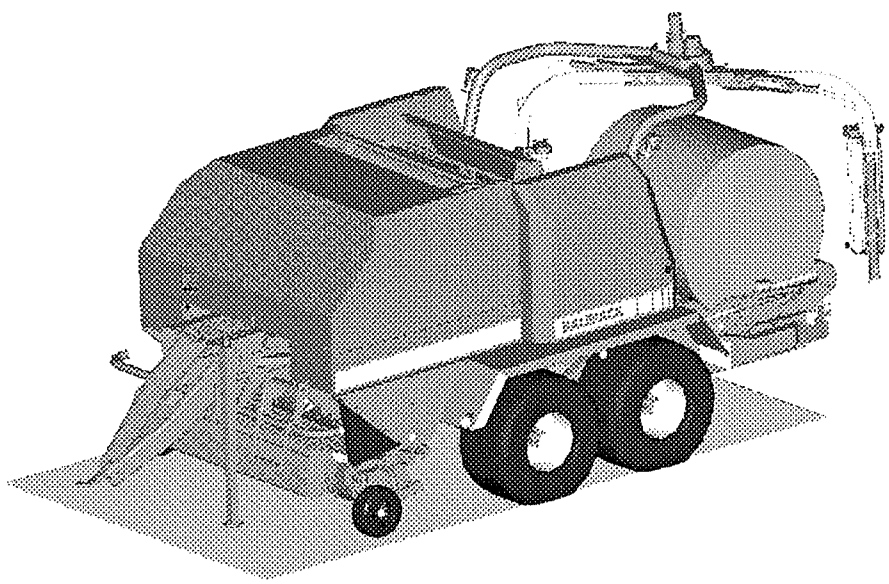
Operator´s manual EN

RF 130 Balepack



1665 0507

EC Declaration of Conformity

CE

In accordance with EG machinery guidelines 98/37/EG

The machine

Model	: Round baler with integrated bale wrapper
Type	: MP 130 / RF 130 Balepack
Ident. no.	: 6836
Serial number	: 12-
Machine no.	: 136 -
Manufactured	: 2001

was developed, constructed and produced in conformance with the above EG guidelines; on the sole responsibility of

Kverneland Gottmadingen GmbH & Co. KG
Hauptstrasse 99

D-78244 Gottmadingen

The following harmonised standards have been applied:

- DIN EN 292/1 and EN 292/2, Safety of machines, equipment and systems
- DIN EN 294, Safety distances against reaching points of danger
- DIN EN 982, Safety requirements on fluid systems and components
- DIN EN 704, Safety in agricultural collection/compression machines
- DIN EN ISO 14982, Electromagnetic compatibility of agricultural and forestry machines

Complete technical documentation is available.
The relevant operating manual for the machine is available

- in the original version : German
- in translated versions : English, Dutch, French

Gottmadingen 23.02.2001

Rasmus Nordbøe

GPA Managing Director

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Foreword

Dear Customer!

We thank you for having demonstrated your confidence in us by purchasing this bale packer.

This operating manual contains detailed information on putting your new bale packer into service and maintaining it. It also contains safety instructions for guaranteeing safe operation. In addition to the variants and equipment which can be supplied, the operating manual describes all supplementary equipment not normally contained within the scope of delivery.

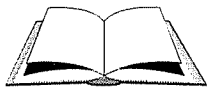
With this operating manual, we wish to put you into a position to extract the greatest possible usefulness from your Balepack.

The performance of the machine depends largely on proper utilisation and careful maintenance of the machine. Before first putting the machine into service therefore, please read this operating manual through carefully and always keep it readily accessible. In this way accidents will be avoided and the manufacturer's guarantee preserved and the machine will always be in working order and ready for operation.

All information and illustrations in this operating manual correspond to the situation at the time of publication. Kverneland constantly strives to improve its products. The company reserves the right to make changes and improvements it considers necessary. However, because of this, any duty to retrofit already-delivered machines is excluded.

Should questions still remain open after reading the operating manual, contact the responsible dealer. We wish you a good harvest with the help of your Balepack!

Before putting into service, read the operating manual and note the safety instructions!



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Enter here the appropriate details of your machine:

Machine type :.....

Serial number :.....

Commissioned on :.....

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1 Safety

1.1 For your safety

Your dealer will have explained the operation and maintenance of the machine at the time of handover. Before using the machine for the first time, read this operating manual and without fail observe the safety instructions. Especially important points are indicated with a pictogram.

This sign is to be found at all important safety instructions in this operating manual. Pay close attention to these instructions, and in these cases act with particular care.

The round baler is equipped with safety devices and has been tested for safety and accident prevention by the German agricultural trade association. However, with faulty operation or misuse, dangers threaten:

- the life and limb of the operator, third persons and animals within the vicinity of the machine,
- the machine and other material assets of the operator and third persons,
- the efficient working of the machine.

All persons having anything to do with the setting up, putting into service, operation and maintenance of the machine must read and observe the following instructions carefully.

It concerns your safety!

1.2 Safety instructions in this manual

Danger!
This symbol in connection with the word "Danger!" signals risk of injury and/or danger to life. When you see this sign in the operating manual, please take all necessary safety measures.

Attention!
This symbol in connection with the word "Attention!" warns you of material damage and financial and criminal consequences (e.g. loss of guarantee rights, legal liability, etc.)

Note:
Here you will find important advice, application tips and practical information on safe operation and to protect you from financial consequences (e.g. loss of guarantee).

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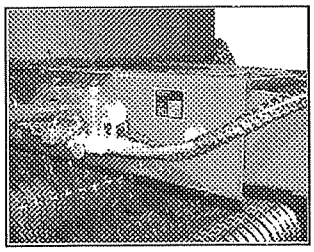

1.3 Type plate

The type plate with details of the machine type and number is on the drawbar connection, on the right.

Transfer the data on the type plate into the box provided for the purpose on page 3.

1.4 Intended use

The Balepack is constructed, intended and suitable exclusively for normal use in agricultural work to collect mown straw lying on the ground in swathes, to compress this into round bales, to wrap with netting and afterwards to package in sheeting.

Any other use shall be regarded as not as intended. The manufacturer shall not be liable for damage resulting from this. The user alone shall carry the risk!

Following the operating, maintenance and repair requirements specified by the manufacturer also falls within the intended use. The machine may only be maintained and repaired by persons familiar with this and instructed in the dangers.

The applicable accident prevention regulations and other generally recognised safety, industrial medicine and road traffic regulations are to be followed.

Unauthorised modifications to the machine shall render void all liability on the part of the manufacturer for resultant damage.

1.5 Liability

All persons having anything to do with this machine must read and observe this operating manual. Additionally, you may use this machine exclusively for the intended use (see Chapter 1.4).

1. You may work on this machine only in accordance with the instructions in this manual.
2. You must abide by the following rules and regulations:

- locally-applicable accident-prevention regulations;
- recognised road traffic, safety and industrial medicine regulations;
- functional limitations and safety instructions listed within this technical manual.

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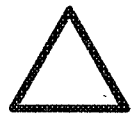
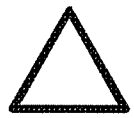
3. When working on the machine, you may use only suitable and tools and equipment in perfect order.
4. You may only use parts (spare parts, supplementary equipment, lubricants, etc.), which at least meet the requirements established by the manufacturer of the machine and you must use these in accordance with the regulations (including specified torques).

   A part meets the requirements when it is an original partor is expressly approved by the manufacturer of the machine.
5. Unauthorised modifications to the machine shall render void all liability on the part of the manufacturer for resultant damage.



Anyone not observing the above regulations shall be held grossly negligent. All liability on the part of the machine manufacturer for resultant damage shall consequently become void. The user alone shall carry the risk.

1.6 Safety stickers and warning signs



Genuine safety means that you are familiar with all safety stickers. This concerns the type and location of the danger and in particular the safety measures to be taken. Always remain alert and aware of the danger(s)!

This machine is provided with warning signs (safety stickers). The stickers with the relevant explanations are listed below and indicated in the overall illustration.

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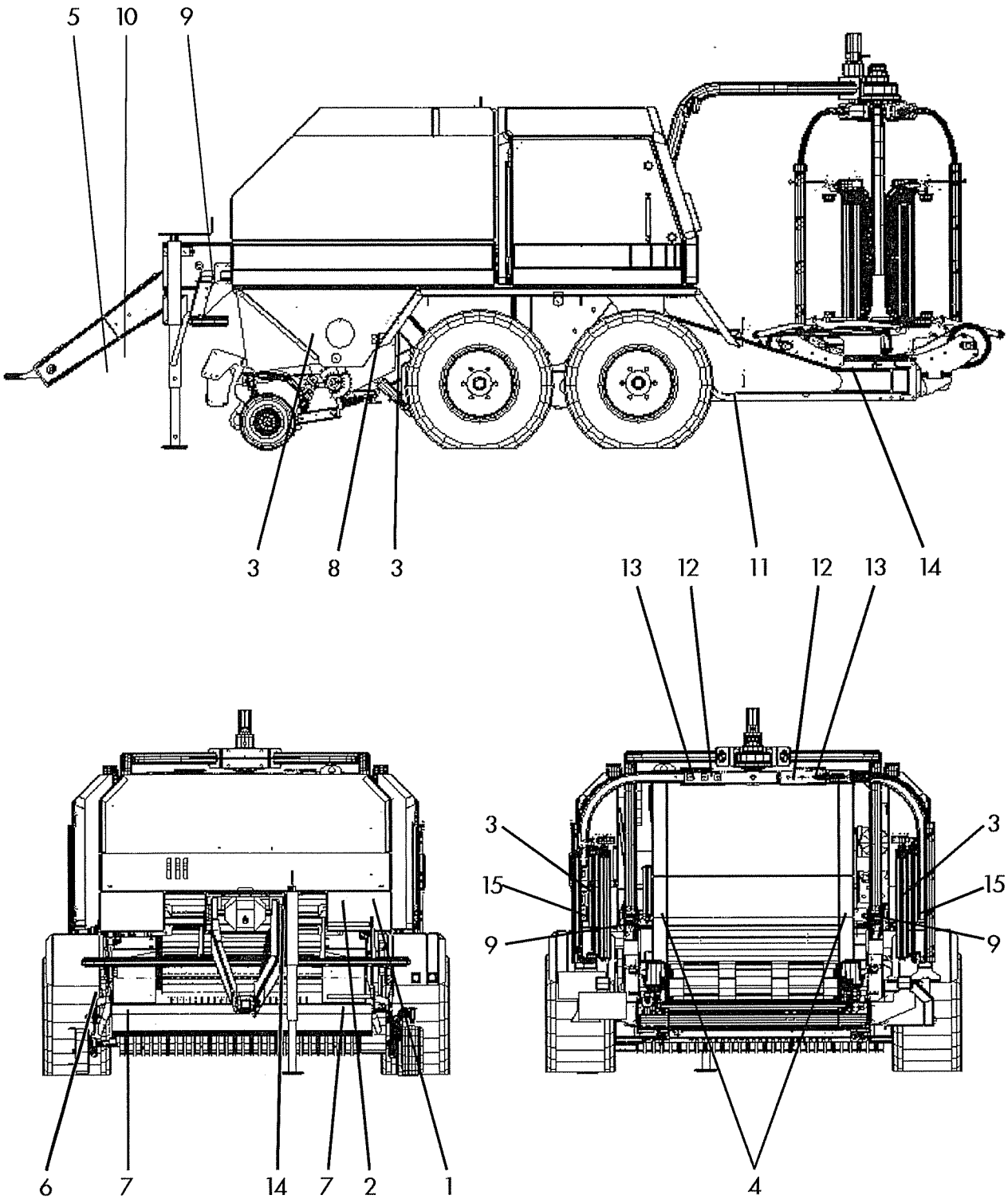
1.7 Overview of safety stickers



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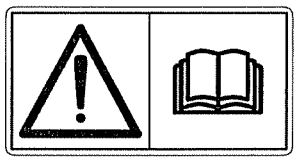
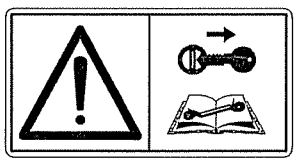
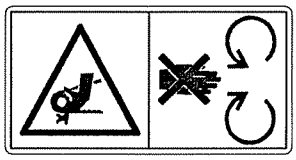


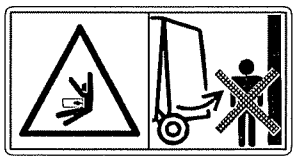
1. Before putting into service, read and note the operating manual and safety instructions.



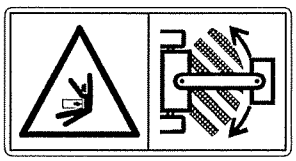
2. Prior to any maintenance and repair work, switch off the tractor engine and withdraw the ignition key.



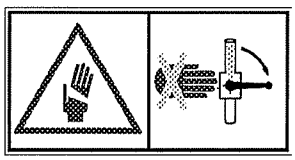
3. Do not open or remove safety devices with tractor engine running.



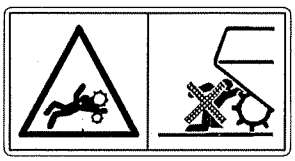
4. Render safety devices operable before putting the machine into service. Do not remain within the pivot zone of the tail gate while operating.



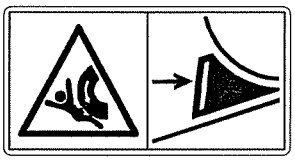
5. Do not remain within the folding zone while operating.



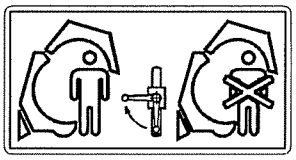
6. Danger of injury by shearing and pinching points! Before performing any work on the cutting mechanism, same must be locked using the ball cock.



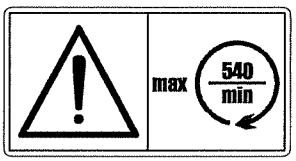
7. Never reach into the pick-up zone when the tractor engine is running with power take-off shaft connected.



8. Before uncoupling or switching off, secure machine with chocks against unintended rolling away.



9. Prior to all work under the tail gate and in the compressing chamber, close the hydraulic valve to secure the tail gate (the hydraulic valve is on the right, at the front of the machine, behind the hydraulic block).



10. The specified power take-off shaft speed n_{max} = 540 min^{-1} may not be exceeded.

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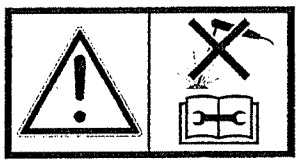
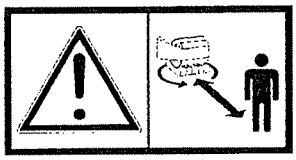
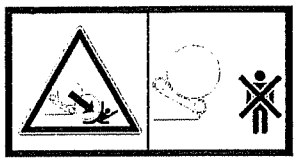


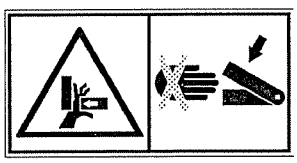
11. Before all welding work on the assembly, disconnect all electrical and electronic connections.



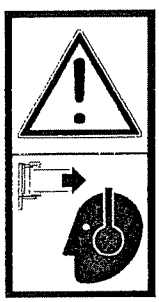
12. **Pinch Point Danger:** During operation keep a safe distance from the pre-stretcher extension arm.



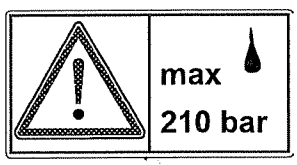
13. **Pinch Point Danger:** When unloading the bales, keep a safe distance from the machine.



14. **Danger of injury by shearing and pinching points!** Keep clear of the operating area of the cutter. Arms and legs can be cut off if they are caught by the cutter.



15. **Noise danger:** When the pre-stretcher is in operation, the noise level can reach up to 90 dB(A). Wear ear plugs.



16. The pressure acting upon the hydraulic system must not exceed 210 bar.

Replacement pictographs can be ordered to:

Kverneland Gottmadingen GmbH & Co KG

Hauptstrasse 99

D-78244 Gottmadingen

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1.8 Approved operators

Adolescents of 16 years or younger may not operate the bale wrapper.

The machine's owner must provide the operator with the operating instructions and ensure that the operator has read and understood the instructions. Only then can the operator put the machine into operation.

The responsibility for the machine's various functions and/or activities are to be clearly indicated and observed. Under no circumstances should there be any questions concerning competencies (of the operator), for this could endanger the operator's safety.

The owner must ensure that only qualified people operate the machine. The operation of the bale wrapper by third parties is the sole responsibility of the owner of the machine.

1.9 General safety precautions

Basic rule:
Prior to activating the equipment and the tractor, inspect and ensure that both are safe to operate and observe road safety! Observe all instructions specified in the manual as well as the generally accepted safety precautions.

1.9.1 General information

1. The warning- and safety indicators and symbols display important instructions for safe operation of the machine. Please observe these instructions for your own safety!
2. Familiarize yourself with the equipment and the operational elements and their functions. Ensure that all protective devices are properly installed.
3. The clothing of the operator are to be slim fit. Avoid loose fitting clothing ! Wear protective shoes!
4. Keep the machine clean! Fire hazard!
5. While operating the machine on public roads observe:
   - legal traffic regulations,
   - the applicable axle loads and laden weight,
   - the applicable dimensions related to transport.
   - Never leave the driver's seat while driving!
6. Adjust the equipment to the specified road traffic conditions and latch in accordance with the manufacturer's instructions!
   Always ensure that the equipment is connected and disconnected while standing on a flat, solid and even surface!! This prevents the vehicle from tilting or sinking in soft soil or mud. Use chocks.
7. Inspect and mount the transportation equipment as well as the lighting, warning and safety devices!
8. Operational equipment (ropes, chains, and rods) and remote devices are to be positioned in such a way that no unexpected movement will occur during all transportation and operational activities!

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9. Connect and secure the devices to the specified equipment and in accordance with the instructions!! Special care is necessary when connecting and disconnecting equipment on and from the tractor!
10. Ensure the correct respective positioning while mounting or dismantling the landing gear. Stability!
11. Never run the motor in an enclosed area!
12. Always inspect the surrounding vicinity (children!) prior to activating the machine or while starting and or driving!
    Always ensure sufficient view!
13. It is not permitted to have someone ride along during transportation! No work may be performed on the equipment while it is in operation!
14. Always adjust your speed in relation to outdoor conditions! While driving uphill or downhill or while driving across a slope, avoid sudden lateral movements.!
15. Trailor equipment influences the driving performance as well as the steering and braking abilities! Make sure that the brakes and steering are in good working condition!
16. When driving around corners, take into account the width of the equipment's overhang!
17. Only activate the equipment when all safety devices have been mounted and are in protective position!
18. Keep away from area of operation and all hazardous areas!
19. Keep away from the pivoting or rotating area of the machine!
20. The power controlled parts (i.e. hydraulic) are located at the rolling and cutting positions!!
21. Secure the equipment prior to leaving the tractor! Completely lower the installed machine! Turn the engine off and remove the ignition key!
22. Do not stand between the tractor and the equipment unless chocks are used to protect the vehicle from rolling away!
23. Pay attention to permissible axle load and the laden weight as well as the acceptable transportation dimensions!

1.9.2 Trailor equipment

1. Secure the equipment against rolling away! The wheel blocks are located to the right of the machine, behind the spring-loaded door!
2. Take into account the maximum admissible supporting load of the trailer coupling, the counterweight pendant, and hitch!
3. While connecting the draw bar, make sure there is enough room to move at the connecting point!

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1.9.3 Power take off (PTO)

Applies to power driven equipment only.

1. Use only the cardan shafts specified by the manufacturer! Make sure that the cardan shaft is correctly installed and completely secure! Protection tubes and protection alignment device must be installed properly and in good working condition! Secure the cardan shaft protection device using suspending chains to prevent travel! For the cardan shaft, pay attention to the pipe contact ratio specified for transport and working positions!
2. While working with the cardan shaft, no one may be near or within the range of the revolving cardan shafts!!
3. While using the cardan shafts with an overload or overriding clutch free engine, the overload or overriding clutch-free engine must be mounted on the side of the machine!
4. The cardan shaft may only be assembled or disassembled when the PTO and motor are turned off and when the ignition key is removed!

   The disconnected cardan shaft is to be positioned on the specific holding device or to be positioned into the specific, for this purpose designed, chain!!

   After the dismantling the cardan shaft, put the protection cover on the PTO end!
5. The PTO protection cover must be properly placed on the shaft and be in good condition!

   Before activating the PTO, make sure that the selected rpms and direction of rotation torque of the tractor comply with the direction of the rotation and the r.p.m. of the equipment's cardan shaft.

   In order to avoid hazardous situation, prior to activating the PTO, make sure that no one is in the area operation!
6. Never activate the PTO when the engine is turned off!
7. Always disengage the PTO if too much unwinding takes place or if unwinding is no longer required.
8. Clean, lubricate or activate the PTO-driven equipment or cardan shaft only if the PTO and engine are turned off and the ignition key is removed!
9. Any damage must be repaired immediately and prior to further operation of the vehicle!

1.9.4 Hydraulic System

1. Warning! The hydraulic system is subject to high pressure!
2. Inspect the hydraulic hose pipe regularly and replace when damaged or at the latest after 6 years (recommended interval time)! Hose pipes must be replaced in accordance to the manufacturer's technical specifications.
3. Lower the hydraulic equipment and the aggregate prior to operation.

   Subsequently depressurise and de-activate the engine. (indication of the manometer, 0 bar)!
4. Use the correct tools to search for leakage. Danger of injury!

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5. Pay attention to the connection stipulated for the hydraulic hose when connecting the hydraulic cylinders! While adjusting the hydraulic hose to the tractor's hydraulic system, make sure that both the tractor and the equipment are depressurised! Only connect compatible hydraulic connection components!
6. Prior to connecting or disconnecting the foil wrapping device, the hydraulic system must be depressurised. The bale press's hydraulic cycle must then be closed again after the foil wrapping hydraulics have been disconnected. (the output terminal on the bale press leading to foil wrapping device must be connected to the input terminal on the bale press leading to the foil wrapping device)
7. Always close the safety ball valve on the hydraulic aggregate prior to activating the operation on the device. (Chap. 5,4)
8. As a result of high pressure, fluids (i.e. hydraulic oil) can escape and penetrate the skin, resulting in severe injuries! If injured, seek medical care immediately! Danger of infection!
9. After the closing the tail gate and the subsequent activated pressure build-up (inspect using the manometer located on the hydraulic block), you can re-set the tractor's control valve to neutral.

1.9.5 Tires and brakes

1. When working on tires, make sure that the vehicle is safely parked and will not roll away. Chocks!
2. Mounting tires and wheels requires significant experience and the right tools as specified!
3. Only qualified personnel using the specified tools may repair and/or assemble tires and wheels!
4. Check air pressure regularly! Comply with air pressure stipulated!
5. The wheel nuts must be adjusted after the first 10 operating hours!

   The starting torque is 325 Nm (M18 x 1,5).
6. Before driving, always make sure that the brakes are in good working order.
7. The brake systems must undergo routine inspections.
8. Adjustments and repair work on the brakes may only be performed by qualified professional workshops.

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1.10 Safety during storage or when not in use

1. Park the vehicle in a safe location!
2. Never allow children to play on the vehicle or in its vicinity!
3. Only hitch or unhitch the equipment when it is parked on a flat, solid and even surface! This prevents the vehicle from tilting or sinking in soft soil or mud. Always use wheel blocks!
4. Place the disconnected cardan shafts in its specific holding device!
5. If the foil wrapping system is stored separately, the accompanying retractable legs must be set up first in order to ensure that the system's stand is stable.
6. Unhitch the vehicle only if there are no bales in the press chamber or on the wrapping table.

Too high a bearing load on the bearing surface or negative load on the draw bar eye. Machine might overturn!

1.11 Maintenance

The direction indicators ("right hand side", "left hand side", "front", "rear") are from the point of view of the direcetion of travel. The direction of turning is defined as follows:

- Direction of turning "right" = clockwise,
- Direction of turning "left" = counter clockwise,
- Rotations around the vertical axle, viewed from top down,
- Rotations around the horizontal axle, at a right angle to the direction of driving, viewed from the left to the right,
- Rotation of screws and nuts, amongst others, always viewed from the operating side.

1. Repair, maintenance and cleaning activities as well as resolving operational errors are in principal may only be performed if the drive is de-activated and the engine switched off! Remove ignition key!
2. Test whether the nuts and bolts are screwed tight and tighten, if necessary! (Tightening torque for screw connections, appendix A. 1)
3. During repair work on the jacked-up vehicle / aggregate, make sure the supporting elements are secured!
4. Use appropriate tools and gloves while exchanging working tools!
5. Properly dispose of oils, lubricants, and filters.
6. Before working on the electrical systems, always disconnect the power supply.
7. If the protective gears are subject to abrasion, they must be inspected regularly and replaced in a timely manner!
8. Disconnect the cable to the generator and battery when doing electrical welding on the tractor and connected equipment.

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1.12 Safety instructions for the MP 130/RF 130 Balepack

1. General safety instructions are included in this manual as well as in the VSG 1.1 (01..01.2001) of the Agricultural Association.
2. The bale packer is to be hitched tothe tractor prior to operation. (There is a danger of overturning when opening the tail gate if the wrapping table is loaded and the bales are being tipped off the wrapping table.)
3. Never operate the bale packer without using the protective devices.
4. Prevent the cardan shaft's protecting tube and safety pot from rotating. Secure safety chain!
5. Ensure that all moving components of the bale packer are in a standstill position prior to operating the Balepack.
6. In principle, removing blockage or resolving operational faults may only be done if the PTO is disconnected and the engine switched off. Remove ignition key! There is a danger of being grabbed by the moving parts.
7. Never attempt to manually feed sections of the crop in the bale packer or remove obstructing parts while the bale packer is in operation.
8. Feed wrapping materials (net and foil) into the bale packer only when the tractor engine is switched off and the ignition key is removed. There is a danger of being grabbed by the moving parts.
9. Feeding the net and resolving operational faults may only be done if the tractor engine is switched off and the ignition key is removed!
10. Be careful with regard to rolling and cutting positions when operating the support device!
11. It is crucial that no one is located in front of the pick-up if the press is in operation! There is a danger of being grabbed by the moving parts.
12. It is crucial that no one is located behind the machine when bales are being stacked!
13. Keep at a safe distance when the feed components, such as the pick-up, feed screws, foil wrapper, etc., are in operation because these components cannot be completely protected due to their function!
14. Eliminate operational errors in the feed elements, such as pick-up, feed screws, conveyors, etc. only if the tractor engine is switched off and the ignition key is removed!
15. Comply with speed limits when using public roads!!
16. Repairs on pre-stressed energy accumulators (springs, etc.) require the qualified personnel and the use of proper tools. Such repairs may only be performed at a specialized professional workshop. Hydraulics may not be repaired!
17. In order to avoid fire hazards, it is recommended that a 12 kg fire extinguisher be carried along.
18. When operating in hilly areas, it is best to position the round bales diagonally in relation to the downhill direction of travel in order to prevent rolling away!
19. Do not attempt to retrieve bales that roll down the hill. Danger of accident!
20. Pay particular attention when opening the tailgate. No one may be within reach of the pivoting area of the gate!
21. Prior to entering the press chamber, the hydraulic supply stop valve must be closed at all times, !

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22. For any activity within the reach of the beating arm / net wrapping, the cutting device may not be connected to the power supply!
23. Everyone must keep away from the foil wrapper when in operation.
    Injury may occur as a result of colliding with the wrapping arm!
    Safety switches on the wrapping arms:
    A safety switch is activated immediately after collision (bumping into) with the wrapping arm during operation. This safety device will immediately stop the wrapping arm!

1.13 Road traffic regulations

Applies only to Federal Republic of Germany!

The Balepack is an agricultural machine hitched to a tractor and therefore not subject to registration. As the Balepack covers the licence plate of the tractor, a second licence plate must be fitted to the rear end of the machine.

During transport the universal drive shaft must always be connected to the tractor power take-off.

Two wheel chocks must always be at hand. They are stowed in the film boxes.

The flashing and rear lights must be kept clean and should not be covered by the crop. Check the function of the lighting equipment and perform all necessary repair work.

Transport is only permissible with the table of the balewrapper and the bale chamber empty.

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2 Technical data

2.1 General information

		Standard	Option
Dimensions, weight			
Length / mm	6400		
Width /mm	2980		
Height / mm	2660		
Empty weight / kg	4950 (with standard equipment)		
Operating, Lighting			
necess. control devices, on the tractor	1 x solo control, 1 x dual control		
Control box	cable separation area, 3-pole socket	x	
	Extension cable 1,5 m		x
Lighting	7-pole plug in accordance with STVZO	x	
Coupling			
Draw bar eye, rigid	40 mm	x	
Draw bar eye, rotating	40 mm		x
Hitch draw bar eye, rigid	52 mm		x
Draw shafts	33 mm		x
Engine			
Central engine	540 min^{-1}		
Cardan shaft	cam controlled clutch 1800 Nm		
Roll chamber	parallel front/rear drive		
Rotor reverse	mechanical		
Pick Up			
Intake width / mm	2100	x	
Fork tip rows	5	x	
Elevator	hydraulic	x	
Equilibrium	springs, 4-fold adjustable	x	
Roller feelers	pneumatic, 2x6-fold adjustable	x	
Impact plate		x	
Overload protection	shearing screw M8 x 45 8.8 DIN 931	x	
OptiCut cutter device			x
Cutting positions	14	x	
Gap between cutters / mm	70	x	
Cutter blanking plates	14 pieces		x

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		Standard	Option
Roll chamber			
Bale diameter / mm	1250	x	
Roll chamber width / mm	1220	x	
Fold shape roller	18	x	
Roller drive diameter / mm	190	x	
Number of roller drives	19		x
Roll chamber locking device	hydraulic	x	
Moulding density adjuster	hydraulic	x	
Chain lubrication device	automatic	x	
Overload protection, roller drive	2 x shear bolts M8 x 45 DIN 931 10.9	x	
Binding			
Release	manual / automatic	x	
Net wrapping		x	
Foil wrapping		x	
Supply of wrapping material			
Net wrapping	2 net rolls	x	
Foil wrapping	8 + 2 foil rolls	x	
Axles			
Tandem axle	50 km/h pneum. /hydr.	x	
	60 km/h pneum. /hydr.		x
Foil wrapping unit			
Permissible bale weight	1.300 kg	x	
Foil pre-stretcher / cutter		x	
Foil width	750 mm	x	
Foil end sensor	Signals empty foil roll	x	
Nominal pre-stretching, series transmission	ca. 70%	x	
Max. speed of pre-stretcher extension arm	ca. 30 U/min	x	
Number of foil positions	adjustable	x	
Power supply	12 V		
Oil supply	35-40 l/min		
Work lights			x
Assembly mat			x
Warning light			x
Equipment for unhooking the wrapper			x
Load sensing equipment			x

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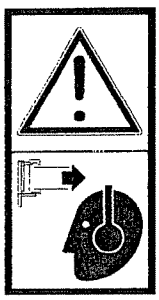
2.2 Noise measurement

The emission sound level has been reviewed in accordance with EN 31 201 and EN 31 204.

A-evaluation of equivalent sound level

	Tractor	**Tractor and compressor**
Cabin window open	76,7 dB(A)	83,7 dB(A)
Cabin window closed	74,2 dB(A)	75,2dB(A)



Danger by noise! In the area of the pre-stretcher there can be a noise level of 90 dB(A). Always use an ear protection!

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3 General description

3.1 Operation of the MP / RF 130 Balepack

The functions of the bale packer are controlled via the "Autoform" operator control panel located in the tractor cabin, and connected to a solo and dual control device.

AUTOFORM is used to pre-select the hydraulic controlled functions and binding options. The integrated Autoform display indicates the operational instructions as well as the number of bales and the possible occurring faults/malfunctions.

The bale packer compresses greens, hay and straw from the field into round bales. The material has to be pressed and collected by the pick-up, subsequently compressed using the impact plate, then fed into the conveyor channel. The feed screws as positioned on the outer side of the hoisting drum, combine large swaths with a width equal to the that of the press chamber. The hoisting drum is equipped with spiral-shaped, grouped, double forks and ensures that the press chamber is continuously filled. If equippped with the "OptiCut' cutting device and inward- turning cutters, the material to be pressed is fed into the machine and subsequently cut by 14 cutters. Each cutter is individually protected against foreign objects and automatically returns to the cutting position after passing a foreign object. The roll chamber compresses the bales into solid bales that will retain their shapes.

The moulding pressure can be pre-selected in accordance with the usability requirements and the press density requirements. A control valve (hand wheel) controls the moulding pressure hydraulically. The set moulding press can be read on the manometer. A horn signal informs the operator as soon as 90% moulding pressure has been achieved. As soon as 100% is achieved, the machine must be stopped. You can choose whether the binding is should be manually or automatically started. The binding option to be selected binding depends on the available net wrapping options.

After the binding procedure is finished, the tailgates are hydraulically opened and the bales roll from the press chamber onto loading arm 1. At the same time, the sensor is actuated and the loading arm 1 is triggered.

The loading arm 1 pivots upwards and conveys the bales onto loading arm 2.

Loading arm 2 pivots upwards and conveys the bales onto the wrapping table. Afterward, the tailgate closes again. The wrapping table is moved into working position and loading arm 2 drops down.

Both foil wrapping arms begin to rotate and thus wrap foil around the bales. At the same time, the wrapping table rotates the bales so that they are wrapped proportionally.

As soon as the pre-set number of wrappings has been achieved, the foil wrapping arms are stopped and both foil cutters move down in order to cut the foil on both sides of the bales.

Afterwards, the wrapping table sinks down to unloading position and the bales are ejected from behind. The ejector can be either manually or automatically activated.

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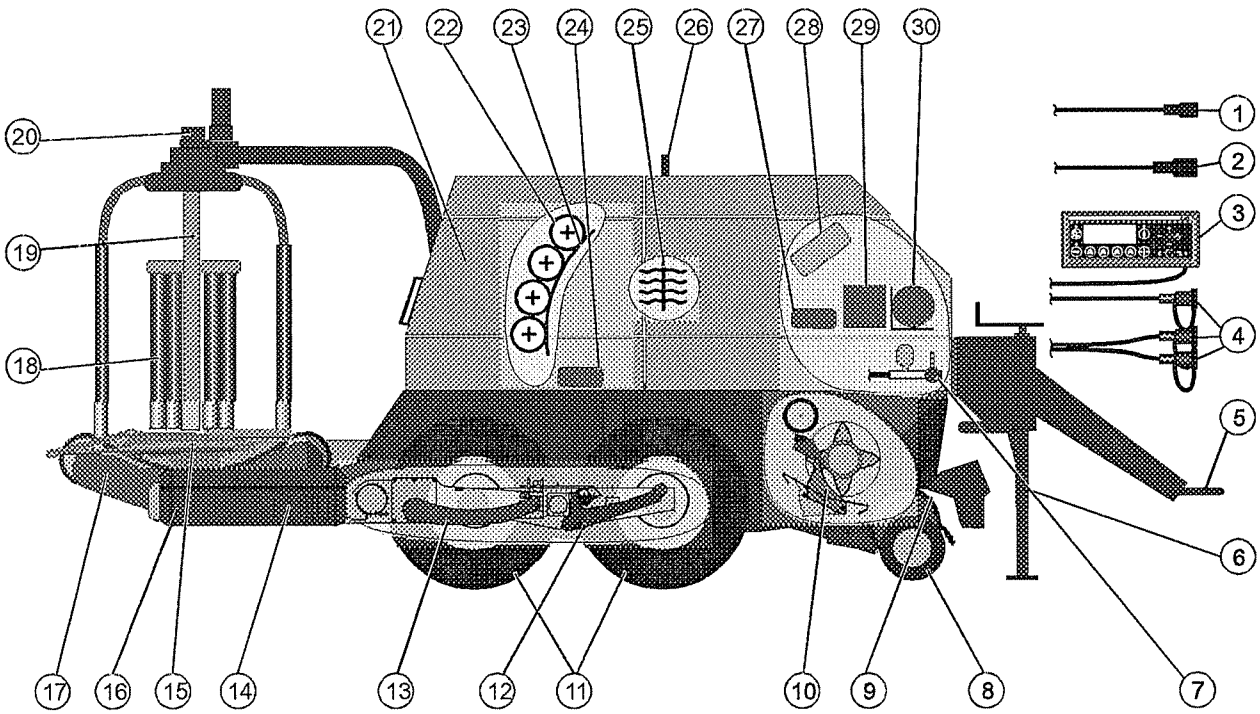
3.2 Important parts for the MP / RF 130 Balepack

1 Power supply socket for electronic control
2 9-pole socket for street lighting
3 AUTOFORM with socket
4 Hydraulic piping / a solo operating control device / a dual operating control device, on the tractor side
5 Finely adjustable draw bar with draw bar eye
6 Support with adjustment lever
7 Manometer for moulding pressure
8 Pick-up roller feeler, pneumatic, 2x6 adjustable in height
9 Adjust pick-up impact plate
10 OptiCut cutter device
11 Double axle with running wheels, brakes in accordance with equipment
12 Loading arm 1 (LA1, underneath press chamber)
13 Loading arm 2 (LA 2, to transfer from loading arm 1 to wrapping table)
14 Hydraulic control unit of wrapper
15 Foil cutter
16 Electronic control of the wrapper (machine box wrapper)
17 Wrapping table
18 Foil unwrapper (foil pre-stretcher)
19 Foil wrapping arm (satellite)
20 Hydraulic drive foil wrapping arm (satellite)
21 Reserve container for wrapping foil
22 Foil shape - press roller
23 Tailgate press chamber
24 Mechanic separation area of wrapper to press
25 Separation area hydraulics, electronics, electricity to wrapping device
26 Lifting eyes
27 Electronic press control (machine unit press)
28 Net wrapping
29 Reserve container net roll
30 Net roll brake



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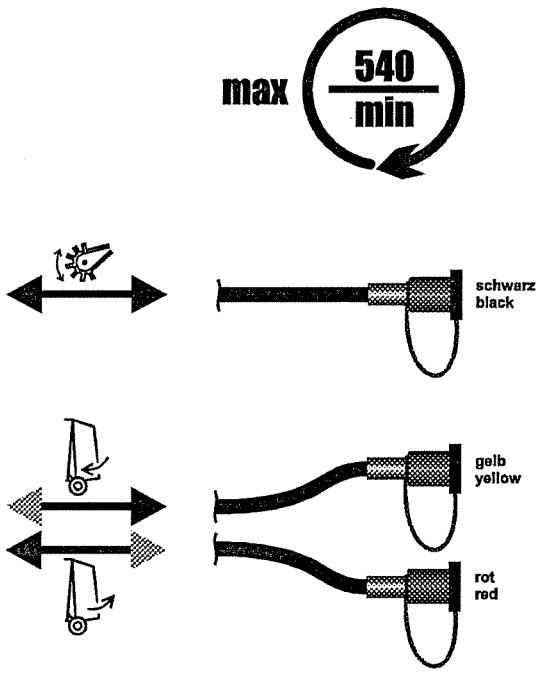
4 Mounting and adjustment procedures



Number of cardan shafts and control drive connections

Careful!
All adjustments, maintenance, and repair activities may only be performed if the engine is switched off and the machine has come to a standstill!

4.1 Necessary tractor equipment

The required PTO for the operation of the Balepack is 540 r.p.m..

The PTO must guarantee that the tractor's clutch operates independently.

In order to control the hydraulic functions, the Balepack requires the following:

- an individual / solo operating control device for pick-up and cutter device (a remote connection DIN 5675, SAE J1036, DN 10)
- a dual operating control device for the remaining functions or for back wall actuation of the press without wrapper (two remote connections, DIN 5675, SAE J1036, DN 10)
- a non-pressure hydraulic oil tank sleeve for operation with a wrapper (DIN 5675, SAE J1036, DN 16)

the capacity for the hydraulic cycle may not exceed
35-40 ltr/min. This capacity volume must be adjusted on the tractor! (See tractor operating instructions) The hydraulic pressure may not exceed 170 bar!

4.2 Hydraulic connection

- Connect hydraulic hose (marked in black) to a solo operating control device.
- Connect hose marked in red to a dual-operating control device.
- Connect the hose marked in yellow to the hydraulic tank coupling when operating with the wrapper.

  For operation without wrapper to the backflow of the dual-operating control device.

Information
If the hydraulic oil tank sleeve is lower that the nominal DN 16 width, the tractor must be retro-fitted or re-equipped.

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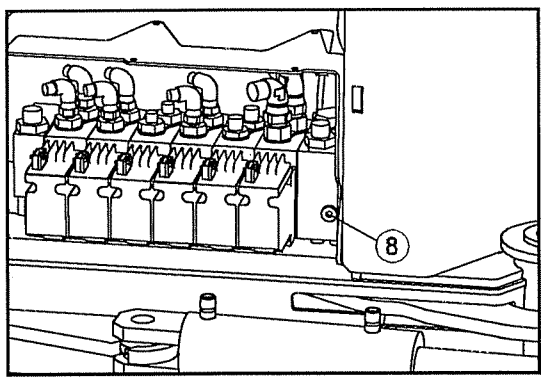

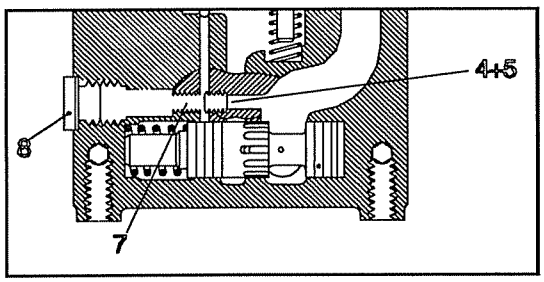

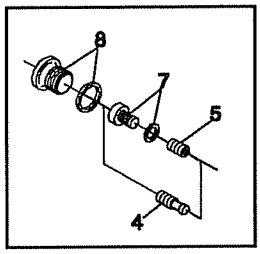

For John Deere tractors built before model 50, the oil's backflow must be re-directed directly to the tractor's oil filter!

Connecting to a tractor with a closed hydraulic system (such as the John Deere models 30,40 and 50) means that the center conduit of the valve block must be closed.

- Loosen screws 8 and 4.
- Attach screw 5 (with hole) and screw 7 with gasket.
- Adjust screw 8.

When a different type of tractor is connected, the sealing in the center conduit must be removed or else the tractor's hydraulic pump will be damaged!

Use only clean hydraulic oil. This protects against pre-mature wear and tear and prevents components from failing. The tractor's oil and filter must be changed in accordance with the manufacturer's specifications.

Be careful
First, the hydraulic piping marked with yellow must be connected. Afterward, set control device to LOWER (close tailgate) and check pressure increase on the manometer. Only then can the hydraulic piping marked with red be connected.

4.3 Tractor with Load Sensing System

When connecting to a tractor with a load-sensing hydraulic system, the hydraulic bloc on position 8 must be adjusted as follows:

- Loosen screws 8 and 4.
- Attach screw 5 (with hole) and screw 7 with gasket.
- Mount third control lines instead of screw 8 and connect to tractor connection. (For special equipment, see tractor operating manual)

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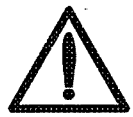
4.4 Integrated oil filter

A high pressure oil filter is integrated into the valve block's pressure pipe.

For exchanging the filter components, see chapter on maintenance.

Filter condition indicator:

- Green: Filter component working properly
- Red: Change filter
- Check filter when oil is warm (for tractor engine rpm the same as for normal presses).
  Cold oild can lead to faulty indicator readings.



For tractors with closed hydraulic systems (such as John Deere model series 30, 40, and 50), the satellite must rotate in order to obtain the correct reading (oil must flow through the filter).
Be careful when satellite is rotating!

4.5 Operating speed

The through-flow volume in the tractor hydraulic system may not exceed 35-40 ltr/min. This produces satellite revolutions of approx. 30 U/min. In case of strong oil pressure, there is no further increase in the satellite's number of rotations due to the flow limiter integrated into control valve block.

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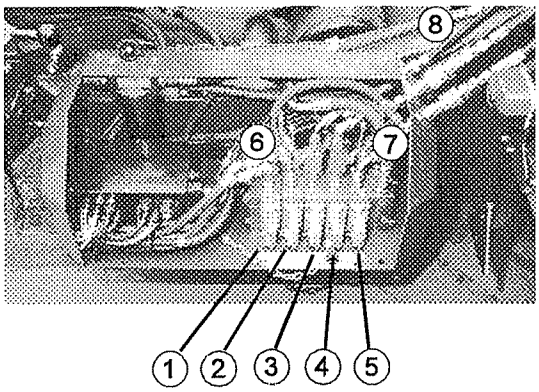
4.6 Hydraulic valve functions



Danger of injury when functions are actuated:
Safety sensors are inactive when hydraulic functions are manually released.

Independent of the control, the following functions can be activated through manual release of the hydraulic valves.

1 Foil cutter
2 Position wrapping table
3 Loading arm 2: bale transfer to wrapping table
4 Open/close tailgate

Loading arm cannot be hydraulically controlled - only through electrical systems in PIA mode, see Chapter 6.4.

5 Wrapping function: Rotate satellite and operate wrapping table.

Information!
This can only be done if AUTOFORM is deactivated.

Danger of injury when satellites are rotating!

Two ball valves are available that ensure safety in case of disruptions and maintenance and unhitching.

6 Wapping table with stop valve: if the valve is closed, the table can no longer be moved.
7 Stop valve loading arm 2: when the valve is closed, loading arm 2 can no longer be moved.

8 Hydraulic connections to and from press

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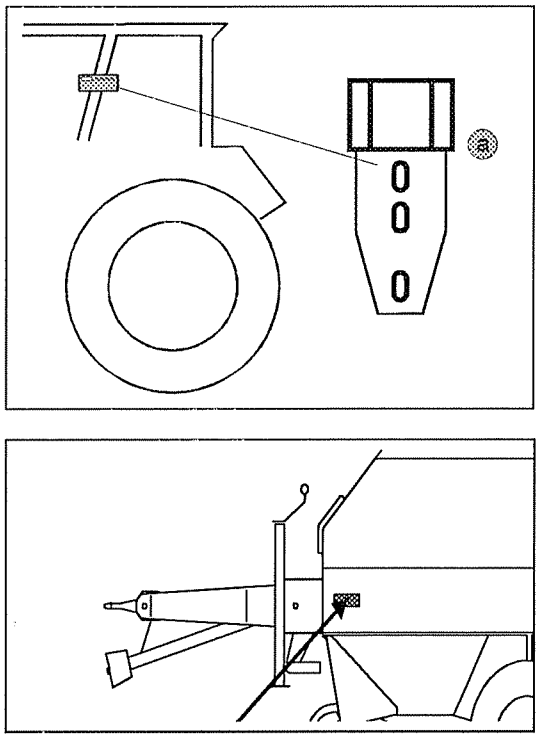


Mounting AUTOFORM

4.7 Electrical connection

For the AUTOFORM power supply, the tractor requires a 3-pole socket according to DIN9680 (included in scope of delivery). The power supply for lighting comes from a 7-pole socket.

The tractor requires the appropriate connections to the pneumatic and hydraulic brake axles.

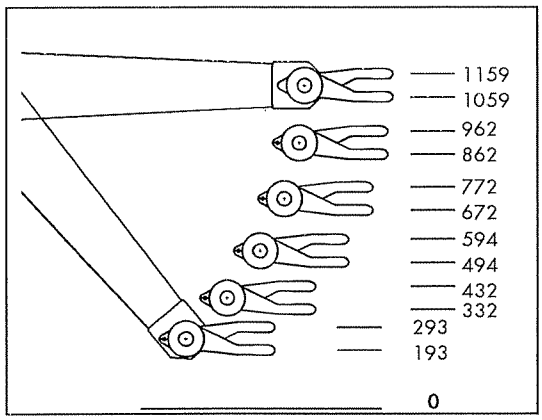
4.8 Mounting AUTOFORM

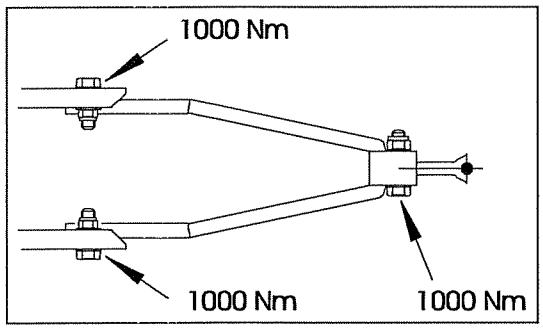
In order to mount AUTOFORM, the clamp strap (a) must be attached to the safety frame / roll bar or to the center sleeper in the tractor cabin. ts position must be clearly visible. Support (b) is subsequently tightly screwed onto the clamp strap and functions as the AUTOFORM intake.

While hitching the machine, Autoform can remain in the tractor cabin. For this reason the cable socket (screwed connection) must be removed from the unit-housing.

In order to place AUTOFORM on the round baler press, a hitching device is located on the left side of the draw bar, underneath the front hood.

AUTOFORM must always be protected against moisture!





Deichsel anpassen

4.9 Adjusting the draw bar

The draw bar must be adjusted in such a way that the balepack standard tires in hitched position is parked. When provided with 500-tires, the bale packer must be angled forward approximately 2° in order to achieve an optimum material flow.

The draw bar height adjustment is a result of the fastening screws being loosened and the adjustment made using the tooth lock washers. It is possible to hitch up to a height of min. 193 mm and max. 1159 mm.

When adjusting the draw bar, the bale packer must be secured by wheel chocks in order to prevent rolling!

Adjustment:

- The bale packer must be positioned horizontally using the support's adjustment handle. Use the protective cap for orientation.
- Loosen the draw bar fastening screw on the right and left sides (of the machine) and angle the draw bar to the height of the attachment (center of the draw bar eye - fastening screw at the center of the draw bar opening / topside draw bar counter-weight pendant.)
- Loosen the draw bar eye by putting the draw bar eye-fastening screw in a horizontal position.
- Achten Sie auf Festsitz der drei Befestigungsschrauben = 1000 Nm (tightening torque for screw connections, annex A.1)

4.10 Cardan shaft, clutch

The bale packer is supplied with a WWE wide-angle cardan shaft with an integrated cam controlled clutch.

In case the press is overloaded, the drive system is switched to "zero." The power supply is subsequently cut off and the machine is stopped. Activation follows automatically if the PTO is less than 200 r.p.m.

The manufacturer of the cardan shaft has pre-adjusted its torque to 1800 Nm, deviation of + 10% (at cardan shaft r.p.m. 540).

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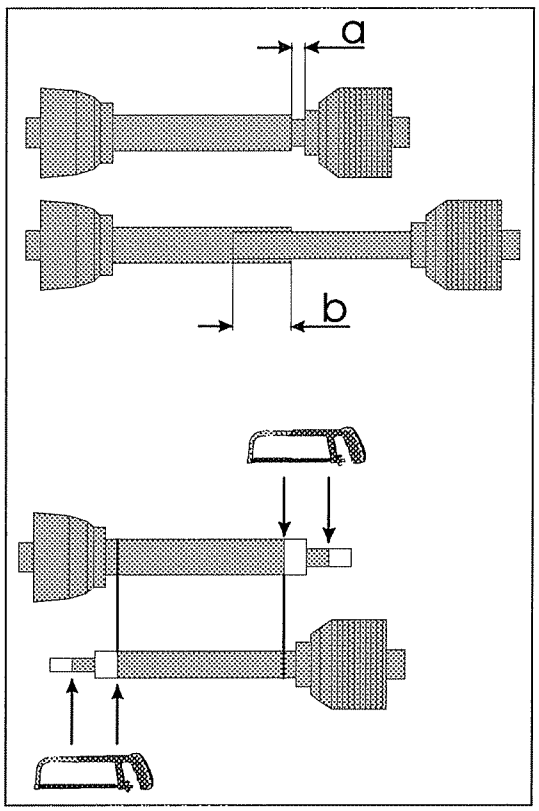

Adjust length of cardan shaft

Interferring with the clutch in any way shall result in the loss of all guarantees that result from said interference.

The protective cover (on the device machine side) has an opening into which the cardan shaft can be inserted and then attached to the center transmission -motor shaft. The tightening torque for the screws is 8.5 Nm. Then, both insertion openings must be closed again using protective covers.

Depending on different trailer models and tractor models, it is sometimes necessary to adjust the length of the cardan shaft.

To check and/or adjust the length, proceed as follows:

- Hitch balepack to the tractor;
- Draw bar must be adjusted as stated in Chapter 4.3.
- Remove the cardan shaft and attach half to the tractor and the other half to the machine;
- Position the cardan shaft halves underneath one another;
- Ensure that the cardan shaft's overlap when driving around curves as well as straight ahead has:
  - a minimum overlap of b = 200 mm,
  - that the cardan shaft does not touch the block (Minimum distance a=20 mm),
  - the cardan shaft has enough clearance to the draw bar.
- If the shaft must be shortend, ensure that the both protective tubes and the discs are cut with the same dimensions;
- Carefully deburr the tube ends, remove the shavings, and grease guide plates accurately.

4.11 Adjust moulding pressure

The press density of the round bales depends on the conditionof the harvest materials and on the set moulding pressure.

Moulding pressure is hydraulically regulated. When turning the adjustment wheel for the control valve clockwise, the moulding pressure increases. Turning it counter-clockwise decreases the

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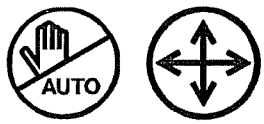
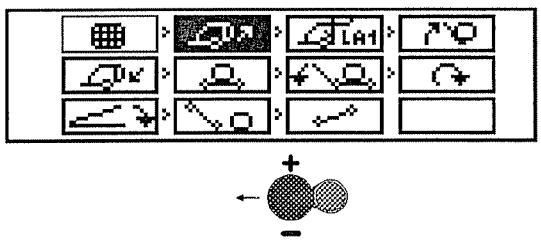
moulding pressure. A 170 bar maximum pressure is adjustable. (depending on the system, a 10% pressure reduction due to processing in the moulding pressure memory is offset by the control system).

Basic adjustments can be made as follows:

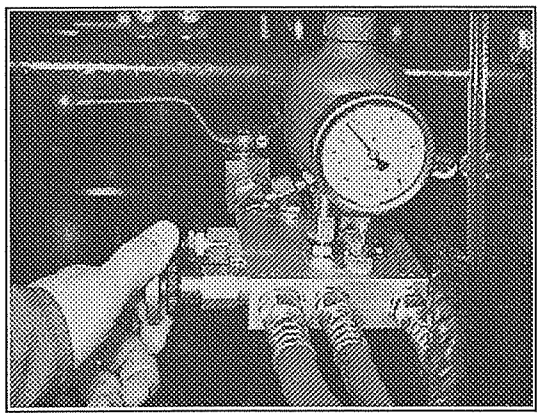




- Adjust hydraulic cycle and open the tailgate in PIA mode (Chapt. 6.4) just a bit:

Operating mode / Press functional key (PIA mode)

using joystick on the "tailgate open" symbol.

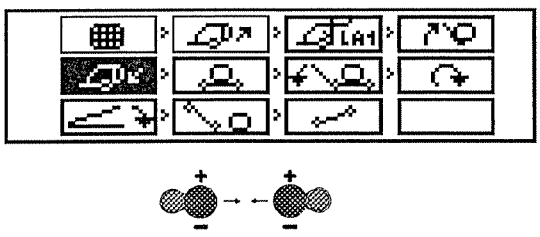


Confirm with I | OK and in case of drop in pressure,

press the STOP button on the manometere in order to break

Adjust moulding pressure

off the process.



- In this condition, the setting screw is depressurized and can easily be removed up to the end position (minimal pressure).
- Close tailgate in PIA mode
  In PIA mode (see above), use Joystick to switch to "TAILGATE CLOSE."
  Close tailgate by pressing OK button.

- In order to generate pressure increase, the process must be repeated.

- You can read the default pressure on the manometer on the press.

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- By rotating the adjustment wheel, the moulding pressure can now be set and be displayed on the manometer.
- When adjusting in reverse direction, direct pressure display is not possible!

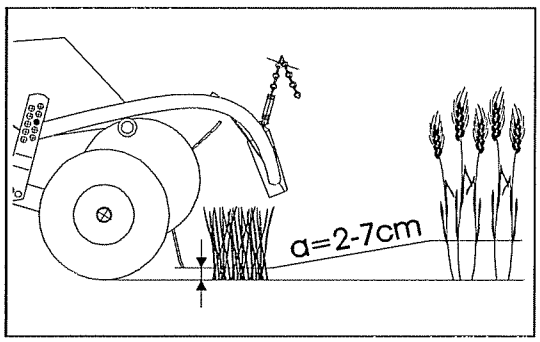
4.12 Pick-Up adjustment

4.12.1 Pick-Up height adjustment

Lifting and lowering the pick-up is done hydraulically using the tractor control device. On AUTOFORM, you can pre-select the "Pick-up" function. (LED lights up)

The pick-up's operational height is adjusted via two pneumatic roller feeders (right and left).

The height must be adjusted in accordance to the soil condition and with the condition of the materials to be compressed. This ensures a clean collection of materials.



Adjust height of pick-up

The standard distance between the fork tips is the deepest position in relation to the soil. The reference values to be considered are: the minimum distance for a = 2 cm for greens and hay respectively, a maximum distance of a = 7 cm for straw.

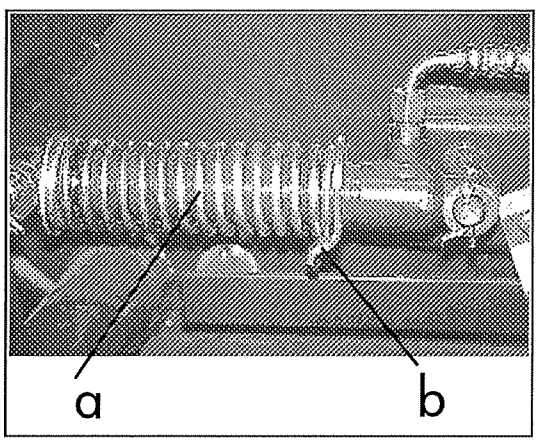
Striking the fork into the soil must be avoided in order to prevent contamination of the materials that have to be pressed and above wear on the forks.

Adjusting the distance of the forks to the ground is done using 2x6 holes on the roller feeder steering wheel. Make sure that the right and left side roller feeders have the same adjustments!

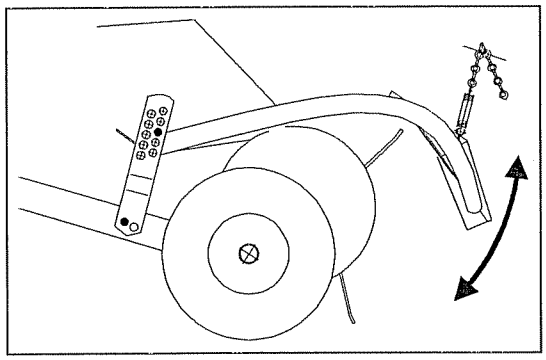
4.12.2 Adjust pick-up balance

The pick-up's soil pressure is adjusted using the the roller feeler via the relieving springs on the left and right sides. The springs have to be shifted using the hydraulic cylinders from pick-up elevator. By alternatively inserting the sliding plate (b) into one of the four positions, the equilibrium can be pre-selected.

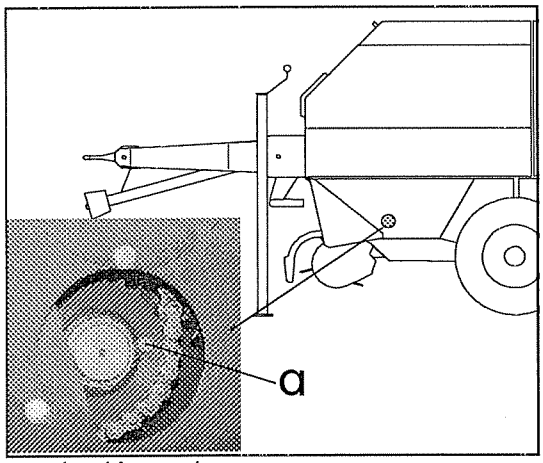
A better equilibrium (first groove in driving direction) can be



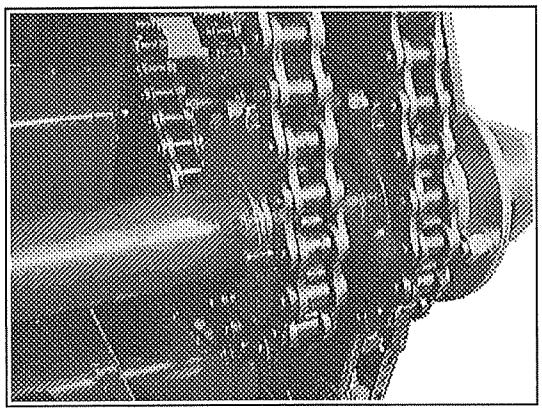
Pick-up Entlastung einstellen



Adjust pick-up imprint plate



Overload fuse pick-up



Overload protection of the roller drive

achieved for soft soil and a lesser equilibrium (last groove in driving direction) for hard soil. By "jumping, " the user can make a pre-selection for an uneven surface. To change the sliding plate, the pick-up has to be raised up to the stroke.

4.12.3 Adjust pick-up impact plate

The impact plate keeps the press material low in order to achieve a balanced flow of material. Depending on the type and quantity of the material, the impact plate can be adusted in height using two chains.

4.12.4 Pick-up overload protection

In order to avoid damage, the pick-up must be equipped with a torque protection device in the drive. When overloaded, the power supply is interrupted by the break in the shearing screw (a) M8 x 45 8.8 DIN 931 (set screw) and the Pick-Up will stop.

When changing the shearing screw, make sure that the above screw quality is used!

4.13 Shearing screws roller drive

In order to prevent damage to the press roller and in addition to the main protection, two shearing screws M8 x 45 DIN 93110.9 (set screw) are located in the roller drive (one in the front half of the press chamber and one in the rear half). Both shearing screws are located in the double chain drive in front on the left side of the machine. By using the return turning handle (to set to hexagonal), the relevant location of the hole can be found using the shearing screw fracture.

When a shearing screw breaks, the press roller becomes overloaded generally due to a blockage of the press material. The blockage must first be eliminated.

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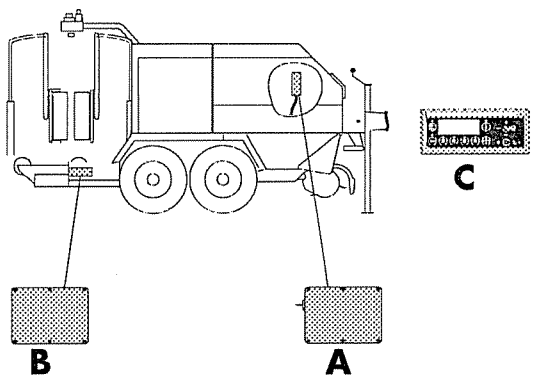
5 Operation



5.1 Control

The balepack computer consists of three main parts:

A Electronic control for press (Machine box press)

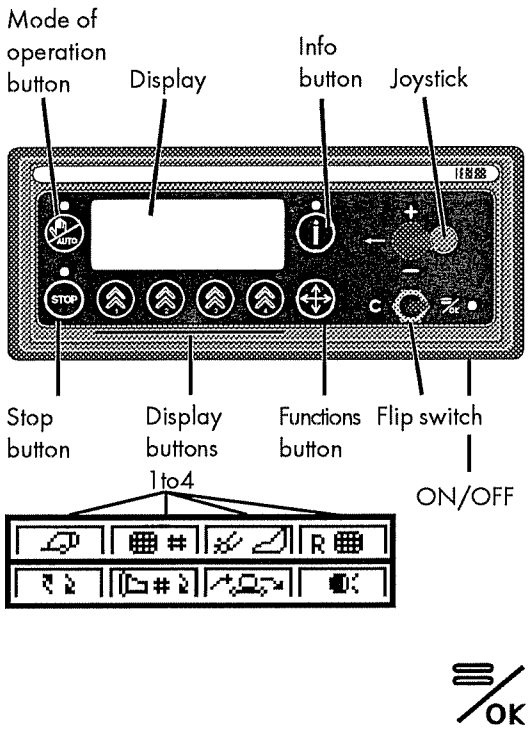
B Electronic control for wrapper (wrapper machine box)

C Operating unit in the tractor (AUTOFORM)

5.1.1 AUTOFORM connection

Connect electrical system to tractor power supply. When connecting for the first time, connect the power cable to the tractor battery first. Use the connection cable that was provided. Connect Autoform to the designated right angle plug.

Protect AUTOFORM from rain and moisture. The control modes of the press and the wrapper may in now way be left open if there is danger of moisture, dust etc, which might damage the electrical systems. The distribution voltage is 12 volts.



5.1.2 General information on AUTOFORM

AUTOFORM consists of a foil keyboard, a four-way Joystick, flip switches, and a display.

The **keyboard** operates the machine and adjusts the modes to full or half-automatic. The various keyboard symbols are explained below.

The **joystick** is used to select the various submenus and to adjust the numerical values (e.g. net wrappings).

Switching the **flip switch** to the right means OK.

1. It is used to start the program sequence, meaning to start the processes from the current program step.
2. Using OK the parameters for making changes are called up. BWhen calling up a parameter, the value also blinks. The joystick changes the value when it is moved left/right or up/down. By pressing OK again, the value is saved.

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Pressing the **flip switch** to the left has the delete function (C) for:

1. deleting the error code on the display or
2. resetting the processed values to the minimum value for the actual parameter, or set the value to zero.

Mode of operation button

Selection of operating mode:

- Manual (LED lights up):
  Depending on the program, interim steps must be performed and verified by pressing the button OK.
- Auto:
  All bale-packing functions are performed completely automatically.

Info button

All modes of operation, based on the selection from the press menu or the wrapper menu:
This button selects the counter select display. A total of 8 ball counters is available. The display indicates the counter (order) number, the wrapped bales, and the total working period of the press or the wrapper for each job / order. The counter values are deleted by pressing the C button and verified by pressing =/OK. Follow the same procedure to delete the operating time.

Stop button

When the Stop button is actuated, the machine is stopped, regardless of the mode of operation, and all processes deactivated. This button can also be used as the EMERGENCY stop button. This button activates the LED, which indicates that the system is in the 'safe' neutral position. In this neutral position, the User function, Dealer function and Service function can be called up and changes made, if necessary.

Display buttons 1, 2, 3 and 4

The function of the above mentioned buttons depends on the symbols indicated above the buttons on the display. These buttons call up sub-menus or can also activate and deactivate other functions.

Function button

In the Stop mode, meaning the STOP button was previously actuated; this button opens the User function menu. The User function menu allows users to customize their settings.

In combination with the button, the PIA-Modus (Process Independent Activation) is activated.

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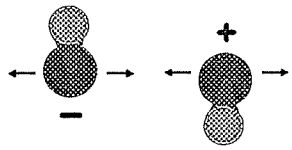
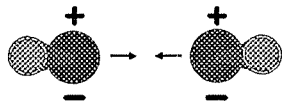


Joystick '+'/UP and '-'/DOWN

- PIA mode (Chapt. 6.4)
  Depending on the joystick function group displayed.
- Programming mode:
  The '+' function increases the value displayed by one pre-programmed step (usually 1). When this function button is held down, the value continues to increase step-by-step. After it is held down for a longer period of time, the steps increase at a faster rate and in larger increments.
  The '-' function lowers the values displayed by the pre-programmed step.



Joystick left/right

- PIA mode (Chapt. 6.4):
  Depending on the joystick function group displayed.
- Programming mode:
  Using ⟹ the next display and/or the variables are displayed on screen so that the User function, the Dealer function, or the Service function can be edited. When editing a variable, the ⟸ the previous display and/or the variables are displayed on screen so that the User function, the Dealer function, or the Service function can be edited. It can can be used to quit the field currently being edited (without changes).

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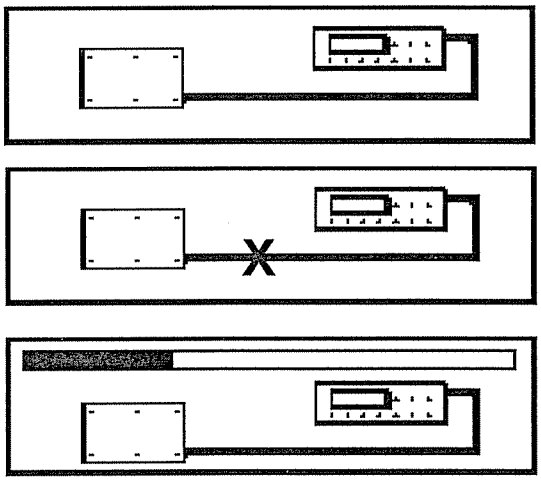
Display

The display indicates all bale packer operations that can be recorded by the controls.

This means that process flows are currently displayed, setting values displayed, and error messages signaled.

Here, the various menus are briefly described and supplemented with display examples:



- Switching on machine

Under normal circumstances, when the machine is activated, a connection is established between the control unit and the Autoform. The illustration above indicates how this is works.

- Connection errors

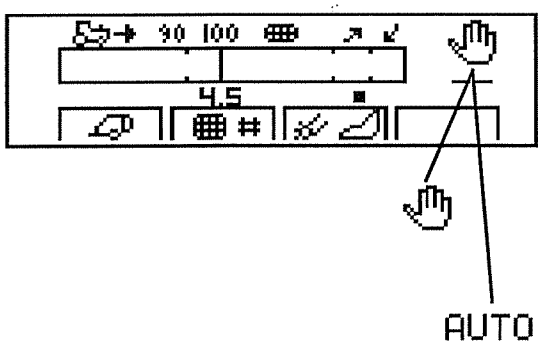
If it takes a while to establish the connection between AUTO-FORM and the machine box, the connection display blinks. This display lasts 6 seconds and then an error message appears.

- Upload

If the connection between the machine box and AUTOFORM is established, review the systems to see whether the graphic symbols in AUTOFORM are correct. If they are not or if a new version of the control unit's software is installed, the system begins uploading the graphic symbols in AUTOFORM.

- Stop mode (Chapt. 5.2.2)

(after switching on power supply):
The Balepack is located in a safety/stop position that is indicated through the LED on the Stop button. A digital clock is visible in the display. Settings can be performed using the display buttons.



- Process mode (Chapt. 6.3)

(after switching on cardan shaft):
Mode: The Stop button does not light up the LED light.

During the work process, the machine is able to work in the following modes of operation (selected using the Mode of Operation button):

- **Manual:**

  The symbol is shown in the upper right of the display screen. (Process continues if the user confirms it with OK)

- Fully automatic:
  The 'AUTO' symbol is shown in the upper right side of the display. (The work process runs fully automatically)

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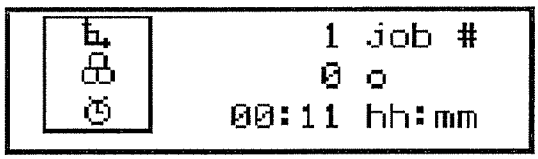
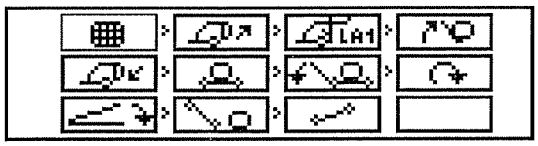


- Job mode

The Info button inserts this menu. In this case, the user can save up to 8 daily counters. In addition, there is also the option of maintaining the time to be used for this.



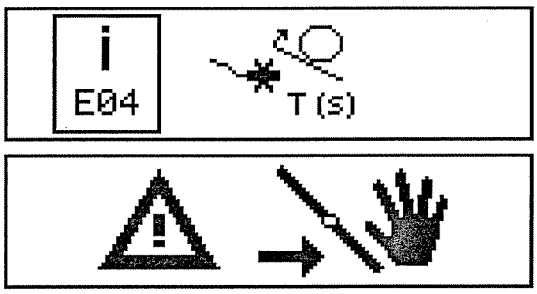
- PIA mode (Chapt. 6.4)

(Prozess Independent Activation)

In case of disruptions, this mode can be used to serve each of the bale packer's individual work processes or to eliminate errors.

The safety switch and the STOP button continue to be effective.

The control system loses track of the current operating mode (e.g. the control system does not notice whether or not the bale chamber has been filled).



- Errors and warning messages

Errors and warning messages provide you with information on errors (Exx messages) in the process sequence or disruptions to the machine. (e.g. release of the safety brackets on the wrapper).

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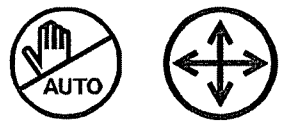
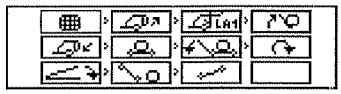
5.1.3 Button/Switch combinations

These button/joystick combinations can be used to open various sub-menus.

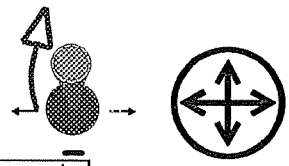




Mode of operation - and function buttons (PIA mode)

- Can be actuated in each menu
  The PIA mode is activated by simultaneously pressing the Mode of operation button and the Function button. This enables individual working steps or a complete press-wrapping process to be performed. (see Chapt. 6.4).

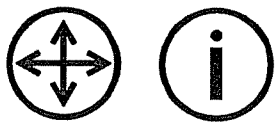
The control system loses track of the current operating mode (e.g. the control system does not notice whether or not the bale chamber has been filled).



Joystick +/UP and Function button (Dealer Functions)

- Actuating STOP mode:
  To do this, first press the joystick's UP button and then the Function button. This joystick/button combination activates the Dealer function.

  Screens such as Dealer function provide access to the parameters to be programmed on the dealer level.



Function button and Info button (for factory settings, see Chapt. 5.2.2.3)

- Directly after activation in STOP mode
  If this combination is actuated after activating AUTOFORM, the system resets all settings to the factory settings
  This combination must be actuated separately for the press and the wrapper. For the press, this must be performed in the PRESS stop menu and for the wrapper's electrical system, in the WRAPPER stop menu.
  Then deactivate AUTOFORM in both systems and then reactivate it again.

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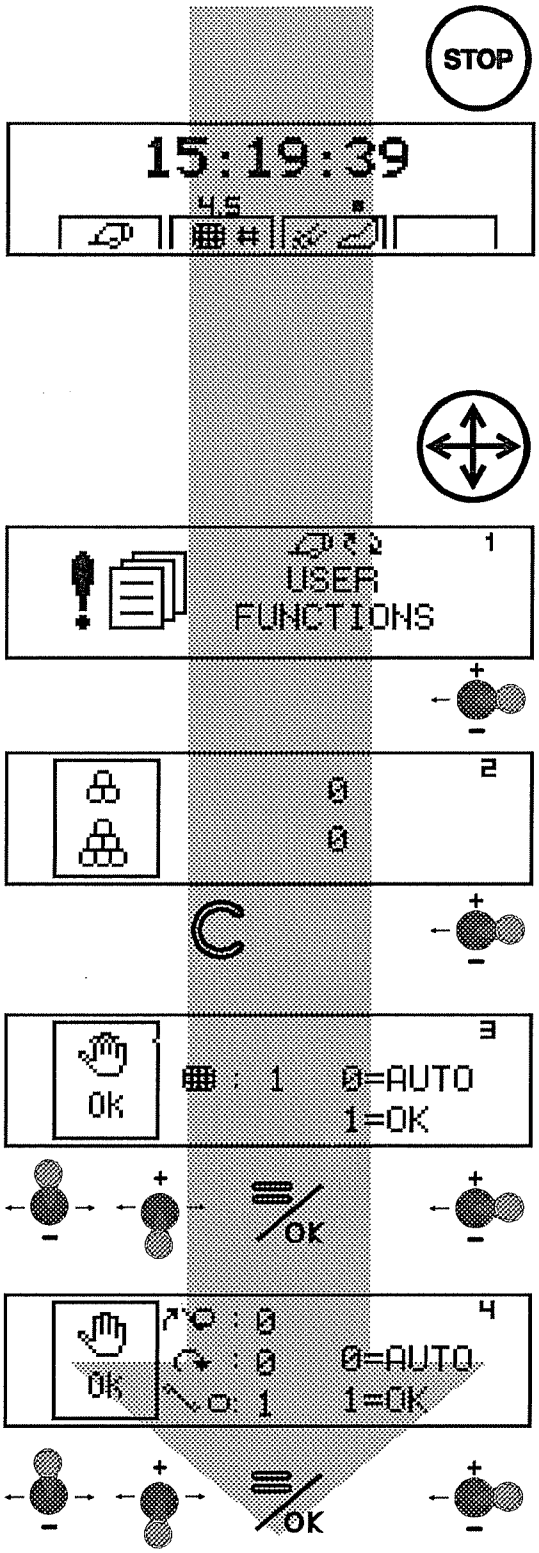
5.2 Basic control settings

5.2.1 User functions



The User functions provide access to the parameters, which can be altered / configured.
The User functions are activated when Function button is pressed in Stop mode. The displays appearing on screen are then explained in the next section.

Moving the joystick to the right causes the next menu to appear on screen, moving it to the left causes the previous menu to appear on screen. To change/edit a parameter, use one of the four functions: Delete (C), Plus (Joystick UP), Minus (Joystick DOWN) or Enter ('=/OK').

By pressing the Stop button in one of these modes, the User functions are completed and the Stop menu reappears.

1. Selecting the User functions)

Press the Function button in order to activate User functions.

2. Bale counter

The first value indicates the daily counter; this value can be reset by pressing the 'C' button (flip switch). The second value is the machine's total value. The value cannot be reset, nor can it be changed.

3. Pre-selection: Start net wrapping (see table S.43)

If the value displayed = 0, then the net wrapping automatically starts in manual mode.

If the value displayed = 1, the net wrapping must start with OK (manual confirmation).

Change the setting with '+'/'-' (Joystick) and 'OK'.

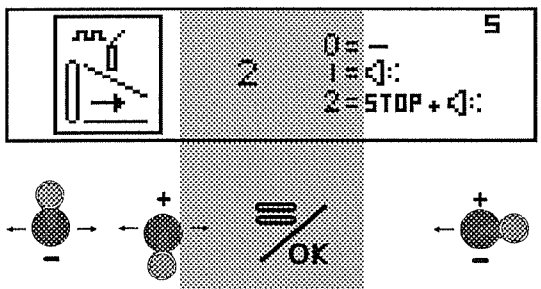
4. Pre-selection: Start bale transfer, wrapping, unloading

If the value displayed = '0', the respective process automatically starts up in manual mode.

If the value displayed = '1,' the process must be started by pressing OK (manual confirmation).

Change the setting with '+'/'-' (Joystick) and 'OK'.

The bales may be unloaded automatically only if there is absolutely no danger of the bales rolling away after being unloaded.



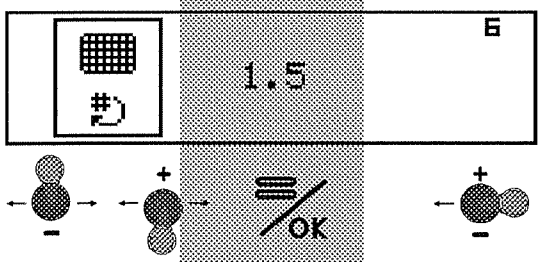
5. Pre-selection: Monitoring foil tearing

If the value displayed = '0', **no** signal is given if the foil is torn.

If the value displayed = '1', **one** signal is issued if the foil is torn.

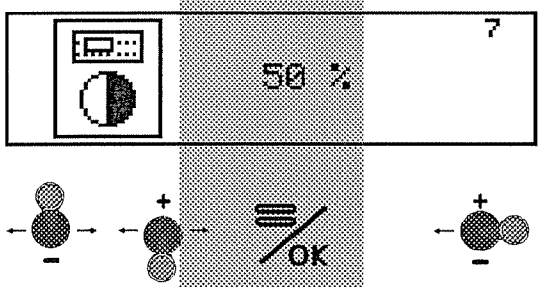
If the value displayed = '2', when the foil is torn, **one** signal is issued **and** the wrapping process interrupted.

Change the setting with '+'/'-' (Joystick) and 'OK'.



6. Setting the number of net wrappings

The value displayed corresponds to the number of net wrappings per bale. (1,5/1,6/1,7/...../9,9 ; Factory settings 2,5)

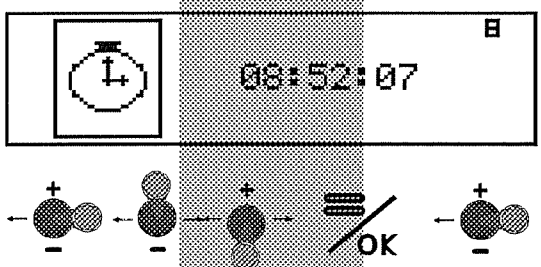


Change the setting with '+'/'-' (Joystick) and 'OK'.

7. Set contrast display

The contrast value displayed can be set individually.

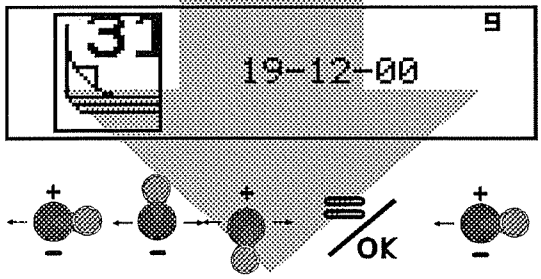
Change values with '+'/'-' (Joystick) and 'OK'.



8. Set time

Display current time.

Change values with '+'/'-' (Joystick) and 'OK'.



9. Set date

Display current date.

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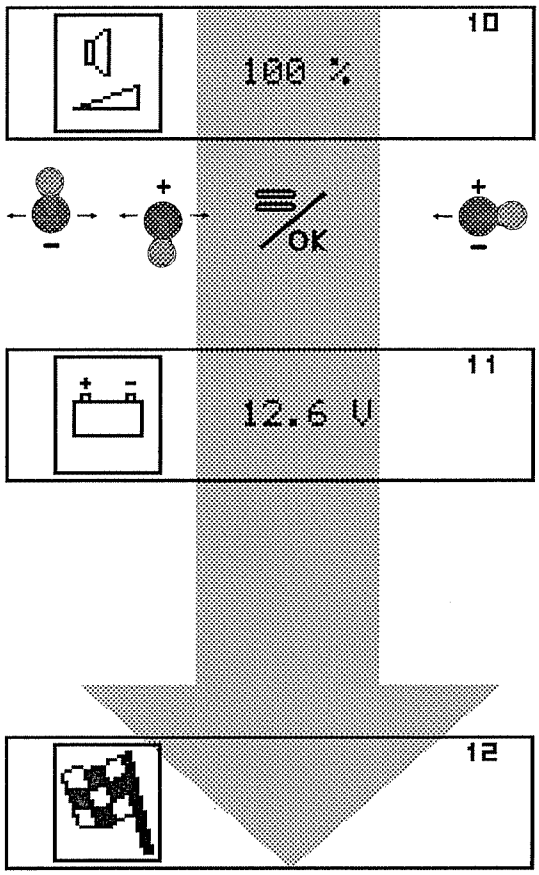


Change values with '+'/'-' (Joystick) and 'OK'.

10. Change values with '+'/'-' (Joystick) and 'OK'.

Display current noise level of the control system.

Change noise level with '+'/'-' (Joystick) and 'OK'.

11 Display battery power

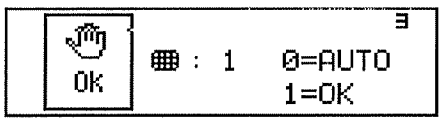
Display current battery power.

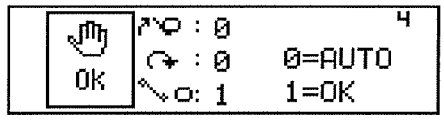
When the battery power exceeds the level of 10 volts, the power supply for the control system is no longer guaranteed. Bale packer may no longer operate smoothly.
The battery must be charged and / or the connection cable to the battery must be checked.

12. Display of homing flag

When the homing flag appears, the User functions in the bale packer are finished.

Possibilities and recommendations for programming Manual mode in the User functions:





Function	Binding	Transfer	Wrapping	Unloading *)	Remark
Display indication	: 1	: 0	: 0	: 1	
Programming	1	0	0	1	Recommended setting when first putting into service and with small sloping fields
(factory setting)	0	0	0	1	Recommended setting with large sloping fields
Programming	1	0	0	0	Recommended setting with large and small level fields

***)Bales may only be automatically unloaded if there is absolutely no danger of them rolling away after they have been unloaded.**

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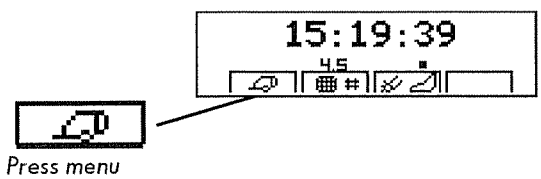
5.2.2 Settings in Stop mode

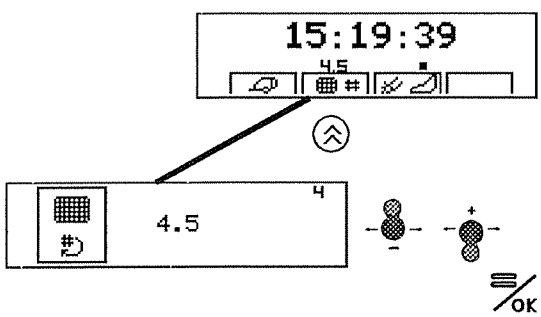
Individual press and wrapper settings may be set directly in the Stop mode, or certain functions may be pre-selected.

Both menus for the press and for the wrapper unit are described:



Press menu

5.2.2.1 Press menu

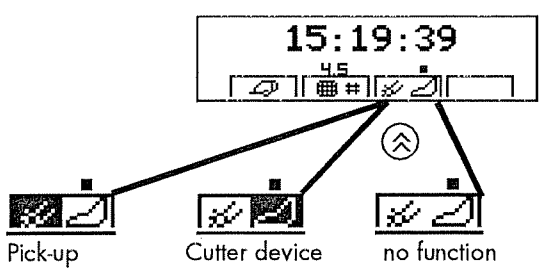


Display button 2

Setting the number of net wrappings

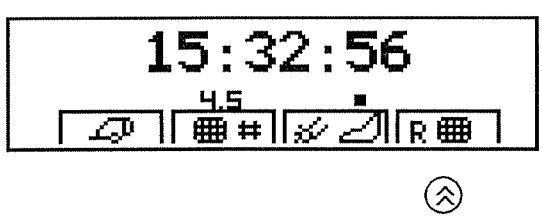
Setting the number of wrappings:
- Change the value by pointing the joystick toward + or -.
- Confirm the value with 'OK'.

In automatic or manual mode, the display button 2 functions as a trigger for premature net wrapping.



Display button 3:

Pre-selection of 'Pick-Up', 'Cutting Device' or 'No Function'. As soon as the dot above the symbol cutter disappears, the cutters are 'swung out' and inactive.



Display button 4:

Reset net wrapping.
Function:
2 seconds after switching on the AUTOFORM, display button 4 displays 'R'. As long as this letter is displayed, pressing the display button in the reference position sets the servomotor for net wrapping. If this is done, the cardan shaft must be deactivated.

Danger of injury!
The net cutter is released when the reset function is activated.
It has to be reset by opening the tailgate (in PIA mode) or manually using a lever!

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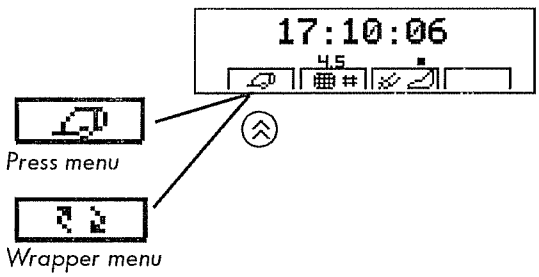
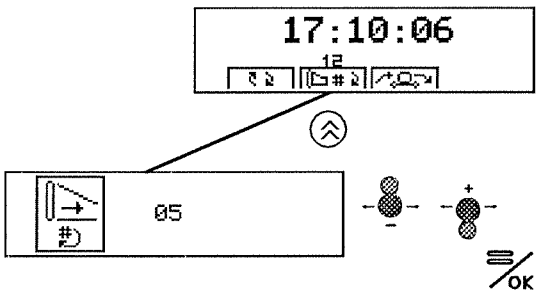
5.2.2.2 Wrapper menu



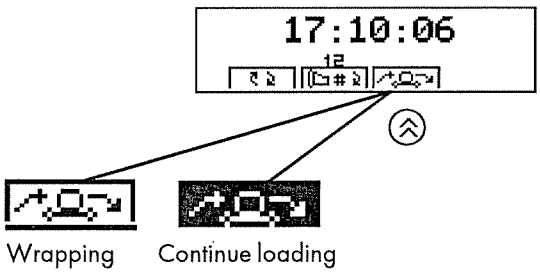
Display button 1:
In the Stop mode, you can switch from the press menu to the wrapper menu.



Display button 2

Setting of the number of foil wrappings.

Setting of the number of wrappings.
- Change the value by pointing the joystick toward + or -.
- Confirm the value with 'OK'.



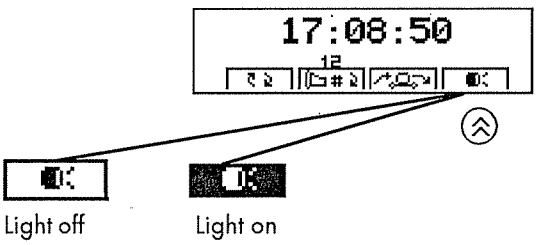
Display button 3:

Pre-selection 'continue loading', which means unload round bales without foil wrapping (basic setting for wrapper).

Setting:

- Each time the button is pressed, the next function is selected and/or the function is selected or aborted.
- Accept the selection by pressing "OK".

The setting is reset to 'wrap' after AUTOFORM is switched on/off.



Display button 4 (special equipment):

Switch on/off headlights on the wrapper (basic setting: light off)

After switching on/off AUTOFORM, the setting is reset to 'Light off'.

5.2.2.3 Resetting to factory settings

The electrical system can be reset to the factory settings using the adjoining button combination. For example, this might be necessary if a circuit board has to be replaced.

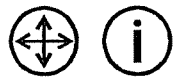
The press and wrapper electrical systems can be reset separately.

Proceed as follows:

Resetting the press electrical system:

OFF/ON Switch on AUTOFORM

The Stop menu appears



Keep the button combination of Function button and Info button pressed until the display disappears and reappears (approx. 5 seconds).

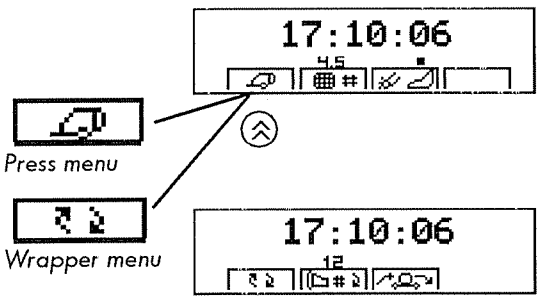
OFF/ON Switch on/off AUTOFORM

Reset wrapper's electrical system

OFF/ON Switch on AUTOFORM

The Stop menu appears

Use display button 1 to change to wrapper menu



Keep the button combination of Function button and Info button pressed until the display disappears and reappears (approx. 5 seconds).

OFF/ON Switch on AUTOFORM again

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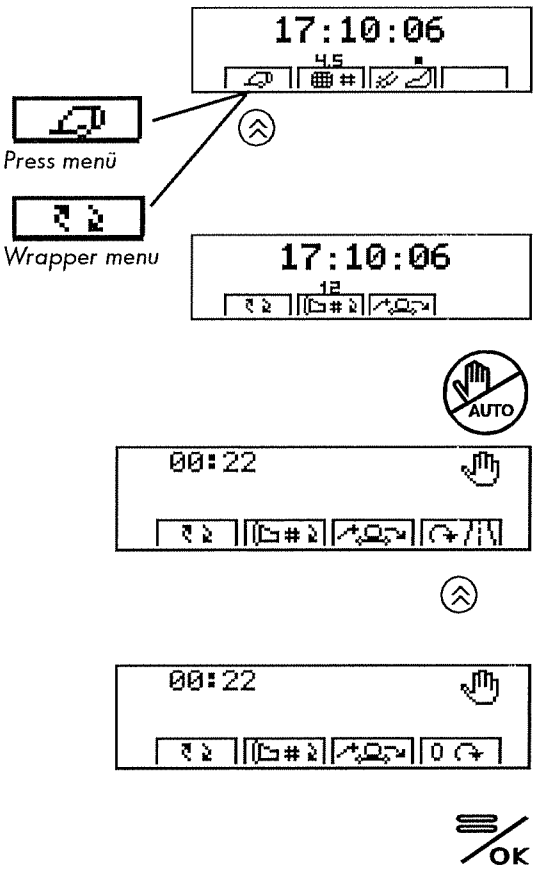
5.2.2.4 Satellite settings for protecting foils

The foil rolls on the bale wrapper may be damaged if driven on narrow streets and rural roads.

Swaying branches or shrubs may rip holes in the foil. The wrapping process itself may cause tears in the foil.

As a protective measure, the satellite can be twisted in such a way to protect the foil rolls.

Proceed as follows:



Set hydraulic cycle

In Stop mode, change to the Wrapper menu (display button 1)

Press Manual /Auto button

Press display button 4

Confirm twisting by pressing OK.

Satellite is twisted into protective position.

Follow the same process to return the satellite to basic settings.

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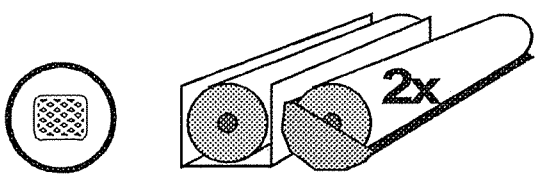
5.3 Net wrapping

Setting of the number of net wrappings

The materials to be pressed are wrapped as a secure bale using a pre-set number of net wrappings. AUTOFORM activates the net wrapper, the number of net wrappings from 1.5 to 8, and the modes Automatic or Manual to start the wrapping process.

For more on this, see Chapt. 5.2.1 or 5.2.2.1 .



Specification of the net material

In order to achieve the best possible wrapping quality, it is best to use a net quality with a maximum outer diameter of 320 mm and a minimum width of 1230 mm. The diameter is 76 mm, the core length is 1255 mm.

Recommended net roll manufacturers:

BP Chemicals PlasTec GmbH
Rossbacher Weg 5
D-64720 Michelstadt

Postfach 3209
D-64713 Michelstadt

Postfach 7309
D-72786 Pfullingen

Inserting and setting net rolls

A reserve container for a second net roll is located behind the operational net roll.

Be careful!
The tractor engine must be switched off and in a parked position before inserting and threading new net rolls. Remove ignition key! Do not reach into the areas of the cutters and/or anvil - the cutter is activated each time the tailgate is activated! Danger of injury!

Inserting net roll and threading net:

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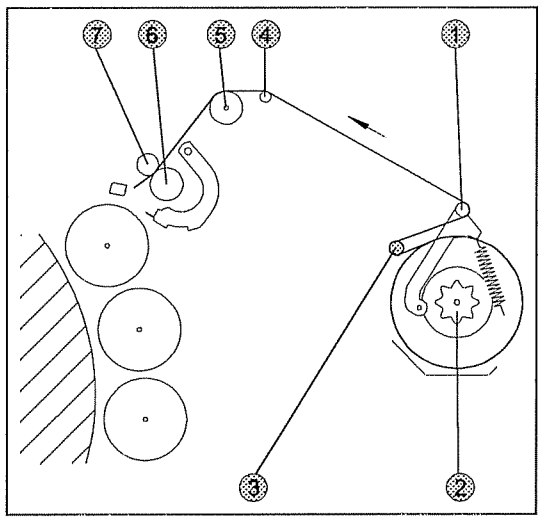
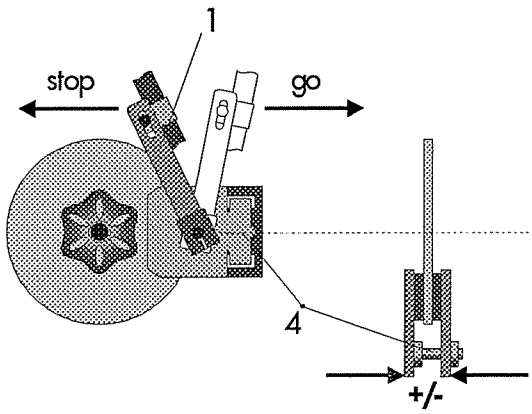
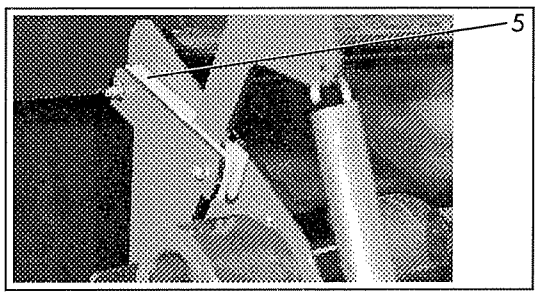


- After removing the securing clip, take out the net roll container (right side) by first turning the handle slightly to the right to unlock it.
- Insert the net roll by pushing the cardboard cover over the rubber segment on the left roll container.
- Insert the net roll container into right side of the cardboard cover, lock, and secure with the securing clip.
- Unroll the net from the roll and place on the clamping bracket (1) using the guidance pipe (3).
- Place the net over the guidance pipe (4) and the plastic net-distribution (5).
- Tighten the beginning of the net at half width and insert between the rubber rollers (6) and the aluminium rollers (7), use a spanner to turn the rubber rollers (6) to the bearing (left side) until the net has a secure grip.
- Place the net roll facing the middle of the press chamber. Strongly tighten the hand wheel (2) - the net roll is secured through axial and radial distribution of the rubber segments.



Setting the disk brakes:

- Press handle (1) approximately 10 ª against the spring tension (go) using the net clamping bracket.
- In this position, the net must simply be released, (rough rotation). The basic settings depend on the diameter of the net roll and can vary!



Adjustment:

- Setting the brakes operation using screws or M8 check nut M8 (4).
- Tighten the last screw / check nut again.
- If the net clamping brackets vibrate excessively during net wrapping process, the guiding strip (5) can be tightened in order to obtain optimum damping.

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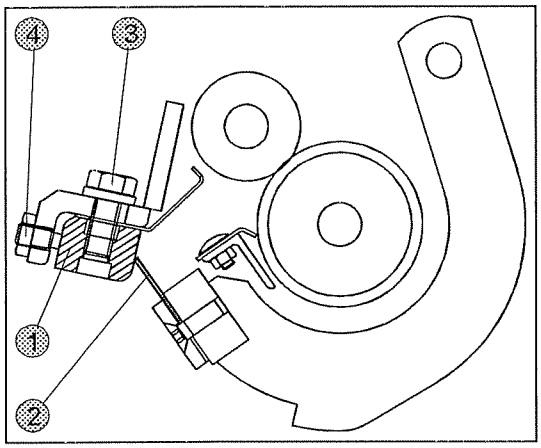


The net wrapper does not require maintenance.

For the net to roll off properly, the anvil (1) and the beater blade (2) must be parallel to one another, which you can adjust as follows:

- The beater blade must be free of tension (placed on the anvil).
- The anvil's fastening screws (3) must be loosened.
- Use adjusting screws (4) to press the anvil against the beater blade. Loosen check nuts beforehand.
- If there is no light gap between the anvil and the beater blade, tighten check nuts and fastening screws (3).

The beater blade can be rotated three times.

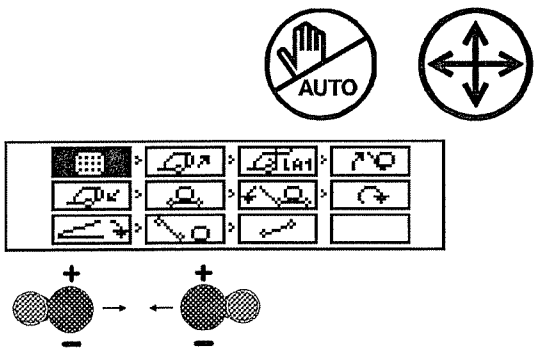
The clamp with the beater blade can be adjusted manually (see illustration).

- To do this, insert the correct round bars into the bearing's bore holes and screw in until it catches.

Emergency function for net wrapping:

This ensures that even if operation is disrupted, net wrapping can be performed.

Procedure:



- Call up PIA mode (see Chapt. 6.4).

- Use joystick to chance to net wrapping.

- Actuate net wrapping by pressing OK.

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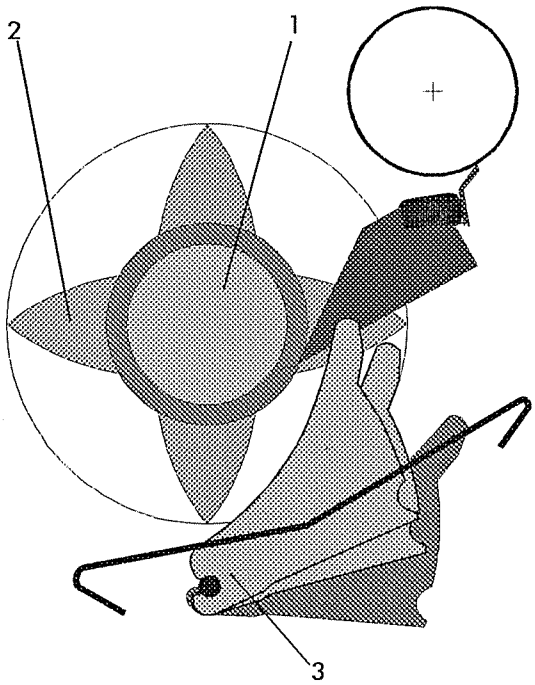

5.4 OptiCut Cutter Device

Function

The hauling drum (1) with spiral-shaped double lift forks (2) uses a trimming blade (3) to make a regular pulling cut.

Using the OptiCut cutter device enables you to cut press material at a maximum of 14 different cutting positions with a theoretical length of 70 mm. The cutters can be pivoted from the conveyor channel hydraulically. Any number of cutters can be selected so that the cutting lengths can be adjusted accordingly. However, the complete pivot function remains intact.

Each cutter has a component that protects it from foreign objects.

If a foreign object passes through the cutter, a spring device pushes the cutter into the 'cutter holders.' It then automatically returns to the cutting position.

The cutters can be set in two positions:

- Cutter operation in 'normal cutting'(flat set cutting = operation setting),
- "Exact cut" (steep cutter position).

Information
If the possibility blockage exists due to a large quantity of materials to be processed, it is advisable to swing out the cutter device hydraulically for a short moment in order facilitate a smoother flow of hay!

When the cutter device rotates at the end of the press procedure, the last step in this procedure places uncut materials around the last bale. As a result, loss due to breakage is minimised and the bale's stability can be increased!! When 90% of the pre-set press density has been achieved, the interval horn signals this in AUTOFORM.

If the pivoting cutter device is used for longer periods of time, the cutters are swung in and out every ten bales in order to prevent the cutter openings from clogging!

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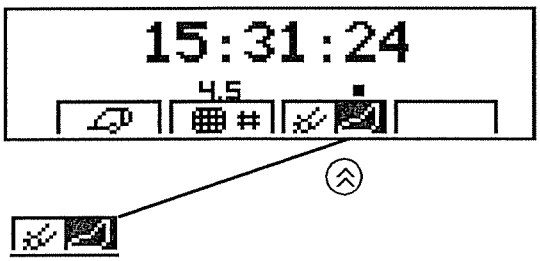
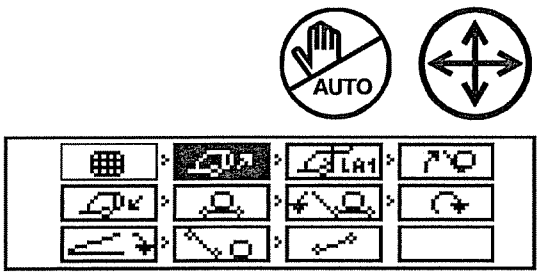
Cutter change

Be careful!
For any work on the cutter device, the engine has to be switched off. Wait until the machine comes to a standstill and close the cutter hydraulics using the stop valve. When working with the cutters, always wear safety gloves and never touch the cutting edge of the cutters.

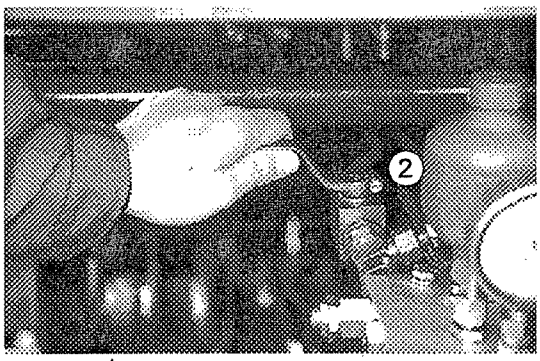


- Hydraulically rotate the cutter device outwards.
  - Activate cutter device hydraulics in Stop mode using the Display button confirm by pressing the sole-operating control device.
  - The cutters are swung out and inactive as soon as the point above the cutting symbol disappears.

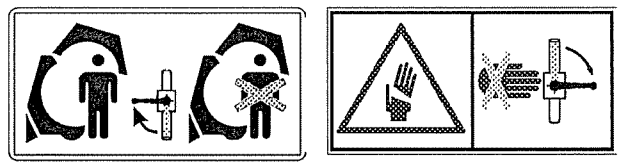


Note
Swinging the knives several times in and out will ease the subsequent rotation of the knife shaft.

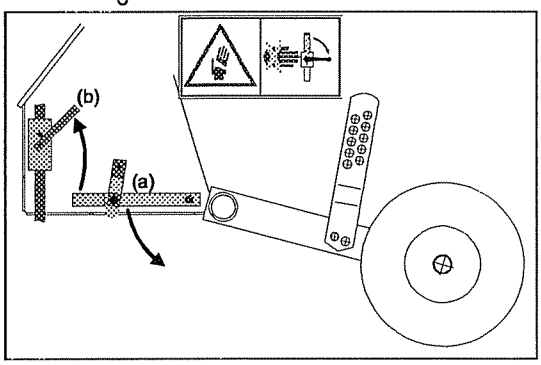
- Open tailgate in PIA mode. (Chapt. 6.4)
  Change to PIA mode
- Use joystick change to "open tail gate".
- Open tailgate and confirm with OK button.
- Secure tailgate - close hydraulic lever.



Secure tailgate



- Close hydraulic lever (b) for cutter device on right side of machine.
- Switch off tractor engine, remove ignition key.
- Turn the cutter shaft, push lever down (a).
- Grasp the end of the cutter and remove by pulling upwards. You may need to change the position of the conveyor forks by rotating the hauling drum.
- Sharpen cutters (only if removed from the machine!).
- Re-insert cutters in reverse sequence.



Information!
Make sure that the cutters are always sharp! This considerably minimises the shaft's power demands!

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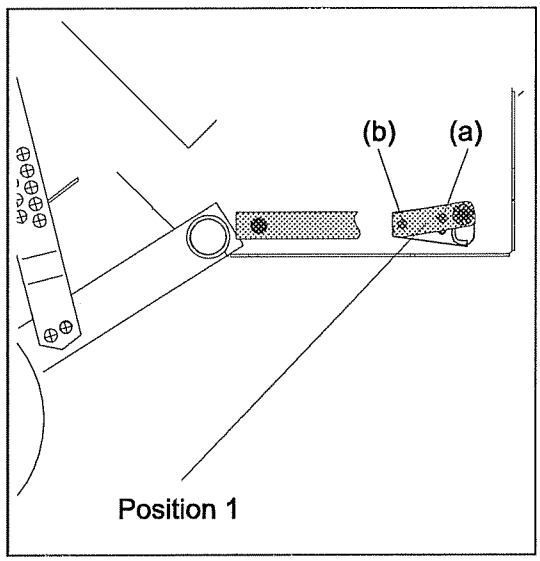
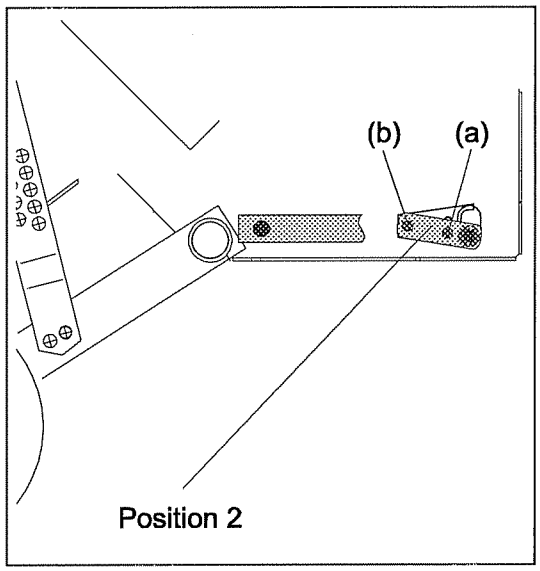
Changing the cutting angle

- Position 1:
  Steep cutting angle for 'exact cut'
- Position 2:
  Flat cutting angle for 'standard cut'
  (approx. 20% lower power output)



Changing cutting angle from 'exact cut' to 'standard cut':

- Rotate the cutter device hydraulically outward, switch of the tractor engine!
- Unscrew M 10 (a) fixing screw located on the left and right side.
- Remove M 10 swing bolt (b) located on the left and right sides.
- Rotate the cutter device hydraulically inwards, switch off the tractor engine! Remove ignition key.
- Screw in M10 fixing screw (a) into the top position.
- Tighten fixing screws and swing bolts (a, b)on left and right sides.



Change cutting angle from 'exact cut' to 'standard cut':

- Rotate the cutter device hydraulically inwards, switch off the tractor engine! Remove ignition key.
- Unscrew M 10 (a) fixing screw located on the left and right side,
- Remove M 10 swing bolt (b) located on the left and right sides.
- Rotate the cutter device hydraulically outwards, switch off the tractor engine! Remove ignition key.
- Screw in M10 fixing screw (a) into the bottom position.
- Tighten fixing screws and swing bolts (a, b) located on left and right sides.

Activate cutter device.

In order to be able to work with the cutter device, it must be activated. To activate the cutter device, pre-select Display button 3 on the press's display screen.

For more on this, see Chapt. 5.2.2.1 Single function.

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5.5 Foil wrapper

Foil wrapper connection

In delivered condition, the foil wrapper unit is already connected to the bale press.

Connecting the foil wrapper to the bale press.

If the foil wrapper is not yet connected, then you must connect it before putting it into operation. For more on this, see Chapt. 10.2 Attaching the foil wrapper

Stretch foil specification

Please use the foil according to the following specification only:

- Foil width: **only 750 mm**
- Adhesion: Good, only on the interior
- Load capacity: Highly flexible for easy coverage of corners and edges
- Foil strength: min. 25 micrometers because lower strength leads to tearing when stretched.
- Information on use:
  - Store the rolls upright in cartons in a cool, dry place.
  - Prior to use, make sure that foil is at room temperature
  - The foil must be removed from the cardboard box before using in the pre-stretcher.
  - Handle with care in order to avoid damages, especially to the outer edges of the rolls.

Wrapping film is available from:

Kverneland Deutschland GmbH
Sohnreystr. 14
D-37697 Lauenförde

Tel: +49 (0) 5273 806-0
Fax: +49 (0) 5273 806-513

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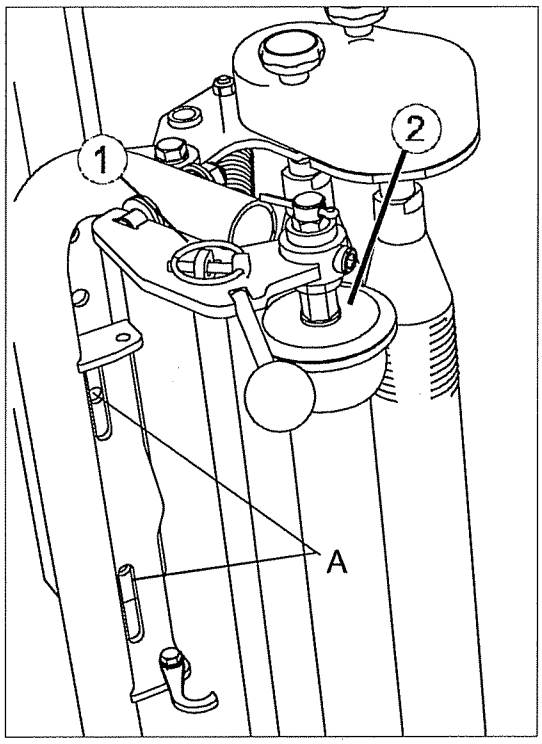
Pre-stretcher

- Adjust the pre-stretcher according to the bale size. For round bales, the foil centre and the bale centre must match.

Insert/change foil



Prior to operation, the correct foil roll must be placed on foil wrapper units. The foil is to be fed into the foil wrapper according to the insert diagram.

Positioning the foil roll:

- Remove safety split pin from roll-counter arbor (1) and remove from eye,
- Pivot roll- counter-arbor (2) upwards,
- Take out empty foil roll by pulling upwards.
- Place new foil roll on arbor.
- Close counter arbor and secure with safety split pin.

Danger!
For safety purposes, the foil roll's counter-arbor must be secured at all times! werden!

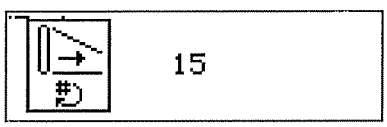
Setting the number of foil wrappings

Prior to operation, the number of foil wrappings must be determined. This depends on the desired packing quality.

The minimum number of foil wrappings is 5 wrappings / bales and its maximum is 99 wrappings / bales.

22 Wrappings/bales are set as default.

In the first step, the number of foil wrappings can be increased and decreased. For settings, see Chapt. 5.2.2.2 Stop mode in the wrapper menu.



Sheeting consumption		Number of arm revolutions with bale diameter in cm	
Sheeting width	Sheeting layers	120	130
750 mm	4	16	17
750 mm	6	24	26

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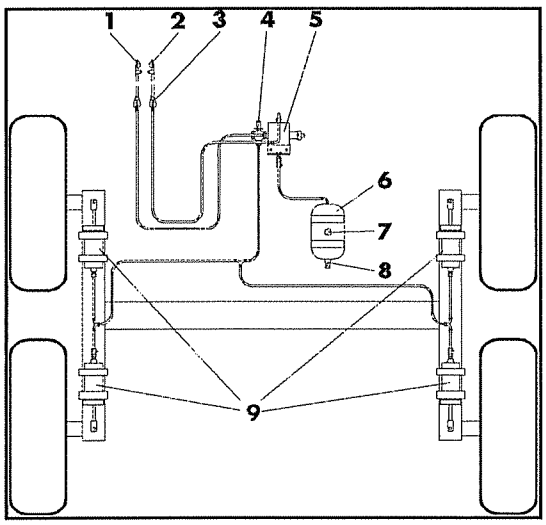
5.3 Compressed air braking system

5.3.1 Compressed air system components



The most important components of the dual line, compressed-air braking system are:

1 Coupling head for the brake line (yellow)

2 Coupling head for the reserve line (rot)

3 Line filter - air filter

4 Braking governor

5 Trailer braking valve

6 Air tank

7 Drainage valve

8 Test connection to air tank

9 Brake cylinder

5.3.1 Connection to the compressed- air braking system

- Check before starting to drive (for exact instructions, see Appendix A5):
- The compressed-air braking system of the tow vehicle must correspond to the bale packer. Make sure that the stop valve on the tow vehicle is open.
- Attach the red coupling head (reserve line) and the yellow coupling head (brake line) to the relevant counterpart on the towing vehicle.
- Make sure that the coupling heads are securely in place and that the hoses are properly positioned.
- Check handle position of the braking governor.
- You may have to drain the air tank.
- Perform a brake test.
- Check brake cylinder head (see Appendix A5):

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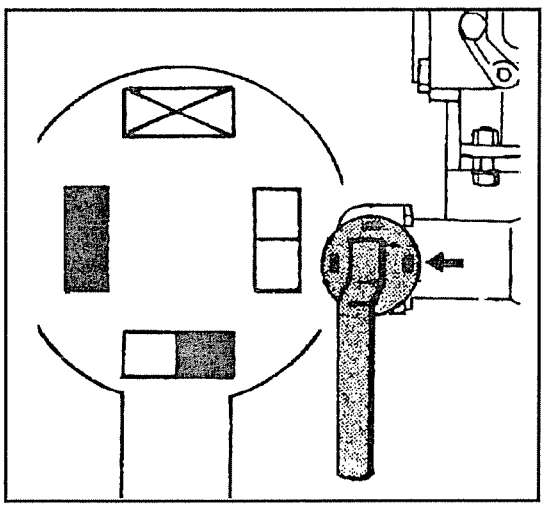


The braking governor can be used to manually adjust the trailer's braking action to the load capacity. The following lever settings are: "full load", "half load", "neutral", and "release".

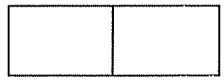
The first position "full load" is to be used during road transport.

The "half load" and "neutral" load settings are for use out in the fields.

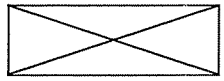
The "release" setting is only necessary for maneuvering the uncoupled trailer!

"Full load"

"Half load"

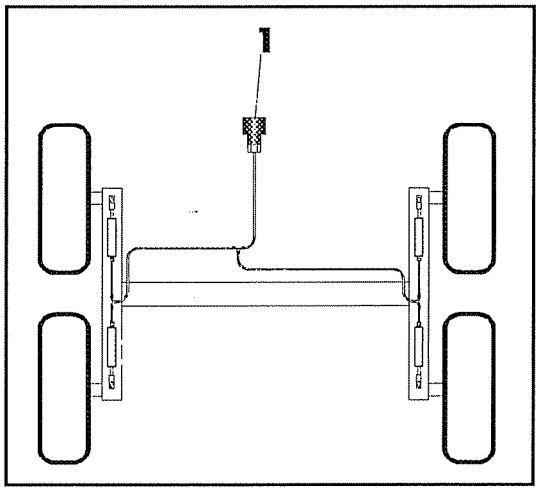


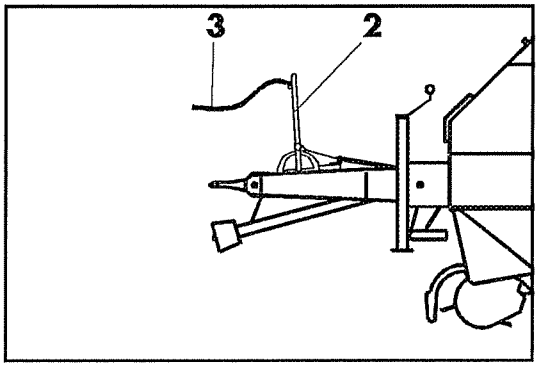
"Empty load"



"Release"

5.4 Hydraulic braking system





When equipping the bale packer with a hydraulic braking system, the brake hose (1) (with connection valve ISO 5676) from the carrying device to the draw bar must be removed and hooked up to the tractor with the hydraulic braking equipment.

The brake lever (2) attached to the draw bar functions as a parking brake lever for the parked bale packer and as a contact break when in motion. When in motion, loosen hand brake lever and attach towrope (3) to the tractor.

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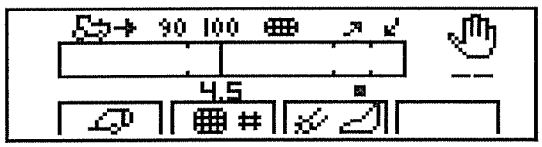
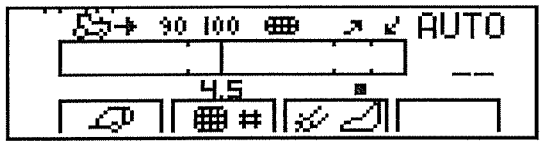
6 Operating modes



6.1 Manual operating mode ( )

Manual operating mode is indicated by an open hand symbol at the top right of the display. The manual operating mode can be programmed in User Functions. The four main cycles net binding, bale transfer, wrapping and unloading occur automatically or start these must be confirmed by means of the 'OK' switch.



6.2 Automatic operating mode (AUTO)

Automatic operating mode is indicated by an 'AUTO' symbol at the top right of the display. All functions of the Balepack are performed completely automatically.

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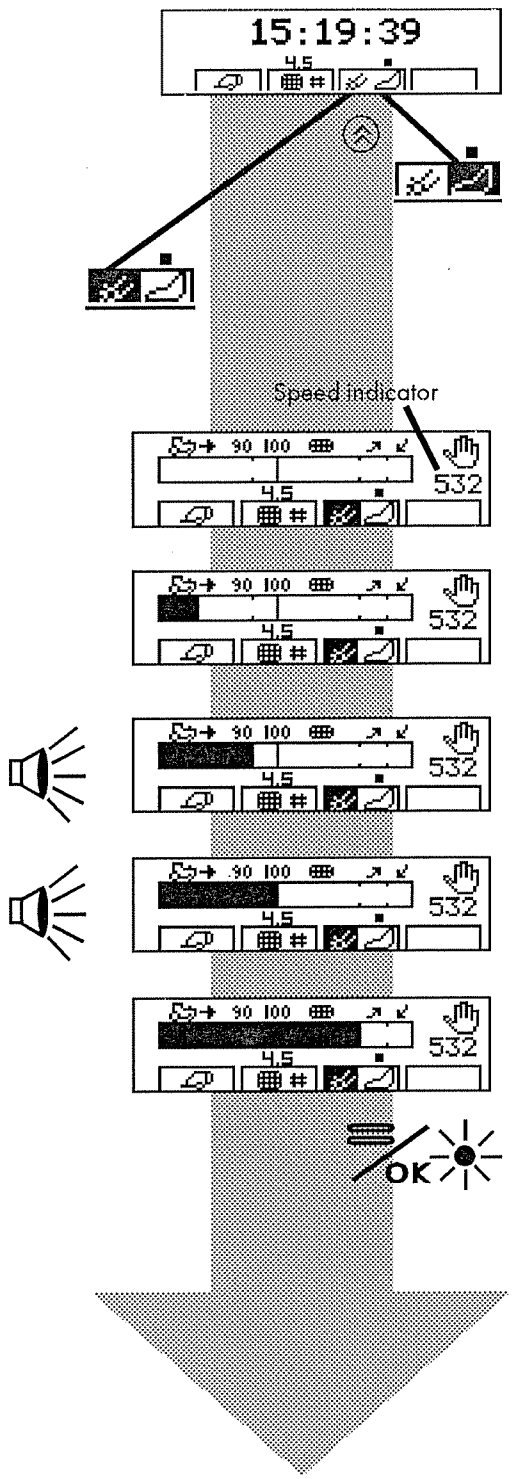
6.3 Process sequence

The following describes the compression/wrapping process in manual mode.

The factory settings are programmed in the user menu (User Functions):

Bind	Transfer	Wrap	Unload
confirm	automatic	automatic	confirm



1. Switch on AUTOFORM.
2. The spot above the knife shows the cutter in cutting position. If the knife is to be swung out, select the knife symbol with display key 3 and operate with single-acting hydraulic control unit until the spot above the knife disappears.
3. Select pick up with display key 3.
   Lower pick up with single-acting control unit and leave in floating position.
4. Switch on cardan shaft (540 rpm) and hydraulic circulation. Pick up swathe.
5. After 10 seconds:
   The progress of the process is indicated by the black bar in the display. The tail gate cylinders are charged with pressure once again.
6. After reaching 90% of the compressing chamber capacity the first beep signal sounds.
7. After reaching 100% of the compressing chamber capacity the second beep signal sounds.
8. Confirm the start of net binding with the 'OK' switch* ('OK' switch LED must flash).
   Beep signal sounds.

Information
If binding release occurs before 100 % is reached, binding can be started manually with display key 2.

*) Which function must be confirmed with the 'OK' switch can be set in User Functions. Should confirmation of a function not be set, the current process will run on each time.(Chapt.5.2.1)

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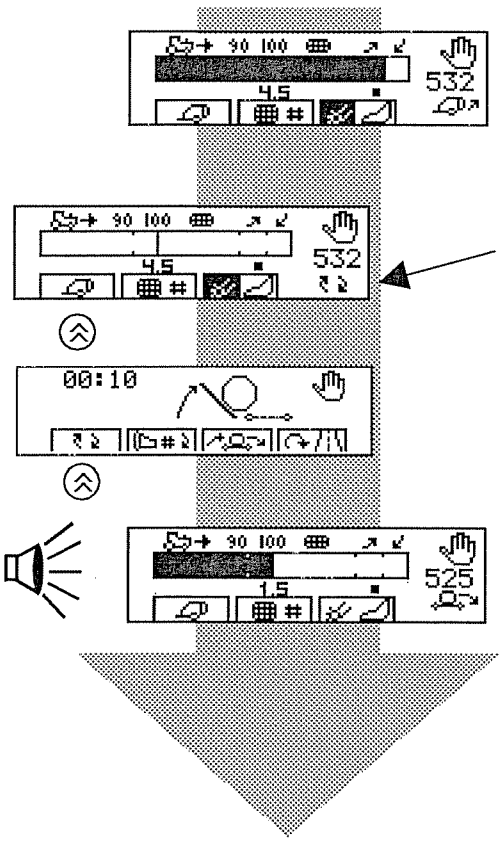

9. After the binding process, the tail gate is automatically opened and the bale is transferred to the wrapper.*

10. Tail gate closure also occurs automatically after the transfer.

11. Now that the tail gate is closed again, the next bale can be compressed.
The symbol for the wrapping process, which is started automatically, appears at the bottom right of the screen.
If more information on the bale transfer or wrapping process is desired, changing between wrapping and compression process modes is possible with display key 1.

12. If bale wrapping is complete, unloading can be confirmed with the 'OK' key.*

Risk of injury from bale rolling away!

To confirm unloading of the bale* after running through 90% and 100% and the related binding request* as well as the following request, on confirmation with 'OK', the binding process is always activated first of all. After activation of the binding process, unloading of the wrapped bale can then occur.

*) Which function must be confirmed with the 'OK' switch can be set in User Functions. Should confirmation of a function not be set, the current process will run.on each time.(Chapt.5.2.1)

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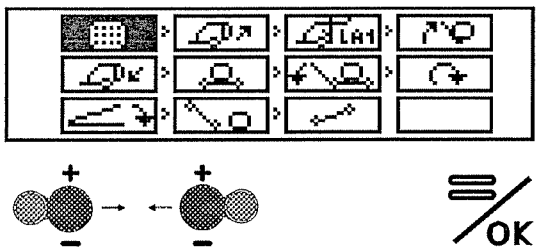
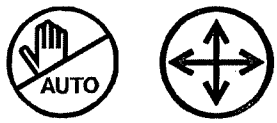
6.4 Process-independent control in PIA (Process Independent Activation) mode

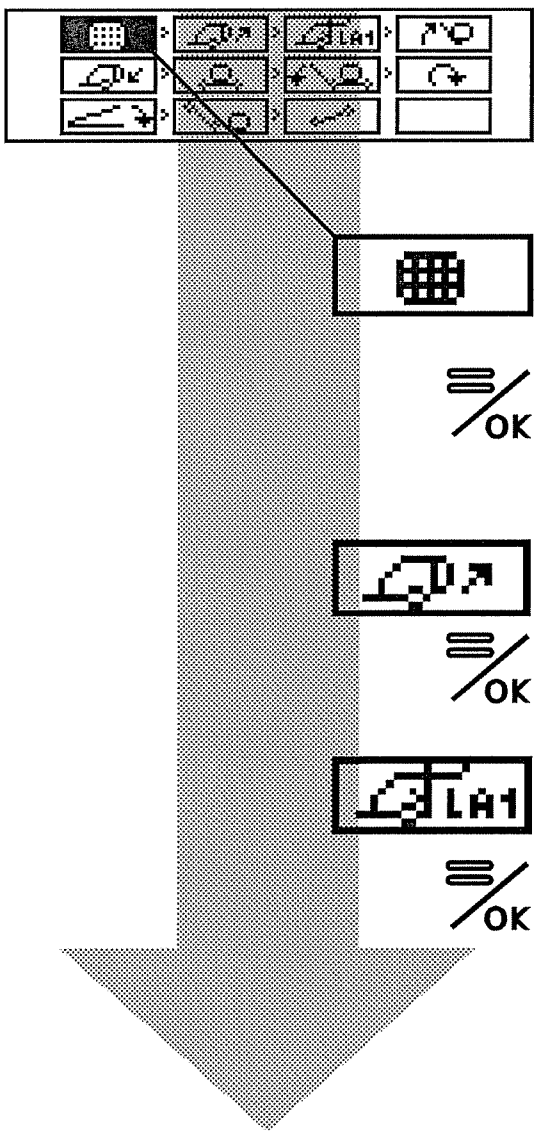


In PIA mode, all individual functions of a complete sequence are displayed as symbols on the screen. Any function can be selected with the joystick and afterwards activated by operating the 'OK' switch. The functions can be controlled here independently of the process sequence.

The operator must personally ascertain the current operating status.



Key combination: Manual/Auto + Function key activates the PIA mode.



Information on the status of the compressing/wrapping process will be lost.

Binding release

Net feed for 6 seconds, i.e. Net pulses are not taken into consideration here.

Depending on the speed of compression, more or less net is unwound. At 540 rpm power take-off shaft speed, approximately 3 wraps are carried out. As soon as binding is completed, the control system jumps automatically to the next symbol:

Open tail gate

As soon as the 'Tail gate open' sensor is operated, the control system jumps automatically to the next symbol:

Swing loading arm 1 (LA1) upwards.

As soon as the 'LA1 up' sensor is operated, the control system jumps automatically to the next symbol.

As soon as the bale does not operate the bale transfer sensor, a warning signal sounds!
Do not operate the 'OK' key.
Ensure that the bale is on loading arm 1.
Otherwise there is the danger that the bale will be jammed in the chamber by loading arm 1 (LA1).

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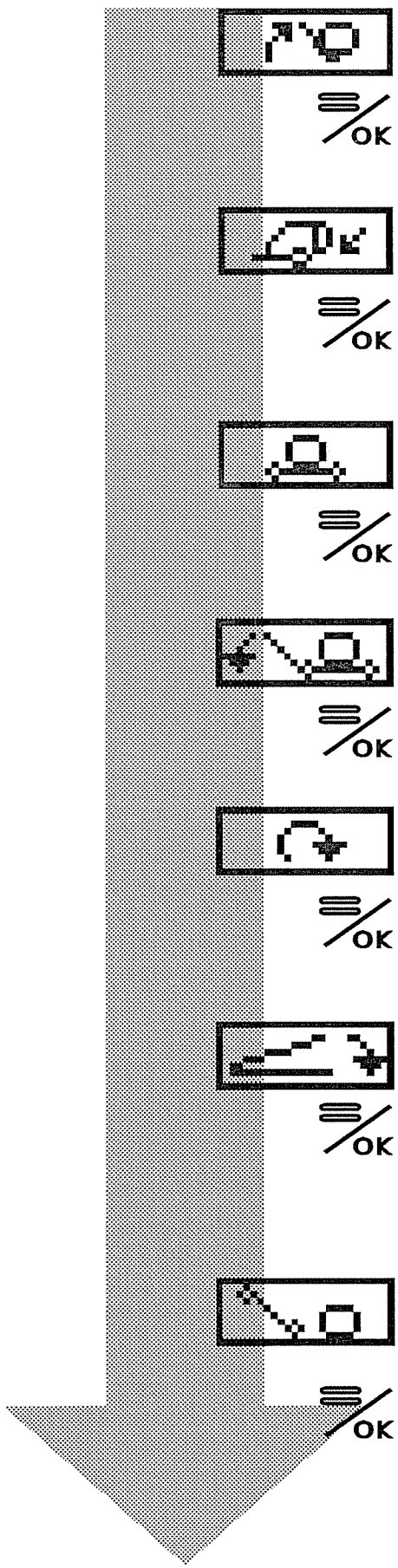

Swing loading arm 2 (LA2) upwards

As soon as the 'LA2 up' sensor is operated, the control system jumps automatically to the next symbol:

Close the tail gate and simultaneously swing the first loading arm (LA1) downwards.

As soon as the 'Compression pressure' sensor is operated, the control system jumps automatically to the next symbol:

Position the wrapping table horizontally

As soon as the wrapping table is horizontal, the control system jumps automatically to the next symbol:

Swing loading arm 2 (LA2) downwards

As soon as the 'LA2 down' sensor is operated, the control system jumps automatically to the next symbol:

Start wrapping process

and perform the preset number of wraps. As soon as the wrapping process is completed, the control system jumps automatically to the next symbol:

Cut foil

Satellite and foilcutter are operated such that the foil is properly cut. As soon as the 'Foil cutter down' sensor is operated, the control system jumps automatically to the next symbol:

Unload bale

As soon as the wrapping table has moved rearward, the control system jumps automatically to the next symbol:

Risk of injury from bale rolling away!

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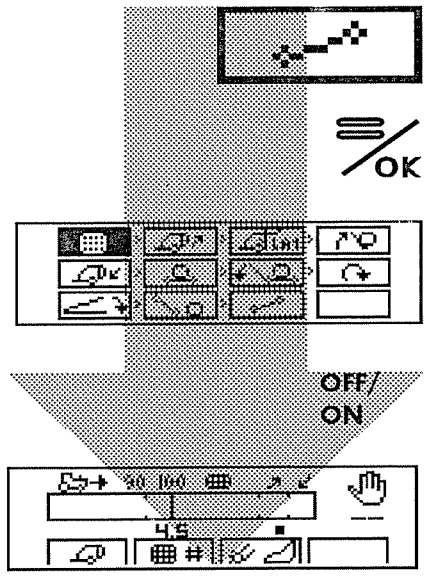


Tilt table forwards

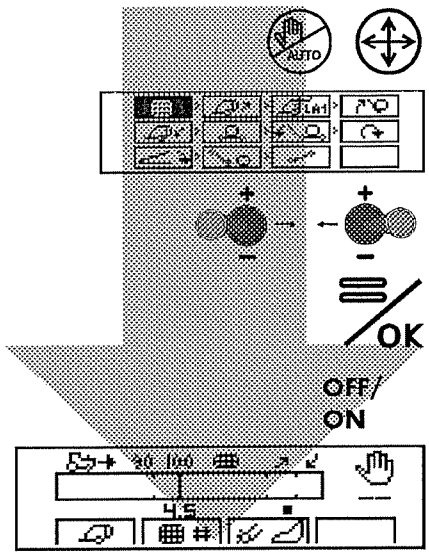
As soon as the wrapping table has moved forward, the control system jumps automatically to the start symbol.

Switch control box off and on

Continue to work in process mode

If the individual function is not carried out properly, the display does not jump to the next function. The relevant sensor is to be checked for function.

6.5 Measures during errors in the process sequence



If an operating error occurs preventing further normal operation, the following procedure is recommended:

1. Switch on the cardan shaft.
2. Switch on the hydraulic circulation.
3. Change to PIA mode.
4. Select the desired position with the joystick.
5. Operate function with 'OK' switch.
6. Complete the compression/wrapping process in PIA mode in full.
7. Switch control box off and on.
8. Restart work in process mode

Be careful!
Ensure that the bale is no longer in the chamber, rather is on loading arm 1 before operating loading arm 1.

Loading arm 1 cannot be operated via the wrapper hydraulic block.

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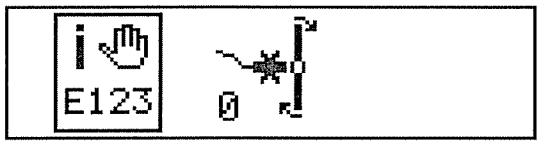
7 Fault finding

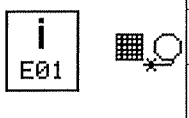
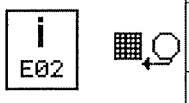


7.1 Fault messages

When an error / fault occurs, the Autoform automatically activates an alarm that lasts for several seconds. The display indicates the error code and the block caused by the alarm. The error code on the display can be deleted / cancelled by pressing button Cancel (C) button. The cause of the error should first be resolved.

Danger!
The cardan shaft and the tractor engine must be switched off before attempting to resolve the error. The ignition key must be removed and nothing attempted until all moving parts have come to a standstill. Never try to resolve errors when the machine is running!

7.1.1 Overview of the wrapper's error messages

Error Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.3)
E 01	 Net does not run	Net roll empty	Install new roll	B-IN4
		Net roll incorrectly inserted	Install roll per Chap. 5.3	
		Net brake adjusted too heavily	Adjust brake per Chap. 5.3	
		V-belt slipping on pulleys	V-belts elongated; if necessary exchange or carry out reset	
		Linear motor does not move from home position	Check spindle position; home position - extended approx. 18 mm	
		Dirt between rubber and aluminium rollers	Remove contamination	
		Net wrapped around rubber or aluminium roller	Check surfaces for damage; adjust cleaner	
		Sensor faulty	Check LED on sensor or in the machine box	
E 02	 Net is not separated and runs on	Parallelism of beater arm to anvil out of true	Check parallelism; if necessary readjust per Chap. 5.3	B-IN4
		Linear motor does not disengage the beater arm pawl	Check linear motor voltage supply	
		Beater arm blocked by dirt, no impulses from net sensor	Clean area	
		Net supplied before compression pressure achieved; fringe of running bale caught	Net was not cleanly separated, check parallelism of beater arm and anvil	
		V-belts not sufficiently disengaged from V-belt pulley	Check home position of the linear motor (see above); rectify jamming in V-belt pulley	
		Separation edge of beater arm worn	Turn or replace beater arm	

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Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.3)
E 03	i E03  Tail gate not closed	Tail gate not completely closed	Close tail gate with pressure, until the pressure gauge indicates the preset pressure (in PIA mode)	B-AN1
		Straw between gate and front piece	Remove straw build-up, clean area	
		Hydraulic feed interrupted	Check hydraulic feed In PIA mode, operate "Close tail gate" (see Chap. 6.4) During machine operation without the wrapper: Close tail gate with tractor control unit.	
		Sensor is incorrectly adjusted	During machine operation without the wrapper: Ensure that inputs and outputs of a dual-actingcontrol unit are used and not a pressureless return	
		Sensor or cable faulty	Check sensor or cable	
		With operation without wrapper: pressureless return still inserted.	Check hydraulics	
E 04	i E04  Net wrapping beater arm not tensioned	Permanent net knife sensor signal	Check LED in machine box	B-IN7
		Beater arm path is too limited	Check pull rod adjustment	
		Linear motor not in its starting position, pawl not engaged	Reset net wrapping, Chap. 5.2.2.1	
		Beater arm locking catch worn	Replace worn part	
E 05	i E05  No impulses from net wrapping linear motor	Sensors integrated into linear motor faulty	Check LED in machine box If necessary exchange linear motor	B-IN7

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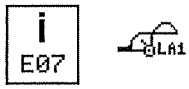
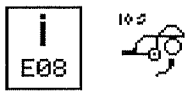
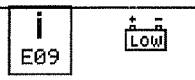
Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.3)
E07	 Loading arm 1 is not in upper position and bale transfer has stopped	Hydraulic feed interrupted Sensor is incorrectly adjusted Mechanical blockage obstructing loading arm 1 **Sensor for the upper position** of first loading arm LA1 delivering no signal Cable/sensor faulty During machine operation without the wrapper: Tail gate with tractor control unit not switched to open long enough	Check hydraulic feed After fault rectification, clear the error message with 'C' and restart process with 'OK' switch, or: Complete cycle in PIA mode (see Chapter 6.4), then Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary Remove blockage with machine switched off During machine operation without the wrapper: Open tail gate with tractor control unit (even when tail gate is already open).	B-IN12
E08	 Improper operation of the bale transfer sensor with tail gate closed	Sensor is incorrectly adjusted Cable/sensor faulty	Open tail gate in **PIA mode** (see Chapter 6.4), then: Clean rocker Lubricate rocker (lubrication nipple) Check sensor and exchange if necessary Adjust sensor position (see Chapter 7.3.2) After fault rectification, clear the error message with ` C ` and restart process with **'OK' switch** or:	B-IN11 B-AN1
E 09	 Supply voltage insufficient	Voltage under 8V Indicated even when tractor started	Provide supply voltage directly from the tractorbattery - cable with socket in scope of delivery	
E10	 Improper operation of the tail gate sensor: Opened with tail gate closed	Sensor is incorrectly adjusted Cable/sensor faulty	Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary After fault rectification, clear the error message with 'C' and restart process with **'OK' switch** or: **Complete** cycle in PIA mode (see Chapter 6.4), then: Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary	B-IN8 B-AN1

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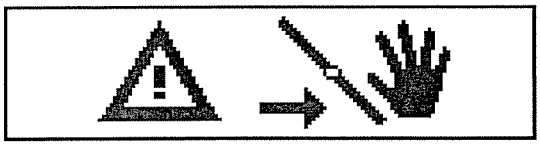
Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.3)
E11	i E11  No operation of tail gate opened sensor Result:Loading arm 1 is not operated	Tail gate has not been opened completely Mechanical blockage obstructing the tail gate opening Sensor is incorrectly adjusted Sensor is incorrectly adjusted	Sensor is incorrectly adjusted After fault rectification, clear the error message with 'C' and restart process with 'OK' switch, or: Complete cycle in PIA mode (see Chapter 6.4), then: Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary	B-IN 8
E12	i E12  Improper operation of loading arm 1 upper sensor with tail gate closed	Sensor is incorrectly adjusted Cable/sensor faulty	Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary After fault rectification, clear the error message with 'C' and restart process with 'OK' switch, or:	B-IN 12 B-AN 1
E14	i E14  No signal from bale transfer sensor, despite tail gate already open for 8 seconds **and bale sensor should have** operated	Bale not on bale transfer sensor Sensor is incorrectly adjusted Cable faulty Sensor stiffness Sensor faulty	Complete cycle in PIA mode (see Chapter 6.5), then: Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary Clean rocker Lubricate rocker (lubrication nipple)	B-IN 11
E15	i E15  Sensor bale transfer activated despite tail gate being closed. Note:Loading arm 1 not activated.	Sensor stiffness Sensor is incorrectly adjusted Cable/sensor faulty	Complete cycle in PIA mode (see Chapter 6.4), then: Clean rocker Lubricate rocker (lubrication nipple) Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary	B-IN 11



7.1.2 Wrapping alarm

The safety bracket of the satellite arm has locked into engagement.

The satellite has stopped rotating immediately.

The recent operating status of the control system is no longer active.

Procedure:

1. Stop the universal drive shaft and the oil circulation in the hydraulic circuit.
2. Wait for the baler to be at a complete stop.
3. Find and eliminate the reason which has caused the safety system to be released.
4. Move the safety bracket to its initial position.
5. Switch on the universal drive shaft and the hydraulic system.
6. Stop the baling and wrapping cycle in the PIA mode (see section 6.4).
7. Continue operation in the processing mode.

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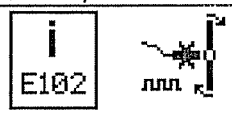
7.1.3 Overview of all general error messagess

Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.4)
E 100	No error, status 'OK'			
E 102	 Faulty satellite cutting position Sensor fault	Satellite has not been rotated far enough Sensor faulty (check LED) Hydraulics not switched on Mechanical blockage obstructing satellite Rotation of satellite through longer road journey	Check hydraulic feed Remove blockage with machine **switched off** After fault rectification, clear error message with 'C' and restart **process with 'OK' switch or:** Complete cycle in PIA mode (see Chapter 6.4) Adjust sensor in its slot correctly Position correctly or exchange sensor if necessary	W-IN2
E103	Satellite O-position:Sensor fault	Sensor is incorrectly adjusted Cable faulty Sensor faulty	Complete cycle in PIA mode (see Chapter 6.4), then: Check cable, if necessary **exchange** Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if **necessary (see Chapter 7.3.2)**	W-IN3
E 104	 Sensor for loading arm 2 in upper position not activated	LA2 has not been moved completely upwards Mechanical blockage obstructing LA2 Sensor is incorrectly adjusted Cable/sensor faulty	Check hydraulic feed and check hydraulic circulation After fault rectification, clear error message with 'C' and restart **process with 'OK' switch, or:** Remove blockage with machine switched off Complete cycle in PIA mode (see Chapter 6.5), then: Adjust sensor position (see **Chapter 7.3.2)** Check sensor and exchange if necessary	W-IN11
E105	 Sensor for loading arm 2 down	LA2 has not been moved **completely downwards** Mechanical blockage obstructing LA2 Sensor is incorrectly adjusted Cable/sensor faulty	Check hydraulic feed After fault rectification, clear error message with 'C' and restart **process with 'OK' switch, or:** Remove blockage with machine switched off Complete cycle in PIA mode (see Chapter 6.5), then: Adjust sensor position (see **Chapter 7.3.2)** Check sensor and exchange if necessary	W-IN12

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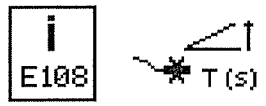
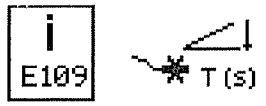
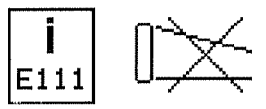
Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.4)
E107	 Unload table sensor does not switch	Sensor incorrectly adjusted Cable/sensor faulty Adjust sensor position (see Chapter 7.3.2)	Set table horizontally with hand lever on hydraulic block Complete cycle in PIA mode (see Chapter 6.4), then: Check sensor and exchange if necessary After fault rectification, clear **error message with 'C' and restart** process with 'OK' switch, or:	W-ANA3
E108	 Sheeting cutter up sensor	Sheeting cutter has not been moved completely upwards Mechanical blockage obstructing sheeting cutter Sensor is incorrectly adjusted Cable/sensor faulty	Check hydraulic feed Remove blockage with machine switched off Complete cycle in PIA mode (see Chapter 6.4), then: Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary	W-IN8
E109	 Sheeting cutter down sensor	Sheeting cutter has not been moved completely downwards Mechanical blockage obstructing sheeting cutter Sensor is incorrectly adjusted Cable/sensor faulty	Check hydraulic feed Remove blockage with machine switched off Complete cycle in PIA mode (see Chapter 6.4),then: Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary	W-IN9
E111	 Sheeting end sensor	Sheeting roll empty Sheeting torn Sensor is incorrectly adjusted Cable/sensor faulty	Replace empty sheeting roll with full roll Rethread sheeting After fault rectification, clear the **error message with 'C' and restart** wrapping process with 'OK' switch, Adjust sensor position (see Chapter 7.3.2) Adjust transmitter position (see Chapter .....) Check sensor and exchange if necessary	W-IN5

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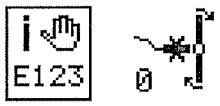
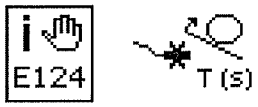
Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.4)
E123	 Satellite not in start position:Danger of collision	Satellite has not been rotated far enough Mechanical blockage obstructing satellite Rotation of satellite through longer road journey Too high a hydraulic circulation triggering the satellite brake Sensor is incorrectly adjusted Cable/sensor faulty	Check hydraulic feed Bring satellite into start position (see Chapter 5.2.2.4) After fault rectification, clear error message with 'C' and restart wrapping process with 'OK' switch On frequent occurrence, reduce specific output of hydraulics Remove blockage with machine switched off Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary	W-IN3
E124	 Loading arm 2 not up:Danger of collision	LA2 has not been moved completely upwards Mechanical blockage obstructing LA2 Sensor is incorrectly adjusted Cable/sensor faulty	Check hydraulic feed Remove blockage with machine switched off **Complete cycle in PIA mode (see** Chapter 6.4),then: Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary Correct the position in PIA mode (see Chapter 6.4)	W-IN11
E125	 Loading arm 2 not down:Danger of collision	LA2 has not been moved completely downwards Mechanical blockage obstructing LA2 Sensor is incorrectly adjusted Cable/sensor faulty	Check hydraulic feed Remove blockage with machine switched off **Complete cycle in PIA mode (see** Chapter 6.4), then: Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary Correct the position in PIA mode!	W-IN12
E126	LA2 up and down sensors are activated simultaneously.	Sensor is incorrectly adjusted Cable/sensor faulty Complete cycle in PIA mode (see Chapter 6.4)	Adjust sensor position (see Chapter 7.3.2) Check sensor and exchange if necessary	W-IN11 W-IN12

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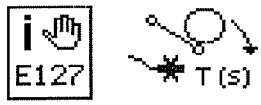
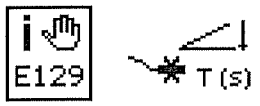
Error No.	Fault	Possible cause	Remedy	Sensors (Chap. A.4)
E127	 Wrapping table not in starting position (forwards)	Table has not been rotated far enough Mechanical blockage obstructing table Last cycle not properly completed Table adjusted in PIA mode **Table adjusted at control block** manual lever Cable/sensor faulty	Check hydraulic feed Remove blockage with machine switched off Correct the position in PIA mode:Symbol (see Chapter 6.4)	W-ANA3
E129	 Sheeting cutter not down	Sheeting cutter has not been closed far enough Mechanical blockage obstructing sheeting cutter Cable/sensor faulty Last cycle not properly completed Sheeting cutter adjusted in PIA mode **Sheeting cutter adjusted at control** block manual lever	Check hydraulic feed Remove blockage with machine switched off Correct the position in PIA mode:Symbol (see Chapter 6.4)	W-IN9

7.1.4 Overview of all general error messages

Fault	Possible cause	Remedy	Sensors
Horn does not function	Horn set too quietly Plug loose in (control box) Autoform Horn faulty	Adjust volume in compressor menu (Chapter 5.2.1) Advise service	
Autoform cannot be switched on	Fuse blown in compressor machine box	Check fuse and replace if necessary Check +PWR and +VACC (LED on compressor board) Check cable connections in distribution box (see Chapter A.3)	

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Fault	Possible cause	Remedy	Sensors (Chap. A.3-4)
Autoform does not start high on switch-on	No data exchange with compressor machine box	Check the 'RUN' LED on the printed circuit board (in compressor machine box) Check the 'RUN' LED on the printed circuit board (in Autoform control box) Check the 'PWR', 'PWRON' and 'RUN' LEDs (in wrapper machine box) Check cable connections in distribution box (see Chapter A)	
Autoform starts in wrapping mode on switch-on	No data exchange with compressor machine box	Check the 'RUN' LED on the printed circuit board (in compressor machine box) Check cable connections in distribution box (see Chapter A)	
Autoform does not switch to wrapping process	No data exchange with wrapper machine box Plug in area of the compressor-to-wrapper interface not plugged in	Check the 'PWR', 'PWRON' and 'RUN' LEDs (in wrapper machine box) Check fuse in the compressor machine box Check cable connections in distribution box Check plug in area of the compressor-to-wrapperinterface and connect if necessary (see Chapter A)	
Oil tank near wrapper hydraulic block is full or overflowing	Specific output of hydraulic circulation is too high	Check hydraulic circulation or reduce flow rate	
Wrapping table not horizontal during wrapping	Calibration has not been carried out Calibration has been overwritten by preset	Recalibrate (see Chapter A)	W-ANA3
Frequent torn sheeting	Wrapping table not horizontal Cutting position of satellite incorrect Wrapping sheeting incorrectly inserted Damaged sheeting roll Too little tension between prestretching rollers Prestretching rollers dirty Poor-quality sheeting	Recalibrate **Move sensor for cutting position in** its slot Insert sheeting correctly Store sheeting roll per instructions Increase pretensioning in prestretcher or renew spring	
In solo operation, the compressor does not close tail gate with pressure	Return to tank still pressureless	Unplug return from pressureless return and plug into tank to dual-acting control valve related to the flow	

7.2 Faultfinding in the hydraulics

a. Oil flow in rapid-action couplings to tractor interrupted:

Through this, a pressure increase can occur for example in the return hose (blocked return coupling). Use rapid-action couplingssuitable for the tractor.

b. Severe oil heating

Oil temperatures of up to 70°C are not unusual during continuous use. A temperature of 60°C is feels very hot to the touch. Check whether the screw (John Deere screw) for the central unit centre pipe closure is correctly inserted (only on tractors with adjustment pumps, i.e. primarily John Deere tractors).

c. Fault in control valve unit

Check control valve for freedom of movement; see control valve overview.
Fit valve lever and first of all move faulty valve forwards and backwards several times.

Before testing, limit oil flow from the tractor to minimum and keep clear of moving parts of the machine.

When the functions can be carried out, the fault is being caused electrically.

d. Contaminated oil

Heavily contaminated oil is extremely damaging for the hydraulic system. Observe regular intervals for checking oil and exchanging filters.
Contaminated oil can contain a high proportion of particles that cannot be filtered out, which however can lead to wear of seals and clogging of control valves.
Experience shows that tractor hydraulic oil is often heavily contaminated with particles and water.

e. Fault cannot be rectified

Locate a Kverneland dealer. Full information on faults that have occurred is helpful for a speedy repair.

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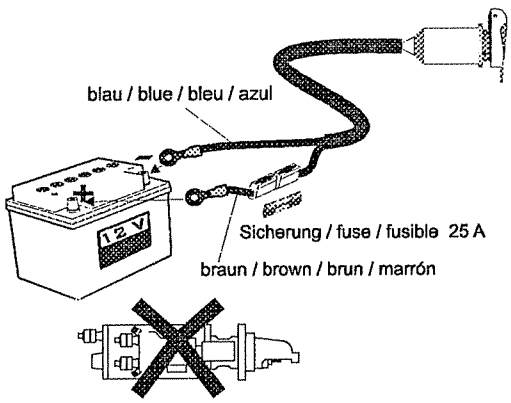


7.3 Looking for errors in the electrical systems

A stabile power supply is necessary in order for the electrical control panel to function properly. Voltage drops in the cables and switches may not lead to a drop in operating voltage of more than 11 volts on the control panel and / or solenoid valves.

Use only the original battery cable supplied by Kverneland.

7.3.1 Causes for electrical system/electronic errors:

General information:

Pay attention to error messages on the display of the control panel.

a. Insufficient power supply from the battery (high voltage drop, short voltage cut-off)
If errors / malfunctions occur when changing tractors, an additional inspection is necessary.

b. Cable/switch damaged
Check connection to multimeter (resistance measuring range/W).

c. Bad contact to the connectors
Re-establish contact quickly in order to obtain the correct contact.

d. Error in the control panel
Possible solutions: Check cables, especially cable between black box and control panel. ("data transfer cable").

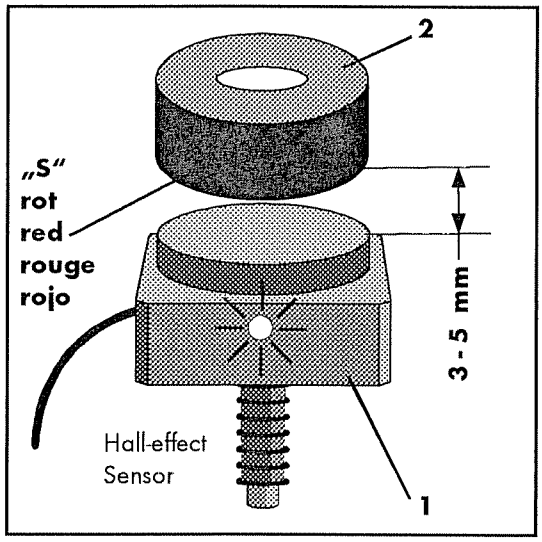
Check for short-circuiting in the sensor cables.

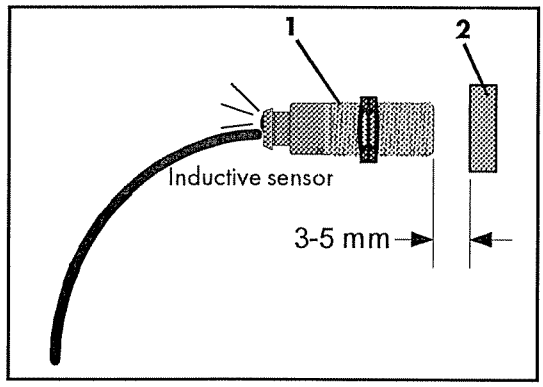
7.3.2 Sensor position

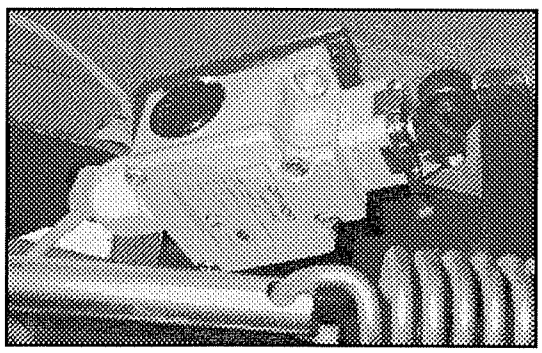
Two different types of sensors and two mechanical limit switches are integrated into the bale packer

Sensors

Description	reaction to:
Hall sensors	magnet
Inductive sensores	metal







Mechanical limit switch

If a sensor is activated when the electrical system is in operation, a small sensor light lights up.

The magnet shows up on sensor with red page or marked "S".

The gap between sensor (1) and metal or magnet (2) has to be between 3 - 5 mm.

Sensors on the press

- Net engine (sensors integrated)
- Bale rpm sensor (RUN Sensor)
- Net rpm sensor
- OC cutter ON/OFF sensor
- Net cutter sensor
- "Open" tail gate sensor
- Bale transfer sensor (BOS)
- Loading arm 1 (LA1) "top"
- "Moulding pressure" tailgate sensor

The safety switch and the STOP button on the wrapper.

- Satellite safety switch/Stop switch
- "Top" loading arm sensor 2 (LA2) "Top"
- "Bottom" loading arm sensor 2 (LA1)
- "Closed" foil cutter sensor
- "Open" foil cutter sensor
- Foil tear sensor (end of foil)
- Sensor for satellite in zero position
- Sensor for satellite speed and position
- Sensor for wrapper table angle

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7.4 Fault finding in the mechanics

Problem	Remedy
Holes in stretched sheeting	Clean prestretcher
Too little sheeting overlap	Check roller drive mechanism
Sheeting tears on lower edge	Gap to rollers too small, raise prestretcher
Automatic sheeting feeder releases sheeting too soon	Lower knife
Incomplete cutting of sheeting	Raise knife on automatic sheeting feeder
Excessive tyre wear	Check tyre pressure and toe-in

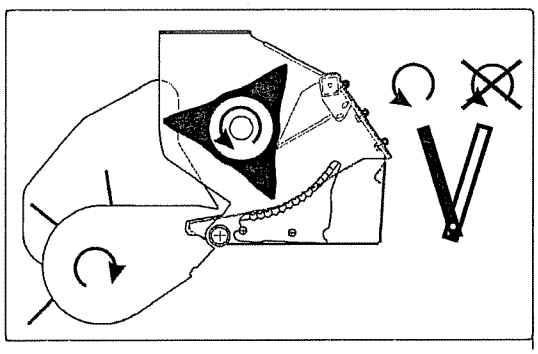
7.5 Blockage in the OpticCut rotor/ cutter device

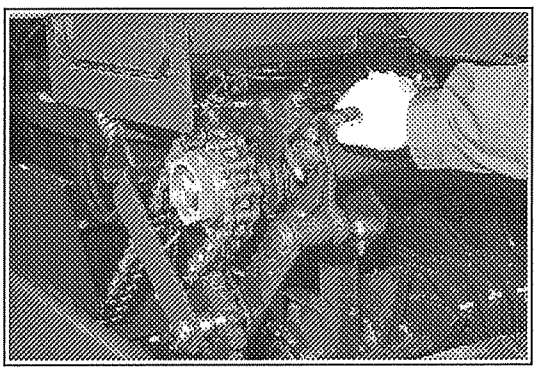
Information!
Experience indicates that blockages and/ or release of the cam control clutch often happen with bales almost completed.
It is possible to wrap these bales prior to unblocking the rotor area in the cutting device. To do this, the rotor cutter must be disconnected using the reverse coupling. Disconnect the cardan shaft at a low rpm, complete wrapping the bales, and unload. Then, disconnect the cardan shaft, re-connect the rotor, and unblock by rotating the cardan shaft at a low rpm.

If blockage occurs in the feeding roller / cutter device, the cam control clutch automatically sets the r.p.m. to 'zero '. If the blockage cannot be eliminated by re-activating the cardan shaft at 200 r.p.m., the material causing the block must be cleared from the feeding channel by reversing the feed roller.

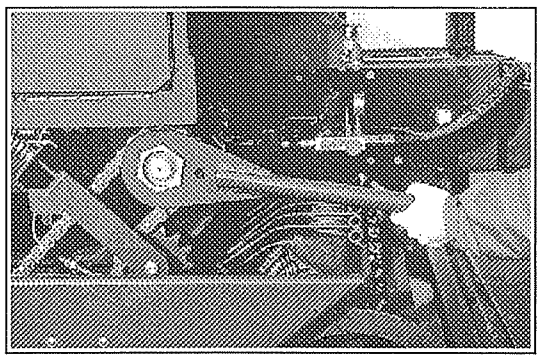
To reverse, follow the below procedure:

- Hydraulically pivot cutter away from the feeder.
- Bring cardan shaft to a halt, switch off tractor engine, remove ignition key.
- Use handle to remove coupling claw.
- Remove reverse turning handle from the draw bar sleeper and set to hexagon.
- To reverse, turn counter clockwise and use the feed roller to convey the material out of the feeder.





Disengage the clutch dog using the lever.



- After eliminating the blockage, quickly turn the reverse handle other direction so that the drive chain in is re-tensioned in the direction of travel!
- Insert the reverse handle into the holder in the drawbar sleeper and re-attach the coupling claw.

Attention!
Close the hood before starting work!

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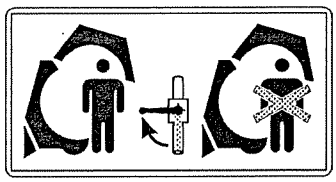
8 Operating principles

8.1 Hooking up the trailer to the tractor and road traffic

- Hook bale packer up to tractor.
- Mount cardan shaft using e a pin chain to secure against rotation.
- Connect all hydraulic cables and power supply cables.
- Lift support up until it stops, pull out stop bolts, lift supports, insert stop bolts below and secure with a securing clip.
- Before driving, hydraulically lift machine until it stops.
- When driving around tight curves, make sure that the width angle of the cardan shaft (tractor side) does not exceed 80°. Otherwise, there is a danger of breakage while in operation as well as at a standstill.
- Transporting with a full press chamber is not permitted! When finished working, leave the last bale on the field!

8.2 Operation in the field

The bale packer is extensively insured against all foreseeable accidents. However, safety issues and extreme care must be observed at all times while working. Prior to use, make sure that all safety devices are attached to the machine and that they are intact.



Be careful!
Never attempt to repair malfunctions when the machine is in operation. Special care is required when opening and closing the tailgate! No one is allowed anywhere near the rotating /pivot range of the tailgate. Before accessing the press chamber, close the hydraulic stop valve.

Before starting work, (see also Chapt. 6):

- Insert and thread net
- Adjust the height of the pick-up's roller feeler
- Adjust pick-up's spring release
- Pre-select press density
- Reset daily bale counter to zero.
- Adjust number of net wrappings and number of foil wrappings
- Cutter device ON/OFF
- Number of cardan shaft r.p.m.'s: 540 per min

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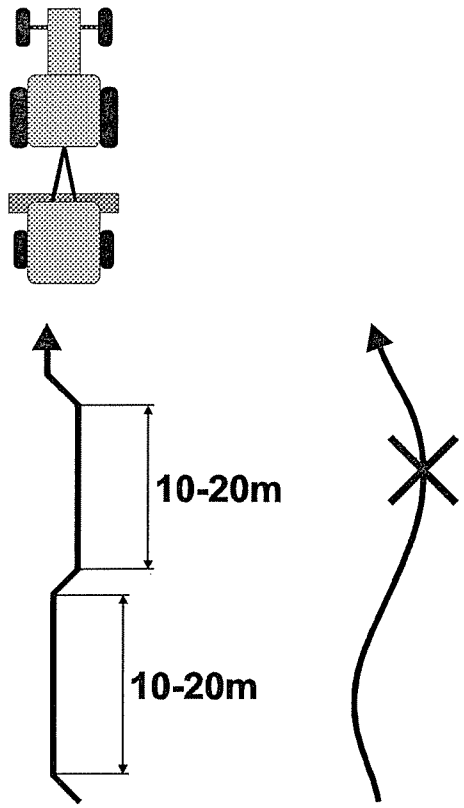

Operation:

To load the round bale press up to capacity, the press chamber must be suitably filled with material to be pressed. The chamber is best and most evenly filled if operated correctly, meaning alternatively operating on the right and left sides of the swath, using medium-sized or smaller swaths.

If a counter-weight is attached, take into account the tendency for stacks to build-up due to cuttings being dragged along.

When driving around tight curve, e.g. when turning, make sure that the angle width of the cardan shaft (on the tractor side) does not exceed 80°. Otherwise, there is a danger of breakage while in operation as well as at a standstill.

In order to achieve operating conditions that equal the soil's condition while in operation, the "Pick-Up' function must be pre-selected on AUTOFORM. If the Cutting function is pressed during the Pressing process, you have to switch over again to 'OptiCut'!

Information!
A higher material density and a better shape can be achieved if you reduce the driving speed as soon as the Autoform indicates "90 % press density achieved"!

Information for practical use:

- Number of net wrappings (Recommendation 2):
  To better hold the bales together, it is advisable to set more net wrappings for straw (two are recommended) than for hay or green materials.
- Number of foil wrappings (22 are recommended):
  To best hold bales together, it is advisable to set more net wrappings for straw as than for hay or green cuttings.
- Moulding press
  The following tendencies are: damp/moist cuttings - more moulding pressure; dry cuttings - less moulding pressure.

Information!
For very dry, brittle straw, the moulding density has to be decreased or the cutters have to be pivoted outwards in order to prevent the bales from coming to a standstill.

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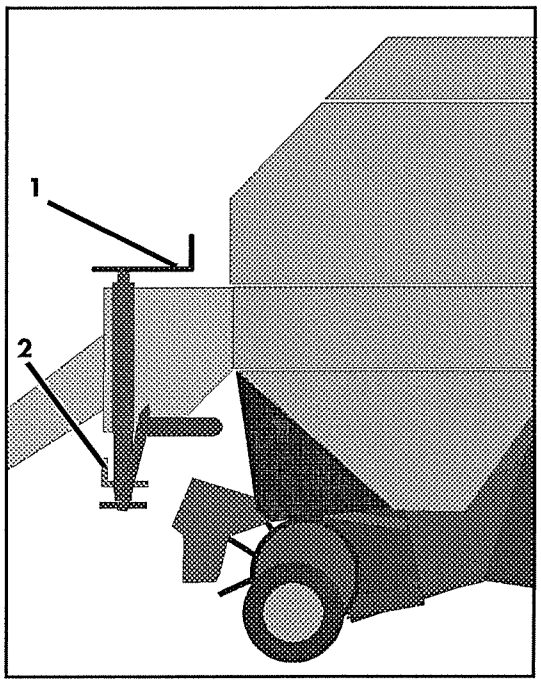
8.3 Turning off the Balepack



Prior to connecting the bale packer, the cardan shaft must be removed, the cable and the hydraulic lines have to be separated from the tractor (depressurise the equipment - open the tail gate briefly and re-setto zero) and the supports must be placed in the following position:

- Prior to unhooking the bale wrapper, secure it by using chocks to prevent it from rolling away !
- Remove stop bolts (2) and lower the supports.
- Insert stop bolts above and secure by using securing clips.
- Use the crank handle (1) to turn the support and lower until the trailer has been released.

Be careful!
Park the machine on solid and even ground and secure using wheel liners to prevent it from rolling away!

9 Maintenance

Be careful!
Repair and maintenance activities may never be performed while the equipment is in operation!

Before working on any part of the machine, switch off tractor engine, remove ignition key, and wait for machine to come to a standstill.

Close the hydraulic stop valve before entering the press chamber! Be careful when opening and closing the tailgate! No one should be anywhere near the pivot range.

Basic maintenance and care is necessary to ensure that the machine operates efficiently and to avoid premature repairs.

9.1 Tightening screws

After the first 20 operating hours pull up all bolts and nuts to the prescribed torque (see section A.1).

Locking screws and check nuts must be tightened at a 10% higher torque!

9.2 Check running wheels

Wheel nuts and wheel covers must be checked to ensure that they are secure. The wheel air pressure must be 1.5 bar.

After the first 10 operating hours, the wheel nuts must be tightened! The M18 x 1,5 wheel nut torque is 325 Nm.

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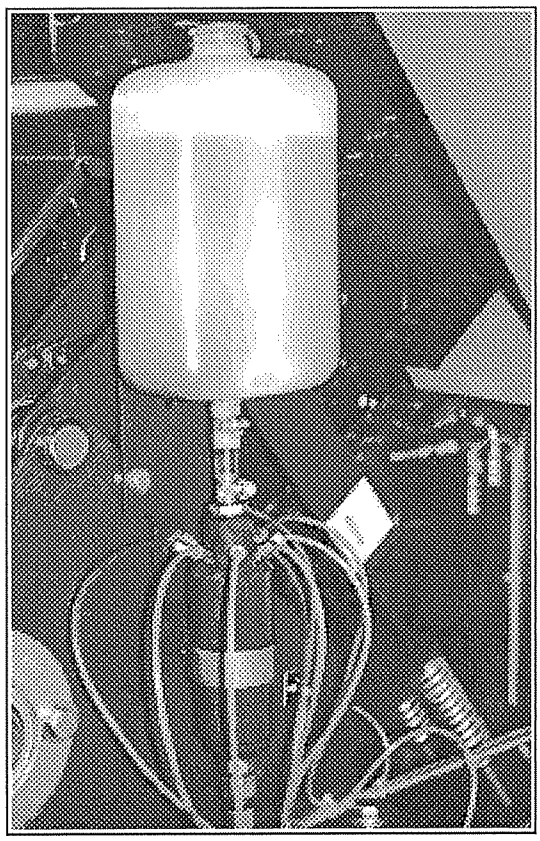
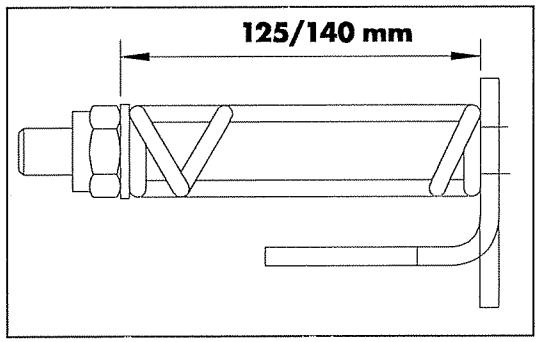




9.3 Central chain lubrication

In order to decrease maintenance expenses for drive chains, an automatic central chain lubrication device has been included as part of the standard equipment. The oil level of the reserve tank must be checked daily. When the tank needs to be refilled, use Bio chain:

Recommended oil: AVILPUP Biokettenfluid 100

The distribution pump is connected to the tailgate hydraulics system and is activated by the pressure impulse issued when the tailgate is opened. A pre-set quantity of oil flows from the oil tank to the intake lines and is applied to the chain using a brush.

The brush must be adjusted in such a way that it lightly touches the chains.

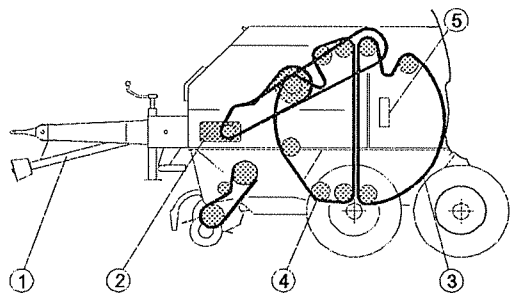
9.4 Chain adjusters

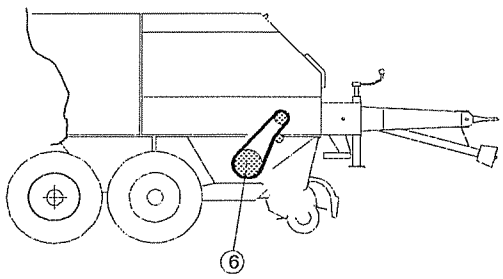
All drive chains are elastically adjusted using a spring-loaded chain adjuster. The chain adjusters can be arranged in the chain range to be free moving so as to prevent torsional power from occurring and to minimise wear to the chains and chain wheels.

The specified spring dimensions for the chain adjuster wheel must be checked regularly and adjusted if necessary.

Spring dimension (length) chain adjuster:

- Drive for cutting tool / right
  - 140 mm
- Double chain adjuster for roller drive machine front / tail gate
  - 2 x 140 mm
- Roller drive machine front side - left
  - 125 mm
- Roller drive tail gate - left side
  - 125 mm





9.5 Lubrication schedule

1 Cardan shaft:
Lubricate bearings (lubrication nipples) and guide platelayers daily.

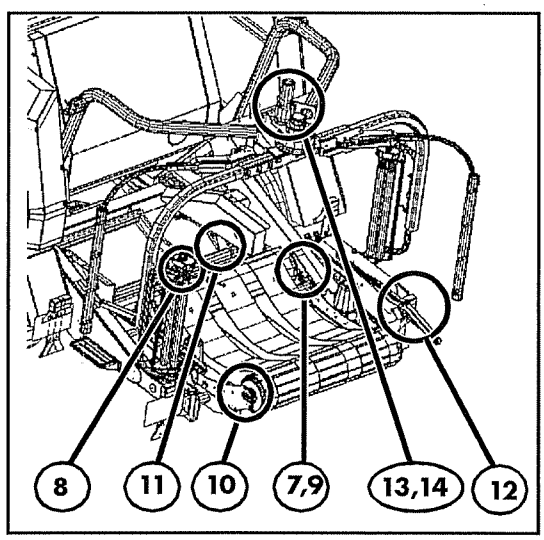
2 Transmission:
1.3 litre transmission oil SAE 90/
Only change in case of repairs

3 Chains:
Central lubrication,
Keep tanks consistently filled with oil.
(Bio chain adhesive oil „FLUID 100")

4 Roller bearings front side:
After cleaning using a high-pressure cleaning device and at the end of the season, re-grease 2 x 9 press- roller bearings (+ 1 press roller).

5 Roller bearing, behind:
After cleaning using a high-pressure cleaning device and at the end of the season, re-grease 2 x 9 press- roller bearings (+ 1 press roller).

6 OptiCut Rotor:
After cleaning using a high-pressure cleaning device and at the end of the season, re-grease 3 x rotor bearings.



Foil wrapper:

7	Roller table drive chain:	every 50 hours
8	Pre-stretching system:	every 50 hours
9	Transmission at table rollers:	every 50 hours
10	Bearing table rollers:	every 50 hours
11	Loading arm 1 and 2	every 50 hours
12	Pivot bearing automatic foil system:	every 200 hours
13	Extension arm - transmission:	every 50 hours
14	Oil change engine brake	every 500 hours

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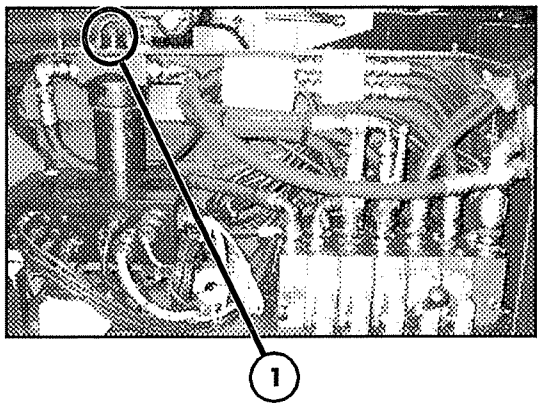


9.6 Maintenance of the hydraulic system

9.6.1 Wrapper oil filter (1)

Filter condition indicator:

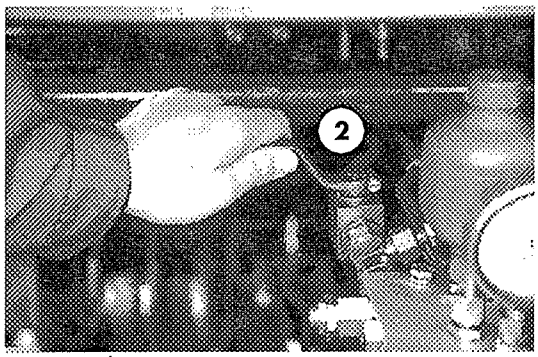
- Green: Filter component working properly
- Red: Change filter

Check the filter when the oil is warm (the r.p.m. of the tractor engine under normal operating conditions). Cold oil can cause false readings.

For tractors with a closed hydraulic system (John Deere series of models 30, 40 and 50) the pre-stretcher extension arm must be in operation in order to obtain a correct reading (oil must flow through the filter). Beware of rotating pre-stretcher extension arm.

Filter replacement intervals

Filters must be inspected after 3000 bales or at least once during the season. The filter must be replaced after 8000 bales or at least once every season.



Secure tailgate

Be careful!
Depressurise the system before opening the filter housing. Close the tailgate latch!

Depressurize system:

- Connect hydraulic lines to tractor.
- Slightly loosen the lines between the filter housing and the hydraulic block so that air can escape.
- Put the steering switch in the "close tail gate " position until the oil is drained from the screwed connection.
- Tighten screwed connection

9.6.2 Changing hydraulic oil in tractor

Keep hydraulic oil clean! Clean hydraulic oil protects against excessive wear and premature failure of components. Change filter and tractor oil according to manufacturer's instructions.

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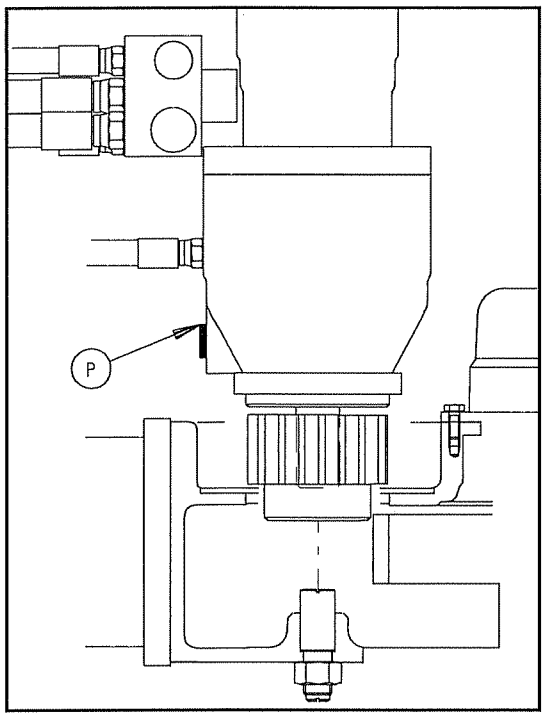

9.6.3 Hydraulic brake for the pre-stretcher extension arm

This brake is located between the engine and the transmission on the topside of the extension arm on the pre-stretcher mast. The brake for a long operating cycle must be filled with hydraulic oil. The oil fill plug (depressurising) is located at the front of the brake beneath the connection for pressure tubing. See illustration (P).

- Loosen the brake from the transmission and lift.
  The brake is attached to the transmission by a wedge. The transmission is mounted to a fixed shaft on the bottom side of the transmission housing, see illustration
- Drain the brake system housing. Clean the discharge screw.
- Change the oil after the first 50 operating hours only and again after every 500 operational hours.
- Use mineral hydraulic oil ISO VG 35 -70 degree (35 - 70 cSt). Quantity to be filled: 25 cm³ (0,025 litre).

Prior to filling with oil, make sure that the housing is empty or else it might be overfilled.

9.7 Wintering

- Clean off cutting residue and dirt from Balepack.
- Separate AUTOFORM from cable; store in a dry place.
- Check round baler press for wear and tear and damage and have it overhauled.
- Release the beater blade (must be placed next to anvil!)

Be careful!
Do not reach into the area of the beater blade and/or anvil, danger of injury!

- Thoroughly clean and re-grease all roller chains.
- Re-grease all bearings in the fold shape roller.
- Thinly grease the OptiCut cutting blade.
- Grease machine according to lubrication schedule.
- Safely park bale packer and secure using wheel chocks to prevent it from rolling away.
- Keep children away from the machine and never let them play on it or anywhere near it.

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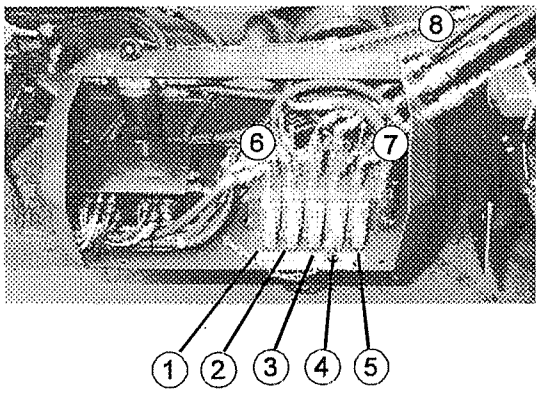
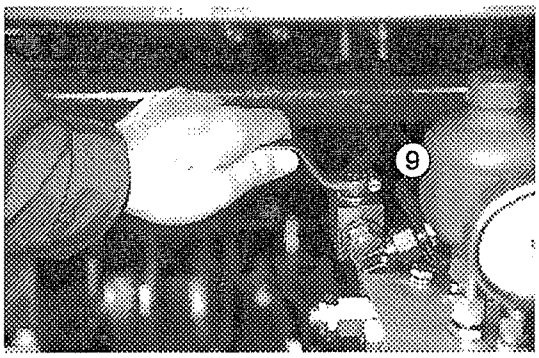
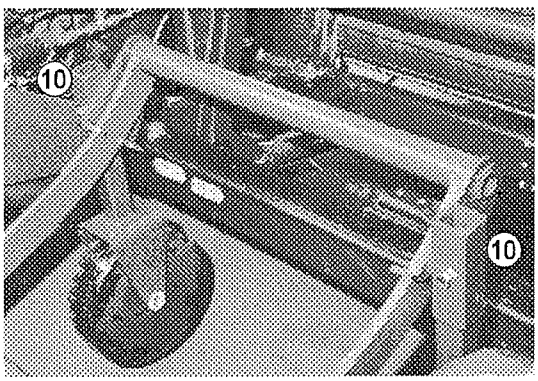
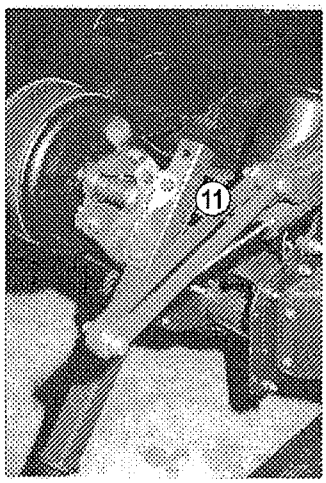
10 Supplementary equipment







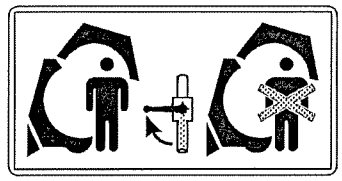


10.1 Uncouple sheet-wrapping unit (special equipment)

If the BalePack is to be used without sheet-wrapping unit, the sheet-wrapping unit can be uncoupled with this special equipment.

To uncouple, proceed as follows:

1. Complete the last compression and wrapping process.
2. The tractor engine must be running and the hydraulics must be switched on (power take-off shaft switched off).
3. Oil circulation must be activated.
4. The hydraulic functions are operated manually at the control unit independently of the electrical control system.
5. Operate hydraulic valve for the tail gate (4) by means of the supplied key and open the tail gate of the baler manually.



6. Close hydraulic valve (ball valve) to secure the tail gate (9).
7. Swing loading arm 2 up by approximately 45° (3).
8. Switch off tractor engine.
9. Fit the supplied two front support wheels by inserting them laterally into loading arm 2 (10).
10. Fit the two rear support wheels and secure to the frame with the fixing bolts (11).
11. Pull out upper connecting bolts between baler and sheet-wrapping unit (12) and swing fixing claw (13) rearwards.

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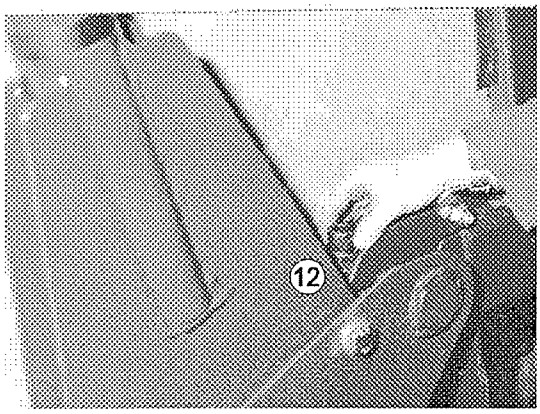

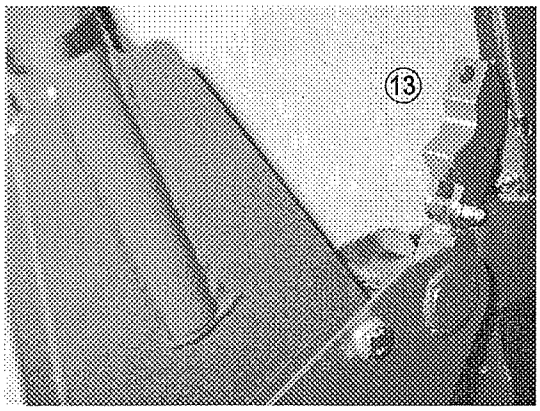

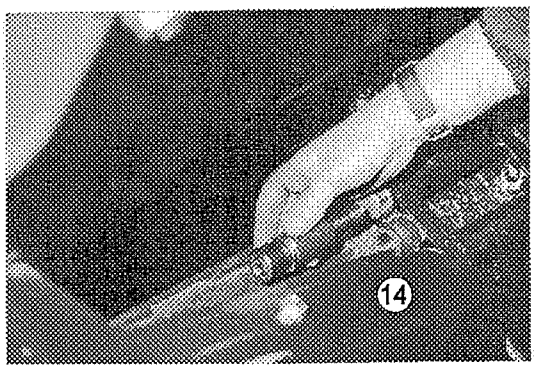

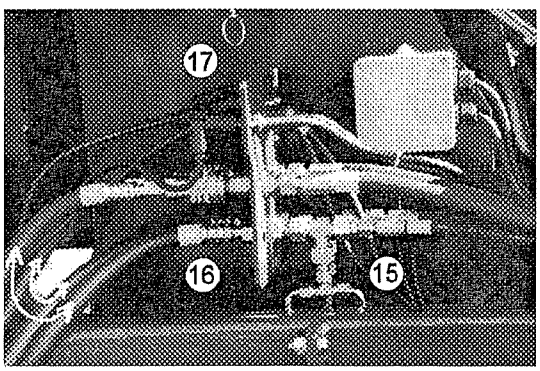

12. Loosen and pull out the two lower fixing bolts between baler and sheet-wrapping unit (14).
13. Start tractor engine and reactivate hydraulic pressure.
14. Swing wrapping table by means of manual hydraulic function (2) until the centring on frame in lower area is released.
15. Swing loading arm 2 completely down by means of manual hydraulic function (3) and with this, lift out wrapping frame bolts from the fixing claw (13).
16. Close hydraulic valve (ball valve) for the wrapping table and loading arm 2 (6 and 7).
17. Switch off tractor engine and depressurise hydraulic system.
18. Loosen the hydraulic connections from the baler to the sheet-wrapping unit on the hydraulic box (8).
19. Loosen the hydraulic connections from the sheet-wrapping unit to the baler (16)
20. Withdraw sheet-wrapping units electrical supply connecting plug (17)
21. Close hydraulic circulation:
    'Short-circuit' the hydraulic hoses (15) leading away from the baler again to the hydraulic connections for the sheet-wrapping unit on the baler (16) (outputs = inputs)
22. Secure the hydraulic and electrical supplies securely to the sheet-wrapping unit.
23. The sheet-wrapping unit is now uncoupled.
24. Start tractor engine and pressurise hydraulics once more.
25. Move baler carefully away from the sheet-wrapping unit and close tail gate manually with the dual-acting control unit on the tractor.

Open tail gate and closure must occur in solo mode with dual-acting control unit.

10.2 Attach sheet-wrapping unit

Proceed as described above but in reverse order.

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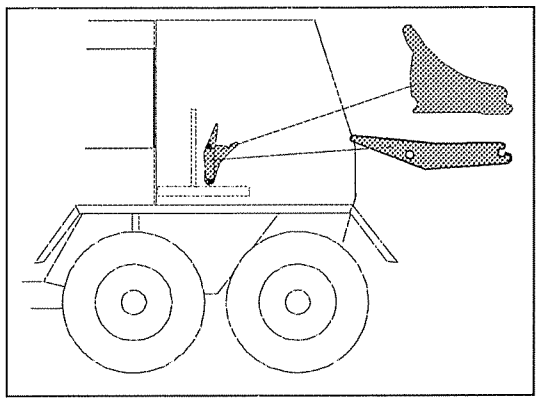

10.3 Blanking plates

With cutting device not fitted, or when the cutter is fitted with less than 14 knives, the slots in the cutting floor can be closed off with blanking plates. The blanking plates keep the knife slots clean and guarantee uniform material flow in the area of the cutting floor.

10.4 Extension cable for control and operating unit

With the use of special tractors with a greater distance between the tractor cabin and the compressor, the (screwed) connecting cable can be disconnected from the rear wall of the box and a 1.5m extension inserted.

10.5 Supplementary equipment for load sensing tractors

As described in Chapter 4.3 "Tractors with load sensing system", these require an additional control line from the wrapper hydraulic block to the tractor.

10.6 Volume distributor for setting oil flow

Tractors not equipped with oil quantity regulation as described in Chapter 4.1 "Required tractor equipment" can be fitted with this kit. With this, the quantity of oil can be limited to the required 35-40 litres.

A Appendix

A.1 Torques for screwed connections

All screwed connections are to be tightened in accordance with the table below when no other torque is given. On this machine, "8.8" is at the same time the standard and minimum quality of the bolts used. Safety bolts and nuts are to be tightened with a 10% higher value.

Thread	Tightening torque for material qualities per DIN ISO 898 (dry)						Spanner size		Remarks
	8.8		10.9		12.9				
	Nm	lbf-ft*	Nm	lbf-ft*	Nm	lbf-ft*	mm	inch	
M3	1,9	(11,5)	1,8	(16,0)	2,1	(18,6)	6	1/4	
M4	2,9	(25,5)	4,1	(36,5)	4,9	(43,5)	8	5/16	
M5	5,7	(50,5)	8,1	(71,5)	9,7	(86,0)	9	23/64	
M6	9,9	7,3	14	10,3	17	12,5	10	13/32	
M8	24	17,7	34	25,0	41	30,3	14	9/16	
M10	48	35,4	68	50,2	81	59,8	17	11/16	
M12	85	62,7	120	88,6	145	107	19	3/4	
M14	135	99,6	190	140	225	166	22	7/8	*values in brackets-=lbf-in
M16	210	155	290	214	350	258	24	121/128	
M18	290	214	400	295	480	354	27	1 9/128	
M20	400	295	570	421	680	502	30	1 3/16	
M22	550	406	770	568	920	679	32	1 17/64	
M24	700	517	980	723	1180	871	36	1 27/64	
M27	1040	767	1460	1077	1750	1291	41	1 79/128	
M30	1410	1041	1980	1461	2350	1734	46	1 13/16	
M33	1910	1410	2700	1996	3200	2362	50	1 31/32	
M36	2450	1808	3450	2546	4150	3063	55	2 11/64	
M39	3200	2362	4500	3321	5400	3985	60	2 3/8	

Tensile strength	8.8		10.9	12.9
	≤ M16	≥ M16		
N/mm2	808	830	1040	1220
lbf/sq.in.	117,222	120,414	150,880	176,994

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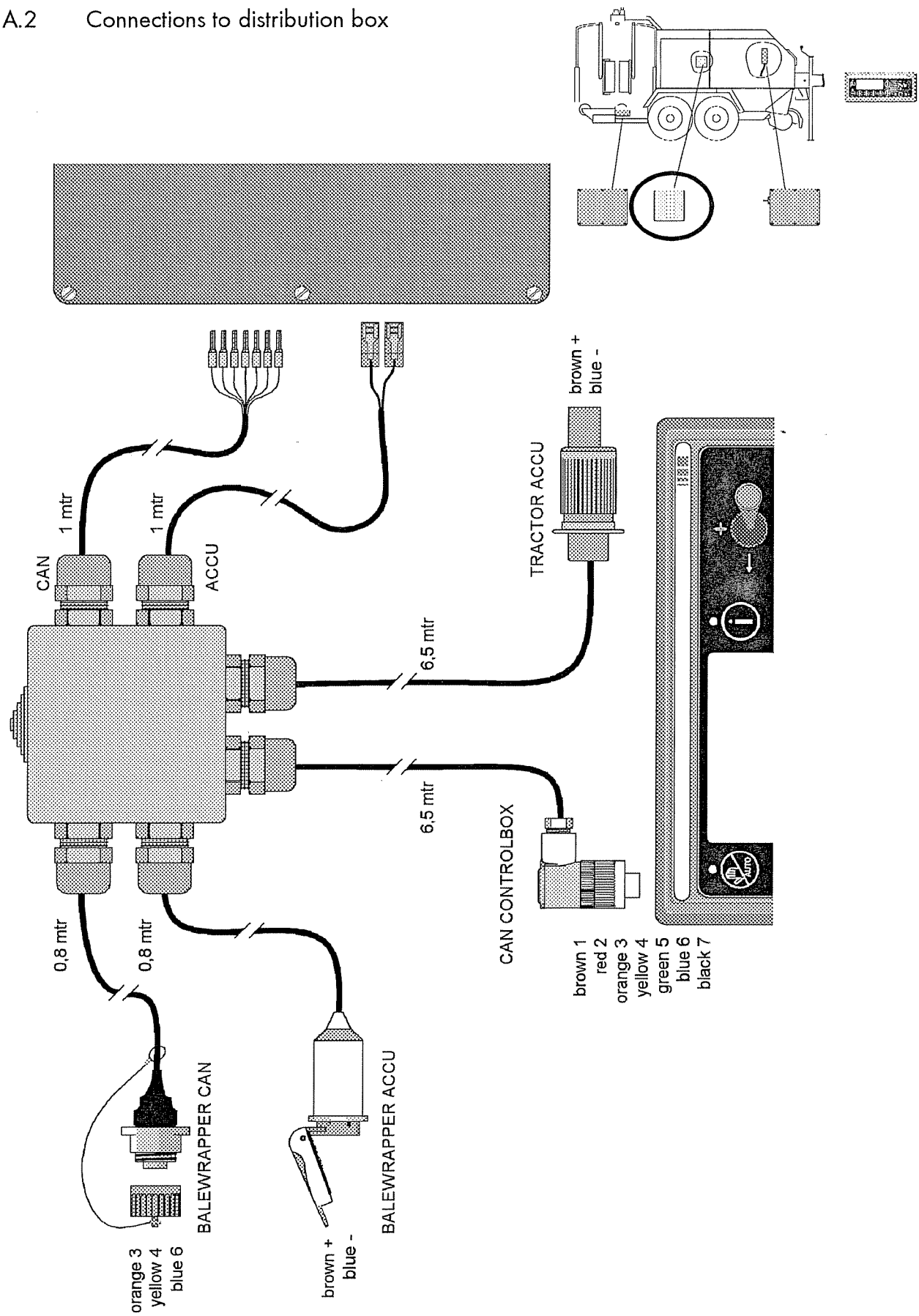
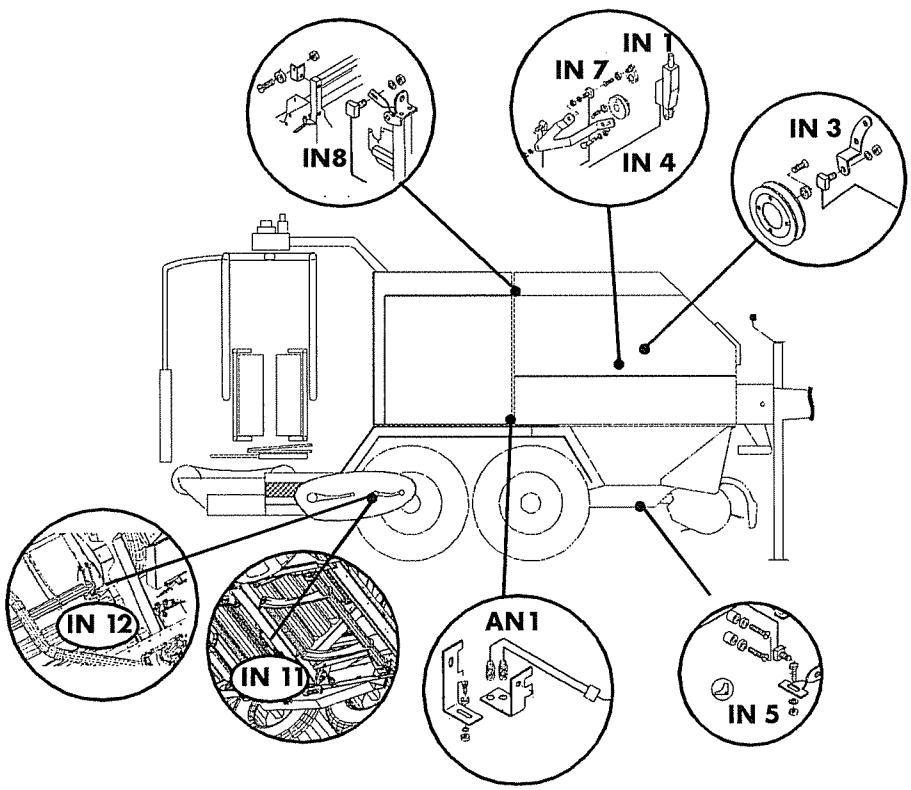
A.2 Connections to distribution box



A.3 Connections to compressor machine box

Inputs	Abbrev. on board	Abbrev. in faults list Chapter 7	Function (engl.)	Funktion (deutsch)
Digital sensor 1	IN1	B-IN1	Net actuator pulses	Netzmotor (Sensoren integriert)
Digital sensor 2	IN2	B-IN2		
Digital sensor 3	IN3	B-IN3	Bale rpm pulses	Ballendrehzahl
Digital sensor 4	IN4	B-IN4	Net rpm pulses	Netzdrehzahl
Digital sensor 5	IN5	B-IN5	OptiCut knife on/off	OptiCut-Messer Ein/Aus
Digital sensor 6	IN6	B-IN6		
Digital sensor 7	IN7	B-IN7	Net Knife locked	Netzmesser Verriegelung
Digital sensor 8	IN8	B-IN8	Gate "open"	Hecklappe "offen"
Digital sensor 9	IN9	B-IN9		
Digital sensor 10	IN10	B-IN10		
Digital sensor 11	IN11	B-IN11	BaleOut	Ballenübergabe
Digital sensor 12	IN12	B-IN12	Loading arm 1 (LA1) "up"	Ladearm1 (LA1) "oben"
Analog sensor 1	AN1	B-AN1	Pressure sensor	Heckklappe "Pressdruck"
Analog sensor 2	AN2	B-AN2		
Outputs				
Output 1	OUT1	B-OUT 1	Pick-Up valve	Pick-Up Ventil
Output 2	OUT2	B-OUT 2	OptiCut valve	OptiCut Ventil
Motor output 1	M1	B-M1	Net motor	Netzmotor
Motor output 2	M2	B-M2	Loading arm (LA1) valve	Ladearm 1 (LA1) Ventil
Power supply	Accu	B-Accu	Power supply	Stromversorgung
CAN bus 7-wire				



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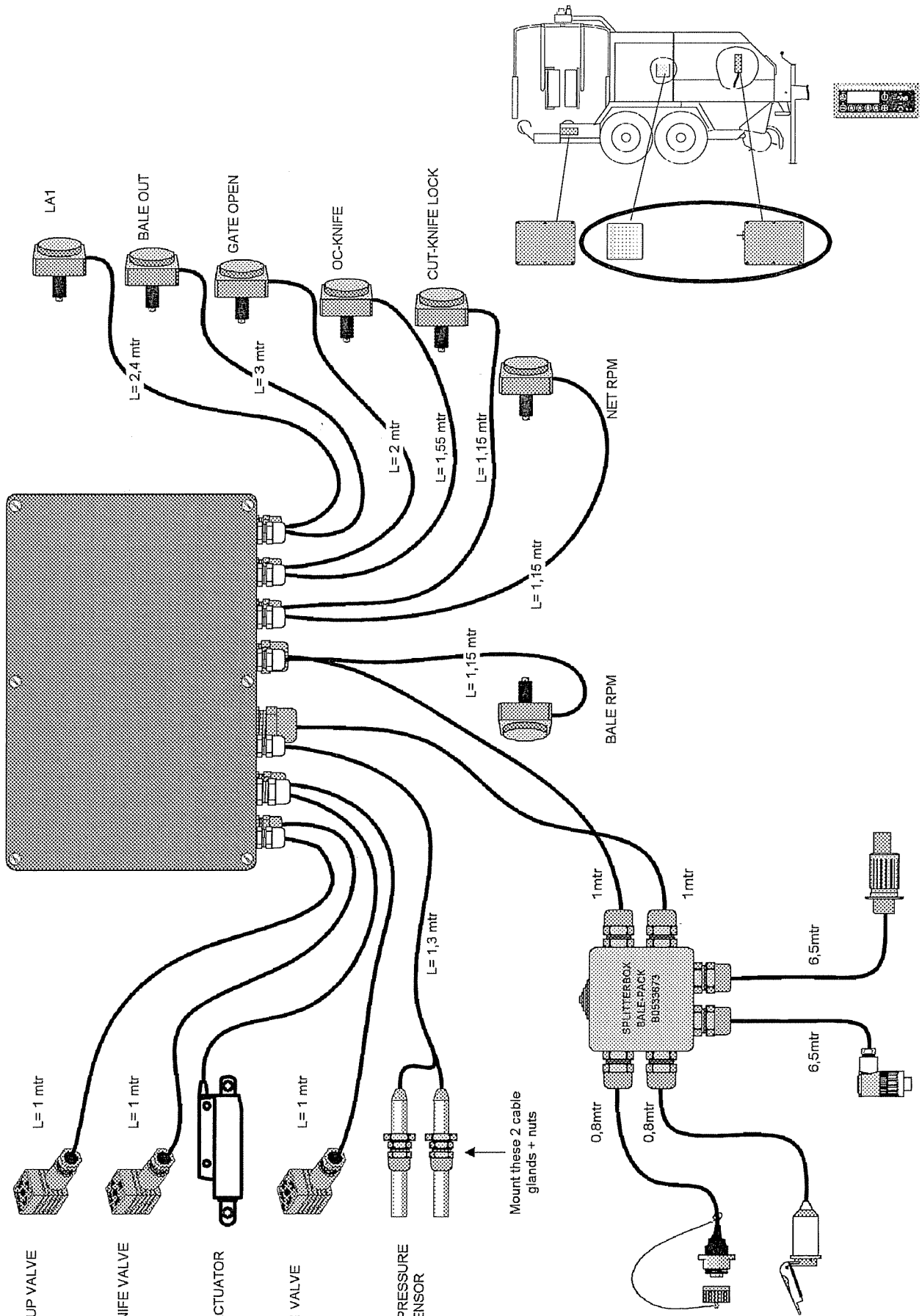
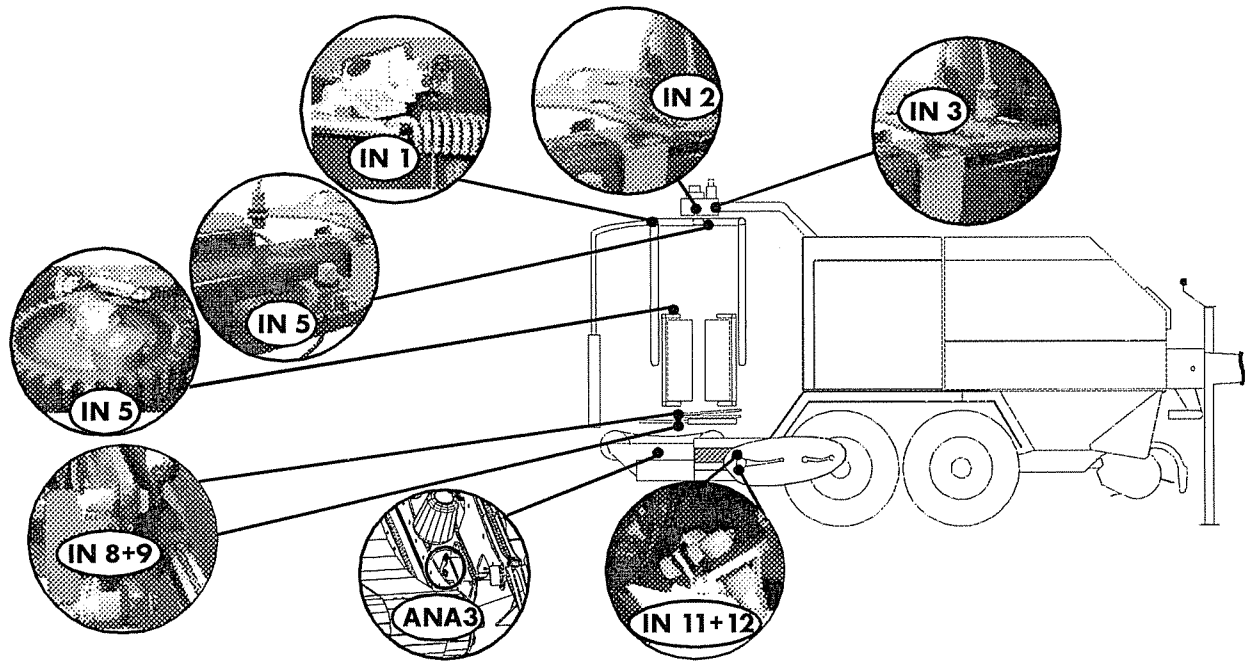

LA1
BALE OUT
GATE OPEN
OC-KNIFE
CUT-KNIFE LOCK
NET RPM
BALE RPM
L= 2,4 mtr
L= 3 mtr
L= 2 mtr
L= 1,55 mtr
L= 1,15 mtr
L= 1,15 mtr
L= 1,15 mtr
L= 1 mtr
L= 1 mtr
L= 1 mtr
L= 1,3 mtr
1mtr
1mtr
6,5mtr
6,5mtr
0,8mtr
0,8mtr
SPLITTERBOX
BALE-PACK
B0533673
Mount these 2 cable glands + nuts
PICK-UP VALVE
CUT KNIFE VALVE
NET ACTUATOR
LA1 VALVE
BALE PRESSURE SENSOR

A.4 Connections to wrapper machine box

Inputs	Abbrev. on board	Abbrev. in faults list Chapter 7	Function (English)	Funktion (deutsch)
Digital sensor 1	IN1	W-IN1	Safty switch	Sicherheitsschalter (am Satelliten)
Digital sensor 2	IN2	W-IN2	Satellite cutting position	Schneid-Position des Satelliten
Digital sensor 3	IN3	W-IN3	Satellite zero position	Grundstellung des Satelliten
Digital sensor 4	IN4	W-IN4		
Digital sensor 5	IN5	W-IN5	Film break	Folien-Endsensor
Digital sensor 6	IN6	W-IN6		
Digital sensor 7	IN7	W-IN7		
Digital sensor 8	IN8	W-IN8	Cutter up	Folienschneider oben
Digital sensor 9	IN9	W-IN9	Cutter down	Folienschneider unten
Digital sensor 10	IN10	W-IN10		
Digital sensor 11	IN11	W-IN11	LA2 safe up	LA2 oben
Digital sensor 12	IN12	W-IN12	LA2 safe down	LA2 unten
Analog sensor 1	ANA1	W-ANA1		
Analog sensor 2	ANA2	W-ANA2		
Analog sensor 3	ANA3	W-ANA3	Table angle	Tischwinkel
Outputs				
Output 1	out1	W-OUT1	LA2 up	LA2 heben
Output 2	out2	W-OUT2	LA2 down	LA2 senken
Output 3	out3	W-OUT3	Cutter up	Folienschneider heben
Output 4	out4	W-OUT4	Cutter down	Folienschneider senken
Output 5	out5	W-OUT5	Table up	Tisch vor
Output 6	out6	W-OUT6	Table down	Tisch zurück
Output 7	out7	W-OUT7	Tail gate up	Heckklappe öffnen
Output 8	out8	W-OUT8	Tail gater down	Heckklappe schließen
Analog output 1	VK1-1	W-VK1-1	Satellite forward	Satelliten vorwärts
Analog output 3	VK1-3	W-VK1-3	Table backward	Tisch rückwärts
Power supply	Accu	W-Accu		
CAN bus 7-wire				



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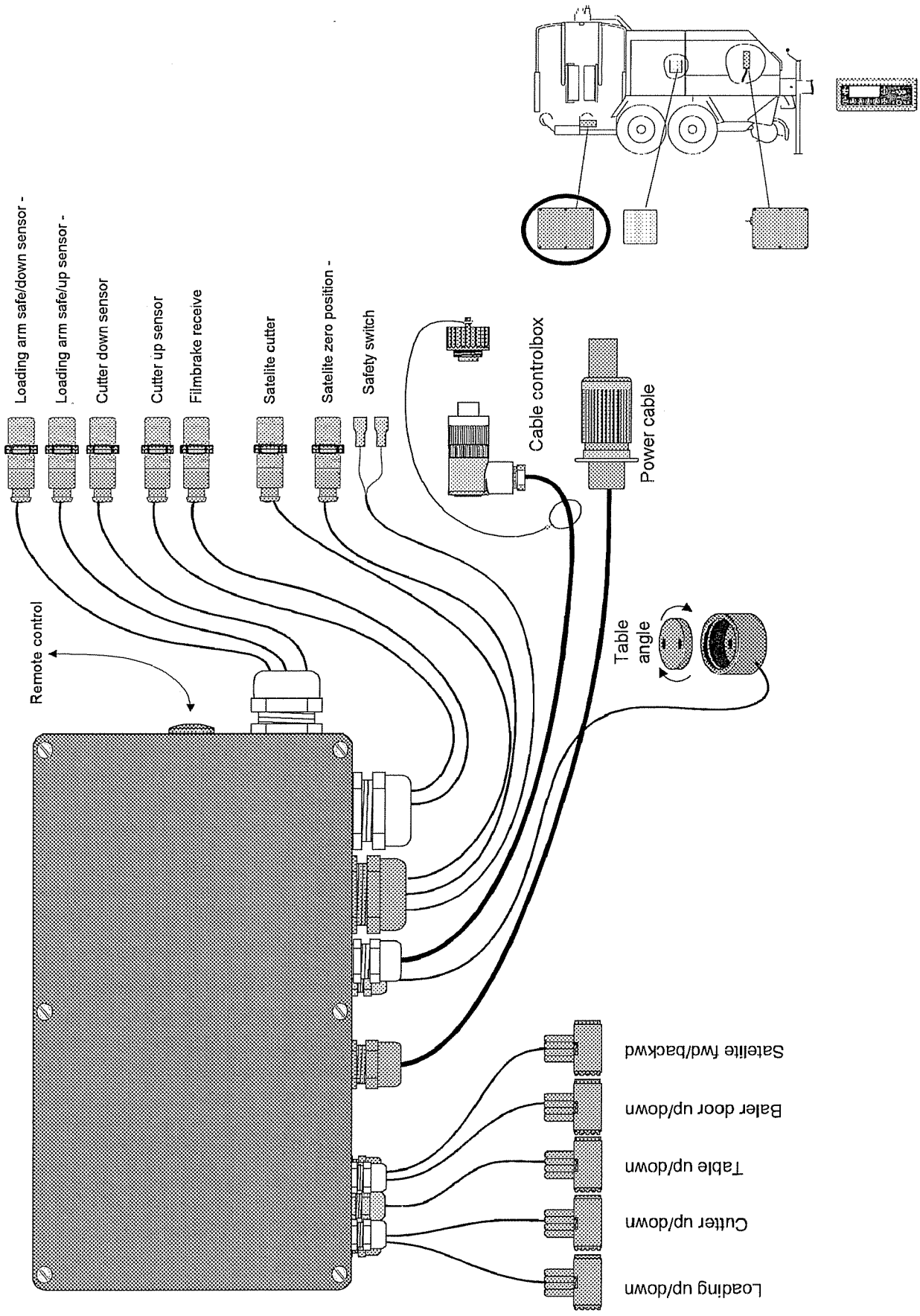
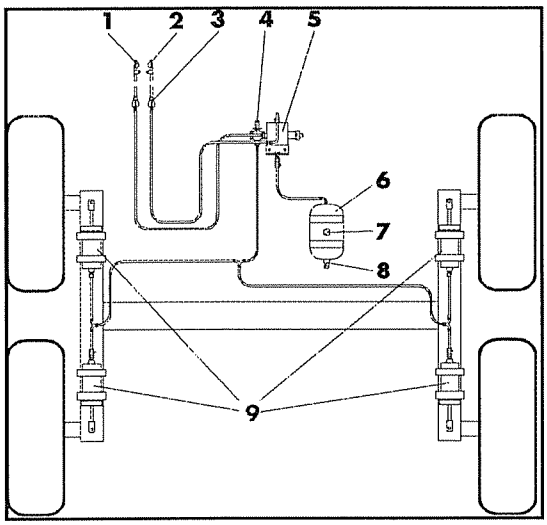

Loading arm safe/down sensor -
Loading arm safe/up sensor -
Cutter down sensor
Cutter up sensor
Filmbrake receive
Satelite cutter
Satelite zero position -
Safety switch
Cable controlbox
Power cable
Remote control
Table angle
Satellite fwd/backwd
Baler door up/down
Table up/down
Cutter up/down
Loading up/down

A.5 Compressed-air brakes



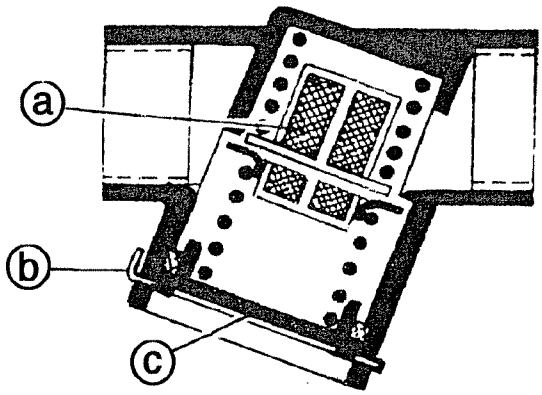
Attention!
Repair work may only be carried out by autohorized skilled workers.

Attention!
The vehicle is equipped with plastic pipes.

Be careful when performing welding work!
Permitted heat temperature on depressurised line: max. 130 °C, max. 60 min. (see labels on the frame above the braking governor)

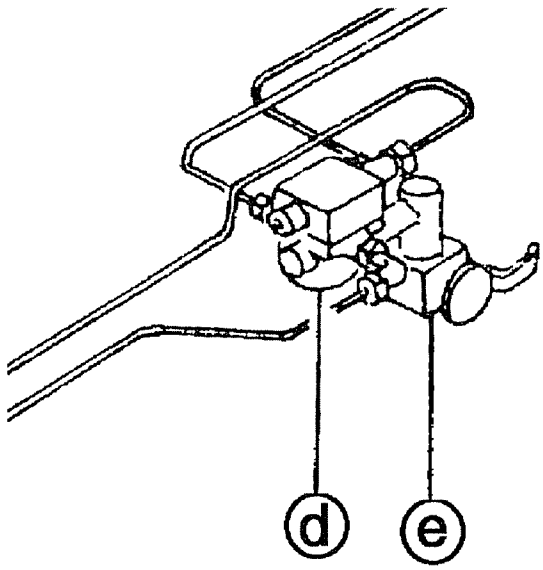
The air tank (6) has been testedas a design type and may not be changed or welded. The discharge valve must be screwed on to the underside of the tank. After approx. 20 operating hours, it should be pressed which can be done by pushing a pin to the side.

The coupling heads must be able to be coupled without problem and closely connected.



The air filters in the pipe lines allows air to pass through unfiltered if the filter unit (a) is clogged. Since protection for the following devices does not exist, the filter unit must be cleaned at regular intervals. The pipeline must be depressurised. After pressing the lid (c) and loosening the insert piece (b), the filter insert can be removed.

The trailer braking valve does not require any particular maintenance. It forwards the compressed air that constantly flows from the tow vehicle through the reserve line to the trailer's compressed air tank as soon as the control impulse from the towing vehicle is issued via the brake line. The braking governor (e) is flanged onto the trailer's braking valve.



Maintenance and adjustment:

- In principle, your new vehicle is equipped with a functional braking system.
- In case of wear and tear on the brake linings, adjustments must be performed on the system (see following maintenance).

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Brake control

Danger!
Danger of pinching!

In case of relieved brakes, mark the connecting rod. Afterward, measure the connecting rod when the brakes are loaded.

max. permissible piston stroke with loaded brakes is 55 mm.

If the piston strokes exceed this amount, the brakes have to be re-adjusted.

After 5000 km or 250 - 300 operating hours

- Brake lining - check thickness for possible damage.
  If the brake lining thickness is less than 2 mm or if it is damaged, the brake pads have to be replaced.

Four times a year and definitely after the harvest.

- Lubricate all bearings on the axle. Oil Bowden cables, don't use grease!

Test data for brake inspection

Pressure on the test connection in front of the air tank (same as reserve line) should be 6.5 to 8.0 bar.

Pressure on the test connection in front of the braking cylinder at "full load": 6.0 to 7.5 bar.

Pressure on the test connection in front of the braking cylinder at "half load": 4.0 to 4.2 bar.

Pressure on the test connection in front of the braking cylinder at "neutral": 2.5 to 2.7 bar.

Pressure on the test connection in front of the braking cylinder at full braking force: at least 6 bar.

Trailer brake valve - starting pressure (same as brake line): 0.2 to 0.6 bar.

Drop in tank presser after full force has been applied to the brakes four time: max. 0.8 bar.

Within three minutes, at an output pressure of 3 bar, there may be no loss in pressure.

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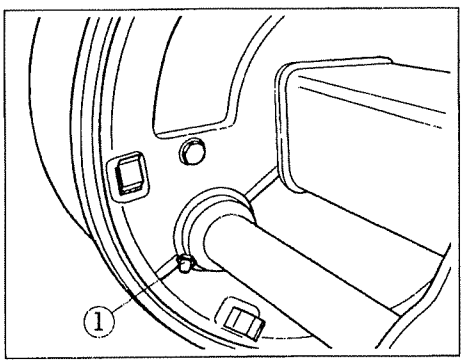
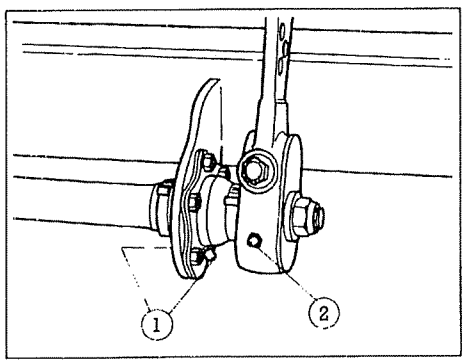
A.6 Maintaining the wheel brakes





Excerpt from:
BPW's maintenance regulations (Bergische Achsen KG)
Agricultural trailer axles

Brake axle bearing, inside and outside

- four times a year -

(and before putting into operation after not being used for a long period of time)
Lubricate lubricating nipple (1) with lithium-based grease (e.g. BPW-ECO-Li 91).

Be careful!
No grease or oil may touch the brakes.

The cam bearing is not sealed in the direction of the brakes. Use only lithium-based grease with a dripping temperature above 190°C.

Slack adjuster

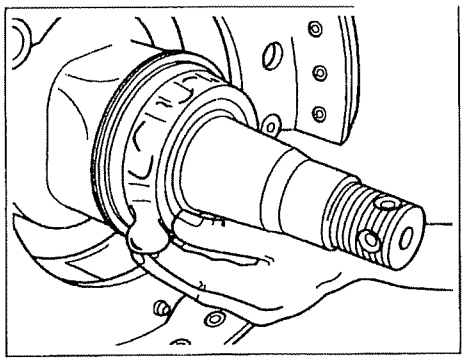
- four times a year -

Lubricate lubricating nipple (2) with lithium-based grease (e.g. BPW-ECO-Li 91) until fresh grease emerges.

Change grease on wheel hub bearing

- twice a year -

Secure the vehicle, jack it up, and loosen brakes.



Remove wheels and dust covers.

Remove split pin and unscrew axle nut.

Using a suitable screwdriver, unscrew the wheel hub with brake drum, tapered roller bearing, and sealing components from the steering knuckle.

Mark wheel hubs and bearing cages removed so that you don't mix them up when re-assembling.

Clean the brakes, check for wear and tear, integrity and function, and worn parts. The brake interior must be kept free of lubricants and contaminants.

Thoroughly clean wheel hubs inside and out. Remove old grease deposits. Thoroughly clean bearing and seals (diesel oil) and check for re-usability.

Before assembling bearing, lightly lubricate bearing seat and assemble all components in reverse sequence. Carefully lift parts onto press grooves with pipe connectors without tilting or causing damage.

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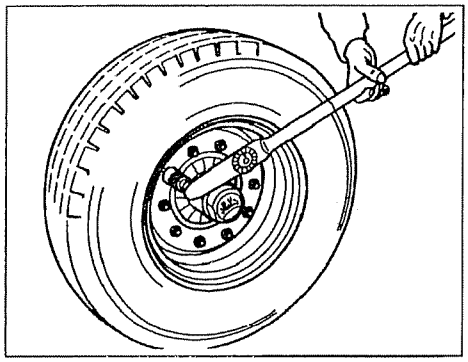
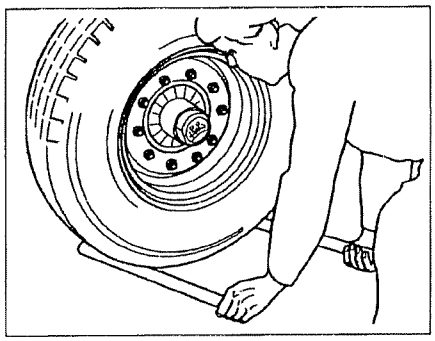
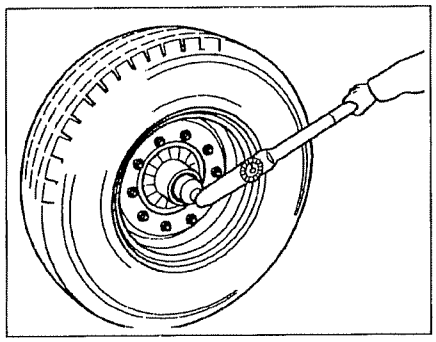
Before assembly, smear grease on the bearing, the wheel hub chamber betweeen the bearings and the dust cover. The amount of grease should fill up approx. a quarter to a third of the available space in the assembled hub. Mount the axle nut and adjust the bearing and brake settings. Lastly, perform a functional test and a corresponding test drive, you may have to resolve newly determined problems.

For lubricating the wheel hub bearing, only the lithium-based grease ((e.g.

BPW-ECO-Li 91) with a dripping point greater than 190°C) may be used. The wrong grease or too much may lead to damage. Due to incompatibility, mixing lithium-based and natron-based grease may lead to damages.







Check the wheel nuts to make sure they are secure.

- after initial operation and again after 50 operating hours -

Tighten wheel nuts using cross-arm torque wrench to a tightening moment of 291Nm (M18x 1,5, galvanized).

Check wheel hub bearing clearance

- after every 100 operating hours -

To check the wheel hub bearing clearance, lift the axle until the wheels are free. Loosen the brakes. Insert the jack between the wheels and the ground and check the clearance. In case of tangible bearing clearance:

Adjust bearing clearance

1. Remove dust cover.
2. Remove split pin from axle nut.
3. Tighten wheel nut at the same time that the wheel is turning until brakes are lightly applied to the wheel hub.
4. Reverse axle nut up to the next possible hole. If evenly covered, keep going until the next hole. (max. 30').
5. Insert split pin and bend up slightly.
6. Fill dust cover with some lithium-based grease (e.g. BPW-ECO-Li 91) and screw into/hammer into the wheel hub.

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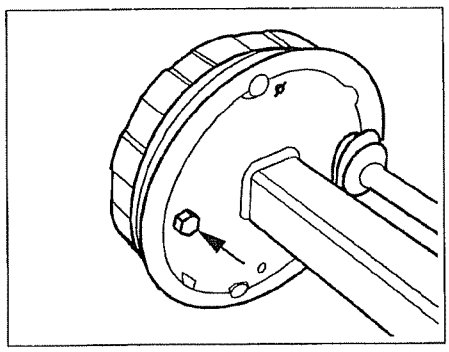


Brake adjustment

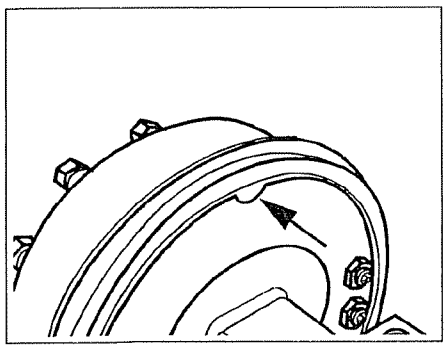
- Depending on the function, check for wear and tear and the brake function regularly and make adjustments, if necessary. Adjustments need to be made if ca. 2/3 of the max. cylinder hub at full braking power has been worn down. To do this, secure the vehicle, jack it up, and loosen brakes.

Adjusting the brakes

- after every 1000 operating hours -

Completely loosen cable or tow rod. Turn the wheel in a forward direction, while doing so, turn the adjustment screw until the wheel is blocked.

Now screw the adjustment screw in the reverse direction just until the wheel starts moving freely. Check to ensure that the individual brakes effect braking action simultaneously to one another.



Brake lining check

- every 100 operating hours -

The brake lining must be replaced if you find a remaining lining thickness of

a: 5 mm in riveted linings

b: 1 mm in bonded linings.

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effective from ident. nr. (PIN)
a partir du no d`ident. du produit (PIN)

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