

Checchi & Magli



**Manuale uso e manutenzione
TRAPIANTATRICE**

italiano

**Manuel d'instructions et d'entretien
REPIQUEUSE**

français

**Owner's manual
TRANSPLANTER**

english

**Bedienungs-anleitung
PFLANZENSETZMASCHINE**

deutsch

**Manual de uso y manutencion
TRASPLANTADORA**

español

FOX

FOX-DT

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1.0 - DECLARATION OF CONFORMITY

The company CHECCHI & MAGLI s.r.l.
Via Guizzardi n. 38
40054 - BUDRIO - BOLOGNA - ITALY
TEL. 051/800253
FAX. 051/6920611

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

FOX/1 - 2 - 3 - 4 - 5

FOX-DT/2 - 3 - 4 - 5 - 6 - 7

conform with the Essential Requirements for Safety and the Protection of Health set out in Directive CEE 89/392, 98/37 EC and subsequent amendments.

EN 292-1, EN 292-2 and EN 294 relating to safety of machinery were specifically

followed.

Budrio, January 2000

CHECCHI & MAGLI s.r.l.

The President

Nerio Checchi

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 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 FOX and FOX-DT transplanters. This semi-automatic transplanter driven by its own drive wheels, can operate only when coupled to a tractor equipped with universal three-point linkage, and with one or two operators on board each transplanting unit. 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.

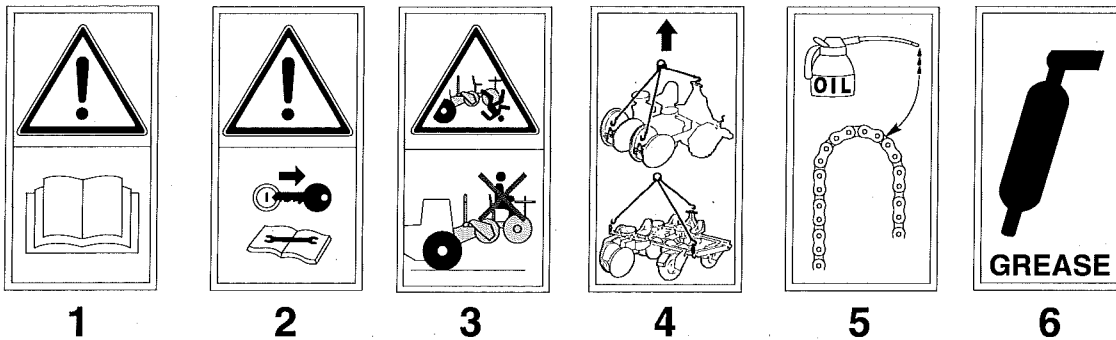
The Manufacturer accepts no responsibility whatsoever in the event of negligence and failure to observe these instructions.

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

		FOX					FOX - DT					
		1	2	3	4	5	2	3	4	5	6	7
	cm.	290	150	290	150	290	150	290	150	290	150	290
	cm.	150	150	200	200	250	300	300	350	350	400	400
	cm.	110	110	110	110	110	110	110	110	110	110	110
		365	150	460	250	560	360	670	510	815	620	960
		25	20	30	25	40	30	50	40	60	50	70
		18	14	22	18	29	22	36	29	44	36	51

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 - Do not travel from one work area to another or on the road with the lift unit raised and operators on board.

Indication signs:

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

english

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 three 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**).



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 tractor chocked.**

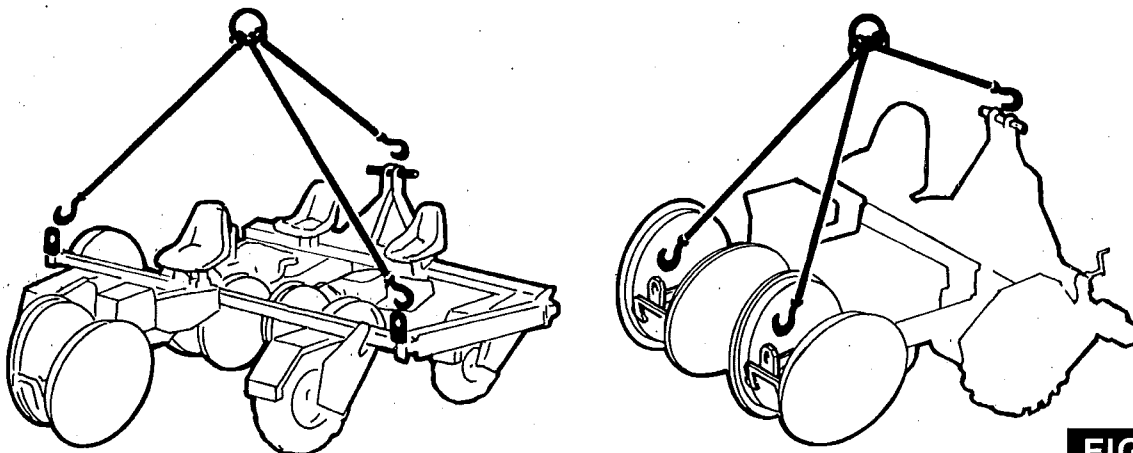




FIG. 3

english

 **8.4** - Couple the machine only to a tractor of adequate power (see technical bulletin referring to the model in use), and with a lift unit which complies with standards specifically for tractors.

Adhere to the maximum stipulated weight on the axle, and the total mobile weight.

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 tractor 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 tractor is running.

Before leaving the tractor, lower the lift unit, stop the engine, operate the parking brake and remove the ignition key from the control panel.

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

8.9 - When driving on the road it is necessary to abide by the highway code of the country in question.

8.10 - When transporting by road, with the machine lifted, put the hydraulic lift unit control lever in the locked position.


 **8.11** - The operators must take position on their respective seats and place their feet on the foot-rests (fig. 4.A) **only when the tractor is stationary and chocked and the machine is on the ground.**

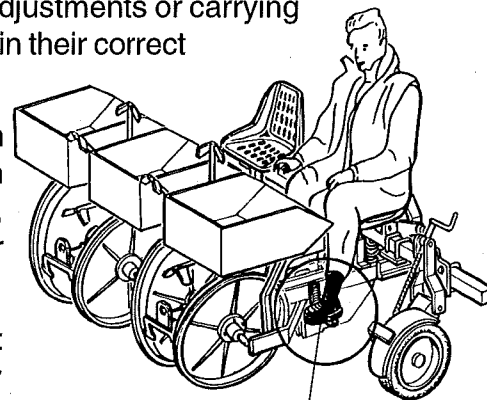
It is strictly forbidden to travel from one work area to another or on the road with the lift unit raised and operators on board. It is forbidden to alight if the machine is moving or not positioned on the ground.

8.12 - 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.

8.13 - 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.

8.14 - 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.

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



A

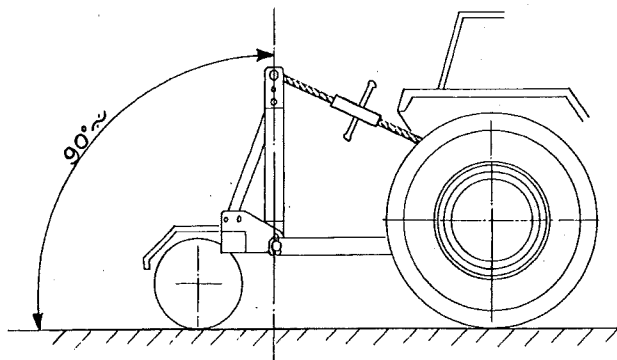
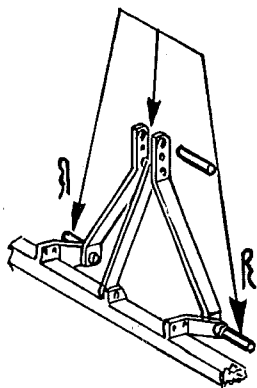
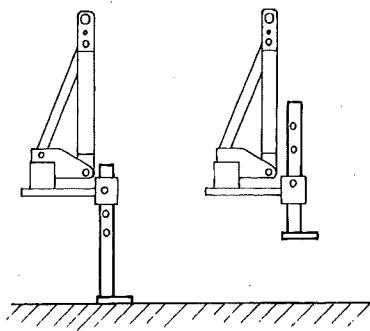
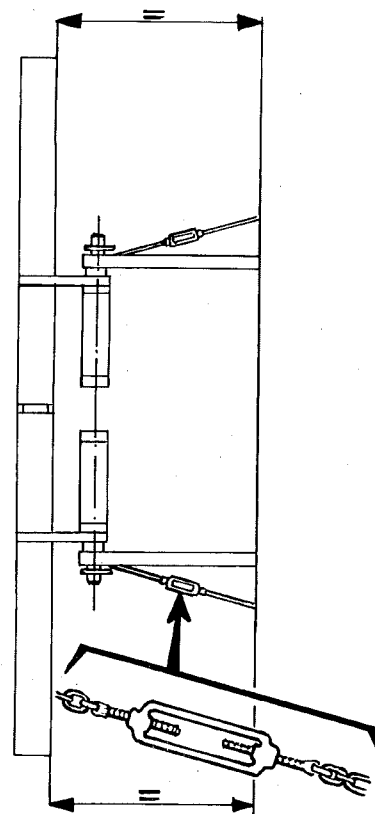
FIG. 4

9.0 - COUPLING TO THE TRACTOR

- 9.1 - The machine must be coupled to the tractor on flat ground.
- 9.2 - Check that the three-point linkages are of a compatible category.
- 9.3 - Bring the tractor up to the machine, **taking care not to get between the two at this stage**, and proceed with coupling only when the tractor is stationary. Fix the three coupling arms with the relative pins and insert the appropriate safety split pins (fig. 5).
- 9.4 - Limit sideways movements and keep the machine parallel with the tractor, using the stabilizer chains and arm adjustment device (fig. 5.b).
- 9.5 - Adjust the third point arm until the machine coupling is at right angles (fig. 5.a).
- 9.6 - If applicable, position the support foot as shown in fig. 6.

10.0 - UNCOUPLING FROM THE TRACTOR

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


FIG. 5a

FIG. 5

FIG. 6

FIG. 5b

11.0 - 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. 7). For best results observe the dimensions shown in fig. 7. For seedlings of different sizes, consult your dealer or Checchi & Magli directly.

12.0 PLANT MAGAZINE

Planting box as shown in fig. 8.A normally come supplied. There are also other types of plant holder:

- inclined box holder (fig. 8.B)
- plant holder for plants with rootball (fig. 8.C).

All plants must be removed from the magazines when travelling on the road.

13.0 - 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.

14.0 - OPERATORS ON BOARD



Pay particular attention to the safety regulations in points 8.11 and 8.12.

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

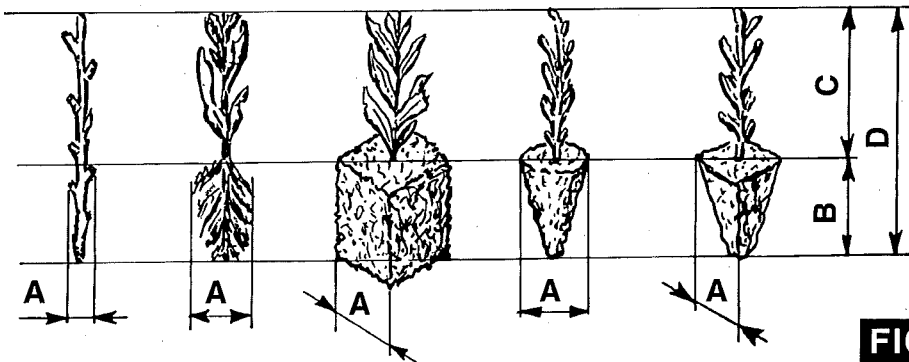


FIG. 7

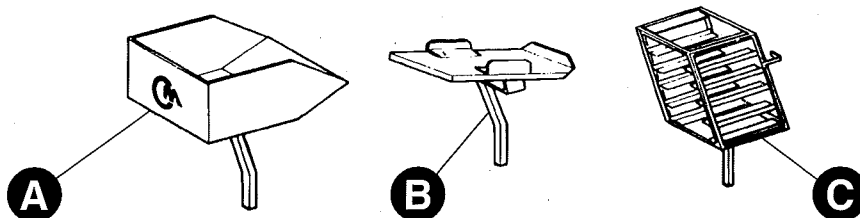


FIG. 8

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15.0 - FUNCTIONS OF THE TRACTOR DRIVER

Pay particular attention to the safety regulations in points 8.11 and 8.12. Before starting work decide with the operator(s) 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 tractor's exhaust fumes 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 operators and the tractor driver.


-AVOID REVERSE MOTIONS WITH THE TRANSPLANTER STILL ON THE SOIL.

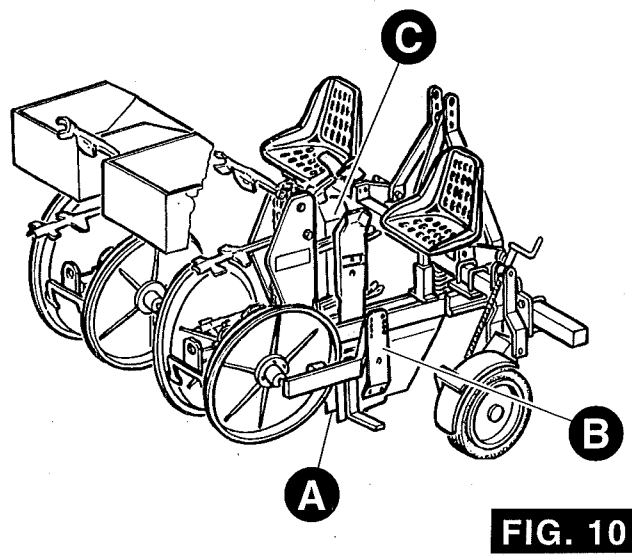
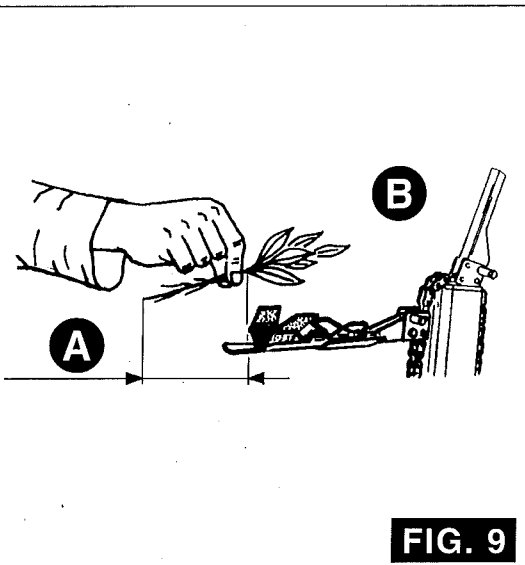
16.0 - FUNCTIONS OF THE OPERATOR

Pick up the plants from the containers and place them correctly in the grippers (fig. 9.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.

17.0 - TRANSPLANT DEPTH

The part of the root or rootball which you wish to plant must protrude towards the outside of the rubber gripper (fig. 9.A); the correct depth can only be determined in this way.

 The working depth of the ploughshare (fig. 10.A) is adjusted into the various positions available (fig. 10.B) according to the length of the root to be planted. It is not advisable to lower the ploughshare more than necessary.



18.0 - GRIPPER CLOSING

Closing of the grippers can be advanced or delayed by adjusting the guides which cause it to close (fig. 10.C):

- move up to advance
- move down to delay

19.0 - TRANSPLANT UNIT IN WORK PHASE

19.1 - Use the support wheel adjustment device (fig. 11) to set the **transplant units to a horizontal position in relation to the ground** (fig. 11.A).

19.2 - Check that an **oscillation space of approximately 2 cm** remains between the beam stop and the linkage (fig. 12).

This is essential to allow the transplant unit to adapt itself to any unevenness in the ground.

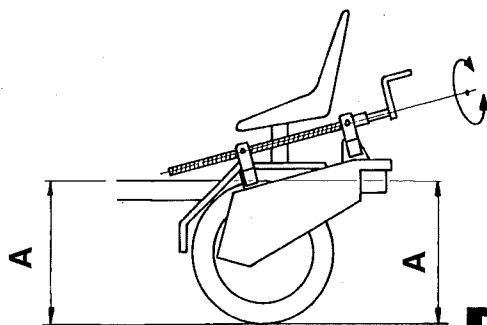
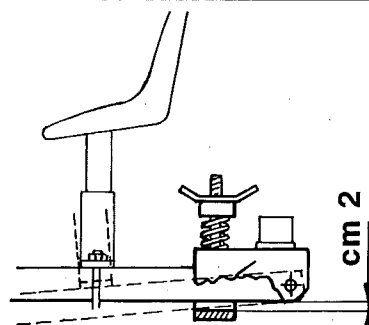
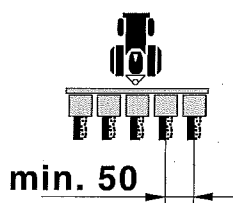
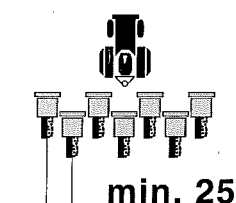
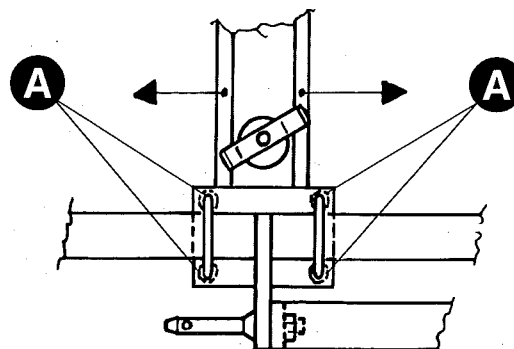
20.0 - TRANSPLANT DISTANCE

INTER-ROW SPACING: minimum 50 cm for single frame version (fig. 13)

minimum 25 cm for double frame version (DT) (fig. 14)

Inter-row spacing must be adjusted with the machine coupled to the tractor and with the lift unit lowered.

Clean the hexagonal axis and the frame of any soil or other dirt, slacken the screws (fig. 15.A), position the unit at the desired distance, sliding it along the frame. Do not carry out these operations by hammering with metal objects as this could cause serious damage to the components.


FIG. 11

FIG. 12

FOX
FIG. 13

FOX-DT
FIG. 14

FIG. 15

20.1 - DISTANCE BETWEEN PLANTS

The diagram (fig. 16) shows the distances which can be obtained with the three types of distributor that can be fitted:

(fig. 16.A) Standard distributor with 10 grippers min. 23 cm max 80 cm.

(fig. 16.B) Special distributor with 15 grippers min. 18 cm max 55 cm.

(fig. 16.C) Master distributor with 10 grippers min. 13 cm max. 40 cm.

To renew the gears supplied (fig. 17.B) and obtain the distances indicated, **observe the safety regulations** and proceed as follows:

-Remove the casing (fig. 17.A) by turning the nuts (fig. 17.C)

-Release the chain tensioner nut (fig. 17.D) and turn upwards to slacken the chain (fig. 17.E)

-Renew the upper gear (fig. 17.F) by turning the nut (fig. 17.G) and positioning it as shown in the diagram in fig. 16.

-Position the chain on one of the two lower gears (fig. 17.H) corresponding to the required distance, indicated in the diagram (fig. 16)

-Check that the chain is correctly positioned on the respective gears and tension it again by turning the tensioning device (fig. 17.L) downwards and secure the nut (fig. 17.D).

-Correct chain tension will allow oscillation of 1 cm (fig. 17.L)

-Fix the casing (fig. 17.A) in its initial position.


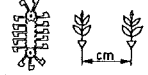
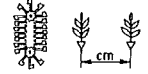

A	10 standard		23	27	31	35	39	43	49	55	62	69	78
B	15 special			18	21	24	26	29	33	37	42	46	52
C	20 master			13	16	18	20	22	25	28	31	34	39
		Z 	12	14	16	18	20	22	10	12	14	16	18

FIG. 16

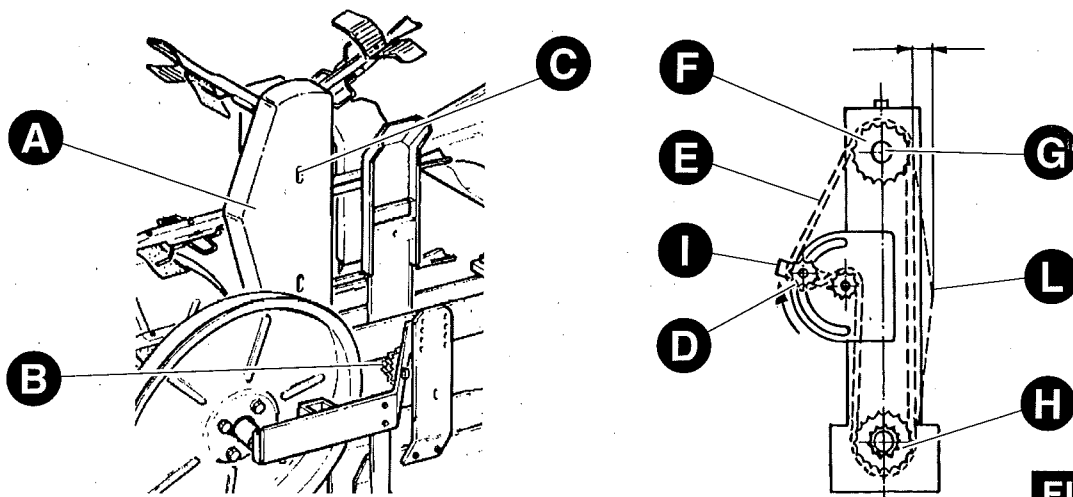


FIG. 17

21.0 - DRIVE WHEELS

During work, the drive wheels **must hold the ground constantly** to operate the transplanting equipment. The tractor's hydraulic lift unit must be completely lowered. For more effective ground-holding, the anti-skid shoes supplied (fig. 18.D) can be fitted.

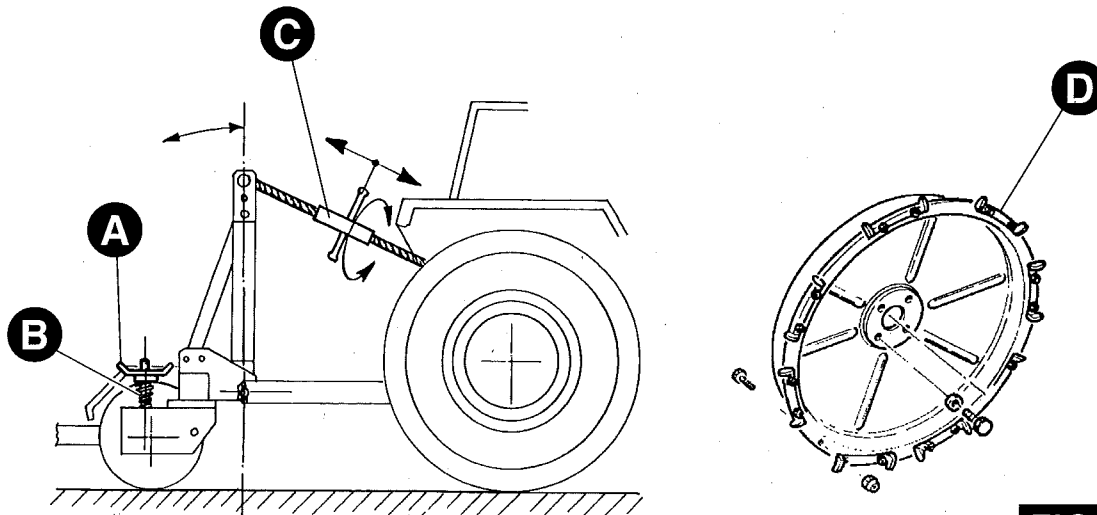
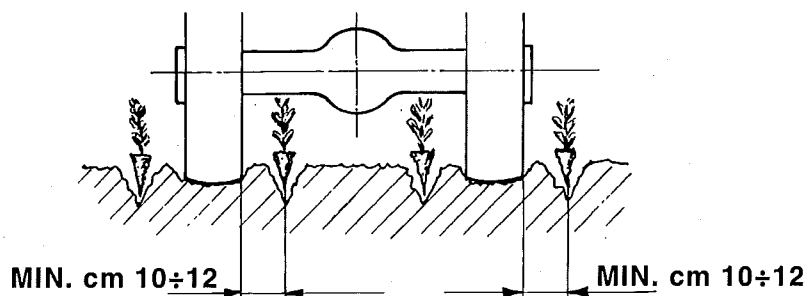
22.0 - RIDGING INTENSITY

To increase the ridging intensity of the ground near the plant, proceed as follows:

- 22.1 - Lengthen the adjustable arm of the tractor's third point (fig. 18.C)
- 22.2 - Tighten the adjustment device (fig. 18.A) to give more pressure to the spring (fig. 18.B)
- 22.3 - To reduce the ridging intensity, carry out the above operations in reverse order.

23.0 - TRACTOR GAUGE

The imprint left on the ground by the wheels of the tractor, as well as having a compacting effect, also usually lowers the surface of the ground. **Keep a transplanting distance of not less than 10-12 cm from the imprint** (fig. 19) by adjusting the inter-row spacing or the gauge of the tractor.


FIG. 18

FIG. 19

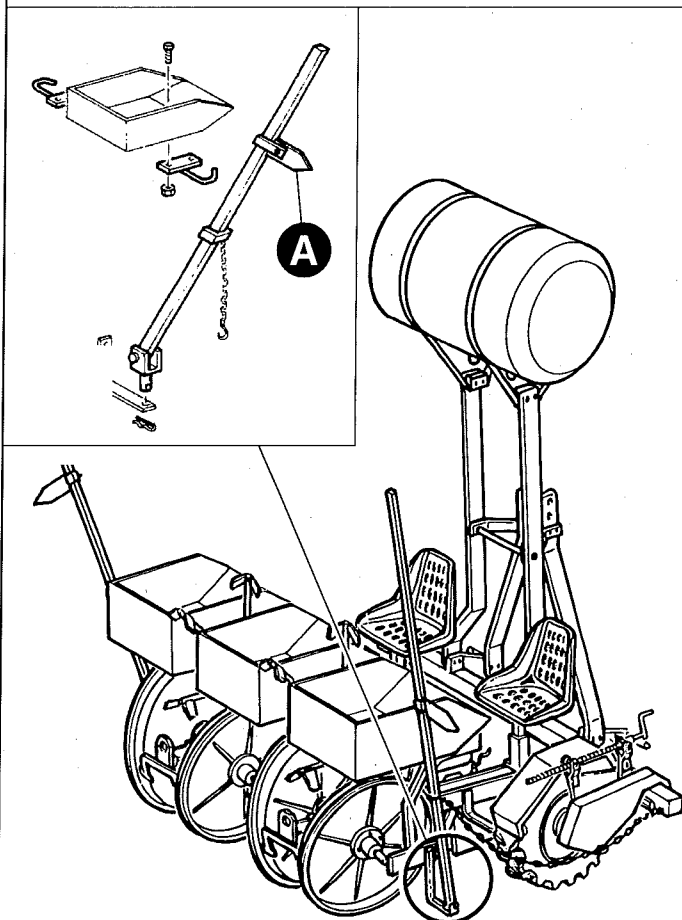
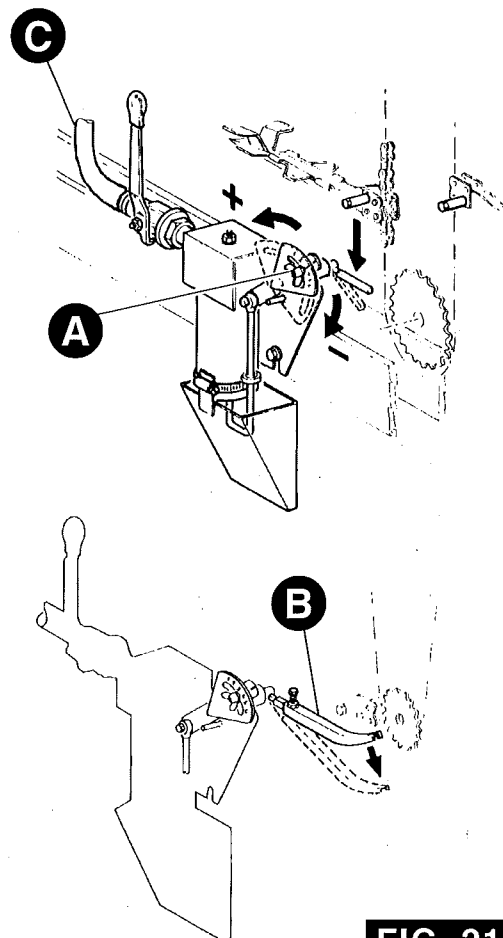
24.0 - ACCESSORIES

24.1 - ROW MARKERS: fit as shown in (fig. 20) and adjust the point of the marker to the desired distance (fig. 20.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 and disassemble before travelling on the road.

24.2 - WATERING DEVICE

Allows localized irrigation; is synchronized with the gripper type distributor and the quantity of water for each seedling (from 0 to 20 cl approx.) can be adjusted by means of the sector (fig. 21.A). To maintain perfect synchrony of water distribution when the distance between plants is over 43 cm only, fit the opening lever extension supplied (fig. 21.B). The water must reach the watering device by means of the delivery tube (fig. 21.C) **by force of gravity only**. Pressurized delivery prejudices correct operation and causes **serious mechanical damage**.


FIG. 20

FIG. 21

24.3 - 300 LITRE TANK

The tank supplies the watering device and must be positioned as shown in fig. 20. When this accessory is fitted, the weight of the fully loaded transplanter is increased by about 360 kg, so use only a tractor with **power of at least 10 HP / 7.5 kW more** than indicated in point 4.0.

Do not fit or use the tank when the gradient of the terrain exceeds 10 - 12% as this may cause problems of stability and threaten the safety of the operators.

Before uncoupling the transplanter from the tractor, discharge the remaining water from the tank by opening the watering device valve. **This operation is essential for avoiding unnecessary overloading which may prejudice the stability of the machine and make subsequent re-coupling more difficult.**

24.4 - EXTRA SEAT

Meets the possible need for two operators for each transplanting unit; only for row inter-spacing of more than 100 cm.

Fit as shown in fig. 22.

24.5 - ADJUSTABLE CLOD SEPARATOR

Recommended for land which has not been finely prepared.

With suitable depth adjustment, it has the function of shifting surface clods bi-laterally, at each transplanting unit.

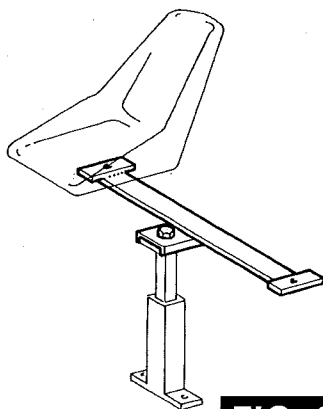
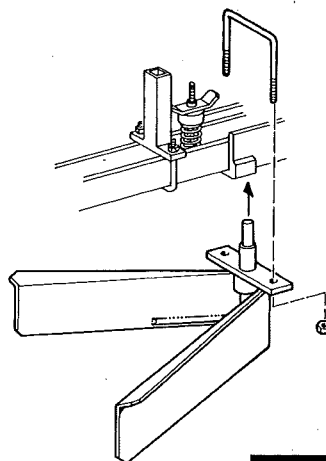
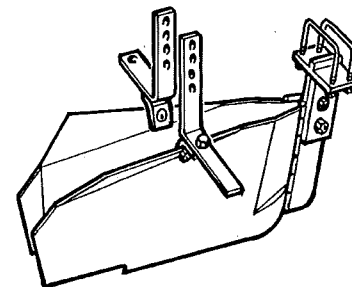
Fit as shown in fig. 23.

24.6 - 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. 24).

24.7 - OTHER ACCESSORIES

Other possible accessories (e.g. microgranulator, fertilizer-broadcaster, etc.) come supplied with specific instructions for use and assembly.


FIG. 22

FIG. 23

FIG. 24

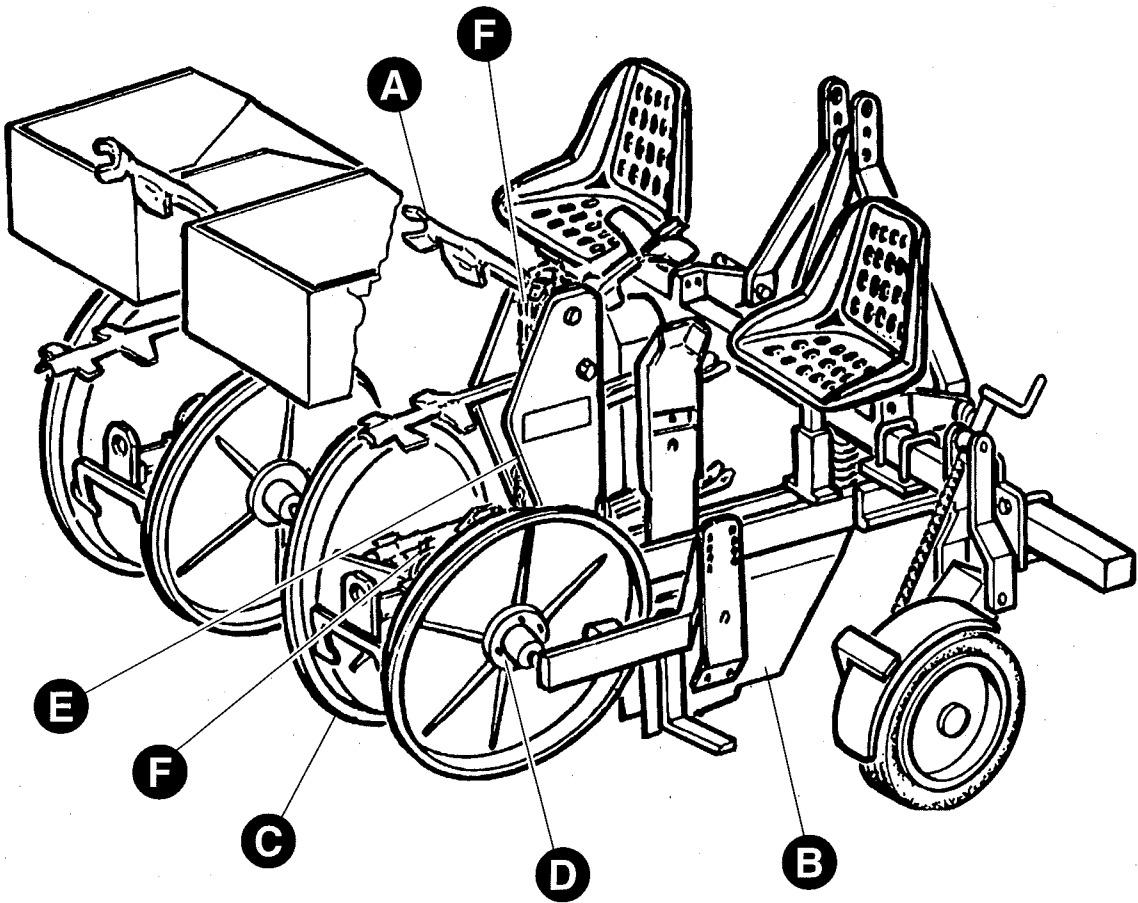


FIG. 25

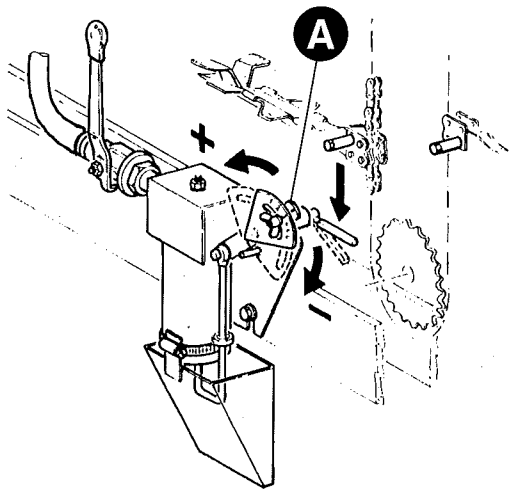


FIG. 26

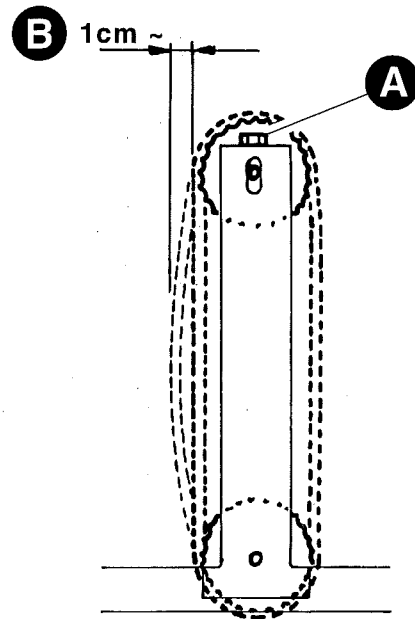


FIG. 27

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25.0 - MAINTENANCE

The maintenance intervals listed below are guidelines for conditions of normal use. In the case of more demanding working conditions due to 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.

25.1 - EVERY HOUR OF WORK

-Remove any residues of earth or peat that have accumulated on the grippers (fig. 25.A), outside and inside the ploughshare (fig. 25.B) and on the wheels (fig. 25.C).

25.2 - EVERY 8 HOURS OF WORK

-Grease the wheel hubs (fig. 25.D)

-Oil the distributor chain (fig. 25.E)

25.3 - EVERY 40 HOURS OF WORK

-Oil the transmission chains (fig. 25.F)

-Grease the watering device (fig. 26.A)

-Check that the screws are tight

-Adjust the tension of the distributor chain by turning both nuts (fig. 27.A).

Oscillation as shown in fig. 27 shows that the adjustment is correct.

25.4 - RECOMMENDED LUBRICANTS

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

26.0 - 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:

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

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

26.3 - 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.

26.4 - Position the equipment as indicated in point 8.0.

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.

27.0 - DISPOSAL

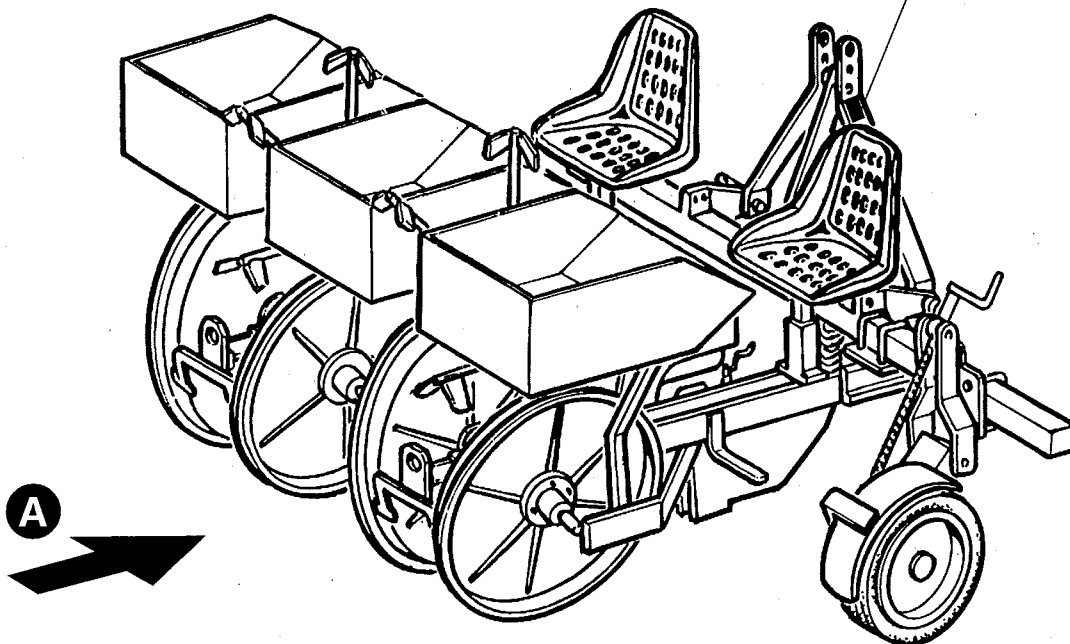
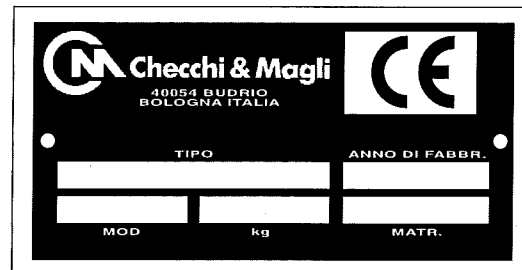
The machine consists of ferrous metals and rubber tyres.

At the end of its working life it must be scrapped at an authorized waste disposal centre.

28.0 - SPARE PARTS

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

- 28.1 - type, model and serial number shown on the affixed data plate (fig. 28).
- 28.2 - code number and description taken from the spare parts catalogue.
- 28.3 - quantity requested
- 28.4 - 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.
- 28.5 - the terms Left and Right are intended to indicate the left and right of the machine when viewed from behind (fig. 28.A).

**FIG. 28**