

## 1.0 - DECLARATION OF CONFORMITY

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hereby declares under its own responsibility that the transplanters described in this manual;

MINI-FOX

conform with the Essential Requirements for Safety and the Protection of Health set out in EEC Directive 89/392 and subsequent amendments. EN 292-1, EN 292-2 and EN 294 relating to safety of machinery were specifically followed.

Budrio, 6 December 1994

Nerio Checchi  
Legal Representative

## 2.0 - GUARANTEE

Check at the time of delivery that the machine and accessories are complete and undamaged.

Any complaints must be presented in writing within 8 days of receipt of the goods.

### 2.1 - EXPIRY OF GUARANTEE

In addition to the normal stipulations of the conditions of supply, the guarantee shall be invalidated if the instructions set out in this manual are not complied with.

## 3.0 - PRELIMINARY NOTE

This manual describes the spare parts and the regulations for use and maintenance of the MINI-FOX transplanter. This semi-automatic transplanter driven by its own drive wheels can operate coupled to a motorized cultivator equipped with tow bar, and with two operators on board, one to deposit the plants and one to drive the cultivator. It is **advisable to comply with the contents of this manual**, as the machine will run properly only if used and maintained correctly.

Using the machine without observing the instructions contained herein may give rise to problems, prejudice smooth running and reduce the effective life of the machine.







**The Manufacturer accepts no responsibility whatsoever in the event of negligence and failure to observe these instructions:**

In the event of contestation, the original Italian shall constitute the valid reference text.

For any dispute, the competent court shall be the Court of Bologna.

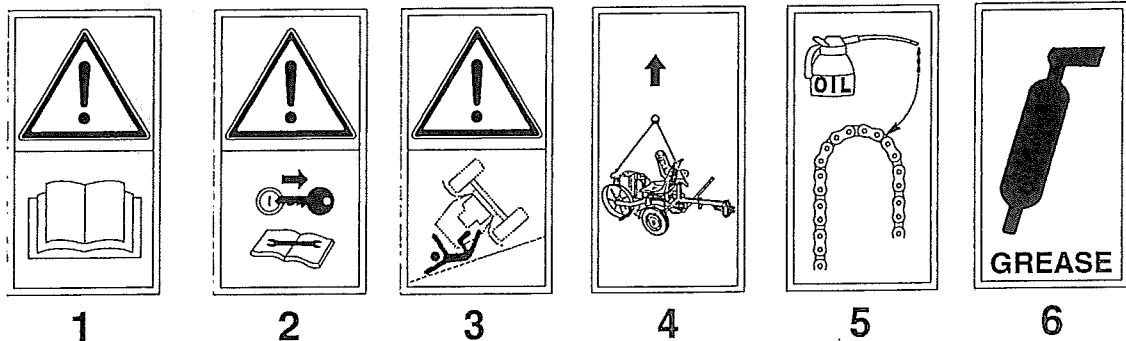
#### 4.0 - TECHNICAL DATA

The MINI-FOX transplanter has been constructed for use in conjunction with a motorized cultivator with minimum power of 12 - 14 HP. Because of its small size, light weight and manoeuvrability, it can be used for cultivating even small areas.

MINI-FOX		
	cm.	200
	cm.	120
	cm.	115
		140
		12
		9

**FIG. 1**

#### 5.0 - WARNING AND DANGER SIGNS


**FIG. 2**
**Warning signs:**

- 1 - Before starting work, read the instruction booklet carefully.
- 2 - Before carrying out any maintenance work, stop the machine and consult the use and maintenance manual.

**Danger signs:**

- 3 - Manoeuvre with care: the machine has a narrow gauge, which affects its stability.

**Indication signs:**

- 4 - Fixing points for lifting
- 5 - Points to be oiled
- 6 - Points to be greased

**6.0 - LIFTING**

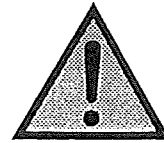


- 6.1 - Check that the lifting gear, hooks, ropes, chains, etc., are of sufficient capacity for the task (see weight indicated on machine data plate and in the weights and measures table).
- 6.2 - Fix hooks, ropes, chains, etc., in the positions shown in fig. 3.
- 6.3 - Operate the lifting system slowly and before lifting definitively, make certain that no deviation occurs and that there are no members of the public in the work area.
- 6.4 - **Keep at a safe distance** and do not for any reason enter areas subject to the risk of accidental falling of the machine.

**7.0 - TRANSPORT**

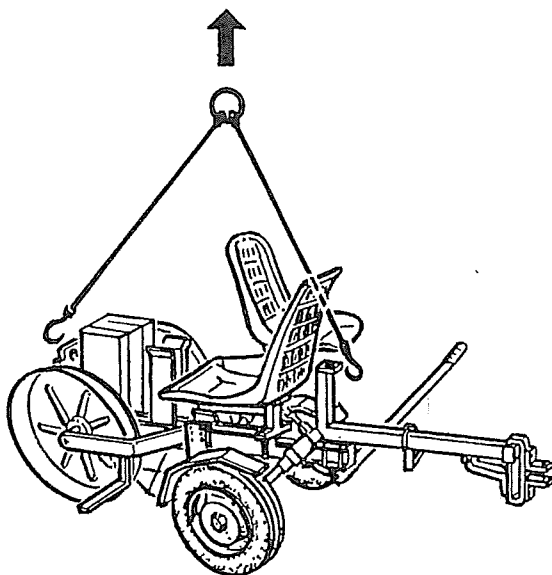
Check that the vehicle to be used is suitable in terms of capacity, size and any other respect stipulated in the highway code.  
 Position the machine in such a way that it does not protrude beyond the profile of the vehicle, and fix it adequately with ropes or other means so as to prevent uncontrolled movements.

**8.0 - REGULATIONS FOR SAFE USE AND THE PREVENTION OF ACCIDENTS**

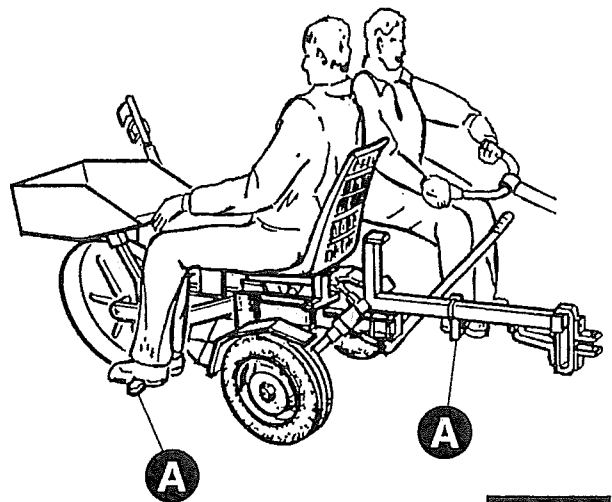


- 8.1 - **Read all the instructions before using the machine, especially those which relate to safeguarding against physical injury.** The Manufacturer accepts no responsibility for any damage arising from improper use of the machine or failure to observe these instructions.  
 It is the duty of the user to inform employees and other personnel of the directions set out in this document (**this is a legal requirement**).

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**FIG. 3**



**FIG. 4**



**8.2 - Pay attention to the danger symbols shown in this manual and on the machine.**

**8.3 - Adjustment, maintenance or work of any kind on the machine must be carried out only with the engine OFF, the machine resting on the ground, and the motorized cultivator chocked.**



**8.4 - Couple the machine only to a motorized cultivator of adequate power (see technical bulletin) and equipped with a tow bar.**

**8.5 - When coupling and uncoupling the machine, pay maximum attention so as to avoid the risk of crushing.**



**8.6 - It is strictly forbidden for the motorized cultivator to be driven by inexperienced personnel or personnel not in possession of a driving licence or in poor health.**

**8.7 - Never leave the operator position when the motorized cultivator is running.** Before leaving the motorized cultivator, stop the engine, operate the parking brake and remove the ignition key from the control panel (if applicable).

**8.8 - Remember that the road-holding, steering and braking are affected by the presence of a carried or towed machine.**

**8.9 - The operators must board the motorized cultivator only when it is stationary, and sit on the appropriate seat, placing their feet on the foot-boards (fig. 4.A).**



**It is strictly forbidden to travel on the road with the machine coupled to the motorized cultivator.** It is forbidden to alight if the machine is moving.

**8.10 - The moving parts (wheels - chains - distributors etc.) are protected by appropriate guards, and where this is not reasonably possible, sufficient space has been allowed so as to prevent the risk of crushing. Upon no account wear loose clothing,** which may become trapped in the parts described above during operation, and in any event, pay maximum attention while working, as moving parts of any machine are inherently dangerous.

**8.11 - Do not remove the safety and protection devices which have been installed.** If they are removed for the purpose of making adjustments or carrying out maintenance, ensure that they are refitted in their correct place.

**8.12 - Check the efficiency of the protection devices periodically and renew them when necessary, using only original spare parts, which can be supplied by the Manufacturer or its authorized dealers.**



**8.13 - Do not lend the machine to inexperienced persons:** in the event of an accident, you may be accountable.

## **9.0 - PREPARATION OF THE MACHINE (IF APPLICABLE)**

The machine may be shipped partially disassembled in order to save space. If this is the case, reassemble by referring to the figure on page 2 and the figures in the spare parts catalogue on pages 72 to 75.

### 10.0 - COUPLING TO THE MOTORIZED CULTIVATOR

**10.1** - The machine must be coupled to the motorized cultivator on flat ground.

**10.2** - Bring the motorized cultivator up to the machine, taking care not to get between the two at this stage, and proceed with coupling only when the engine is stopped. Couple as shown in fig. 5, and adjust the plates (fig. 5.A) by means of the screws (fig. 5.B).

Insert the pin (fig. 5.C) and the safety split pin (fig. 5.D).

**10.3** - The transplanting unit must work in a horizontal position. Adjust the position by adjusting the height of the plates (fig. 5.A) in relation to the coupling (fig. 5.E).

### 11.0 - UNCOUPLING FROM THE MOTORIZED CULTIVATOR

- position the equipment on the ground, only in a flat area;
- make certain that the equipment remains stable;
- remove fixing pins and plugs, taking care not to get between the equipment and the motorized cultivator.
- ensure again that everything is stable, bearing in mind all eventualities.

### 12.0 - USABLE PLANTS

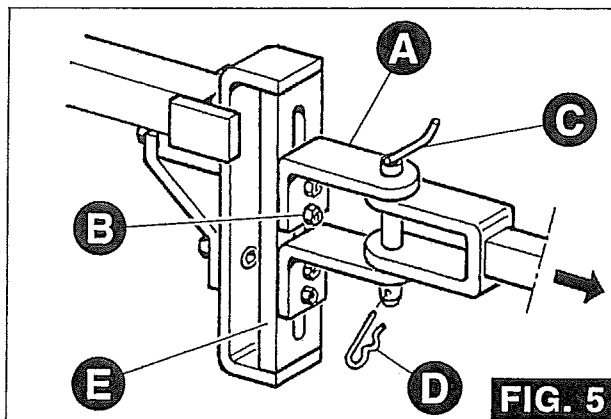
This transplanter has been produced for transplanting seedlings of vegetables, flowers, tobacco, nursery plants etc., with bare root or conical, pyramidal or cubic peat rootball (fig. 6). For best results observe the dimensions shown in fig. 6. For seedlings of different sizes, consult your dealer or Checchi & Magli directly.

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### 13.0 PLANT MAGAZINE

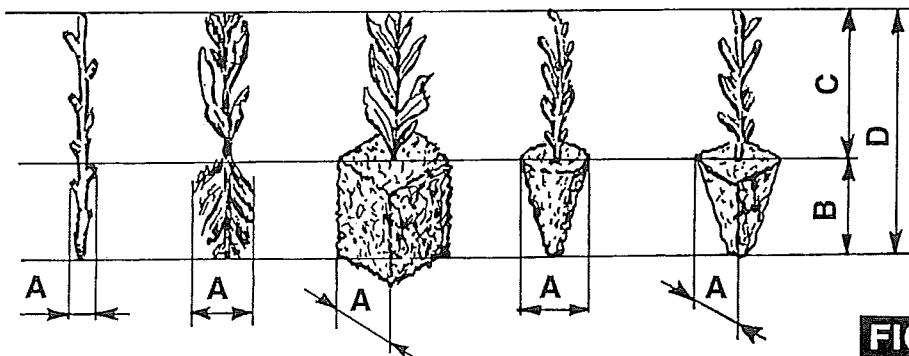
Planting box as shown in fig. 7.A normally come supplied. There are also other types of plant holder:

- inclined box holder (fig. 7.B)
- plant holder for plants with rootball (fig. 7.C).



**FIG. 5**

- A= cm 0.5 ÷ 4
- B= cm 4 ÷ 12
- C= cm 5 ÷ 23
- D= cm 9 ÷ 35



**FIG. 6**

**14.0 - LAND**

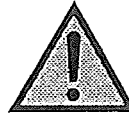
You are advised to work on land which has been suitably prepared with harrows or hoes. **The land must be sufficiently fragmented and slightly compacted on the surface.**

Do not work on very loose or very compact land, as this will make it difficult to achieve consistent and good quality transplanting.



**Take extreme care during manoeuvres on steeply sloping land.**

**15.0 - OPERATORS ON BOARD**



Pay particular attention to the safety regulations in points 8.9 and 8.10.

**16.0 - FUNCTIONS OF THE DRIVER**



**16.1 - Pay particular attention to the safety regulations set out in points 8.1 to 8.13.**

**16.2 - Handlebars**

By means of the adjustment joint (fig. 8.A) on the motorized cultivator, position the handlebars sideways and adjust their height so that they are in the correct position for driving.

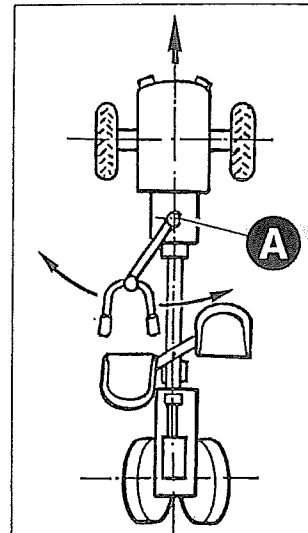


Warning: when you have made the adjustments, simulate a left turn and a right turn while stationary, so as ensure that manoeuvring is not impeded in any way.

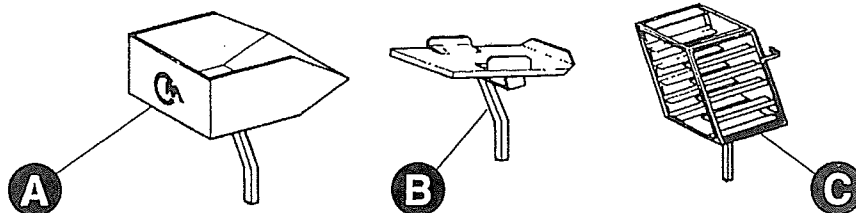
**16.3 - Before starting work decide with the operator on a "start" and "stop" signal. Adjust to the required speed by means of the gear change, keeping at the lowest possible rpm.**

Make certain that the exhaust fumes of the cultivator are not directed at the operators and that the silencer is completely efficient. By adhering to the above instructions, it is possible to work with limited noise levels, thus facilitating communication between the operator and the driver.

**-Do not reverse with the transplanter still positioned on the ground.**



**FIG. 8**



**FIG. 7**

16.4 - Lift the transplanter before you begin to move it, using the lever (fig. 9.A) and locating it in the appropriate safety slot (fig. 9.B).

**17.0 - FUNCTIONS OF THE OPERATOR**

Pick up the plants from the containers and place them correctly in the grippers (fig. 10.B). Decide, with the tractor driver, upon a working speed which allows sufficient time to perform the above functions properly.



Make constant visual checks of the transplant quality, and in the event of anomalies, give the STOP signal, so that you can check the causes and take the necessary corrective action.

**18.0 - TRANSPLANT DEPTH**

The part of the root or rootball which you wish to plant must protrude towards the outside of the rubber gripper (fig. 10.A); the correct depth can only be determined in this way.



The working depth of the ploughshare (fig. 12.N) is adjusted into the various positions available (fig. 12.M) according to the length of the root to be planted. It is not advisable to lower the ploughshare more than necessary.

**19.0 - GRIPPER CLOSING**

Closing of the grippers can be advanced or delayed by adjusting the guides which cause it to close (fig. 12.P):

- move up to advance
- move down to delay

**20.0 - TRANSPLANTING UNIT IN WORK CYCLE**

During the work cycle, it is important that the transplanting unit is positioned horizontally in relation to the ground.

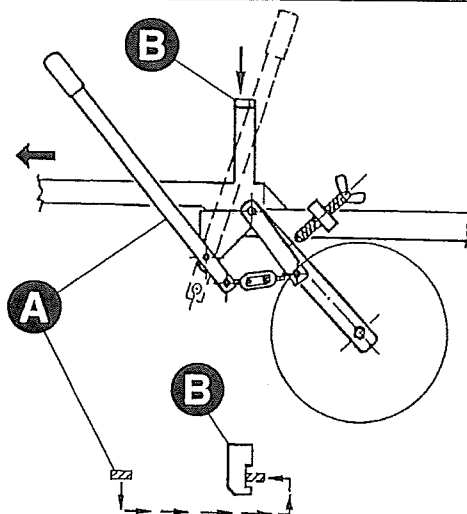
Before making any adjustment, refer to section 10.2.

**21.0 - TRANSPLANT DISTANCE**

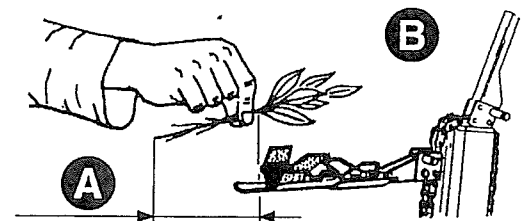
**21.1 - INTER-ROW SPACING**

The minimum distance which can be obtained is approximately 20 - 25 cm, according to the gauge of the motorized cultivator (see chapter 23.0).

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**FIG. 9**



**FIG. 10**

**21.2 - DISTANCE BETWEEN PLANTS**

The diagram (fig. 11) shows the distances which can be obtained with the three types of distributor that can be fitted:

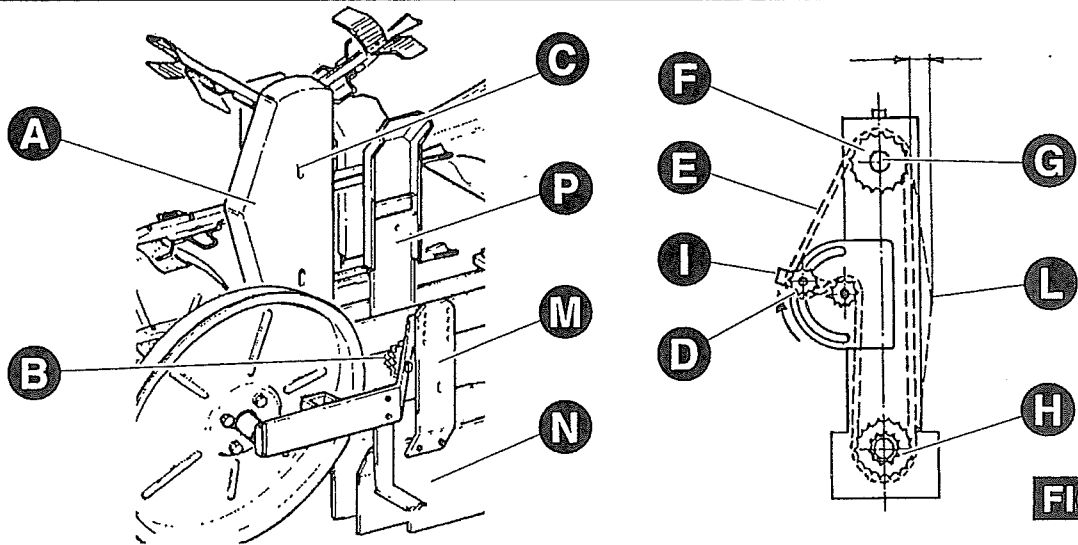
- (fig. 11.A) Standard distributor with 10 grippers      min. 23 cm      max 78 cm.
- (fig. 11.B) Special distributor with 15 grippers      min. 18 cm      max 52 cm.
- (fig. 11.C) Master distributor with 20 grippers      min. 13 cm      max 39 cm.

To renew the gears supplied (fig. 12.B) and obtain the distances indicated, **observe the safety regulations** and proceed as follows:

- Remove the casing (fig. 12.A) by turning the nuts (fig. 12.C)
- Release the chain tensioner nut (fig. 12.D) and turn upwards to slacken the chain (fig. 12.E)
- Renew the upper gear (fig. 12.F) by turning the nut (fig. 12.G) and positioning it as shown in the diagram in fig. 11.
- Position the chain on one of the two lower gears (fig. 12.H) corresponding to the required distance, indicated in the diagram (fig. 11)
- Check that the chain is correctly positioned on the respective gears and tension it again by turning the tensioning device (fig. 12.I) downwards and secure the nut (fig. 12.D).
- Correct chain tension will allow oscillation of 1 cm (fig. 12.L)
- Fix the casing (fig. 12.A) in its initial position.

<b>A</b>	10 standard		23	27	31	35	39	43	49	55	62	69	78
<b>B</b>	15 special			18	21	24	26	29	33	37	42	46	52
<b>C</b>	20 master			13	16	18	20	22	25	28	31	34	39
	Z		12	14	16	18	20	22	10	12	14	16	18

**FIG. 11**



**FIG. 12**

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### 22.0 - DRIVE WHEELS

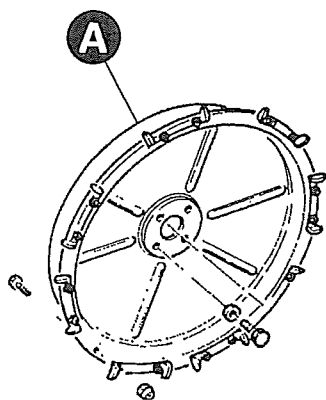
During work, the drive wheels **must hold the ground constantly** to operate the transplanting equipment. The lifting lever must be completely lowered. For more effective ground-holding, the wheels can be fitted with the anti-skid elements supplied (fig. 13.A).

### 23.0 - CULTIVATOR GAUGE

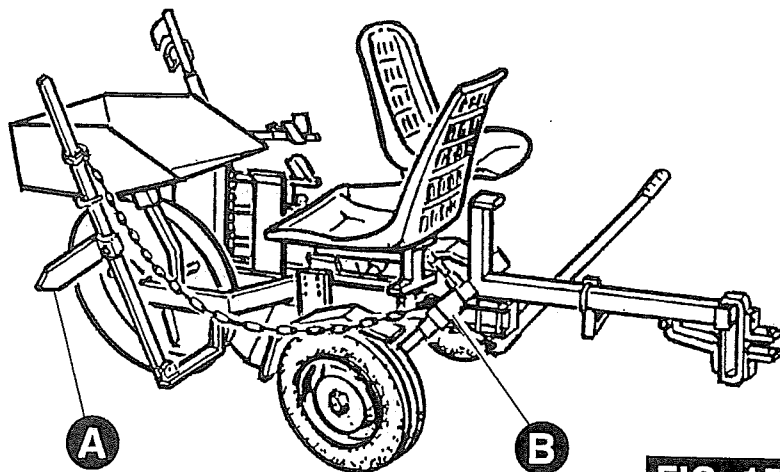
The tracks left on the ground by the wheels of the cultivator, as well as having a compacting effect, also usually lower the surface of the ground. **Keep a transplanting distance of not less than 10-12 cm from the tracks** (fig. 14) by adjusting the inter-row spacing or the gauge of the motorized cultivator.

### 24.0 - TRANSPLANTER GAUGE

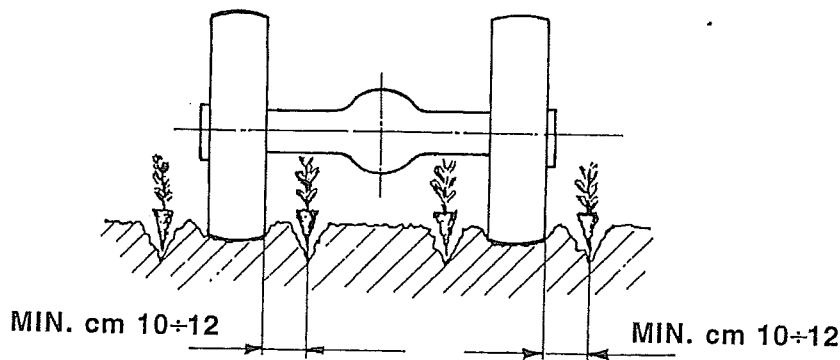
The gauge of the support wheels can be adjusted by moving the wheel support arms (fig. 15.B).



**FIG. 13**



**FIG. 15**



**FIG. 14**

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**⚠ 24.1 - Warning:** for maximum stability, you are advised to operate with the largest possible gauge obtainable from the motorized cultivator and transplanter. Adjust by means of the appropriate adjustment devices.

**24.2 -** Adjust the appropriate travel limit (fig. 16.A) so that the wheels (fig. 16.B) rest on the ground without supporting the full weight of the transplanter. This makes the transplanter more stable and prevents it from sinking on very soft ground.

**⚠ Warning:** if too high a proportion of weight is supported on the wheels (fig. 16.B), the grip of the transmission wheels will be poor.

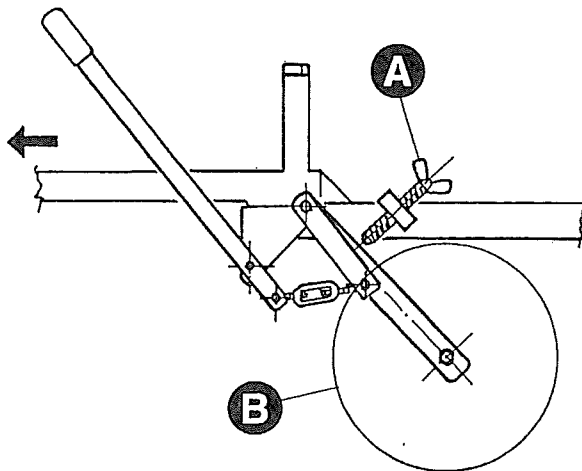
**25.0 - ACCESSORIES**

**25.1 - ROW MARKERS:** fit as shown in fig. 15 and adjust the point of the marker to the desired distance (fig. 15.A). Positioning on the ground and lifting are manual. Carry out these operations with the machine stationary and make certain that there is nobody in the area in question.

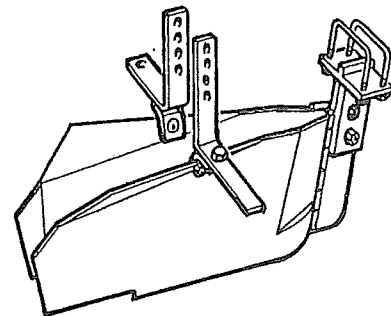
When this accessory is fitted, the overall dimensions of the machine are increased; for this reason, take greater care during manoeuvres.

**25.2 - ADJUSTABLE PLOUGHSHARE**

The mouldboards are width adjustable and make it possible to transplant seedlings with conical or cubic rootball with dimensions exceeding 4 cm up to a maximum of 5-6 cm (fig. 17).



**FIG. 16**



**FIG. 17**

**26.0 - MAINTENANCE**

The maintenance intervals listed below are guidelines for conditions of normal use. In the case of more demanding working conditions due to the environment or seasonal factors, the frequency of maintenance operations must be increased accordingly.

**Always carry out maintenance operations in accordance with the safety regulations set out in point 8.0.**

**26.1 - EVERY HOUR OF WORK**

-Remove any soil, peat or other dirt which may have accumulated on the grippers (fig. 18.A), inside or outside the ploughshare (fig. 18.B) and on the wheels (fig. 18.C and 18.L).

**26.2 - EVERY 8 HOURS OF WORK**

-Grease the wheel hubs (fig. 18.D).  
-Oil the distributor chain (fig. 18.E).

**26.3 - EVERY 40 HOURS OF WORK**

-Oil the drive chains (fig. 18.F)  
-Oil the joints (fig. 18.G and 18.H)  
-Check the tightness of the screws  
-Adjust the tension of the distributor chain by turning both the nuts (fig. 19.A).  
A degree of oscillation as shown in fig. 19.B indicates that the adjustment is correct.

**26.4 - RECOMMENDED LUBRICANTS**

Grease and oil can be used in the same way as for the motorized cultivator, in accordance with the warnings and precautions appearing on the relative containers.

**27.0 - SEASONAL DISUSE**

At the end of the season, or in the event that a stoppage of more than one month is envisaged, it is advisable to proceed as follows:

**27.1** - wash and dry the equipment, paying particular attention to removing residues of fertilizers or chemical products.

**27.2** - check and if necessary, renew damaged or worn parts.

**27.3** - grease thoroughly, store the equipment in a dry area and protect it with a tarpaulin. Apply a thin layer of lubricant to the parts not protected by galvanization or paint.

**27.4** - Position the equipment as indicated in point 11.0.

The advantages which derive from complying with the above recommendations are exclusively of benefit to the user, who will then find the equipment in excellent condition when it is next required.

**28.0 - DISPOSAL**

The machine consists of ferrous metals and rubber tyres. At the end of its working life it must be scrapped at an authorized waste disposal centre.

**29.0 - SPARE PARTS**

Orders for spare parts must preferably be sent via an authorized dealer and accompanied by the following information:

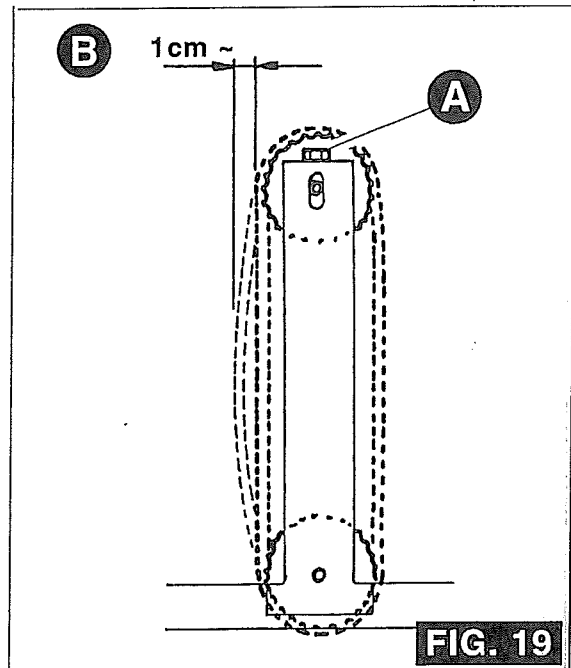
**29.1** - type, model and serial number shown on the affixed data plate (fig. 18.M).

**29.2** - code number and description taken from the spare parts catalogue.

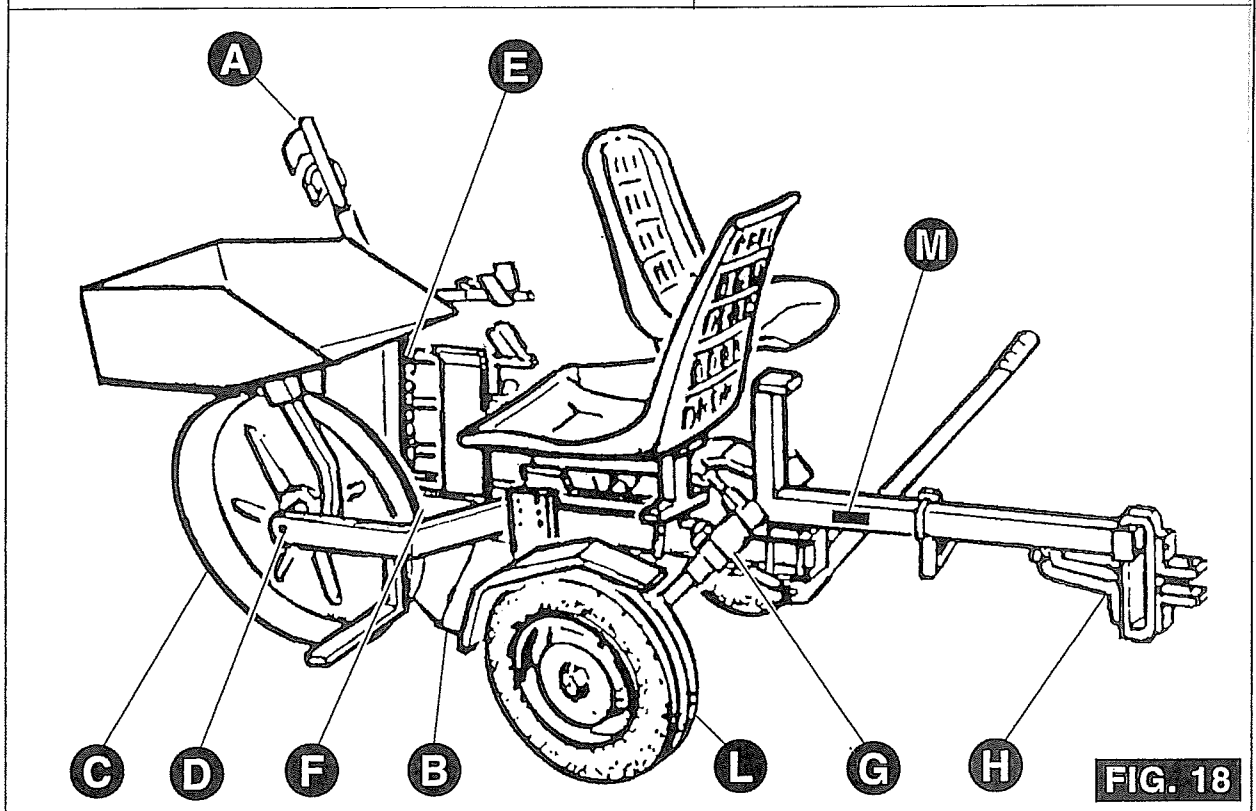
**29.3** - quantity requested

**29.4** - shipment is made according to the customer's requests; in the absence of any requests, it will be made by the means considered most suitable.

**29.5** - the terms Left and Right are intended to indicate the left and right of the machine when viewed from behind.



**FIG. 19**



**FIG. 18**

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