

16/9/15



# **USE AND MAINTENANCE HANDBOOK**

## **MINI ROUND BALER M 50 MINIROTO CE**



SITREX S.p.A. – Agricultural Machinery  
Zona Industriale – Viale Grecia, 22 – 06018  
Trestina (PG) - Italy

## CONTENTS

WARRANTY .....	3
INTRODUCTION .....	3
MARKING AND IDENTIFICATION .....	3
SAFETY LABELS .....	4
WARNING! .....	7
GENERAL SAFETY STANDARDS: USE CONDITIONS AND LIMITS .....	7
POWER TAKEOFF .....	8
ADJUSTMENT .....	9
INSPECTION.....	11
LUBRICATION .....	11
TROUBLESHOOTING/OTHER PROBLEMS.....	12
NET BINDING DEVICE .....	15

## 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 if 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 picker 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, check that the equipment has not been damaged during transportation and that accessories (if any) are complete. Claims will only be accepted in writing within eight days from the date of delivery.

## MARKING AND IDENTIFICATION

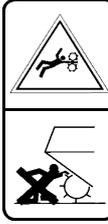
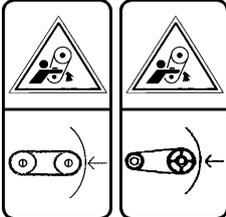
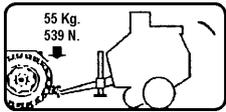
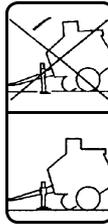
Upon receipt of the machine check the marking on the hood of the machine.



(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 LABELS**

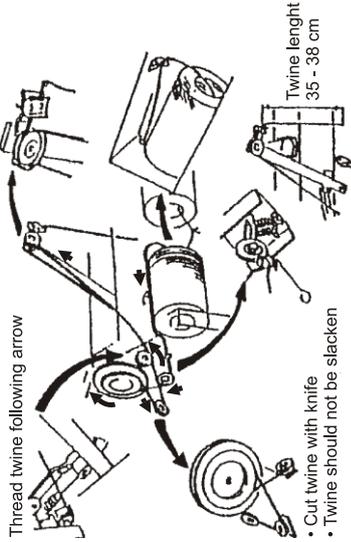
 <p>Before starting any operation, make sure you have read and understood this manual. All maintenance or modification work must be done according to the descriptions given in this manual. Failure to observe this may cause accidents or breakage of the machine.</p>	 <p>When closing the rear chamber, do not insert the hands between the casings.</p>
 <p>Do not approach the universal joint with the machine in motion.</p>	 <p>Turn off the tractor before performing pick-up operations.</p>
 <p>It is obligatory to close the casings before starting the machine.</p>	 <p>When the rear door is open nobody should stand behind the machine.</p>
 <p>To introduce or adjust the binding wire, only after having removed the protections with motor off. It is compulsory to adjust the belt tightening only after removed the protection and where the tractor engine is off.</p>	 <p>Stay at a safe distance from the machine.</p>
 <p>Indicates the maximum vertical load on the towing eye.</p>	 <p>Warning: When the machine is detached from the tractor, use the supplementary wedges.</p>
 <p>Do not approach the swinging door on the round baler while the tractor is in motion.</p>	 <p>Maximum rotation of the universal joint.</p>
 <p>It is necessary to perform maintenance or controls with the rear door open, apply the special safety stops on both hydraulic jacks</p>	 <p>If the machine is parked on very soft soil, it is obligatory to provide an extra support for the foot.</p>

**PTO speed 540/600 rpm**

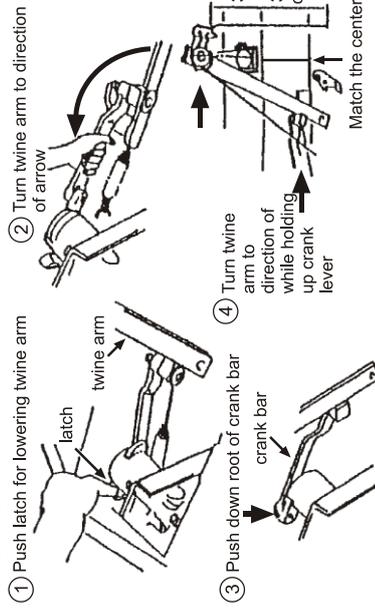
**STOP ENGINE WHEN INSPECTION AND ADJUSTMENT ARE DONE**

- |   |   |
|---|---|
| <b>PRE-START CHECK FOR OPERATION</b>          | <b>POINT OF OPERATION</b>                 |
| 1 Thread twine                                | Select operation speed and drive PTO      |
| 2 Set twin arm                                | Working speed should be from 3 to 5 km/hr |
| 3 Select winding of twine                     | <b>PICK-UP OPERATION</b>                  |
| 4 Adjust bale pressure                        | Sounding of buzzer (aut)                  |
| 5 Switch buzzer on                            | Start of twine winding                    |
| 6 Open stop valve                             | Stopping of travelling                    |
| 7 Adjust pick-up height to operation position | Stopping of twine arm (automatically)     |
| 8 Adjust apron and skirt                      | Finish of twine winding                   |
|   | Bale ejection                             |

**PROCEDURE OF THREADING TWINE**

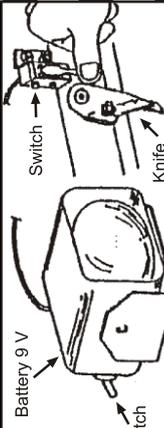


**PROCEDURE OF TWINE ARM SETTING**



**SETTING OF BUZZER**

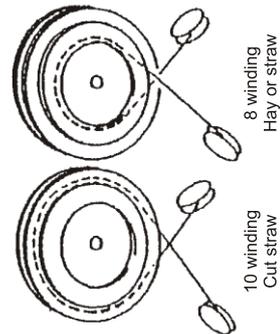
Make sure buzzer is sounded when pushing switch by finger



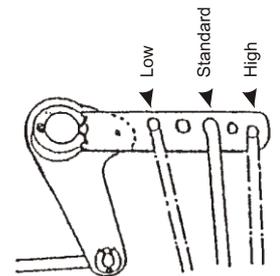
- DID YOU ADJUST CORRECTLY?
- DID YOU LUBRICATE?
- DO YOU HAVE ENOUGH TWINE?
- ALWAYS KEEP YOUR MIND SAFETY OPERATION



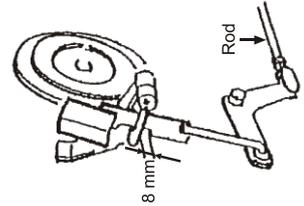
**TWINE WINDING SELECTION**



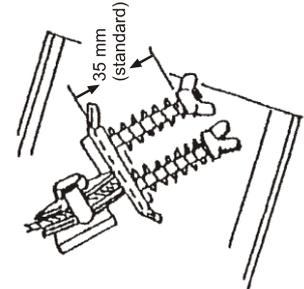
**BALE PRESSURE SELECTION**



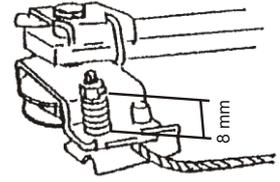
**CONTROL BAR ADJUSTMENT**



**TWINE TENSIONER ADJUSTMENT**

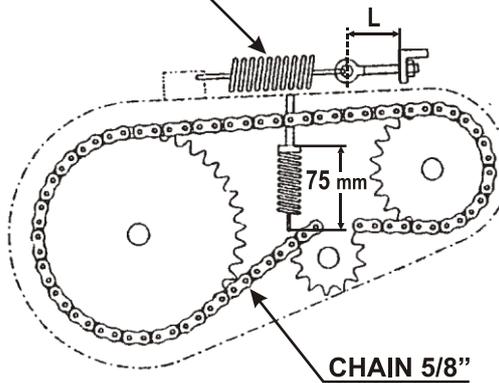


**ARM TENSION SPRING ADJUST**

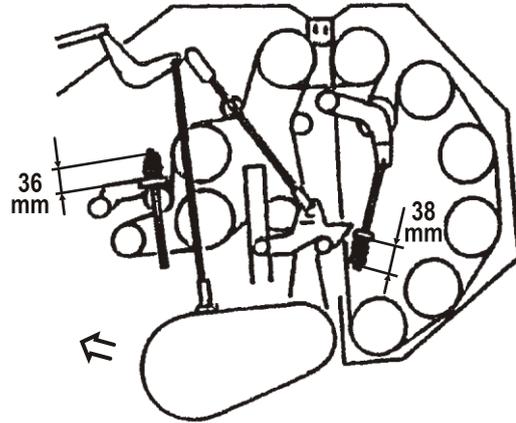


**ADJUSTMENT OF PICK-UP CHAIN AND SUSPENSION**

Standard adjustment length of both sides spring is  $L = 48 \text{ mm}$   
Adjust it to suit field condition

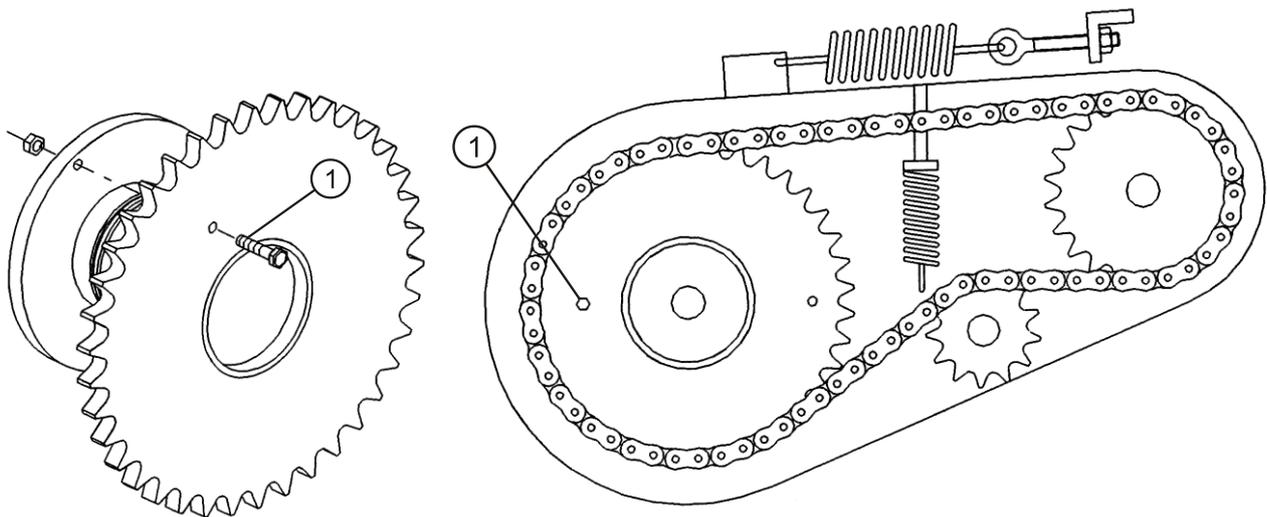


**ADJUSTMENT OF ROLLER CHAIN TENSION**



**ATTENTION - IMPORTANT**

Replace the shear bolt  $\varnothing 5 \text{ mm}$  class 8.8 of the same length (1)



**WARNING!**

- Do not leave the machine unattended when there are moving parts.
- Do not carry 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 does 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 RULE**

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.
- It is recommended to use protective earphones when using the tractor without a sound-proof cab (only if the noise exceeds about 85 dBA).

## 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.
  - Make sure that the chains are applied to the protection device of the cardan shaft to prevent it from turning by itself.
  - Before inserting the power takeoff, check that the number of turns of the machine is the same as that of the power takeoff of the tractor and that no one is present in the hazardous area of 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 must always overlap the universal joint protection hood by at least 50 mm.

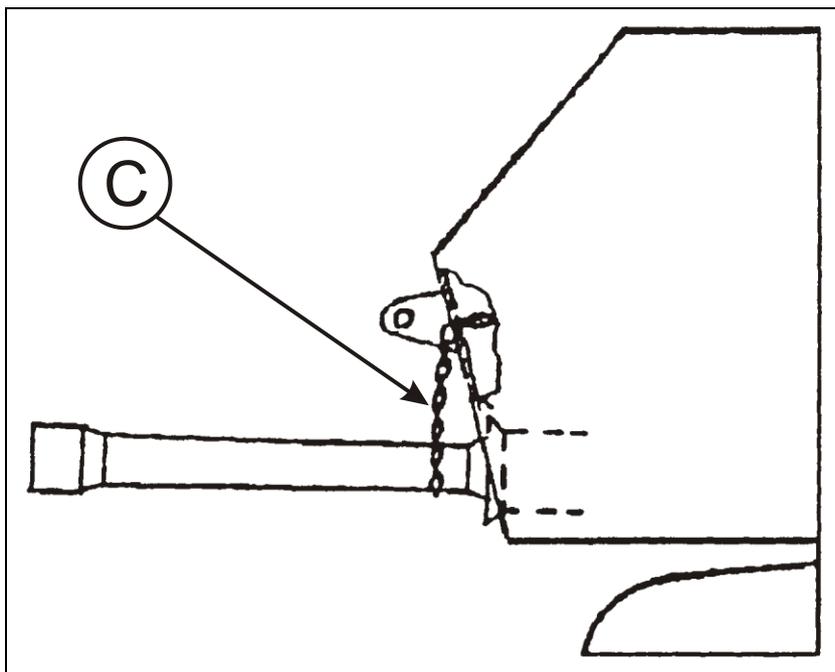


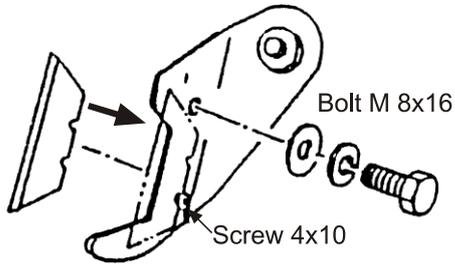
Fig. 1/a

## ADJUSTMENT

WINDING OF TWINE	
10 winding Cut straw	8 winding Hay or straw
Use only twine 500 mt/kg	

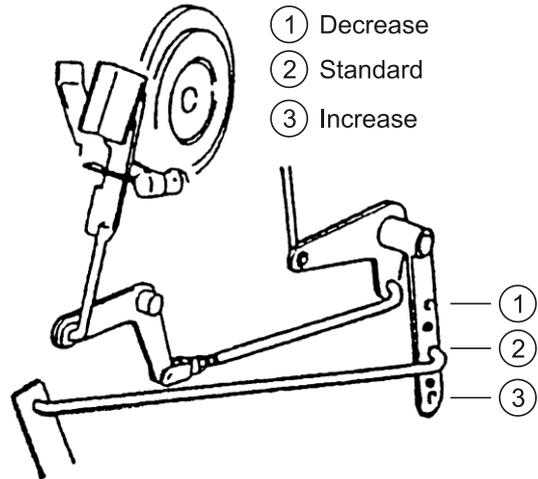
TWINE ARM
Adjust by the nut M 10 to slowly fall down

**REPLACEMENT KNIFE**

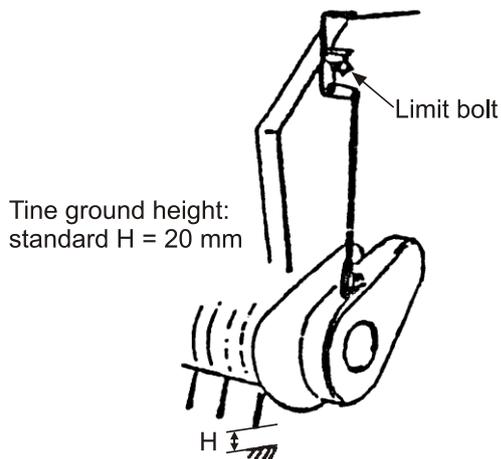


When the cutting knife is dull replace it as soon as possible.  
When replacing knife do not move the screw.

**BALING PRESSURE**

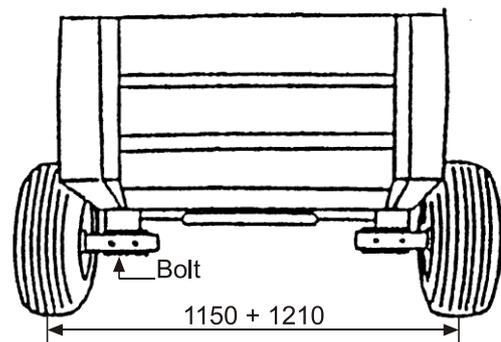


**HEIGHT OF PICK UP**



Adjust the height by limit bolt.

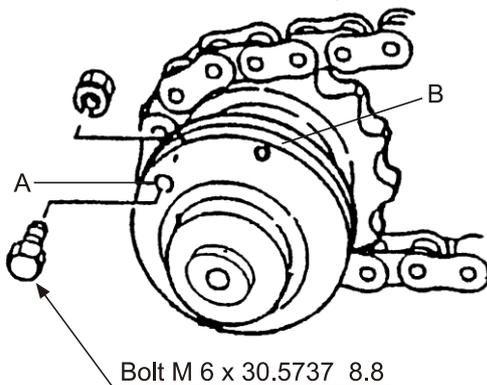
**WHEEL TREAD**



Wheel tread is adjustable with bolts and nut indicated.

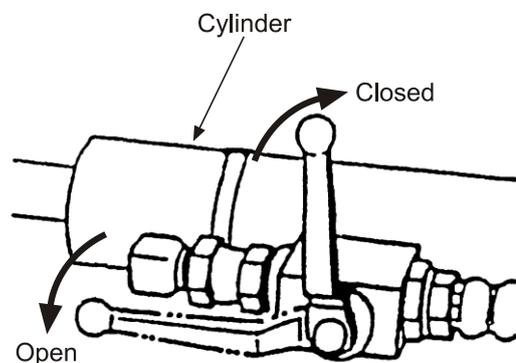
**SHEAR BOLT**

A = Max torque 54 kgm  
B = Max torque 67 kgm



When the shear bolt is served stop the engine and remove the causes and replace the bolt.

**STOP VALVE**



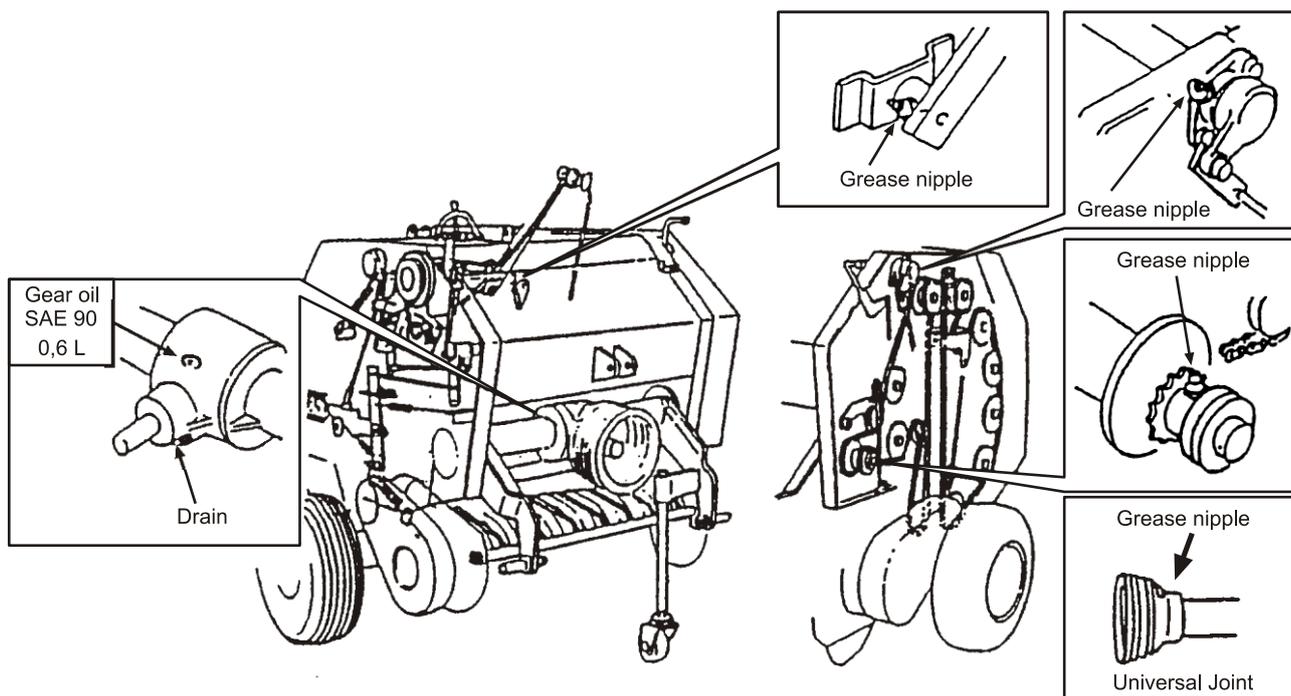
CAUTION: close the stop valve, and be sure stop the engine to prevent danger during inspection.

## INSPECTION

- Tire pressure: 2,0 bar.
- Inspect whether bolts and nut are loosen or not before and after operation.
- Clean, and be inspection and lubrication of each part after operation.

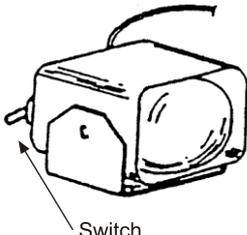
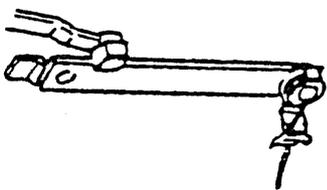
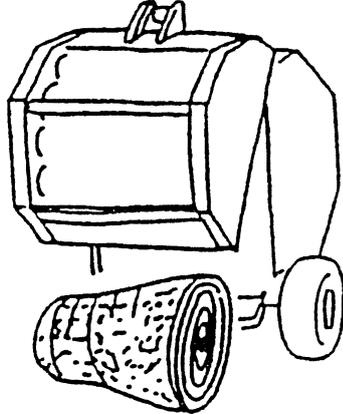
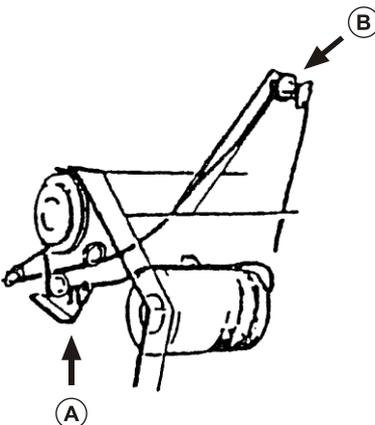
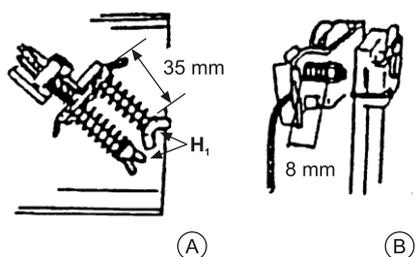
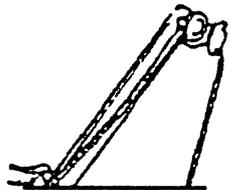
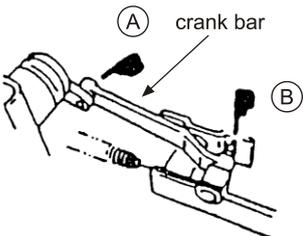
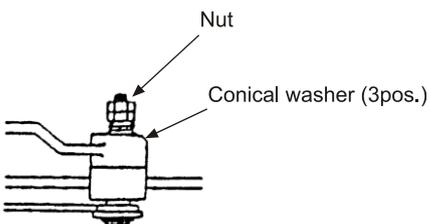
## LUBRICATION

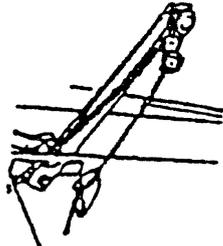
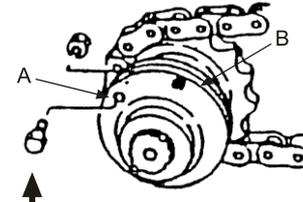
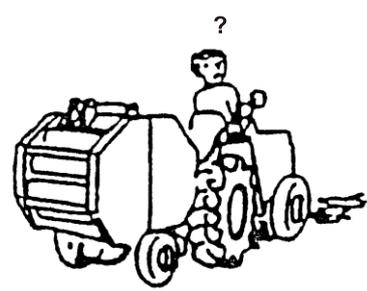
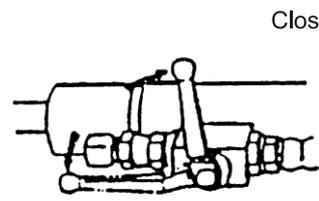
- Interval of oiling: 100 hrs or each 1 season.
- Grease up: every use.
- Apply a reasonable amount of oil the roller chain before and after operation.
- Oil all sliding parts.

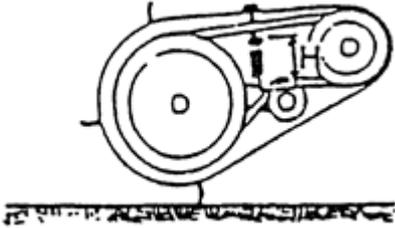
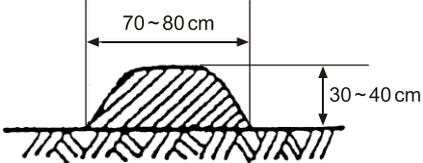
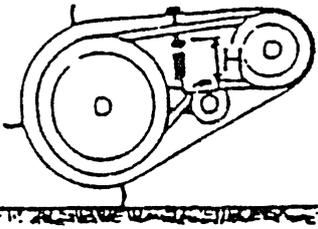
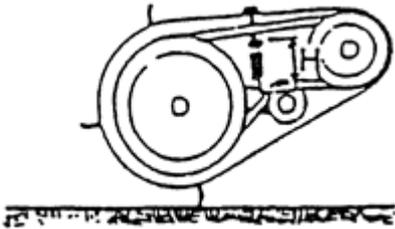
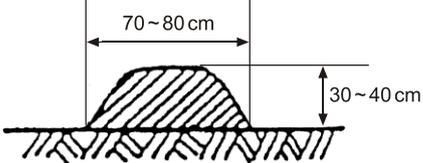


## TROUBLESHOOTING/OTHER PROBLEMS

ENGLISH

FAULT	POSSIBLE CAUSE	REMEDY
<p>(1) Not binding</p> <p>a) Twine doesn't roll up with buzzer sound</p>  <p>Switch</p>  	<ol style="list-style-type: none"> <li>Twine tip doesn't come within roll.                             <ul style="list-style-type: none"> <li>Twine is caught in arm tips.</li> <li>This machine got wet.</li> <li>Twine does not come in by wind.</li> <li>Leading twine is short.</li> </ul> </li> <li>Twine isn't correctly passed.                             <ul style="list-style-type: none"> <li>It is come off guide roll.</li> <li>It is come off twine pulley.</li> <li>It is gotten round.</li> </ul> </li> <li>Twine tensioner is too tensed (A-B).</li> <li>Packing is too soft.</li> </ol> 	<ol style="list-style-type: none"> <li>Confirm twine tips whether it comes in roll or not.                             <ul style="list-style-type: none"> <li>Remove catching twine.</li> <li>Wipe out the wet (cover the twine box).</li> <li>Come in loading twine within roll.</li> <li>After setting the arm, cut the twine with knife, and set the leading twine length to 35-38 cm.</li> </ul> </li> <li>Verify if twine is correctly passed or not.                             <p><b>CAUTION:</b> Remove slack of twine.</p> </li> </ol> <p>Confirm whether twine get round within twine box or not.</p> <ol style="list-style-type: none"> <li>Adjust the twine tensioner.</li> <li>Pick up increasing the baling pressure of left side. (Falling down side of twine arm).</li> </ol>  <p>TWINE TENSIONER</p>
<p>b) Twine doesn't roll up with buzzer sound</p> 	<ol style="list-style-type: none"> <li>Position of arm is different.</li> <li>Each part of arm is worse move.</li> </ol> 	<ol style="list-style-type: none"> <li>Reset the arm to proper position.</li> <li>A. Pull out the spring pin. B. Remove the doubled nut, and lubricate, and move smoothly.</li> </ol>  <p>Nut Conical washer (3pos.)</p> <p>Adjust the fallen speed by the doubled nut, in order not to drop the arm prior twine.</p>

FAULT	POSSIBLE CAUSE	REMEDY
(2) No sound buzzer.		
c) Arm lowers but buzzer doesn't sound.	<ol style="list-style-type: none"> <li>1. Switch of buzzer is not come in.</li> <li>2. Battery is flat.</li> <li>3. Arm does not touch to switch.</li> <li>4. Cord snap.</li> </ol>	<ol style="list-style-type: none"> <li>1. Switch on.</li> <li>2. Replace the battery.</li> <li>3. Adjust the switch.</li> <li>4. Replace the cord.</li> </ol>
(3) Not severe twine.		
d) Twine is cut, twine is difficult to cut.  	<ol style="list-style-type: none"> <li>1. Knife is worn-out.</li> <li>2. Twine tensioner is loose.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the knife.</li> <li>2. Tighten up the fitting bolt of tension spring one or two turns.</li> </ol>
(4) Shear bolt.		
e) Shear bolt is severed.  A = Max torque 54 kgm B = Max torque 67 kgm   Shear bolt	<ol style="list-style-type: none"> <li>1. Baling pressure is too height.</li> <li>2. Shear bolt is loose.</li> <li>3. It is wrapping up the roller.</li> <li>4. Operation of tractor is worse.</li> <li>5. Fodder is too packed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lower the baling pressure.</li> <li>2. Tighten up the shear bolt (M 6x30 - 8.8).</li> <li>3. Remove the wrapping.</li> <li>4. Lower PTO, and to couple slowly the clutch.</li> <li>5. After hearing the buzzer, stop operation but continue to revolve the PTO.</li> </ol>
(5) Do not open gate.		
f) Do not open gate.  	<ol style="list-style-type: none"> <li>1. Stop valve is closed.</li> <li>2. Oil quantity of power package is insufficient.</li> </ol> 	<ol style="list-style-type: none"> <li>1. Open the stop valve.</li> <li>2. Check the oil quantity.</li> </ol>

FAULT	POSSIBLE CAUSE	REMEDY
(6) Feeding problems.		
g) Pick up tine does not turn. (Machine with chain transmission of the pick up)	1. The shear bolt $\varnothing$ 5 mm class 8.8 is broken (page 7).  It is due to: <ul style="list-style-type: none"> <li>• Tine ground height is too low.</li> <li>• Windrow is too large.</li> <li>• The grass is too high and it estranges the pick up operation.</li> </ul> 	1. Replace it with a shear bolt class 8.8 of the same length (page 7): <ul style="list-style-type: none"> <li>• Heighten tine ground height by means of pick up wheel adjustment.</li> <li>• Make a proper windrow; reduce operation speed.</li> </ul>  <ul style="list-style-type: none"> <li>• Raise the pick up height; cut the residual grass.</li> </ul>
h) Pick up tine does not turn, and slip. (Machine with V belt transmission of the pick up)  (Up serial number 98-7-328)	1. V belt is slipped. 2. V belt is cut.  It is due to: <ul style="list-style-type: none"> <li>• Tine ground height is too low.</li> <li>• Windrow is too large.</li> <li>• The grass is too high and it estranges the pick up operation.</li> </ul>  	1. Tighten up the adjusting bolt of belt tension spring length $H = 75$ mm. 2. Replace V belt (B 39). <ul style="list-style-type: none"> <li>• Heighten tine ground height by means of pick up wheel adjustment.</li> <li>• Make a proper windrow; reduce operation speed.</li> </ul>  <ul style="list-style-type: none"> <li>• Raise pick up height; cut the residual grass.</li> </ul>

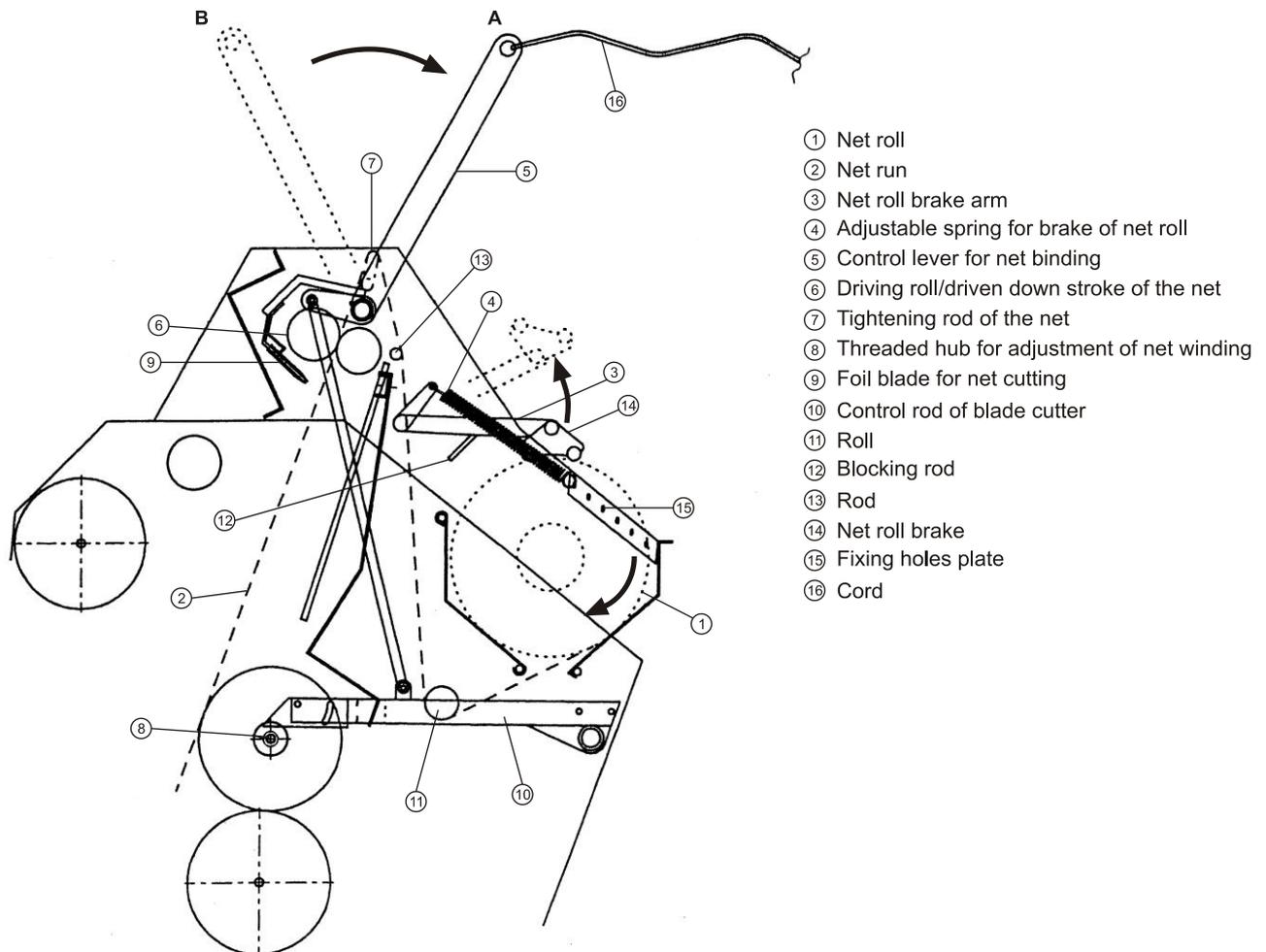
## NET BINDING DEVICE

1. Load the net roll after having lifted the arm "3", blocking it on the top with the suitable bar "12", turning over the item "14",
2. Introduce the net following the dotted line "2" shown on the sketch.
3. Lower the arm "3" while extracting the blocking rod "12" and stretch the spring "4" about in the central position of the fixing holes "15".

Always keep a suitable tension of the spring "4" moving, if necessary, its fixing point, in order to compensate the difference of the net roll diameter occurring after a certain number of bindings.

4. During the packaging, the beginning of the net binding is carried out by pulling the lever "5" by means of the cord "16" in the "A" position, to be carried out when hearing the acoustic signal indicating that the packaging pressure has been reached.
5. Keep the lever "5" in the "A" position for a while, till the net has been taken by the rotating bale.
- Then release the lever "5" which, once binding is finished, will return to the initial "B" position.
6. To increase or decrease the number of net windings on the bale, lengthen or shorten the threaded hub "8". The machine is usually set for two or three net windings.

In case net feeding is not regular, act on the device regulation the brake "14" of the net roll with the spring "4", or adjust stretching between the rolls "6".



- ① Net roll
- ② Net run
- ③ Net roll brake arm
- ④ Adjustable spring for brake of net roll
- ⑤ Control lever for net binding
- ⑥ Driving roll/driven down stroke of the net
- ⑦ Tightening rod of the net
- ⑧ Threaded hub for adjustment of net winding
- ⑨ Foil blade for net cutting
- ⑩ Control rod of blade cutter
- ⑪ Roll
- ⑫ Blocking rod
- ⑬ Rod
- ⑭ Net roll brake
- ⑮ Fixing holes plate
- ⑯ Cord

