

BENASSI[®] S.p.A.



USE AND MAINTENANCE HANDBOOK

MOTORISED HOE

MODEL

BL 450



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INTRODUCTION

Dear user,

Thank you for preferring BENASSI.

The top performance and the easy use of our machine will give you any satisfaction.

- ◆ This machine is the result of a long experience working at the top quality standard and using first quality material.
- ◆ Carefully using and servicing this machine, you will certainly get satisfactory performances for a long time.
- ◆ **Please read very carefully this booklet before using your motorised hoe.**
- ◆ Pay special attention to the instructions marked out by the following sign



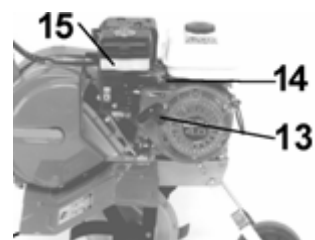
ATTENTION

- ◆ Failure to comply with these instructions may result insidious or even fatal injury.
-
-

KEY TO MACHINE PARTS

- | | |
|----------------------|------------------------------|
| 1- Transport wheel | 9- Throttle lever |
| 2- Engine oil cap | 10- Handlebar adjustments |
| 3- Tillers | 11- Fuel tank cap |
| 4- Tiller protection | 12- Handle |
| 5- Braking spur | 13- Recoil starter |
| 6- Belt cover | 14- Choke lever |
| 7- Gear lever | 15- Air cleaner |
| 8- Clutch lever | 16- Stop lever Diesel engine |

Fig.n. °1



IDENTIFICATION AND TECHNICAL SPECIFICATIONS

N.B.: FOR THE ENGINE TECHNICAL SPECIFICATIONS, SEE THE ENCLOSED OWNER'S MANUAL OF THE ENGINE.

The engines fitted on these cultivators have the following features:

- Exhaust guard
- Recoil starter
- OIL LUBRICATION 4 STROKES ENGINE: see the owner's manual of the engine
- Oil quantity 4 strokes engine: see the owner's manual of the engine
- Fuel 4 strokes engine: unleaded petrol
- Fuel Diesel engine: Diesel fuel
- Safety device for both forward and backward gear stopping the tiller.
- The gear has got two forward speeds and one reverse, a belt joins the transmission to the engine and a double greased chain to the tiller.
- Higher speed is suggested for operations with the tiller. Reduced speed is suggested for ploughing operations.

SPECIFICATIONS WITH ENGINE RUNNING AT 3200 RPM

BELT POS. A (inside the machine) see Fig.11

Fitting the plough

I forward = 41 rpm	Tiller shaft
II forward = 90 rpm	Tiller shaft
Reverse = 32 rpm	Tiller shaft

BELT POS. B (outside the machine) see Fig. 11

Fitting the tiller

I forward = 65 rpm	Tiller shaft
II forward = 138 rpm	Tiller shaft
Reverse= 49 rpm	Tiller shaft

- Speed gear in oil bath
- Belt clutch with tightener
- Transmission with double chain
- Tiller with hexagonal shaft and reinforced blades
- Guidance handlebars can be adjusted in many positions (vertical and side adjustment).
- The tiller is 80 cm wide.
- The frame of the motorhoe is screwed (Pict. 2).
- The spur is adjustable (Pict. 3 Ref. "B")

All the identification references (code number, engine, weight, power) are printed on the number plate on the machine. (Picture 4 Ref. "D")

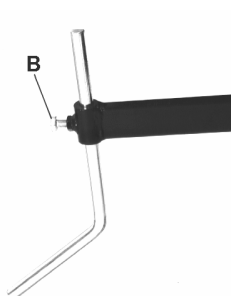
APPLICABLE ACCESSORIES

- Adjustable wheels with rubber tyres 5.0.10
- Pair of differential hubs
- Ballasts for wheels 5.0.10 (14 kg each one)
- Front ballast kg 24
- Single furrow plough with attachment
- Double turning plough with attachment
- Snow blade 80x25 with attachment
- Ridger with attachment
- Wheels with rubber tyres 5.0.10 can be replaced by iron wheels(Ø 450)
- Thin iron wheels (Ø 320) are suitable when using the ridger

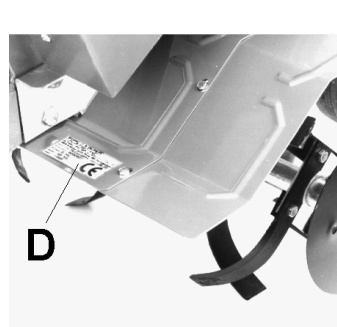
-Picture 2-



-Picture 3-



-Picture 4-



INSTRUCTIONS FOR MOTORISED HOE ASSEMBLY

The machine is packed in a box of the following dimensions:

- ◇ **PETROL VERSION**
- ◇ **Length: 80 cm**
- ◇ **Width: 40 cm**
- ◇ **Height: 70 cm**

- ◇ **DIESEL VERSION**
- ◇ **Length : 86 cm**
- ◇ **Width : 41 cm**
- ◇ **Height: 70 cm**

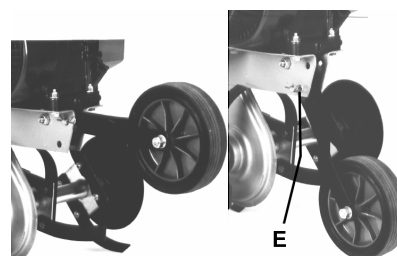
- Take the machine out of the carton box.
- Fit the two tillers to the main shaft using the delivered screws and nuts, assembled on the tillers.
- Fit the rear spur in its place using the delivered screw and nut.
- Fix the handles to the handlebar support, using parts assembled on the handlebar support.

Insert the forward gear engagement cable, already assembled with the lever on the slot of the handle, and fix the cable adjuster to the internal lever support. Then fix the lever by unscrewing the bolt. Reinsert the screw when the lever is in the support,

then screw the nut.

- Fix the transport wheel to the frame using two special cotter pins that are assembled on the transport wheel support. The cotter pins must be withdrawn and inserted again when the wheel is in the wished position on the frame. (Pict. 5 Ref. "E").
- Fit the two guard-extensions to the main tiller protections fitted on the body of the machine using the proper screws and nuts. The protection guards should reach a width of 60 cm according to the CE requirements.
- During the transport the handle can be left unassembled, by means of the threaded bush that fix it to the handlebar support. The tiller is equipped with a front handle (see Pict.10 Ref. "H") in order to be able to lift and to transport the machine easily.

-Picture 5-



SECURITY TERMS



WARNING: Please, read very carefully this booklet before using your machine. Carefully using and servicing this machine, you will certainly get satisfactory performances for a long time. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY CAUSE FATAL INJURY TO THE OPERATOR OR DAMAGE TO THE MACHINE.

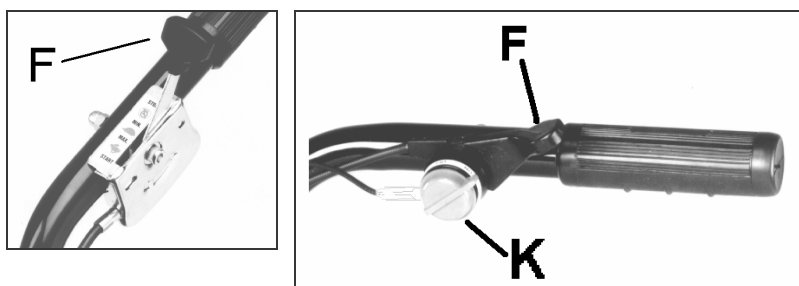
- The use of the machine is forbidden to persons younger than 16 years.
- The operator is responsible of any possible damage and he should always drive the machine carefully and safety.
- Read this booklet before using the machine for the first time.
- Before carrying the machine always empty the fuel tank.
- Before leaving the machine be sure that it is fully stopped.
- Never use the machine without heavy shoes and long trousers. Always inspect the area where you want to work taking off stones, branches, cables and any other thing which can be dangerous.
- Before start working, make sure that a radius of minimum 5 mt. is completely free.
- Clean any possible leakage of fuel.
- Fill up when the engine is off and not hot, always in an open space far from fires or any heating source and don't smoke during this operation.
- Before starting using the machine, make sure that you can quickly stop the engine and that you are familiar with the control levers.
- Never allow the engine to run in enclosed spaces where highly toxic carbon monoxide could not evacuate.
- Never start or use the machine not completely assembled, especially concerning the safety devices and the tiller protection guards which should always be completely assembled. Never start hoeing if the belt protection is not assembled.
- Never fix or clean the tiller blades or any other tools when the engine is running.
- Attention! Don't use the machine on sloping grounds exceeding the limit indicated in the use and maintenance booklet of the engine.
- Do remove the belt cover only when the engine is power-off.
- We are not responsible for accidents due to the wrong use of the machine neglecting the above basic instructions.

STARTING AND STOPPING THE MACHINE

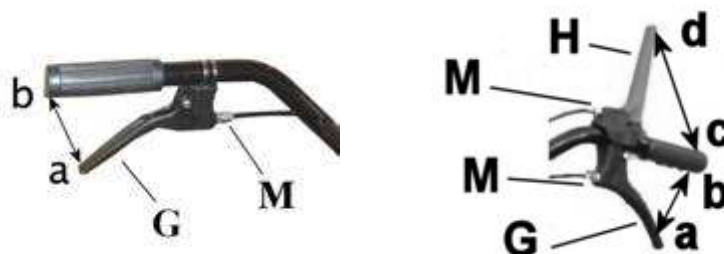
Whenever you are starting the engine of the machine, follow these instructions very carefully:

- Check the oil in the engine : THE BRAND NEW MACHINE IS DELIVERED WITHOUT OIL IN THE ENGINE, THEREFORE YOU SHOULD FILL IT UP TO THE LEVEL ON THE DIP STICK OF THE OIL CUP.
- **Please read carefully on the booklet the ENGINE USE AND MAINTENANCE concerning the “operations before starting”.**
- Start the engine only in open spaces.
 1. Pull the choke lever on the engine (Pict.1 Ref. “14”).
 2. Turn the accelerator lever “F” to the “MAX” position (Pict. 6 Ref. “F”). The switch (Ref. “K” Pict.6) must be “ON”.
 3. The clutch lever “G” must be out. (Pict. 7 Position “A”). In the version with Diesel engine the lever to stop the engine (Pict.7 Ref. “H”) must be held down (Position “C”).
 4. Pull the starting rope by the handle “I”, firstly smoothly and then strongly: when you feel some resistance don’t leave the handle but help the recoiling of the rope with your hand (Pict. 8).
 5. When the engine runs move the choke lever to the initial position and the accelerator lever in the mid-position (Pict. 6).
 6. For stopping the engine in the petrol version move the accelerator lever “F” in the “STOP” position (Fig.6) or in the “OFF” position (Pict. 6 - Ref. “K”). To stop the engine in the Diesel version release the “H” lever (Pict.7) in the “D” position.

- Picture 6 -



- Picture 7 –



- Picture 8 -

- Picture 9 -

- Picture 10 -



- Picture 11 -



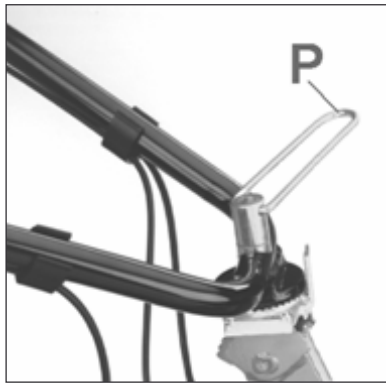
USE AND ADJUSTMENT

- The tiller is equipped with a mechanical transmission that allows two forward speeds and one reverse.
- To move forward simply engage the gear lever (Pict.9 Ref. "R") in the first (Position 1) or in the second (Position 2) speed.
- If the gear lever doesn't move easily, it's necessary to rub with the lever "G" (Pict.7), then completely pull the lever "G" and engage the gear. The clutch cable must be adjusted in a way that allows the belt to be put under tension when the lever is situated at about 1 cm from the knob. To this purpose you have to regulate the register of the cable next to the lever (Ref. "M" Pict.7) and the register next to the pulley under the belt cover (Ref. "L" Pict.11).
- To move backwards engage the gear lever (Pict.9 Ref. "R") in the position "R" and pull the clutch lever "G" of Pict.7 in position "B". When releasing the lever the machine stops automatically while the engine is running, for the Diesel version it is necessary to hold down the lever "H" Pict.7 in the position "C".
- **Two forward speeds are available:** to change speed, shift the belt after taking off the belt protection cover (Ref. "S" Pict.9) by unscrewing the 3 screws (Ref."T" Pict.9 and 10). Remember to switch off the engine, before doing this operation.
 1. The speed of the motorhoe is reduced (41 rpm) when the belt (Ref. "U") is in position "A" as shown in Picture 11.. Reduced speed is suggested for ploughing operations.
 2. If you want the motorhoe to go faster, shift the belt (Ref. "U" Pict.11) into the races of the pulleys pos. "B", keeping the belt stretcher loose. This speed (138 rpm) is suggested to operate with the tiller.
- For all models it is necessary to adjust the tension of the guide pulley (Pict.11) by means of the registers "L" (Pict.11) and "M" (Pict.7), so that the belt doesn't slip when the guide pulley is stretched.
- If the gap is not correct, you can adjust it by shifting the engine on its guides: shift it towards the front wheel if the belt slips otherwise towards the handlebars if the belt is too short.
- The handlebars can be adjusted by unscrewing the blocking lever "P" (pict.12). Adjust the handlebar position as you prefer and then lock it again.
- The tiller is 81 cm wide. It's composed by 3 knives + protection plate, on both sides. It can be reduced to 57 cm by removing one tiller knife from both sides (see pictures 13).
- The sharp side of the hoes must be turned to the front side of the machine.
- We recommend to use the tiller with the side plates because they improve the stability of the machine while working.
- The machine can fit an adjustable ridger, it's an optional accessory delivered complete with its own support which should be fitted on handlebar holder, replacing the standard spur and using the same bolt.
- This machine can be used for ploughing also at reduced speed. In order to do this you have to assemble two wheel-hubs (pict.14 ref. "P") in the place of the tillers by means of the bolts Ref. "A" Pict.14. Then assemble the wheels with tyres 5.0.10 on the hubs, using the screws. These wheels are adjustable in 4 track widths.
- Fit the mounting bracket in the place of the spur support, fixing it to the handlebar support with the bolt (pict.15 ref. "C").
- Fit the plough (Ref. "D" Pict.15) on the mounting bracket. The plough can fit three different positions, because the pin (ref "U" pict. 15) can be inserted in three different holes.
- The plough can be adjusted by changing the inclination of the blades. Both full side and vertical adjustments are possible by means of the tension bar or of both bolts. (ref "V" pict.15).
- In doing this kind of work, you have to assemble a ballast in the front of the machine (Ref. "W" Pict.16). Fix the ballast in the place of the transport wheel support (ref "Z" pict.16), using two bolts. You have also to assemble two ballasts on the wheels (ref. "X" pict. 17), using two screws that fix them to the internal side of the wheel rim.

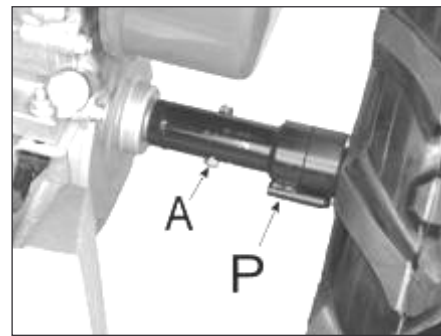


CAUTION: IT IS ADVISED NOT TO KEEP THE MOTOR RUNNING WHEN THE MACHINE IS NOT BEING USED FOR ITS SPECIFIC PURPOSE.

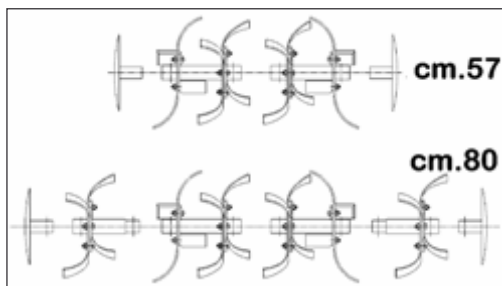
- Picture 12 -



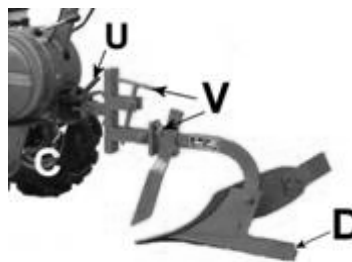
- Picture 14 -



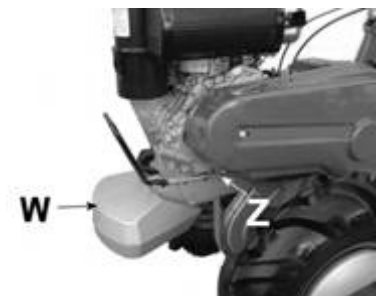
- Picture 13 -
- Tillers -



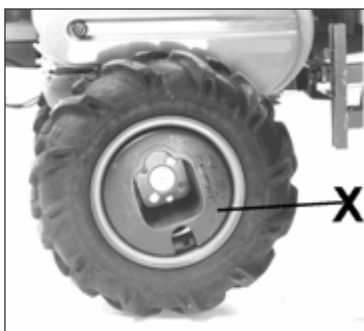
- Picture 15 -



- Picture 16 -



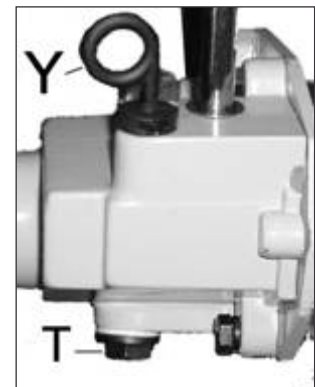
- Picture 17 -



- Picture 18 -



- Picture 19 -



MAINTENANCE

- For the normal maintenance (oil, filter, spark plug) check the booklet for the engine included.
- It is necessary to check periodically the oil level in the gearbox by means of the dipstick Ref. "Y" Pict.19 (at least every 30 working hours). The right oil level is reached when the dipstick in its position touches the oil for 5 ÷ 6 mm. If necessary add oil MPS SAE 80/90.
- The oil has to be changed every 200 working hours or once a year. Unscrew the cap Ref. "T" Pict.19, drain out the oil letting the hole of the dipstick Ref. "Y" Pict.19 open. Then put the cap Ref. "T" Pict.19 back and top up with oil till the right level is reached as explained above.
- The frame has waterproof ball bearings. The transmission in the frame is engaged by two normal grease-lubricated chains.



Every year you should introduce some grease through the hole "Q" (Pict. 18) in the main body.

- All the joints, cables and the belt stretcher should be greased from time to time.
- Keep the machine and the tillers clean and check that all the screws and nuts are well tied, especially the screws of the tiller (always wear protection gloves working on the tiller).
- In case of breaking or wear of the belt, you can replace it after taking off the side protection cover by unscrewing 3 knobs fixing the side protection cover. (Pict. 9 and Pict.10 Ref. "T")
- Take off the belt from the pulleys and install the new belt. After replacing the belt, adjust it to the correct tension following the instructions in the chapter USE AND ADJUSTMENT.
- For any technical repair especially during the guarantee period, it is suggested to apply to the specialised workshops of our dealers.

WARRANTY

Our machines and accessories are guaranteed for 2 years excluding electric and rubber parts.

All the defective parts will be replaced free of charge excluding cost of labour and transport fees which would be at customer's charge.

For any problem regarding the engine or any other part not of our production please refer to the guarantee conditions stated by the manufacturer and apply to their assistance centres.

For any kind of problem or repair please apply to the dealer where you bought the machine.

TESTS FOR CE CERTIFICATION

EC certificate of conformity conforming to directive 98/37/CE

BENASSI® 40010 San Matteo della Decima BO Italy Via Lampedusa n°1 Tel. +39-051-820511

Declare in sole responsibility that the product CULTIVATOR **BL 450 H – BL 450 KE** to which this certificate applies, conforms the basic health and safety requirements stated in the directive 98/37/CE

The laws **EN-ISO12100-1 – EN-ISO12100-2 and EN 709** have been examined to verify this conformity.

THE PRESIDENT



S.Matteo della Decima, 18/04/2007

TEST AND RESULTS

TYPE **MOTORHOE**

MODEL **BL 450 H – BL 450 KE**

Acoustic power level LwA = from 92 dB (A) to 105 dB (A)

Noise level at operator's ear : LpA = from 81 dB (A) to 90 dB (A)

Test condition: 1,6 mt at the centre of the handlebar

Handlebar vibration according to ISO 1033: value from 4,76 m/sec² to 7,00 m/sec²

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