

MECCANICA BENASSI SPA

MOTOR CULTIVATOR MF 223 REVERSIBLE

USER'S MANUAL



**READ THIS MANUAL
CAREFULLY**

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PRINTED IN ITALY

1 - FOREWORD



This symbol is used to highlight an important safety information. If this information is ignored, people are in danger either of possible injuries – even serious ones – or death.

IMPORTANT

This term highlights special precautions to be taken in order not to damage the machine.

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2 - MACHINE IDENTIFICATION AND MARKING

The machine serial number is printed on the drive box.

IMPORTANT NOTE

Always mention the machine serial number when calling our technical service or when ordering spare parts.

MARKING







The CE mark is on the handle support as this example



Marking example.

3 - CONDITIONS AND USE

This manual gives you general information on how this machine should be used and maintained. For any technical problem, please, call Your confidential dealer.

-  This machine has been designed to be used in compliance with what specified in the machine descriptions and safety warnings of this instructions manual.
-  Any other use is not allowed. The manufacturer is not responsible for damages caused by any use then the intended use. The user is fully responsible for any possible risk.
-  Use, maintenance and repair clauses prescribed by the manufacturer are also integral part of the machine intended use.
-  Only people familiar with this machine and well aware of its hidden risks can use, repair and maintain it.
-  The manufacturer is not responsible for damages caused by non-authorized changes made on this machine.
-  Besides warnings mentioned in this manual, please, also comply with general regulations on safety and accident prevention of EEC and the country in which this machine will be operating.

4 - WARRANTY

If in doubt on causes and possible solutions for a certain trouble, please, call our authorized dealer.

This should be absolutely done during the warranty period, since any repair made by non-authorized workshops makes this warranty null and void.

Bear always in mind that the authorized dealer has all special tools, technical specifications and spare parts necessary for properly fixing the machine.

Therefore, he should be called in case of any doubt on maintenance specifications and/or procedures. Some pages of this manual might not be perfectly right due to misprints or production changes. For this reason, call Your dealer before being perfectly familiar with this machine and personally maintaining this machine. For further information on use and maintenance of this machine, ask your authorized dealer for the proper technical manuals.

Our materials have a 12 months warranty (coverings and electrical parts are not included). The manufacturer agrees on replacing those parts considered as faulty free of charge. Purchaser will be charged with labour costs – necessary for repairing the machine – and possible transport costs. Both the warranty claim and the returned piece should always be addressed to our Spare Parts Department and accompanied by regular freight bill mentioning all the machine details.

As far as materials available on the market – especially engines – are concerned, regulations of our supplier will apply and applications for possible technical service should be addressed to the local specialized technical service centres.





5 - SAFETY WARNINGS



- 1) This machine has been designed and manufactured for being used by one operator only, and is driven by means of the appropriate handlebars. Any other use is not permitted.!
- 2) Before operating the machine, read the Use and Maintenance manual thoroughly, so that you are fully aware of all the operating controls and safety aspects of the machine.
- 3) Do not under any circumstances transport people or objects on the machine.
- 4) Always ensure that the machine's safety devices are correctly mounted and in perfect working condition..
- 5) Before use, check that all the controls, in particular the clutch, the motor stop and the brakes (if fitted) are in good working order.
- 6) Any modifications or spurious parts being fitted without the Manufacturer consent will nullify the guarantee, and any possible resulting damage will not be answered for.
- 7) This machine must not be used by children or inexperienced persons.
- 8) Before operating the machine, check that the area is clear and free of debris and that there are no people within the working area (danger zone). The operator, will be held responsible for the safety of third parties, if these are found within the working area of the machine. Do not use the machine under these conditions.
- 9) Keep clear of cutting blades at all times while the machine is in operation. Pay particular attention when reversing; keep hands and feet clear.
- 10) Use the machine only with the handles in the correct working position. This allows a safe working distance between the operator and operating area.
- 11) Use only original accessories and spare parts to guarantee safety and correct operation of the machine.
- 12) Stop engine before refuelling and remove ignition key (if fitted).
- 13) Handle the fuel with care to avoid spilling on the machine; clean any spillage immediately.
- 14) Never refuel in confined places, in vicinity of open flames or near the source of sparks. No smoking!
- 15) Before starting the engine, check that all the controls are in the idle position.
- 16) Do not smoke when starting the engine!
- 17) Do not run the machine in a confined area as toxic exhaust gas can kill.
- 18) Plan your work before commencing.
- 19) Do not use the machine when you are tired.
- 20) Engage the clutch gradually; sudden engagement could cause the machine to rear up.
- 21) The area next to the engine exhaust will most likely reach temperatures above 80°. **Attention!** Danger of scalding.
- 22) Always wear close fitting clothes and anti-slip shoes or boots. For safety reasons avoid using loose clothing.

- 23) Make regular checks that all bolts and nuts are well tightened.
- 24) Keep the area of work clear and clean.
- 25) Only use the machine in clear visibility.
- 26) Avoid working with blunt cutting blades. .
- 27) Pay maximum attention and use good sense when operating the machine.
- 28) If you hit any objects during work, stop the machine and check for any damage immediately.
- 29) During movement to and from the area of work, disengage the Power Take Off. (P.T.O).
- 30) Pay attention when reversing the machine not to trip over anything. If you loose your balancer, release the handlebars immediately; the Motor stop or the disengagement will immediately stop the machine.
- 31) Do not under any circumstance attempt to by-pass the motor-stop device or remove the disengagement device. The machine would result having no safety precautions and would be extremely dangerous.
- 32) Do not travel down hill with the clutch disengaged or the gears in idle.
- 33) The machine's speed must always suit the conditions and the environment.
- 34) Do not perform cleaning or maintenance operations of the machine when the engine is running.
- 35) Avoid sharps turns when travelling up hill, down hill or across steep slopes.
- 36) In steep descents, do not disengage the drive and do not change gear.
- 37) When possible, avoid working up or down hill .Always travel across the slope.
- 38) Do not work on very steep slopes (max.30%).
- 39) Avoid overfilling the fuel tank.
- 40) If there is fuel in the tank, avoid tilting the machine during maintenance or adjustment.
- 41) During use, keep the hot sections of the engine (i.e. cylinder head, exhaust, etc.) clean to avoid a build up of debris that will overheat the engine.
- 42) Whenever possible, stop the machine on level ground.
- 43) When stopping on unlevelled ground, engage 1st gear (up hill) or reverse gear (down hill).
- 44) If leaving the machine for a long time, ensure it is inaccessible to children and inexperienced people. Close the fuel tap (if fitted).
- 45) Do not leave the machine with the engine running.
- 46) The maintenance instructions of the machine must always be carefully followed and worn parts replaced when necessary.
- 47) If the machine is to remain unused for some time, clean it accurately and insert the appropriate protections.
- 48) Apart from the previous items, it is necessary to take heed of the specific safety norms in force in the Country where the machine is operating.



6 - MACHINE START

READ CAREFULLY THE WHOLE MANUAL BEFORE STARTING THIS MACHINE.



NOTE:

The manufacturer aims at ever improving both design and quality of his products. As a consequence, even though this manual includes latest and most up-dated information available when printed, there might be small differences between your machine and the information of this manual. For any doubt or uncertainties on this manual, please call our authorized dealer. This manual is integral part of this machine and should always accompany this machine when sold.

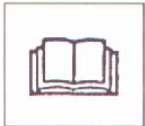
7 - WARNING SIGNS



“WARNING” Comply with what specified in safety warnings and warning signs.



“DANGER” Fire risk.



Read use instructions !



“DANGER” Blades and rotating parts in operation. Keep hands and feet away.



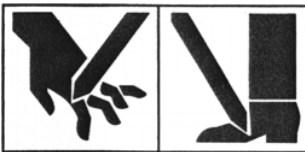
“DANGER” Risk of burns



“DANGER” Blades and rotating parts in operation. Keep hands and feet away.



“DANGER” Keep children away from the machine.



“DANGER” due to working knives and mowing bars! Keep hands and feet away from them.

8 - DRIVING SIGNS



DISENGAGEMENT

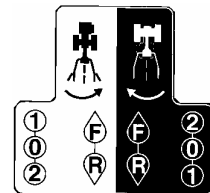


ACCELERATOR HANDLE



STOP

ENGAGEMENT
DISENGAGEMENT

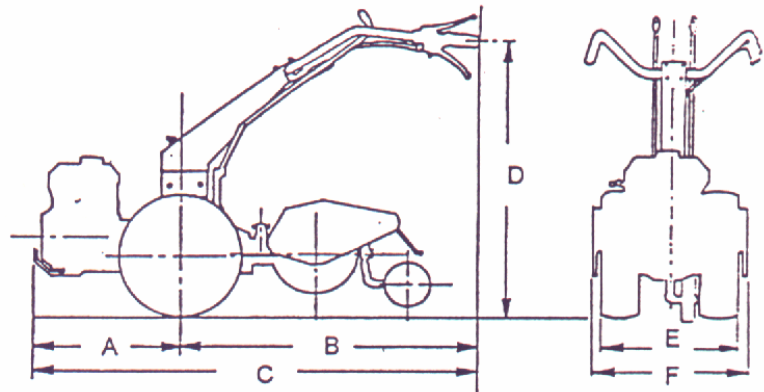


ENGAGING
GEARS

9 - OVERALL DIMENSIONS

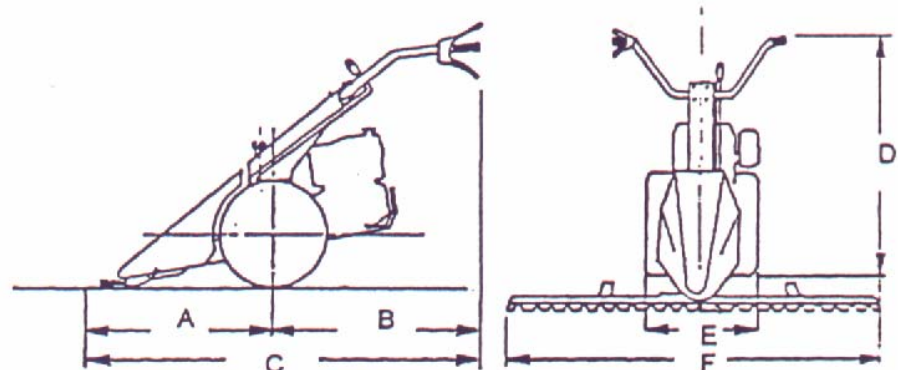
MOTOCULTIVATOR VERSION

A	510
B	1225
C	1735
D	410-1240
E	450
F	400-500-600



MOWER VERSION

A	830
B	930
C	1760
D	410-1240
E	450
F	1070-1170



10 - PACKAGE OPENING



CRUSHING DANGER

NB: WEIGHT OF THE MACHINE 93 KGS.

- Open the carton in its upper side. -Remove the bare machine and wheels to be assembled to the same. - **ATTENTION:** use a lifting system to take the machine out of the carton according to its weight and follow closely the safety and assembling rules on pages 9/10 .

11 - TRANSPORT

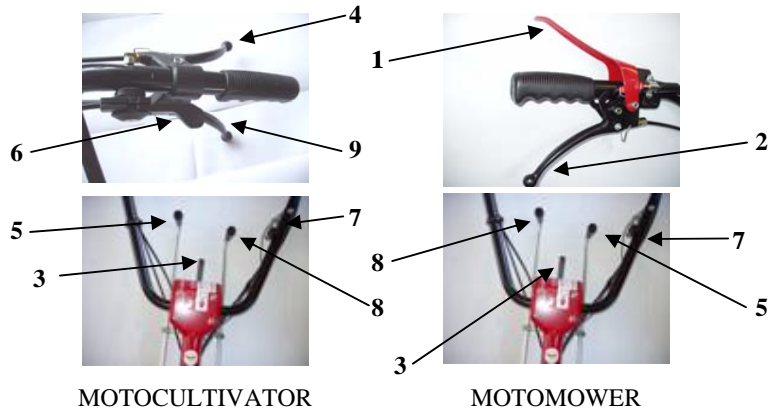
Always insert the appropriate blade protection (if in mower version).

When loading the machine into a lorry, use ramps of adequate stability and strength, or otherwise secure the machine on a pallet and lift with an elevating trolley with the forks at the maximum possible opening.

12 - CONTROLS

IMPORTANT !

1. Engine stop lever
2. Clutch control lever
3. Handlebar vertical lock lever
4. Steering column horizontal lock lever
5. Forward and reverse gear control lever
6. Throttle control lever
7. P.T.O. control lever
8. Gear control lever
9. Wheels disengagement lever



MOTOCULTIVATOR

MOTOMOWER

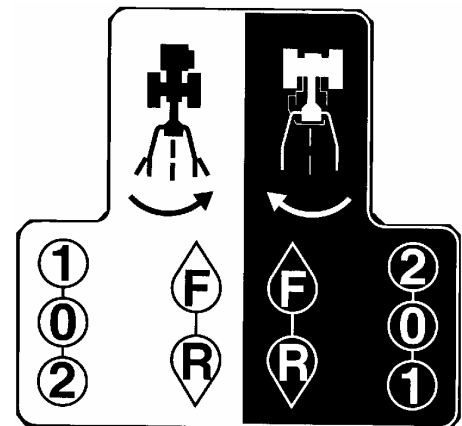
13 – ENGAGING GEARS

The motocultivator has 4 speed gearbox (2 forward + 2 RV) selected by levers 5 and 8.

- With handlebars in tilling position (white symbols on the plate) :travel direction is selected with lever and the 1st and 2nd speed are selected with lever 8.
- With handlebars in front implements position (black symbols on the plate): travel direction is selected with lever 5, and the 1st and 2nd speed are selected with lever 8.

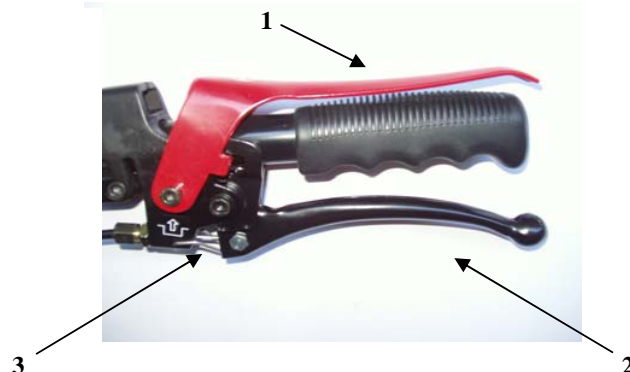
ATTENTION – To avoid unnecessary strain on the controls, make sure that the P.T.O. is in idle position before engaging the reverse gear (and vice versa).

N.B.: Use the clutch to make speed engagement easier. In order to make the engagement of the direction selector easier, set the engine at minimum running and operate the lever without using the clutch.. Avoid a protracted clutch disengagement in order to limit the wear of the thrust bearing.



14 – ENGINE START-UP

When starting the engine, follow the instructions contained in the engine’s “Use and Maintenance” booklet, and after having made sure that the gear control and P.T.O. control levers are in idle position, lock the motor stop lever 1 and clutch lever 2 by using hook 3.



15 – ENGINE STOP SAFETY DEVICE

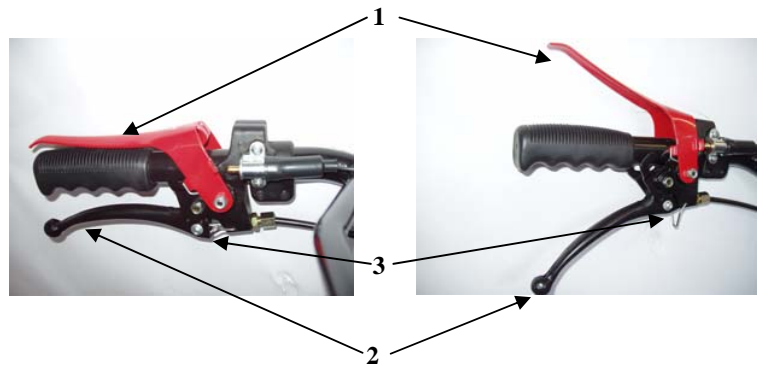


Main function of lever “1” is the engine to be stopped when handlebars are left away.
Do not tie the engine stop lever “1” to the handlebar handle..

Each time the engine is started, check that the safety clutch “3” is into lever “2”.

ENGINE STOP: lever “1” up.

ENGINE RUNNING: lever “1” down.



BEFORE USING THE MACHINE IT IS IMPORTANT TO VERIFY WITH CLOSE ATTENTION THAT SAFETY DEVICES ARE ALL WELL WORKING.

16 – TYRE PRESSURE

Often check that tyre pressure be within the limits of 1 – 1,2 Bar .

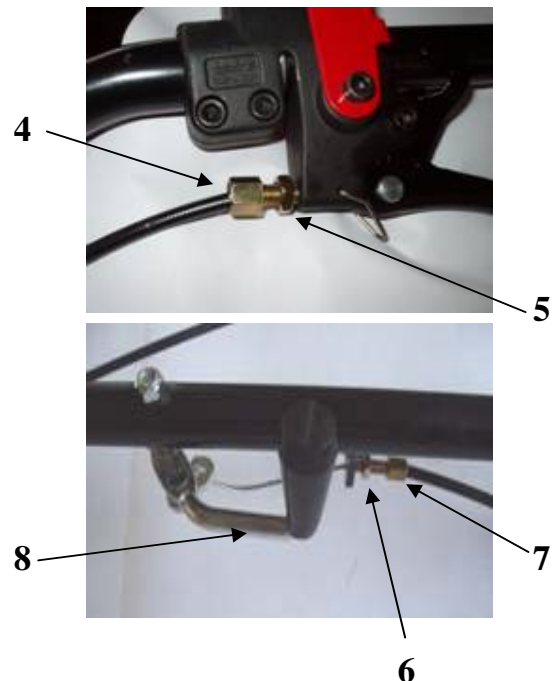
17 - CONTROLS ADJUSTMENT

CLUTCH: Check the idle stroke of the clutch lever regularly. This should be approximately 5mm

- In order to change adjustment , loosen nut 5.
- Set stroke to about 5mm by screwing or unscrewing adjuster 4.
- Lock nut 4 again..

POWER TAKE OFF CONTROL LEVER:

Periodically check the idle stroke of lever 8. To change adjustment loosen nut 6 and screw or unscrew adjuster 7. Then lock nut 6 again.



18 - HANDLEBARS

Adjustment in height (vertical sense) allows 5 positions, obtained with lever 9.

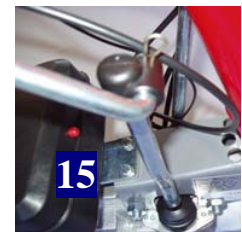
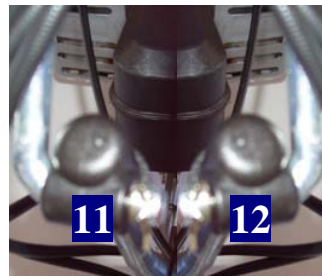
Side adjustment (horizontal sense) allows 6 positions (3 with handlebars in normal positions + 3 with handlebars reversed by 180°) which are obtained with lever 10.



19 - ROTATION OF HANDLEBAR

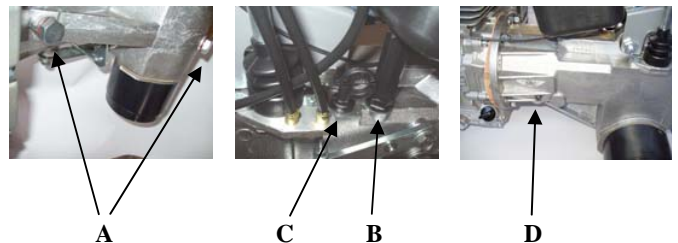
In order to turn handlebars and to utilize the machine as motor mower, please follow the below instructions:

1. Take away cotter pins 11 and 12 and free laterally the rods out from their position – see 13.
2. Keep rods moving them towards levers of the handlebar.
3. Pick lever 10 and turn the handlebar by 180° as indicated on the sticker placed on the handlebar itself.
4. Reach the right position, leave lever 10 after putting the block system. The handlebar support must not move.
5. Put again rods in their previous position – see 14 - and at last their cotter pins -15-.



20 - GEAR BOX OIL AND CLUTCH OIL REPLACEMENT

Oil must be replaced when hot by unscrewing fill caps A and taking fill caps B and C away. When oil is completely drained, replace caps A and fill with new oil through hole B (clutch oil) and C (gear box oil) up. Check the clutch oil level by using screw D and the gear box oil level by using fill cap C equipped with a dipstick. This operation is to be done with motor cultivator in horizontal position.



21 - LUBRICATION

TYPE OF LUBRICANT

Engine: see engine manual.

Motor cultivator:

Oil replacement: AGIP ROTRA MP 80W/90

Clutch oil: AGIP ROTRA MULTI THT

IMPORTANT !

1. ENGINE

Each day: check level and top up if necessary.

Oil replacement: to be carried out according to intervals and methods set out by the engine manufacturer.

2. GEARBOX

Every 200 hours: check level and top up if necessary.

Every 500 hours : replace oil.

3. POWER TAKE-OFF FOR IMPLEMENTS

Before attaching implements, fill up with multipurpose grease AGIP GREASE MU EP 0.

4. ROTARY HOE BOX

Every 200 hours: check level by unscrewing the cap of the rear cover of the rotary hoe body. Replace if necessary.

Every 500 hours: replace oil (oil AGIP D. SIGMA SAE 30).

5. MOWING BAR BOX

Oil: AGIP ROTRA MP 80W/90

6. ROTO-MOWER BOX

Oil: AGIP SIGMA SAE 30



22 - IMPLEMENTS COUPLING



The machine is equipped with a quick implement connection.

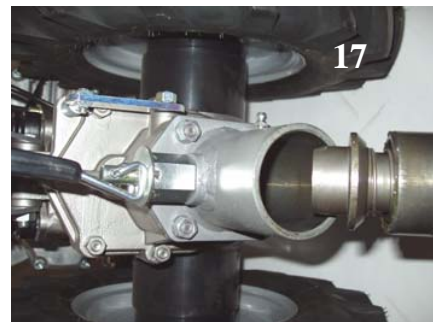
Before mounting the implement, make sure that the P.T.O. engagement lever is in idle position.

When connecting or disconnecting the implements, it is necessary to pull the knob 16 upwards and engage the implement in the connection sleeve 17 and bring the knob back to its original position. Make sure that the shutter has gone into the stop hole.



16

To be greased periodically



17

23 - ROTARY HOES

TECHNICAL CHARACTERISTICS:

Hood width: 40 – 50 – 60 cm.

Hoe diameter: 260 mm. N°blades:24

Working depth adjustment: in order to vary the working depth, adjust the central hoe's inclination by removing fixing screw (2) and shifting the perforated rod (3) until it meets a new hole. When working with hard terrain, to prevent the machine from bounding forwards, adjust the central knife by moving it downwards into the last hole.



ROTARY HOE MAINTENANCE

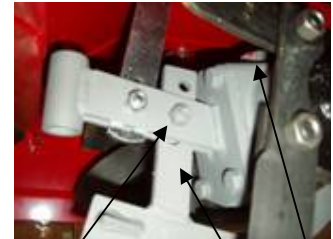
ATTENTION – Maintenance operations must be carried out with machine at standstill and engine switched off. !

Each time the Rotary Hoe is used check that:

1. The bolt Pos.1 is turned until it trips into gripped position.
2. The blade's nuts and fixing screws are well tightened.
3. The oil of the valve collets box is at right level -0-



1



2

3

0

24 - FRONTAL MOWER BAR APPLICATION

At first fit the transmission set to the mowing bar (don't forget the bushing) following the side pictures.

Connection to the motor cultivator

The mower bar is attached to the motor cultivator by means of the Quick fit connection.

Mower-height adjustment

- Loosen nut (1).
- Bring the skid pad (2) back to wanted position.
- Lock the nut again.
- Carry out adjustment on both skid pads.

Blade holder adjustment

- Loosen fixing screws (3).
- Move the adjustable screw (4).
- Lock the fixing screws again.
-

N.B.: for a good work there must not be too much rubbing between the blade-holder and the blade itself around 0,1 – 0,2 mm. play.

PIC. 1



PIC. 2



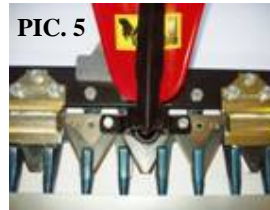
PIC. 3



PIC. 4

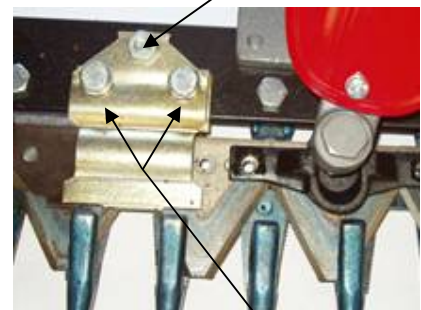


PIC. 5



2

1



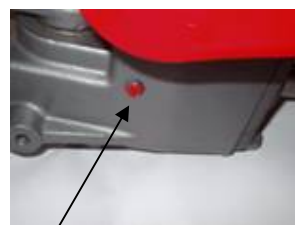
4

3

IMPORTANT !



Check the oil level of the swinging ass.ly through the screw "5" each 8 working hours and lubricate the blade bush "2". Top up with oil through the plug on the swinging ass.ly part "6", if necessary. Use oil AGIP ROTRA MPS SAE 85 W/90.



5



6

25 - FRONTAL ROTATING MOWER SET

CONNECTION TO THE MOTOCULTIVATOR

The rotating mower set is attached to the motor cultivator by means of the Quick Fit connection.

26 - CUTTING HEIGHT ADJUSTMENT

Cutting height is easily adjusted by tightening or loosening the lever "15".



27 - BLADE ASSEMBLY AND DISASSEMBLY

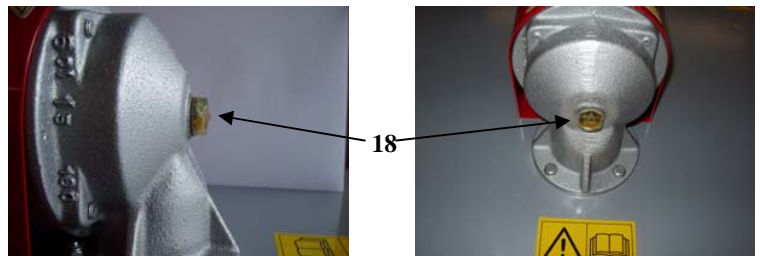


The blade can be easily removed by unscrewing the two screws "16";, to reassemble it, clean the cutter hub "17" thoroughly and tighten the screws as far as they are fully secured and cutting blades turn freely.
N.B.: Always change self blocking nuts with new ones.



IMPORTANT !

Check the mower set oil level every 200 hours through the screw "18". Add oil, if necessary.
Use oil SIGMA SAE 30.
AFTER 500 h. change whole oil.



28 - USE OF THE MOTORCULTIVATOR

RUNNING-IN

During the first 80 hours of operation the following standards must be observed:

- After every start from cold, run the engine slowly for some minutes without load.
- Do not operate the engine at low speed for a long time.
- Do not use the machine for long periods in heavy works.
- Frequently checks that there are no oil losses and replace it the first time as suggested by the producer.

BEFORE STARTING THE ENGINE

Every day, before starting the engine, check:

- The oil level in the engine sump.
- The quantity of the fuel in the tank.



STARTING THE ENGINE

Verify that all the safety devices are perfectly working and inserted before engine starting up.

- Make sure that all control levers are in neutral position.
- Start the engine following the instruction listed in this instruction book.
- With the engine cold, avoid abrupt accelerations.
- If environmental temperature is low, do not use the machine under stress immediately.

USE OF CONTROLS

- **When using the motor cultivators controls, carefully comply with the standards contained in this instruction book.**



CHECKS DURING USE

- In case of incorrect operation of any part, stop the machine and take the necessary steps.
- Excessive smoking at the exhaust may denote some irregularity in engine operation; consult the instruction book or the engine.

ACCELERATOR

- Do not use the engine at too low speed; this can lead to excessive oil consumption and other troubles.
- **Low speed is however necessary when engages are done, to avoid problems of mechanical nature.**

SPEED CHANGING

- The motor cultivator can generally be started in any gear. It is therefore advisable to start working by immediately engaging the gear which allows traction speeds suitable for the work to be made.

N.B.: To avoid mechanical problems all engagement actions have to be done with the engine at low speed.

29 - MAINTENANCE OF THE MOTOR CULTIVATOR

ATTENTION!: Effect the maintenance operations when the motor cultivator is stopped and the engine shut-down.

GENERAL STANDARDS

- To ensure constant efficiency of the motor cultivator and increase its life, carefully comply with the maintenance operations described in this instructions manual.
- The intervals established for each operation must be carefully observed, otherwise it may endanger the operation and performance of the motor cultivator.
- It is advisable to clean the machine every week, removing all dust, mud and other dirt that may have accumulated.
- For lubrication of the various components use only the products indicated in this instructions manual.
- Checking the oil level in the different machine members must be carried out with machine cold and on the flat.
- Oil changes must be made with hot oil; this facilitates drainage and favours the removal of deposits..
- Carefully clean the greasers before putting grease in them; clean them again when the operation is completed in order to avoid accumulation of dust.

ENGINE AND RELATED MEMBERS

Carefully comply with the maintenance instructions contained in the respective instructions book.

TYRES

- The inflation pressure value is shown in this instructions manual.
- A pressure lower than normal causes irregular wear of the tread, favours wear of the sides of the tyre and may, in extreme cases, lead to sliding of the tyre on the rim with consequent bursting of inner tube.
- Pressure higher than normal favours skidding of the tyre on the ground, with consequent loss of traction and wear of the tread.
- The pressure must be checked with the tyres cold.
- Avoid bringing the tyres into contact with oil, grease or fuel.
- Periodically check the conditions of the tread; remove stones, nails etc., which may become embedded.

30 - USE OF INTERCHANGEABLE ACCESSORIES

For the use, in safety conditions, of the motor cultivator, is necessary use the interchangeable accessories from the Manufacturer. Use of accessories from other Manufacturers must be approved from the Technical Office of Manufacturer with written permit.

31 - LONG INACTIVITY OF THE MOTOCULTIVATOR

When the motor cultivator has to remain inactive for a long period of time, take the following precautions:

- Protect the engine as indicated in the appropriate instruction book.
- Carry out general cleaning of the machine and place it in a suitable place (neither dusty nor dump).
- Lubricate the machine (see this instructions manual).
- If possible, raise the machine from the ground, arranging it on suitable trestles..
- Cover the machine with a protective tissue .

32 - NOISE AND VIBRATIONS

MOTOCULTIVATOR VERSION

Weighed equivalent steady acoustic pressure level at the driving place at 1 m from the handlebars and a height of 1.6 m from the ground.

MODEL	dB(A) max. VALUE	ENGINE	OTHER VALUES

Acoustic power level.

MODEL	dB(A) MAX.VALUE	ENGINE	OTHER VALUES

Frequency weighed root mean square of vibrations at handlebars.
Integration time 60 sec. Weighting in compliance with ISO 5349.

MODEL	m/sec. 2 MAX VALUE	ENGINE	OTHER VALUES

MOWER VERSION

Weighed equivalent steady acoustic pressure level at the driving place at 1 m from the handlebars and at a height of 1.6 m from the ground.

MODEL	dB(A) MAX VALUE	ENGINE	OTHER VALUES

Acoustic power level

MODEL	dB(A) MAX VALUE	ENGINE	OTHER VALUES

Frequency weighed root mean square of vibrations at handlebars.
Integration time 60 sec. Weighting in compliance with ISO 5349.

MODEL	m/sec. 2 MAX VALUE	ENGINE	OTHER VALUES

Descriptions, figures and technical features mentioned herein are non-binding for the Manufacturer. These are mentioned as mere information. The Manufacturer reserves the right to make any change at any time without being bound to update this publication.
Copyright of MECCANICA BENASSI S.P.A.

33 - DECLARATION

- GB - CE – DECLARATION OF CONFORMITY
In compliance with CEE 89/392 regulations and subsequent changes
- CERTIFICATE OF ORIGIN -

MECCANICA BENASSI S.p.A , I-44040 DOSSO (FE) via Statale , 325
DECLARES ,under is own responsibility, that the item called
MOTOR CULTIVATOR

Model:

MF 223

From series-no.*:

140002001

* The number is printed on the machine's gearbox .

is manufactured by the above company in compliance with basic safety and health safeguard requirements specified in the regulation CEE 89/392 and subsequent changes.

For checking the conformity with the above regulations, have been examined the following CEN rules: UNI EN 709:98/A1 : 2000 .

Dosso, (Italy) , the 24th March , 2005

MECCANICA BENASSI SPA
L' Amministratore Unico

U.T. 24/03/05



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