

BENASSI[®] SpA

**OPERATION AND
MAINTENANCE MANUAL
POWER HOE
SERIES
BL 120**





**BEFORE USING THE MOTOR-HOE
CAREFULLY READ THE INSTRUCTIONS
GIVEN IN THIS MANUAL**

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INTRODUCTION

- This manual provides Use and Maintenance instructions, technical specifications, and safety precautions for motor-hoes model BL 120.

Read this USE and MAINTENANCE Manual carefully before using your new motor-hoe. This manual provides the most up-to-date information on your motor-hoe available at the time of going to press.

Manufacturer reserves the right to modify this document at any time without prior notice.

- AFTER-SALES SERVICE. Use only original spare parts. The use of non-original parts voids the warranty. When ordering spare parts, specify:
 - motor-hoe serial number;
 - part code of spare part required;
 - quantity or number of parts required.

SAFETY REGULATIONS



GENERAL NOTICES

Any engine driven machine can become dangerous if used incorrectly.

Pay particular attention to the instructions in this manual marked:



WARNING

This symbol means that failure to observe the regulation could cause injury or even death to the operator.



PRUDENCE



Prudence is the Golden Rule to prevent accidents.



TRAINING

The motor-hoe must only be used by responsible persons trained in the use of the machine and duly authorized to use it.



MACHINE AND ENGINE MANUALS



Read those MANUALS carefully before starting, using, servicing, refuelling or carrying out any work on the motor-hoe.

**DECALS**

Read all the decals attached to the motor-hoe and follow their prescriptions before starting, driving, refuelling or servicing the machine. Replace immediately any damaged or illegible decals.

**SUITABLE CLOTHING**

Do not wear wide and flapping clothes that could be caught in moving parts.

Always wear robust gloves when servicing the motor-hoe or coupling attachments.

Do not operate your motor-hoe barefoot, wearing sandals or shorts. Wear heavy shoes and trousers.

**PHYSICAL CONDITION**

Do not drive the motor-hoe if your physical condition is not suitable.

**NOISE**

In order to reduce the problems deriving from the noise of the machine:

- Do not work with the engine at maximum RPM range.
- When using the machine for a long time, use ear protections.

**ENGINE RPM**

Do not change the injection system in an attempt of increase maximum engine RPM; running the engine at too high a speed increases the risk of accidents.

**FIRST AID**

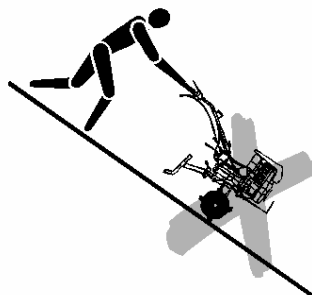
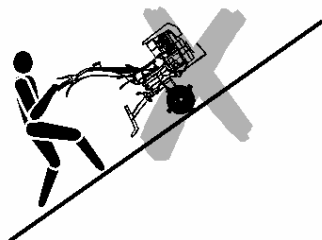
It is good operating practice to have a first aid box on the motor-hoe.

**STARTING THE ENGINE**

- Disengage all control levers before starting the motor. Keep your feet clear of the attachments fitted to the machine.
- Do not run the engine in a closed ambient where the exhaust gases can collect. They contain carbon monoxide that is highly toxic.
- Oil bath air filter - When delivered new, there is no oil in the air filter. Before using your motor-hoe, add motor oil up to the marked level.

**OPERATING OF THE MOTOR-HOE**

- First of all, make sure that you know how to stop the engine in an emergency. Familiarize yourself with the controls and learn how to use your motor-hoe correctly.
- Do not allow children or inexperienced persons to operate it.
- Do not use your motor-hoe in proximity of other people, and in particular of children. Do not use it close to animals. Bear in mind that you are responsible for any damage or injury caused to persons or things.
- Keep your hands and feet clear of the rotary tillers when in motion.



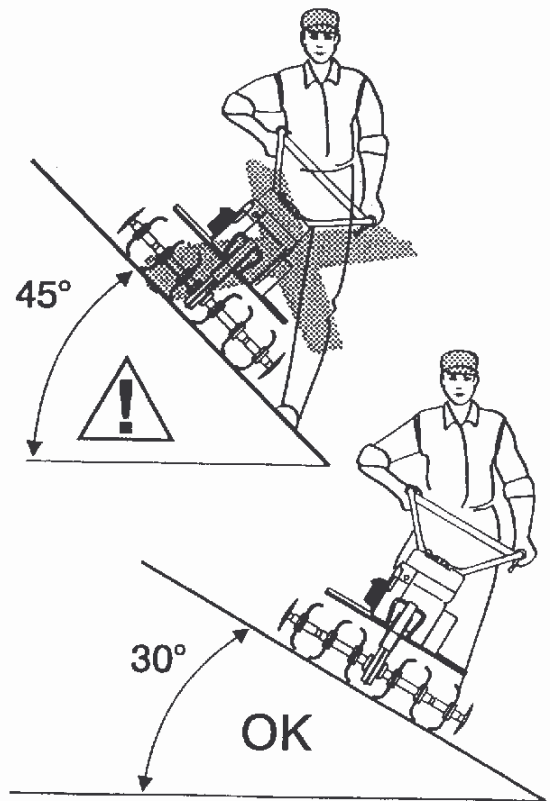
- Use your motor-hoe only in daylight or with good artificial lighting. Operate it at walking pace. Do not run.
- Take particular care on slopes; operate only under safe and stable conditions. Do not work uphill or downhill; move across the slope instead. Take special care when turning.
- Do not operate on slopes over 30°.
- Do not use your motor-hoe without its protection guards.
- Do not operate the motor-hoe if protection guards or other safety devices are missing or defective.
- Keep your hands and feet clear of all attachments.
- Do not lift or transport your motor-hoe with the engine running.
- Do not leave your motor-hoe in closed ambients with fuel in the tank. Fuel vapor is a potential source of danger.
- Keep your motor-hoe clean. Do not let grass and oil residues build up: these are a fire hazard.

! OPERATING OF ATTACHMENTS

- Check that the attachment coupled to the PTO functions correctly before starting the motor.
- Never use attachments coupled to the PTO in proximity of children or animals.
- Keep your hands and feet well clear of the attachment coupled to the PTO.

! MAINTENANCE

- Stop the engine and disconnect, for gasoline engines, the spark plug lead:
 - before checking or repairing your motor-hoe;
 - in case of excessive vibrations (investigate cause immediately).
- Stop the engine before adjusting attachments.
- Periodically check that all nuts and bolts are tight.
- **Fuel is highly flammable.** Store fuel only in specifically designed containers. Refuel your motor-hoe in the open. Do not smoke while refueling.
- Complete refueling before starting the engine. Do not remove the fuel cap or refuel when the engine is running or hot. In case of fuel spillage, do not start the engine. Push your motor-hoe some distance away from where the spillage occurred before starting it.
- Replace the exhaust pipe if it becomes worn or damaged.



some distance away from where the spillage occurred

IDENTIFICATION DATA

MOTOR-HOE IDENTIFICATION

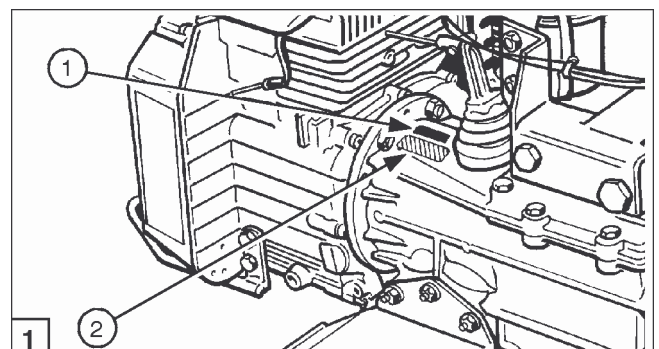
The serial number is stamped on the engine side of the gear box of your motor-hoe (see figure 1, item 1).

ENGINE IDENTIFICATION

Refer to the engine Operation and Maintenance Manual.

EC MARKING

The motor-hoe is marked EC in compliance with the Directive of the European Community Council 89/392/EEC and further amendments (see figure 1, item 2).



TECHNICAL SPECIFICATIONS

FOR THE ENGINE FEATURES, SEE THE ENGINE INSTRUCTION BOOKLET DELIVERED WITH THE MACHINE.

STARTING

Auto-winder device.

CLUTCH

Twin plate dry clutch with control lever on left handlebar.

GEAR

Three forward speeds and one reverse speed (with safety device). Speed are engaged through a control lever fitted to the column. The maximum speed that can be attained, according to type of tire (on request) fitted on the machine.

TRANSMISSION

Oil bath gear box with bevel gear pairs to drive tiller rotor.

POWER TAKE OFFS (PTO)

Two power take offs:

- Upper power take off is independent of gear (rotation speed equal to engine shaft rpm).
- Lower power take off, synchronized with gear (rotation speed as function of speed engaged).

The dimensions of the power take offs are shown in figure 2.

HANDLEBARS

Adjustable in height and width with quick locking device.

WHEELS/TIRES (on request)

- Tires with agricultural tread.
- Available sizes: 5.00.10 or 5.00.12

MASS

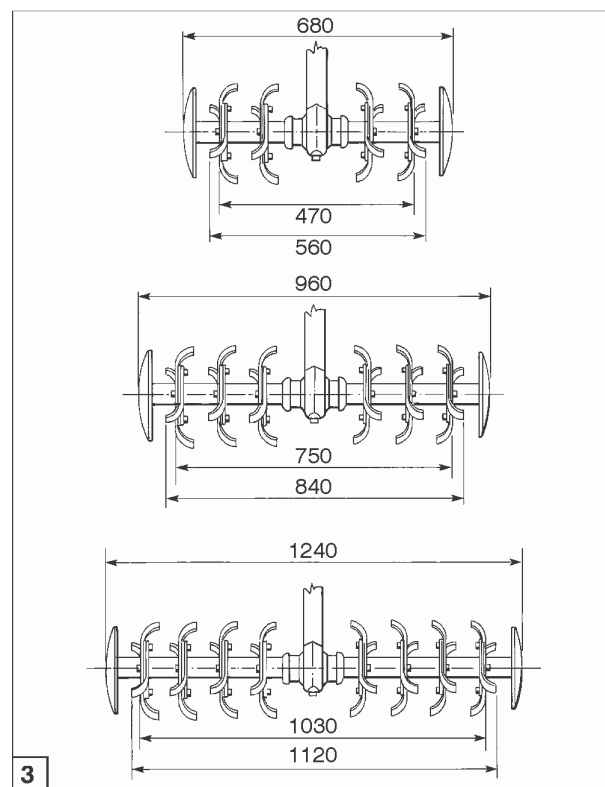
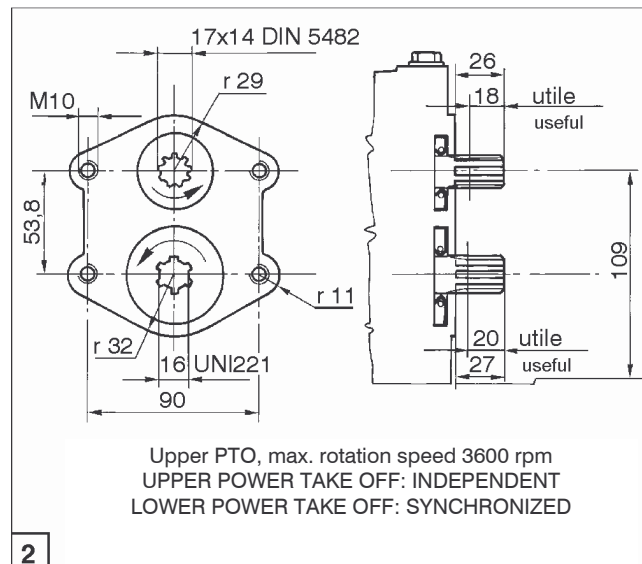
Refer to the identification plate installed on the machine.

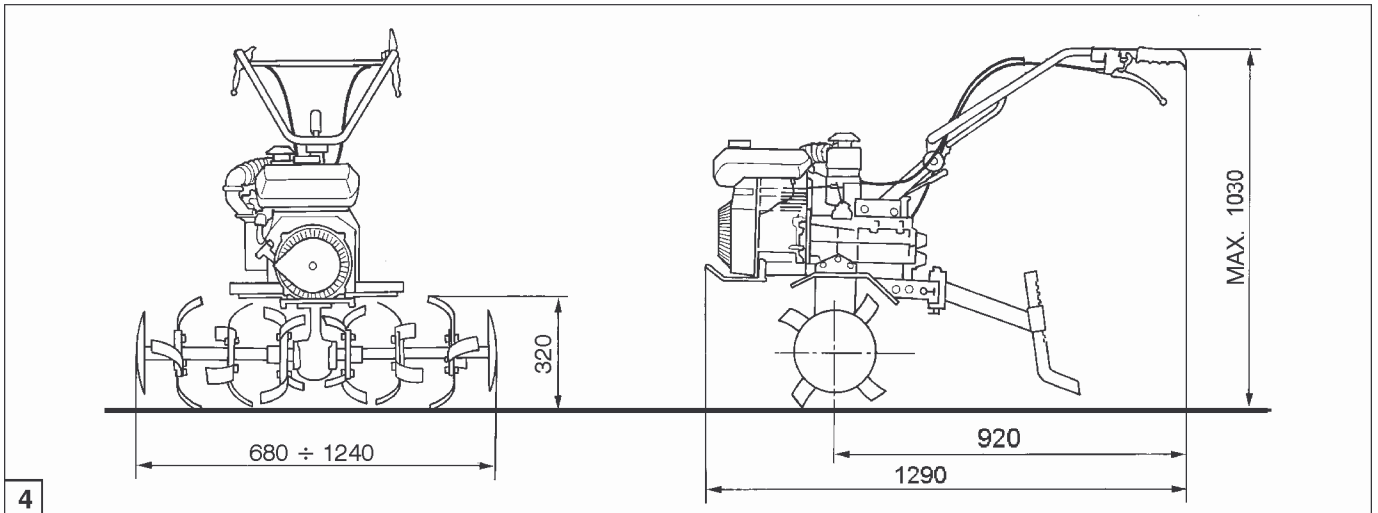
ROTARY TILLERS

Interchangeable rotary tillers; figure 3 shows the working widths obtainable with the different versions of rotary tiller, available as accessories.

DIMENSIONS

The overall dimensions of the motor-hoe are shown in figure 4.





SAFETY DEVICE

The motor-hoe is fitted with the following safety device to ensure maximum safety in machine operation:

- Reverse speed engagement control lever which, when released, disengages reverse speed automatically.



WARNING

Do not interfere with the safety device. Do not use the motor-hoe if the safety device is missing or defective.

TRANSFER PRINTINGS - INSTRUCTIONS AND SAFETY

Please find below the adhesive transfer printings shown on the machine. For accident prevention purposes, they must always be clearly readable.

Should they be damaged, it is compulsory to replace them by requesting the original spare part from the Manufacturer.

<p>Cod. 208882</p> <p>SPEEDS CONTROL</p>	<p>Cod. 207151</p> <div style="border: 1px solid black; padding: 5px;"> <p>ATTENZIONE - FILTRO ARIA</p> <ul style="list-style-type: none"> - Rifornimento di olio all'acquisto - Controllare ogni 8 ore di lavoro <hr/> <p>WARNING! - AIR FILTER</p> <ul style="list-style-type: none"> - Fill in with oil at purchase time - Check every 8 working hours </div> <p>AIR FILTER</p>	<p>Cod. 217881</p> <p>ACCIDENT PREVENTION</p>
<p>Cod. 207020</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>DISPOSITIVO ANTINFORTUNISTICO</p> <p>SAFETY DEVICE IN REVERSE</p> </div> <p>ACCIDENT PREVENTION DEVICE</p>		

SYMBOL LEGEND



Workshop manual



Keep safety distance

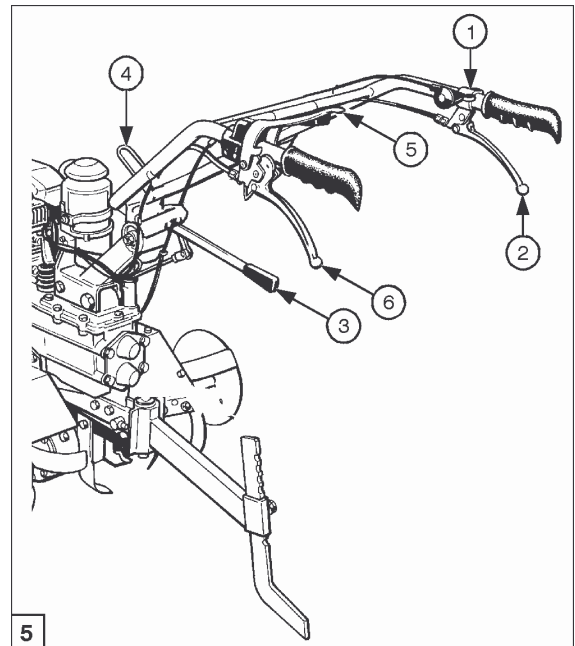


Engine manual

MOTOR-HOE CONTROLS

See figure 5.

1. Throttle control lever.
2. Reverse speed engagement control lever (accident prevention device).
3. Gear lever.
4. Handlebar lock release lever.
5. Engine stop lever.
6. Clutch lever.
7. Leg locking lever.



OPERATING THE CONTROLS

Refer to figure 5.

Throttle control lever (1)

- Lever (1) in up position: engine at idle.
- Lever (1) in down position: maximum engine rpm.

Reverse speed engagement control lever (2)



Reverse speed engagement control lever (2) is an accident prevention device. Do not use the motor-hoe if this safety device is defective.

The lever is operated as follows:

- a. Set the throttle control lever (1) to idle position.
- b. Pull up clutch lever.
- c. Move the gear lever (3) to neutral position between 1st and reverse speed “R” (see the “SPEEDS CONTROL” plate at page 7).
- d. Pull the reserve speed engagement control lever (2).
- e. Gradually release the clutch lever while accelerating the engine. Reverse speed remains engaged as long as you pull the lever (2); when you release lever (2), reverse speed is disengaged automatically.

Gear lever (3)

Use the gear lever as instructed below:

- a. Set the throttle control lever (1) to idle position.
- b. Pull up clutch lever.
- c. Move the gear lever (3) to the required position: forward speed or reverse speed (see the “SPEEDS CONTROL” plate illustrated at page 7) and release it as soon as the gear is engaged.
- d. Gradually release the clutch lever while accelerating the engine.
- e. To disengage gear, pull up the clutch lever and move gear lever (3) to the neutral position.

Handlebar lock release lever (4)

This allows the handle to be adjusted in height and width to suit driving comfort and tilling depth. Simply rotate lever (4) counterclockwise to release the handlebars.

Engine stop lever (5)

- Lever (5) pressed down: engine running.
- Lever (5) released: engine stopped.

Clutch lever (6)

- Lever (6) pulled up: clutch disengaged.
- Lever (6) released: clutch engaged.

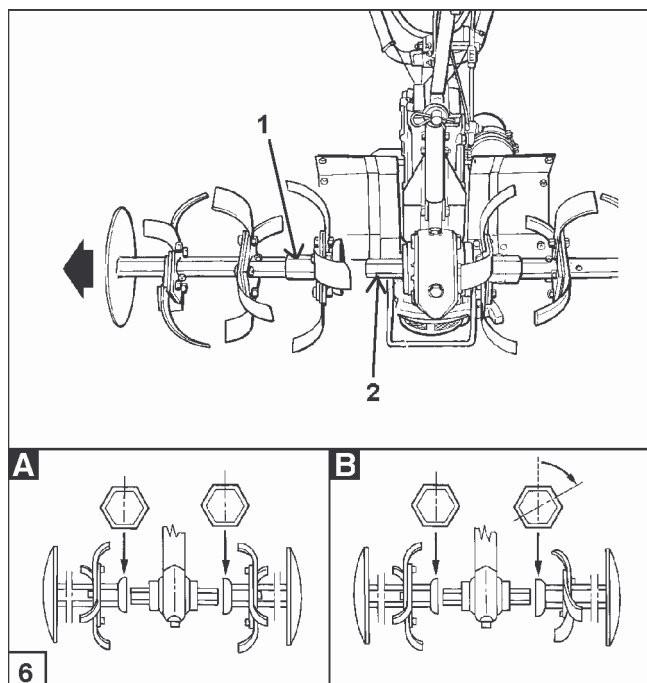
INSTALLATION

INSTALLATION OF ROTARY TILLERS

The tool shaft has hexagonal cross-section to allow quick and easy installation of rotary tillers or other attachments. Proceed as follows (see figure 6):

- a. Clean the rotary tiller hubs (1) and hexagonal shaft (2) thoroughly applying a little grease to facilitate assembly and future removal.
- b. Fit the rotary tiller hub onto hexagonal shaft and secure it by means of the pin provided
- c. Bear in mind the following:
 - The cutting edge of tiller rotors must face toward the motor-hoe front part.
 - For tilling on sandy or stone-free ground, fit the two rotary tillers so that the corresponding tines, on the two side of the machine, are on the same axis (see detail A).
 - To facilitate the work on stony ground, fit the two rotary tillers so that the corresponding tines, on the two side of the machine, are staggered (see detail B); for this purpose the rotary tillers hub is provided with double holes.

INSTALLATION OF PROTECTIVE GUARDS



WARNING

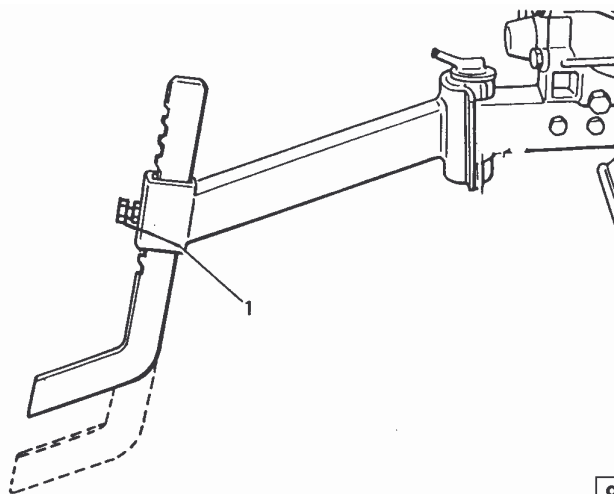
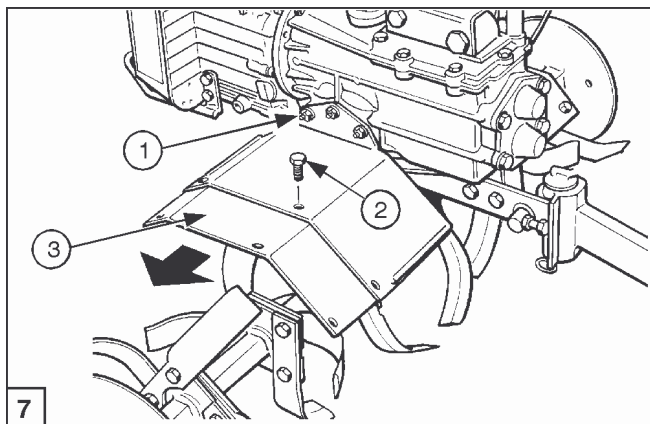
The protective guards act as a safety device and must be fitted before the motor-hoe is used.

- a. Mount the fixed guard, if not yet installed, securing it with the three nuts (see figure 7, item 1).
- b. Remove the three screws (2) and withdraw the moving guard (3) from the fixed one, secure the moving guard again with the screws (2) and relevant nuts.

LEG ADJUSTMENT

To ensure satisfactory operation and correct movement of the motor-hoe on different types of ground, adjust the position of the leg as follows (see figure 9):

- a. **Adjustment for hard soil:** loosen the screw (1) and lift the leg to shift the motor-hoe center of gravity to a more rearward position.
- b. **Adjustment for soft soil:** loosen the screw (1) and lower the leg to move the center of gravity on the tiller rotors.



OPERATING THE MOTOR-HOE

STARTING THE ENGINE

NOTE

See the engine Operation and Maintenance Manual for all informations regarding the engine.

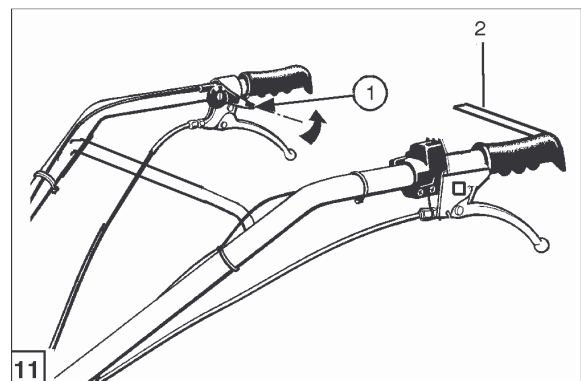
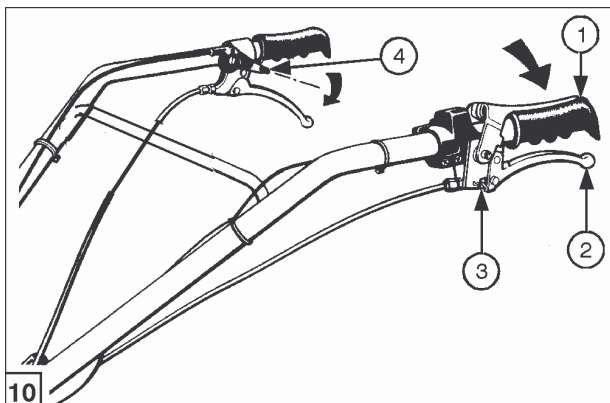
CAUTION

Oil bath air filter (if fitted) - When delivered new, there is no oil in the air filter. Before using your motor-hoe, add motor oil up to the marked level.

- a. Disengage all control levers before starting the engine.
- b. Open the fuel cock (if present).
- c. If cold starting the engine, use the choke fitted on the carburator (gasoline engine only).
- d. Press down the engine stop lever (figure 10, item 1) and, at the same time, pull clutch lever (2) fully up.
- e. Lock the clutch lever (2) with locking device (3).
- f. Turn throttle control lever (4) a 1/4 turn.
- g. Grip the pull-rope handle and pull firmly and quickly.
- h. When the engine starts, allow the rope to wind back onto the reel slowly (for engine with auto-winder device).
- i. Turn the throttle control lever (4) to idle position, and allow the engine to warm up.
- j. As soon as the engine starts up, disengage the choke (for gasoline engine only).

NOTE

Do not leave the clutch lever pulled up for an extended length of time after the engine has started. This could cause damage to the clutch.



STOPPING THE ENGINE

- a. Turn throttle control lever (see figure 11, item 1) to idle position.
- b. Shut-off the fuel cock (if fitted).
- c. Release the engine stop lever (2).



WARNING

The engine stop lever (2) also operates as a safety device (emergency stop), and stops the engine as soon as it is released.

MAINTENANCE

To ensure continuing reliability, use only original spare parts when overhauling or repairing your motor-hoe.

ENGINE

Make sure you do comply with the safety precautions contained in the engine Operation and Maintenance Manual.

During the first 50 hours (running in)

For the first 50 hours do not use the machine for heavy duty work. The following additional instructions must also be complied with during the running in period.

OIL BATH AIR FILTER

Every 8 hours

Check the oil level in the air filter. If necessary, top up with engine oil. Clean the filter element as instructed in the engine Operation and Maintenance Manual.

NOTE

Filter cleaning frequency depends on operating conditions, but should never be more than 8 hours

GEARBOX AND TRANSMISSION

After the first 50 hours (running in)

Change the gear/transmission oil (see figure 12). Change the oil when the engine is hot to facilitate draining of exhausted oil.

- a. Remove the oil filler breather plug (1).
- b. Remove the oil drain plug (2) from the bottom of the gearbox, on the right side, and the oil drain plug (3) from the lower part of the rotary tiller mounting and let the exhausted oil drain out. When fully drained, reinstall the plugs (2) and (3).
- c. Fill up with new oil (1.75 liters) of the following types:
 - SAE 90 for ambient temperatures between -6 and +32°C;
 - SAE 140 for ambient temperatures between +32 and +60°C.

Oil supply is carried out through the oil filler plug (1).

Every 20 hours

Check the level of the oil in the gearbox. The level must reach between the maximum and minimum notch on the dip-stick (1).

NOTE

Check the oil level with the motor cold and with the motor-hoe on level ground.

Every 300 hours

Change the gearbox and transmission oil following the instructions given above in the paragraph covering running in.

ROTARY TILLERS

Every 100 hours

Check that all nuts and bolts of tillers are secured. Tighten if necessary.

CHECKS AND ADJUSTMENTS

CLUTCH LEVER

The clutch lever must have a free play of about 5 to 6 mm before the clutch starts to disengage.

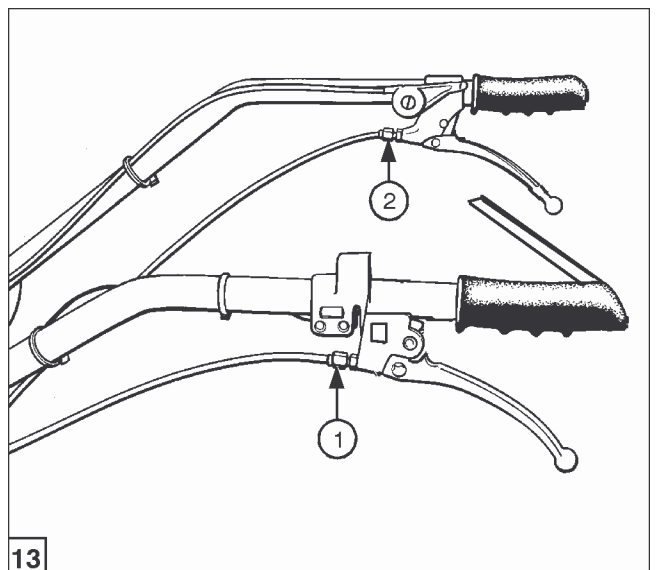
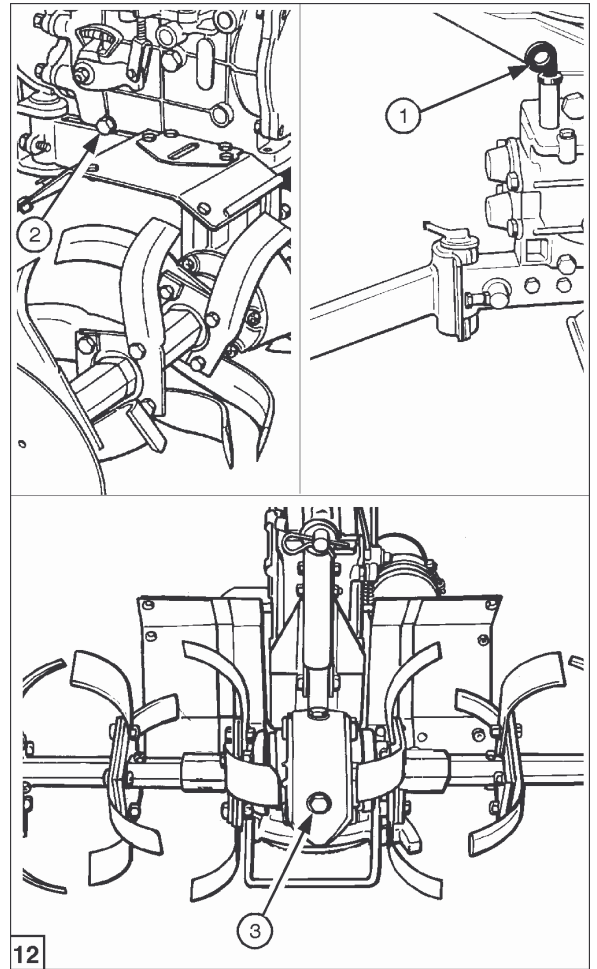
Insufficient play can cause clutch slip, while excess play can lead to failure to disengage fully.

Adjust play by means of cable adjuster (see figure 13, item 1).

REVERSE SPEED ENGAGE CONTROL LEVER

The reverse speed engagement control lever must have a free play of about 5 to 6 mm before the reverse speed is engaged.

If the lever free play is insufficient (reverse speed remains engaged) or excessive (reverse speed does not engage), adjust play by means of cable adjuster (see figure 13, item 2).



SAFETY TESTS AND CERTIFICATION

Declaration of CE conformity in accordance with EEC directive 89/392 and amendments.

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Declare on their own responsibility, that the machine

POWER HOE TYPE

MODEL SERIES BL 110 - BL 120

Conforms to the basic Safety and Health Requirements as stated in EEC 89/392 Directives, and successive modifications

In order to verify the correct application of the aforementioned Directives, the following Conforming Standards were consulted pr EN 709

CHAIRMAN OF THE BOARD



S. Matteo della Decima 20/10/97

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