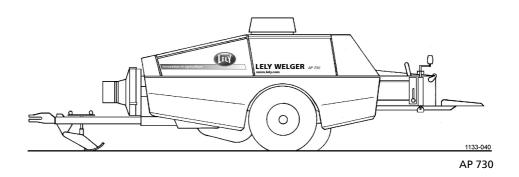
LELY WELGER

AP 530 / 630 / 730 / 830



1132.99.03.01 03.95



Operator's Manual



www.lely.com

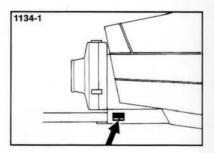
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Read and observe the instruction manual before putting the machine into operation! In this manual, we have printed the warning sign at all points which relate to safety. Pass on all safety instructions to other operators! The warning and information plates attached to the pick-up baler give important advice on the safe operation of the machine. Observe this advice for your own safety!

The serial number is stamped on the type plate shown adjacent. Matters relating to the guarantee and any queries cannot be dealt with unless this number is stated. Please therefore enter the number in this box immediately on receipt:





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Instruction manual No.1132.99.03.01

KCS 03.95.500 000

Manufactured by:

Welger GmbH

Postfach 1965 • 38289 Wolfenbüttel
Tel.: (05331) 404-0 • Fax: (05331) 404-266

^{*} Please note that equipment features indicated with [*] in this instruction manual are standard for certain model versions only or are only available for certain models as extra equipment. In addition, these equipment features are not available in all export countries.

Handover declaration

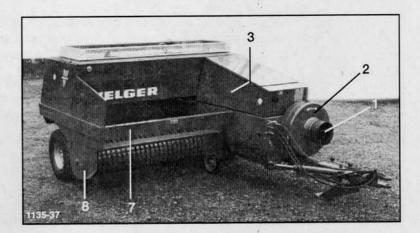
Please complete this form fully on delivery of the machine and return to the importer. Guarantee claims cannot be processed until this form has been received.

		(A) D	
		(1) Date of delivery	
(2) Type:			AP
Maschine No.: (refer to type pla	te: #)		
			5 balania tan 5 00
hinged loading chute		guide shield	□ bale ejector P 23
hydraulic pick-up lifting device*	☐ hydr. di mechai	raw-bar pivoting nism*	
3) Address of customer			
Name:			
Address:			
Postcode:	Town:		
The machine shown in (2) was	purchased / put	into use by me.	
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(5) Address of sales agent / impo	Date	e EC Statement of Cog g and maintenance reg	gulations contained in it we Signature of customer signature if not the same as (5)



2. Safety components

- 1. Guard tube for p.t.o. drive shaft
- 2. Guard casing for flywheel
- Side casing panels (secured with quick-action catches)
- 4. Guard casing for tying section
- Guard casing for cross-feeder section
- 6. Twine box cover
- 7. Safety bar for pick-up section
- 8. Side cover of tine path







Always maintain safety elements in the proper condition. Before starting the machine, all guard casings must be fitted and closed!

Note: To aid recognition of the individual parts, the illustrations in this instruction manual sometimes show the machine with the guard casings removed. This instruction manual covers the types AP 530, AP 630, AP 730 and AP 830. Unless otherwise stated, text and pictures relate to all types. The expressions "right", "left", "front" and "back" relate to the direction of travel of the machine.

3. It's a matter of your safety...



- Never carry out adjustments and repairs or maintenance and care work on the machine when the drive is running. Always first disengage the p.t.o. drive shaft and withdraw the drive shaft from the end of the p.t.o. drive shaft before working on moving parts of the machine.
- When driving on the road, the drive shaft must always be coupled to the p.t.o. drive shaft.
- Never attempt to remove harvested crops from the machine when the drive is running. Always first disengage the p.t.o. drive shaft and switch off tractor engine and remove the ignition key.
- During work, only the driver should be on the tractor. Riding on the baler is prohibited!
- Do not climb on the draw-frame or other parts of the baler when this is in operation. Otherwise, keep your distance from the pick-up.
- All safety mechanisms must be fitted to the baler and be in the proper condition. Before opening safety guards, disengage power take-off shaft and switch off tractor engine, remove ignition key and wait until the machine has completely stopped.
- Before beginning assembly work on the hydraulics, depressurise the oil system. Work on pressure reservoirs should only be carried out by a specialist workshop.
- Before uncoupling the tractor, use the two chocks to prevent the pick-up baler from rolling away. Carry
 the chocks on the machine. Store the drive shaft in the holder provided for it after withdrawing it from
 the tractor's p.t.o. drive shaft.
- Before threading the baling twine, disengage the baler drive, switch off the tractor engine and remove the ignition key. Move the safety bolt on the star wheel of the knotter trip to the lock position.

Notes on fire safety

- Under certain conditions, harvested crop is easily ignited.
- Always keep the baler free of crop matter and oil leakages.
- If any parts of the machine run hot, find and eliminate the cause.
- · Keep the electrics of the tractor and baler and the exhaust system of the tractor in proper condition.
- Avoid smoking and always keep a suitable fire extinguisher to hand.



When maintaining or assembling the machine

- · Disengage the power take-off shaft
- · Switch off the tractor engine
- · Remove the ignition key

when working in the area of the tying unit, additionally:

engage the tying unit safety mechanism (fig. 1).

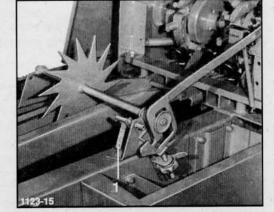


fig. 1

Engaging the tying unit safety mechanism

If the needles are positioned in the baling channel, turn the flywheel by hand in the normal running direction until the needles and knotter unit are in the home position.

Pivot the safety bolt (fig. 1) upwards, slide through the slot in the "off" direction and pivot downwards again.

Pay attention to the sticker "Tying unit off"!

Guard casings

To comply with the European safety regulations, manufacturers of machines are, according to prEN 704 from 1.1.95 at the latest, obliged to design fixed isolating guard casings in such a way that they can only be opened by means of a tool and will automatically lock again without the need for a tool.

To open the guard casings on the WELGER pick-up baler, the hexagon head of the catch is turned counter-clockwise with a 13 mm spanner and the casing is removed from the machine (fig. 2). To close the cover, the panel is pressed against the machine until the catch can be heard to engage.

To open the guard casing of the flywheel, the catch springs on the locking clasps are to be pushed back with a small screwdriver or similar (fig. 3).



fig. 2

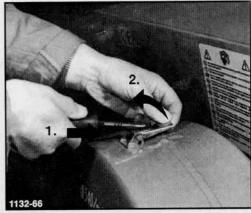


fig. 3

Warning symbols

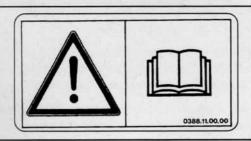
Areas of danger which cannot be made safe by a change of design are indicated by a warning symbol. Since, in most cases, the warning symbol is shown without text, the precise meaning is described below.



Make sure that warning symbols are recognisable at all times. If any of the warning symbols on your pick-up baler are missing or damaged, they are to be replaced.

Warning symbol

Meaning / Spare part No.



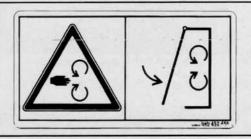
Carefully read operator's manual before handling the machine. Observe instructions and safety rules when operating.

Spare part No.: 0388.11.00.00



Stay clear of articulation area while engine is running.

Spare part No.: 0389.99.00.00



Close shields and guards prior to operating the machine.

Spare part No.: 0389.92.00.00



Insert safety lock before getting in hazardous area.

Spare part No.: 0393.92.00.00

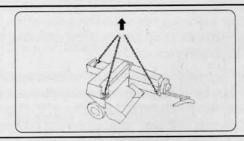


Never reach into pick-up area as long as tractor engine is running with PTO connected.

Spare part No.: 0389.94.00.00

Warning symbol

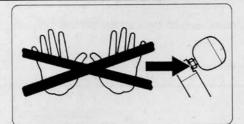
Meaning / Spare part No.



The three lifting eyes on the pick-up baler are indicated by this symbol.

No other fixing points may be used for hooking up a crane.

Spare part No.: 0393.06.00.00



Work on the pressure reservoir may only be carried out by a specialist workshop.

Spare part No.: 0391.33.00.00

Proper use

- The pick-up baler has been built exclusively for the production of bales compressed from grain crops lying on the ground (proper use). Usage going beyond that does not constitute proper use. The manufacturer is not liable for damage resulting from improper use; the operator alone bears the risk.
- Proper use also includes adherence to the operating, maintenance and servicing conditions prescribed by the manufacturer.
- The pick-up baler may only be used, maintained and repaired by persons who are familiar with such tasks and who have been informed of the dangers.
- The attachment of auxiliary equipment to the machine other than at the positions provided by the factory is prohibited.
- The relevant accident prevention regulations, regional safety standards and other generally recognised safety regulations in particular, are to be adhered to.
- Unauthorised alterations and the installation of non-approved parts and equipment on the machine exclude any liability on the part of the manufacturer for damage resulting from this. Only original WELGER spare parts are to be used. Components covered by CE regulations must conform with these regulations.

To be observed when driving on the road

The pick-up baler is an agricultural trailer machine. Neither a licence nor operating permission is required to operate it. When travelling on the road, an electric lighting system must be provided to satisfy road traffic regulations. This is already installed on your WELGER pick-up baler.

For travelling on public roads and tracks, we refer you to the lighting regulations for trailer machinery. For this purpose, the connecting cable supplied with every baler must be plugged into the sockets on the tractor and machine. The lighting is to be checked regularly for correct functioning. Additionally, all direction indicators, brake, reverse and side marker lamps, as well as rear and side reflectors must be kept clean. The operator is to make sure that no parts of the lighting systems are covered by harvested crop hanging over the sides of the machine.

The wheel chocks which are part of the safety equipment (2 pieces) are to be carried on the baler at all times.

The permissible speed of 25 kph must not be exceeded!

Noise level of tractors and work machinery

The EC Directive 86 - 188 - EEC relating to noise at the workplace instructs employers and employees to assess noise at the work place and to control it.

The noise level normally experienced during field work is subject to certain fluctuations which partly depend on the noise level of the tractor and partly on the operating conditions.

The noise level generated by the pick-up baler, measured at the head height of the driver with the tractor window open, is less than 70 dB (A) under normal operating conditions.

The combined noise level of baler and tractor primarily depends on the level of tractor noises (radios are also a source of noise).

We recommend that the tractor is operated with the windows closed.

4. Technical specifications

	AP 530	AP 630	AP 730	AP 830							
Channel dimensions	360 x 480 mm 360 x 490 mm										
Bale weight, depending on bale material, length and density	10–30 kg 12–35 kg										
Bale length, infinitely adjustable	0,5–1,2 m										
Double tying with twine* with a) Sisal twine b) Plastic twine	Continuous length: 200, 150 oder 125 m/kg Continuous length: 400, 320 oder 250 m/kg (Depending on density and bale weight)										
Twine consumption	approx. 500	m/100 bales with	average bale len	gth of 0.80 m							
Double tying with wire* Tensile strength Spool diameter Spool width Spool weight Wire consumption	non-galvanised, annealed, oiled tying wire of 1.8 mm or 2.0 mm thickness 35 - 49 kg/mm², stretch min. 12 % external: 336 mm, internal: 208 mm 152 mm approx. 45 kg 2 x 45 kg for approx. 700 to 750 bales with average bale length of 0.80 m										
Speed of p.t.o. drive shaft		540	rpm								
Ram stroke rate	100/min	90/г	min								
Pick-up Pick-up width approx. Rake width Tine bars Tines per bar Tine spacing	1,73 m 1,42 m 5 21 71 mm	1,80 m 2,05 m 1,54 m 1,79 m 5 5 25 29 64 mm 64 mm									
Weight of baler from:	approx. 1460 kg approx. 1690 kg approx. 1890 kg appro										
Length of baler in transport	4,65 m 5,30 m 5,60 m										
Width of baler	2,52 m 2,65 m 2,										
Height of baler without chute	1,63 m 1,67 m										
Tyres left right		implement tyre		i.3 impl. tyre impl. tyre							
Track width	2,24 m	2,3	5 m	2,60 m							
Power consumption, depending on use and ground, min.	18 kW (20 hp)										

Specifications are approximate figures and are not binding. Model supplied may differ.

5. Preparing for operation

Your pick-up baler is lubricated and all functions are checked before dispatch. The full performance of the machine can be used immediately provided the following advice is observed:

<u>^</u>

Attention!

When handling machinery in the area of the draw-bar, make sure that the machine is safeguard against rolling away.

Do not crank up the support foot until the baler is securely coupled to the tractor.

Due to the way they function, the support foot and pivoting drawbar can crush or cut at certain places. Take particular care when operating.

There must be no one standing between the machine an tractor when the tractor is being moved the baler.

When parking the baler, make sure that the support foot is on ground which is able take the weight. Always clip the drive shaft into the support provided for it.

Children must be kept away from the machine at all times!

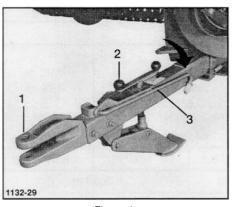


Figure 4

Coupling the baler and tractor

- □ Couple the baler and tractor so that there is as little play as possible. For this purpose, ensure that the hole diameter of the baler tow hitch 1 (fig. 4) matches that of the tractor's linkage draw-bar. The hole diameter of the tow hitch 1 of the baler is 32 mm as standard (22 mm on request).
- ☐ Set up the tractor's linkage draw-bar all round. But the rotation around its own axis mustn't be reduced at all.
- □ Adjust the height of the baler to the tractor's towing hitch by turning crank 2 (fig. 4). If you are using a linkage draw-bar, or by no more than 160 mm to either side.
- ☐ Feed the safety chain of the draw pin around the draw-bar and secure with the spring clip. After coupling the baler, raise its support foot by turning crank 2 as far as its stop.



Note

For swinging drawbar operation: Use special hitch eye for swinging drawbar!

Coupling the hydraulic lines*

When coupling the hydraulic hoses to to the tractor hydraulics, make sure that the hydraulic systems are depressurised both on the tractor and baler.

The height adjustment of the pick-up and the pivoting action of the baler draw-bar can be controlled by means of the tractor hydraulics. The baler has a number of hydraulic hoses with plug-in couplings for this purpose:

Function	
When driving	5) g device* (hose with stop valve) on the roads, the pick-up must be locked in ion by means of the stop valve
Hoses B and mechanism*	C are fore the hydraulic draw-bar pivoting

Identification	Mark H
Symbol	Colour
150-	red
Hose B (fig. 5) no symbol	-
Schlauch C (fig. 5) no symbol	=

When the baler is parked, the coupling sleeves on the end of the hydraulic hoses, as shown in fig. 5, are to be pushed into the hose holders on the baler. To couple the hoses to the tractor, withdraw the hose couplings from the hose holders by pulling back the sleeves and plug into the appropriate sockets on the tractor.

Moving the baler into the working position

Keep away from the pivoting area of the draw-bar unless the p.t.o. drive shaft is disengaged and the tractor engine is stopped.

draw-bar I and the

Where the draw-bar is hydraulically* pivoted, the baler draw-bar can be smoothly pivoted and locked by means of the tractor hydraulics.

Where the draw-bar is adjusted mechanically*, pull out the locking pawl 4 (fig. 6). This can be done from the tractor seat by means of a draw cable 5. According to the width of the tractor, move the baler draw-bar to one of the catch positions and secure with the pawl 4.

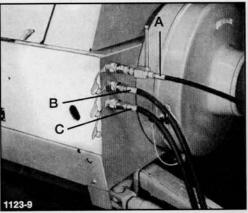


fig. 5

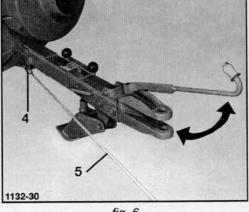


fig. 6



When driving on public roads:

Pivot the draw-bar far enough in that the baler is travelling behind the tractor.

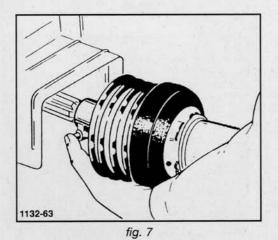
In the case of a hydraulically* pivoted draw mechanism, lock the tractor control valve by mechanical means. If this is not possible, uncouple the hydraulic hoses.

In the case of mechanical* draw-bar adjustment, make sure that the pawl 4 (fig. 6) is securely engaged.

Fitting the drive shaft

The guard tube and guard cone of the drive shaft and p.t.o. drive shaft must be fitted and in a proper condition.

Before engaging the p.t.o. drive shaft, make sure that the tractor p.t.o. drive shaft is running at the correct speed and direction of rotation for the machine. Where the tractor p.t.o. drive shaft coupling is hydraulically or pneumatically engaged, only engage or disengage the take-off shaft when the engine is at idle.



Clean the p.t.o. drive shaft stubs on the tractor and baler. Attach the drive shaft at both ends, when doing so press the security pin until locked in position (fig. 7).

Fold down the drive shaft support 3 as shown in fig. 4.

Adapting the drive shaft

Make a note of the maximum operating length LB (see fig. 8). Try to achieve as much overlap Pu as possible. The drive shaft may be extended by no more than half of the overlap LZ available in the pushed-together state Pu. If necessary, adjust the length of the shaft.

- To do this, hold the shaft halves next to each other in the shortest operating position and mark out (fig. 9).
- Shorten inner and outer guard tubes by equal amounts so that a sliding travel of 40 mm is retained in the closest operating position.
- Shorten inner and outer special-section tubes by the same amount as the guard tubes.
- Round off the cut edges and carefully remove any filings.
 Smear grease on sliding special-section tubes.

Use the retaining chain to prevent the guard tubes from turning with the drive shaft.

Each time before operating the shaft, check that it is securely engaged.

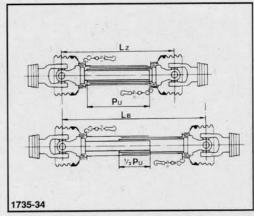


fig. 8

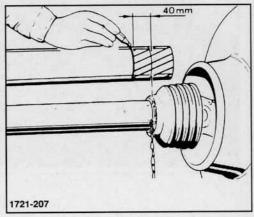


fig. 9

Connecting the electrics

For travelling on public roads and tracks, you are referred to the lighting regulations for trailer machinery. For this purpose, the connecting cable supplied with the baler must be plugged into the sockets on the baler and tractor. Check that the lighting is functioning correctly.

6. Twine tying*

Make sure the machine is switched off and the ignition key removed when inserting new twine spools and threading the twine.

Before working in the area of the knotter, ensure the knotter trip is secured with latch 1(fig. 10).

Securing the knotter trip

If the needles are positioned in the baling channel, turn the flywheel by hand in the normal running direction until the needles and the tying mechanism are in the home position.

Pivot the safety bolt (fig. 10) upwards, slide through the slot in the "off" direction and pivot downwards again. Pay attention to the sticker "Knotter off".

Use baling twine of good quality. Refer to the technical specifications on Page 7. Where the bales are to be stored outside, we recommend the use of plastic twine. Place the twine rolls upright in the twine box (fig. 12 or 13). The beginning and end of the twine should be at the top. If the spool is the wrong way round, the twine will tend to loop and tear.

Up to 6 twine spools (AP 530: 4 twine spools) can be stored in the top twine box. A box below it (AP 630, AP 730 and AP 830 only) can take further spare spools.

To avoid having to thread the twine frequently, it helps to join several twine spools together in the top box.

Pull the end of the twine of spool A, upwards out of the casing and knot together with the beginning of the twine on spool A2. The knot shown in fig. 11 can be used for all types of twine. Proceed similarly with spools B₁ and B₂.

Threading the baling twine

Note! Thread twine only when the drive of the machine is disengaged; lock the knotter trip as described above. When threading the twine, pay close attention to fig. 12 (AP 530) or fig. 13 (AP 630, AP 730 and AP 830). Correctly threaded, the twines for the left and right needles will run without touching each other.

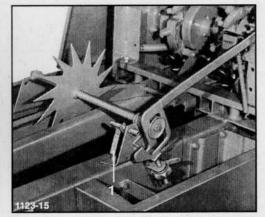


fig. 10

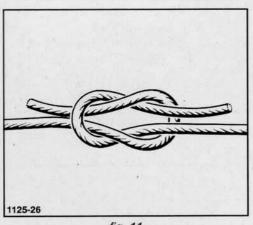


fig. 11

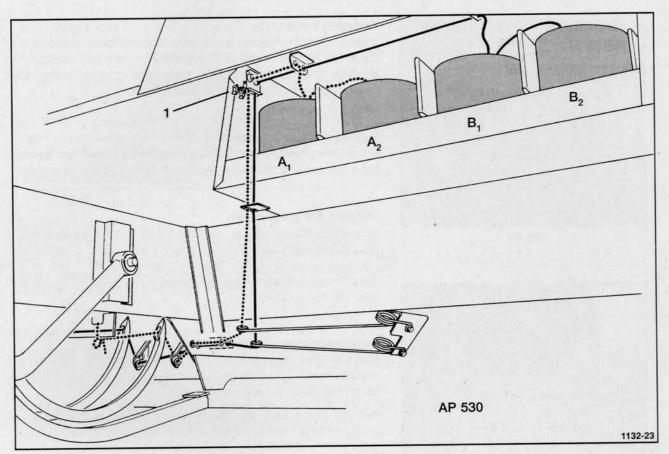


fig. 12

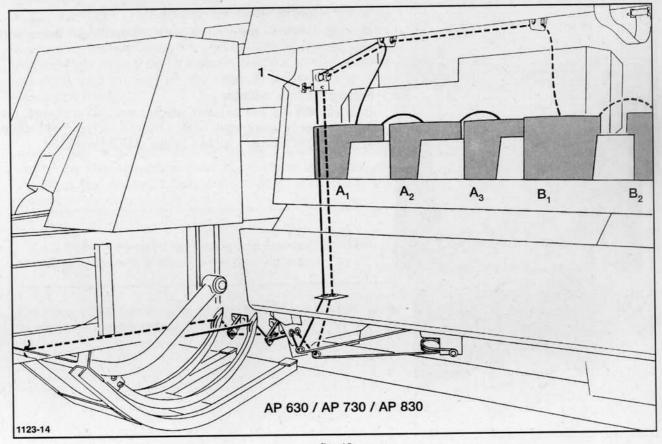


fig. 13

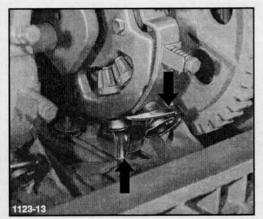


fig. 14

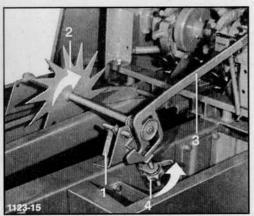


fig. 15

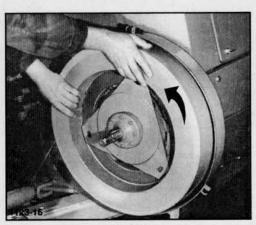


fig. 16

Cleaning the knotter

To ensure that the twine is securely held and cannot slide out of the twine holder during baling, carefully wash off rust-proofing coating on the twine holder and twine knotter with petrol before operating the machine (see arrows in fig. 14).

Setting the twine tension

Adjust the pressure springs to a length of 26 mm by means of the wing nuts on the twine tensioner (item 1 in fig. 12 or 13).

Tripping the tying cycle

Release safety device on the knotter trip: pivot the safety bolt 1 (fig. 15) upwards, slide through the slot in the "on" direction and pivot downwards again. Turn star wheel 2 by hand in the direction of the arrow until control rod 3 jumps forwards and trips the tying cycle.

Drawing the twine into the knotter

Turn the flywheel in the direction of the arrow (fig. 16) until the needles have moved up and down once. The two twine holders have now taken up the baling twine.

Pull the loops from the two knotters. Remove the pieces of knotted twine from the cross strut of the channel floor.

Adjusting the bale length

To alter the bale length, turn the star nut 4 (fig. 15):

Turn the nut in the direction of the arrow for longer bales, and vice versa.

Setting the bale counter

To check the number of bales which have been pressed, the bale counter (on the knotter next to the control rod) must be set to "zero" with the key supplied before starting work.

7. Field use



The pick-up baler is safeguarded against foreseeable accidents.

In spite of this, caution must still be taken when working. Before use each time, check that all safety mechanisms on the machine are fitted and secured.

Never repair faults when the drive is running.

Laying of swaths

The full performance of the machine can only be exploited if care is taken when laying the crop in even swaths. For that reason, lay swaths evenly. The machine will then work continuously and at maximum output.

Speed of p.t.o. drive shaft

The baler reaches its specified ram stroke rate only when the tractor p.t.o. drive shaft is running at 540 rpm. Check the stroke rate with a watch (see technical specifications).

The baler is not suitable for working at the extra take-off shaft speed of 1000 rpm obtainable with newer tractors.

Adjusting the pick-up height

a) Mechanical pick-up lifting device *

Adjust the height of the pick-up by means of draw cable 1 as shown in fig. 17 so that the tines are approximately 2 cm from the ground. Loosely tie the draw cable to the tractor with slack. The pick-up can be lifted by a gentle, brief pull on the cable. To lower the pick-up, pull on the cable forcefully at first then gently and briefly.

b) Hydraulic pick-up lifting device*

Raising and lowering of the pick-up is performed via the control valve of the tractor hydraulics. On the field, lower the pick-up so that the tines are approximately 2 cm above the ground, as shown in fig. 18. Avoid having the pick-up tines touch the ground.

Risk of injury! When raising and lowering the pick-up, do not allow anyone to stand in the pivoting area.

A support wheel can be fitted so that the pick-up is better able to adjust to unevennesses in the ground.

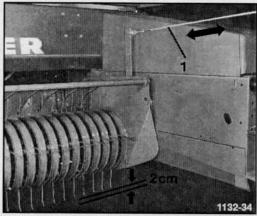


fig. 17

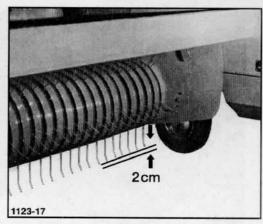


fig. 18

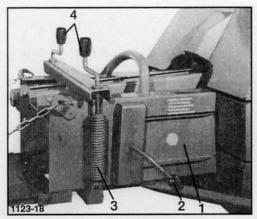


fig. 19

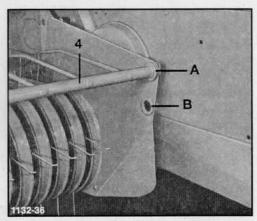


fig. 20

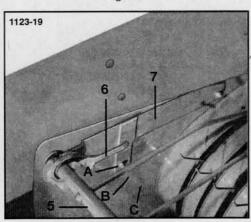


fig. 21

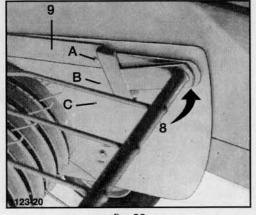


fig. 22

Baling density

Before starting work, loosen the tension flaps* 1 (AP 630, AP 730 and AP 830) on both sides of the baling channel by turning the spindles 2 (fig. 19).

Slacken tensioning springs 3 on both sides of the baling channel by turning hand cranks 4. Set the required baling density when baler is working by gradually tightening spindles 2 and hand cranks 4.

Always tighten the tension flaps* 1 first before increasing the baling density with hand cranks 4.

Where the baling material is extremely dry, the normal tensioning springs can be replaced by dry crop springs.

Dry crop springs.....Order No. 0940.29.91.00 (2 x).

Adjusting the windguard

AP 530: The windguard 4 is freely movable between two stops (fig. 20) in two different set positions A and B.

To change positions, the split pins on both sides must be removed. The windguard can then be withdrawn out of the side panels of the pick-up.

AP 630, AP 730 and AP 830: The windguard 5 is freely movable between two stops in three different set positions A, B and C (fig. 21).

To change the position of the windguard, release the catch lever 6, remove the windguard 5 at one end from the holder 7, pivot forwards and twist so that the pin 8 (fig. 22) at the other end of the tube can be guided through the slot in holder 9 and thus pulled out.

The windguard can be fixed higher or lower to suit the length of the crop. With normal crop, use the upper position A. To pick up short crop, set the windguard lower.

Note: When adjusting the height of the windguard, make sure that it is the same on both sides!

Pick-up support wheel*

The baler can be fitted with an adjustable pick-up support wheel to ensure that the pick-up remains at the correct distance from the ground even on unneven fields, to be sure of picking up the crop cleanly.

To achieve the required distance from the ground, adjust the support wheel higher or lower in one of the three specified holes. Normally, position the wheel so that the tines are 2 cm clear of the ground when the pick-up is lowered (fig. 23).

If the support wheels have pneumatic tyres, the air must be let out of the tyre before parting the split rims.

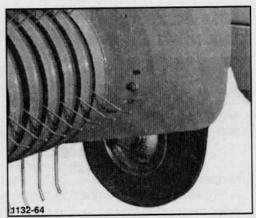


fig. 23

Cross-feeder with deflecting mechanism as overload protection

The cross-feeder and packer of the baler are equipped with an automatic overload safeguard. The tines of the cross-feeder and hydraulic packer work automatically without the usual shear pins and cope with blockages by deflecting and automatically returning to the working position.

The machine can often work itself free in the event of a blockage. By reducing the speed of the p.t.o. drive shaft briefly, the resistance to deflection of the linkage of the cross-feeder line increases. The plug of material is pushed into the baling channel and the machine then runs free again.

If the tines are deflected frequently, however, this indicates that the machine is working at its load limit. Continuous deflection increases wear in the drive of the machine. If this occurs, it is advisable to drive the tractor in the next lower gear.

Note: If the fault is not cleared after repeated deflection of the cross-feeder and packer tines, the blockage is too severe for the baler to cope with. Disengage the p.t.o. drive shaft, switch off the tractor engine and clear the material from the cross-feeder by hand. On no account remove the blockage by turning the p.t.o. drive shaft or flywheel in reverse direction. Doing so may permanently bend the flat springs of the cross-feeder and damage the hydraulic packer.



Never attempt to remove crop from the machine with the drive running. Always first disengage the p.t.o. drive shaft, switch off the tractor engine and remove the ignition key.

Working technique

To obtain the best performance from the machine, the tractor speed should be matched to the swath height. Where the swath is denser, stop the tractor briefly and allow the baler to clear itself.

To prevent damage to drive components when negotiating tight bends, the p.t.o. shaft must first be disengaged. Follow the instructions of the drive shaft manufacturer!

8. Special equipment

Bale throw-off chute

The bale throw-off chute (Part No. 1115.81.91.01) throws the bale to the left or right to give the tractor/baler combination more free space.

Assembly: Insert the throw-off chute into one of the holes beneath the bale guide plate and secure with hooks.

Hinged loading chute

A hinged version of the loading chute is additionally available (Part No. 1135.80.00.00). This remains on the baler even when driving on the roads and is merely hinged forwards.

Baler-mounted bale ejector P 23

is mounted on the end of the baling channel and loads the ejected bales automatically onto an attached, specially designed trailer (Part No. 3157.00.00.00).

Trailer hitch

The adjustable trailer hitch (Part No. 1122.89.00.00) is required when one of the above loading chutes or the baler-mounted bale ejector P 23 is in use.

Attachment: Bolt the hitch to the fixing holes already provided beneath the baling channel and push in the trailer bar. Insert the linchpin into one of the retaining holes and secure with the spring clip.



Do not couple up a single-axle trailer to the trailer hitch.

When travelling on public roads and tracks, the trailer hitch must be pushed completely in. It must under no circumstances project more than 1 m beyond the rear lights of the baler

Tow hitch with 20 mm diameter pin

This tow hitch (Part No. 0753.04) is designed for the draw-bars of smaller tractors. The linchpin (Part No. 2101.05.07.01) is necessary for this.

Pick-up guide shield

The pick-up guide shield guarantees perfect gathering of short crops (Part No. 1123.42.92.00).

Tight-angle drive shaft

The tight-angle drive shaft makes the tractor/baler combination more manoeuvrable because the shaft can be flexed by up to 80° and does not require disengaging when negotiating bends. To avoid breaking the joint, the p.t.o. drive shaft must on no account be flexed by more than 80° - even when stationary.

Tight-angle drive shaft:

Part No. 0930.14.08.00

Tight-angle drive shaft with freewheel:

Part No. 0930.14.09.00

Dry crop tensioning springs

Where the baling material is extremely dry, dry crop tensioning springs (Order No. 0940.29.91.00) (2 x) can be used in place of standard tensioning springs 3 (fig. 13).

9. Maintenance, care and adjustments

Never carry out servicing and maintenance work, or adjustments and repairs to the machine when the drive is running. Switch off the tractor engine and wait for the machine to come to a standstill. Disengage the p.t.o. shaft and withdraw the drive shaft from the p.t.o. shaft before commencing work on the machine.

To ensure that the machine maintains its value as long as possible and that it works efficiently without the need for premature repairs, carry out servicing regularly and take good care of the machine.

General advice

Tighten up all bolts and nuts after approximately 20 running hours - inside the machine too. However, take care not to alter adjusting screws.

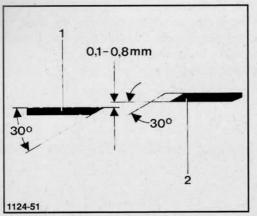


fig. 24

The following components are under spring tension!

- triangular plate spring of the flywheel
- flat springs of deflecting mechanism of the cross-feeder
- torsion bar for pick-up springing

Maintenance work is to be carried out by a specialist workshop

Checking the road wheels

Check that the wheel nuts and caps are tightly fitted. Check that the fastening bolts of the axle stub are tight.

Maintain the correct tyre pressures:

10.0/75-15.3 i	mpl												2.3	bar;
11.5/50-15.3 i	mpl												2.3	bar,
7.00-12 impl.		* 1											2.0	bar,
8.00-12 impl.													2.0	bar.

Checking the cutting mechanism

Check that the knives on the frame and ram are tight and sharp. Hone knife edges when necessary; regrind after long periods of use. Blunt knives will cause the baler to labour and suffer performance loss; incorrectly ground knives will override and cause poor functioning or damage.

Maintain edge angles and chamfers as in fig. 24 and fig. 25. Grind frame knife 1 and ram knife 2 to an edge angle of 30. On frame knife 1 below, grind counter-chamfer as shown in fig. 25.

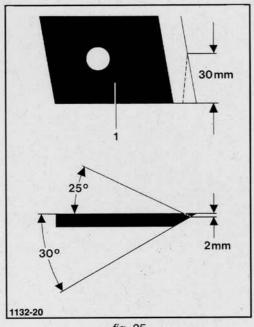


fig. 25

Adjusting the knives

To install new or reground knives, proceed as follows:

 Remove play in the ram by adjusting the ram slide rails in the frame:

AP 530: Ram 1 is guided (fig. 26) by slide rails during the forward and return strokes. The rails are arranged in the channel below on the cutting side and above on the opposite side of the knife.

To ensure that the ram runs without play, first remove the feed guide plate from the cross-feeder table and undo the fixing bolts 3. To remove play, the bottom guide rail 2 can be pressed against the ram roller by adjusting the screw 4. To ensure that the guide rails remain parallel, repeat the process with the ram at different positions. Retighten bolts 3. Lock adjusting screws 4. Screw the M 10 set screws lightly against slide rail 2 and refit the feed guide plate.

AP 630: Ram 1 is guided by means of three half-round slide rails, of which the two on the left in relation to the direction of travel can be adjusted in situ. Elongated holes in the frame or shims (see spare parts list) are used for adjustment purposes.

AP 730 a. AP 830: Ram 1 is guided by means of three round slide rails. Elongated holes in the frame or M16 set screws (see spare parts list) are used for adjustment purposes.

- Adjust ram knife 6 to remove play in relation to the bottom guide rail 7 in the frame (fig. 26 or 27), by placing shims (see spare parts list) underneath.
- The frame knife (item 1, figs. 24 and 25) is also adjusted to the correct play of 0.1 - 0.8 mm (fig. 24) in relation to ram knife 2 by placing shims (see spare parts list) underneath.

Tighten the knife screws. After fitting the knives, turn the baler by hand (see fig. 16) and check the play once again. Allow the ram to go through a complete cycle when doing so. The knives must move freely and not collide.

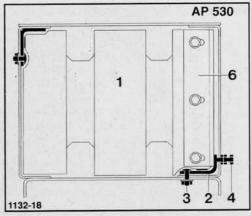


fig. 26

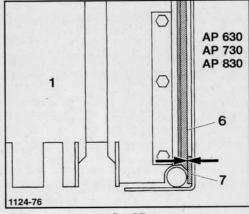


fig. 27

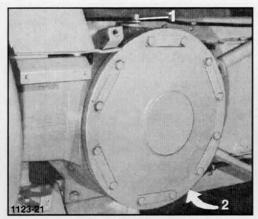


fig. 28

Changing the transmission oil

The oil in the transmission is to be changed after the first 50 - 100 running hours. Unscrew the oil filler plug 1 (fig. 28) upwards out of the transmission housing. Unscrew oil drain plug 2 underneath and drain off the used oil into a container held beneath the transmission. Unscrew the oil level plug from the hole on the side of the housing.

Clean drain plug 2, reinsert and tighten. Fill up with gear oil Hypoid SAE 90 (EP 90) until oil emerges from the level hole. Replace and tighten the oil level and oil filler plugs.

Oil capacity:

AP 530 approx. 1.0 liter AP 630 approx. 3.5 liter AP 730 approx. 4.0 liter AP 830 approx. 4.0 liter

Note: Dispose of the used oil in the proper way!

Check the oil level regularly. If oil is lost through leakage, eliminate the cause and top up before problems occur.

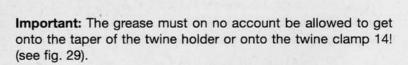
Oil change interval

- first oil change after 50 100 hours
- then every 500 hours or every two years before the season starts

Twine holder and knotter

When carrying out repairs and fitting new parts, apply multipurpose grease to the bearing surfaces on the twine holder 4 and knotter 5 (fig. 29): undo lock nut 6 and bolts 7 and 8. Remove flat spring 9. Undo bolt 10 (fig. 30) and the two bolts 11, then withdraw the knotter mechanism. Force the pins 12 out of the bevel gear 13. Withdraw the twine holder and knotter and smear with a little multi-purpose grease.

Wipe off any excess grease.



Push in the shafts again, checking that the clamp 14 and knotter cam 15 are in the correct position. Refit pins 12 in the correct position of the bevel pinion:

Twine holder: knife pointing to face of bevel pinion;

Knotter: roller of knotter tongue pointing to face of

bevel pinion.

Reinstall the knotter mechanism in the reverse sequence. Adjust bolts 7 and 8 on flat spring 9 as described on page 31.

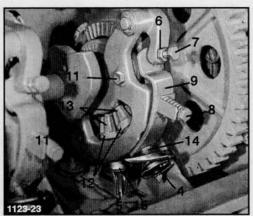


fig. 29

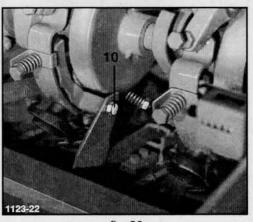


fig. 30

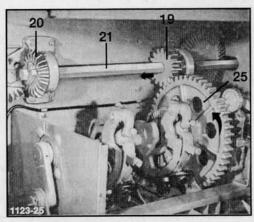


fig. 31

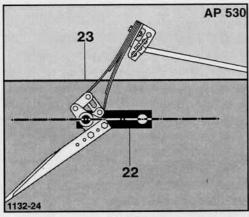


fig. 32

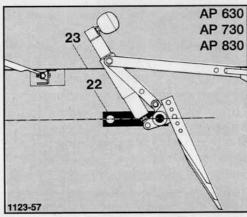


fig. 33

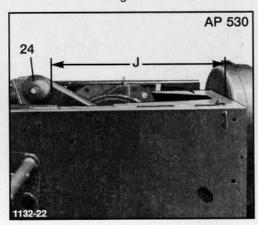


fig. 34

The machine adjustments described below should be carried out in specialist workshop if possible:

- Packer timing in relation to the ram
- Needle timing in relation to the ram
- · Cross-feeder timing in relation to the packer.

Timing the packer in relation to the ram

When the ram is clear of the intake opening, the packer forces baling material into the baling channel. This process is very fast and requires precise timing:

- · Take the cover panel out of the the twine box.
- Undo the clamping discs on pinion 19 and bevel gear 20 (fig. 31).
- Remove circlip 31 (fig. 37) from hexagon shaft 21. Drive hexagon shaft 21 out of bevel gear 20.
- Align packer crank 22 parallel with the top of packer box 23 (fig. 32 or 33) and jam in position.
- Set the head of operating rod 24 to achieve measurement J by turning the flywheel in the normal running direction and jam in position:

- In this position, slide the hexagon cross shaft 21 into the bevel gear 20. If this is impossible, move the operating rod head 24 (fig. 34 bzw. 35) to the specified position, by turning the flywheel in the normal direction, as many times as necessary to allow hexagon cross shaft 21 to be slid into bevel gear 20.
- Remove the jamming arrangement from the packer. Check control measurement J once more. Ensure the following tolerances are adhered to:

AP 530: J = 600–620 mm AP 630: J = 170–185 mm AP 730/AP 830: J = 330–350 mm

 Retighten the clamping discs on the pinion 19 and bevel gear 20. Replace circlip 31. Replace the cover panel in the twine box.

Note: When fitting the clamping discs, make sure that the head of the locking screw is positioned on the flattened side of the drive peg.

Timing the needles in relation to the ram

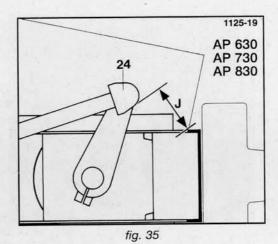
When installing new needles, these must be adjusted before use (see chapter "Adjusting needles").

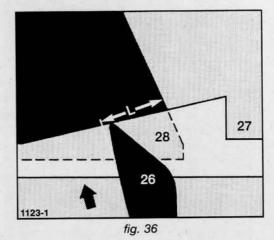
- Trip the knotter mechanism (see page 14, fig. 15).
- Undo the clamping disc on pinion 19 and move pinion 19 in the direction of the arrow (fig. 31) until it is no longer engaged with the knotter drive gear 25.
- Turn the knotter drive gear 25 in the direction of the arrow until the tip of the needle 26 (fig. 36) is level with the top of the bottom bar.
- Jam the knotter drive gear 25 in position. Turn the flywheel in the direction of the arrow (fig. 16), until the tip of the ram 28 has gone past the needle tip by around 20 mm on the working stroke. In this position, engage pinion 19 once again (fig. 31) with knotter drive gear 25.

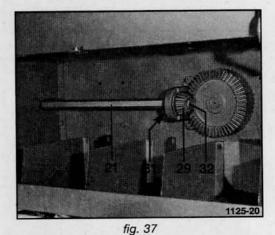
If it proves impossible to engage pinion 19 at the specified position, proceed as follows:

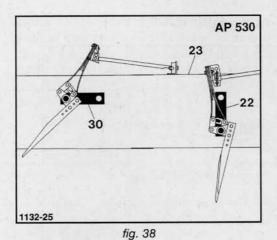
- Jam the packer and flywheel in position (the relative positions of packer and ram must not be altered when doing this).
- Undo the clamping disc on bevel gear 20 (fig. 31).
- Remove circlip 31 (fig. 37) from hexagon cross shaft 21.
- Drive hexagon cross shaft 21 out of bevel gear 20 so that pinion 19 (fig. 31) can be withdrawn from cross shaft 21 and pushed on again moved around by 1/6 of a revolution. If the gear teeth do not yet engage, keep repeating the process in the same direction of rotation of pinion 19 until it engages correctly with knotter drive gear 25.
- · Drive hexagon cross shaft 21 into bevel gear 20 again.
- Tighten the clamping discs on pinion 19 and bevel gear 20.
 Refit circlip 31 to hexagon shaft 21 (fig. 37).
- Remove all jamming arrangements.
- In this position of the ram, check the control measurement L (fig. 36):

AP 530: L = 20–30 mm AP 630: L = 20–30 mm AP 730/AP 830: L = 25–32 mm









30 22

fig. 39

AP 630 / AP 730

1123-58

Timing the cross-feeder in relation to the packer (AP 530 – AP 730)

To ensure that the cross-feeder does not collide with the packer:

- Take the insert out of the twine box. Remove circlip 32 (fig. 37).
- Drive hexagon cross shaft 21 out of cross-feeder drive pinion 29 in the direction of the arrow (fig. 37) after undoing the clamping discs on pinion 19 and bevel gear 20 (fig. 31).
- Align and jam cross-feeder crank 30 as shown in fig. 38 or 39 parallel with the top of the packer box 23.

AP 530:

- Move packer crank 22 downwards into the vertical position as shown in fig. 38 by turning the flywheel in the normal running direction.
- In this position, push hexagon cross shaft 21 into cross-feeder drive pinion 29 (fig. 37). If this is not possible, keep moving packer crank 22 (fig. 38) into the horizontal position by turning the flywheel until it is possible to push hexagon cross shaft 21 into cross-feeder drive pinion 29.

AP 630 and AP 730:

- Move packer crank 22 as shown in fig. 39, by turning the flywheel in the normal running direction, so that it is parallel with the top of the packer box and jam in position.
- In this position, push hexagon cross shaft 21 into cross-feeder drive pinion 29 (fig. 37). If this is not possible, keep moving packer crank 22 (fig. 39) into the horizontal position by turning the flywheel, until it is possible to push hexagon cross shaft 21 into cross-feeder drive pinion 29.

Retighten the clamping discs on the pinion 19 and bevel gear 20. Replace circlip 32 (fig. 37). Fit the insert into the twine box.

Employ the services of a specialist workshop to carry out repairs to the deflecting packer or cross-feeder. The flat springs of this feed mechanism are under considerable tension. There is a risk of injury when dismantling.

Timing the cross-feeder in relation to the packer (AP 830)

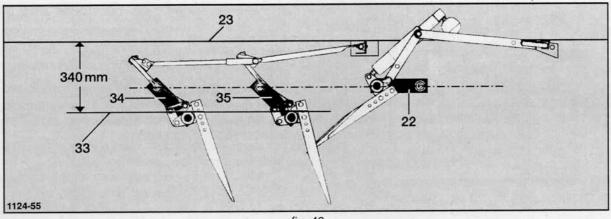


fig. 40

The two cross-feeders of the AP 830 must operate at a specific moment in relation to the packer:

Remove the casing panel from the twine box. Remove circlips 31 and 32 (fig. 37). After undoing the clamping rings on pinion 19 and bevel gear 20, (fig. 31) drive hexagon cross shaft 21 (fig. 37) in the direction of the arrow out of both cross-feeder drive pinions 31.

Align cross-feeder cranks 34 and 35 as shown in fig. 40:

A distance of 340 mm must be maintained between the top of packer box 23 and the top of distance sleeve 33. Jam both cross-feeder cranks 34 and 35 in this position.

Move packer crank 22 (fig. 40) by turning the flywheel in the normal direction of rotation so that it is parallel with the top of packer box 23 and jam in position.

In this position, push hexagon cross shaft 21 into both cross-feeder drive pinions 32 (fig. 37). If this is not possible, repeatedly move packer crank 22 (fig. 40) into the horizontal position by turning the flywheel, until it is possible to push hexagon cross shaft 21 into both cross-feeder drive pinions.

Remove the device used for jamming. Retighten the clamping rings on pinion 19 and bevel gear 20. Replace circlips 31 and 32 (fig. 37). Refit the casing panel into the twine box.

Employ the services of a specialist workshop to carry out repairs to the support cylinder of the packer or deflecting cross feeder. The support cylinder of the packer is under gas pressure. The flat springs of the deflecting cross feeder are under considerable tension! There is a risk of injury when dismantling!

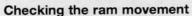
Quick adjustment of the packer

A good bale shape largely depends on even filling of the baling channel by the packer. To achieve a good bale shape with different crop materials, baling channel filling can be altered by repositioning the linchpin in the perforated link plate on the packer rod linkage:

	denser filling in driving	ng direction
	left	right
AP 530 (fig. 41)	pin 34 in lower holes	pin 34 in upper holes
AP 630/AP 730 AP 830 (fig. 42)	pin 33 in right hole	pin 33 in right hole

- Secure pin 33 or 34 with the guard pin. By adjusting the tines on the packer and cross-feeder, it is also possible to influence the way material is fed into the baling channel:
- Packer tines higher:

 ⇒ bales on knife side firmer.



Clean off baling material compressed onto the slide rails. Check that the ram pins are tight. Clean, examine and, if necessary, replace all rollers and slide rail scrapers on the dismantled ram.

Note: Have the ram slide rails in the frame of the machine readjusted only by a specialist workshop.

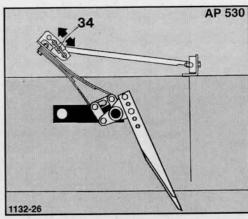


fig. 41

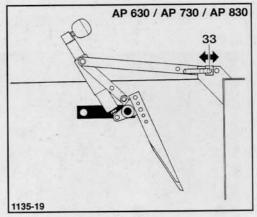


fig. 42

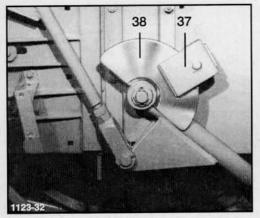


fig. 43

Adjusting the needle brakes

The needles should not run on beyond their highest or lowest position. For that reason, the needle brakes on the needle frame (fig. 43) and on the knotter shaft (fig. 45) should be adjusted as follows:

When under load the pressure springs 39 (fig. 44) and 42 (fig. 45) should be the same length as the gauge fingers 40 or 43 adjacent to them, i.e. they must end level with the respective gauge finger. Correct any differences with tensioning nuts 41 or 44

Replace brake pads 37 (fig. 43) or 45 (fig. 45) if the friction linings are worn out.

Note: The brake plates and friction linings must never come into contact with lubricants.

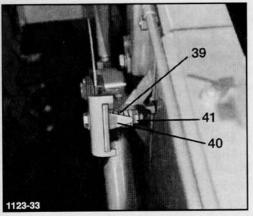


fig. 44

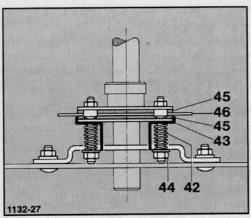


fig. 45

Checking the main drive

To protect the main drive from overloading, the baler is provided with an automatic dual friction clutch.

It consists of a plate clutch in front of the flywheel with triangular plate spring 1 (fig. 46) and either a conical friction clutch 2 located behind the flywheel (AP 530 and AP 630, fig. 47) or a three-block friction clutch (AP 730 and AP 830, fig. 48).

In the case of machines AP 530 and AP 630, the rear conical friction clutch also has a shear bolt 3 (fig. 47 and 49) of the size:

M 7 x 50 DIN 931-8.8 (Order No. 0901.10.50.00).

This bolt should be tight. It is secured by means of an M 7 DIN 934-8 hexagon nut and a A 7 DIN 127 spring washer.

For the safety of the baler, it is important that the dual clutch system is working correctly. The torque levels to be transmitted are:

a) for the plate clutch

b) for the three-block friction clutch

AP 730/AP 830: $M_D = 2500 - 2900$ Nm

These values are set at the factory. Normally, the friction clutch does not require readjustment. However, if the friction blocks and linings are badly worn, the correct torque specification may not be achieved. In this case, the friction blocks or linings of the dual clutch are to be replaced.

Note: Do not omit any of the shims 8 when rebuilding (fig. 47). All shims should be refitted. Place the correct number of shims 8 in front of and behind the triangular plate spring 1 to achieve the specified torque.

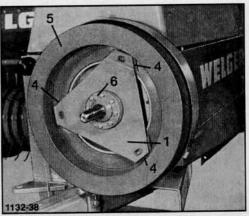


fig. 46

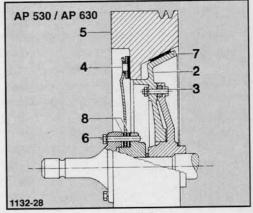


fig. 47

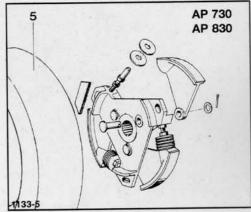


fig. 48

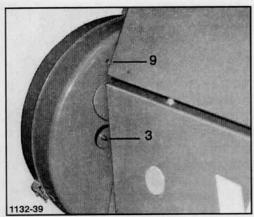


fig. 49

Before the season starts, dismantle the friction blocks of the front plate clutch and, with emery paper, remove any rust which has built up on the friction face of the flywheel 5. The friction blocks are dismantled by loosening the eight bolts 6 on the front of the triangular plate spring far enough to release the tension on the spring. Complete dismantling is unnecessary (fig. 46 and fig. 47).

If the shear bolt 3 frequently shears off (only AP 530 and AP 630), clean the friction linings 7 of the rear conical clutch (fig. 47). Adjustment of the torque figures given above is achieved by means of compensating shims 8 (fig. 47) which can be fitted in front of or behind the triangular plate spring 1.

Freeing up the conical clutch at the beginning of the season (only AP 530 and AP 630)

If the rear conical clutch has seized after being out of use for a long time, proceed as follows:

Of the eight fixing bolts 6 (fig. 46), unscrew two diagonally opposed bolts then screw them back in again by 3 - 4 turns. Remove the remaining screws entirely.

Through the hole 9 (fig. 49) in the rear of the flywheel guard, release the flywheel 5 from the cone of the clutch plate 2 by means of several blows on a hammer and drift (fig. 47).

When doing so, turn the flywheel several times between hammer blows.

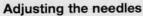
Jam the machine drive by inserting a wooden block in front of the ram knife.

Turn the flywheel 5 several times. Next, replace the remaining bolts 6 and tighten all eight bolts uniformly.

Protection of the knotter drive

The knotter drive is protected from overloading by a shear bolt in the needle operating rod. If the needles are obstructed during the upwards cycle, bolt 5 (fig. 50) shears.

- · Trace the cause and eliminate it.
- Take out any needles which are bent, and straighten or replace with new ones.
- Straighten bent needle frame and restore the original shape.
 If this is not possible, replace the needle frame.
- Pull out the split pin 6 and pin 7.
- Pivot the operating rod 8 downwards and withdraw from the operating rod shaft 9.
- Remove the remaining sheared off bolt and refit the operating rod 8.
- Carefully screw in a new shear bolt 5 (part no. 0901.98.10.00).



Firstly check whether the length of the needle operating rod from hole centre to hole centre, as shown in fig. 50, is adjusted to L = 504 mm.

If different, remove split pin 6, bolt 7 (fig. 50) and loosen lock nut 10, screw operating rod shaft 11 in or out as appropriate so that L = 504 mm.

Trip the knotter mechanism as shown in fig. 15. Move the flywheel in the normal running direction until the needles have reached their top position.

The control measurement A from flat spring to needle tip must now be 90 - 105 mm (fig. 51). If this is not the case, readjust the needles in their holders until measurement A lies within the specified tolerance.

Control measurement B from needle tip to the top edge of the cross rail (fig. 52) should be 138 - 143 mm. If this is not the case, loosen bolts 12 (fig. 53) and adjust measurement B by loosening or tightening bolts 13 and 14:

To increase measurement B, loosen bolt 13 and tighten bolt 14. Finally, lock the adjusting bolts and tighten bolts 12.

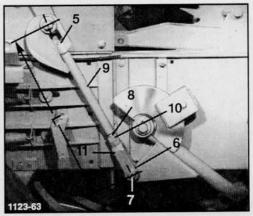


fig. 50

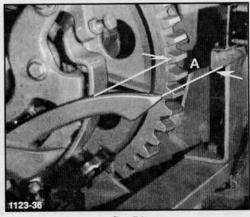


fig. 51

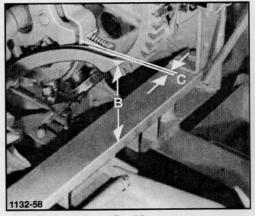


fig. 52

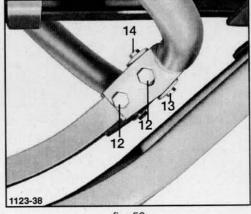


fig. 53

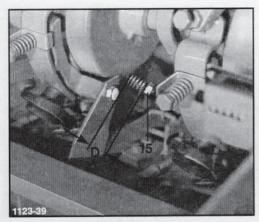


fig. 54

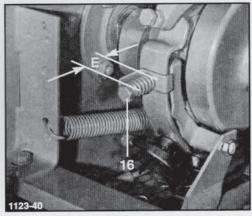


fig. 55

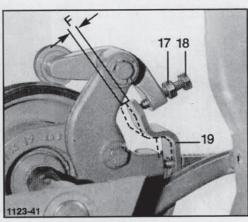


fig. 56

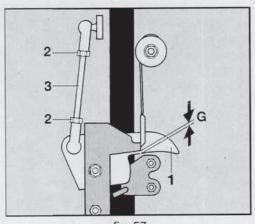


fig. 57

Control measurement C (fig. 52) between needle and flat spring must not exceed 1 - 2 mm. If it is different, restraighten the needles.

Note: Only attempt to straighten needles which are slightly bent; restore the original shape when doing so. Readjust the twine guiding eyes below the baling channel, if necessary.

Where the machine is operated stationary, the area underneath the tying needles should be kept free of dirt and material (clean out with the machine at standstill).

Adjusting the knotter tension

To achieve good knots, the spring height D in fig. 54 should be 23 - 28 mm. If not, adjust with lock nut 15.

Adjusting the twine holder tension

The height of the twine tensioning spring in fig. 55 should be set to the control measurement E. The gauge finger adjacent to the spring indicates the correct height. Correct any differences with screw 16.

Set the additional tension to control measurement F as follows (fig. 56):

Undo lock nut 17. Slacken bolt 18 off until there is no tension in flat spring 19. Screw in bolt 18 initially until it meets spring 19, then tighten further as follows:

with twine in twine holder:4 $^{1}/_{2}$ turns without twine in twine holder:3 $^{1}/_{2}$ turns.

The top end of flat spring 19 is consequently shifted by approx. 7 mm (with twine) or 5 mm (without twine) towards the knotter shaft. Finally retighten lock nut 17.

Adjusting the tying mechanism

After all repairs to the ram, packer and tying mechanism drive, needle drive and tying mechanism, check:

that control measurements agree with actual measurements on the machine. If there are any discrepancies, readjust as appropriate. If necessary, on both sides.

Readjusting the twine flicker

Trip the knotter mechanism as shown in fig. 15. Move the flywheel in the normal running direction until the twine flicker 1 is stationary (fig. 57). Measurement G should now be 1 - 2 mm. If it is different, loosen lock nuts 2 and adjust the linkage accordingly by turning the threaded rod. Finally, tighten lock nuts 2 once again.

Checking the twine retaining spring

The twine retaining spring 4 (fig. 58) must lie against nose 5 of the twine guide plate under slight tension. Readjust spring 4, if necessary, by resetting it.

Replacing the twine guide plate

After replacing the twine guide plate 6 (fig. 59), check measurement H: The spacing between nose 5 and knotter 7 should be between 1.5 and 2.5 mm. If necessary, adjust the twine guide plate by means of shims.

Adjusting the knotter shaft pawl spring

With the needles at the home position, flat spring 8 should be engaged with notch ring 9 with a clearance of approx. 1 mm from the bottom of the notch (fig. 60).

If necessary, loosen screw 10 and move flat spring 8 until there is 1 mm clearance from the bottom of the notch. Retighten screw 10 in this position.

Adjusting the twine brake

Adjust wing nut 11 on the twine brake (fig. 61) so that the spring length (control measurement K) is 26 mm.

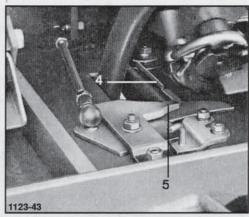


fig. 58

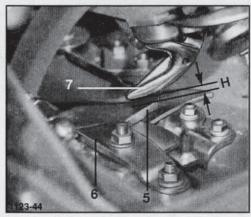


fig. 59

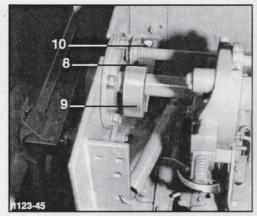


fig. 60

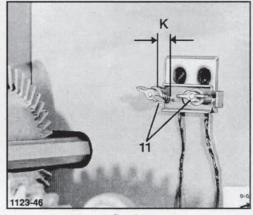


fig. 61

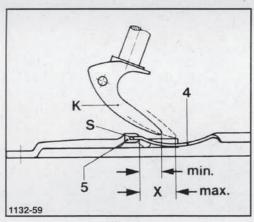


fig. 62

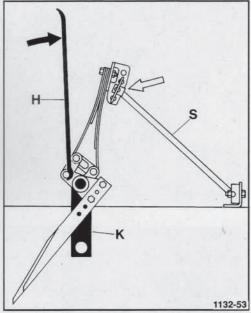


fig. 63

Positioning the knotter

Always check the position of the knotter following maintenance and repairs:

Trip the knotter mechanism by hand (see fig. 15).

Turn the flywheel by hand until the knotter is parallel with the needle slot. In this position, measurement X from the knotter tip to the front edge of the finger of the twine guide plate should be 15 - 20 mm (fig. 61).

If the measurement is not within this tolerance range, shift the knotter frame in the elongated slot of the holder so that the measurement X lies in the range 15 - 20 mm.

When doing this, check the position of the retaining spring. The tip S of the retaining spring 4 must lie precisely in the centre of the thickness of the finger of the twine guide plate 5 (as shown in fig. 62). If necessary, readjust the retaining spring 4 while fitted.

Freeing up the deflecting cross-feeder

To ensure that the deflecting torque of the cross-feeder is not exceeded, the following measures must be taken before using the baler for the first time or after long periods of disuse:

Free up the cross-feeder by "bottoming the springs" several times. The best tool for doing this by hand is a tyre lever H (fig. 63) of at least 500 mm in length.

Move the cross-feeder to the position shown (fig. 63) by turning the flywheel by hand (pay attention to direction) - crank arm K must point upwards.

Insert the lever H as shown with the hooked end against the bottom pin of the joint between the two brackets 1116.33.03.77.

Free up the joint by jerking the lever forcibly in the direction of the black arrow.

By pressing in the direction of the arrow you oppose the force of the flat spring! Risk of injury!

When performing this work, tensioner arm S should be locked in the centre position (refer to white arrow in fig. 63).

The deflecting torque of the cross-feeder should be between 600 and 850 Nm, that of the packer between 750 and 850 Nm. The link rod on the packer must pivot in the claw in the second hole from the bottom.

Tying faults and their elimination

On the next page are illustrated 9 possible tying faults. When all specified measurements are adhered to and the springs are correctly tensioned, correctly tied knots as shown in position 10 are achieved. Figs. 64 and 65 show the knotting mechanism.

Note: When adjusting the screws "e", "g" or "i", it is essential to adhere to the control measurements "D", "E" and "F" as shown in fig. 54, 55 and 56.

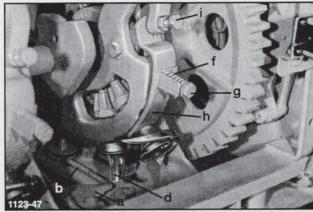


fig. 64

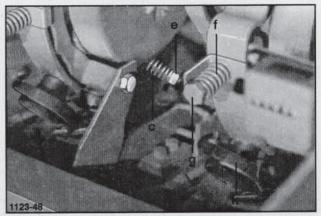


fig. 65

No.	Knot	Tying fault	Cause	Remedy	
1	Knot OK, but twine torn		Twine tensioner too loose; after the knotting cycle, twine runs on over the nose of twine guide plate "a"	Adjust the twine tensioner to 26 mm spring height	
			Twine not held tight by twine flicker; after the knotting cycle, twine runs on over nose of twine guide plate "a"	Adjust twine flicker correctly (fig. 57)	
			Spring "b" sticking due to paint or dirt.	Free spring "b" by cleaning.	
2	L	Short loop	Spring "c" too weakly tensioned, twine held too loosely by knotter.	Tighten nut "e", adjust measurement D (fig. 54)	
3		Knot not tied	Spring "c" too weakly tensioned, twine held far too loosely by knotter as a result.		
4	+	Long end of twine frayed, twine fibres left in the twine holder	Spring "f" too highly tensioned	Loosen screw "g", adjust measurement "E" (fig. 55)	
5	+	Ends torn off, twine pieces of approx. 5 cm length drop off	Spring "f" far too highly tensioned		
6	\$	Knot appears firm but one end pulls out under strain	Knotter "d" not closing correctly	Tighten nut "e" adjust control measurement "D" (fig. 54; if necessary, clean knotter	
7		Knot on one end of twine only, loop end short	Spring "h" too weakly tensioned, twine holder "k" not holding the twine during bale compaction	Tighten screw "i", adjust control measurement F (fig. 56)	
8	×	A simple knot tied, with the twine running back to the next bale	Needle too far away from the knotter frame, twine holder "k" and and knotter "d" not catching the twine	fig. 52: Measurement C: = 1 - 2 mm	
9		Knot on one end of the twine only, loop long	The twine is lifted by the needle but not caught by the knotter "d". Baling material between ram and top casing pushes the twine away from the knotter "d".	Refer to figs. 36, 51 and 52: Adjust measurements "L", "A" and "B" as specified. Readjust twine flicker. Remove baling material between ram and top casing.	
10	4	Correctly tied knot	All control measurements adhered to, all springs correctly tensioned.		

10. Servicing chart

	daily		
Lubrication:			
Machine part	Lubricant	Grease points	Item on Page 38
Cross-feeder bearing	Multi-purpose grease	1	1
Packer bearing	Multi-purpose grease	1	2
Check and lubricate, if necess	sary:		
Bearing plate on cross-feeder or packer	Multi-purpose grease	4 (6)	9

weekly in addition						
Lubrication:						
Machine part	Lubricant	Grease points	Item on Page 38			
Guard tube bearing	Multi-purpose grease	2	3			
Tractor drive shaft	Multi-purpose grease	2	4			
Special-section tubes	Multi-purpose grease	[[] [] [] [] []	5			
Needle operating rod	Multi-purpose grease	1 1	6			
Tying mechanism coupling	Multi-purpose grease	2				
Checking:						
Machine part		Checking points	Item on Page 38			
Oil bath transmission	Gear oil SAE 90	1	7			
Axles / wheels		1/2	Bolts and axle caps			
Tyres: air pressure		2	refer to Technical Specification			

Servicing work on the hydraulics

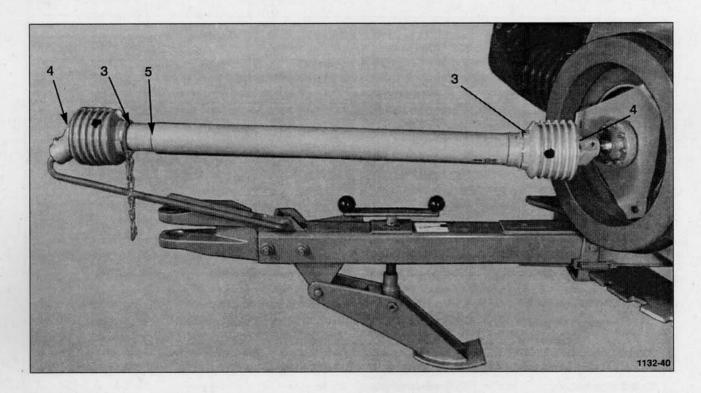
Before working on the hydraulic system, it is essential to depressurise it. Check hoses and pipes regularly for damage and ageing. Defective parts are to be replaced immediately with new original spare parts. Hoses and hoselines are prone to natural ageing even under normally acceptable stresses. This limits their service life.

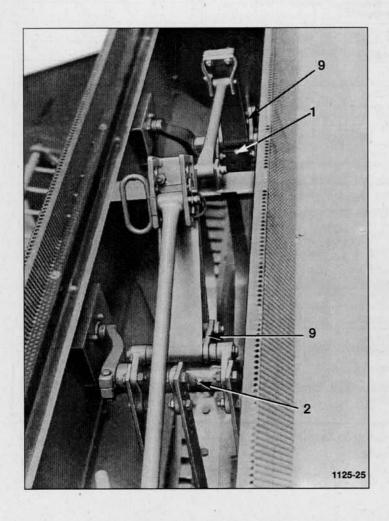


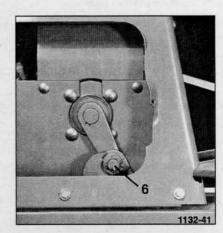
According to the "Safety regulations for hydraulic hoselines", their service life should not exceed six years.

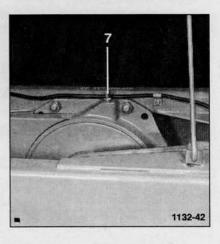
When searching for leaks, use a suitable aid such as cardboard or wood to avoid harmful effects!

Lubrication chart









Faults quickly eliminated

The wide range of operating conditions which may be experienced mean that we cannot give precise rules of action for all possible circumstances. Ground condition, swath density, condition of baling material, improper handling or poor care of the machine can result in malfunctions.

Our Customer Service department is available should you experience a problem you cannot cope with. In general, though, you should be able to handle most situations by referring to the following table.

Before attempting to eliminate faults, disengage the p.t.o. drive shaft, switch off the tractor engine, and wait for all moving parts to come to a standstill - never try to fix faults in the area of the intake opening, for example, when the machine is running.

No.	Fault	Fault Possible cause		Remarks	
1	Drive shaft wobbling and running out of true	Negotiating tight bends	Disengage p.t.o. drive shaft in bends	Use tight-angle drive shaft	
		Baler incorrectly attached	Attach baler correctly	See Page 8	
2	Main drive clutch slipping	Baler overloaded	Drive slower, gather less material		
		Slip-threshold torque too low	Have the clutch adjusted	See Page 29/30	
3	Pick-up stops	Overloaded by blockage, pick-up clutch slipping	Remove blockage, drive slower, gather less material		
		Touching the ground, pick-up too low	Set pick-up higher	See Page 15	
4	Baling material clogged between pick-up and straw table	Baler overloaded	Drive slower, gather less material		
		Windguard tines bent	Straighten windguard tines		
		Damp baling material	Slacken bale density	See Page 16	
5	Labouring, slowly getting worse	Cutter blades blunt	Regrind blades	See Page 20	
		Baling channel gummed up	Empty baling channel and clean inside		
6	Cross-feeder or packer overload mechanism Overload responding		Stop tractor, continue running p.t.o. drive shaft at 250 rpm	See Page 17	
7	Curved bales	Unneven compacting	Alter packer quick adjustment or adjust feeder tines	See Page 27	
		Deflecting cross-feeder or packer respond continuosly	Drive tractor in next lower gear	See Page 17	
8	Tying faults			See Page 36	

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EC-Statement of Conformity

according to EC Directive 89/392/EEC

We	WELGER GmbH
(Name of su	upplier)
	Gebrüder-Welger-Straße, D-38304 Wolfenbüttel
(full address manufacture	s of the company - in the case of agents etablished in the Community, give name of company and address of er)
declare o	n our sole responsibility that the product
	WELGER AP 530 / AP 630 / AP 730 / AP 830
(make, type))
	this statement relates, satisfies the relevant basic health and safety requirements of EC 89/392/ECC and 89/336/ECC
and the re	equirements of the additional relevant EC Directives
	number with date of issue of the additional EC Directives)
(if relevant)	
	e proper implementation of the aforesaid health and safety requirements in the EC s, the following standard(s) and/or technical specification(s) was/were taken into ation:
(title and/or	number with date of issue of standard(s) and/or technical specification(s))
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Wolfenbür	ttel 20 12 1995 / / ill/UND

Dr. Wilkens (Entwicklungsleiter)