Operator‘s manual

Translation of the original Operating Manual

Nr. **99+3843.EN.80V.0**

Chassis Nr.

Disc mower

NOVACAT X8 ED/RCB/COLL

(Type PSM 3843 : + . . 01483**)**

Pöttinger - Trust creates Affinity - since 1871

"Quality pays for itself." Therefore we apply the highest quality standards to our products which are constantly monitored by our in-house quality management and our management board. Because the safety, perfect function, highest quality and absolute reliability of our machines in operation are the core competencies for which we stand.

There may be deviations between these instructions and the product as we are constantly developing our products. Therefore no claims may be derived from the data, illustrations and descriptions. Please contact your Specialist Service Centre for any binding information about specific features of your machine.

We would ask you to please understand that changes to the scope of supply with regard to form, equipment and technical specifications are possible at any time.

Product liability, information obligation

Product liability obliges manufacturers and dealers to issue operating instructions for the machine at the point of sale and to instruct the customer on the operation, safety and maintenance regulations governing the machine.

Confirmation is required to prove that the machine and the operating instructions have been properly handed over. For this purpose you have received a confirmation e-mail from Pöttinger. If you have not received this mail, please contact your local dealer. Your dealer can fill in the handover declaration online.

For the purposes of product liability law, every farmer is an entrepreneur.

In the terms of product liability law, damage to property is any damage arising due to the machine, but not to the machine, and an excess (500 euros) exists for this liability.

Corporate damage to property within the terms of the product liability law is excluded from this liability.

Be advised! The operating instructions must also be handed over with any subsequent machine sale or transfer and the transferee must be instructed in the regulations stated.

Refer to PÖTPRO for additional information about your machine:

Are you looking for suitable accessories for your machine? No problem! All the information you require is here at your disposal. Scan the QR code on the machine's type plate or look under www.poettinger.at/poetpro

And if we don't have what your looking for, then your Specialist Service Centre is there for you with help and advice.

EN INSTRUCTIONS FOR PRODUCT HANDOVER

PÖTTINGER Landtechnik GmbH
Industriegelände 1
4710 Grieskirchen, Austria
Tel. 07248 / 600 -0
Telefax 07248 / 600-2511

According to the product liability please check the above mentioned items.

Please place a cross where appropriate. [X]

- ❑ Machine checked according to delivery note. All attached parts removed. All safety equipment, drive shaft and operating devices at hand.
- ❑ Operation, commissioning and maintenance of the machine or device discussed and explained to the customer on the basis of the operating instructions.
- ❑ Check tyres for correct air pressure.
- ❑ Check wheel nuts for tight fit.
- ❑ Correct PTO shaft speed indicated.
- ❑ Adaptation to the tractor carried out: Three point adjustment
- ❑ Cardan shaft correctly cut to length.
- ❑ Test run carried out and no defects detected.
- ❑ Function explanation during test run.
- ❑ Swivel in transport and working position explained.
- ❑ Information about optional equipment is given.
- ❑ Indication of unconditional reading of the operating instructions.

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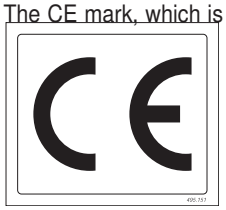
Table of contents

Recommendations for work safety

All points refering to safety in this manual are indicated by this sign.

CE mark

The CE mark, which is affixed by the manufacturer, indicates outwardly that this machine conforms to the engineering guideline regulations and the other relevant EU guidelines.



EU Declaration of Conformity (see Attachment)

By signing the EU Declaration of Conformity, the manufacturer declares that the machine that is brought into service complies with all relevant fundamental safety and health requirements.

Safety hints:

These Operating Instructions contain the following Figures:

DANGER

If you do not follow the instructions in a text section with this marking, there is a risk of fatal or life-threatening injury.

- All instructions in such text sections must be followed!

WARNING

If you do not observe the instructions marked this way, there is the risk of a severe injury.

- All instructions in such text sections must be followed!

CAUTION

If you do not observe the instructions marked this way, there is the risk of an injury.

- All instructions in such text sections must be followed!

NOTE

If you do not observe the instructions marked this way, there is the risk of material damage.

- All instructions in such text sections must be followed!

TIP

The text sections marked in this way provide you with special recommendations and advise regarding the economical use of the implement.

ENVIRONMENT

The text sections marked in this way provide practices and advice on environmental protection.

The features marked as (optional) are only available as standard with specific implement versions or are only offered for specific versions as optional equipment or are only offered in certain countries.

Figures may deviate from your implement in detail and are to be taken as illustrations of operating principle.

Designations such as right and left always apply as the direction of travel unless the text or illustrations clearly show otherwise.

Introduction

Dear Customer

These Operating Instructions are intended to allow you to familiarise yourself with the implement and provide you with clear information on safe and correct handling, care and maintenance. Thus please take the time to read these Instructions.

These Operating Instructions comprise part of the implement. They are to be kept at a suitable location and accessible to staff over the entire service life of the implement. Instructions based on the national provisions regarding protection against accidents, road traffic and environmental protection are also to be applied additionally.

Any persons commissioned with the operation, maintenance or transport of the implement must read and understand these Instructions, in particular the safety information, prior to starting work. Any warranty claims lapse on non-observance of these Instructions.

In case you have questions related to this operation manual or further questions about this implement, please contact your dealer.

Care and maintenance performed in good time and scrupulously according to the maintenance intervals specified ensure operational and traffic safety as well as the reliability of the implement.

Use only the original spare parts and accessories from Pöttinger or accepted by Pöttinger. For those parts reliability, safety and suitability for Pöttinger machines can be assured. Warranty claims lapse if non-approved parts are used. The use of original parts is also recommended after the warranty period has expired to maintain the performance of the implement in the long term.

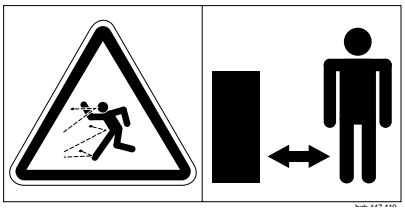
Product liability legislation obliges the manufacturer and the authorised dealer to issue Instructions when selling implements and to instruct customers in the use with reference to the safety, operating and maintenance regulations. Confirmation in the form of a declaration of transfer is required to verify that the implement and Instructions have been transferred correctly. The declaration of transfer was attached to the implement on delivery.

Every self-employed person and farmer is an entrepreneur within the meaning of the product liability legislation. In accordance with the laws of product liability, entrepreneurial property damages are excluded from the liability. All damage to property within the meaning of the product liability legislation is regarded as damage caused by the implement but not to the implement.

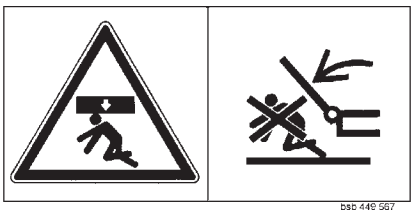
These Operating Instructions are integral part of the implement delivery scope. You should therefore hand them over to the new owner if ownership of the implement is transferred. Train and instruct the new owner in the regulations stated.

The Pöttinger Service-Team wishes you good luck.

Meaning of warning signs

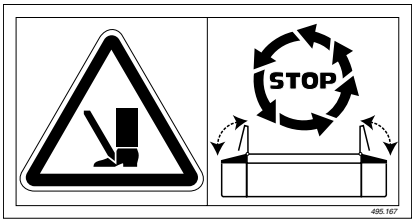


Danger - flying objects; keep safe distance from the machine as long as the engine is running.



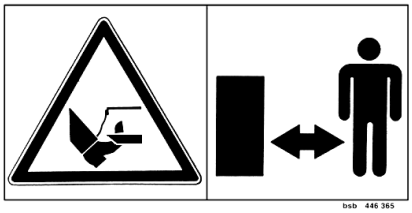
Do not stand in the implement's swivel range.

Do not touch rotating machine components.
Wait until they have stopped completely.

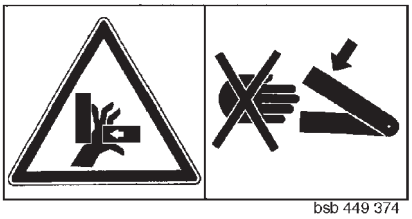


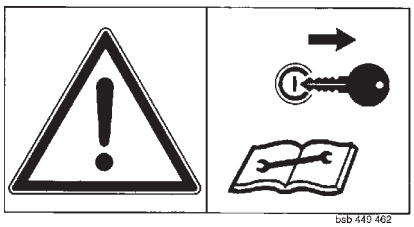
Close both side protective coverings before engaging p.t.o..

Never reach into the crushing danger area as long as parts may move.



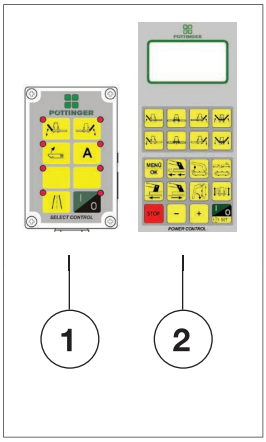
Stay clear of mower knife area as long as tractor engine is running with PTO connected.





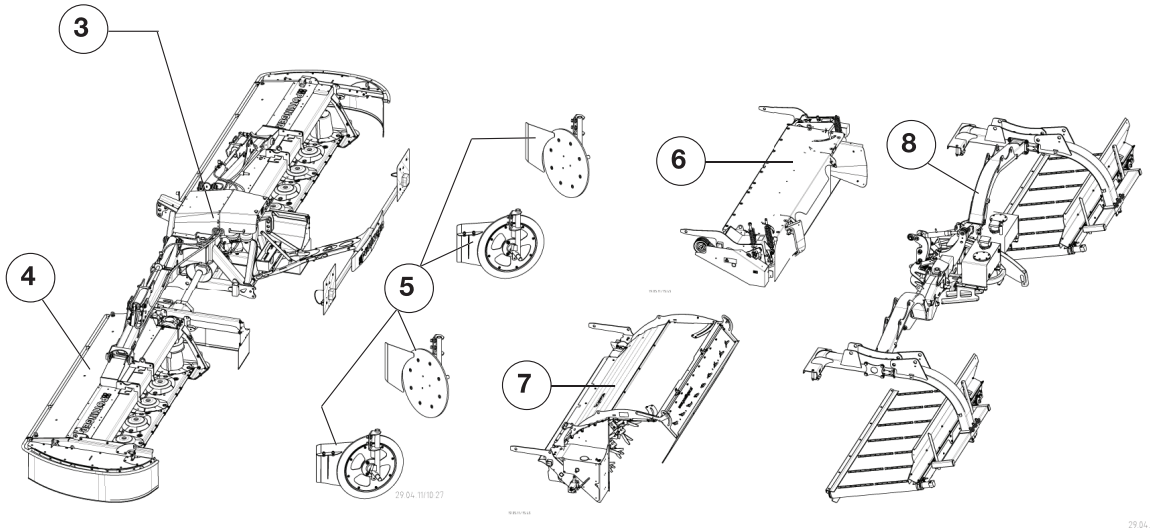
Shut off engine and remove key before performing maintenance or repair work.

Overview



Designations:

(1) Select Control
(2) Power Control (ISOBUS-compatible)
(3) Coupling jack with removable lighting beam
(4) Mower unit
(5) Swath former
(6) Tine conditioner
(7) Roller conditioner
(8) Cross conveyor belt



Versions

Control variants	Description
Select Control	Operation by means of Select Control (preselection circuit), spring relief, (not suitable for roller conditioners) and manual side protection folding.
Power Control (ISOBUS-compatible)	Operation by means of Power Control/ISOBUS, optionally hydraulic or spring pressure relief, automatic side protection folding, suitable for roller conditioner and cross conveyor belt.
Unit variants	**Description**
Reverse drive (tractor drives backwards)	Both versions are suitable for reverse drive in triple combinations.
ED	The mower units are fitted with a tine conditioner.
RC	The mower units are fitted with a roller conditioner.
Swath former	The mower units are fitted with a swath former.
COLL	The mower units are fitted with a cross conveyor belt.

Tractor

To operate this machine the following tractor requirements are necessary:

- Tractor power:
  "Front- / Rear mower" combination from 90 kW / 120 hp
  "Push-drive" combination from 130 kW / 200 hp
- Attaching: Lower link Cat. III
- Connections: see "Required hydraulics and Electrical Connections" table

Ballast weights

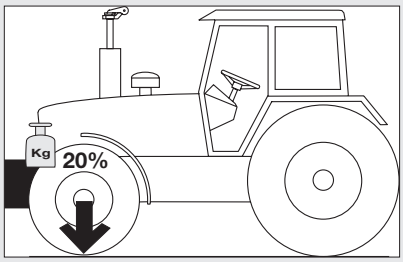
Ballast weights

The front of the tractor must have sufficient ballast weights to guarantee braking and steering capabilities.

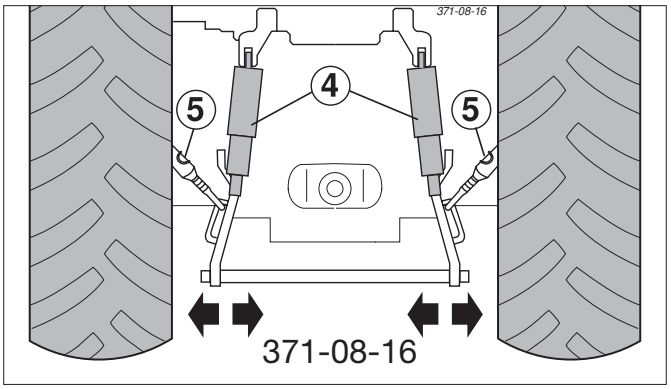
DANGER

Life-threatening danger or material damage through overloading or incorrectly balancing the tractor.

- The front axle of the tractor must always be loaded with at least 20% of the tractor's tare weight.

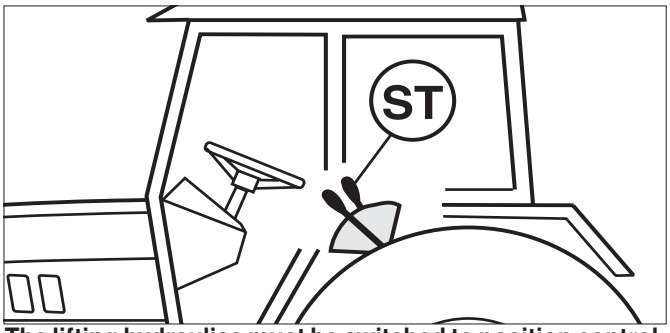


Lifting unit (three-point linkage)



- The tractor's lifting unit (three-point linkage) must be designed for the applicable load. (See technical data)
- The lifting struts are to be set at the same length (4) using the appropriate adjusting device
  (See the tractor manufacturer's operating manual)
- If the lifting struts on the lower links can be fixed in different positions, then the rear position must be selected. This relieves the pressure on the tractor's hydraulic system.
- The limiting chain or lower link stabilisers (5) are to be set so that the attached machine CANNOT move sideways. (Safety measure for transportation)

Hydraulic control on the lifting gear



The lifting hydraulics must be switched to position control:

Necessary hydraulic connections

Design	Consumer	Single-acting hydraulic connection	Dual-acting hydraulic connection	Identification (on the machine)
Select Control	Rear mower	X		
	Front mower	X		
	Hydraulic upper link (variant)		X	

Power Control / ISOBUS Terminal	"Advance" SN 16 red hydraulic connection
	"Return" SN 20 blue hydraulic connection
	Load-sensing connection SN 6 *)

Operating pressure	
Minimum operating pressure	170 bar
Maximum operating pressure	200 bar

NOTE

Risk of material damage due to incompatible oils.

- Check that hydraulic oils are compatible before connecting machine to the tractor's hydraulic system!
- Do not mix mineral oils with organic oils!

Power connections required

Design	Consumer	Pin	Volt	Power connection
Standard	Lighting	7-pin	12 V DC	According to DIN-ISO 1724
Select Control	Control	3-pin	12 V DC	per DIN-ISO 9680
Power control / ISOBUS	Control	3-pin	12 V DC	per DIN-ISO 9680

Safety advice

DANGER

Life-threatening danger through operating a machine that is unroadworthy or damaged

- Check the vehicle for roadworthiness prior to every operation (lights, brakes, protective panels …)!

DANGER

Life-threatening danger through implement operation with self-driven machines. The field of vision during a transport run is restricted when a NOVACAT X8 is attached.

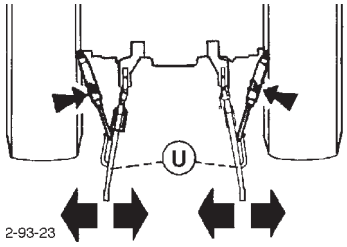
- Operate the machine only with tractors whose field of vision remains unaffected by the unit during transport.

For further safety instructions **see Supplement A1, pt. 7), 8a. - 8h.)**

Attaching machine to tractor

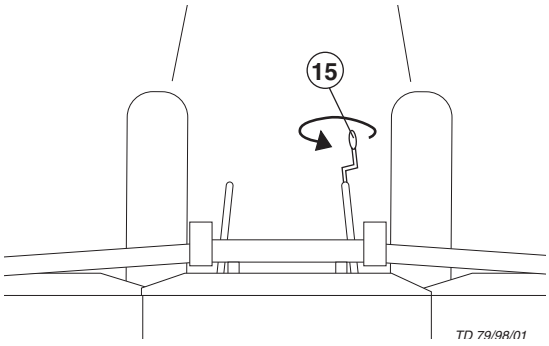
Attach mower centrically to tractor

- Adjust lower link accordingly.
- Fix the hydraulic lower link so that machine cannot swing out sideways.



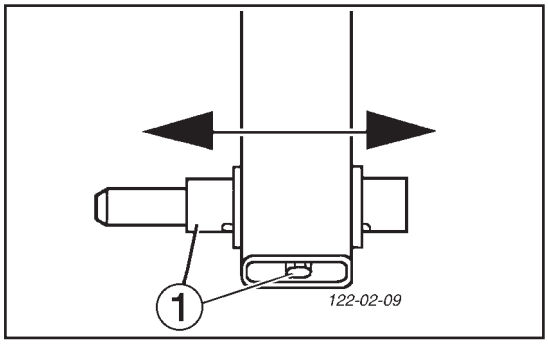
Mounting frame horizontal

- Bring mounting frame to horizontal position by adjusting lower link jackscrew (15).



Pin machine to three-point attaching frame

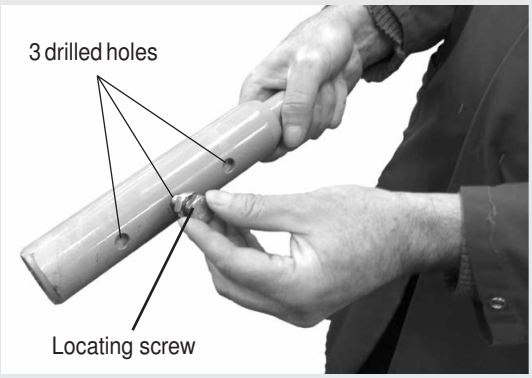
- Adjust the lower link bolts (1) on the bearing frame using the locating screw, according to the three-point category and the track width. The mower must not brush the tractor's rear tyres.



NOTE

Risk of material damage due to improper attachment.

- Pat attention that the locating screw is anchored correctly in the desired hole!

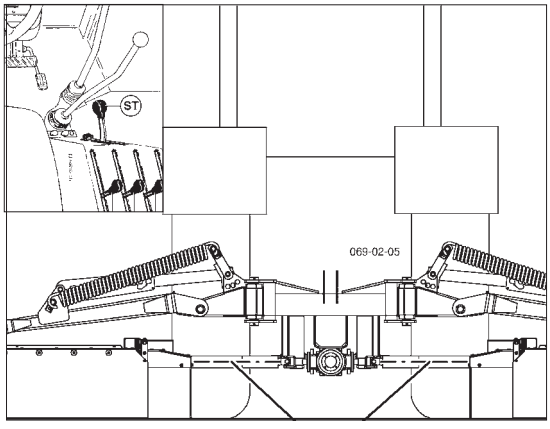


Setting lower link height

- Set tractor hydraulics (ST) using the depth stop.

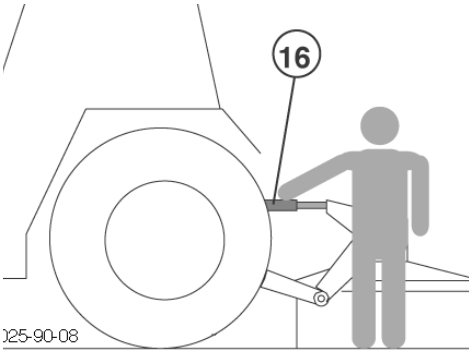
  Recommended lower link height: 55cm

  This height allows optimum uneven ground compensation and does not need to be changed when the cutter bar is raised.



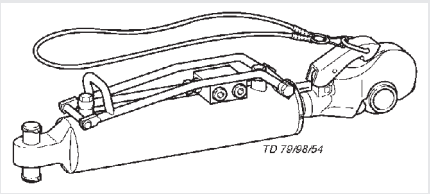
Adjust upper linkage spindle

- Cutting height is set by turning upper link spindle (16).



TIP

A hydraulic upper link is recommended (double-acting implement).



Connect to tractor

TIP

The connecting lines between the front and rear mowers must be adapted to the tractor.

Secure the lines properly.

Operation:

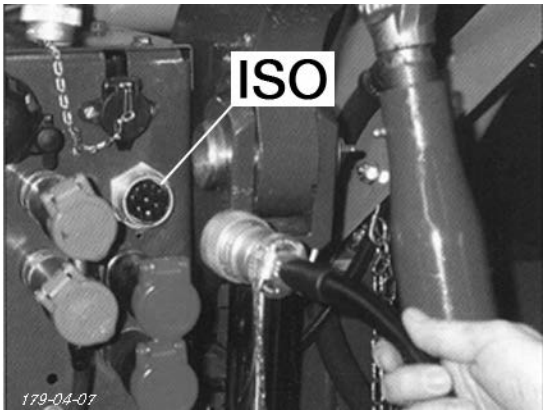
- Connect 3-pin plug to the DIN 9680 socket on tractor

Lighting:

- Connect 7-pin plug to tractor
- Check that lighting functions properly.

For tractors with Isobus control

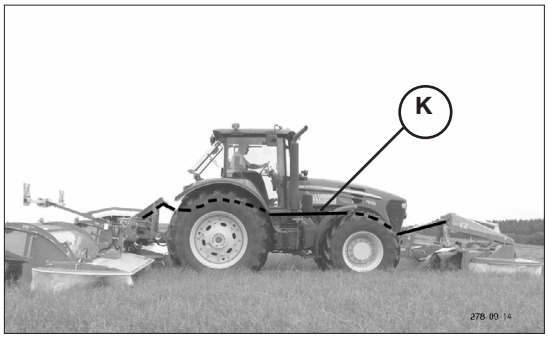
- Connect the 9-pin ISO plug to the ISObus socket on the tractor.



Attach connecting lines from the front mower.

"Power Control" version

With the "Power Control" variant, it is possible to control the automatically folding front mower side guard and the rear mower simultaneously. (Optional extra)



TIP

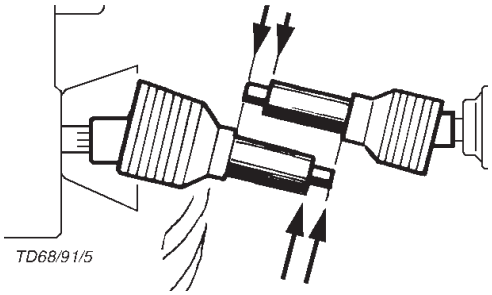
The hydraulic hoses between front and rear mower are pressurized. Ensure they are depressurized before disconnecting:

Power Control Press key until signal tone is heard (approx. 3 Sec)

Isobus: Press key until signal tone (approx. 3 Sec)

Attach the cardan shaft

- Before initial operation, check the cardan shaft length and adapt if necessary. See also chapter "Drive Shaft" in Supplement B.



Connect the speed monitoring unit

- Connect the speed cable to output S2 of the machine's wiring harness and to the tractor's Isobus terminal.

- For configuring the speed monitoring unit in the configurations menu, see "Speed signal from tractor available".

Hydraulic connection ("Power Control" version)

Minimum hydraulic system:

1 single-acting hydraulic circuit (EW) with depressurized return flow (T)

Optimum hydraulic system:

1 single-acting hydraulic circuit (EW) with depressurized return flow (T)

1 dual-acting hydraulic circuit (DW) for hydraulic upper link

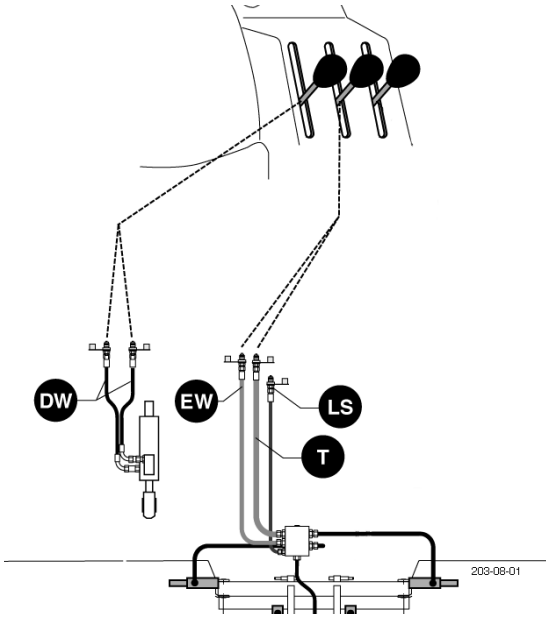
or

1x Load sensing hydraulic circuit (LS) **(Optional extra)**

consisting of:

- single-acting hydraulic circuit (EW)
- depressurized return (T)
- load sensing line

1x dual-acting hydraulic circuit (DW) for hydraulic upper link



Settings

The screw (7) on the hydraulic block must also be adjusted.

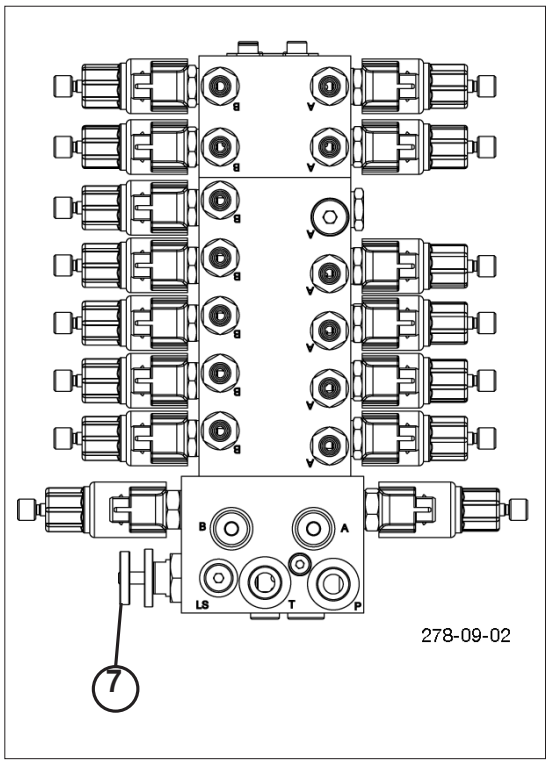
TIP

Separate the electrical connections!

Depressurize the hydraulics!

Power Control: Press key  until signal tone is heard (approx. 3 Sec)

Isobus: Press key  until signal tone (approx. 3 Sec)



For tractors with "Load sensing"

- Screw in screw (7) on hydraulic block completely

For tractors with a closed hydraulic system

- Screw in the screw (7) on hydraulic block completely

For tractors with an open hydraulic system

- Unscrew the screw (7) on hydraulic block completely

Be aware of cutting disc's direction of rotation

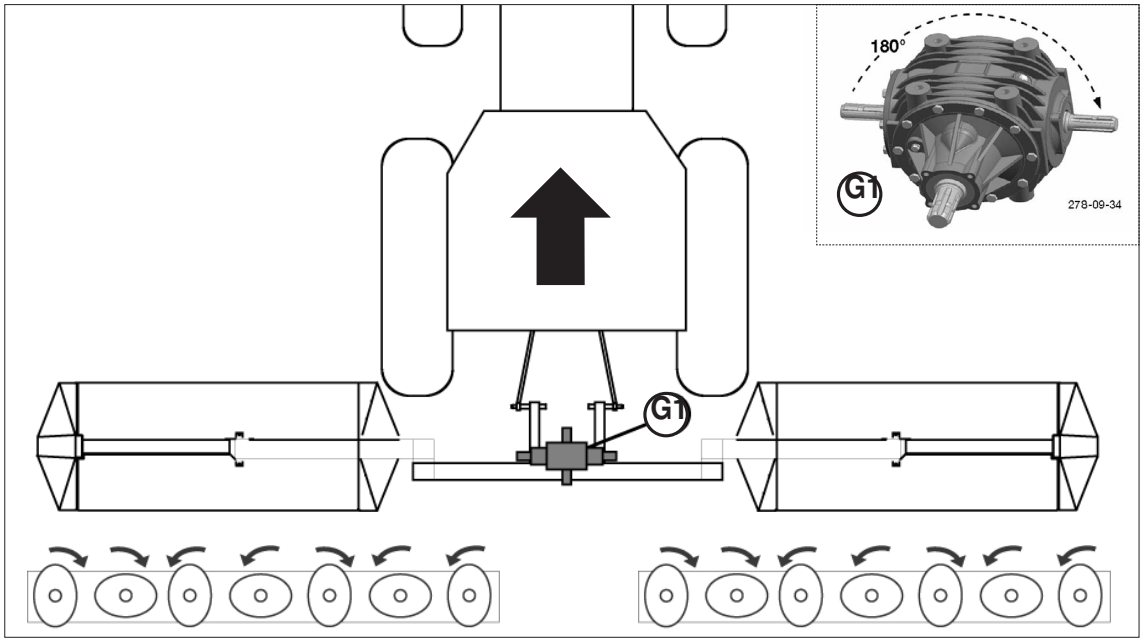
- Select appropriate rotation direction for the drive
- If the necessary p.t.o. direction of rotation cannot be selected from the tractor, then turn the gearing (G1) **180°** .

  In this case, replace the ventilation screw with the drain screw.

TIP

If the gearing has been turned then the ventilation screw must be replaced with the drain screw.

Correct position for ventilation screw is at the top!



Remove machine from tractor

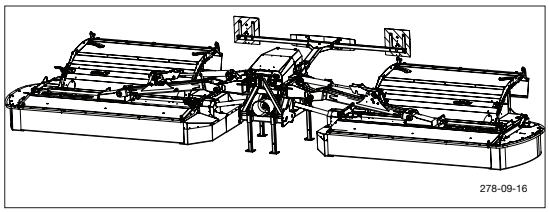
WARNING

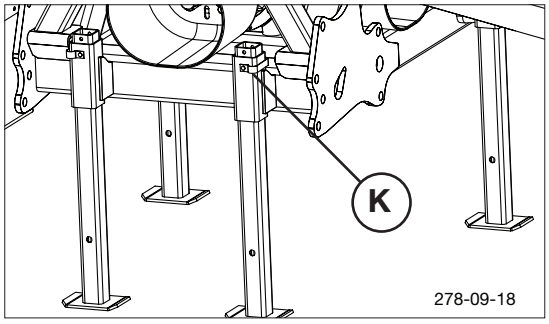
Risk of serious injury or injury resulting in death due to the machine tipping over.

- Park the machine only on firm, level ground. Make sure the ground is stable!
- Park the cross conveyor only on firm, level ground. Make sure the ground is stable!
- Only park the mower combination in the working position!

Uncouple disc mower:

- Uncouple connection lines and cardan shaft.
- Extend all 4 support feet on mounting frame and secure properly with linch pin (K).

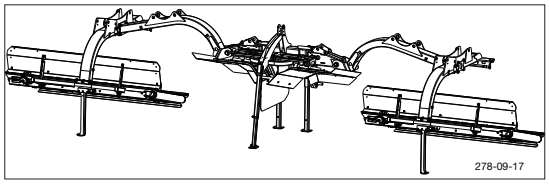




- Store control unit and connection lines on holder on mounting frame.
- Uncouple upper link and lower link.

"Cross conveyor belt" version:

- Uncouple connection lines and cardan shaft.
- Extend the 3 support feet on mounting frame and those on the cross conveyor belt, and secure properly with linch pin (K).



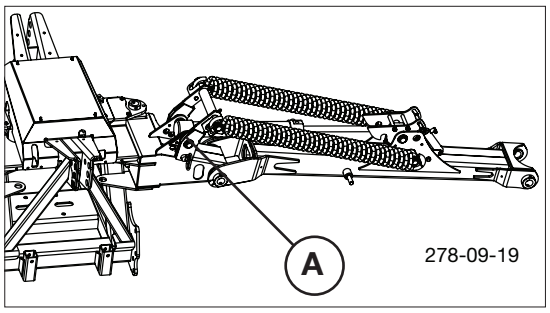
- Uncouple cross conveyor belt.

(Details see section on “Cross Conveyor Belt”)

Mechanical pressure relief of the mower units (Select Control)

The support weight of the mower units in the "Select Control" variant is reduced by an adjustable spring relief.

Setting:

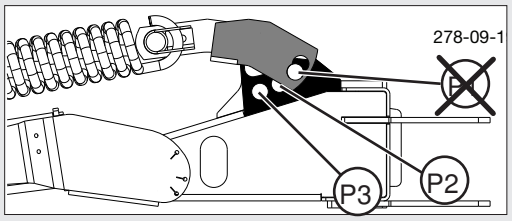


1. Raise the mower unit until the relief springs are no longer tensioned.
2 Pull out the locking pin and insert it in the desired position (for intermediate positions, turn the pin 180°).
3. Secure locking pin

NOTE

Risk of material damage to the cutter bar if the hydraulic relief is set too low.

- Do not pin the hydraulic relief in the P1 position. This is not suitable for mowers of this size.
- This position is safeguarded with a screw.



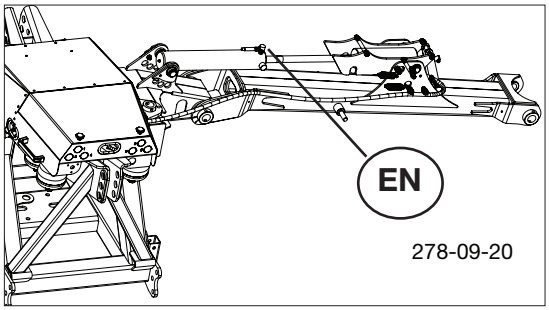
Hydraulic relief of mower units (Power Control)

In the "Power Control" version, the support weight of the mower units is reduced by means of an adjustable hydraulic relief. The adjustment is made via the control panel.

Setting:

See chapter "Power Control" and/or "ISOBUS"

Lowering speed:



The lowering speed of the mower units can be adjusted using the throttle valve (D).

TIP

The machine cannot be brought to the transport position if there is no pressure in the relief system.

Collision Prevention

An adjustable counter-pressure is generated hydraulically for the collision prevention system. The mower unit swings back slightly if this is exceeded. The return-swivel to the working position takes place automatically.

NOTE

It is not the purpose of the collision prevention system to prevent material damage to the machine when travelling at full speed.

- Drive at an appropriate speed.
- Drive within the line of vision.

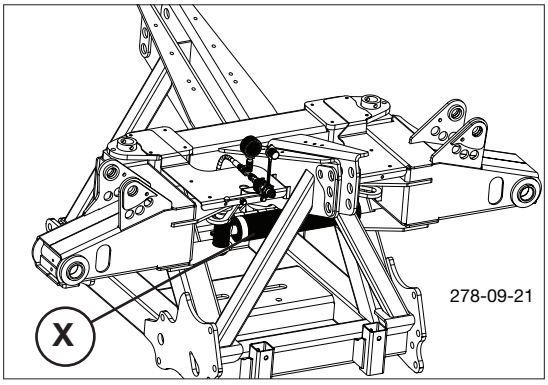
Setting:

Set hydraulic cylinder pressure (X):

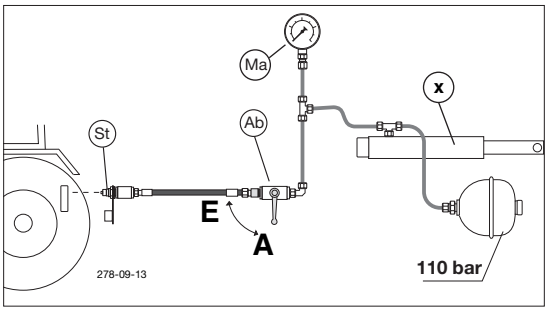
CAUTION

Risk of slight or moderate injury through being crushed by the swivelling cutter bar.

- Direct all persons out of the danger area around the machine during the setting procedure.



- Depressurise control valve on tractor.
- Connect the plug coupling (St) to the tractor and to the mower combination.



- Open stopcock (Ab) (position E).
- Activate control valve on tractor until working pressure is reached -> see pressure gauge (Ma) display

Collision Prevention: Work pressure (x): 110 bar

- Close stopcock (Ab) (position A).
- Disconnect plug coupling (St).

Changing from working position to transport position

DANGER

Life-threatening danger through the mower tipping over

- Change from the working to the transport position only on level, solid ground.

DANGER

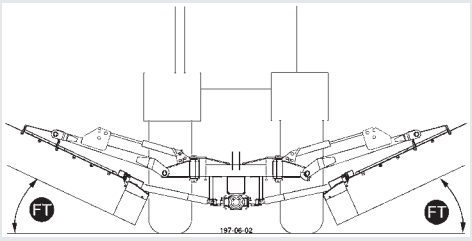
Life-threatening danger through rotating or ejected components

- Switch off the mower discs drive.
- Wait until the mower discs have stopped moving before swivelling them up.

DANGER

Life-threatening danger through moving parts

- Ensure that the cutter bar swivel range is clear and that no-one is standing in the danger area.



NOTE

Risk of material damage when changing to transport position due to braked cardan shafts.

- On tractors equipped with a cardan shaft brake, this must be switched off before switching to the transport position.

Raise to road transport position

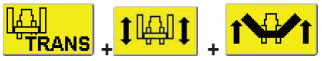
Swivelling into the road transport position can only be activated if all mowing units are in the field transport position (headland FT).

- Switch drive off and wait for complete stop.
- Swivel all hoop guards on mower in

Version with “Select Control”

Version with “Power Control”

Variant with "ISOBUS-Terminal"



TIP

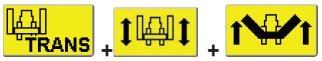
Details on the individual operating variants can be found in the respective chapters of the control system (Select Control, Power Control, ISOBUS)!

Lower to field transport position

Version with “Select Control”

Version with “Power Control”

Variant with "ISOBUS-Terminal"



TIP

Details on the individual operating variants can be found in the respective chapters of the control system (Select Control, Power Control, ISOBUS)!

DANGER

Life-threatening danger through rotating or ejected components

- Activate all guards of the mower combination before use.
- Make sure that nobody is in the danger area around the machine!

Travelling on public roads

DANGER

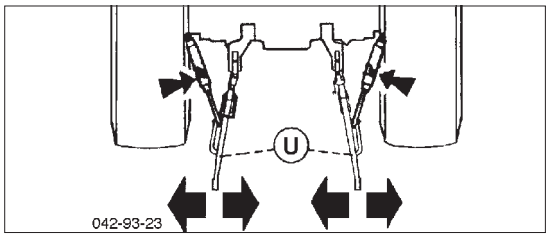
Life-threatening danger during transportation

- Travelling on public roads may only take place in the transport position.
- Check that the lights are working before travelling.
- Observe the max. permissible transport height (4m)!
- Check that the safety devices are in an orderly condition.
- Before travelling, place swivelling parts in the correct position and secure against dangerous changes in position.

TIP

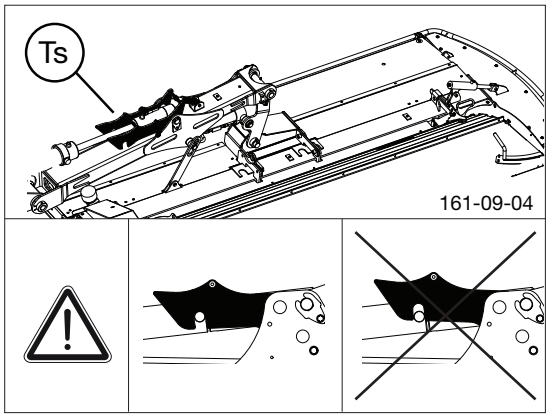
- Observe the statutory regulations for your country.
- Important information can also be found in the supplement of this operating manual.

Hydraulic lower link



- Secure hydraulic lower link so that machine cannot swing out sideways.

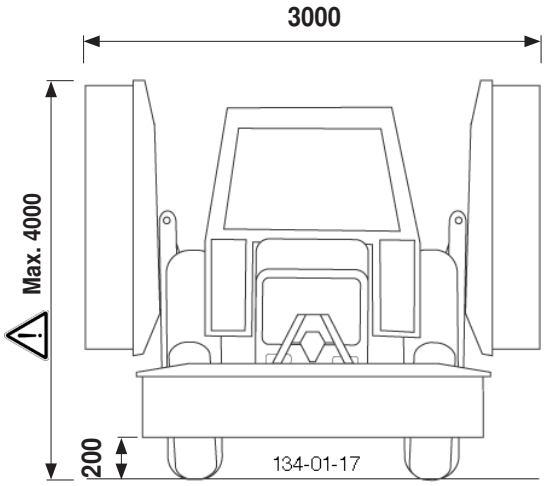
Transport safeguard (Ts)

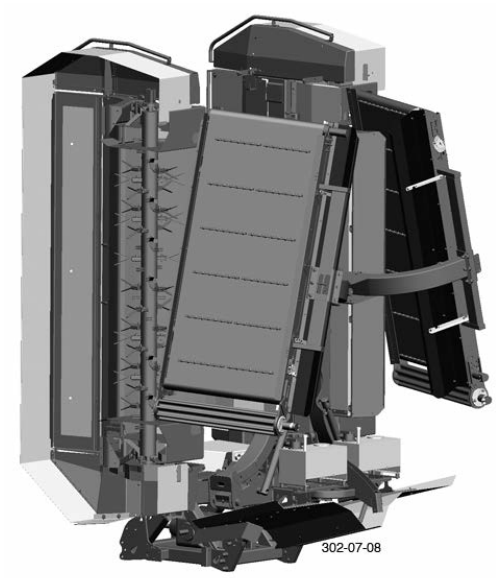


- Check transport safeguard before travelling!

  Check that both mower units are properly secured with safety hooks!

Transport position





Terminal performance features

Electrical connection

The terminal's electricity is supplied via a plug in accordance with DIN 9680 from the tractor's 12 V on-board electrical system. These three-pin plugs may also be two-pin versions as only two main wires (+12 V, ground) are required.

NOTE

Property damage through unacceptable plugs and sockets which do not guarantee proper functioning.

- Plugs and sockets must be replaced only with genuine replacement parts!

Technical data

Operating voltage:	+10V ..... +15V
Operating temperature range:	-20°C .... +60°C
Storage temperature: .... +70°C	-30°C
Degree of protection:	IP65

Fuse: 10A multifuse in an operating voltage plug.

Function

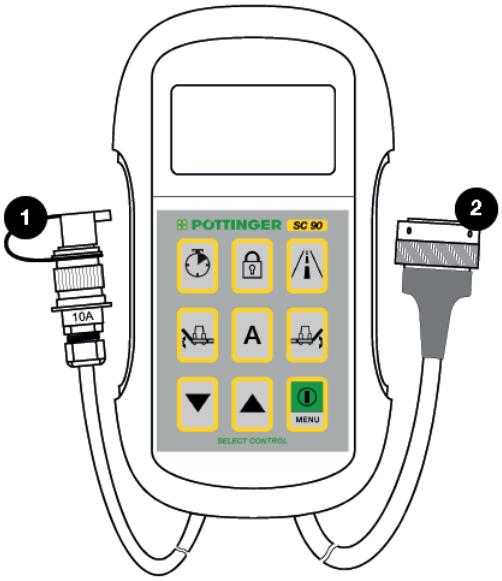
The attachment is operated via a single-action control unit on the tractor with which the individual functions can be preselected using the Select Control terminal. The preselected functions are displayed on the LDC screen of the terminal.

Starting work

1. Positioning

Position the Select Control terminal so that it is easily visible in the tractor cab. (There is a magnet on the back for attaching the terminal.)

2. Connecting



- Plug the connector (1) into the tractor's 12V power supply.
- Connect plug (2) to the 20-pin connection on the machine.
- During operation, push the locking cap of the counterpart of plug 2 onto the adjacent dummy plug.

3. Switching on and off

To activate terminal, press key "I/O" 

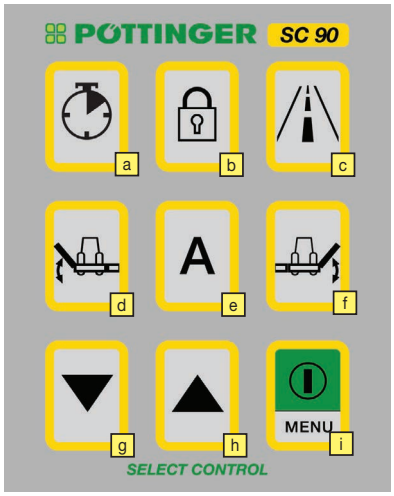
.

To deactivate terminal, press key "I/O" 

for three seconds.

Upon switching on the terminal, the initial screen is shown. The version number of the current software is shown on the final line of the initial screen.

Operating interface



Meaning of keys

- a Hour counter (partial and total hour counter)
- b Transport guard
- c Road Transport
- d Preselect left mower unit
- e Preselect automatic operation
- f Preselect right mower unit
- g Arrow down
- h Arrow up
- i I/O or menu

Operating notes

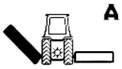
To preselect a function, press the required key.

The preselected function will be displayed on the screen.

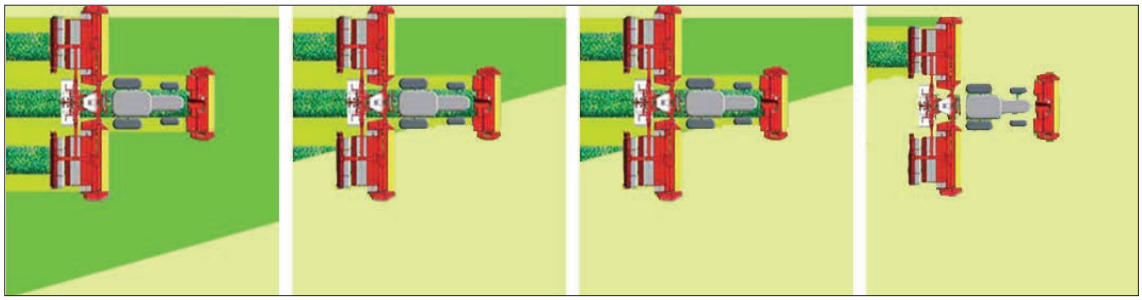
Functions

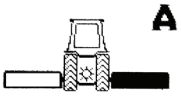
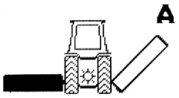
1. Automatic Mowing Operation:

The intelligent step sequence ensures easy mower operation. (see example)

Keys	Display	Note
A + +		Both mowers are swivelled between the "Field transport" and "Work position" positions using the tractor's control device.
A + /		Only one mower is swivelled between the "Field transport" and "Work position" positions using the tractor's control device. After the swivelling action, it switches back automatically to both mowers.

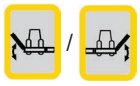
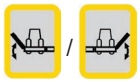
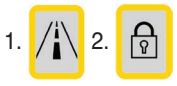
Example:



			
Control device: Float position	Control device: Raise	Control device: Float position	Control device: Raise
	If automatic operation is preselected, the second mower unit is automatically switched over shortly after completion of a single lifting operation.	The left mower is located in the float position again without any further preselecting.	If the second mower has returned to the headland position, then both mowing units are automatically preselected for the next lowering procedure.

2. Manual Mowing Operation:

If required, it is also possible to operate without automatic preselection i.e. the preselected function is carried out using the control unit.

Keys	Display	Note
		Both mowers are swivelled between the "Field transport" and "Work position" positions using the tractor's control device.
		Using the tractor's control device, the left or the right mower is swivelled alternatively between the "Field transport" position and "Working position". The second mower remains in the start position.
		The transport safeguard is manually opened or closed with the tractor's control unit.

3. Swivelling from the “Field transport" to the "Road transport” position:

Prerequisite for this function: Cardan shaft at a standstill and headland position of both mower units!

If the cardan shaft is moving and the "Road transport" key is pressed, the warning opposite is displayed on the screen.

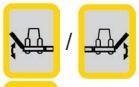
Keys	Display	Note
		Preselect "Road transport" key -> both mowers are activated (for individual raising, select the relevant mower) Press and hold the "Road transport" key, and operate the tractor's control device until the "Road transport" position is reached and the mechanical transport safeguard is locked.

DANGER

Life-threatening danger exists through machine tipping over. There is a danger of tipping when swivelling the machine on slopes.

- When swivelling in the road transport position: Always swivel the downhill-side mower first and then the uphill-side mower.

4. From individual raising to transport position

Keys	Display	Note
1.  2. 		Select left or right mower, then press the "Road transport" key, Press and hold the "Road transport" key and operate the tractor's control device until the "Road transport" position is reached and the mechanical transport safeguard is locked.

5. Swivelling from the “Road transport" to the “Field transport” position:

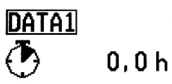
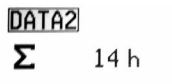
Keys	Display	Note
1.  2.  3. 	1.  2.  3. 	(1) Preselect the "Road transport" key, (2) press and hold the "Transport lock" key, and actuate the tractor's control unit until the transport safeguard has unlocked. (3) Press and hold the "Road transport" key, and move the tractor's control unit to the floating position until the "Field transport" position is reached. Once the "field transport" position has been reached, the system switches back to automatic mode after a short time and both mower units are selected.

DANGER

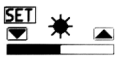
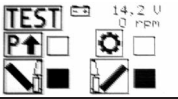
Life-threatening danger exists through machine tipping over. There is a danger of tipping when swivelling the machine on slopes.

- When swivelling in the field transport position: Always swing the uphill-side mower first and then the downhill-side mower.

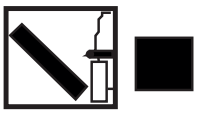
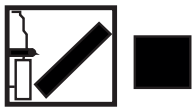
6. DATA Menu

Keys	Display	Note
		Briefly press the "Data menu" key to access the partial hour counter (Data1). Press and hold "Data menü" key to reset the partial hour counter to 0h.
		Press the "Datamenü" key again briefly to access the total hour counter (Data2).
		Press the "Datamenü" key again briefly to access the work area.

7. System menu

Keys	Display	Note
MENU		Press the key "IO" for a short time to access the brightness menu. Adjust the display brightness using the arrow keys. Note: When selecting a brightness of <30%, the keyboard lighting will be activated.
MENU		Press the key "IO" once again briefly to access the contrast menu. Adjust the display contrast using the arrow keys.
MENU		Press the key "IO" once again briefly to access the sensor test display.
MENU		Press the key "IO" once again briefly to access the work area.

7.1 Sensor test display

Icon	Description	Note
 14,2 V	Current supply voltage	
0 rpm	PTO shaft speed in rpm	
	Pressure switch	black: Pressure > 40 bar white: Pressure < 40 bar
	Hall sensor - PTO shaft	black: Magnet at the sensor white: Magnet in another position
	Initiator - left mowing unit	black: active white: inactive
	Initiator - right mowing unit	black: active white: inactive

Terminal performance features

Electrical connection

The power supply for the entire electronic system (job calculator and terminal) is conducted through a plug (compliant with DIN 9680) from the tractor's 12V onboard electrical system. These 3-pin plugs may also be 2-pin versions as only two main wires (+12 V, ground) are required.

NOTE

Property damage due to the use of unacceptable plugs and sockets which do not guarantee proper function.

- Plugs and sockets must be replaced only with genuine spare parts!

NOTE

Property damage through corrosion.

- Do not expose the operating terminal to the weather!

Technical data

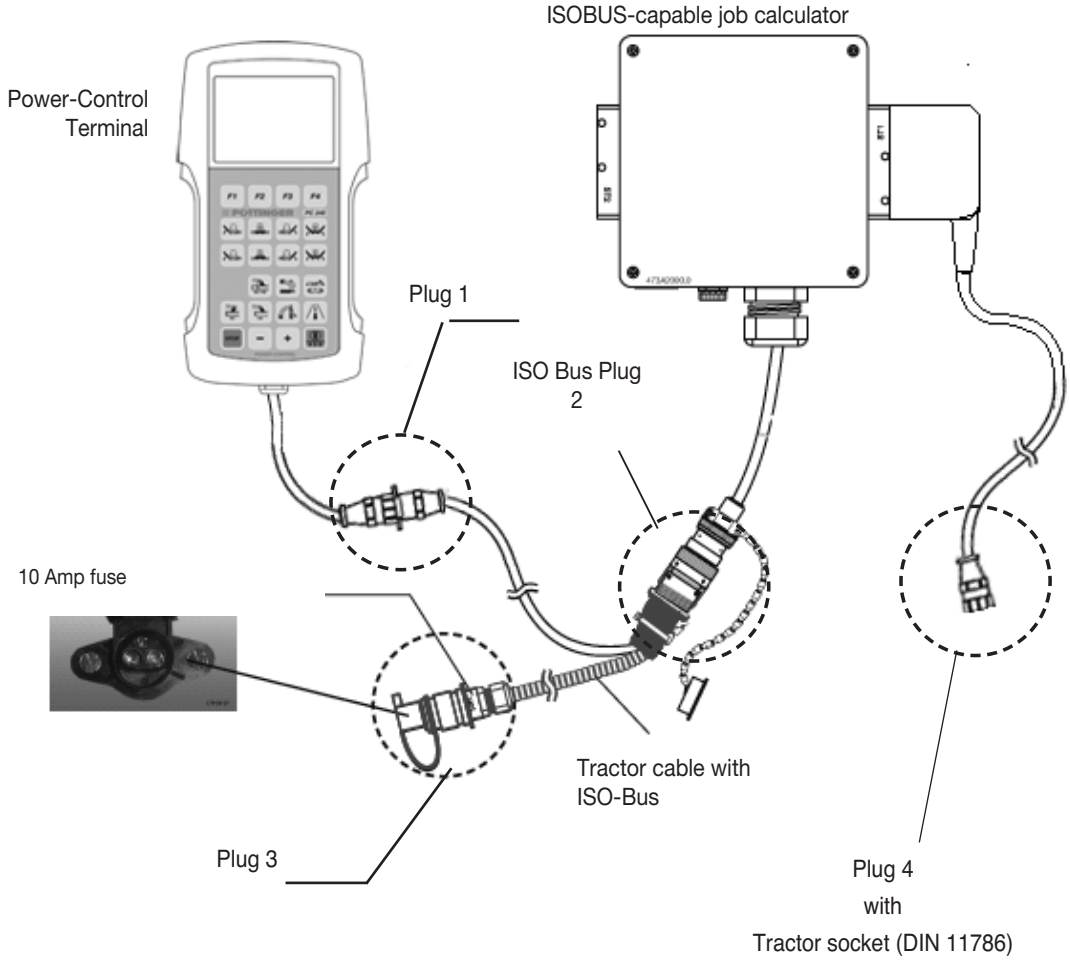
Operating voltage:	+10V ..... +15V
Operating temperature range:	-20°C .... +60°C
Storage temperature:	-30°C .... +70°C
Degree of protection:	IP65

Fuse: 10A multifuse in an power voltage plug

Function

All machine functions can be directly controlled through the Power Control Terminal. Furthermore, the Power Control Terminal has a large display to show the current operating status and various menus and alarm messages. A prerequisite is a single-acting hydraulic circuit with depressurised return or load sensing.

Initial start



Operating with the Power Control Terminal

1. Position the Power Control Terminal in tractor cabin where it can be clearly seen. (To secure the terminal there is a holder on the back.
2. Connect terminal to tractor cable via plug 1.
3. Run the job computer cable from the machine into the tractor cab and connect it with the tractor cable via the ISOBUS plug (2). (Make sure that the cables are properly arranged!)
4. Connect the tractor cable plug (3) to the tractor's 12V power supply.
5. If hectare counting is required, connect cable with plug (4) to socket in tractor (DIN 11786) and job calculator's cable harness.

To activate terminal, press key "I/O"  .

To deactivate terminal, press key "I/O"  for three seconds.

Key assignment

Function keys

a Function key 1*
b Function key 2*
c Function key 3*
d Function key 4*

Raising and lowering the mower unit

e Raise left mower unit
f Raise front mower unit
g Raise right mower unit
h Raise all mower units
i Lower left mower unit
j Lower front mower unit
k Lower right mower unit
l Lower all mower units

Side shift, cross conveyor, transport

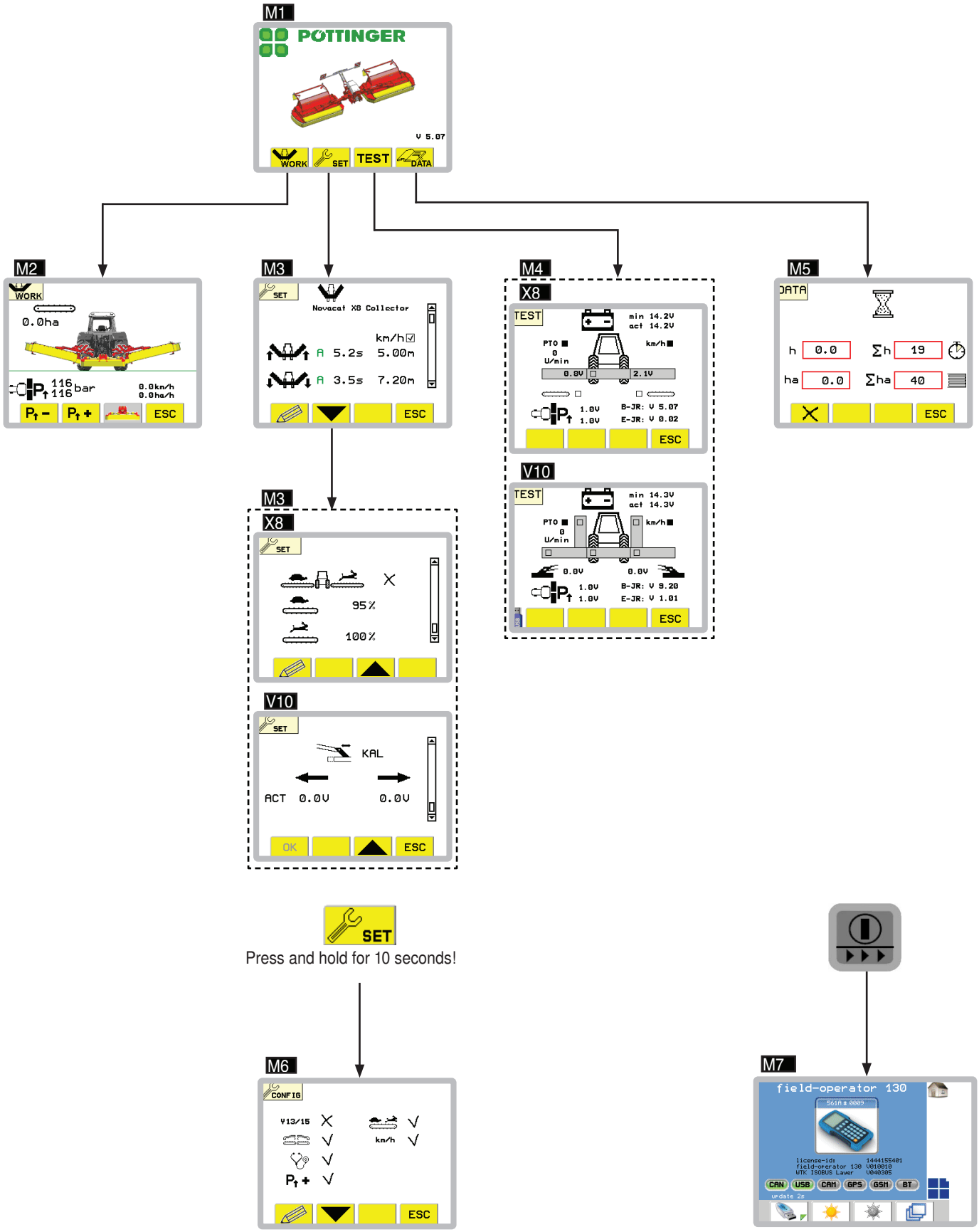
m Slope travel preselection
n Raise cross conveyor belt
o Change cross conveyor belt speed
p Decrease working width
q Increase working width
r Lower cross conveyor
s Road transport preselection
t STOP - stops any function
u Decrease a setting value
v Increase a setting value
w On/Off

Press [On/Off] key to switch on Power Control Terminal. Press [On/Off] key to access the System Menu.

Press and hold [On/Off] key longer to switch off Power Control terminal.

* Function keys have different functions depending on the menu.

Menu tree


M1
POTTINGER
V 5.07
WORK
SET
TEST
DATA
M2
WORK
0.0ha
116
116 bar
0.0km/h
0.0ha/h
P↑ -
P↑ +
ESC
M3
SET
Novacat X8 Collector
km/h
A 5.2s 5.00m
A 3.5s 7.20m
ESC
M4
X8
TEST
min 14.2V
act 14.2V
PTO
0
U/min
km/h
0.8V
2.1V
1.0V
1.0V
B-JR: V 5.07
E-JR: V 0.02
ESC
V10
TEST
min 14.3V
act 14.3V
PTO
0
U/min
km/h
0.0V
0.0V
1.0V
1.0V
B-JR: V 9.20
E-JR: V 1.01
ESC
M5
DATA
h 0.0
Σh 19
ha 0.0
Σha 40
ESC
M3
X8
SET
95%
100%
V10
SET
KAL
ACT 0.0V
0.0V
OK
ESC
SET
Press and hold for 10 seconds!
M6
CONFIG
V13/15
km/h
P↑ +
ESC
M7
field-operator 130
CAN
USB
CAN
GPS
GSM
BT

Menus

TIP

Every menu can be exited by pressing the ESC key. ESC

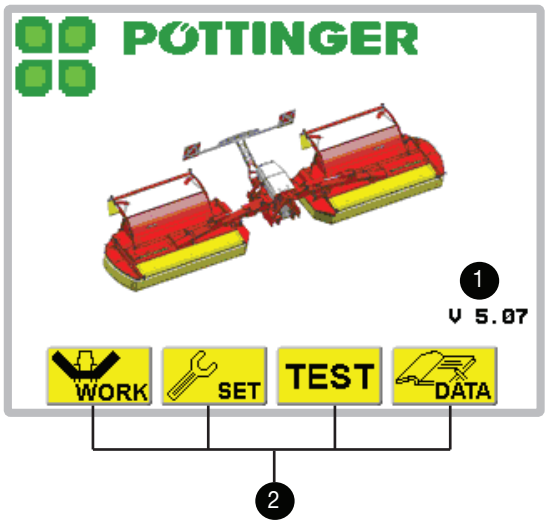
TIP

Pressing the "Stop" key will stop all functions. STOP

Start menu

M1

After turning on the Power Control Terminal the Start menu appears.



Display:

1 ... Software version

2 ... Function keys

Function keys:

WORK ... Work menu M2

SET ... Set menu M3 / prolonged pressing: Configuration menu M6

TEST ... Sensor test menu M4

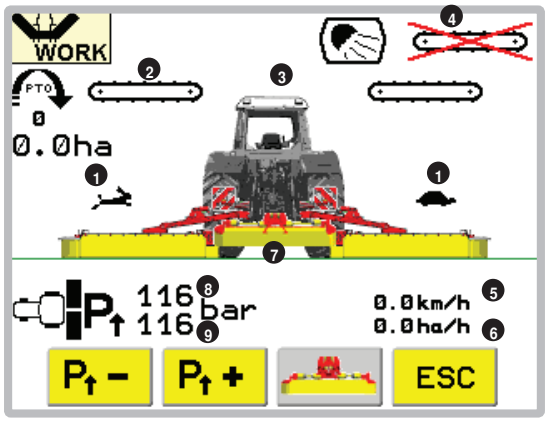
DATA ... Data menu M5

Work menu

M2

In Start menu, press function key F1 to access the Work menu.

Press function key F4 to return to the Start menu.



Display:

1 ... Cross conveyor belt speed:
Fast (hare)/Slow (tortoise) (only with X8 Collector)

2 ... Preselect to either raise or lower cross conveyor.

3 ... Operating condition of mower units:
Working (pic. 1), Field transport (pic. 2), Road transport (pic. 3)

4 ... a cross conveyor is not in working position

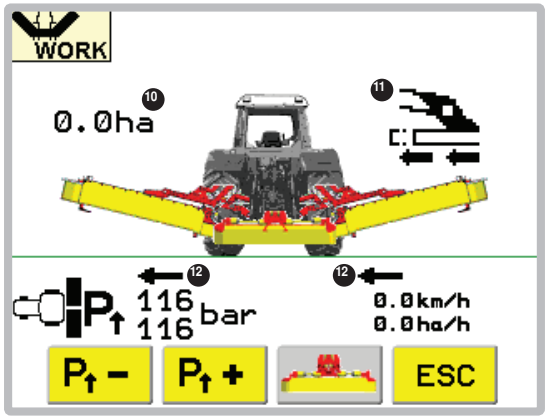
5 ... Tractor speed:
can only be selected if in the configuration menu

6 ... ha. per hr.:
only if tractor speed is selected in configuration menu.

7 ... Front mower available. If this symbol is not displayed, there is either no front mower available or it cannot be managed with this control.

8 ... Right rear mower unit relief pressure

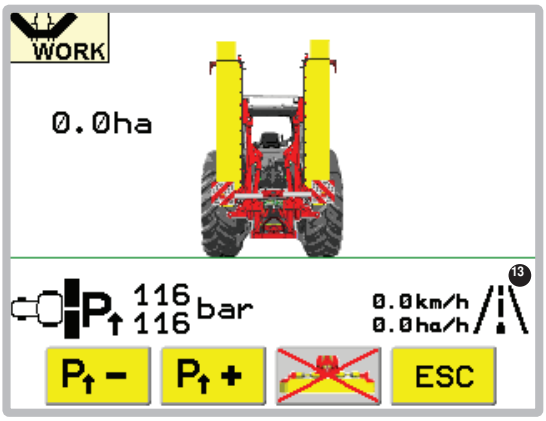
9 ... Left rear mower unit relief pressure



10 ... Daily hectare counter only if tractor speed is selected in configuration menu.

11 ... Slope travel preselection (only with Novacat V10)

12 ... Side shift (only with Novacat V10)
Both arrows point outward = max. width
Both arrows point inward = min. width
Both arrows point in the same direction = slope travel



13 ... Road transport symbol

Lifting and lowering from or to the road transport position is only possible when the symbol is displayed. If symbol begins to flash then press [Road transport] key once again.

TIP

To set the relief pressure, the mower units must be in the floating position.

Function keys:

- P↑ – ... Decrease relief pressure of rear mower units*
- P↑ + ... Increase relief pressure of rear mower units*
- ... Activate/deactivate front mower
- ESC ... Go up one menu level (here: Start menu)

Hard keys: Raising and lowering

	Lower left mower unit	Lowers left mower unit from field transport to working position
	Lower front mower	Lowers front mower from field transport to working position
	Lower right mower unit	Lowers right mower unit from field transport to working position
	Lower all mower units	Lowers all mower units from field transport to working position
	Raise left mower unit	Raises left mower unit from working position to field transport position.
	Raise front mower	Raises front mower from working position to field transport position.

*Momentary pressure differences could arise between left and right rear mower units. But these are automatically equalized after the filling process.

	Raise right mower unit	Raises right mower unit from working position to field transport position.
	Raise all mower units	Raises all mower units from working position to field transport position
	Road transport preselection	**TIP** In order to activate the [Preselect road transport] key  , • all mower units must be in field transport position. • both cross conveyors must be in the working position. • the cardan shaft must be stationary. **TIP** Pressing the "Road transport preselection" key  for 3 seconds will depressurize the side guard hydraulic hoses. (e.g. before uncoupling) 1. Press the preselection key to enable lifting to and lowering from the road transport position. 2. Press either the [Raise] or [Lower] key to move the respective mower units to or from the road transport position.
	Stop	Stops any raising or lowering process.

Hard keys: Raising and lowering cross conveyor (only Novacat X8 Collector)

	Raise cross conveyor	Raises both or the preselected cross conveyor
	Lower cross conveyor	Lowers both or the preselected cross conveyor
	Right cross conveyor preselection	1. Press the preselection key to enable the raising or lowering of an individual cross conveyor. The symbol "Right cross conveyor preselection" ❷ appears on the display. 2. Press the appropriate key, [Raise] or [Lower], to move the relevant cross conveyor.
	Left cross conveyor preselection	1. Press the preselection key to enable the raising or lowering of an individual cross conveyor. The symbol "Left cross conveyor preselection" ❷ appears on the display. 2. Press the appropriate key, [Raise] or [Lower], to move the relevant cross conveyor.
	Cross conveyor speed settings (Optional extra)	Press the key to change the speed setting of the cross conveyor belts. One of two settings can be selected and they are represented by a "hare" or a "tortoise". Go to the Set menu to adjust the speed of the speed settings.

Hard keys: Side shift (only Novacat V10)

	Slope travel preselection	1. Press the preselection key to move both rear mower units in the same direction, consecutively. 2. Press the appropriate key [side shift] to start side shifting in the relevant direction. The mower units then move consecutively.
	Decrease working width / Side shift left	Decreases mower working width so that both mower units move inward to end position. In conjunction with [Slope travel preselection], both rear mower units move to the left.
	Increase working width / Side shift right	Increases mower working width so that both mower units move outward to end position. In conjunction with [Slope travel preselection], both rear mower units move to the right.

TIP

The keys "Decrease working width" and "Increase working width" are stay-put keys (function activated by briefly pressing the key). The function is interrupted by using the STOP key or by pressing the key for the opposite direction. If function is interrupted with STOP key, no arrow appears in the display.

TIP

When mowing on slopes it is sensible to position both mower units uphill. Doing so will prevent streaking.

TIP

Adjusting the working width is only possible in the working and field transport positions. Before changing to the road transport position, move both mower units to the minimum working width! This ensures that they do not exceed the total height of 4 m if they have been folded into the road transport position.

Set relief pressure for hydraulics

Adapt the relief pressure to the ground conditions.

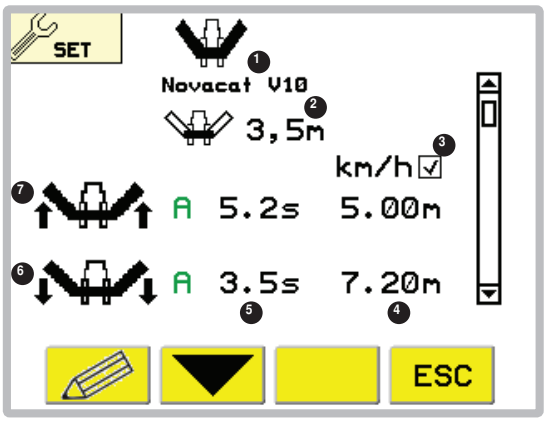
1. Ensure that both mower units are in the neutral position. Otherwise the relief pressure cannot be adjusted.
2. Raise an outside rear unit. If this is even possible, this equates to a relief pressure of approx. 70kg.
3. Press the function keys P↑ − or P↑ + to adapt the relief pressure to the ground conditions.

Set menu

M3

In the Start menu, press function key F2 to access the Set Menu.

Press function key F4 to return to the Start Menu.



Display:

1 ... Type of machine

2.... Front mower working width (only Novacat V10)

3 ... Time or distance controlled delay when lowering the rear mower.

TIP

The values for the distance controlled delay will not appear if the speed has not been selected in the configuration menu.

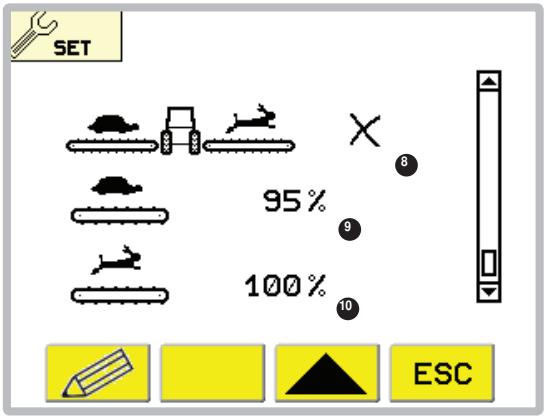
4 ... Column for the distance controlled delay

5 ... Column for the time controlled delay

6 ... Line for lowering the mower unit

7 ... Line for raising the mower unit

only Novacat X8 Collector:

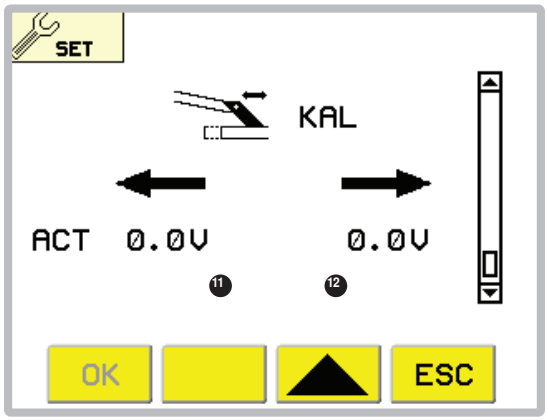


8 ... Speed selection for cross conveyor belt:
Tick = Differing speeds between the left and right cross conveyor belt (for mowing in contour lines)
Cross = Same speed for both cross conveyor belts with the possibility of switching between two speeds.

9 ... Speed regulator for speed 1
(Tortoise): same percentage = same speed

10 ... Speed regulator for speed 2
(Hare):

only Novacat V10:



11 ... Voltage value for the left angle sensor

12 ... Voltage value for the right angle sensor

Function keys:

... Edit menu entry

... scroll down

... scroll up

ESC ... go to the higher menu (here: Start menu)

Calibrating the angle sensors: (only Novacat V10)

It is necessary to calibrate the angle sensors after a sensor exchange. The function serves to memorize the voltage values at the end positions.

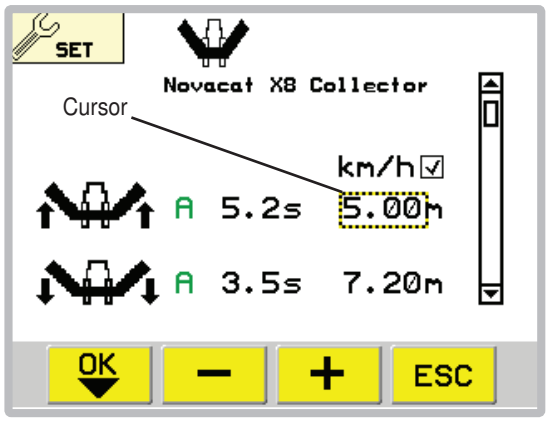
The minimum and maximum working widths are started by keystroke (function is only active as long as the [Side shift left] or [Side shift right] key is pressed).

The mower units must be in the field transport position for this.

- Calibration procedure
  - Press key [ ] until both mower units are at the inside stop.
  - Press key until both mower units are against the outer stop.
  - Press key [OK] for 2 secs.
    Saving is confirmed by an audible signal.

Changing a value

1. Press function key [ ] to change a value.
2. Press function key [OK] until cursor has reached the value to be changed.



3. Change the value with the keys [–] and [+] until the desired value is reached.
4. Press function key [OK] to save the value and to select the next value.
5. Press [ESC] to exit the change screen.

Function keys

OK	... save the current value and change to the next variable
–	... change the current variable value down
+	... change the current variable value up
ESC	... change to higher menu (here: Set Menu)

Sensor test menu (together)

M4

In the Start menu, press the function key F3 to access the Sensor Test menu.

Press function key F4 to return to the Start menu.

Display:

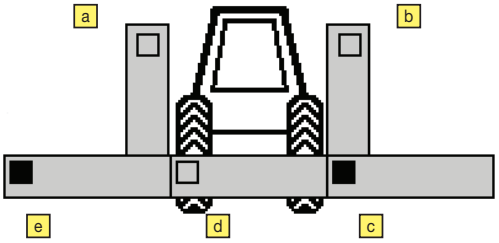
A shaded square shows an active sensor.

A white square shows an inactive sensor.

TIP

When a rotating component rotates past the sensor at a sufficiently low speed, the field starts to flash.

Sensors:



a ... S15

Transport position for left mower unit

b ... S13

Transport position for right mower unit

c ... S3

Field transport and working positions for right mower unit

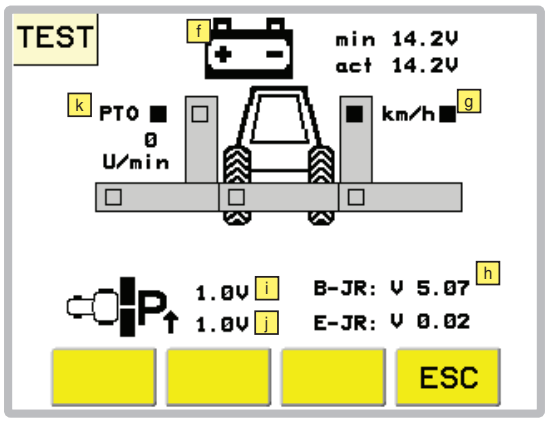
d ... S7

Field transport and working positions for front mower

e ... S5

Field transport and working positions for left mower unit

Values:



f ... Voltage indicator:

The top voltage display (min) shows the lowest measured power supply value since the operation started. This value is stored until the next new start.

The lower voltage display (act) shows the current measured power supply voltage value.

g ... S2 (Speed)

Speed sensor active. To check the signal, compare the kph displayed in the Work menu with the tractor's tachometer display.

h ... Software versions

show the software versions used for the base board (B) and the expansion board (E).

i ... S4 (Voltage indicator for right pressure transducer)

Shows the current given value of the right pressure transducer. So the function can be checked using the data sheet.

j ... S6 (Voltage indicator for left pressure transducer)

Shows the current given value of the left pressure transducer. So the function can be checked using the data sheet.

k ... S1 (p.t.o. cardan shaft)

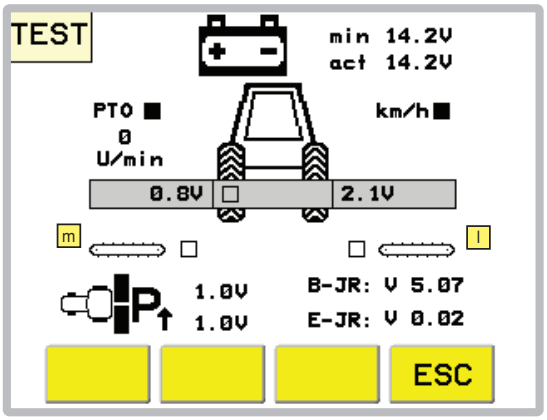
Sensor function is checked while cardan shaft is turning. From approx. 10 rpm the shaded field is displayed.

Function keys:

ESC ... change to higher menu (here: Start menu)

Sensor test menu

Novacat X8 Collector

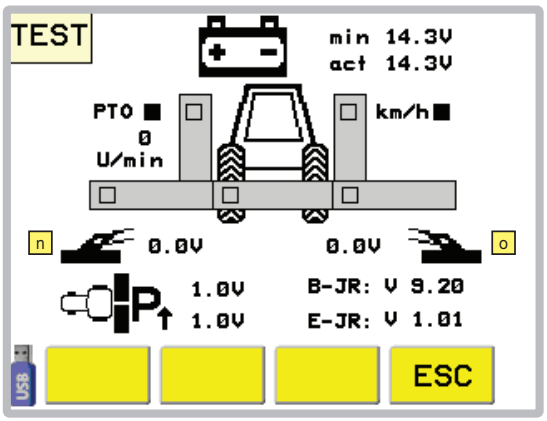


l ...S9
Initiator position for right cross conveyor

m ...S10
Initiator position for left cross conveyor

Sensor test menu

Novacat V10



n ...S11
Left angle sensor voltage

o ...S12
Right angle sensor voltage

Data menu

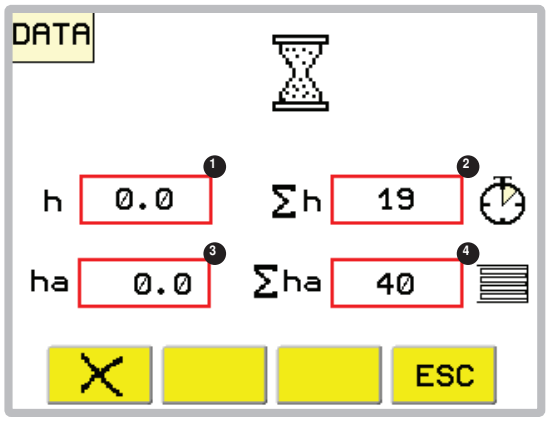
M5

Press function key F4 in the Start menu to access the Data menu.

Press function key F4, to return to the Start menu.

TIP

The hectare counters only function when the "kph" has been selected in the configuration menu and the cable is connected to the tractor's signal socket.



Display:

1 ... Partial hours counter
2 ... Total hours counter
3 ... Partial ha. counter
4 ... Total ha. counter

Function keys:

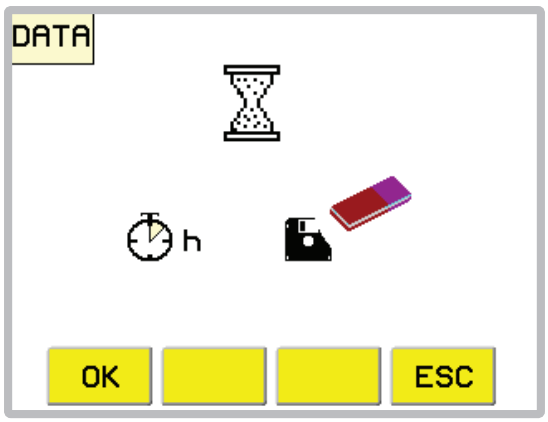
... resetting both partial counters

ESC ... go to higher menu (here: Start menu)

TIP

It is not possible to reset partial counters individually. Partial counters can only be reset together.

Resetting partial counters:



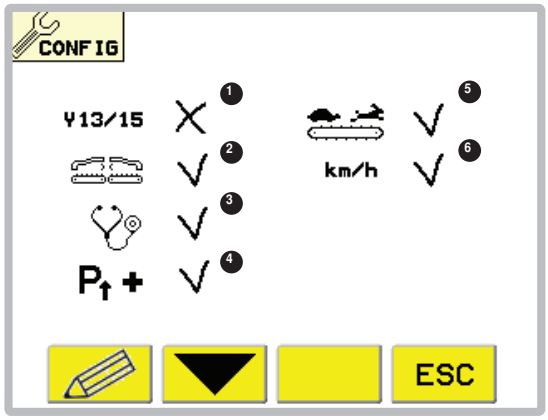
1. Press function key [ ] to reset partial counter to nil.
   A new screen appears.
2. Press function key [OK] to confirm the procedure or press function key [ESC] to interrupt the procedure and return to the previous menu.

Configuration menu

M6

In the Start menu, press the function key F2 for 10 seconds to access the Configuration Menu.

Press function key F4 to return to the Start Menu.



Display:

1 … Swivel assistance
Deactivate this configuration on Novacat X8, X8 Collector and V10!

2…. Single cross conveyor swivelling
(only with Novacat X8)

3 ... Inputs/Outputs diagnosis function

4 ... Hydraulic relief

5 ... Cross conveyor belt speed regulator
(only with Novacat X8 Collector)

6 ... Speed signal from tractor available

(Tick = active / cross = inactive)

Function keys:

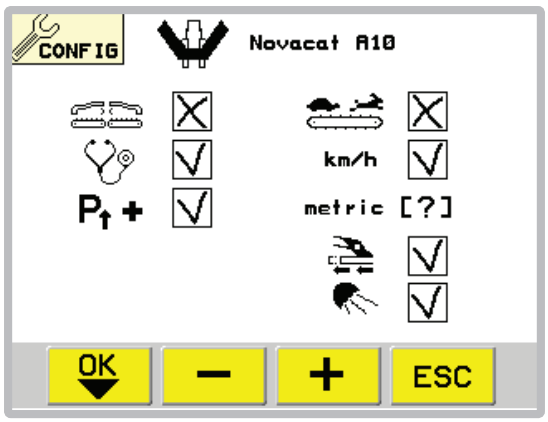
... Edit menu entry

... scroll down

... scroll up

ESC ... go to higher menu (here: Start menu)

Changing a value



1. Press function key [ ] to change a value.
2. Press function key [OK] until the cursor reaches the value to be changed.
3. Change the value using key [−] and [+] until the required value is reached.
4. Press function key [OK] to save the value and to select the next value.
5. Press ESC to exit the change screen.

Function keys

OK ... save the current value and change to the next variable

− ... change the current variable value down

\+ ... change the current variable value up

ESC ... change to higher menu

(here: Set Menu)

System Menu

M7

Press the key briefly to access the System Menu.

Press the key once again to return to the previous menu.

TIP

A display brightness of less than 60% automatically switches on the Power Control Terminal keyboard lighting.

Function keys:

... only for service personnel

... Set screen brighter

... Set screen darker

... only for service personnel

Diagnosis function

When faults occur, the relevant alarm message is displayed and an acoustic warning signal is audible.

Function keys:

...the respective alarm is suppressed until the next system start.

... Confirm the fault. If the fault repeats itself, another alarm will be set off.

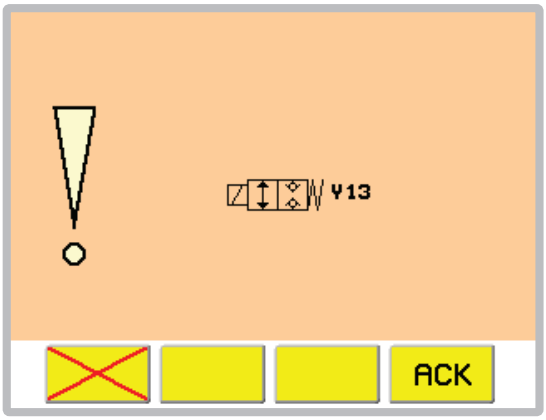
TIP

- Confirm an fault with key [ACK] 

- The diagnostic function for each individual sensor can be switched off until the next system start by pressing the F1 [Switch off] function key! 
- The alarms for the voltage supply cannot be switched off!
- When a malfunction occurs, any desired function can be switched manually with the aid of emergency operation (see chapter "Electrohydraulics").

Alarm reports:

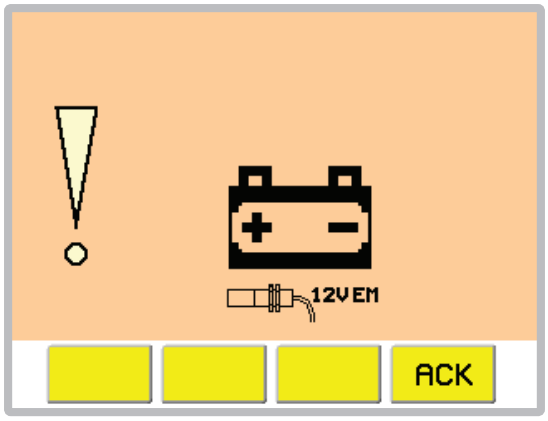
Switching output fault (Example: Y13)



Causes:

- Short circuit
- Insufficient power
- Valve not plugged in

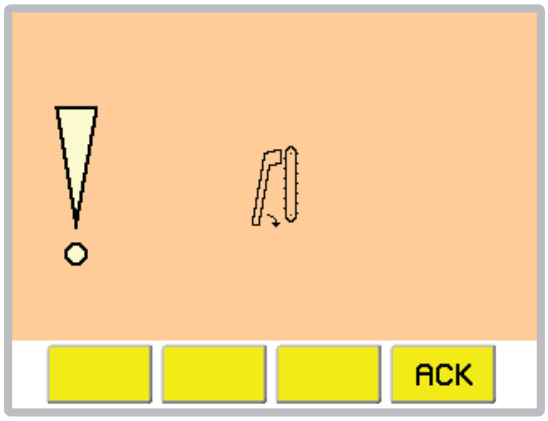
Sensor power fault (Example: Sensor power supply < 12V)



Causes:

- Insufficient power at the job calculator
- Faulty job calculator

Warning: Cross conveyor not in working position!



Therefore it is impossible to fold mower together.

Remedy:

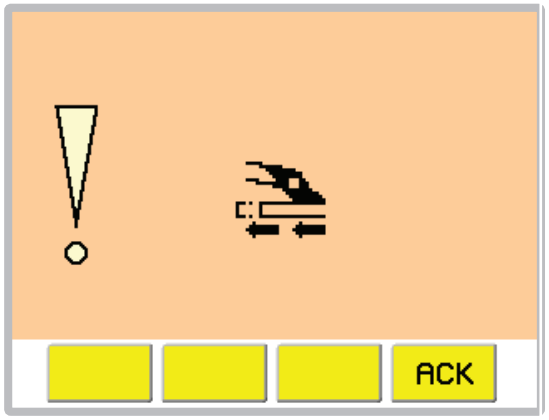
Bring cross conveyor into working position and then fold mower together.

If the message is still displayed:

Causes:

- Faulty sensor (S9, S10)
- Faulty line
- Hydraulics leaking

Angle sensor malfunction:



There is no automatic guarantee that the machine does not exceed the max. transport height of 4m.

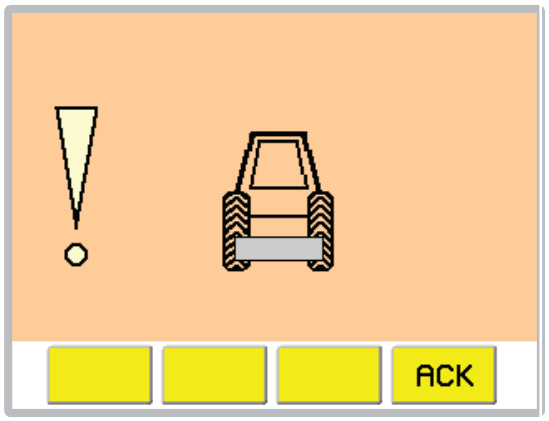
Remedy:

Minimize side shift using the emergency operation on the hydraulic block.

Causes:

- Faulty angle sensor (S11, S12)
- Faulty power line to angle sensor

Front mower sensor malfunction:



The front mower's sensor does not give any feedback to the job computer within 6 seconds after pressing the [Lift Front Mower] or [Lift All Mowers] key.

Causes:

- Faulty sensor
- Faulty line

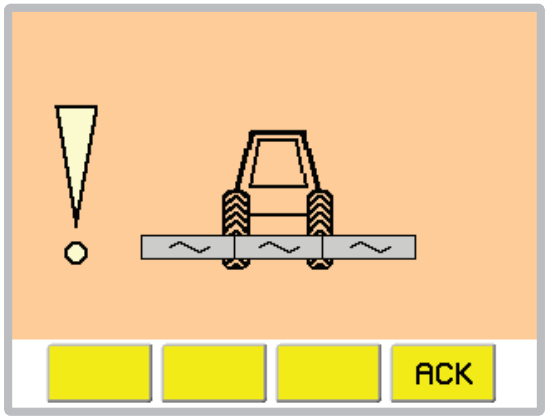
Checking the sensor setting:

When the front mower is in transport position the sensor (S7) must be covered.

Immediate measures:

- Check in the menu M2 if the front mower has been activated
- Check the sensor lines.

Warning: Mower units not in neutral position

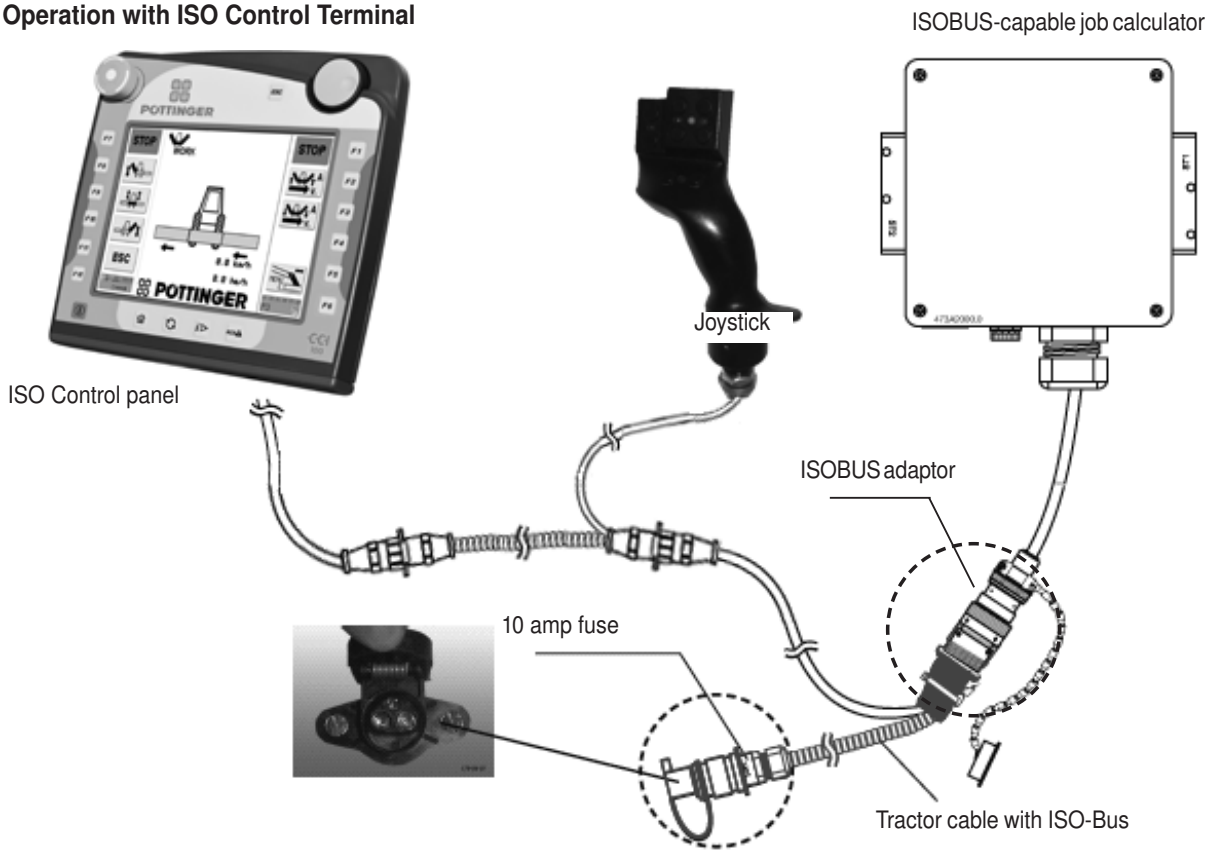


There are two possible causes for this warning:

1. The mower units are not in the neutral position and therefore filling the hydraulic relief is impossible.
2. The cardan shaft is still turning and the mower is in working position but not in the neutral position, and the tractor speed is greater than 0 kph.

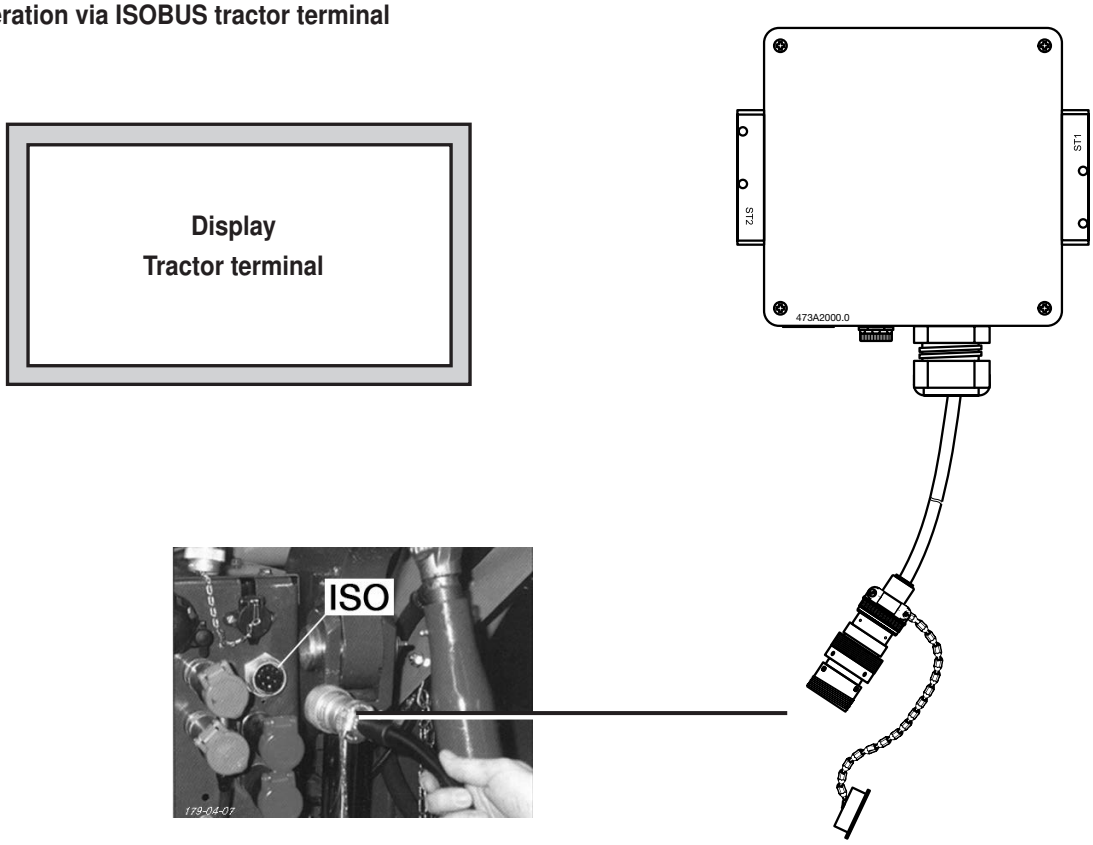
Variant

Operation with ISO Control Terminal

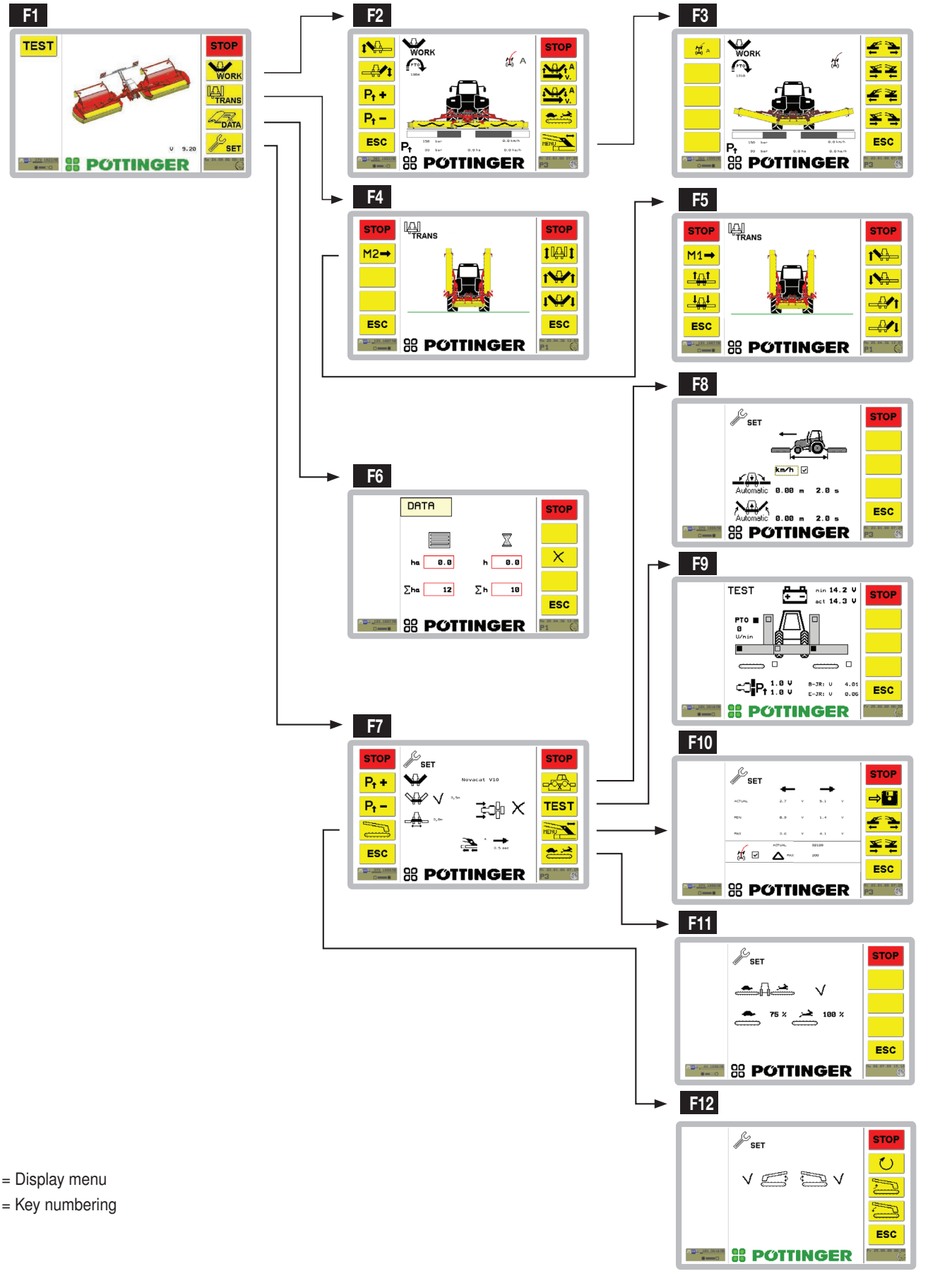


Variant

Operation via ISOBUS tractor terminal



Operation structure - mower with ISObus solution



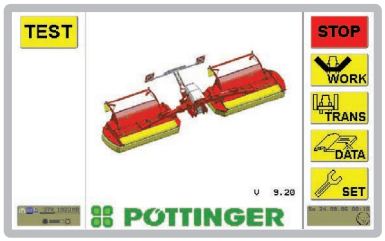
F = Display menu

T = Key numbering

Meaning of keys

Start menu

F1 T6



T1 T2 T3 T4 T5

T1 STOP
T2 Work menu
T3 Transport menu
T4 Data menu
T5 Set menu
T6 Test menu

STOP-key function

To stop all procedures currently running.

STOP

ESC key function

To return to previous menu.

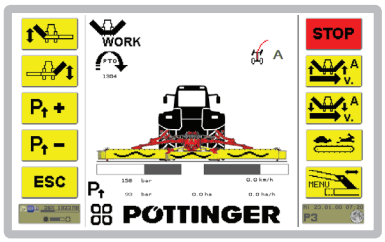
ESC

TIP

The function of the keys [STOP] and [ESC] are identical on all masks. Therefore they will no longer be shown.

Work menu

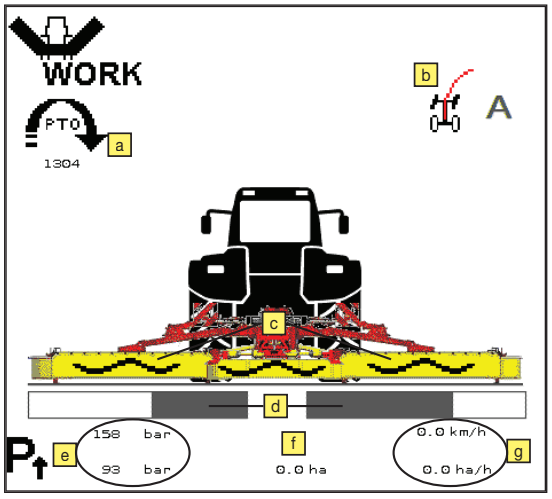
F2 T1 T2 T3 T4



T7 T8 T9 T10

T1 Raise / Lower left mower unit
T2 Raise / Lower right mower unit
T3 Increase relief pressure*
T4 Decrease relief pressure*
T7 Automatic “Raise mower units” function
T8 Automatic “Lower mower units” function
T9 "Change speed" (nur X8 Collector)
T10 Navigating the "Side shift" menu
- Change to mask (F3)

Meaning of display:



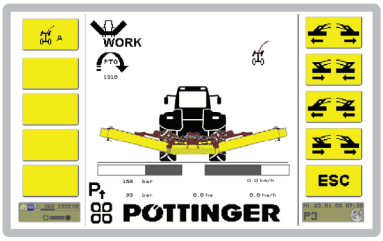
a ... Driveshaft speed (r.p.m.)
b ... Status of curve-cut optimisation

	Curve-cut optimisation OFF
	Curve-cut optimisation ON but inactive
A	Curve-cut optimisation ON but becoming active after the delay interval has expired, and as long as the machine is in the working position. **Conditions for starting the curve-cut optimisation:** - Curve-cut optimisation active in the configuration menu - Curve-cut optimisation activated in the work menu - Mower units are in working position - Cardan shaft turning - Mower units are totally apart - Tractor is in motion

c ... Mower position: Work / headland / transport
d ... Side shift position
e ... Release pressure on the right (above) and left (beneath)
f ... Partial-hectare counter (see the Data menu)
g ... Working speed in km/h and ha/hr

*Momentary pressure differences could arise between left and right rear mower units. But these are automatically balanced out after the filling process.

F3 T6



T1
T2
T3
T4

T1 Increase working width

T2 Decrease working width

T3 Side shift left

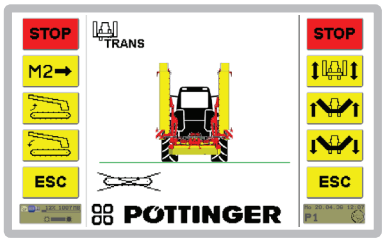
T4 Side shift right

T6 Switch on of curve-cut optimisation

Even when it is switched on, the curve-cut optimisation, is active only in the working position.

Transport menu

F4



T2
T3
T4
T7
T8
T9

T2 Change to page 2 (change over to mask (F5))

T3 Swivel selected cross conveyor out

T4 Swivel selected cross conveyor in

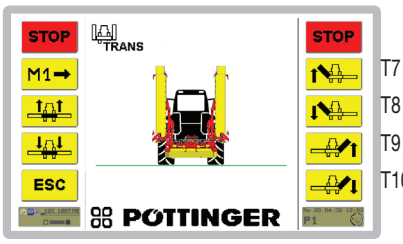
T7 Select "Change from working position to transport position"

Press key T7 for 3 secs. -> the side guard hydraulic hoses are depressurized (e.g. before uncoupling)

T8 Raise mower units to road transport position

T9 Lower mower units to headland position

F5



T2
T3
T4
T7
T8
T9
T10

T2 Change to page 1 (change to mask (F4))

T3 Raise front mower

T4 Lower front mower

T7 Raise left mower unit

T8 Lower left mower unit

T9 Raise right mower unit

T10 Lower right mower unit

TIP

To go to the road transport position

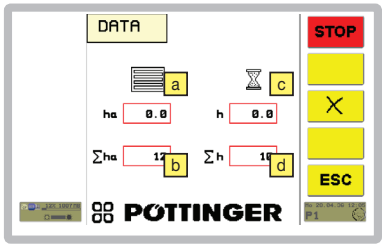
- the cardan shaft must be stationary.
- The [preselect] road transport key - T8] cannot be used as long as the cardan shaft is still turning.
- The [preselect] road transport key - T8] cannot be used as long as both cross conveyor belts are not in working position.
- The [preselect] road transport key - T8] cannot be used if all mower units are not in the field transport position.

TIP

Press and hold the [Preselect "Change working position to transport position" key for 3 seconds to depressurise the hydraulic hoses of the side guards. (e.g. before uncoupling)

Data menu

F6



T8

T8 Delete partial counter (ha, hr)

Meaning of display:

a ... Partial ha. counter

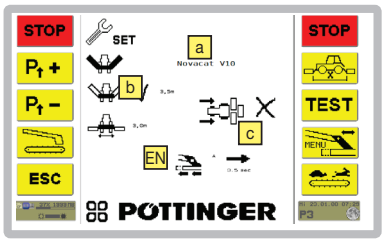
b ... Total ha. counter

c ... Partial hours counter

d ... Total hours counter

SET menu

F7



T4 Navigating in the "Cross conveyor belt swivelling" menu (F12)

T7 Navigating in the "Time-distance dependent lowering/raising" menu

- Switch to mask (F8)

T9 Navigating in the "Side shift calibration" menu

- Switch to mask (F10)

T10 Navigating in the "Cross conveyor belt speed" menu (F11)

Meaning of display:

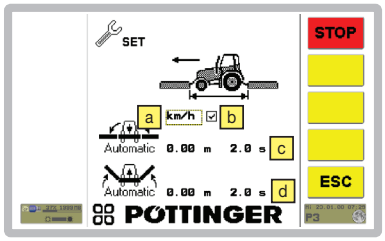
a Set machine type

b Activate/deactivate front mower

c Front mower working width

d Delay between lowering to working position and activating the curve-cut optimisation.

F8



Meaning of display:

a Set time- or distance-dependent lowering/raising

Kph = Distance-/speed dependent

sec = Time dependent

- When using the curve-cut optimisation, "Kph" must be set here.

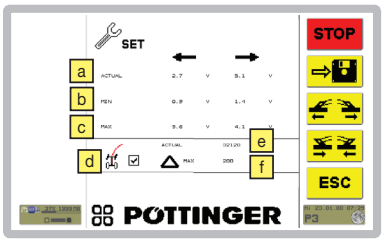
b Speed signal from tractor available or not available.

c Setting the lowering delay between the front and rear mower. This value is also the delay for the curve-cut optimisation.

d Setting the lifting delay between the front and rear mower.

Different values for (meter (m) or seconds (sec.)) The values for (m) and (sec) are separately adjustable and are used depending on the setting under a Time or distance dependent lowering / lifting.

F9



T2 Save value

T3 Calibrate max. working width position

T4 Calibrate min. working width position

Novacat V10

Meaning of display:

a Current tension of the angle sensor left/right

b Minimum calibrated tension left/right

c Maximum calibrated tension left/right

d Display: Steering signal transmission from tractor (tick = active / cross = inactive)

e Display "current steering lock". (For straight driving a value of around 32128 must be displayed.

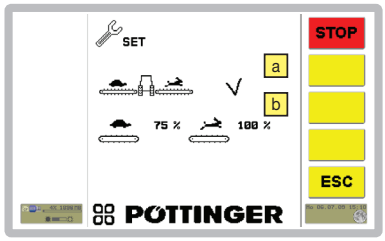
f Setting value: "Delta maximum retraction of the mower bar" deviation from the straight driving value from which the mower bar is retracted to the maximum. Must be matched to the tractor (experience value between 150 and 350). If the value is set too high, a strip will remain during cornering despite active cut optimisation.

Menu function:

It is necessary to calibrate the angle sensors after a sensor exchange. The function serves to memorize the voltage level at the end positions.

- The mower units must be in the field transport position for this.
- Calibration procedure
  - Press "Decrease working width" until both mower units are against the inner stop.
  - Press "Increase working width" until both mower units are against the outer stop.
  - Save

F10



Meaning of display:

a Tick = Differing speeds between the left and right cross conveyor belt (for mowing in contour lines)

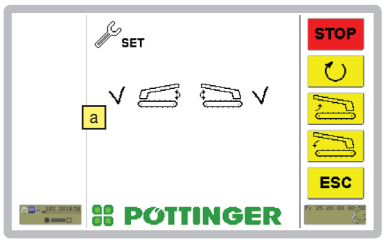
Cross = Same speed for both cross conveyor belts with the possibility of switching between two speeds.

b Set speed level

Two speed levels can be set for the cross conveyor belts.

Setting: in 5% steps, setting range: 5 – 100%

F11



T7
T8
T9

T7 Activating the required cross conveyors (left, right or both)

T8 Swivel selected cross conveyor out

T9 Swivel selected cross conveyor in

Meaning of display:

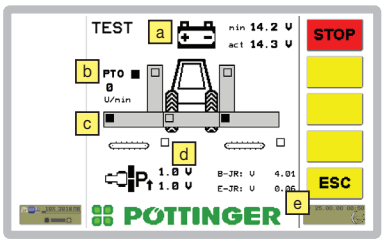
a Individual cross conveyor swivelling

Tick = swivel-mounted

Cross = Swivelling deactivated, hydraulic cylinder is not triggered.

TEST menu Novacat X8 Collector

F12a



Meaning of display:

a Voltage indicator

The top voltage indicator shows the lowest measured supply voltage value since the operation started. This value is saved until the next new start.

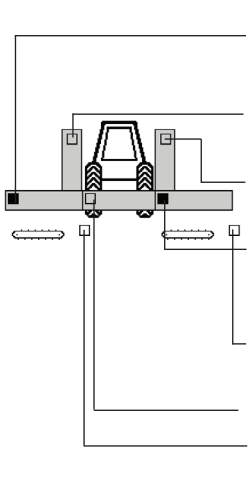
The bottom voltage indicator shows the current measured supply voltage value.

b **S1** PTO (cardan shaft)

In the right field, the rotating cardan shaft sensor function is checked. This field will have a black background if the cardan shaft rotates faster than 10 rpm.

c Current sensor status display

A black square indicates an active sensor. When activating and deactivating the sensors, the square must alternate between black and white.



S5 Left mower unit field transport and working positions

S15 Left mower unit transport position

S13 Right mower unit transport position

S3 Right mower unit field transport and working positions

S9 Right cross conveyor initiator position

S7 Front mower position

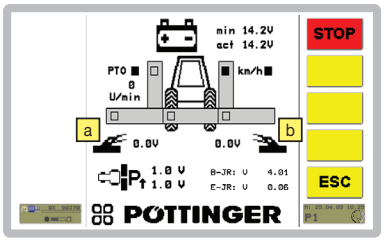
S10 Left cross conveyor initiator position

d **S4** Right pressure transducer voltage indicator

e **S6** Left pressure transducer voltage indicator

TEST menu Novacat V10

F12b



Meaning of display:

a S11 Left angle sensor voltage

b S12 Right angle sensor voltage

Diagnosing function

Monitoring the job calculator for

Operating voltage	
Voltage supply sensor	
Short circuit to earth or 12 V Broken cable Overload	

With fault recognition

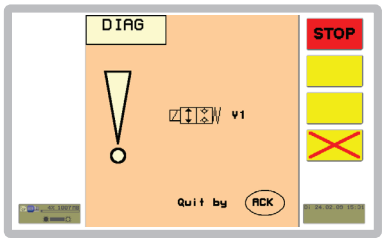
- The alarm mask is superimposed and an alarm tone sounds
- The relevant symbol and the fault is displayed

Confirm a fault with the "ACK" key.

The diagnosing function can be switched off for each individual channel until the next system start by using the key**"T9"**.

Switch outputs (example: Y1 = Raise directional control valve**)**

Diag



T9

Causes:

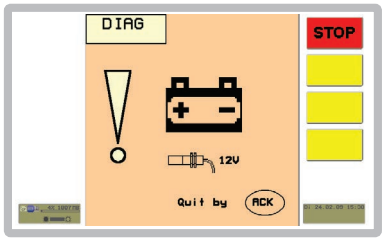
- Short circuit
- Insufficient power
- Valve not plugged in

TIP

In the event of a malfunction, any desired function can be switched manually using emergency actuation (see chapter "Electrohydraulics").

Sensor inputs (Example: Sensor power supply < 10V

Diag



Causes:

- Insufficient power at the job calculator
- Faulty job calculator

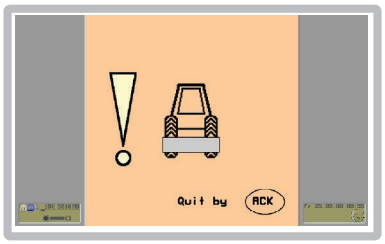
TIP

The alarms for the voltage supply cannot be switched off!

Time out - Monitoring

If the front mower sensor is not reached within 6 seconds after pressing the "Raise front mower or all mowers" key.

Diag



Causes:

- Faulty sensor
- Faulty line

TIP

When this message is displayed, the sensor S7 of the front mower has not been reached.

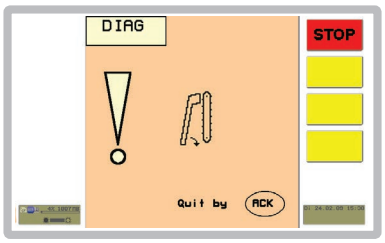
Immediate measures:

- Check if the front mower has been activated in the SET menu!
- Check sensor lines!

Warning: Cross conveyor not in working position!

Therefore impossible to fold mower together.

Diag



Remedy:

Bring cross conveyor into working position and then fold mower together.

If the message is still displayed:

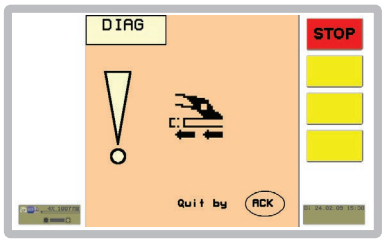
Causes:

- Faulty sensor (S9, S10)
- Faulty line
- Hydraulics are leaking

Angle sensor malfunction:

There is no automatic guarantee that the machine does not exceed the max. transport height of 4m.

Diag



Remedy:

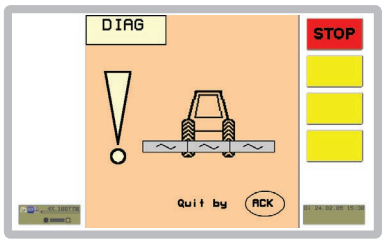
Minimize side shift using emergency activation on the hydraulic block.

Causes:

- Faulty angle sensor (S11, S12)
- Faulty supply line to angle sensor

Warning: Mower units not in neutral position

Diag

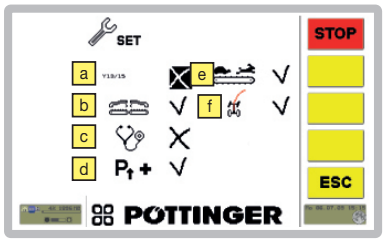


There are two possible causes for this warning:

1. The mower units are not in the neutral position and therefore filling the hydraulic relief is impossible.
2. The cardan shaft is rotating and the mower is in the working position but not in the neutral position, and the tractor speed is greater than 0 kph.

Configuration menu

In the START Menu (F6) press and hold the “Set” key SET for 10 seconds to access the Configuration Menu.



a **Swivelling assistance**

Deactivate this configuration with Novacat X8, X8 Collector and V10!

b **Single cross conveyor belt swivelling**

(only with Novacat X8)

c **Inputs/outputs diagnosing function**

d **Hydraulic relief**

e **Cross conveyor belts speed regulator**

(only with Novacat X8)

f **Curve-cut optimisation:**

(only Novacat V10)

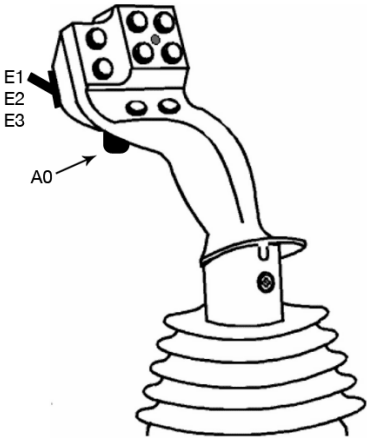
(Tick = active / cross = inactive)

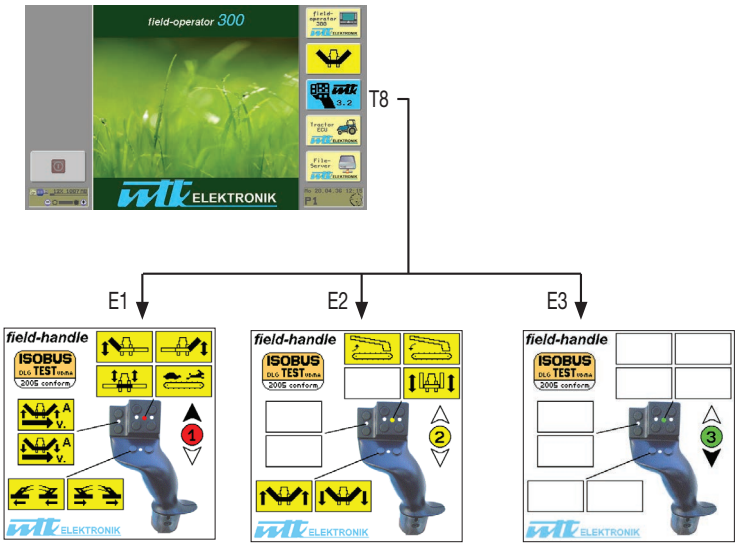
Joystick - Mower assignment

On the joystick there are 8 equivalent function keys (1 – 8), a green release key (A0) and a level switch (E1/E2/E3). The keys enable 8 different functions to be allocated per level (E1/E2/E3) = max. 24 different functions can be performed with the joystick.

Joystick assignment - check function keys

Press T8 in the Start menu. Use the level switch (E1/E2/E3) to switch to the respective overview. The assigned function keys are identified by the function symbol.





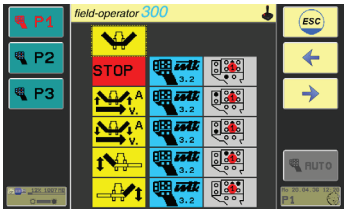
Setting the joystick

Setting the joystick function keys assignment

1. Press key [T6] in the Start menu. The “Field operator 300” menu appears.
2. Press key [T9] in "Field operator 300" menu to access the "Joystick setting menu".

3. With the terminal keypad  select the function symbol.
4. Select level on the joystick using the level switch (E1/E2/E3).
5. Press the green release key (A0) on the joystick while simultaneously selecting the required function key (1-8).
6. The following symbols appear on the display for checking 

In this case it means: The "STOP" function has been assigned to function key 7 of level 1 on the joystick.

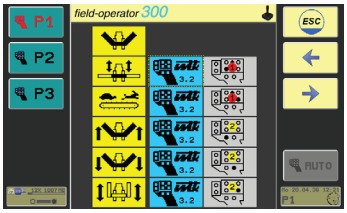


Important: The number on the joystick symbol (1/2/3) shows the level selected for the function!

1 - Level 1 - "Switch up" and LED glows red on joystick

2 - Level - 2 "Switch middle" and LED glows yellow on joystick

3 - Level 3 - "Switch down" and LED glows green on joystick



To assign further function keys, repeat steps 3 to 6.

Safety advice

DANGER

Life-threatening danger exists through blades being ejected.

- After the first operating hours, tighten all blade screw connections.
- Check all safety equipment before starting work. In particular, make sure that the side safeguards are folded down correctly in the field transport position.

DANGER

Life-threatening danger exists through ejected parts when removing a blockage, when changing blades or when adjusting the machine during operation.

- Stop tractor/trailer unit on level ground and apply tractor's brakes.
- Park the mower in the working position.
- Before going to the rear of the machine, make sure that the PTO shaft is stationery and that the hydraulic connections are depressurised.
- Remove the tractor key!

DANGER

Life-threatening danger exists through falling off the machine.

- Do not climb onto the machine, or play on or around it.
- Do not let anyone climb on or clamber about on the machine.
- Before starting, make sure that no one is standing on the machine or in its danger area!

TIP

Further safety instructions: see Supplement A, pt. 1. - 7.)

Important notes prior to starting work

1. Check the blades

- Check the condition of blades and the blade fastenings.
- Check mowing discs for damage (see chapter "Maintenance and Service")

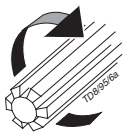
2. Safety devices

- Fold down side guard for the "Select Control" variant or check activated side guard for the "Power Control" variant
- Check safety devices (covers, protective aprons, casings, etc.) for proper condition and function.

3. Switch the machine on only in the working position and do not exceed the specified p.t.o. speed (max. 1,000 rpm)!

- Turn the p.t.o. on only when all safety devices (coverings, protective aprons, casings, etc.) are in proper condition and attached to the implement in the correct protective positions.

4. Pay attention to correct p.t.o. direction of rotation!



5. Prevent any damage

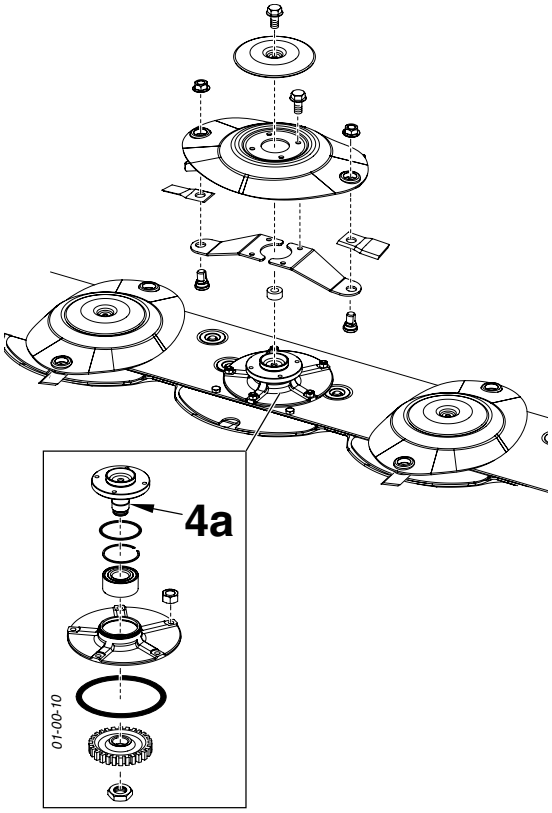
NOTE

Property damage caused through unnoticed obstacles. Obstacles (e.g. large stones, pieces of wood, boundary stones, etc.) can damage the mower unit

- Inspect the field before mowing and remove the obstacles.
- Drive sufficiently slowly and "drive-by-sight".
- Drive around visible obstacles at a sufficient distance.

If a collision should occur,

- Stop immediately and switch off the drive.
- Check the machine carefully for any damage In particular, check the mowing discs and their drive shafts (4a).

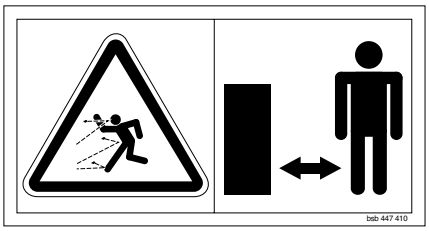


- If necessary have it checked over in a specialist work shop as well.

After contact with a foreign object

- Check condition of blades and blade holder (see chapter "Maintenance and Service").
- Retighten all blade screw fittings.

6. Keep a safe distance while engine is running.



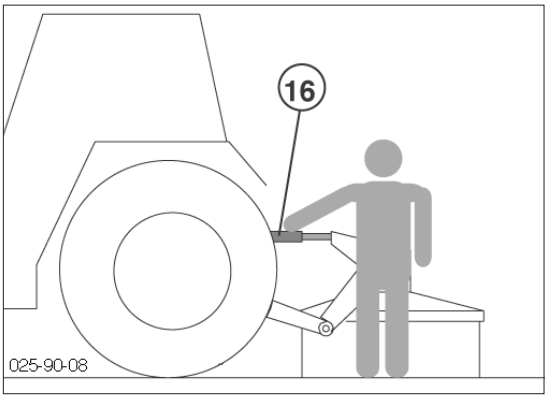
- Direct people out of the danger area as they may become injured by foreign objects ejected by the mower.
- Special care is necessary on stony ground and near roads and paths.

7. Wear hearing protection

- If a noise level of 90 dB (A) is reached or exceeded, then hearing protection must be worn (UVV 1.1 § 16).

Mowing

1. Set mowing height by turning the upper link spindle (16) (max. 5° mowing disc incline).

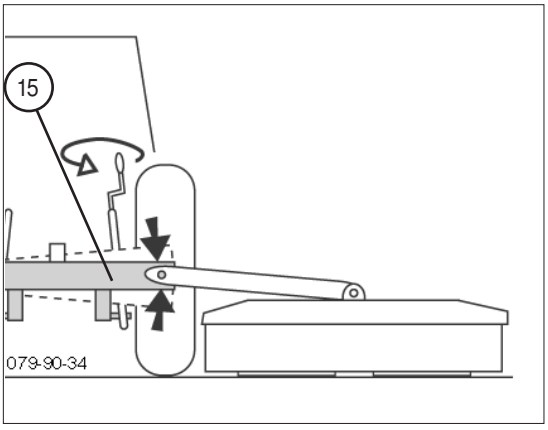


2. For mowing, slowly engage the p.t.o. shaft away from the crop and bring the mower rotor up to full speed.

Smoothly increasing the p.t.o. speed will avoid system-related noises from the p.t.o. shaft free-wheel.

- The driving speed depends on the ground conditions and the crop to be mown.

Setting:



- Mounting frame is horizontal (15)
- Fix the hydraulic lower link so that machine cannot swing out sideways.

Reversing

Raise the machine when reversing!

Collision Avoidance

When mowing around trees, fences, boundary stones etc., collisions between the cutter bar and obstacles can occur despite careful and slow driving. In order to avoid damage, a collision safety device is provided on the mower.

NOTE

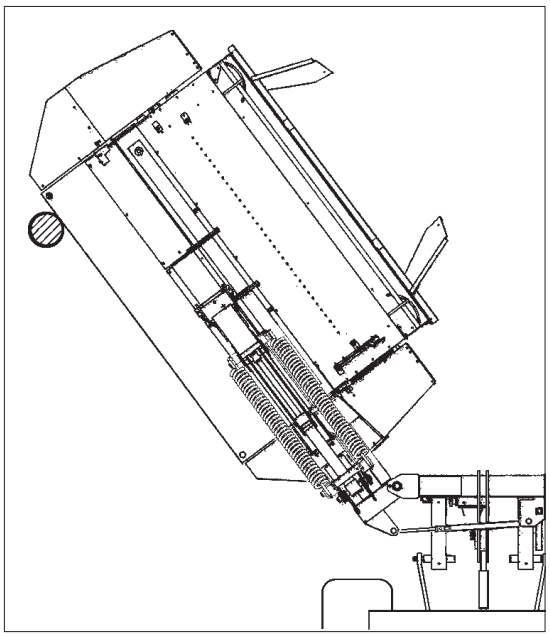
Material damage - It is not the purpose of collision avoidance to avoid damage to the machine when driving at full speed.

- Drive at an appropriate speed.
- Drive within the visibility range.

Return swivelling takes place automatically via a gas pressure reservoir.

TIP

The collision avoidance back pressure (= pressure in the gas storage tank to be overcome) is adjustable. See chapter "Relief and collision avoidance".



Working on slopes

DANGER

Life hazard - due to tandem tipping. The tractor's travelling characteristics are influenced by the weight (G) of the mower unit. This can lead to dangerous situations, especially on slopes.

Tipping hazard on slopes is present

- when the mowing units are lifted hydraulically
- when bending with lifted mowing unit

Counter-measures:

- Reduce speed when bending accordingly.
- It is better to travel in reverse on a slope than to carry out a risky turning manoeuvre.

NOTE

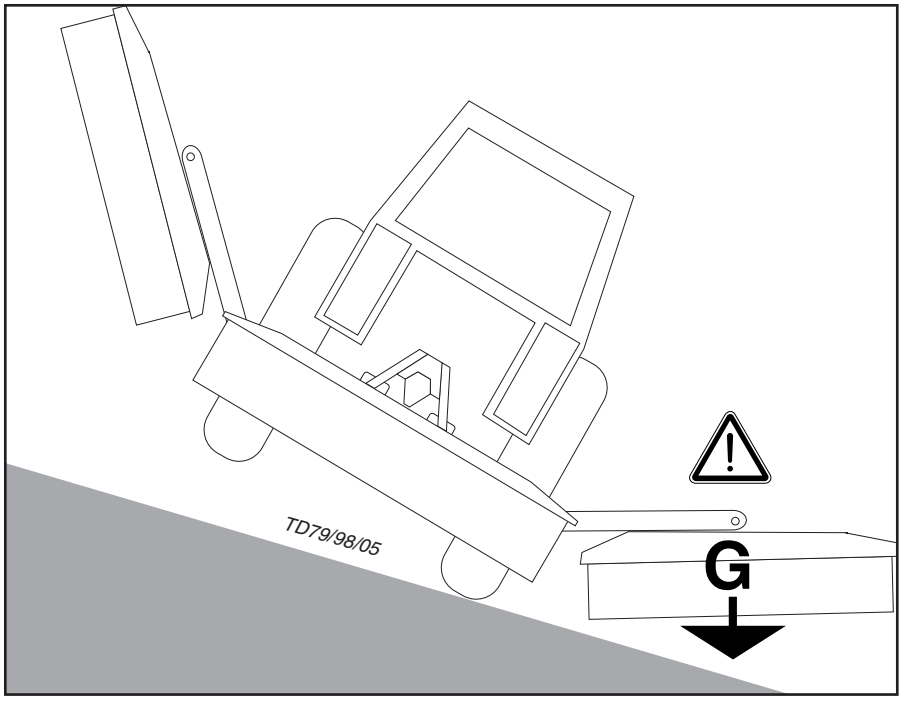
Material hazard - due to unnoticed obstacles

- Raise the mower when driving backwards and reversing!

DANGER

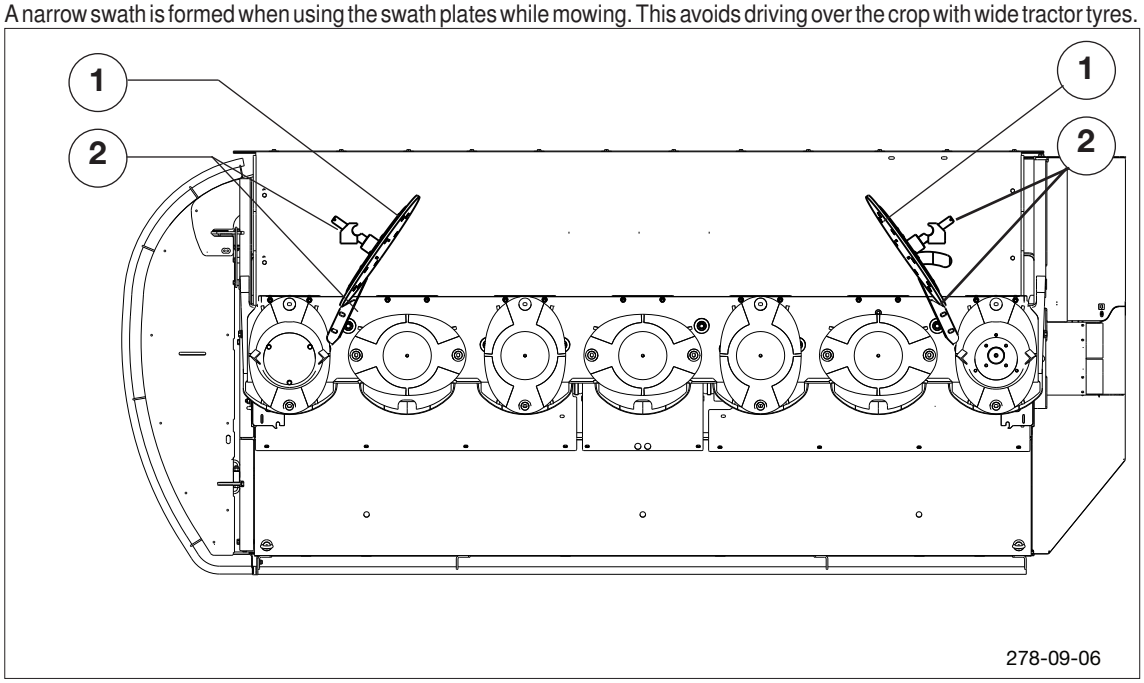
Life hazard - due to tandem tipping. There is a danger of tipping when swivelling the implement on headland.

- Swivel the cutter units successively using the individual lifting system in "field transport" or "working position".
- When swivelling in "field transport" or "working position": Always swing the uphill side mower first and then the downhill side mower!



Mode of operation

A narrow swath is formed when using the swath plates while mowing. This avoids driving over the crop with wide tractor tyres.



Designations:

(1) Swath disc

(2) Swath disc holder

Possible settings

DANGER

Life hazard - due to pulling-in by rotating parts.

- Never open nor remove the safety devices as long as the engine is running or parts are moving.

TIP

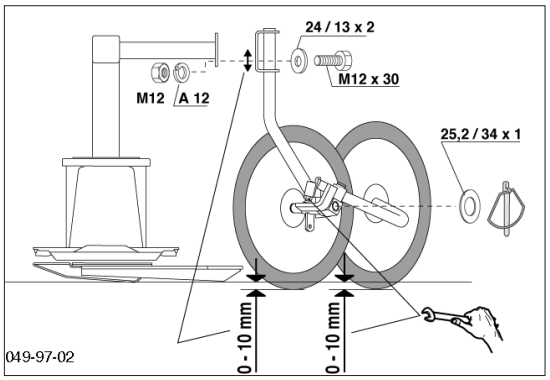
Before initial operation, read and observe the operating instructions, particularly the safety information,

Working area:

The horizontal working range of the swath former is adjustable via the slots (L).

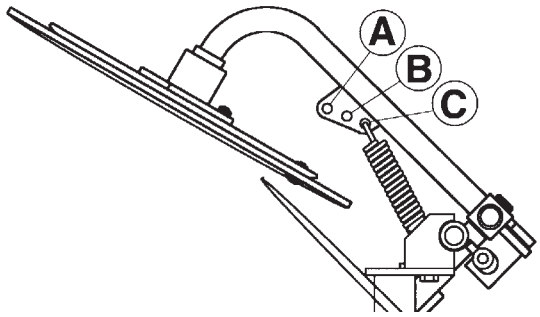
Optimal setting

The discs are mounted 0-10 mm lower than the bottom edge of the cutter bar.



Optional equipment:

Additional swath disc



Setting both tension springs:

A = For tall, dense fodder crops.

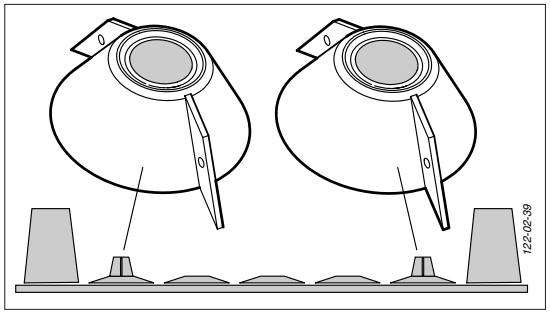
B = Basic setting.

C= For short fodder crops.

Conveying cone

Conveying cones are recommended:

- to improve the conveyance rate of swath deposits, particularly with heavy, dense forage.
- See spare parts list for individual parts



Maintenance

The swath former is maintenance-free with the exception of cleaning activities.

⚠ DANGER

Life hazard - somebody else puts the tractor into operation and drives off or switches on the articulated shaft while you are busy with maintenance work.

- Shut off engine and remove key before performing maintenance or repair work.

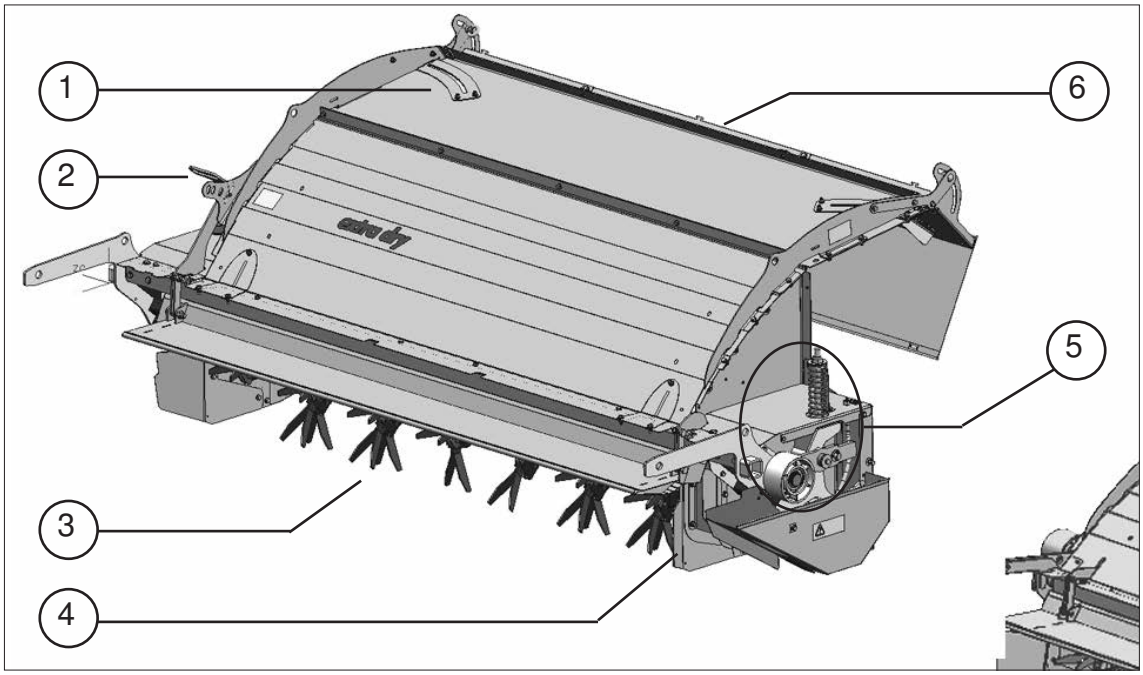
Removal and installation of the swath former

The mower unit is compatible for the optional attachment of a tine, roller conditioner or swath former. Special work steps are necessary for the conversion depending on the unit to be attached.

For details see the Section “REPLACE CONDITIONER”

Operation mode

The aim of conditioning is to ream the wax layer (protection layer) from the blade of grass. Consequently, the fodder looses moisture more easily and dries more quickly. Conditioning is carried out using V-shaped tines, placed in a spiral on the conditioner shaft. The intensity is adjusted via an impact plate with conditioner rails.



Designations:

(1) adjustable swath board
(2) Intensity adjustment unit
(3) Tine rotor
(4) Propeller unit
(5) V-belt tensioner
(6) Adjustable baffle plate

General safety information

⚠ DANGER

Life-threatening danger exists through being drawn in by rotating parts.

- Never open or remove the safety devices as long as the engine is running or parts are moving.
- Never enter the danger area within the protective installations as long as components are moving.
- Wear close fitting work clothes.
- Long hair should be kept under a head covering.

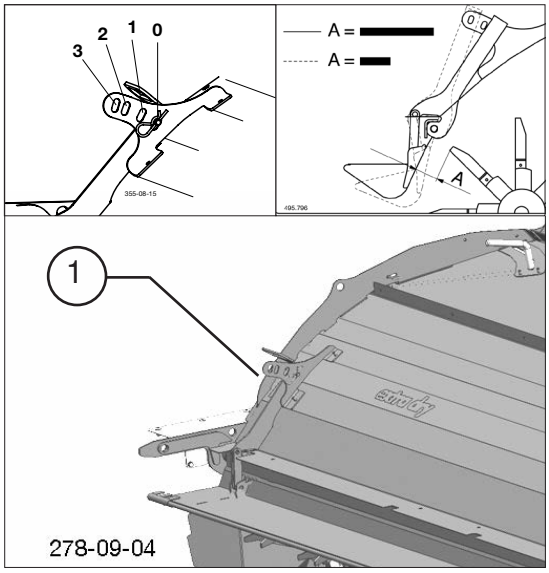
Possible settings

For optimal adaptation to the surrounding conditions, make the following adjustments to the tine conditioner:

Set the conditioning effect:

The distance between the adjusting strip and the rotor is set using lever (1).

- Position (3): the most effective conditioning. The fodder surface is strongly reamed. However, the fodder must not be beaten.
- Position (0): the fodder surface is only lightly reamed.

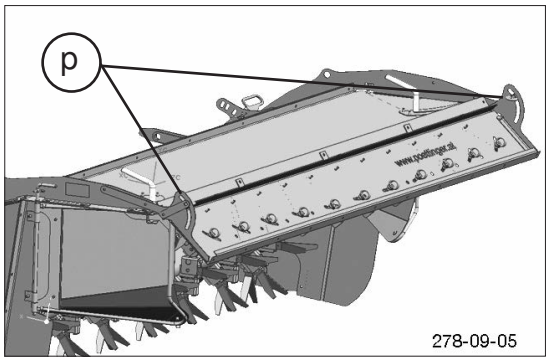


Among other things, the right setting depends on the quantity of cut material, driving speed and tractor capacity. Therefore, a binding recommendation cannot be provided regarding the correct lever setting.

Baffle plate:

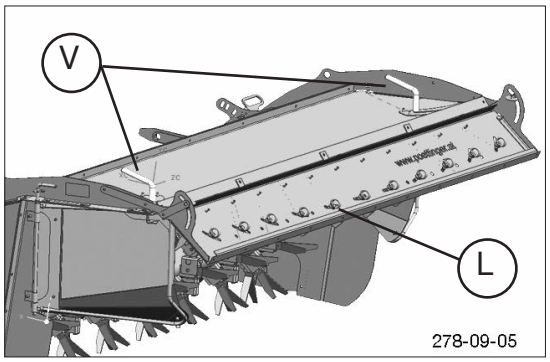
For the desired cuttings throw distance, you can adjust the angle of the baffle plate:

- Loosen clamping screw (P)
- Set impact plate
- Fix clamping screw (P)



Set swath width:

The swath boards form the cut and conditioned fodder into the desired swath width. Adjust the left and right swath plates identically by unscrewing and adjusting the setting screw (V)



Crop spreader:

the individually adjustable guide plates (L) help obtain the desired shape of the swath tray.

Setting the position of swath and guide plates

NOTE

Property damage through the swath and guiding plates being too narrowly set. This can lead to:

- increased power requirements

- machine clogging

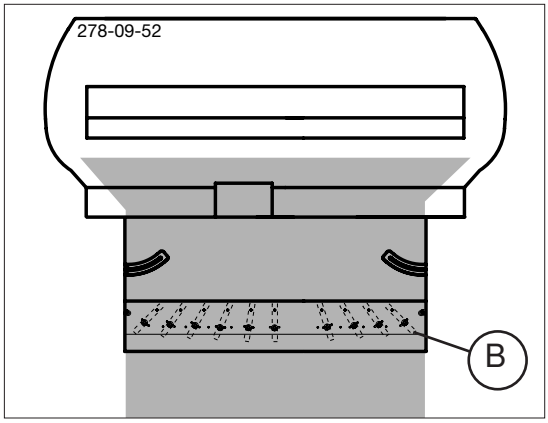
- V-belt damages

- Check the setting and if necessary set the swath and guiding plates to be wider

The settings listed below should be taken as basic settings. Due to the different types of forage, an optimum setting of the guide plates can possibly only be determined during practical application.

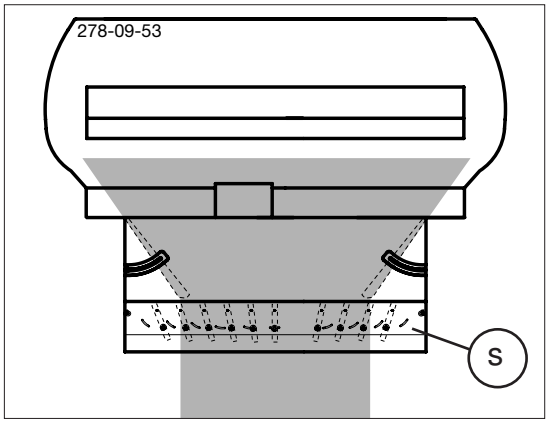
Crop spreading

- Swing swath plates (V) completely out
- Set the position of the guide plates (see illustration (B))



Swathes

- Swing swath plates (V) in
- Adjust the position of the guide plates (see image (S))



Operation

DANGER

Life-threatening danger exists through parts being thrown out.

- Make sure that third parties also keep a sufficient safe distance from the running engine.

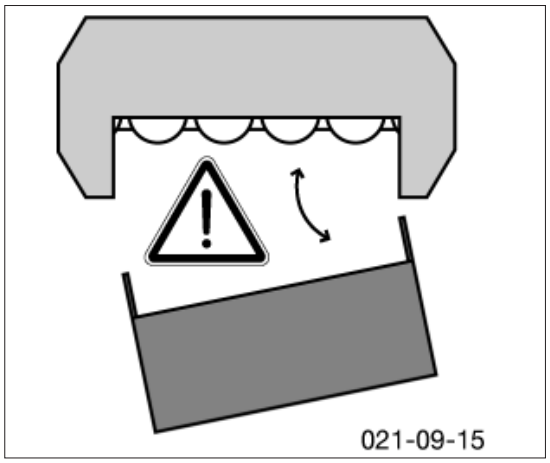
Driving speed:

Adapt the speed to fodder consistency. Travelling too fast reduces conditioning quality and evenness.

Working without a conditioner:

If necessary, the tine conditioner can also be detached and replaced with a roller conditioner, or swath former. (Contact your sales partner for more information.)

A machine with a conditioner as a complete unit is fitted with the proper safeguards. Should the conditioner be removed then the mower unit is no longer completely safeguarded. In this case, mowing must not take place without fitting additional safeguards!



DANGER

Life-threatening danger exists when detaching the conditioner. If the conditioner is detached, the cutting blades are freely accessible.

- For mowing without a conditioner, specially designed safeguards for this type of operation must be fitted to the mower bar.

  These safeguards are not included in the scope of delivery for a new machine with conditioner. The parts must be ordered additionally (see spare parts list, component: "REAR PROTECTION“).

Maintenance

DANGER

Life-threatening danger exists through another person starting the tractor and driving off, or switching on the cardan shaft while maintenance work is being carried out.

- Shut engine off and remove key before carrying out maintenance or repair work.

DANGER

Life-threatening danger exists through being drawn in by rotating parts.

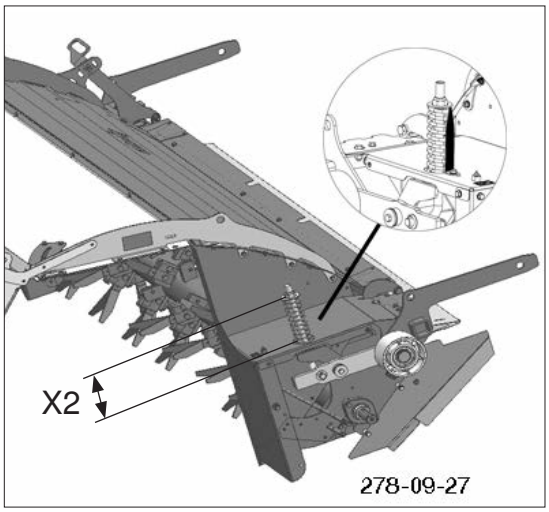
- Never open or remove the safety devices as long as the engine is running or parts are moving.
- Never enter the danger area within the protective installations as long as components are moving.
- Wear close fitting work clothes.
- Long hair should be kept under a head covering.

Correct belt tension:

Control size X2

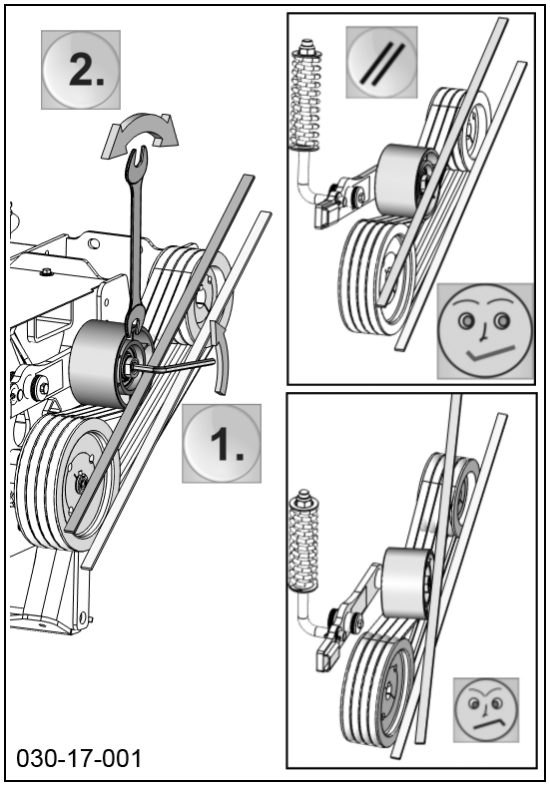
NOVACAT X8:

X2 = 185 mm (lateral mowers)



Check tensioner pulley run

Check the tensioner pulley running after the initial operation and after every change to the drive. The tensioner pulley must run parallel to the drive belt (see illustration).



Rotor tines:

1. Replacing tine fixings

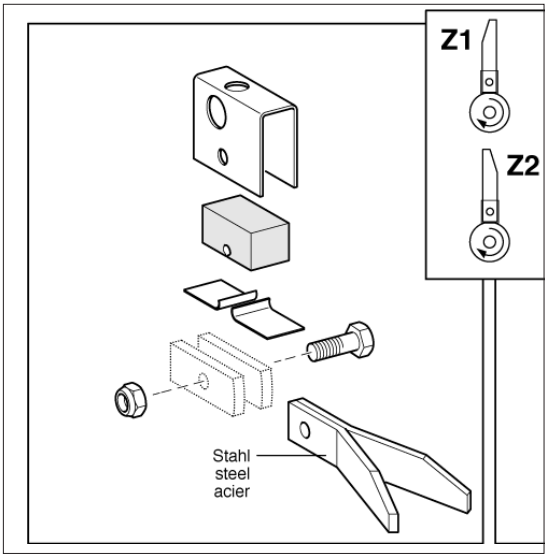
If signs of wear are found on the tine fixings, then the affected component(s) must be replaced. (tines, bolt, slotted spring pin ...)

2. Rotor tines position

Pos. Z1: Rotor tines position for normal operating conditions.

Pos. Z2: For difficult conditions of use, if e.g. the fodder wraps around the rotor.

Turn the rotor prongs 180° (pos.Z2). This tine position solves the problem in most cases. However, this lessens the conditioning effect to a certain extent.



Detaching and attaching the conditioner

The mower unit is designed for the attachment of either a tine conditioner, a roller conditioner or a swath former. Special work steps are necessary when changing from one machine to another.

For details see the Section “REPLACE CONDITIONER”

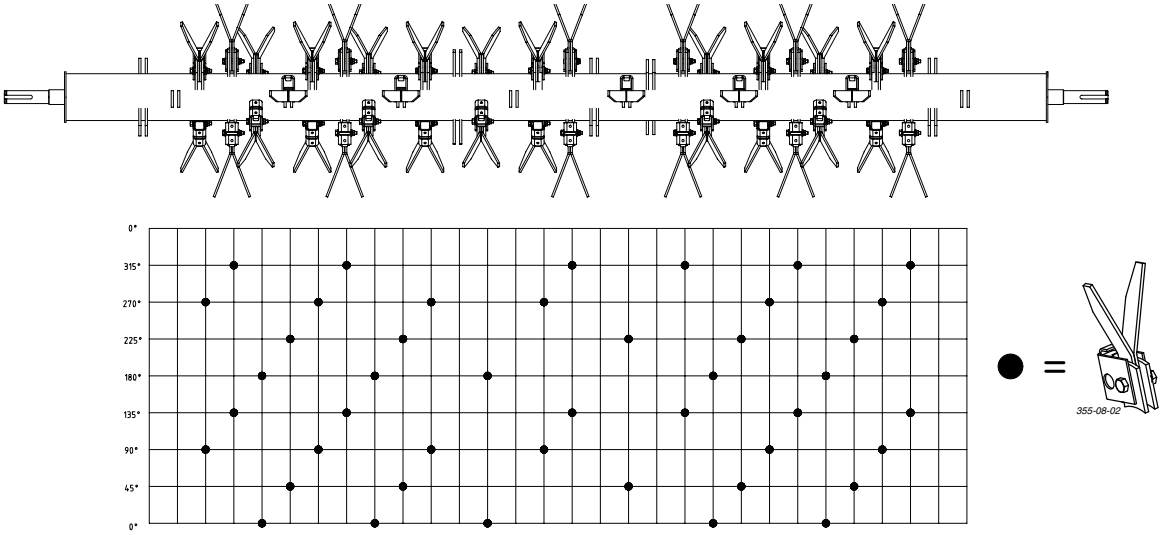
Position of the rotor tines on the conditioner

NOTE

Risk of material damage during operation with unbalance.

- Always remove both opposite tine holders and install them if you want to remove damaged tines.
- In case of noticeable vibrations, stop immediately and check the tine conditioner for lost tines.
- Remove the holder of the lost tines.
- Remove the remaining tines from the pair with its holder.

NOVACAT X8



Safety advice

DANGER

Life-threatening danger exists through being drawn in by rotating parts.

- Never open or remove the safety devices as long as the engine is running or parts are moving.
- Never enter the danger area within the protective installations as long as components are moving.
- Wear close fitting work clothes.
- Long hair should be kept under a head covering.

CAUTION

Risk of injury through ejected parts.

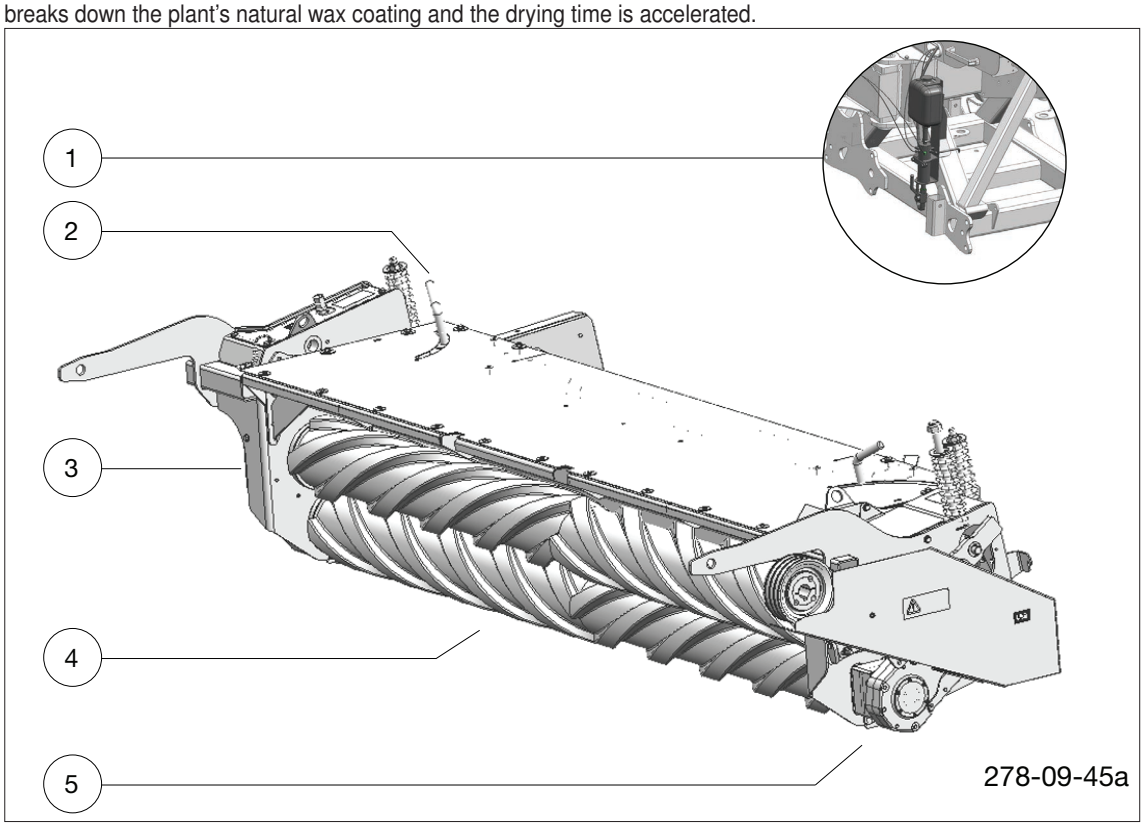
- Maintain a sufficiently safe distance from people when mowing.
- Stop work if you cannot keep a safe distance.

TIP

Before initial operation, read and observe the operating instructions, particularly the safety information.

Operation mode

The roller conditioner is suitable for lucerne and clover types. Two power-driven interlocking rollers crush the fodder. This breaks down the plant's natural wax coating and the drying time is accelerated.



Key:

(1) Central lubricating unit (on supporting frame)
(2) Adjusting unit for swath board (left and right)
(3) Maintenance unit: Chain drive
(4) Upper and lower rubber roller
(5) Maintenance unit: Belt drive

Possible settings

DANGER

Life-threatening danger exists through being drawn in by rotating parts.

- Never open or remove the safety devices as long as the engine is running or parts are moving.
- Never enter the danger area within the protective installations as long as components are moving.
- Wear close fitting work clothes.
- Long hair should be kept under a head covering.

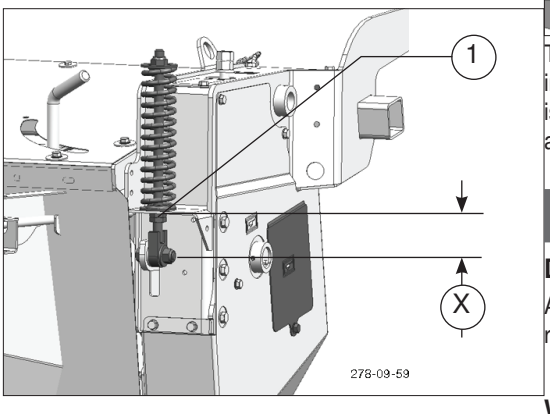
TIP

Before initial operation, read and observe the operating instructions, particularly the safety information.

The roller conditioner is preset for medium intensity when delivered. Make the following adjustments for optimum adaptation to the surrounding conditions:

Distance between rollers:

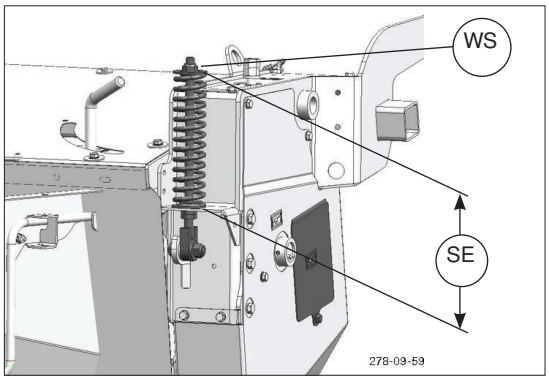
The distance between the rollers is equally set, left and right, using the adjustment screw (1). Basic setting: (X) = 45 mm.



TIP

Due to component tolerances, an uneven roll gap can occur regardless of the basic setting. Check the gap on both sides and readjust the adjusting screw (1) on one side if necessary.

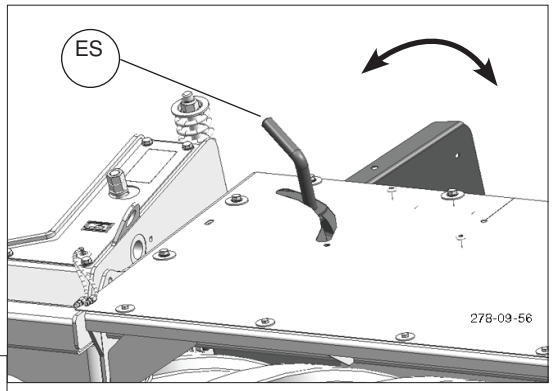
Upper roller spring pre-tension:



The upper roller is moveable and is tensioned left and right with a spring. The spring tension intensity can be adjusted at any time using the nut (WS).

Standard setting (SE): 210 mm

Set swath width:



The swath boards form the cut and conditioned fodder into the desired swath width. Adjusting the swath board is carried out identically, left and right, by unscrewing and adjusting the adjusting screw (ES).

Operation

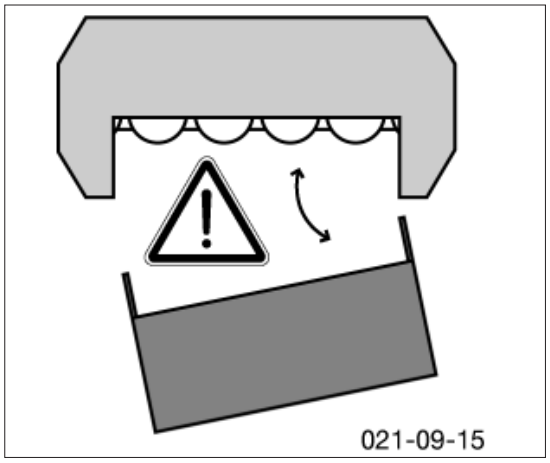
Driving speed:

Adapt the speed to fodder consistency. Travelling too fast reduces conditioning quality and evenness.

Working without roller conditioning:

If required, the roller conditioner can also be removed and replaced with a tine conditioner or swath former. (Contact your Service Centre for more information.)

A machine with a conditioner as a complete unit is fitted with the proper safeguards. Should the conditioner be removed then the mower unit is no longer completely safeguarded. In this case, mowing must not take place without fitting additional safeguards!



DANGER

Life-threatening danger exists when detaching the conditioner. If the conditioner is detached, the cutting blades are freely accessible.

- For mowing without a conditioner, specially designed safeguards for this type of operation must be fitted to the mower bar.

  These safeguards are not included in the scope of delivery for a new machine with conditioner. The parts must be ordered additionally (see spare parts list, component: "REAR PROTECTION“).

Maintenance

DANGER

Life-threatening danger exists through another person starting the tractor and driving off, or switching on the cardan shaft while maintenance work is being carried out.

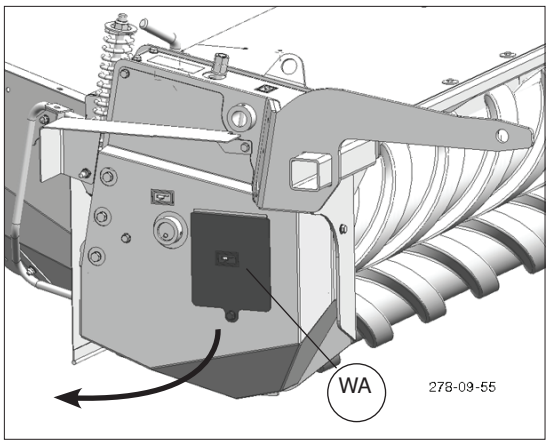
- Shut engine off and remove key before carrying out maintenance or repair work.

DANGER

Life-threatening danger exists through being drawn in by rotating parts.

- Never open or remove the safety devices as long as the engine is running or parts are moving.
- Wait until the rotating machine parts are at a complete standstill before starting any repair work.
- Wear close-fitting clothes and tie back long hair when carrying out repairs.

Cleaning: (after every 20 operating hours)



- Remove the covers and maintenance openings (WA) for the V-belt and chain drive
- Remove dirt deposits
- Clean rubber rollers

NOTE

Property damage through dirty toothed belts. A dirty and thus impaired toothed belt can lead to property damage.

- Check and clean the toothed belt.

Chain drive maintenance unit

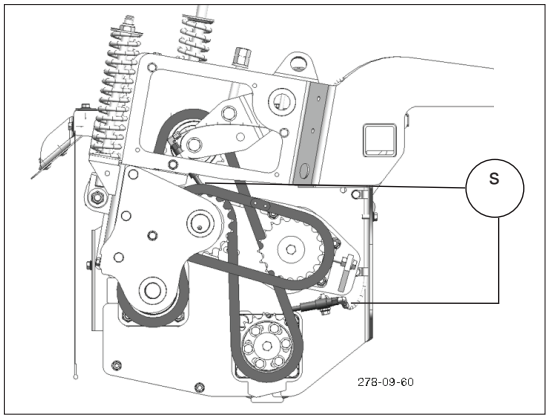
Lubrication: (after every 20 operating hours)

TIP

The following oils are recommended for the central lubrication device:

- Synthetic oil HEES 46
- Hydraulic oil HLP 46

Only use new oil!



Drive chains are lubricated via main lubricating device. A lubricating impulse is triggered every time the mower is raised.

- Functional check of lubricating device (S)

• Check oil level (The oil container is attached to the bearing frame)

NOTE

Risk of material damage to the drive chains due to inadequate lubrication.

- Check the central lubrication unit oil level before each start-up.

Old oil pump
until July 2011

New oil pump
from August 2011

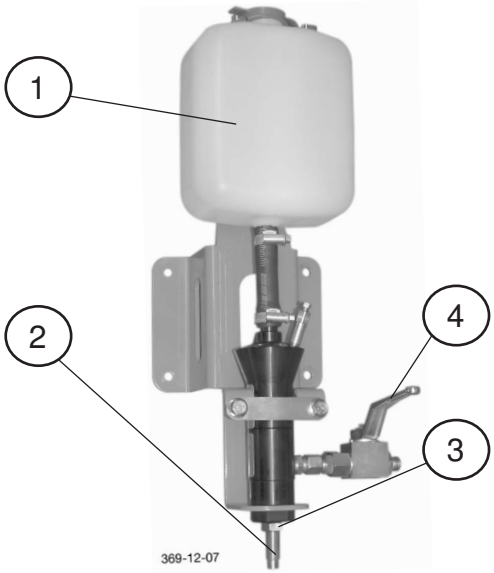
The old pump (until end of July 2011) does not allow adjustment of oil volume per lift. (See illust. 369-12-08) Pump is located on conditioner below oil reservoir (1).

The new pump (from August 2011) allows adjustment of oil volume per lift:

Correct setting for oil volume per lift:

The smaller the field, the more often the mower lift per unit of time is triggered, so select the LOWEST oil volume to be injected per lift.

Set oil volume using adjusting screw (2) and lock nut (3). The further the adjusting screw is screwed into the pump, the lower the oil volume per lift.



(1) Oil reservoir
(2) Adjusting screw
(3) Lock nut
(4) Stopcock (Lubrication on/off)

Setting the lubricant quantity

- Factory setting: X=27.5 mm
- Unscrew screw to increase the lubricant quantity .
- Screw in screw to decrease the lubricant quantity.

NOTE

Risk of material damage to the drive chains due to inadequate lubrication.

- Check the central lubrication unit oil level before each start-up.

Chain tension: (after every 60 hours in operation)

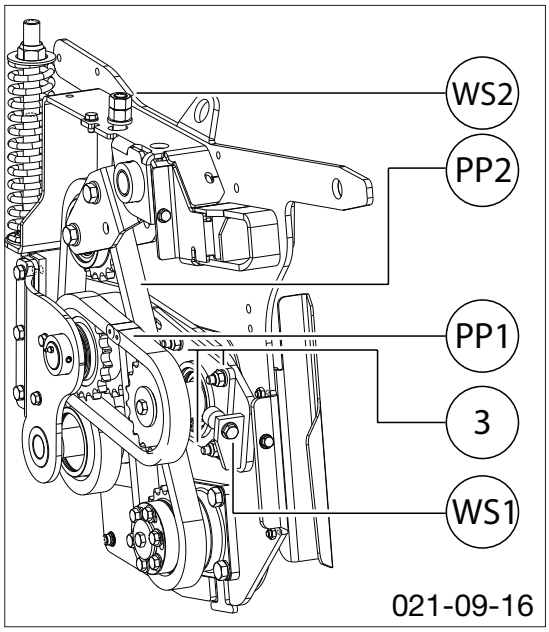
Short drive chain

Check chain tension with your thumb on check point (PP1).
Play: 3.5 –5 mm.

Alter chain tension:

- Loosen screws (3)
- Adjust tensioning screw (WS1)

Long drive chain

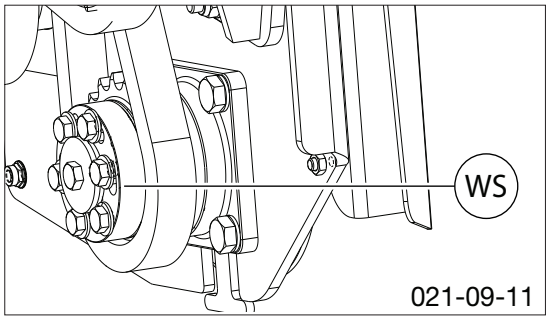


Check chain tension with your thumb on check point (PP2).
Play: 5 – 8 mm.

Alter chain tension:

- Adjust tensioning screw (WS2)

Alter roller position: (as required)



The roller position changes if the drive chains are re-tensioned several times.

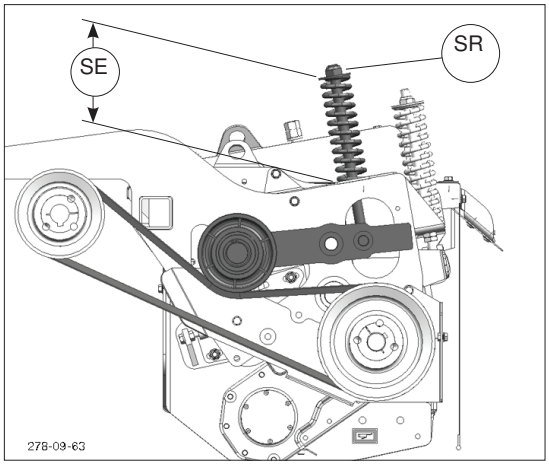
Alter roller position:

Loosen screws (WS) and rotate roller. Set lower roller position so that the profile of both rollers optimally interlock but do not make contact with each other.

TIP

Optimum roller position prevents premature wear of the rubber rollers.

Drive belts: (as required)



Check belt tension:

- Basic setting (SE): 200 mm

Alter belt tension:

- Adjust screw (RS)

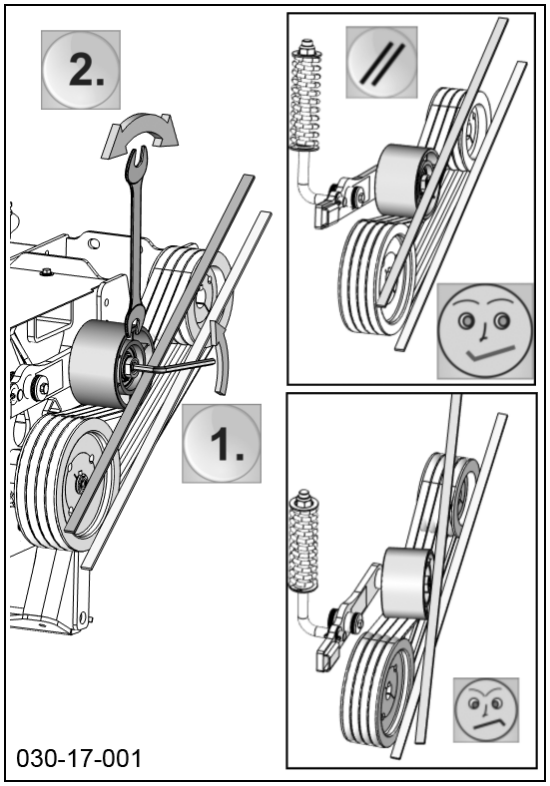
Replacing belts:

When the drive belts show signs of damage or wear, they must be replaced. **(Note: Always replace the complete belt set!)**

- Loosen belt tension. To assist, the belt tensioner can be deactivated using the quick-change blade wrench
- Replace belt
- Retension the belts

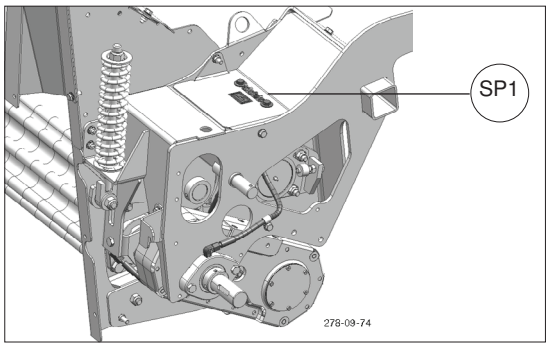
Check tensioner pulley run

Check the tensioner pulley running after the initial operation and after every change to the drive. The tensioner pulley must run parallel to the drive belt (see illustration).



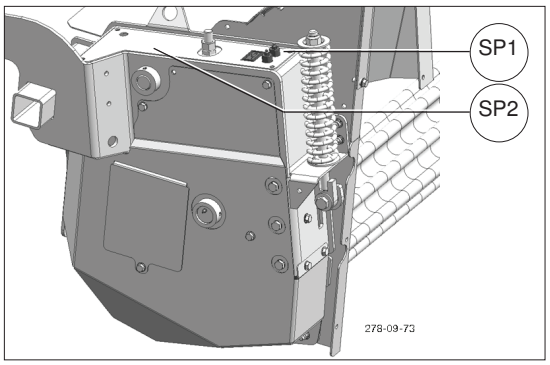
Lubrication:

(After every 50 operating hours)



• SP 1

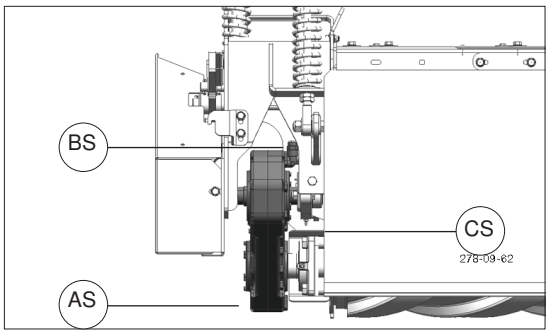
(Every 100 operating hours)



• SP 2 (Unscrew the top cover to lubricate!)

Gear oil:

(After every 100 operating hours)

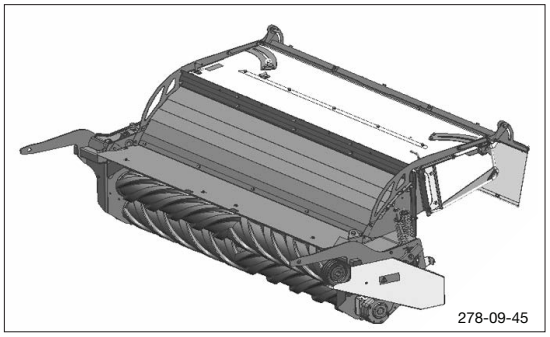


The gearbox is located on the outside of the cutter bar.

- Open drain plug (AS) and drain oil
- Fill gearbox with oil (700ml) at filling screw (BS)
- CS = oil level

(Fully synthetic lubricating oil for high-temperature lubrication, ISO-VG class 220)

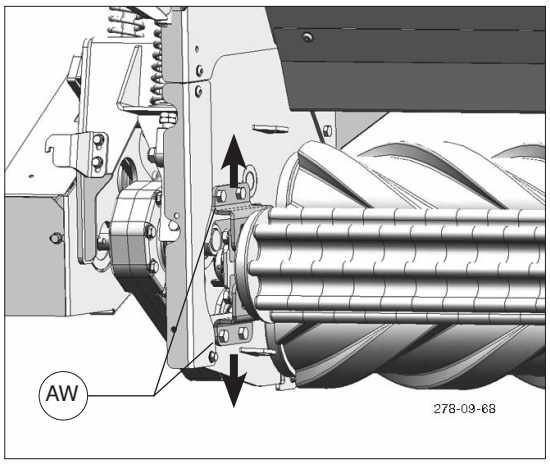
Roller conditioner for Collector



A dedicated roller conditioner is necessary if the mower combination is fitted with a collector. The differences are:

- greater ejection
- additional roller

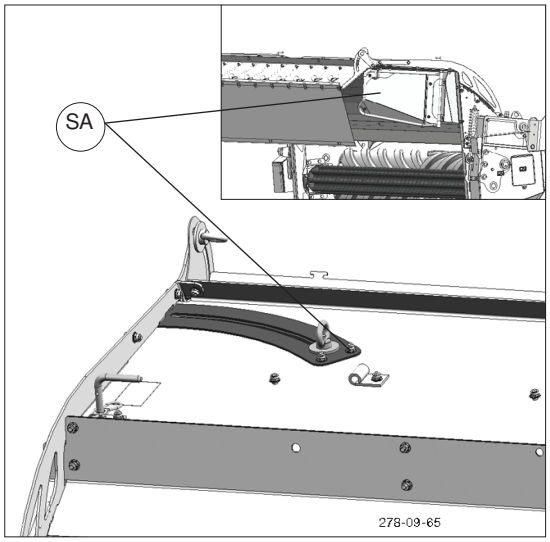
Adjust ejection angle:



The additional roller affects the ejection angle of the mowed material. The roller height can be altered to adjust the ejection angle.

- Unscrew the 4 bolts (AW) left and right
- Adjust the roller height and fix in position

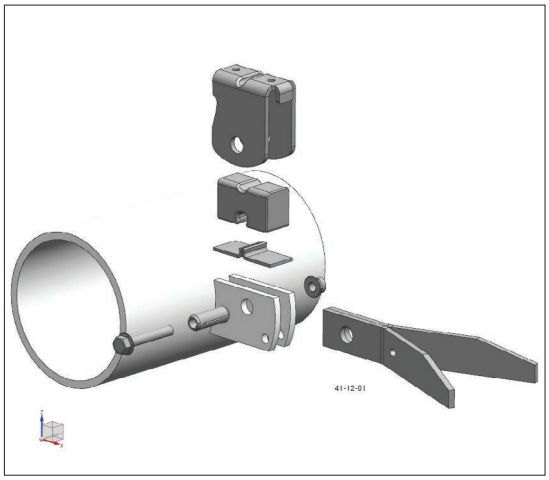
Swath board in conjunction with collector:



The swath plate is easy to remove and may be pinned to the processor's ejection hood (SA)

Maintenance of the rotor tines:

1. Replacing tine fastening



If signs of severe wear on the tine fastening are discovered, it must be replaced completely (tines, screw, clamping sleeve, ...).

Mode of operation

The mower unit is designed to allow attachment of either a tine conditioner, a roller conditioner or a swath former. The conditioners or swath formers are additionally designed as a safety device and are imperative for use.

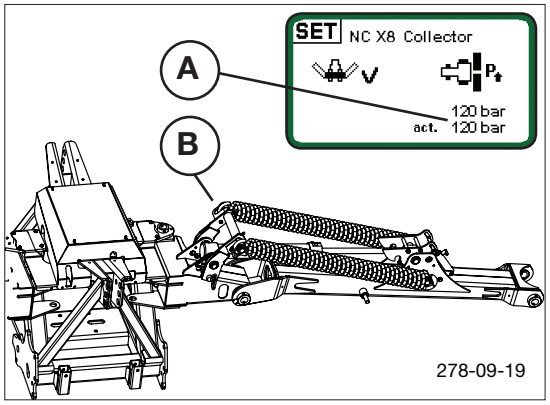
Remove conditioner

⚠ CAUTION

Risk of slight or moderate injury through being crushed.

- Reduce the relief pressure before starting to remove the swath former or conditioner.

1. Reduce mower unit relief pressure



(A) Version: Hydraulic relief

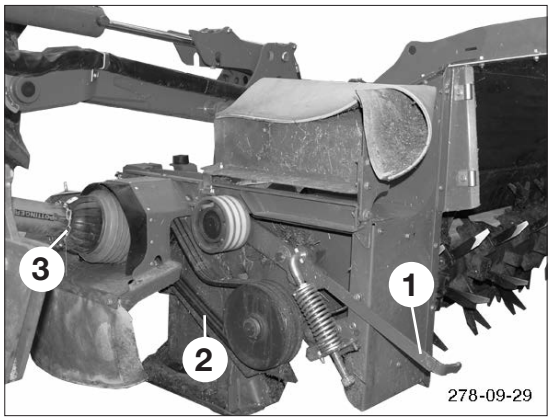
Reduce the relief pressure to 0 in the “SET” menu via the operating panel.

(B) Version: Mechanical relief

Raise the mower unit until the pressure relief springs are depressurized and undo the linch pin.

(See Section headed “Pressure relief and collision lock”)

2. Remove protective cover and belt

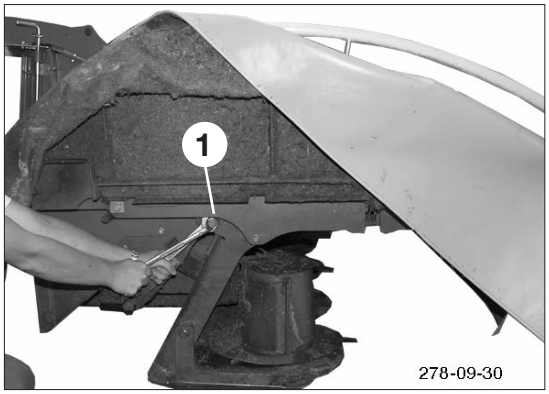


Loosen the belt tension using the blade wrench (1) and remove the belt (2) on the conditioner side.

Then remove blade wrench.

The belts must be removed completely if a swath former is attached. Uncouple cardan drive shaft (3) and remove belt.

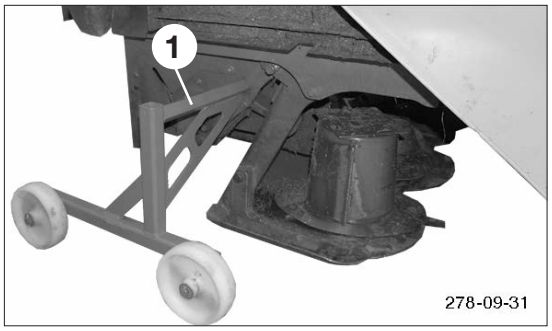
3. Loosen conditioner fixing



The conditioner fixing (1) to be loosened is located under the conditioner’s outer side guard.

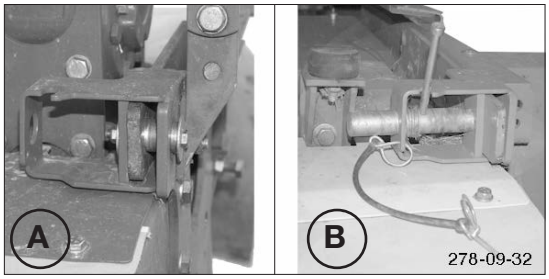
The optimum alignment between mower unit and conditioner is adjusted using the conditioner fixing (1). The belt pulleys on the inside of the conditioner must be aligned flush with the belt pulleys of the mower unit.

4. Fit the trolley



To transport the removed conditioner, insert the trolley (1) supplied into the bracket on both sides until it stops.

5. Open retaining bolt

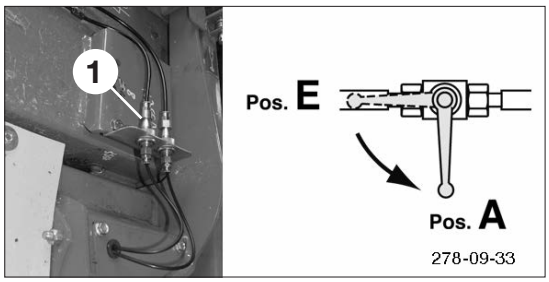


The conditioners are each attached to the mower unit with 2 retaining bolts.

Standard (A): Screw + sleeve

Optional equipment (B): Quick-release fastener with spring support.

6. Disconnect lubrication line:



(The lubrication line is only connected if the roller conditioner is used!)

Close shut-off valve of central oil lubrication on coupling jack (pos. A)

To connect and disconnect the lubrication line on the mower unit, slide the connection out.

7. Remove conditioner

Attach conditioner

1.Cleaning

Clean the conditioner/swath former and the mower unit thoroughly, especially the connecting points.

2. Push conditioner or swath former into mower unit mounting.

3. Lock retaining bolt

Standard (A): Screw + sleeve

Option (B): Quick-release fastener with spring support.

4. Removing the trolley

5. Adjust and secure conditioner fixing

The optimum alignment between mower unit and conditioner is adjusted using the conditioner fixing (1).

The belt pulleys on the inside of the conditioner must be aligned flush with the belt pulleys of the mower unit. Secure conditioner fixing!

6. Install belt, tension and attach protective cover.

For details see the Section “Remove Conditioner”

7. Connect lubrication line (only with roller conditioner)

Open the shut-off valve of the central oil lubrication on the mounting frame (pos. E).

8. Adapt relief pressure to mower unit:

The mower unit relief pressure must be reset after attaching the new conditioner.

The guideline values for the "hydraulic relief" variant are as follows:

Swath former: 90 - 100 bar

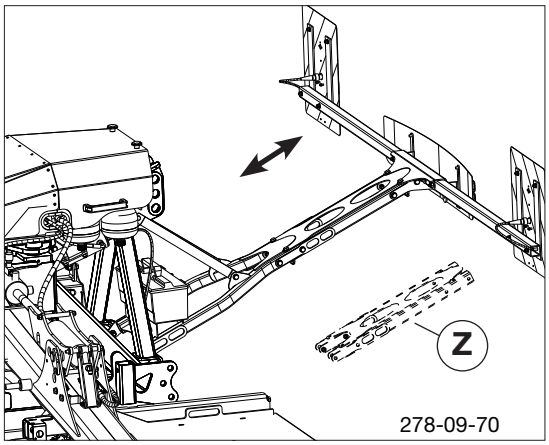
Tine conditioner: 130 - 140 bar

Roller conditioner: 160 - 170 bar

TIP

Check the relief pressure: The mower unit can be raised manually externally (approx. 80 kg relief pressure).

9. Adapt the lighting support



Depending on the conditioner or swath former, the lighting support length can be changed by using an adaptor (Z).

General safety information

DANGER

Life-threatening danger exists through being drawn in by rotating parts.

- Never open or remove the safety devices as long as the engine is running or parts are moving.

CAUTION

Risk of injury through ejected parts

- Maintain a sufficiently safe distance from people when mowing.
- Stop work if you cannot maintain a safe distance.

TIP

Before initial operation, read and observe the operating instructions, particularly the safety information.

Mode of operation

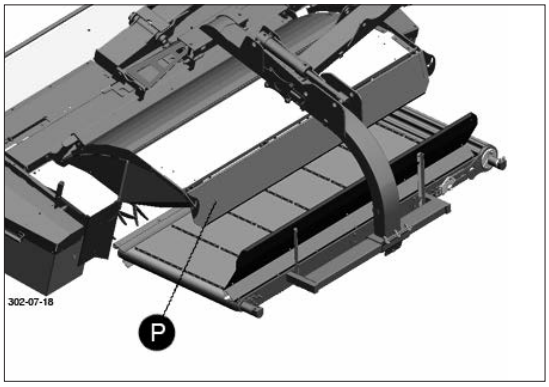
A variable swath deposit is possible using a cross conveyor belt (single swath, broad deposit or triple swath). The cross conveyor is swivelled out or in, and the belt speed per unit infinitely adjusted using the operator terminal.

Mode of operation

A variable swath deposit is possible using a cross conveyor belt (single swath, broad deposit or triple swath). Using the operating terminal, the cross conveyor belt is swung out or in and the belt speed per unit infinitely adjusted.

Possible settings

Deflector plate (P):



Set deflector plate (P) so that forage is thrown onto the centre of the cross conveyor belt

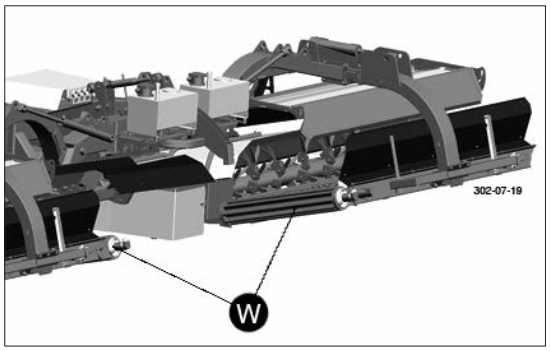
Belt speed: (optional equipment)

Cross conveyor belt speed can be set using the control

TIP

Different speeds can be set on the cross conveyor belts for operation on slopes (contour lines). The downhill-side belt is allowed to run faster than the uphill-side belt.

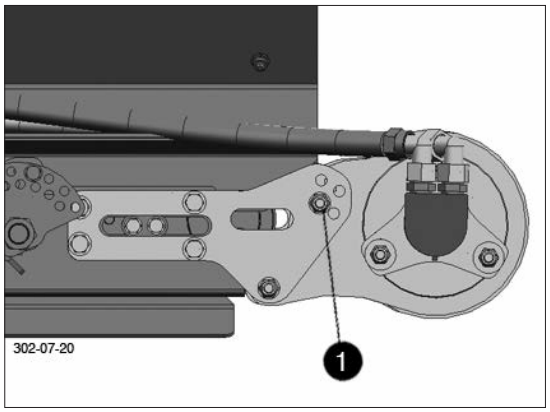
Accelerating roller (Optional):



Accelerator rollers (W) are used to transfer the cut forage further into the middle.

Setting:

The height of the accelerator rollers can be adjusted to change the casting distance.



- Remove screw (I) (front and rear)
- Move roller to the desired position
- Insert screw (I) in the appropriate hole pattern and tighten (front and rear)

TIP

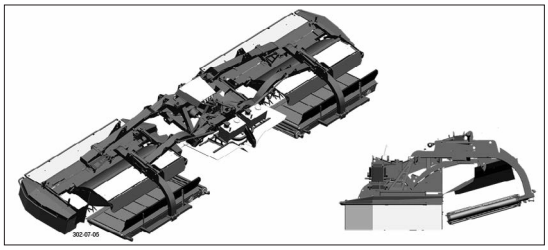
There are 2 screws on each roller which have to be uniformly adjusted when changing the casting distance.

Operation

TIP

Check and clean the belt run regularly to prevent premature wear (see chapter "Maintenance").

Swinging in the cross conveyor:



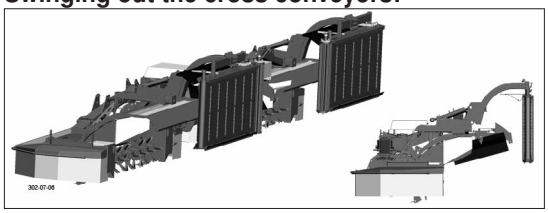
Cross conveyor belts will always be in this position when swinging from transport to working position.

- Swivelling cross conveyor belts in and out takes place via the operating console.

TIP

The cross conveyor belts are permanently connected to the mower units and therefore always move with them when swivelling between transport and working position.

Swinging out the cross conveyors:



- Swivelling cross conveyor belts in and out takes place via the operating console.

NOTE

Risk of material damage when swivelling the cutter bars into transport position through colliding with the cross conveyor belts.

- Swing in the cross conveyor belts in before bringing the cutter bars into transport position.

TIP

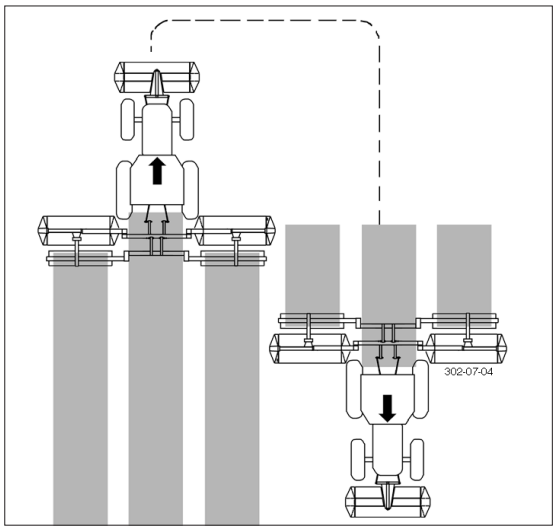
If the cross conveyor belts are no longer needed, they can be removed them from the machine. The tractor will therefore have less load.

Swath deposit

A variable swath deposit is possible using a cross conveyor belt (single swath, broad deposit or triple swath). Using the operating terminal, the cross conveyor belt is swung out or in and the belt speed per unit infinitely adjusted.

Cutting without a cross conveyor

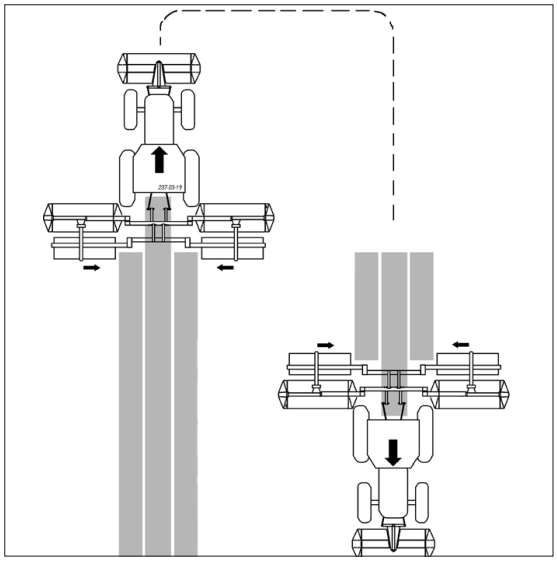
- The mown material is deposited at the swath width of the conditioner (= single swath deposit).



Cutting with a cross conveyor

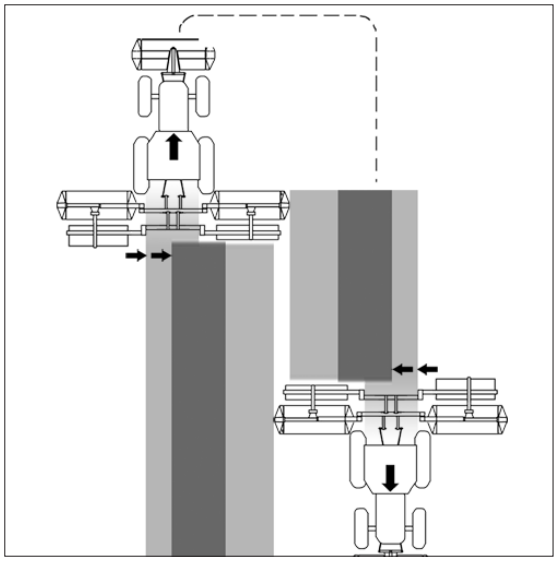
- Both cross conveyors are transporting the mowed material to the middle and generate a "3rd swath".

  The swath width can be narrowed using the additional roller.



Mowing with only one cross conveyor

- If operating with only one cross conveyor, there is a chance of depositing a swath row over the remaining two swath rows.



Advantage:

The total swath width is optimal for a swather with a minimum working width of 10m.

TIP

Remove the separating plate for this mode of operation.

General safety information

DANGER

Life-threatening danger through machine tipping over.

- Park the cross conveyor belt only on even, solid ground.
- No-one is to be located between the mower combination and the cross conveyor belt when attaching and removing the cross conveyor belt

CAUTION

Risk of injury through ejected parts

- Maintain a sufficiently safe distance to people when mowing.
- Stop work if you cannot maintain a safe distance.

Dismounting the Cross conveyor belt

TIP

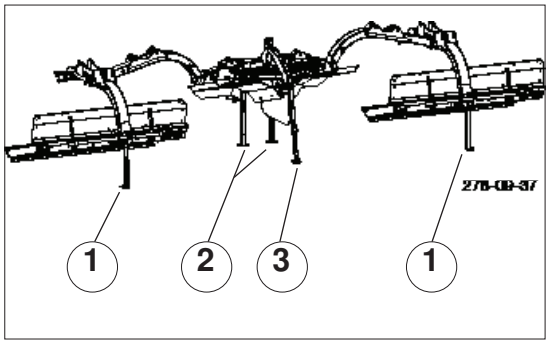
After a weight change, such as the attachment or removal of the cross conveyor belts:

Check the relief pressure and readjust it if necessary.

1. Move the mower unit to the starting position:

- Raise and place in headland position
- Briefly swing cross conveyor belt out and then swing completely in

2. Position support stands and disconnect cardan shaft:



- Swing out support stand (1) per belt
- Disconnect cardan shaft between mower unit and cross conveyor belt.

TIP

Disconnect cardan shaft from cross conveyor belt first.

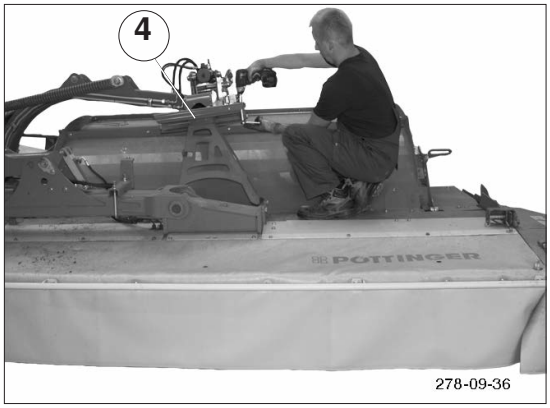
- Fit the 2 support stands (2) to the front main frame of the cross conveyor belt.

TIP

The support stands are not transported together with the mower unit.

- Secure support stand (3) on the rear main frame of the cross conveyor belt at the very outside position.

3. Undo locking flap



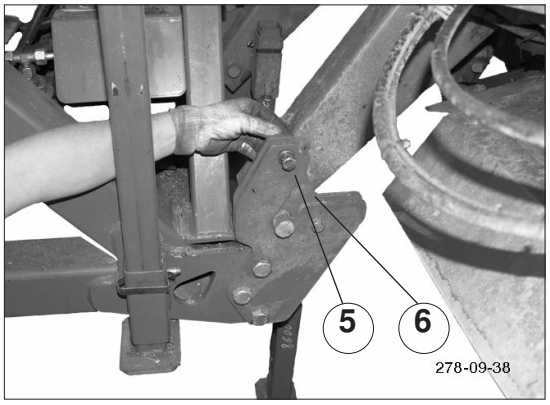
- Undo the flap screws (4)

4. Lower mower unit to working position:

TIP

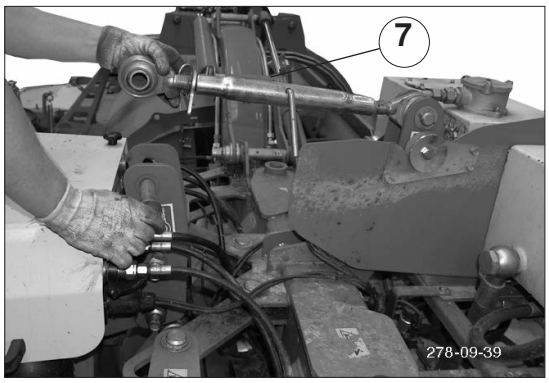
Lowering can be interrupted using the STOP key on the control unit. Therefore gradual and gentle lowering is possible.

5. Undo lower link:



- Undo the upper screw (5) in the lower link safeguard
- Fold lower link safeguard (6) out

6. Uncouple upper link:



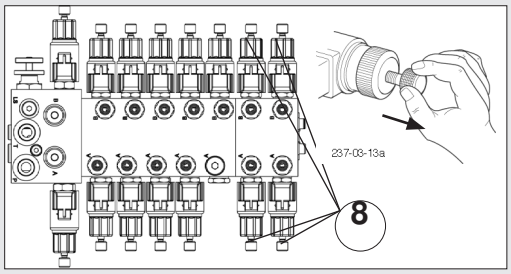
- Relax the top link (7) and hang it on the side of the mower unit.

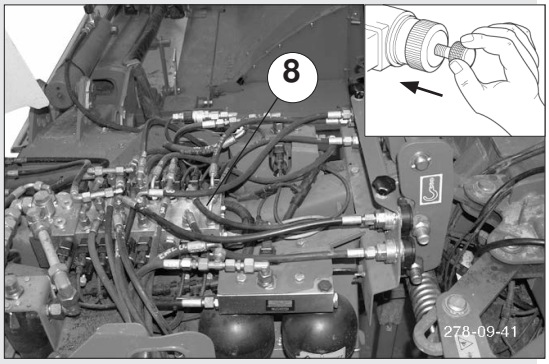
7. Unplug connecting lines:

- Unplug electrical connection lines
- Unplug hydraulic connection lines

TIP

If the pressure in the hydraulic lines is too high, they cannot be disconnected. To remedy the situation, turn the last 4 valve blocks (8) in of the emergency operation hydraulic block (under the white protective cover of the mounting frame).



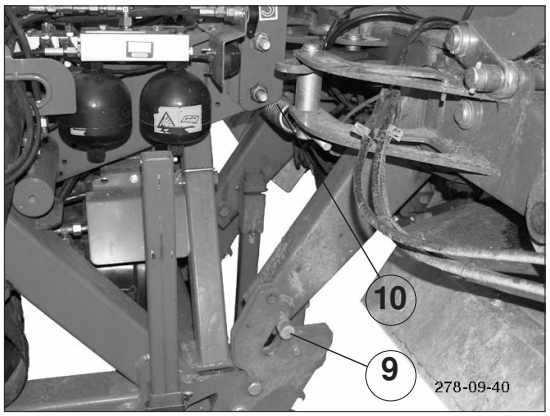


WARNING

Risk of serious injury or death if the last 4 valve blocks of the emergency operation remain screwed in.

- Unscrew the last 4 valve blocks of the emergency operation. So that the cross conveyor belts are not accidentally swivelled.

8. Lower mower unit and move off freely



- Lower mower unit until cross conveyor belt lower links (9) are free.

NOTE

Risk of material damage through a collision between the upper link holder and the spring of the cross conveyor belt.

- Do not lower the mower unit too far!

- Carefully move the mower unit clear

9. Alter software setting

- The mower type can be altered on the control panel in the “SET” menu. (see chapter "Power Control and ISOBUS)

Configuration:

With cross conveyor belt = Type: Novacat X8 Collector

Without cross conveyor belt = Type: Novacat X8

WARNING

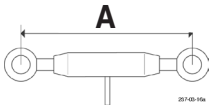
Risk of serious injury or injury resulting in death through the machine tipping when climbing on or clambering about on a parked cross conveyor belt.

- Do not climb onto parked cross conveyor belts.
- Advise other persons that the parked cross conveyor belts must not be accessed.

Attaching the Cross Conveyor Belt

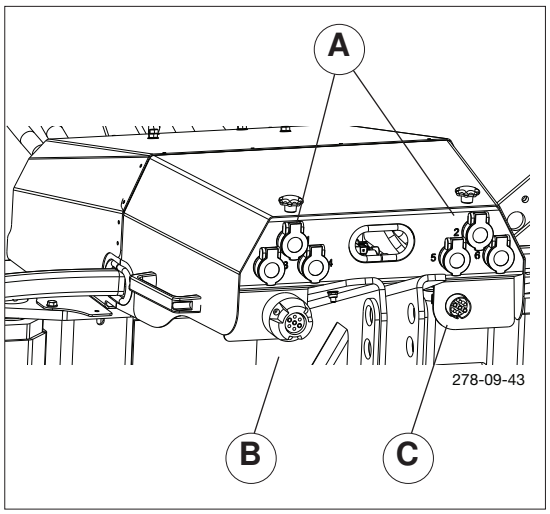
Attaching the cross conveyor belt to the mowing unit takes place in the reverse order.

Seting the upper link:



A = 475mm

Connections:



A 1 = raise left Collector
2 = raise right Collector
3 = swing left belt out
4 = swing left belt in
5 = swing right belt out
6 = swing right belt in

B Lighting

C: Connection cable for Collector

Cross conveyor belt maintenance

DANGER

Life-threatening danger exists through moving or rotating parts

Carry out maintenance works on the machine only when

- it has been parked securely on level, firm ground.
- it has been secured against rolling away.
- the tractor engine is turned off and the pto shaft is stationary.
- all moving or rotating parts (especially the mowing discs) have come to a complete standstill. (Hearing test!)
- the tractor's ignition key has been removed.

Life-threatening danger exists when under the machine.

- Adequately support the sections you will be under.

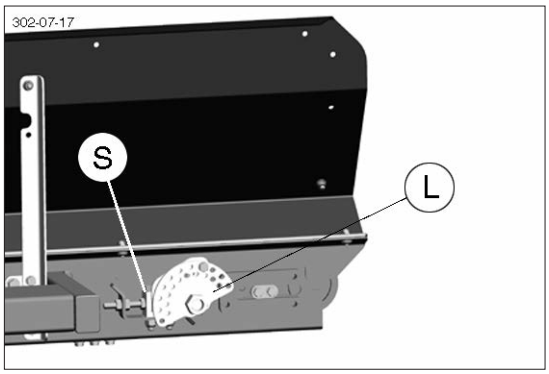
1. Check the belt run every 5, 10, 20 hours. Then every 20 hours thereafter.

- The belt must not run to the sides.
- The belt must be centred on both rollers.

Possible causes for high belt wear:

- Belt tension to loose
- Belt not running centred

Setting belt tension

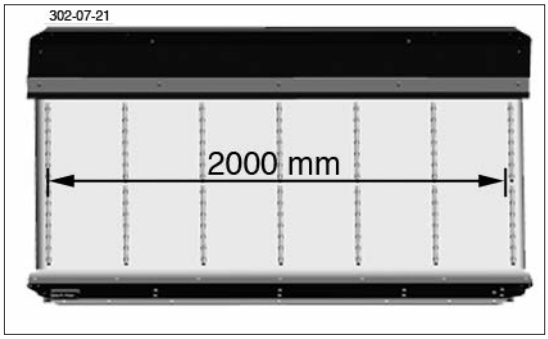


- Set the belt tension by rotating the perforated disc (L)
- Set the roller position by moving the tensioning block (S)
  - Set the roller so that the belt runs in the middle

Possible causes for high belt wear:

- Belt tension to loose
- Belt not running centred

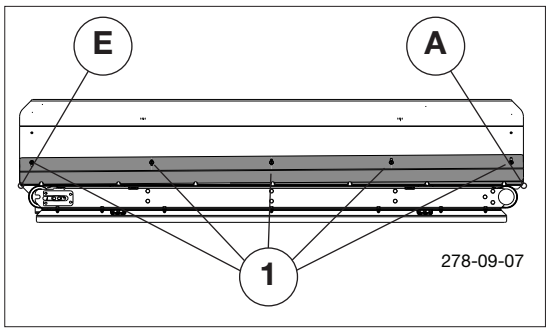
Setting the belt pretension



- Pretension belt at approx. 0.4 – 0.5 %

  Setting instruction:
  - Mark loose belt at 2000 mm (see diagram)
  - Tension belt until marked distance reaches 2008 – 2010 mm

Adjust the feed plate

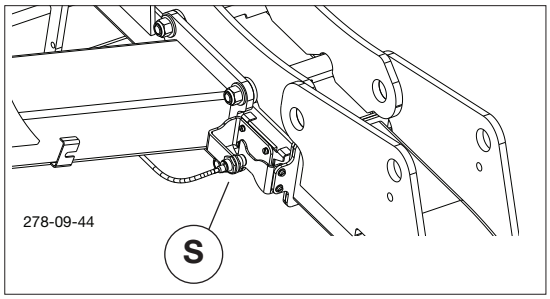


Always adjust the distance between the feed plate and the conveyor belt with the screws (1) so that the gap on the discharge side (A) of the conveyor belt is larger than the gap on the intake side (E). **Minimum distance: 5mm**

TIP

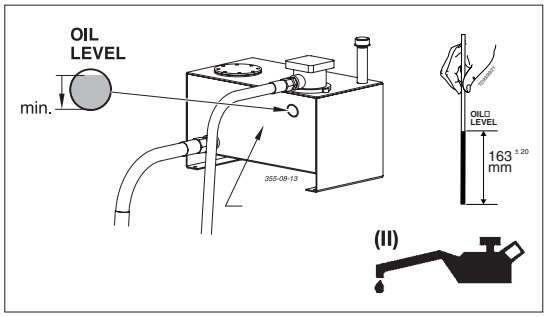
Set the feed plate correctly. Doing so prevents blockages and reduces cleaning costs.

Adjust sensor



The cross conveyor belt sensor advises the swinging status of the belt. Set the sensor distance (S) between 3 -> 5 mm.

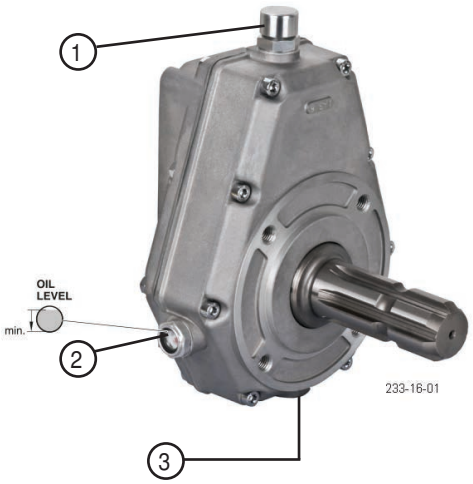
Oil change



Interval: every 2 years / max. 4,000 ha)
Quantity: 26 litres
Type: SAE 10W-30

Oil change

Interval: Annually
Quantity: 0.3 litres
Type: SAE 90



1… Filling screw
2...Sight glass for oil level
3… Drain bolt

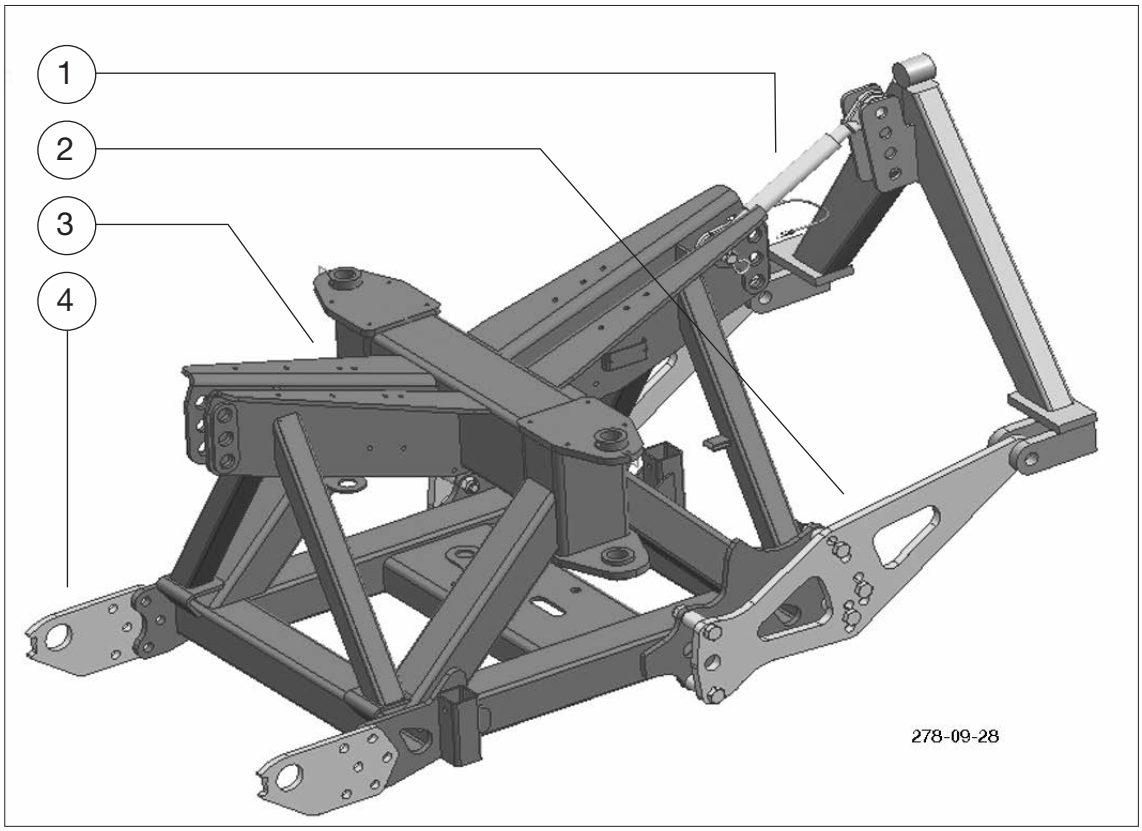
Requirements for reverse drive

- Tractor suitable for reverse drive
- Conditioner suitable for reverse drive
- ”Non-standard equipment” conversion set

Establish suitability for reverse drive

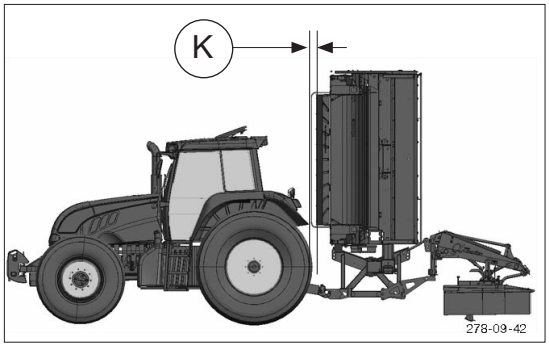
The following additional components must be mounted on the coupling jack (3) for reverse drive suitability.

- Upper link (1)
  Remove depending on central mower unit or A-frame mounting and adjust desired inclination
- Attach hitching lugs for central mower unit (2) or A-frame mounting
- Attach hitching lugs for tractor (4)



Adaptation of the tractor to the mower unit

The tractor’s 3-point suspension must be adapted such that no collision (K) occurs on swivelling the mower unit.



Safety advice

DANGER

Life-threatening danger exists through moving or rotating parts

Carry out maintenance works on the machine only when:

- It has been parked securely on level, firm ground.
- It has been secured against rolling with wheel chocks.
- The tractor engine is turned off and the pto shaft is stationary.
- All moving or rotating parts (especially the mowing disks) have come to a halt. (Hearing test!)
- The tractor's ignition key has been removed.
- If necessary, remove the cardan shaft.

Life-threatening danger exists when under the machine.

- Support the sub-areas you are under in an adequate way.

WARNING

Risk of serious injury through escaping oil.

- Pay attention to scuffed or clamped hose areas.
- Clean the couplings of the oil hoses and the oil sockets prior to each connection!
- Wear the relevant protective clothing.

NOTE

Material damage due to impurities that have penetrated into the hydraulic system

- Clean the couplings of the oil hoses and the oil sockets prior to each connection!

General maintenance information

Please observe the information below to maintain the machine in good condition even after a long period in operation:

- Re-tighten all bolts after the first hours in operation.

The following should be checked in particular:

Blade bolt connections on the mowers

Tine bolt connections on the rake and tedder

Spare parts

a. Genuine parts and accessories are specially designed for the machines.

b. We expressly draw your attention to the fact that genuine parts and accessories not supplied by us, have not been tested and approved by us.

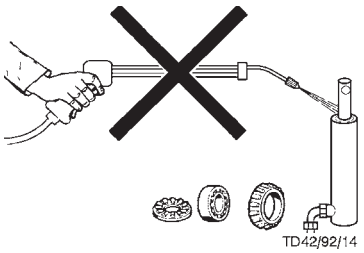
c. Under certain circumstances, the installation and/or use of such products may negatively modify or impair the specified structural properties of the machine. The manufacturer accepts no liability for any damage caused through the use of non-genuine parts and accessories.

d. Any unauthorised modifications and/or fitting of components and attachments to the machine negates any liability on the part of the manufacturer.

Cleaning of machine parts

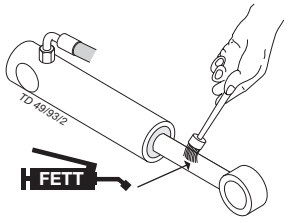
Be advised! Do not use high-pressure cleaners for the cleaning of bearing and hydraulic parts.

- Danger of rust!
- After cleaning, lubricate the machine according to the lubrication plan and carry out a brief test run.
- Cleaning pressure being too high may damage the paint.



Parking in the open

Clean and protect the piston rods with grease prior to longer periods parked out in the open



Winter storage

- Clean machine thoroughly prior to winter storage.
- Park protected against the weather.
- Change or top up gear oil.
- Protect exposed parts from rust.
- Lubricate all greasing points.
- Disconnect terminal, store dry and protected from frost.

Articulated shafts

- See information in the supplement

Please observe the following for maintenance!

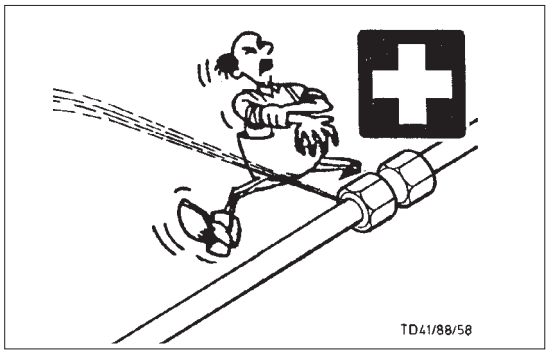
The directions in these Operating Instructions apply.

If no particular instructions are available here, then the information in the instructions supplied by the respective cardan shaft manufacturer apply.

Hydraulic unit

Caution: injury and infection hazard!

Liquids escaping at high pressure may penetrate the skin. Therefore seek immediate medical help!



Make sure that the hydraulic system is suited to the tractor before connecting the hydraulic lines.

After the first 10 hours of operation and every 50 hours in operation thereafter

- Check hydraulic unit and piping for leaks and if necessary re-tighten bolt connections.

Prior to every startup

- Check hydraulic hoses for wear.

  Replace any worn or damaged hydraulic hoses immediately. The replacement hoses must meet the manufacturer's technical requirements.

Hose lines are subject to natural ageing. The period of use should not exceed 5 – 6 years.

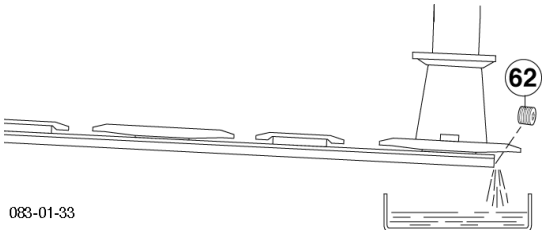
Oil change on cutter bar

TIP

- Carry out oil change at operating temperature
- The oil is thick when cold. Too much waste oil sticks to the gears and as a result any suspended particles are not removed from the gearbox.
- It can take some time until the old oil has completely drained.

Oil change

- Change oil after every 100hrs of operation and then annually, at least.
- Lift cutter bar on the outer side.
- Remove oil drain plug (62), let oil drain and then dispose of waste oil correctly.



Oil quantity:

NOVACAT X8: 3.0 litre SAE 90

Check cutter bar oil level

- Top up or change the oil annually under normal operating conditions.

DANGER

Life-threatening danger exists through another person starting the tractor and driving off, or switching on the cardan shaft while maintenance work is being carried out.

- Shut engine off and remove key before carrying out maintenance or repair work.
- Wait for the mower discs to come to a standstill

DANGER

Life-threatening danger exists if the machine starts to roll or tilt.

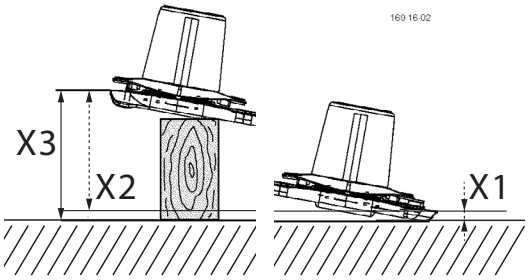
- Before any maintenance and repair work, park the machine on even, firm ground.
- Braking the machine

1. Lift one side of the mower bar X3 and support it.

X3 = X2 + X1

X1 = Distance from ground to upper skid edge.

X2 = Vertical measurement from the upper left skid edge to the upper right skid edge



NOVACAT X8: X2 = 300 mm

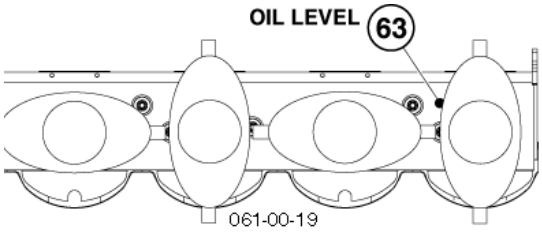
- The side where the oil refill screw is located remains on the ground.
- Lift the other side of the mower bar by X3 and support with a suitable prop.
- The full width of the cutter bar must be positioned horizontally.

2. Leave mower bar in this position for about 15 minutes.

- This time is necessary to allow the oil to collect in the lower area of the mower bar.

3. Remove oil fill screw (63).

Measure oil level through the opening (63).

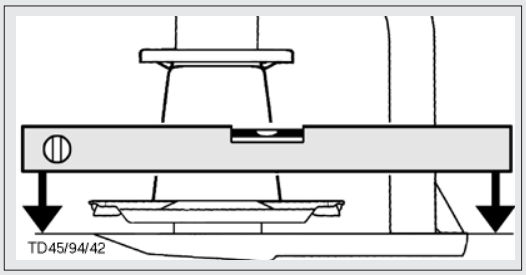


4. Oil level check

NOTE

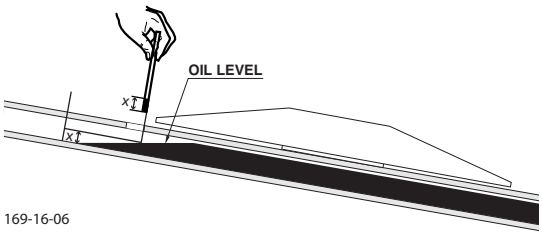
Property damage through too much or too little oil.

- The full length of the cutter bar is propped up. The width of the cutter bar must be exactly horizontal (see illustration).



The oil level is correct if x= 16 mm.

X is the oil depth at the lower edge of the level opening (63)



169-16-06

5. Topping up oil

Add the amount of oil lacking.

NOTE

Property damage through too much or too little oil.

Too much oil can cause the cutter bar to overheat during operation.

Too little oil does not guarantee the necessary lubrication.

- Be precise when adding oil!

Maintaining the gearbox

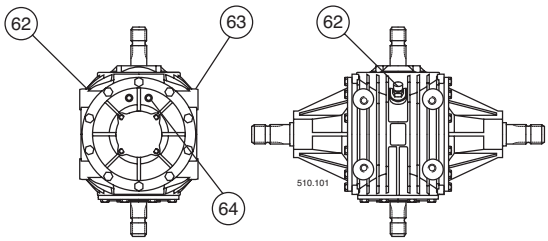
TIP

- The oil is to be replenished annually (OIL LEVEL) when operating under normal conditions.

Input gearbox

(If the mower combination is supplied without collector preparation, the gearbox is only fitted with 3 stubs)

- Change oil after the first 50 operating hours.
- Change oil after 100 operating hours, at the latest.



Fill opening (62)

Drain opening (63)

Oil level check (OIL LEVEL) (64)

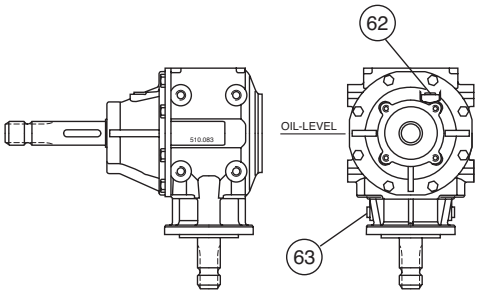
Oil quantity:

"3 stub" variant 4.0 litre SAE 90

"4 stub" variant 4.8 litre SAE 90

Angular gear

- Change oil after the first 50 operating hours.
- Change oil after 100 operating hours, at the latest.



Fill opening (62)

Drain opening (63)

Oil level check (OIL LEVEL) (64)

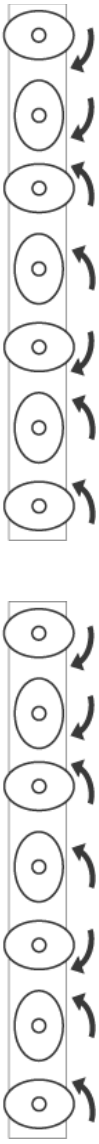
Oil quantity:

0.8 litre SAE 90

Installing cutter blades

TIP

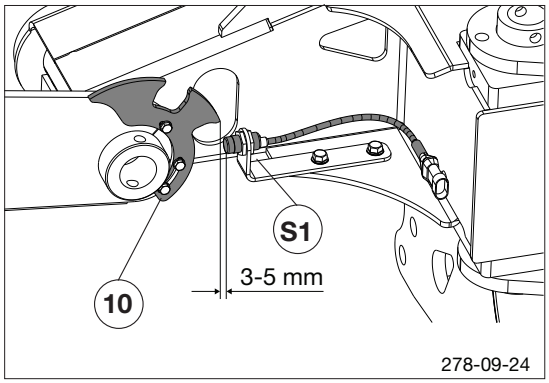
- The arrow on the cutter blade shows the cutter disc's direction of turn.
- The mounting surfaces must be free of paint before fitting.



Direction of travel

Setting the field transport position (headlands FT)

The following guide is valid for both cutter bars.



1. Set sensor gap (3-5 mm)
2. Raise both cutter bars until the hydraulic cylinders have retracted to a measurement of "1100 mm".
3. Loosen the disc screws (10).
4. Move the disc (10) along the slot until the edge is located almost at the sensor (S1).
5. Retighten disc screw fittings.

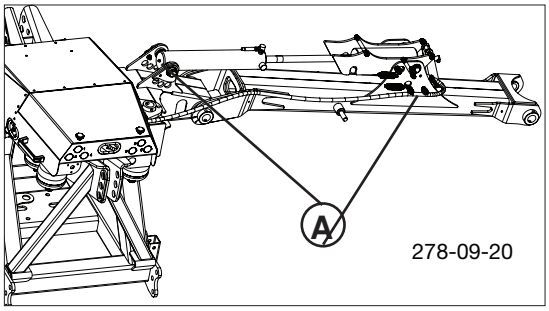
Set sensors

Adjustments and checks must always be carried out in the operating position where the distance from the sensor is smallest.

There is also a possible assembly clearance to consider.

Gap 3-5 mm

Lubricating the hydraulic relief

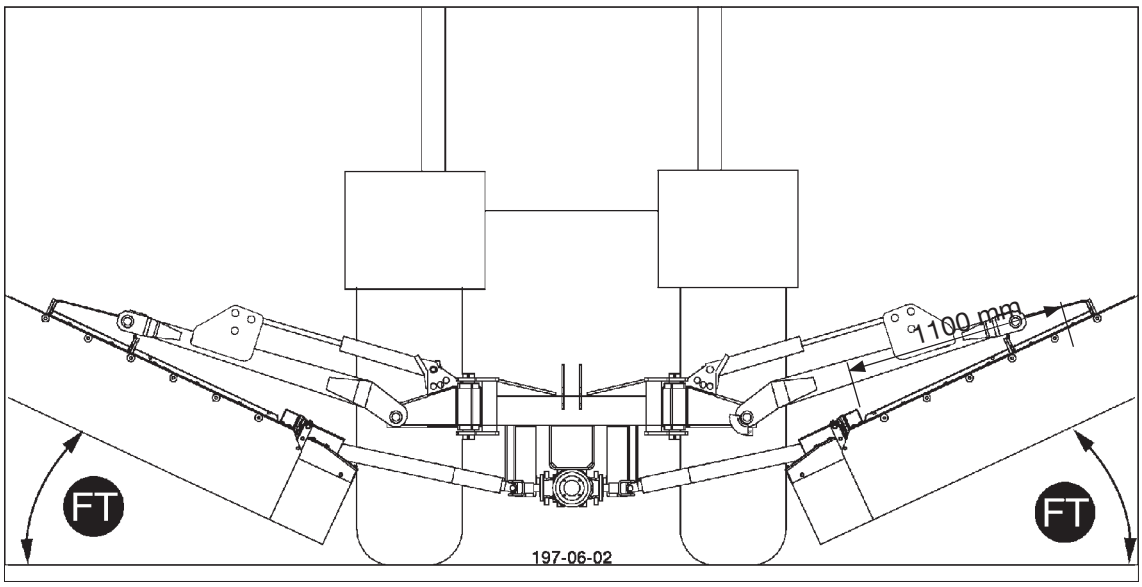


1. Reduce relief pressure
2. Lubricate cylinder suspension (A)

NOTE

Risk of material damage due to excessive wear.

- Reduce the relief pressure before lubricating the cylinder suspensions to achieve uniform lubrication.



Winter storage with optional extra: Parking supports

WARNING

Risk of serious injury or injury resulting in death due to the machine tipping over.

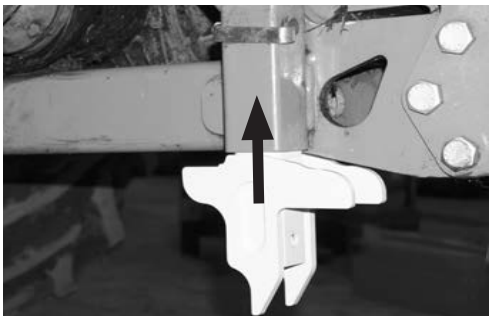
- Place the mower on firm, level ground during the cold season.

TIP

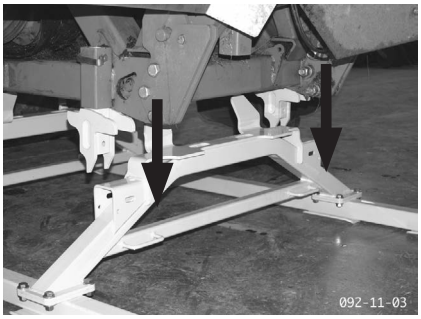
The type of wintering shown here applies to normal travel and push travel.

1. Remove mower support stands: Remove linch pin and adapter sleeve from each stand, then remove stands.

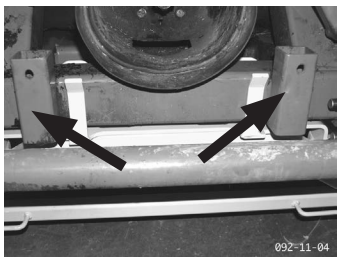
2. Bring left and right rear guides in position and fasten with linch pin.



3. Bring mower in to position and lower onto parking stands.



4. Use wedges with front guides on the parking stands to secure against tipping.



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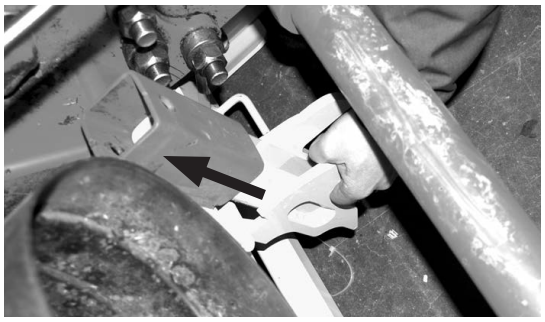
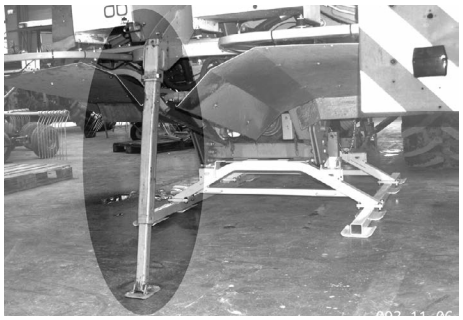
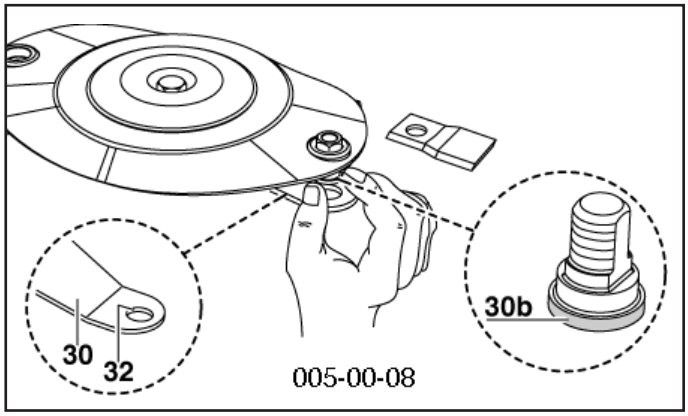
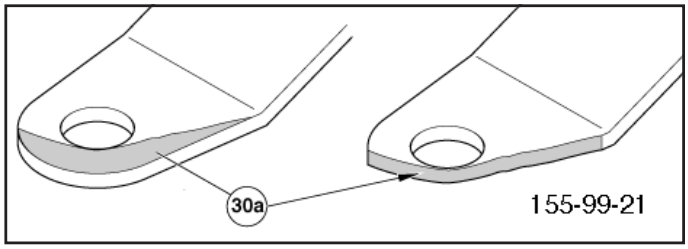


5. Fit support stand to mower: Fasten using linch pin.



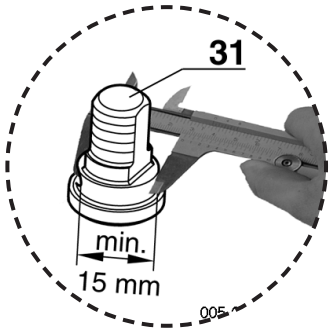
Wear control cutting blades bracket





The following parts are subject to wear:

- Cutting blade brackets (30)
- Cutting blades pins (31)



Procedure - Visual control

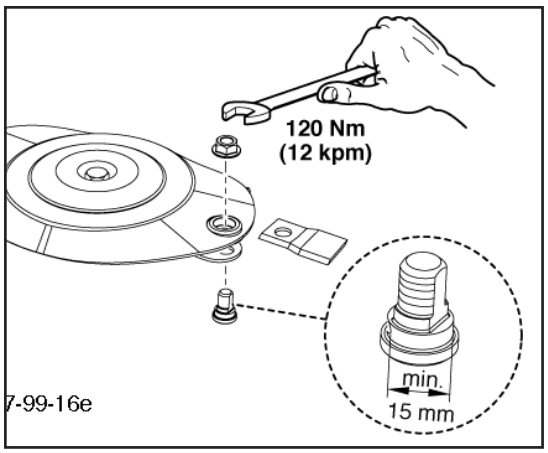
1. **Remove the cutting blades.**
2. **Remove grass residues and dirt**
   - around the pin (31).

DANGER

Life hazard - due to projected parts when

- **the blade pin in the middle is worn off up to 15 mm**
- **the wear area (30a) has reached the edge of the hole.**
- **the lower blade pin (30b) is worn off**
- **the blade pin is no longer stable in position**

- Check the cutter blade holders before any putting into operation, and frequently during operation, immediately after driving over a solid obstacle (e.g. stone, wood piece, metal …). If you find one or several wear signs, do not continue mowing.
- Worn parts must be immediately replaced with Pöttinger original parts.
- Blade pins and nuts shall be fastened with 120 Nm.

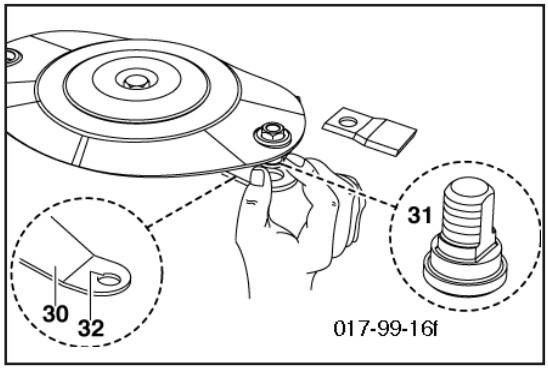


Holder for the rapid change of mowing blades

Life hazard - due to projected parts when

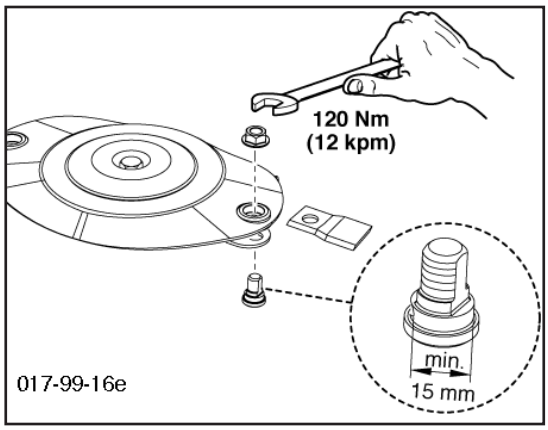
- **the mowing blades on a mowing disc are worn unequally (imbalance hazard). Replace both mower blades of this disc with original Pöttinger parts!**
- **themowingbladesarebent,damagedandworn. Replace the affected mower blades!**
- **the blade holders (30) are bent, damaged and worn. Replace the affected blade holders!**

• Check mower blades and blade holders regularly.



Mowing blades suspension checks

- Normal check every 50 hours.
- More frequent check if mowing on stony terrain or in other harsh conditions of use.
- Immediate check after driving over a solid obstacle (e.g. stone, wood piece, …).

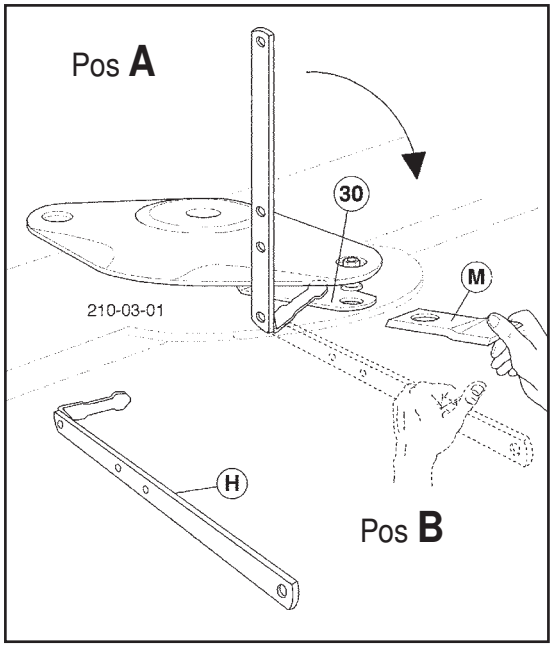


Checking procedure

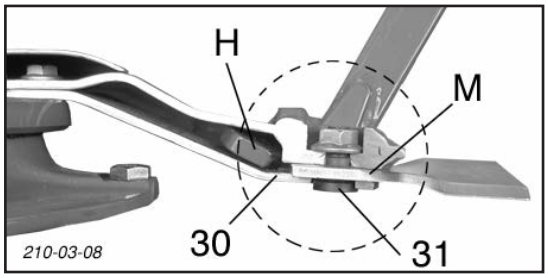
- as described under chapter "Changing the Mowing blades"

Changing the mowing blades

1. Insert lever (H) from left or right side on the cutter disc "Pos A" until it stops.
2. Swivel the lever from "Pos. A" to "Pos. B" and push the movable holder (30) downwards.



3. Remove the cutter blade (M).
4. Remove fodder residue and dirt
   - around the bolts (31) and inside the borehole (32).
5. Check
   - the blade bolt (31) for damage, wear and tight fitting.
   - holder (30) for damage, change in position and fitting
   - borehole (32) for damage.
   - Side surfaces must not show any signs of deformation.
6. Install the cutter blade
7. Visual control! Check that the blade (M) is correctly positioned between blade bolts (31) and holder (30) (see image).



8. Swivel lever (H) to "A" again and remove.

Disruptions and remedies for electrical failures

When there is an electrical system interruption, then the desired hydraulic function can be carried out using an emergency action.

DANGER

Life-threatening danger exists when entering the danger zones

- Be aware of the danger clearances for all lifting and lowering operations, or switching on and off procedures.

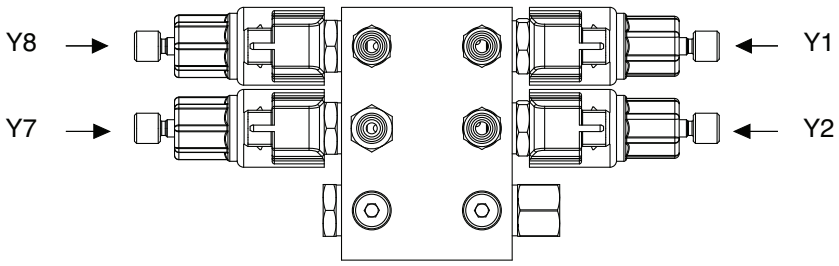
The hydraulic block is located under the front protective cover.

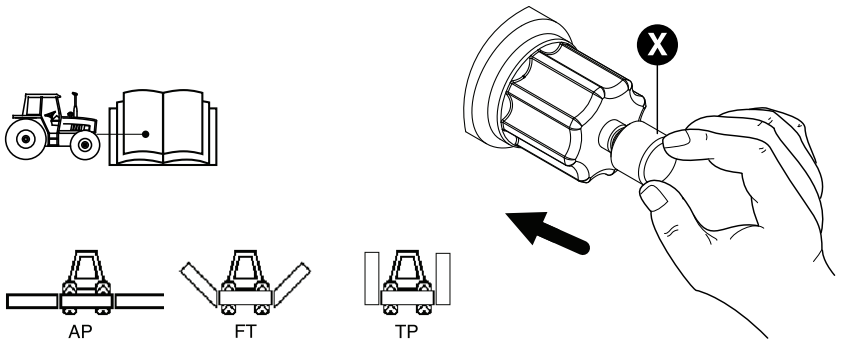
To carry out the desired hydraulic function

- Screw the allocated valve button in
- Actuate servo-valve on tractor
- The hydraulic function is carried out
- Finally, screw the allocated valve button out.

Preselection operation (Select Control)

		Remark	Y1	Y2	Y7	Y8
Novacat X8			X			
						X
		FT TP		X		
		AP			X	
			Y1	Y2	Y7	Y8





Disruptions and remedies for electrical failures

When there is an electrical system interruption, then the desired hydraulic function can be carried out using an emergency action.

DANGER

Life-threatening danger exists when entering the danger zones

- Be aware of the danger clearances for all lifting and lowering operations, or switching on and off procedures.

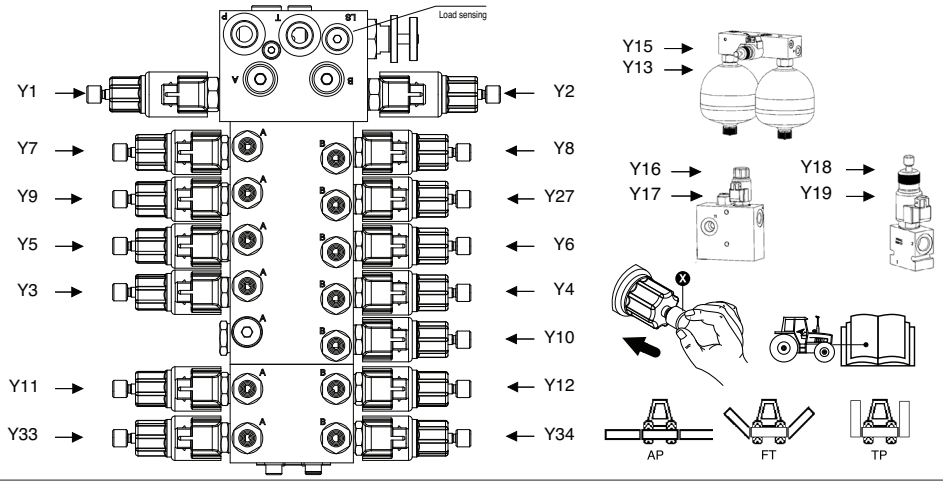
The hydraulic block is located under the front protective cover.

To carry out the desired hydraulic function

- Screw the allocated valve button in
- Actuate servo-valve on tractor
- The hydraulic function is carried out
- Finally, screw the allocated valve button out.

Direct operation (Power Control / ISOBus)

		Remark	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y15	Y16	Y17	Y18	Y19	Y27	Y33	Y34
Novacat X8		FT	X		X																		
		TP	X		X																		
		AP			X										X								
		FT			X																		
		FT	X				X																
		TP	X				X																
		AP					X									X							
		FT					X																
		FT / TP	X						X														
		AP							X	X													
		TP		X								X											
		TP										X											
		FT	X								X										X		
		FT		X							X										X		
		AP		X	X	X	X	X							X	X							
		AP			X	X	X	X							X	X							
Novacat X8 Collector			X																		X	X	
				X																	X	X	
			X										X	X									
				X									X	X									
																	X						
																		X					
	ON																		X				
																				X			
			Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y15	Y16	Y17	Y18	Y19	Y27	Y33	Y34



Disruptions and remedies for electrical failures

When there is an electrical system interruption, then the desired hydraulic function can be carried out using an emergency action.

DANGER

Life-threatening danger exists when entering the danger zones

- Be aware of the danger clearances for all lifting and lowering operations, or switching on and off procedures.

The hydraulic blocks are located between the folding arms for the cross conveyors.

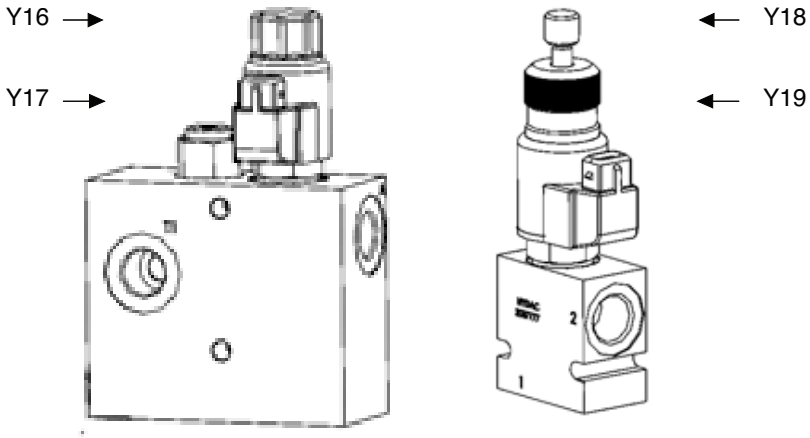
To carry out the desired hydraulic function

- Screw the allocated valve button in
- Actuate servo-valve on tractor
- The hydraulic function is carried out
- Finally, screw the allocated valve button out.

Direct operation (Collector)

Novacat X8

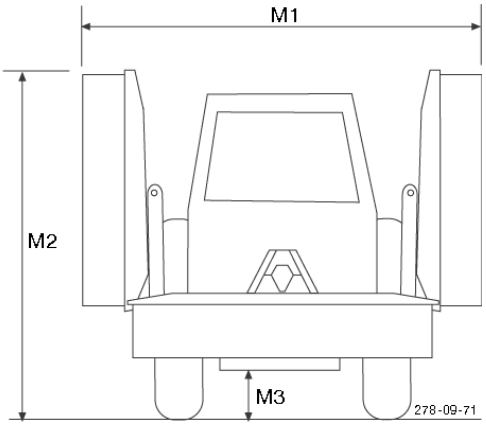
	Y16	Y17	Y18	Y19
	X			
		X		
ON 			X	
ON 				X
	Y16	Y17	Y18	Y19



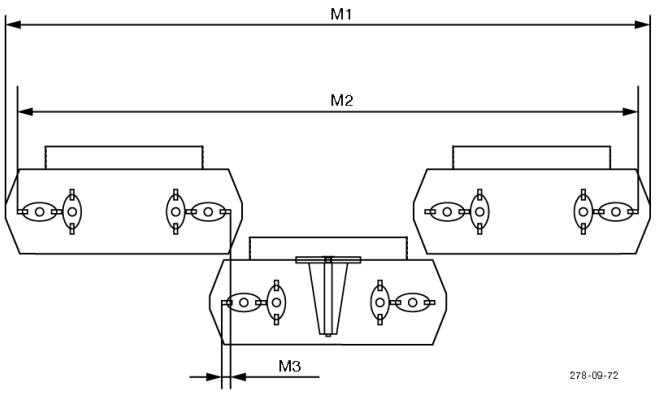
Technical data

Designation		NOVACAT X8 (Type 3843)
Three-point hitch		Cat III
Number of mower discs		2 x 7
Number of knives per disc		2
Power requirement [kw/PS]		110 / 150
Area output [ha/h]		10.0
PTO drive shaft speed [rpm^{-1}]		1000
PTO drive shaft overload protection [Nm]		1100
Weight[1] [kg]	NovaCat X8	2020
	NovaCat X8 ED	2550
	NovaCat X8 RC	2760
	NovaCat X8 ED Coll	3810
	NovaCat X8 RC Coll	4120
Continuous sound pressure level [db(A)]		78,9

Dimensions: Transport	[mm]
M 1	3000
M 2	3960
M 3	200



Dimensions: Mower blades	[mm]
M 1	9100
M 2	8300
M 3	min: 250 max: 400



[1] Weight: Variations possible depending on machine features.

Position of Vehicle Identification Plate

The chassis number is engraved on the name plate illustrated on the left. Warranty claims, enquiries and spare parts orders cannot be made without quoting the chassis number.

Please enter the number on the title page of the Operating Instructions immediately on taking delivery of the vehicle/ equipment.

The defined use of the mower unit

The mower is intended solely for normal use in agricultural work.

- The mowing of grassland and short stemmed fodder.

  Any other uses outside of these are regarded as undefined.

  The manufacturer takes no responsibility for any resulting damage which occurs henceforth. The risk is carried by the user alone.
- Compliance with operating, service and maintenance requirements laid down by the manufacturer also comes under the heading of “defined use”.

SUPPLEMENT

Things will run better with genuine Pöttinger parts

Original inside

- **Quality and precise fitting**
  - Operating safety.
- **Reliable operation**
- **Longer lasting**
  - Economy
- **Guaranteed availability** through your Pöttinger Sales Service.

The decision must be made, ”original” or ”imitation”? The decision is often governed by price and a ”cheap buy” can sometimes be very expensive.

Be sure you purchase the ”Original” with the cloverleaf symbol!

PÖTTINGER

TIP

This operating manual contains this symbol at all points relating to the safety of persons.

1.) Operating instructions

a. The operating instructions are an important part of the machine. Make sure that the operating instructions are always on hand when operating the machine.

b. Keep the operating instructions as long as the machine is in your possession.

c. Pass the operating instructions on to the buyer when selling the machine or changing the operator.

d. Make sure that all safety and warning symbols remain attached on the machine and keep them readable. The hazard warnings provide important information for a safe operation and, thus, your safety.

2.) Qualified personnel

a. Only persons of legal age who are mentally and physically able and have been trained or familiarized accordingly is allowed to operate this machine.

b. Persons not yet trained, familiarized or under training or in a general education must only operate this machine under the supervision of an experienced person.

c. Inspection, setting and repair work must only be performed by authorized persons.

3.) Performing maintenance work

a. These instructions only refer to service, maintenance and repair operations the user is able to carry out without assistance. Any work beyond this scope has to be carried out at authorized workshops only.

b. Repairs on the electrical and hydraulic system, preloaded springs, pressure accumulators, etc. require sufficient knowledge, correct tools and protective clothing and, thus, must only be performed at authorized workshops.

4.) After maintenance work on brakes

a. After each repair of the brakes, a functional check or a test drive must be carried out to ensure that the brakes function properly. New drums or brake linings only have optimum braking effect after a few braking operations. Violent braking should be avoided.

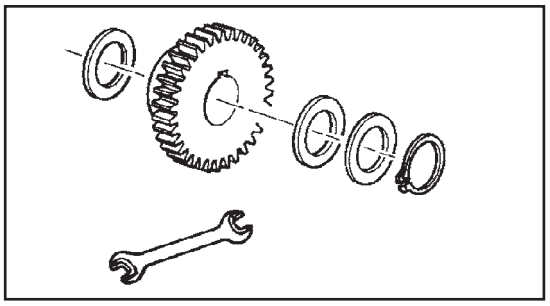
5.) Modification work

a. Do not undertake any unauthorised additions, modifications or alterations to the machine. This also applies to the installation and setting of safety devices as well as welding or drilling in stress-bearing parts.

6.) Appropriate use

a. see technical data

b. Intended use also includes compliance with the manufacturer's stipulated operating, maintenance and service conditions.



7.) Spare parts

a. **Original parts and accessories** are specially designed for the machines and their equipment.

b. We expressly draw your attention to the fact that genuine parts and accessories not supplied by us, have not been tested and approved by us.

c. Under certain circumstances, the installation and/or use of such products may negatively modify or impair the specified structural properties of the machine. The manufacturer accepts no liability for any damage caused through the use of non-genuine parts and accessories.

d. Unauthorised changes as well as the use of components or attachments on the machine lead to the exclusion of manufacturer's liability.

8.) Safety devices

a. All protection devices must remain on the machine and be maintained in proper condition. Replacement of worn or damaged covers or guards is required in good time.

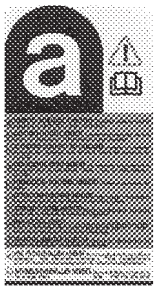
9.) Before starting work

a. Before commencing work, the operator must familiarise with all of the operating devices and functions. The learning of these is too late after having already commenced operation!

b. Before every putting into operation check the vehicle or the implement for traffic and operating safety.

10.) Asbestos

a. Certain sub-supplied components of the vehicle may contain asbestos due to technical reasons. Please observe the marking of spare parts.



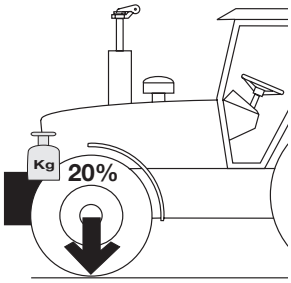
11.) Transport of people prohibited

a. The transport of people on the machine is not permitted.

b. The machine may only be driven on public roads when in the position stipulated for road transport.

12.) Driving ability with auxiliary equipment

a. The towing vehicle is to be sufficiently equipped with weights at the front or at the rear in order to guarantee the steering and braking capacity (a minimum of 20% of the vehicle's tare weight on the front axle).



b. The driving ability is influenced by the road and auxiliary equipment. The driving must be adapted to the corresponding terrain and ground conditions.

c. When driving through curves with a connected implement, observe the radius and swinging mass of the implement!

d. When travelling in a curve with attached or semi-mounted implements, take into account the working range and swing mass of the implement!

13.) General

a. Before attaching implements to the three-point linkage, move system lever into a position whereby unintentional raising or lowering is ruled out!

b. Danger of injury exists when coupling implements to the tractor!

c. Danger of injury through crushing and cutting exists in the three-point linkage area!

d. Do not stand between the tractor and the implement when using three-point linkage external operation!

e. Attach and detach drive shaft only when motor has stopped.

f. When transporting with raised implement, secure operating lever against lowering.

g. Before leaving tractor, lower attached implement to the ground and remove ignition key!

h. Nobody is allowed to stand between tractor and implement without the tractor being secured against rolling using parking brake and/or wheel chocks!

i. For all maintenance, service and modification work, turn driving motor off and remove the universal drive.

14.) Cleaning the implement

a. Do not use high-pressure washers for the cleaning of bearing and hydraulic parts.

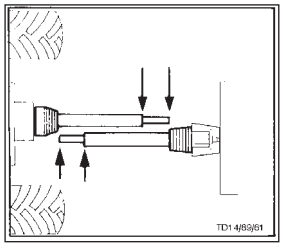
Adapting cardan shaft to tractor

NOTE

Material damage - due to inferior spare parts

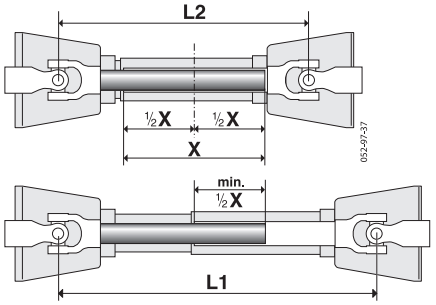
- Only use the cardan shaft supplied or stated; otherwise the warranty claims for any damage are not valid.

The correct length is determined by comparing both cardan shaft halves.



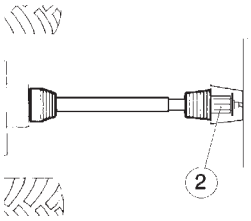
Cutting to length procedure

- To adapt the length, hold cardan shaft halves side by side in the shortest operating position (L2) and mark.



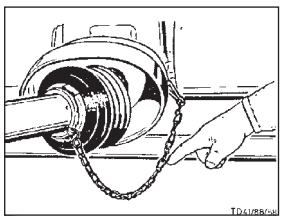
Caution!

- Note the maximum operating length (L1)
  - Try for the greatest possible tube overlap (min. 1/2 X)
- Trim the inner and outer protective tube equally
- Attach overload protection (2) to the machine!
- Always check that drive shaft locks are securely engaged before starting work.



Safety chain

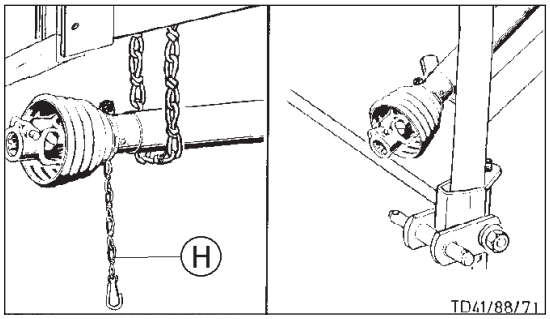
- Use chain to prevent tube guard from rotating.
  Ensure sufficient swivel space for the cardan shaft!
- Trim the safety chain so that it cannot wind around the cardan shaft.



Instructions for working

Do not exceed the permissible pto speed when using the machine.

- The attached machine may run-on after the pto is switched off. Work must only be performed on it once it has completely stopped.
- When parking the machine, the cardan shaft must be taken off or secured using a chain, as instructed. Do not use safety chain (H) to suspend the cardan shaft.



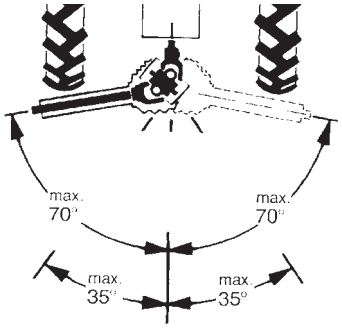
Wide-angle joint:

Maximum angle for operation and at standstill 70°.

Standard joint :

Maximum angle at standstill 90°.

Maximum angle for operation 35°.



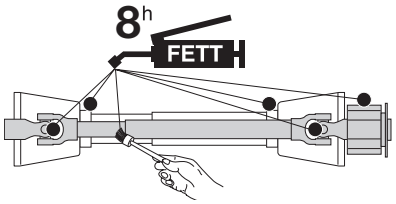
DANGER

Mortal danger - due to worn covers

- Replace the worn covers immediately

- Lubricate with a brand-name grease before starting work and every 8 hours worked.
- Before any extended period of non-use, clean and lubricate driveshaft.

  For winter working, grease the tube guards to prevent freezing.



Important for driveshafts with friction clutch

Torque is limited with overloading and brief torque peaks and evenly transferred during slipping.

Prior to initial operation and after long periods out of use, check friction clutch for proper function.

a) Measure dimension „L“ at compression spring of K90, K90/4 and K94/1 or at set screw of K92E and K92/4E.

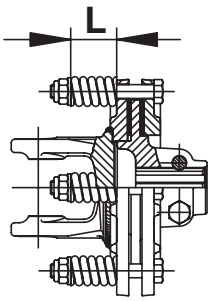
b.) Loosen screws to release the pressure on the friction disk.

Slip the clutch.

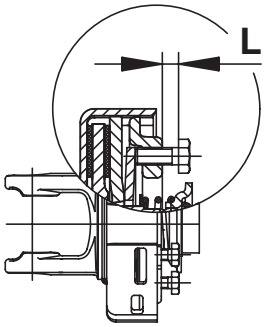
c.) Tighten set screws to dimension "L".

Clutch is ready for use.

K90,K90/4,K94/1



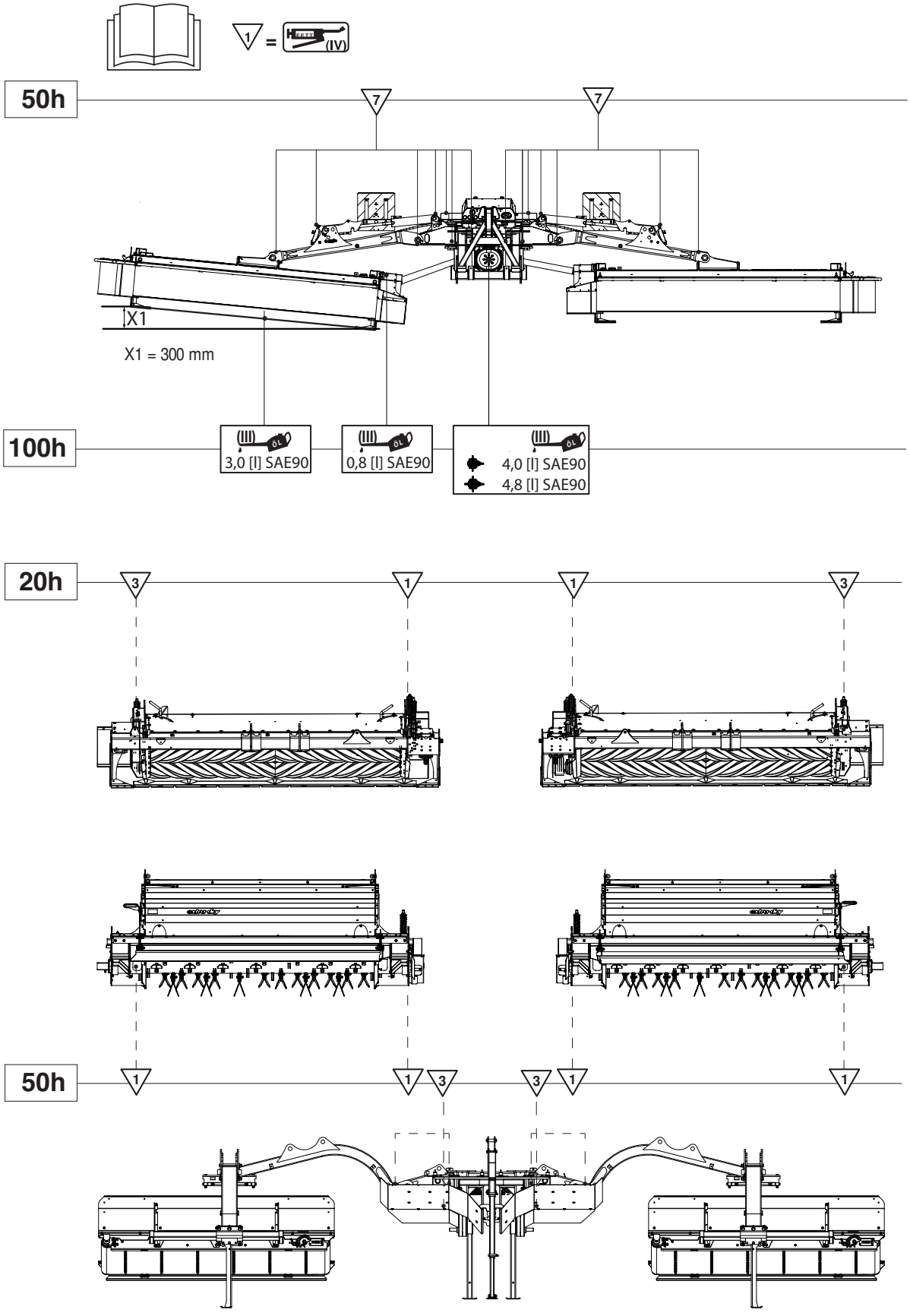
K92E,K92/4E



Lubrication chart

X^{h}	after every X hours operation
40 F	all 40 loads
80 F	all 80 loads
1 J	once a year
100 ha	every 100 hectares
BB	if necessary
	GREASE
	Oil
 =	Number of grease nipples
 =	Number of grease nipples
(III), (IV)	see supplement „Lubrificants“
[l]	Litre
– – – –	Variation
	See manufacturer’s instructions
↺	Rotations per minute
	Always screw in measuring stick up to stop.

X8 ED / RC Collector



EN

Lubricants

Edition 2013

The performance and the lifetime of the farm machines are highly depending on a careful maintenance and application of correct lubricants. our schedule enables an easy selection of selected products.

The applicable lubricants are symbolized (eg. “III”). According to this lubricant product code number the specification, quality and brandname of oil companies may easily be determined. The listing of the oil companies is not said to be complete.

Gear oils according to operating instructions - however at least once a year.

- Take out oil drain plug, let run out and duly dispose waste oil.

Before garaging (winter season) an oil change and greasing of all lubricating points has to be done. Unprotected, blanc metal parts outside (joints, etc.) have to be protected against corrosion with a group "Iv" product as indicated on the reverse of this page.

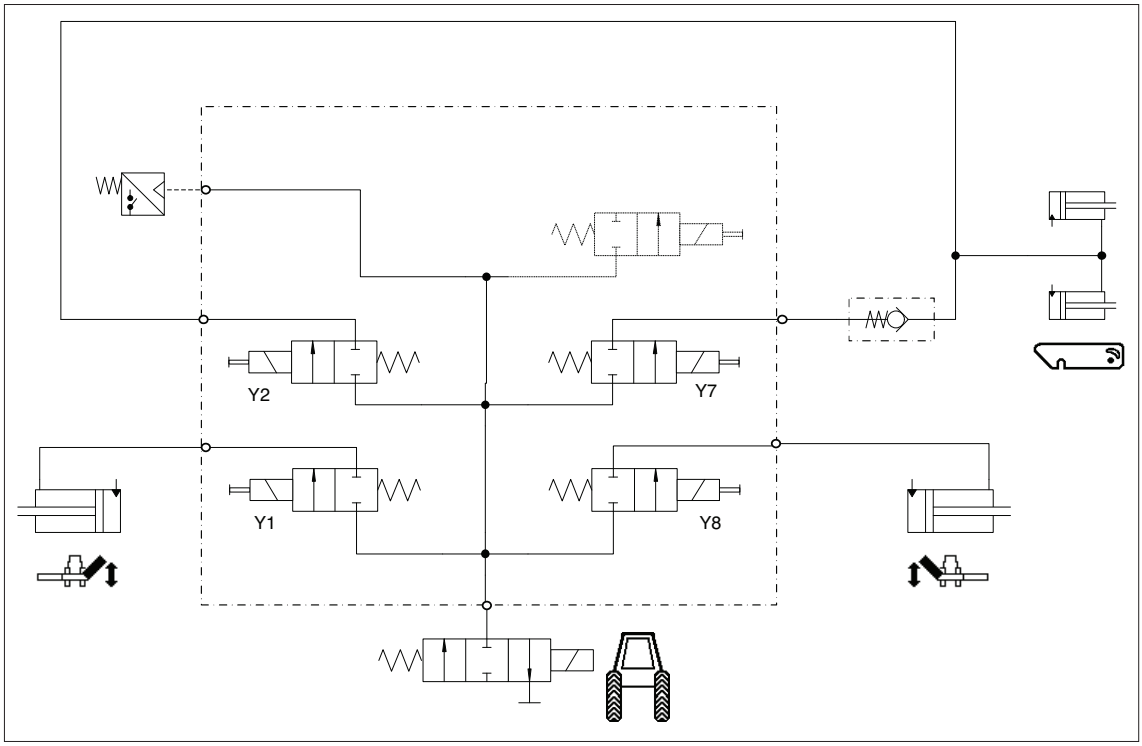
Corrosion protection: Fluid 466

Lubricant indicator	**I**		**III**		**V**	**VI**	**VII**
required quality level niveau	HYDRAULIKöL HLP DIN 51524 Teil 2 See notes: * ** ***	motor oil SAE 30 according to API CD/SF	gear oil, SAE 90 resp. SAE 85 W-140 according to API-GL 4 or API-GL 5	lithium grease	transmission grease	complex grease	gear oil SAE 90 resp. SAE 85 W-140 according to API-GL 5

Company	I	(II)	III	(IV)	V	VI	VIII	NOTATIONS
AGIP	OSO 32/46/68 ARNICA 22/46	MOTOROIL HD 30 SIGMA MULTI 15W-40 SUPER TRACTOROIL UNIVERS. 15W-30	ROTRA HY 80W-90/85W-140 ROTRA MP 80W-90/85W-140	GR MU 2	GR SLL GR LFO	-	ROTRA MP 80W-90 ROTRA MP 85W-140	* The international specification J 20 A is necessary for compound operation with wet brake tractors. ** HLP-(D) + HV hydraulic oils *** HLP + HV hydraulic oils with a vegetable oil basis, biodegradable and therefore environmentally friendly.
ARAL	VITAM GF 32/46/68 VITAM HF 32/46	SUPER KOWAL 30 MULTI TURBORAL SUPER TRAKTORAL 15W-30	GETRIEBEÖL EP 90 GETRIEBEÖL HYP 85W-90	ARALUB HL 2	ARALUB FDP 00	ARALUB FK 2	GETRIEBEÖL HYP 90	
AVIA	AVILUB RL 32/46 AVILUB VG 32/46	MOTOROIL HD 30 MULTIGRADE HDC 15W-40 TRACTAVIA HF SUPER 10 W-30	GETRIEBEÖL MZ 90 M MULTIHYP 85W-140	AVIAMEHRZWECKFETT AVIA ABSCHMIERFETT	AVIA GETRIEBEFLIESSFETT	AVIALUB SPEZIALFETT LD	GETRIEBEÖL HYP 90 EP MULTIHYP 85W-140 EP	
BAYWA	HYDRAULIKÖL HLP 32/46/68 SUPER 2000 CD-MC * HYDRA HYDR. FLUID * HYDRAULIKÖL MC 530 ** PLANTOHYD 40N ***	SUPER 2000 CD-MC SUPER 2000 CD HD SUPERIOR 20 W-30 HD SUPERIOR SAE 30	SUPER 8090 MC HYPOID 80W-90 HYPOID 85W-140	MULTI FETT 2 SPEZIALFETT FLM PLANTOGEL 2 N	GETRIEBEFLIESSFETT NLGI 0 RENOLIT DURAPLEX EP 00 PLANTOGEL 00N	RENOPLEX EP 1	HYPOID 85W-140	
BP	ENERGOL SHF 32/46/68	VISCO 2000 ENERGOL HD 30 VANELLUS M 30	GEAR OIL 90 EP HYPOGEAR 90 EP	ENERGREASE LS-EP 2	FLIESSFETT NO ENERGREASE HTO	OLEX PR 9142	HYPOGEAR 90 EP HYPOGEAR 85W-140 EP	
CASTROL	HYSPIN AWS 32/46/68 HYSPIN AWH 32/46	RX SUPER DIESEL 15W-40 POWERTRANS	EPX 80W-90 HYPOY C 80W-140	CASTROLGREASE LM	IMPERVIA MMO	CASTROLGREASE LMX	EPX 80W-90 HYPOY C 80W-140	
ELAN	HLP 32/46/68 HLP-M M32/M46	MOTORÖL 100 MS SAE 30 MOTORÖL 104 CM 15W-40 AUSTROTRAC 15W-30	GETRIEBEÖL MP 85W-90 GETRIEBEÖL B 85W-90 GETRIEBEÖL C 85W-90	LORENA 46 LITORA 27	RHENOX 34	-	GETRIEBEÖL B 85W-90 GETRIEBEÖL C 85W-140	
ELF	OLNA 32/46/68 HYDRELF 46/68	PERFORMANCE 2 B SAE 30 8000 TOURS 20W-30 TRACTORELF ST 15W-30	TRANSELF TYP B 90 85W-140 TRANSELF EP 90 85W-140	EPEXA 2 ROLEXA 2 MULTI 2	GA O EP POLY G O	MULTIMOTIVE 1	TRANSELF TYP B 90 85W-140 TRANSELF TYP BLS 80 W-90	
ESSO	NUTO H 32/46/68 NUTO HP 32/46/68	PLUS MOTORÖL 20W-30 UNIFARM 15W-30	GEAROIL GP 80W-90 GEAROIL GP 85W-140	MULTI PURPOSE GREASE H	FIBRAX EP 370	NEBULA EP 1 GP GREASE	GEAR OIL GX 80W-90 GEAROIL GX 85W-140	
EVVA	ENAK HLP 32/46/68 ENAK MULTI 46/68	SUPER EVVAROL HD/B SAE 30 UNIVERSAL TRACTOROIL SUPER	HYPOID GA 90 HYPOID GB 90	HOCHDRUCKFETT LT/SC 280	GETRIEBEFETT MO 370	EVVA CA 300	HYPOID GB 90	
FINA	HYDRAN 32/46/68	DELTA PLUS SAE 30 SUPER UNIVERSAL OIL	PONTONIC N 85W-90 PONTONIC MP 85W-90 85W-140 SUPER UNIVERSAL OIL	MARSON EP L 2	NATRAN 00	MARSON AX 2	PONTONIC MP 85W-140	
FUCHS	• TITAN HYD 1030 • AGRIFARM STOU MC 10W-30 • AGRIFARM UTTO MP • PLANTOHYD 40N ***	• AGRIFARM STOU MC 10W-30 • TITAN UNIVERSAL HD	• AGRIFARM GEAR 80W90 • AGRIAFRM GEAR 85W-140 • AGRIFARM GEAR LS 90	• AGRIFARM HITEC 2 • AGRIFARM PROTEC 2 • RENOLIT MP • RENOLIT FLM 2 • PLANTOGEL 2-N	• AGRIFARM FLOWTEC 000 • RENOLIT SO-GFO 35 • RENOLIT DURAPLEX EP 00 • PLANTOGEL 00N	• RENOLIT DURAPLEX EP 1	• AGRIFARM GEAR 8090 • AGRIFARM GEAR 85W-140 • AGRIFARM GEAR LS90	
GENOL	HYDRAULIKÖL HLP/32/46/68 HYDRAMOT 1030 MC * HYDRAULIKÖL 520 ** PLANTOHYD 40N ***	MULTI 2030 2000 TC HYDRAMOT 15W-30 HYDRAMOT 1030 MC	GETRIEBEÖL MP 90 HYPOID EW 90 HYPOID 85W-140	MEHRZWECKFETT SPEZIALFETT GLM PLANTOGEL 2 N	GETRIEBEFLIESSFETT PLANTOGEL 00N	RENOPLEX EP 1	HYPOID EW 90 HYPOID 85W-140	
MOBIL	DTE 22/24/25 DTE 13/15	HD 20W-20 DELVAC 1230 SUPER UNIVERSAL 15W-30	MOBILUBE GX 90 MOBILUBE HD 90 MOBILUBE HD 85W-140	MOBILGREASE MP	MOBILUX EP 004	MOBILPLEX 47	MOBILUBE HD 90 MOBILUBE HD 85W-140	
RHG	RENOLIN B 10/15/20 RENOLIN B 32 HVI/46HVI	EXTRA HD 30 SUPER HD 20 W-30	MEHRZWECKGETRIEBEÖISAE90 HYPOID EW 90	MEHRZWECKFETT RENOLIT MP DURAPLEX EP	RENOSOD GFO 35	RENOPLEX EP 1	HYPOID EW 90	

Company	I	(II)	III	(IV)	V	VI	VIII	NOTATIONS
SHELL	TELLUS S32/S46/S68 TELLUS T 32/T46	AGROMA 15W-30 ROTELLA X 30 RIMULA X 15W-40	SPIRAX 90 EP SPIRAX HD 90 SPIRAX HD 85/140	RETINAX A ALVANIA EP 2	SPEZ. GETRIEBEFETT H SIMMNIA GREASE O	AEROSHELL GREASE 22 DOLIUM GREASE R	SPIRAX HD 90 SPIRAX HD 85W-140	* The international specification J 20 A is necessary for compound operation with wet brake tractors. ** HLP-(D) + HV hydraulic oils *** HLP + HV hydraulic oils with a vegetable oil basis, biodegradable and therefore environmentally friendly.
TOTAL	AZOLLA ZS 32, 46, 68 EQUIVIS ZS 32, 46, 68	RUBIA H 30 MULTAGRI TM 15W-20	TOTAL EP 85W-90 TOTAL EP B 85W-90	MULTIS EP 2	MULTIS EP 200	MULTIS HT 1	TOTAL EP B 85W-90	
VALVOLINE	ULTRAMAX HLP 32/46/68 SUPER TRAC FE 10W-30* ULTRAMAX HVLP 32 ** ULTRAPLANT 40 ***	SUPER HPO 30 STOU 15W-30 SUPER TRAC FE 10W-30 ALL FLEET PLUS 15W-40	HP GEAR OIL 90 oder 85W-140 TRANS GEAR OIL 80W-90	MULTILUBE EP 2 VAL-PLEX EP 2 PLANTOGEL 2 N	RENOLIT LZR 000 DEGRALUB ZSA 000	DURAPLEX EP 1	HP GEAR OIL 90 oder 85W-140	
VEEDOL	ANDARIN 32/46/68	HD PLUS SAE 30	MULTIGRADE SAE 80/90 MULTIGEAR B 90 MULTIGEAR C SAE 85W-140	MULTIPURPOSE	-	-	MULTIGEAR B 90 MULTI C SAE 85W-140	
WINTERSHALL	WIOLAN HS (HG) 32/46/68 WIOLAN HVG 46 ** WIOLAN HR 32/46 *** HYDROLFLUID *	MULTI-REKORD 15W-40 PRIMANOL REKORD 30	HYPOID-GETRIEBEÖL 80W-90, 85W-140 MEHRZWECKGETRIEBEÖL 80W-90	WIOLUB LFP 2	WIOLUB GFW	WIOLUB AFK 2	HYPOID-GETRIEBEÖL 80W-90, 85W-140	
MOTOREX	COREX HLP 32 46 68** COREX HLPD 32 46 68** COREX HV 32 46 68** OEKOSYNT 32 46 68***	EXTRA SAE 30 FARMER TRAC 10W/30	GEAR OIL UNIVERSAL 80W/90 GEAR OIL UNIVERSAL 85W/140	FETT 176 GP FETT 190 EP FETT 3000	FETT 174	FETT 189 EP FETT 190 EP FETT 3000	GEAR OIL UNIVERSAL 80W/90 GEAR OIL UNIVERSAL 85W/140	

Hydraulics diagram (Select Control)



Explanation:

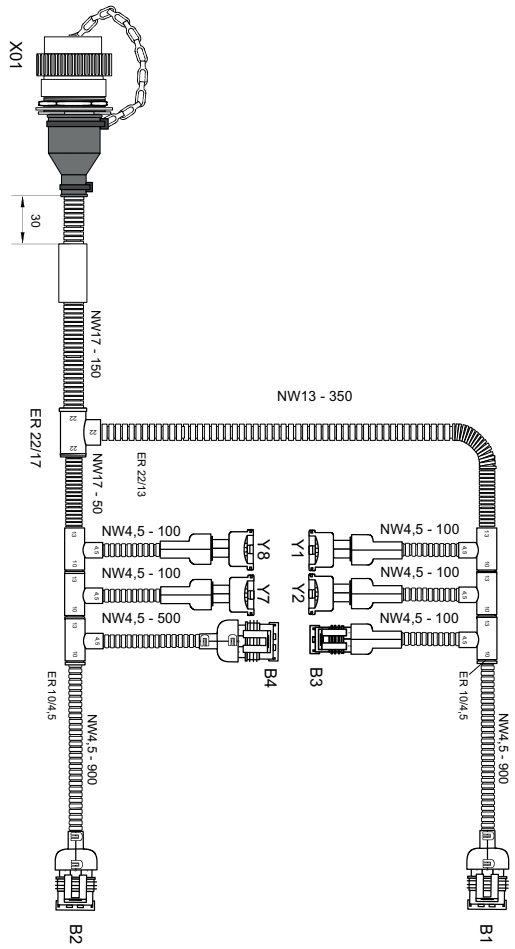
Y1 Directional control valve - Right mower unit

Y8 Directional control valve - Left mower unit

Y7 Directional control valve - Neutral lock

Y2 Directional control valve - Raise / Lower lock

Eelctrical circuit diagram (Select Control)

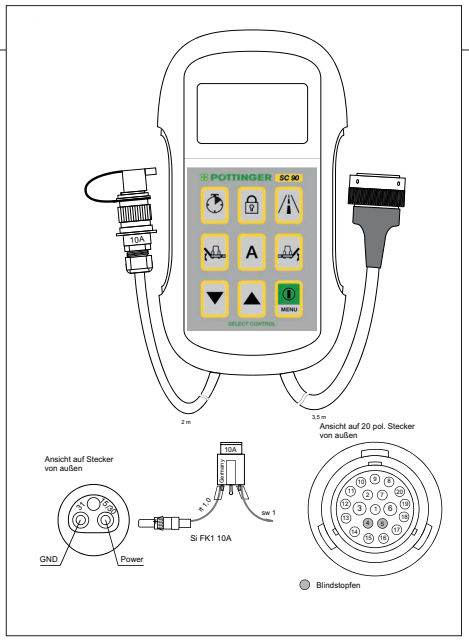


TIP

All plug views are external!

Colour code:

bl	blue
br	brown
gn	green
gnge	green / yellow
gr	grey
rt	red
sw	black
ws	white



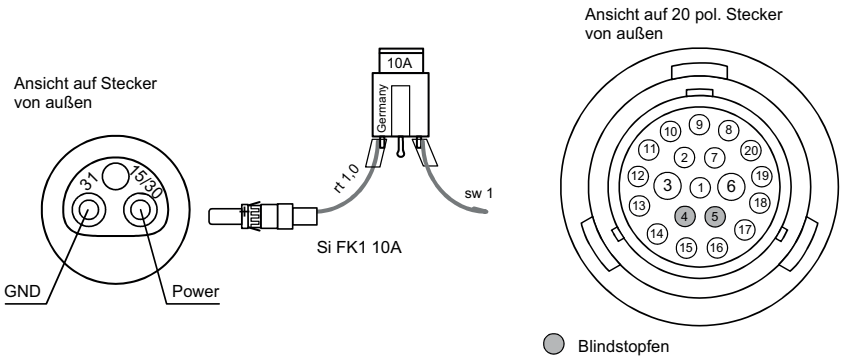
Explanation:

Y1 Directional control valve - Right mower unit
Y8 Directional control valve - Left mower unit
Y7 Directional control valve - Neutral lock
Y2 Directional control valve - Raise / Lower lock

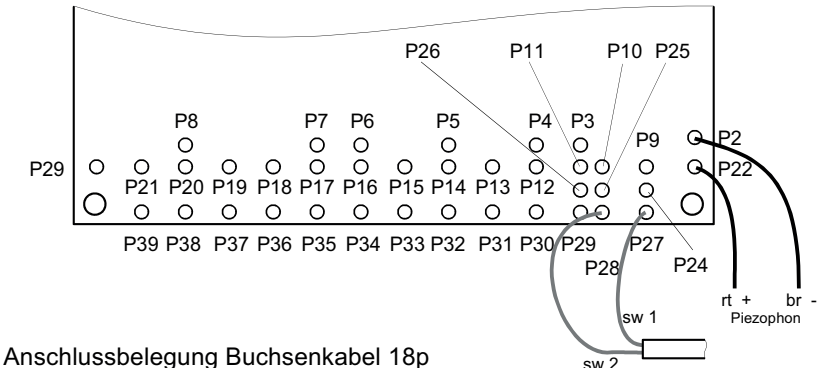
B4 RPM sensor
B2 Position mower unit, left
B1 Position mower unit, right
B3 Pressure switch

Pin configuration for plug (Select Control)

20-pin plug



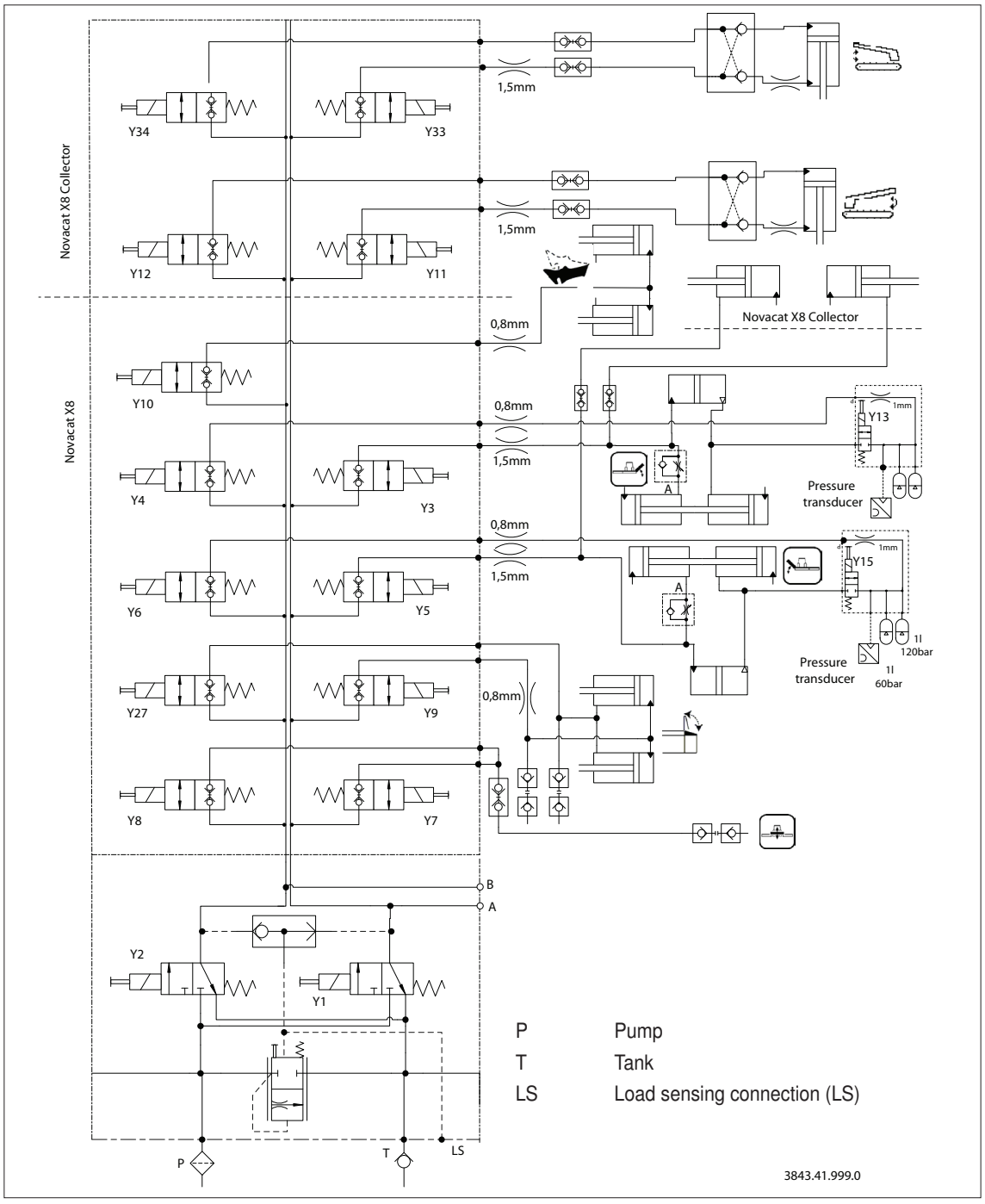
Female connector:



Anschlussbelegung Buchsenkabel 18p

ColourLP	Point	Function	Plug pin	Comment
grey	P26	Sensor GND	1	
violet white	P33	Input 7	2	pnp-B2 pos. left
violet	P4	Output 3	19	Y2
grey white	P18	Input 5	11	pnp
Beige	P15	Input 2	15	npn
green yellow	P5	Output 4	20	Y7
red white	P7	Output 2	7	
pink	P8	Output 1	18	Y1
orange	P6	Output 5	17	Y8
white	P30	Sensor Ub	8	
blue	P3	Power GND	3	
black	P10	Power GND	6	
brown	P34	Input 8	9	pnp
red	P19	Input 6	10	pnp-B1 pos. right
black white	P32	Input 4	14	npn
blue white	P31	Input 3	13	npn-B3-pressure switch
brown white	P13	Input 1	12	npn-B4-Hall sensor
transparent	P39	LIN	16	

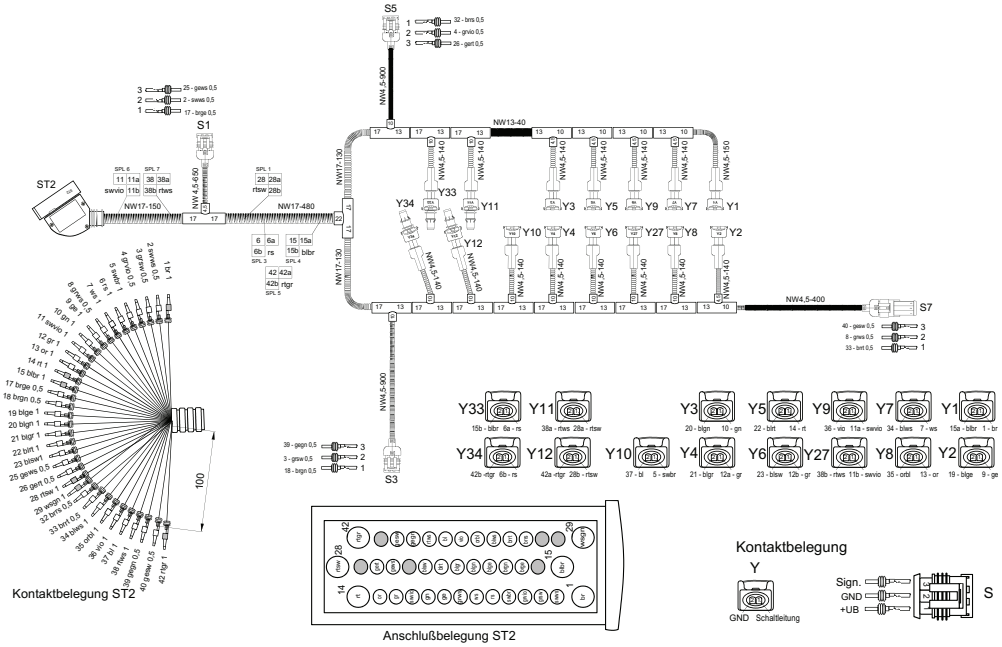
Hydraulics diagram (Power Control / ISOBUS)

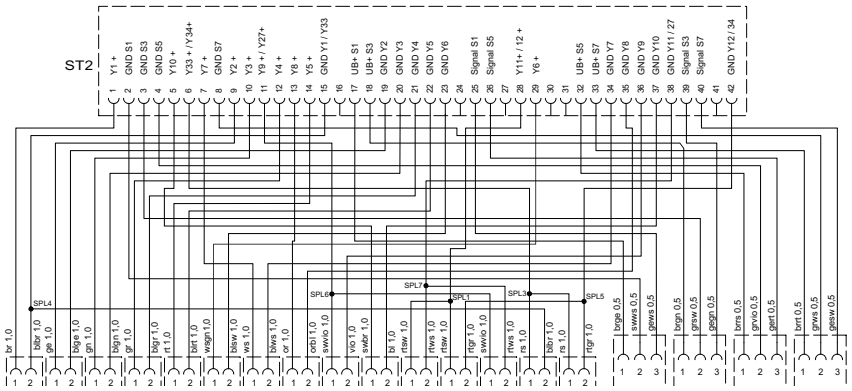


Explanation:

Y1 Directional control valve - Raise
Y2 Directional control valve - Lower
Y3 Seat valve - Mower unit, right
Y4 Seat valve - Filling hydraulic relief, right
Y5 Seat valve - Mower unit, links
Y6 Seat valve - Filling hydraulic relief, left
Y7 Seat valve - Mower unit, centre
Y8 Seat valve - Mower unit in neutral, centre
Y9 Seat valve - Side protection
Y10 Seat valve - Locking
Y11/12 Cross conveyor belt - Swing (left)
Y13 Seat valve - Hydraulic relief, right
Y15 Seat valve - Left hydraulic relief
Y 27 Seat valve - Side protection
Y33/34 Cross conveyor belt - Swing (Right)

Electrical circuit diagram (Power Control / ISOBUS)





TIP

All plug views are external!

Colour code:

bl	blue
br	brown
gn	green
gnge	green / yellow
gr	grey
rt	red
sw	black
ws	white

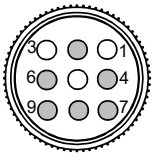
Explanation:

Y1 Directional control valve - Raise
Y2 Directional control valve - Lower
Y3 Seat valve - Mower unit, right
Y4 Seat valve - Filling hydr. relief, right
Y5 Seat valve - Mower unit, left
Y6 Seat valve - Filling hydr. relief, left
Y7 Seat valve - Mower unit, centre
Y8 Seat valve - Mower unit in neutral, centre
Y9 Seat valve - Side protection
Y10 Seat valve - Locking
Y11 Cross conveyor belt (QFB) - Swing (left)
Y12 Cross conveyor belt (QFB) - Swing (left)
Y27 Seat valve - Side protection
Y33 Cross conveyor belt (QFB) - Swing (right)
Y34 Cross conveyor belt (QFB) - Swing (right)

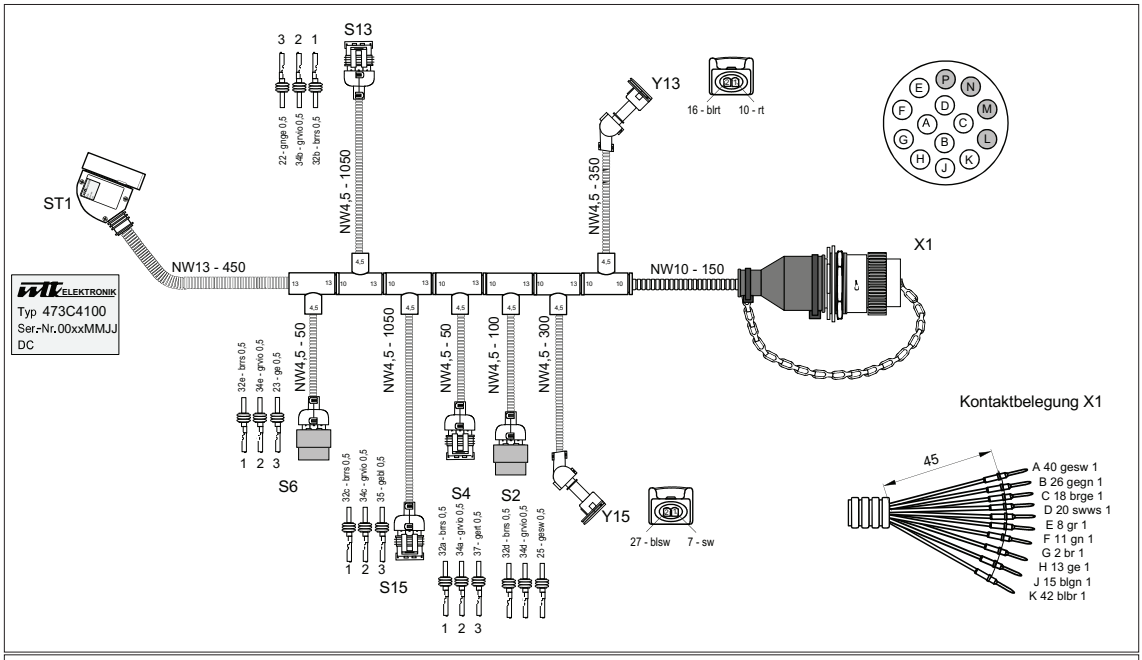
S1 RPM sensor
S3 Field transport and working position, Mower unit right
S5 Field transport and working position, Mower unit left
S7 Position of front mower unit

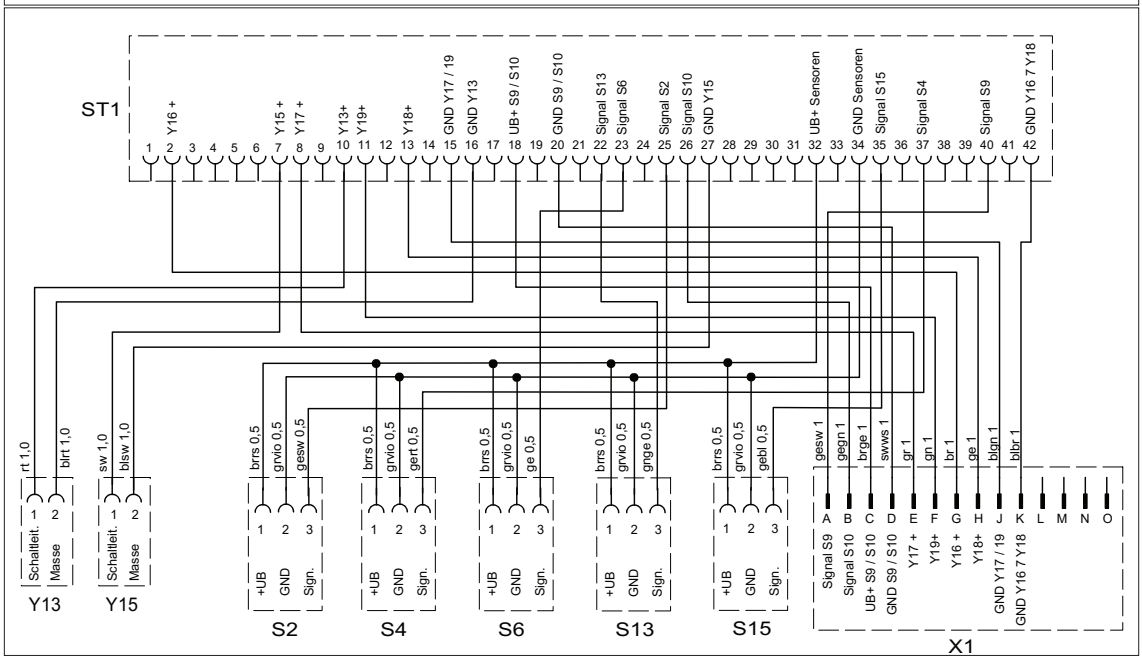
Terminal (Power Control)

Kontakt	Farbe	Funktion
2	ws	CAN_L
4	gnge	CAN_H
6	sw	TBC PWR
7	gr	ECU PWR
8	br	LIN
9	bl	ECU GND



Electrical circuit diagram (Hydraulic relief) Power Control / Isobus





TIP

All plug views are external!

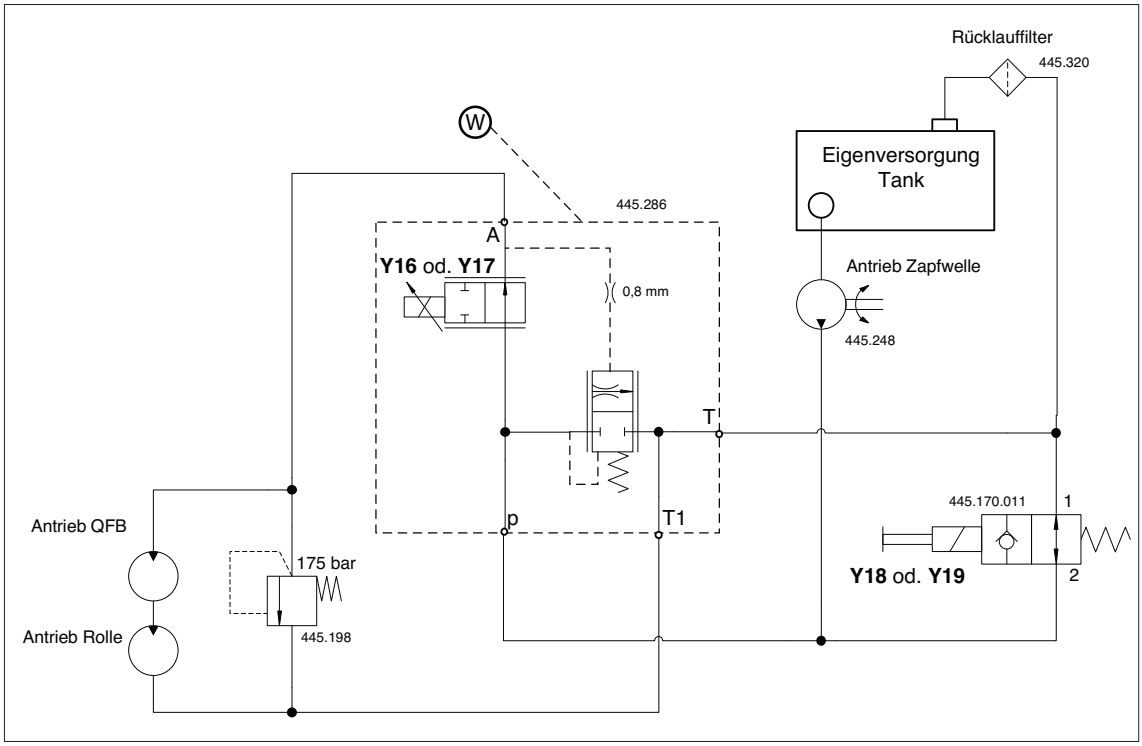
Colour code:

bl	blue
br	brown
gn	green
gnge	green / yellow
gr	grey
rt	red
sw	black
ws	white

Explanation:

Y13 Seat valve - hydraulic relief, right
Y15 Seat valve - hydraulic relief, left
S2 Signal socket connection cable
S4 Pressure measurement sensor, right
S6 Pressure measurement sensor, left
S15 Transport position mower unit, left
S13 Transport position mower unit, right
X1 Connection plugs

Hydraulics diagram (Collector)



Explanation:

Y16 Directional control valve - Cross conveyor belt speed regulator, right

Y17 Directional control valve -Cross conveyor belt speed regulator, left

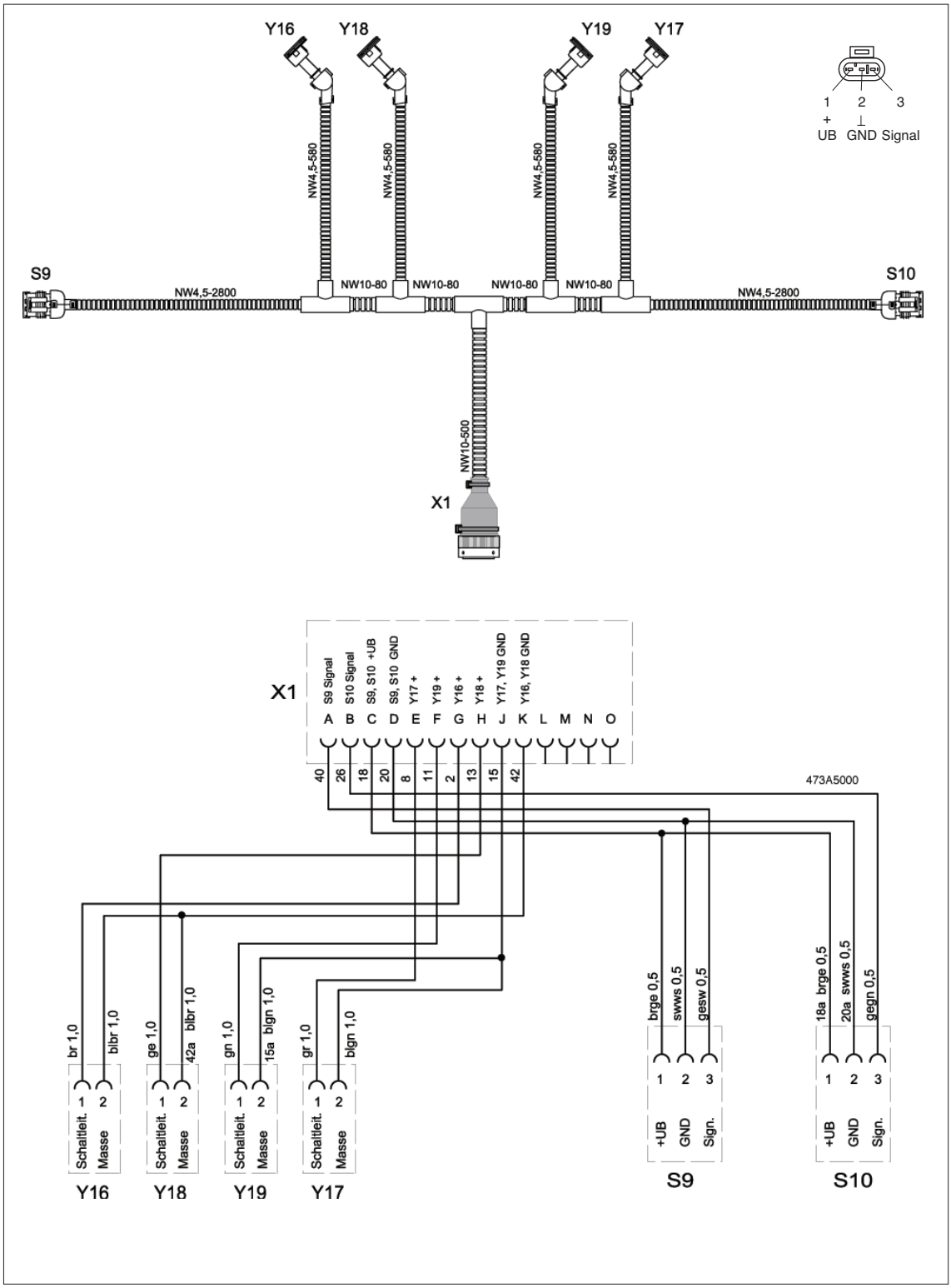
Y18 Directional control valve -Cross conveyor belt on/off, right

Y19 Directional control valve -Cross conveyor belt on/off, left

W Optional extra -

Cross conveyor belt speed regulator

Electrical circuit diagram (Cross conveyor belts)



TIP

All plug views are external!

Colour code:

bl	blue
br	brown
gn	green
gnge	green / yellow
gr	grey
rt	red
sw	black
ws	white

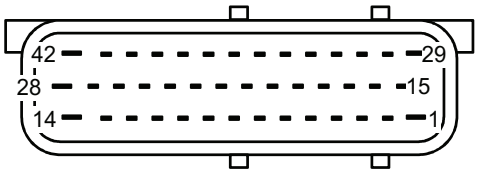
Explanation:

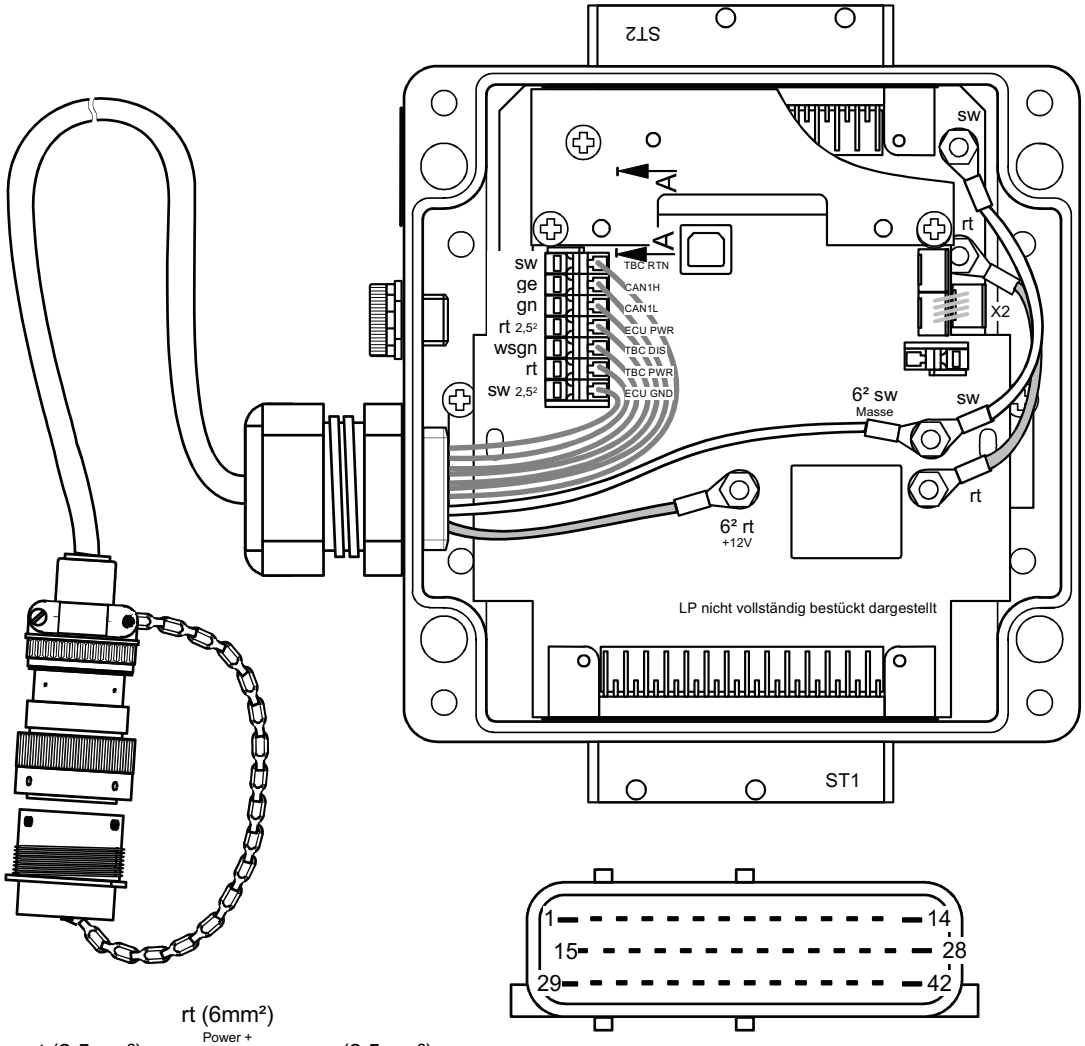
Y16 Throttle - QFB speed, right
Y17 Throttle - QFB speed, links
Y18 Seat valve - Cross conveyor belt on/off, right
Y19 Seat valve - Cross conveyor belt on/off, left

S9 Sensor - Cross conveyor belt, right
S10 Sensor - Cross conveyor belt, left

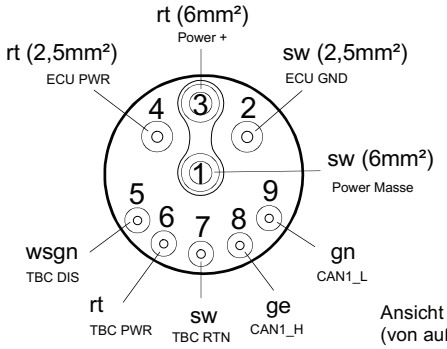
Processor

Ansicht auf 42 pol. Steckverbinder ST2
(von außen)





Ansicht auf 42 pol. Steckverbinder ST1
(von außen)

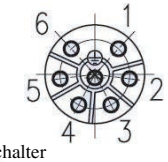


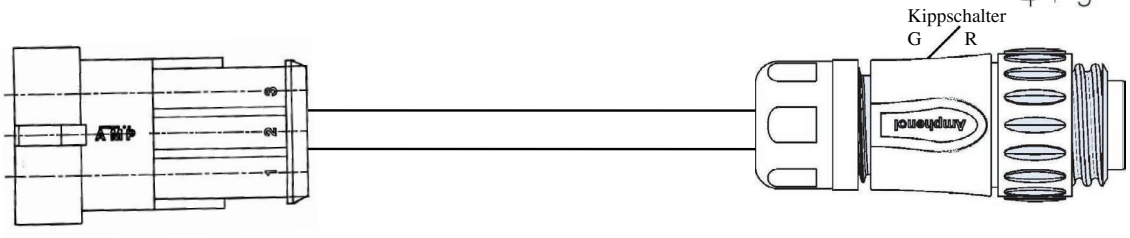
Ansicht auf LBS-Stecker
(von außen)

Anschlussbelegung der 42 pol.
Steckverbinder siehe Blatt 2

Signal socket connection cable

Signal socket connection cable
Toggle switch: G: Tractor transmission signal
R: Tractor radar sensor signal (if available)





1	–	n.c.	1	–	Litze Nr. 2– Schalterstellung R
2	–	Litze Nr. 1	2	–	Litze Nr. 2 – Schalterstellung G
3	–	Litze Nr. 2			

Taper bushes installation instructions

To assemble

1. Clean and degrease the bore and taper surfaces of the bush and the tapered bore of the pulley.
2. Insert the bush in the pulley hub and line up the holes (half thread holes must line up with half straight holes).
3. Lightly oil the grub screws (bush size 1008 to 3030) or the cap screws (bush size 3535 to 5050) and screw them in, do not tighten yet.
4. Clean and degrease the shaft. Fit pulley with taper bush on shaft and locate in desired position.
   - When using a key it should first be fitted in the shaft Keyway. There should be a top clearance between the key and the keyway in the bore.
   - Using a hexagon socket wrench (DIN 911) gradually tighten the grub/cap screws in accordance with the torques as listed in the schedule of screw tightening torques

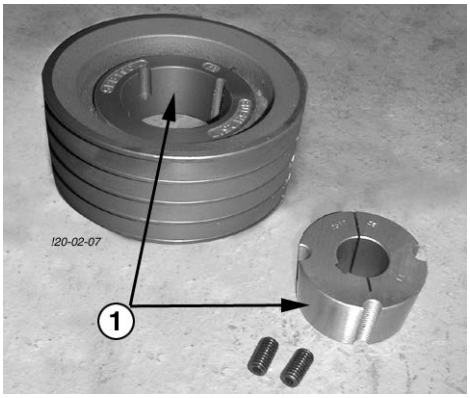
Bush identifier	Torque [Nm]
2017	30
2517	49

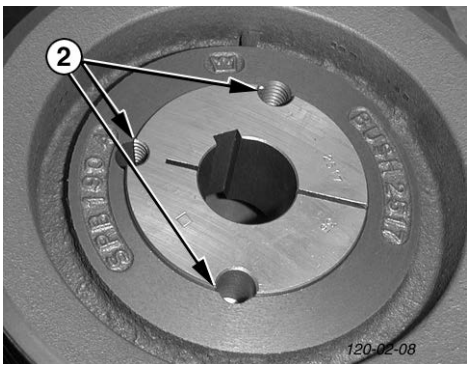
   - When the drive has been operating under load for a short period (half to on hour) check and ensure that the screws remain at the appropriate tightening torque.
   - In order to eliminate the ingress of dirt fill all empty holes with grease.

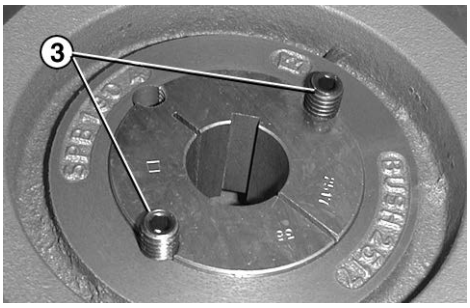
Removal

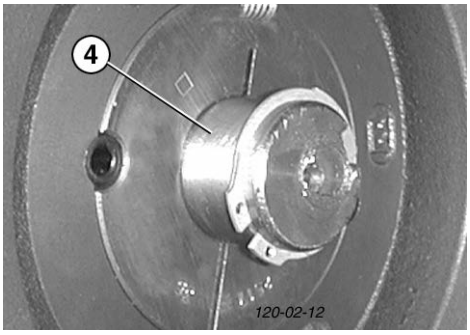
1. Slacken all screws. Depending on the size of the bush remove one or two.

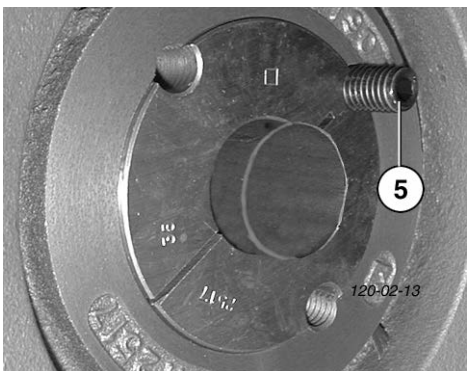
   After oiling point and thread of grub screws or under head and thread of cap screws insert them into the jacking off holie(s) in bush (Pos. 5).
2. Tighten screw(s) unitormly and alternately until the bush is loose in the hub and pulley is free on the shaft.
3. Remove pulley bush assembly from shaft.











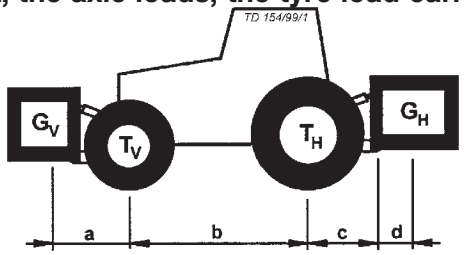
Combination of tractor and mounted implement

DANGER

Life hazard or material hazard - due to overload on tractor or wrong tractor ballast distribution.

- Make sure that hitching the implement (in the front and rear three-point linkage) does not lead to exceeding the maximum total admissible weight of the tractor, the axle loads or the load capacity of the tyres. The front axle of the tractor must always to be loaded with at least 20 % of the unladen weight of the tractor.
- Make sure before buying an implement that these conditions are fulfilled by carrying out the following calculations or by weighing the tractor/implement combination.

Determination of the total weight, the axle loads, the tyre load carrying capacity and the necessary minimum ballasting.



For the calculation you need the following data:

T_L [kg]	unladen weight of tractor	1	**a** [m]	distance from centre of gravity for combined front mounted implement/front ballast to front axle centre	2 3
T_V [kg]	front axle load of unladen tractor	1			
T_H [kg]	rear axle load of unladen tractor	1	**b** [m]	Tractor wheelbase	1 3
G_H [kg]	combined weight of rear mounted implement/rear ballast	2	**c** [m]	distance from rear axle centre to centre of lower link balls	1 3
G_V [kg]	combined weight of front mounted implement/ front ballast	2	**d** [m]	distance from centre of lower link balls to centre of gravity for combined rear mounted implement/rear ballast	2

1 see instruction handbook of the tractor
2 see price list and/or instruction handbook of the implement
3 to be measured

Rear hitched implement resp. front-rear combinations

1. CALCULATION OF MINIMUM BALLASTING AT THE FRONT $G_{V\ min}$

$$G_{V\ min} = \frac{G_H \bullet (c+d) - T_V \bullet b + 0{,}2 \bullet T_L \bullet b}{a+b}$$

Record the calculated minimum ballasting which is needed at the front of the tractor into the table.

Front mounted implement

2. CALCULATION OF THE MINIMUM BALLASTING REAR $G_{H\ min}$

Record the calculated minimum ballasting which is needed at the rear of the tractor into the table.

$$G_{H\ min} = \frac{G_V \bullet a - T_H \bullet b + 0{,}45 \bullet T_L \bullet b}{b+c+d}$$

3. CALCULATION OF THE REAL FRONT AXLE LOAD $T_{V\ tat}$

(If the front hitched implement (G_V) does not reach the minimum required ballasting Front ($G_{V\ min}$), the weight of the front hitched implement must be increased to the minimum ballasting Front!)

$$T_{V\ tat} = \frac{G_V \bullet (a+b) + T_V \bullet b - G_H \bullet (c+d)}{b}$$

Record the calculated real front axle load and the permissible front axle load of the tractor into the table.

4. CALCULATION OF THE REAL TOTAL WEIGHT G_{tat}

(If the rear hitched implement (G_H) does not reach the minimum required ballasting Rear ($G_{H\ min}$), the weight of the rear hitched implement must be increased to the minimum ballasting Rear!)

$$G_{tat} = G_V + T_L + G_H$$

Record the calculated real and the permissible total weight given in the instruction handbook for the tractor into the table.

5. CALCULATION OF THE REAL REAR AXLE LOAD $T_{H\ tat}$

Record the calculated real and the permissible rear axle load given in the instruction handbook for the tractor into the table.

6. TYRE LOAD CAPACITY

$$T_{H\ tat} = G_{tat} - T_{V\ tat}$$

Record double the value (two tyres) of the permissible load carrying capacity into the table (see for instance documentation provided by the tyre manufacturer).

Table

	Real value according to calculation		Permissible value according to instruction handbook		Double permissible tyre load capacity (two tyres)
Minimum ballasting Front / rear	/ kg		---		---
Total weight	kg	≤	kg		---
Front axle load	kg	≤	kg	≤	kg
Rear axle load	kg	≤	kg	≤	kg

The minimum ballasting has to be attached to the tractor either in form of a mounted implement or ballasting weight!

The calculated values must be less or equal (<) the permissible values!

The CE norm is not valid in the United States of America and Canada.

EC Conformity Declaration

Original Conformity Declaration

Name and address of the manufacturer:

PÖTTINGER Landtechnik GmbH
Industriegelände 1
AT - 4710 Grieskirchen

Machine (interchangeable equipment):

mower	NOVACAT X 8 ED / RC / COLL
Type	3843
Serial no.	

The manufacturer declares that the machines adhere to all relevant provisions in the following directive:

machinery 2006/42/EG

In addition to this, the manufacturer also declares adherence to the other following directives and/or relevant provisions

Source of applied, harmonised norms:

EN ISO 12100 EN ISO 4254-1 EN ISO 4254-12

Source of applied miscellaneous technical norms and / or specifications:

Person responsible for documentation:
Martin Baumgartner
Industriegelände 1
A-4710 Grieskirchen

Markus Baldinger,
CTO R&D

Jörg Lechner,
CTO Production

Grieskirchen,
02.04.2020

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