

07/04/2016

ABBRIATA®

USE AND MAINTENANCE HANDBOOK

ROUND BALER

M100 / M120 / M150

FROM SERIAL NUMBER:

ZGE0009_0G0000084 (M100 SUPER – M100 MAGNUM)

ZGE000F_0_0000001 (M100 SUPER/L – M100 MAGNUM/L)

ZGE0008_0G0000194 (M120 COMPACT/PLUS – M120 COMPACT MAGNUM/PLUS)

ZGE0005_0G0001008 (M120 SUPER/PLUS – M120 MAGNUM/PLUS)

ZGE0006_0F0000400 (M150 SUPER/PLUS – M150 MAGNUM/PLUS)



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WARRANTY

The machine built by the company is guaranteed for 12 consecutive months from the date of purchase, provided that it is used according to the instructions contained in the Use and Maintenance manual and operates under normal working conditions. It is only under these conditions that the manufacturer agrees to supply spare parts, at no charge, for those components which, in the opinion of the manufacturer, have production or material defects; or, in its unquestionable opinion, to make repairs directly or by using authorized personnel.

The buyer will pay for any labor and transportation costs relative to this warranty.

The warranty expires if the equipment was used without complying with the instructions contained in the Use and Maintenance manual, or it is was repaired, disassembled or modified by unauthorized workshops.

Spare parts replaced under the warranty must be returned to the manufacturer.


The warranty will not be valid for cases involving poor maintenance and abnormal use of the machine. Any disputes will be under the competence of the judicial authorities of Alessandria - Italy.

INTRODUCTION

Read this manual carefully before using the machine.

This handbook conforms with EEC Machine Directive 89/392 and subsequent amendments.

The manufacturer reserves the right to make changes, without prior notice and without any sanctions, without affecting the main technical and safety data.

The symbol  WARNING calls the reader's attention to indicate that non-compliance may lead to personal injuries or death of the operator.

This publication is divided into chapters which discuss the relative machine use and maintenance operations.

Please follow these instructions to ensure the best machine operating efficiency.

It is recommended to use only original spare parts (consult the Spare Parts catalogue).

- This manual indicates the standards that will guarantee regular machine maintenance and use, thus avoiding problems which might damage the machine and reduce its operating performance.
- Despite the fact that technical service is available at any time, the manufacturer is not responsible for any non-compliance with the standards contained in this handbook.
- This machine was built for operations only for the agricultural sector and therefore the owner will be personally responsible for any improper use of the round baler. Any other use is considered to be improper.
- In case of any breakdown the machine must be repaired by personnel with knowledge of safety conditions so as to respect the accident prevention regulations and rules regarding technical safety, circulation on public thoroughfares and first aid.
- When the machine is delivered, ascertain that it has undergone no damage in shipment and that it is complete with any accessories. Claims can only be accepted if received in writing within eight days of delivery.

MARKING AND IDENTIFICATION

Upon receipt of the machine check the marking on the frame of the machine (fig.1).

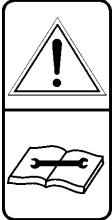

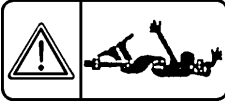

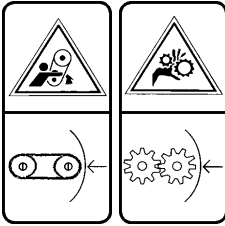


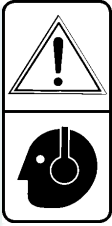



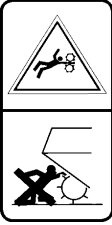



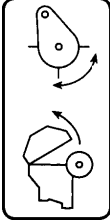
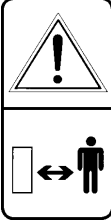
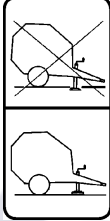
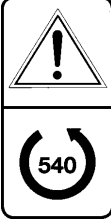
Fig.1

(EXAMPLE OF MAKE-UP OF IDENTIFICATION PLATE)

Each individual machine is provided with a CE identification plate and a CE certificate of conformity pursuant to EEC directive 89/392 and subsequent modifications.

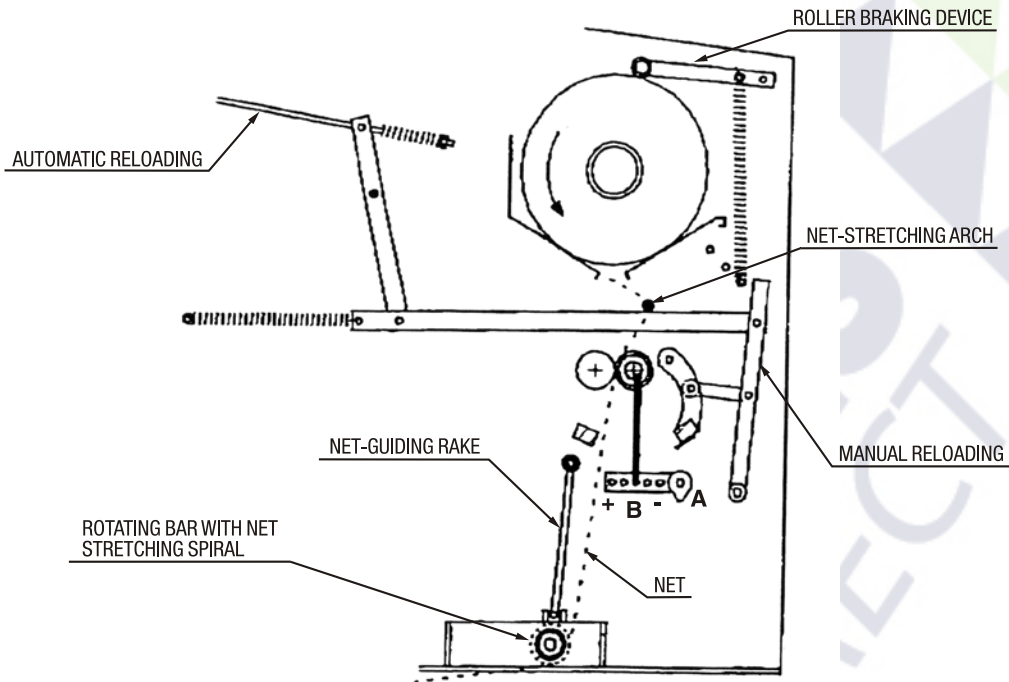
SAFETY SAFETY LABELS

 <p>Before starting any operation make sure you have read and understood this manual. All interventions of maintenance or modification must be made according to the descriptions given in this manual. Failure to observe these instructions can cause accidents or breakage of the machine.</p>	 <p>When it is necessary to perform maintenance or controls with the rear door open, apply the special safety stops on both hydraulic jacks.</p>
 <p>Do not approach the universal joint with the machine in motion.</p>	 <p>When unloading the bale there must not be anyone behind the machine.</p>
 <p>It is obligatory to close the casings before starting the machine.</p>	 <p>Warning: when the machine is detached from the tractor, use the supplementary wedges.</p>
 <p>Introduce or adjust the binding twine or adjust the transmission, only after having removed the protections with motor off.</p>	 <p>If the tractor does not have a soundproofed cab, wear earplugs.</p>
 <p>Indication of maximum vertical load on the towing eye.</p>	 <p>When closing the rear chamber, do not insert the hands between the casings.</p>
 <p>Do not approach the swinging door on the round baler while the tractor is in motion.</p>	 <p>Turn off the tractor before performing pick-up operations.</p>

 <p>When the rear door is open nobody should stand behind the machine.</p>	 <p>Label located near the lever 7 of Figure 16/A.</p>
 <p>Stay at a safe distance from the machine.</p>	 <p>If the machine is parked on very soft soil, it is obligatory to provide an extra support for the foot.</p>
 <p>Maximum rotation of the universal joint.</p>	

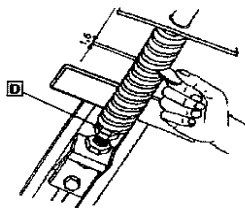
TRACTORTOOLS DIRECT

DIAGRAM OF THE NET BINDING DEVICE



- 1- REGULATE THE ROLLER BRAKING DEVICE, USING THE SPECIAL SPRING, ACCORDING TO THE PRODUCT TO BE BALED AND THE DIAMETER OF NET ROLLER.
- 2- IN ORDER TO VARY THE NUMBER OF WINDINGS OF THE NET AROUND THE BALE, MOVE CONTROL POINT "B" TO THE ADJACENT HOLES: THE NUMBER OF WINDINGS DROP AS ONE MOVES CLOSER TO CENTRE "A" AND INCREASE AS ONE MOVES AWAY.

WHEN BALING VERY CRUMBLY AND SHORT PRODUCTS PULL THE CORD FROM THE DRIVER'S SEAT FOR DOUBLE BINDING.



WARNING!

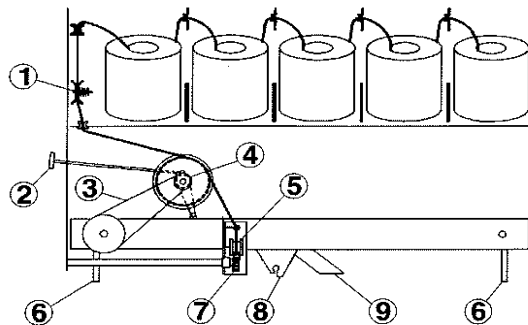
WITH THE SPECIAL DISK, MAKE SURE THAT THE DISTANCE BETWEEN THE TURNS IS $1,5 \pm 2$ MM. TO ADJUST, ACT ON NUT AND LOCK NUT [D].

WARNING

MAKE SURE THE BELT IS TIGHT AT ALL TIMES. USE THE TENSIONERS TO TIGHTEN IT.

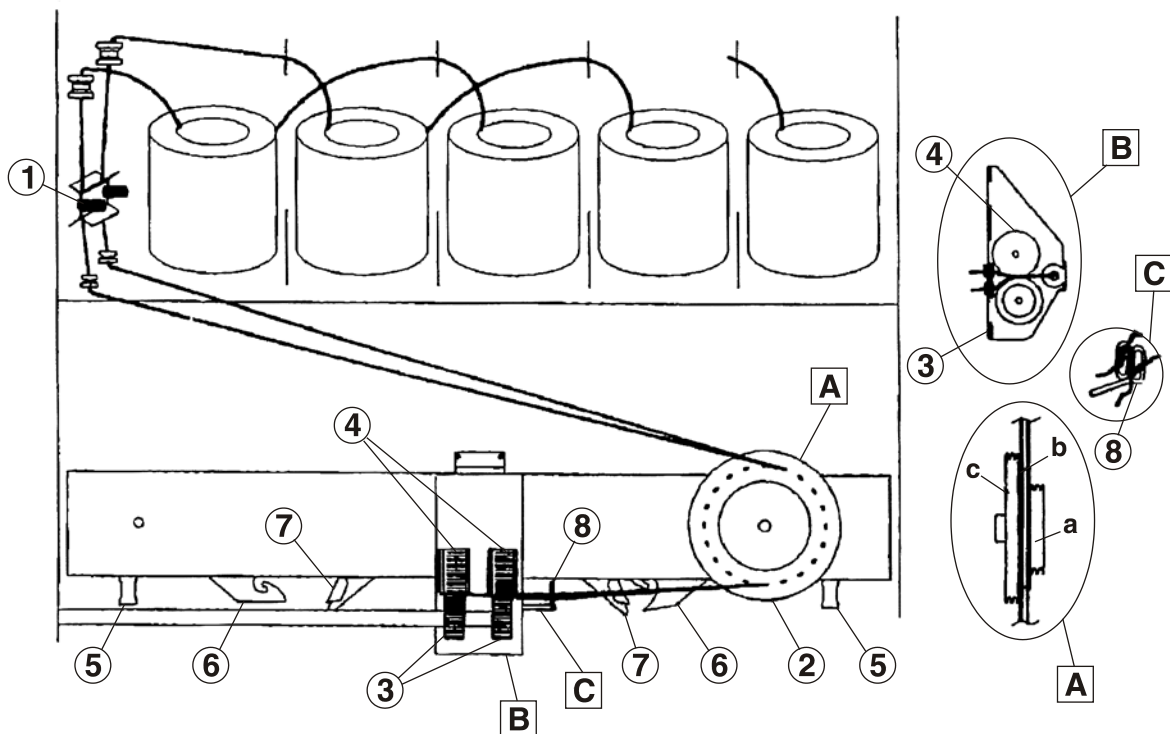
LUBRIFICATE ALL CHAINS FREQUENTLY WITH OIL MIXED WITH NAPHTHA.

SCHEME OF AUTOMATIC BINDER



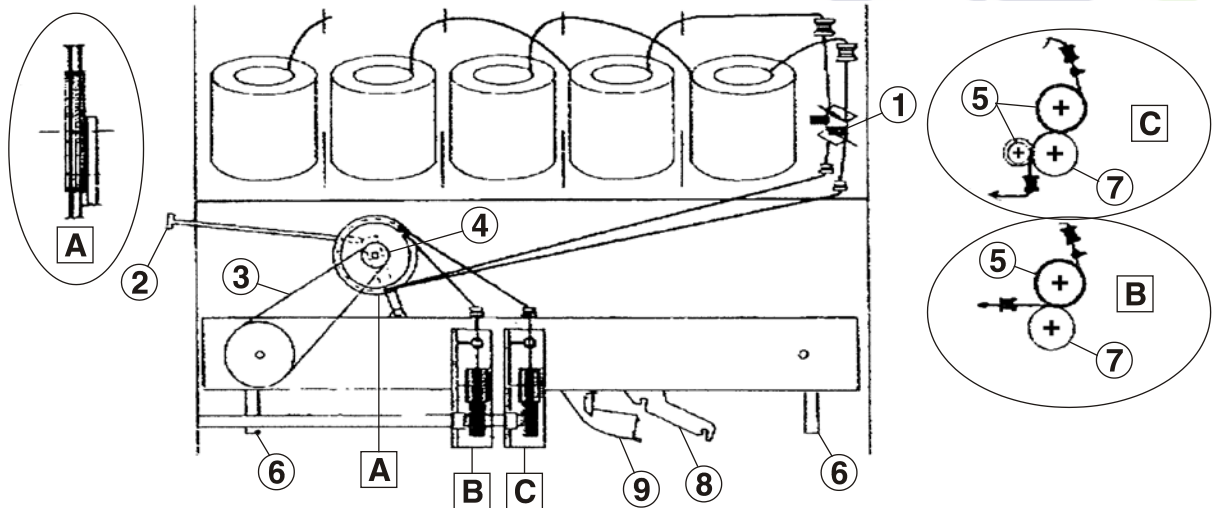
- 1 - STRING BRAKE
- 2 - PULLEY POSITION CONTROL KNOB
- 3 - BELT
- 4 - DRIVE PULLEY
- 5 - STRING PRESSING WHEEL
- 6 - BALE END BINDING REGULATION
- 7 - FEEDING CONTROL WHEEL
- 8 - ACCOMPANYING SLIDER
- 9 - STRING CUTTE KNIFE

SCHEME OF AUTOMATIC DOUBLE BINDER



- | | |
|--|--|
| 1 - STRING BRAKE | 7 - STRING CUTTING KNIFE, RIGHT AND LEFT |
| 2 - DRIVING PULLEY | 8 - STRING SEPARATOR |
| 3 - STRING DRIVING KNURLED WHEELS | A = N. 10 STRING WINDINGS |
| 4 - STRING PRESSING KNURLED WHEELS | B = N. 13 STRING WINDINGS |
| 5 - BALE EXTREMITY BINDING ADJUSTMENT | C = N. 16 STRING WINDINGS |
| 6 - STRING HOLDING TROLLEY, RIGHT AND LEFT | |

AUTOMATIC DOUBLE TWINE BINDING DEVICE



- | | |
|---------------------------------|--------------------------------|
| 1- STRING BRAKE | 6- BALE END BINDING REGULATION |
| 2- PULLEY POSITION CONTROL KNOB | 7- FEEDING CONTROL WHEEL |
| 3- BELT | 8- ACCOMPANYING SLIDER |
| 4- DRIVE PULLEY | 9- STRING CUTTE KNIFE |
| 5- STRING PRESSING WHEEL | |



WARNING!

- Do not leave the machine unattended when there are moving parts.
- Do not carry out any maintenance, lubrication, adjustment, cleaning, or any other operation when there are moving parts.
- All operations must be done with the machine stationary and with the tractor's engine switched off.
- Do not use the machine without guards.
- Whenever the operator has to get off the tractor, he has to disconnect the P.T.O., switch off the engine, pull on the parking brake and wait for all the tools to stop completely before getting off. Getting back into the driver's seat, the operator needs to make sure that earth or mud do not make the controls difficult for him
- The machine can only be used if carried by a suitable tractor and controlled by a suitable cardan shaft, which takes its motion from the tractors P.T.O.; all other uses are strictly forbidden.
- Other persons in addition to the operator are not allowed on board the tractor.
- It is not allowed to carry persons or objects on the equipment.
- During normal work keep people out the range of action of the machine.
- When working on slopes, keep to the tractor manufacturer's instructions to avoid turning over. In any case reduce your speed and handle with care.
- Before unhooking the equipment from the tractor, lean it on the ground and stabilize it with the stabilizer.
- After unhooking, check the stability of the equipment.
- Do not push the product into the collection apparatus using your hands or feet.
- When transporting the machine it is necessary to use the customary signals.
- The firm declines all responsibility should the above instructions not be observed.

BASIC RULES

For safety purposes and to ensure correct machine operation, before starting the equipment it is recommended to check the operation of both the machine and the tractor.

GENERAL SAFETY STANDARDS: USE CONDITIONS AND LIMITS



WARNING!

- The manufacturer of the ball joint or cardan shaft is responsible for such components.
- For the cardan shaft or ball joint, the manufacturer of the universal joint will issue the prescribed EEC conformity declaration, together with the machine.
- Become familiar with the controls, the correct use of the machine and learn how to turn off the motor quickly. Do not remain in the work area.
- It is important to keep animals and other persons away from the machine. Do not allow the machine to be used by children or unskilled persons.
- During operation, it is recommended to wear suitable clothing and heavy shoes (loose-fitting clothes are prohibited).
- Make sure that you have mounted the guards, safety devices and protection systems in accordance with the prescribed standards.
- Have defective or damaged parts repaired or replaced.
- Work during the day or with adequate artificial light.
- Stop the machine before crossing streets, paths or gravel-covered roads.
- If you collide with a heavy object or if the machine vibrates excessively stop the motor, check for damage and have skilled personnel make all the necessary repairs before re-starting the machine.
- When you decide to leave the tractor, turn off the motor and remove the ignition key from the instrument panel. Before getting close to the machine, wait for all moving parts to stop turning.
- Do not place hands and feet close to moving machine parts.
- Always keep in mind the use accident-prevention standards. Therefore, to ensure correct use, it is absolute essential to refer to the warning signals.
- Before starting any type of operation, the operator should become familiar with the machine, its parts and the relative functions and, especially, when driving on the road, must respect the current traffic rules and regulations.
- Always check that the machine is perfectly clean to avoid dangerous accidents.
- While working, never transport other persons on the machine.
- If the picker becomes jammed, clean it only when the motor is turned off.
- Be extremely careful when unloading and closing the binding chamber.
- Do not use the machine near other persons.
- The machine should be cleaned with the motor off and the machine stopped.
- Do not tamper with the controls and the safety systems.
- The machine must be assembled in accordance with the instructions.
- Use the necessary caution during machine assembly and disassembly operations or when disconnecting the machine from the tractor. Always check the loads per axle, the overall weights and dimensions allowed for transiting.
- Make sure that lighting, warning signal and protection devices have been installed and install them if they are missing.
- The machine running speed must be compatible with the environmental conditions and avoid any brusque steering movements while moving uphill or downhill. Do not work on very steep slopes.
- The machine can be started only when the relative protection devices have been installed.
- It is absolutely prohibited to remain in the work area and in the vicinity of the machine while it is operating and moving.
- Make sure that there are no persons near the machine during operations which may involve tilting hydraulic parts. The parts driven by external forces have sharp and pointed ends.
- If brakes and stop devices are not activated, it is absolutely prohibited to remain between the machine and the tractor.
- Do not operate the machine in closed rooms.
- The machine is equipped with wheel blocking wedges which must be used immediately each time the machine is disconnected from the tractor. These wedges are kept inside the container that houses the string roll.



WARNING!

- During operation, persons or animals should not get closer than 40 meters from the machine!
- Therefore, stay far away from the rear mobile chamber of the machine which expels the bales, thus creating a dangerous situation.
- Driver seat noise level: Leq. = 79,5 dBA. It is recommended to use protective earphones when using the tractor without a sound-proof cab (only if the noise exceeds about 85 dBA).
- When the machine is not working, it must be fitted the supplemental support foot, if the machine is left on soft ground (see safety labels pag.5).
- The machine described in this use and maintenance handbook should be repaired or disassembled, only by manufacturer authorized workshops.

POWER TAKEOFF



WARNING!

- Only EC marked universal joints can be used with the machine and the user must follow the instructions contained in the "use and maintenance" handbook issued by the universal joint manufacturer.
- The protection bar and the universal joint protection hopper, as well as the power takeoff guard must be installed in the proper position.
- The cardan shaft can be mounted and removed only if the power takeoff is disconnected, the motor is off and only if the ignition keys are not inserted in the instrument panel.
- Make sure that the cardan shaft is installed properly and correctly install the protection bar and the relative protection hopper.
- Before engaging the PTO, check that the rpm of the machine is the same as that of the tractor PTO (540 rpm) and that the direction of rotation of the PTO is counter-clockwise. Make sure that there is nobody in the danger zone surrounding the machine
- It is prohibited to insert the power takeoff when the motor is on.
- During work operations with the power takeoff it is prohibited to remain in the vicinity of the cardan shaft or the power takeoff and the power takeoff must be disconnected if the angles are too high.
- Even when the P.T.O. is disconnected, do not get close to it.
- To clean, lubricate or perform any maintenance, always turn off the engine, disconnect the P.T.O. and remove the keys from the ignition.
- With the P.T.O. disconnected, the universal joint must be held by the special support so as not to strike the ground and be damaged or soiled.
- It is always necessary to block the universal joint when not in use, hooking it onto its chain C (Fig. 1/a).
- The P.T.O. protection hood on the tractor must always overlap the universal joint protection hood by at least 50 mm.

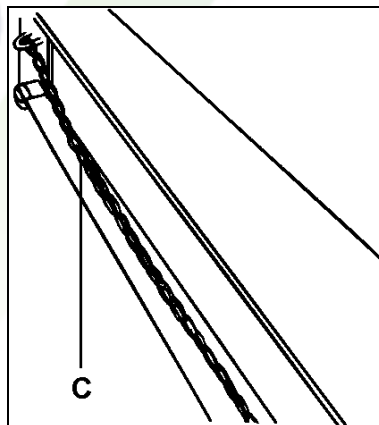


Fig. 1/a

START-UP

Position the machine on a horizontal surface using the stopper foot (the height of the P.T.O. should be from 86 to 90 centimeters from the ground – fig. 1/bis). Position the pick-up rake in the hole A to bale long-medium crop or hole B to bale short crop (Fig.3). Adjust screw 1 and 2 so that the rake tips are approx. 6 cm far from the ground of packer device and approx. 4 cm far from the chain bars (Fig.3) Hook the machine with the tractor in reverse, positioning the towing eye at the desired height (also adjusting, if necessary, the height of the hitch of the tractor) ensuring that it is securely fastened. The round baler is correctly positioned when its frame is parallel to the ground or slightly inclined upwards at the front (fig.1/bis).

Now raise the stopper foot placing it in the working position.

1. Check all the lubrication and greasing points.
Ascertain that none of the nuts and bolts are loose, and tighten them if necessary.
Check the main chain and tighten it if necessary as shown in fig.2.
Check the slack at the point indicated in Fig. 3, which should be about 1 cm with the machine at full load.
2. Mount the cardan shaft and make sure it is perfectly locked onto the P.T.O. and that there is no possibility of the shaft detaching itself or jamming.
Make sure that the protection for the cardan shaft is fixed by its security chain to the fixed frame of the machine and follow all instruction detailed in the cardan shaft security booklet.
3. Fit the two hoses (n° 3, 4 Fig. 16/A) with rapid connectors (n°2 Fig. 16/A) of the hydraulic system of the round baler to the tractor. In this case the tractor must be equipped with a distributor with two independent hydraulic levers. By means of lever P connected with hose 3 fig. 16/A, it is possible to control the rear door: by means of lever R connected with hose 4 fig.16/A, it is possible to control the pick-up (see fig.16/A insert B).
If the tractor is equipped with only one hydraulic lever, fit only one hose (19 Fig. 16/A) of the hydraulic system of the round baler to the tractor. In this case, by means of the lever S of the tractor connected with hose 19 fig.16/A through switch 23 fig.16/A, it is possible to control both the rear door and the pick-up.
4. Open and close the rear door of the machine 3 or 4 times by means of lever P or S of fig.16/A . With the P.T.O. on, let it spin at 400/500 rpm for a few minutes.
5. Check that the rear door (chamber) closes properly.

ATTENTION!

The chains must be properly tightened.

Verify the distance between the spring turns which must be $1.5 \div 2$ mm, by means of the appropriate disc; if necessary, adjust the screw and counter nut **D** (fig.2).



WARNING!

The guards must always be closed before starting the machine and can be opened only after stopping the machine, turning off the tractor engine and removing the keys from the ignition.

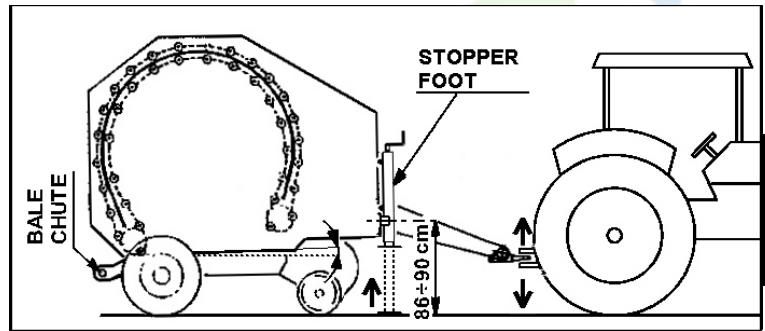


Fig. 1/bis

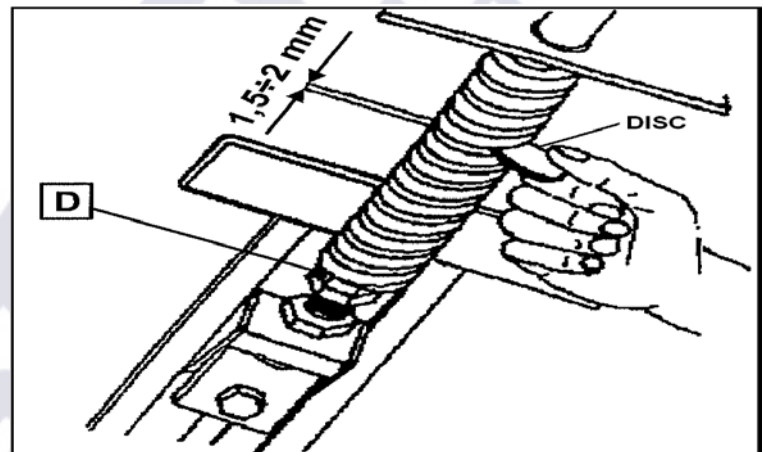


Fig. 2

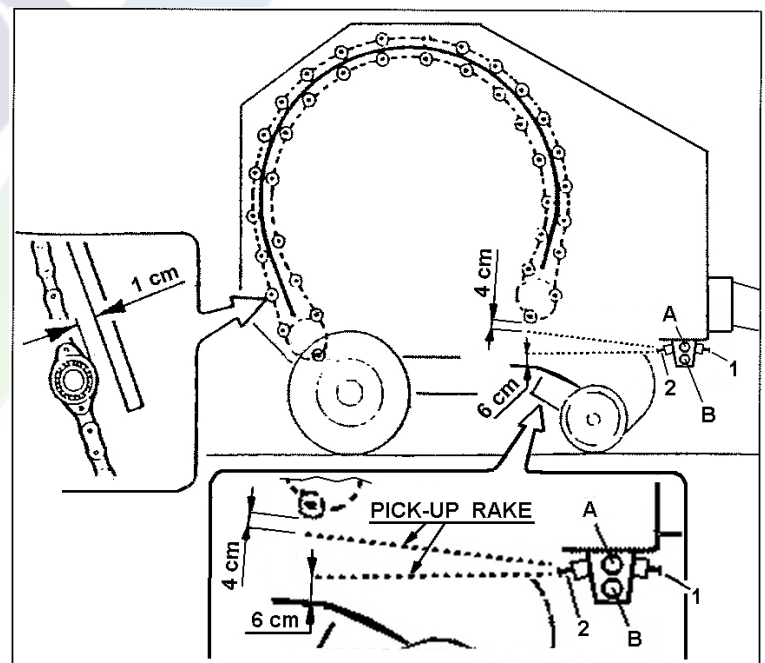


Fig. 3

INSTRUCTIONS FOR USE

1. Connect plug 34 of Fig. 16/C to the electric device of the tractor and open switch no. 43 of Fig. 16/A so that it is possible to control the position of the pick-up by means of a hydraulic lever on the tractor.
2. Release the pick-up safety chain, if present, position the pick-up at the correct height off the ground by adjusting the pick-up wheel (1 fig.A pag.24), if necessary, and then reattach the chain and insert the P.T.O.
3. Position the machine centrally on the line and start loading after starting engine of the tractor, putting it into gear and bringing the P.T.O. to 540 r.p.m.

Note: The line should be even and not too wide.

In case of a too narrow line, alternate from side to side every 30 m. so as to form a uniform bale (Fig. 5).

The speed of harvesting can vary depending on the product to be loaded and the size of the line, but must be roughly between 6 km/h and 20 km/h at all times.

Note: Depending on the characteristics of the product harvested, you can select a higher or a lower pressure.

Refer to the indicator (no. 2 Fig.4) for this and see p.16 item 9.

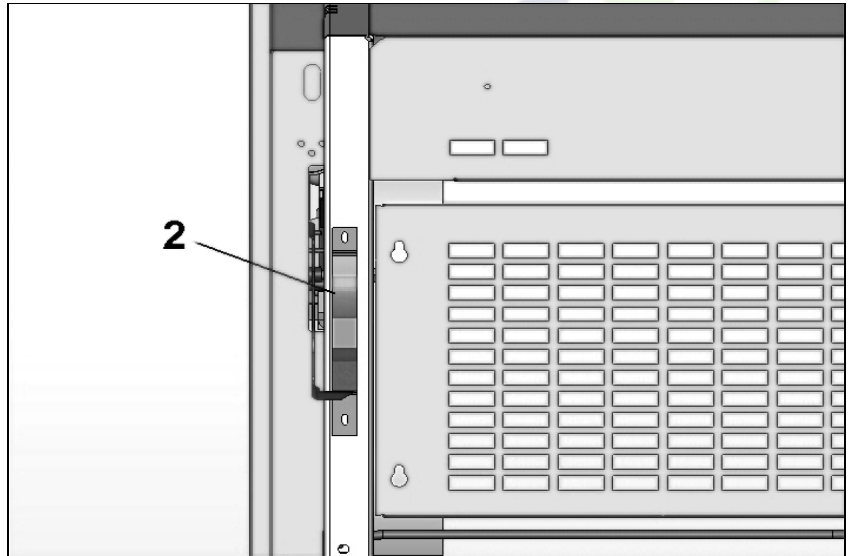


Fig. 4

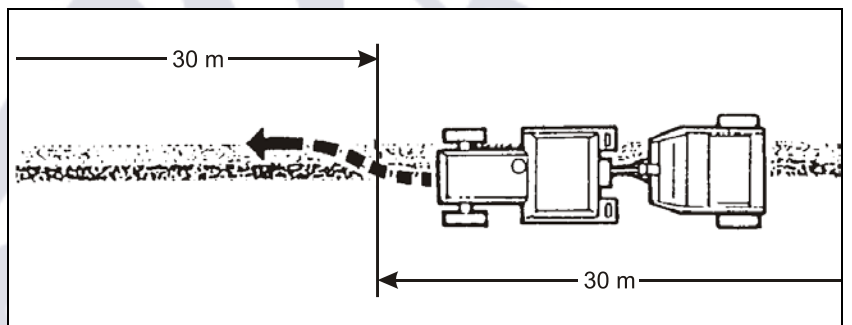


Fig. 5

4. A few seconds before reaching the desired pressure, (when the buzzer starts) make sure some crop is on the pick-up, and start the binding device using the electric button C of the control panel (fig. 16/E) brought onto the tractor cabin. When the twine (or the net) is "caught" by the bale and starts winding up, block the tractor advancement immediately, letting the power takeoff turn. In doing so, the twine (or net) is fastened to the bale and when the bale is completely bound, it is automatically cut so that the binding system is ready for a new cycle.

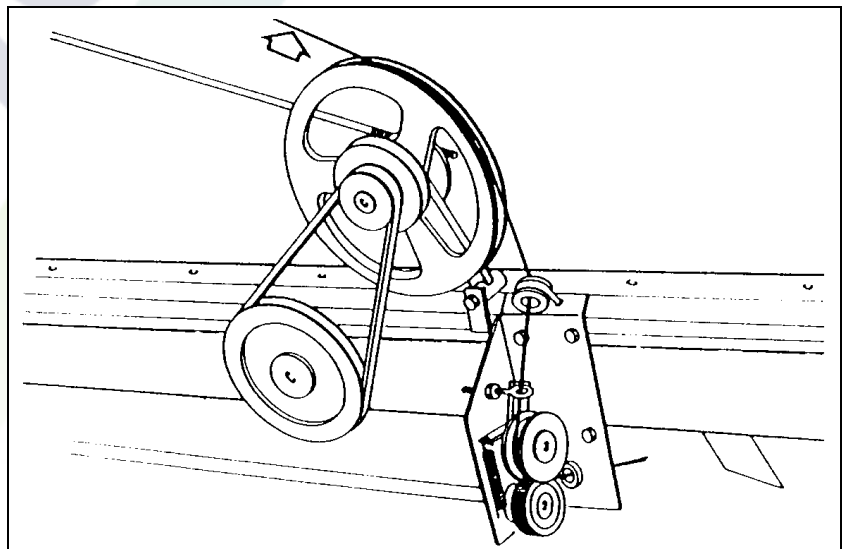


Fig. 6

5. For short products it is advisable to use the double binding option. To do this, pull the cutter cord (Fig. 7) which disables the cutter and enables the twine to go around the bale twice.
6. When the binding cycle is finished (in the case of twine binding this is indicated by the stop in the rotation of the pulley in fig. 6), proceed as follows:
 - a) stop the P.T.O.*;
 - b) move the tractor 5 – 6 m. back;
 - c) open the rear chamber door (see p.13 item 3 and p.19);
 - d) re-connect the P.T.O., and drive it slowly so that the rotation of the rollers ejects the bale.
7. Close the rear door by means of the hydraulic lever on the tractor

**WARNING!**

Be careful when performing the bale unload door opening and door closing operations. Perform this operation on a flat surface. The area has to be large enough to allow for this operation. Make sure the bale is not able to roll downhill (no gradient allowed). Also, make sure no persons or animals are to be found close to the machine when performing this operation. Always make sure the round bale produced is safely on the ground before taking the machine on the road.

8. A special mechanism / chain front joint block (Fig. 8) allows to interrupt the movement of the main chain when opening the rear door. It is advisable to grease this mechanism every 10 working hours (every day).

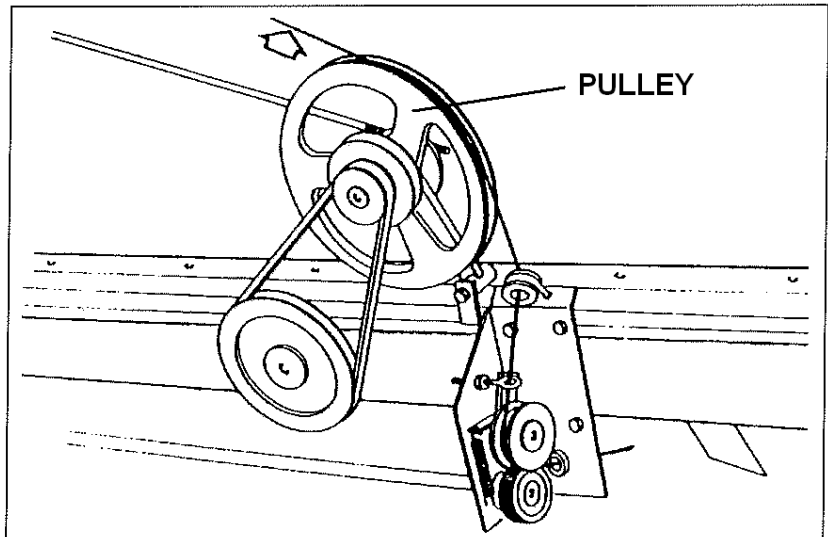


Fig. 6

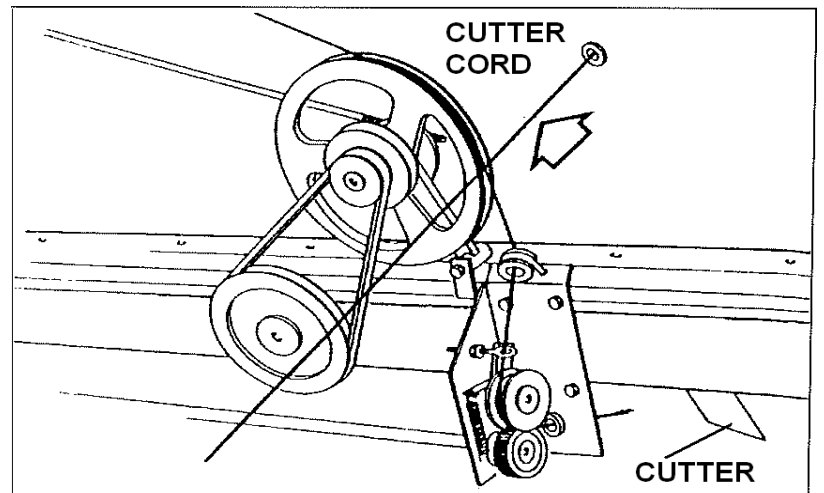


Fig. 7

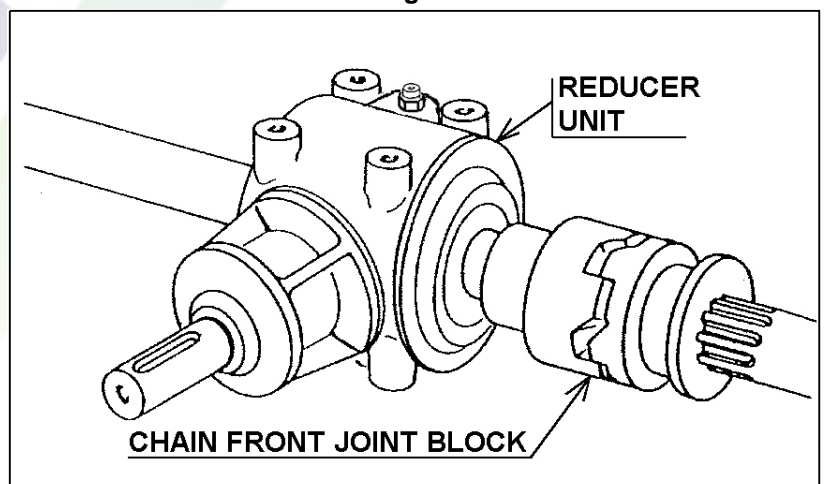


Fig. 8

*It is possible to open and then close the rear door without stopping the P.T.O., taking care of lessening the number of P.T.O. rears when the rear door is closing in order to avoid excessive stress on the chain front joint block (fig.8).

9. To adjust the pressure of the bale, position lever E (fig. 8/A , detail B) from 1 (min. density) to 7 (max. density).

For further adjustment of the pressure of the bale, shorten or lengthen spring no. 4 Fig. 8/A within the limits from 1 to 3 (Fig. 8/A - detail "C") using rod 10 with its nuts.

ATTENTION!

Very important! Be sure spring 4 is lengthened at the same level on both left and right sides.

In general we suggest that you bale (E.G. dry hay) mainly with lever E (fig.8/A, detail B) in position 3 or 4 and with spring 4 lengthened to the factory setting position of 1.7 (fig.8/A detail C).

The above is valid for all types of "M100" and "M120".

For "M150" in general we suggest that you bale (E.G. dry hay) mainly with lever E (fig. 8/A detail B) in position 3 or 4, spring 4 lengthened to the factory setting position of 1.7 (fig.8/A detail C) and the length T of rod 21 fig. 8/A set to 261 mm as in the factory.

ATTENTION!

- Before starting to work, check that the rear door is completely closed, be it the hooking lever (n. 7 Fig. 8/A) is completely closed. It means it is in contact with its pivot 8 fig. 8/A.

In the above mentioned conditions the clearance between the inner part of the hook no.7 Fig.8/A and the pivot n. 8 must be about 2 mm. (see fig.8/A detail D).

Please find this clearance adjusting the position of hook 7 Fig. 8/A by means of bolt 9 Fig. 8/A.

- When the rear door is opening, make sure that the minimum distance between the tip of hook 7 fig.8/A and pivot 8 fig.8/A is from 16 to 20 mm (see fig.8/A detail D). Pls find this clearance adjusting the position of hook 7 fig.8/A by means of bolt 9 Fig.8/A.
- Lubricate through greasers n. 5 Fig. 8/A (right and left) the relevant bushes, once a working day.
- Adjust the tension of the transmission chains, by using the special tensioners (fig. 9).

ATTENTION!

The round balers are tested and the necessary adjustments are made by the manufacturer. It is important, however, for a general check, to run the machine on empty for a few minutes. The machine should be considered in the break-in period for the first 100 bales, then all the adjustments should be checked again: above all chain tension then tightness of screws, lubrication, closure of hooks, binders, etc.

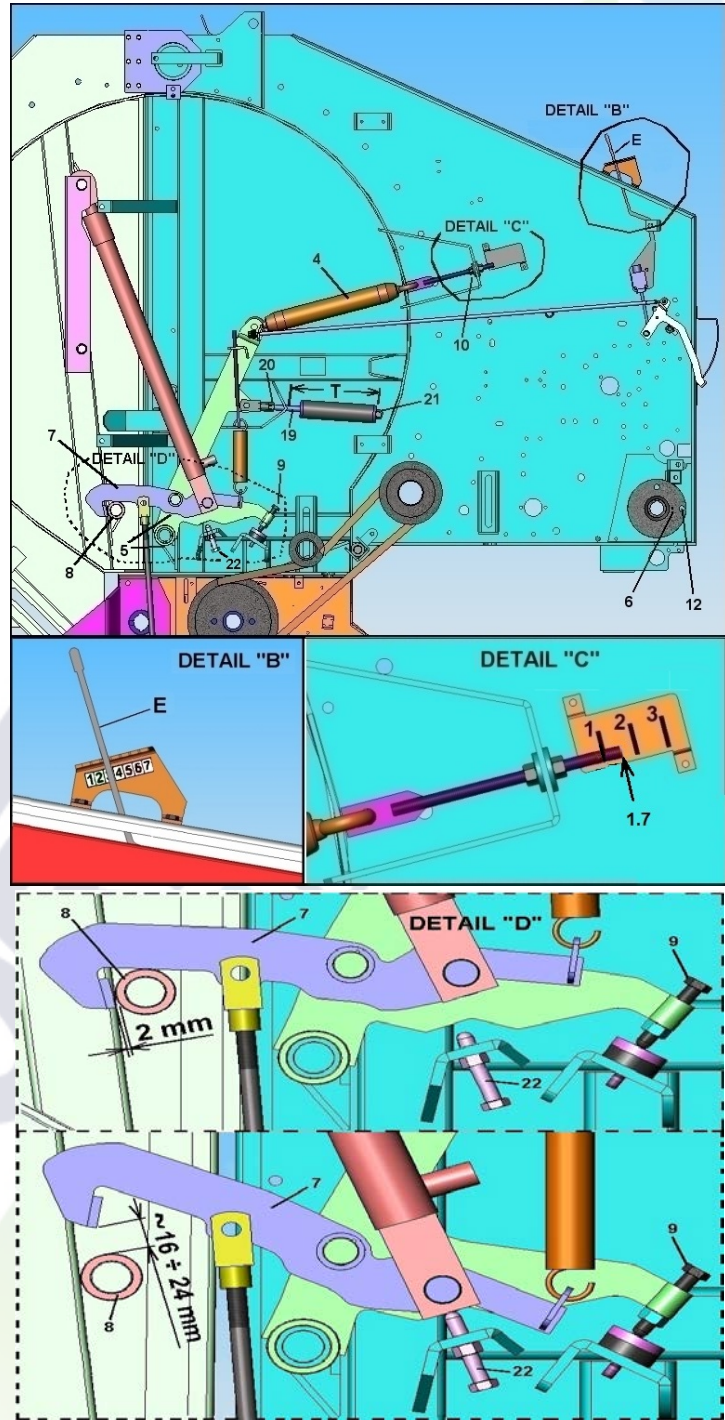


Fig. 8/A

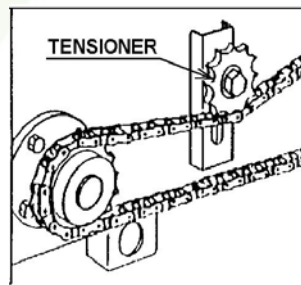


Fig. 9

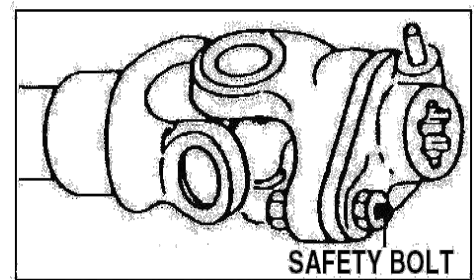


Fig. 10

SAFETY MECHANISM FOR OVERLOADING AND FOREIGN BODIES

1. The round baler is provided with a cardan drive shaft with torque limiter: in case of overload, it shears off the safety bolt preventing any parts from breaking (Fig. 10).
2. A second system similar to the first, is located on the primary transmission, which is equipped with a safety bolt M7 x 50 – class 8.8 - R = 80 kg/mm² (no. 12 Fig. 8/A).

This device works when rocks or other foreign bodies get into the pick-up / packer device, or when there is any abnormal resistance to rotation of the lower rollers. Mainly it is due to the intrusion of foreign bodies or to too high pressure in the compression chamber.

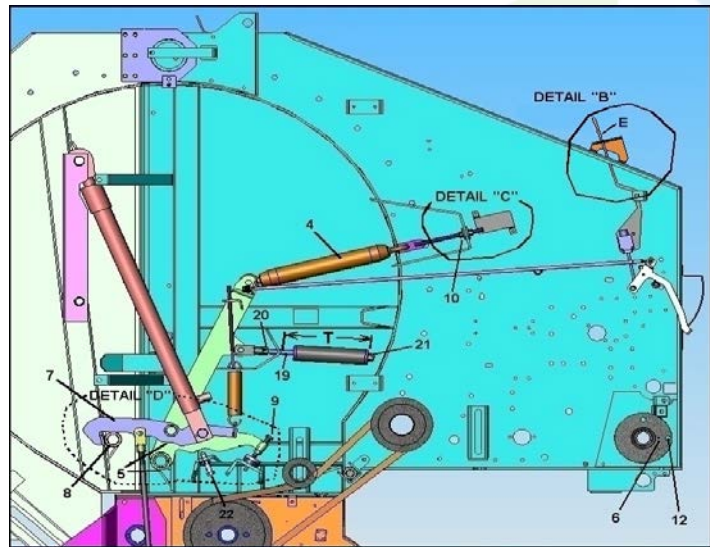


Fig. 8/A



WARNING!

Only replace with safety bolts identical to the original one. The bolts M7 x 50 – class 8.8 - R = 80 kg/mm² are provided (12 pcs.)

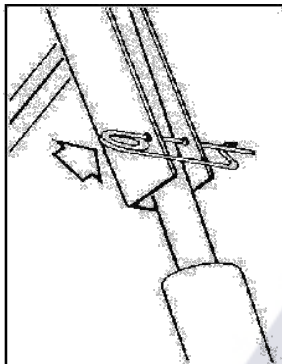


Fig. 12



Fig. 12/A

MAINTENANCE, LUBRICATION AND GREASING



WARNING!

- Before performing any maintenance or lubrication, put the safety mechanisms of the round baler (Fig. 12) into operation and proceed only after turning off the engine.
- Turn off the engine, remove the keys from the ignition and disconnect the machine before proceeding with operations of maintenance, cleaning and repairs.
- Always use the blocking or locking devices before performing any maintenance or repairs.
- Wear gloves and use the proper tools when replacing any parts. Also, for the stability of the machine, it is advisable to perform all operations on a solid support.
- Replace any protection mechanisms that are not adequate and remove any oil or grease at once.
- **It is very important to clean the machine at the end of every working days by using a pistol of an air compressor giving particular attention to the area between the back of the pick-up and the frame of the packer device and also the side frame of the round baler (see fig. 12/A).**
- If it is necessary to do any electrical welding on the machine-tractor unit, remember to detach both the generator cable and the battery.
- Make sure the replacement parts are original, that is, the ones used by the manufacturer, and check before using them that all the screws are tight so that they won't come loose.

For lubrication and greasing, pls follow the instructions detailed below:

- a) The round baler is equipped with a reducer unit (Fig. 8) that contains 1.3 lt. of SAE 90 oil that should be replaced after the first 400 hours of use and then at the start of every harvest season.
- b) There are six greasing points:
 1. greasing points 5 fig.8/A for hook and spring lever rotation bushings right and left, to be greased once a day.
 2. greasing point 6 fig.8/A for shear bolt flange, to be greased once a day.
 3. greasing point 3 fig.13 for packer device connecting rod; to be greased once a day. Of course the above isn't valid if you find two sealed bearings in position 3 / fig.13.
 4. greasing point 4 fig.13 for chain front joint block to be greased every 10 working hours, if possible, when the rear door is open;
 5. greasing point 5 fig.13 for pick-up cam to be greased every 40 working hours;
 6. greasing point 6 fig.13 for pick-up wheel lever right and left. To be greased every 40 working hours.

None of the other bearings require greasing as they are all sealed.

Every 200 hours it is advisable to remove all the casings around all the transmission chains and check the correct tension. Use a paintbrush to grease them (Fig. 14) by using oil mixed with naphta.

In the same way, by using oil mixed with naphta lubricate the main chain (Fig. 15).

Be careful! Don't lubricate too much this main chain..

BINDING SYSTEM

"Abbrata®" round balers are provided, as standard equipment, with one twine binding device, and can be equipped with a "net binding device" or "double twine binding device" or "double binder" on request.*

The threading system of the twine is shown on the adhesive label applied on the inner front of the machine (see also drawing of page 8,9,10).

One twine binder has two pulleys (Fig. 16) that advance the twine carrier at two speeds depending on the following cases:

1. rapid, for very long products (when the twine is wrapped around the big diameter pulley);
2. slow, for normal or short products (when the twine is wrapped around the low diameter pulley).

The diagrams (drawing) of the net binding system is shown on an adhesive label applied on the inner front of the machine (see also the drawing page 8).

The diagrams of "double binder" and "double twine binding device" are shown on an adhesive label

applied on the inner front of the machine (see also drawings of page 9 and 10).

To feed net or twine in the baler to start binding cycle, pls see p.14 item 4.

**"Double binder" isn't available for "M100" and "M120 Compact"

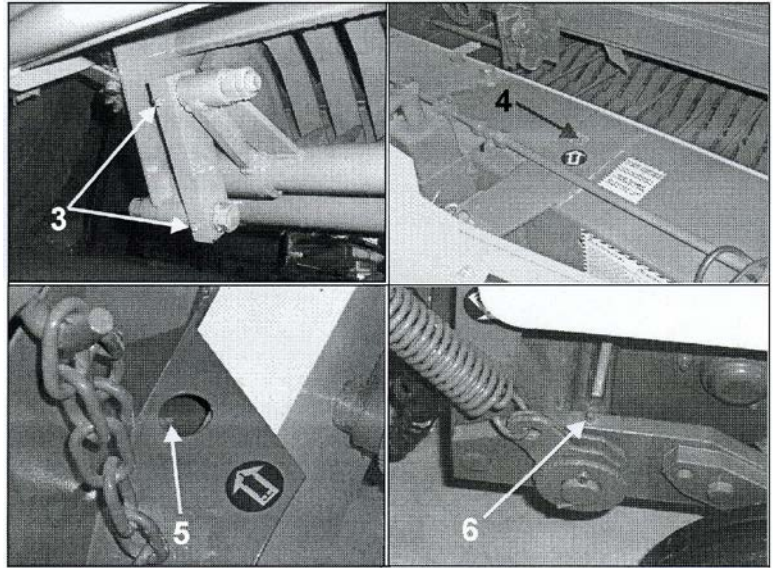


Fig. 13

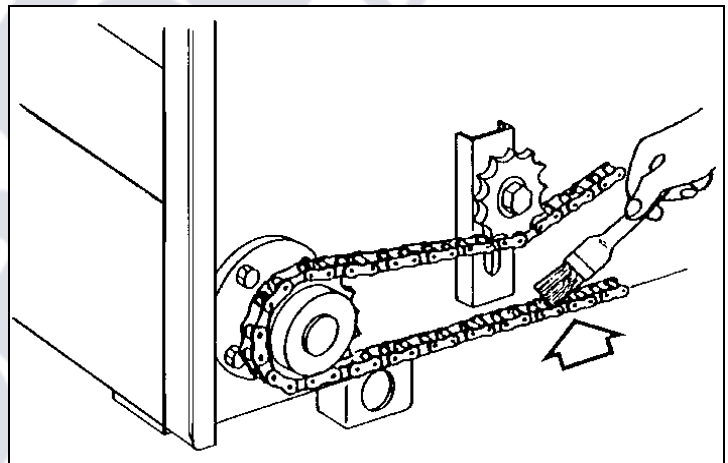


Fig. 14

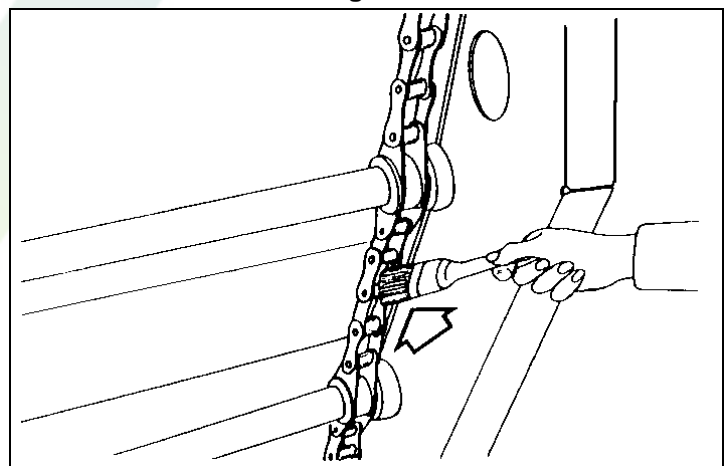


Fig. 15

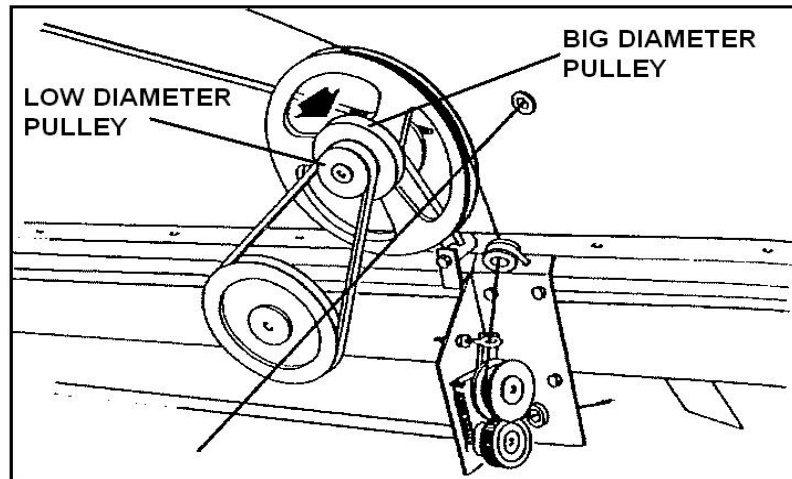


Fig. 16

HYDRAULIC SYSTEM

The connection of the hydraulic net of the round baler with the tractor allows to control the following operations:

1. opening and closing the rear door;
2. raising and lowering the pick-up.

The above is possible through the following devices:

- door opener control hose 3 to be connected with the outlet of lever P of the tractor (insert B fig. 16/A);
- raise pick-up control hose 4 to be connected with the outlet of lever R of the tractor (insert B fig. 16/A);
- deviator / switch attached to hose 19 to be connected, on tractor side, with the outlet of lever S of the tractor (insert D fig. 16/A);
- deviator / switch 23 to select alternatively, the pick-up or the rear door movement (insert D fig.16/A).

ABBRIATA® round balers can be connected to the tractor with a set of two hydraulic hoses no. 3 - 4 (insert B fig.16/A) or with one hydraulic hose 19 and switch 23 (insert D fig. 16/A).

When the tractor is equipped with at least two independent hydraulic levers P and R, connect hydraulic hoses 3 and 4 (insert B fig.16/A) to the corresponding hydraulic outlets of the tractor. By means of the above mentioned levers, it is possible to drive directly, without selecting switch, the pick up and the rear door movement (see insert B fig. 16/A).

When the tractor is equipped with only one hydraulic lever S, connect hydraulic hose 19 (insert D fig.16/A) to the corresponding hydraulic outlet of the tractor. By means of the above mentioned lever, it is possible to drive the pick up or alternatively the rear door depending on the previously selected position of the lever of switch 23 fig.16/A (see insert D fig.16/A).



WARNING!

The hydraulic hoses can break. It is therefore important to pay attention to any leakage of hot oil under pressure.

The hoses and the hydraulic components conform to prEN 982.

Maximum working pressure: 330 bar - bursting pressure: 1450 bar.

Hydraulic hoses must be replaced every 5 years from the date printed on them.

ELECTRIC SYSTEM

The green light (G fig. 16/E) signals that the control panel (B fig. 16/C – fig. 16/D and fig.16/E) is powered up.

The horn (K fig. 16/E) acoustically advises that the previously selected pressure of the bale has been reached.

The red light (I fig. 16/E) contemporarily signals, together with the horn above, that the previously selected pressure of the bale has been reached.

The switch (H fig. 16/E) allows to deactivate and activate the horn.

The deviator (F. fig 16/E) active on the M120/M150 round balers which can be equipped with both Twine and Net binders, allows to choose whether to use the Twine or Net binding.

The "START" button (C fig. 16/E) commands the start of the Twine or Net binding previously selected.

Connect the tractor's electrical system to the 7 polarity plug (n°.34 fig. 16/C – fig. 16/D) to activate all the lights and gear motors of the twine and/or net binder.

Try to operate the round baler's electrical system before driving on the road or before starting to bale the product – to set up tractor socket see pag. 22 / 23.

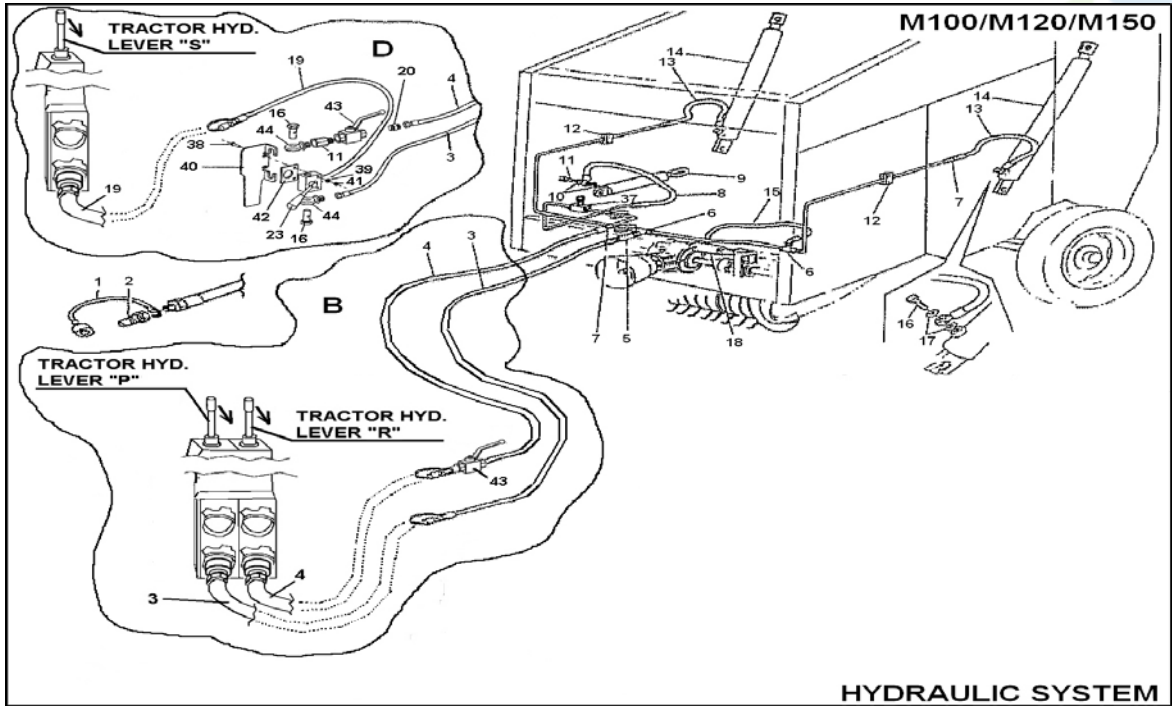


Fig. 16/A

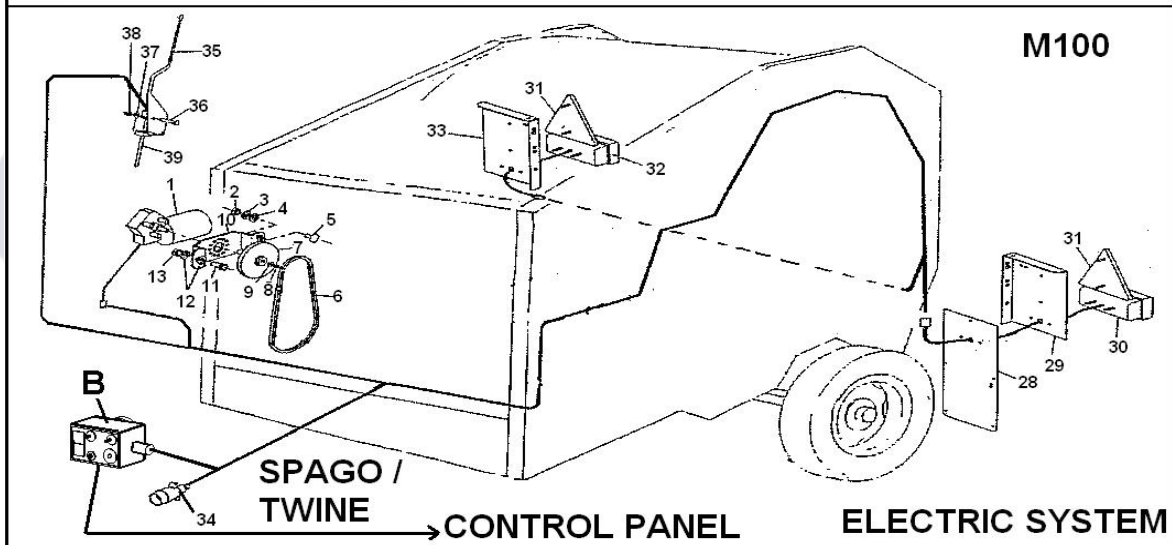
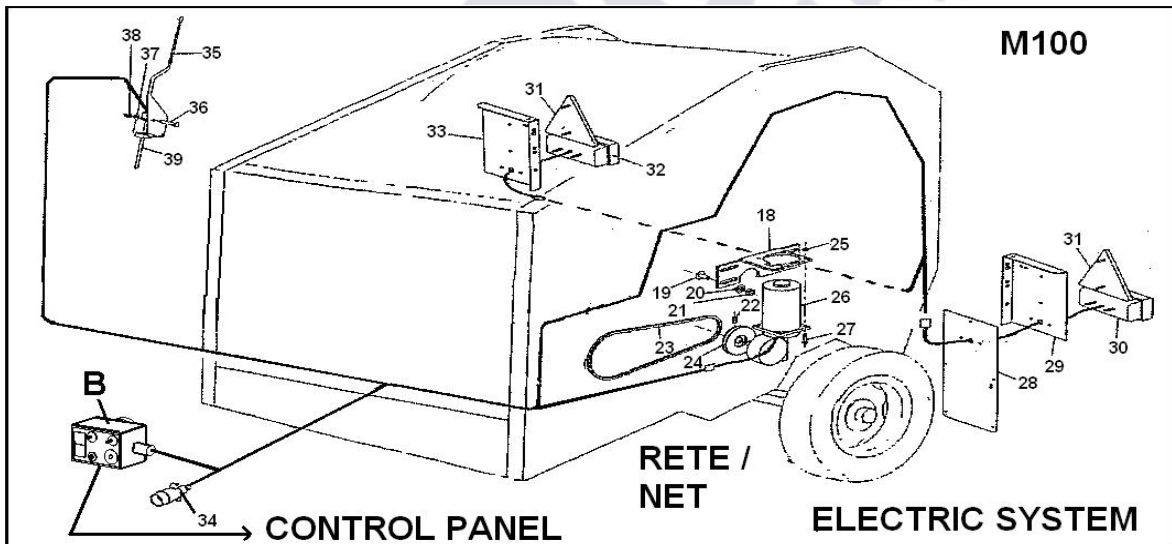


Fig. 16/C

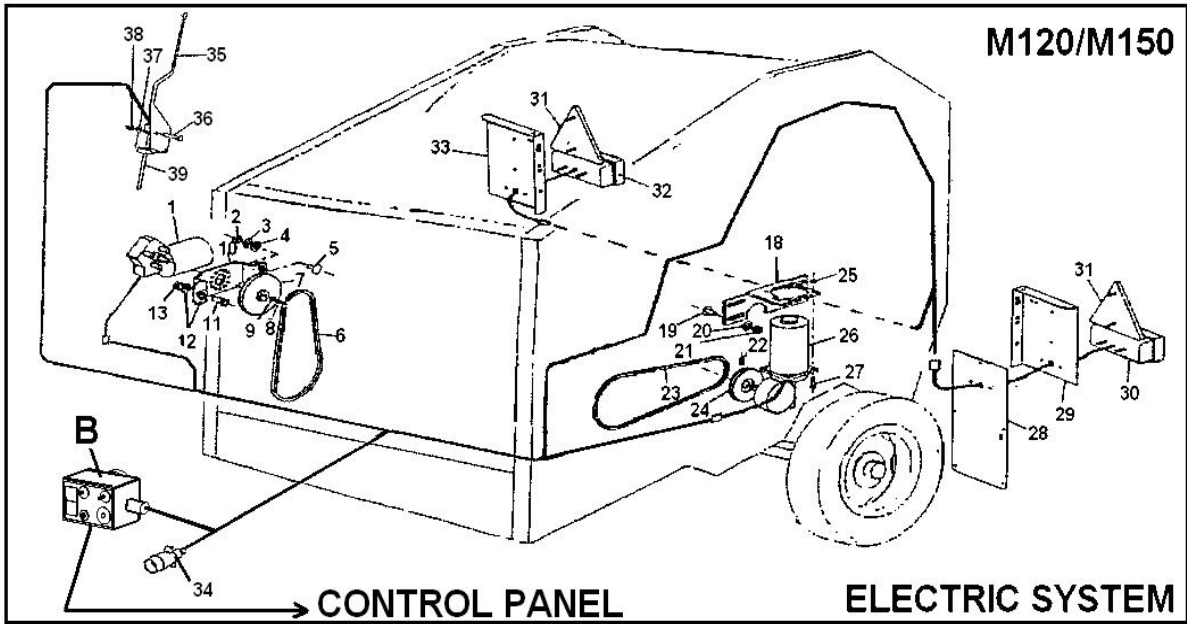


Fig.16/D

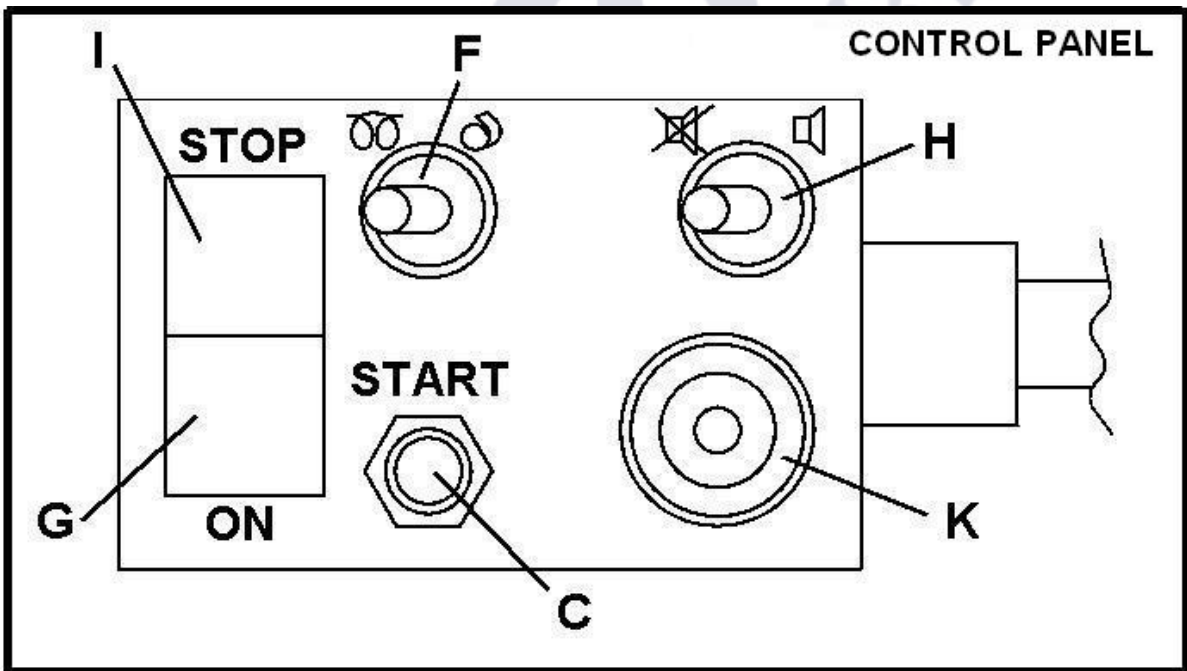


Fig.16/E

CONNECTING WIRES OF THE ROUND BALER PLUG AND TRACTOR SOCKET TO ACTIVATE LIGHTS AND ELECTRIC MOTORS.

A) THE MACHINE IS SUPPLIED WITH A 7 POLE PLUG

ROUND BALER PLUG

The 7 pole plug of the round baler is supplied pre-wired to activate lights and electric motors, therefore must not be modified.

TRACTOR SOCKET

The existing 7 pole “standard” tractor socket can present one of the three following alternative cases.

CASE 1 - The pole in position 2 is empty.
The pole in position 7 is empty.

It is necessary to modify existing socket connections as follows:

EXISTING SOCKET		MODIFIED SOCKET	
1. Right arrow	Yellow (X)	1. Right arrow	Yellow
2. Rear fog lamp / Motors (Empty)	-	2. Rear fog lamp / Motors – connect Ø 3 red wire provided to + of tractor start-up switch.	Red Ø 3 (Z)
3. Ground	White	3. Ground - connect with Ø 3 black wire provided, to frame /ground of tractor in addition to existing white wire.	White + Black Ø 3
4. Left arrow	Green	4. Right arrow	Green
5. Parking lights	Brown	5. Parking lights	Brown
6. “Stop” lights	Red	6. “Stop” lights	Red
7. Parking lights (Empty)	-	7. Parking lights (Empty)	-

The electric motors of the machine can work with lights off, without turning-on rear fog lamp.

(X) The colours may not be respected.

(Z) The positive pole of the tractor start-up switch, usually corresponds to the M015 position – check with search phase

CASE 2 - The pole in position 2 is empty.
The pole in position 7 is occupied.

It is necessary to modify existing socket connections as follows:

EXISTING SOCKET		MODIFIED SOCKET	
1. Right arrow	Yellow (A)	1. Right arrow	Yellow
2. Rear fog lamp / Motors (Empty)	-	2. Rear fog lamp / motors – connect Ø 3 red wire provided to + of tractor start-up switch	Red Ø 3 (Z)
3. Ground	White	3. Ground - connect with Ø 3 black wire provided, to frame /ground of tractor in addition to existing white wire.	White + Black Ø3
4. Left arrow	Green	4. Left arrow	Green
5. Parking lights	Brown	5. Parking lights	Brown
6. “Stop” lights	Red	6. “Stop” lights	Red
7. Parking lights	Black	7. Parking lights	Black

The electric motors of the machine can work with lights off, without turning-on rear fog lamp.

(X) The colours may not be respected.

(Z) The positive pole of the tractor start-up switch usually corresponds to the M015 position – check with search phase

CASE 3 – The 7 poles are all occupied.

It is necessary to modify existing socket connections as follows:

EXISTING SOCKET		MODIFIED SOCKET	
1. Right arrow	Yellow (X)	1. Right arrow	Yellow
2. Rear fog lamp / Motors	Blue	2. Rear fog lamp / motors (Y/Z)	Blue
3. Ground	White	3. Ground - connect with Ø 3 black wire provided, to frame /ground of tractor in addition to existing white wire.	White + Black Ø 3
4. Arrow	Green	4. Arrow	Green
5. Parking lights	Brown	5. Parking lights	Brown
6. "Stop" lights	Red	6. "Stop" lights	Red
7. Parking lights	Black	7. Parking lights	Black

The machine can work by turning-on rear fog lamp.

(X) The colours may not be respected.

(Z/Y) If the rear fog lamp power line (in this case supposedly of blue colour) was insufficient to power the electric motors, it will be necessary to replace the existing blue wire with Ø 3 red wire provided after having replaced the line protection "fuse" with another larger fuse. Otherwise, it is necessary to first disconnect the blue wire and subsequently connect the Ø 3 red wire directly to the positive pole of the tractor start-up switch which usually corresponds to the M015 position (to be checked with search phase).

In this last case the machine can work with lights off, without turning on rear fog lamp.

B) THE MACHINE IS SUPPLIED WITH A 7 POLE PLUG AND A SINGLE-POLE PLUG

ROUND BALER PLUGS

Both the 7 pole plug already supplied pre-wired and the single-pole plug of the round baler do not usually require modification.

TRACTOR SOCKETS

Both the 7 pole standard socket and the single-pole socket of the tractor do not usually require modification.

If the single-pole socket of the tractor is incapable of receiving the single-pole plug of the round baler, it is necessary to replace it with that supplied with the round baler together with the single-pole plug.

Consequently the round baler-tractor electrical connection is usually performed by inserting the 2 plugs of the round baler into the corresponding sockets of the tractor without making any variation.

HOISTING THE MACHINE

To hoist the machine use the special attachments or hooks located on the upper part (Fig. A). It is advisable to use an appropriate compensator to avoid damaging the machine.

The machine is equipped with extra wedges that, when not in use, are stored in the upper part of the machine. They should always be used when the machine is detached from the tractor (see safety labels – page 6).

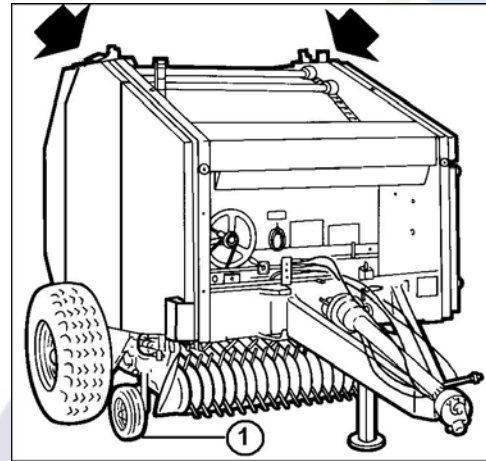


Fig. A

TROUBLESHOOTING

- a) The bale is not ejected from the chamber:
 1. Reduce the baling pressure.
 2. Keep the machine on the central axis of the crop line.
 3. Assemble on the rear door the "Iron wedges" supplied as standard equipment.
 4. Make sure the machine is slightly inclined upwards at the front
- b) The main chain is turning but the product is not entering:
 1. Check whether the pick-up is turning.

If not, replace the shear bolt no.12 Fig. 8/A.
- c) The pick-up is clogged:
 1. Stop and reverse with the P.T.O. engaged, lift and lower the pick-up
 2. In the event of large blockages, disengage the P.T.O., turn off the tractor, take off the **ignition** key and remove the clogged crop manually

WARNING!

When the machine is clogged, operate on it only after disconnecting the P.T.O., turning off the engine and removing the key from the ignition.

WARNING!

Normally, clogging occurs when the crop line is too large and irregular or because the machine is running too fast.

- d) The twine slips on one side of the bale:
 1. Adjust the twine limiter located under the binder unit on both sides (see parts 6 of "Scheme of automatic binder" page 8).
- e) The chamber does not close perfectly:
 1. Adjust the position of the hook by means of bolt 9 Fig. 8/A (see pag.16).
 2. Check there is no crop between the base of rear door and the frame of the machine. If necessary, remove it.

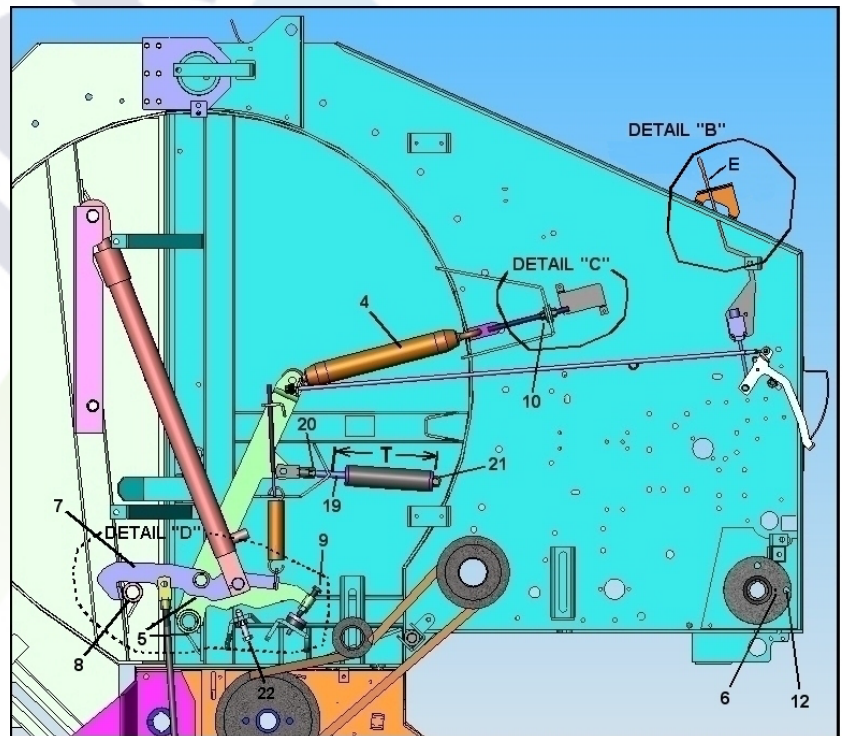


Fig. 8/A

END OF SEASON STORAGE

After eliminating all the harvest residues and disconnecting the binding system, and removing the twine or net, please do the following:

- a) Thoroughly clean the interior and exterior of the machine. Dirt and humidity may create rust.
Important! Warning! Clean the machine by using a high pressure air unit. Don't use a high pressure water unit which could damage machine parts.
- b) Loosen the V-belts.
- c) Check and remove the mobile parts such as belt tensioners, cardan shaft, etc. Clean and check them for wear. Replace with new parts if necessary.
- d) Oil all the parts of the cardan shaft.
- e) Thoroughly lubricate the machine.
- f) Clean the gears and change the oil.
- g) Replace any worn or damaged parts.
- h) Touch-up damaged paint and spray a rust inhibitor on bare spots.
- i) Store the machine in a dry environment and inflate the tires.
- j) Make a list of all the spare parts required and order them ahead of time (for your seller it will be easier to prepare the spare parts during the off season). In this way your machine will be ready for use for the new season.

PREPARATION FOR THE NEW SEASON

- a) Lubricate the entire machine.
- b) Check the oil level. Top up, if necessary.
- c) Adjust all screws and nuts.
- d) Check all machine adjustments. Re-adjust, if necessary.
- e) Carefully re-read the use and maintenance handbook.

CHARACTERISTICS

M100 / M120 / M150 is a "modular" range of fixed chamber round balers with chain and bars. They are differentiated by the size of the bale produced, but all share the following advantages:

- high level of sturdiness and construction quality
- ease of use
- reduced power absorption
- low maintenance costs
- compact dimensions and moderate weight
- large production capacity due to the use of the latest generation packer device
- possibility to reach a higher bale density than other machines of its category

		M100 Super	M100 Magnum	M100 Super/L	M100 Magnum/L	M120 Compact/Plus
Bale size	cm. inches	Ø 100 x 100 Ø 39.3 x 39.3	Ø 100 x 100 Ø 39.3 x 39.3	Ø 100 x 120 Ø 39.3 x 47.2	Ø 100 x 120 Ø 39.3 x 47.2	Ø 120 x 100 Ø 47.2 x 39.3
Pick-up	cm. inches	145 57	165 64.9	165 64.9	185 72.8	145 57.0
Chains shafts	No.	27	27	27	27	31
P.T.O. rotating/speed	RPM	540	540	540	540	540
Required power	HP	40/45	40/45	40/45	40/45	40/45
Dimensions (Approx.) WidthxLengthxHeight	cm. inches	180 (195)*x302x177 70.8 (76.7)*x118.8x69.7	225x302x177 88.5x118.8x69.7	215x302x177 84.6x118.9x69.7	245x302x177 96.4x118.9x69.7	180 (195)*x330x192 70.8 (76.7)*x129.9x75.5
Weight (Approx.)	kg. lb	1.590 3.490	1.650 3.636	1.650 3.636	1.730 3.806	1650 3.636
Tyres		7.50-16 or 11.5-80/15	11.5-80/15	11.5-80/15	11.5-80/15	11.5-80/15

		M120 Compact Magnum/Plus	M120 Super/Plus	M120 Magnum/Plus	M150 Super/Plus	M150 Magnum/Plus
Bale size	cm. inches	Ø 120 x 100 Ø 47.2 x 39.3	Ø 120 x 120 Ø 47.2 x 47.2	Ø 120 x 120 Ø 47.2 x 47.2	Ø 150 x 120 Ø 59 x 47.3	Ø 150 x 120 Ø 59 x 47.3
Pick-up	cm. inches	165 64.9	165 64.9	185** 72.8	165 64.9	185** 72.8
Chains shafts	No.	31	31	31	41	41
P.T.O. rotating/speed	RPM	540	540	540	540	540
Required power	HP	40/45	50	50	50	50
Dimensions (Approx.) WidthxLengthxHeight	cm. inches	225x330x192 88.5x129.9x75.5	215x330x192 84.6x129.9x75.5	245x330x192 96.4x129.9x75.5	215x357x227 84.6x140.5x89.4	245x357x227 96.5x140.5x59.4
Weight (Approx.)	kg. lb	1.720 3.784	1.850 4.070	1.930 4.246	2100 4628	2200 4840
Tyres		11.5-80/15	11.5-80/15	11.5-80/15	11.5-80/15	11.5-80/15

* with 11.5-80/15 tyres size **on demand: 200 cm.

