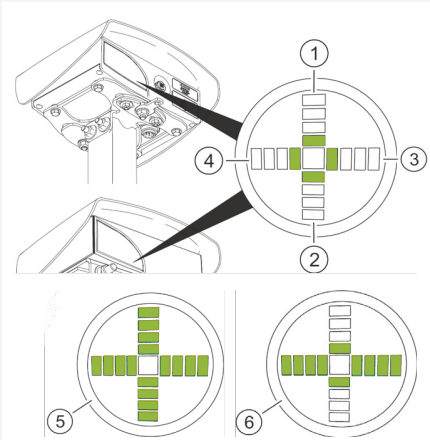
- High rotor losses
  1. Open rotor cover plates
  2. Increase rotor speed
  3. Decrease the drum speed

1 Turn on CEBIS

2 Select LASER PILOT

To activate LASER PILOT,
make sure it is turned on in CEBIS [1]
and that LASER PILOT is selected [2].

Line up with the crop edge before pressing the AUTOPILOT button on the joystick.



To set up the LASER PILOT,
make sure the combine has a straight edge and is lined up with the crop.

With the engine running and the threshing engaged, the LEDs on the back of the LASER PILOT should all be in the middle.

If the LEDs are:
1- it is too high,
2- it is too low,
3- it is too far right,
4- it is too far left.

To adjust the LASER PILOT,
you only need the panel spanner.

Tips:

If the LASER PILOT is not steering straight ahead, check the adjustments in the HOTKEY first.

Check the back of the LASER PILOT.
5 - adjust up or down and left or right or clean glass.
6 - no crop edge, adjust left or right.

Notes

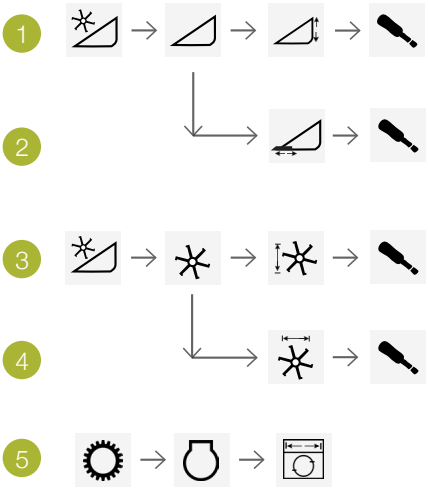
Frequently Asked Questions

“Threshing won’t engage and none of the hydraulics are working.”	Check that the road travel switch is not engaged.
“Threshing has engaged but the engine will not go to full rpm when the engine speed dial is turned.”	Check that the combine is not in 3rd gear.
“Getting a poor sample after many adjustments.”	Check that the preparation floor are clean.
“The machine will not change gear.”	Make sure that the multifunction lever is in its neutral position and both the footbrake pedals are applied, then briefly press the gear rocker switch once to select a gear.
“The machine goes off course when AUTOPILOT is engaged.”	Make sure that the LASER PILOT is set up correctly and check CEBIS settings.
“The machine is lacking performance.”	What are the settings in CEBIS? what are the crop and field conditions? Make sure that threshing segment is removed from the main concave and that the crop is not being over threshed. When chopping check that the fine chop step is not engaged and the stationary knives are backed off.

In wet and laid crops	It is even more important to get a good cut and feed into the combine. Check the knife and fingers regularly, paying particular attention to the knife to finger gap.
To pick up laid crops	The skids under the bar must be raised into their highest position. This will also reduce the amount of soil sticking to the underside of the cutterbar.
Do not try to go too low with the cutterbar in laid crops	You only need to place the point of the lifter on the ground. If you go too low, the point of the lifter will lift and hold the crop down.
Soil and foreign objects	These are more likely to enter the combine in a wet harvest, it is vital that the stone trap be emptied at least daily. The worse the conditions, the more frequently this should be done.
Emptying the stone trap	Check that the APS concaves are clean. To do this, simply open the concave to 50mm before switching off and emptying the stone trap.
Under the concave is the preparation pan	This will become dirty as wet grain and soil passes over it. The dirtier it becomes, the less effective it will be, and hence, the dirtier the sample will become. With wet grain it is important to try to keep to a cleaner sample than normal, as you then waste less fuel drying chaff etc.
If the preparation pan is dirty	This is your first indication that further cleaning inside the combine may well be required. When cleaning the rest of the combine, follow the path of grain through the machine, and open covers as you come to them.

Wet Harvest Recommendations

When unloading wet grain	Reduce the flow into the unloading auger by shutting down the slides on both the cross augers in the grain tank. This will reduce the load on the unloading system, bringing it down to a ‘normal’ level.
If wet and dirty grain is being unloaded	It is also likely that dirt will build up in the turret auger. This can and should be checked regularly through the inspection doors, and cleaned if required.
If the shear bolt on the unloading drive fails	This is often the first sign that either the slides in the tank are too high, or there is too much dirt in the system, check auger timing.
Chopping wet straw	This adds an extra load to the chopper drive. Regularly check the tension of the drive belts and the blade condition. Do not forget the 2 ‘stops’ at either end of the main tensioner.
Chopper blade wear	This can be accelerated when chopping wet straw due to the increased levels of soil in it. Check the condition of the blades regularly. Do not forget to check the stationary blades.
In wet conditions	It is possible for material to stick to the return floor under the rotors. This then impedes the flow of grain back to the preparation pan and affects the sample. Check the pan regularly and clean as required.



Seasonal calibration

At the beginning of the season before the combine is used, it is advised that the following items are learnt:

A. Learn AUTOCONTOUR limits [1], VARIO [2] and reel [3,4] ‘end stops’ in the cutterbar section of CEBIS.

B. With threshing and cutterbar engaged and the machine running at full throttle, learn the ‘Max no-load speed’ [5].

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