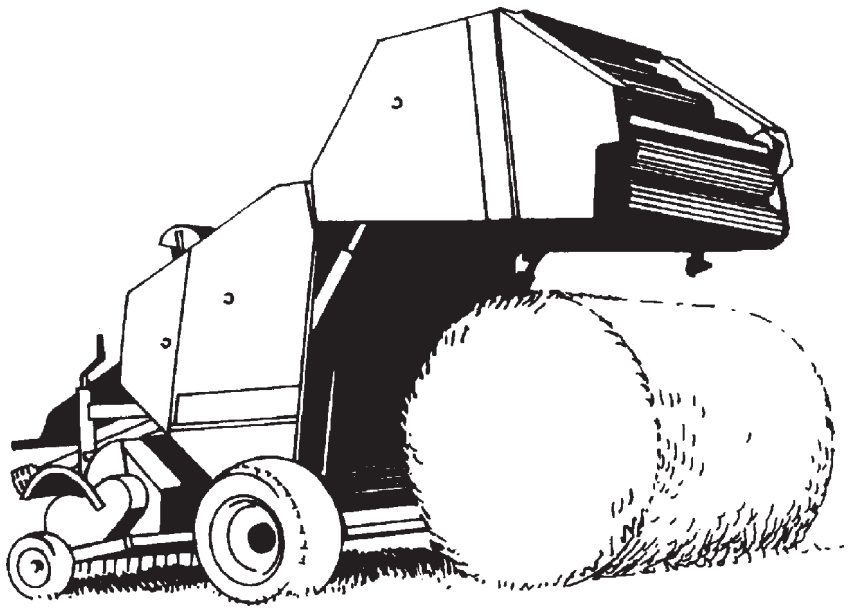
Operation manual EN

RF 112
RF 120 / OC
RF 150 / OC
RF 120 L / OC
RF 150 L / OC



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CE

EC Declaration of Conformity
as defined by the EC directives

- Machines 89/392/EEC amended by 91/368/EEC and 93/44/EEC, Appendix II and 93/68/EEC

The machine

product	: round baler
type	: GP 2.12/2.30/2.50/2.30 OC/2.50 OC, RB 3.20/3.50 RF 112/120/150/120 OC/150 OC/120 L/150 L
identity no.	: 6811/6820/6824/6826/6829
serial no.	: 6811 - 43 6820 - 28 6824 - 21 6826 - 15 6829 - 13
year of construction	: 1985

was solely developed, designed and manufactured, in accordance with the aforementioned EC directives, by

Kverneland Gottmadingen GmbH & Co. KG
Hauptstraße 99
78244 Gottmadingen
Germany.

The following harmonised norms were applied:

- DIN EN 292/1 and EN 292/2, safety of machines, equipment and systems
- DIN EN 294, safety clearances to danger areas
- DIN EN 982, safety requirements of fluid technology systems and components
- prEN 704 (January 94) safety of agricultural machines - balers
- prEN ISO 14982:1996, electromagnetic compatibility of agricultural and forestry machines

Complete technical documentation is available.
The machine´s operating instructions are available

- in the original version : German
- in the languages : English, French, Dutch, Spanish

Gottmadingen, 09.07.1997

i.V

R. Willburger
Head of Development/Design

Foreword

Dear Customer,

We would like to thank you for the trust you are showing in our company in purchasing this Kverneland Gottmadingen fixed chamber round baler.

The following operating instructions provide detailed information on starting up and maintaining your new round baler. They also contain safety instructions to ensure risk-free operation. In addition to the equipment and variants that can be supplied, the operating instructions describe all additional equipment not contained in the usual supply schedule. With these operating instructions, we aim to help you get the most out of your Kverneland Gottmadingen round baler.

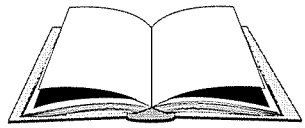
The machine´s performance depends to a large extent on it being properly used and carefully maintained. For this reason, the operating instructions should be read through with care before starting up for the first time and should be kept to hand thereafter. By doing this, you will prevent accidents, have the manufacturer´s guarantee, and always have a reliable machine that is ready for use.

All information and illustrations in these operating instructions are state-of-the-art at the point in time of publication. Kverneland Gottmadingen constantly strives to improve its products. It reserves the right to make all changes and improvements that it considers to be necessary. This does not, however, oblige the company to later modify machines supplied.

If, after reading the operating instructions, you should have further questions, please contact your retailer.

We hope you have a good harvest using your round baler!

Please read and take note of operating instructions and safety regulations prior to start-up.



Kverneland Gottmadingen GmbH & Co KG
Hauptstraße 99
78244 Gottmadingen
Germany
Tel.: 07311-788-0

Fill in your machine details here:

Machine type :.....

Serial number :.....

Initial start-up on :.....

Contents

1 Safety

1.1 Your personal safety

The retailer will have explained to you about operation and maintenance when handing over the machine. Read these operating instructions before using the machine for the first time and be sure to note the safety instructions. Areas of particular importance are marked with a pictograph.

You will find this sign beside all important safety instructions in these operating instructions. Take particular note of these and take extra care when carrying out the operations to which they apply.

The round baler is equipped with protective equipment and its safety and the accident protection it provides have been checked by the *Landwirtschaftliche Berufsgenossenschaft* [Agricultural Professional Association]. However, in the case of maloperation or misuse, a danger is posed to the following:

- the life and limbs of operators, third parties and animals near the machine,
- the machine and other material assets belonging to the operator and third parties,
- the efficient operation of the machine.

All persons concerned with the mounting, start-up, operation and maintenance of the machine must carefully read and take note of the following instructions.

After all, it is your safety that is at issue.

1.2 Safety instructions in this manual

How safety instructions are denoted:

Warning:
This word denotes danger to life or limb. If you see this word in the operating instructions, please take all necessary safety precautions.

Caution:
This word indicates the risk of material damage as well as financial detriment and disadvantage under criminal law (e.g. loss of guarantee rights, liability cases etc.).

Note:
This indicates instructions, application tips and practical information.

1.3 Type plate

The nameplate with model name and number is fixed on the gear housing of the main supporting axle of the machine.

Note:
Enter the data on the type plate into the box provided for this purpose on the second page.

1.4 Intended use

The round baler is exclusively constructed for ordinary use in agricultural work and intended for and suited to gathering mown crops lying in swaths on the ground, compressing this into round bales and binding it with plastic twine or wrapping it with netting.

It is not intended for any other use. The manufacturer shall not be liable for damage resulting therefrom. The user shall bear all responsibility.

Intended use also comprises adhering to the operating, maintenance and servicing directions prescribed by the manufacturer. The machine may only be used, maintained and repaired by persons who are familiar with the work and who have been informed of the dangers.

The relevant accident prevention regulations and other generally recognised regulations concerning safety, industrial medicine and road traffic are to be observed.

Caution:
Unauthorised changes to the machine remove all liability on the manufacturer´s part for damage arising therefrom.

1.5 Liability

All persons who work on and with this machine must read and note these operating instructions. Furthermore, this machine may only be deployed for its intended use (see Section 1.4).

1. Work on this machine must be carried out in accordance with the instructions contained in the current documentation.

   This documentation can be made up of the following:

   - mounting instructions
   - operating instructions
   - supplementary sheets

2. The following rules and regulations must be observed:
   - the locally applicable, relevant accident prevention regulations,
   - the recognised road traffic, safety and industrial medicine regulations,
   - the functional limits and safety regulations listed in the technical instructions.

3. Only suitable and perfectly functioning tools and equipment may be used in carrying out work on the machine.
4. Only parts (replacement parts, additional equipment, lubricants etc.) may be used that at least correspond to the requirements laid down by the machine manufacturer, and these parts must be used in accordance with the regulations (including the starting torques mentioned).

   A part corresponds to requirements when it is an original part or if it has been expressly approved by the machine manufacturer.
5. Unauthorised changes to the machine remove all liability from the manufacturer for damage arising therefrom.

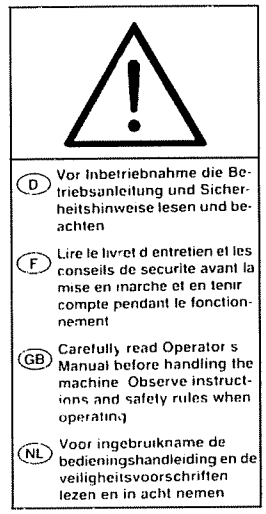
Caution:
Any person not observing the above regulations shall be deemed to be acting in a grossly negligent manner. The manufacturer shall bear no liability for damages arising therefrom. The risk shall be borne entirely by the user.

1.6 Safety stickers and warning signs

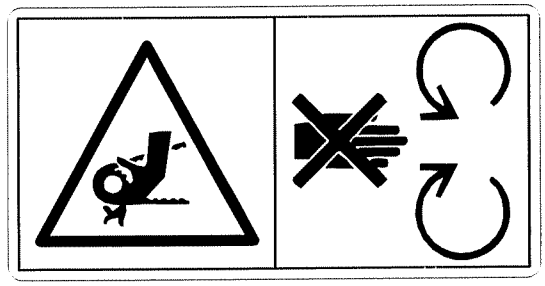
Caution:
Real safety means being familiar with all safety stickers. This concerns the type and place of danger and, in particular, the safety measures to be taken. Remain constantly vigilant and be aware of the dangers.

Warning signs are provided on this machine (safety stickers). The stickers together with their explanations are listed in the following and shown on the overall diagram:

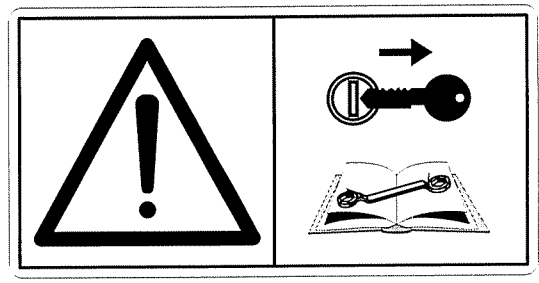
1. All of the operating and safety instructions must be read and complied with before system start up!



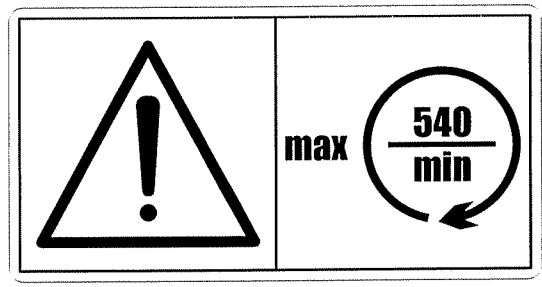
2. Do not open or remove the guard panels while the tractor engine is running!



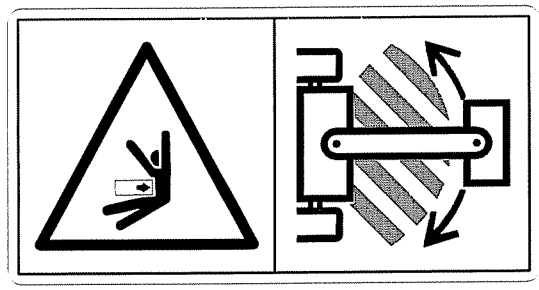
3. Read all maintenance and repair work instructions before carrying out any maintenance or repair work. Stop the engine and remove the ignition key!

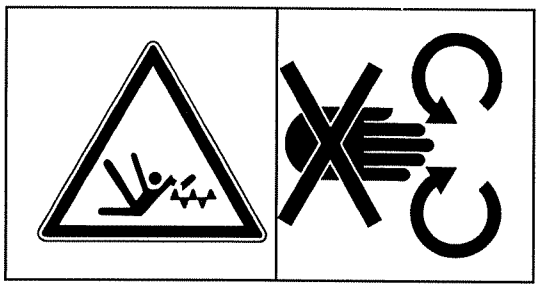


4. Do not exceed the prescribed p.t.o. speed of $n_{max} = 540\ min^{-1}$!

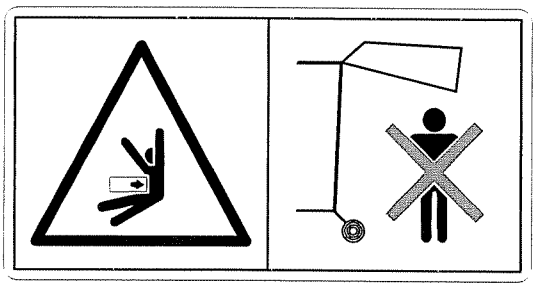


5. Keep clear of the swinging/turning area when the engine is running!

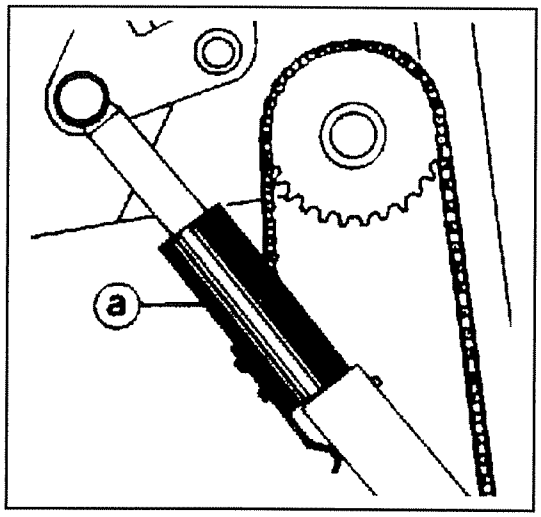




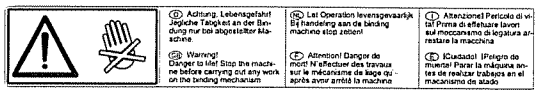
6. Keep hands clear of the rotating augers!



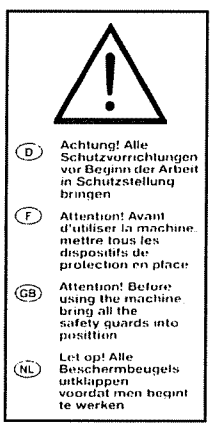
7. Keep clear of the lifted tail gate when it is open and unlocked!



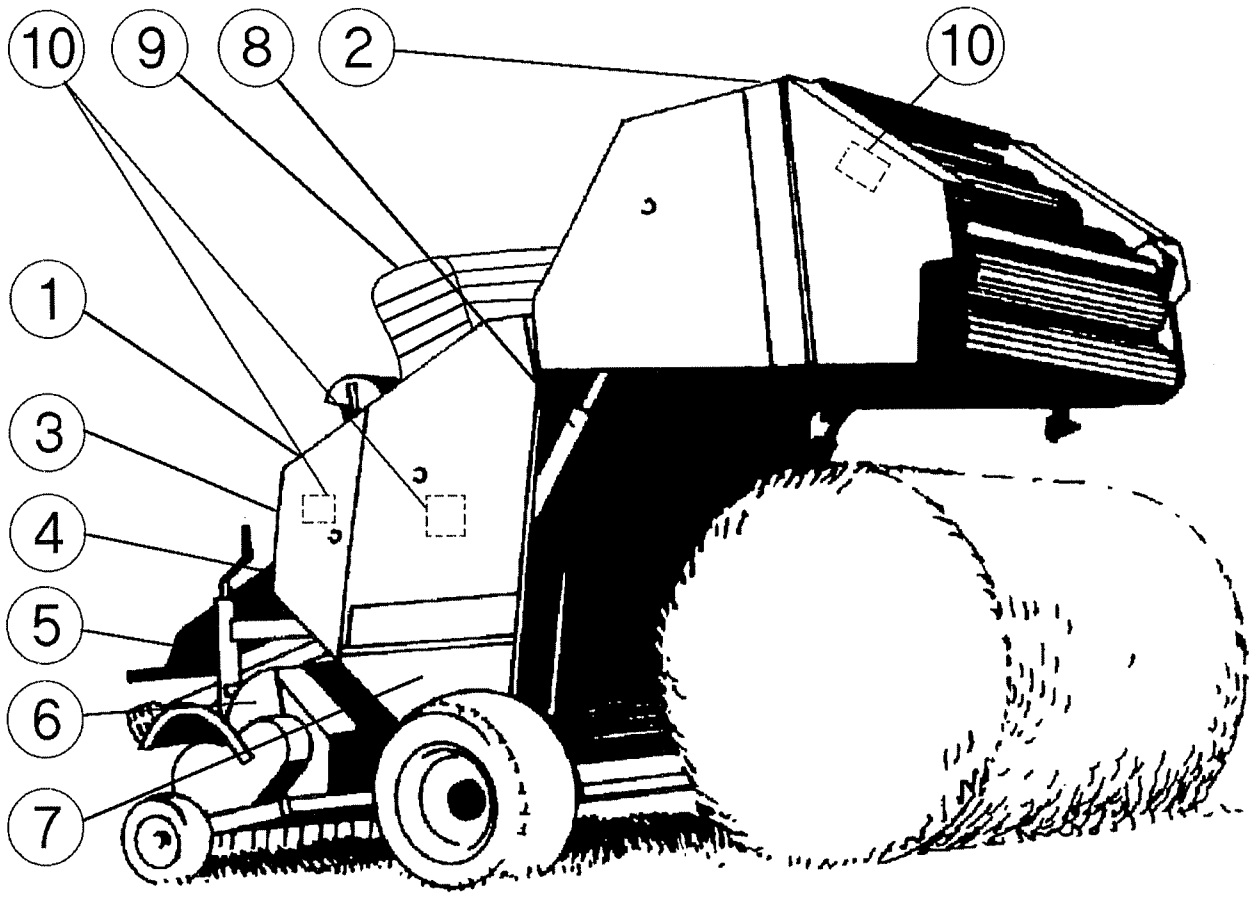
8. Lock the tail gate strut (a) prior to carrying out work underneath the tail gate or in the baling chamber!



9. All maintenance work performed on the Round Baler as well as the opening of the protective devices may only be carried out when the p.t.o. is disengaged and the engine turned off.



10. Attention! Before using the implement, bring all the safety guards into position.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1.7 Authorised users

Youths under 16 years of age may not operate the round baler.

The owner of the machine must make the operating instructions available to the user and ensure that the latter has read and understood same. Only then may the user operate the machine.

The delegation of responsibility for various machine duties must be clearly established and adhered to. There must be no doubt regarding the user´s competence as this could put the user at risk.

The owner must ensure that only authorised persons work on the machine. He is responsible for third parties for the area in which the round baler is being used.

1.8 General safety and accident prevention regulations

Basic rule:

Check that the device and tractor are road worthy and operationally safe before each start-up. Note the generally applicable safety and accident prevention regulations as well as the instructions in these operating instructions.

1.8.1 General

1. The warning and notice signs posted provide important information for risk-free operation. Please note these instructions for your own safety.
2. Make yourself familiar with all equipment, operating elements and their functions prior to commencing work. Ensure that all protective devices are properly attached.
3. The user´s clothing must fit closely. Do not wear baggy clothes. Wear sturdy shoes.
4. Keep the machine clean. Be aware of the risk of fire.
5. When using public thoroughfares, please observe the following:

   - the statutory road traffic regulations,
   - the permissible axle loads and total weights,
   - the permissible transport dimensions.
   - Never leave the operator´s platform while travelling.

6. The equipment must be in the condition prescribed for road transport and be locked according to the manufacturer´s instructions.
7. Check and secure transport equipment and the lighting, warning and protective equipment.
8. Operating devices (ropes, chains and linkage) of remote controlled equipment must be installed in such a way that they can not trigger unintentional movements in any transport and working position.
9. Couple equipment according to regulations, and attach and secure to the prescribed devices. Particular care should be taken when coupling and decoupling equipment to or from the tractor.

10. When attaching or detaching, bring the support devices into the position necessary. Be conscious of its stability.
11. Never run the engine in an enclosed area.
12. Check the surrounding area (children) before driving away and starting up. Ensure that you have adequate visibility.
13. Passengers may not be carried on the equipment while on a transport journey. No work may be carried out on the device while in operation.
14. Always adjust travelling speed to suit weather and terrain conditions. Avoid taking sudden curves on inclines and declines and transverse travel on an incline.
15. Attached equipment influences road performance as well as steering and braking. Ensure that you can steer and brake adequately.
16. When taking curves, bear in mind the overhang width and the centrifugal mass of the device.
17. Only operate the device if all protective equipment is in place and in protection position.
18. It is forbidden to remain in the working and danger area.
19. Do not remain in the rotating and swinging range of the device.
20. There are crushing and cutting areas at power-driven parts (e.g. hydraulic parts).
21. Secure equipment before leaving the tractor. Lower the attached implement fully. Switch off the engine and remove the ignition key.
22. No one may remain in the area between the tractor and device if the vehicle is not secured against rolling away by a wheel chock.
23. Note the permissible axle load and total weight as well as the permissible transport dimensions.

1.8.2 Attached devices

1. Secure the device so that it cannot roll away.
2. Take note of the maximum permissible support load of the drawbar coupling, the pending attachment or hitch.
3. Ensure that the drawbar trailer has sufficient mobility at the point of attachment.

1.8.3 Power take-off operation

Applies only to PTO driven equipment.

1. Use only universal drive shafts prescribed by the manufacturer.

   Ensure that the universal drive shaft is correctly mounted and secured.

   The protective tube and guard cone of the universal drive shaft must be properly attached and be in perfect condition.

   Protect guard cone of universal drive shaft from being turned by attaching the chain.

   Ensure that the prescribed pipe overlaps are in transport and working position for the universal drive shafts.

2. No one may enter the area of the turning universal drive shaft when working with the universal drive shaft.
3. When using universal drive shafts with an excess load or free-running couplings, overload or free-running couplings are to be attached to the equipment.
4. The universal drive shaft is only to be attached or detached when the PTO shaft and engine have been switched off and the ignition key has been removed.

   Place the uncoupled universal drive shaft on the appropriate mount or hang in the chain provided.

   After detaching the universal drive shaft, place the protective cover on the PTO shaft end.
5. The PTO guard must be properly attached and be in perfect condition.

   Before switching on the PTO shaft, ensure that the rpm selected and rotational direction of the tractor PTO shaft corresponds with the permissible rpm and rotational direction of the device.

   Before switching on the PTO shaft, ensure that no one is in the machine´s danger area.
6. Never switch the PTO shaft on while the machine is switched off.
7. Always switch off the PTO shaft if the angles of operation are too large or if you do not need it.
8. Only clean, lubricate or set the PTO driven equipment or universal drive shaft when the PTO shaft and engine are switched off and the ignition key has been removed.
9. Any damage is to be repaired before using the machine.

1.8.4 Hydraulic system

1. Warning: The hydraulic system is under high pressure.
2. Check the hydraulic hose pipes regularly and replace them when they are damaged or become old. The replacement hose pipes must correspond to the technical requirements of the equipment manufacturer.
3. Lower equipment and units before commencing work on the hydraulic system. First depressurize the system and then switch off the engine.
4. Use appropriate aids when searching for leaks. Be aware of the risk of injury.
5. The prescribed connection of hydraulic hoses is to observed when connecting hydraulic cylinders.

   When connecting the hydraulic hoses to the tractor hydraulic system, ensure that the hydraulic system is depressurized both at the tractor and at the equipment. Only connect up compatible hydraulic fittings!
6. Mark the coupling sleeves and plugs at hydraulic function connections between the tractor and equipment to avoid misconnections.

   If the connections are mixed up, the functions of the components are reversed (e.g. raising, lowering). Be aware of the risk of accidents.
7. Liquids escaping under high pressure (hydraulic oil) can penetrate the skin and cause serious injury. In the case of injury, medical advice is to be sought immediately. Risk of infection.

1.8.5 Tyres and brakes

1. When carrying out work on the tyres, ensure that the machine is safely parked and secured against rolling away. Use the wheel chocks.
2. The mounting of tyres and wheels calls for a sufficient level of knowledge and mounting tools conforming to specifications.
3. Repair work on and the mounting of tyres and wheels may only be carried out by skilled persons using tools suited to the purpose.
4. Check air pressure regularly. Adhere to prescribed air pressure.
5. The wheel nuts are to be tightened after the first 10 operating hours. The torque moment is 325 Nm (M18 x 1.5).
6. Check that the brakes are in proper working order before each journey.
7. The brake system is to be checked on a regular basis.
8. Adjustment and repair work on the brake system may only be carried out by a specialist workshop or a recognised brake service.

1.9 Safety when not in use and in storage

1. Store the device in a safe place.
2. Never allow children to play on or around the device.
3. Never couple or decouple the device on anything but firm, dry and level ground. This reduces the risk of overturning or sinking into soft ground or mud.
4. Lay down the decoupled universal drive shaft on the mount provided.

1.10 Maintenance

Direction signs ('to the right', 'to the left', 'to the front', 'to the back') apply to the direction of travel.

The direction of rotation is defined as follows:

- direction of rotation right = clockwise,
- direction of rotation left = anti-clockwise,
- rotation about a perpendicular axis, viewed from top to bottom,
- rotation about a horizontal axis, at right angles to the direction of travel, viewed from left to right,
- rotation of bolts, nuts and similar, always viewed from the operating side.

1. Repair, maintenance and cleaning work and the elimination of malfunctions may only ever be carried out when the drive mechanism is switched off and the engine is at a standstill. Remove ignition key.
2. Check nuts and bolts regularly to ensure that they are tight and re-tighten if necessary. Keep to the torques given. (See Appendix A.1 for torques for bolt connections).
3. When carrying out maintenance work on the raised device/unit, always secure with suitable supports.
4. When interchanging work tools, use suitable tools and wear gloves.
5. Dispose of oils, grease and filters properly.
6. Always disconnect the current supply before carrying out work on the electrical system.
7. If protective equipment is subject to wear and tear, it is to be checked regularly and replaced in good time.
8. Disconnect cable to generator and battery when carrying out electrical welding work on the tractor and attached devices.

1.11 Safety instructions for round balers

1. This documentation and the *UVV* [Decree concerning Accident Prevention] 1.1 § 1 of the *Landwirtschaftliche Berufsgenossenschaft* [Agricultural Professional Association] contains general safety instructions.
2. The round baler is to be attached to the tractor before start-up. (Risk of overturning when the tailgate is opened).
3. Never operate the round baler without a protective device.
4. Protect guard tube of universal drive shaft and protecting pot from being turned. Fit the safety chain!
5. Wait for all moving parts to come to a standstill before carrying out any work on the press.
6. Blockages are only to be removed and malfunctions are only to be eliminated when the PTO shaft is switched off and the engine is at a standstill. Remove the ignition key. There is a risk of getting caught in moving parts.
7. Never try to introduce the crop by machine or to remove blockages as long as the press is in operation.
8. Only insert binding material (twine and netting) when the tractor engine is switched off and the ignition key has been removed. There is a risk of getting caught in moving parts.
9. Only thread twine and netting and eliminate malfunctions when the tractor engine is switched off and the ignition key has been removed.
10. When moving the support device, beware of crushing and cutting areas.
11. No one may be in front of the pick-up while the press is running. There is a risk of getting caught in moving parts.
12. No one may be behind the machine while bales are being ejected.
13. While in operation, keep at a sufficient safety distance from the feed elements such as the pick-up, intake auger etc.: due to their function, the feed elements cannot be fully covered.

14. Only eliminate malfunctions of feed elements such as the pick-up, intake auger, conveying roller etc. when the tractor engine has been switched off and the ignition key has been removed.
15. The permissible speed limit is to observed when transporting on roads.
16. Repairs to prestressed energy accumulators (springs etc.) call for sufficient knowledge and mounting tools that conform to specifications and may only be carried out in specialist workshops. Hydraulic accumulators may not be repaired!
17. To avoid the risk of fire, it is recommended to carry a 12 kg fire extinguisher.
18. When working on hilly terrain, lay round bales face down on the slope incline so that they can not roll away.
19. Do not try to stop a round bale rolling down a slope. Be aware of the risk of injury.
20. Take particular care when opening and closing the tailgate. Persons may not enter the swinging range of the gate.
21. Before entering the bale chamber, the tailgate supports must be brought into safety position and the shut-off tap in the hydraulic supply tube must be shut.
22. Whenever work is being carried out on or around the beating arm/net wrapping, the cutting device must not be live.

2 Technical data

2.1 General

Type	6811 Ø 1,20m	6820 Ø 1,50m	6811/OC Ø 1,20m	6820/OC Ø 1,50m	6824/OC Ø 1,20m, PU 2,10m	6826/OC Ø 1,50m, PU 2,10m	6829 Ø 1,20m
Dimensions, weight, power requirement							
Length	3,22 m	3,54 m	3,62 m	3,94 m	3,62 m	3,94 m	3,22 m
Width	2,27 m	2,27 m	2,27 m	2,27 m	2,49 m	2,49 m	2,27 m
Height	1,95 m	2,25 m	1,95 m	2,25 m	1,95 m	2,25 m	1,95 m
Weight	1680 kg	1930 kg	2050 kg	2292 kg	2193 kg	2534 kg	1680 kg
Power requirement kW/PS	37/50	44/60	44/60	52/70	44/60	52/70	37/50
Controls and lighting							
Pilotbox T, single acting control unit	●	●	●	●	●	●	-
Lighting according to regulations	●	●	●	●	●	●	●
Baling chamber and drive mechanism							
Bale diameter	1,2 m	1,5 m	1,2 m	1,5 m	1,2 m	1,5 m	1,2 m
No. of rollers with ribbed profile	17	22	17	22	17	22	17
Automatic chain lubrication	●	●	●	●	●	●	○
Bale ejector ramp	○		○	○	○	○	○
Wide angle p.t.o. (single sided)	●	●					●
Wide angle p.t.o. with freewheel	○	○	-	-	-	-	○
Wide angle p.t.o. with cam-type cut-out clutch	-	-	●	●	●	●	-
P.t.o. speed 540 rpm	●	●	●	●	●	●	●
Set of spare parts for reduced pick-up and baling roller speed	○	○	○	○	○	○	●
Hydraulically-operated pick-up							
Intake width	1,5 m	1,5 m	1,5 m	1,5 m	2,1 m	2,1 m	1,5 m
No. of tine rows	4	4	4	4	5	5	4
Metal gauge wheels	●	-	-	-	-	-	○
Pneumatic-tyred gauge wheels	○	●	●	●	●	●	○
Baffle plate	●	●	●	●	●	●	○
Gathering wheels (increases pick-up width to 1.80 m)	○	○	○	○	-	-	-
● = standard / ○ = optional / - = not available							

Type	6811 Ø 1,20m	6820 Ø 1,50m	6811/OC Ø 1,20m	6820/OC Ø 1,50m	6824/OC Ø 1,20m, PU 2,10m	6826/OC Ø 1,50m, PU 2,10m	6829 Ø 1,20m
Hydraulically-operated OptiCut system							
Rotary conveyor	-	-	●	●	●	●	-
Theoret. cutting length (mm)	-	-	70	70	70	70	-
14 knife cutting mechanism	-	-	●	●	○	○	-
Binding unit							
Twin-Fix twine binding	●	●	●	●	●	●	●
Net wrapping	○	○	○	○	○	○	-
Twin-Fix twine binding + Net wrapping	○	○	○	○	○	○	-
Tyres							
10,0/75-15,3 Imp. 8 PR							●
11,5/80-15,3 Imp. 8 PR							○
11,5/80-15,3 Imp. 10 PR	●	●	●	●	-	-	○
15,0/55-17 Imp. 10 PR	○	○	○	○	●	●	○
● = standard / ○ = optional / - = not available							

2.2 Noise metering

The sound pressure level emmision has been measured in accordance with the EN 31 201 and EN 31 204.

A-method effective perceived sound pressure level

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

Acoustic capacity level and acoustic capacity

	Tractor	Tractor and baler
Acoustic capacity level	106,1 dB(A)	115,2 dB(A)
Acoustic capacity	40,3 mW	371 mW

3 General description

3.1 Round Baler operation

The Round Baler is operated and controlled from the tractor cabin via the pilotbox T (1) (only models 6811 / 6820 / 6824 / 6826).

The pilotbox T performs the following functions:

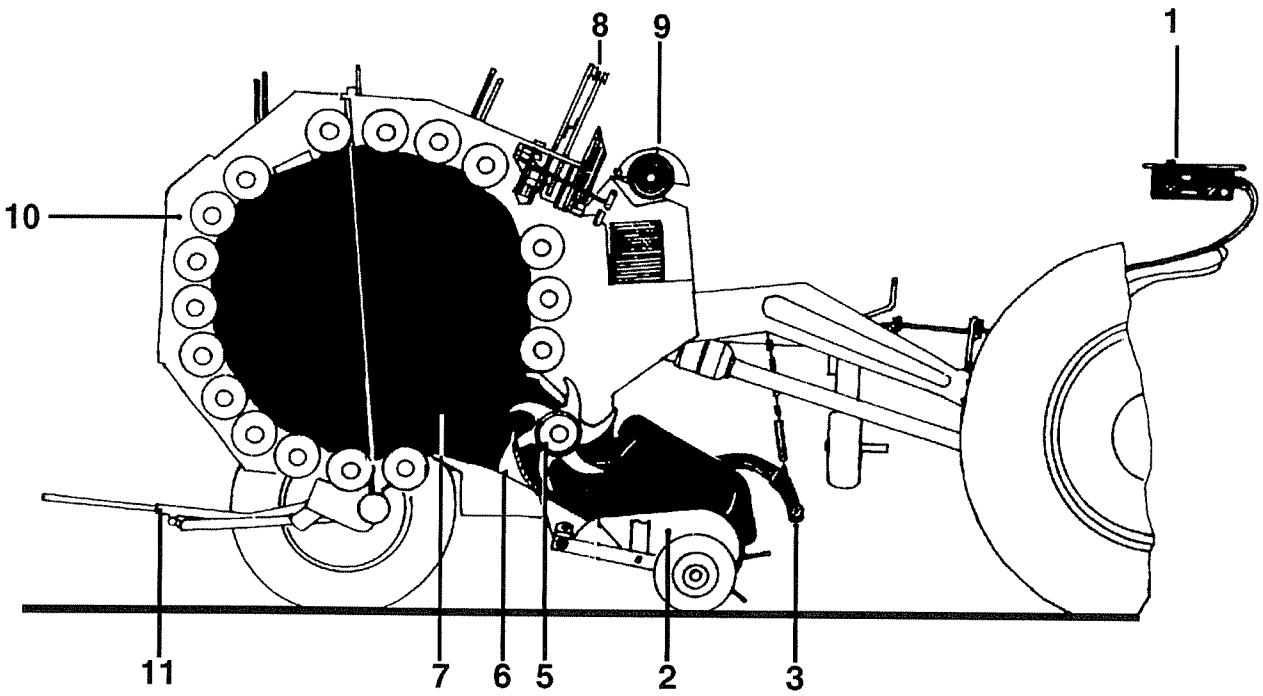
- lifts and lowers the pick-up
- switches the Opticut on and off (only models with Opticut)
- opens and closes the tail gate

Warning lights and acoustic signals indicate:

- bale density has been reached
- twine binding is operating
- net binding is operating

The Round Baler forms silage, hay and straw into highly compressed round bales. The crop to be baled is taken up by the pick-up (2). A baffle plate (3) located above the pick-up ensures accurate intake. The pick-up transports the crop to a rotary conveyor (5) composed of offset douple tines. The 14 knife cutting mechanism (6) reduces the crop to batches 7 cm long before it enters the baling chamber (7). Each knife can deflect individually if a foreign object is encountered, and swing back automatically to cutting position. In the baling chamber the crop is rolled up into tight bales which retain their shape.

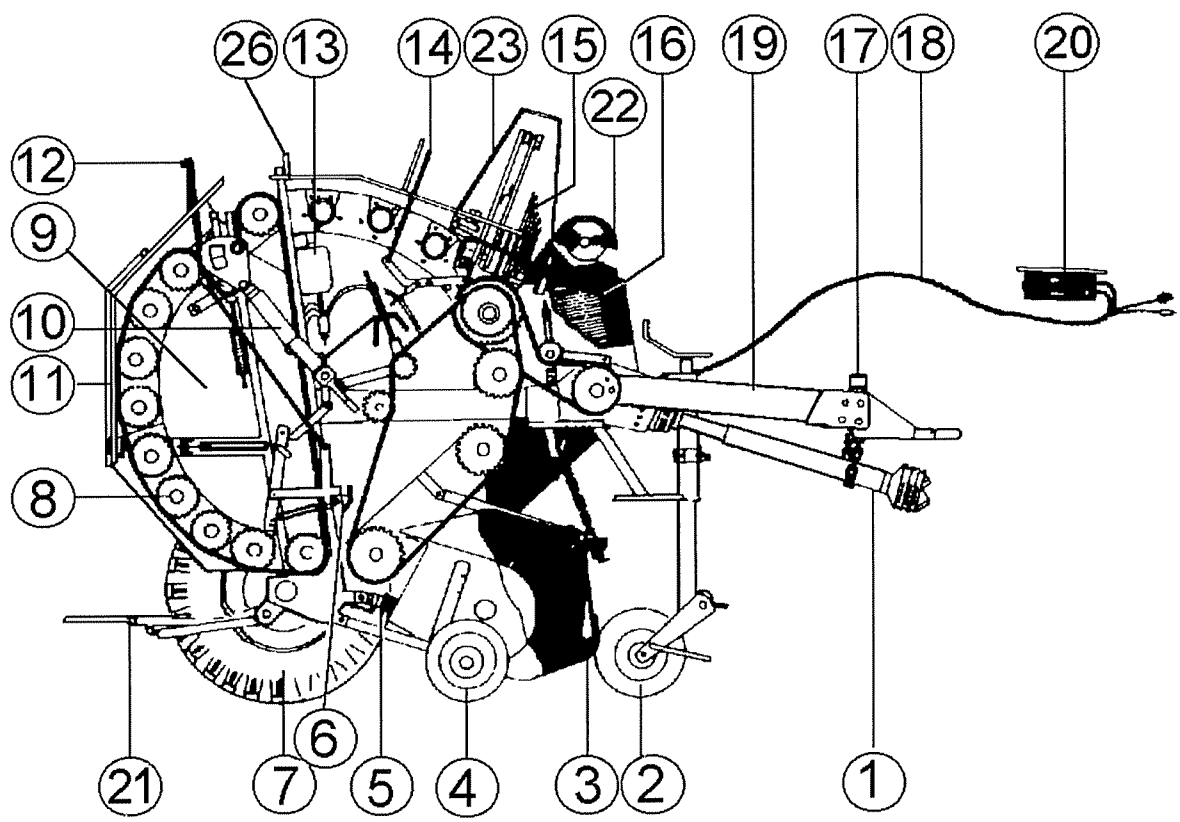
Bale density can be pre-selected to match the crop to be baled. The driver receives a signal when the preset bale density is reached. The twine binding mechanism (8) starts automatically- the driver has only to stop the tractor. The bale can be wrapped with either twine or net (optional) or simultaneously with both systems. The net wrapping mechanism (9) functions via the pilotbox. If the bales are to be wrapped with net, the implement must be switched over accordingly. When the binding process is completed, the driver opens the tail gate (10) hydraulically and the bale rolls over the bale ejector ramp (11) (optional) onto the field. The tail gate closes, and the next baling process can begin.



3.2 Main componets of the Round Baler

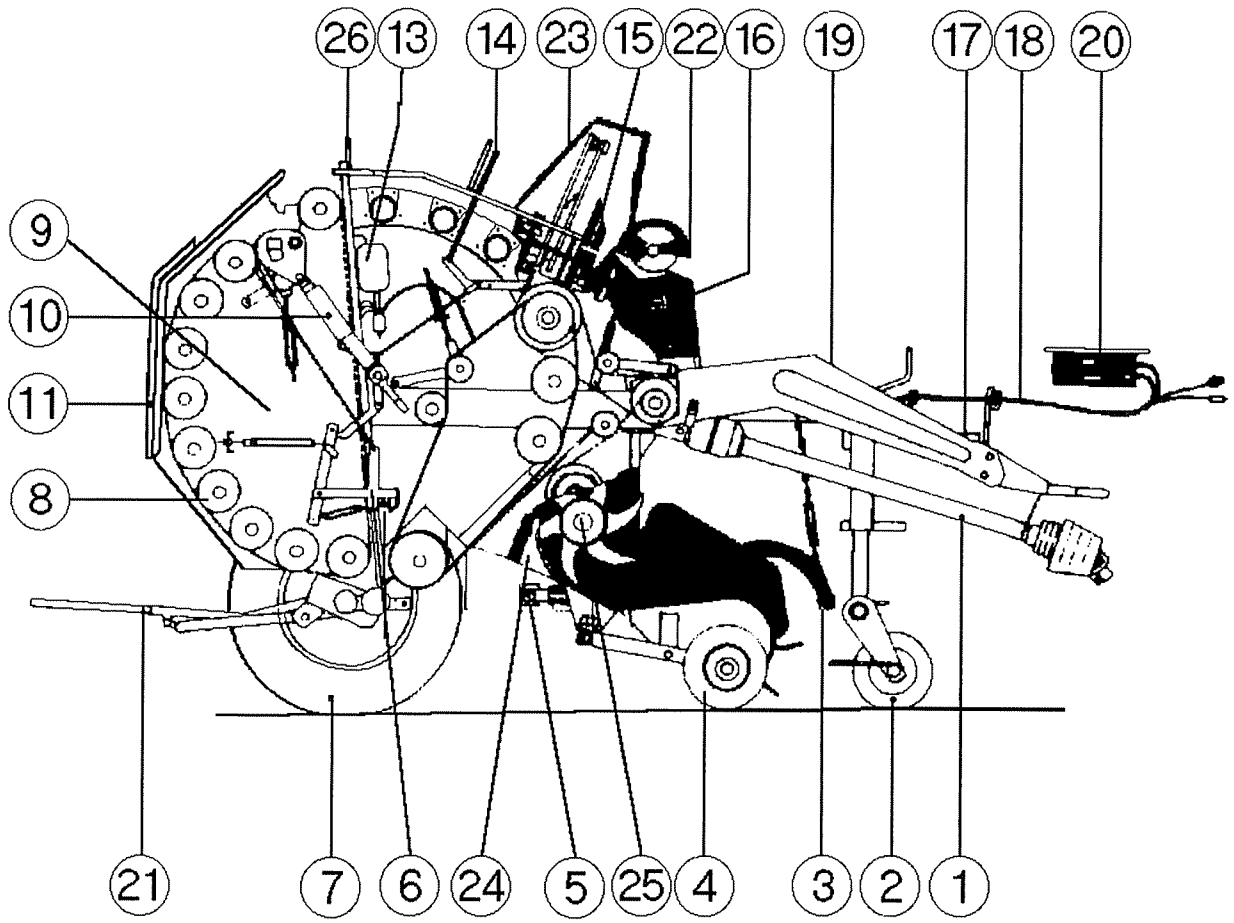
Models 6811 / 6820 / 6829 without Opticut

1. Wide angle p.t.o., single-sided
2. Jockey wheel
3. Baffle plate with tines
4. Gauge wheel for the pick-up (not available in model 6829)
5. Hydraulic cylinder with weight compensating springs for the pick-up
6. Tail gate lock
7. Tyred wheel
8. Baling rollers
9. Tail gate
10. Hydraulic cylinder for tail gate
11. Hinged cladding to access rollers for cleaning
12. Control bar for tail gate lock (only 6829)
13. Oil tank for central lubrication system
14. Fill level indicator
15. Binding mechanism with variable twine wheel
16. Twine box
17. Support for pilotbox T when implement is deposited (not all models)
18. Operation lines
19. Height adjusting drawbar
20. Pilotbox T (not available in model 6829)
21. Bale ejector ramp (optional)
22. Net wrapping mechanism
23. Protective yoke
26. Lift eyes



Models 6811 / 6820 / 6824 / 6826
with wide pick-up and/or Opticut

1. Wide angle p.t.o. (single-sided)
2. Jockey wheel
3. Baffle plate with tines
4. Gauge wheel for pick-up
5. Hydraulic cylinder with weight compensating springs for the pick-up
6. Tail gate lock
7. Tyred wheel
8. Baling rollers
9. Tail gate
10. Hydraulic cylinder for tail gate
11. Hinged cladding to access rollers for cleaning
13. Oil tank for central lubrication system
14. Fill level indicator
15. Binding mechanism with variable twine wheel
16. Twine box
17. Support for pilotbox T when implement is deposited
18. Operation lines
19. Height adjusting drawbar
20. Pilotbox T
21. Bale ejector ramp (optional)
22. Net wrapping mechanism
23. Protective yoke
24. Opticut cutting mechanism (only Opticut implements)
25. Rotary conveyor (only Opticut implements)
26. Lift eyes



4 Installation and adjustments

4.1 Required tractor equipment

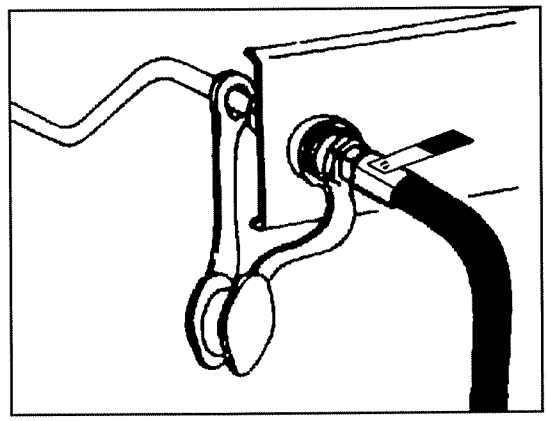
The Round Baler may only be operated at a p.t.o. speed of 540 rpm.

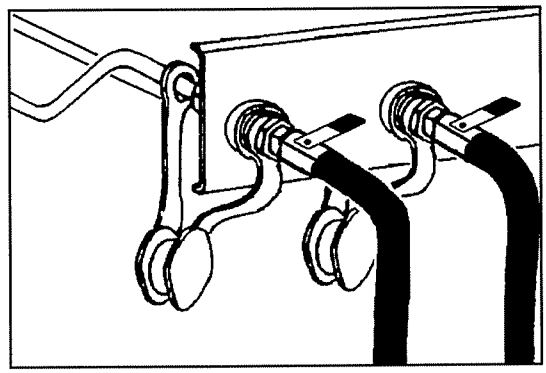
The p.t.o. should be independent of the clutch.

The tractor must be equiped with a control unit and a hydraulic spool valve (remote control connection) to operate of the baler.

Models 6829 require a tractor equipped with two control units and two hydraulic spool valves (remote control connections) or a hydraulic distributor (optional equipment).

A single-acting valve must be available for the signal system.

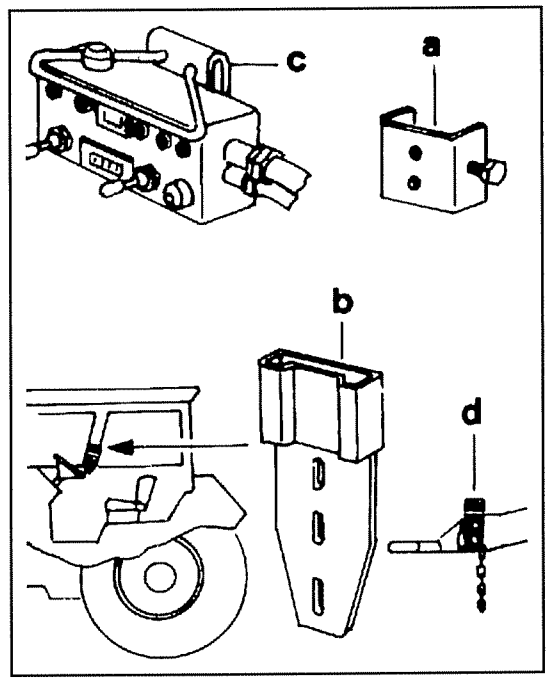




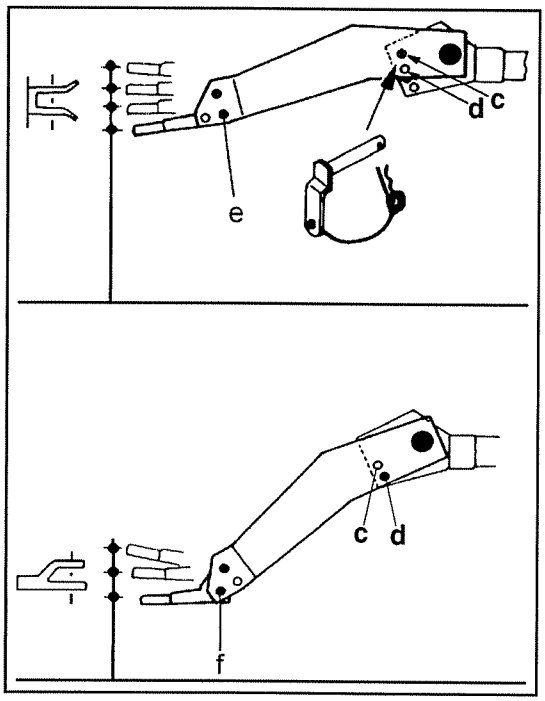
4.2 Installing the pilotbox T

Attach the clamp (a) to the safety frame (central supporting beam) of the tractor cab.

Screw the bracket (b) to the clamp. Transfer the pilotbox (c) from its stowage on the drawbar (d) to the bracket in the tractor cab.



Note:
Protect the pilotbox from moisture!



4.3 Adjusting the drawbar

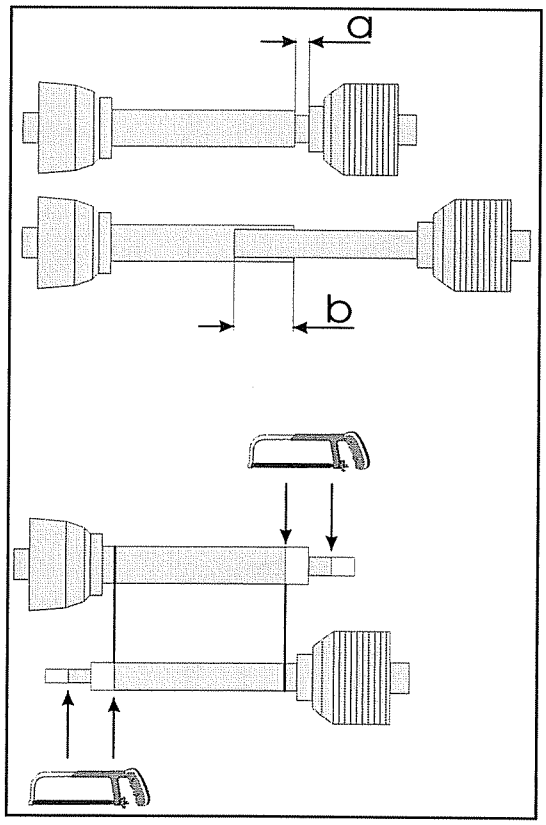
The baler should be coupled to the tractor so that it is approximately horizontal.

To accomplish this, the drawbar can be placed in:

- 4 different top hitch positions and
- 3 different bottom hitch positions

1. Position the baler with the jockey wheel so that the lower edge of the guard panel is horizontal.
2. Lift the drawbar to the height of the towing jaw and attach with bolts (c) or (d) on the left and right side.
3. Secure the bolts with spring clips.

To switch over from a top to a bottom hitch, the towing eye must be moved from drill hole (e) to drill hole (f).



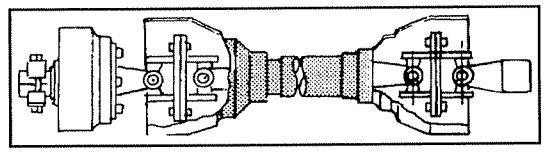
4.4 Adjusting the drive shaft

It may be necessary to adjust the length of the drive shaft, since the length of the p.t.o. varies according to tractor.

Determine the exact length as follows:

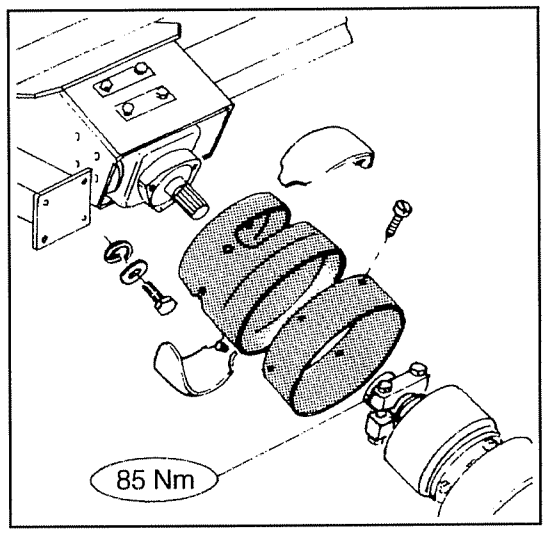
- Hitch the Round Baler to the tractor.
- Pull the drive shaft apart and hold the two sections next to another.
- Check to see that when turning and travelling straight ahead:
  - there is a minimum overlap (b) of 200 mm,
  - the drive shaft end has a minimum clearance (a) of 20 mm and
  - there is sufficient clearance for the drive shaft when a bottom hitch is used.
- If it is necessary to shorten the shaft, cut both sliding and guard tubes off equally.
- Smooth the ends of the tubes, remove any swarf and lubricate the friction faces.

4.5 Wide angle p.t.o. with cam-type cut-out clutch for balers with opticut



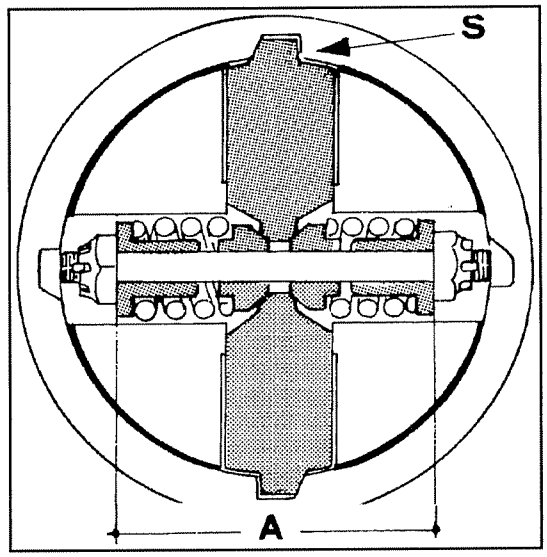
The cam-type cut-out clutch is an overload protection which switches the torque to „0" in the case of an overload. To switch on the clutch again, disengage the p.t.o. at a low speed.

This speed must be below 200 rpm.



The drive shaft guard has openings which simplify the coupling of the p.t.o. to the drive shaft. The tightening torque of the screws is 85 Nm. Close openings with both covers after coupling is completed.

The clutch may only be disassembled using locking cams (S). To ensure proper functioning after clutch components are replaced, make sure that the spring bolt measurement (A) remains unchanged and protruding threads are the same on both sides.



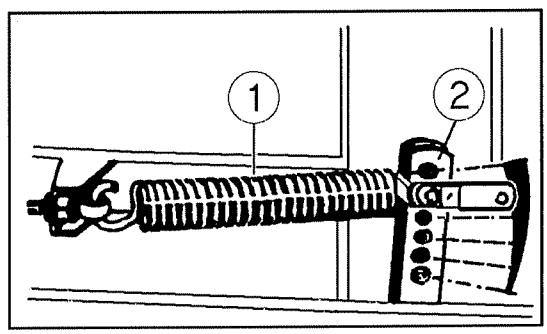
The permissible clutch torque of 1700 Nm may not be surpassed. This set torque value protects your implement against overload and may not be changed.

4.6 Adjusting bale pressure

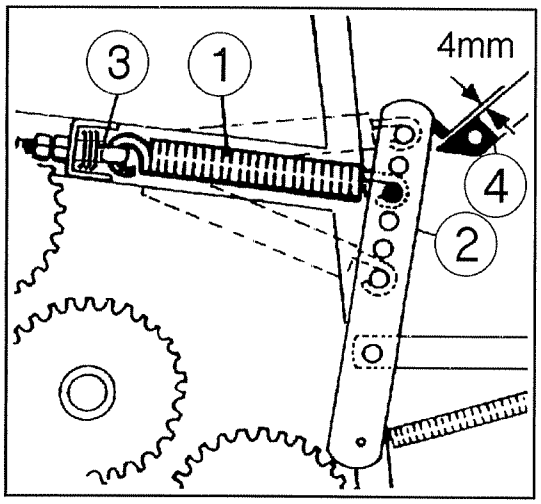
The density of bales is depends on crop, driving speed and baling pressure. The pressure may be adjusted in steps using a lever (2).

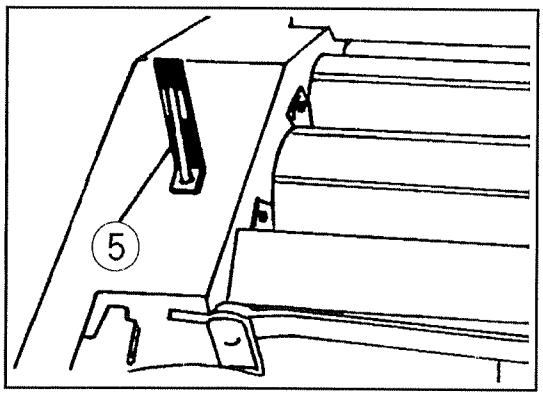
Hook tension spring (1):

- in a higher hole to increase pressure
- in a lower hole to decrease pressure



Attention!
Adjust baling pressure equally on both right and left sides. Baling pressure may only be adjusted when the baling chamber is empty!



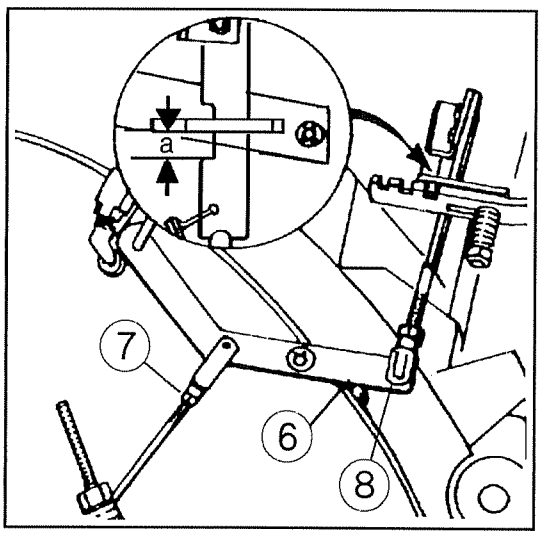


Adjusting baling presssure and actuating the binding mechanism:

The baling pressure can be adjusted by moving the right and left tension springs (1). Adjust the length of the tension springs by rotating the eyebolts (3) so the lever (2) can be moved from the top to the bottom position without using tools when the tail gate is closed.

Both sides must have the same position and the lock nuts of the eyebolts must be re-tightened.

The fill level indicator (5) visible from the tractor cab shows the driver the contents of the baling chamber according to the pressure range selected.



Basic position:

The linkage for the baling pressure indicator and binding mechanism actuation is correctly set when:

- the upper lever (6) is against the stop,
- the distance between the lower lever (4) and the adjusting lever (2) is 4 mm and
- the clearance (a) is 12 mm.

The 4 mm clearance adjustment is carried out using clevis (7) whereas the clearance (a) is carried out using clevis (8).

Adjusting for special crops:

If special crops are baled and the bale density required to actuate the binding mechanism is different than the set 4 mm, the clearance may be adjusted from 1 mm to a maximum of 7 mm. After baling is completed, the clearance should be reset to 4 mm. This will minimize wear of the p.t.o. clutch and having to frequently replace shear pins and will ensure desired firm bales as well.

4.7 Adjusting the pick-up

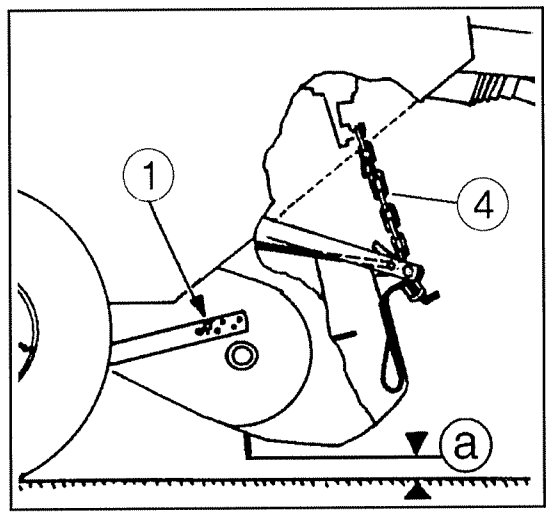
4.7.1 Adjusting pick-up height (model 6829)

The tractor control unit allows you to adjust the pick-up height according to terrain from the tractor cab.

To keep the crop clean, the tine tips should not touch the ground. The best tine position is when the tines are 2 to 3 cm (a) from the ground.

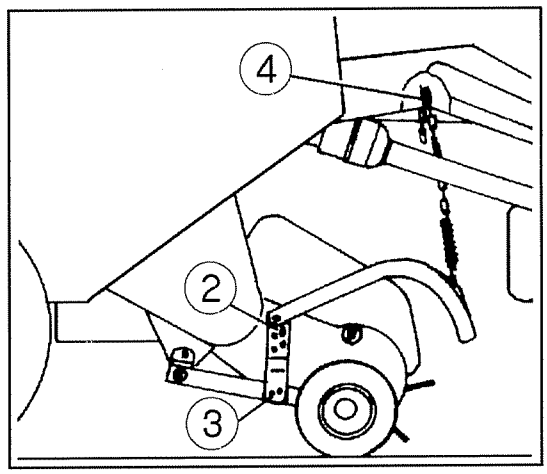
The pick-up height adjustment is carried out at the lever (1).

The pick-up with gauge wheel is built optionally.



4.7.2 Adjusting gauge wheels for pick-up (models 6811 / 6820 / 6824 / 6826)

The six different holes of the gauge wheel control arms (2) allow the ground clearance of the tines to be varied. The tine tips should not touch the ground. Two drill holes (3) allow this clearance to be further halved.



4.7.3 Adjusting the pick-up weight compensation

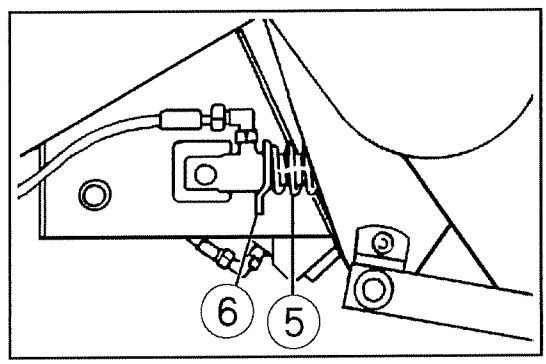
The pick-up weight can be compensated to a greater or lesser extent using relief springs (5) which both hydraulic cylinders act on. This is accomplished by selecting any one of three slots provided for the shackle (6). The normal position is the middle slot.

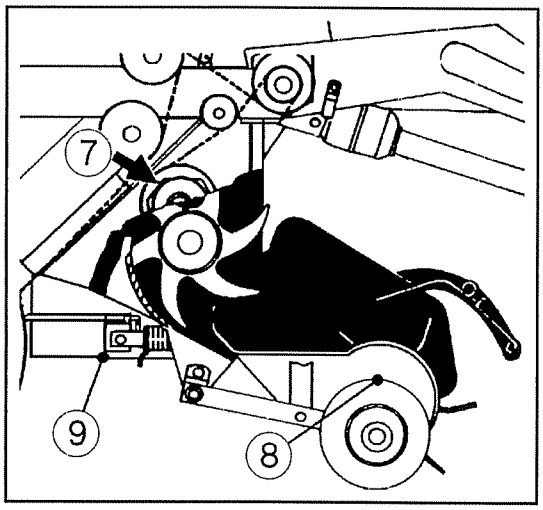
Raise the pick-up to re-locate the shackle.

When the pick-up jumps on uneven terrain, reduce the tension.

When equipped with gauge wheels (optional equipment):

- on soft soils to increase tension
- on hard soils to reduce tension





4.7.4 Shear pin for the pick-up drum

The pick-up drum is protected against overload with a shear pin M8 x 35 8.8 DIN 933 on the right-hand side.

- For balers with wide pick-up - Pos. 7
- For balers with Opticut - Pos. 8
- or balers without Opticut - Pos. 9

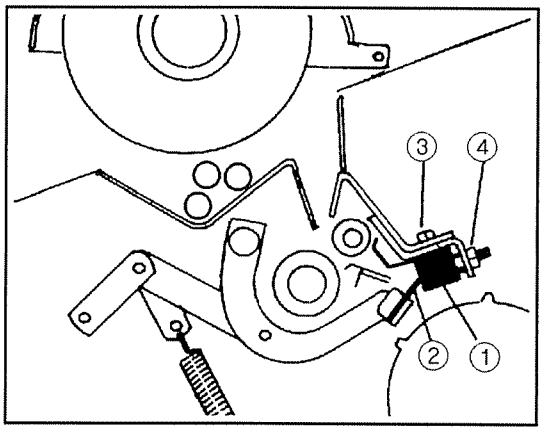
To replace the pin unscrew the guard. Only use screws of the same quality.

4.7.5 Adjusting the baffle plate

The baffle plate can be attached at different heights with a chain (4) (optional equipment model 6829).

This allows the baffle plate to be set to match the crop density.

4.8 Adjusting the cutterbar and anvil to a parallel position



If the cutting of the netting at the end of the wrapping process is incomplete, check to see that the cutterbar (2) and anvil (1) are parallel to one another and adjust them if necessary.

- To adjust, loosen the fixing bolts (3) of the anvil which affect the clearance between anvil and cutter bar.
- Position the anvil parallel to the cutterbar (2) using the adjusting screws (4).
- Lock the adjusting screws with hexagon nuts.
- Re-tighten the fixing bolts (3).

The cutterbar can be turned two times. The cutting surface must be kept free of paint residue.

Danger!
Never reach into the cutterbar area as there is danger of injury. Whenever work is to be done in the cutterbar area, the cutter mechanism must be locked. It is recommended you check to see that the quadrant (5) does not rest on the knurled shaft (6).

Attention!
Required voltage = 12 V.

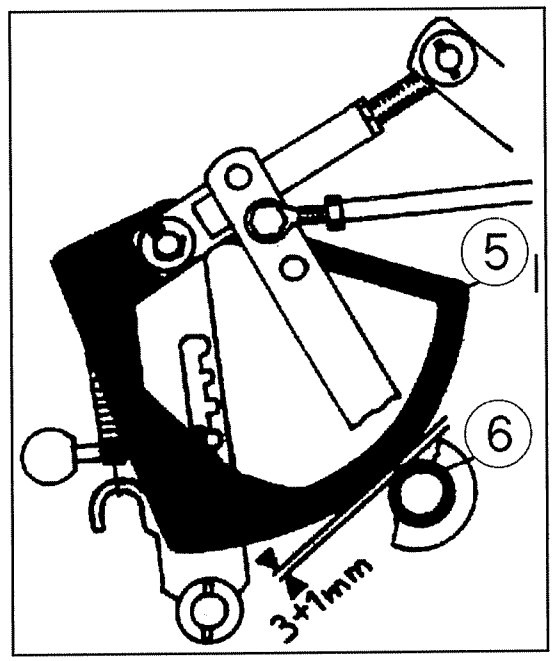
4.9 Adjusting the lifting spindle

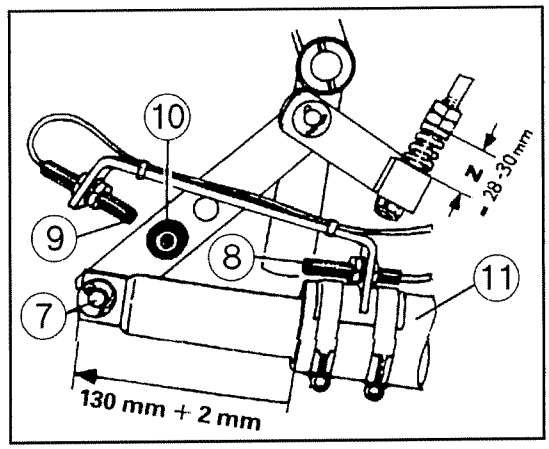
The lifting spindle (7) is controlled by solenoid (10) and two limit switches (8) and (9) which control the spindle stroke. The spindle must not be moved all the way to the limit stops.

Screw both limit switches in place and adjust as follows:

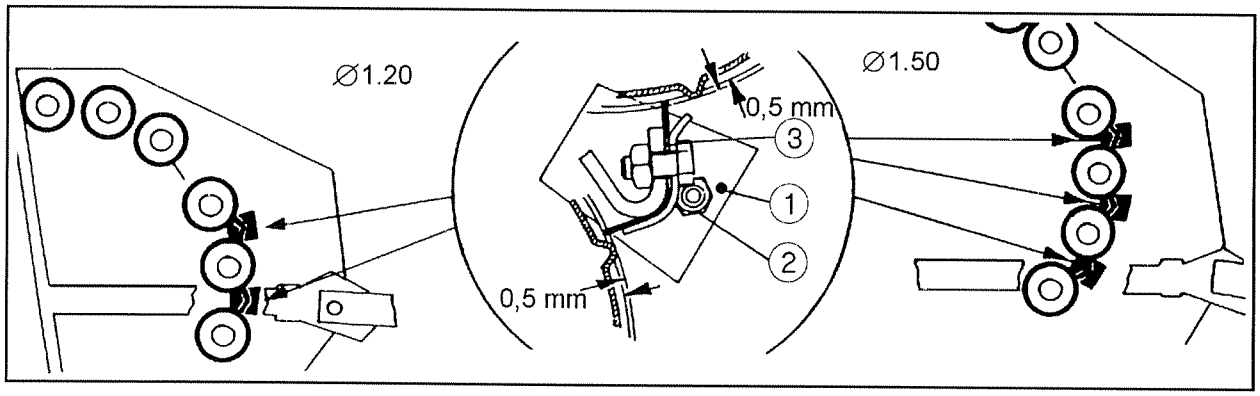
- Switch (8) controls the reaction stroke of the piston rod. Adjust the switches so that there is a 3 + 1 mm clearance between the segment (5) and the knurled shaft (6). Detach the connector plug of the spindle motor when the segement and kurled shaft are in this position. This power break allows you to check the clearance.
- Switch (9) controls the extension stroke of the piston rod. It must be adjusted in such a way that the piston rod runs out 130 + 2 mm .
- Check the compression (Z) of the spring and correct if necessary. When not tensioned, its length should be 28 - 30 mm.
- The switch cuts out the motor (11) in the case of overload or insufficient voltage.

If such is the case, detach the plug to break the power supply and allow the thermostatic switch to cool down. Trace the source of the fault (defective or incorrectly adjusted limit switches, missing solenoid or corroded plug connector between tractor and implement). After the fault is eliminated and the thermostatic switch has cooled down, the system can be switched on again.





4.10 Adjusting strippers

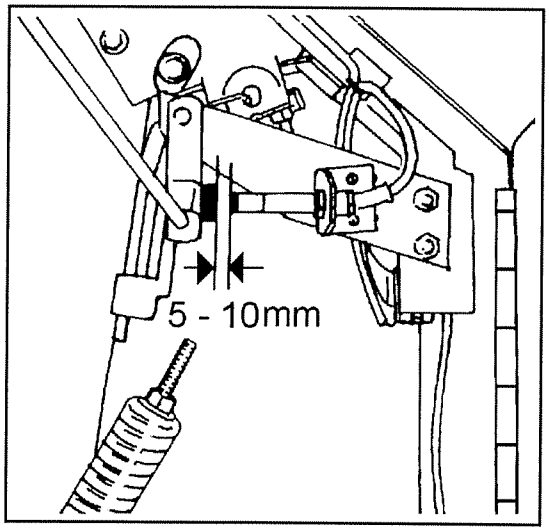


To prevent twine form emerging from the baling chamber, full-length plastic strippers are fitted in such a way that they lightly touch the rotating rollers (projecting into the roller path by max. 0,5 mm).

- There are two strippers (1) for balers with a 1.20 bale diameter.
- There are three strippers (1) for balers with a 1.50 bale diameter.

The stripper can be adjusted by loosening the bolts (2). Re-tighten the bolts and nuts after carrying out adjustment. For a better fit of plastic strippers, and to prevent deformation when tightening the screws, adjusting shims (3) have been inserted between the support and clamping strip.

4.11 Adjusting the solenoid switches

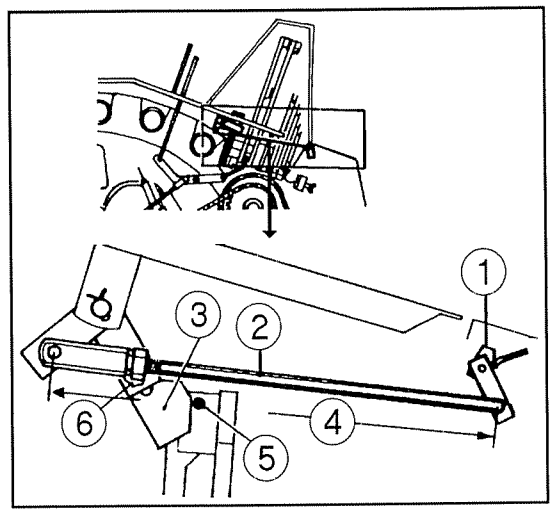


Check to see that there is a 5 to 10 mm clearance between the solenoid switches and the solenoid. Adjust using the cable connections (screw in or out as required).

The solenoid switches can be adjusted using the slotted holes of their supports.

Note:
The solenoid switch must face the center of the solenoid.

4.12 Adjusting the twine brake

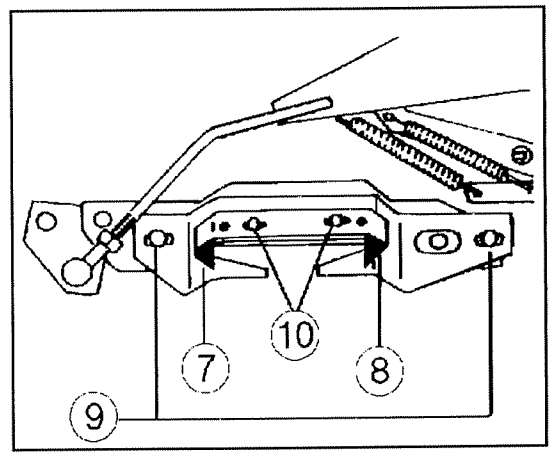


When the required bale density is achieved, the pressure actuates the binding mechanism and the brake is released by the cam (1) so that the twine can be drawn in freely by the rotating bale. Insufficient or delayed opening of the twine brake can lead to faulty binding. If necessary, adjust the pushrod (2) or the lever (3):

- The pushrod length (4) should be:
  - 514 mm for balers with a 1.20 m bale diameter
  - 628 mm for balers with a 1.50 m bale diameter.
- The lever (3) should be adjusted so that after the binding is released, the pin (5) is in the position shown in the diagram.

The lever (6) can be adjusted after loosening the nut (6). Re-tighten after adjustment.

4.12.1 Adjusting the twine knives



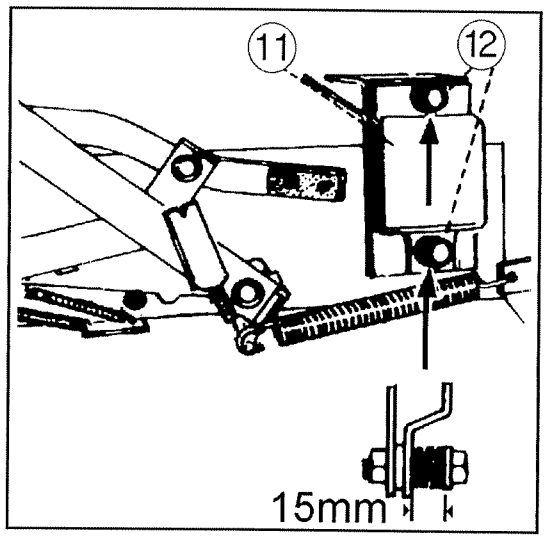
The knives are adjusted for trouble-free operation at the the factory.

If re-adjustment has to be made, e.g. after repairing the implement, proceeded as follows:

After the binding process, the twine at the right knife (7) must be cut first, and then at the left knife (8). However, the time difference should be as short as possible.

Adjustment is carried out using the fixing bolt (9).

Blunt twine knives can either be rotated to the next position or replaced by loosening the clamp (10).

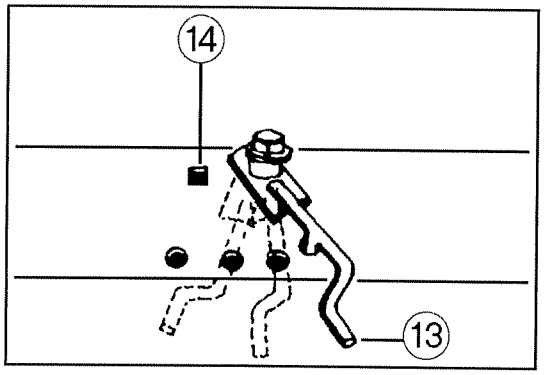


4.12.2 Adjusting the swing arm brake

The swing arm brake (11) ensures a continous binding process and uniformly distributed twine windings around the bale.

If there are irregular jerking movements of the swing arm - particularly in the outer area, re-adjust the swing arm brake using screws (12).

The standard setting of the spring length is 15 mm.



4.12.3 Adjusting the twine on the bale edge

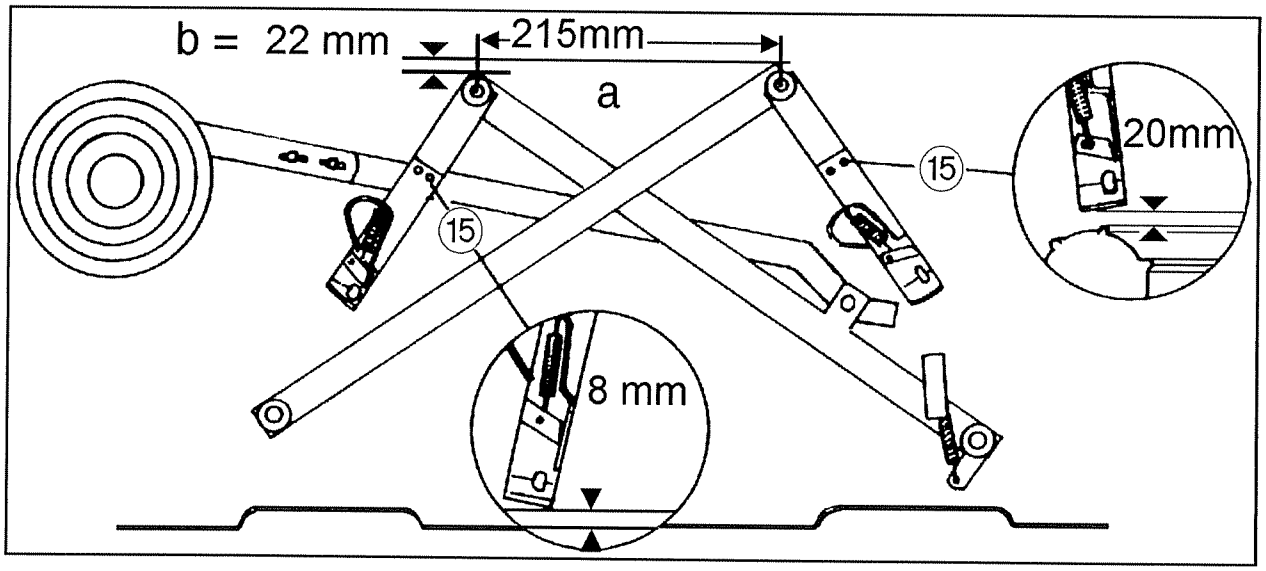
Twine guiding on the outer edge of bales is adjusted using guide arms (13). To make this adjustment, lift the guide arms by hand, unlock them and push them inwards or outwards, then re-lock.

Each guide arm can be locked in three positions.

In extreme crops the distance from the end of bales may be reduced by re-locating guides (13) to position (14).

4.12.4 Adjusting the twine shuttle

After the binding mechanism is releasd, the left-hand twine shuttle should should be 8 mm from the cross carrier and the right-hand shuttle 20 mm from the baling rollers.



Note:
It is important that the swing arm and shuttle are in the lowest postion.

Adjustments are carried out using the screws (15).

4.13 Adjusting the swing arms

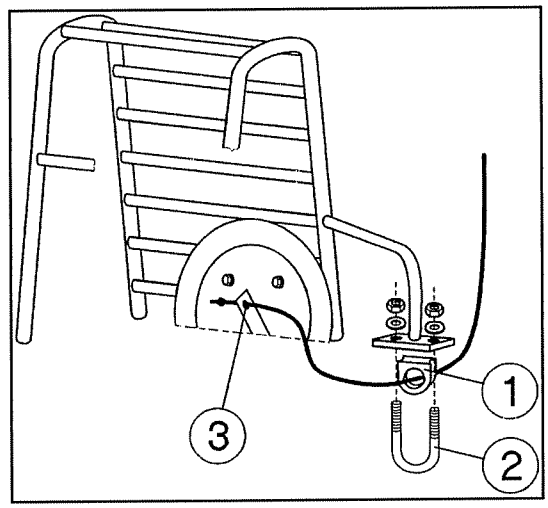
Before threading the twine, make sure that the swing arms are in the position as shown (a) = 215 mm. The distance of (b) should be 22 mm.

Adjustments are made by lengthening or short- ening the connecting rod using the screws (15).

4.14 Installing the pull rope

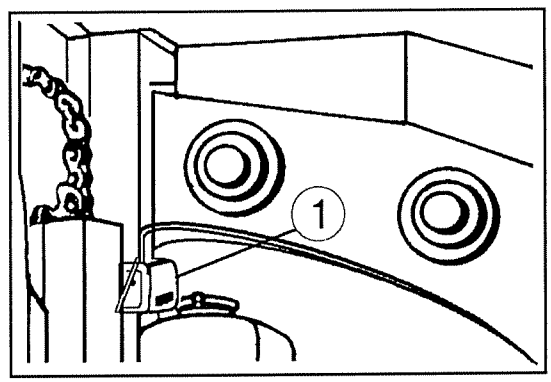
The baler is fitted with a pull rope in order to simplify the actuation of the binding mechanism from the tractor cab.

To install the pull rope, secure the eye (1) to the protective device using the U-shaped screws (2) and the nuts. Then lead the rope through the eye and then through the drill hole on the actuation lever (3). Tie a knot at the end of the rope so it doesn't slip out of the drill hole. After this is done, place the rope in the tractor cab.



4.15 Adjusting the bale counter

To count the number of round bales, set the bale counter on the pilotbox (or in models 6829 with switch 1) to „0" before beginning to bale.



5 Operation

Danger!
The implement should be at a standstill whenever maintenance, repairs or adjustments are carried out. Stop the engine and remove the ignition key!

5.1 Controls and operating instructions

5.1.1 Pilotbox T

Only models 6811, 6820, 6824, 6826 have a pilotbox. The following instructions are only valid for these models.

Attach the pilotbox to the bracket in the tractor cab provided for this purpose.

Attention!
Protect the pilotbox from moisture! The power requirement is 12 Volts.

The hydraulically operated functions „pick up", „tail gate", and „Opticut" are selected with toggle switches. Only one function may be selected at one time.

The selected function can then be actuated with the single-acting control unit of the tractor.

Control and operating elements:

1 Tail gate / Neutral / Pick-up

2 Opticut / Neutral

3 Push button - net wrapping mechanism on

4 Push button - reset daily bale counter

5 Indicator light - power supply

6 Indicator light - tail gate open

7 Indicator light - bale ejector down

8 Indicator light - Opticut

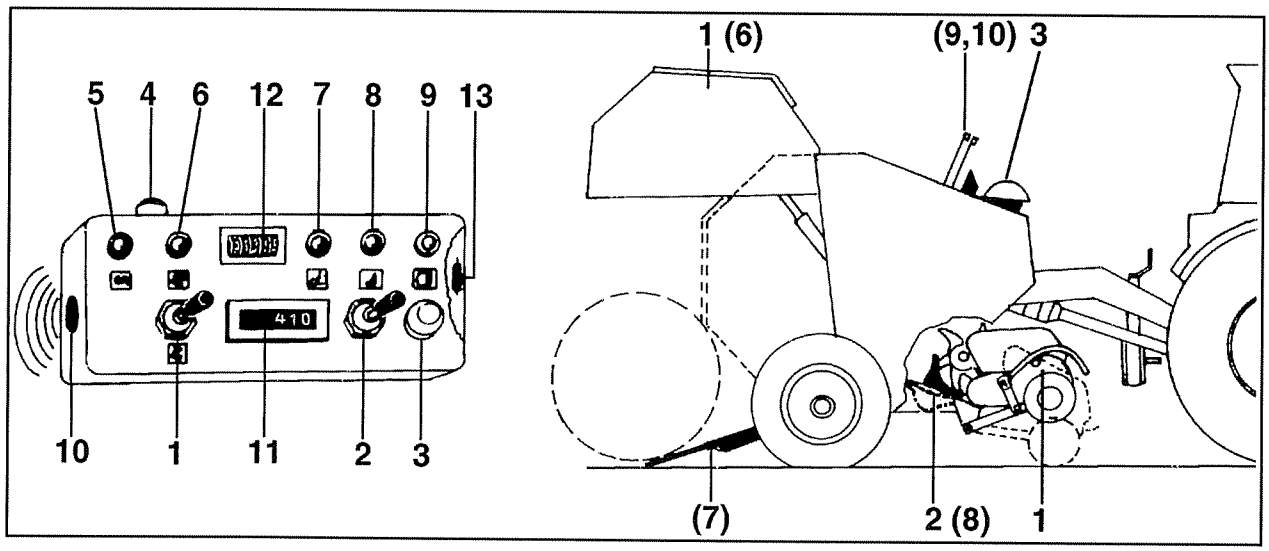
9 Indicator light - binding process

10 Acoustic signal - binding process

11 Bale counter (power is supplied by an alkali battery type LR 1, life time approx. 4 yrs)

12 Permanent bale counter

13 Fuse 25 A

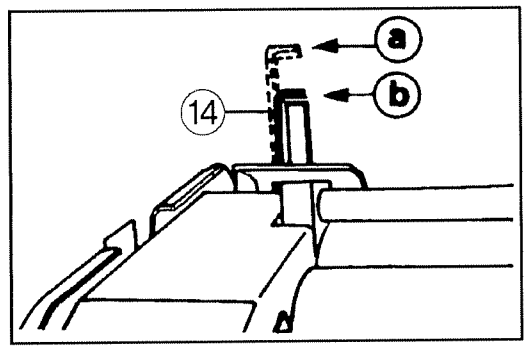


5.1.2 Tail gate

Danger!
Caution when opening and closing the tail gate! Keep clear of the tail gate area!

Locking the tail gate:

The tail gate must be properly locked before collecting crop and after each bale is ejected. To do this, set the pilotbox toggle switch (1) to „tail gate" and the tractor control unit to „lowering". This will automatically lock the tail gate. This is signalled to the operator when the tail gate lock indicator (14, only 6829) is in position „b" and the indicator light (6) on the pilotbox goes out.



In models without a pilotbox, the tail gate is locked and opened directly via the tractor control unit. The position of the tail gate is only seen on the tail gate lock indicator.

Opening the tail gate

The tail gate is opened by selecting „tail gate" on switch (1) on the pilotbox and setting the tractor control unit to „lifting".

5.1.3 Twine binding

Installing the twine reels:

Danger!
Only thread twine reels when the implement is at a complete standstill!

Only use quality twine binding:

- sisal twine with a running length of 200 to 330 m/kg
- synthetic twine with a running length of 400 to 700 m/kg

If the bales are stored outside, it is advisable to use synthetic twine.

Place the 4 reels of twine next to one another standing upright on the twine box. Using a square knot, tie the end of reel (A) to the starting end of reel (B) (which is pulled out from the middle of the reel). Tie reel (C) to reel (D) in the same manner.

Threading twine:

Note:
Before threading the twine, make sure the swivel arms (x) are in the position shown in the diagram. They should be (z) approx. 215 mm (8.4") apart and can be adjusted by turning the variable twine wheel (7) in the direction of the arrow. The binding mechanism is in starting position when the swing arms move down as soon as the variable twine wheel is turned in the direction of the arrow.

Danger!
While turning the variable twine wheel, keep clear of the swing arms!

Refer to the diagram and the sticker on the right-hand side of the implement when threading the twine.

Note:
To simplify threading of the twine brake (3), release the binder by using the pull rope (see installing the pull rope) or pressing down the indicator (14).
Observe the warnings when install- ing the pull rope!

Thread reel (A) through the following points:

1 Guide

2 Twine box side wall

3 twine brake (set spring length to approx. 30 mm)

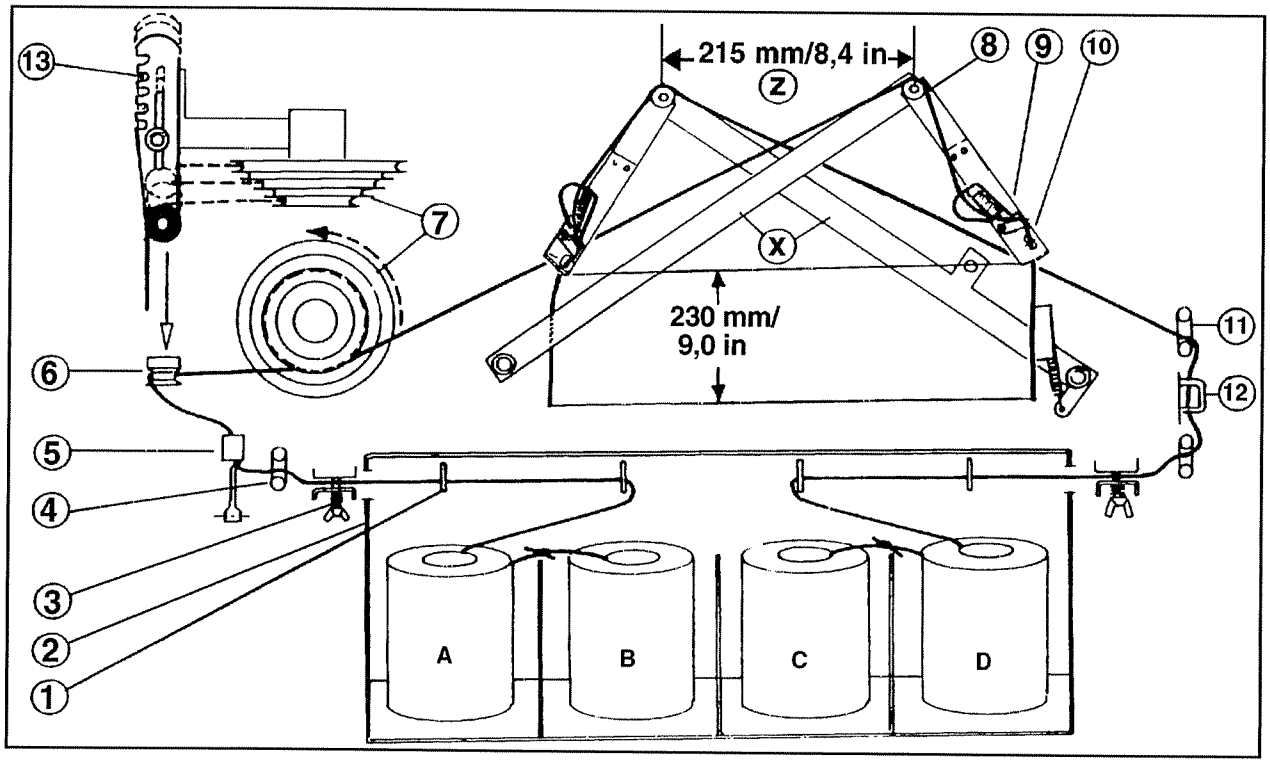
4 Eye

5 Twine tensioner

6 Guide pulley (align with appropriate groove on the variable twine wheel to be encircled)

7 Wind around the variable twine wheel once

Note:
The distance between twine windings around the bale can be pre-selected and is determined by the variable twine wheel. A large wheel diameter produces closely spaced windings. A small wheel diameter -wide windings.



8 Guide pulley

9 Twine brake (between the guide bolts)

10 Guide arm

11 Twine guide

12 Twine guide

13 One lever position for each wheel groove

Note:
The twine may not protrude more than approx. 230 mm, to prevent it from being caught in the rotating bale before the binding process takes place.

As a rule, the loose end of the twine should lightly touch the top edge of the baling roller.

Thread the twine from reel (D) in the same manner as reel (A) with the exception of the variable twine wheel. Numbers (5) and (6) are replaced by (11) and (12).

Binding the bale:

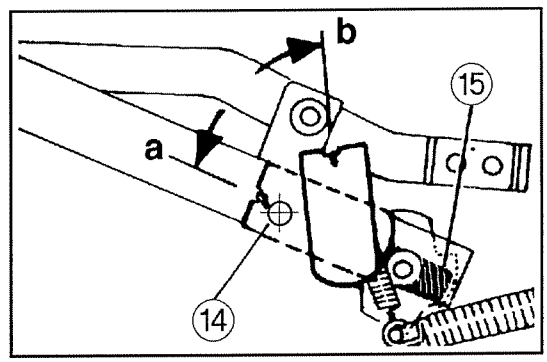
The binding process starts and runs automatically. The binding mechanism is actuated automatically as soon as the pre-selected density of the bale is reached. Simultaneously, a buzzer sounds + machine horn and the red indicator light (9) lights up on the pilotbox. A buzzer sounds in models without a pilotbox.

Note:
Continue to pick up crop for 5 to 10 m (depending on type) after the buzzer sounds and indicator light up. This allows the twine to feed into the bale. Only then may the forwards direction stop.

Allow the baler to continue running without picking up any crop. Binding is then performed automatically. During this process the implement may be reversed or driven to the edge of the field to eject the bale.

If the twine is not cleanly cut, the knives may be adjusted, switched or replaced (see knife adjustment).

The twine tensioner on the left side of the implement may be tightened by 3 to 4 mm at the same time.



Single or double binding:

Single or double binding around the bale can be selected depending on the type or condition of the crop (short, long, dry).

Danger!
Never adjust the lever while the mechanism is running!

a) lever to the left = single binding

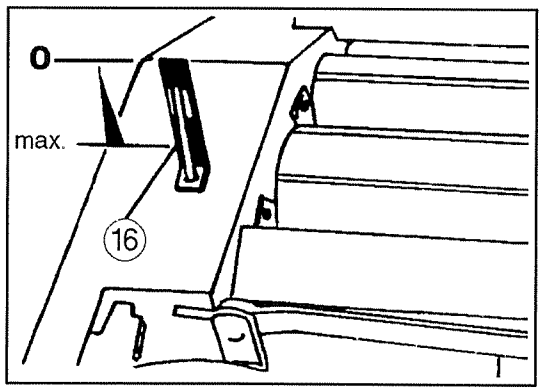
b) lever to the right = double binding

The lever can be locked with a screw (14) in the desired mode.

Note:
The block (15) must be horizontal.

Clean this area regularly, preferably after each adjustment to avoid trouble.

Danger!
When repairing binding faults make sure that the engine is turned off and the implement has come to a standstill before opening the protective screen!Remove the ignition key!



Actuating the binding manually:

Danger!
Manual actuation may only be carried out with the engine off and after the implement has come to a complete standstill!

Manual actuation is carried out by pressing the indicator (16) or using the pull rope.

If the bale is to be wrapped before the set density is reached, the binding can be actuated by pulling the rope.

Ejecting the bale:

Danger!
When working on hilly terrain, always eject the bale across the gradient so that it cannot roll away. Do not try to stop a bale rolling downhill - danger of accident! Caution when opening and closing the tail gate. Keep clear of the tail gate area!

While the binding process is taking place, back up the implement approx. 5 m (not necessary if bale ramp is fitted). After the binding is completed, open the tail gate hydraulically with the p.t.o. engaged so that the bale rolls out.

Attention!
Drive the implement forward before closing the tail gate to prevent it from coming down on top of the ejected bale!

Hold the tractor control valve in „lower" until the tail gate is completely closed and locked.

The implement is now ready to make the next bale.

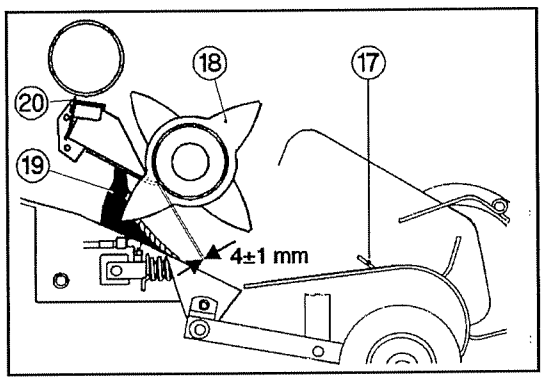
Note:
The pressed bale may only be ejected from the baling chamber while the implement is running.

A bale ejector ramp is offered as optional equipment.

5.1.4 Opticut cutting mechanism

The crop is cut before it enters the baling chamber. Cutting and baling take place in a continuous flow. The pick-up (17) collects the crop and transports it to the rotary conveyor (18). This pulls the crop through the Opticut (19) before it enters the baling chamber.

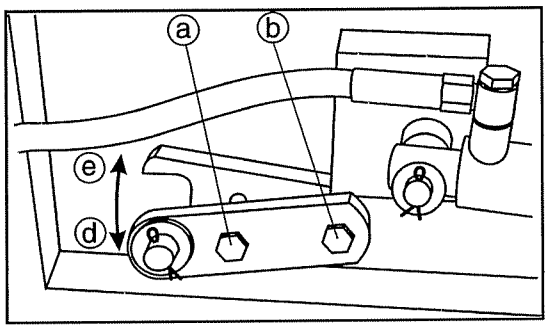
The Opticut is engaged and disengaged hydraulically.



Note:
In order to prevent a jam in the case of large amounts of crop, the knives should be swung out for a short time to let the crop move through easily.

The knives can be secured in two positions: „normal cut" and „exact cut".

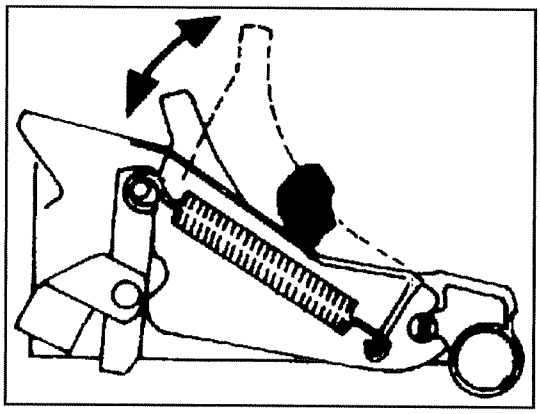
Changing over from „exact cut „ to „normal cut":



- Fold in the knives hydraulically, then turn off the motor.
- Unscrew the locking screw M10 (a) on the right and left side.
- Loosen both joint screws M10 (b).
- Fold out the knives hydraulically, then turn off the motor again.
- Install both locking screws (a) in the lower position (d).
- Retighten both the locking and joint screws.

Changing over from „normal cut" to „exact cut „:

- Fold in the knives hydraulically, then turn off the motor.
- Unscrew the locking screw M10 (a) on the right and left side.
- Loosen both joint screws M10 (b).
- Fold out the knives hydraulically, then turn off the motor again.
- Install both locking screws (a) in the upper position (d).
- Retighten both the locking and joint screws.

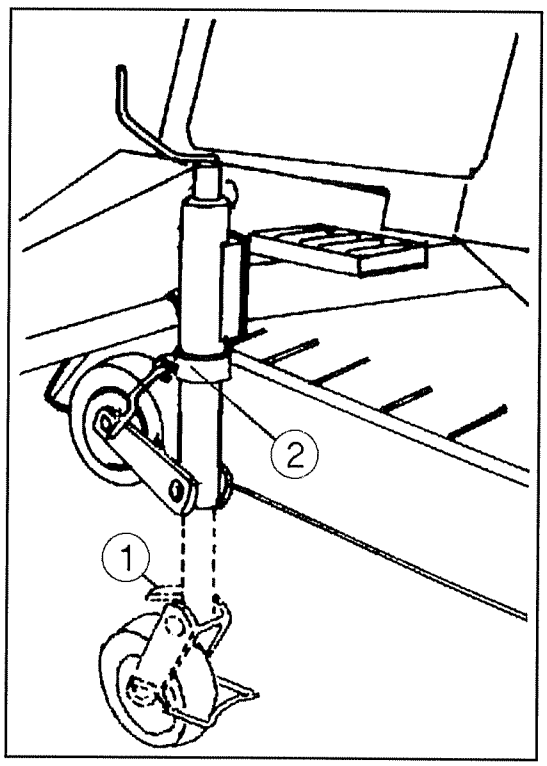


When all 14 knives are engaged, the crop is cut into batches 74 mm long. All knives can be removed individually (see adjusting the twine knives). To do this, pull the rear side of the knives until they come free of the shaft, then remove them from the front. Each knife deflects foreign objects individually and then returns automatically to cutting position.

To prevent crop from wrapping around the front roller and twine running out of the chamber when working with dry crops, a rubber lip can be attached to the cross carrier of the cleaner.

5.2 Hitching the baler to the tractor and transport

- Hitch the baler horizontally to the tractor so the pick-up has sufficient ground clearance and the opened tail gate has sufficient clearing space for ejected bales.
- Connect the p.t.o. to the wide angle drive shaft on the tractor side and secure the guard tube using the chain to prevent rotation.
- Connect the hydraulic hose and electrical cable to the tractor
- Wind the jockey wheel a little, press the catch (1) and swing up the jokey wheel until it locks. Now wind it completely so the catch (2) keeps it from rotating.
- For transport, raise the pick-up until it is against the stop.



Attention!
To transport the baler, push in the bale ejector ramp sliding extension rails and lock them using the lever.

- When taking sharp corners, make sure the wide angle joint (tractor side) is not deflected more than 80°. Otherwise danger of the joint breaking exists when the implement is both stationary or in motion.

5.3 Field operation

The Round Baler is to a large extent protected against foreseeable accidents. However, this does not mean that necessary caution needn't be exercised when operating the baler. Check to see that all guards are correctly attached and in good condition before starting work.

Danger!
Never attempt to rectify malfunctions while the implement is running! Caution when opening and closing the tail gate! Keep clear of the tail gate area! Secure the tail gate before entering the baling chamber!

Before baling:

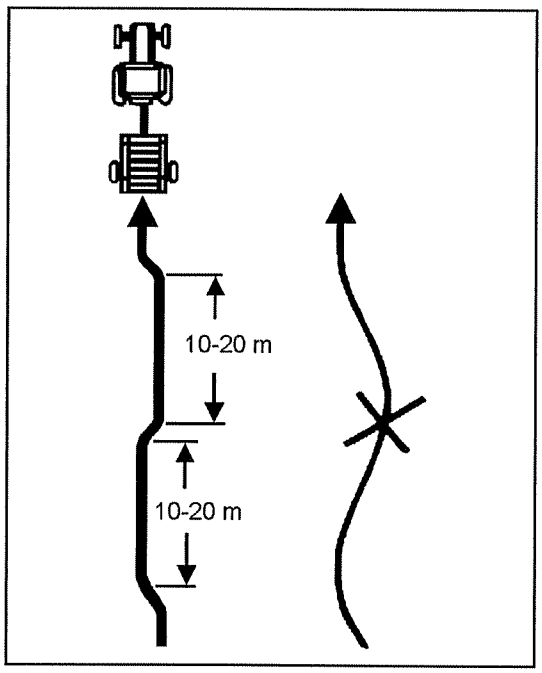
- set bale counter to „0",
- select density,
- lower pick-up so tines are approx. 2 cm from the ground,
- lock tail gate,
- thread twine.

P.t.o. speed:

Operate the Round Baler at the standard p.t.o. speed of 540 rev/min. The p.t.o. speed may be reduced to 350-450/min in order to bale short and brittle crop. The p.t.o. should not be disengaged when baling short or dry crop.

Cornering:

When taking sharp corners, make sure the wide angle joint (tractor side) is not deflected more than 80°. Otherwise danger of the joint breaking exists when the implement is both stationary or in motion.



Driving:

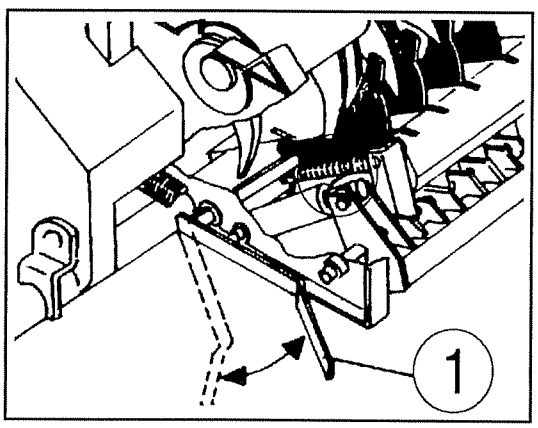
Appropriate driving to uniformly fill the entire width of the baling chamber will result in high output and well-shaped bales. If windrows are narrow, the baling chamber can be uniformly filled by alternately driving to the left and right of the windrow.

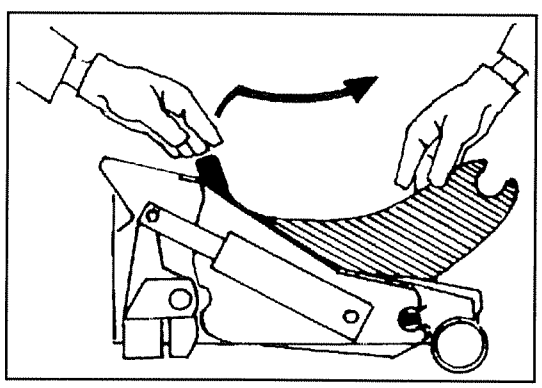
To obtain the best possible ground contour following, select the „pick-up" function (button 1 of Pilotbox) and set the hydraulic system to floating position before starting work.

Bottom hitch attachment (linkage drawbar) may lead to unwanted mounding of large windrows. A guard placed underneath the bottom hitch can help to solve this situation.

Operating with Opticut:

When baling dry and brittle crop, it is advisable to lower the Opticut hydraulically shortly before the baling process is completed. This allows a layer of longer crop to cover the short crop and prevents losses. If blockage occurs, the Opticut should be lowered until the channel is again free.





Removing and replacing knives:

Danger!
Work on the Opticut may only be carried out with the engine off and after the implement has come to a complete standstill!
When carrying out work on the knives, use protective gloves! Keep hands clear of the cutting area!

1. Lower the Opticut hydraulically.
2. Open and lock the tail gate hydraulically.
3. Stop tractor engine!
4. Press down the lever to secure the knives (1) located on the left side of the Opticut.
5. Grasp the protruding ends of the knives and remove them (may be turn the rotor!).
6. Sharpen knives.

Danger!
Danger of injury!

7. The knives can only be sharpened after having been removed.
8. Replace the knives by inserting them in the slots on the knife shaft.
9. Lift the lever to secure the knives.
10. Put the Opticut in cutting position.

Danger!
When carrying out work on the knives, use protective gloves! Keep hands clear of the cutting area!

Note:
Sharpening the knives frequently will reduce the amount of energy expended.

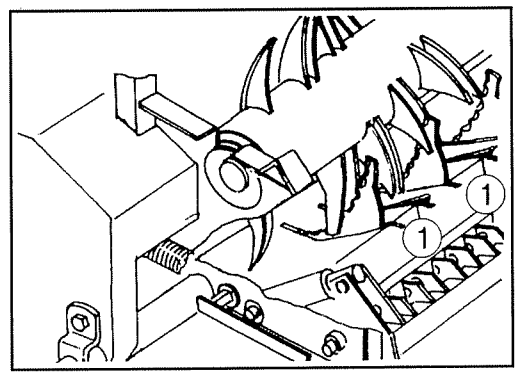
5.4 Installing filler plates

Should the baler be operated with fewer knives, filler plates (1) must be installed to avoid blockage.

The filler plates are stowed on the side wall under the left front guard.

The knives removed may be stowed here also.

The filler plates are installed in the same manner as the knives.

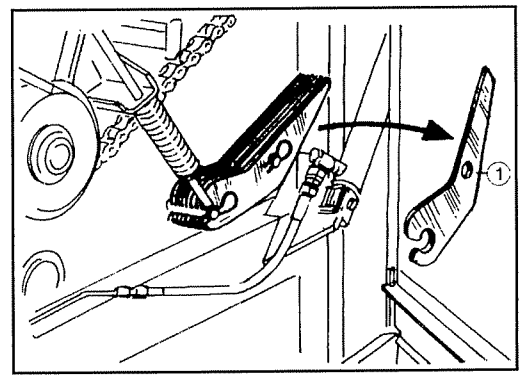


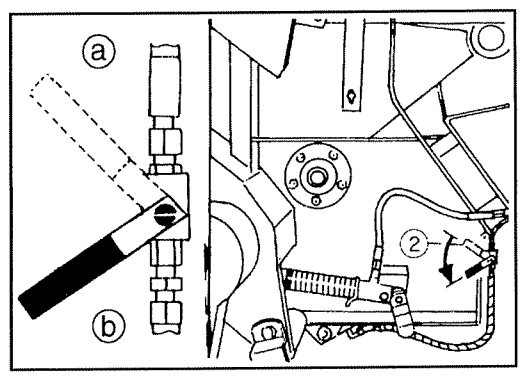
Opticut hydraulics:

Before using the baler for a longer amount of time without the Opticut, the hydraulic shut off tap (2) must be closed on the left side.

a = open

b = closed





5.5 Winter storage

- Clean the baler so it is free of crop residue and dirt.
- Clean and lubricate the roller chains
- Grease the implement according to the lubrication schedule and change the gearbox oil.
- Grease all lubrication points and rollers.
- Then allow the Round Baler to run for a brief period.
- Inspect the implement for signs of wear and damage and carry out repairs as necessary.
- Deposit the baler on level ground and use wheel chocks to secure it from rolling.
- Never allow children to play on or around the implement.

6 Maintenance

Danger!
The implement should be at a standstill whenever maintenance, repairs or adjustments are carried out. Stop the engine and remove the ignition key!
Wait for the implement to come to a complete standstill before working on moving parts!
The tail gate stay must be in locked position before entering the baling chamber!
Be careful when opening and closing the tail gate! Keep clear of the tail gate area!

Careful maintence will preserve the value of your Round Baler and keep operation costs as low as possible without the need for premature repairs.

6.1 Retightening bolts

Retighten all bolts and nuts after approximately 20 operation hours.

6.2 Checking wheels

Check wheel nuts and hub caps to make sure they are tight. Check tyre presssure (1.5 bar).

6.3 Central lubrication

The automatic central lubrication system considerably reduces maintenance time. Check the oil tank (1) daily and refill when necessary.

The system comprises pump, oil tank, pipes and brushes.

The required supports are welded to the side panel of the implement and the hydraulic connections are ready for attachment.

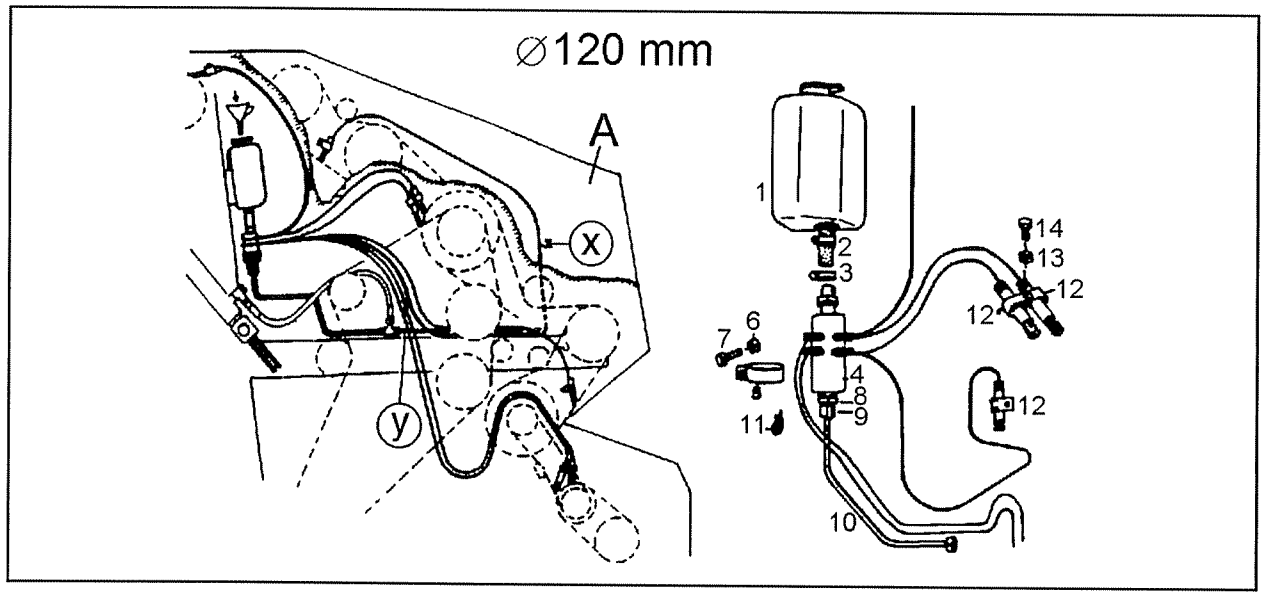
Function:

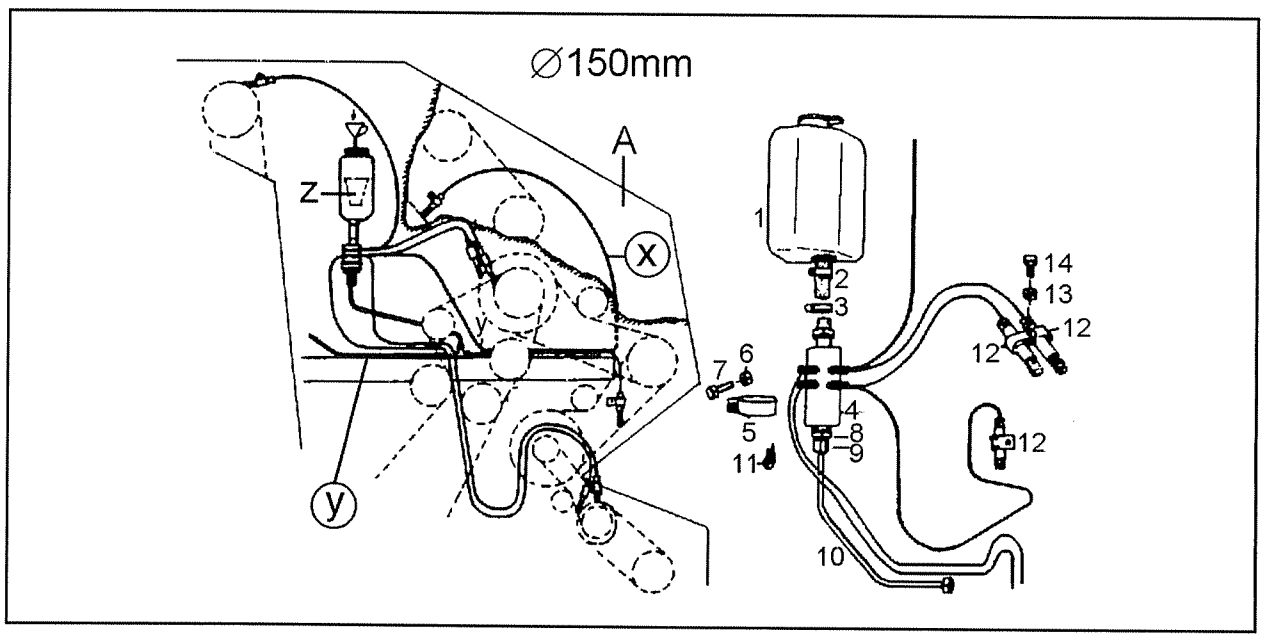
The grease pump is connected to the tail gate hydraulics and is actuated by the pressure impulse emmited when the tail gate is opened. This sends a constant flow of oil to the various feed pipes and is then distributed to the chains using the brushes (use biological chain oil).

Assembly:

The central lubrication system is assembled according to the diagram and the following list of parts.

- Observe the following during assembly:
- Attach the oil tank to the dove tail guide (z).
- Secure the grease pipes using cable binders (11).
- Run the longest grease pipe (x) along the hydraulic pipe (y) to the other side of the implement (see section A).
- Adjust the brushes so that they lightly touch the chains.

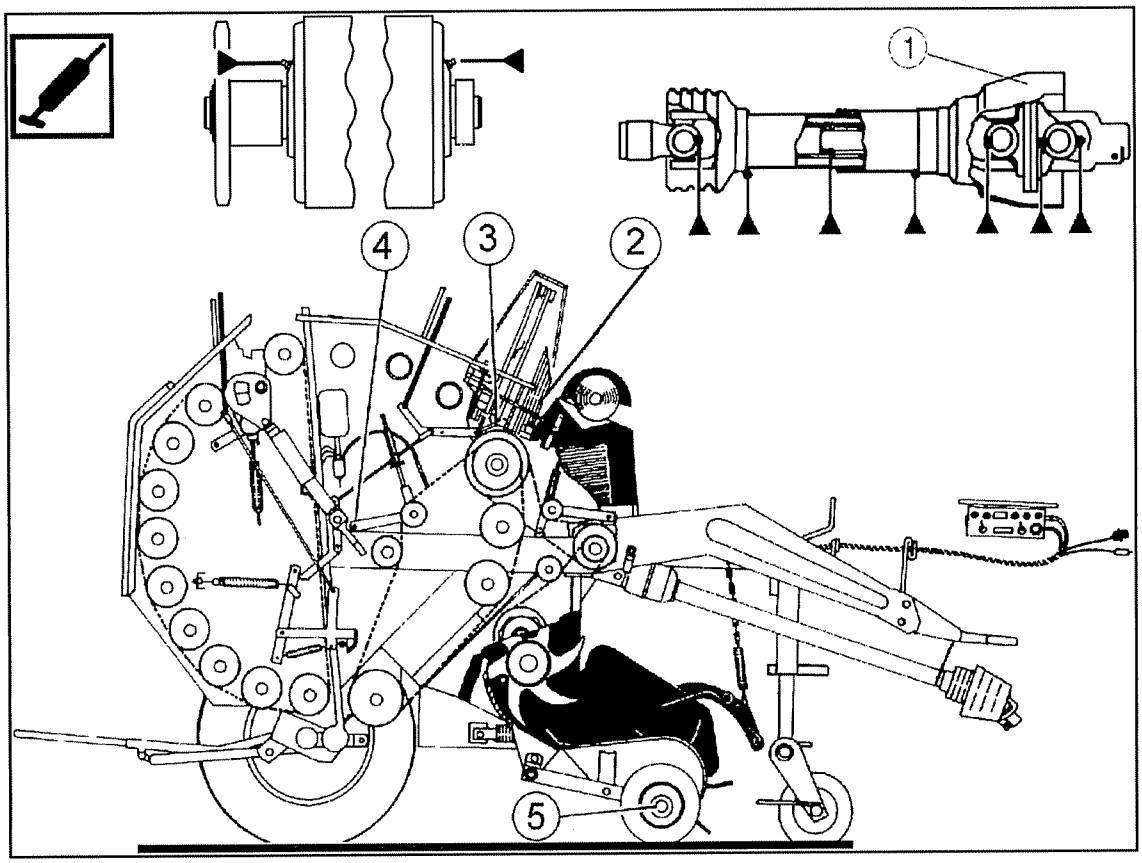




Assembly parts:

1 Oil tank (complete)
2 PVC hose
3 Hose clamps
4 Grease pump with grease pipes and brushes
5 Pipe clamps
6 Locknut M8
7 Hex. head screw M8 x 30
8 Nippel
9 Cone - reduction union
10 Hydraulic pipe (complete) with cutting ring
11 Cable binder
12 Pipe clamp
13 Locknut M6
14 Hex. head screw M6 x 20

6.4 Lubrication plan



Lubricate the p.t.o. (1), binding mechanism (2), binding arms (3), all chain tensioners (4) and gauge wheel (5) once a week.

Grease all lubrication points and rollers after each high-pressure cleaning and following long periods of non-use.

Only use clean grease K2k according to DIN 51825, e.g. Deutzer oil, HFL 300 W or Shell Retinax A.

Clean all grease nippels and the nozzle of the grease gun before lubrication.

6.5 Lubricating roller chains

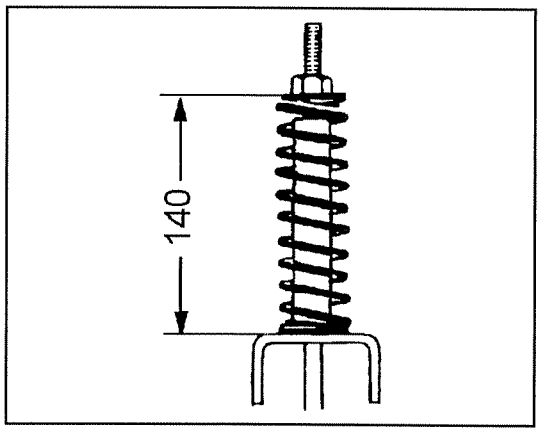
All the baler's roller chains must be lubricated at regular intervals. Use chain oil for this purpose. The chains must be cleaned prior to lubrication in order for the grease to reach all joints. The life of the chain is dependent upon good lubrication.

Attention!
Never allow the roller chains to run dry!

6.6 Changing gearbox oil

The first oil change in the gearbox should take place after approximately 50 operation hours. To do this, unscrew the oil filter cap, unscrew the oil drain plug and drain off the old oil into a suitable container.

Clean the drain plug and repace it. Fill with approximately 0.8 liters of SAE 90 gear oil. Tighten down the filler cap securely. Thereafter change the oil after every season.



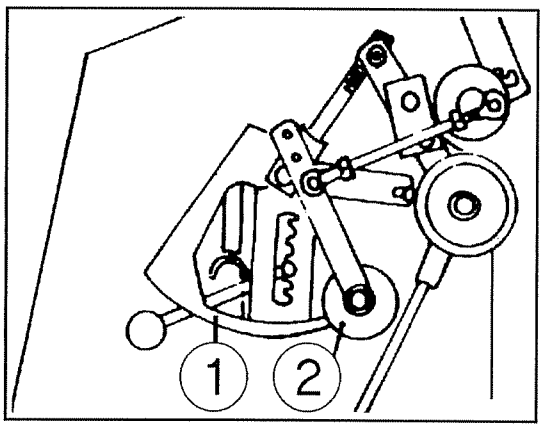
6.7 Tensioning drive chains

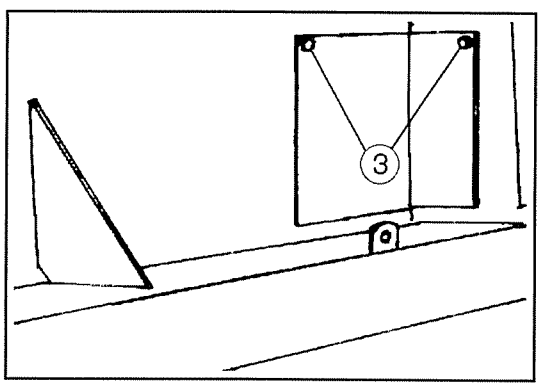
All drive chains are spring tensioned. Check the tension of the chains from time to time and re-adjust the spring length to 140 mm (5.5") when necessary (see diagram and stickers on the implement).

6.8 Assembling the binding mechanism freewheel

When repairing and assembling the freewheel and parts of the freewheel in the binding mechanism, special care must be taken to avoid damage. Only use KP-F2K multi-purpose grease to pack the binding mechanism drive.

This work is best left to your KVERNELAND GOTTMADINGEN dealer whose expertise and tools meet the need in such cases.





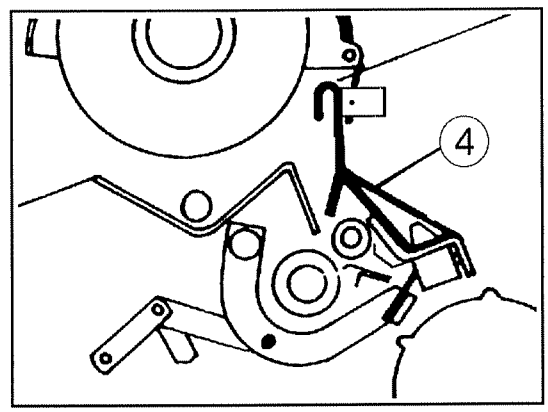
6.9 Opening the rear wall of the twine box and removing the deflector plate

Danger!
All work carried out on the cutterbar must be done when the mechanism is not cocked. To make sure that this is so, check to see that the quadrant (1) is not touching the knurled shaft (2).

To clean the net feed channel, both corner plates of the twine box can be lifted out when the turn locks (3) are unscrewed.

For this same purpose as well as to insert the netting, the deflector plate (4) may be lifted out using the handles provided.

When replacing the deflector plate, hang it on both brackets, make sure that it engages in the retaining bolts and see that the protective cover lies on the deflector.



6.10 Net wrapping maintenance

The net wrapping equipment is generally main-tenance free.

After a long period of service, however, some re-adjustment may be necessary.

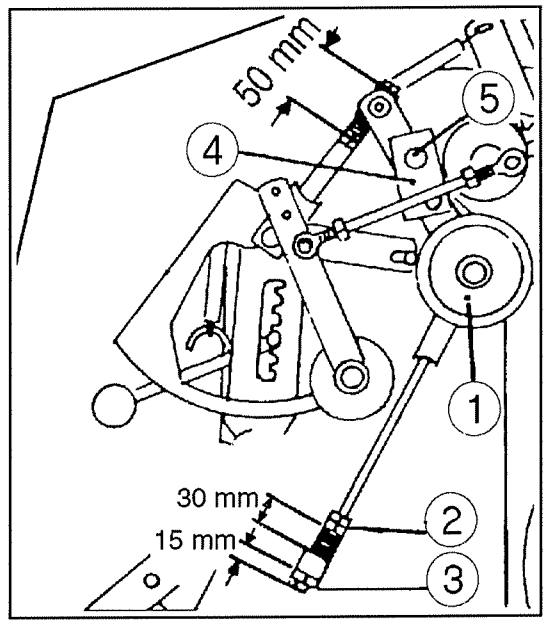
Danger!
The implement should be at a standstill whenever maintenance, repairs or adjustments are carried out. Stop the engine and remove the ignition key!

6.11 Tensioning the V-belt

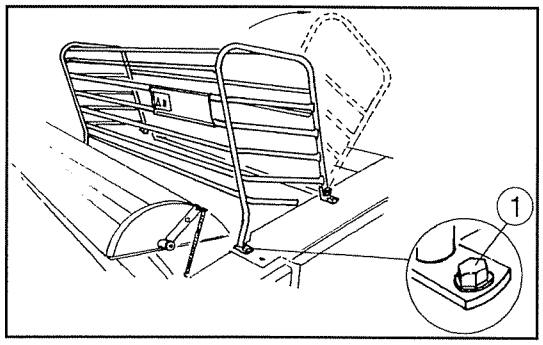
The tensioning roller (1) for the V-belt can be adjusted using nuts (2) and (3). Re-tighten locknuts. The basic settings are shown in the diagram.

The brake block (4) stops the netting intake roller after the netting has been cut.

If the braking effect is insufficient, the block (4) can be adjusted using the screw (5). Move the block towards the belt to increase the braking effect on the netting intake roller.



6.12 Working on the binding system



Danger!
The drive to the Round Baler must be disconnected and the tractor engine stopped before carrying out work on the baler or opening the protective device!

The protective device on the binding system can be folded up for maintenance purposes from the platform above the drawbar. To do this, turn the screw (1) 90°.

All maintenance work should only be carried out from the standing platform above the drawbar.

7 Eliminating malfunctions

7.1 General malfunctions

The great variations in operating conditions make it impossible to give general rules to cover all situations. The nature of terrain, density of windrow, condition of the crop, improper handling or poor maintenance can all lead to breakkdown.

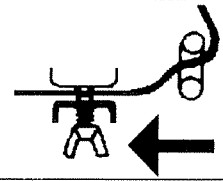
Our service shop is available to deal with problems that you cannot rectify yourself. However, you will generally be able to solve most problems with the aid of the following table.

Danger!
Always switch off the p.t.o. and tractor engine and wait for moving parts to come to a standstill before working on the implement.
For example, never attempt to rectify malfunctions within the area of intake while the implement is running!

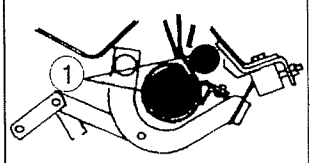
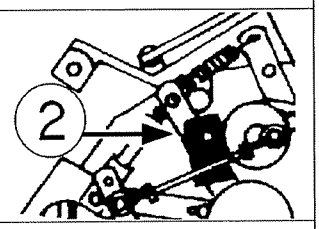
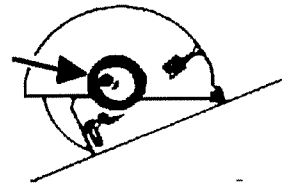
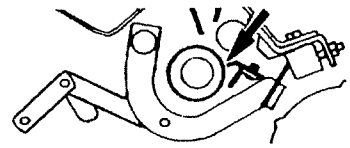
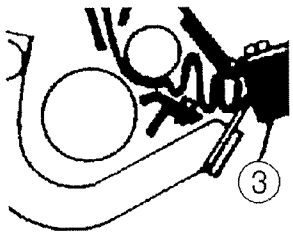
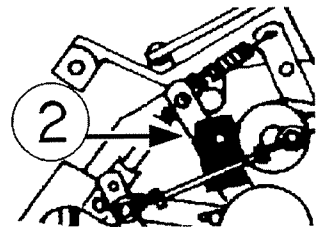
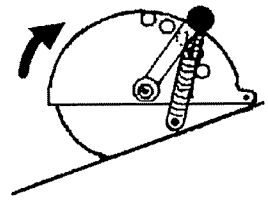
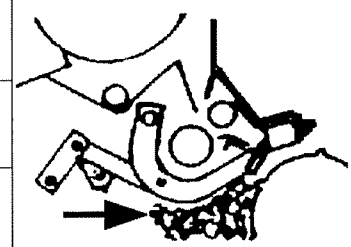
No.	Malfunction	Possible cause	Remedy	Remarks
1	Inadequate crop pick-up	Pick Up not low enough	Correctly adjust height of pick-up	Pick Up Höhe einstellen
		Baffle plate too high for short crop material	Lower baffle plate for short crop	Adjusting baffle plate
		Poor adaption of pick-up to ground contours in uneven terrain	Re-adjust pick-up	Adjusting pick-up or gauge wheels of pick-up
2	Crop jammed between pick-up & baling chamber	Travel speed too high - Irregular swaths	Reduce speed until intake operates smoothly	
3	Tailgate open and crop drops out of chamber	Tailgate not properly closed	Observe Pilotbox tailgate lock indicator. Hold tractor control for tailgate in "lower" longer	Locking tailgate
4	Slip between bale and baling chamber - bale stoppage	Extremely dry or slippery crop (barley straw)	Reduce baling pressure. Drive at sufficient speed	Adjusting baling pressure
5	Baler without OptiCut: stiffness, shear pin broken in main drive	Bale pressure too high	Correct settings	Adjusting baling pressure
		Beginning to slip	Reduce density	Adjusting baling pressure
		Wrong grade of bolt	Only use original parts	Spare parts list
	Baler with OptiCut: cam-type cut-out clutch	Binding actuation incorrectly set	Check settings, correct if necessary	Actuating baling pressure and binding mechanism
		Bale pressure too high	Reduce pressure	Adjusting baling pressure

No.	Malfunction	Possible cause	Remedy	Remarks
6	Irregularly shaped bales	Tractor not driven as specified	Follow driving instructions in manual	Driving
7	High crumbling losses	P.t.o. speed too high for very dry conditions	Decrease p.t.o. speed (350-450 rpm) or turn it off when there is no crop intake	P.t.o. (see also no. 4)
		Travel speed too low	Select higher gear	
		Windrow too thin	Make denser windrows	
	High crumbling losses: balers with OptiCut		Before binding, switch off the cutting mechanism or reduce the no. of knifes	

7.2 Twine binding malfunctions

No.	Malfunction	Possible cause	Remedy	Remarks
1	Twine slipping sideways off the bales	Irregular bale shape	Correct driving	Fahrweise
		Unsuitable binding for short crop	Don`t set windings near outer edge of crop	Adjusting twine on bale edge
2	Binding is actuated, but not operating. Twine not drawn in	Twine not properly threaded	Check twine threadings. Twine must extend 200-230 mm from the guide arm	Threading twine
		Twine brake does not open enough	Adjust twine brake or pull rod or adjust lever	Adjusting twine brake
3	Twine comes out of the baling chamber	Scrapers dirty, damaged or not correctly adjusted	clean, replace or adjust scrapers	Adjusting scrapers
4	Binding mechanism runs sluggishly	Needle bearing too tight	Lubricate bearing at grease nipples	See binding mechanism
5	Twine not properly cut	Blunt knives	Adjust or replace knives	Adjusting twine knives
6	Twine from the left swing arm poorly cut	Twine brake too loose	Tighten the twine brake 3-5 mm	

7.3 Net binding malfunctions

Malfunction	Possible cause	Remedy
Netting wraps araound intake rollers (1) 	Insufficient braking of V-belt or intake roller	Adjust block (2) 
	Soiled or damaged roller surface	Clean and smooth surface
	Netting roll runs sluggishly on bearing	Grease the right and left netting roll bearings 
	Guide plate (see arrow) too far from the roller	Decrease the distance from the guide plate to the intake roller (approx. 0,3 mm) 
The netting doesn`t wind around the bale 	Netting jams before the anvil (3) and stops	Adjust block (2). To remove jam, turn back the rubber roller (M 10 screw on the stub of the right roller). Less tension on the V-belts simplifies reversal. 
	The cover over the netting roll is too tightly tensioned	Attach tension spring to rear notch using the lever large roll = back, small roll = front 
Net wrapping fails to operate	Lifting motor doesn`t place the quadrant against the knurled shaft	Check electrical wiring 
	V-belt too tightly tensioned	Decrease V-belt tension
	Space behind the knife carrier is blocked (see arrow)	Clean the space behind the knife carrier from below

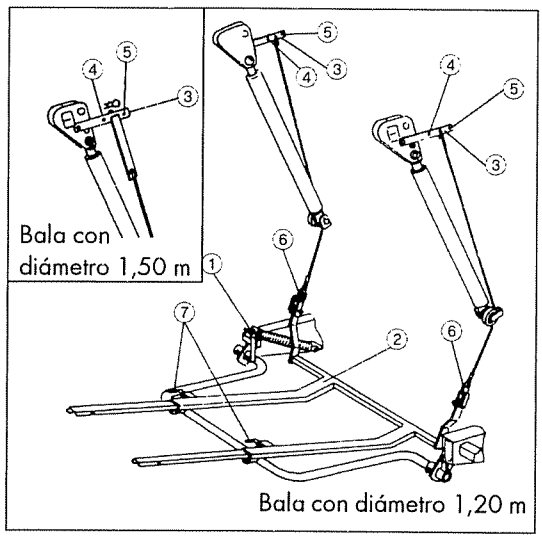
8 Optional equipment

Danger!
The implement should be at a standstill whenever maintenance, repairs or adjustments are carried out. Stop the engine and remove the ignition key!

8.1 Bale ejector ramp

When the bale ejector ramp is used, the tail gate is opened and the bales roll out of the baling chamber far enough that the baler doesn't need to move forward before the tail gate is closed again.

The bale ejector ramp can be assembled additionally. Full assembly instructions are supplied for this purpose.



Adjustment and operation:

- For light bales reduce the tension of the spring at the eyebolt.
- The angle of the roll out mechanism (2), and therefore the distance the bale rolls, can be adjusted by moving the cable pull attachment along the actuating rod (3).
- Attaching the cable in drill hole (4) increases the angle. The drill hole (5) decreases the angle (roll distance).
- The bales should only roll out far enough to clear the the path of the closing tail gate. Fine adjustment is carried out at the clevis (6).
- Adjust the clevis (6) so that the tail gate doesn't come in contact with the bale as it closes.
- When baling heavy crops (silage), don't extend the sliding extension rails.

Danger!
To transport the baler, push in the bale ejector ramp sliding extension rails and lock them using the lever.
Only eject bales when the implement is in operation!

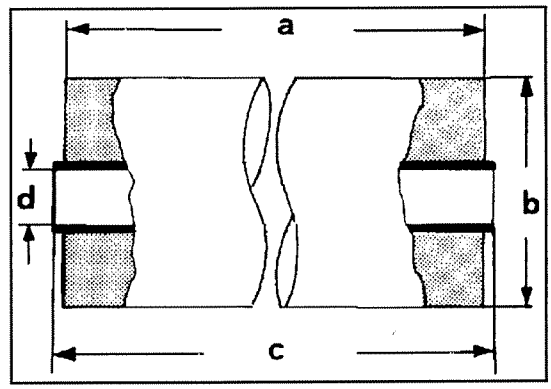
8.2 Conversion kit for reduced baling roller speed

A conversion kit for reduced baling roller speed is additionally offered for tractors up to 48 kW (65 PS). Replace both sets of sprocket wheels as well as the chain and chain tensioner on the main drive roller and secondary drive roller.
Models 6811/ 6820/ 6829 (without Opticut) with 1.20 m and 1.50 m bale diameters require an additional conversion kit for the pick-up.

8.3 Net wrapping

You have purchased a Round Baler with net wrapping capacity. The net rolls purchased to meet the need of this handling method must conform with the following:

- net width (a) = 1230 to 1255 mm
- roll diameter (b) = max. 320 mm
- tube length (c) = 1225 to 1260 mm
- tube diameter (d) = 76 mm
- weight of net = 10 to 16 g. per running meter



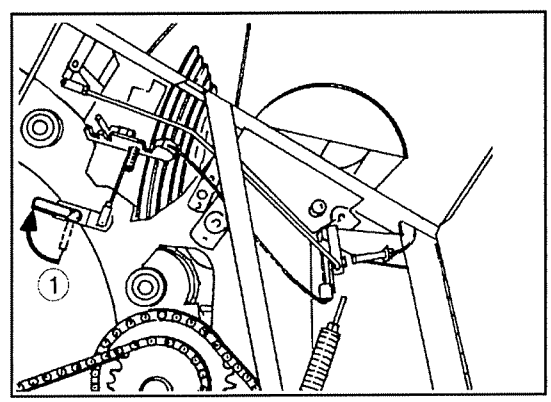
We recommend nets obtained from your dealer or ordered directly from the following addresses:

MX 1000: BP Chemicals PlasTec GmbH
Michelstadt Branch
Post box 32 09
D-64713 Michelstadt, Germany

Pfullingen Branch
Post box 73 09
D-72793 Pfullingen, Germany

Net wrapping provides your baler the following capabilities:

- net wrapping
- twine binding
- combined net and twine binding

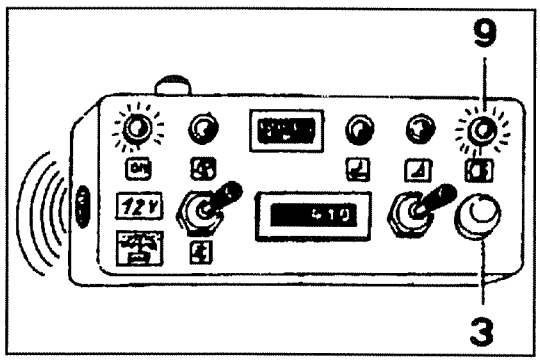


Disconnecting the twine binding

If your baler is threaded with twine, the twine binding mechanism must be disconnected in order to ensure effective net wrapping.

This is done by pulling out the lever (1) on the right side of the baler and locking it.

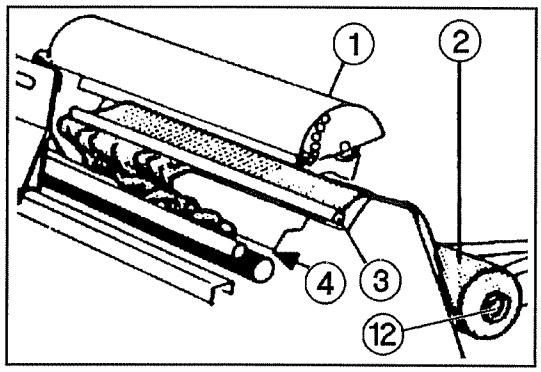
Fold back the lateral guide arms.



Starting the net wrapping:

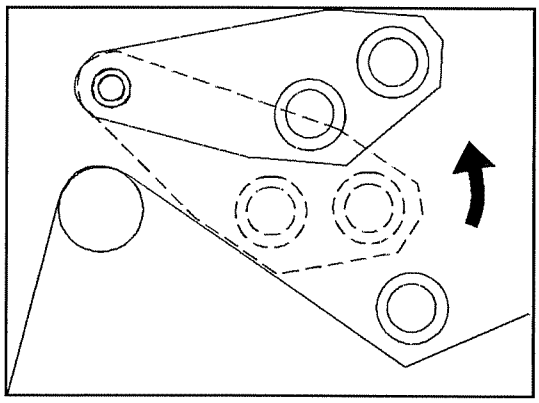
Attention!
12 Volts are required for the net wrapping mechanism!

A flashing indicator light (9) on the pilotbox T and a buzzer warn the operator that the bale density is soon to be reached. When the indicator light remains lit and the buzzer sounds intermittantly, the driver should stop the tractor and press the bush button (3) on the pilotbox to start the net wrapping process.

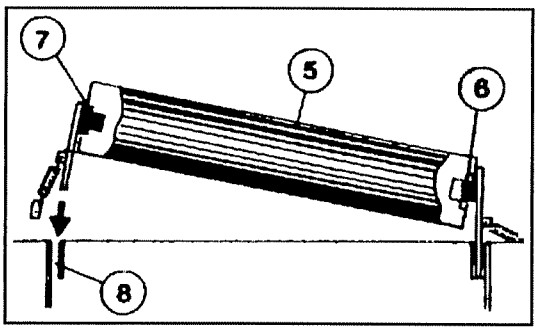


Installing the net roll:

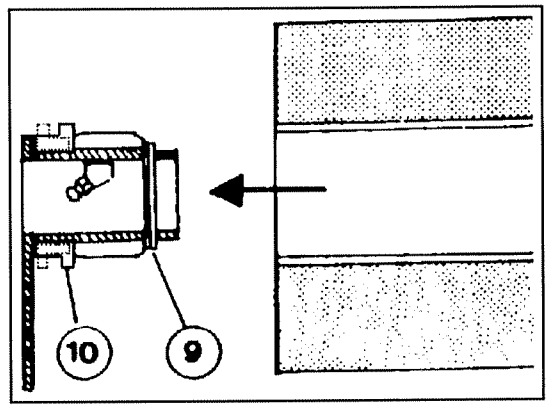
- Unhook and remove the cover (1). Remove the tension springs on both sides. Lift out the deflector plates.
- Place the net roll on the drawbar (2).
- Pull out the guide tube (3). Insert the starting edge of the net, place the guide tube over the net and lock the tube in place. Thread the starting edge of the net through the guide bars (lift the set of bars) and press the bunched up net against the intake rollers (4).



- Using a hex. head wrench turn the rubber roller (12) anti-clockwise until the net appears in the baling chamber.
- Replace the deflector plate.
- Slide the net roll (5) into either the right or left bearing (6). Then on the open end, insert the bearing (7) and press it in the guide slot (8).



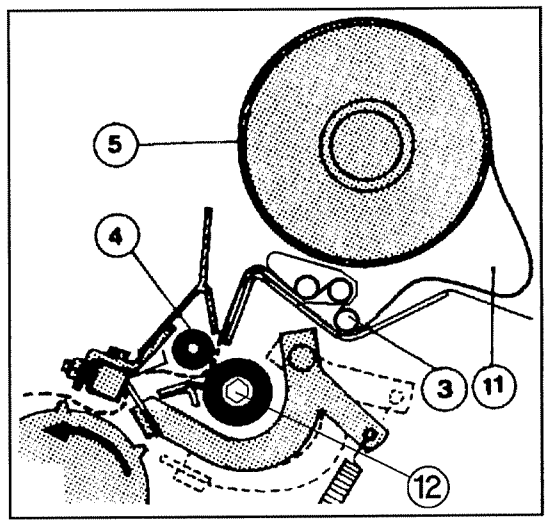
- For wider net rolls remove the tightening sleeve (9) and turn the flange (10). Replace the bearing and secure with tightening sleeve (9).
- Lubricate each time a new roll is fitted.



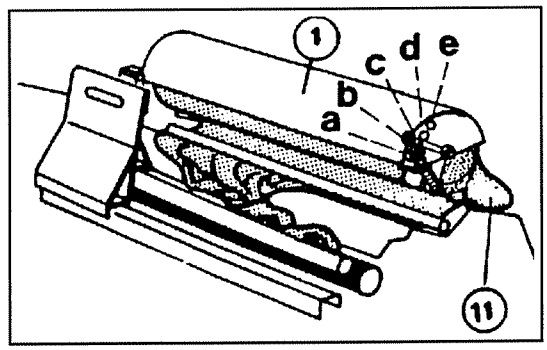
In order for the intake roller to firmly grasp the net, it must be inserted so that:

- it is loose and bulky in area (11),
- it is between the three bars in area (3) (to do this, lift the setof bars) and
- it is gathered together in front of the intake roller and then pressed against it.

Replace the cover (1) and attach the tension spring on both sides of the bolts (see the grooves).

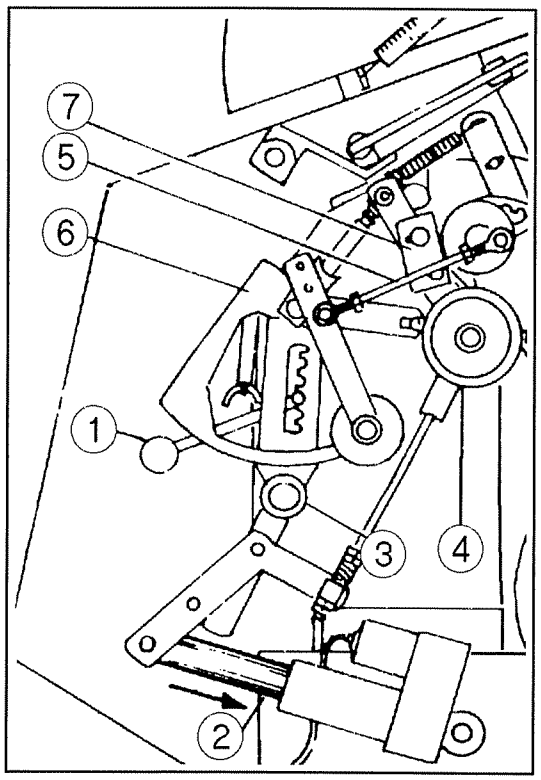


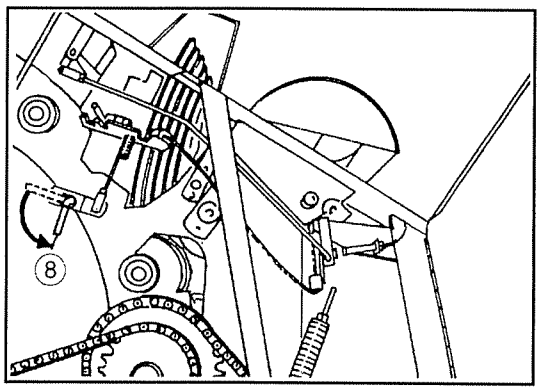
Note:
The various slots (a,b,c,d,or e) for the lever allow you to determine the slowing speed of the net roll after being cut. The slot for the tension spring must be chosen so that as the netting slows down, it sags and adopts the form (11) depicted in the diagram.



Normal settings are as follows:

- large rolls (a)
- small rolls (e)





8.4 Adjusting net wrapping

The number of wrappings around the completed bale can be pre-selected with the stop lever (1). The stop lever in the lowest setting allows approx. 1 1/4 turns, whereas the top setting allows approx. 3 1/2 turns. The number of turns required depends on the type of crop.

The net wrapping process:

When the push button is pressed, the actuating motor (2) runs, causing the trip lever (3) to tension the cutting mechanism and the tensioning roller (4) to tension the drive belts. The lifting motor then returns to its starting position.

This drives the intake rollers and the quadrant (6) is moved downwards via the push rod (5). At the end of the quadrant, after the number of pre-selected turns is reached, the cutting mechanism is released and the entire width of netting is cut against the cutterbar. Simultaneously, the drive belt is locked by the brake block (7), bringing the intake roller to a standstill.

If the bale is to be tied with twine instead of net wrapping, it is only necessary to thread the twine as described in the manual, set the lever (8) to the twine binding position, and swing the lateral distance arms into position.

Combined net wrapping and twine binding:

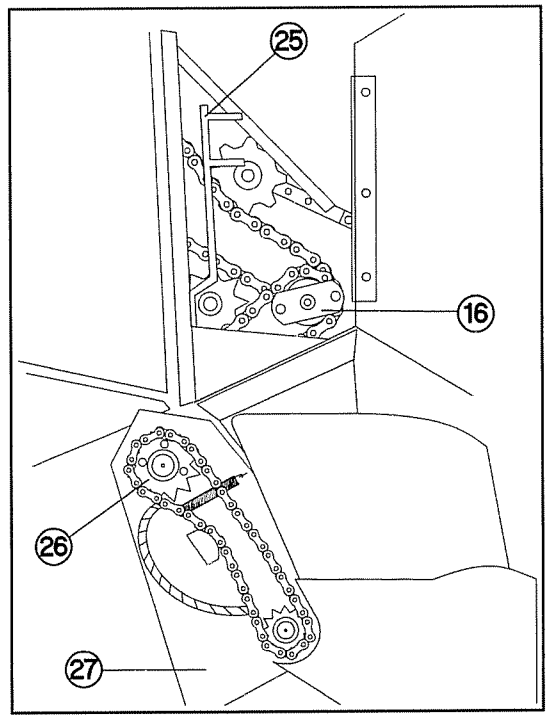
In cases where particularly firm and durable binding is required, it is possible to use both net wrapping and twine binding. The position of the lever (8) is twine binding. Shortly after the the twine binding begins, push button 3 on the pilotbox for net wrapping can be actuated.

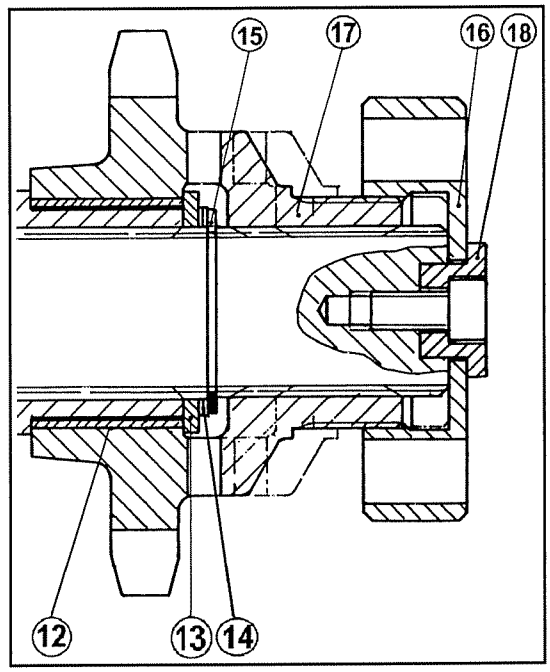
Note:
We recommend operating the push button so that the net and twine are cut at nearly the same time.

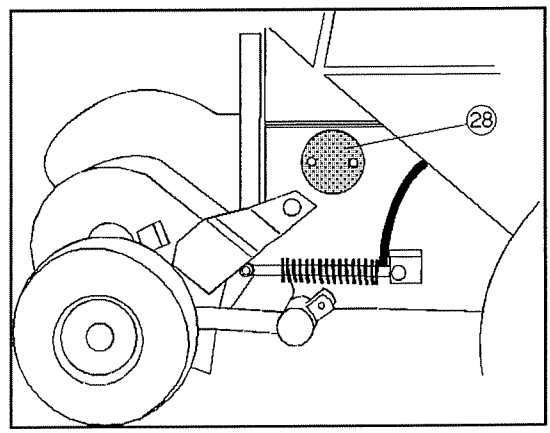
8.5 Operating the reversing device

The reversing implement can be used in the follow-ing way when the feeder section is blocked:

1. Turn the contact stud (16) by means of the lever (25), thereby pulling back (left handed thread) the claw (17) and separating it from the spline hub (12). In this way the pick-up and the tine roller are separated from the drive of the implement.
2. You can now start the bale binding process manually.
3. After reengaging the claw (17) and the spline hub (12), the blockage can be cleared by switching on the universal-joint drive shaft.
4. 6824 / 6826 / 6829 only:
   If this cannot be done, remove the protection (27) and, after separating the drive again, turn the pick-up and the tine roller backwards over the gear (26) using the lever (25).
5. 6811 / 6820 only:
   If this is not possible, separate the pick-up and tine roller drive once more (see 1).
   Insert the lever (25) into the left side of the carrier plate (28) on the tine roller and turn the tine roller backwards.







A Appendix

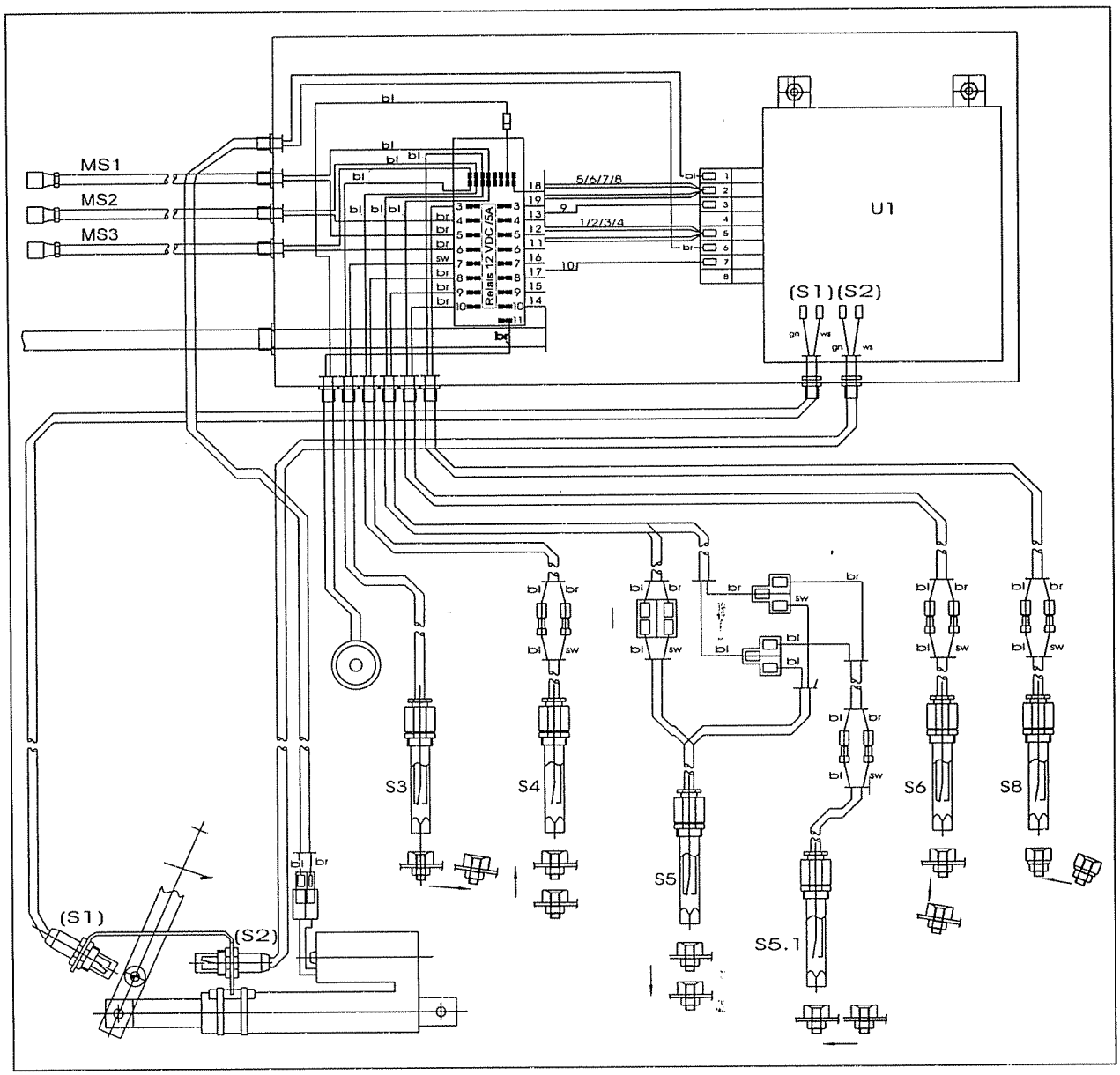
A.1 Torque values for international metric thread joints

All bolted joints must be torqued in accordance with the values given in this table unless otherwise indicated. On this machine „8.8" is both the standard and minimum quality used.

Warning!
When lock bolts or lock nuts are used the given value must be increased by 10%.

Thread	Torque value for material quality codes in acc. with DIN ISO 898 (dry or oiled)						size of jaw		Remarks
	8.8		10.9		12.9				
	Nm	lbf-ft*	Nm	lbf-ft*	Nm	lbf-ft*	mm	inch	*value in brackets =lbf-in.
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	
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				

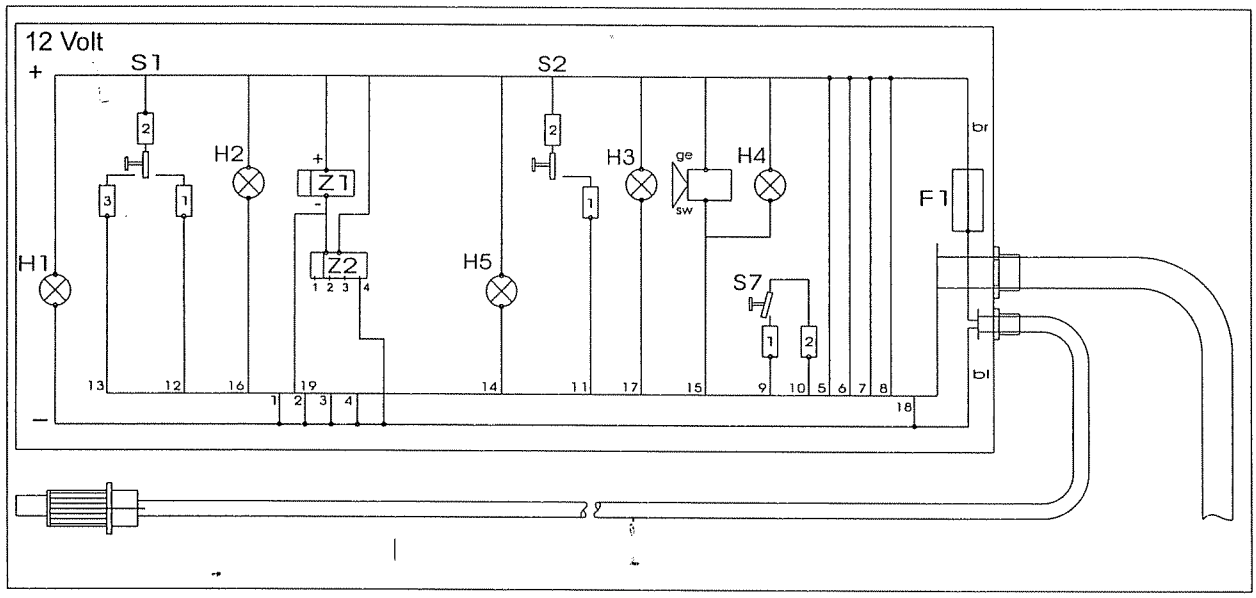
A.2 Circuit diagram of entire implement



Legend:

MS 1	Magnetic valve tail gate	S 3	Open tail gate switch
MS 2	Magnetic valve pick up	S 4	Opticut switch
MS 3	Magnetic valve Opticut	S 5	Twine binding switch
U 1	Control circuit net wrapping	S 6	Net wrapping switch
(S 1)	Front acutating motor switch	S 7	Bale ejector switch
(S 2)	Rear acutating motor switch	S 8	Counter signal switch

A.3 Circuit diagram pilotbox T



Legend Pilotbox T:

S 1 Tail gate/pick up toggle switch

S 2 Opticut toggle switch

S 7 Net wrapping gauge switch

H 1 Power indicator light

H 2 Tail gate indicator light

H 3 Opticut indicator light

H 4 Binding mechanism indicator light

H 5 Bale ejector indicator light

Z 1 Counter: total number of bales

Z 2 Counter: daily number of bales

F 1 Fuse 25 A

notes:

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GmbH & Co KG
Hauptstraße 99
78244 Gottmadingen
Germany

Tel. +49 7731 788 0
Fax +49 7731 788 353

Prod. series nr.

gültig ab Produktion Nr. (PIN)
vanaf Produkt identiteitnr. (PIN)
effective from ident. nr. (PIN)
a partir du no d`ident. du produit (PIN)

6811 - 43
6820 - 28
6824 - 21
6826 - 15
6829 - 13