Operating manual

RESPIRO R9 profi

Version 2.2 / 2022

Software V3.00

original operating manual

www.reiter-respiro.com

Table of content

CAUTION!

Very important

Retighten all screw connections after the first 10 hours of operation and a further check after the first 50 hours

For safety reasons, check the wheel nuts regularly before each starting out.

1. General

Please read this operating manual carefully and keep it in the vicinity of the pick-up belt rake. This will allow you to refer to it at any time for information regarding your safety and proper use of the machine.

1.1. Symbols in warnings

In this operating manual there is a warning for every activity that involves a risk. Be sure to follow these warnings to the letter. Doing so will allow you to avoid damage to property as well as injuries, which in the worst case could even be fatal.

The warnings use signal words that have the following meanings:


DANGER

Failure to heed this warning will result in death or severe injury.


WARNING!

Failure to heed this warning could result in death or severe injury.


CAUTION!

Failure to heed this warning could result in minor injuries and/or damage to property.

1.2. Additional instructions


Information

This note indicates tips and useful information and provides assistance in solving a problem.


Environment

This note indicates instructions for the proper handling of environmentally hazardous substances.

1.3. CE mark

CE

The CE mark to be affixed by the manufacturer informs others about the machine's conformity with the provisions of the Machinery Directive and other relevant EC Directives.

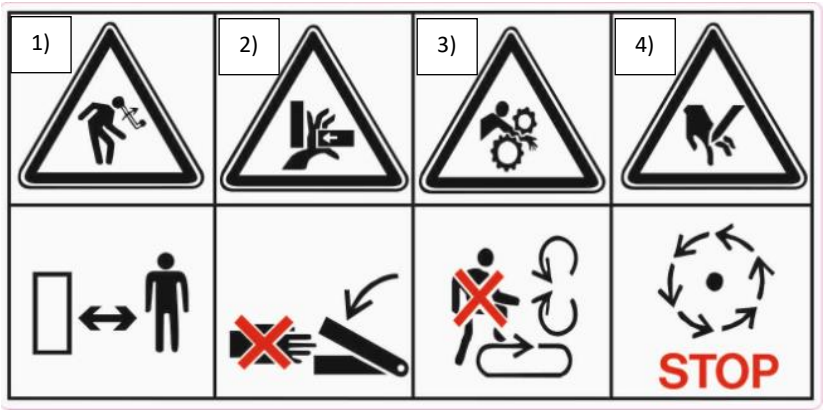
EG Declaration of Conformity (see appendix)

By signing the EC Declaration of Conformity, the manufacturer declares that the machines placed on the market are in compliance with all relevant health and safety requirements.

1.4. Warning signs

1.4.1. Meaning

Group warning signs



1) Maintain sufficient distance.
2) Never reach into the crush hazard area while the parts there are capable of moving.
3) Do not touch moving machine parts, never climb on to the conveyor belt.
4) Wait until the machine has come to a complete standstill.

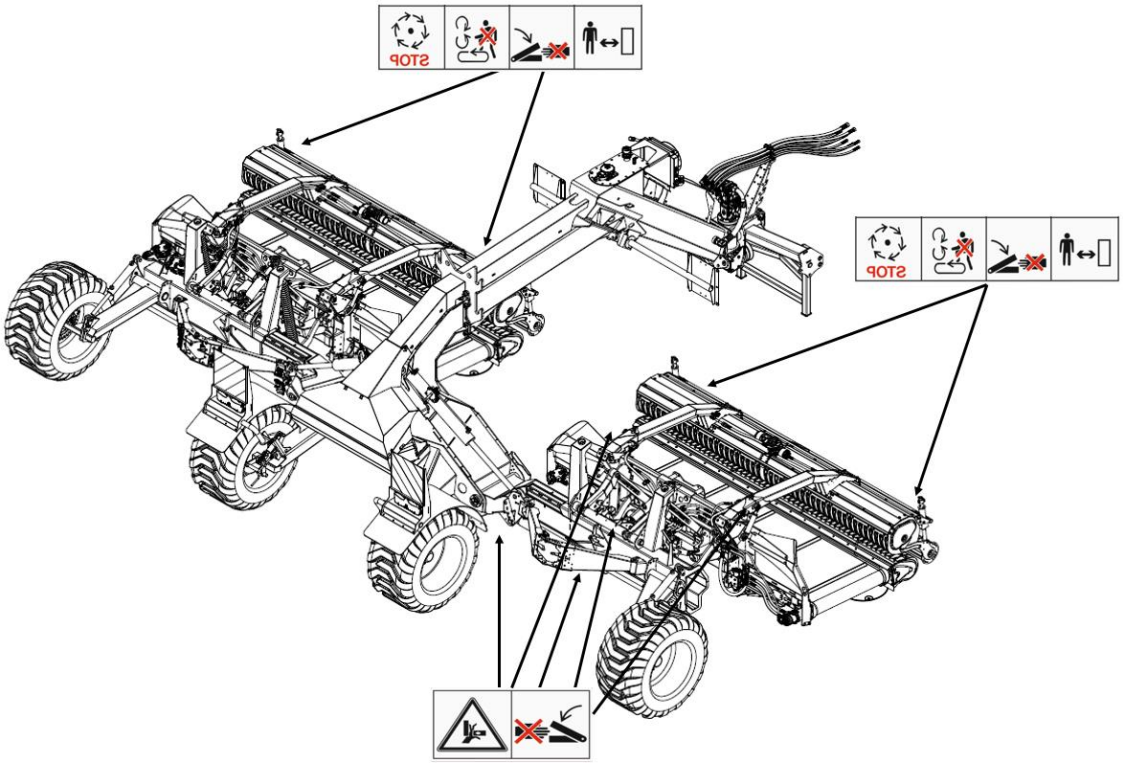
Switch off the engine and remove the key before performing maintenance and repair work.

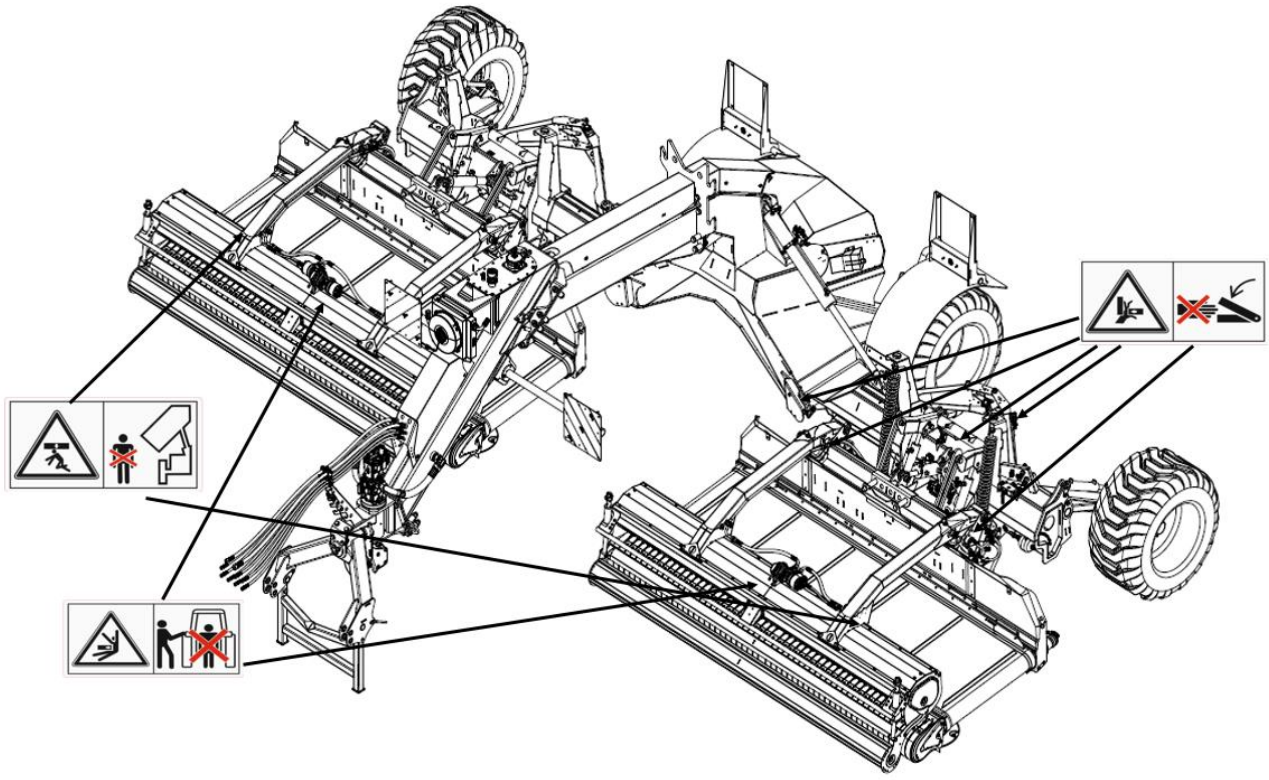
Do not stand in the swivel range of the rotor while the machine is in operation.

Never step into the driving zone of the tractor.

Never reach into the crush hazard area while the parts there are capable of moving.

1.4.2. Position on the machine





2. Important information for your safety

The RESPIRO pick-up belt rake is built according to the recognized safety rules. Nevertheless, hazards can arise during use. For this reason, the following safety instructions and the special warnings in the individual chapters must be observed.

2.1. Intended use

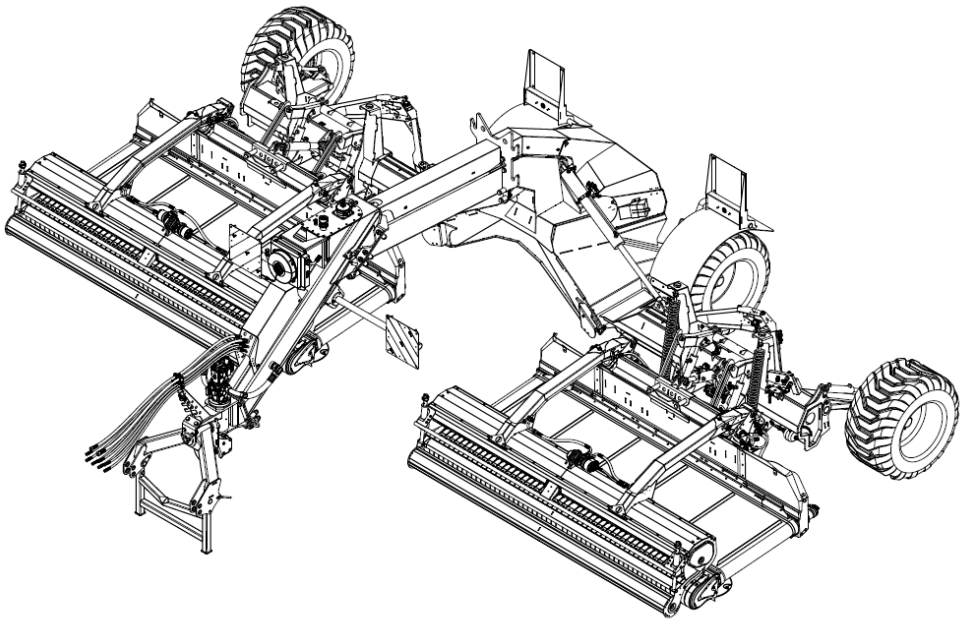
- exclusively for the normal use in agricultural work
- for raking different corps
- in compliance with the prescribed maintenance and repair work
- Any non-agricultural use in prohibited

2.2. Target group

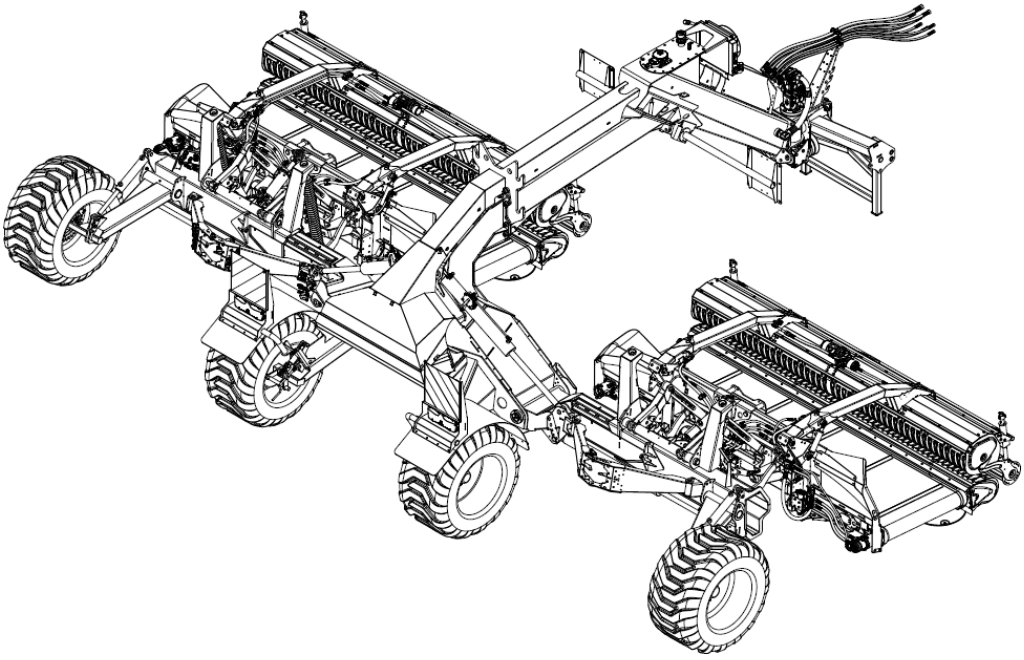
- specialist staff
- laymen, assistants
- apprentices, interns under supervision

3. Product description

3.1. View of the machine

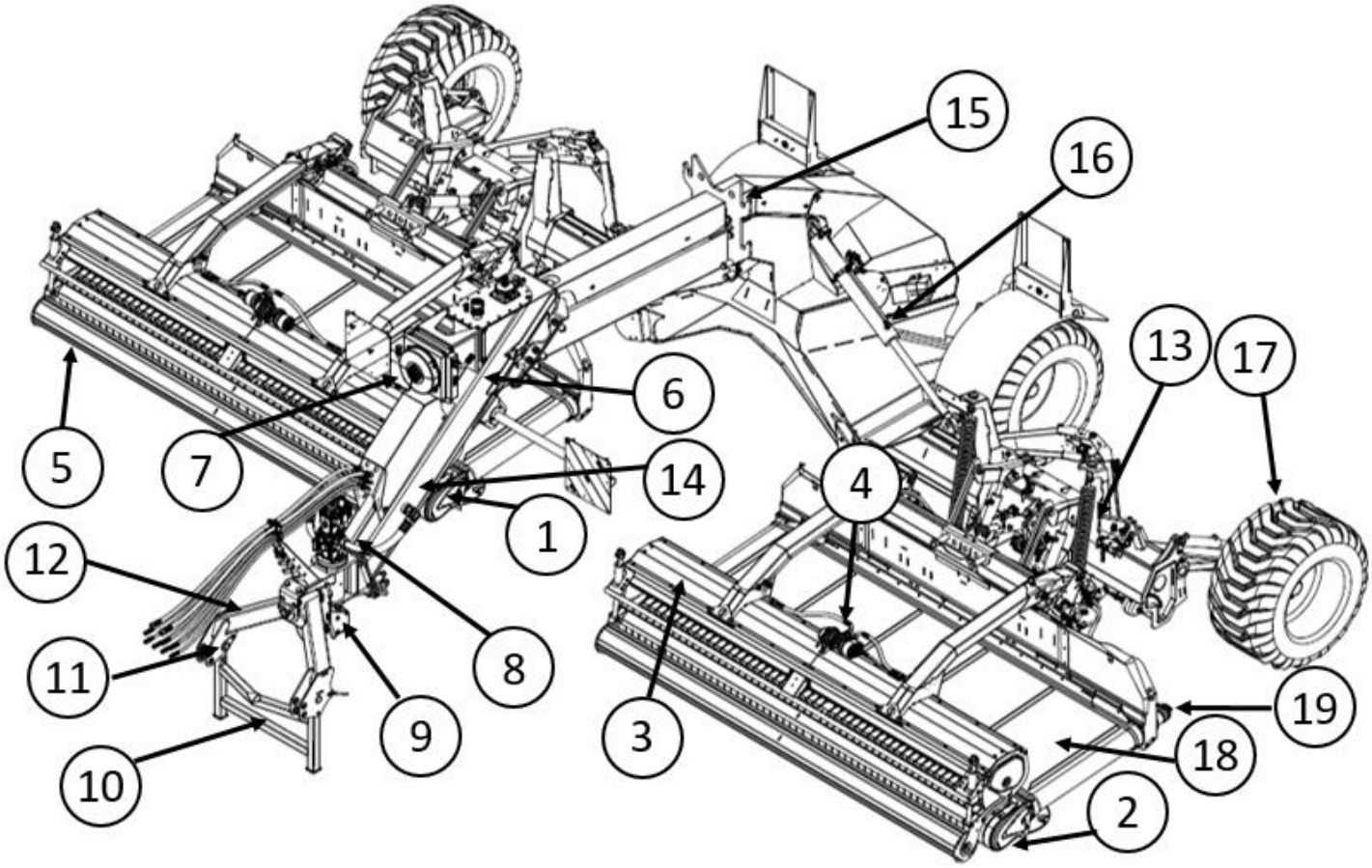


View from diagonally above (working position: centre swath)



View from diagonally behind (working position: centre swath)

3.2. Description and definition

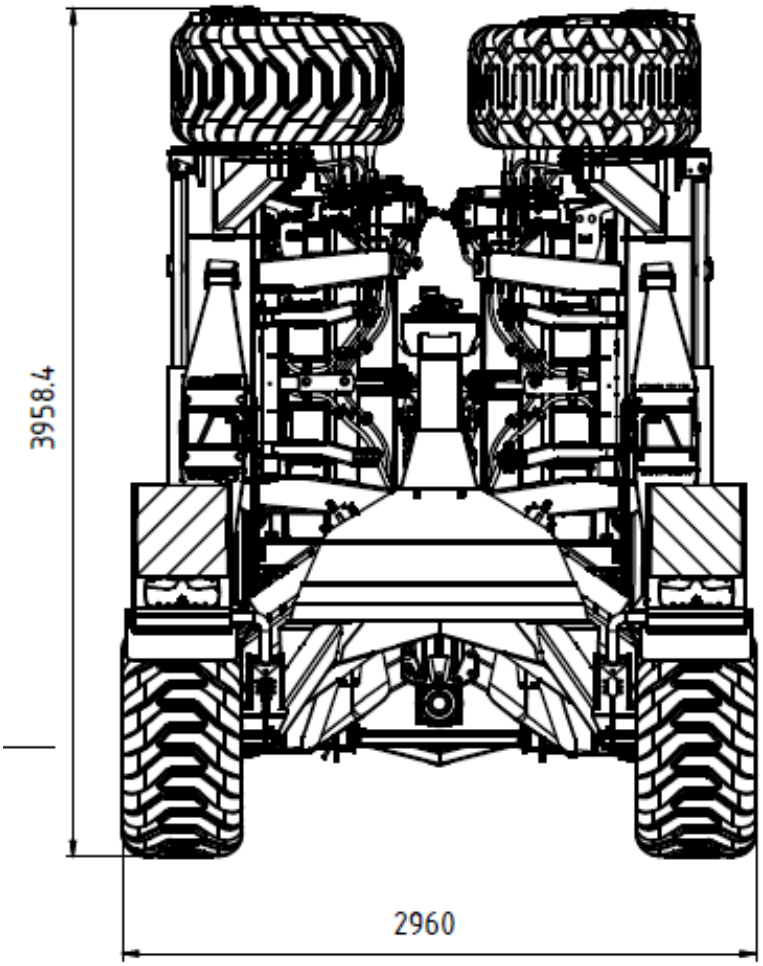


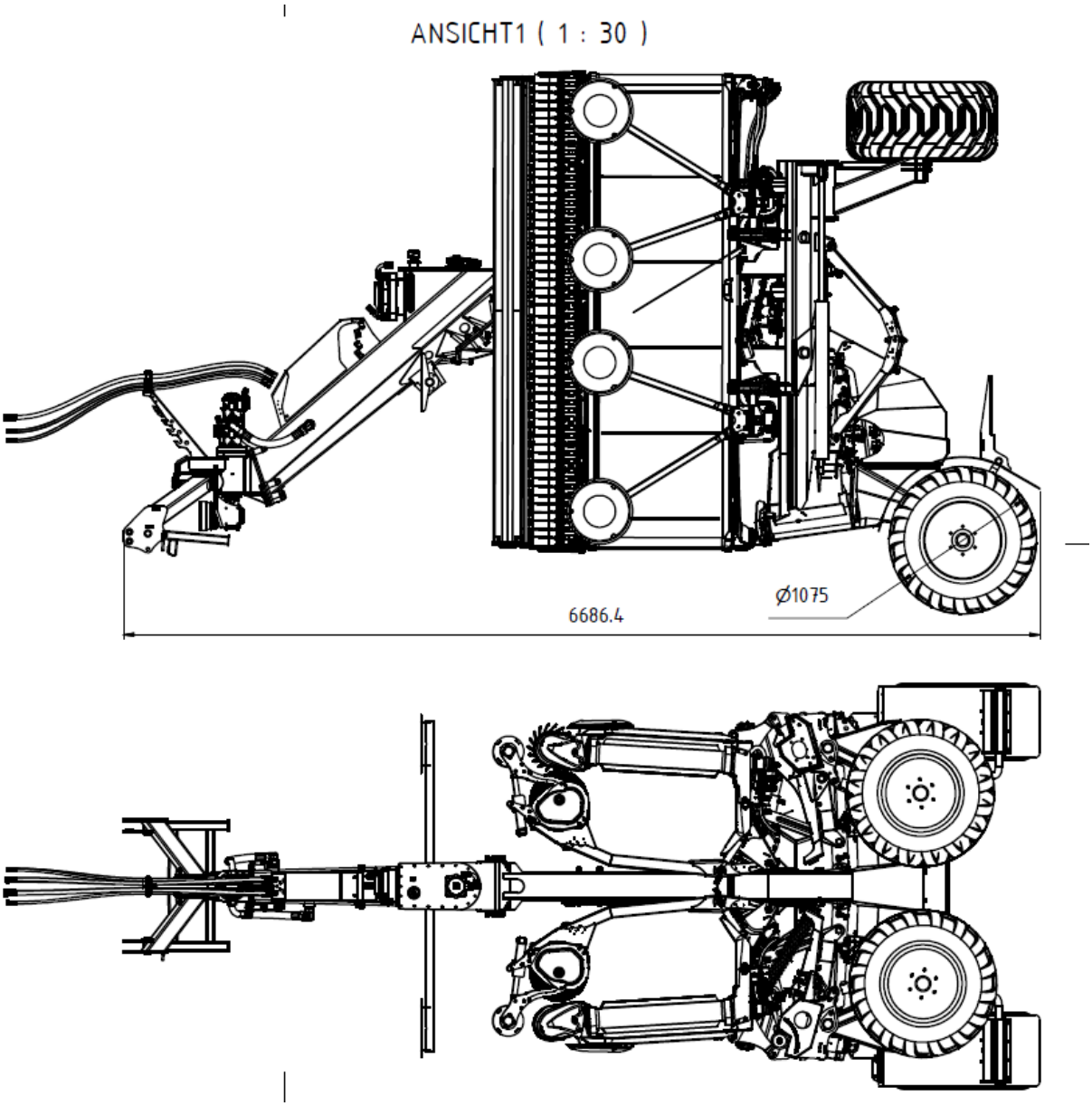
1: right Pick-Up
2: left Pick-Up
3: rotor
4: rotor drive
5: swathroller
6: hydraulic tank
7: oil cooler
8: axial piston pump
9: bevel gear
10: parking support
11: linkage arm
12: attachment frame
13: unit linkage system
14: drawbar
15: transportation lock
16: lifting cylinder
17: wheel
18: belt
19: belt drive

3.3. Technical data

	RESPIRO R9 profi
attachment	standardised 2-point attachment (category 3)
Working width	7m side swath, 9 m centre swath, centre swath minimum 7,5 m
Swath size	from 0,5 to 2 m
length	6,68 m
Height during transport	3,95 m
Width during transport	2,96 m
Maximum working width	9 m
Working height	2,6 m
Tractor requirements	150 PS
PTO speed	800
Total weight	6400 kg
wheels	550/45-22,5
Tire pressure	1,6 Bar

3.4. Transport measurements





3.5. Type label

Please note here the type designation and the serial number of your machine. This information must be provided for spare parts orders or warranty requests.

Modell/Type: RESPIRO R9 profi

Fabrication number:

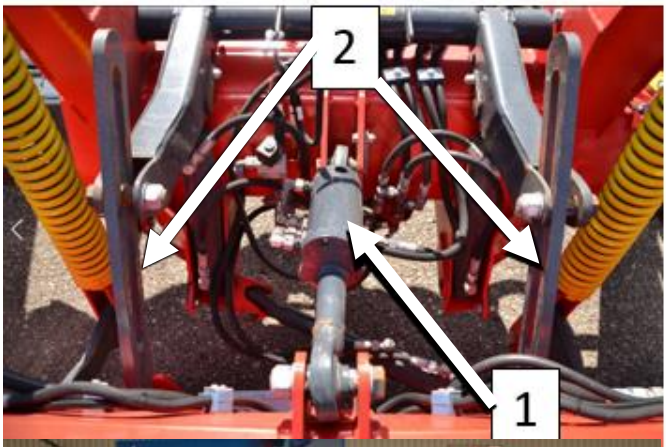
3.6. Operating principle

The RESPIRO R9 consists of 2 working units 3.5 m RESPIRO profi with a 1000 mm wide belt.
The forage is picked up from the ground by the pick-up (1). The swath roller (2) presses the forage against the pick-up and guides the flow of material to the rotor (3). The driven rotor conveys the forage evenly on to the conveyor belt (4). The forage can be deposited by the conveyor belt on either the left or the right.
Thereby with the R9 you can provide a centre swath, a side swath or two (small) night swaths.

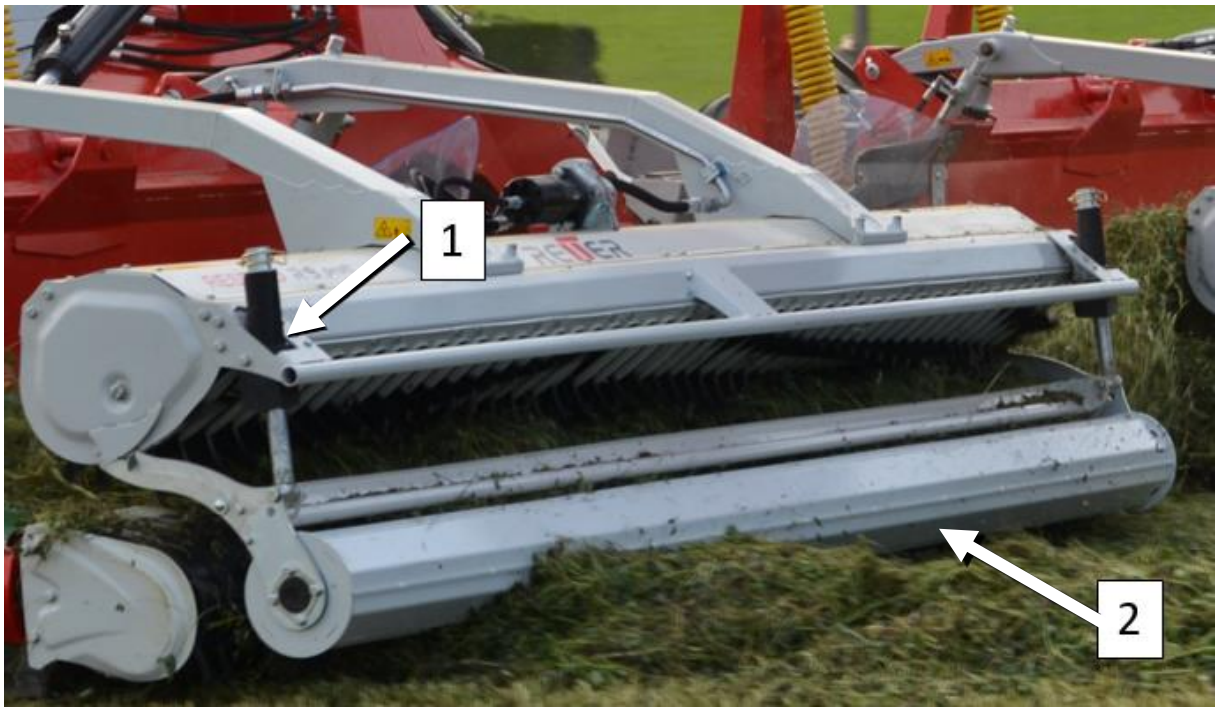
RESPIRO R9 in headland position

Patented 4-wheel chassis

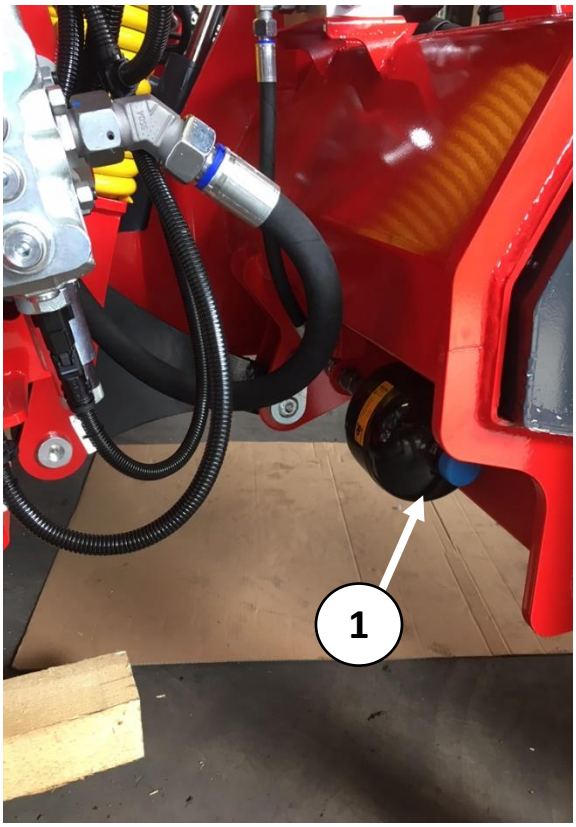
Four sliding plates per working unit provide the ideal ground guide for the pick-up



The upper linkage (1) and the two lifting struts (2) fix the unit to the frame. The suspension is provided via the yellow springs (3).



Suspension (1) swath roller (2): suspended and adjustable in height



Accumulator ① for rotor suspension.

parking brake ②

RESPIRO R9 support foot

3.7. Equipment and road safety regulations

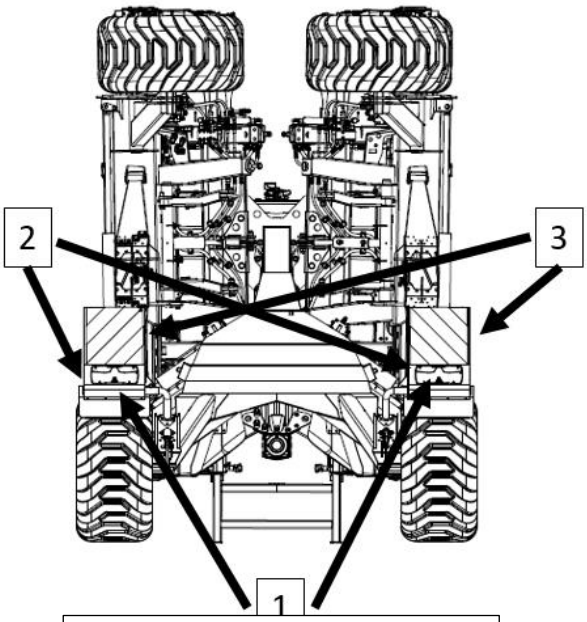
Proper equipment that ensures road safety is either factory-installed or can be installed by your distributer. Always comply with the applicable maximum permitted travel speed allowed for tractors with public road equipment. Regardless of this maximum speed allowed by law, for your safety, for the safety of others we never recommend exceeding 25 km/h (15mph).

The rear-mounted road safety device consists of the following elements:

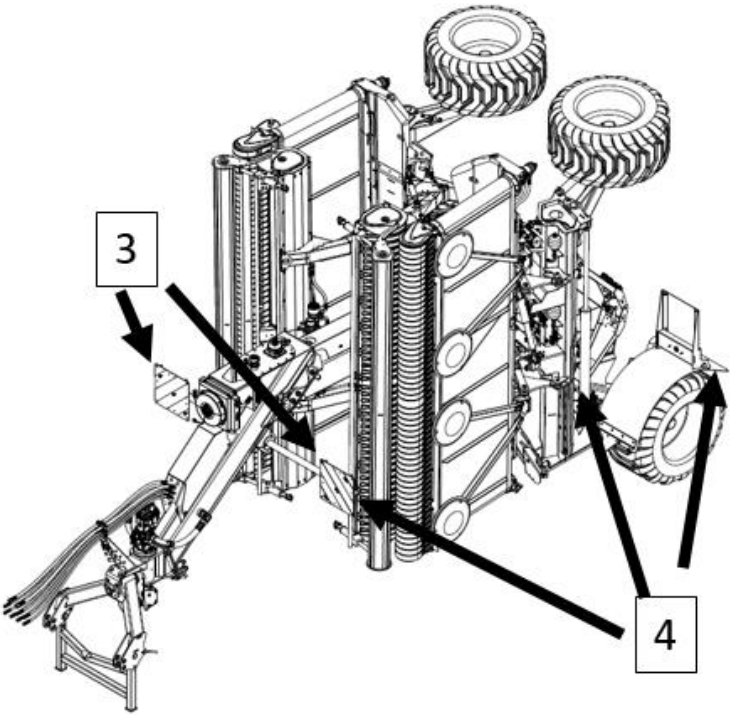
- 2 lights (1) (red taillight/brake light/direction indicator)
- 4 red reflectors (2)
- 2 retroreflective warning signs front and back (3)
- 3 reflectors sideways (4)

CAUTION!

It is essential to replace the warning signs and lights in case of wear or damage.



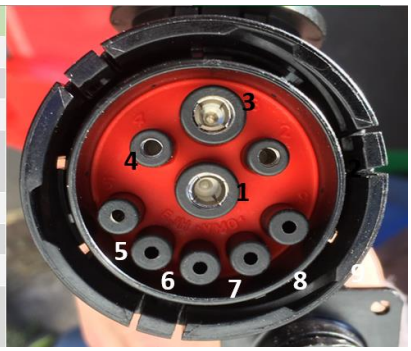
RESPIRO R9 in Transport-Position



3.8. Electronics / sensors

Power is supplied via an ISOBUS connection of the tractor.

PIN	designation	colour	description	voltage	profil/comment
1	GND	black	mass	mass	6 mm²
2	ECU_GND	black	mass control units	mass	2,5 mm²
3	PWR	red	power supply	12 V	6 mm²
4	ECU_PWR	red	power supply of the control unit	12 V	2,5 mm²
5	TBC_DIS	-	control termination		bridge
6	TBC_PWR	red	power supply termination	12 V	
7	TBC_RTN	black	mass termination	mass	
8	CAN_H	yellow	data transmission		twisted
9	CAN_L	green	data transmission		



CAN-Modul

CAUTION!

Magnetic fields can damage the electronics of the CAN module.

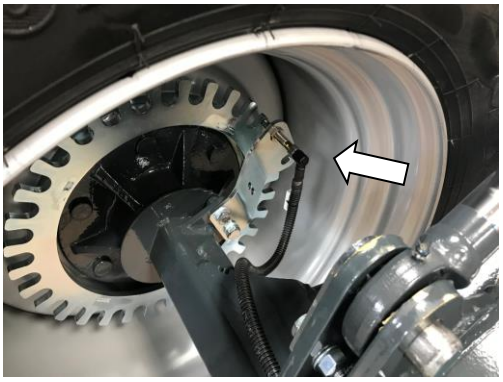
Electromagnetically actuated values are no longer able to switch.

Do not mount any magnets near the CAN module!

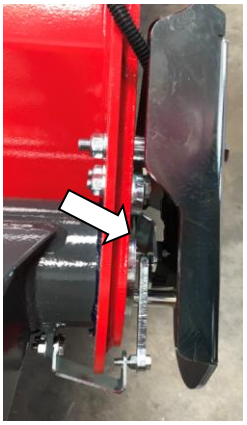
PTO speed sensor

Rotor speed sensor

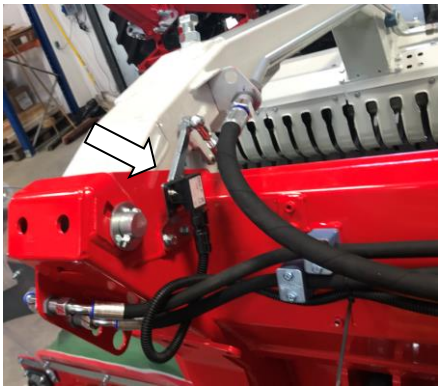
Inductive sensor belt speed



Inductive sensor speed

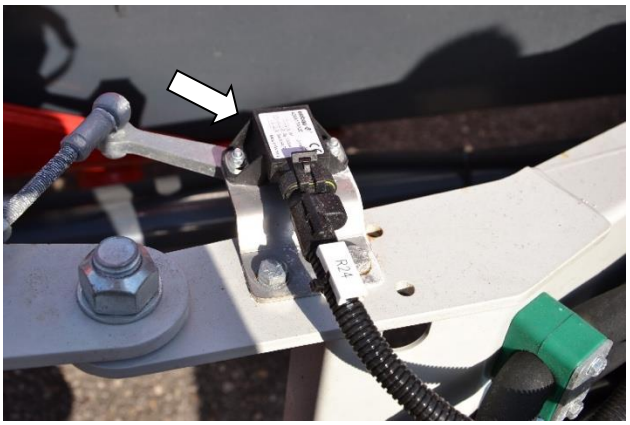


Angle sensor Telescopic boom



Angle sensor rotor

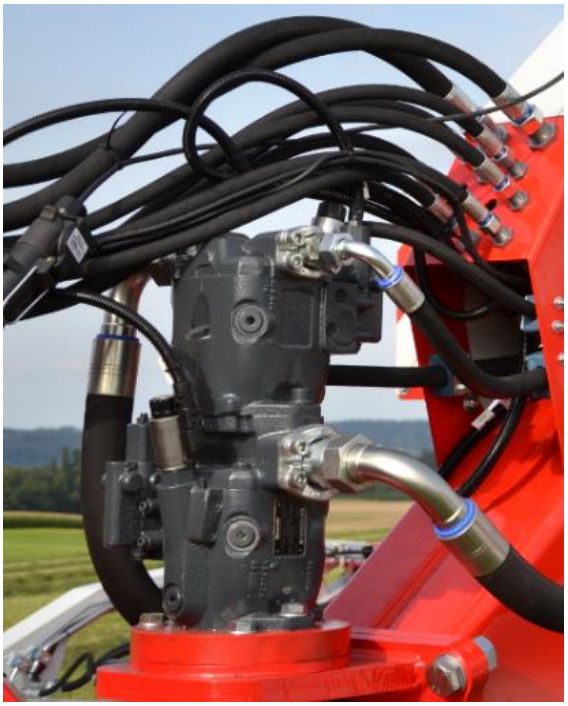
Angle sensor hoist



Angle sensor for working width

3.9. Hydraulic

3.9.1. On-board hydraulic



The working units are driven via the cardan shaft, which drives two axial piston pumps. Preselection of the 1000 PTO

CAUTION!

When the axial piston pump is fully swung out, the PTO speed must not exceed 750 rpm for continuous operation.

CAUTION!

The axial piston pump must not be operated with zero delivery volume due to the risk of overheating.

Hydraulic oil used: HLP 46

Regularly check the oil temperatures

Axial Piston Variable Displacement Pump Bosch Rexroth, Type A10VO.

Use the lowest system speed to enjoy all benefits:

- Less wear of all components
- Lower oil heating
- Lower power requirement
- Higher crop care; less leaf loss
- Lower forage contamination and less foreign objects in the crop.

Each axial piston pump supplies one unit. The maximum power is 28kW.

The oil tank contains approx. 180 litres of hydraulic oil.

CAUTION!

Overheating of the hydraulic oil.
Gaskets on valves and hydraulic elements can be damaged.
If possible, always use the free return flow to keep the oil heating low due to lower pressure losses.

3.9.2. Oil cooler

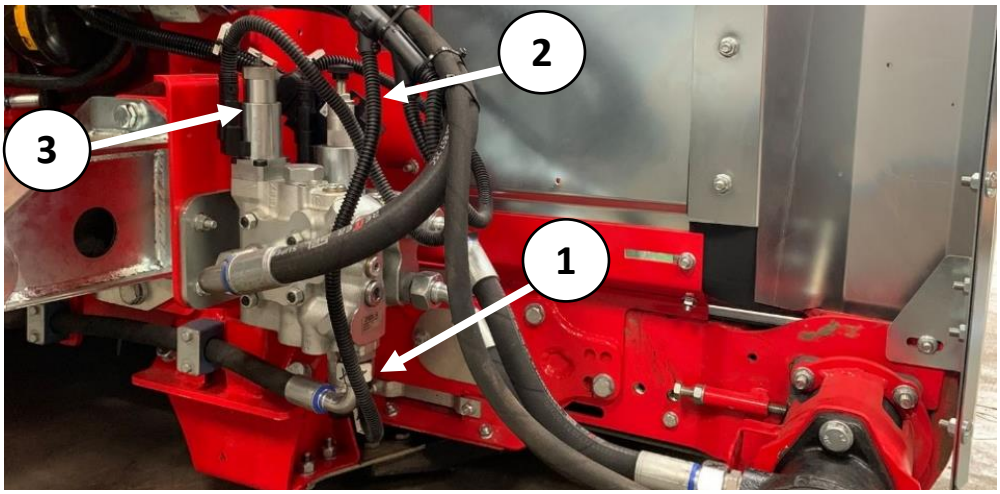
Hydraulic cooler with temperature sensor and oil return in the return filter
As soon as the machine is operated in the field, the cooler always runs.
Low oil temperature => better lubrication properties => long service life of all hydraulic components => oil change less often required.

3.9.3. Hydraulic belt module on right and left working unit

Control of the belt direction left ① and right ② as well as the belt speed ③.

Emergency operation if electromagnetic valves do not work

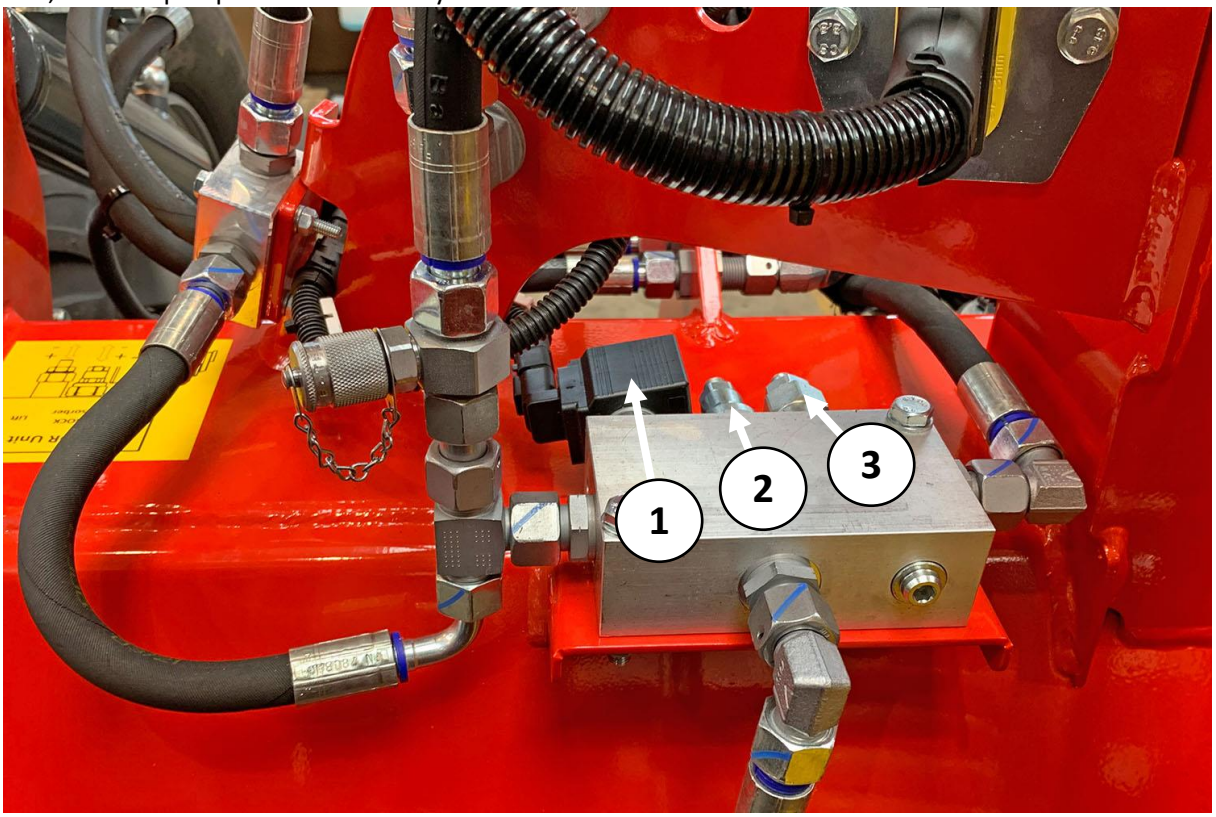
- Mechanical emergency confirmation of the hydraulic main module in the event of a wire damage (valves can no longer be operated by electromagnetic pressure).
- Turn the screw ① or ② clockwise according to the desired belt direction. Select the belt speed via the screw ③: turn further inward clockwise => the belt runs faster

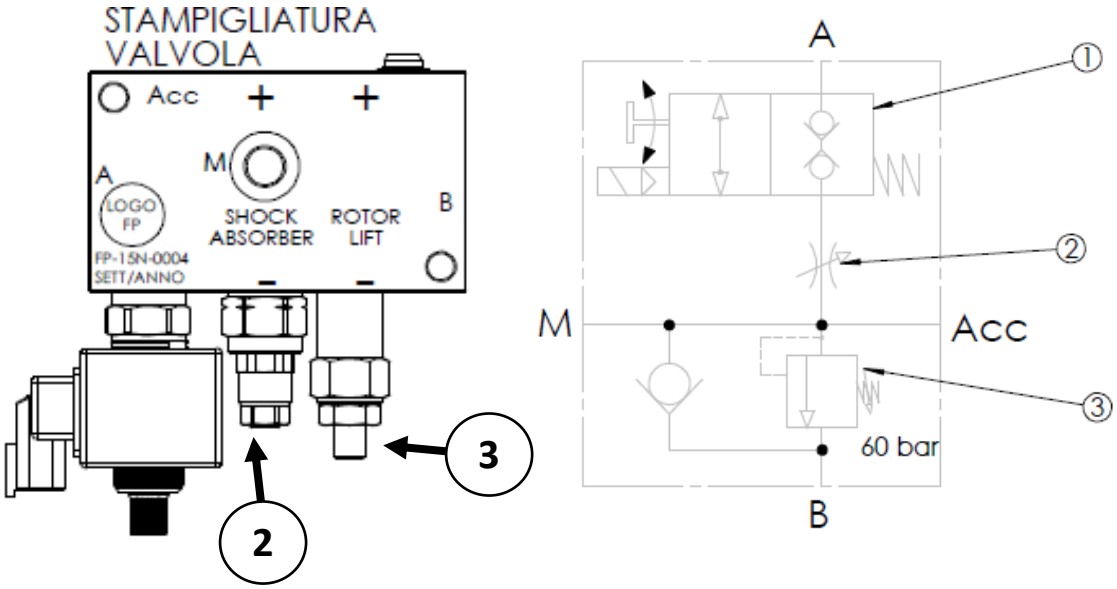


Belt module

3.9.4. Rotor module:

Electromagnetic valve ①: Lock rotor
Adjusting screw ②: Setting the damping; clockwise => damping becomes stronger
Adjusting screw ③: Setting the suspension; clockwise => suspension becomes stronger, rotor rests less, can escape upwards more easily.



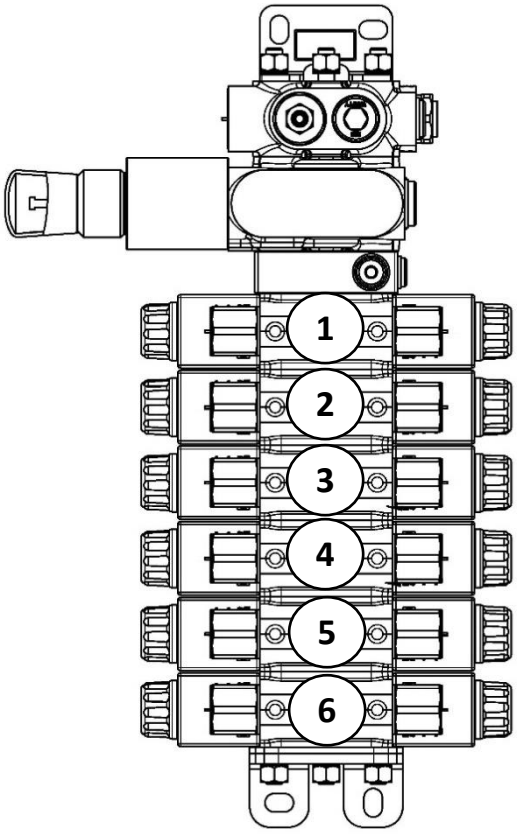


Normal operation: Knurled screw is screwed in; The electromagnetic valve can switch to shut-off or shut off.

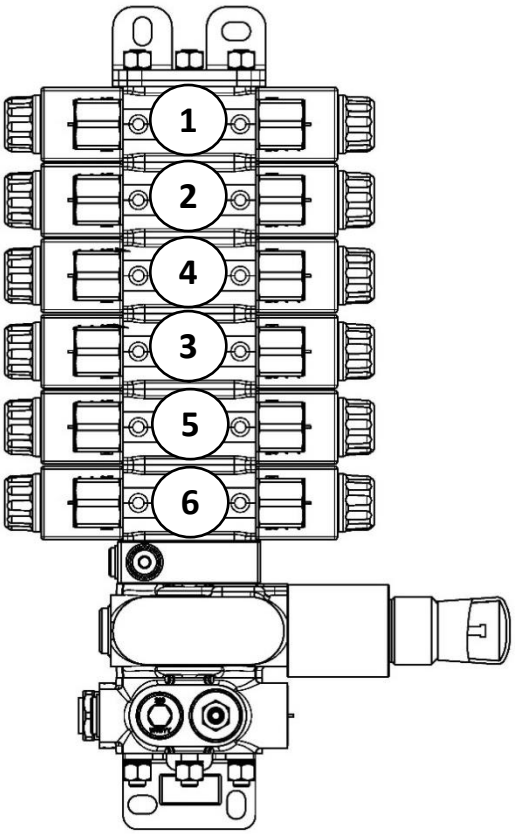
Valve does not switch:
Unscrew knurled screw several times and screw in again.
Unscrewed thumbscrew switches the valve to passage.

3.9.5. Hydraulic block

Hydraulic block consisting of the load sensing element, the pilot valve and the six 4/3-way valves



Valve block until end of year of manufacture 2020



Valve block from year of manufacture 2021

Description of the valve segments:

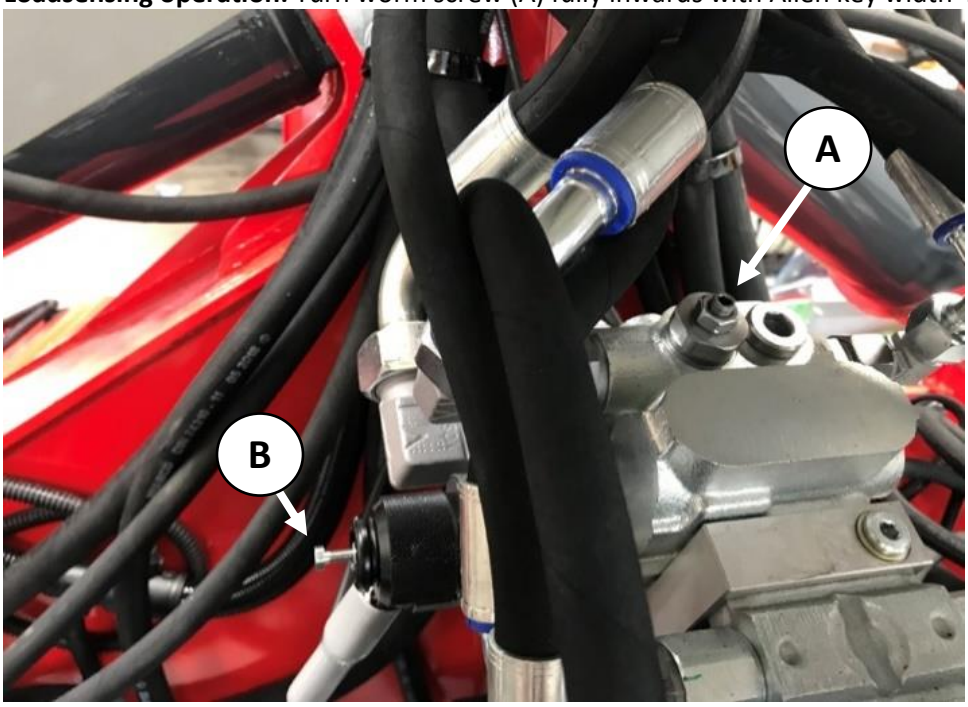
① Boom swivel cylinder left
② Boom swivel cylinder right
③ Excavating rotors
④ Slide out
⑤ Wheel links
⑥ Top link

Hydraulic emergency operation see in chapter 13.

CAUTION! Do not operate the upper link cylinder manually in Transport position!!! Danger of tensioning of the working units in the folded state on the double hook. Carriage ejection cylinders can buckle, because the unit of work is jammed in the double hook!!!

3.9.5.1. Load sensing adjustment (A) and pilot valve adjustment(B)

Loadsensing operation: Turn worm screw (A) fully inwards with Allen key width 4 and lock with nut.



CAUTION! Attention: for the pressure circulation without load, the couplings of the load-sensing pressure line and the return line on the tractor must be easy to turn. If the pressure is too high these connections can no longer be turned => there is an error; Danger of overheating => please contact customer service.

Operation with constant pump: Unscrew the worm screw (A) counterclockwise with an Allen key width 4 and lock it with the nut.

Pilot valve: with wrench size 7 this set screw (B) can be adjusted. Factory setting: the piston of the valve is only lightly touched with the adjusting screw and then fixed with the lock nut. For emergency operation, the flow can be adjusted from zero to maximum, depending on the position of the screw (fully screwed in)

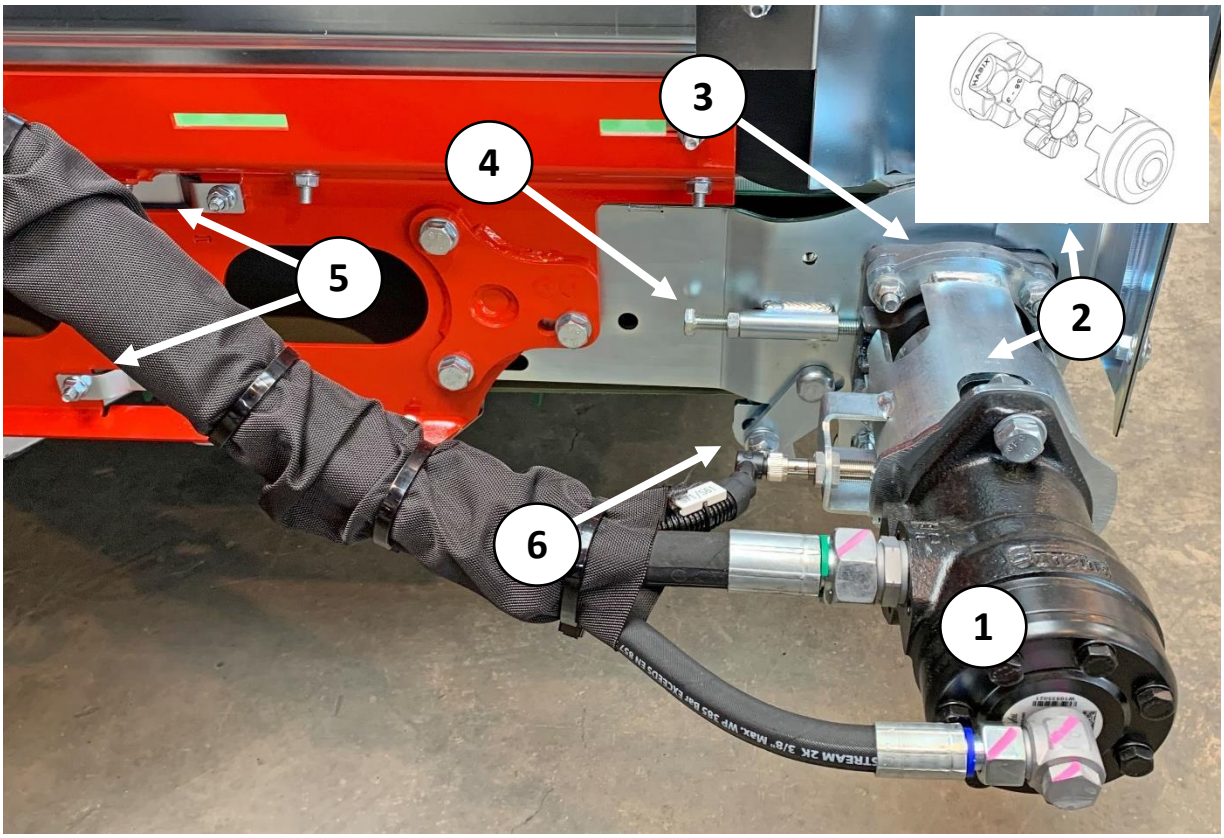
3.10. Conveyor belt

The conveyor belt is driven hydraulically via a hydraulic motor ① with clutch ②.

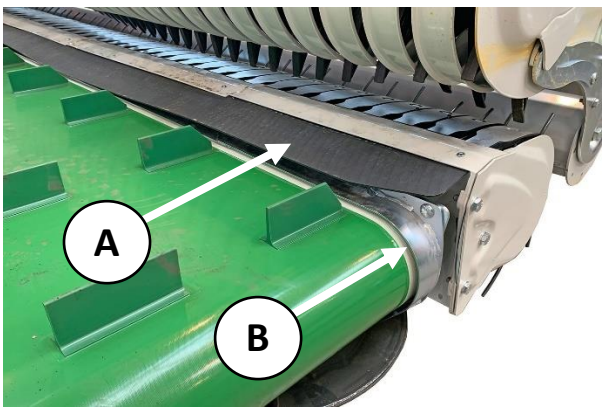
The belt is tensioned via the flange bearings ③ by means of fine adjustment ④ for optimum setting of the centred run of the conveyor belt. The belt guide rails ⑤ hold the belt in position. For adjustment, see "Chapter 8.8 Changing the conveyor belt".

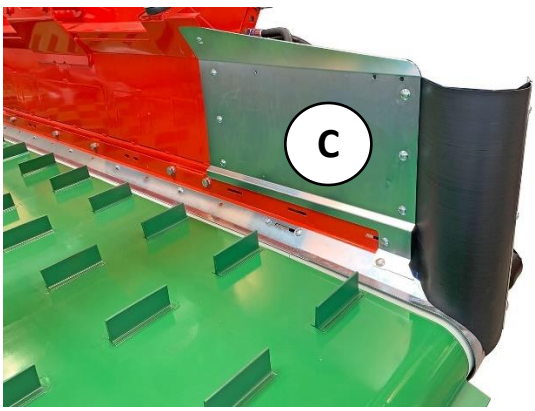
The roller scraper ⑦ cleans the conveyor belt rollers. This can be adjusted separately for each side.

For adjustment and cleaning, see "Chapter 7.9 Adjusting the roller scraper".



Transition part (A) made of Robalon from the elastic pick-up to the conveyor belt. The belt sealing plates (B) serve as protection against winding at the belt bearing. The crop slides into the swath via the back (C).





3.11. Other hydraulic components

Adjustable flow restrictor is set at the factory. Adjustment only after consultation with the factory.

Electromagnetic valve for locking the control arm cylinder

Lowering valve: do not adjust the factory setting

4. Mounting and dismounting of RESPIRO R9

CAUTION!

Attention: Never exceed the permissible total weight of the tractor, its maximum lifting capacity and the maximum permissible axle loads!

4.1. Requirements for the tractor hydraulics:

- 2x double acting control units with floating position
- Load Sensing
- Standard rear linkage
- ISOBUS connector
- 7 – pin connector
- Two air brake connectors

Description of mounting elements:

- PTO shaft to drive axial piston pumps
- ISOBUS cable
- 7 – pin cable
- 4 hydraulic flexibles
- Three load sensing lines
- Two pressure air lines for braking device

4.2. Coupling of the machine

Important: always mount or dismantle the machine in the same condition of folding on the tractor. This ensures that the hydraulic oil level in the tractor remains unchanged. If this is not observed, there will be a lack of oil or oil overflow in the tractor.

4.2.1. Coupling of the lower link

For coupling you need lower links and lower link balls of category 3/2.

The lifting struts of the tractor three-point linkage should be aligned so that the lower links are aligned parallel to the ground.
After decoupling, raise the lower links and push the parking leg upwards.

4.2.2. Coupling of the PTO shaft

Slide the PTO shaft onto the PTO stub shaft. Then secure the PTO guard to the tractor using the safety chain.

4.2.3. Connect the hydraulic line and the main wiring harness

1. Before connecting the hydraulic lines put all control units in floating position and stop the tractor so that the load-sensing connections are depressurised.
2. Connect double-acting connection LEFT to control unit 2. Pay attention to the correct connection of of pressure (LEFT + / 2 clips) and return (LEFT - / 1 clip) side.

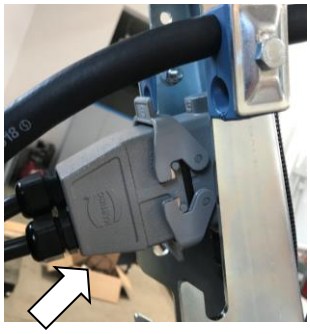

3. Connect double-acting connection RIGHT to control unit 1. Pay attention to the correct connection of pressure (RIGHT + / 2 clips) and return (RIGHT - / 1 clip) side.

4. Connect the load-sensing hoses to the tractor connections.

Load-sensing connections:

Control line: Cat 2
Pressure line: Cat 3
Return: Cat 4

5. Connect the main wiring harness to the drawbar and connect the power supply from the tractor via the ISOBUS cable and connect the terminal to the main wiring harness.

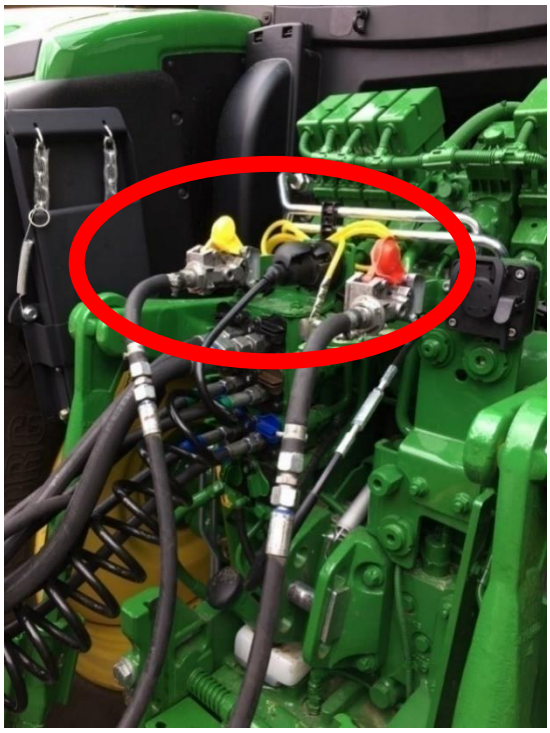


4.2.4. Connecting the brake lines and lighting cables

First attach the yellow coupling (brake and control line), then the red coupling to the tractor. When disconnecting the machine, first disconnect the red coupling, then the yellow one.

If the brake hoses are not connected to the brake system of the tractor, the brakes of the machine are automatically actuated.

Finally connect the 7-pin cable and check if the lighting works.



CAUTION!

The cable may be damaged by improper mounting or fastening.
Mechanical stress on the cable may lead to damage.
The cable must not be strained during the lifting and lowering of the front linkage or during steering operations.

4.3. Parking of the machine

CAUTION!

Place the machine only on level and horizontal surfaces.
The machine should preferably be parked in transport position.

1. Put the tractor and machine in an extended position
2. Lift the lower link and put the supporting legs down.
3. Put the control units into floating position and turn off the tractor engine.
4. Disconnect the brake lines, hydraulic hoses and main cable. Remove the main cable from the drawbar and store it in a dry place.
5. Place the sealed hoses in the designated attachment.
6. Remove the PTO shaft

7. Apply the parking brake and, if necessary, secure the machine with chocks.
8. Open the lower link hook and lower the hydraulics

Wheel chock for safe parking of the machine

Mechanical parking brake

4.4. Fold the RESPIRO R9 apart

Before bringing the machine into working position, the following points must be observed:

- Wait for complete standstill of all moving parts.
- Make sure that there are no persons in the swivelling range of the machine.
- If necessary, refer all persons from the swivel range.

CAUTION!

The folding of the machine only

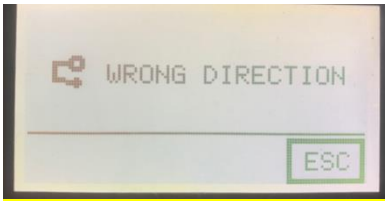
- at standstill
- on a flat surface
- Tractor tractor and RESPIRO R9 profi in a stretched position
- Align the trailer on the slight slope in the fall line

CAUTION!

Attention: When folding with the help of the emergency control:
Fold gradually to ensure stability.

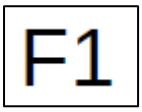
1. Before unfolding the machine, raise the lower links so that the unit does not touch the ground.

2. Apply control units 1 and 2 to pressure until both working units are fully tightened towards the telescope frame
   If this is not the case, a continuous signal tone sounds and the following picture appears

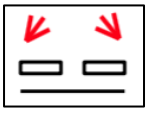


   => lifting the working units completely or operate the control units correctly!

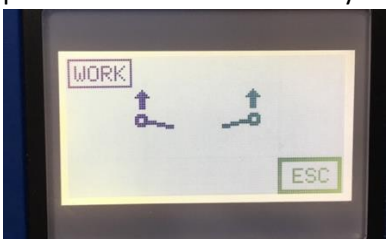
3. Press “F1“ to change to “working” mode.



4. “Fold apart“ Button



   press the button above firmly until the symbol below appears on the screen of the control



   terminal appears and the two working units have moved up by the unit-upper link in the headland position. Wait two more seconds, then you can release the “Fold apart” button.

5. When the beep sounds, press and hold the “!” button until the alarm goes out. The boom

   folding cylinders are switched to floating position and the rotor relief is activated.

   To restore the values set before folding (delivery mode, working width, belt direction, speeds), hold down the "!" button for 2nd time.
   ATTENTION: No persons should be near the machine, the working width will be adjusted!!!

4.5. Fold the RESPIRO R9 together in transport position

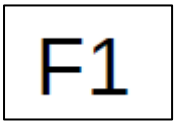
CAUTION!

Before bringing the machine into transport position, the following points must be observed:

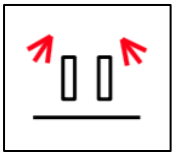
- Wait for complete standstill of all moving parts.
- Make sure that there are no persons in the swivelling range of the machine.
- If necessary, refer all persons from the swivel range.

1. Make sure both rotors are in the lowest position
2. Bring working units into headland position (Press control units 1 and 2 until both working units are fully tightened towards the telescope frame)

3. Raise the lower links so that the pick-up cannot collide with the ground while folding together. Here, the rear hydraulics of the tractor was not raised high enough This caused the collision of the pick-up with the ground.
4. Press “F1“ to change to “working” mode.

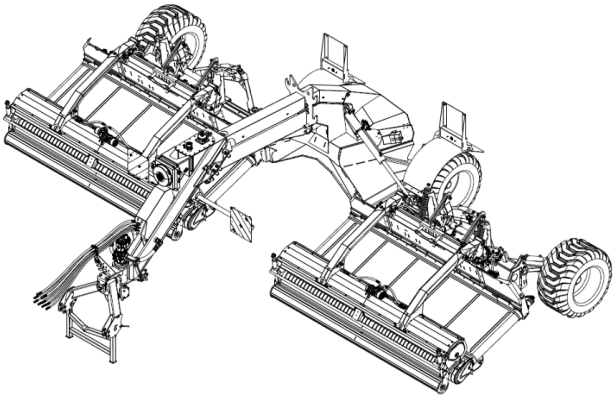


5. “Fold together“ Button

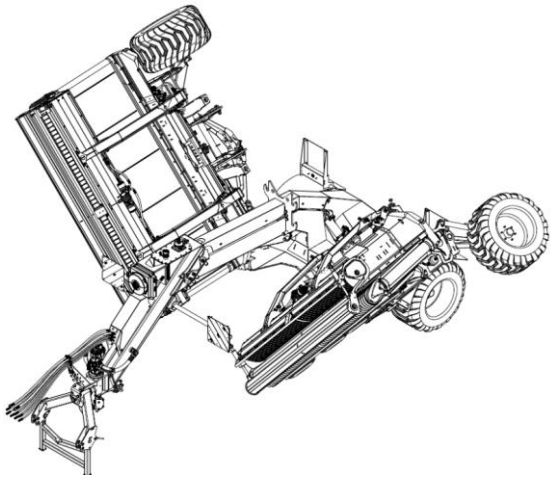


Press the button above firmly until the symbol below appears on the screen of the control terminal, the two working units have been locked into the hook while lowering and the wheels have been swivelled in.
Wait two more seconds, then you can release the “fold together” button.

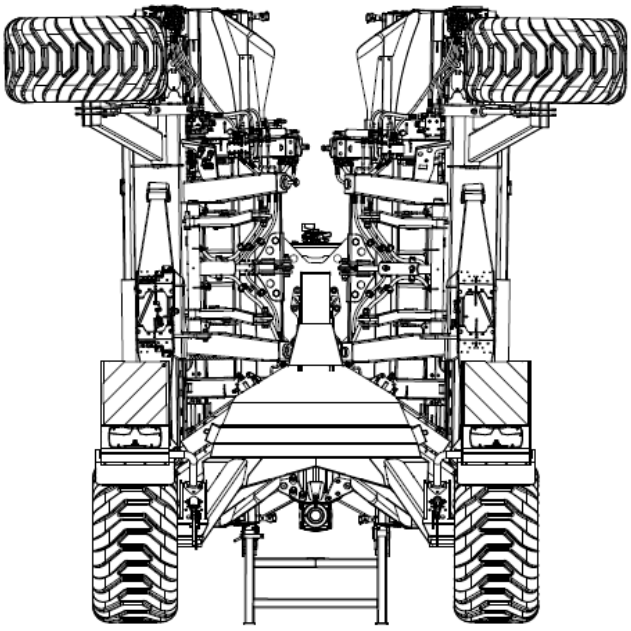
Folding sequence



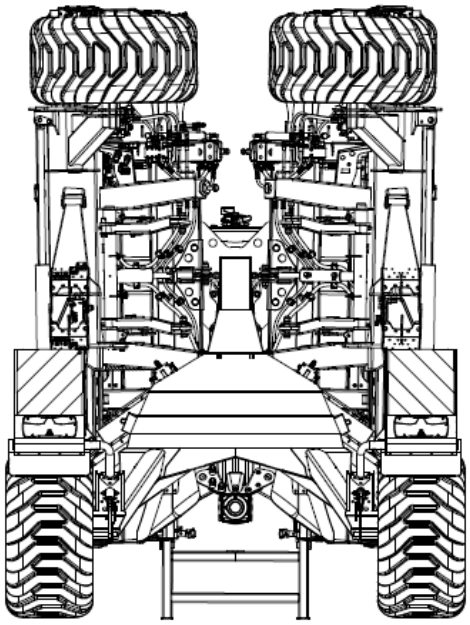
Sequence 1



Sequence 2



Sequence 3



Sequence 4

Information

If the error sign above appears on the screen of the control terminal, the working units must be raised into headland position.

CAUTION!

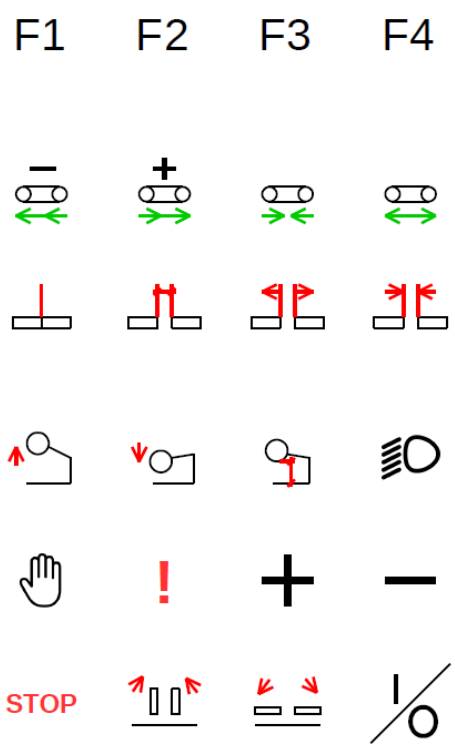
Never turn on the PTO shaft while the machine is in transport position.

4.6. Ballasting of the tractor

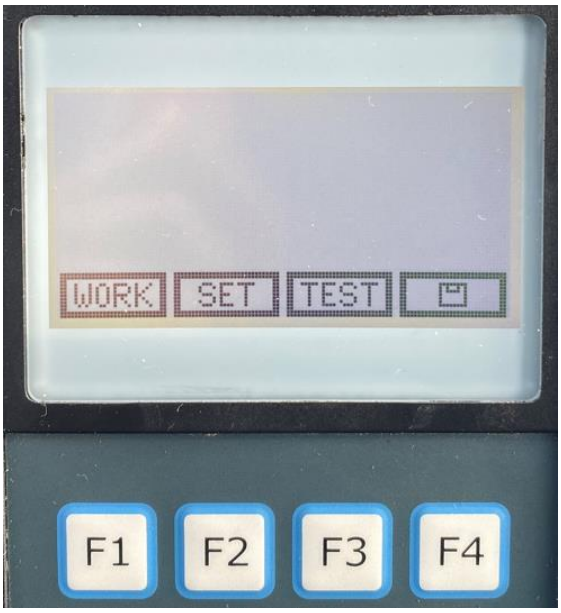
The RESPIRO R9 weights 6500 kg, thereof 4,5 t are distributed on the 4 wheels and 2,0 t on the tractor rear linkage.
The permissible total weight of the tractor, its lifting capacity or, the maximum permissible load on the coupling system and the maximum permissible axle loads must be observed. The front axle load should always be 20% of the tare weight of the tractor. If this is not achieved, attach appropriate ballast weights to the front of the tractor to ensure proper steering and braking capability.

5. Operation of the machine

5.1. Control terminal



5.2. Start screen



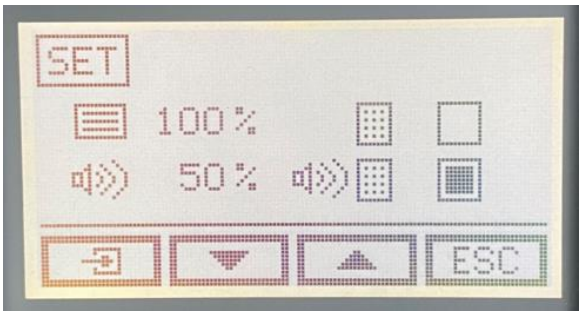
The function keys F1, F2, F3, F4 operate the displayed functions in the bottommost screen bar for all menus.

5.2.1. Work menu

F1: Press the F1 key to enter the Work menu

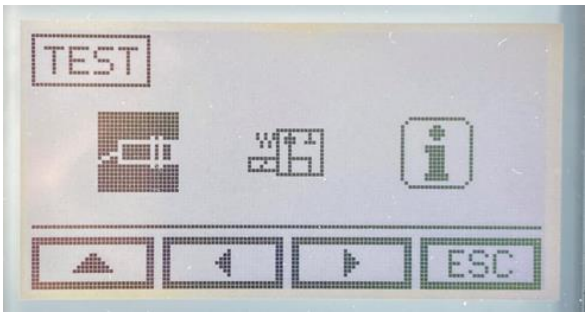
5.2.2. Set menu

F2: Pressing the F2 key will enter the SET menu



5.2.3. Test menu

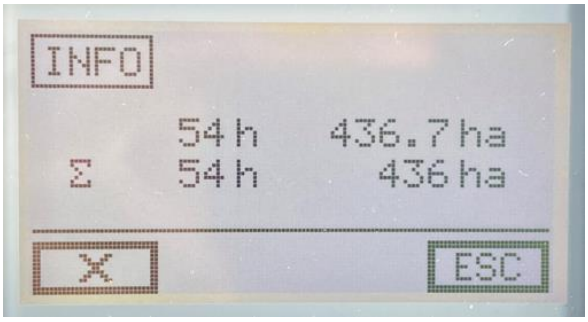
F3: Press F3 to enter the TEST menu



For customer service purposes

5.2.4. Info menu

F4: Press F4 to go to the INFO menu

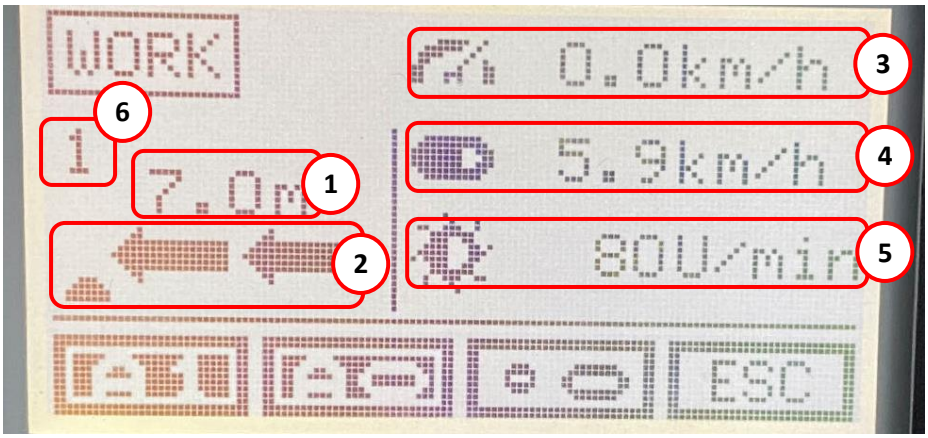


5.3. WORK-Menu:

5.3.1. Description various display information in the WORK menu:

All indications "left", "right" always refer to the operating terminal and in the direction of travel of the machine.

When the PTO shaft is switched on, the following fields are displayed:



① working width in m
② working mode (center swath, side swath, 2 single swath, splitted swath)
Indicates the direction in which the conveyor belts are deposited. If it is highlighted in black, the belt runs, if it is highlighted in white, the belt stops.
③ working speed in km/h.
④ belt speed in km/h.
The filling level of the conveyor belt symbol indicates the position of the proportional valves of the belt valves, maximum speed of the conveyor belts at given oil flow from the axial piston pumps.
⑤ pick-up speed in rpm (U/min).
The fill level of the pick-up symbol indicates the degree of swing-out of the axial piston pumps.
⑥ current rhythm of the automatic swath placement left / right (see chapter 5.5.5. page 41)

Display oil level in the tank

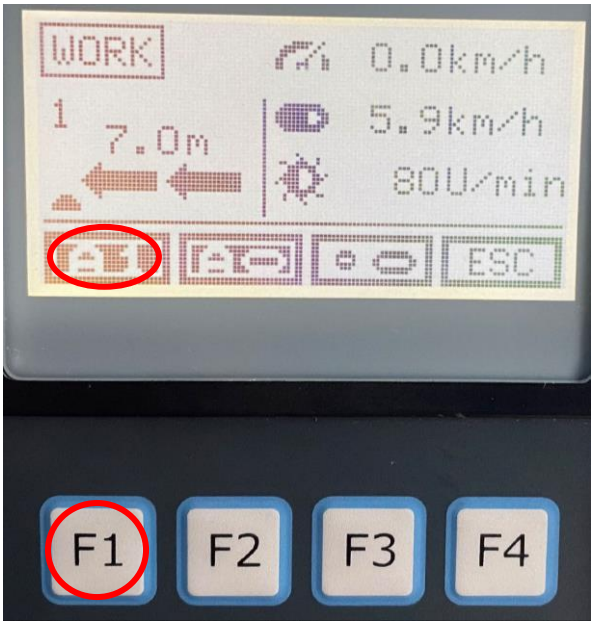
If the symbol of the oil can appear in the upper corner, the oil level in the system is too low.

Immediately stop operation of the machine, check the oil circuit for leakage, check the oil level and fill to the prescribed level.

CAUTION! Operation of the machine in the event of a lack of oil can lead to foaming of the oil and thus to total destruction of the system.

5.3.2. Automatic speed control

In the WORK menu, you can switch between A (automatic deactivated), A1 (automatic mode 1) and A2 (automatic mode 2) by pressing the F1 key. The field is highlighted in black.

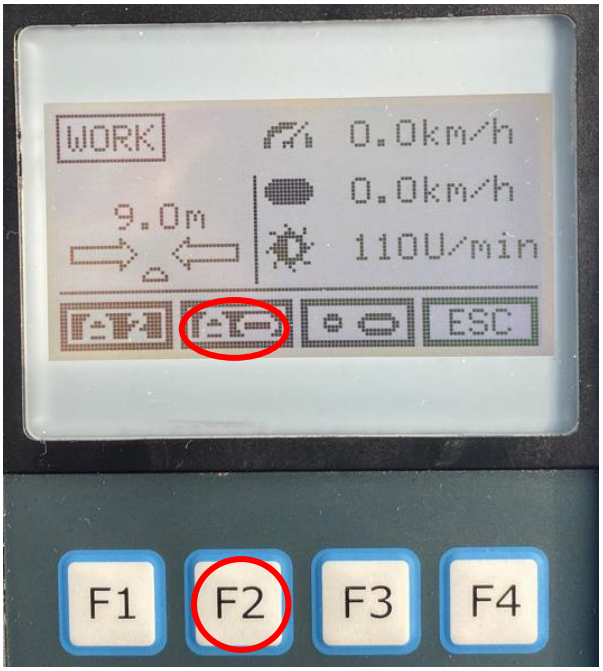


Benefits:

- As the working speed increases, the pickup, rotor and belt speeds increase proportionally.
- If the PTO speed is too high, the speeds are reduced automatically (hill mode).
- Less crumbling losses
- Less wear
- Better swathing
- Less oil heating

5.3.3. Automatic belt switch - automatic belt switch-off on the headland

Pressing the F2 key activates the automatic belt switch. Field is highlighted in black. When the working units are lifted out via the respective DW control unit, the conveyor belts are automatically switched off, switched on again when lowering.

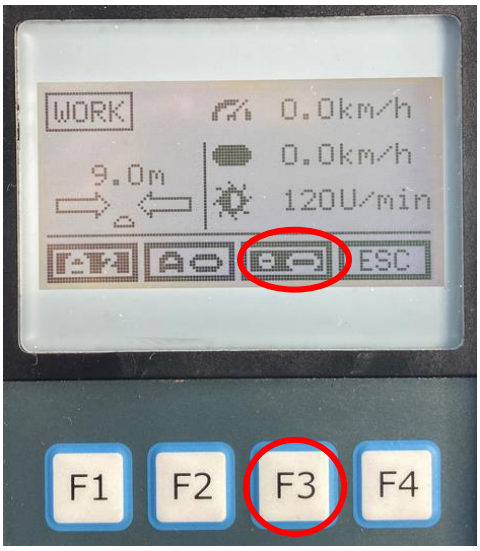


Benefits:

- Crop cannot fall off the belt in the headlands - clean work
- Crop material on the conveyor belt can be carried on
- Improvement of swathing

5.3.4. Belt stop

Pressing F3 switches off the conveyor belts while the PTO shaft is running. Field is highlighted in black. The arrows of the belt direction are highlighted in whit. Press F3 again to switch on both conveyor belts again. The field is highlighted in white again, the arrows of the band direction in black again.



Benefits:

- Crop can be picked up, carried and stored at any point
- Ideal for raking sharp field corners
- Ideal for picking up raking losses and the like - no mold growth - no poison for the next cut
- Helpful for raking around masts, trees, etc. Beware that the tapes are not overfilled and that no unnecessary heaps are created during storage!

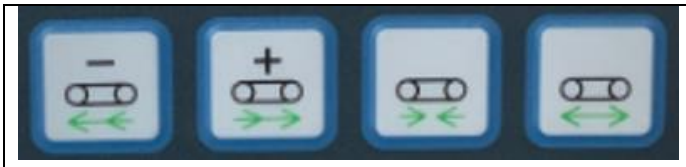
5.3.5. Change back to the start screen

Press F4 to go back to the start screen

5.4. Operating terminal Keyboard Functions in the WORK menu:

All keyboard functions in the WORK menu at a glance

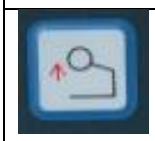
5.4.1. Keyboard functions Conveyor belts

	
	Pressing this button briefly reduces the speed of both conveyor belts. For a strong reduction of the belt speed, repeat the short operation several times. By pressing and holding this button for approx. 2 seconds, the beep sounds, the direction of both conveyor belts is switched to the left in the driving direction.
	A short press of this button increases the speed of both conveyors. For a strong increase in belt speed, repeat the short operation several times. By pressing and holding this button for approx. 2 seconds, the beep sounds, the direction of both conveyor belts is switched to the right in the driving direction
	Holding down this button for about 2 seconds, the beep sounds, the direction of both conveyor belts is switched to the middle In the direction of travel left conveyor belt to the right and right conveyor belt running to the left (ATTENTION: working width for centre swath must be at least between 7.3 m and 9.0 m!)
	By pressing and holding this button for approx. 2 seconds, the beep sounds, the direction of both conveyor belts is switched to the outside In the driving direction left conveyor belt to the left and right conveyor belt running to the right

5.4.2. Keyboard functions work units

	
	Holding down the button for approx. 1 second, both work units are pushed together Belt direction: side delivery left or right or "apart" to the left and right
	Holding down this button for about 3 seconds will save the value of the current working width, the beep sounds. By holding down this key for about 1 second, both units of work are separated or pushed together to the previously stored value Function: Save the desired swath width
	Holding down this button will move both work units apart until the button is released
	Holding down this button will move both units together until the key is released

5.4.3. Keyboard functions rotor und working lights

	Holding down this button raises both work unit rotors - until the button is released
	Holding down this button both rotors of the working units are lowered to the lowest position
	When this button is pressed and held, both top link cylinders are completely retracted. When this button is pressed briefly, the top link cylinders become approx. 4 mm longer per actuation => this allows the rake height of the pick-up to be adjusted.
	When this button is pressed, both working lights on the rotors are switched on and off

5.4.4. Keyboard functions row 4:

	Button for switching to manual mode (see chapter: Manual operation)
	This button brings all valves in floating position 1st function: when the beep sounds, press and hold this button for about 2 seconds until the beep goes off. As a result, the entire machine is brought into floating position. The four-wheel drive can adapt to the ground. 2nd function: If the button is pressed for approx. 2 sec after unfolding, the values set before folding (delivery mode, working width, belt direction, speeds) are set again. ATTENTION: No persons should be near the machine, as the working width is adjusted. 3rd function: If during operation the machine was brought to a standstill with the "STOP" key and consequently all valves are closed, the valves are released again when the key is pressed for approx. 2 sec. When this key is pressed, thus bringing the machine into the floating position. **CAUTION!** During the automatic folding operations, the call sign button must not be pressed!
	By repeatedly pressing this button, the axial piston pumps are further swung out and thus the speed of the entire system is increased.

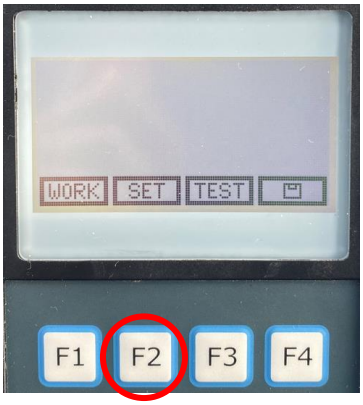
	By repeatedly pressing this button, the axial piston pumps are less swung out and thus the speed of the entire system is reduced.

5.4.5. Keyboard functions row 5:

	
	By pressing and holding this button for approx. 3 sec, all valves close immediately By holding down the "!" Key, valves are released again ATTENTION: When the PTO shaft is running, the axial piston pumps are permanently pumping against the closed system => oil flows back into the tank via the pressure relief valve => oil heater! Important: After pressing the "STOP" button, switch off PTO shaft promptly! By keeping the "!" button pressed, valves are released again.
	Holding down this button will automatically bring both units of work into transport position. Keep the button pressed until the program has been completed and lock the working units in transport position in the hook (see chapter automatic flap). If the folding process is interrupted by mistake, press the button again and the folding cycle will be repeated.
	Holding down this button will automatically bring both units of work into working position. Keep the key depressed until the program has been completed and the working units are in the headland position (see chapter automatic folding).
	Ausschalter

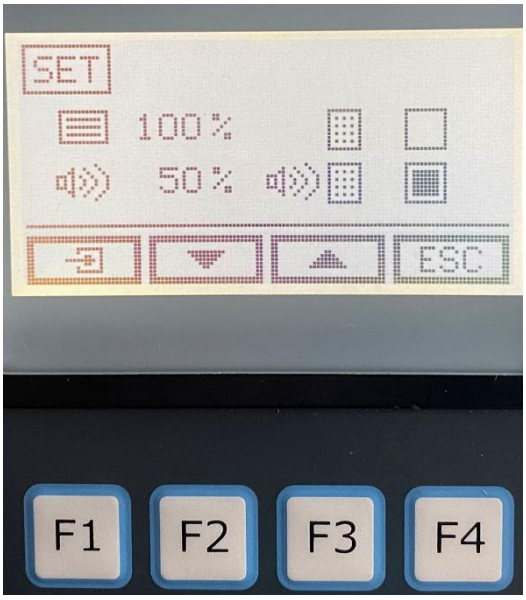
5.5. SET-Menu:

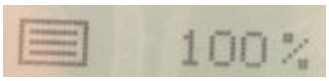
By pressing the F2 key, you enter the set menu.



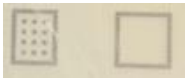
F1	After pressing the F1 key, the basic settings of the current page can be edited
F2	Press F2 to go to the next page of the basic settings
F3	Press F3 to go to the previous page of the basic settings
F4	Press F4 to go back to the start screen

5.5.1. Terminal settings (illumination/volume):

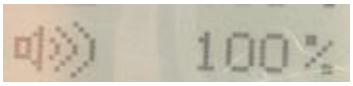




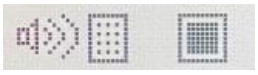
Adjustment of the display brightness



Activation of the keyboard illumination

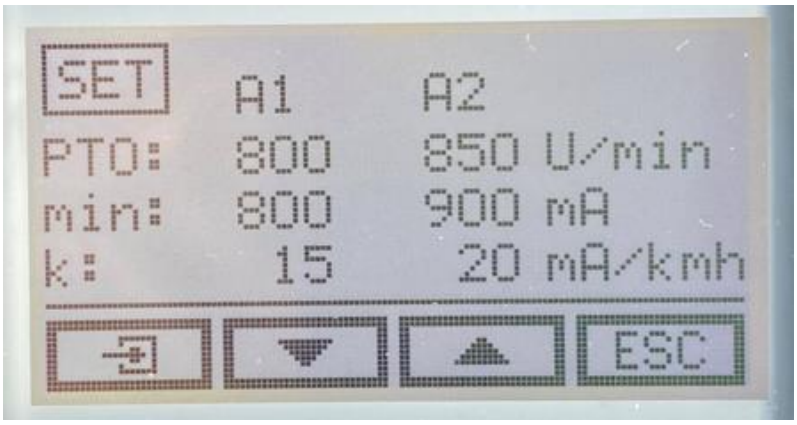


Adjustment of the beep volume



Activation of an acoustic signal when F keys are pressed in the WORK menu.

5.5.2. Parameters for the automatic speed control:

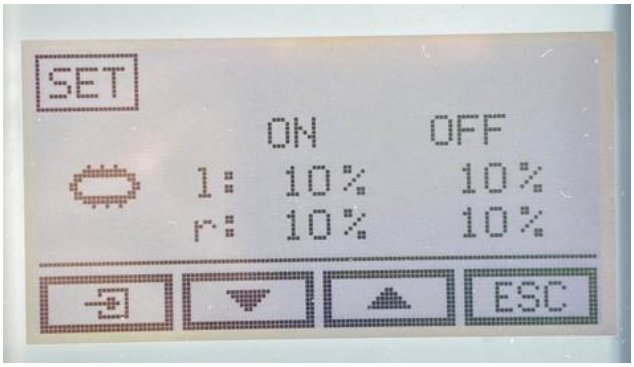


2 modes: A1 and A2

The following values can be set:

- PTO: from which PTO speed the valve current is reduced in percent (per 10 rpm the valve current is reduced by 2%).
- min: minimum current of the PROP valve (offset) = minimum pump swing = minimum speed (full pump swing = maximum current consumption = 1,600mA)
- k: Factor mA/kmh - setting of the increase in current consumption per 1 km/h

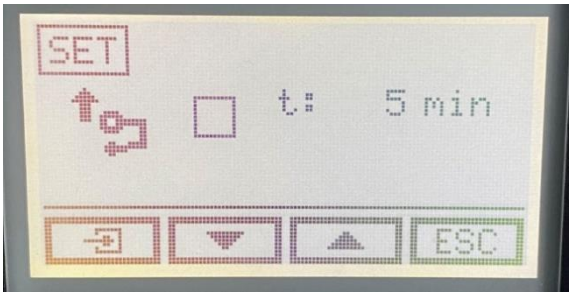
5.5.3. Parameters for automatic belt switch:

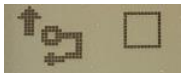


ON: Setting of the percentage lift height on the linkage from which the left or right conveyor belt is switched on again when lowering on the headland.

OFF: Setting of the percentage lift height on the linkage from which the left or right conveyor belt is switched off when lifting on the headland.

5.5.4. Activation of automatic top link lift in case of leaking locking block:

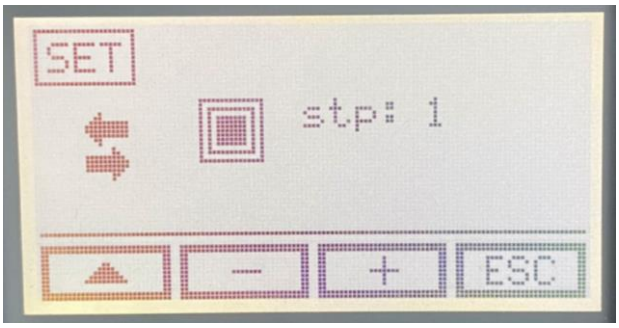




Activation of automatic top link lift

Setting time interval when pressure is applied to cylinder

5.5.5. Automatic swath placement left / right:

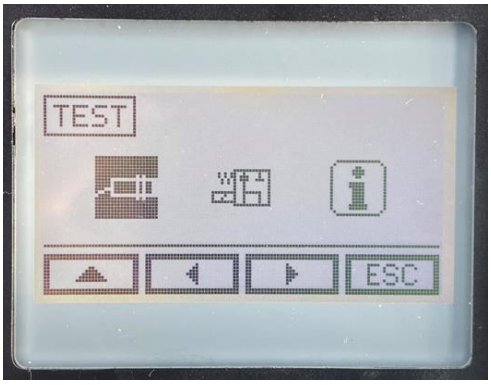


The direction of placement switches automatically between left and right according to the set rhythm when lifting at the headland. The rhythm is counted down and the system switches after 1.

Only possible if automatic belt control is activated.

Pressing and holding the deposit button left or right (depending on the set deposit direction) counts down the rhythm by 1.

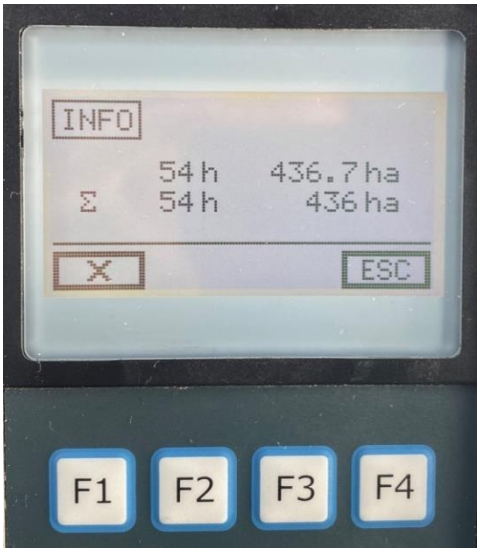
5.6. Test-menu:



For customer service purposes only.

Sensor test and valve test is possible. The software status can be queried.

5.7. Info-menu:



Partial and total hours or hectare counter.

The partial hours or partial hectare counter can be reset to zero by pressing and holding the F1 key.

6. Getting started

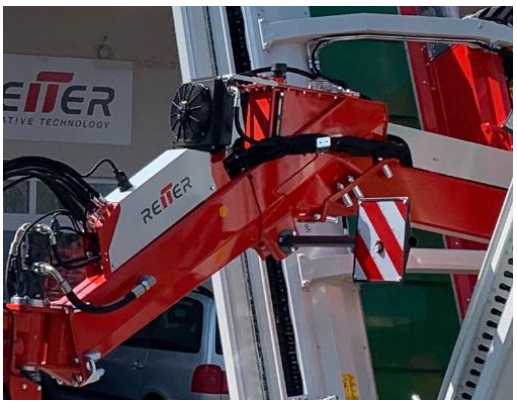
Attach the machine to the rear linkage, raise the supporting leg and secure it with the bolt.

Connect the hydraulic lines and brake lines.

Connect the main electrical wiring harness and attach the control terminal to the power supply. Perform the following activities carefully:

1. Check all connectors for perfect bond: main connector, power supply, hydraulic hose and brake lines
2. Unfold machine as described earlier.
3. Try to raise and lower the working units
4. Start the oil flow via the PTO shaft
5. Increase the working speed of pick-up and rotor by pressing the “+” button
6. Try to run the band left and right. Check the belt speed control.
7. Increase and decrease the distance between the working units
8. Lift the Rotor and lower it again
9. Check floating position of rotor and telescopic frame

Checks before use:



1. Check the oil level: if the pto shaft is approximately horizontal and the oil temperature is approx. 20 ° C, the oil level in the upper window must be visible.

If this is not the case, top up with hydraulic oil HLP 46.

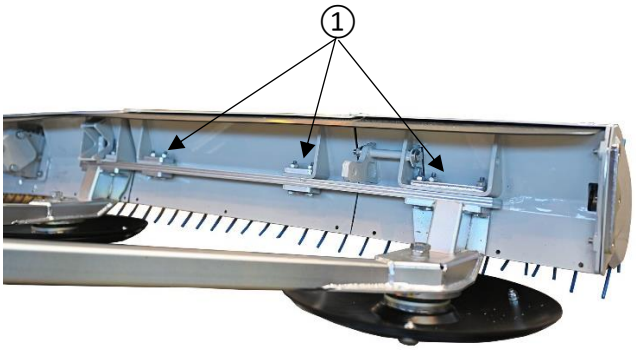
Safety indicator Oil level at the terminal:

CAUTION! If the oil level drops too low, the return oil can splash on the surfaces => foam => axial piston pump and subsequently all other hydraulic motors will be damaged!!!

If you notice a nagging noise on the axial piston pumps, immediately switch off the PTO and contact customer service.

1. Check frame flange fittings for tightness (726 Nm tightening torque)
2. Check wheel nuts for all four wheels for tight fit (280 Nm tightening torque)
3. Check all bolt connections and hydraulic cylinders.

4. Check the gear box screws for tightness



5. Check the screw connections on the pick-up spine ① for tightness.
   (49 Nm tightening torque / fine-thread screws 60 Nm tightening torque)
6. Check hydraulic drive for leaks
7. Check the function of the blocking blocks
   A) Locking block for top link

CAUTION!

If the locking block on the top link is leaking, the pick-up works deeper than desired.

=> Swap locking block
=> or as a bypass, install stopcock

   B) Locking block wheel carrier arm

CAUTION!

Should the locking block on the wheel carrier be leaking, the boom will sag => the suspension of the work unit will deteriorate and ground hugging will suffer

=> Swap lock block
=> or as a bypass, install stopcock

Now the machine is ready for use

CAUTION!

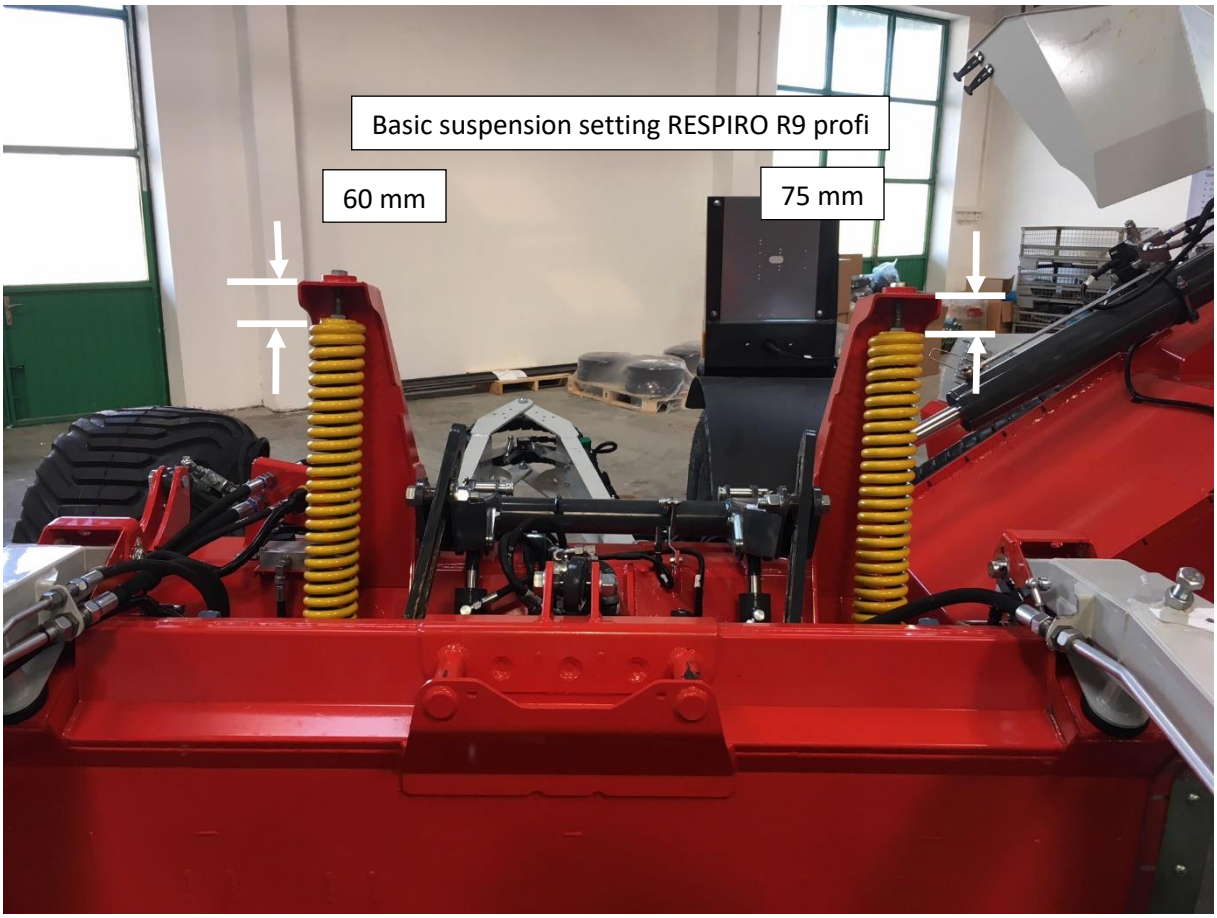
Loose screws endanger the safety and stability of the machine.
Loose screws can lead to expensive subsequent damage.
Important: Check the screws for tightness after the first 50 hours operation.

7. Recommended settings for operation

7.1. Suspension

The suspension of the RESPIRO R9 is provided by the yellow springs. For best suspension set them as follows:

The inner spring of the unit should be tightened up to 75 mm, the outer one up to 60 mm.



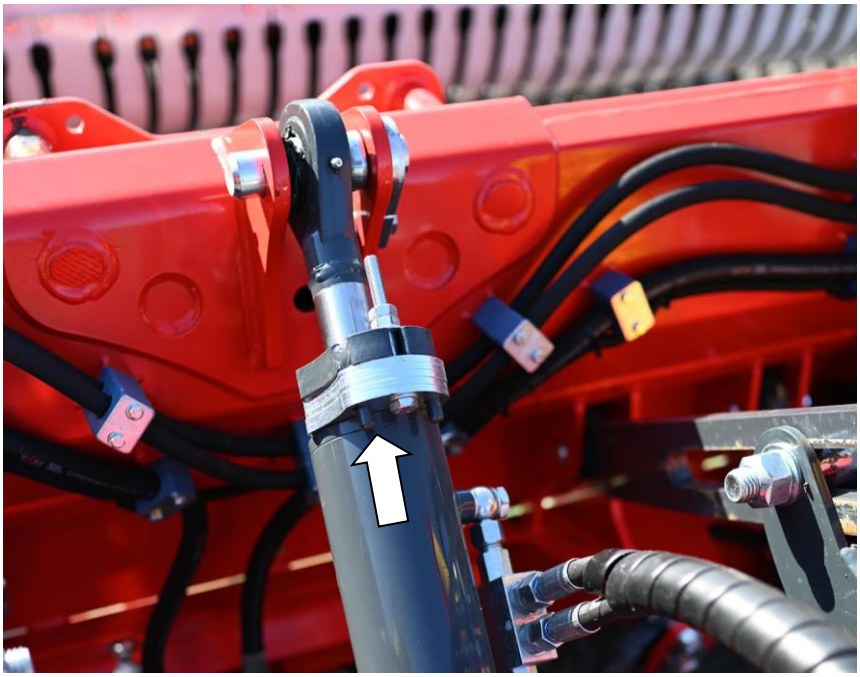
7.2. Adjust raking height of the pick-up

The working height of the pick-up is set by changing the length of the upper link.

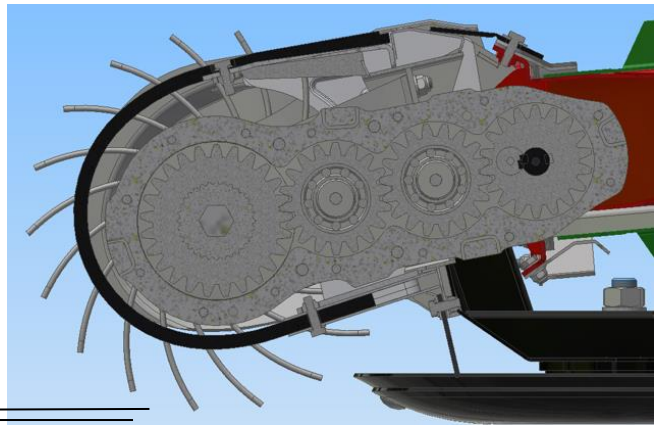
Additional insert plates => Pick-up works deeper

Assembly of the insert plates in position Cylinder extended

When this button is pressed and held, both top link cylinders are completely retracted. When this button is pressed briefly, the top link cylinders become approx. 4 mm longer per actuation => this allows the rake height of the pick-up to be adjusted.



Basic setting rake height: on level ground, the distance between pick-up tines and ground should be approx. 1 - 1.5cm.



Distance from pick-up tines to ground approx. 1 to 1.5 cm.

7.3. Rotor position, rotor damping and rotor suspension

The rotor must be set in such a way that the vertical distance between the rotor tine tips and pick-up is around 6 cm.

CAUTION!

Collision of rotor with pick-up
Rotor tines can break if they come into contact with the pick-up.

The distance between the rotor tine tips and the pick-up should not be less than 6 cm.

Height adjustment of the rotor (distance from rotor to pick-up)

1. Loosen lock nut.
2. Raise the rotor position: turn screw clockwise.
3. Lower the rotor position
4. Retighten lock nut.

7.4. Headland position

Put the two hydraulic control units on “pressure” (+). This will raise the two units. At the headland, the conveyor belt is to be brought to a standstill, because otherwise the crop is scattered at the headland. (belt stop or automatic switch-off)

7.5. Swath roller

The height of the swath roller can be adjusted using the holing rods.
Two upper and two lower positions are available.
Basic setting: lowest position of the swath roller

Recommendation:
Low position: for little amount of forage and very short grass
High position: for high amount of forage and long forage

7.6. Pick-up cover:

For flawless operation of the pick-up, assure clearance right between the last scraper and the side cover at both ends. This clearance should be as small as possible without jamming the pick-up tines. No forage is drawn in and the pick-up can operate flawlessly.

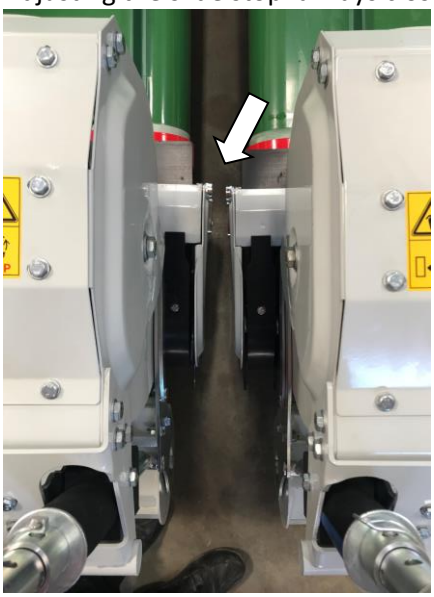
The distance between the side cover and the first scraper should be approx. 7-8 mm. The distance to the pick-up tines is therefore only approx. 0-2 mm.

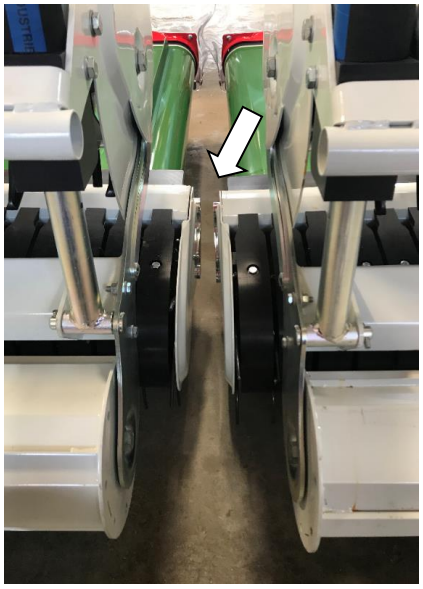
Setting via insert plate or washers at the two rear screws.

Reinforcement plate Pick-up cover inside protects the screws and the side cover in case the pick-up's touch.

7.7. Other adjustments

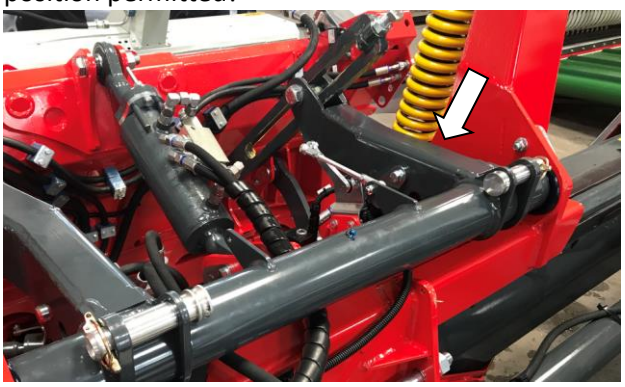
Adjusting the slide stop: always close the screw carefully.





Adjust the tractor lift so that the PTO shaft is horizontal. Lower work units on level ground. Now check the distance between the pick-ups as shown in the picture.
The factory setting is about 2-3 cm.

The lifting linkage of the working units must be lowered completely under pressure - no floating position permitted!

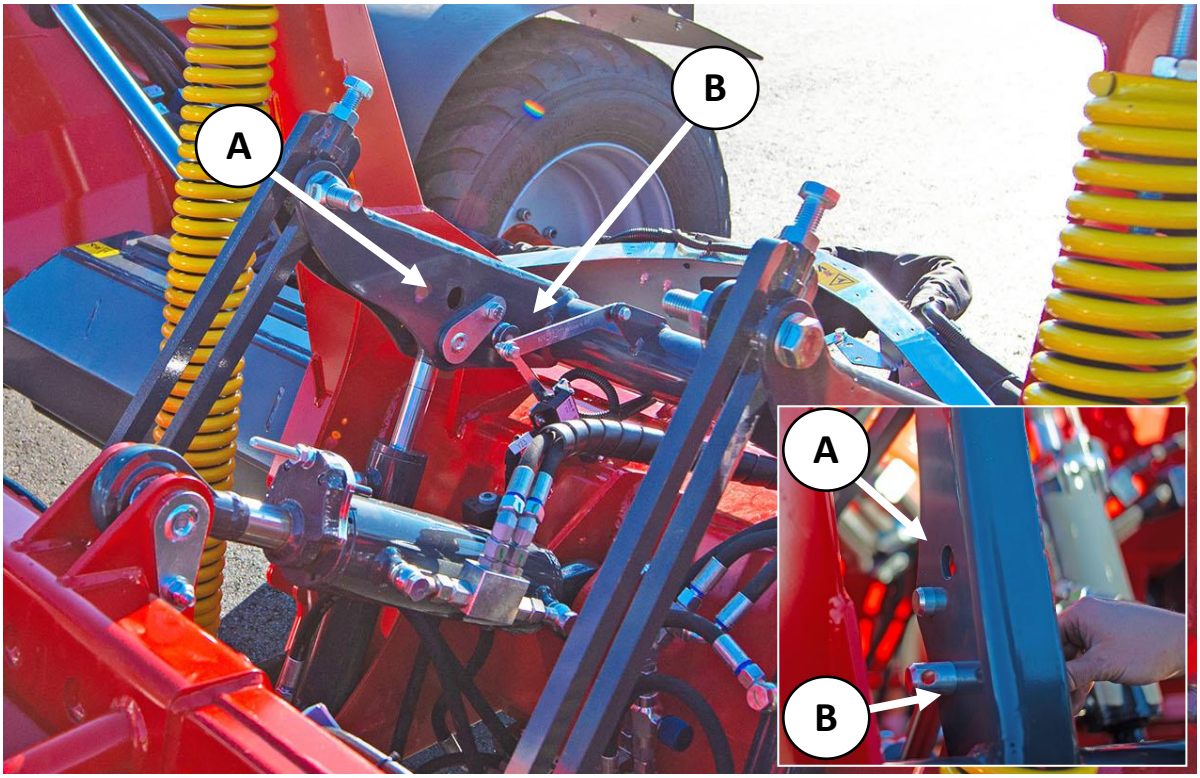


The wishbone cylinders pull the working units after lowering inwards..

Fine adjustment hoist strut for use in straw (cereals, maize).

7.8. Straw mode

The units should “fly“ in straw operation. This means that the units do not rest on the ground but are supported by the lifting linkage. To do this, pin all the bolts from position (A) to position (B).



Advantages for straw operations:

- Less wear on the gliding discs
- Less diesel consumption due to lower power requirement
- Less dust formation
- Fewer foreign objects in the swath due to significantly less ground penetration of the tines
- Less tine wear
- Longevity of the pick-up
- Fewer knocks against the tractor: machine cannot sag when lanes are deep

8. Field working

CAUTION!

Before bringing the machine into working position, the following points must be observed:

- Make sure that there are no persons in the swivelling range of the machine.
- If necessary, refer all persons from the swivel range.

The machine is equipped with a steering device to enable:

- The machine can follow the tractor track.
- Turning at the end of the field is easier and the machine is aligned more quickly back straight, as a machine without steering device.
- Better to drive in hard-to-reach field plots.

The attachment allows a turning angle of 90 degrees between tractor and machine to the right or left. The angle depends on the external width of the tractor. To protect the steering system, never try to force a larger steering angle.

Forward speed

Basically, the machine can be driven as fast as mowing before. However, the speed should always be adapted to the working conditions.

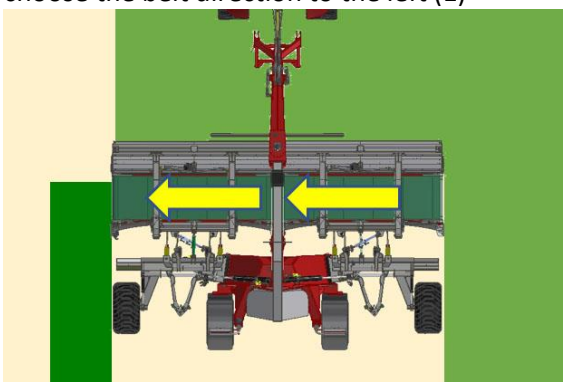
Put the machine into working position
Put the control units, which lower and raise
the working units in floating position.

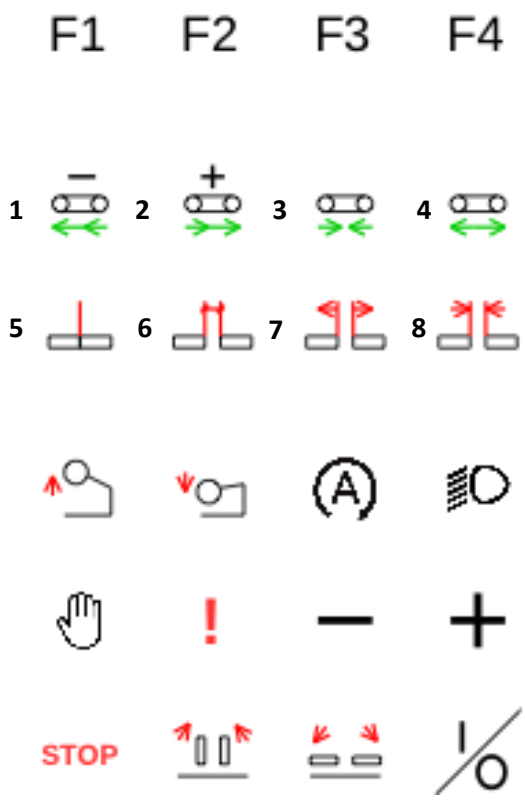
Crossing swaths with the right working unit lifted
Put the first control unit on “pressure” (+)

Crossing swaths with the left working unit lifted
Put the second control unit on “pressure” (+)

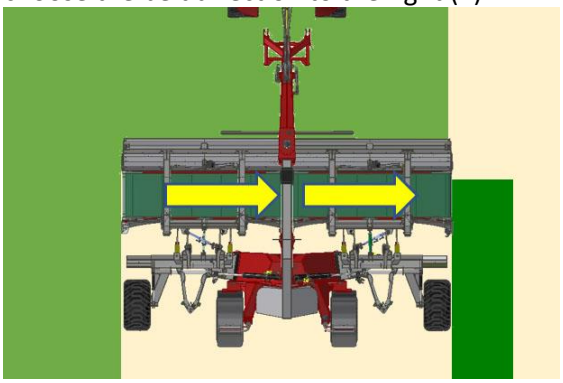
Crossing swath with both working units lifted
Put the first and the second control unit on “pressure” (+)

Side delivery to the left (in driving direction)
First, the units must be moved together (5). Then choose the belt direction to the left (1)

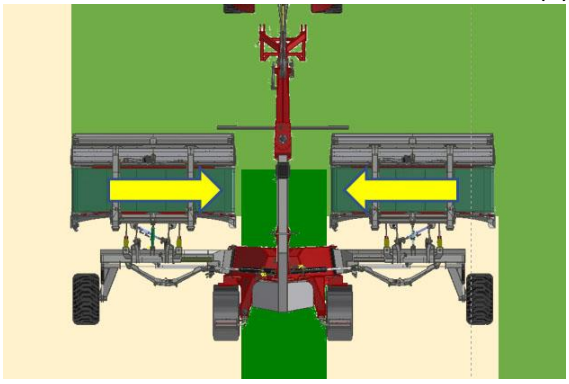




Side delivery to the right (in driving direction)
First, the units must be moved together (5). Then choose the belt direction to the right (2)



Centre swath
Divide or bring the working units together as wide or close you want, to get the desired swath size. (7 or 8)
Then choose the belt direction to the centre (3)

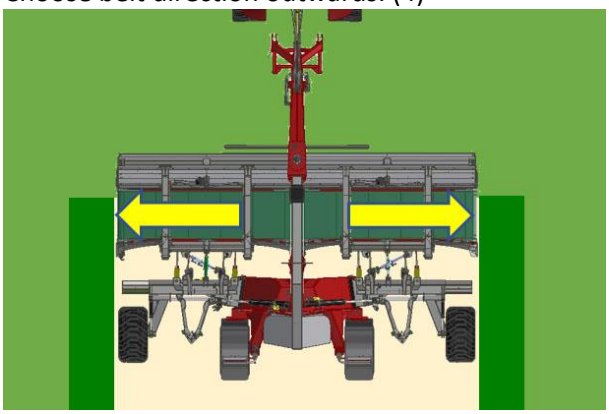


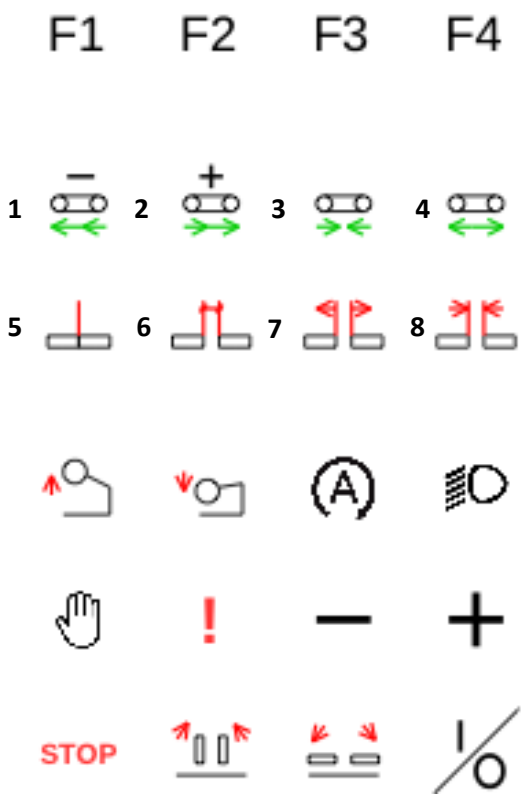
Function: Save the desired swath width
Holding down the button (6) for about 3 seconds will save the value of the current working width, the beep sounds.
By holding down this key for about 1 second, both units of work are separated or pushed together to the previously stored value

Swath delivery to the left and the right side

Bring the working units together (5)

Choose belt direction outwards. (4)

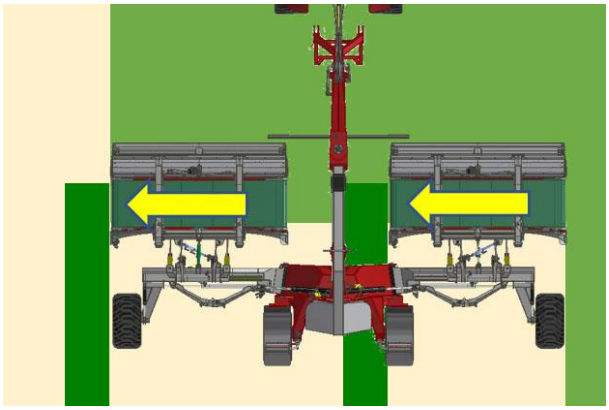




Central and side delivery to the left

Divide or bring the working units together as wide or close you want, to get the desired swath size (7 or 8)

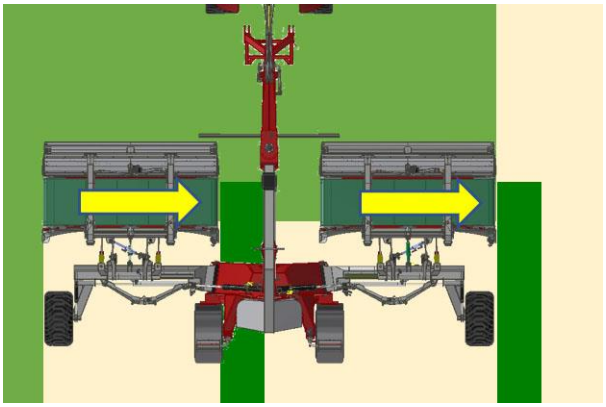
Then choose belt direction to the left (1)



Central and side delivery to the right side

Divide or bring the working units together as wide or close you want, to get the desired swath size (7 or 8).

Then choose belt direction to the right (2)



9. Maintenance

9.1. Maintenance chart

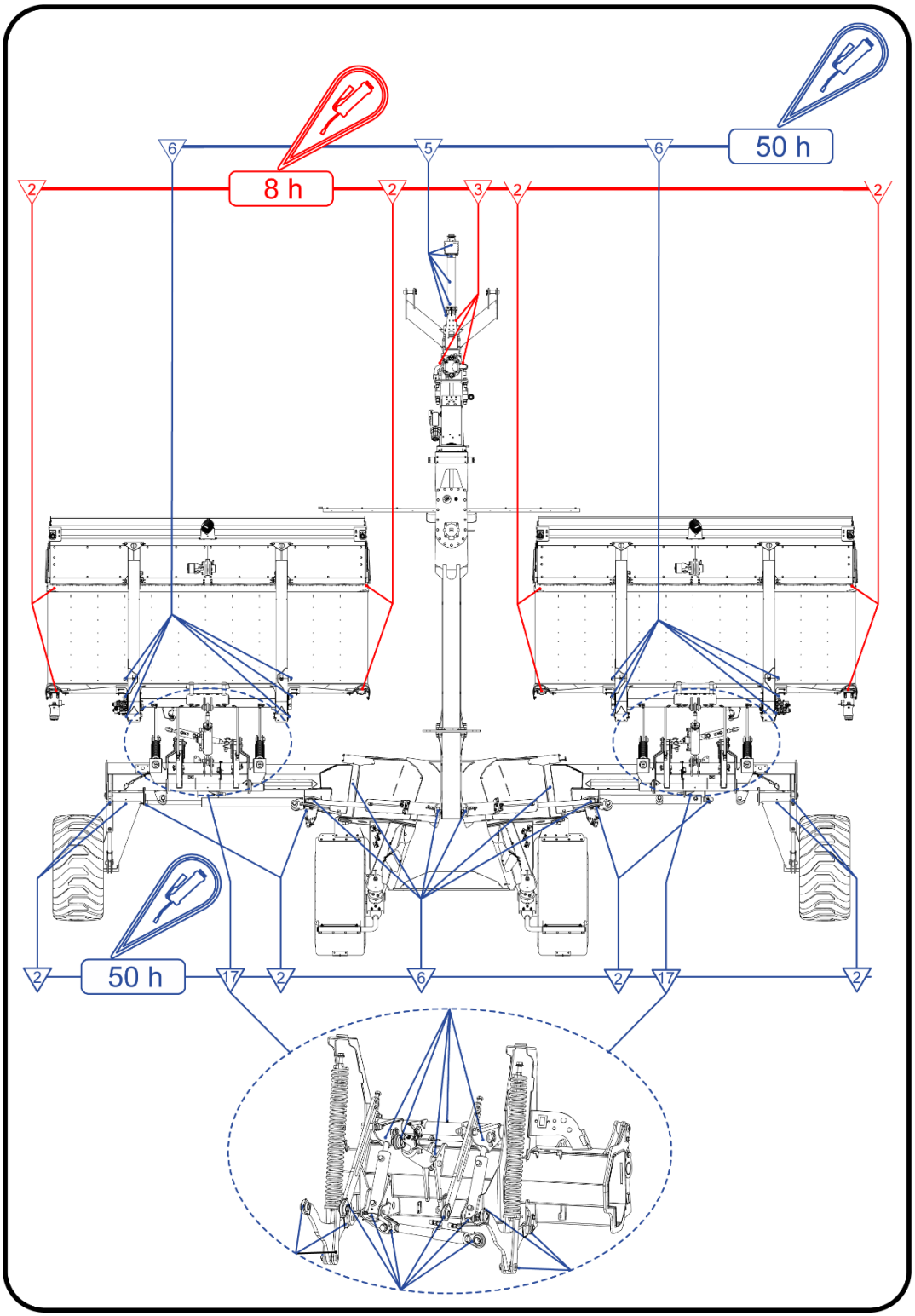
	Before the very first operation	After 10 hours in the field	After 20 hours in the field	After 50 hours in the field	weekly	Every 50 hours	Every 200 hours	Every 500 hours	Every second year
Oil change: • hydraulic tank of the machine									X
Oil change: • main gear box				X				X	
lubrication: • steering system • linkage system right • linkage system left						X			
oiling: • hitch yokes •supporting leg							X		
	Other maintenance services – to check:								
• running alignment of belts & tension of the belts		X					X		
• oil level in the hydraulic tank		X			X				
• braking system			X		X				
• fastening elements		X			X				
• tightening torque of the nuts of the wheels	X	X			X				

The pick-up and rotor are generally maintenance-free. Occurring wear should be checked daily. Components should be changed depending in the wear condition. Maintenance work must be carried our only when the machine is at a standstill and the key has been removed from the ignition. The lubrication points on the machine must be lubricated regularly.

9.2. Lubrication plan

The following points are to be greased every 8 or 50 hours:

When greasing the headstock, swivel it several times during the greasing process. Grease can spread better.



9.3. Replacing pick-up tines

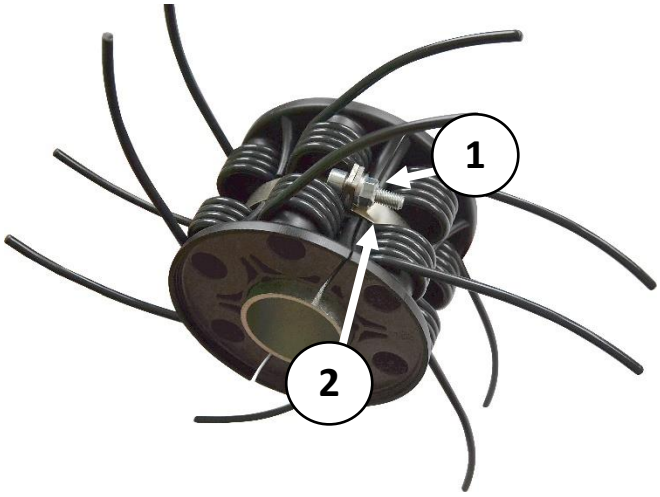
Wear types on pick-up tines:

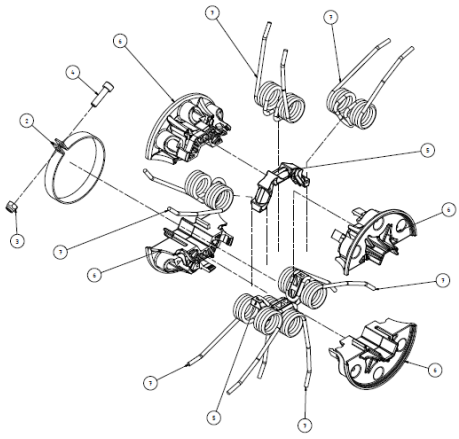
- Wear on the side of the tine legs
- Wear on the tine point; the circumferential circle of the pick-up tines gets smaller
- Tine legs can break off due to material fatigue

Tines should be replaced of the

- Wear to the sides is greater than half the wire thickness;
- The circumferential circle of the tine points has become more than 15 mm smaller in radius;
- A tine leg has broken off;

1) The scraper is coming loose at the top of the affected point.
2) Scrapers can be bent downwards to allow access to the tine disc.



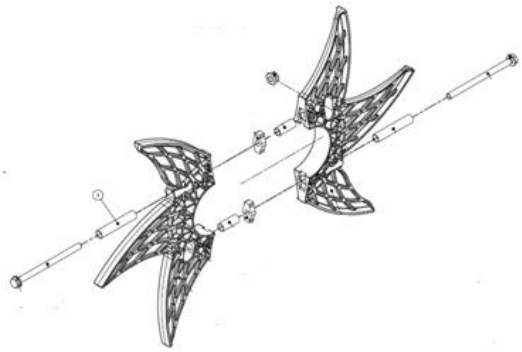


3) Loosen M8 screw (1) on the clamping ring (2).
4) Remove the half-shell and replace damaged tines.
5) Join the tine disc and assemble it with the clamping ring. Tighten the M8 screw with nominal torque.
6) Mount the scraper.

9.4. Replacing rotor tines

Rotor tines can be damaged by foreign objects. It is not necessary to replace tines immediately. Carry out a replacing of more than 2 tines per tine star are damaged.

The replacement can be performed during the winter inspection.



1. Removing the rotor scraper.
2. Unscrew the rotor tines individually.
3. Insert new tines. Ensure that the sockets are installed correctly according to the drawing.
4. Mount the rotor scraper.

9.5. Replacing wear discs

Wear discs should be checked daily for wear. Perform the replacement as soon as a war disc is worn down. This will avoid damage to the basic disc.

CAUTION!

Damage to the basic disc.
Not only is the wear disc to be replaced but also the basic disc. High follow-up costs.
Check the wear condition of the wear discs daily.

9.6. Repair of the conveyor belt

The conveyor belt is very rugged in design due to the belt reinforcement on the left and right. If the conveyor belt is nevertheless damaged by foreign objects, the following remedy can be applied:

Cracks, slits:

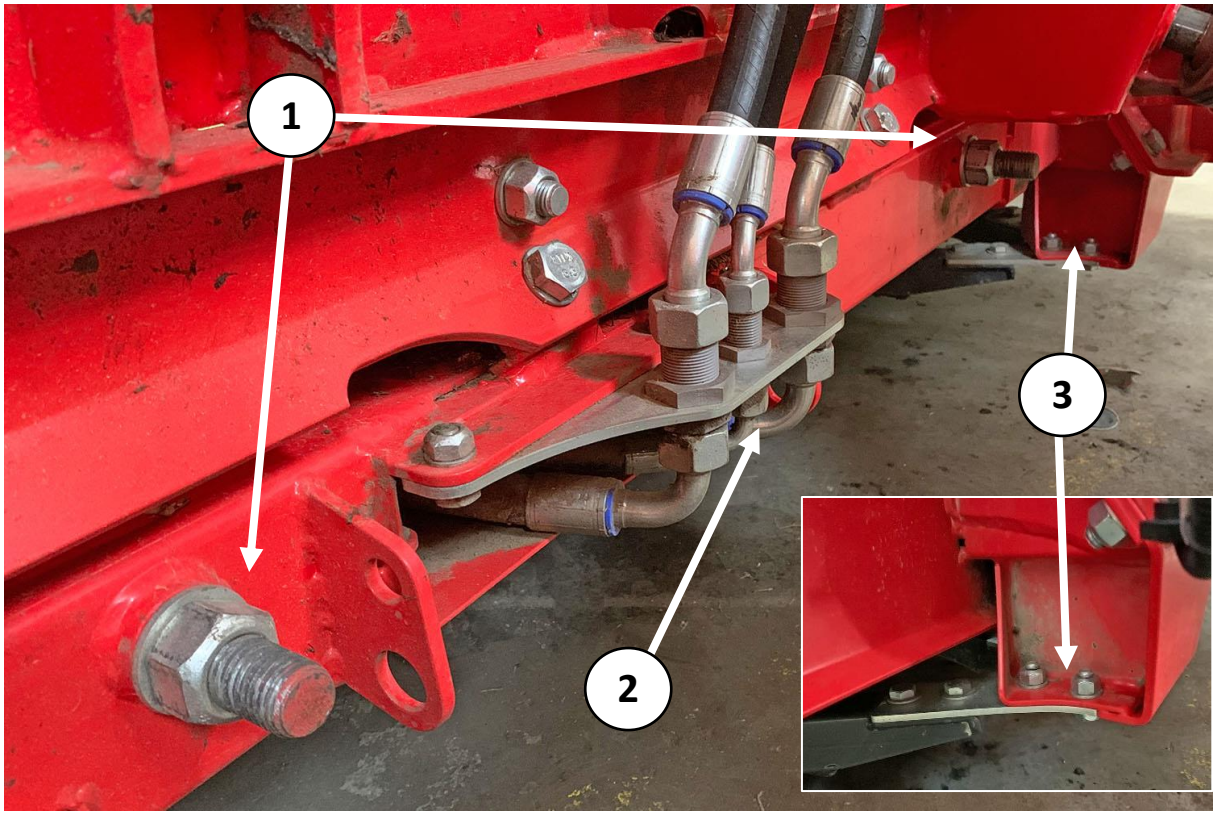
- Both ends punched out with a round hollow punch so that the crack does not grow further
- Gluing of the open spot with special glue

9.7. Replacing the conveyor belt

If the crack or slit on the conveyor belt can no longer be stopped, the belt must be replaced. The following steps are required to replace the belt (two people are recommended for some of the working steps):

9.7.1. Removing the pick-up:

1. Loosen the central fixing of the pick-up via the lock nuts ① on the threaded rods.



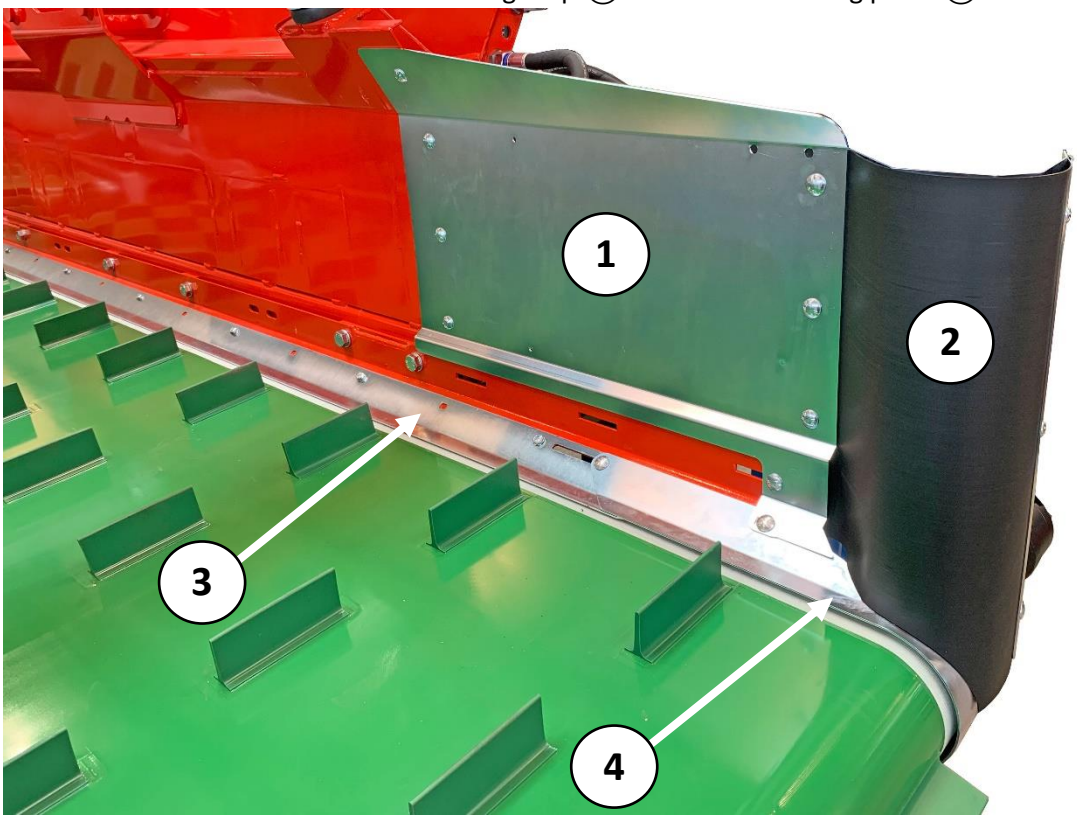
2. Mark (pressure/return) and loosen the hydraulic lines ② to the drive of the pick-up. Avoid hydraulic oil losses & contamination by using sealing plugs.

3. Loosen the left and right gusset plate ③ only at the screws (2x2) to the main frame. Note: Under no circumstances loosen the screw connection of the gusset plate to the frame structure struts. Put pallet underneath.

4. Place a pallet under the sliding plates of the pick-up, lift it with a forklift or pallet truck and carefully pull out the pick-up. If there is no pallet, lower the pick-up onto level ground and carefully push it back with the tractor.
The pick-up will detach from the belt unit.
Note: Ensure that the hydraulic lines do not get stuck in the tunnel.


9.7.2. Dismantling back and belt sealing

1. Dismantle the sheet metal back ① and sliding element ②.
2. Dismantle the front and rear belt sealing strip ③ and the belt sealing plates④.



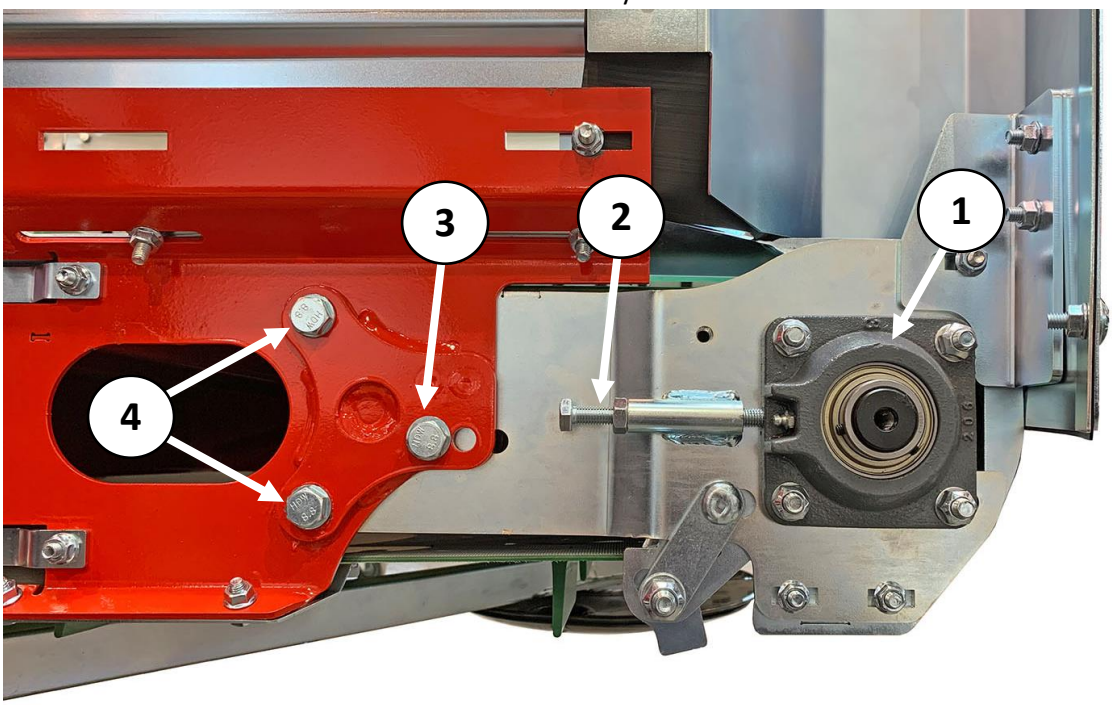
9.7.3. Remove conveyor belt

1. Loosen all screws on the front and rear flange bearing ①.

2. Fine adjustment ② front and rear, loosen screw only slightly. No counter-holding on the nut required.

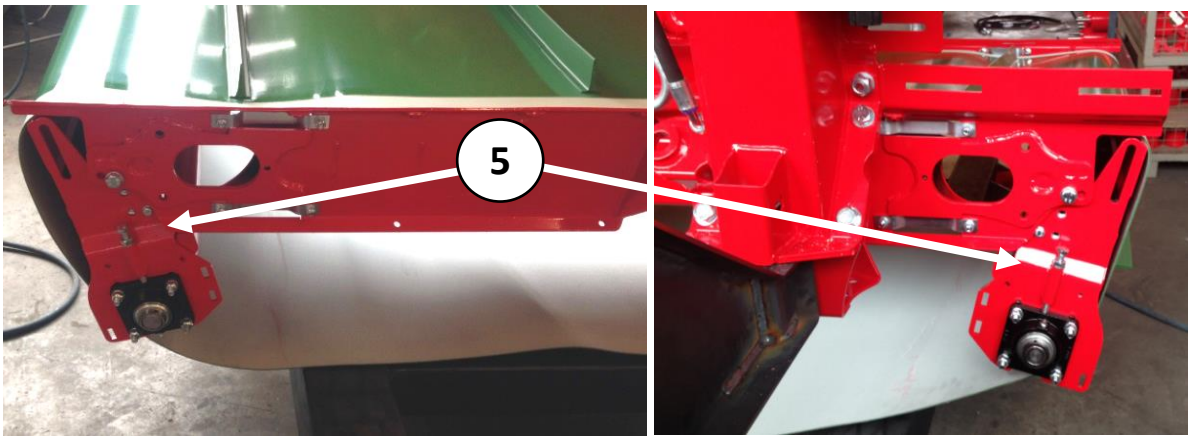
3. Slightly loosen the middle screw ③ of the rough belt tensioner, remove the upper and lower screw ④.

VORSICHT! Danger of jamming: when removing the screws ④, the belt roll carrier must be secured so that it cannot shoot down unintentionally.



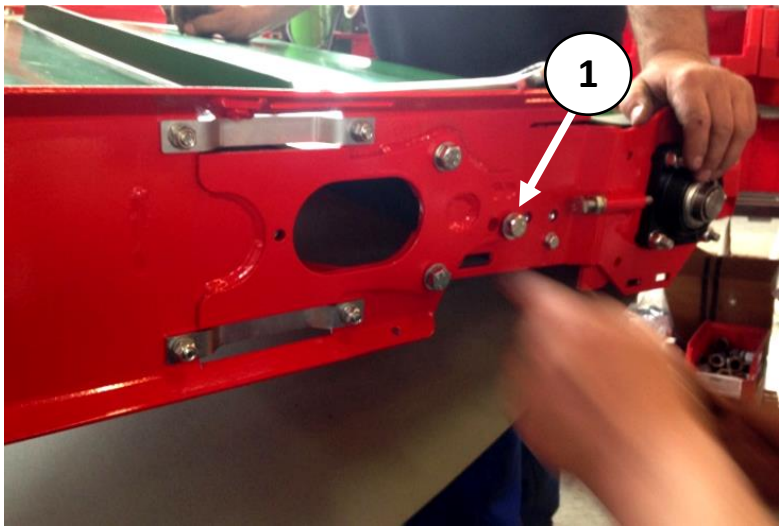
4. Swivel the belt roll carrier ⑤ on both sides

5. Pull the belt out to the front

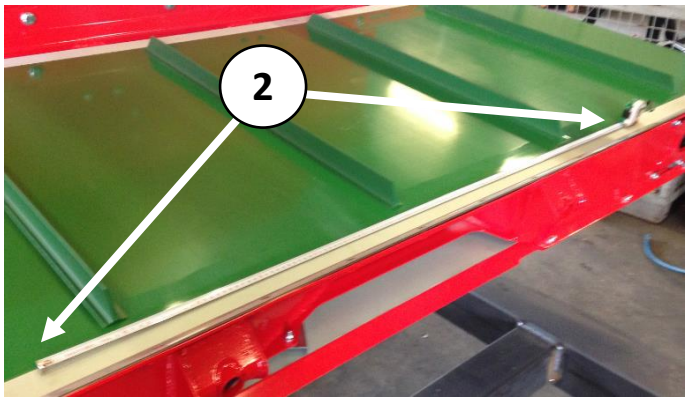


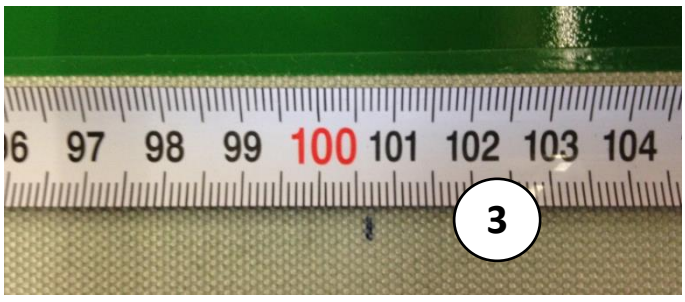
9.7.4. Installing a new conveyor belt

1. Insert a new belt (2 people required). Make sure that there is no damage when putting the belt in place.
2. Swing the belt roll carrier ① up again on both sides and align it. Adjust the rough tension in the hole pattern if necessary.



3. Conveyor belt in untensioned but taut condition: attach a 1000 mm mark ② to the belt. Then tension the belt via the fine adjustment so that the 1000 mm mark is 1006-1008 mm ③.





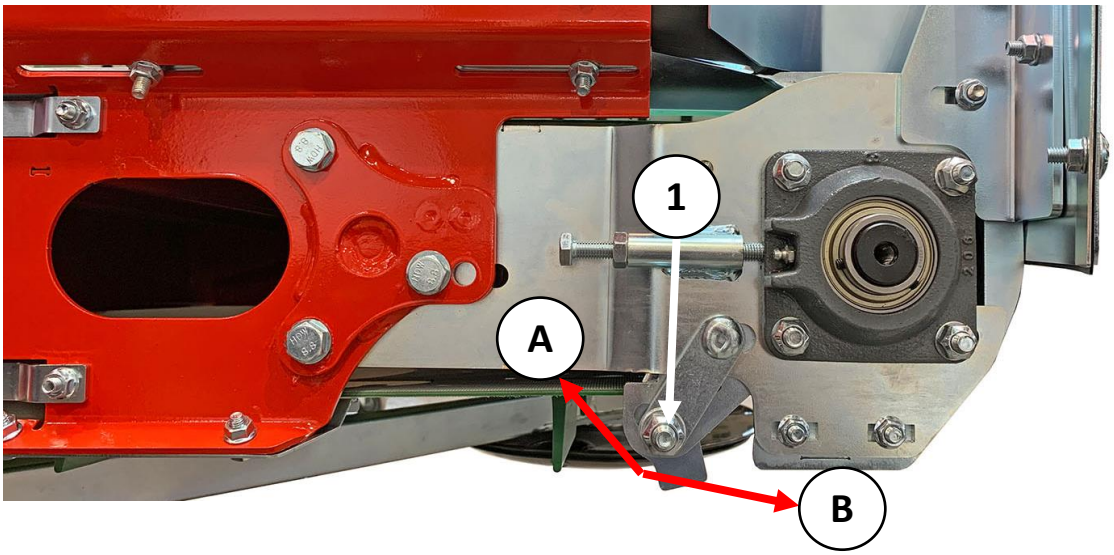
4. Carefully make a test run (connect the pressure line and the return line with a hose).
5. Adjust the belt via the fine adjustment. Adjust the rollers as necessary using the fine adjustment. Ensure that the belt is centred.
6. Tighten the fine adjustment and flange bearings again.
7. Reassemble the belt sealing plates, belt sealing strip, sliding element and sheet metal back in reverse order.
8. Reinstall the pick-up in reverse order.

9.8. Adjusting the roller scraper

Slightly loosen the screws ①on the front side of the belt and the back side of the belt, it should still "clamp" slightly.

Adjustment direction (A): Scraper comes closer to the roller

Adjustment direction (B): Scraper moves farther away from the roller.

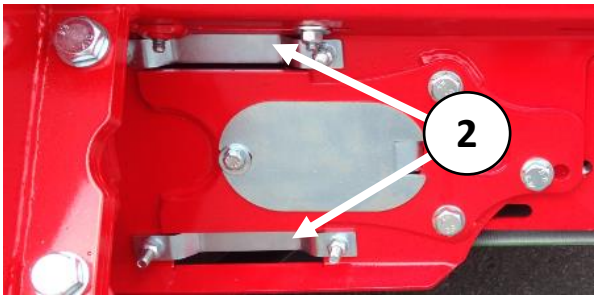


Clean the roller as needed

1. Adjust scraper in direction (A) until the dirt on the roller is removed. Let the belt run in both directions.
2. Then distance the scraper from the roller so far that no grinding noise can be heard.
3. The distance should be as small as possible for a good cleaning effect (!)
4. Tighten the screws

9.9. Check wear of conveyor guide strips

Check guide stripes (1) for wear on the inner side. Palpation check.



9.10. Maintenance and change of hydraulic oil

9.10.1.Oil maintenance:

Drain water and dirt once a year using the drain plug. A small amount is sufficient for this. Then carefully close the screw again.

Oil drain plug

oil filler neck

9.10.2.Oil change:

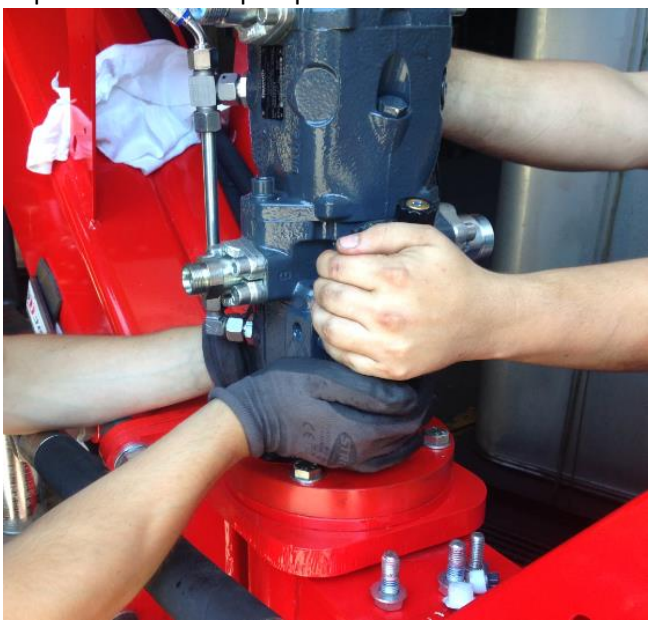
Change the hydraulic oil after 1000 operating hours, as well as change of return filter. If the oil gets cloudy, the oil and filter change is to be done immediately.

9.10.3.Oil change instructions:

1. Allow the oil to flow through the drain plug into a vessel. Wait until no more oil flows, then close the drain plug again.
2. Disconnect the suction lines and pressure lines at the pumps and remove the double pump so that the pumps can be vented. If necessary, store the ends of the pressure lines high, so that oil does not escape unnecessarily.
3. Filling both pump housing in horizontal location at the highest leakage oil connection so that no air cushion at the upper bearing is possible

4. Fill the leak oil line

5. Replace the double pump



6. Fit the leak oil line
7. Mount the pressure line
8. Preparation for tank filling: with filter pump with 10mµ element and integrated tank installation return filter, type: RFM ON 210 BE 10 A0.1; Make HYDAC.
9. Fill the tank step by step and, depending on the level, screw the corresponding suction line to the pump. In this way there is very little air in the suction hose. Check suction lines for leaks
10. Filling level slightly higher than the desired level, since the level will still fall due to the hydraulic drive. If necessary, oil must be refilled.
11. Test run with low PTO speed.

Important: if a nagging noise should occur, immediately switch off the PTO and contact the factory customer service immediately.

9.11. Cleaning of machine parts

When cleaning the machine, make sure that no damage is caused to the seals on the bearings and electric connectors. Therefore, never use the high-pressure cleaner to spray pressurised water against the bearing seals and connectors.

10. Troubleshooting

Assistance for problem solving. If you are in any doubt, contact your sales representative or customer service.

Pick-up and rotor are not working

- Pressure build-up due to the sun shining on the hydraulic system.

Rotor does not lift

- Contact fault on the valves.
- Check contacts, use contact spray
- Turn the knurled screws out and in again. If necessary, repeat the procedure

Belt does not travel

- Contact fault on the valves or connector damage.
- Check contacts on the valves
- Check power supply
- Check connector.

Pick-up tines make a noise when idling

- Too much contact between the tines and scrapers.
- Check pick-up for bent tines.
- Check pick-up for trapped foreign objects.
- Remove foreign objects, straighten out tines.

Pick-up or rotor are stiff / sluggish

- Jammed drive elements.
- Check if foreign objects are jammed somewhere.
- Check if the harvest forage has become entangled; if required, clean the pick-up and rotor

Conveyor belt is running lopsided

- Conveyor belt is moving strongly to one side
- Check the condition of the conveyor belt edge for wear.
- Correct conveyor belt operation by adjusting the fine adjustment when the belt is running slowly.
- Removal of the pick-up must be avoided under all circumstances. Perform a belt running correction via the two rear bearings.

Conveyor belt rollers build up dirt

- Readjust the cleaning strip (1)

Gliding discs do not rotate smoothly

- Bearing damaged?
- Check for contamination in the area of the bearing.

11. CONFIG-menu:

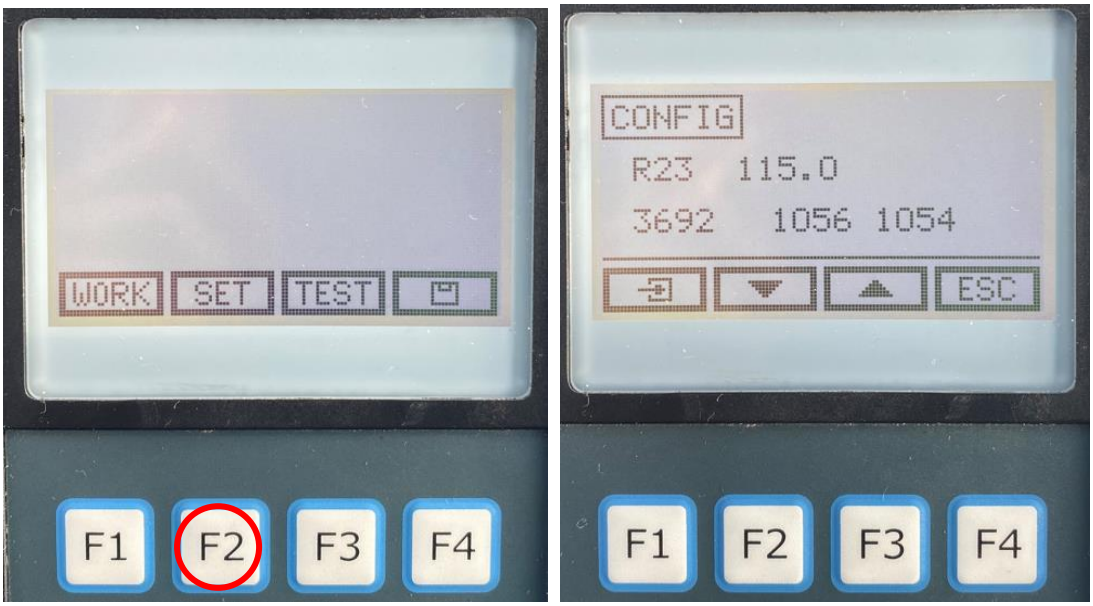
If an angle sensor has to be replaced due to damage, the sensor must be recalibrated.
In the event that the operator terminal is damaged and needs to be replaced, all angle sensors must be recalibrated. This allows the new terminal to communicate properly with the machine.

11.1. Calibrating the angle sensors:

IMPORTANT: Only trained personnel are allowed to calibrate sensors.

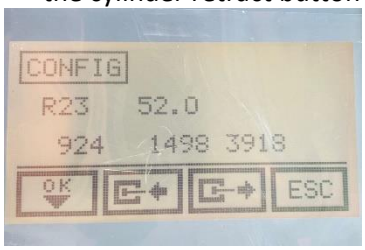
Recalibrate sensors only when a sensor has been replaced, a sensor has been moved by mechanical manipulation, or a new operator terminal is being used.

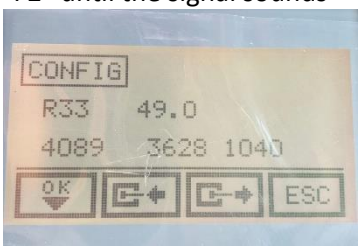
1. Switch from Work mode into another mode by pressing the ESC key.
2. Switch to "CONFIG" mode at the terminal by pressing the "F2" key for a long time. List of all sensors to be calibrated appears.
3. Select sensors to be calibrated using the up and down arrow keys ("F2" and "F3").
4. Press the pencil key "F1" to change to edit mode.



11.1.1. Lifting unit for the working units in the headland (sensors R23 and R33):

a. Raise the working units completely by means of the control unit on the tractor, then hold down the cylinder extension button "F3" until the signal sounds.
b. Using the control unit on the tractor, lower the working units completely, then press the cylinder retract button "F2" until the signal sounds

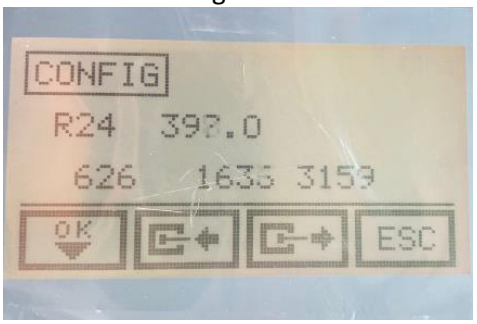


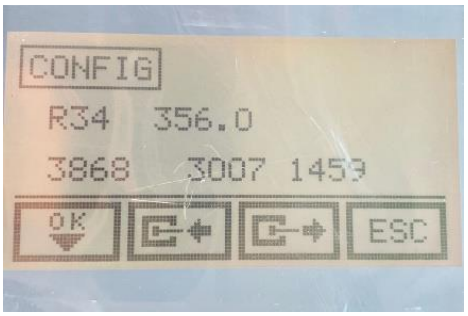


11.1.2. Slide for side shifting of the working units (sensors R24 and R34):

Only operate during slow driving or on slippery surfaces.

a. Press and hold the cylinder extension button "F3" until the carriages have been completely extended and a signal tone sounds.
b. Press and hold the cylinder retract button "F2" until the carriages have been fully retracted and a signal tone sounds.

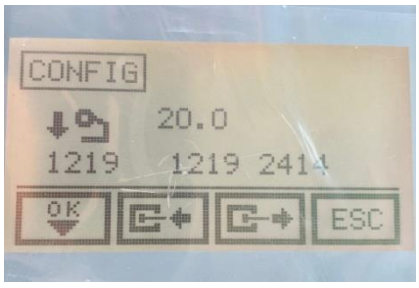




11.1.3. Rotor (rotor symbols for sensors R65 and R75):

Lower both work units on level ground (sensors R23 and R33).

a. Press and hold the cylinder extension button "F3" until the rotor has lifted completely and a signal tone sounds
b. Press and hold the cylinder retract button "F2" until the rotor has been lowered completely and the signal tone sounds.

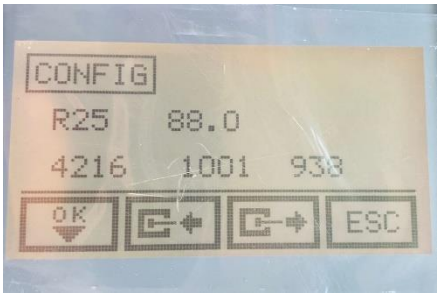


11.1.4. Work unit carrier arms (Sensors R25 and R35)

Machine and tractor in an extended position and on a flat surface.

a. Boom in 90° position (= Transport position):

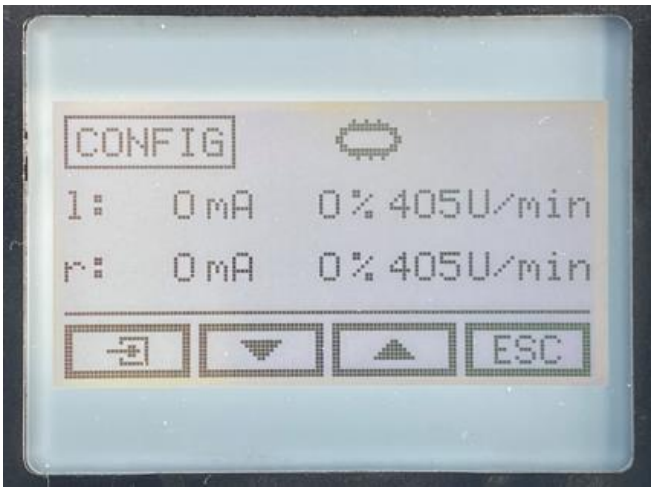
1. **IMPORTANT:** Hoist for lifting work units (R23 and R33) must be fully excavated. Button cylinder retract button press and hold "F2" until the beep sounds.
2. Carrier arm cylinder using cylinder extension button "F3" lower working units **gradually** on **both** sides to 45 ° and then lower **both** sides to 0 ° (= touch down on the ground).
   When the "0 ° position" is reached, press the **OK button** "F1" until the beep sounds. (*Should possibly be carried out again after complete calibration after the machine has been brought into the floating position by means of "!")*



b. Boom in 0° position (= working position, on level surface) and four-wheel chassis in floating position (button "!"):

1. Press and hold the **OK** button until the beep sounds
2. **IMPORTANT:** Hoist for lifting work units [R23 and R33] fully raised, carriages [R24 and R34] fully extended and top link cylinder fully extended (can only be operated in manual mode). Button Press cylinder retract button "F2" until **both** extension arms [R25 and R35] are at approx. 60 °. Swing **one** boom further to 90 ° (= transport position) and keep the button pressed until you hear a beep. Then continue to swing the **second** boom 90 ° and hold down the button until you hear a beep.

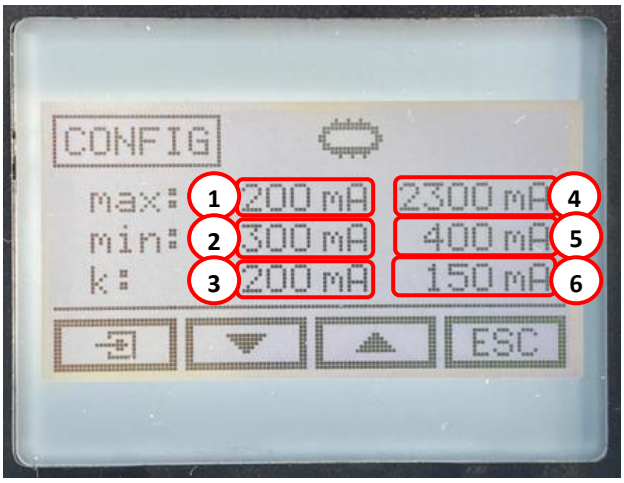
11.2. Correction values belt speed:



In the event of different belt speeds on the left and right, the current flow from the belt valve can be corrected. (with side swath delivery, the delivery belt automatically runs slightly faster).

Coil current = target coil current * (1+percentage/100) + offset value

11.3. Correction of smooth belt start or stop:



①Maximum valve current when the belt is stopped

②Minimum current when stopping the belt

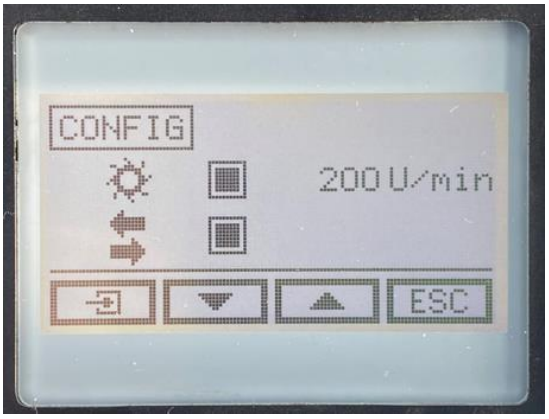
③Speed delay when stopping

④Maximum current flow when belt is running

⑤Minimum current during belt start-up

⑥Acceleration during belt start-up.

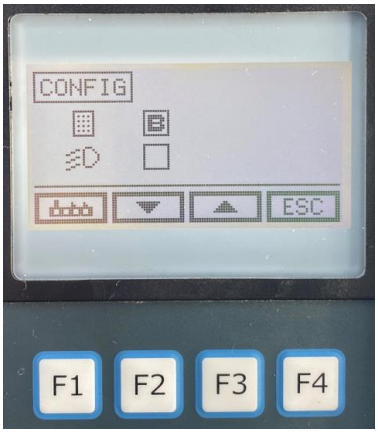
11.4. Speed limitation pick-up:



The maximum pick-up speed is adjustable. Basic value max. 200 rpm. This reduces the risk of feed being pulled in.

Pump assignment can be changed from left to right.

11.5. Other settings CONFIG menu:

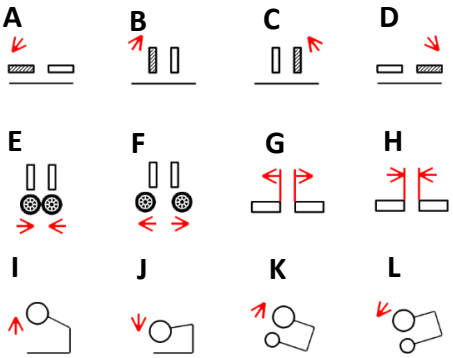


Key exchange „+ / -„

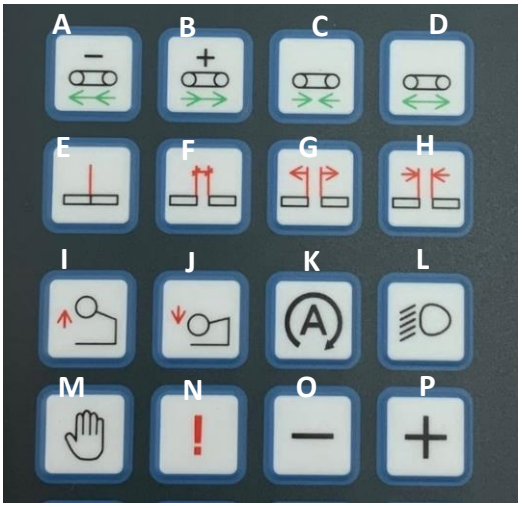
Factory reset

12. Key assignment emergency operation

In case of failure or defect of an angle sensor, it is possible to operate the machine in emergency mode. The correct switching sequence is important in order not to cause damage to the machine due to incorrect operation. The standard key assignment is then replaced by the emergency operation key assignment!



Key assignment emergency operation

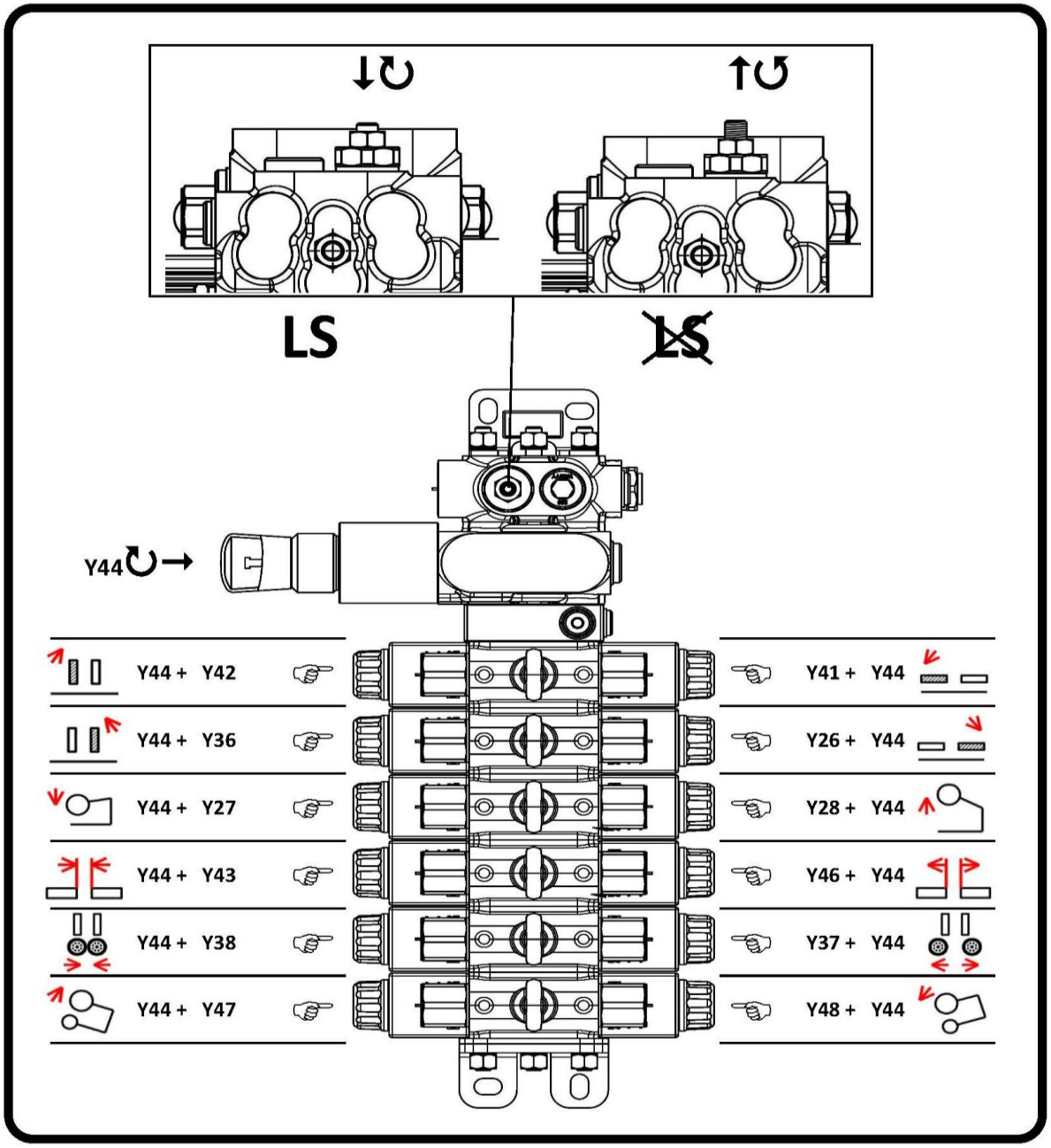


Key assignment standard operation

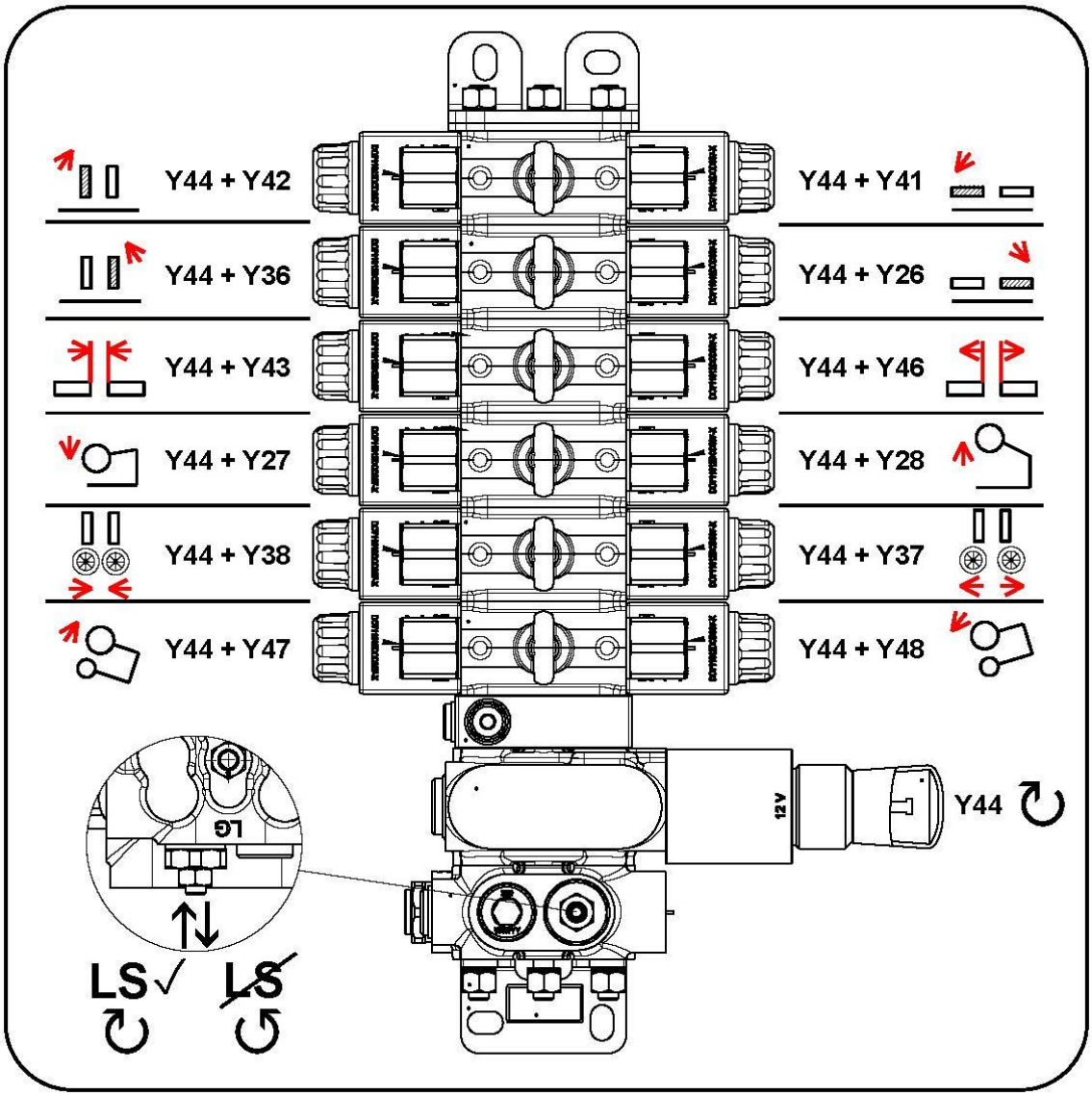
1) Go to the start menu with ESC
2) Press and hold the STOP button until the signal tone sounds.
3) Press and hold the hand symbol until the signal tone sounds.
4) Now the key assignment for emergency operation applies
5) **Folding the machine from transport position to working position.**
   ATTENTION: Bring the tractor with the machine into a level and stretched position!!!
   a) Press button (F) to swing the wheels all the way out.
   b) Press button (G) and carefully push the working units upwards out of the transport lock.
   c) Press button (A) and (D) and swing both outriggers down synchronously and step by step.
   d) Press button (K) so that both top link cylinders are completely retracted to pull the working units upwards.
   e) Press the button (N=!) to move the outriggers to the floating position.
   f) Select the desired swath deposit with button (G) or (H).
6) **Folding the machine from working position to transport position.**
   ATTENTION: Bring the tractor with the machine into a level and stretched position!!!
   a) Lift the working units via the machine linkage with the tractor control unit.
   b) Press button (G) and bring the working units to maximum working width.
   c) Press button (L) so that both top link cylinders are fully extended to lower the working units completely.
   d) Press button (B) and (C) and swing both outriggers synchronously and step by step upwards.
   e) Press button (H) and gradually pull the work units downwards into the lock
   f) Press button (E) to swivel the wheels inwards.

13. Hydraulic emergency operation

13.1. Machines until year of construction end 2020



13.2. Machines from year of construction 2021



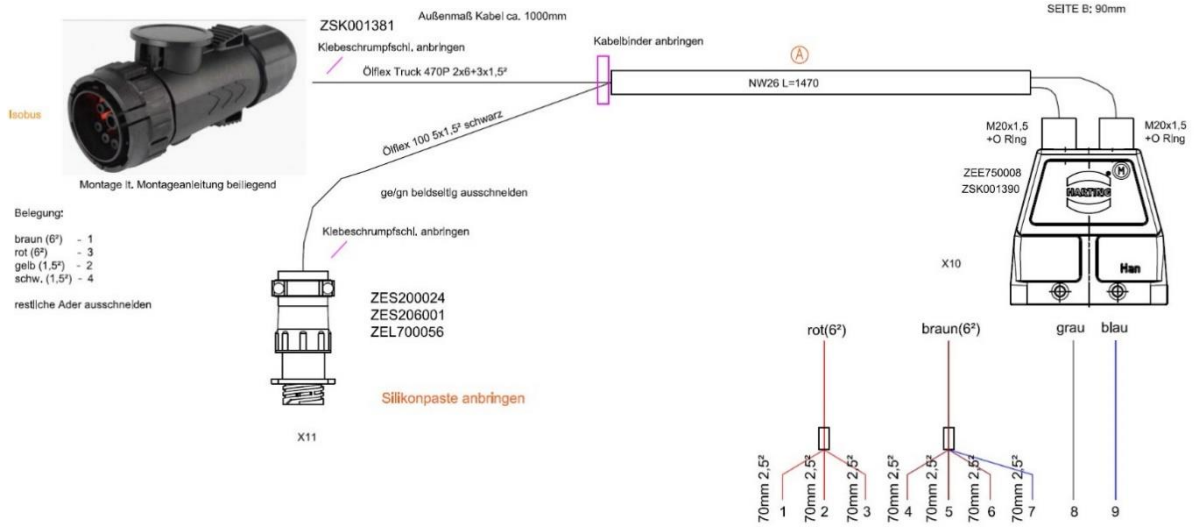
14. Electro- and hydraulic plan

14.1. Legend

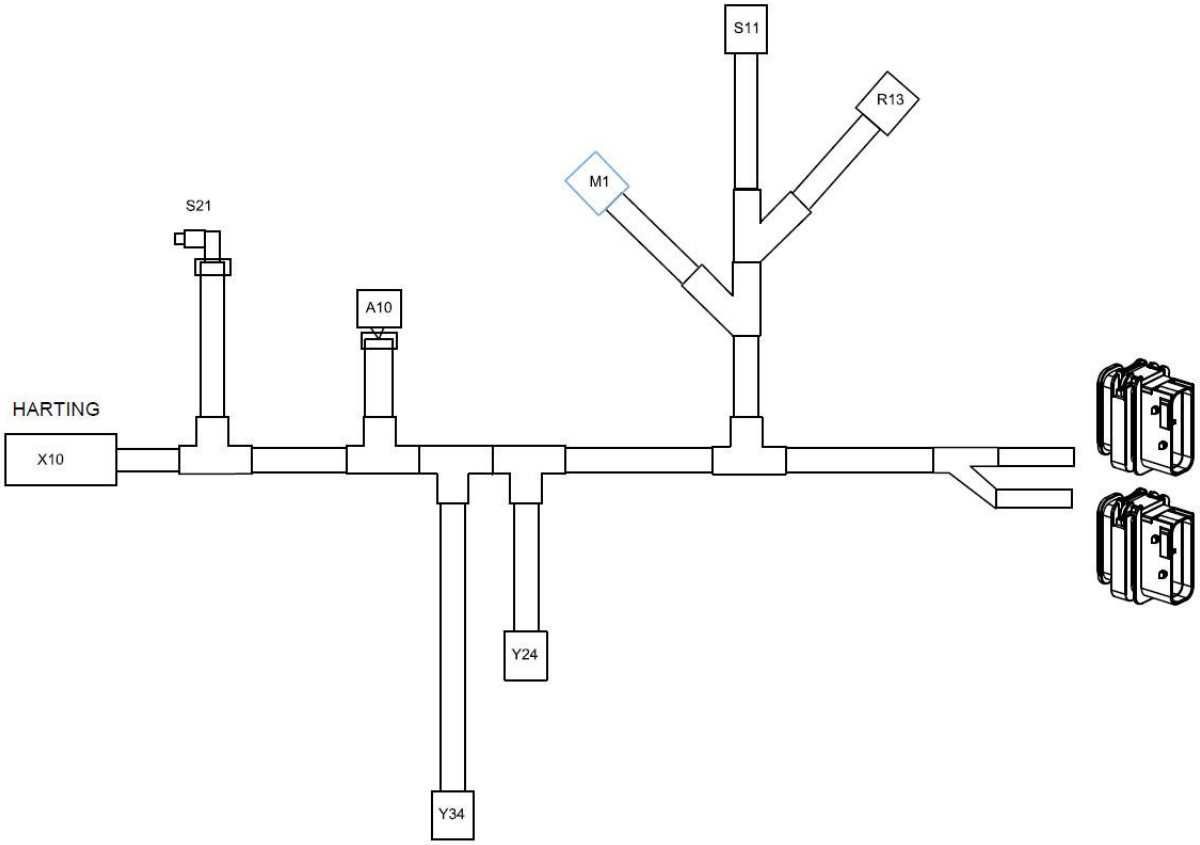
X10 Drawbar connector
X60 Plug module left
X70 Plug module right
A10 Cooler control module
A20 CAN module 1 central
A30 CAN module 2 central
A40 CAN module 3 central
A60 CAN module left
A70 CAN module right
S11 Oil level switch
R12 Oil temperature radiator
R13 Oil temperature at/in the tank
S21 PTO speed
R23 Position lifting unit working unit left
R24 Telescopic frame outrigger left
R25 Outrigger position to main frame left
R33 Position lifting unit working unit right
R34 Telescopic frame outrigger right
R35 Outrigger position to main frame right
S41 Speed pulse wheel left
S42 Speed pulse wheel right
R43 Tilt sensor
S61 Speed pulse belt
S62 Speed pulse rotor
R65 Rotor position
S71 Speed pulse belt
S72 Speed pulse rotor
R75 Rotor position
M1 Oil cooler
H61 Worklights
H71 Worklights
Y21 2/2 directional control valve boom swing cylinder left
Y22 2/2 directional control valve Rotor lift left
Y23 2/2 way valve lateral offset left / from 2021 rotor lock left
Y24 Prop valve AXKO 1
Y26 Boom swing cylinder right Coil a
Y27 Directional control valve Rotor lift Coil a
Y28 Directional control valve Rotor lift Coil b
Y31 2/2 directional control valve Boom swing cylinder right
Y32 2/2 directional control valve Rotor lift right
Y33 2/2 way valve lateral offset right / from 2021 rotor lock right
Y34 Prop valve AXKO 2
Y36 Boom swing cylinder right Coil b
Y37 Wheel swing arm Coil a
Y38 Wheel swing arm Coil b
Y41 Boom swing cylinder left Coil a
Y42 Boom swing cylinder left Coil b
Y43 Side shift coil a
Y44 Pilot valve (V4)
Y46 Side shift coil b
Y47 Hydr. top link Coil a
Y48 Hydr. top link Coil b
Y63 Directional valve belt direction left
Y64 Prop valve belt
Y66 Directional valve belt direction right
Y73 Directional valve belt direction left
Y74 Prop valve belt
Y76 Directional valve belt direction right

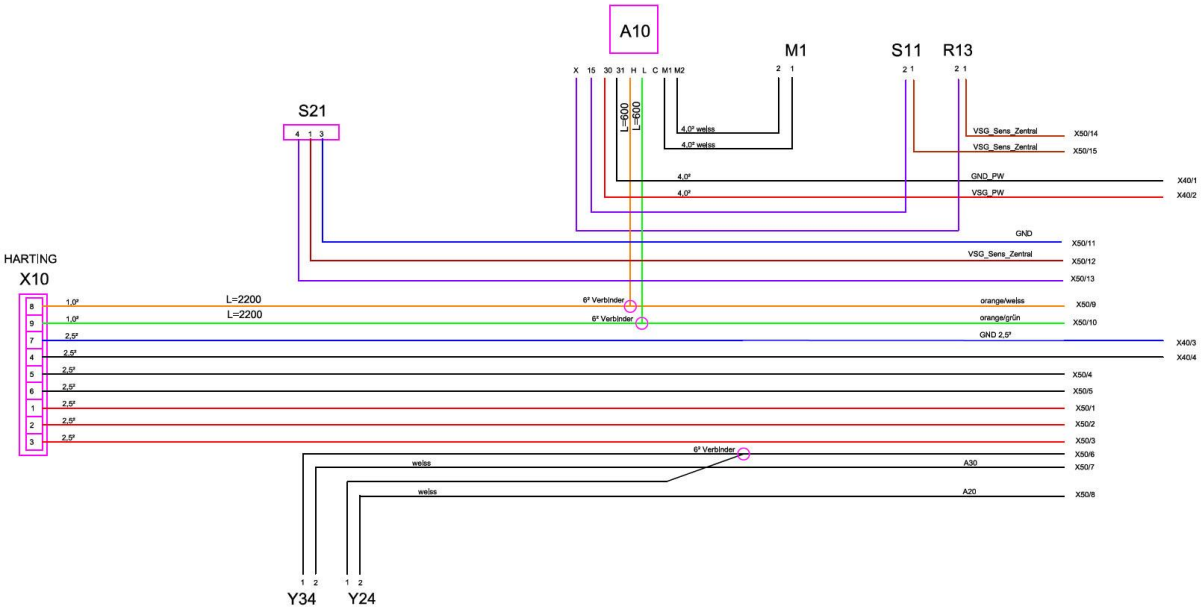
14.2. Electro plan

14.2.1.Wiring harness ISOBUS

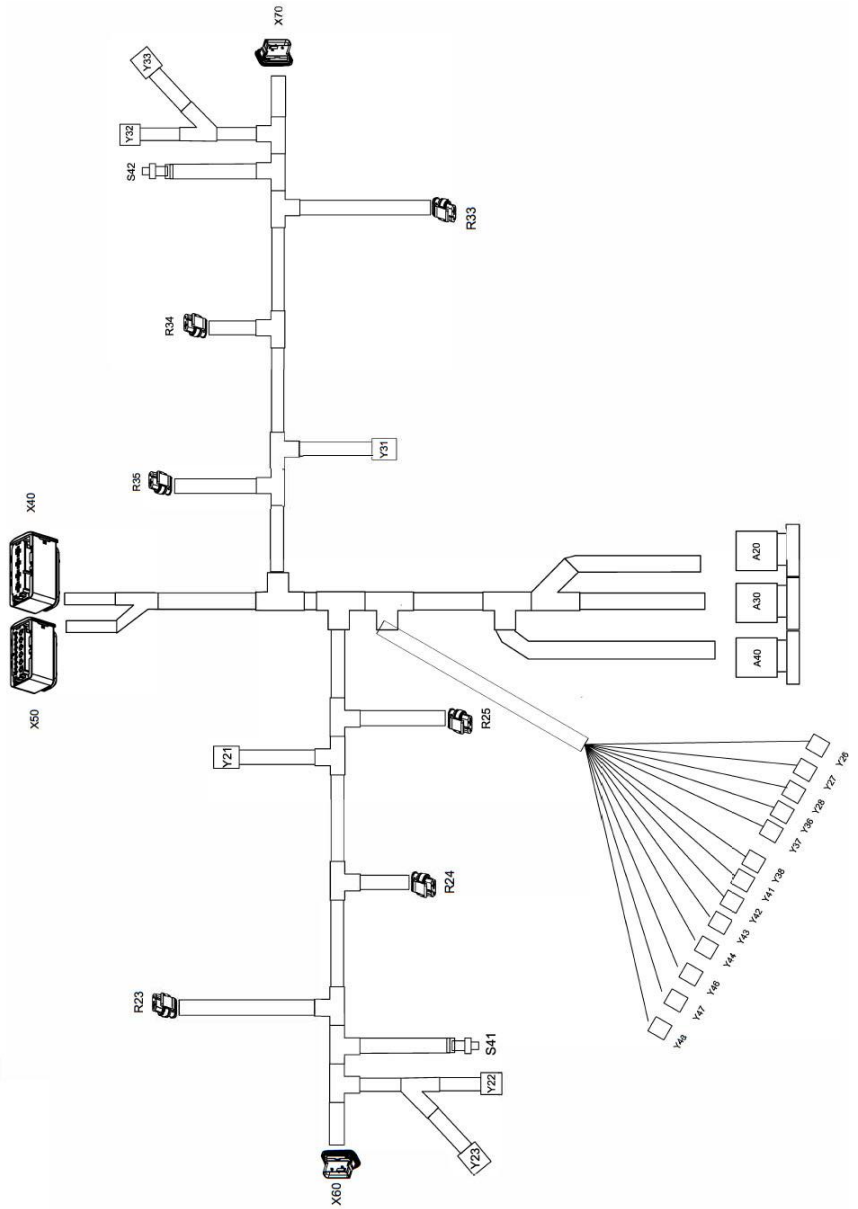


14.2.2.Wiring harness central 1

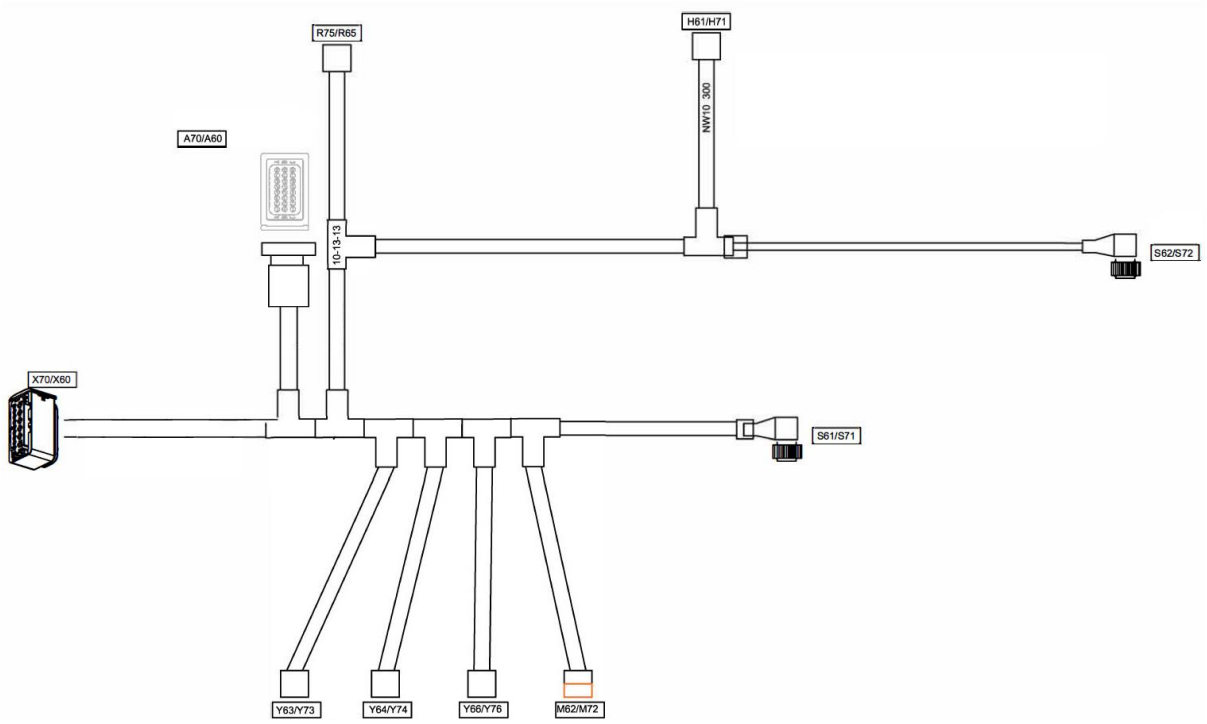




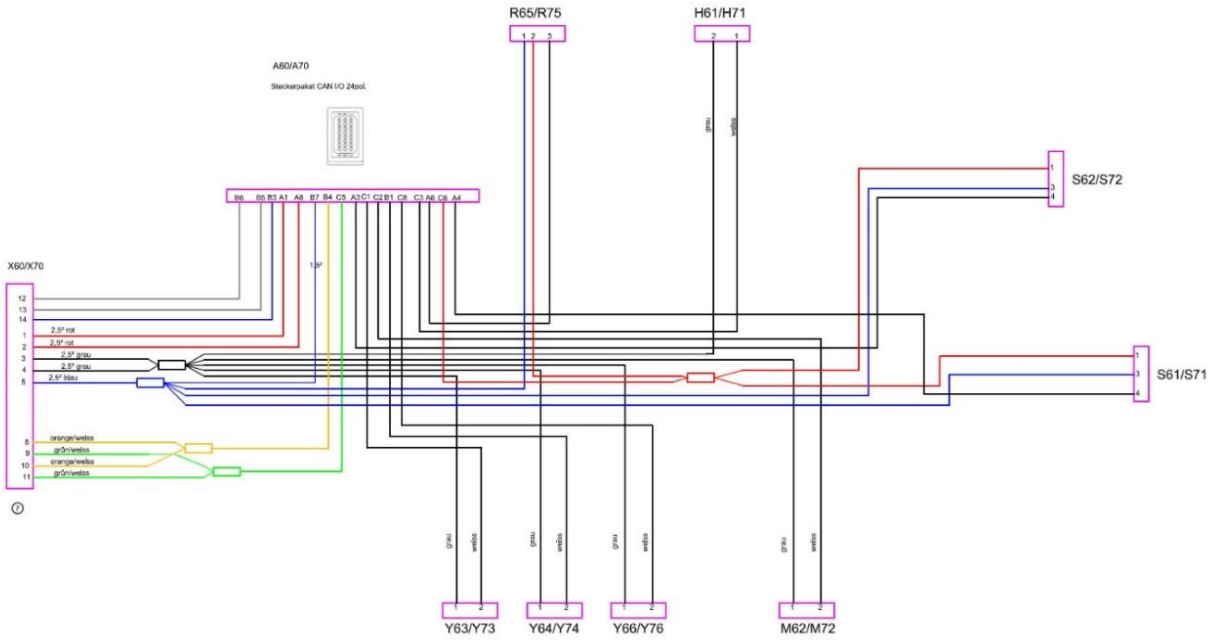
14.2.3.Wiring harness central 2



14.2.4.Wiring harness left right

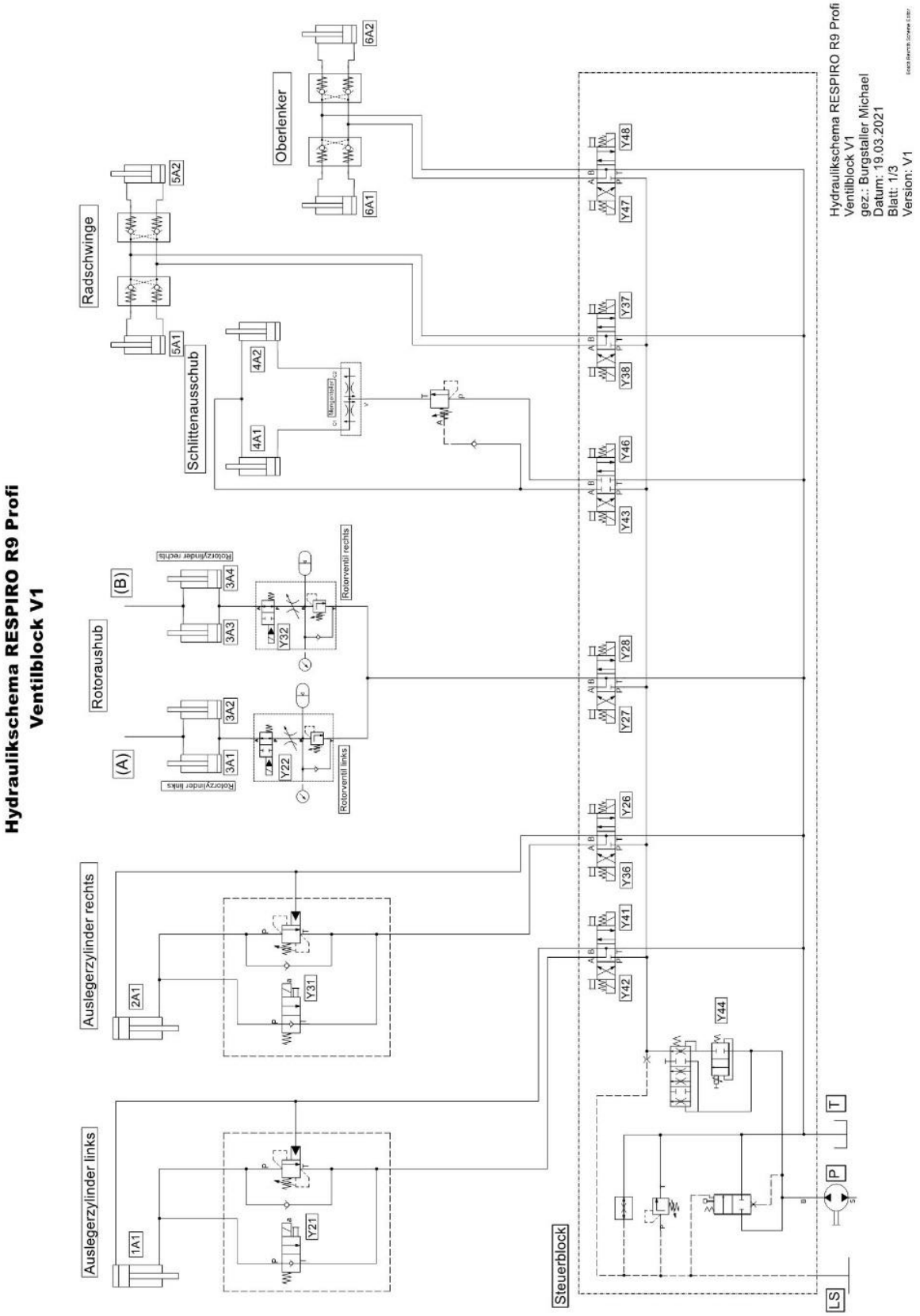


Belegung

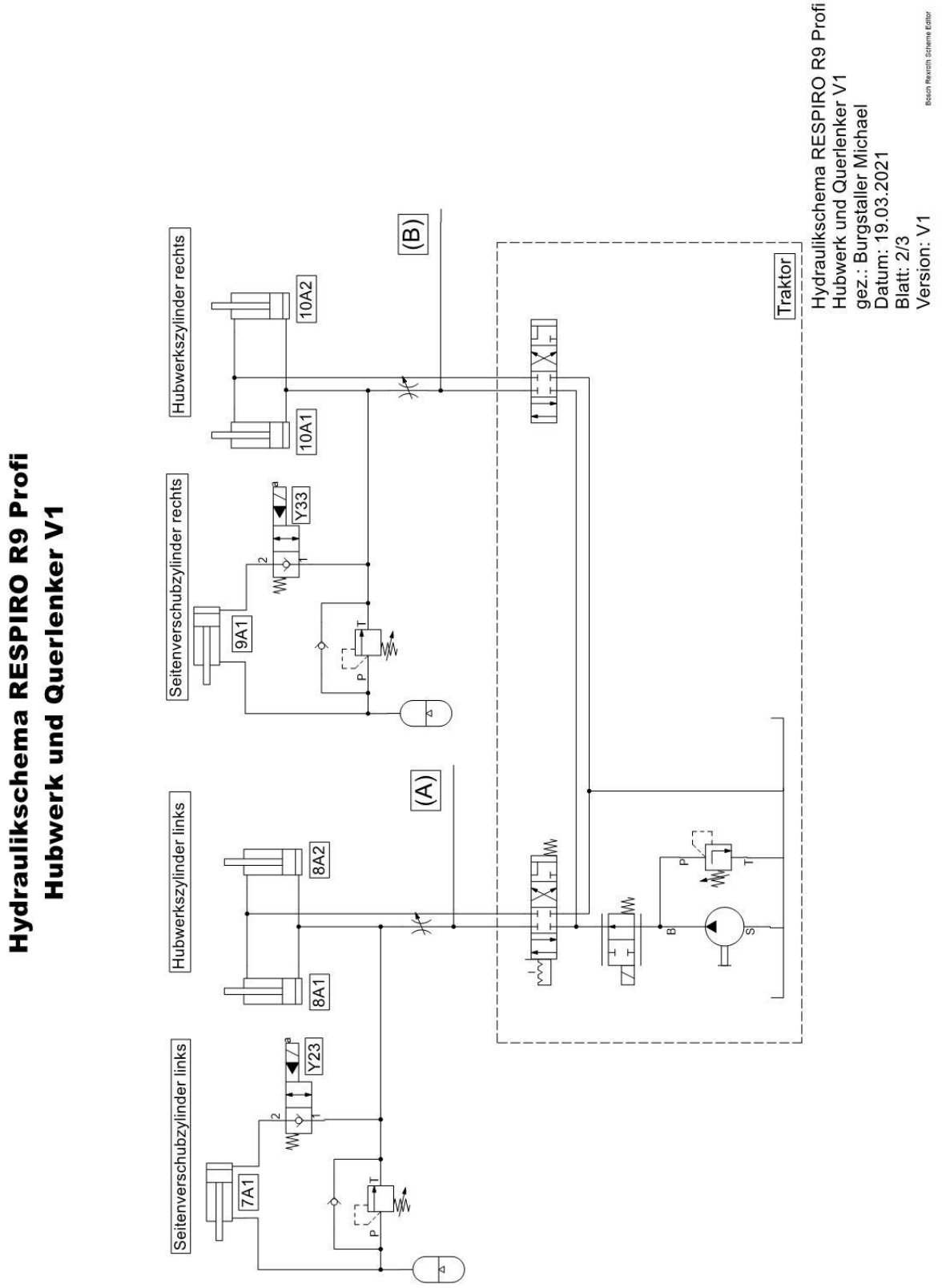


14.3. Hydraulic plan

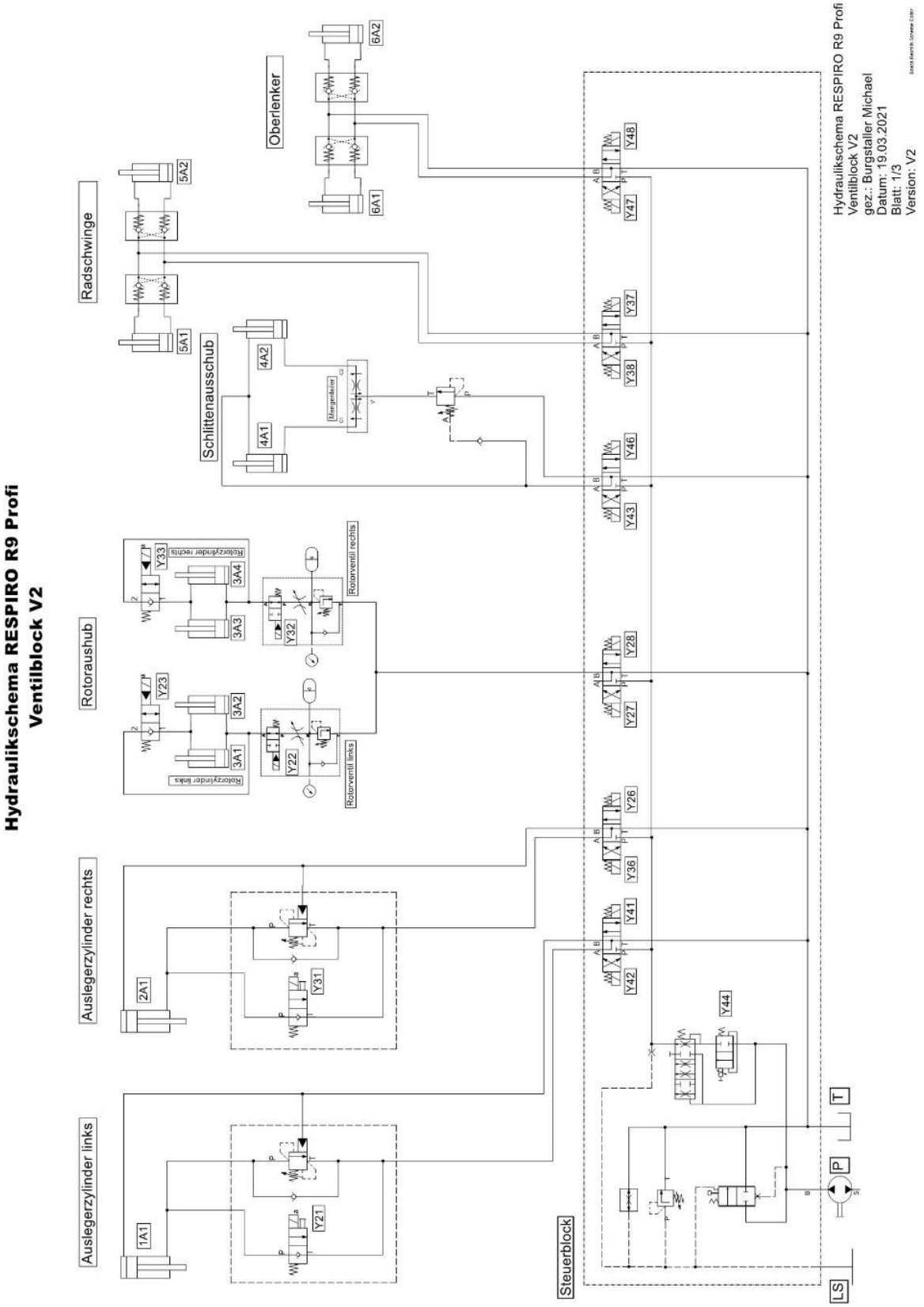
14.3.1.Valve block until year of construction 2020



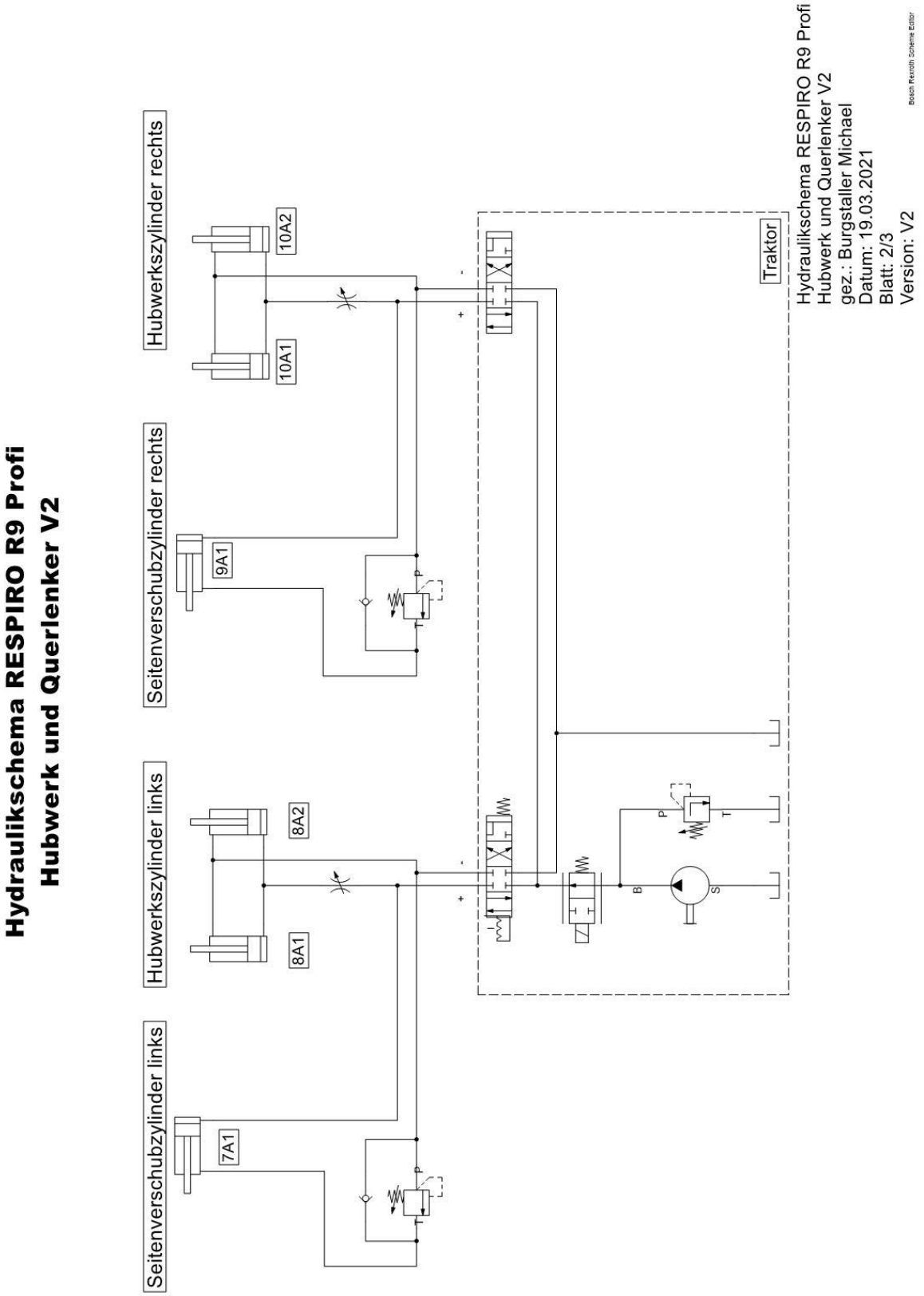
14.3.2.Lifting unit and wishbones until year of construction 2020



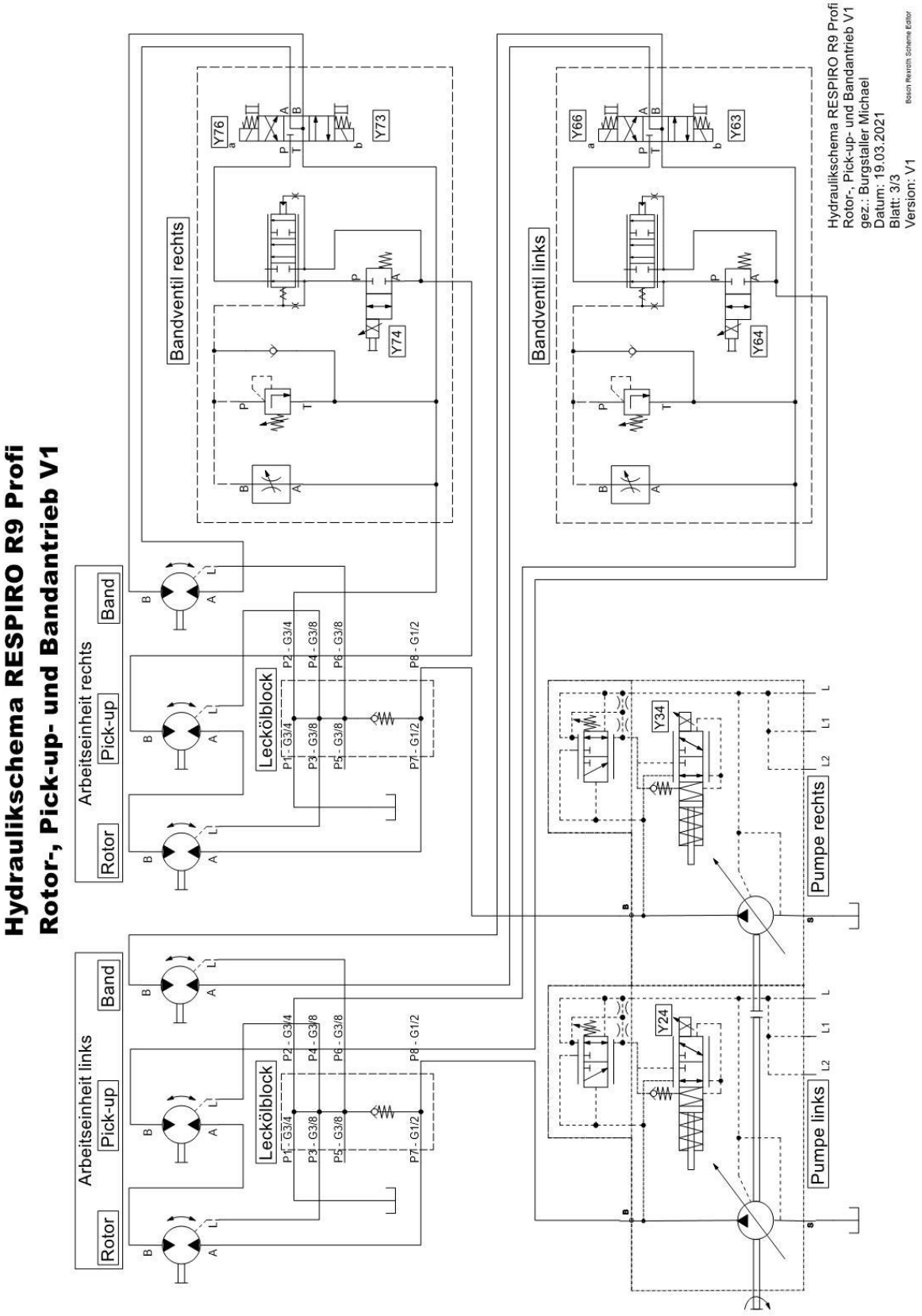
14.3.3.Valve block from year of construction 2021



14.3.4.Lifting unit and wishbones until year of construction 2020



14.3.5.Rotor-, pick-up- and belt drive



15. Useful tips

15.1. Parking without folding together

- If possible, park the machine in a hall or in the shade.
- Slowly lower both working units, then move them in in floating position
- Lower the supporting foot and switch off the tractor
- Disconnect the connections and remove the PTO shaft
- Use wheel chocks on steep terrain
- Lower the lower links and extend them

16. Storage tips

The following storage instructions increase the longevity of the product

The machine should be parked on a flat and even surface.

- Pick-up is distorted as little as possible. Increases the longevity
- Pick-up tines cannot be damaged

16.1. Parking outdoors

- Do not park the machine in strong sunlight. This can lead to malfunctions due to the build-up of pressure in the hydraulic lines.
- To protect the plastic part, it is recommended to park the machine in the shade.

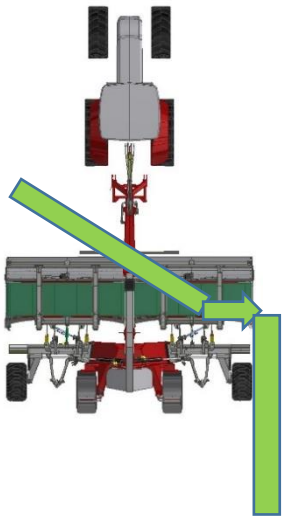
16.2. Winter storage

- Clean machine
- Grease / Lubricate
- Replace wear parts as required
- Check tire pressure
- Touch up possible defects to the paint
- Best stored under a roof
- In case of cold, do not activate the machine at full throttle
- Store control terminal in a dry location

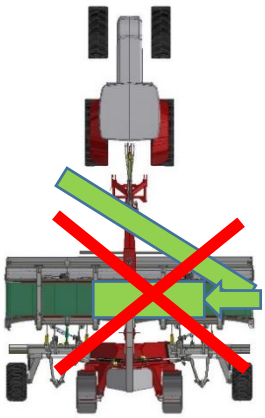
17. Recommendations for the successful use of RESPIRO technology:

1. The machine may only be operated by trained personnel.
2. Machinery rings should choose the smallest possible number of drivers.
3. Before each use, check the most important points as described in the operating instructions.
4. The highest priority when working with the belt rake is the uniformity of the swath. This allows every harvester to deliver the best performance. If the windrow is uneven, this reduces the efficiency of the subsequent harvesting technique enormously.
5. Even swaths are achieved when ...
   a) the driving speed approximately coincides with the belt speed. The flow of the crop must always be done without faltering. If the belt speed is too small, the effect of "dripping" and thus heap formation begins
   b) no sudden changes in working speed are made, especially by sharp braking
   c) the first two rounds are swathed in the middle of the field; This is especially valid in the field corners.
   d) for operation in side delivery, in the corners deliver the swath outwards.
   e) in sharp field corners raking is performed out of the corner, so the machine is pushed backwards into the field corner and then begins the swathing
   f) it does not accumulate on the belt when picking up already laid swaths at an oblique angle, but the absorbed material can flow away unhindered

Right

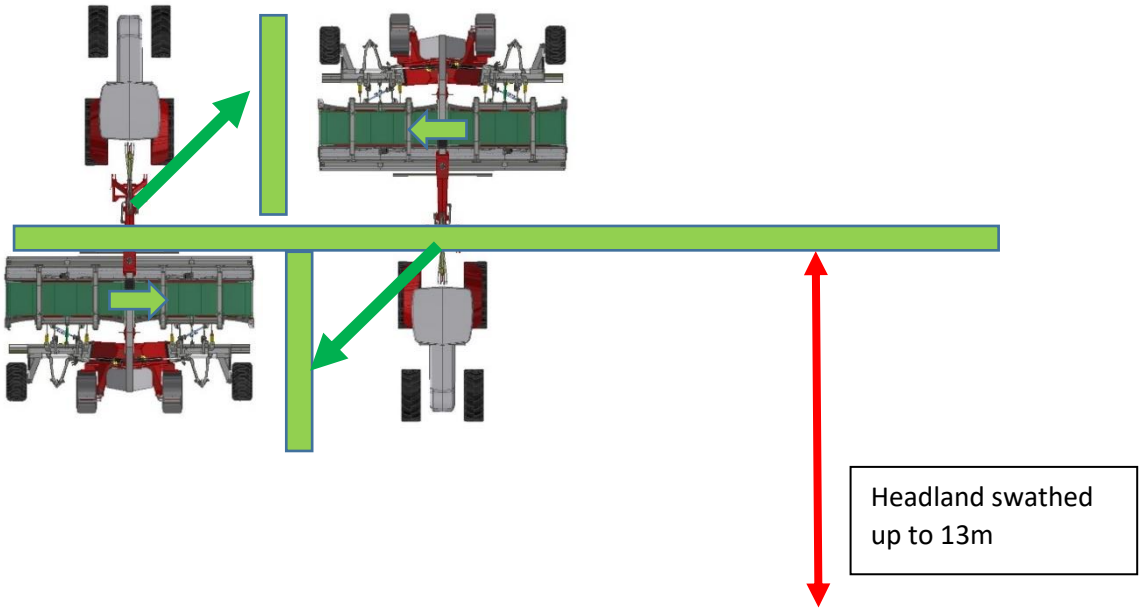


False



g) the rotor works in the lowest position, especially with short harvested crops, because it optimally supports the crop flow
h) If there is a blockage on the belt, raise the rotors and eject the crop during forward travel. This distributes the accumulated mass on the belt as well as possible at the desired location
i) The belts must not be reversed while driving in the direction
j) Make sure that the blets are running before feeding crop over the pick-up on the belt
6. For the forage harvester, the swaths should be laid side by side. This allows the chopper to achieve the best throughput.
7. For sensitive crops such as alfalfa, etc. reduce the system speeds to minimize leaf and disintegration losses.
8. Be sure to use the lowering limit for the working units when turning grain straw. This reduces wear.

9. For the use of maize straw, the working units are to be led just above the ground so that an optimal compromise between the quality of the harvest and the cleanliness of the harvested crop is achieved.
10. The headland should be cleared at least 10m - so the crop is no longer run over when turning.
11. The following diagram shows the rapid start-up at the swath at the headland. In doing so, we shift the crop on the windrow when approaching to the middle of the field and "drag it out" when driving out into the headland.
Advantage: there are no crop accumulations despite cross swathing on the headland.



12. To clean the field, if necessary, after chopping, or where crop has been left lying, turn off the belts and collect the remains on the belt. Thereafter, this residual amount can be disposed of at the edge of the field or placed to already laid swaths.
13. The belt rake allows comfortable transfer of swaths from wet field locations.
14. Through the use of tracking systems, the windrow quality can be significantly increased. Likewise, the performance improves because you work cleanly with less overlap.
15. Stemy crops like green rye, mowed without a conditioner, are best swathed from the plant's head. This achieves an optimal crop flow and also high possible working speeds.
16. Crop mowed with conditioner is easier to rake. If mowing without a conditioner and subsequent swathing leads to poor quality of raking, an attempt can also be made to lightly rake diagonally.
17. If the goal is to achieve the best possible rakeing quality of the subsequent harvesting machine, it is advantageous to lay the swath completely on already worked surface. This also has the further advantage that the ventilation from the ground is optimal.

18. For operation on a slope, a front ballast is useful.
19. For narrow swathing for presses and loader wagons, adjust the belt speed and working speed.
20. Share your experience with us and other colleagues – Thanks!

RESPIRO – boost your forage productivity

RESPIRO R3/3.5 compact

RESPIRO R3/3.5 profi

RESPIRO R6/7 rd

RESPIRO R9 profi

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