Ed. 01/04

USE AND MAINTENANCE MANUAL

Dunker SW

INDEX

Problems and remedies follow each subject.
As this manual contains the most up-to -date information there may be slight differences between your machine and that described in the manual. Should you find any printing errors or any explanation which isn't clear or for should you have any other doubts please call your dealer:

(TO BE FILLED IN BY DEALER)

or call us directly:

STORTI INTERNATIONAL S.p.A
Tel.: 045/6134311 - Fax: 045/6149006

Ed. 01/2004
COD. 1672432300

USER AND MAINTENANCE MANUAL

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WRITED: STORTI OTTORINO

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TITLE: USER'S MANUAL USE AND MAINTENANCE

Thank you for choosing STORTI and placing your trust in our products.
We are pleased to welcome you amongst our clients.

You are now the proud owner of our new **DUNKER SW**, a Cutter-Mixer wagon designed and built using the most modern technology and equipment. We are sure you will be more than satisfied as you put this machine into daily use.
Before using the machine we advise you to read this "USER AND MAINTENANCE" manual carefully in order to get to know your cutter-mixer wagon well.

Apart from the normal information about the use of the machine this manual also contains important warnings fro maintenance and use of the machine which should ensure your SAFETY and keep the cutter-mixer wagon working perfectly.

Should you have any other questions or problems regarding your cutter-mixer wagon please contact your dealer or your STORTI importer.
We welcome your questions and suggestions.

So that we can constantly improve our relationship we ask you to fill in the Guarantee Certificate completely and send it back to us.
We would remind you that the guarantee will only be valid after it has been received by STORTI.

We are sure of your co-operation in this respect and that you will be more than satisfied in using this machine. Have a good read and we wish you well in your work.

Complete the postcard, detach and Send by post or by fax if preferred (+39 /0 49 / 9514280)

Affrancatura a carico del destinatario da addebitarsi sul conto di credito speciale n° 154 presso l'Agenzia P.T. di 37050 - Belfiore - Aut. Filiale di Verona n° 8138/2 del 29/04/96

La tecnologia che alimenta la qualità

Alla spettabile

STORTI INTERNATIONAL S.p.A
C.P. 10
37050 BELFIORE (VR) - ITALY

GUARANTEE CERTIFICATE

The guarantee is valid, unless otherwise stated in writing, for a period of 12 months from delivery date, within the boundaries of the state of Italy.

For the parts not constructed by STORTI the guarantee is limited to that allowed by the supplier. During the period of guarantee any parts which should be defective in material or workmanship, according to the final decision of our Technical Office, will be replaced free of charge.
All tests and checks for defects and their causes will be carried out at our site in Belfiore - Verona - via Castelletto 10.

Any expenses for checks on site carried out by STORTI, transport costs, packaging of any parts to be repaired or replaced as well as the manpower hours will be paid by the buyer.

The guarantee will be considered invalid if components are repaired or replaced with spare parts which are not original or when any work is done on the machine not according to the manual or without our authorisation.
Any parts which are by their very nature or use subject to deterioration, wear and tear or bad maintenance will not be covered by this guarantee.
The buyer will not be able to claim for damages of any nature however they may come about.

On delivery of the machine the buyer must check that it is as ordered and conforms to the contract and that it has not been damaged in transport.
Should any such damage be evident then the buyer must not use the machine and must inform STORTI directly or his supplier within 6 days.

GUARANTEE Dunker SW

Serial Nr. _____

Date _____ m^3 _____

☐ I have received and read the "User and Maintenance Manual"

Signature _____

NAME _____

Tel. _____ Age _____

Adress _____

HEREBY AUTHORISE STORTI S.P.A TO INSERT MY DETAIL INTO THE COMPUTER. IN ACCORDANCE WITH THE DATA PROTECTION ACT 13 LAW 675/96, I WILL ABLE TO HAVE ACCESS TO MAY DETAILS AND ASK THEM TO BE CHANGED OR CANCELLED.

STATISTICAL DATA

Type of animal reared ☐ For beef cattle N° _____

☐ Dairy cattle N° _____

Please give a mark from 1 - 10 to the following to indicate how much they influenced your choice in purchasing the cutter-mixer wagon:

___ Qual. of the product ___ Qual. of work

___ Image ___ Reliability

___ Ease of use ___ Price

___ Speed of work

___ After-sales service

Complete the postcard, detach and send by post or by fax if preferred (+39 /0 49 / 9514280)

REFERENCE LAW 626/94

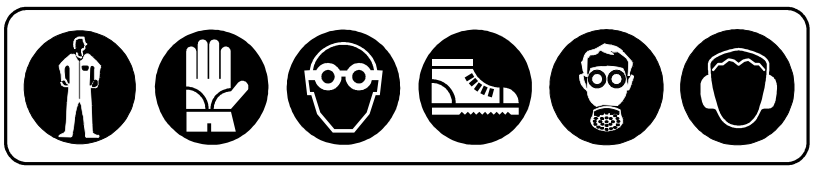
ACCIDENT PREVENTION STARTS HERE

- Consult the instruction manual before carrying out any operation;

- Make sure you understand the meanings of the signs on the machine that are placed there to inform and warn operators of potential dangers;

E.G.: THE FOLLOWING IS A SIGN MEANING DANGER and indicates an area or machine part that could cause severe **INJURY** OR **DEATH**.

- Use the PPE (personal protection equipment) (ART. 44 COMMA 2 of the law D.Lgs 626/94);



- OVERALLS
- GLOVES
- EYE-PROTECTORS
- SAFETY BOOTS
- MASK
- EAR PROTECTORS

- Do not remove or alter safety, signalling or control devices without authorisation to do so (ART. 5 COMMA 2 of the law D.lgs 626/94).

IMPORTANT :
Repairs to or replacements of components with non-original parts will mean the CE mark lapses and with this the guarantee rights.

CHECKLIST

PREDELIVERY

Before the machine is delivered to the customer it is ESSENTIAL to carry out the following checks.
Each box ticked indicates that the check has been carried out.

- ❑ Check that no parts are damaged, missing or not in their proper place after transit.
- ❑ Check that all of the screws are in place and properly fixed.
- ❑ Check that the hydraulics have not been damaged (oil leaks, defective tubes, imperfect connections,…).
- ❑ Check the mixing reducer unit oil, the cutter unit oil and the reservoir tank oil levels are correct (if necessary top up as indicated in the table on page 50-52-58).
- ❑ Check the chains and moving parts with greasers have been properly greased (as specified in the table on page 42).
- ❑ Check the wheel nuts are tight and also check tyre pressure (in accordance with the specifications in the table on page 43-44).
- ❑ Check that all the safety devices and stickers relating to SAFETY are properly affixed in the correct positions.
- ❑ Check the model and matriculation number correspond with the plate as described on page 10-11 and that the machine is conform to the customer's order.
- ❑ Check the universal joint guards (they must be free and not turn with the shaft).
- ❑ Check that all the moving parts (chains, unloading belt, feed screws,….) are properly adjusted and can rotate freely.
- ❑ Check the central feed screw cutters are properly regulated as shown on page 46-47.

I confirm that the pre-delivery checks have been carried out as indicated above.

_____
Signature of dealer / agent

_____
Date filled in

DELIVERY

The following checklist MUST be checked off with the customer AT THE TIME of machine delivery.
Each box ticked indicates that the check has been carried out.

- ❑ Check with the customer that the machine is conform to order.
- ❑ Deliver the "Use and maintenance manual" to the customer and explain to him and all his operators how the machine works BEFORE it is started up.
- ❑ Go through with the customer and explain to him all the SAFETY information contained in the manual.
- ❑ Go through with the customer and explain to him all the safety devices and the machine controls.
- ❑ Go through with the customer and explain to him the GUIDELINES FOR THE PROPER USE OF THE MIXER TRUCK as described on page 38.
- ❑ Go through with the customer and explain to him the routine maintenance which needs to be carried out to ensure the long life of the machine (as specified in the table on page 42).
- ❑ Go through with the customer and explain to him the use of the machine as described on page 36-37.
- ❑ Go through with the customer and explain to him the part of the manual regarding problems and possible remedies, as specified on page 60.
- ❑ Go through with the customer and explain to him any additional information booklets on such apparatus as the weighing scales.
- ❑ Fill in this customer registration form and send it to Storti International.

I confirm that the information on the machine has been fully explained to me on the delivery of the machine.

_____ _____
Machine model Matriculation number

_____
Customer's signature

_____
Date of delivery of the machine

CHECKLIST

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_____ _____
Machine model Matriculation number

_____
Customer's signature

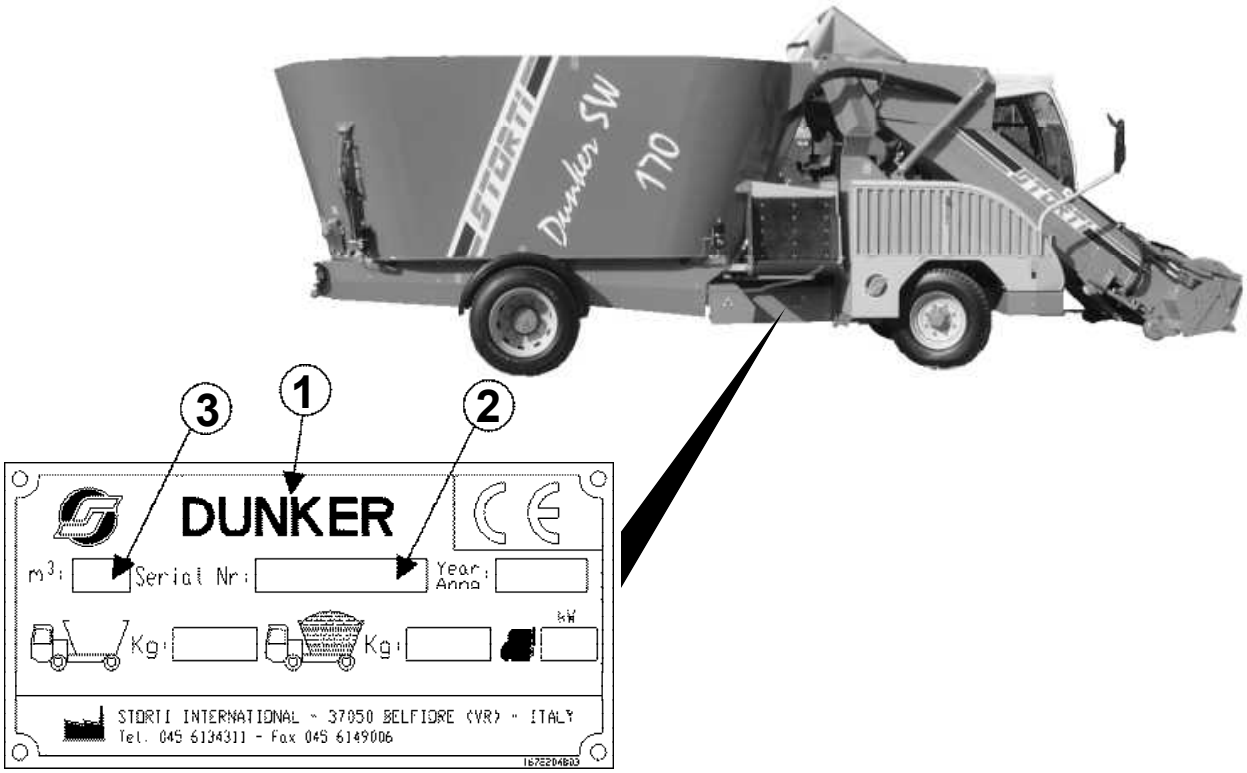
_____
Date of delivery of the machine

SPARE PARTS

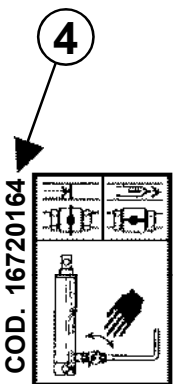
HOW TO ORDER SPARE PARTS

In order to facilitate the search for spare parts and the despatch of we ask you please to adhere to the following norms and specify in all cases:

- **Model (1) and serial number(2) of the machine.** These can be found printed on the identification plate placed on the forward side of the mixer wagon. Orders cannot be processed without the serial number.
- **Capacity of the machine in cubic metres (3).**
- **Code(4) and description of the spare parts.**
- **Quantity of the parts required.**
- **Exact address of company with company name and details** complete with any particulars of delivery address for the goods.
- **Method of delivery required** (if this is not specified STORTI reserves the right to use the method it considers the most suitable).



FOR EXAMPLE:



MUST: The safety lock which shuts off the cylinder must be closed before carrying out any operation (repair/maintenance/cleaning etc.) to the machine.

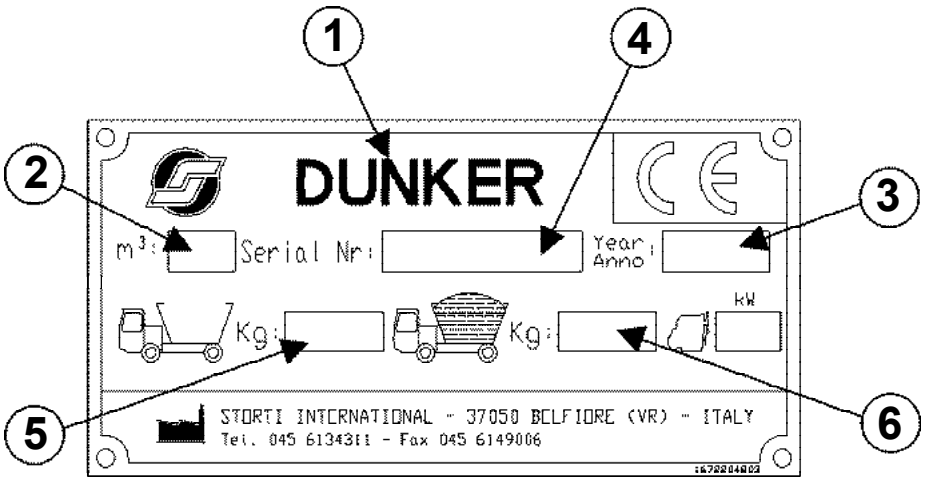
DESCRIPTION OF THE MACHINE

The **DUNKER SW** is a machine designed to facilitate animal feeding on farms. It's function is to load and mix different types of feed products in order to obtain a mixture which is suitable for use as cattle feed.

The machine is composed of three distinguishable groups:

- **THE MILLING CUTTER GROUP:** This is used to load the feed material into the mixing body.
- **THE MIXING BODY:** This is where the loaded material is mixed by the mixing augers and from where the final mixture is unloaded into the feeding troughs
- **THE SELF-PROPELLED GROUP:** made up of chassis, operator's cab, wheels and other such equipment as to guarantee self-propelled movement and transfer of the machine.

DESCRIPTION OF THE MACHINE



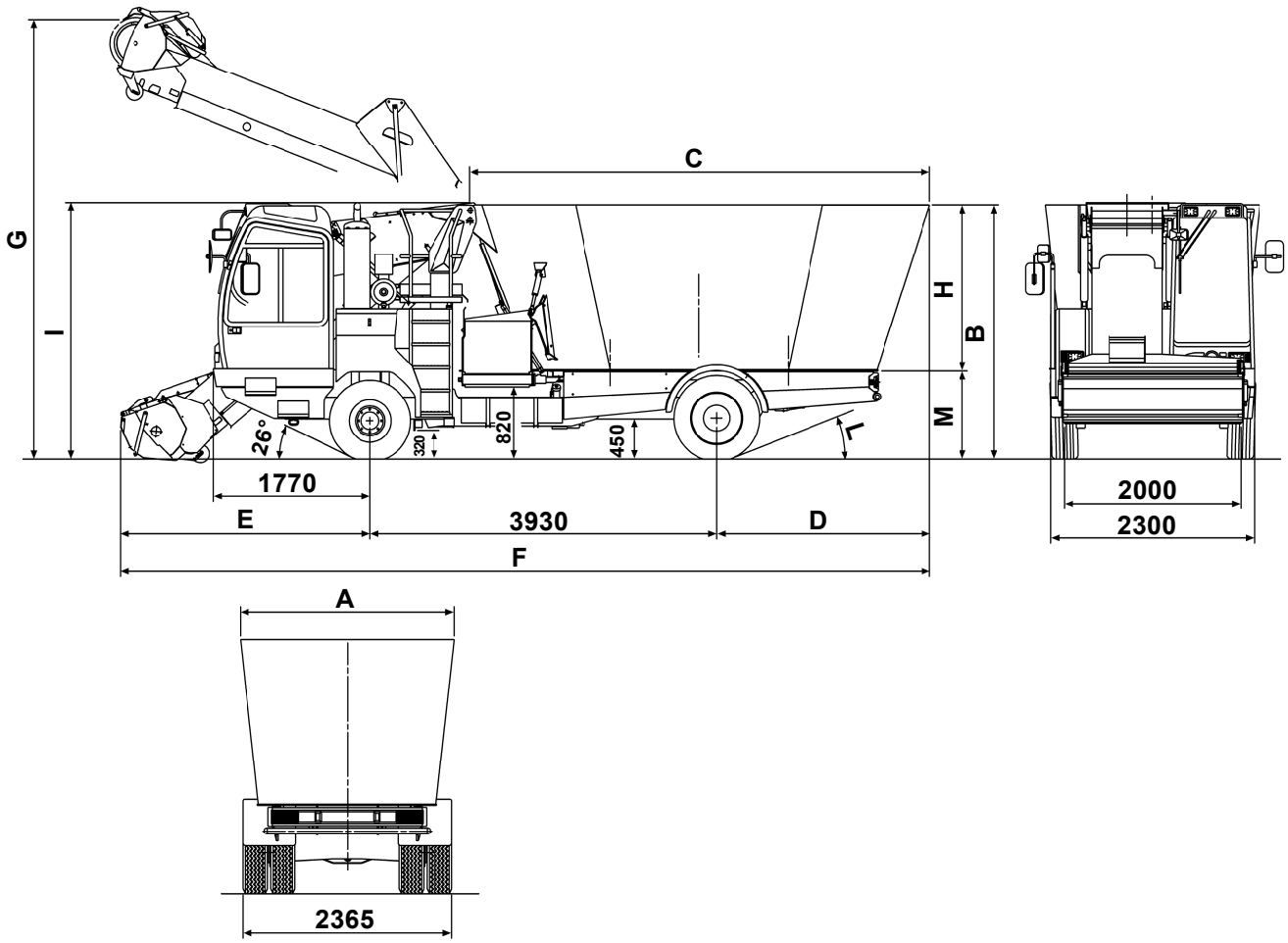
1) Model of the machine
2) Internal dimensions of the body
3) Serial number (progressive)
4) Construction year
5) Total weight (empty and with optionals)
6) Total weight fully loaded

IMPORTANT:

- **The total weight of feed product allowed (indicated on the identification plate) refers to a maximum speed on a flat firm surface such as a farmyard. Should the machine be driven over a rough surface the total weight of feed product must be reduced considerably.**

- **Maximum sound levels measured according to regulation EN 1553: 1994 (no load and with the cabin closed) are as follows:**
  Noise level: 82,3 dB(A) - operator ear

TECHNICAL DATA DUNKER SW



SELF PROPELLED VERTICAL AUGER	TURNING CIRCLE	A	B	C	D	E	F	G	H	I	L	M	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Kg
17 m³	7265	2420	2875	5215	2410	2825	9165	4460	1880	2920	21,5°	995	11.100
21 m³	7265	2450	3045	5575	2785	2790	9505	5720	2050	3060	18°	995	11.600
25 m³	7265	2490	3388	5770	2882	2637	9449	5429	2387	3388	18°	1001	12.420

Total weight fully loaded of 19,000 kg on a flat compact surface.

The above specifications can be modified to allow for technical improvements. As such they are in no way binding and do not affect supply. **STORTI** reserves the right to make any changes or improvements at any time in the design or construction of the machine and the making of the components without the obligation of adapting any of these modifications to previous models.

TRANSPORT

LOADING PROCEDURE

In cases where the machine is not homologated the machine must be transferred on a truck or similar vehicle on public roads.
ATTENTION: make sure the transport vehicle is sufficient and suitable for the machine weight.
Follow the instructions in the list below, using suitable equipment for the machine weight printed on the identification plate.

1. Take the machine from stocks and move it to the loading area.
2. Move the machine near the loading platform of the transport vehicle.
3. Take care no other persons are in the loading operation vicinity.

LOADING WITH RAMP BOARDS

Loading with the ramp boards is a dangerous operation and must be carried out by specialised, expert personnel.

Observe the following instructions:
Lower the truck's suspensions, lower the parking foot down to the ground.
If the foot is not present, stabilise the flatbed by placing bases at the end of it **(see drwg. B)**. Before loading, close the rear view mirrors of the self-propelled vehicle, lower the extension of the cutting arm tunnel with the handwheel.
ATTENTION: when loading, check if the rear of the self-propelled vehicle (or the front if loading in reverse gear) does not touch the ground. If it does, the ramps boards must be extended further to reduce the loading angle.
When you have finished loading, lower the cutter and brake the machine. Tie the machine with four ropes, using the supplied fittings indicated by stickers.
ATTENTION: do not load on wet or frozen ramp boards.
Loading operations must be carried out by at least two people: the driver and a helper who signals any corrections that may be necessary.

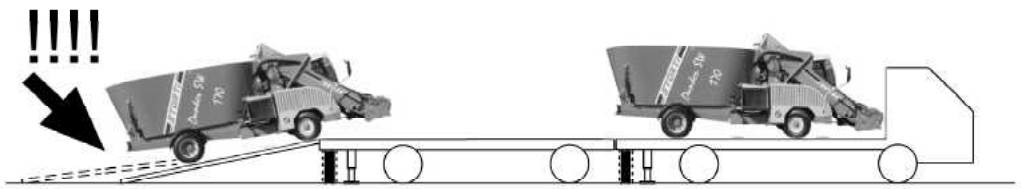


FIG. A

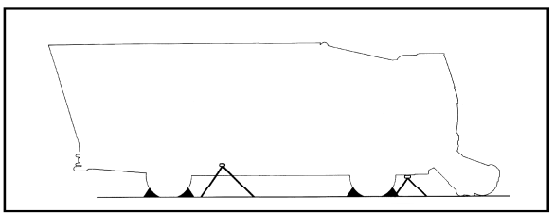


FIG. B

CONDITIONS OF USE OF THE MACHINE

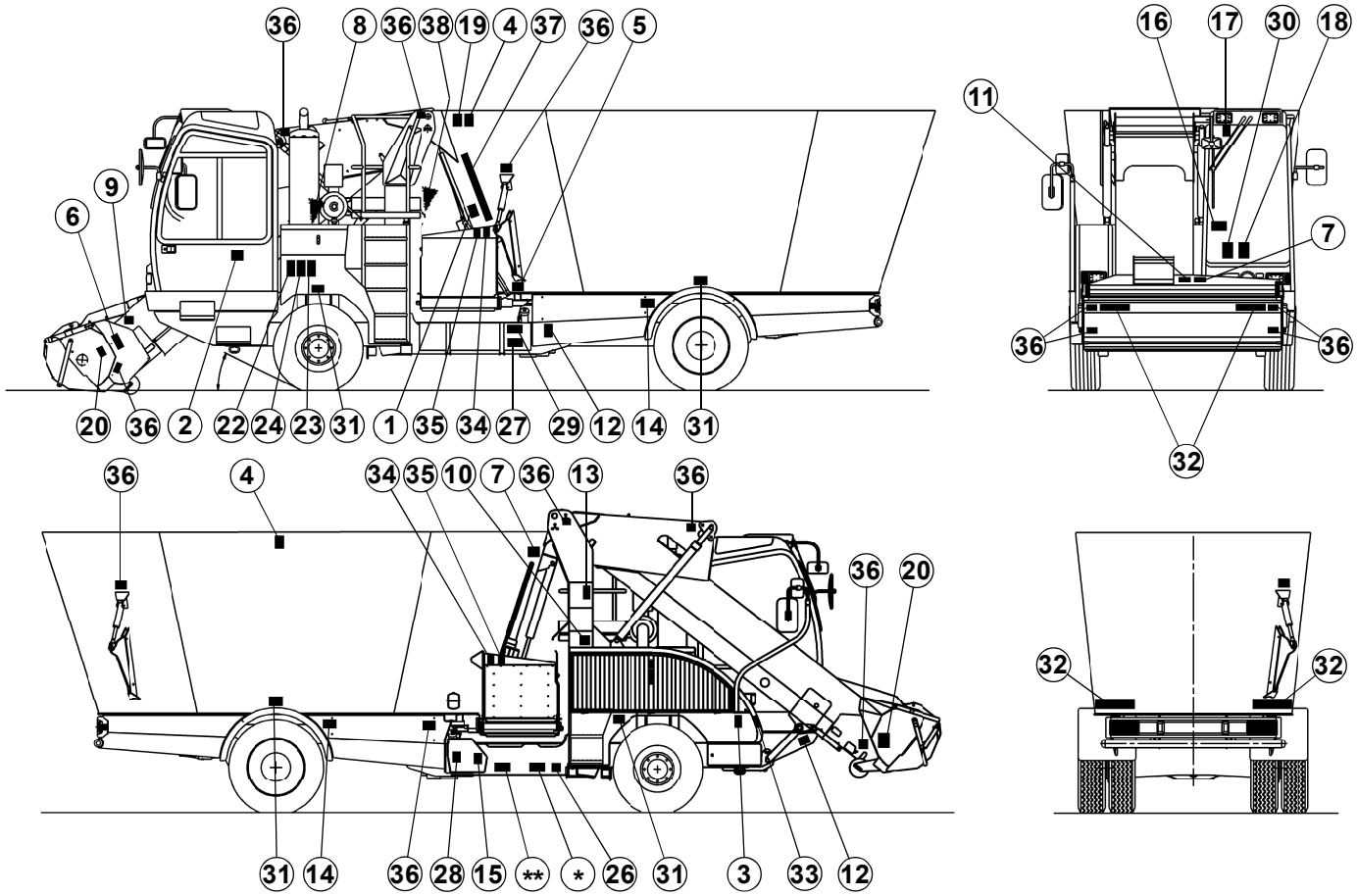
- Read this whole manual carefully before starting up the machine.
- Check that all the guards are in good order and that all the descriptive stickers are perfectly legible before starting to use the machine for work.
- Make sure you get to know all the controls, try every individual lever checking that it works according to the manual.
- The machine was designed and built EXCLUSIVELY for de-silation, cutting, mixing and distributing products intended for animal feed.
- The machine must be manoeuvred by a single competent operator over 18 when seated in the driver's seat.
- Material which can not be loaded into the machine with the milling-cutter, must be loaded through the upper opening of the machine and only using appropriate equipment which will guarantee a safety distance is kept between the operator and the machine (augers, rubber bladed shovels, loaders etc.)
- Before using the machine the operator must make sure that there is no one behind or in the working area of the machine. It is his duty to stop the machine whenever any dangerous situations are FORESEEN.
- The operator must not use the machine when indisposed, tired or drunk or after using drugs.
- The operator must make sure that the products he intends to use contain no foreign bodies (stones, metal, etc.) which might harm persons or the machine itself and consequently the animals to be fed.
- The machine must be used within the farm, on flat resistant surfaces with enough space to work with good visibility and to manoeuvre in safety.
- Clean the machine and remove any possible dry straw residue or other materials whenever the machine is not used for a few days so that the acids are removed.
- We advise you to check the work area before starting

STRICTLY FORBIDDEN

- Using the machine to transport people, animals or other object is **STRICTLY FORBIDDEN**.
- Using the machine as a lifting mechanism or climbing on the milling-cutter arm is **STRICTLY FORBIDDEN**.
  When looking inside the mixer only use the special ladder provided.
- Standing on the platform while the machine is in motion is **STRICTLY FORBIDDEN**.
- Getting into the mixing bowl to carry out any maintenance operation without having first removed the ignition key from the dashboard, turned off and removed the battery switch is **STRICTLY FORBIDDEN**.
  In any case you must seek assistance from a person working outside the mixing bowl.
- Standing anywhere near the milling-cutter, near the cut material projection area or on top of the mass of silage is **STRICTLY FORBIDDEN**.
- Tampering with, damaging or removing the protective guards and the warning notices on the machine is **STRICTLY FORBIDDEN**.
- Making any modifications, however slight, to any of the components of the machine is **STRICTLY FORBIDDEN**.
- People wearing **PACE-MAKERS MUST NOT** approach the magnet zone located on the discharge belt, indicated by the following stickers.

- The use of spare parts which are not original is STRICTLY FORBIDDEN (see **"GUARANTEE CERTIFICATE"**.)

STICKER POSITIONS



(*) Identification plate

(**) Chassis number

(5) Only machines equipped with milling-cutter

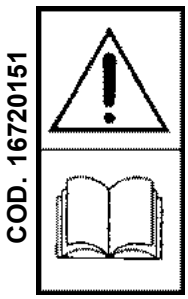
(1) The number references on these drawings correspond to the number at the top right of each symbol on the following pages.

N.B. Whenever these safety stickers are no longer legible, whether in part or wholly, they must be replaced promptly.

N.B. When ordering replacement stickers please refer to the code at the side of each sticker.

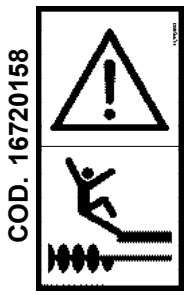
KEY TO THE SYMBOLS

(1) **DANGER:** indicates an area or part of the machine which can cause serious injurious or death.

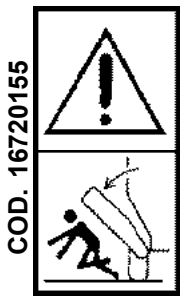


(2) **DANGER:** consult the instruction manual before carrying out any operation.

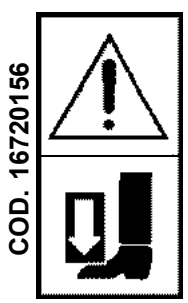
(3) **DANGER:** keep clear of the milling-cutter and DO NOT stand underneath it.



(4) **DANGER:** working in any position above the machine is STRICTLY FORBIDDEN.

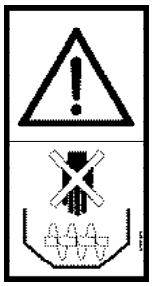


(5) **DANGER:** keep clear of the unloading conveyor.



(6) **DANGER:** keep clear - danger of being crushed.

COD. 16720153

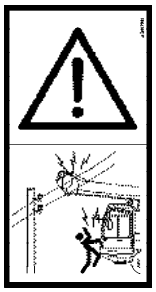


(7) **DANGER:** DO NOT clean the machine whilst it is working

COD. 16720162

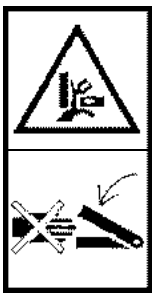
(8) **WARNING:** moving parts.
Covers **MUST** be screwed down closed after each intervention.

COD. 16720179



(9) **DANGER:** atch out for overhead electric cables

COD. 16720169

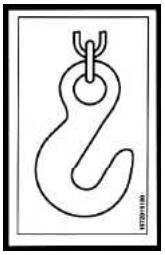


(10) **DANGER:** keep hands clear- danger of being crushed

COD. 16720170

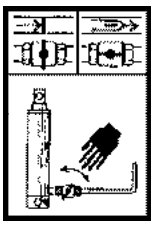
(11) **DANGER:** close protective guard.

COD. 16720191



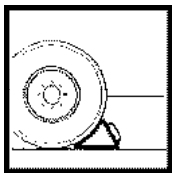
(12) **Hook here to lift the machine.**

COD. 16720164



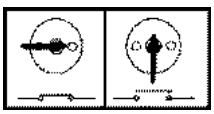
(13) The cylinder tap **MUST** be closed before carrying out any operation on the machine.

COD. 16720163



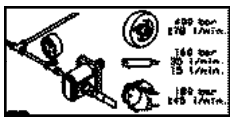
(14) Use wedges to stop the wheels whenever the machine is parked.

COD. 16720167



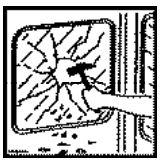
(15) Electrical circuit switch connected to the battery.

COD. 16720185



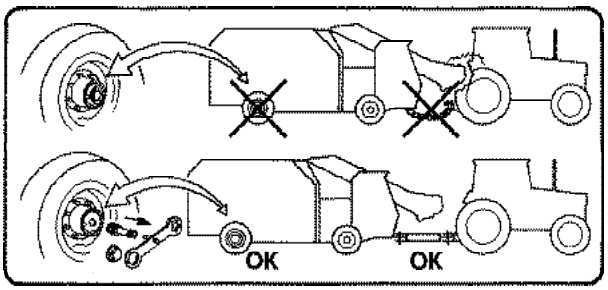
(16) Hydraulic circuit pressure settings.

COD. 16720177



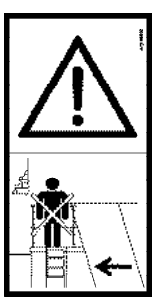
(17) Use the hammer to break the glass if necessary.

COD. 16720188



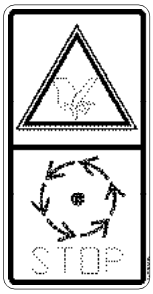
(18) When towing the machine the pinion **MUST** be removed from the planetary gears and a tow-bar **MUST** be used.

COD. 16720268



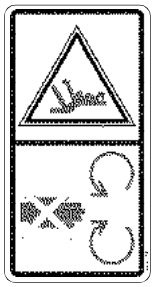
(19) **DO NOT** stand on platform whilst the machine is in motion.

COD. 16720310



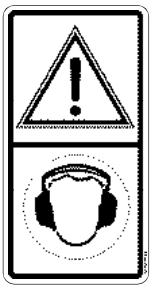
(20) Stop rotary hoe rotor

COD. 16720311



(21) **DANGER:** do not touch moving parts

COD. 16720312

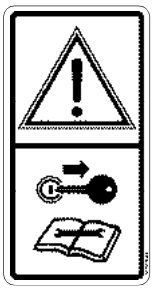


(22) **MUST:** Use the noise guards.

COD. 16720313

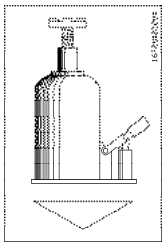
(23) **MUST:** Use dust guards.

COD. 16720314



(24) **CAUTION:** Disconnect power supply to carry out maintenance.

COD. 16720282



(25) **JACK**

COD. 16720320

26 OIL DISCHARGE

COD. 16720319

27 INFLAMMABILITY

COD. 16720321

28 **DANGER CORROSIVE FLUIDS**

COD. 16720194

29 **DIESEL**

COD. 16720409

30 **Do not weld (see page 64)**

COD. 16720073

31 **8 bar**

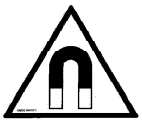
COD. 16720030

32 **DO NOT stand to machine**

COD. 16720269

33 Mark CE

34 PACER-MAKER **wearers forbidden to approach**



35 **Magnet**

COD. 16720019

36 **Apply grease**

COD. 16720217

37 Graduated scale

SAFETY DEVICES

1) Fire extinguisher
2) Hammer
3) Wedges
4) Instruction booklet
5) Spare parts supplied.

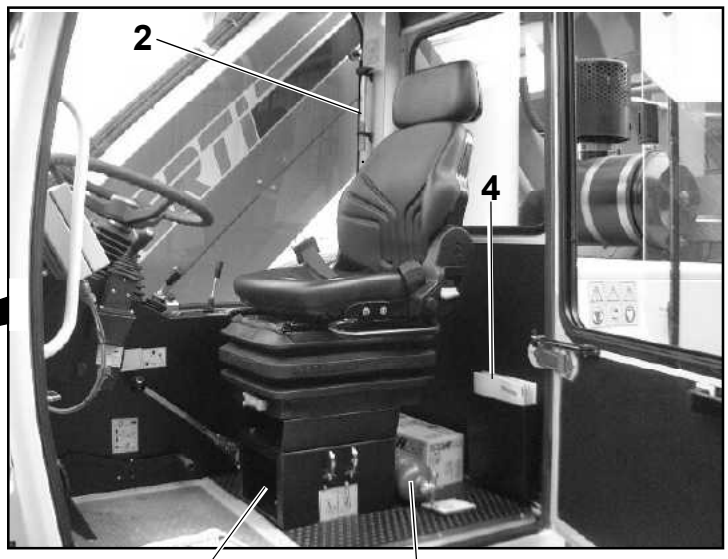


FIG. 1

FIG. 2

DESCRIPTION AND POSITION OF CONTROL

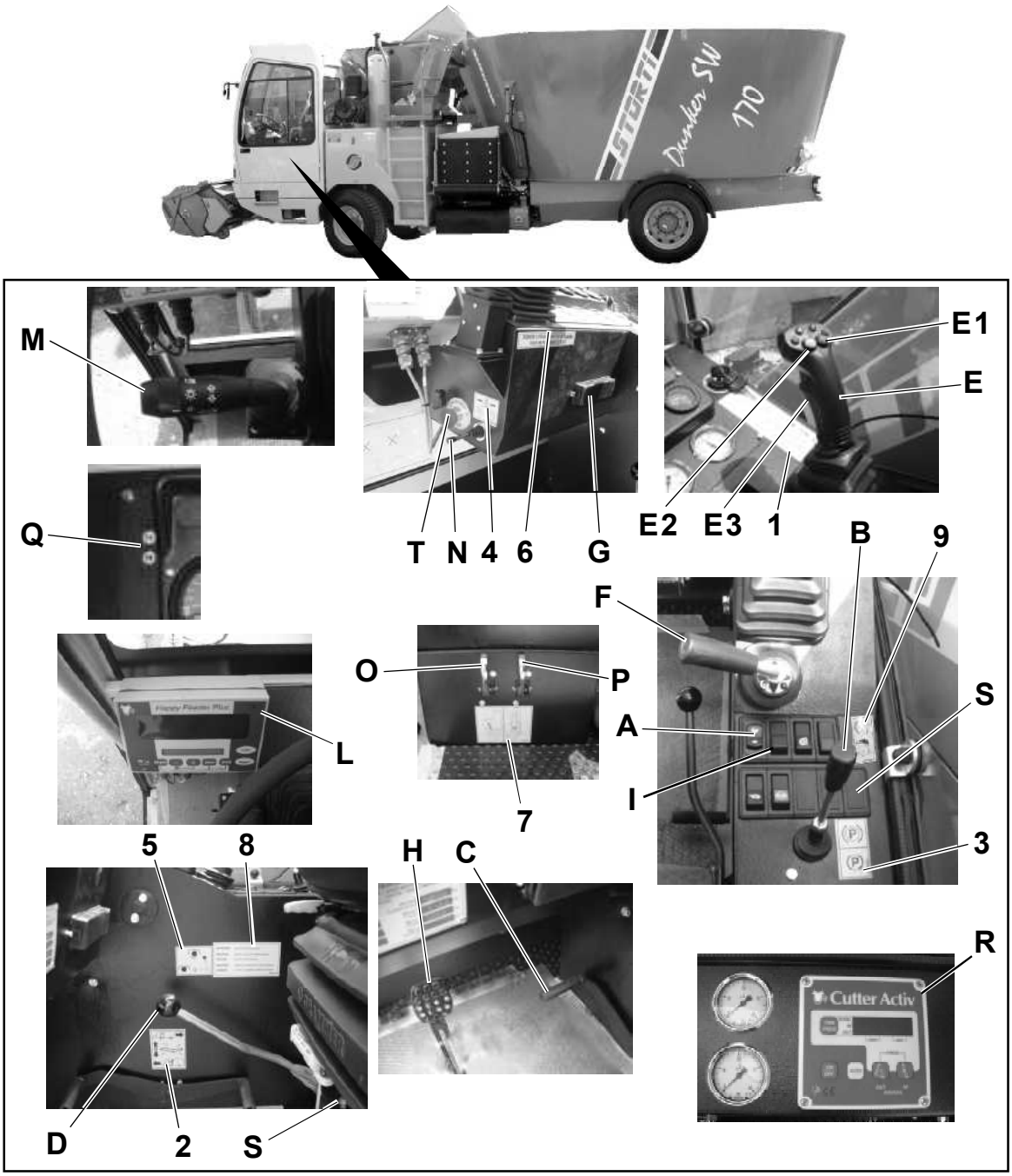


FIG. 3

A ACCELERATOR

B PARKING BRAKE

Backwards: brake on
Forwards: brake off
This brake acts on the rear wheels of the machine and is a NEGATIVE type brake. The brake will come on automatically when the engine is turned off.
WHEN THE MACHINE IS TO BE TOWED the rear wheels need to be freed by removing the pinion (**P**) which connects to the gear using the special spanner and screw (**C**) supplied **(Fig. Pag 23).**
NOTE: For towing the bar must be used,because, once the connectingpinions (P) have been removed,the machine no longer has anything that brakes it.
Remove the central plug (**T**) and then screw in screw M6 (of the supplied tool) which is in the centre of the sspindle so as to get hold of it. Unscrew it completely and replace the cap so as to avoid any oil leakage **(Fig. 4 Pag 23)**.

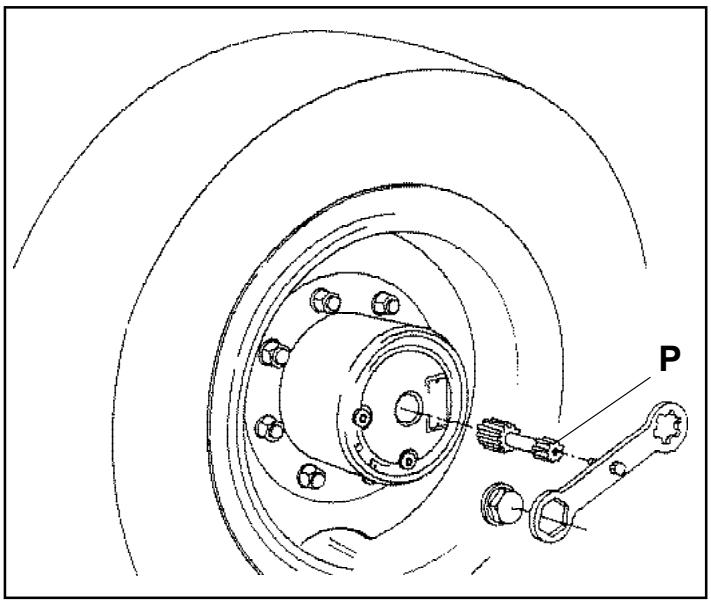


FIG. 4

C FORWARD PEDAL

Depress to go forward. Raise to reverse.
Always use this control gently and avoid rapid changes of direction. There is an acoustic warning signal when the machine is in reverse.

D CLUTCH LEVER

Raise to engage and lower to disengage. This lever controls a “dead centre” clutch. The lever must be pulled decisively right up or down until you can feel a click on the lever as it engages. **(position B - Fig. 5)**. Should this not happen check that the pins are running smoothly, and if necessary grease these, or else check the internal regulation of the discs **(see page 57). IMPORTANT: Check that, after disengaging the clutch, the lever falls under its own weight about 15°. If this does not happen check and grease as described (position A).**

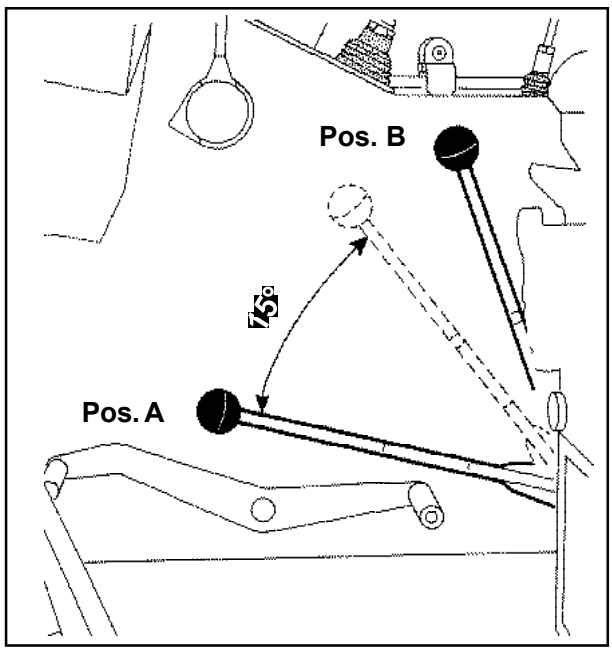


FIG. 5

E MULTIFUNCTION LEVER

Forwards: to lower the milling-cutter with progressive adjustment of the lowering speed.
Backwards: to raise the milling-cutter
Right: counterblade out
Left: counterblade in

SELECTION BUTTONS ON THE MULTIFUNCTION JOYSTICK:

E1) Direction of rotation of the milling-cutter.
- **1 click - green light:** upwards rotation of the milling-cutter
- **1 click - no light:** stop
- **1 click - red light:** downwards rotation of the milling-cutter

E2) Choice of direction of rotation for the loading conveyor:
- **1 click - green light:** loading
- **1 click - no light:** stop
- **1 click - red light:** reverse
- **Choose the direction of rotation before starting the milling-cutter.**

E3) Start button for milling cutter and conveyor belt rotation.

WARNING: This button starts both the milling-cut-ter and the conveyor belt at the same time. But even when the direction of rotation of the mil-ling-cutter is changed the conveyor belt rotation remains the same as that selected by button 2.

F UNLOADING CONTROL

Forwards: starts left hand conveyor belt
Down: closes door
Up: opens door
Backwards: starts right hand conveyor belt

G SERVICE FUSE BOX
(see page 35)

H FRONT BRAKE PEDAL

Depress to brake. Works on the front wheels.

I DIFFERENTIAL LOCKING DEVICE OPTIONAL)

Hold down the button to activate this (a yellow light will appear). Release the button to de-activate (yellow light goes off).

L WEIGHING SYSTEM INSTRUMENT

See relative manual.

M MULTIFUNCTION HEADLIGHT LEVER

N AUGER SPEED CHANGE LEVER

Forward: second speed (fast).
Backward first speed (slow).

O FRONT BONNET OPENING LEVER

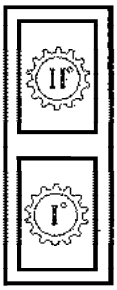
Pull to open.

P SIDE BONNET OPENING LEVER

Pull to open.

Q AUGER SPEED CONTROL INDICATOR LIGHTS

Indicator 1 - auger first speed selected
Indicator 2 - auger second speed selected.



R CUTTER ACTIVE COUNTERBLADE
INSIERTIOIN UNIT

VISUAL DISPLAY

PROGRAMMING:

Use the TIME PROG button to select the work cycle timer programming function.
Press the button once.
The TOTAL light comes on. The entire time of the work cycle can now be set (in minutes from 0 - 99) during which the counterblades will be engaged or in the rest position for the time set by using the IN or OUT buttons
Press the button a second time.
The IN light comes on.
The counterblade insertion time can now be set (in minutes and seconds up to a max. of 10 minutes)
Press the button a third time.
The OUT light comes on.
The counterblade disengagement time can now be set (' in minutes and
seconds up to a max. of 10 minutes)
Press the button a fourth time to quit the programming function (no lights should be on).
Use the AUT (-) and IN (+) buttons to set the required values.
While a work cycle is in progress the TIME ME FROG button is inoperative:

AUTOMATIC FUNCTION

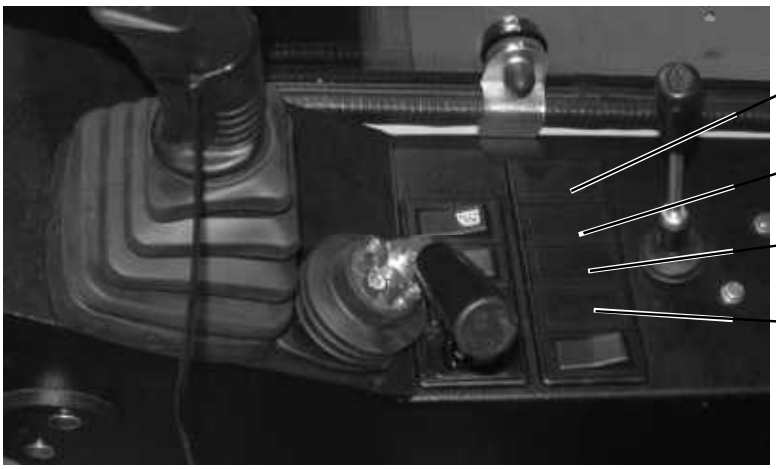
Use the AUTO button to start a work cycle automatically, The visual display will show the time of the work cycle in progress as it counts down from the TOTAL value set.
If this button is pressed during a work cycle, the cycle is interrupted, the counter blades return to the rest position and the display goes out.
While programmirig is being carried out the AUTO button is inoperative.

MANUAL FUNCTION:

IN (+) button
Press this button to (insert) the
counter blades in manual only when the button is not being used for setting the time for an automatic work cycle or while one is in progress. While a work cycle is in progress the IN (+) button is inoperative.

OUT (-) button
Press this button to disengage the counterbladesin manual only when the button is not being used for setting the time for an automatic work cycle or while one is in progress.
While a work cycle is in progress the **OUT(-)** button is inoperative.

S OPTIONAL EXTRA CONTROLS (Position S - Fig. 3 - Page 22)



OPTIONAL

PUSHBUTTON OPTIONAL

1) Transfer hopper
2) Rear discharge
3) Additional hopper LH or RH
4) Additional hopper LH or RH
5) Transfer hopper
6) Electric seat

FIG. 6

T PUSH-BUTTON OF EMERGENCY TO FUNGUS

HEATING UNIT

The cabin is supplied with a 3 speed blow heating unit. To turn on the heating and regulate the temperature use lever **(3 speed L)** and switch **(I)** to select the speed required. These two controls are situated on the ceiling of the cabin.
The air direction **(B)** can be varied by moving the apertures as necessary particularly to de-mist the windows.
To recycle the air open apertures **(C - Fig. 7)**.
Remember that the filter placed above and behind the cabin must be kept clean in order to ensure it works well **(item D - Fig. 8).** The remaining switches **(F)**, **(G)** and **(N)**, respectively, are used to operate the wipers, turn on the spotlights and wash the windscreen.

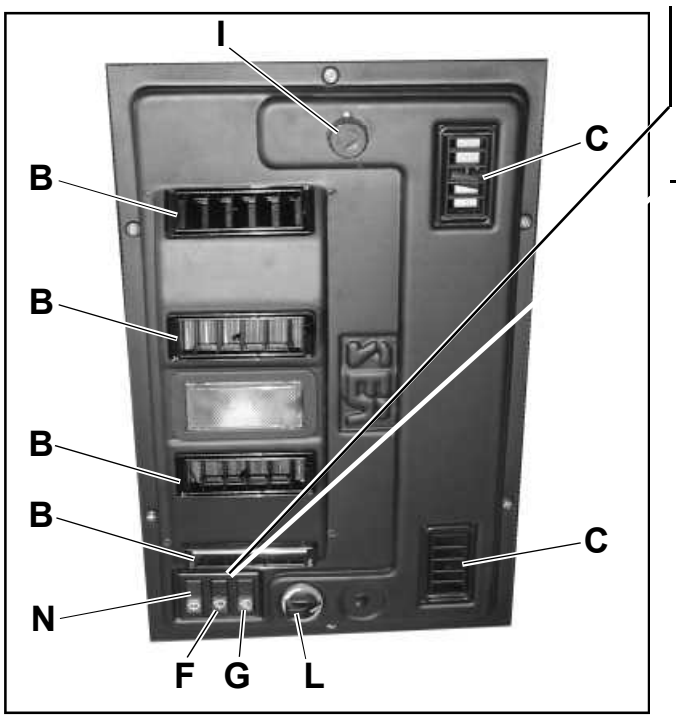


FIG. 7

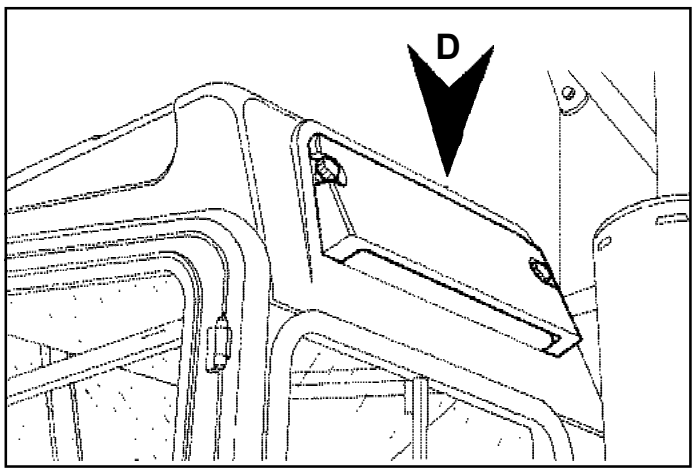


FIG. 8

WINDSCREEN WASHER FLUID

The windscreen washer water tank is situated behind the cabin inside the left side bonnet. Periodically check that there is windscreen washer liquid in the tank **(A - Fig. 9)**

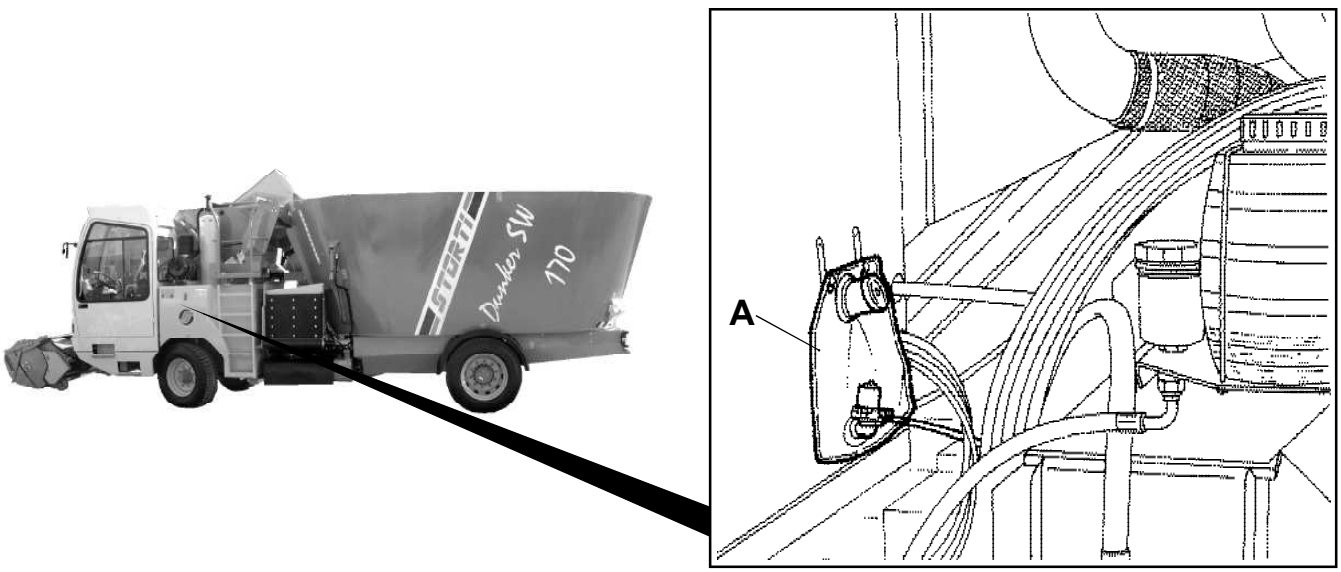
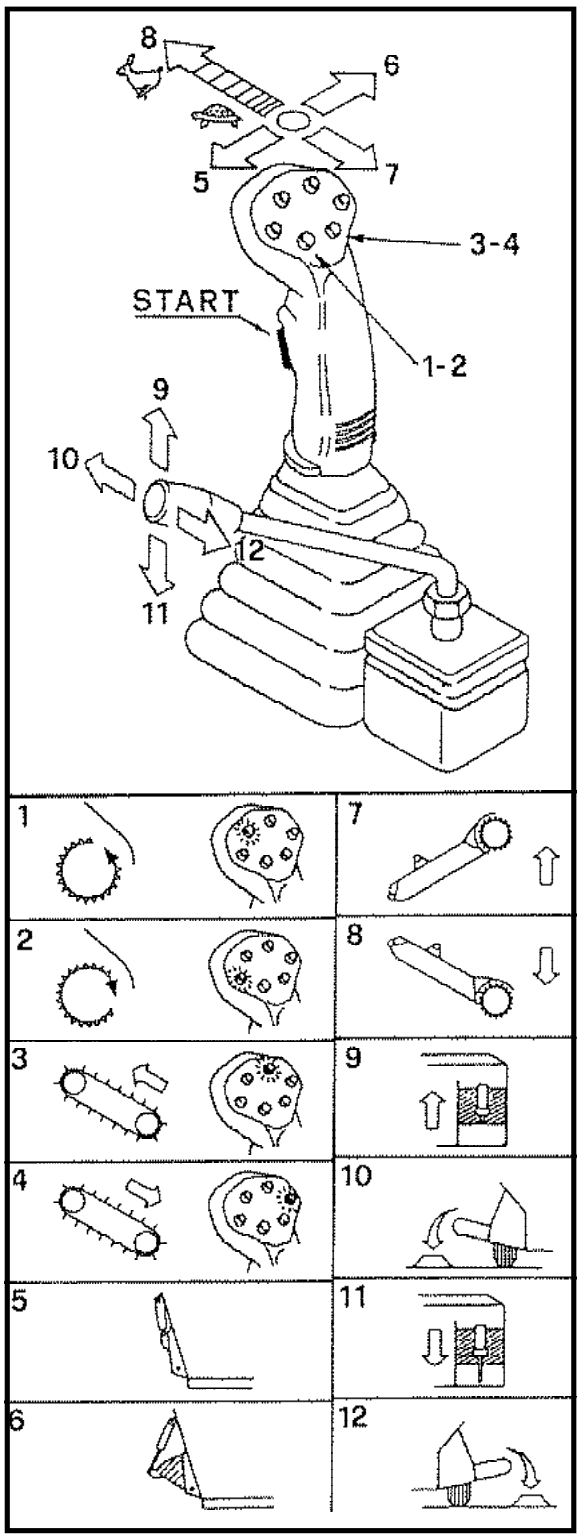


FIG. 9

ILLUSTRATION OF THE CONTROLS



COD. 1672021600

1) UPWARDS ROTATION OF MILLING CUTTER (GREEN LIGHT)

2) DOWNWARDS ROTATION OF MILLING CUTTER (RED LIGHT)

3) UPWARDS DIRECTION OF ROTATION OF LOADING CONVEYOR (GREEN LIGHT)

4) DOWNWARDS DIRECTION OF ROTATION OF LOADING CONVEYOR (RED LIGHT)

5) COUNTER BLADE IN

6) COUNTER BLADE OUT

7) RAISE MILLING-CUTTER ARM

8) LOWER MILLING CUTTER ARM *

9) OPEN DOOR

10) START LEFT HAND SIDE UNLOADING CONVEYOR

11) CLOSE DOOR

12) START RIGHT HAND SIDE UNLOADING CONVEYOR

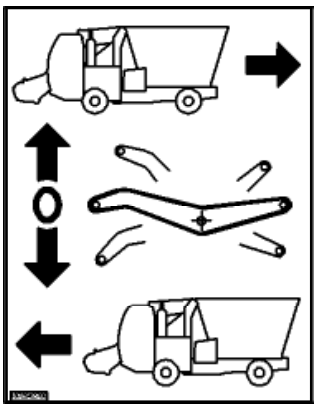
(Pos. 1 - Fig. 3 - Pag. 22)

*** CONTROLLING THE MILLING CUTTER DESCENT SPEED**

When working move the multifunction lever gradually forwards so that the milling-cutter is working at a pressure of **MAX. 170-180 bar on silage material and 120-130 bar on rotary bales. This can be seen on the pressure gauge placed above the control panel.**

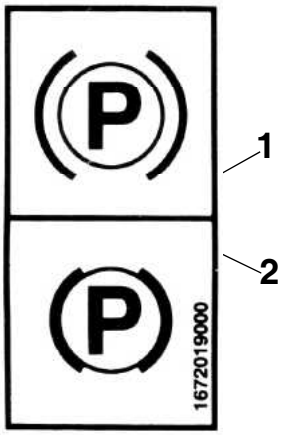
NB = decrease descent speed when the machine is almost full to allow the auger to move the material.

COD. 16720427



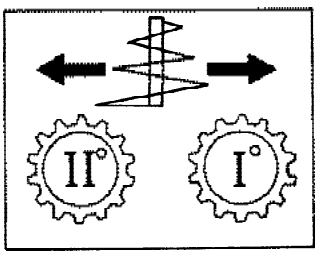
FORWARD AND REVERSE MOVEMENT (Position 2 - Fig. 3 - Page 22)

COD. 16720190



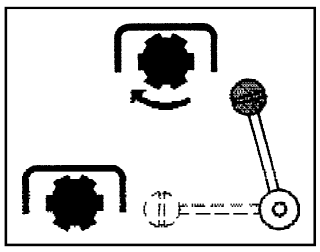
USING THE PARKING BRAKE (Position 3 - Fig 3 - Page 22)
1 = Off
2 = On

COD. 16720256



CHANGING AUGER SPEED (Position 4 - Fig 3 - Page 22)
Forwards - second speed (fast).
Backwards - first speed (slow).

COD. 16720255

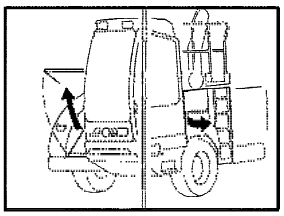


CLUTCH ENGAGEMENT STICKER (Pos. 5 - Fig. 3 - Page 22):
Low: clutch disengaged
High: clutch engaged

COD. 16720389

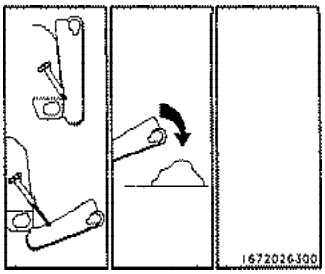
STICKER: PRESS THE BRAKE PEDAL TO TURN ON (Pos. 6 - Fig. 3 - Pag. 22)

COD. 16720242



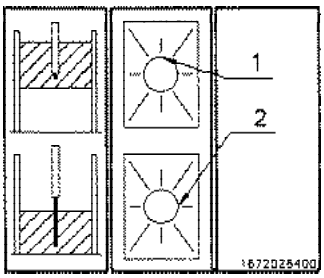
STICKER FOR HOOD-OPENING (Position 7 - Fig 3 - Page 22)

COD. 16720263



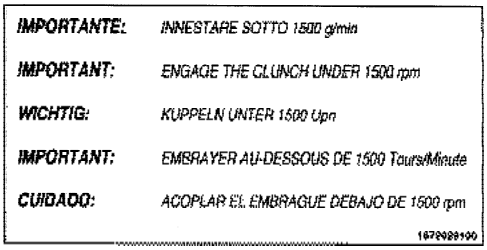
RAISE LOWER AND UNLOAD HOPPER EXTENSION (OPTIONAL)

COD. 16720264



REAR DOOR OPEN/CLOSED STICKER
Indicator light no.1 on: rear door open.
Indicator light no.2 on: rear door closed.

COD. 1672029100

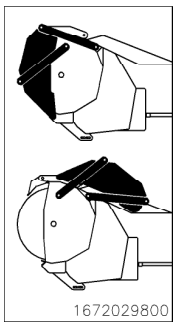


IMPORTANTE:	*INNESTARE SOTTO 1500 g/min*
IMPORTANT:	*ENGAGE THE CLUNCH UNDER 1500 rpm*
WICHTIG:	*KUPPELN UNTER 1500 Upn*
IMPORTANT:	*EMBRAYER AU-DESSOUS DE 1500 Tours/Minute*
CUIDADO:	*ACOPLAR EL EMBRAGUE DEBAJO DE 1500 rpm*

1672029100

GEAR CLUTCH LIMIT" ADHESIVE
(Pos. 8 - Fig. 3 - Page 22)

COD. 16720298



"HIGH / LOWER PROTECTION MILLING CUTTER" ADHESIVE
(Pos. 9 - Fig. 3 - Pag. 22)

COD. 10000610

STORTI Agip

PER IL CORRETTO FUNZIONAMENTO DELLA MACCHINA LA CASA COSTRUTTRICE CONSIGLIA DI USARE:

FOR A CORRECT FUNCTIONING OF THE MACHINE THE MANUFACTURER RECOMMENDS TO USE:

RIDUTTORI - MOLTIPLICATORI REDUCERS - MOLTIPLIERS	AGIP BLASIA 220
IMPIANTO OLEODINAMICO HYDRAULIC SYSTEM	AGIP OSO 46
LUBRIFICAZIONE A GRASSO GREASE LUBRICATION	AGIP GR MU 2

OIL ADHESIVE (Storti - Agip)(Pos. 38 - Pag. 15)

DESCRIPTION OF THE CONTROL INSTRUMENTS

DASHBOARD

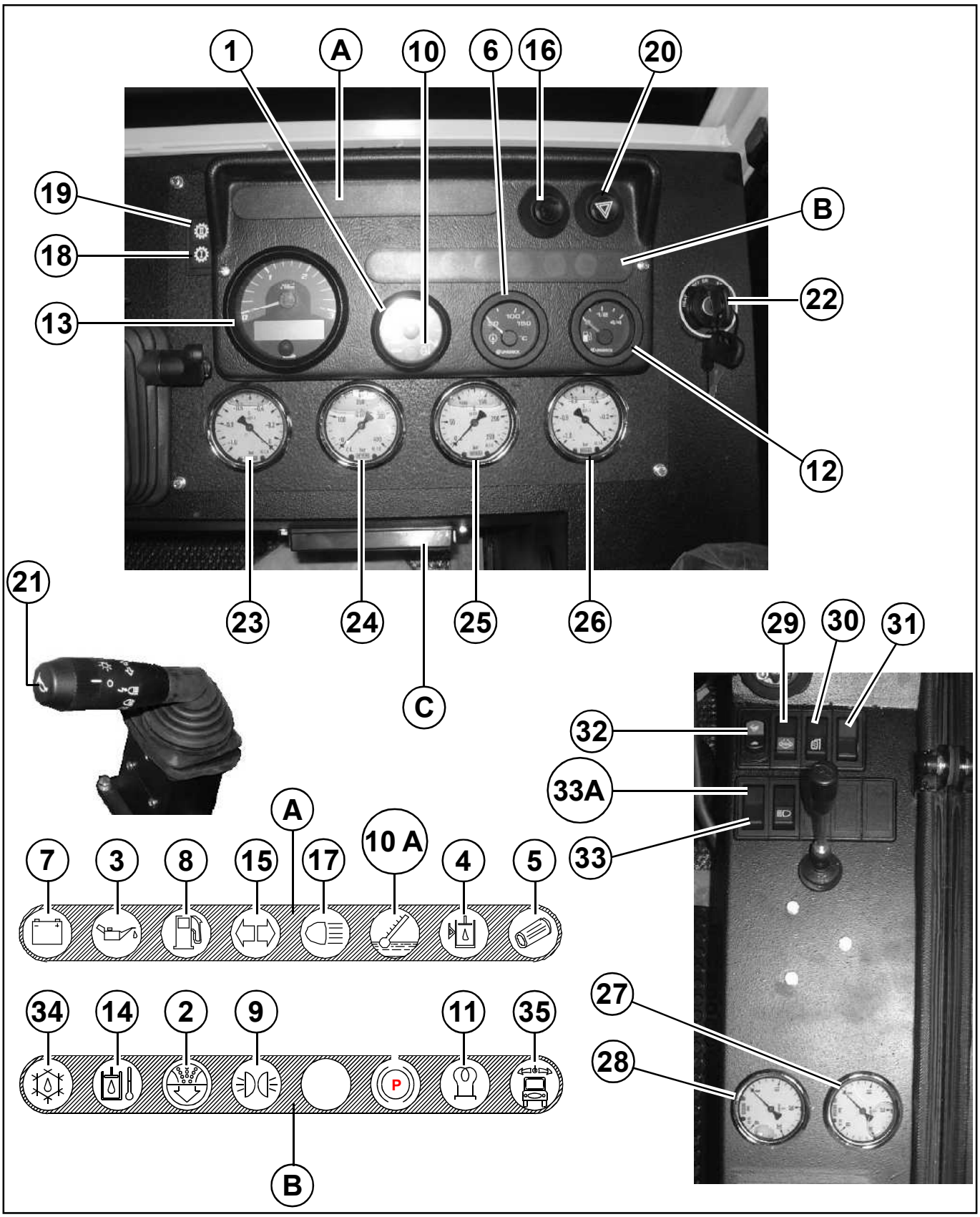


FIG. 10

1) WATER TEMPERATURE
This must never go above 90° - 105°

2) INDICATOR LIGHT: AIR FILTER OBSTRUCTION
Sostituire il filtro quando si accende.

3) INDICATOR LIGHT: ALARM LOW PRESSURE MOTOR OIL

4) HYDRAULIC OIL LEVEL TOO LOW
WARNING: as soon as this light comes on the engine cuts out itself.

5) EXTERNAL FILTERS BLOCK UP FOR HYDRAULIC TANK
The indicator light may remain on for a short time when starting up from cold.
Keep the engine ticking over slowly until the light goes off. Should it not go off check the vacuum gauges **(23 and 26 - Fig. 10 - Page 31)** and replace the tank filter/s.

6) HYDRAULIC OIL TEMPERATURE
In case the 70° are exceeded, to hold the motor to low regimen, therefore to eventually verify pulizia of the radiator dell'olio and the fuses of the electrofan.

7) BATTERY CHARGE
This light goes out after starting the engine.

8) FUEL RESERVE

9) POSITION LIGHTS

10A + 10) WATER TEMPERATURE TOO HIGH
Turned ON at 110°
Keep the engine running at minimum and then check the radiator is clean and that the fan is working.

11) PREHEATING INDICATOR LIGHT

12) FUEL LEVEL

13) REV COUNTER INSTRUMENT — MULTI-PURPOSE ELECTRONIC DISPLAY (vdo)

14) HYDRAULIC OIL TEMPERATURE HIGH
It lights when the hydraulic oil exceeds 80°.

15) DIRECTION INDICATORS

16) INDICATOR LIGHT: LOADING BELT STOPPED

17) FULL-BEAM HEADLIGHTS

18) AUGER 1ST SPEED INDICATOR LIGHT

19) AUGER 2ND SPEED INDICATOR LIGHT

20) EMERGENCY SIGNAL.

21) HORN.

22) IGNITION KEY.

23) FORWARD MOVEMENT PUMP VACUUM GAUGE
N.B.: When the machine is warm and the VACUUM GAUGE indicates over 0.3bar change the cartridge filter under the tank (Fig. 36 - Page 50- Position D1.)

24) MILLING CUTTER PRESSURE (Fig. 10).
The pressure, at work, of the milling cutter must not vary - it must be between 120-130 bar when working on dry material such as rotary bales and between 170-180 bar when working on a wall of silage material. To alter this value up or down increase or decrease the milling-cutter descent speed with lever **(E)** as described on **page 22**.
If the material is friable, do not load too quickly because the mixing screw may not be able to remove the material under the loading channel.

25) EQUIPMENT PRESSURE (Fig. 10).
CONVEYOR - CYLINDERS-STEERING UNIT.

26) MILLING-CUTTER PUMP VACUUM GAUGE (Fig. 10)
N.B.: When the machine is warm and the VA-CUUM GAUGE indicates over 0.3 bar change the cartridge filter under the tank (Fig. 36 - Page 50 Position D2).

27) FORWARD MOVEMENT FEED PUMP PRESSURE (Fig. 10)
It does not have to be inferior to 15 bars

28) MILLING-CUTTER FEED PUMP PRESSURE
It does not have to be inferior to 15 bars **(Fig. 10 - Pag. 31)**

29) DIFFERENTIAL LOCKING DEVICE
Press to turn ON the differential shut-down
Release to disable lit

N.B.: Do not activate the differential shut-down while steering, especially under normal adherence conditions

30) THERMAL MIRROR

31) AUTOMATIC HOOD OPENING/CLOSURE

32) PUSH-BUTTON OPERATED ACCELERATION

Press the hare to increase motor revs, press the tortoise to reduce them.

33) When the indicator light goes ON **(Detail 33A)** it lights and flashes to reports an emergency situation, When it lights steadily, this means that the control unit begins the motor self-switchoff procedure.
At least 30 seconds elapse before the motor is stopped. If you press the push-button during that time, the count restarts from zero.
If the operator does not notice the indicator light going on, and therefore the motor goes OFF. After waiting for 10 seconds, it can be re-stared, as you have 30 seconds to control it safely.
N.B.: The push-button may be pressed more than once, to enable the operator to position the appliance safely.

34) INDICATOR LIGHT: HYDRAULIC OIL LOW TEMPERATURE ALARM

This lights to inform you that an adequate quantity of oil cannot circulate in the system. This is due to low oil temperature, or because the appliance continues to be used even after the clogged filter indicator light goes on. While the indicator light is lighted, the motor cannot be accelerated.

35) INDICATOR LIGHT: POSITIONAL STABILISER ON (NOT PREVIEW)

36) INDICATOR LIGHT: LOADING BELT STOPPED (OPTIONAL)

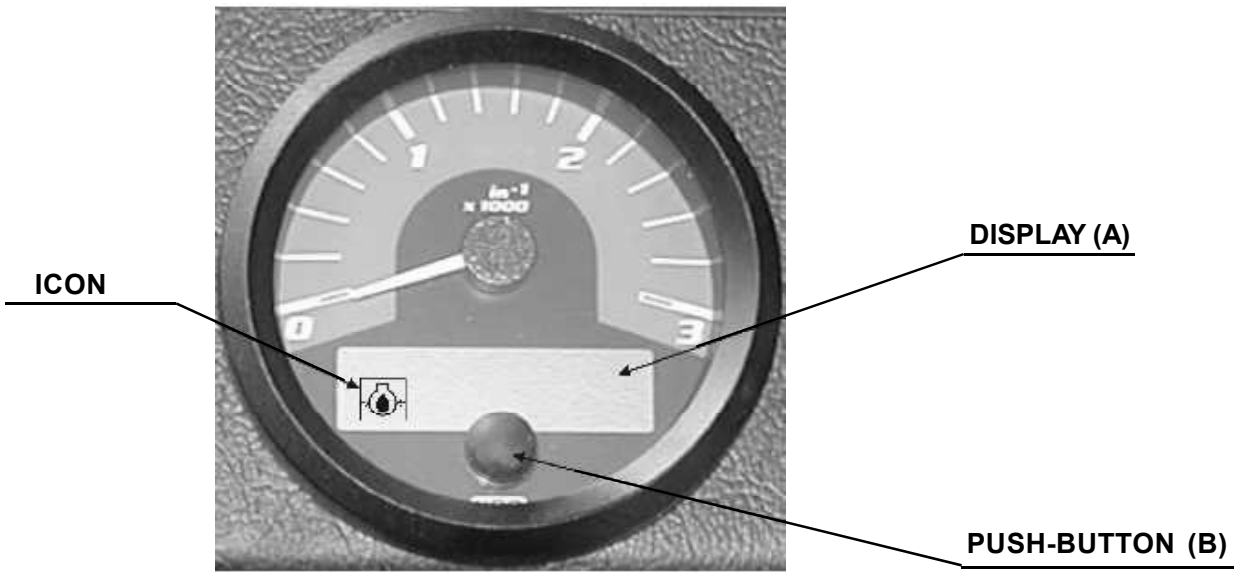
VDO INSTRUMENTATION DIAGNOSTICS

When a flashing error message appears on the display of the instrument **(A)**, to cancel it, press the instrument's push-button **(B)** for more than two seconds.
Then scroll through the menu with push-button **(B)**, locate the cursor on the relevant message, hold the button down for another two seconds, and a three-item message is displayed:

1) How many times the trouble occurred;
2) An SPN value;
3) An FMI value;

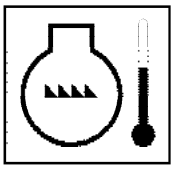
If you consult the error code table using the **SPN** and **FMI** values, you will identify the type of problem.
If there is more than one error, when you enter the values display, press push-button **(B)** to scroll through the other errors.
The hours display includes both total and partial hours.
To reset the **DTC** s saved with the panel OFF, hold down instrument's push-button **(B)** and turn the key without starting. When the display turns completely dark, release the push-button and wait for the check to finish.
When a spanner symbol appears, this means you should consult the maintenance manual. The message appears for the first time after **500** hours of duty, and then every **2000** hours of duty.
To cancel display of this message, press push-button **B**, while the panel is OFF, hold it down, turn the key, release the push-button and wait for symbol **L** to re-appear. At this point , press it again until the icon disappears.

N.B. the motor's control unit saves all data and stores them permanently in its memory, independently of the **VDO** instrument.

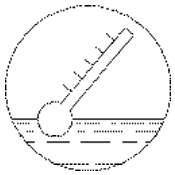


LIST OF ALARMS SHOWN ON DISPLAY (A)

- **Alarm: engine cooling liquid temperature**
  Above 110°C, indicator lights **(C)** and **(I)** light up on the dashboard. Icons **(A)** and **(B)**, light up simultaneously, alternately flashing on the display **(A)** of the VDO instrument.

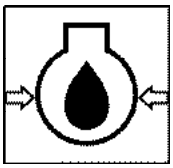

A


B

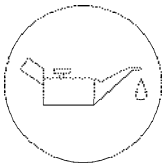

C


I

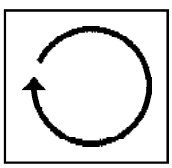
- **Alarm: Motor oil pressure low**
  Below 60 kPa, indicator light **(F)** lights up on the dashboard. Icons **(D)** and **(E)** light up simultaneously, alternately flashing on the display **(A)** of the VDO instrument.


D

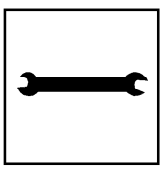

E


F

- **Engine over-revving alarm**
  Above 2750 rpm icons **(G)** and **(H)** light up simultaneously, alternately flashing on the display **(A)** of the VDO instrument.
- **Alarm DTC**
  When the instrument receives error messages from the motor control unit, icons **(H)** and **(M)** appear. When icon **L** appears, this means that motor maintenance should be checked (the icon appears after 500 hours the first time and then every 2,000 hours).


G


H


L

M

A LIST OF PARTIAL INDICATIONS WHICH, BY PRESSING PUSH-BUTTON (B), CAN BE SELECTED AND VIEWED ON THE DISPLAY (A) WHILE THE MACHINE IS OPERATING.

- WORK HOURS
- DTC (ERROR MESSAGES)
- OIL PRESSURE
- CONSUMPTION OF FUEL
- ENGINE LOAD PERCENTAGE
- AIR TEMPERATURE AT INLET
- FUEL TEMPERATURE
- ENGINE TORQUE PERCENTAGE

POSITIONS OF FUSES IN THE FUSE BOX
(Pos. G - Fig. 3)

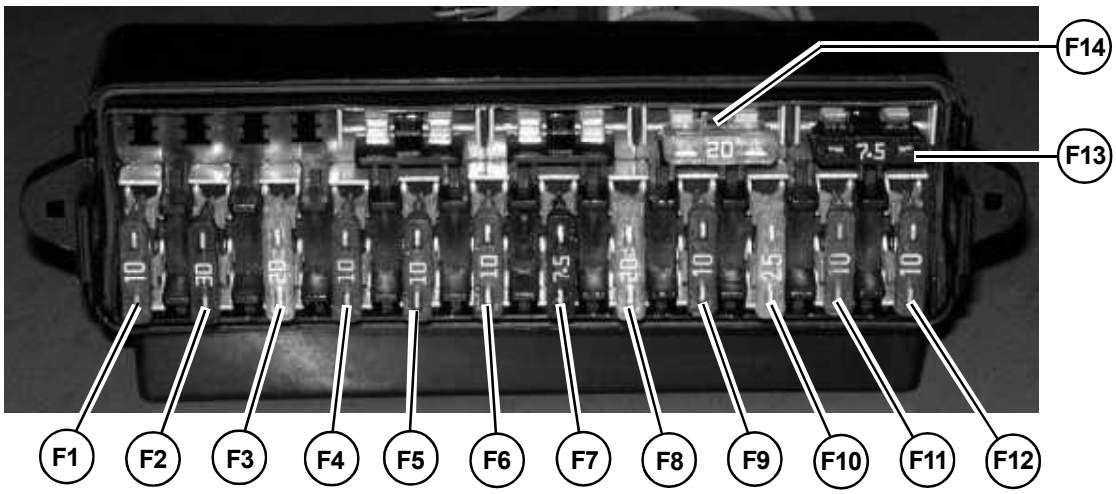
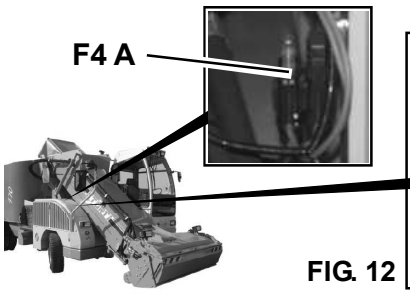


FIG. 11

Pos.	FUSE	AMPERAGGIO
F1	FUSE HEATED MIRROR + REVERSE GEAR LIGHT	10A
F2	FUSE WORKING LIGHTS	30A
F3	FUSE INDICATOR LIGHTS + HORN	20A
F4	FUSE DIFFERENTIAL LOCKING – CUTTER HOOD	10A
F5	FUSE: SCREW SPEED + CUTTER ACTIVE	10A
F6	FUSE: POSITIONAL STABILISER + GEARMOTORS SPEED	10A
F7	FUSE: INDICATOR LIGHTS + INSTRUMENTATION	7,5A
F8	FUSE OPTIONAL	20A
F9	FUSE: MANIPULATOR + CUTTER BELT ROTATION	10A
F10	FUSE WINDSHIELD WIPER + CABIN FAN	25A
F11	FUSE WEIGHING MACHINE + DASHBOARD SOCKET	10A
F12	FUSE FEED + 15 MOTOR	10A
F13	FUSE CAN-BUS INSTRUMENTS	7,5A
F14	FUSE DIPPED BEAM - MAIN BEAM - EMERGENCY INDICATOR LIGHTS	20A
F1 A	FUSE MAIN FEED	80 A
F2 A	FUSE: OIL FAN 1	30 A
F3 A	FUSE: OIL FAN 2	30 A
F4 A	FUSE: PLUGS 40 X2	80 A



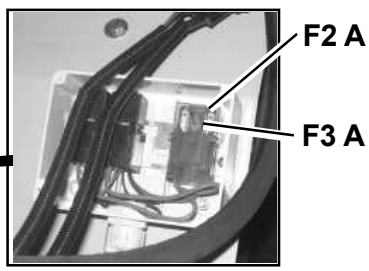


FIG. 12

FIG. 13

WARNING: the fuses for the radiator fans are situated on the right mudguard (Fig. 12).
WARNING: a general 80A fuse (F1A) is situated on the chassis (left hand side facing forward) near the suspension (Fig. 13). This fuse can cut out all the electrical circuits.

USE

The positions **RIGHT - LEFT - FRONT - REAR** refer to the normal direction of motion of the machine when being towed **(Fig. 14)**.

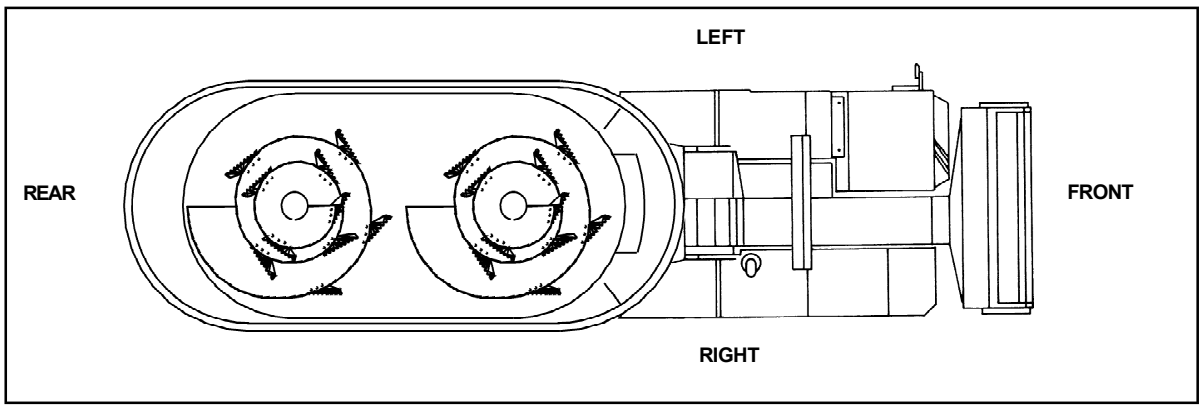


FIG. 14

PARKING

These are the positions the guards and highlighted components must be in when the machine is parked **(Fig. 15).**

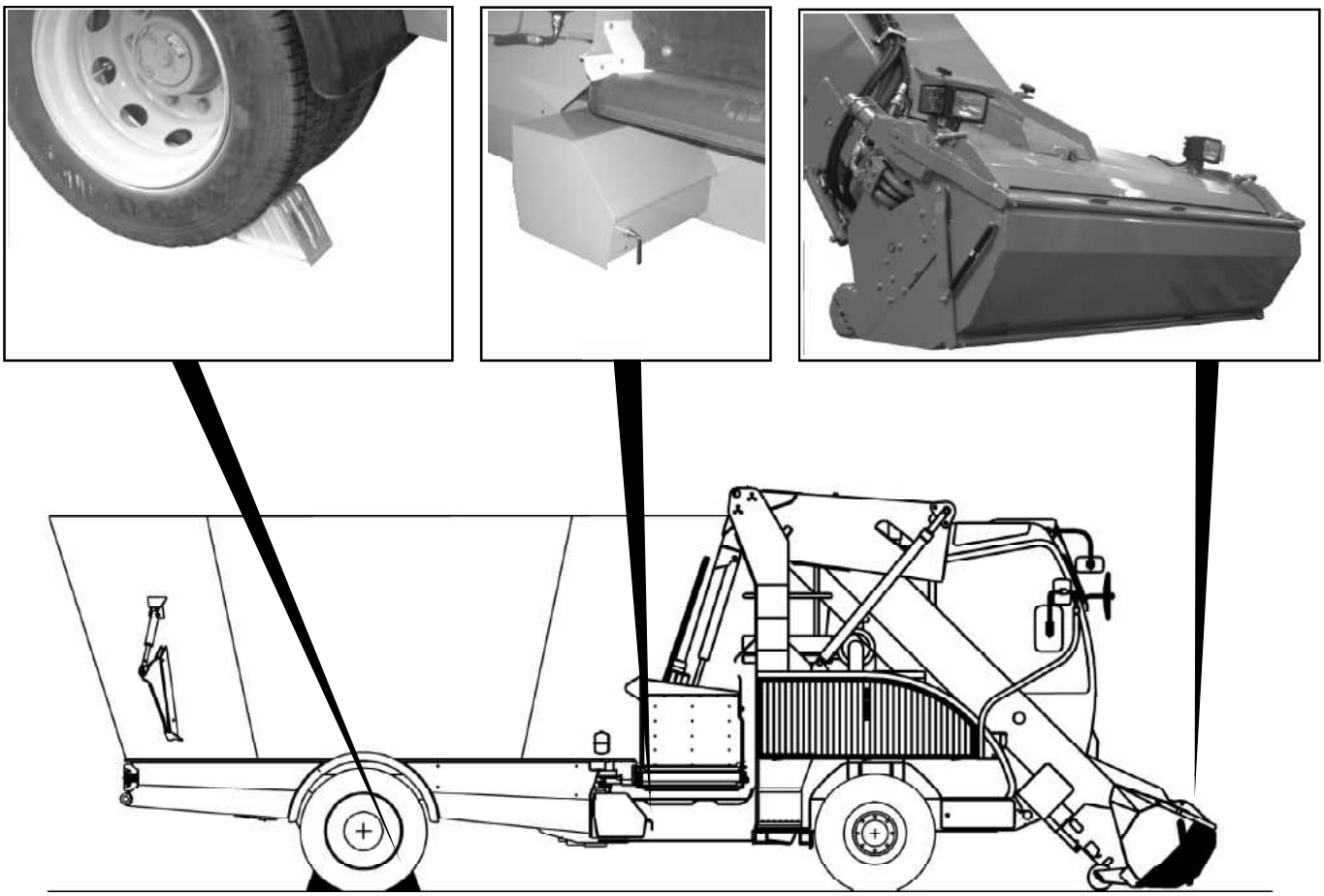
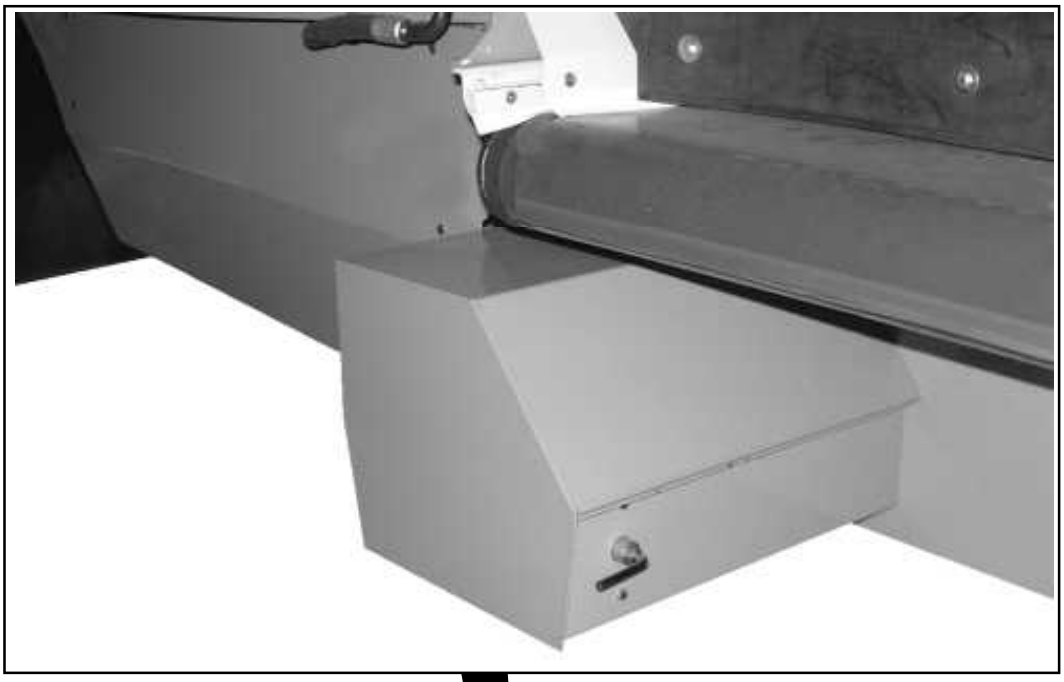


FIG. 15

MOVEMENT

These are the positions the guards and highlighted components must be in when the machine is moving **(Fig. 16).**



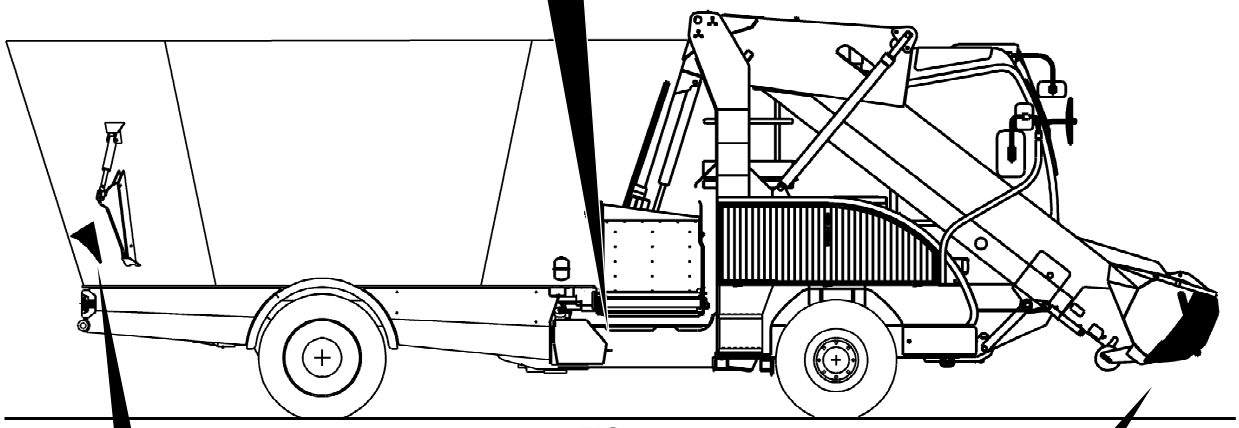
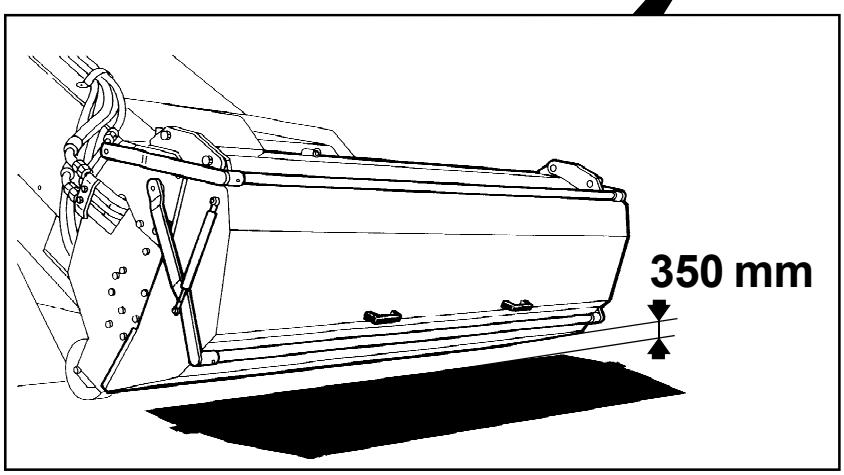


FIG. 16



IMPORTANT:

- Use the acoustic warning signal **(Pos. 21 - Fig. 10 - Pag. 31)** before beginning each manoeuvre.
- Always start up mixer rotation before loading material with the cutter.
- Material loading order depends exclusively on the final product type required.
  Normally dry materials such as hay and straw are loaded first, followed by chopped silage, then the powdered feed. When hay or long straw is loaded with pitchforks or loaders, the machine must be left running at least at 2200 rpm until the long fibres have been partially chopped. After this the other chopped silage can be added.
  Mixing can be completed setting the motor at 1800/2000 rpm.

MACHINE START-UP AND USE

Start-up and switch-off are performed using the ignition key only **(Pos. 22 - Fig. 10 - Pag. 31).** Keep the key in **HEAT** position for 15 seconds when the machine is started up in very cold conditions. To start, the accelerator lever must be moved to ¼ of its run, then the gear lever **(Pos. D - Fig. 3 - Pag. 22)** must be disengaged.
After start-up keep the cutter in rotation and wait until the motor temperature reaches at least 60°, and the hydraulic oil temperature reaches approximately 30°, before beginning any work operations. If the oil does not reach this temperature even during work operations, it must be replaced with lower viscosity oil.
This delay is necessary to permit hydraulic oil to reach the required temperature. During machine transfer and manoeuvres, the motor rpm must be maintained at a rate between 1300 and 2000. When moving the machine, release the parking brake (lever **B - Fig. 3 - Pag. 22**) and press the pedal very slowly **(Pos. C - Fig. 3 - Pag. 22)** (press forward for forward travel and back for reverse). Release the pedal in centre position to stop the machine.
N.B.= Always block the machine using the parking brake, or switch off the motor before leaving the machine.

GOOD ADVICE FOR CORRECT MIXER WAGON USE

To obtain good rations depends on a large number of factors, including the quality of the product, a good choice of truck, a good operator and the level of care taken in the various stages of the work. It is practically impossible to set down a procedure which should be followed to the letter which will give optimal results in all circumstances.
The same kind of raw materials stored or produced in different geographical areas or in a different way may be so different in their characteristics that they have to be treated quite differently when it comes to using them. We feel therefore that it is right to set forth our considerations on the various work stages and the behaviour of certain products once they have been put into the mixer, rather than laying down a series of operations which have to be carried out.
Given that the indications given below have produced good results in most cases, we feel we should highlight certain factors which could jeopardise the resulting final product:

- Poor quality raw materials due to poor harvesting or storage.
- Inefficient machine function due to poor maintenance
- Lack of care or incompetence on the part of the user

The Cuttermixer is only an instrument and so the operator must himself always be aware of the desired result to be obtained and use the machine efficiently with due regard to the particular nature of the various materials being used.
It follows that the advice given below is above all intended as a good starting point and general guideline from which it may be necessary to deviate as circumstances demand.

GENERAL INFORMATION

Since the main characteristic of these self-propelled vehicles is the capacity to load all the materials with the front de-silating cutter, it should be taken into consideration that chopping time will be reduced to a great extent because the fibre is partially chopped before it is introduced.
When all the materials are loaded with the de-silating cutter, a further advantage is gained because the surface of silo stored products remains uniform and compact, preventing fermentation and other disadvantages.
Generally these self-propelled machines reduce total processing time to a very great extent.
Below is a list of certain points to be kept in mind:
- Wherever it is absolutely certain that the quality or the weight of the round bales corresponds exactly with the quantity established in the recipe, **the complete bale can be introduced.** This machine features the capacity to break up bales in a short time.
- Where a particularly short length unifeed is required, sharp blade condition is of prime importance.
- The cutting capacity of this machine depends more on the speed than on the pressure.

- Adding water reduces the fibre volume preventing possible material loss from the upper part of the machine. However an increase in material toughness will increase fibre cutting time.
- On the other hand, this machine does not present any problems of material twisting around the auger.
- When mixing dry fodder, pay close attention to the rotation time. Over a certain mixing time the quality can deteriorate.
- Prolonged mixing or cutting time, or excessive rotation speed provokes product heating due to the large auger surface that is in contact with the material.
- After unloading, the auger must be rotated rapidly to unload the auger screw as far as possible.

WORKING PHASES

1) Move the machine towards the mass of material to be milled making sure that there is no one anywhere near the machine.

2) Before starting work on the pile of produce, turn off the machine, lift the milling cutter guard and check that the cylinder safety tap is in the working position (open) **(Fig 36- Page 50)**. Start the machine and lift the milling cutter **(D - Fig. 3 - Page 22)** to the top of the pile of material.
N.B. Beware of overhead electric wires.
IMPORTANT: Lever (D) engages and disengages the clutch; do not carry out these operations when the engine is running at high rpm.
Avoid repeatedly stopping and starting the mixer when the mixing bowl has a large load.

3) Move forward slowly in a straight line until the depth of milling required is reached and put on the hand brake **(B)**. It is absolutely essential that the wheels are perfectly aligned with the machine itself during this forward movement phase so that the milling-cutter does not bump into the sides of the pile of silage.

4) Start up the loading conveyor and the milling cutter rotation with the engine running at about 1500 Rpm and start de-silation adjusting the descent speed by using the appropriate lever **(Pos. E - Fig. 3 Page 22)**.
This adjustment of speed must be done in such a way as to allow the milling cutter to work at a pressure of 120 -130 bar which should be visible on the pressure gauge **(Fig. 10 - Page 31- Pos. 24)**.
Choose the direction of rotation of the milling cutter according to the type of material you are working on. Generally speaking it is better to choose upwards rotation (green light) for hard materials and downwards (red light) for soft materials.
N.B.: the conveyor must always move upwards (green light).
WARNING: wait until the drum of the cutter has topped rotating before changing direction.
After 20/30 cm accelerate the speed of the engine until you reach 2500 Rpm and so complete the descent. When the cutter reaches the bottom wait a few seconds until the conveyor is empty, then lower the rpm of the engine, stop the milling-cutter and the conveyor. If it is necessary to repeat the operation to complete the load go back to **point 3**.

5) When the milling process is complete move slowly away, but always in a straight line so that the machine does not bump into the sides of the pile of silage

6) After a few metres stop the machine and stop the cardan shaft and lower the milling cutter guard .
Start up the cardan again and allow it to rotate for a few minutes so as to complete mixing.

7) To distribute the product into the feeding troughs use the lever which opens the unloading door until the amount required is unloaded: then start up the unloading conveyor belt (on the side where unloading is required) and the mixed product will be unloaded into the feeding troughs.
N.B.: in order to obtain a homogenous mixture keep the engine running at at least 1800/2000 rpm.

8) When the unloading process is completed, close the door again by moving the lever in the opposite direction. Wait until the conveyor belt is completely empty and then stop it by using the appropriate lever.

9) At the end of the whole process the machine must be parked on a firm, preferably flat, surface, with the hand brake on, the milling cutter guards lowered and milling cutter lowered to the ground.

IMPORTANT:
Should the milling cutter get stuck the following procedure should be carried out:
- Release the milling cutter START lever
- Reduce the engine Rpm to 1500
- Raise the milling cutter by 20-30 cm
- Start up the milling cutter again and start work again
- If it is still stuck, change rotation direction for a few se-conds and release the START control.

IMPORTANT:
ALWAYS remember to change direction of rotation only when the milling cutter is stopped.)
Should it prove necessary to repeat this process more than twice it is advisable to stop work, move the machine away, turn off the engine and find out the cause of the malfunction. (foreign bodies, missing or blunt blades, milling cutter lowering speed too great etc.)
If the conveyor belt gets stuck during milling:
- Release the conveyor and milling cutter START button.
- Reduce the engine Rpm to 1500.
- Change direction of rotation for a few seconds.
- Change back direction of rotation and start work again.

IMPORTANT:
Before leaving the machine always make sure that the ignition keys have been removed and that the parking brake is on.

N.B. The flours can also be loaded through the mouth located ono the cutter arm **A (Fig. 17)**.

1. Rest the cutter arm on the floor;
2. Keep the motor running on 1150 revs with the cutter ON;
3. Open the door and load the flours;
4. Press the push-button to run the loading belt and repeat the operation until the desired weight is reached.

IMPORTANT:
The belt activation push-button was installed to keep the operator at a safe distance from the operating parts.
Do not tamper with the functionality of the push-button.

FIG. 17

MAINTENANCE

LOOK AFTER THE ENVIRONMENT

The air and the earth are precious and irreplaceable so by protecting the environment we protect ourselves.
It is very important therefore to know the local regulations for the correct disposal of used oil and coolant.
If you do not know the precise regulations covering their disposal, collect the used liquids in suitable containers which can be sealed until you have asked for clear direc-tions from your supplier who will know how to help you.
Avoid contact with the skin and prevent leakage of the liquid during topping up Make sure that any tubes or tanks that are damaged are repaired immediately. Make sure these tubes and tanks are adequately protected during any repair work involving the use of welding equipment sander, abrasive or other equipment which might cause damage. mola o altra attrezzatura, che potrebbe danneggiarli.

GENERAL RULES FOR MAINTENANCE

Do not climb on the machine. A ladder or steady stool must be used when changing oil or greasing points that are high up on the machine.

Before any service or maintenance operation:
- **The engine must be turned off.**
- **The ignition keys must be removed.**
- **Pull the hand-brake.**
- **The cab must be closed and locked and the battery switch must be turned off.**
- **Should the front wheels be under service, maintenance or repair block the rear wheels with wedges.**
- **Close the taps of the cylinders on the milling cutter arm whenever it is necessary to work on the front part of the machine.**

Monthly: check the wheel pressure monthly and if necessary inflate to the pressure value indicated on the rating plate or in the table on **page 43**.
Check that the bolts on the wheel hubs are tight.
When filling up with diesel always check that there are no deposits in the pre-filter. Should there be any, clean it by unscrewing the cap under the cup.
Each time: Before starting up the machine check that the radiator protection grilles are clean. Any bits of hay or straw must be removed while the engine is off so as to avoid any small pieces blocking up the radiator.
Immediately replace or repair any of the control and warning instruments (lights, pressure gauges, warning hooters or alarms). Should there be a broken fuse always find out the cause.
Should any oil leak or loss be noticed, find out the cause immediately, carry out any necessary repair or adjustment and restore the oil level.
Make sure that the cutting instruments (the blades on the central auger and the milling cutter.) are working efficiently.

a) If necessary the milling cutter blades can be sharpened: any broken blades should be replaced immediately so that the milling cutter is not put out of balance. Replace the rotary tiller blades when their profile is reduced by 4 mm compared to the spare one supplied with the machine **(see page 46)**.

b) Replace the screw knives if worn, to avoid extra force and greater wear of mechanical parts, as well as increased fuel consumption.

ALWAYS USE SUITABLE SAFETY EQUIPMENDURING ALL MAINTENANCE OPERATIONS

This chapter describes the operations necessary to avoid any break down and to keep the machine working to maximum efficiency. For any operation that is not described in this manual please consult your dealer.
The maintenance operations which regard any part strictly connected with the engine are described in the "**JOHN DEERE USER'S MANUAL**".

SUMMARY OF MAINTENANCE OPERATIONS

■ GREASE ▲ REPLACE ● CHECK

TIPE OF CHECK	Page	After 1st 10 hours	After 1st 100 hours	INTERVAL IN HOURS					
				4	8	50	200	500	800
- JOHN DEERE ENGINE	See relative instruction manual								
- BATTERY	51						●		
- CLEAN RADIATORS	52				●				
- COOLANT	48	●				●			
- AIR FILTER	54				●			▲	
- DOOR AND UNLOADING CONVEYOR	-						■		
- TRANSMISSION GEAR OIL	53	●	▲			●			▲
- MILLING-CUTTER GEAR OIL	58	●	▲			●			▲
- CLUTCH	57		●					●	
- CLUTCH SHAFT	53						■		
- HYDRAULIC CIRCUIT OIL	50	●				●			▲
- INTERNAL TANK FILTER	50		●				●		
- EXTERNAL FILTERS	50							▲	
- MILLING CUTTER PISTONS AND FULCRUM	-						■		
- CHAINS BEARINGS AND BUSH	-						■		
- CARDAN SHAFT	53					■			
- SUSPENSIONS	45	●						●	
- WHEEL NUTS	44	●	●						
- LOADING CONVEYOR TENSION	55	●			●				
- UNLOADING CONVEYOR TENSION	56	●							
- OIL LEAKS	-	●							
- WHEEL REDUCER OIL	-	●	This speed reducer is lubricated with hydraulic oil.						
- HYDRAULIC PIPING			Every week.						

MUST:

- Turn off the engine.
- Remove the ignition key from the dashboard.
- Pull the hand-brake.
- Lock the cabin, turn off and remove the battery switch **(A - Fig. 18)**.
- Use wedges to block the forward wheels when working on the rear wheels.
- Close the cylinder taps on the milling-cutter arm when working on the front part of the machine.

FIG. 18

FEATURES OF THE LUBRICANTS:

HYDRAULIC OIL **ORDER CODE: 98000000**	**AGIP OSO 46** **ESSO NUTO H 46** **MOBIL D T E 25** **SHELL TELLUS 46** **TOTAL AZZOLLA 46**
GEARBOX OIL (augers, milling cutter) **ORDER CODE: 98000001**	**AGIP BLASIA 220** **ESSO SPARTAN EP 220** **MOBILGEAR 630** **SHELL MACOMA R 220** **TOTAL CARTER EP 220**
BRAKE OIL **ORDER CODE: 98000012**	**DOT 4**
LUBRICATING GREASE **ORDER CODE: 98000002**	**AGIP MU 2**
COOLANT **JOHN DEERE ENGINE** **ORDER CODE: 98400553**	**ANTIFREEZE** **JOHN DEERE**

TYRE PRESSURE		
	Bar	**ORDER CODE**
305/70 R19,5 XZT	**8**	**99100102 FRONT**
275/70 R22,5 Twin	**8**	**99100140 BACK**

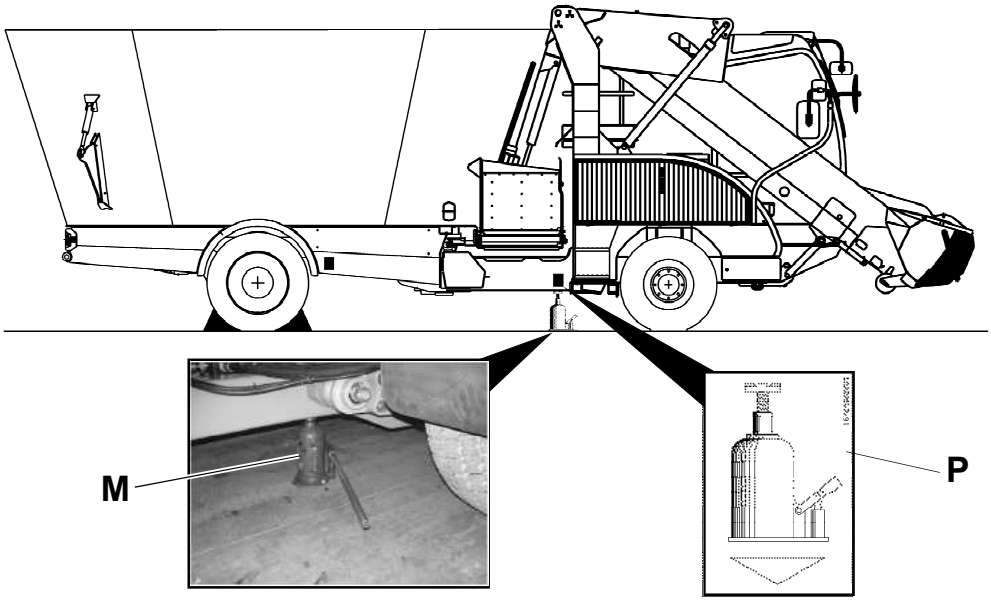
LUBRICANT QUANTITIES REQUIRED

AUGER MIXER GEARBOXAUGER MIXER GEARBOX	**Litri**	**15+15**
MILLING-CUTTER GEARBOX	**Litri**	**4**
CLUTCH GEARBOX	**Litri**	**2,5**
HYDRAULIC CIRCUIT	**Litri**	**150**
DELIVERY CHUTE GEARBOX	**Litri**	**10**
RADIATOR COOLANT	**Litri**	**30**
BRAKE LIQUID	**Litri**	**0,6**

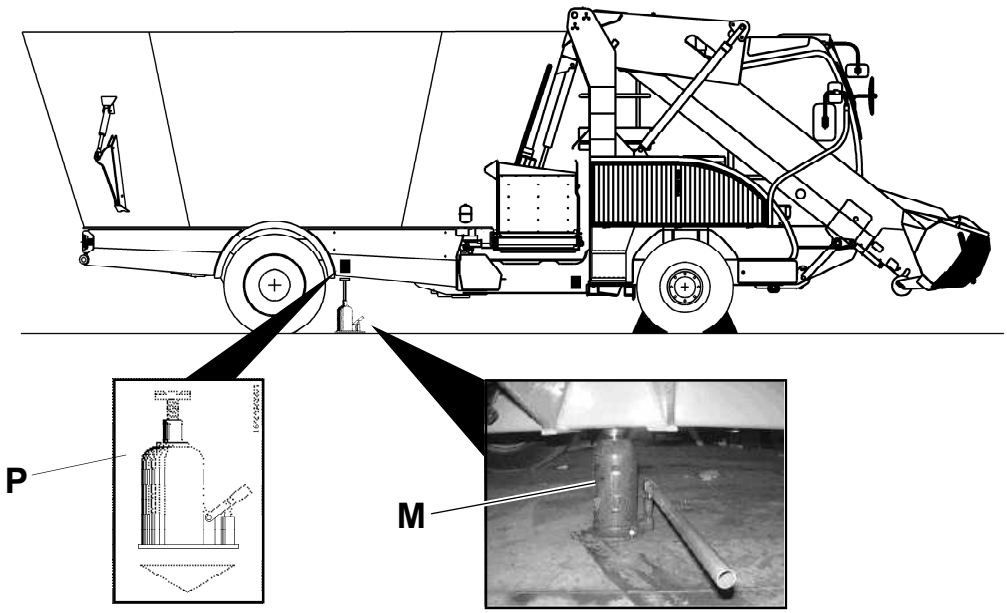
ENGINE OIL (ORDER CODE: 98000004)	(See relative instruction manual)	**Litri**	**14**

WHEEL REPLACEMENT

Before starting any operations always check that the cutter is positioned at least 50 cm from ground level.



The raising jack **(M)** must have a minimum capacity of 10 T, and must be positioned under the two centre beams of the frame. This is marked with an identification symbol **(P)**.



1. Switch off the motor and place the wedges on the side opposite to the side to be raised;
2. Lock the cabin door and remove the key, keeping it in your pocket for safety reasons;
3. Place the jack under the beam and raise the wheel in question;
4. Unscrew the screws and replace the wheel;
5. Tighten the bolts again, keeping in mind that the torque wrench setting for the front wheels is 340 Nm, and 630 Nm for the back wheels.

ADJUSTING THE SUSPENSION FRONT

2 operators are needed for this

When the front suspensions need adjusting or resetting after the recommended service period, proceed as follows:

1. Park the machine on a flat surface and turn the engine off;
2. Unscrew the male caps “A” from the valve “B” (Fig. 19) or the union “E” (Fig. 19), the holed screw “C” from the pipes “D” (Fig.19), put the capped stud bolt “F” to one side (Fig. 19), which will be remounted when setting is complete.
3. Connect the pipes “D” (Fig. 19/A) to the valves “B” and the union “E” (Fig. 19/A) using the holed screws “C”.
4. Remove the screw and safety washer “H” from the front valves “B” (Fig. 19/A) and open; the suspensions release and the car lowers.
5. One operator turns the engine on and gives max. acceleration.
6. Take all the suspensions to their top position (car high); the other operator closes the front valves “B” (Fig. 19/A).
7. Turn the engine off and adjust the rating (Fig. 20) by opening and closing the valves “B” (Fig. 19/A).
8. When it is correctly rated, close the front valves “B” (Fig. 19/A).
9. Make a test run. If the setting is correct, replace the screws and safety washers “H” on the valves “B” (Fig. 19/A). (If it is not correct, repeat the operations at points 4-5-6-7-8).
10. Unscrew the holed screws “C” from the valves “B” and remount them on the pipes “D” on the capped stud bolts “F”.

FRONT SUSPENSION VALVE

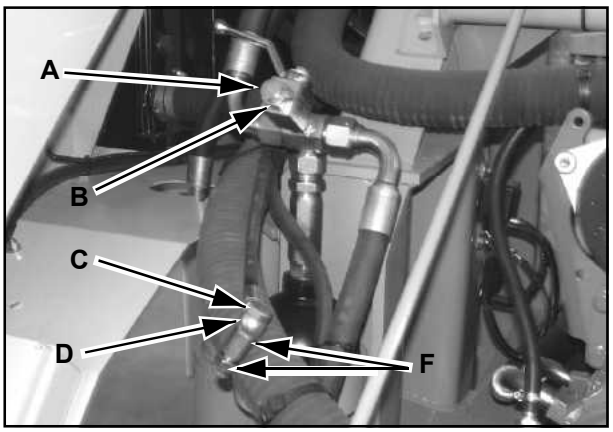


FIG. 19

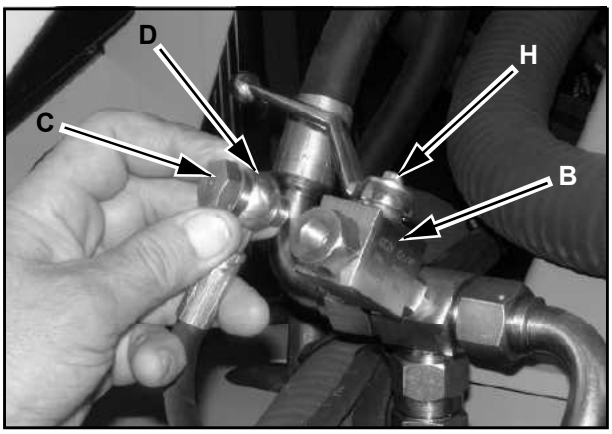


FIG. 19/A

FRONT SUSPENSION

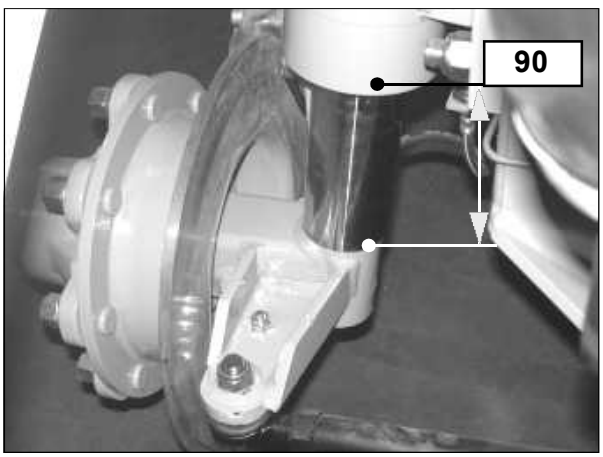


FIG. 20

N.B:

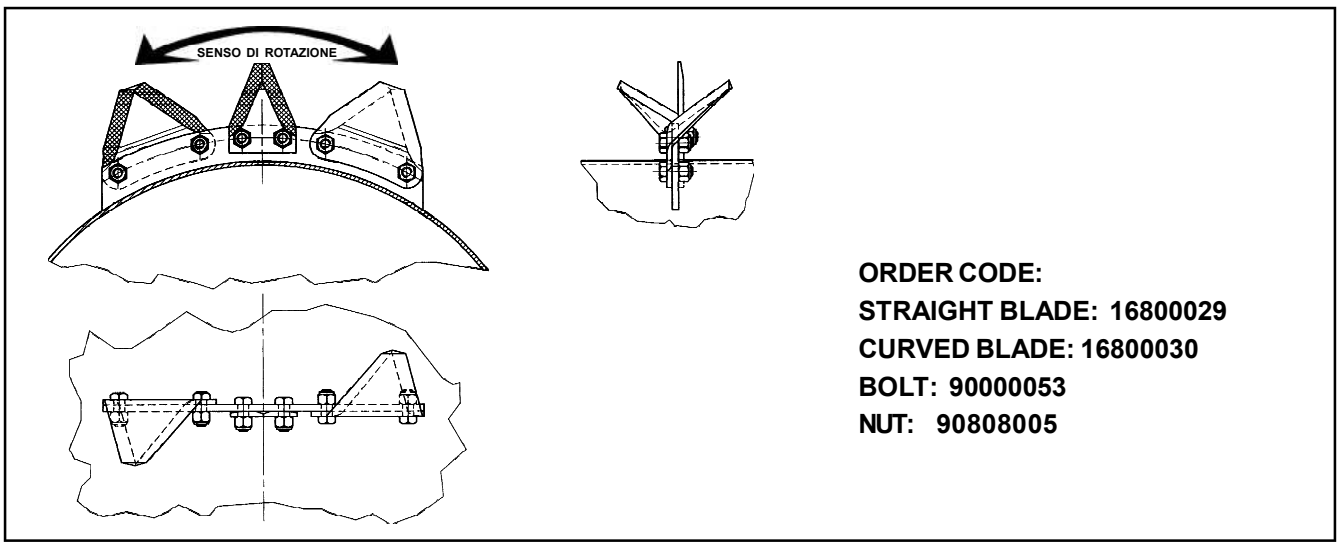
a) A suspension control check must be performed after the first 8 hours of machine use, and then every 400 working hours. **(See table on page 42)**.

b) When the suspension checks are completed make sure the machine is parallel to the reference surface and that all settings are correct.

c) Check the fixing bolts on the front and back wheels according to the table on **page 42**. The torque wrench setting must be 340 Nm for the front wheel bolts and 630 Nm for the back wheel bolts.

REPLACEMENT OF THE MILLING CUTTER BLADES

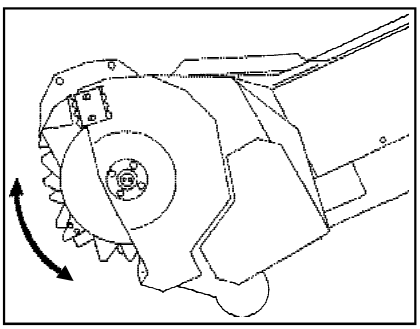
1) Raise the milling cutter to shoulder level (to make it easier to work)
2) Close the descent locking valve which is situated on the left cylinder of the milling cutter arm.
3) Replace the blades **(Fig. 21)**.
4) Always remove and replace one blade at a time together with its bolts and make sure that the position and orientation are the same as that replaced **(Fig. 22)**.
ALWAYS remember to reopen the locking valve at the end of the operation.



ORDER CODE:
STRAIGHT BLADE: 16800029
CURVED BLADE: 16800030
BOLT: 90000053
NUT: 90808005

FIG. 21

MILLING CUTTER



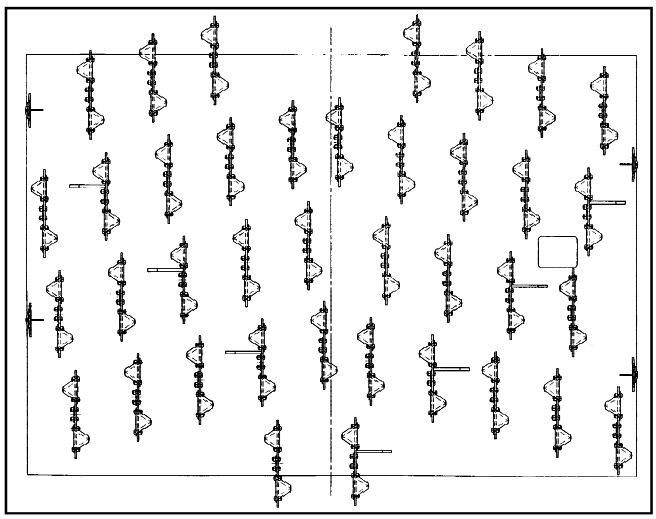


FIG. 22

SCREW CONVEYORS PHASE

ATTENTION: if you have to remove the screw conveyors in order to carry some maintenance operations out, or you have to idle rotate the gear boxes (one gear box at a time) detached from the cardan joint; remember to phase the screw conveyors as per drawing **(Fig.23)** by manually rotating the gear boxes (one gear box at a time) up to reach the proper position.
After reaching the proper positions, it is possible to connect the two gear boxes of the screw conveyors; if you do not correctly phase as per drawing, you may compromise the mixing and the mechanical members may suffer a greater stress.

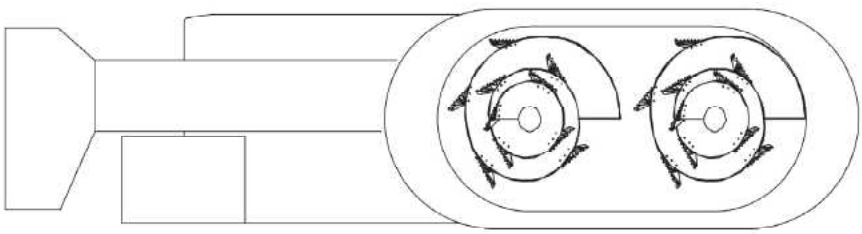
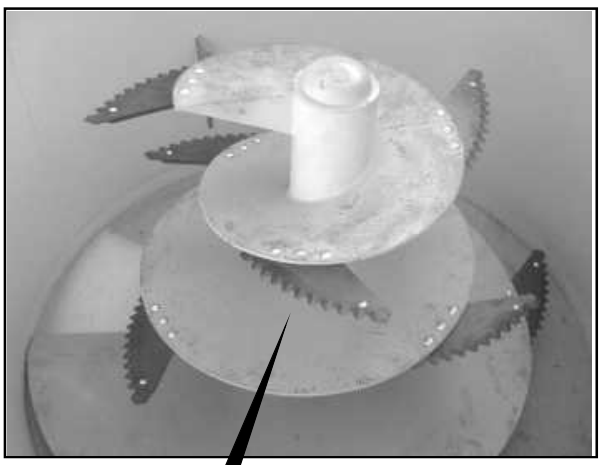
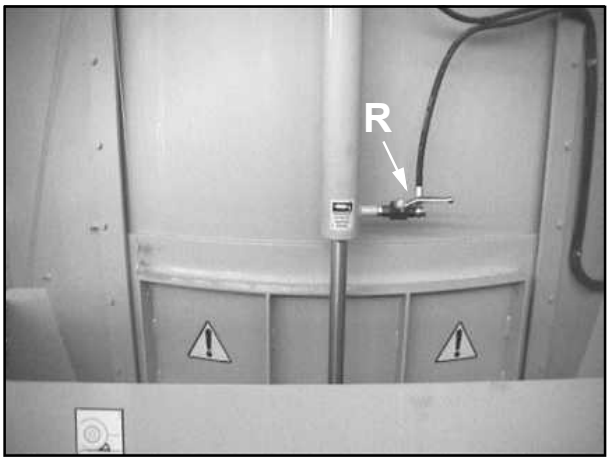


FIG. 23

REPLACEMENT OR ROTATION OF THE AUGER BLADES

This is an operation which requires particular care.
It is advisable to have two people to carry out this operation, one inside the body and one outside to supply the first with the blades and bolts.
Before getting into the mixing bowl, open the unloading door, turn off the engine, disengage the clutch, lock the cabin, take the keys with you (keep them in your pocket), cock oil **R (Fig. 24)** closed.
Switch off and remove the battery switch.





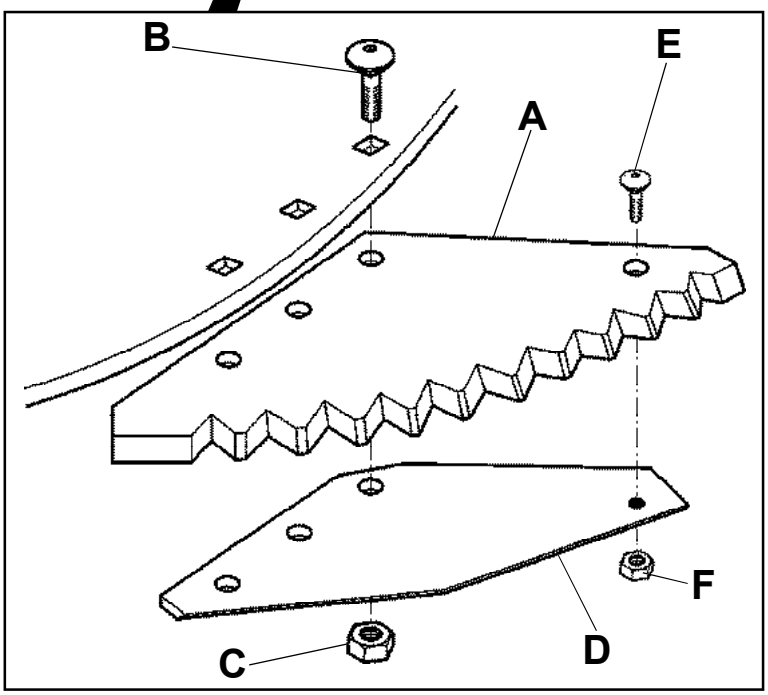


FIG. 25

ORDER CODE:

BLADE (A - Fig. 25): 16800040

FIXING BOLT (B - Fig. 25): 16121183

FIXING NUT (C - Fig. 25): 90808009

BLADE UNDER PLATE (D - Fig. 25): 16140201

FIXING BOLT (E - Fig. 25): 16120252

FIXING NUT (F - Fig. 25): 90809006

JOHN DEERE ENGINE OIL LEVEL

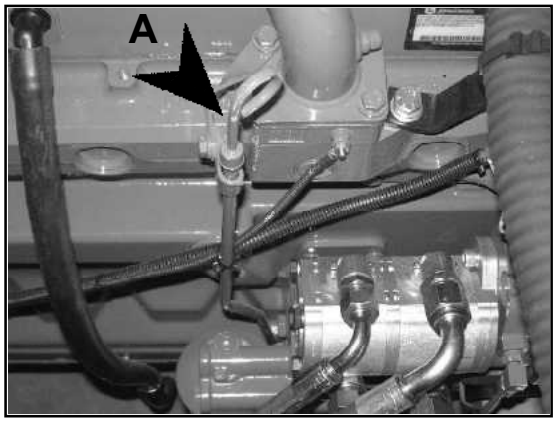


FIG. 26

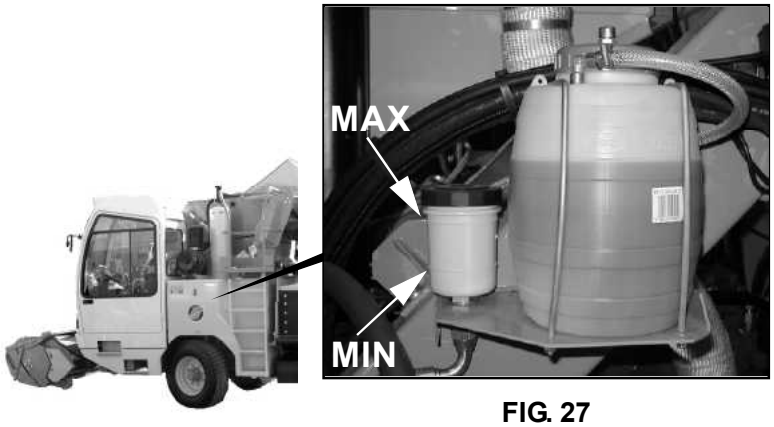


FIG. 27

A = Engine oil level dipstick **(Fig 26)** (see also the JOHN DEERE engine manual).

BRAKE FLUID

Check the brake fluid level periodically **(Fig. 27)**.

COOLANT

The radiator plug **(B - Fig. 28)** is to be used only when re-filling the cooling system when it is completely empty and to check the water level if there is a malfunction in the system.
Check the system, first when the engine is cold and then when it is hot, by making sure that the water level rises as the temperature of the engine increases.
Under normal conditions water must be added only through the tank **(C - Fig. 29)** when the engine is cold.

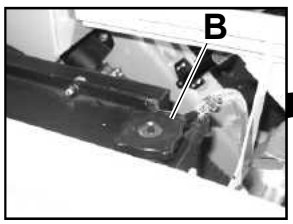


FIG. 28

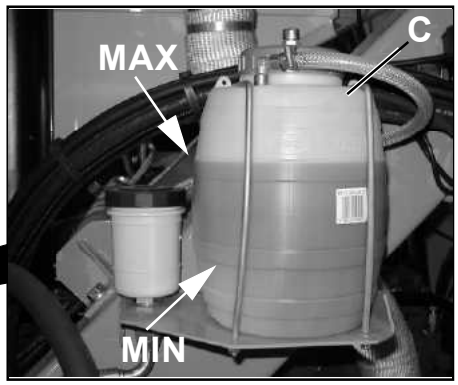


FIG. 29

FUEL PRE-FILTER

Check for water or deposit in the cup **(A - Fig. 30)** of the pre-filter at regular intervals and clean out if necessary (see also JOHN DEERE engine manual)

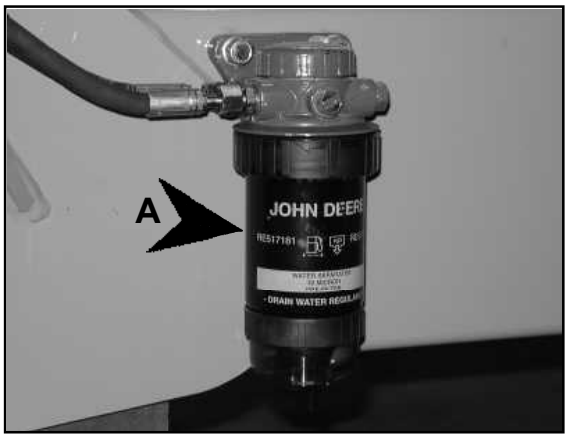


FIG. 30

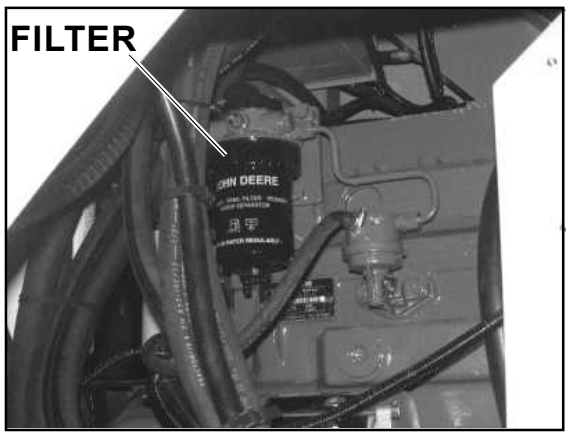


FIG. 31

DIESEL TANK

The diesel tank **(B - Fig. 32)** is situated on the left hand side of the machine, behind the cabin.

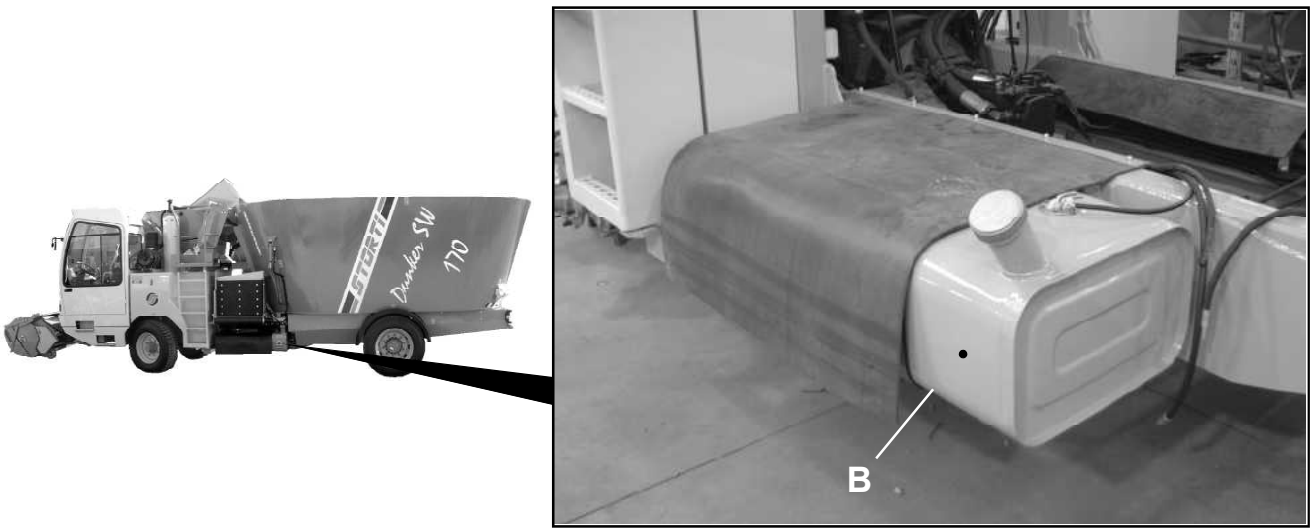


FIG. 32

ATTENTION:
Diesel oil is extremely inflammable, therefore it is forbidden to approach the oil tank with any type of naked flame or source of heat.

HYDRAULIC OIL TANK AND FILTERS

A hydraulic oil filter **(A - Fig. 33)** is fitted in the tank.
This must be cleaned before the needle on the pressure gauge situated on top of it reaches 1.5 bar.
Remove cover **(B)** and take out the internal cartridge **(ORDER CODE 99012007)** wash it with a brush and diesel and then carefully blow it with compressed air.
Replace it if it is damaged.
Two external filters are also fitted and these can be reached through the appropriate door situated on the inside of the unloading hopper **(C - Fig. 34) (D1: forward movement pump filter and D2: milling-cutter pump - Fig. 36)**.
Periodically check the oil level from the inspection hole **(D - Fig. 34)** if some more oil is needed add it from the tank filler cap **(E - Fig. 33)**.
When filling the tank take great care not to spill oil on the ground as this pollutes the environment.

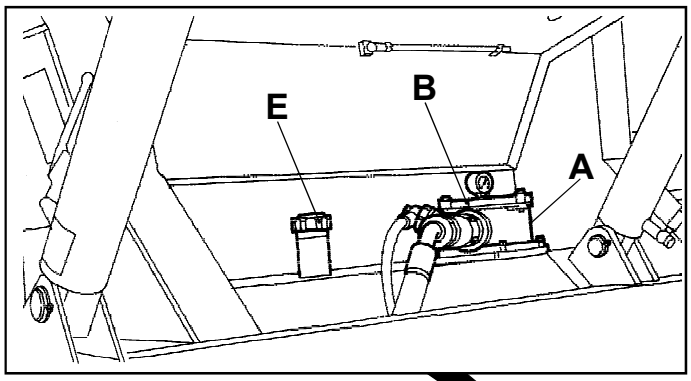


FIG. 33

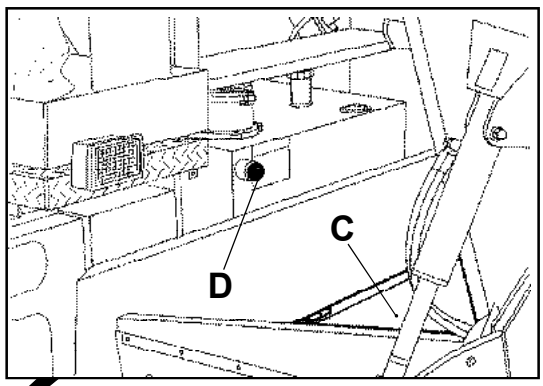


FIG. 34

HYDRAULIC OIL DISCHARGE.

- Remember to provide a recipient to collect the waste oil.
- Remove the cap **E Fig. 33** and the discharge cap **F Fig. 35** (from the discharge hose) and let the oil flow out.
- Take care to eliminate the oil according to current local regulations and standards.
- Replace the cap **F Fig. 35** on the hose.
- Start filling the tank with new oil from the platform above according to table **page 42**.
- When the oil reaches the indicator level **D Fig. 34** filling is completed.
- Replace cap **E Fig. 33**.

N.B. During this operation make sure all cylinders are closed (cutters lowered, hatch open…) otherwise waste oil will remain in the circuit and will contaminate the newly replaced oil.

FIG. 35

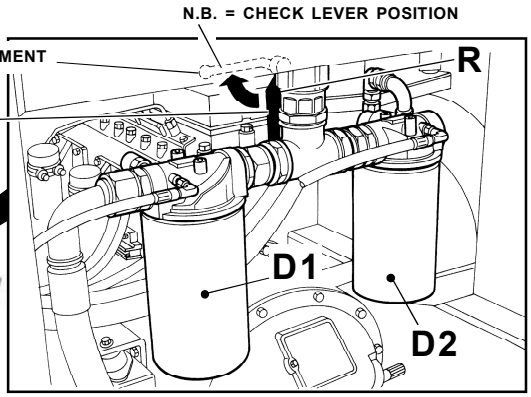


FIG. 36

The cartridges on these filters cannot be cleaned and must be replaced when light **(E Fig. 37)** remains on even when the machine is hot or else when their respective vacuum gauges **(F-G Fig. 37)** show more than 0.3 bar.
Close tap **(R - Fig. 36 Page 50)** remove cartridges **(D1-D2 - Fig. 36 - Page 50)** by unscrewing them.
Fill the new cartridges **(ORDER CODE: 99007302)** completely with oil, and put a little on the seal on the lid.
Then screw them into position. Open tap **(R)**.

N.B.= If the indicator light (Part. 5 on the dashboard page 31) comes on and the vacuum gauges (Part. 23 and 26 on the dashboard page 31) do not show anything or vice versa, please contact your dealer, there could be some technical problem.

WARNING!! CHECK THE POSITION OF LEVER (R) BEFORE STARTING WORK. IT MUST BE IN THE OPEN POSITION.

IF THIS IS FORGOTTEN IN THE CLOSED POSITION THEN THE PUMPS WILL BE IRREPARABLY DAMAGED.

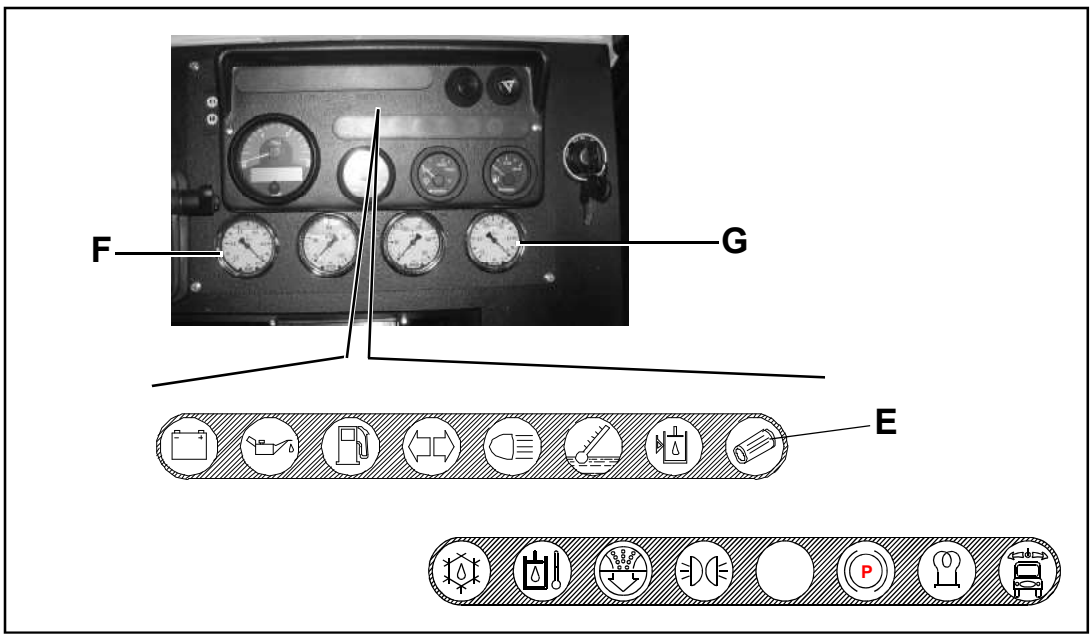


FIG. 37

BATTERY

A = Battery **(ORDER CODE: 99453004)**
B = Electric circuit switch **(ORDER CODE: 99400382)**

Check the battery fluid level every 30÷40 days **(A - Fig. 38)** and add extra if necessary.
Check that the switch **(B - Fig. 38)** is working well too.

FIG. 38

CLEANING THE GRILLES AND THE RADIATOR

The grilles **(D)** and the radiator **(E-F - Fig. 39)** must be cleaned with compressed air from the inside and outside. If the compressed air is not enough to clean them then a water jet can be used.
If a water jet cleaner is used then always work from the outside taking car not to bend the cooling blades.
If necessary reduce the pressure of the jet and move the jet further away from the radiator.
N.B. = This procedure must be carried out only when the engine is off.
Wait until the radiators are dry before starting work operations again.

FIG. 39

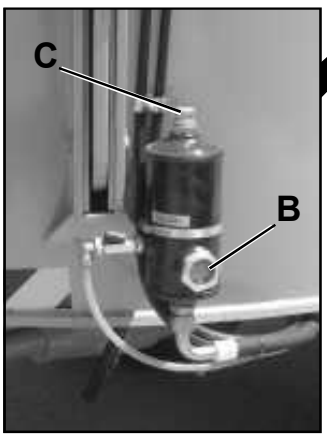


FIG. 40

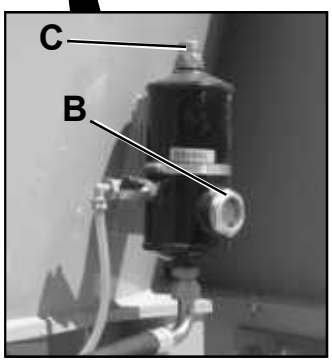


FIG. 40A

AUGER GEARBOX OIL LEVEL

Check this oil level through the spyholes **(B - Fig. 40 - 40A)** on the transmission gearbox. When you need to replace or top up this oil take off top **(C)** and fill as necessary). (See chapter REDUCTION GEAR OIL LOADING).

GREASING THE CARDAN UNIVERSAL SPIDER JOINT

Disengage the clutch so that you can rotate the cardan shaft universal spider joint so that the greasing nipples can be reached **(Fig. 41).**

CHECKING THE OIL LEVEL IN THE ENGINE GEARBOX

The oil level **(H)** must be checked when the machine is cold. Check the level through the top situated facing forward on the sump **(Fig. 41- View D - Pos. E)**. The filling top is the part in **position F** whilst the emptying top is in **position G (Fig. 41)**.

GREASING THE CLUTCH SHAFT A

Should the shaft be a little stiff, use a little grease several times, both with the clutch engaged and disengaged **(Fig. 41 - Pos. A)**.

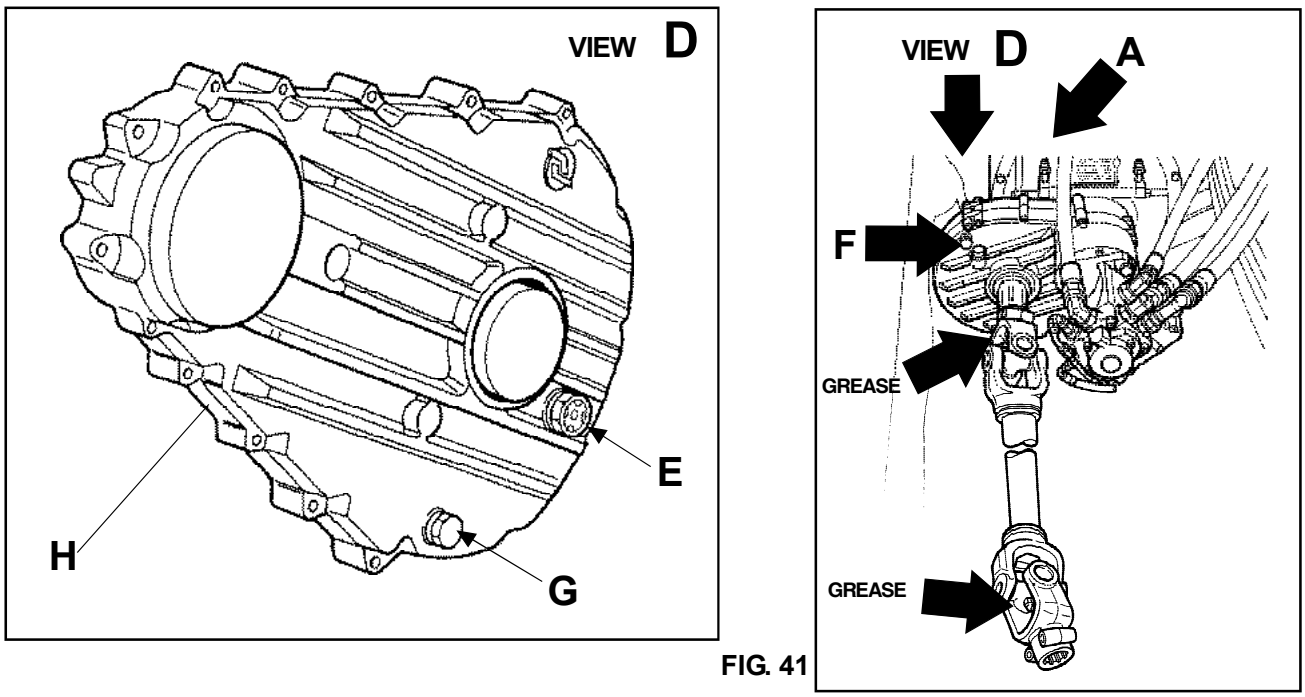


FIG. 41

AIR FILTER

It is advisable to use the table on **page 42** as a guide for when to check and replace this filter.
A blockage warning light can be found on the dashboard **(Pos. 2 - Pag. 31 - Fig. 10)** which will indicate when the filter needs to be checked.
When the warning light comes on the air filter must be taken apart and everything must be cleaned with compressed air (the safety cartridge must also be cleaned). Then assemble everything together again and check that the warning light goes out.
If the light comes on again after cleaning the filter then both cartridges must be replaced.

ORDER CODE:
SAFETY CARTRIDGE: 99011969
INTERNAL CARTRIDGE: 99011968

AIR INTAKE TUBES

Check that the intake flexitubes **(A - Fig. 42)**, both internal and external, have no breaks or cracks in them. If they do then they must be replaced immediately to avoid damaging the engine.

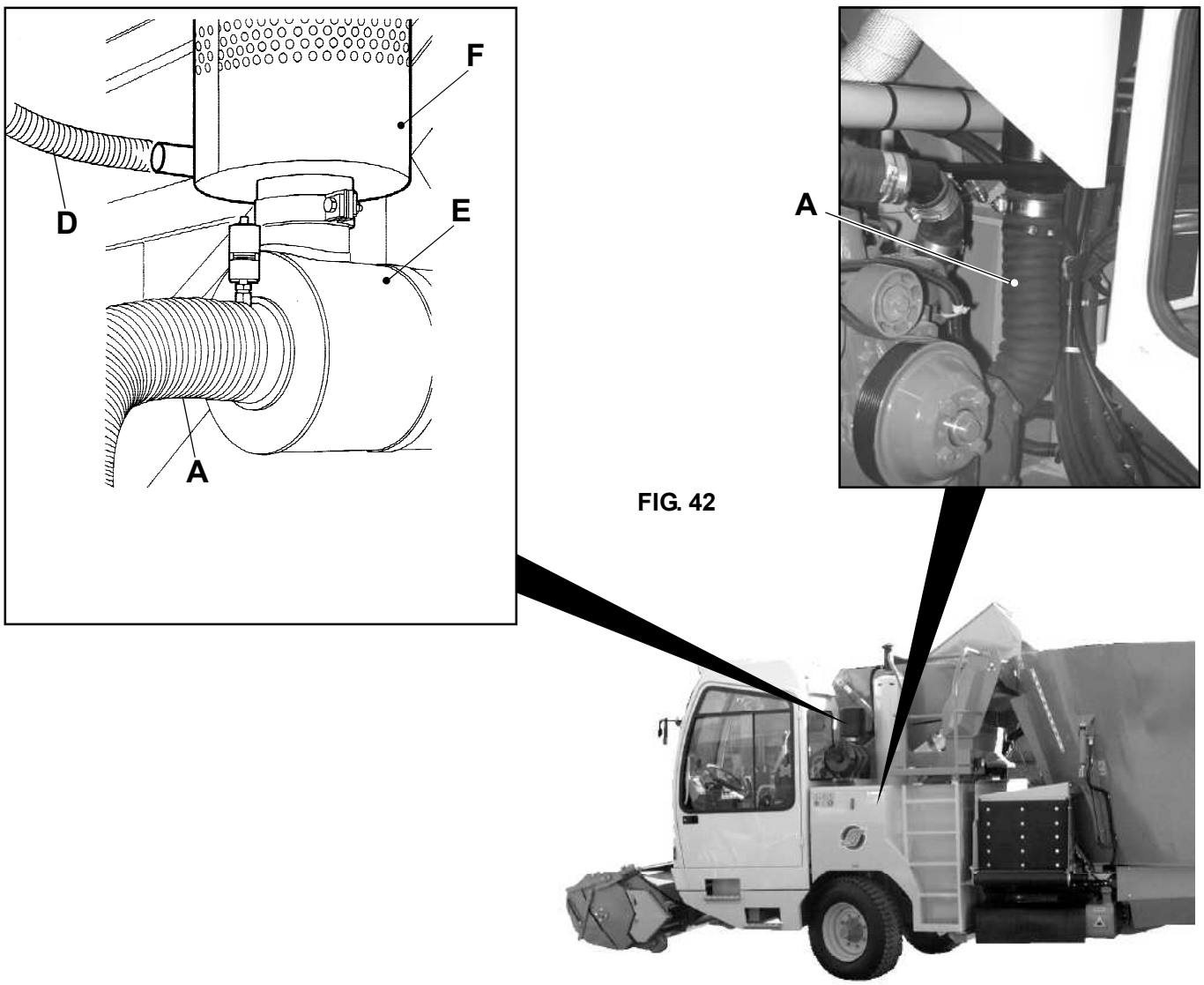


FIG. 42

The loading conveyor is held at the correct tension by the springs **(Part. A - Fig. 43)** situated on the lower part of the milling-cutter arm.

To center the loading belt please do the following:

1) Adjust conveyor springs.
2) Center the belt in the conveyor.
3) Check springs tensioning (distance of 0,2 - 0,5 mm from spiral to spiral).

N.B. = If the distance is not repeat the procedure starting from point 1.
N.B. = After each adjustment run the conveyor in the loading direction (green light) for at least 5 minutes and high rpm and then check that it is centred.

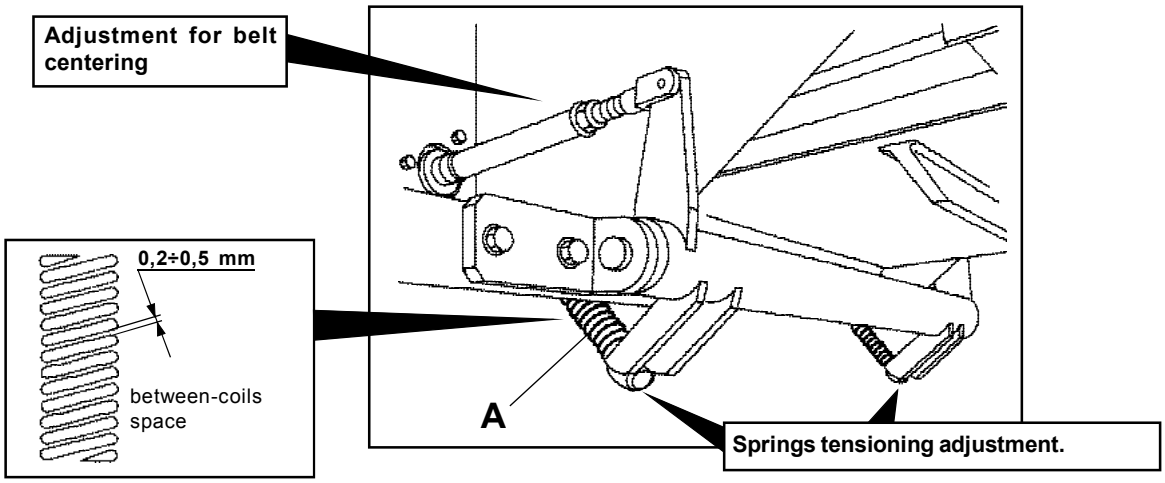


FIG. 43

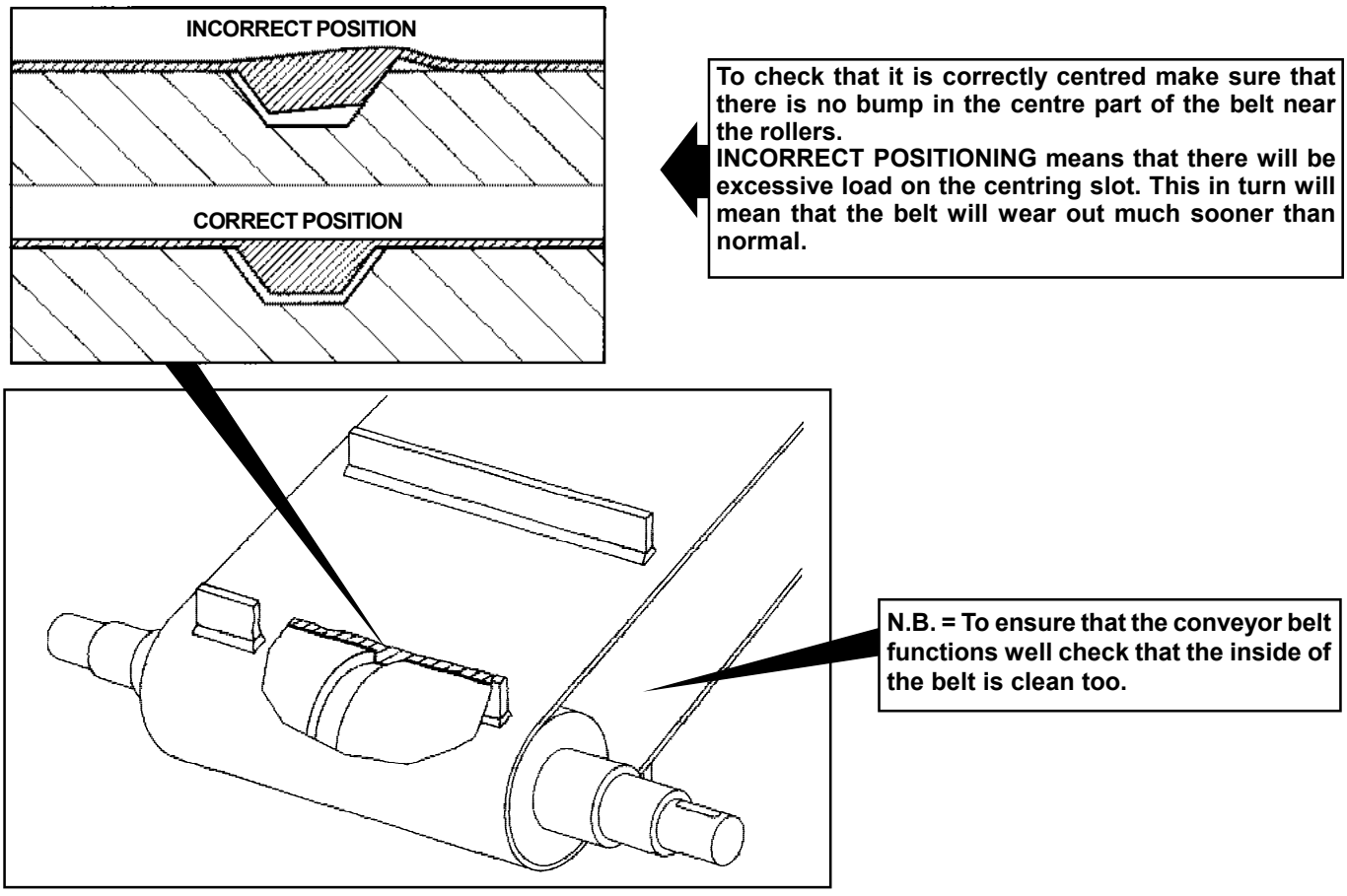


FIG. 44

UNLOADING CONVEYOR BELT TENSION

The unloading conveyor is held at the correct tension by the springs **(Part A - Fig. 45)** situated at the front of the belt. The tension must be adjusted **when the belt is stopped** checking that the distance between each spiral is between 0.5 and 1 mm

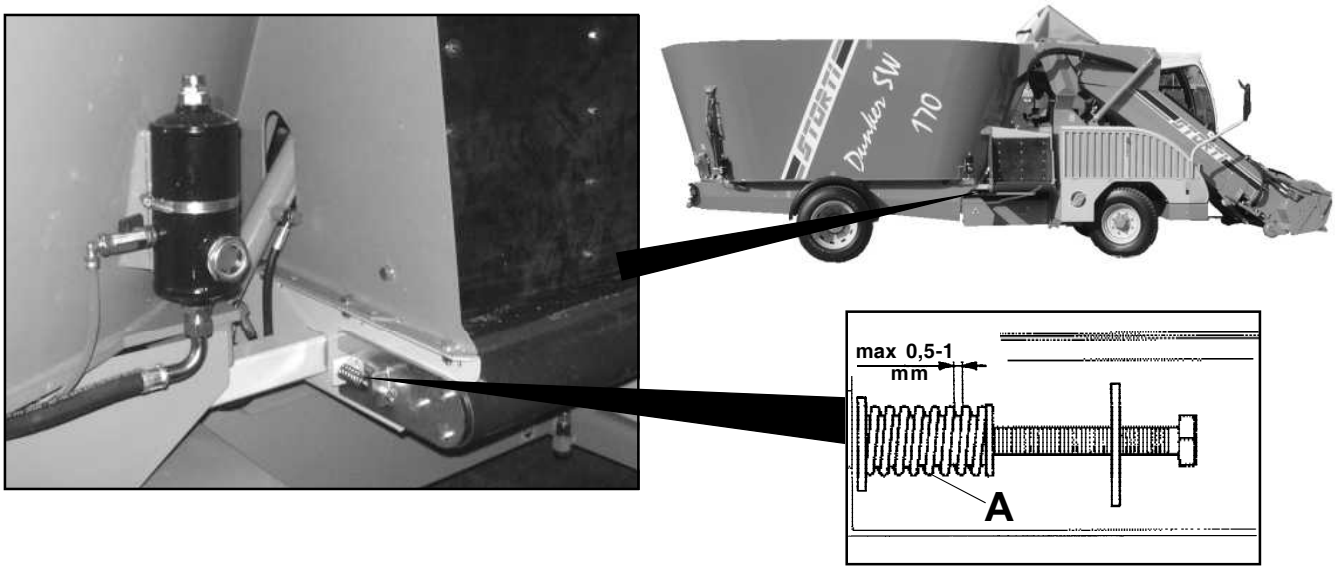
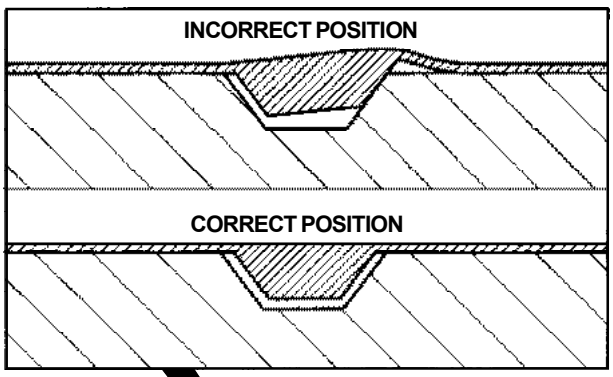
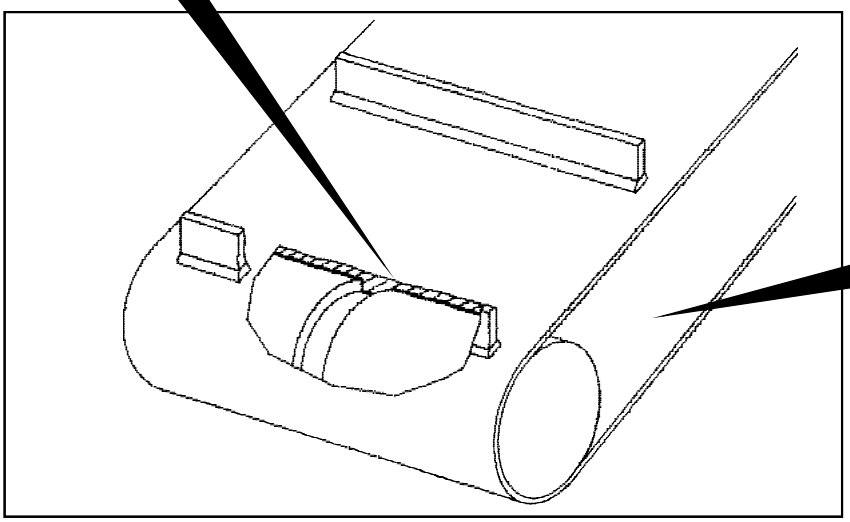


FIG. 45



To check that it is correctly centred make sure that there is no bump in the centre part of the belt near the rollers.
INCORRECT POSITIONING means that there will be excessive load on the centring slot. This in turn will mean that the belt will wear out much sooner than normal.

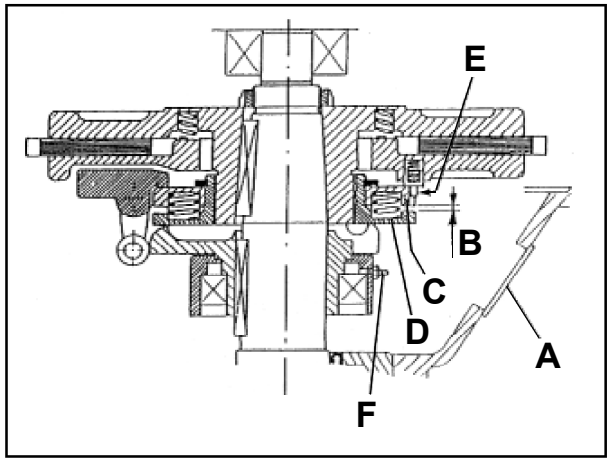


N.B. = To ensure that the conveyor belt functions well check that the inside of the belt is clean too.

FIG. 46

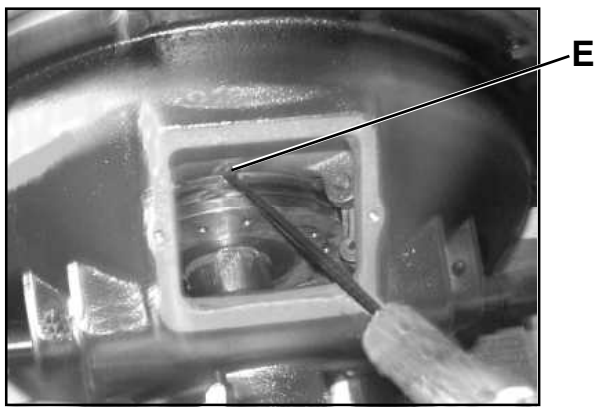
HOW TO ADJUST THE CLUTCH

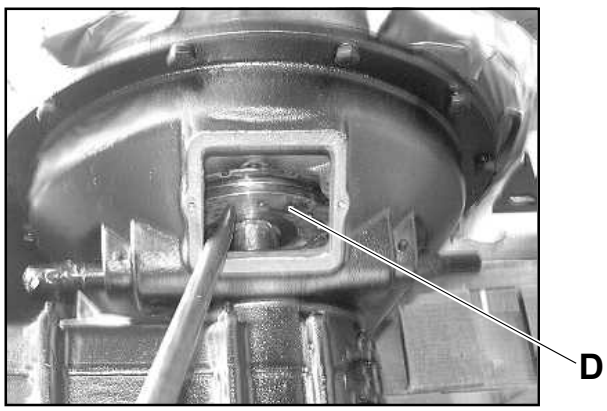
1) Gear control checks are to be performed with the gear engaged.
2) Remove the cover **(A)** from the upper part of the cone.



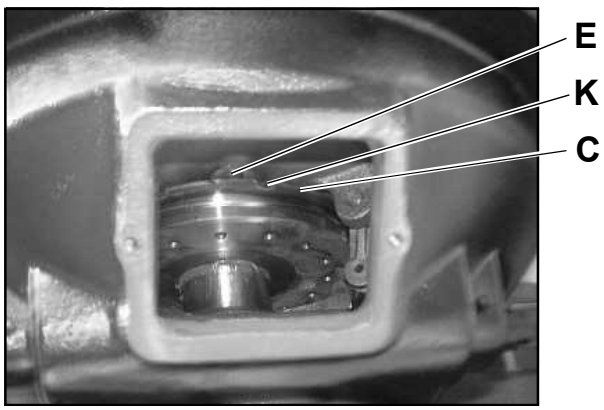
3) Check the distance between **(B)** and the two rings **(C)** and **(D)**.
This space must measure between 0,3 and 1 mm.
N.B.: When the gear is engaged, the space **"B"** must be reduced by approximately 1mm without the two components making contact with each other.
Wherever the space is equal or over 1 mm, it must be reset at the initial value of 0,3mm using the following procedure:

3a) Disengage the gear by pushing the block system **(E)** inward using a screwdriver;





3b) Turn the ring **(D)** in a clockwise direction for a ¼ or ½ turn using a lever;



3c) Make sure that the block system **(E)** is inserted in one of the notched **(K)** of ring **(C)** when work is completed;

3d) Engage the gear and check that the space **(B)** is not smaller than 0,3 mm;

3e) Grease regularly with a little lubricant from the greaser **(F)** When greasing, make sure that no excess grease penetrates the disks.

CHECK THE MILLING-CUTTER GEARBOX OIL LEVEL

To check the oil level, raise the milling-cutter about 1.5 m and remove the level plug **(Fig. 48)**.
If no oil comes out then top up through hole **(A - Fig. 47)**.

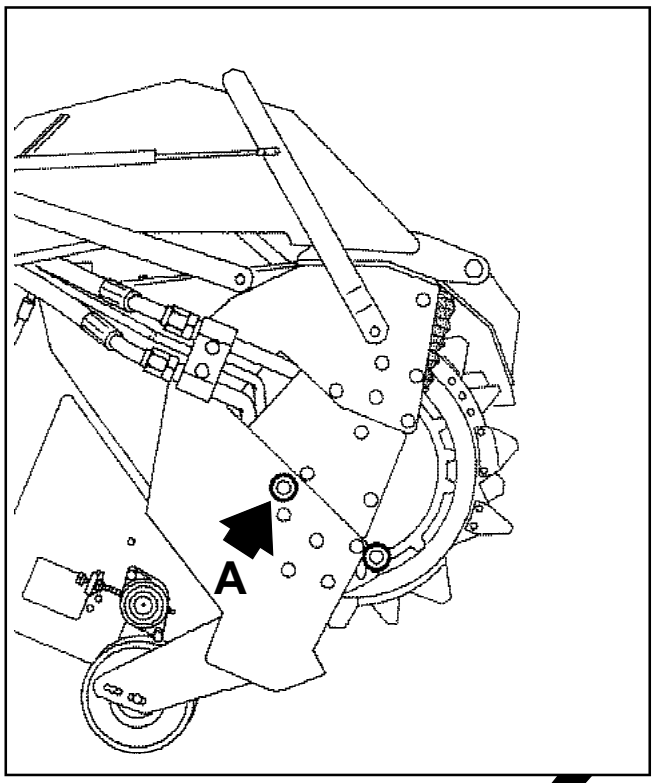


FIG. 47

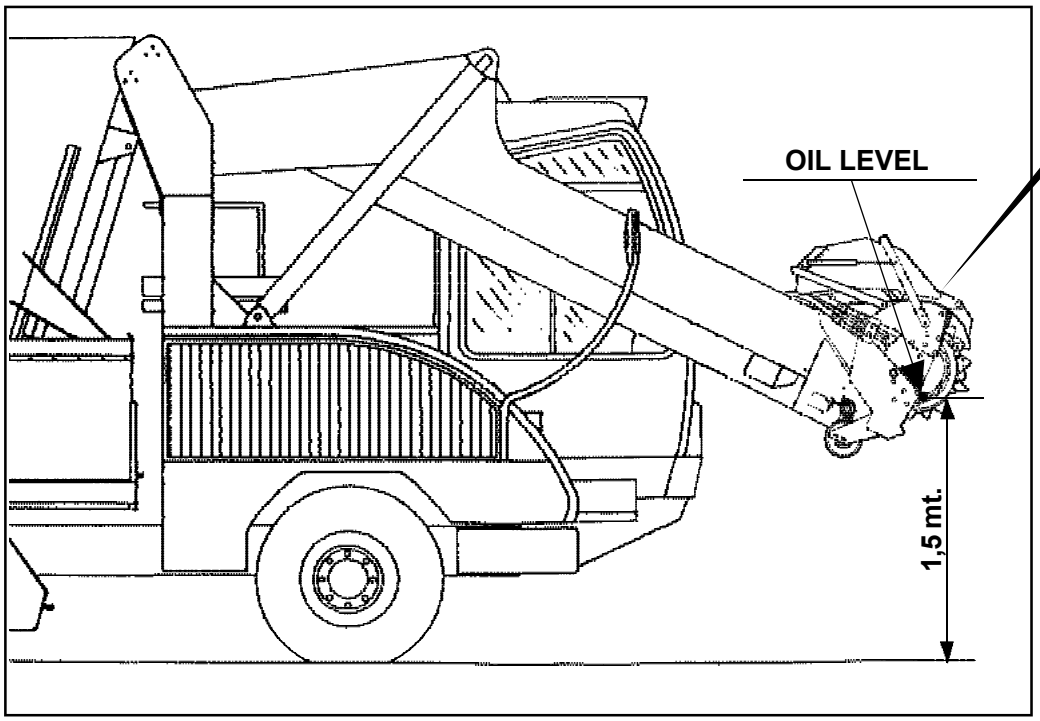


FIG. 48

BELT REPLACEMENT

To replace the engine belt, loosen screw **A**, move the sleeve **B** toward the pump and, while applying pressure with a lever **C** on a tensioning device, withdraw the belt **(Fig. 49)**.

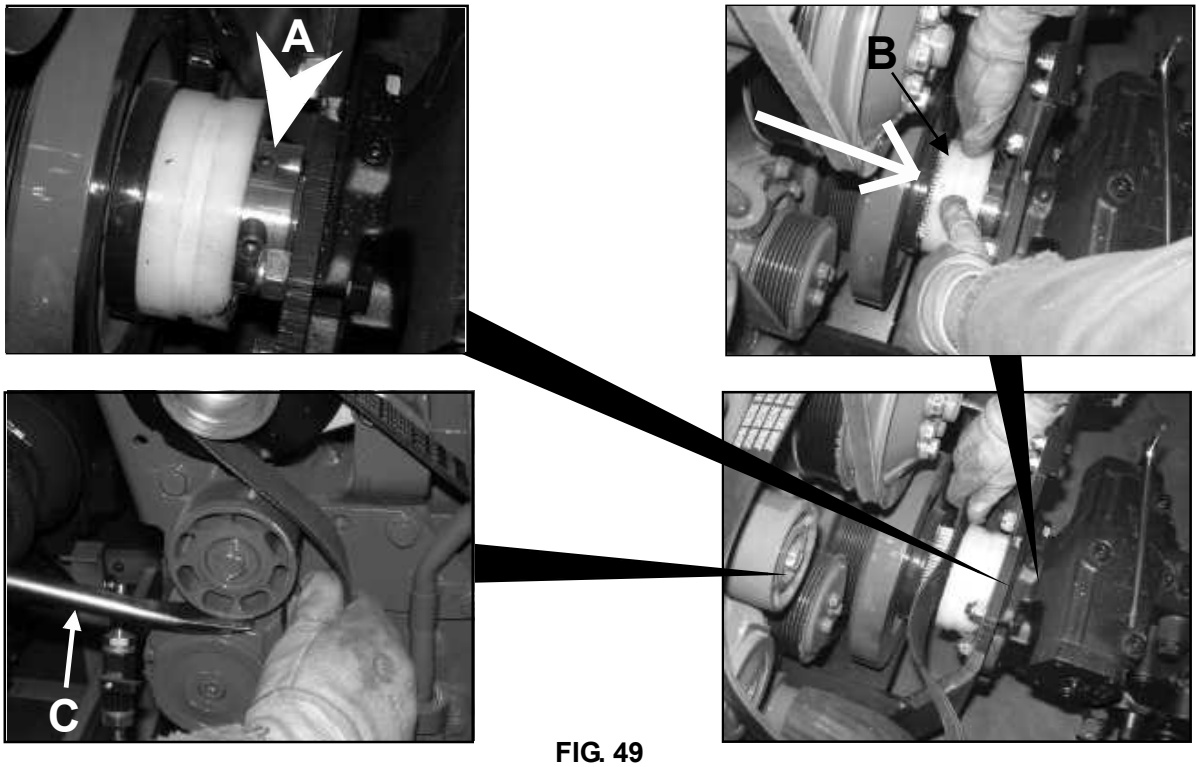


FIG. 49

INSTRUCTIONS FOR REPLACING THE CONDITIONER COMPRESSOR BELT

Procedure for replacing the belt of the conditioner compressor: loosen nuts **A** and **B**, lower the compressor sufficiently to loosen the belt **C** and replace the belt **(Fig. 50)**. After replacing the belt, apply tension to the belt and re-screw nuts **A** and **B**.

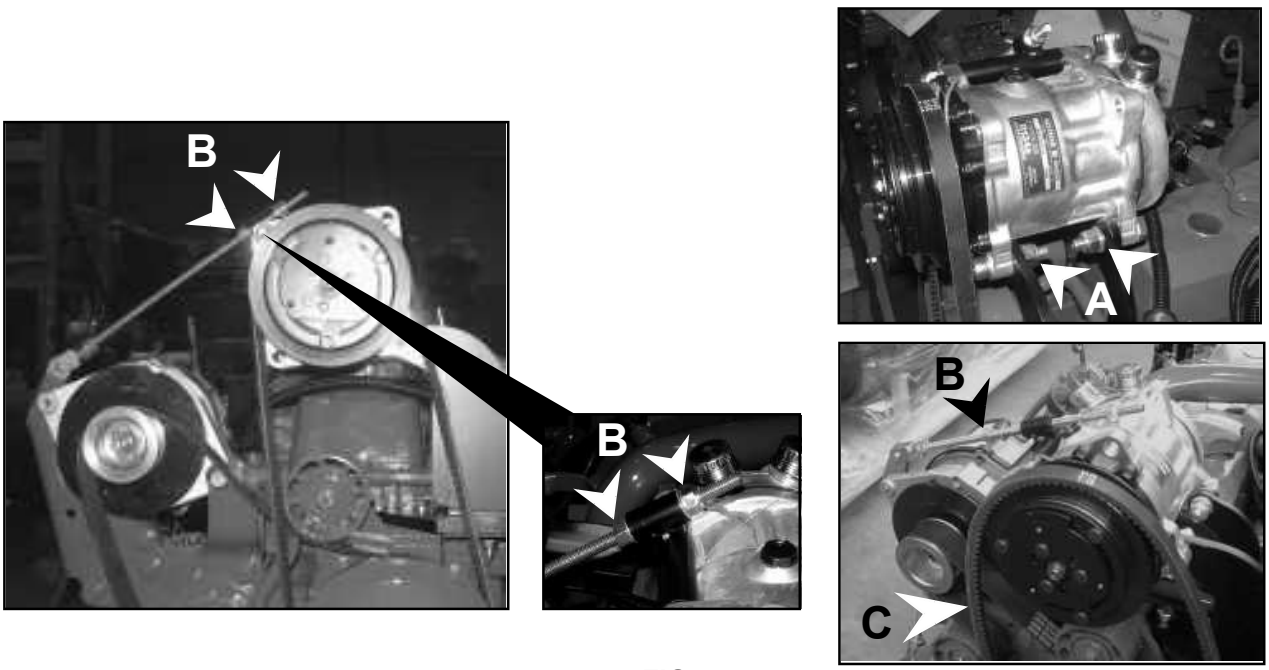


FIG. 50

PROBLEMS	SOLUTIONS
• **No lights come on on start-up:**	• Check the battery switch **(B - Fig. 38 - Page 51)**. • Check the 80A fuse **(F1A - Fig. 13 - Page 35)**. • Check the connection of the cables to the battery **(C - Fig. 38 - Page 51)**. • Control sensor status
• **An electrical component doesn't work:**	• Check the battery switch **(B - Fig. 38 - Page 51)**. • Check the fuses in the dashboard **(Fig. 11 - Page 35)**.
• **The weighing system doesn't work:**	• Check the fuse **(F11 - Fig. 11 - Page 35)**. • If there is a malfunction consult the weighing system instruction booklet.
• **The engine cuts out:**	• Check the fuel level. • Make sure the pre-filter is clean **(A - Fig.30 - Page 49)** • Check the hydraulic oil level.
• **Air filter clogs up frequently:**	• Make sure that the dust extractor tube **(D - Fig. 42- Pag. 54)** is not blocked. To clean this, remove the pre-filter **(E - Fig. 42 - Page 54)**, turn it upside down and blow clean with compressed air to get rid of any material clogging it.
• **The clutch slips:**	• Check that it is set as described on **page 57**.
• **The machine is low at the front:**	• Check the height of the front suspensions as shown on **page 45 (Fig. 20)**.
• **The auger speed can't be changed from the cabin:**	• Call for after sales service.
• **The machine does not move and the engine strains when using the starter pedal:**	• Check that the parking brake isn't on. • Make sure that the supercharging gauge **(Part. F - Fig. 51)** does not show below 16 bar.
• **Supercharging forward movement pump below 16 bar:**	• Check the filter **(G - Fig. 52 Pag. 60)** situated under the tank. • Check that the filter tap **(H - Fig. 52 Pag. 60)** under the tank is in the open position.

FIG. 51

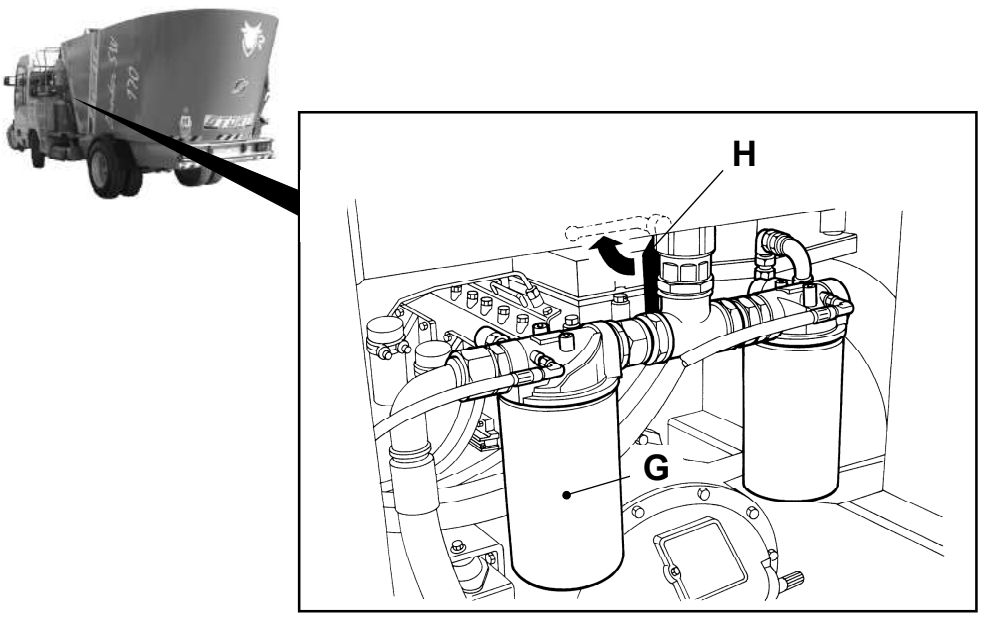


FIG. 52

PROBLEMS	SOLUTIONS
• **The machine does not move even when the forward pedal is pressed:**	• Turn the **engine off** and check that the wire and all the fork attachments are in place **(D - Fig. 54 Pag. 61)**. Check that the pump lever **(M - Fig. 55 Pag. 61)** moves when the pedal **(L - Fig. 53 Pag. 61)** is pressed. **N.B.= should you need to move the machine, carry out the operation as described on page 13**

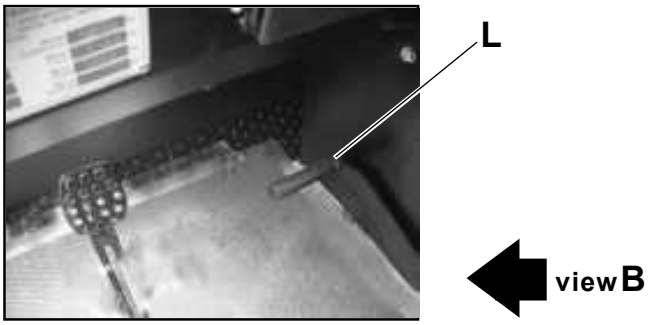


FIG. 53

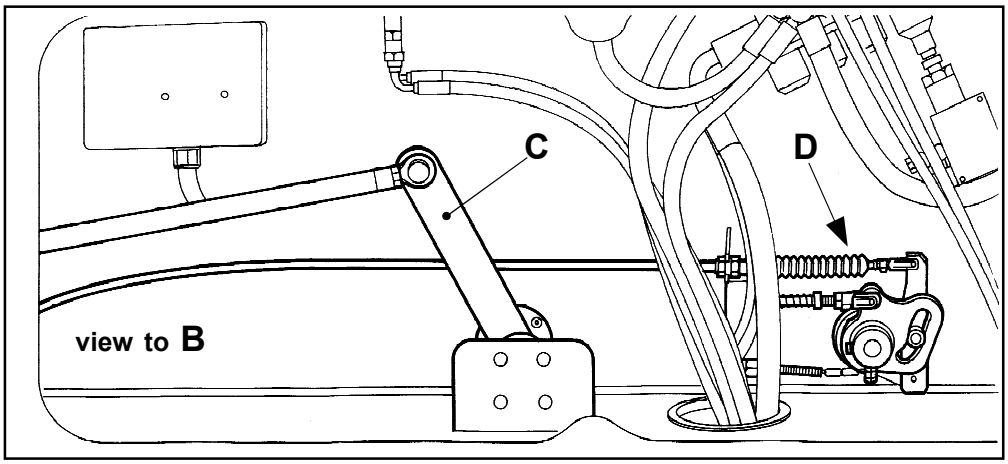


FIG. 54

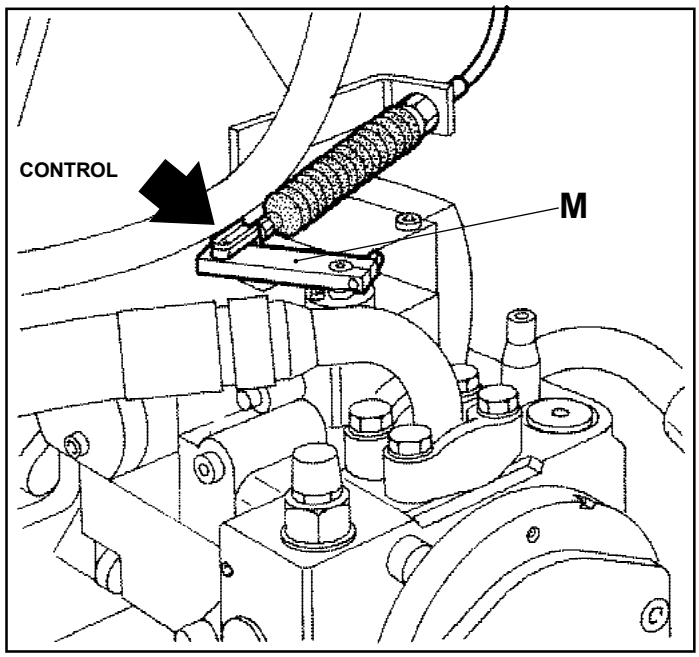


FIG. 55

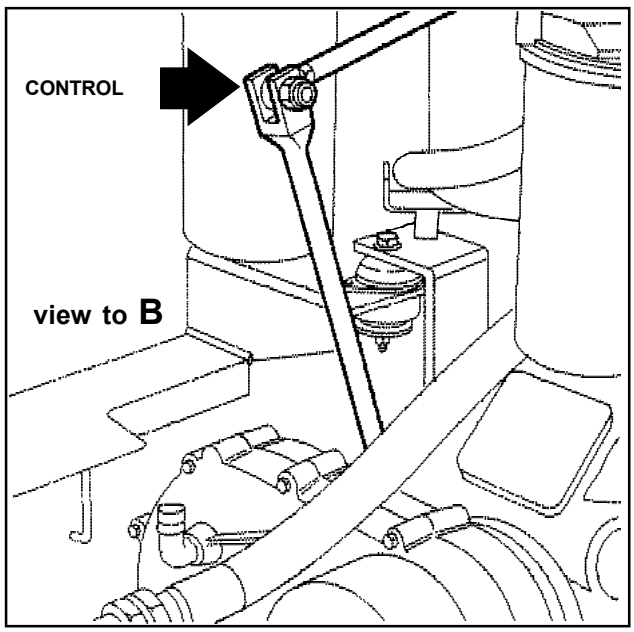


FIG. 56

PROBLEMS	SOLUTIONS
• **The unloading conveyor belt gets stuck:**	• Check the conveyor belt tension **(Fig. 45 -Pag. 56)**. • Check that there are no foreign bodies on the rear roller and on the hopper frame.
• **The milling-cutter arm does not move when the lever is used, or moves with difficulty, but the other equipment works:**	• Check that the tap on the cylinder on the cabin side is open **(Fig. 57)**.

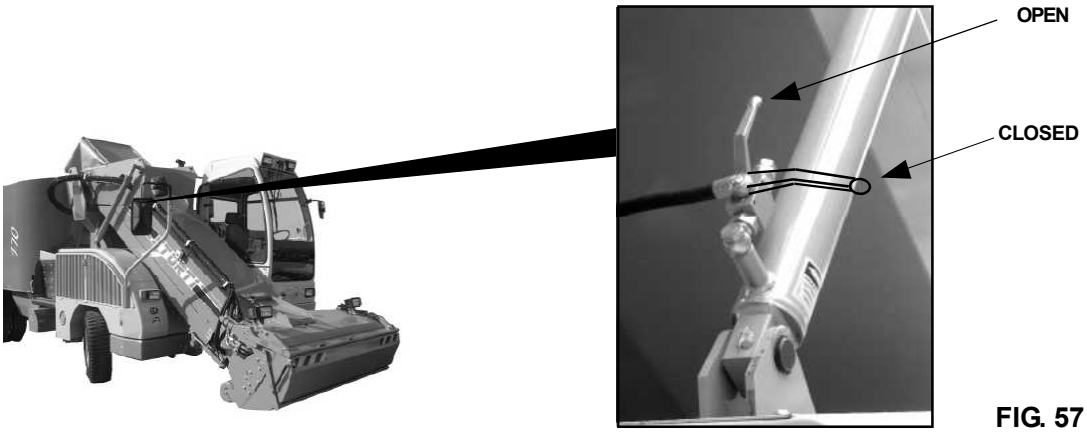


FIG. 57

PROBLEMI	RIMEDI
• **The milling-cutter arm and the loading conveyor don't work:**	• Check the choice of direction of rotation on the multifunction lever and make sure that the relevant lights are on **(Fig. 58)**. • Check fuse **F9 (Fig. 11 - Page 35)**. • Check the multifunction lever connector **(N - Fig. 59)**.

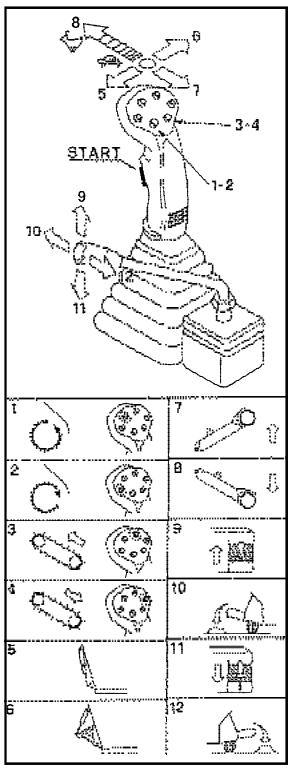


FIG. 58

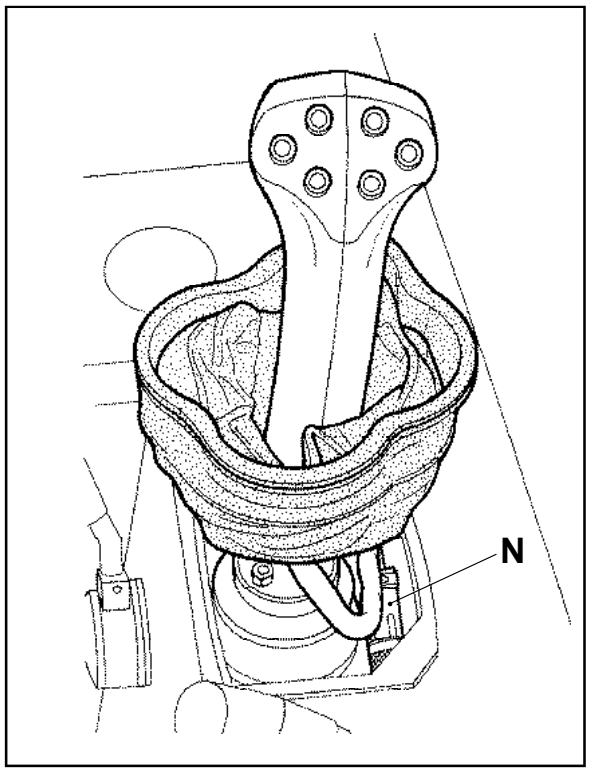


FIG. 59

PROBLEMS	SOLUTIONS
• **The milling-cutter does not work:**	• Check that the clutch lever is engaged. • Check that the supercharging gauge is not below 16 bar **(P - Fig. 60 Pag. 63)**.
• **Supercharging milling-cutter pump below 16 bar:**	• Check the filter **(I - Fig. 61 Pag. 63)** situated under the tank. • Check that the filter tap **(H - Fig. 61 Pag. 63)** under the tank is in the open position.
• **The machine does not load the material:**	• Check the conveyor belt tension **(Fig. 43 - Page 56)** and centring **(Fig. 44 Pag. 56)**. • Make sure there is no blockage inside the channel.
• **The belt gets stuck but the shaft turns making the roller slip on the belt:**	• Check for any foreign bodies between the lower part of the belt and the protective bonnet. Make sure the belt is not broken or torn.
• **The belt gets stuck and theshaft does not turn:**	• Make sure the loading auger is not clogged up **(P - Fig. 62 Pag. 64)**. • Check the transmission chains **(Q - Fig. 63 Pag. 64)**.
• **The loading and unloading conveyor belts are off centre and are wearing too quickly:**	Check **page 55** for loading conveyor belt, for unloading conveyor belt see **page 56**.
• **The engine heats and the backwater tank is full:**	Carry out the checks and procedures as described on **page 42**.

SHOULD ANY PROBLEM ARISE WHICH IS NOT DEALT WITH ON THESE PAGE S PLEASE CONTACT THE MANUFACTURER.

FIG. 60

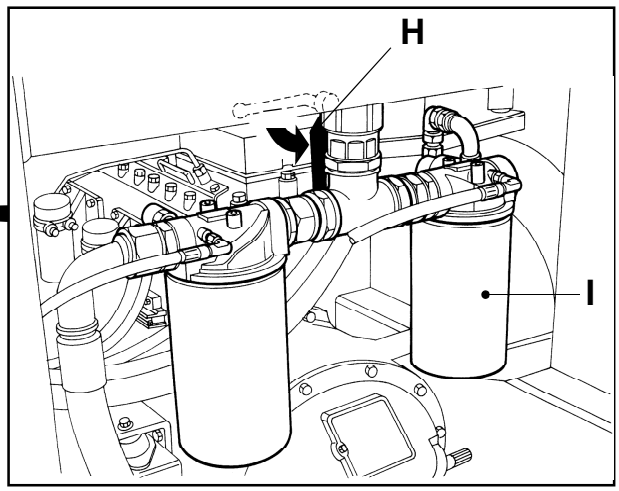


FIG. 61

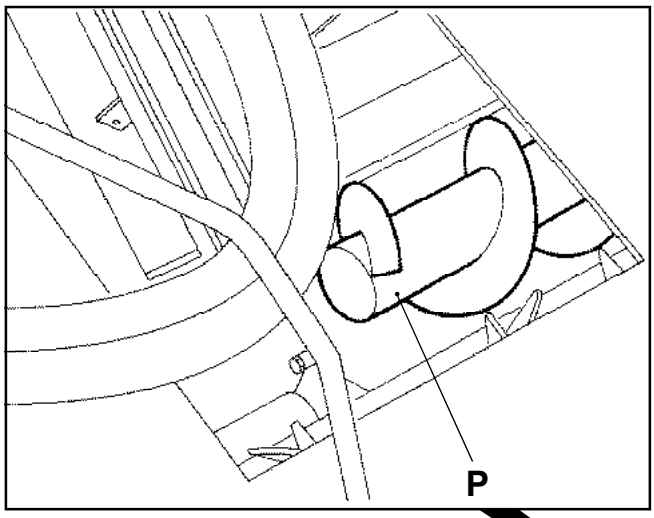


FIG. 62

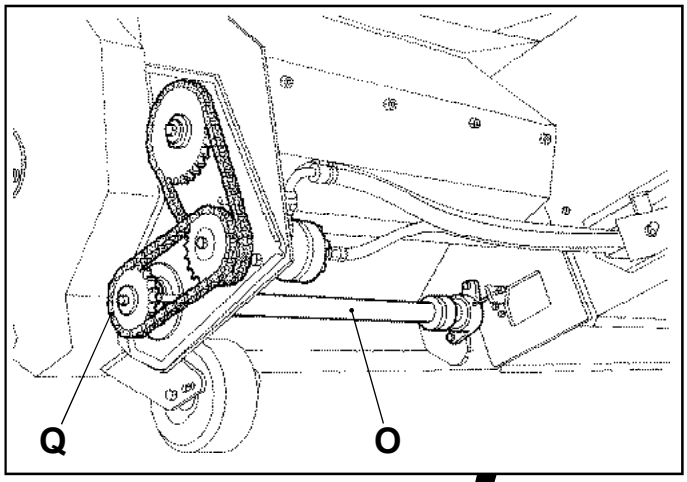
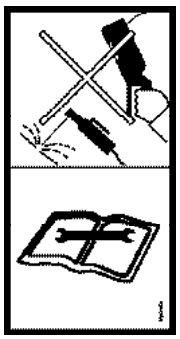


FIG. 63



MAXIMUM ATTENTION!!

Be careful when carrying out welding operations on any part of the vehicle (chassis, axles, "bodywork", motor, etc.) with motors equipped with electronic motor control units (ECU).

IMPORTANT: DO NOT WASH the electronic motor control unit **(ECU Fig. 64 - Pag. 64)** with high-pressure spraying equipment.
Before carrying out welding operations on any part of the machine and its motors equipped with electronic motor control units, protect the units from eventual damage caused by overload as follows:

1) **Switch off** the electrical mains current to the battery by activating the switch positioned on top of the battery.
2) **Disconnect** the earth connector of the motor control unit that is attached to the chassis of the vehicle.
3) **Disconnect** all other connectors attached to the motor control unit.
   Disconnect the module connector near to the injection pump.
4) **Connect** the earth cable of the welder near to the welding point and ensure that the motor control unit and other electrical components are not in the vicinity of the earthing point.

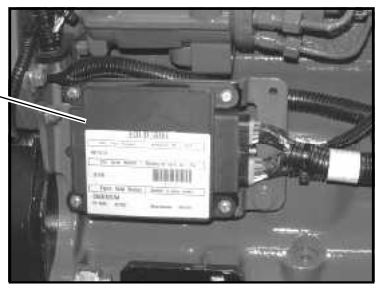


FIG. 64