

# MASCAR



## *Use and maintenance manual*



## *Round baler* ***CORSA 320/350***



Prima di iniziare ad  
operare con la  
macchina, leggere le  
istruzioni per l'uso

CE

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Details mentioned in the identification plate

*Machine model*

*Serial number*

*Year of production*

*Machine weight*

*Authorized **MASCAR** repair centre to contact for service in*

## SECTION 1

### Description and main features

#### 1.1 PRESENTATION

This manual features information, instructions and all other data deemed necessary for the user to gain familiarity with Corsa 320 - 350 Round Baler, its proper operation and routine maintenance. Corsa 320 - 350 Round Baler, hereinafter also referred to as the machine, is manufactured by MASCAR of Grumolo delle Abbadesse (Vicenza) Italy, hereinafter referred to more simply as the Manufacturer.

The contents of this manual do not constitute a detailed description of the various components and their operation. Herein, the user will nonetheless find everything he/she will normally need to know in order to operate the machine safely and look after it properly.

The regular operation, lasting efficiency and economical running of the machine depend on the observance and application of the procedures described herein, together with careful and thorough maintenance.

Failure to comply with the instructions given herein, negligent operation, incorrect use of the machine and the performance of unauthorized modifications may result in the loss of any rights under the warranty provided by the Manufacturer.



#### **WARNING**

***Consequently, the Manufacturer declines all responsibility for damage resulting from negligence or failure to observe the instructions herein.***

When in need of repairs or an overhaul entailing somewhat complex operations, you must contact the authorized Service Centres who have their own skilled personnel, or get in touch with the Manufacturer directly. Remember the Manufacturer is on hand to ensure a prompt and precise technical service and any other element required to get the most out of the machine.



#### **DANGER**

This manual is an integral part of the machine and must be kept with it at all times, even when it is moved to a new location or sold. It must be kept in a safe place known to the personnel authorized for its operation/servicing. It is up to said personnel to make

sure it is kept safe and intact for future consultation for the entire duration of the machine's service life.

Should it be damaged or lost, apply to the Manufacturer for a new copy without delay.

#### 1.1.1 INTENDED USERS OF THE MANUAL

This manual represents the fundamental instrument for the personnel authorized to perform various operations concerning the machine, i.e.

- Personnel in charge of the transportation and handling of the machine.
- Personnel in charge of operating the machine;
- Maintenance personnel;
- Personnel in charge of scrapping.

#### 1.2 WARRANTY

The Manufacturer warrants its brand-new products for a period of 12 (twelve) months from the date of purchase. On receiving the machine, check to make sure it is intact and all parts accounted for.

Any complaints must be made in writing within 8 (eight) days of receipt of the machine. The user's sole remedy under warranty shall consist in the repair or replacement free of charge of any parts proving to be defective subsequent to a thorough examination by the Manufacturer's engineering department (and does not include electrical parts or any implements).

Under no circumstances shall the repair or replacement of parts covered by the warranty extend the warranty period.

The purchaser may only enforce the warranty if the conditions concerning the warranty service, also featured in the supply contract, have been met.

#### 1.2.1 EXCLUSIONS FROM WARRANTY

**The warranty becomes void** (in addition to those situations featured in the supply contract):

In the event of an incorrect manoeuvre attributable to the operator.

In the event the damage can be attributable to poor maintenance.

In the event the machine is altered, following repairs carried out by the user without the Manufacturer's permission or subsequent to the fitting of non-original spare parts, and the damage is the result of said alterations.

In the event the instructions featured in this manual have not been followed.

Neither shall the warranty cover any damage resulting from negligence, carelessness, bad operation or improper use of the machine.

**WARNING**

**The removal of the safety devices supplied with the machine shall automatically cause the warranty to become void and relieve the Manufacturer of any liability.**

**In addition, the warranty shall become void in the event non-original spare parts are used.**

**The machine, or parts of it, must be returned carriage free, even when under warranty.**

**1.3 MARKINGS**

Each machine features an identification plate (13 Fig. 1) featuring the following data:

CE marking;

- a) Name and address of the Manufacturer;
- b) A) Machine model;
- c) B) Serial number;
- d) C) Year of manufacture;
- e) D) Weight in kg.

The data featured on the machine's identification plate are given on page 2 of this manual and must be quoted whenever you are ordering spare parts and/or requesting servicing.

**The round baler comes complete with the following standard-issue documents:**

- Machine's user manual;
- CE declaration of conformity.

**1.4 DESCRIPTION AND USE OF THE MACHINE**

Corsa 320 - 350 Round Baler manufactured by MASCAR is a machine bearing the CE marking in conformity with the provisions of the directive 98/37/EC, as described in the declaration of conformity each round baler comes with mechanisms for picking up the agricultural products and for pressing them into cylindrical bales. The entire assembly is supported by an axle with tyres so that it can be transported, The motive power required for the machine's operation is transmitted from the tractor by means of the power-

takeoff shaft (bearing CE marking) and the connection of the round baler's electrical system to the tractor's 12V power socket. The round baler's electrical system controls the control unit and the lighting system.

The round baler's hydraulic system is controlled by means of a tractor-mounted hydraulic unit connected to the round baler by means of two quick-release flexible hoses attached to the couplings located on the tractor. The hydraulic unit features two levers that enable the various operations to be selected from the tractor.

The levers control the cylinders opening and closing the round bale unloading gate as well as the pickup cylinder.

**The round baler is a machine designed solely for use in farming, for the picking up of hay, straw, maize stubble and green forage and their pressing into cylindrical-shaped bales.**

**A single operator seated in the tractor seat can perform the various operations required to pick up and bale the product lying in windrows.**

**1.5 USE NOT FORECAST OF THE MACHINE****DANGER**

The operator should use the machine like reported in this manual, keeping present of the rules of accident, use conditions and technical characteristics of the same.

**EVERY OTHER USE NOT FORECAST EXCLUDE THE MANUFACTURER FROM EVERY KIND OF RESPONSIBILITY TO PERSONS, ANIMALS AND THINGS.**

## 1.6 SOUND LEVEL

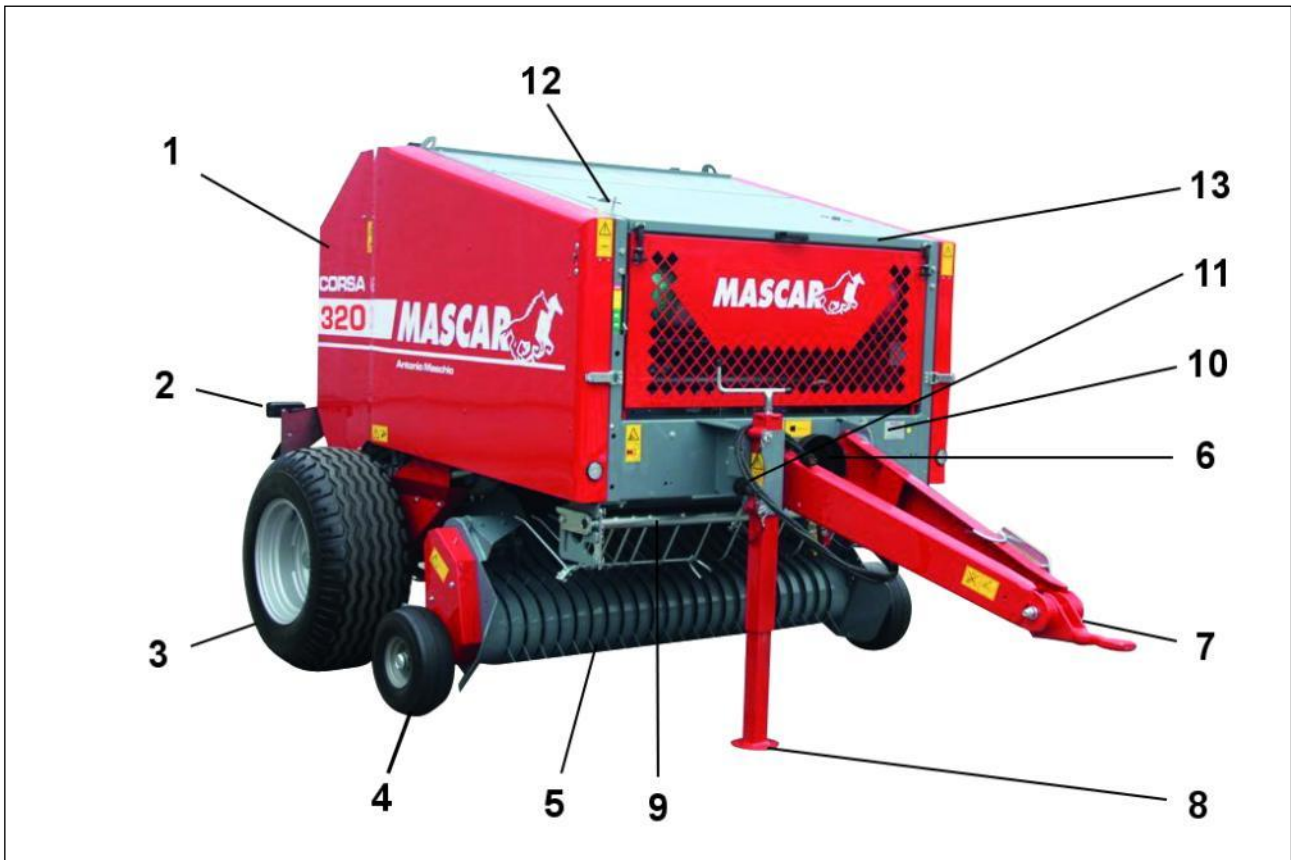
The sound level (airborne noise) has been measured with the machine running unladen, giving the following results:

- Sound pressure level LpAm (A)	dB	82
- Sound power level LwA (A)	dB	102



### **WARNING**

The values measured reveal that the machine has a high noise level. When operating the machine, the operator must use ear protection, such as appropriate safety earmuffs or ear plugs, to prevent damage to hearing (including long-term effects).



**Fig. 1 – Overall view of the machine with its main assemblies**

1. Rear door for unloading of bales
2. Rear lights
3. Wheels
4. Wheels pick-up (PICK-UP)
5. PICK-UP
6. Standing foot
7. Towing link/draw bar with adjustable height
8. Link P.T.O. shaft with protection cup
9. Rake for harvesting products
10. Identification plate
11. Flexible pipes oil-dynamic installation
12. Adjusting lever bales density
13. Front bonnet
14. Rope for twine binding

## 1.7 TECHNICAL DATA

MODEL	<i>Corsa 320</i>	<i>Corsa 320L</i>
Chamber type	Fixed	Fixed
Bales dimension (cm)	120x120	120x120
Chamber system	Chains	Chains
Bars number	34	34
Minimum power Kw(CV)	30 (40)	30(40)
Harvesting width pick-up (cm)	170	200
Rods teeth holder/teeth per rod	4/19	4/23
Adjustment bale density	Mechanic 3 positions	Mechanic 3 positions
Electric installation	12 volt	12 volt
Tyres (option)	10.0/75 (11.5/80-15)	11.5/80-15 (15.0/15-17 19.0/45-17)
Rpm (g/m')	540	540
P.T.O. shaft	Shearing bolt 1050 Mm	Shearing bolt 1050 Mm
Empty weight	1850	1900

Fig.2 – Overall dimensions of the machine



### DIMENSIONS

A= 230 cm

B=360

C=200 cm

MODELLO	CORSA 350	CORSA 350L
Chamber type	Fixed	Fixed
Bales dimension (cm)	120x150	120x150
Chamber system	Chains	Chains
Bars number	41	41
Minimum power Kw(CV)	37 (50)	37(50)
Harvesting width pick-up (cm)	170	200
Rods teeth holder/teeth per rod	4/19	4/23
Adjustment bale density	Mechanic 3 positions	Mechanic 3 position
Electric installation	12 volt	12 volt
Tyres (option)	11.5/80-15 (15.0/15-17 19.0/45-17)	11.5/80-15 (15.0/15-17 19.0/45-17)
Rpm (g/m')	540	540
P.T.O. shaft	Share bolt 1050 Mm	Share bolt 1050 Mm
Empty weight	2200	2250

Fig.2 – Overall dimensions of the machine



### DIMENSIONS

A= 230 cm

B=390

C=230 cm

## SECTION 2

### Safety and accident prevention

#### 2.1 SAFETY

The user is responsible for making sure the personnel is instructed on the hazards deriving from accidents, the devices fitted for the operator's safety and the general safety requirements prescribed by the directives and legislation of the country where the machine is used. The safety of the operator is one of the primary concerns of a manufacturer of machinery. In designing and producing a new machine, the manufacturer tries to foresee all the possible hazards and, of course, adopt appropriate safety measures. Nonetheless, the level of accidents caused by careless or inexperienced use of various machines is still high. Distraction, thoughtlessness and overconfidence often lead to accidents, as can fatigue and drowsiness. Consequently, this manual, and the safety rules in particular, must be read very carefully.



#### **DANGER**

*The Manufacturer declines all responsibility for the non-observance of the safety rules and requirements prescribed by the legislation of the country where the machine is used, and of the instructions herein.*

*Pay attention when you see this symbol in the manual: it indicates a potentially hazardous situation.*

**THERE ARE THREE POSSIBLE HAZARD LEVELS:**



#### **DANGER**

*The word DANGER indicates the most hazardous situation and warns the reader that, if the operations described are not performed properly, this will result in serious bodily injury, death or long-term health hazards.*



#### **WARNING**

*The WARNING symbol warns the reader that, if the operations described are not performed properly, this may result in serious bodily injury, death or long-term health hazards.*



#### **CAUTION**

**This symbol warns the reader that, if the operations described are not performed properly, the machine may be damaged and/or persons injured.**

#### 2.1.1 TERMINOLOGY USED

Below are the definitions of the figures and specific situations that might directly involve the machine and/or persons in direct contact with said machine.

- **USER:** The user is the person, or body or company, that has purchased or hired the machine and that intends using it for the purposes for which it was designed. The user is responsible for the machine and for training those working on and around the machine.
- **HAZARD ZONE:** Any area inside and/or near the machine in which the health and safety of any exposed person is at risk.
- **EXPOSED PERSON:** Any person to be found in a hazard zone, whether fully or partially.
- **OPERATOR:** Description of the people, in a general sense, in charge of installing, operating, adjusting, performing routine maintenance, cleaning, performing minor repairs and transporting a machine.
- **SKILLED PERSONNEL:** The term used to describe people specially trained and qualified to perform any maintenance or repairs calling for specific knowledge of the machine, its operation, the safety devices, the operating procedures, and who are aware of the hazards deriving from the use of the machine and, consequently, are able to avoid them.
- **AUTHORIZED SERVICE CENTRE:** The Authorized Service Centre is the structure legally authorized by the Manufacturer employing skilled personnel qualified to perform all servicing, maintenance and repair work, including complex operations, who must be called in to keep the machine running efficiently.

#### 2.2 GENERAL SAFETY RULES



#### **WARNING**

**Failure to comply with the rules described in Section 2 – Safety and accident prevention – and any tampering with the safety devices, shall relieve the Manufacturer from any liability in the event of accidents, damage of malfunctioning of the machine.**

General warnings:

- The user undertakes to place the round baler in the hands of skilled and trained personnel only.
- The user is obliged to take all necessary measures to deny unauthorized personnel access to the machine.
- The personnel must comply with the instructions herein without exception, and observe the general safety

requirements prescribed by the legislation of the country where the machine is used.

- The user undertakes to suitably instruct his/her personnel on the application and observance of the safety rules. To this end, the user undertakes to ensure that anybody operating the machine is aware of the operating instructions and safety rules in force.
- The user must inform the Manufacturer in the event any defects or malfunctioning of the safety systems are detected, and whenever any potentially hazardous situations are encountered.
- The personnel must use personal safety gear, as prescribed by local legislation, at all times, as well as follow the relevant instructions herein.
- The personnel must observe all the hazard and caution signs and emblems applied on the machine.
- The authorised personnel must not take it on themselves to perform any operations or work that do not fall within their specific sphere of competence.
- The personnel is obliged to report any problem or hazardous situation that might be encountered to the person concerned.
- Personnel in training must always be supervised by expert personnel.
- The round baler has been manufactured in conformity with the current state of technology and will assure safe operation provided it is used properly. The fitting of parts of a different make or any modifications may alter the machine's features and hence compromise operating safety. In this case, therefore, the Manufacturer declines all responsibility for any damage that might be caused as a result of the use of non-original spare parts.
- The machine must be used solely for the purpose for which it was designed.
- The machine must not be operated with the guards removed.



### WARNING

- The operation of the machine by anyone who has not read and assimilated the instructions herein, as well as by unskilled personnel, or by personnel not in good health or not holding the right driving licence, is strictly forbidden.
- Observe the hazard symbols featured in this manual and applied on the actual machine.
- Before starting up the machine, make sure all the safety devices and the actual machine itself are perfectly intact.
- Before commencing work, familiarise yourself with the control devices and how they work.
- The area in which the machine is used is to be considered a **hazard zone**, especially for people not trained in the machine's use. Before starting up the

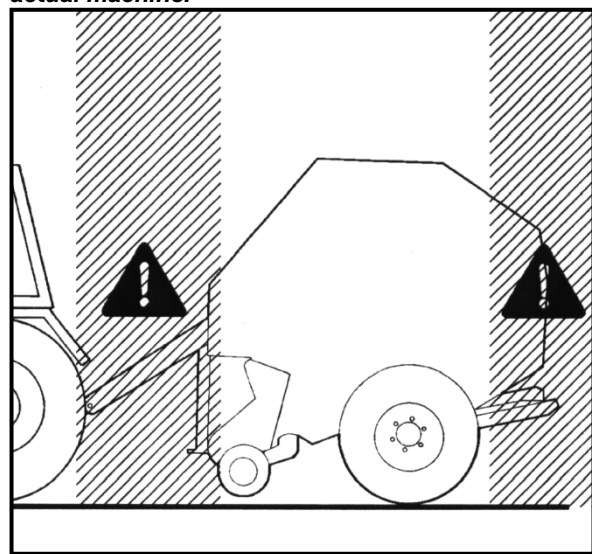
machine, make sure there are no people, animals or obstacles of any nature around the work area.

- When a person is **exposed**, i.e. when he/she is standing in a **hazard zone**, the operator must take appropriate measures to immediately stop the machine and, where necessary, make sure the person is moved clear.
- During the operation of the machine, the operator must be seated in the tractor seat so that he/she cannot fall accidentally and so that the whole machine is under his/her control, and that appropriate action can be taken whenever the need arises.
- It is strictly forbidden to park the machine near or under: terraces, balconies, haylofts, and platforms of any kind that can be reached by people and/or animals.
- If work is to be performed on the twine binder, apart from complying with all the general safety rules, it is essential that the knife first be retracted and hence made inaccessible.
- Before installing a new roll of netting, the rear gate must be opened to prevent the knife intervening accidentally.
- Before performing any work on the machine's net wrap binder, disengage the cutting device, then shut off the tractor's engine, making sure the brake is pulled on, and disengage the power takeoff.
- During the machine's operation, it is strictly forbidden to let any part of your body get near the moving mechanical parts.
- During the machine's operation, the unloading device, when activated, represents a crushing hazard.
- When work near electricity pylons is unavoidable, it is advisable to ensure all parts of the machine are kept at a minimum safety distance from them. Contact the competent electricity board if you have any enquiries. The machine is mainly made from metal and, consequently, any contact with a power line would result in either a discharge between the line and the machine, or in the operator being involved, with possibly lethal consequences.
- It is strictly forbidden to carry people or animals on the machine and on the tractor.
- It is strictly forbidden to leave the driver's seat whilst the tractor is running.
- It is strictly forbidden to remove or tamper with the safety devices.
- The use of the machine may only be controlled via the power-takeoff shaft (bearing CE marking) complete with the necessary safety devices and shields fastened with the relevant chains.
- Take care around the PTO shaft whilst it is turning. Carefully read the PTO shaft instruction manual supplied with each shaft.
- In order to attach and disconnect the PTO shaft, the fixed protection element located on the round baler must be removed. Following attachment and disconnection, the protection element must always be refitted.
- The attachment and disconnection of the PTO shaft must always be performed with the engine shut off.
- Take extreme care to fit the PTO shaft properly on the tractor's power takeoff.

- Do not engage the power takeoff with the engine shut off.
- Before engaging the power takeoff, make sure the rpm of the tractor's power takeoff corresponds to the rpm prescribed for the use of the round baler.
- Never exceed the prescribed rotation at the power takeoff.
- Always disengage the power takeoff when the PTO shaft is at too wide an angle (never over 10-15 degrees) and when it is not in use.
- Do not perform any work on the hydraulic system without first relieving the pressure.
- It is strictly forbidden to stand between the tractor and round baler with the engine running and the PTO shaft engaged (Fig. 3), and likewise when the parking brake is not pulled on.
- If, for any reason, work must be performed with the rear gate open, it is essential that both safety bars designed for this purpose be inserted and that the two hydraulic cocks located downstream from the lift cylinder be closed.
- In the event the part of the machine jammed is where the product is fed in, remember it is strictly prohibited to clean the machine while it is running. The power takeoff must first be disengaged, the engine shut off and the tractor's brake pulled on.
- Before performing any work on the round baler, disengage the power takeoff, shut off the tractor engine and make sure its brake is pulled on. Remove the keys from the dashboard and wait until all the moving parts have stopped completely.
- Before starting up the machine, make sure all the safety devices for the machine's transportation and use are intact.
- The machine is not approved for driving on roads. In the event it is in the future, you must follow the traffic laws of the Highway Code in force in the country where the machine is used.
- It is essential to bear in mind that road holding and the steering and breaking ability may be affected considerably by the load being towed. Consequently, pay special attention, especially when turning, to the centrifugal force exerted owing to the shift in the centre of gravity.
- The round baler must only be taken on roads completely unladen.
- Before leaving the tractor seat, shut off the machine and pull on the parking brake.
- Check periodically to make sure the machine itself and all safety devices are intact.
- Only use recommended oils.
- Do not commence maintenance or cleaning until the machine has been disconnected from the tractor and its wheels blocked with suitably sized chocks.
- During the maintenance and repair work, the operator must wear safety gear, i.e. safety glasses, cut-proof gloves, and non-slip safety boots.
- In the event the covers must be removed, make sure they are refitted properly before the machine is reused.

- Perform maintenance thoroughly as indicated herein; have all damaged or worn parts replaced by skilled personnel.
- The spare parts must meet the requirements defined by the Manufacturer. **Use original spare parts only.**

***The operating instructions contained in this manual must be read and committed to memory, and the manual itself kept safe for the entire service life of the actual machine.***



**Fig. 3 – Areas considered as hazard zones**



### **WARNING**

**Periodically control the locking of screws and nuts and if it is necessary fix them.**

For this operation it is necessary use a dynamometric key respecting the following couple values of locking:

	class	
Ø	8.8	10.9
• M 4	3.0	4.4
• M 5	5.9	8.7
• M 6	10	15
• M 8	25	36
• M 10	49	72
• M 12	85	125
• M 14	135	200
• M 16	210	310
• M 18	300	430
• M 20	425	610

## **2.3 SAFETY SIGNS (PICTOGRAMS)**

The machine has been designed and manufactured in compliance with every possible safety standard to assure

the safety of the operator. Nonetheless, there are still a number of residual hazards involved in the use of the machine, i.e. those hazards that it has not been possible to eliminate altogether owing to the specific nature of the work the machine is designed for and certain operating conditions.

These potential hazards are marked on the machine with stickers (pictograms) that provide a summary indication of the various unsafe and hazardous situations.



### WARNING

**Keep stickers clean and replace them immediately should they start peeling off or be damaged.**

Referring to figure 4, carefully read the instructions below and commit their meanings to memory.



### WARNING

**All the safety signs positioned on one side of the round baler and illustrated in Fig. 3 are applied in exactly the same position on the other side as well.**

- 1) **Before commencing cleaning and maintenance**, stop the round baler and read the operating instructions.
- 2) **Crushing hazard.** During maintenance work with the gate open, insert the safety bars supplied for the purpose on the hydraulic cylinders.
- 3) **Crushing hazard/cutting of upper limbs.** Do not remove the guards and do not go near moving parts.
- 4) **Entanglement hazard.** It is strictly forbidden to go near rotating parts (the power-takeoff shaft in particular) whilst the tractor is in motion.
- 5) **High noise level.** Protect hearing with suitable earmuffs or ear plugs.
- 6) **Danger of crushing by sudden movements.** When the round baler is disconnected from the tractor, wedge appropriate additional chocks under the wheels.
- 7) **Danger of entanglement in pickup's moving parts.** Do not go near rotating parts whilst the round baler is moving or the tractor is running.
- 8) **Crushing hazard.** Do not go near the machine whilst it is working and, in particular, do not place any part of the body between any of the barriers and the rear of the round baler.
- 9) **Crushing hazard.** Do not linger within the round baler's range, especially while the bale is being expelled from the rear of the round baler.
- 10) **Crushing hazard.** Do not linger within the round baler's range, especially under the open rear gate.

- 11) **Hook-up points** for lifting the round baler. See "Section 3 – Transportation and handling" for their location.
- 12) **Oil filling points.**
- 13) **Lubricating points.**
- 14) **Rotation at power take off 540.**

## 2.4 CLOTHING



### WARNING

1. Use suitable clothing. Avoid wearing ties, necklaces, baggy or fluttery clothing as they might get caught up in the rotating parts. Long hair should be tied back.
2. During the maintenance and repair work, the use of personal safety gear is compulsory: cut-proof gloves, non-slip safety boots.

## 2.5 ECOLOGY AND POLLUTION

- Paragraph "1.6 Noise level" contains the values of the airborne noise measured on the round baler. The user is responsible for informing personnel authorized to operate and service the baler of the hazards deriving from noise and is obliged to comply with the relevant national standards in force.



### WARNING

- Paragraph "1.6 Noise level" contains the values of the airborne noise measured on the round baler. The user is responsible for informing personnel authorized to operate and service the baler of the hazards deriving from noise and is obliged to comply with the relevant national standards in force.
- **Since the noise level is nevertheless higher, with the machine working, than that permitted by the relevant standards, appropriate ear protection must be worn.**
- Observe the laws in force in the country where the machine is used relating to the use and disposal of products used for cleaning and servicing the machine, and comply with the procedures recommended by the manufacturers of said products.
- Dispose of any special waste through appropriate companies authorized to handle the relevant waste products and issuing receipts attesting to their disposal.
- Dispose of any waste packaging from the machine in the relevant waste sorter containers.
- In the event the machine is to be scrapped, comply with the prescribed standards on pollution in the country of use, taking particular care with lubricants and electrical and electronic components (batteries and capacitors).

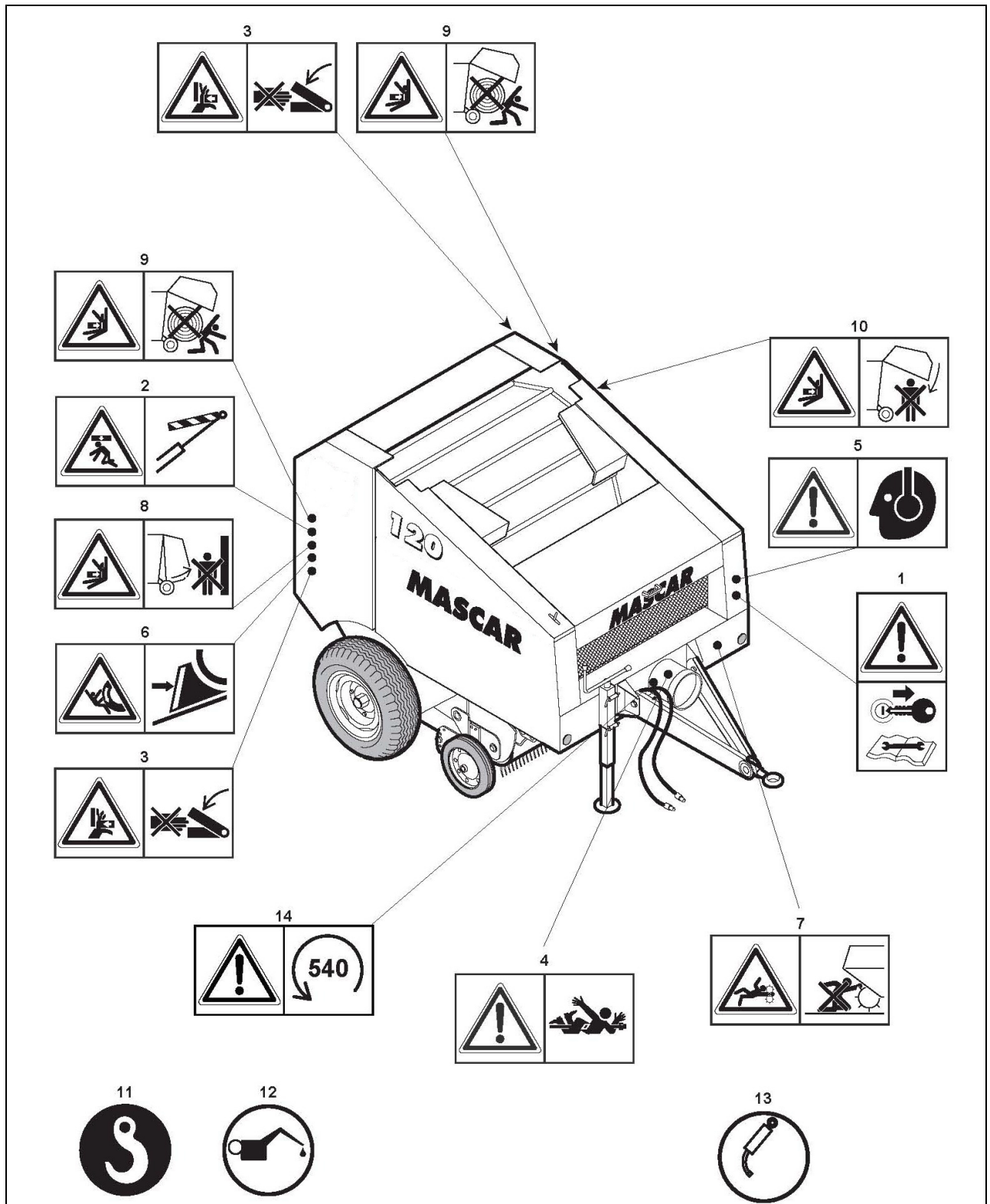


Fig. 4 – Safety signs and their location on the machine

## SECTION 3

### Transportation and handling

#### 3.1 TRANSPORT AND HANDLING

##### 3.1.1 GENERAL WARNINGS



#### **CAUTION**

Should the machine be approved for driving on public roads, follow the traffic laws of the Highway Code in force in the country where the machine is used.



#### **DANGER**

The operations for the unloading, lifting and handling of the machine must be carried out by skilled personnel.

The user and his/her personnel undertake to read the instructions herein beforehand and follow them.

The user undertakes to make sure his/her personnel wear appropriate personal safety gear (gloves, safety boots, hard hat etc.) and are given the correct equipment before commencing operations for the unloading, lifting and handling of the machine.

Avoid uncoordinated actions between a numbers of operators working on the same machine, as this may give rise to hazardous situations.

Control the dimensions and weight of the round baler. Make sure the hoisting cables are fitted with a belt, feature a label containing all the manufacturer's data and that their capacity is clearly readable.

Inspect the cables prior to their use: they must not be damaged, have snapped strands or feature signs of wear.

Do not twist or knot the cables, and follow the operating procedures indicated by the manufacturer.

The round baler must only be transported unladen.

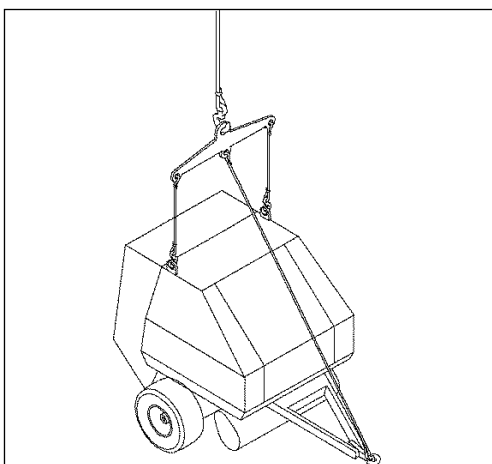


Fig.5 – Lifting points

Should the machine have to be taken a long way, it can be loaded on a lorry or freight car. To this end, consult 1.7 "Technical data" for the weight and dimensions. The dimensions are particularly important in determining the feasibility of transport through tunnels or tight passages. When lifting the machine from the ground onto the level where it is to be loaded, if no suitable ramps are available (Fig. 5) cranes with an appropriate hosting power can be used by hooking up the machine in the relevant lifting points marked with the hook symbol (Fig. 6)

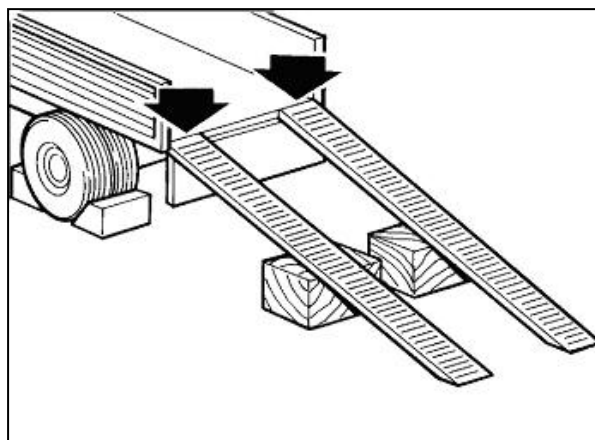


FIG 6 – Loading ramps



#### **WARNING**

Before to proceed with lifting operation, make sure that the machine is completely empty.

**DANGER**

**The area where you load the machine must be completely in flat.**

**Loading ramp** Hitch the machine to a tractor, tow it up the ramps and transfer it onto the lorry or freight car, manoeuvring with extreme care to avoid sudden movements. Make sure the ramps are solid enough and, where necessary, strengthen them with blocks (Fig. 5) to prevent dangerous sagging. Place the ramps in the correct position for the round baler's wheel base. Make sure they are cleaned of any oil, grease or ice to prevent possible slipping.

Proceed up the ramps cautiously, keeping the machine in the centre of the platform.

During the loading and unloading phase, avoid changing direction. Where necessary, back up and try again.

**Crane loading.** Make sure the crane with counterweight has a hoisting power appropriate for lifting the machine. The hook up points for the lifting are clearly visible and marked with relevant stickers (Fig. 6). Lift the machine with extreme care and transfer it slowly, without sudden movements, onto the lorry or freight car.

**DANGER**

**The lifting and transportation operations can be very dangerous if not performed with the utmost care. Have all personnel not involved in the operations removed from the area; clear and cordon off the transfer area; make sure the means available are in perfect working order and suitable for the task in hand; do not touch overhead loads and keep a safe distance from them.**

**During transfer, the loads must not be lifted off the ground by more than 20 centimetres.**

**Make sure that the area involved in the operation is clear and that there is a sufficient "escape space", i.e. a free and safe area personnel can rush into should the load look about to fall.**

**WARNING**

**The surface onto which the machine is to be loaded must be perfectly flat to avoid the load shifting about.**

Once the round baler has been transferred onto the lorry or freight car, make sure it is firmly secured in place.

The wheels must be secured by wedging suitable chocks under them.

Fasten the machine securely to the surface on which it is set using the points intended for this purpose,

marked with the "hook" sticker (Fig. 6): use cables or chains appropriate for the weight of the round baler, pulled tight and fastened to the hold-down point on the surface to prevent the baler shifting around.

**Having transferred the machine, make sure its current state and position are not liable to constitute a hazard before releasing the machine from all the restraints.**

**At this point, remove the cables, chocks and unload the machine using the same means and procedures used for its loading.**

**DANGER**

**Before starting to work control that the axle is in correct position and the screws (1) and (2) Fig. 7 are locked.**

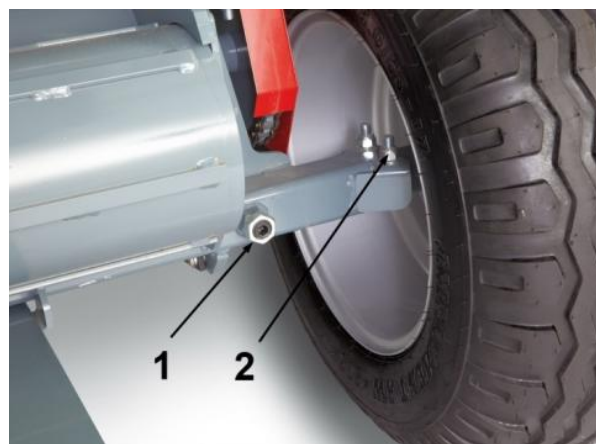


Fig 7 -Axle

## SECTION 4

### Operating instructions

#### 4.1 PRIOR TO USE



#### **WARNING**

Before putting the round baler into operation, the user must make sure the operator in charge of the machine has read, committed to memory and understood every part of this manual, "Section 2 – Safety and accident prevention" in particular.

The operator must make sure the machine is intact and in a good state of repair, that the lubricating oils are at the right level and that all the parts subject to wear and deterioration are in proper working order.



#### **DANGER**

Any adjustments and setup work must always be performed with the round baler shut off and secured.

##### 4.1.1 WORK POSITION



#### **DANGER**

*When the machine is working, the operator **MUST** be seated in the driver's seat since all necessary action is only possible from this position. Before getting down from the driver's seat, the operator **MUST** stop the round baler, pull on the parking brake and shut off the tractor's engine.*

#### 4.2 HITCHING TO THE TRACTOR



#### **DANGER**

*Hitching the round baler to the tractor is a potentially hazardous operation. Take extreme care and perform the whole operation according to the instructions given below.*

In order to correctly hitch the round baler to the tractor, proceed as follows:

- Make sure the power of the tractor used is sufficient to tow the round baler (see 1.7 – Technical data – CHARACTERISTICS OF THE TRACTOR).
- Make sure no objects have been set down on the baler and that no people and/or animals are in the immediate vicinity of the baler's range, and that the power takeoff is disengaged.

- Make sure the round baler is in a stable, horizontal position (and a little bit behind of 2÷3 degrees) and that the tractor's towing hitch is positioned at the same height as the towing eye of the drawbar which can be adjusted by means of the joints.
- Next, start the tractor up and carefully back it up to the round baler, lining the towing hitch up with the drawbar towing eye. Once they have been successfully engaged, insert the hitch pin in the towing eye.
- Pull on the parking brake and shut off the tractor's engine.
- Connect the power-takeoff shaft complete with shields to the tractor's power takeoff, making sure it is firmly secured in place.

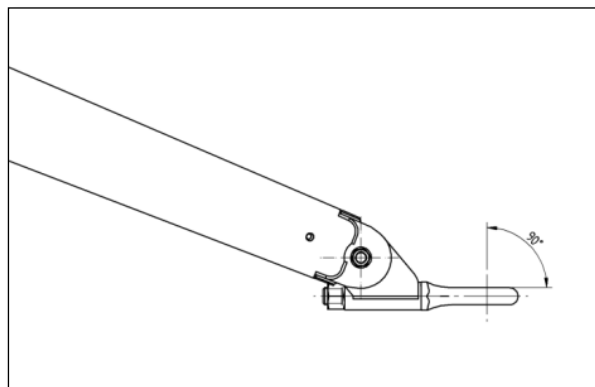


fig. 8 – Towing link's position



#### **DANGER**

Please make sure that the towing link is mounted as shown on fig. 8, otherwise it can become very dangerous.

### 4.3 P.T.O. SHAFT



#### **DANGER**

The power-takeoff shaft applied to a tractor is a mechanical part that, when in operation, constitutes a potential source of bodily harm to anyone working nearby.

Consequently, great care must be taken when performing any operations involving said mechanical part.

Read the instruction manual supplied with the power-takeoff shaft carefully. If you are not sure it is working properly, should it come without shields, or should it appear worn or broken, replace it with a new shaft that must bear the CE marking.

Do not modify or otherwise adapt the PTO shaft. Should this prove necessary, call in the Manufacturer's Service Centre.

Since the PTO shaft is a part that turns at high speed, it is subjected to balancing during testing. Consequently, any subsequent modifications to the shaft may result in lack of balance and might have a negative effect on the workings of the actual machine as well as making the PTO shaft unreliable.

The angle at which the power-takeoff shaft works must be as small as possible (max. 10°-15°), as this helps to prolong the service life of both the shaft and the round baler.

**When the PTO shaft is drawn out as far as it will go, whatever the working conditions, the telescopic tubes must overlap by at least 1/3 of their length (A Fig. 9).**

When it is inserted as far as it will go, the minimum clearance must be 4 cm (B Fig. 9). If this is not possible, contact the Manufacturer's Service Department.

- Make sure the PTO shaft is appropriate for transmitting the power required by the round baler (see technical data on the PTO shaft's instruction manual). If in any doubt, contact the Manufacturer's Service Centre.
- Before starting any work, make sure the shields are in a perfect state of repair and that the relevant safety chains are fitted. Fasten one of these chains to the machine and the other to the tractor to prevent the shields turning with the PTO shaft.

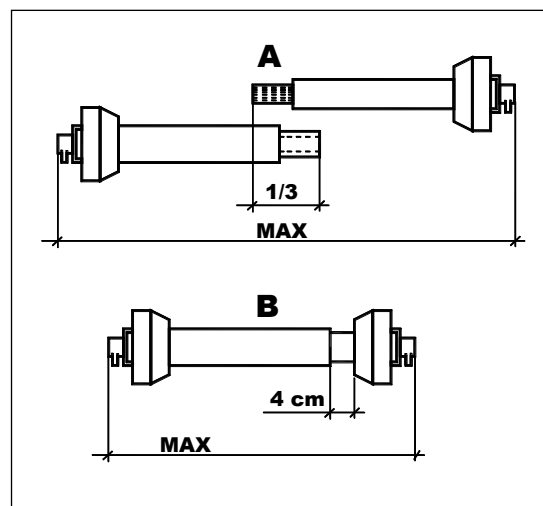


Fig. 9 – PTO shaft length



#### **CAUTION**

Before engaging the power takeoff, make sure the speed of rotation corresponds to that prescribed by the machine (540 rpm)

### 4.4 ADJUSTMENT CARRIAGEWAY

For working on mountain, hill and in presence of high slopes, for obtaining a wider carriageway, unscrew the screws of U-bolt (2 Fig.7) and screw (1 Fig.7), unthread the hub in the position need and screw the screws.



#### **DANGER**

Pay more attention in this operation control that the hub of axle is well blocked.

### 4.5 HYDRAULIC CONNECTION

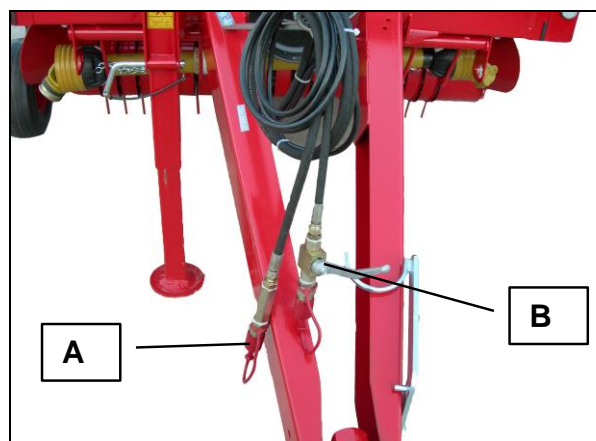


Fig. 10 – Connections

**CORSA «320-350»** round baler can be connected to tractors featuring hydraulic systems with 2-way couplings. The hydraulic system opening and closing the rear gate is fitted with a fixed throttle valve:

- B - Control cylinder harvesting roll pick-up;
- A - Control cylinder rear door;



### WARNING

**It is strictly forbidden to tamper with the above-mentioned throttle valve, under any circumstances. When in doubt, contact the Manufacturer's Service Centre.**

**The hydraulic system is filled with AGIP SUPER TRACTOR UNIVERSAL 15V40 oil.**

The lever of the tractor's hydraulic system distributor must be secured in the "open" position (hydraulic oil circulating).

The flexible pipes of pick-up lifting, opening rear door and tension harm must be tied using female plugging of ½" installed on tractor. On the pipe is installed a tap of blocking that must be:

- OPENED: with the baler in working
- CLOSED: with the pick-up lifted in transport position or in transport case.



### ATTENTION

**before to do operation under the pick-up lifted, close the tap and avoid the lowering with a proper support.**

## 4.6 ELECTRIC SYSTEM

The round baler features a regulation lighting system. Consequently, the tractor must feature a 12 Volt power socket that the round baler's electrical lighting circuit can be plugged in to. In addition, a socket must be installed on the tractor with two poles (connected to the battery) to power the control unit.



### WARNING

**periodically it is necessary to control the lights and if it necessary replace them.**

## 4.7 ELECTRIC SIGNAL OF FINAL DENSITY OF PRESSING

Using the bracket, fit the warning unit on the tractor within the driver's field of view and connect it with the relevant press on the round baler by means of the cable. The second cable must be connected to the tractor's power supply (12 V).

s soon as the round bale has reached the desired pressing density (see "Adjusting the round bale density"), a buzzer sounds and the red light comes on. The bale is therefore ready to be bound.

As soon as the light comes on/warning sounds, it is advisable to start binding:

- 1- STOP LIGHT FULL CHAMBER
- 2- FEEDING LIGHT SWITCH BOARD

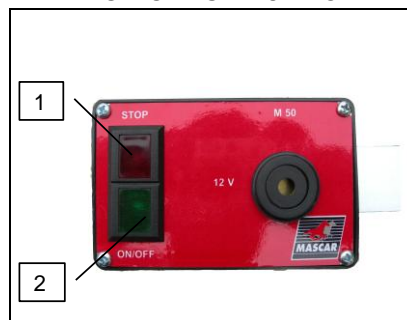


Fig. 11A

## 4.7.1 ELECTRIC SWITCH BOARD (OPTIONAL)

The whole cycle for binding is managed by an electric switch board with the following functions: (Fig. 11B):

- 1- BUTTON FOR SELECTING TWINE OR NET
- 2- BUTTON STARTING BINDER
- 3- STOP LIGHT FULL CHAMBER
- 4- FEEDING LIGHT SWITCH BOARD

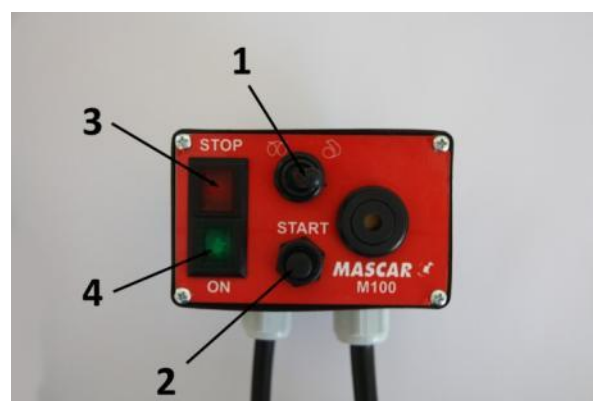


Fig. 11B electric switch board

## 4.8 TWINE BINDING



Fig. 12 twine holder

In order to prepare the machine for twin twine binding proceed as follows:

1. Lift the bonnet propping it open with the relevant support
2. - Place the twine beams in the proper compartments in the box and join them together (Fig. 12), feeding the twine through the fixed grommets.
3. – Pass the twine through the drive-wire ring and, after the adjustable brake ( Fig 13). Screw the brake screw (3 Fig. 13) the twine goes in “pulling”.
4. The wire of wrapping must be always tight for warranting a regular cutting of twine by the knives.

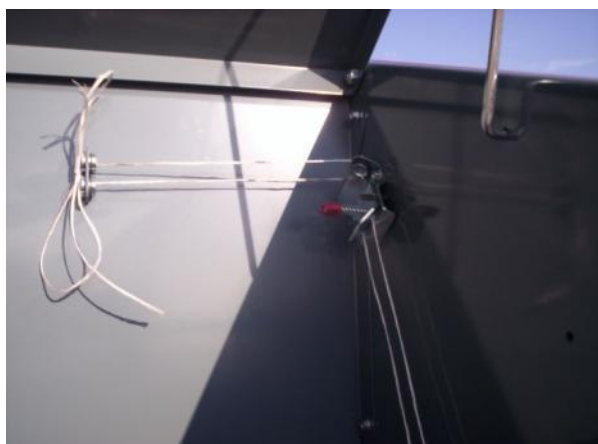


Fig.13- Twine brake

4 –Wrap only one wire around the pulley (4 Fig 14) for one tour, while the second wire directly on the proper rings driving-wire (5 Fig 14) sliding them between the small wheels (6 Fig.14), FROM THIS LAST ONE THE WIRES MUST BE STICK OUT FOR AROUND 15 CM



Fig. 14-twine binding

**The pulley is equipped of 3 grooves. According to the groove increase or decrease the wire around the cylindrical bale.**

Pulley diameter	Wrapping passage
Big	Narrow
Medium	Medium
Reduced	Large

Pay attention that the twine not wrapped on the pulley is the first cut by knife respect the other one if is not in this way invert the twines.

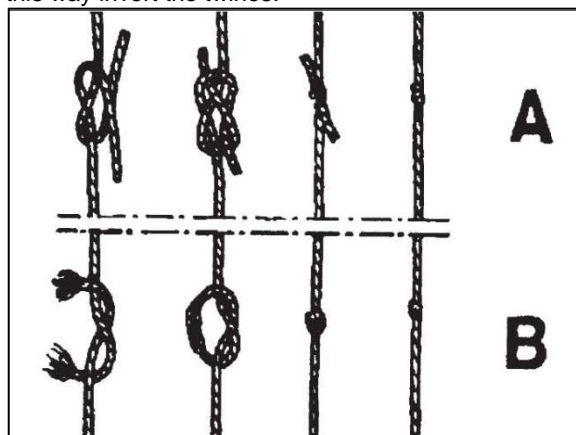


Fig. 15- Knots

### 4.8.1 KNOTTING TWINE

In order to help the twine run smoothly along the routing, it must be knotted as indicated:

- A - Knot for twine from synthetic fibres  
SYNTHETIC 500/700 m/kg.
- B - Knot for vegetal SISAL twine  
SISAL (vegetal) 200/400 m/kg.

### 4.8.2 SIDE ADJUSTMENT OF BINDING

The binding distance at the end of the bale can be adjusted using two adjustable twine-guide screws located to the rear of the binder on the right and left (Fig. 16).



Fig. 16- side adjustment

#### 4.9 NET BINDING

In order to prepare the machine for binding with net wrap, proceed as follows:

- 1 - 1 - Insert the roll of netting in the relevant container and arrange it so that the it unravels as illustrated in Fig. 18.



Fig. 17- net insertion

- 2 - Next, feed the end of the netting between the rubber roller (Fig. 18) and metal roller by approx. 15 cm, past the linking rod (Fig. 18).

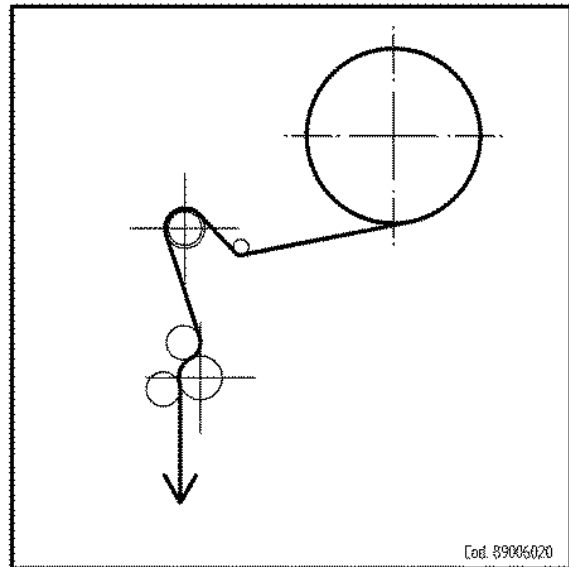


Fig. 18 net scheme



#### **DANGER**

*For avoiding the accidental click of knife, during this operation keep opened the rear door of baler. It is absolutely avoid put the hands between the knives and counter-knives.*

- 1 - Control the correct insertion of net.
- 2 - Cut the excess portion of net. For recharging the net holder it is necessary to open the front door of the baler. During the working phase the recharging of knife is automatic every time you open the rear door for unloading the bale.

#### 4.9.1 RESETTING THE NET WRAP BINDER KNIFE (Fig. 19)

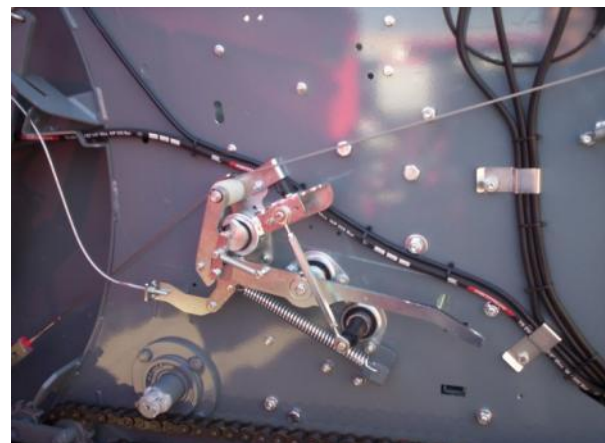


Fig. 19 knife resetting

The knife of the netting binder is reset by means of the steel cable (1) when the unloading gate is opened. If

this does not happen, turn the adjustment nut accordingly.

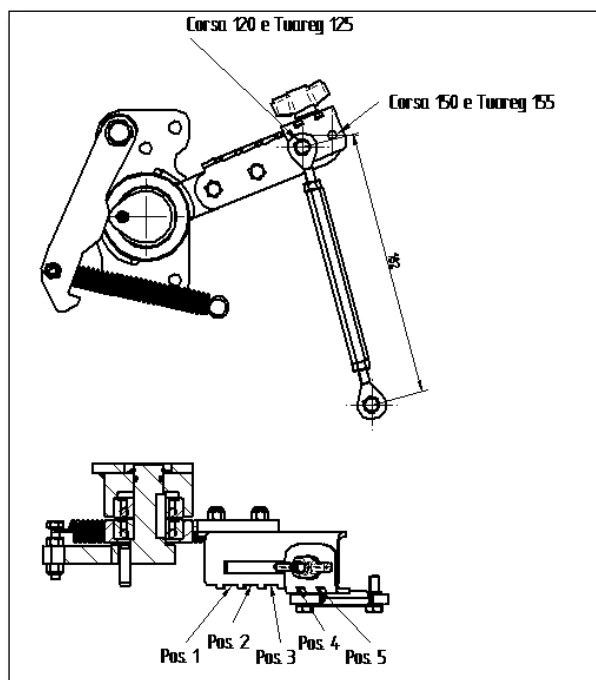
#### 4.9.2 NUMBER OF NET TURNING ON THE BALE



Fig.20 – net turns

The amount of netting to be wound around the bale can be adjusted by altering the position of the jointed rod (1 Fig. 20) and lever (2 Fig. 20).

Position	Tours
1	2
2	2,5
3	3,0
4	3
5	3,5



#### WARNING

**At least 2.5 turns are recommended in order to ensure binding is secure.**

#### 4.10 HARVESTING ROLL (Pick-up)

The pick up cylinder features small height-adjustable wheels (4 Fig. 1). They can be adjusted in height by swapping between the holes on the support according to the pickup requirements.

#### 4.11 IN WORKING

In order to commence picking up and pressing, proceed as follows:

- Hitch the round baler to the tractor as described in section «4.2 – Hitching to the tractor».
- Lower the pickup cylinder to the desired work height, also adjusting the upper metal sheet using the chain (1 Fig. 8). Make sure the twine or netting has been installed on the binding device.
- Using the hydraulic distributor control lever, perform the various actions to make sure it is working properly.
- Next, pressurize the rear gate closing/opening cylinders and engage the tractor's power takeoff, increasing the speed of rotation to approx. 380 to 400 rpm.



#### WARNING

**Under no circumstances must the speed exceed 540 rpm.**

**DANGER**

**Operating with the rear door it is absolutely forbidden that persons or animals stay near the machine.**

Start the tractor gradually with the round baler attached until reaching the right work speed. This varies depending on the type of product but between 5 and not over 12 km/hours.

- When the binding pressure is almost reached, the forward speed must nonetheless be reduced to obtain the best operating result, though the engine rpm must not be decreased.
- After a binding cycle, the twine, dragged behind the round bale and shifted by the conveying sliding block, should be aligned exactly in front of the cutting knife. If this is not the case, align the knife.
- During binding, the tractor must be reversed approx. 5 metres, unless there is a bale ejector.
- Once the twine has been cut, the binder is ready for the next cycle.
- The forming chain is disengaged automatically when the gate starts to open, whilst the rollers of the carriage expel the bale which will be helped out by the bale ejector (Ref. 4.14 – Fig. 24).
- Once the bale has been unloaded, activate the rear gate closure, pressurizing the closing cylinders again.
- At this point, the round baler is ready to form the next bale.

**In the event the windrows are very voluminous, it is advisable to reduce forward speed and increase the rotation at the power takeoff.**

## 4.12 JAMMING OF THE MACHINE

During the work phase, the machine may «jam». Should this happen, stop immediately and proceed as follows.

**WARNING**

**In the event the part of the machine jammed is where the product is fed in, remember it is strictly prohibited to clean the round baler while it is running.**

**The power takeoff must first be disengaged, the engine shut off and the parking brake pulled on.**

In order to free the machine, you must:

1. Disengage the power takeoff, stop the tractor and pull on the parking brake.
2. Wait until all the moving parts have stopped completely and procure a suitable pair of cut-proof gloves.

### 4.12.1 ADJUSTING ROUND BALE DENSITY

The round baler features a manually adjustable graduated rod (1 Fig. 24), so that the compactness of the bales can be adjusted to suit the pickup requirements. If this lever is set in the down position, the bale is more compact, whilst the up position produces softer bales.



Fig. 24 density adjustment

## 4.13 STOPPING THE ROUND BALER

**When work is finished, the operator must:**

- Park the tractor on flat ground and pull on the parking brake.
- Disengage the tractor's power takeoff.
- Disconnect the control unit's power supply.
- Lift the pickup cylinder.
- Stop the engine.
- Make sure the rear gate is closed and that all the machine's moving parts have stopped completely and are in the idle position.
- Lower the support leg until it touches the ground.

### 4.13.1 PARKING

- Before putting the round baler away in its storage shed on a suitable level surface, make sure all the product has been unloaded.
- Rest the front support leg on the ground.
- Wedge suitable chocks under the wheels and make sure all the guards on the machine are in the right place.
- Stop the tractor and pull on the parking brake.
- With the tractor still and all parts completely immobile, remove the power-takeoff shaft from the tractor's power takeoff.

- Set the power-takeoff shaft down on suitable rests so that the actual shaft and its shields are not damaged.
- Relieve the hydraulic pressure.
- Uncouple the hydraulic system's connecting hoses from the tractor.
- Disconnect the power supply cables.
- Disconnect the tractor from the round baler drawbar.
- Lubricate and grease all the points indicated, including the chains.



### **WARNING**

**When parking the round baler, it is essential that the machine be housed in a place that is:**

- **Dry;**
- **Sheltered from the elements;**
- **Guarded or closed to deny access to personnel not authorized in the machine's use.**

## **4.14 ADMITTED SLOPES**

The steadiness of baler is influenced from the ground conditions and the tractor type. The presence of the bale inside the chamber modify in danger way the function of tractor and the machine.

Therefore it is important that the operator knows well the nature of soil on he work and pay attention to the conditions where should operate.

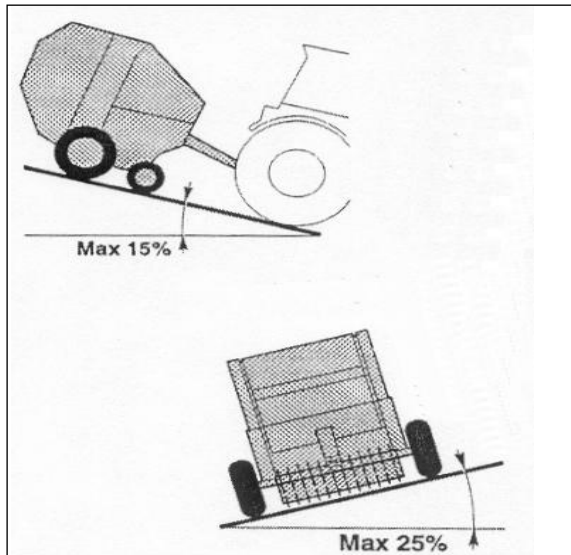


Fig.25—Slopes adimitted

## **4.15 SAFETY DEVICE**

The devices installed must result always efficient and correctly postioned.

The installed security devices must be always efficient and correctly positioned.

- PTO shaft security bolt: this device is on PTO shaft baler side. In case of overloading it beaks down stopping the transmission.
- Pick-up security bolt: this device is installed on the PTO shaft in the side of the baler. In case of overload the screw is cut.
- Comb feeder security bolt: protects it from high strength that can damaged it seriously (bolt M8 x 32 UNI 5737 R=80 Kg/mm<sup>2</sup> "8.8")
- Security supports: in case of maintenance and/or adjustments with the rear door open, fix the stops on the hydraulic cylinders.
- Grip wedges: must be used to avoid dangerous machine movements once that it is disconnected from tractor.
- Security protections: the machine side protections, according to European rules, are fitted with security locks that automatically act when the protection is closed. To open them the operator must use a suitable tool. After the maintenance he has to close them.



### **WARNING**

**Be always sure that all protections are well closed before working or transporting the machine.**

- PTO shaft support: has the function to support it when the machine is stopped. You haven't to work or to transport the machine when the PTO shaft is on this support.

## **4.16 TESTS AND CONTROLS**

- Check the right bolts fixing
- Be sure that all the fixing elements are lubricated
- Check tyres pressure: 3.7 bar (for pick up tyres 2 bar)
- Let work few minutes the machine empty to check the right functioning
- Let run the PTO with low rpm and open and close the rear door few times
- Switch off the tractor and verify the general conditions of the machine

The above mentioned sequence must be made every time the machine stays without working for a long period.

## SECTION 5

### Harvesting Instructions

#### 5.1 GENERAL INDICATIONS

Baler working conditions continuously changes according to product and soil characteristics. The good function of the baler depends from the kind of windrow prepared.

Before starting harvesting, be sure the percentage of humidity inside the product is the right one in order to avoid useless loss.

For pressing bales of uniform density and for their optimal conservation, the best results are with a percentage of humidity of about 20% with hay and about 40% ÷ 55% with silage.

If the windrow is low and wide the bale results perfect.

The best results are with windrows 1.10 m width and 0.30 ÷ 0.40 m height, both to avoid lost of product and to let a good bale forming.

#### 5.2 ADVANTAGES WITH LOW AND WIDE WINDROW

- Faster harvesting
- Low power absorption
- Higher bales weight
- Reduced loss of product
- External permeability
- Good conservation
- Good bale shape
- Tractor driving easier since you avoid to zigzag on the windrow
- Easy keeping the belts straight

#### 5.3 DISADVANTAGES WITH HIGH AND NARROW WINDROW

- Low harvesting speed
- Poor product conservation
- Higher power absorption
- Low bales weight
- Loss of product
- Water penetration inside the bale
- Difficult driving owing to zigzag on the windrow
- Risks having side belts sliding, or overlapping with possible twisting which can cause damages to belts.

#### 5.4 HOW TO FEED

Feeding the machine with narrow windrow.

When the windrow is narrow it's necessary to feed the baler on the sides, not in the centre and for doing this you have to drive 7 ÷ 12 m on the right and then on the left.

**Feeding must guarantee a uniform product distribution on the full chamber width.**

Feeding the machine with wide windrow.

When the windrow is larger than the machine chamber and then the side augers are engaged, you proceed with a straight feeding without being obliged to zigzag.

#### 5.4.1 HARVESTING STARTING

Keep the PTO at 540 rpm.

If windrow is correctly prepared you can go at about 8 - 10 Km/h according to windrow dimensions and soil conditions.

With short and fragile materials is better to work with low tractor speed starting from the right and then left side of the windrow. The harvested product will fill consequently the centre of the baler.

It's necessary to observe the pick up and to adapt consequently the speed according to the kind of windrow to avoid anticipating or delaying the pick-up action on the windrow itself.

The product must enter constantly.

Slightly change, if necessary, the rake adjustment.

A skilful and expert operator can make correctly the adjustments important for the best performances for harvesting the product.



#### **WARNING**

**In case the machine floods, it's absolutely forbidden to get the pick-up free with the PTO running**

Be sure that the pick up teeth are not touching the ground causing a transmission overloading and an early wearing of internal components.



#### **WARNING**

**Be sure that nobody is near the machine and unload the bale on flat soil.**

The bale ejector is to push away from the machine the bale to let close the rear door.



#### **WARNING**

**Don't use bale ejector with hilly grounds**

#### 5.5 BALER STOP

When the work is finished the operator must:

- Park the tractor on flat ground with stationary brake.
- Disconnect the PTO from tractor.

- Disconnect the electric alimentation from the control board.
  - Lift up the pick-up and fix it with the fitted chain.
  - Switch off the engine.
  - Verify that the rear door is closed and all moving components are in rest position.
  - Lift down the jack till the ground.
  - Disconnect all hydraulic and electric joints.
  - Disconnect from tractor the PTO shaft.
  - Taking away the pivot towing link in the draw bar.
- To this point you can move the tractor to another place.

## 5.6 PARKING

- Before parking the baler on a suitable and flat surface checks that the machine is empty.
- Put the jack on the ground.
- Put the grip wedges under the wheels and be sure that all protections are presents and well positioned.
- Park the tractor with the parking brake.
- With the tractor switched off and with no moving components, taken away the PTO shaft from tractor.
- Put the PTO shaft on the draw bar support.
- Release pressure from hydraulic circuit.
- Disconnect hydraulic pipes.
- Disconnect electric cables.
- Disconnect tractor from baler draw bar.
- Lubricate and grease every point chains included.



### **ATTENTION**

The baler has to be parked on a place:

- Dry
- Repaired and covered
- Guarded or closed.

## SECTION 6

### Maintenance

#### 6.1 MAINTENANCE

The various routine maintenance operations are described below.

It is worth remembering that the round baler will cost less to run and last longer if these instructions are complied with.

***Performing maintenance carefully is to the user's benefit as the machine will be in an excellent state of repair once work is resumed.***

The times required to perform the work featured herein are given as a guide only and refer to normal operating conditions. Nonetheless, said times tend to vary depending on the type of use, the amount of dust in the environment, seasonal factors etc.. In demanding operating conditions, maintenance will, of course, need to be stepped up.



#### **WARNING**

***Before commencing any kind of work, make sure the machine is on flat ground and that the round baler is secured in place with suitable chocks under the wheels.***

***The maintenance, adjustment or setup work must be performed with the tractor and power-takeoff shaft disconnected from the round baler.***



#### **CAUTION**

***The greasing points on the round baler are indicated with the «lubricating nipple» sticker (13 Fig. 4). Before injecting lubricating grease by means of the lubricating nipples, the nipples' fittings must be thoroughly cleaned to prevent mud, dust or foreign bodies getting mixed into the grease and diminishing the lubricating effect, or even neutralizing the lubricating effect altogether. Avoid inserting too much grease in the lubricating nipples. Inserting a large amount of grease in the greasing point at a high pressure may damage the bearing protections. Perform this operation with due care.***

***Lubricate and grease all points indicated, including the chains.***

***Any worn areas should be treated with a coat of rust inhibitor.***

***Relieve the hydraulic pressure. This can be achieved by opening the rear gate. The gate will fall closed under its own weight as soon as the engine is shut off. When topping up or changing the oil, use the same recommended type of oil used previously.***



#### **DANGER**

***Keep lubricants out of the reach of children. Read the warnings and safety instructions indicated on the lubricant containers carefully. After use, wash your hands and any other soiled areas thoroughly. Treat used oils in conformity with the law dispositions on pollution.***

#### 6.2 P.T.O. SHAFT

As regards the maintenance of the power-takeoff shaft, follow the PTO shaft instructions supplied by the Manufacturer to the letter: they are to be found in the instruction manual supplied with each shaft.

#### 6.3 AFTER THE FIRST 8 HOURS OF USE



#### **WARNING**

**BEFORE COMMENCING MAINTENANCE OR LUBRICATION, ENGAGE THE ROUND BALER'S SAFETY SYSTEMS AND ONLY START WORK ONCE THE ENGINE IS SHUT OFF. IF THE WORK MUST BE PERFORMED WITH THE ROUND BALER'S REAR GATE OPEN, APPLY THE SPECIAL SAFETY STOPS ON BOTH HYDRAULIC JACKS. (Fig. 26).**

After the first 8 hours of use, check:

- The general state of the round baler.
- The state of wear of the binder's knives.
- That all nuts and bolts are properly tightened.
- The tension of the drive chains.
- For oil leaks from the components of the hydraulic system.
- The tyre pressure.
- The lubrication of the transmission components.

#### 6.4 EVERY 8 HOURS OF USE

- Check the general state of the round baler.
- Perform the complete greasing operation, lubricating all the points marked by the «lubricating nipple» sticker and any points subject to friction.

The following checks are to be repeated at regular intervals and, in all cases, at the beginning of each season:

- Check the reduction gear's oil level and, where necessary, top up
- Perform the complete greasing operation, lubricating all the points marked by the «lubricating nipple» sticker and any points subject to friction.
- Check the rollers on the round bale forming chain for wear.
- Restore the chains' correct tension.
- Check all nuts and bolts are properly tightened.
- Make sure the sliding block conveying the round bale twine slides smoothly.
- Make sure the electrical system is working properly.
- Check for leaks in the hydraulic circuit and make sure the drives are working properly.
- Check the tyre pressure.

### 6.5 EVERY 24 WORKING HOURS

Every 24 working hours, lubricate and grease all the rolling parts subjected to frictions and particularly:

- Rear door cylinders joints.
- Main pressing arm cylinders articulations.
- Pick-up drums articulations.
- Rear door articulations.
- Tensioned joints.
- All the greasing points.

### 6.6 AFTER THE FIRST 50 WORKING HOURS

After the first 50 W.H. change gear-box oil following the procedure mentioned on paragraph 6.8.

### 6.7 EVERY 50 WORKING HOURS

Every 50 W.H. or even more frequently check the gearbox oil level through the inspection window.

### 6.8 EVERY 400 WORKING HOURS

Every 400 W.H. change the gearbox oil with Agip OSO type.

To do it's necessary to:

- Unscrew the filling up plug.
- Put a tank under the gearbox to bring the exhausted oil.
- Unscrew the drain plug.
- Once finished to drain screw the drain plug.
- Unscrew the level plug and fill in new oil till the level of the plug itself.
- Use oil SAE 90 EP. Gearbox capacity is about 2 l.
- Screw the level plug and the filling up plug.

## 6.9 LUBRICATING

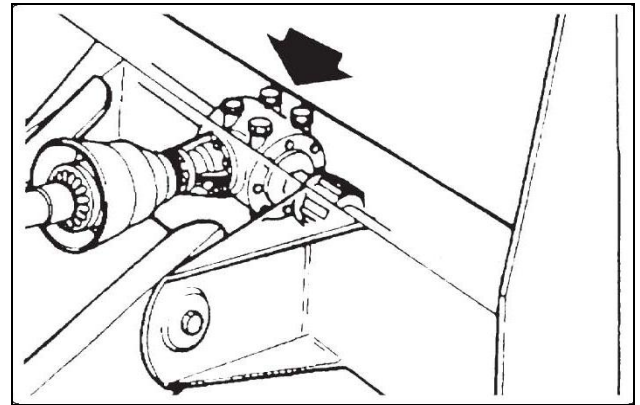


Fig. 25 –Gear box

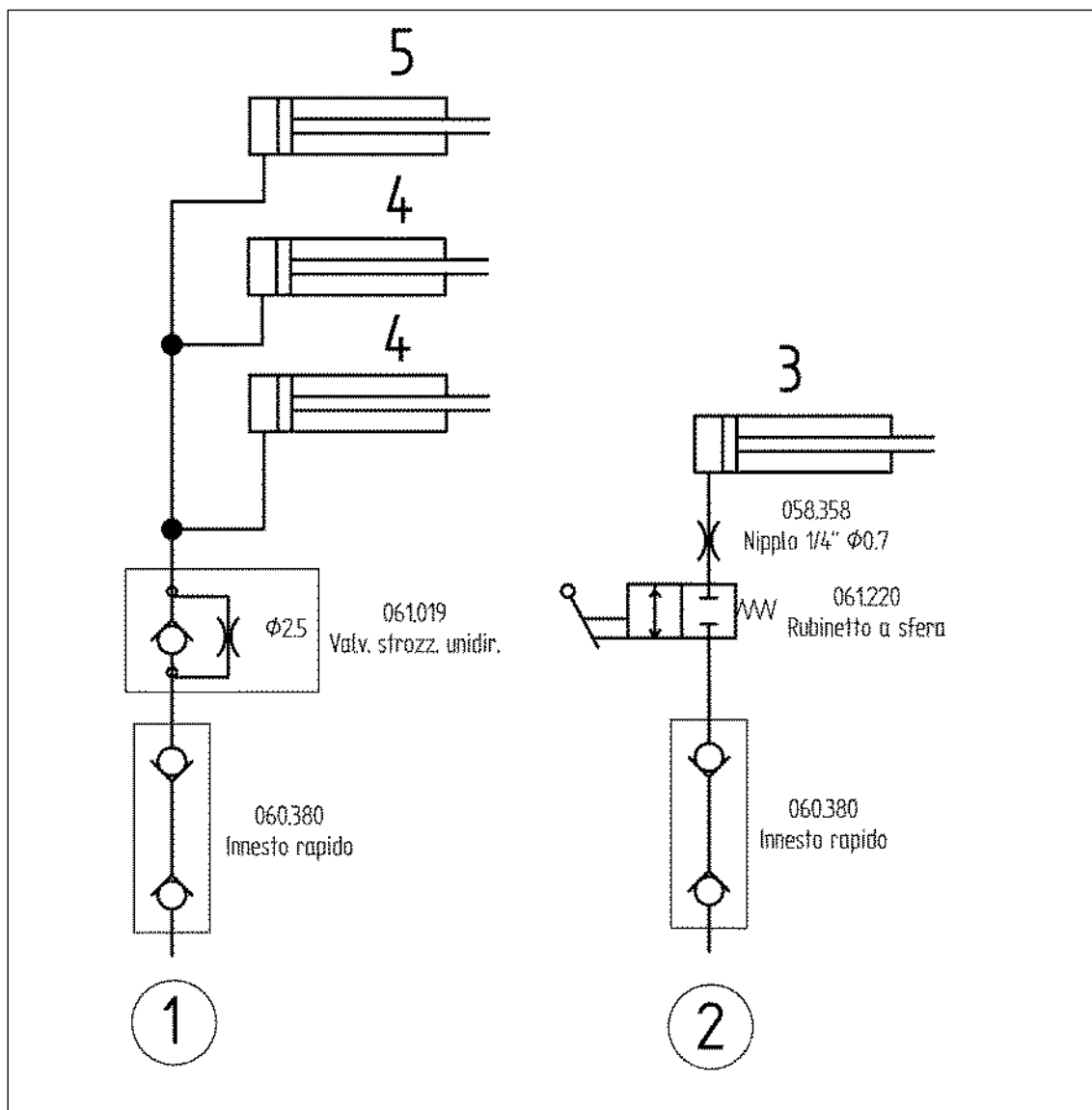
The lubrication of any machine featuring rotating components and/or parts rubbing against each other is of great importance in assuring the lasting service life and proper working of the actual machine. Hence, lubrication should be performed systematically at regular intervals.

## 6.10 MOTHBALLING

At the end of the season, or in the event the machine is to be left idle for a lengthy period, the following steps are necessary:

- Make sure all the product inside the round baler has been unloaded.
- Place the round baler on a suitable level surface.
- Wedge suitable chocks under the wheels and make sure all the guards on the machine are in place.

## 6.11 HYDRAULIC DIAGRAM



POS	MEANING	POS	MEANING
1	Tractor (simple effect) Max 210 bar	2	Tractor (simple effect) Max 210 bar
3	Cylinder pick-up	4	Cylinder door opening
5	Cylinder catenary connection		

## 6.12 TROUBLESHOOTING

TROUBLE	CAUSE	REMEDY
Drive chain making excessive noise	- Insufficient lubrication	- Top up oil
The press chamber does not close properly	- Problems with the hydraulics	- Check the system
	- Material residues preventing closure	- Remove residues
	- Hook connection rod not properly adjusted	- Adjust the relevant adjusters
Closing hooks not synchronized The main chain turns but the product is not fed in	- Safety bolt sheared off	- Replace the safety bolt
During the binding, the twine is not cut	- Knife not cutting	- Sharpen or replace the knife
	- Twine brake not adjusted properly	- Increase the tension of the twine
The twine is caught by the bale but the binder carriages do not move	- Twine not wound around the pulley	- Correct the winding on the pulley
	- The dragging chain pin is broken	- Replace the broken link or the whole chain
Bale too light	- Pressure not regulated properly	- Adjust the operating pressure
	- Rpm too low	- Increase the revolutions of the round baler's power takeoff
	- Pickup with tractor going too fast	- Reduce forward speed
	- Windrow too large	- Alter the windrow size
The bale does not exit the chamber	- Baling pressure too high	- Reduce the baling pressure
	- Windrow too far off to the side	- Correct the tractor path
Bale poorly shaped	- Irregular feeding	- Correct the tractor path
Pickup irregular	- Pickup too high	- Alter the height of the pickup wheels
The round baler in feed throat jams	- Windrow too thick and irregular	- Alter the windrow size
	- Windrow too far off to the side	- Correct the tractor's path
	- Pickup with tractor going too fast	- Stop and reverse with the power takeoff engaged, lift and lower the pickup. Resume forward motion with a lower speed
	- Rpm too low	- Increase the revolutions of the round baler's power takeoff
Irregular netting over the surface of the bale	- The netting is not taut between the support and binder	- Check the tension of the netting
Electrically controlled binding	- No power	- Check fuse on the tractor
	- Twine overstretched	- Decrease twine tension
Gear box does not work automatically	- Incorrect command set on control unit	- Change the functions on the electronic control panel
	- Sensor not working	- Replace the sensor

## SECTION 7

### Spare parts

#### 7.1 SPARE PARTS

All the components of the baler can be requested to the Manufacturer specifying:

- Machine model.
- Serial number of the machine.
- Production year. Code of the part you need (you will find it in the spare parts book), description and quantity.
- Transport device. In case that this voice isn't mentioned, the Manufacturer doesn't reply in case of delay in the delivery. Freight costs are always at charges forward.
- The goods is always delivered EX-WORKS our Company.

**The Manufacturer is always available for every kind of commercial and technical request you may have.**



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