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# USE AND MAINTENANCE MA- NUAL

# ROLLER SEPARATOR



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**Data and measures written in this catalog are approximate and there may be changes without warning.**

DODA thanks you for having bought an item included in its production range and invites you to read this manual.

In it you find all necessary information for the correct use of the machine.

We recommend you to read it entirely and follow all instructions in it.

Furthermore please keep it in a suitable place, so that it will remain unaltered.

The content of this manual can be changed without notice to make necessary changes or improvements to the units already delivered.

It is forbidden to copy or translate any part of this manual without authorization.

## GENERAL CONTENTS

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EC DECLARATION OF CONFORMITY AS  
DEFINED BY 89/392/EEC REGULATIONS AND  
FOLLOWING MODIFICATIONS

The machine described in the following "USE AND MAINTENANCE" manual is a roller press separator for slurry. It is a very simple but efficient machine for treating industrial or farming or non homogeneous waste, when the fluid has to be separated from the solid.

The mechanical system is based on compression and filtering of sewage with subsequent separation of the fluids from the dry materials. The separator is supplied by a SUPER chopping pump and powered by a 2,5 HP motor. The whole structure is made of stainless steel.

From the technological point of view, the concept adopted for all other DODA products has been applied to this machine as well:

**" Highest quality to obtain the maximum reliability and durability."**

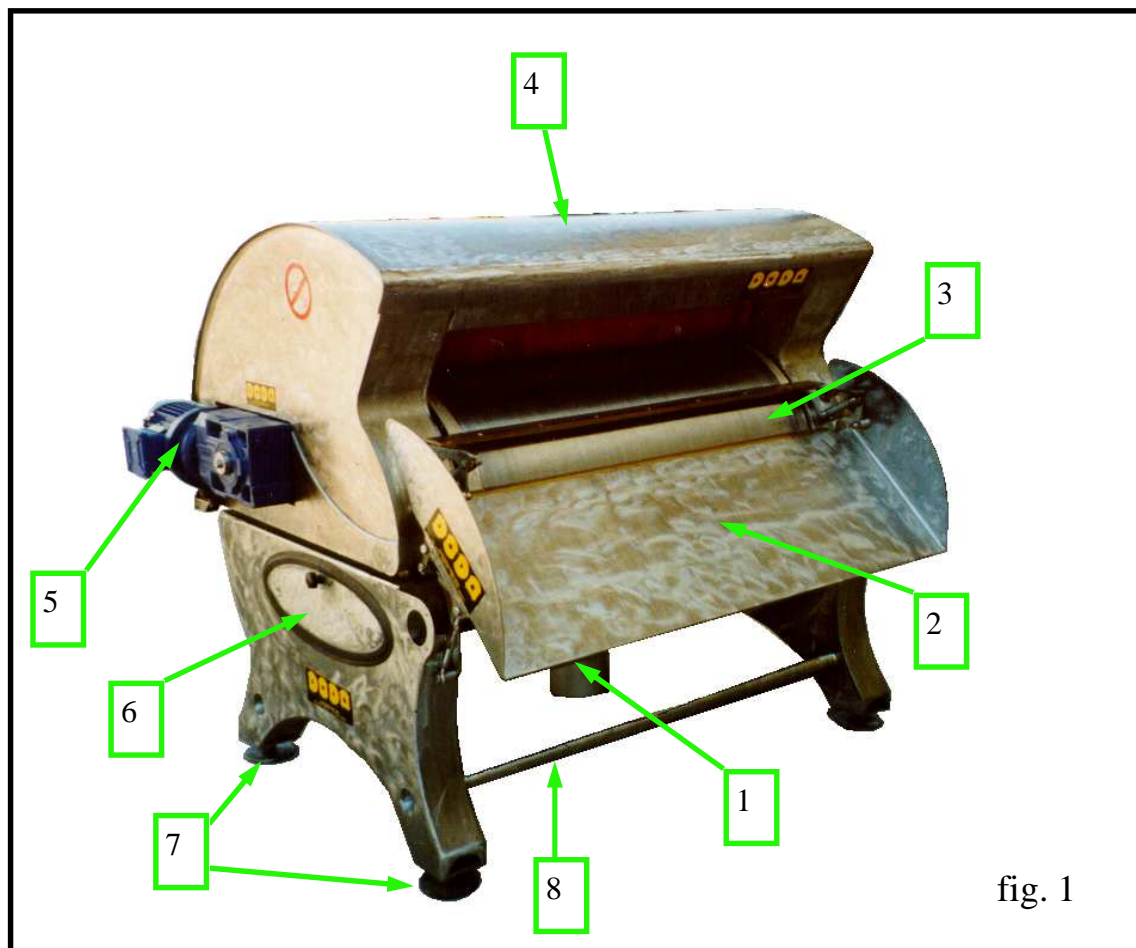
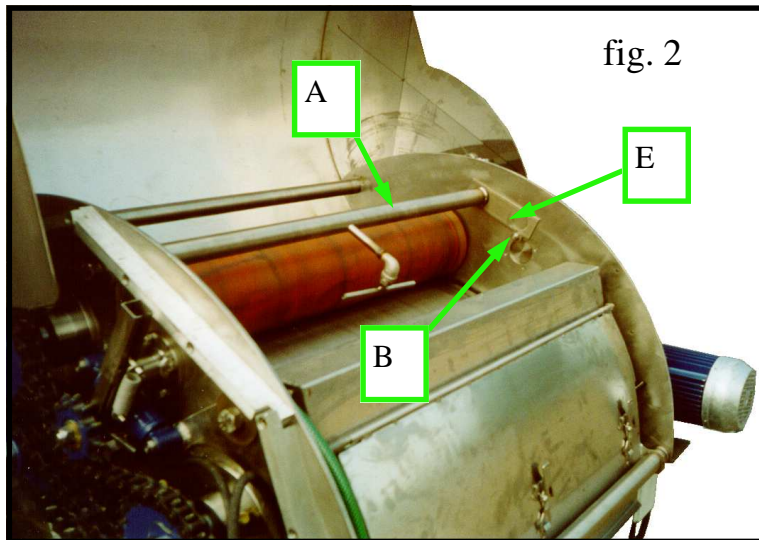


fig. 1

- |                                 |                                       |
|---------------------------------|---------------------------------------|
| 1) Liquid discharge pipe        | 5) Electric gear unit                 |
| 2) Solid substance output chute | 6) Inspection and inner cleaning door |
| 3) Scraper                      | 7) Adjustable feet                    |
| 4) Upper and side-protections   | 8) Supports for transport             |



**WARNING:** never move abruptly or bump stainless steel parts with the forks of the lift truck.

**WARNING:** the machine must operate on the horizontal plane, as is indicated in the stickers on the machine itself: open upper protection **4 fig. 1**, rest the water level to the stay rod **A**, adjust supporting feet until the best position is reached.

For transport, place a pallet at the machine base and lift it with a fork lift. If a pallet is not available, the lift truck must be provided with at least 1.2 m long forks suitable, by paying attention that they lean on points **8 fig. 1**. If the machine is hoisted by a crane, use to the suitable rings **E**: open upper protection **4 fig. 1**, loose nuts **B fig. 2**, lift rings **E**, insert a bar into holes (at least 130 cm long and max  $\varnothing$  4 cm), join the crane hooks to the bar. At the end of this operation, fasten ring **E** again. Do not solder the machine structure together with the base permanently for any reason!



fig. 3



fig. 4

## 3. GENERAL INSTRUCTIONS

- 1) Check that no component has been damaged during transport, in this case contact immediately your dealer .
- 2) The power's supply connection has to be carried out only by skilled workers and according to DODA instructions (by connecting the cables of the electric motor to the power supply or the pump to the tractor by means of the cardan shaft).

DODA is in no way responsible for any electric connection. (please follow the instructions on the motor plate and on the sticker showing the rotation direction).

- 3) Before starting the machine, check that the rotating driving parts are suitably protected, as foreseen by their manufacturer.
- 4) If the protection of a rotating component is not provided, the user has to supply the machine with it in conformity with the provisions of the law.
- 5) DODA takes no responsibility for modifications which could alter the characteristics of the machine bought.
- 6) DODA machines must not be installed on structures which are not in conformity with EC safety regulations foreseen by the Community Directives.
- 7) Before operating the machine it is indispensable to read carefully all directions in the “**Use and Maintenance**” manual. In particular, be sure to have completely understood the machine functioning.
- 8) The machine has been designed and manufactured for the treatment of water and slurry, but not of chemical products. Therefore if these substances are treated with our machine, it could be damaged permanently.

**The DODA separator can also be supplied with other products, such as tomatoes and potatoes. Please contact manufacturer for any other employment.**

## 4. PRELIMINARY CHECKS

The reduction gear is self-lubricating and therefore no maintenance is necessary. The pistons' hydraulic system needs no maintenance as well. If the hand of the pressure gauge **C fig. 15** is often lower than the 4.5 MPa foreseen, that means there are leaks. To bring pressure back to the correct working level: insert lever **D fig. 15** into its special housing, pump until hand reaches 4.5 MPa . Tank **A fig. 15** contains 3 kg of oil. In case of fault contact dealer.

**- Loading pressure must never be higher than 0,3 MPa at separator input.**

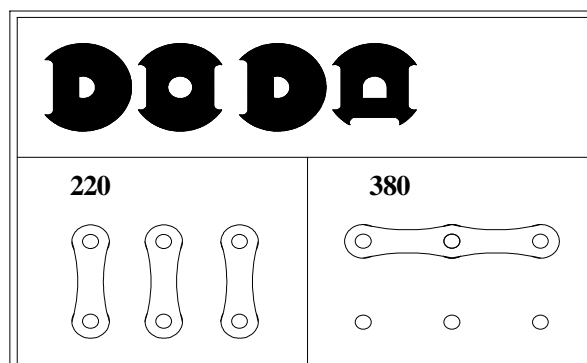


fig. 5

Before positioning the **Separator** arrange the proper structure on the tank edge.

The machine has to work in a horizontal position: open upper protection **4 fig. 1**, put a water level on the stay rod **A fig. 2**, adjust support feet **7 fig. 1** until the correct position is reached.

The height of the plane, on which the feeding pump is set, has to be suitable for its head, considering the loss of pressure due to friction due to the feeding pipe. A correct height of the pipe prevents excessive accumulation of solid materials close to the machine. This assures a better collection of the separated solid product with big sized machines (scrapers, shovels, etc...).

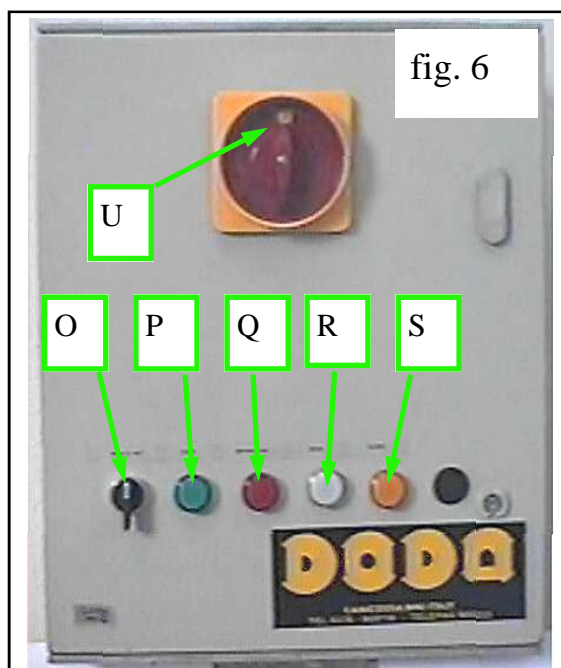


fig. 6

1) Open electric board **fig. 6** and connect the electric supply cables in the suitable terminal board **W fig. 7**.

Check the main voltage inside switchboard (220 Volt only 3 phase or 380 Volt only 2 phase) **fig. 5**. It has to be suitable for the switchboard voltage.

2) To check if the rotation direction of the electric motor is correct, keep "Manual- Automatic" knob **O** turned on manual position.

3) Turn the main switch **U** knob from **zero** position to **one fig. 6** only for one second, then put it again to zero ( check if the rotation direction of the electric motor is correct: see sticker on the back).

To avoid any damage to the machine efficiency, the motor must never rotate in the wrong direction for longer than two seconds.

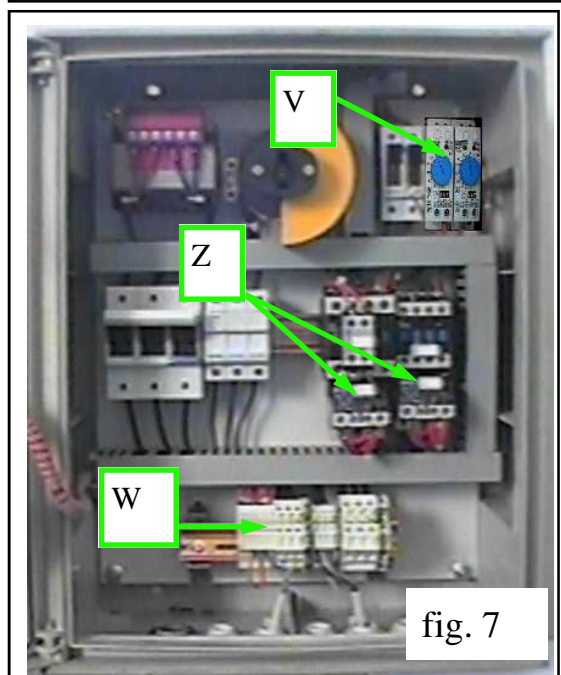


fig. 7

- O) "Manual - Automatic" knob.
- P) Pump indicator lamp.
- Q) Separator indicator lamp.
- R) Washing indicator lamp.
- S) Overheating indicator light
- U) Main switch.
- V) Timer.
- Z) Heat regulator switch
- W) Supply terminal board.

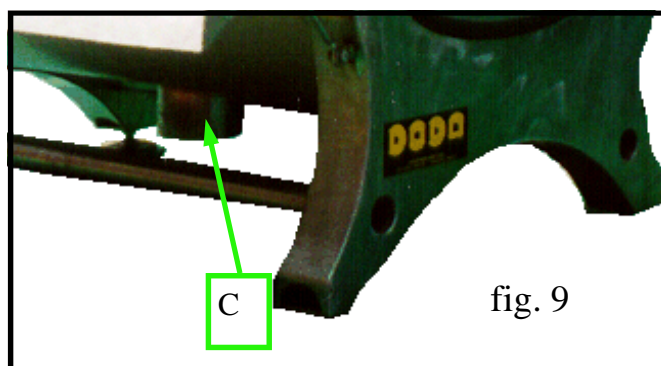
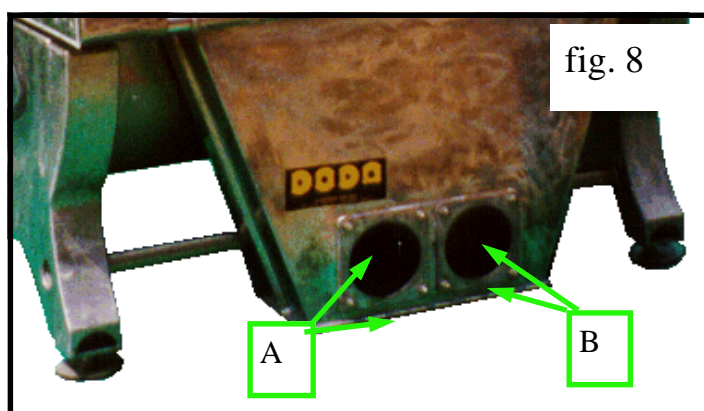
**Any electric connection must be done by skilled workers.**

**DODA assumes no responsibility for electric connections. Safety protections must not be removed in any case.**

4) The *delivery pipe* (diameter 150) can be connected to the input **A** **fig. 8** from the front side or from the bottom, depending on which is the easier way to do it. Put a blind flange on the not used plug.

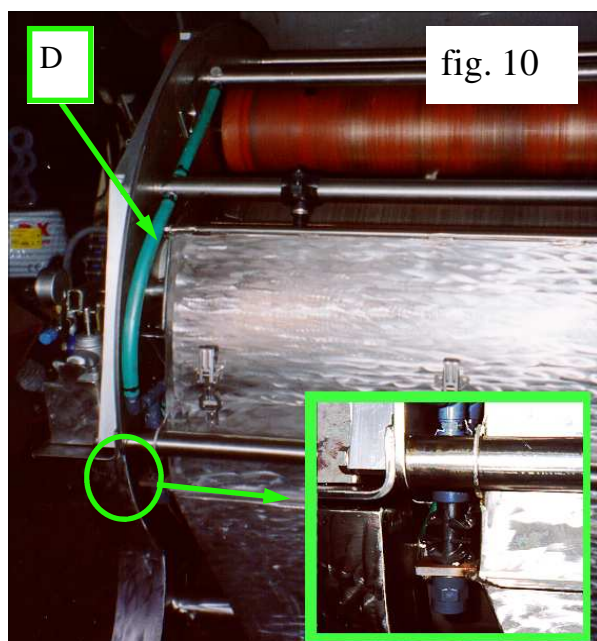
5) The *overflow pipe* (diameter 150), set near the inlet, has to be connected to the plugs **B** **fig. 8**. Also in this case use the easier accessible one and close the other with a blind flange.

6) The *separated slurry outlet* (diameter 150) lies on the separator lower side at point **C** **fig. 9**



**WARNING:** Pipe connections are not load-bearing, therefore the piping weight has not to rest on the machine, but they have to be supported along their whole length.

7) Connect the water inlet pipe to the washing valve on the bottom of pipe **D** **fig. 10**.



**WARNING: insert a drainage valve at the input of this valve to avoid damage to the solenoid valve.**

The **WASHING** device comes into operation at functioning end. The valve controls water flow inside the separator. If the water pressure is low, open the covers **E - F** **fig. 11** to have a better cleaning and to wash it manually. The screen can be inspected also through doors **G** **fig. 12**. A manually washing inside the machine can be carried out also through these openings.

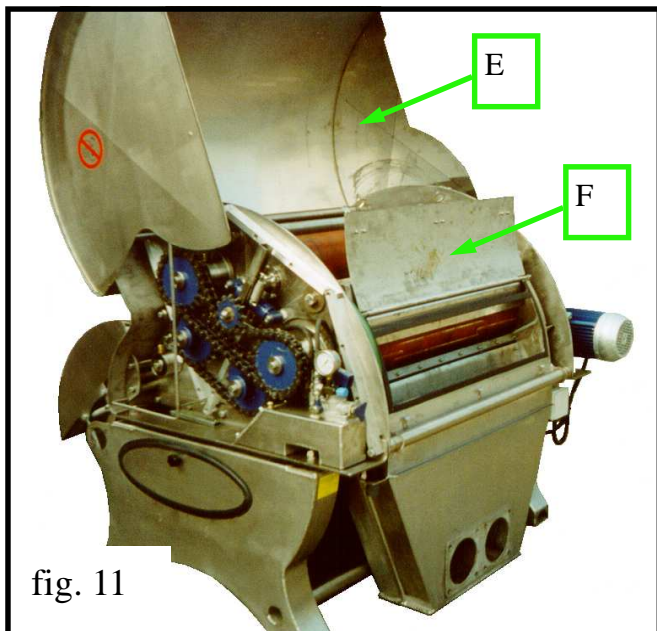


fig. 11

**8) TIMER SETTING:** synchronize and arrange the timers for automatic machine washing. The switchboard, ( see detail V **fig. 7**) consist of two regulators:

1) The first timer, which switches the separator off , control the manure emptying time of the machine after feeding pump stop. The setting of this timer has to be carried out immediately after the first installation, according to the time measured necessary for emptying the non homogeneous slurry out of the tank.

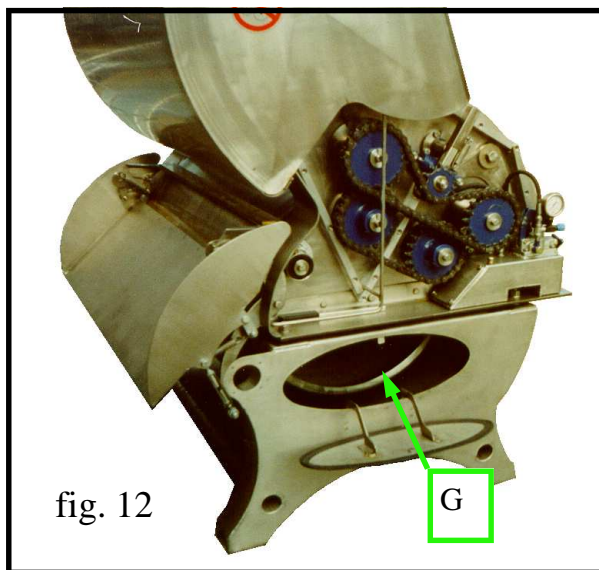


fig. 12

2) The second timer comes into operation immediately after the first one and it is useful for a timed control of the water flow, which washes the separator. Also for the setting of this device, For a correct machine washing take into account the time measured during the first installation. *If* the feeding pump is provided with a level probe, the two timers' cycles start automatically after pump stop.

*If* the feeding pump is not supplied a level probe, the timers' cycles has to be started manually:

- switch the pump off ;
- put "Manual/Automatic" knob **O** **fig. 6** on Manual position, with only one shift; then the cycles programmed by the timers start.

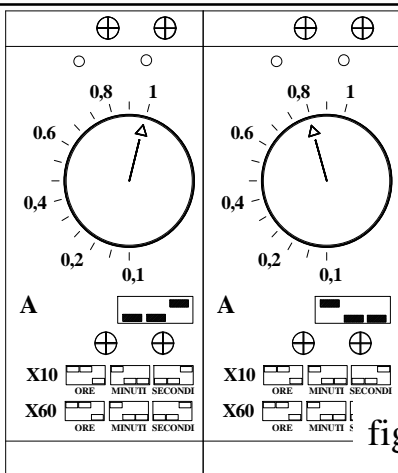


fig. 13

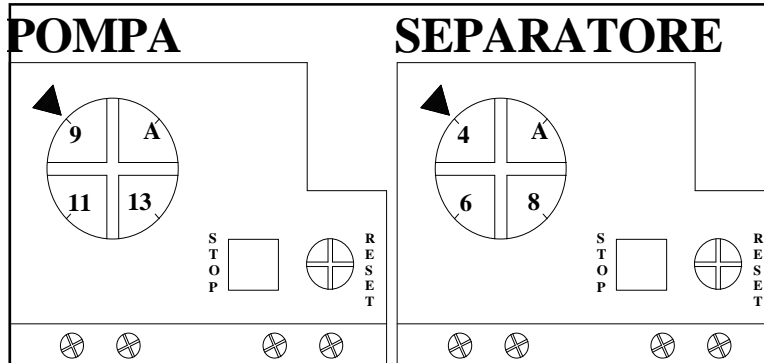


fig. 14

In both cases, if washing has not been satisfactory restart it simply by turning the “Manual/Automatic” knob **O** **fig. 6** on Manual position - with only one shift.

**WARNING:** If you want repeat the washing, reset temporarily the first timer to prevent the machine works in vain .

Time-schedule is directly indicated on timers **V** **fig. 7**. Following figure **13**, after the feeding pump has stopped, the separator will go on working for ten seconds more (first timer); then washing will come into operation for eight minutes (second timer).

- Check the pump rotation way and the degree of over heat protection (absorbed amperage). Then regulate the device illustrated in figure **14** (also see **Z** **fig. 7**) based on absorption of the feeding pump motor as well as on the separator motor.

- Position chopping pump feeding the separator in such a way that the pump body lies 15/20 cm far from the tank bottom.

- Regulate the feeding delivery of the pump to obtain a capacity adequate to the machine working speed.

Before starting machine, control hydraulic pump pressure gauge **C** **fig. 15**, and check that pistons **B** **fig. 15** are under pressure.

For further information, see "Product Quality".

## 6. FUNCTIONING

**WARNING:** read section “GENERAL INSTRUCTIONS” before starting machine.

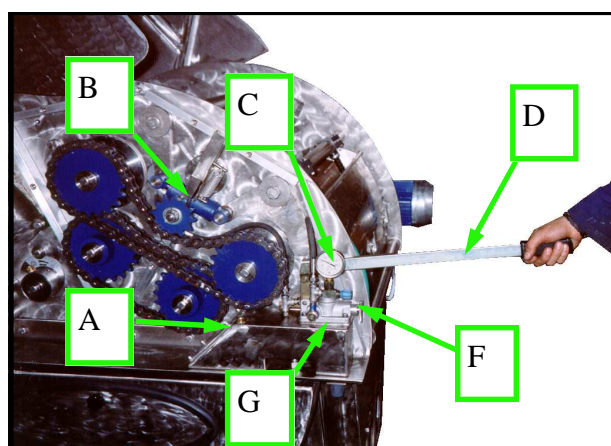
After arranging and checking the machine’ s stability during normal functioning you can start utilising it.

In all versions of electrical motor, provide to check the correct rotation way, and connect them to supply.

Rotate main switch **U** **fig. 6** to position **One** and knob **O** to “Automatic”. Now, *if the feeding pump is provided with a level probe* the pump feeding can start.

The non homogeneous wasted accumulation starts input sensor that, in turn, starts the separator. If the machine is no fed, it stops automatically.

fig. 15



In case you want to stop the cycle, in any time, turn knob **O fig. 6** to Manual:

- The feeding pump stops
- The two-timer program starts.

**WARNING: never operate the machine without manure**

***If the machine is not provided with a level probe*** on the feeding pump, allowing to start and stop the machine automatically, proceed as follows:

- turn main switch **U fig. 6** to **One**
- turn knob **O** to “Automatic”
- start feeding pump
- when the non homogeneous wasted reaches the sensor inside the loading tank, the separator starts up.
- to stop the plant, turn knob **O fig. 6** in central position
- stop the pump

turn knob **O** to Manual again: the liquid manure emptying and the machine washing cycles will start up.

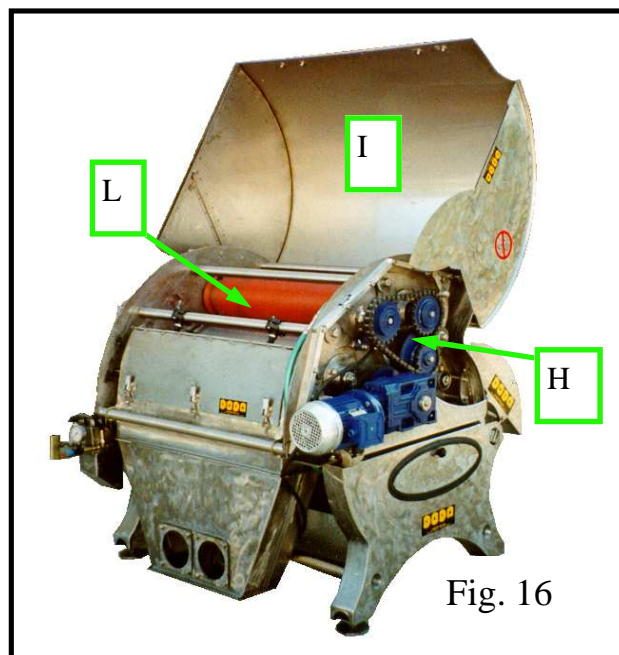


Fig. 16

## PRODUCT QUALITY

To obtain a more or less solid separated product, operate the hydraulic pump **A fig. 15** regulating the pressure of the two pistons **B fig. 15**.

The working pressure, reported on pressure gauge **C**, may range between 45 and 50 MPa (or 700 and 800 PSI). This hydraulic pump is endowed with a compensating device keeping oil pressure constant.

To increase pressure insert lever **D** into its housing and pump oil manually **fig. 15**.

To reduce oil pressure unscrew knob **F**.

If separator is not utilised for a long period remove pressure from pistons.

To introduce oil, unscrew plug **G** and top up. Max capacity 3 Kg.

- 1) During machine inspections, both during working phases and inspection ones, wear always proper clothing (overalls, gloves, helmet, accident prevention shoes, fastened clothes, etc...).
- 2) The machine has always to be used in a well lit place.
- 3) Since gases released by non homogeneous waste are poisonous, check that:
  - the work area is adequately ventilated;
  - the machine is not used near in to flames.
- 4) Never inspect the liquid manure tank alone. If you lose your balance or if you feel faint due to fumes, ask for help immediately.
- 5) If you do not need to work in a tank, cover it.
- 6) The machine must be operated by accountable adults, while the place must not be accessible to children.
- 7) Do not carry out operations or adjustments when the machine is in motion or when it is connected to supply.
- 8) The machine has to be employed only if all necessary protections are correctly positioned, by following instructions indicated in the previous paragraphs to avoid possible contact with moving parts. Do not damage or remove those protections.
- 9) The machine can be set in motion only if it has already been filled up with oil (driving pipes and gearbox).
- 10) Before starting work phases, be sure that the whole assembly is stable (machine and tractor).
- 11) During maintenance be sure that the machine is perfectly standing and disconnected from supply.
- 12) The trolley must not be used for road-transportation (if foreseen).
- 13) During operation, maintenance or adjustment, the rubber parts of the machine (gaskets, etc...) have not to come into contact with oil, grease or oil derivatives.
- 14) Be sure that motor rotation is clockwise as indicated by the arrow on the motor (when foreseen).
- 15) As regards machines provided with electrical supply, the connection has to be carried out in a place protected from atmospheric precipitation.
- 16) If the delivery pipe is connected to pipes or hoses, check that the suitable fastening joints are in perfect conditions; do not stop near them: hazard of bursting and tearing.
- 17) Work and keep the machine in a dry area, protected from atmospheric precipitation if it is not used for a long time.
- 18) Do not go too close to front chute (detail 2 page 1) during machine work phases, to avoid accidents.
- 19) Be sure that the machine is not placed on an inclined plane.
- 20) Do not climb over or lean out of separator screens; do not use ladders or similar tool on machine platforms.

**Before any maintenance operation, stop the machine and switch off the electricity.**

- 1) Grease rotary parts every 50 working hours (lubricators, piston articulated joints, gear wheels, etc...).
- 2) At the end of its utilisation, wash the machine to prevent non homogeneous wasted from solidifying; this could cause damages.

**As for all spare parts, address directly to DODA dealer.**

**IMPORTANT!!**

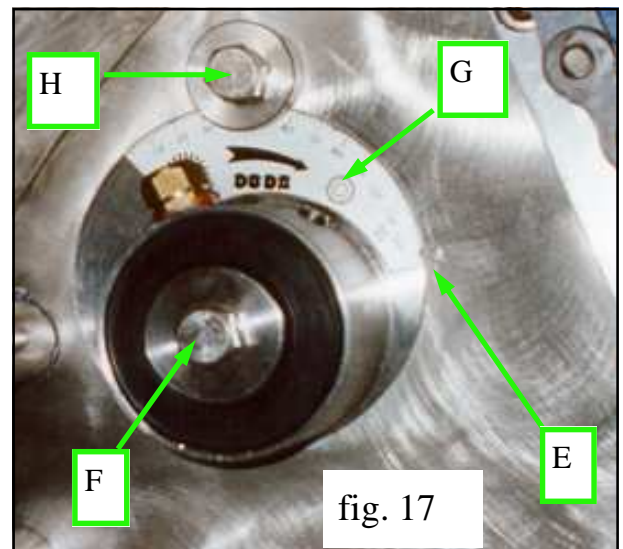
**Switch off electricity before doing periodically maintenance the following parts:**

### **CHAINS**

-Lift protection **I** **fig. 16** and grease side driving chains **H** on both sides.

### **ROLLERS**

- Leaving protection open, clean upper rolls **L** with water.



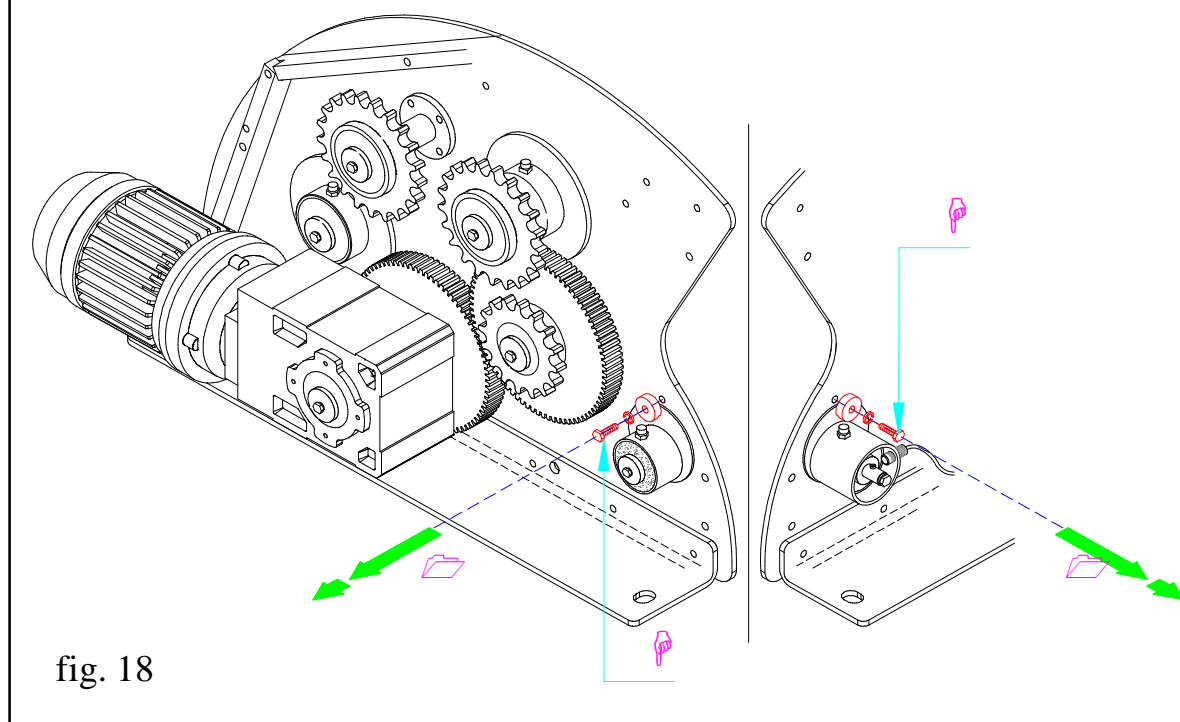
## **BRUSH**

- Check that shaft **F** **fig. 17** rotates when the machine is in operation. If this does not happen, act on support **G** manually: loosen bolt **H** and rotate support in the arrow sense. This rotation moves forward the strainer-cleaning brush by about a millimetre every five degrees of the graduated scale. This brush will be completely worn out when 0° indicator is reached with respect to reference **E**.

**N.B.: there are two G supports, one opposite to the other, therefore they must be adjusted perfectly on the same axis.**

### **BRUSH REPLACEMENT**

The brush is an important element to clean the strainer during machine work and washing cycles. It is made up of a roll covered with steel wires and is subject to wear. So, can be necessary to replace it once it is worn out.

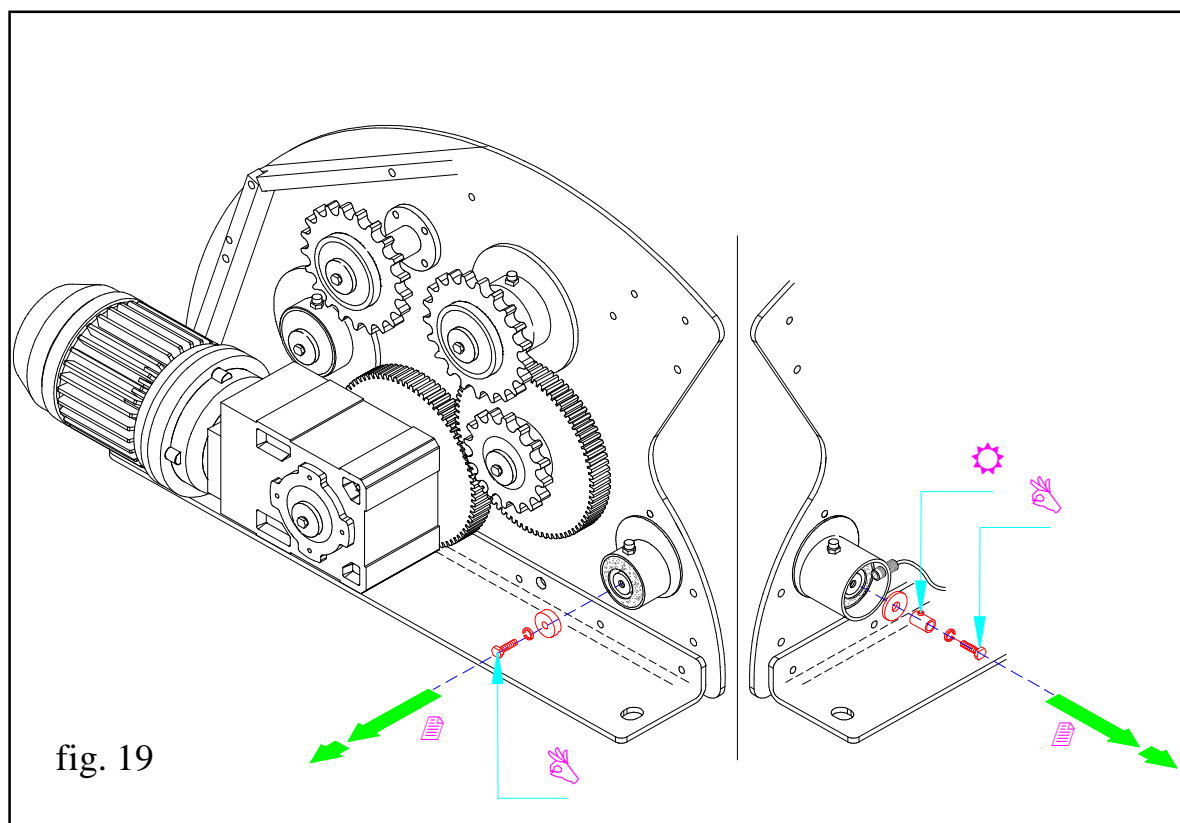


Check that the brush is completely worn before replacing it:

- Indicators on support **G** graduated scale must be on  $0^\circ$  (brush worn out).
- open fig. 12 door and check that the steel wires are worn out (only the central roll must be left).

It is very easy to replace the brush:

- lift protection **I** **fig. 16**.





The worn brush falls onto the bottom of the screen.

- Open the door **G** **fig. 12**.
- Remove the old brush.
- Position the new brush inside the machine on the level of the holes of holder **G**.
- Insert shaft on the side from which it has been removed until you gift the correct position.
- Remove flange **M** and screw up hexagonal screws again.
- Close retainers of flange **M** onto hexagonal screws again.
- Insert both holders **G**.
- Tighten bolts at the ends of shaft **F**.
- Rotate holders in such a way that the 130° notch (of holder **G**) coincides with the reference point **E** **fig. 17** on the side.
- Fasten holder **G** with bolts **H**.

### ROTATION SENSOR

A special proximity switch controls brush rotation **S** **fig. 22**. If, for any reason, (brush wear, mechanical stop, etc.) the brush stops, the separator cannot work.

**N.B.:** In some models the rotation sensor can be mounted on the side of the motor unit.

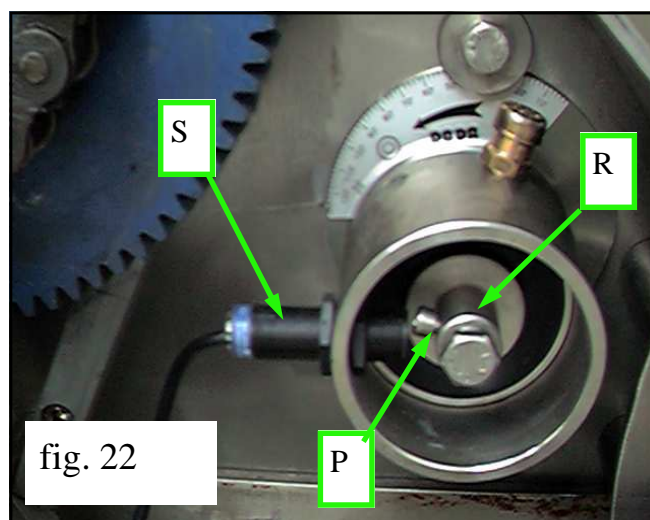


fig. 22

**WARNING:**  
before approaching the machine for any maintenance, switch off the electricity.

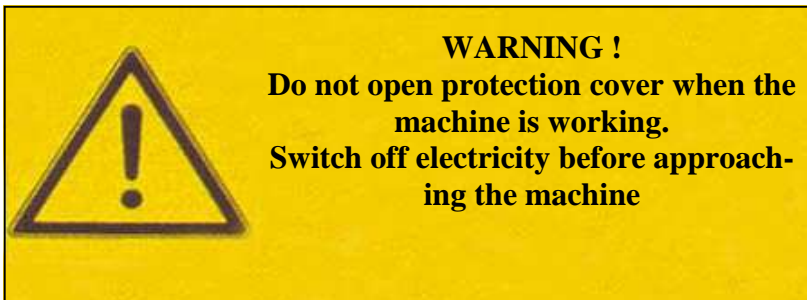
**IMPORTANT:** wash the brush at least once a week. Careful and complete washing of the machine (rollers, screen, brush, inlet tank, sewage collection tank) at the end of each working cycle extend separator life time with better performances.

### WARNING: only for March 2000 versions

When replacing the brush control bush **R** **fig. 22**. It must be mounted exactly like it was before: the socket head screw **P**, which is out-of-centre to the bushing, must lie outside the machine.

In all other models, where the socket head screw **P** is centred, the bushing can be mounted in both ways.

## The machine is provided with the following stickers:



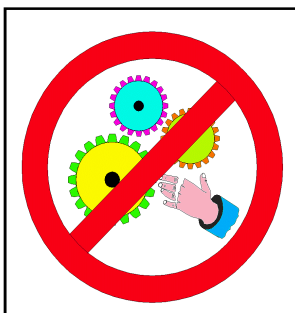
POSITION: ON THE PROTECTION COVER.

THIS STICKERS REMINDS YOU TO SWITCH OFF ANY ELECTRICAL CONNECTION BEFORE APPROACHING THE MACHINE. THE COVER IS PROVIDED WITH A SAFETY LOCK AND THE KEY MUST BE KEPT IN A SEPARATE AND SAFE PLACE



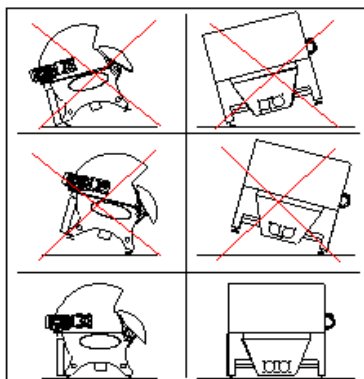
POSITION: ON ELECTRIC MOTOR.

THIS STICKER REMINDS YOU TO CHECK THE ROTATION DIRECTION OF THE ELECTRIC MOTOR BEFORE STARTING THE MACHINE.



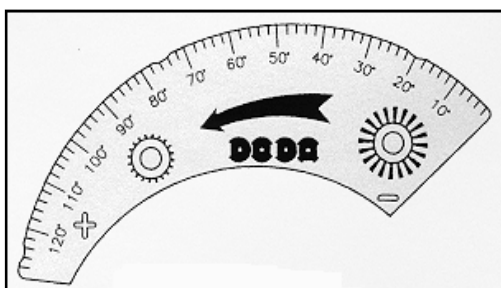
POSITION: ON THE COVER SIDE.

WARNING: DO NOT PUT YOUR HANDS ON OR GO CLOSE TO SEPARATOR'S SIDES IF PROTECTIONS ARE NOT INSTALLED.



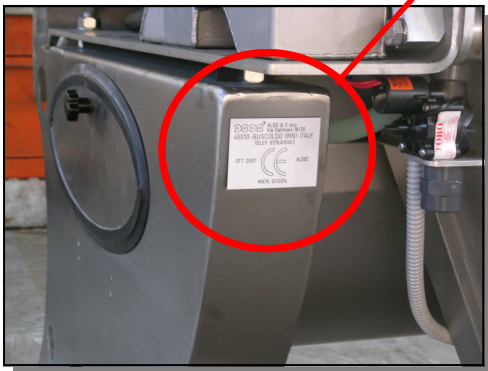
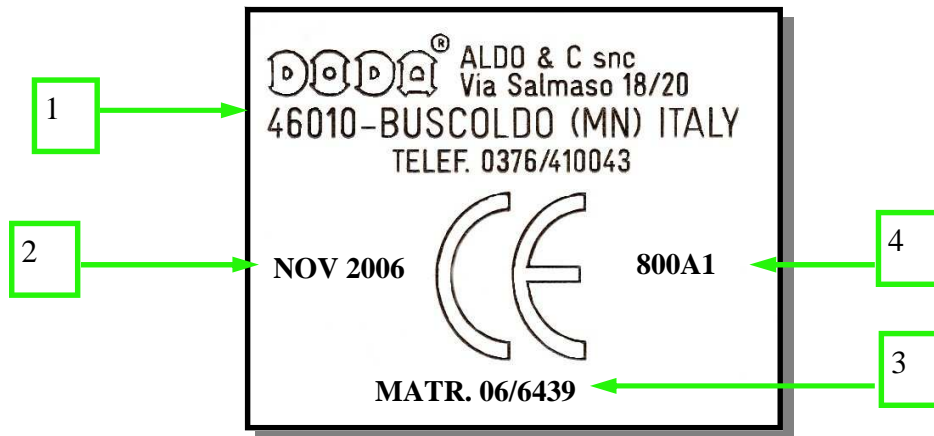
POSITION: ON THE COVER SIDE.

THIS MACHINE MUST BE INSTALLED ON A PLANE SURFACE. IT MUST NEVER BE INCLINED, NOT EVEN DURING OPERATION. THE SEPARATOR MUST BE SECURED TO THE FLOOR BUT NEVER FASTENED IN A PERMANENT WAY



POSITION: NEAR THE CLEANING BRUSH SUPPORTS.

CHECK WEAR LEVEL OF SCREEN CLEANING BRUSH. IF INDICATOR IS ON 130° THE BRUSH IS NEW; THE BRUSH STEEL WIRES MOVE FORWARD BY A MILLIMETER EVERY 5° (MAXIMUM ABOUT 3 CM). IF THE INDICATOR IS ON 0° THE BRUSH IS WORN OUT AND MUST BE REPLACED



Data plate indicating the conformity with EC regulations:

- 1) NAME OF THE FIRM
- 2) MONTH AND YEAR OF PRODUCTION
- 3) PRODUCT IDENTIFICATION CODE
- 4) TYPE OF MACHINE

#### **WARNING:**

The stickers must not be removed. Check periodically if they are readable. If it is necessary apply to the supplier for a new copy .

All the stickers are made of material resistant to oil, acid and bad weather.

## 10. PERFORMANCE AND TECHNICAL DATA

DODA separator is completely made of AISI 304 stainless steel provided with:

rolls with a special gumming on stainless steel shafts rotating on SKF oil-bath bearings:

- loading tank provided with a screen (stone-trap) and an automatic device for overflow discharge, with a hydraulic system for hydraulic check of roll compression complete with equalizer,
- manual hydraulic pump, with hydraulic couplings and accessories.

#### **WARNING:**

**loading pressure must never exceed 0.3 MPa.**

# 11. FAILURES AND REMEDIES

The separator's noise level is very low and, in any case, lower than that usually measured in a work setting.

**Before carrying out any maintenance, regulation or repair operation, stop the machine (main switch U, fig. 6 must be on position 0) and disconnect supply.**

| PROBLEMS   | CAUSES   | REMEDIES  |
|--|--|---|
| <p><b>The machine is fed but the separator do not starts.</b></p>            | <ul style="list-style-type: none"> <li>- The feeding pump does not load the medium.</li> <li>- The medium to separate is too much dense.</li> <li>- The feeding line from the pump to the separator is plugged.</li> </ul> | <ul style="list-style-type: none"> <li>- Control the correct connection and operation of the feeding pump.</li> <li>- Dilute the medium.</li> <li>- To replace the feeding tube or clean plugged pipe.</li> </ul> |
| <p><b>The machine is starts and stops repeatedly.</b></p>                    | <ul style="list-style-type: none"> <li>- Separator feeding is not enough.</li> </ul>   | <ul style="list-style-type: none"> <li>- Control the feeding pump and loading increase flow.</li> </ul>   |
| <p><b>The Separator is not cleaned up well by the brush.</b></p>             | <ul style="list-style-type: none"> <li>- The hairs of the brush do not exit from the grill of the screen.</li> </ul>   | <ul style="list-style-type: none"> <li>- Advance the brush like described to paragraph 6.</li> <li>- If the brush is completely empty (pointer on the 0°), to proceed to the substitution .</li> </ul>            |
| <p><b>No dry matter from scraper</b></p>                                     | <p>The medium is too much liquid.</p>  | <ul style="list-style-type: none"> <li>- Mix the medium in order to have a thicker product.</li> </ul>  |
| <p><b>The machine suddenly stops. Re-started works few seconds only.</b></p> | <ul style="list-style-type: none"> <li>- The brush is worn-out.</li> </ul>   | <ul style="list-style-type: none"> <li>- Suitably adjust the brush or replace it.</li> </ul>  |

# NOTES

**EC DECLARATION OF CONFORMITY AS DEFINED BY DIRECTIVE 89/392/  
EEC AND FOLLOWING MODIFICATIONS**

WE

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HEREBY DECLARE UNDER OUR OWN RESPONSIBILITY THAT THE FOLLOW-  
ING PRODUCT:

SEPARATOR 2000

TO WHICH THIS DECLARATION REFERS, CONFORM TO DIRECTIVE 89/392/EEC  
AND FOLLOWING MODIFICATIONS.

BUSCOLDO (MANTOVA)

.....  
(Name, signature, corresponding stamp)



***COSTRUZIONE MACCHINE AGRICOLE  
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