DEAR AGRIA OWNER!

Before working with your new tractor, let the representative who sold it to you explain and demonstrate the machine.

You should then carefully study this manual, making yourself thoroughly familiar with its contents.

We have purposely chosen this “Pocket Book Size” to enable you to carry these instructions with you when working.

Any damage arising due to non-observance of our instructions is not covered by guarantee! It will, therefore, pay to read this manual carefully!

Exact knowledge of this instruction book will make it easier for you to operate the tractor efficiently and will make your work a pleasure.

AGRIA-WERKE MOECKMUEHL
General hints

The AGRIA Universal Power Tiller will always prove reliable and ready for operation, if serviced, operated and treated with care.

This booklet will provide the necessary information. Careful study of it and — if necessary — inquiries addressed to your AGRIA Service will save annoyance, time and money. Do not follow the well-meant advice of people who are not familiar with AGRIA-machines.

Never use force. It is no substitute for practical knowledge or suitable tools. Do not try to repair the ‘tiller’ yourself, if a fault cannot be recognized or remedied with certainty.

Take the machine to the AGRIA agent or have him come to you. With his knowledge and experience and his well equipped workshop he will be able to effect repairs quickly and therefore inexpensively.

Routine Checks

1. Clean and lubricate the machine and the attachments at short intervals and tighten loose screws and nuts.

2. Check oil level
   a) in the engine gearbox (oil inlet screws, see ill. 9, page 8),
   b) in the driving mechanism for the rotary hoes (inlet openings, see ill. 1 and 7, page 18).

For further details see pages 26/27.
3. Check the **air cleaner** regularly (ill. 4, page 18). The cleaning process is described on page 12.

Take care that there is sufficient oil to correspond with the mark on the oil container.

4. Check contents of **fuel tank**. Use only recognized brand of fuel. Ensure the **correct** ratio of mixture (see "Engine" on page 10).

Ensure that the tank cap is clean in order to guarantee correct venting of the fuel tank and to prevent stoppages in the fuel flow.

5. Check **brake system** of trailer (if you own one). Have the brakes overhauled **regularly**, even if they still function correctly. The brake system should be disassembled and cleaned at least every 6 months. This is best done by the responsible AGRIA service station.
1 Short circuit button
2 Clamp lever for lateral adjustment of handlebar
3 Hexagon screw (to adjust handlebar to appropriate working height)
4 Clamping screw for the spur
5 Clamping screw for the hoeing share
6 Hoeing share
7 Recoil starter
8 Electric socket for lighting connection
9 Oil inlet and outlet screw on engine gearbox
10 Carburettor
11 Guard frame and carrier arm

1 Gear shift rod
2 Handlebar
3 Tool box
4 Adjusting screw for clutch cable
5 Clutch lever
6 Throttle
Description of the main parts

Engine

The built-on engine is an air-cooled two-stroke engine which should be run only on a petrol mixture.

For technical data see page 15.

The reliability of the AGRIA depends mainly on the state and treatment of the engine.

It is therefore advisable to keep informed on its operation and maintenance and to know how to deal with faults as explained on pages 30/31.

Avoid high engine speeds during the first 20 hours of operation (running-in period).

The fuel should be mixed at a 30:1 ratio, i.e. 30 pints of petrol to 1 pint of motor oil.

Use only recognized petrols and oils of the SAE 40 group, such as ESSOLUB 40 (do not use Super petrol!)

Even after the running-in period, never open the throttle more than is required for the work in hand.

Excessive speeds will damage and shorten the life of an engine, particularly when operating without load! If the engine is raced, immediate damage may result.

The engine is cooled by a fan. The grid on the fan housing (recoil starter) and the cooling ribs of the cylinder should therefore always be kept free of dirt and sucked-in plant matter.

The carburettor type and its setting are described in the section “Technical data” on page 15.

Always ensure that the engine idles correctly. The engine should run smoothly at low speed with the throttle at idling position. The correct setting is simple to obtain by adjusting the throttle valve setscrew on the carburettor. This should be done, however, while the engine is still warm.
**Air cleaner** (ill. 4, page 18)

The task of the oilbath air cleaner is to clean the intake air of dust. It is so designed, that its filtering efficiency is not impaired even when in dirty condition.

Cleaning should be carried out at short intervals, under very dusty conditions daily.

If the output of the engine drops, check and clean the filter first!

Clean as follows:

a) Clean exterior and area surrounding air cleaner;

b) Open locking clamp, take off oil container, remove used oil and clean oil container.

c) Fill oil container up to the lower normal oil level mark (not more!) and replace it.

d) Ensure that the filter fits tightly.

**Please note:**

After several oil changes or after excessive fouling, screw off the filter, take off the oil container, thoroughly clean the filter by dipping it into Diesel fuel several times, shake dry and then screw it on again. Fill in oil as described above.

(Under no circumstances use petrol, water, lyes or hot liquids for washing the filter!)

---

**Ignition system**

The necessary data for ignition timing are given on page 15 (Technical data). Checking should be done only by specialists.

**Recoil starter** (ill. 7, page 8)

The engine is started by recoil starter, the mechanism of which is coated with a very consistent and cold resisting anti-corrosive oil, so that no special lubrication is necessary.

It is advisable, however, to lubricate the rope with Diesel fuel from time to time. **Do not use oil or grease** as this tends to harden, causing interference.

**Never let the rope snap back by itself, but guide it back to its original position by the handle!**

Operate as shown in adjacent illustration!

If, in spite of all precautions, stoppages occur, the engine may be started by the belt supplied with the tools and the driver provided behind the recoil starter. For this purpose the holding pot with its protective strainer and then the recoil starter must be removed.

1 Correct operation of the recoil starter

2 Incorrect operation of the recoil starter
Have the recoil starter repaired by a recognized AGRIA dealer at once.

When refitting the recoil starter, ensure that the pawl paths are clean!

The **pawls must not be greased or oiled**, otherwise the recoil starter will not work!

The driver is meant to serve as an emergency starting device only, and should not be used longer than absolutely necessary.

### Tools

The tools are provided in the tool box on the handlebars (ill. 3, page 9)

### Lighting system

On the left side of the engine a three-pole electric socket (ill. 8, page 8) is fitted, to provide power for lighting equipment.

---

**Technical data**

<table>
<thead>
<tr>
<th>Model 4000</th>
<th>Model 6000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engine</strong></td>
<td>64</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>2-stroke</td>
</tr>
<tr>
<td><strong>Cylinders</strong></td>
<td>5.5 HP</td>
</tr>
<tr>
<td><strong>Flywheel magnet O</strong></td>
<td>Bosch Flywheel magneto LM/URB 1/116/16 L</td>
</tr>
<tr>
<td><strong>Contact breaker gap</strong></td>
<td>0.35–0.45 mms</td>
</tr>
<tr>
<td><strong>Ignition point before TDC</strong></td>
<td>3.0 mms</td>
</tr>
<tr>
<td><strong>Spark plug</strong></td>
<td>Bosch M 98 T 1</td>
</tr>
<tr>
<td><strong>Electrode gap of spark plug</strong></td>
<td>0.5–0.6 mms</td>
</tr>
<tr>
<td><strong>Air cleaner</strong></td>
<td>Oilbath air cleaner</td>
</tr>
<tr>
<td><strong>Carburetor</strong></td>
<td>Central float carburettor Bing 1/18/88</td>
</tr>
<tr>
<td><strong>Main jet</strong></td>
<td>95</td>
</tr>
<tr>
<td><strong>Needle jet</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>Idling jet</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Needle position</strong></td>
<td>1-11/2 x open</td>
</tr>
<tr>
<td><strong>Air regulating screw</strong></td>
<td>5.5 liters</td>
</tr>
<tr>
<td><strong>Fuel tank capacity</strong></td>
<td>1200 mms</td>
</tr>
<tr>
<td><strong>Overall length of machine without implements</strong></td>
<td>720 mms</td>
</tr>
<tr>
<td><strong>Overall width</strong></td>
<td>900 mms</td>
</tr>
<tr>
<td><strong>Overall height</strong></td>
<td>47 kgs</td>
</tr>
</tbody>
</table>
**Speeds**
(at approx. 4500 r.p.m. of the engine)

<table>
<thead>
<tr>
<th>Gear</th>
<th>6-6 AM forwards</th>
<th>4,00-12 tractor type forwards</th>
<th>hoeing shaft speeds forwards</th>
<th>reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4,8/3,3*)</td>
<td>6,0/4,1*)</td>
<td>66/45*)</td>
<td>26/18*)</td>
</tr>
<tr>
<td></td>
<td>1,9/1,3*)</td>
<td>2,3/1,6*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>7,1 km/h 4,4 mph</td>
<td>9,0 km/h 5,6 mph</td>
<td>98</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>2,8 km/h 1,7 mph</td>
<td>3,5 km/h 2,2 mph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12,4 km/h 4,9 km/h</td>
<td>15,7 km/h 6,2 km/h</td>
<td>172</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>7,7 mph 3,0 mph</td>
<td>9,8 mph 3,9 mph</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*) Figures apply only to machines with p.t.o. shaft (see description on page 19).

The reverse speeds apply only if the auxiliary gear is installed, as described on page 17.

**Clutch**

The AGRIA is fitted with a multiple-disk clutch running in an oil bath. The clutch is operated by the clutch lever (ill. 5, page 9) on the left handlebar via an adjustable Bowden cable. When the lever is pulled, the clutch disengages, i.e. the machine is no longer driven by the engine.

In order to avoid slipping of the clutch during operation, the clutch lever is adjusted at the factory to 7—9 mms play (ill. 5, page 9). Check this play frequently and adjust, if necessary, by means of the setscrew (ill. 4, page 9).

**Gear change**

The machine has 3 forward gears. The gearbox and the engine form one unit. The constant mesh gear is operated by the gear shift rod (ill. 1, page 9).

Gears are changed as in any motor car, i.e. pull clutch lever (ill. 5, page 9), shift to required gear, slowly release clutch while opening throttle.

If a gear cannot be changed, briefly engage and disengage clutch; this will enable you to change gear smoothly.

The position of the three gears and the idling position are shown on the illustration.

**Reverse gear**

The machine can be equipped with an auxiliary gear, which enables all 3 gears to be operated in reverse.

This auxiliary gear is operated by a shift rod (1) on the left side of the machine, as illustrated. As may be seen from the direction of the arrow, all gears are shifted to reverse (R) when the shift rod is pulled upwards. Forwards travel is achieved when the shift rod is pushed downwards (F).

1 Shift rod for operating
   R = in reverse
   F = forwards
2 Gear shift rod
If this device is installed on your machine care must be taken when hoeing tools are mounted to ensure that only the forward gears (F) are engaged!

When working with hoeing tools never operate the shift lever, as otherwise the hoeing tools will reverse and may cause injuries if the engine clutch lever is not pulled immediately.

Hoeing gearbox
(driving mechanism for hoeing rotors)

Reduction gear and driving chain run in oil bath.

Filling quantities are given in the section “Care and Maintenance” on pages 26/27.

The driving chain is adjustable. The chain spanner can be reached after taking off the cover (ill. 2, page 7).

After loosening the fastening of the support between casing and engine on the left side of the machine as well as the clamping bolts (ill. 6, page 18), the lock nut (ill. 5, page 18) and the hexagon nut (ill. 3, page 8) of the screw for the height adjustment of the handlebar, the chain can be tightened by turning the stud bolt (ill. 5, page 18). Then retighten nuts.

Screw off the cover (ill. 1, page 18) and check the tension of the chain. The chain should not have too much tension; it should be possible to raise it about 10—15 mms.

Connection of implements

A connection is provided not only for trailed implements (ill. 7, page 7) but also for front mounted attachments (see illustrations on page 20).

The machines are available in two different versions, one without p.t.o. shaft, as shown at the top of page 20, and one with p.t.o. shaft, as shown at the bottom of page 20.
Adjusting the handlebar to the correct working height

1. Loosen hexagon nut (ill. 5).
2. Bring handlebar to the required height and let it snap into the relevant notch.
3. Retighten hexagon nut (ill. 5).

Lateral adjustment of the handlebar

1. Turn clamping lever (ill. 1) to the left.
2. Swing handlebar to the required position and let it snap into the required notch.
3. Tighten clamping lever again.

The clamping lever should be approximately parallel to the handlebar after tightening, so that the end of the lever does not disturb while working.

The position may be corrected by turning the hexagon screw (ill. 4) by $\frac{1}{8} = \text{one screw-head side}$. If the end of the clamping lever points to the left – seen in driving direction – the screwhead has to be turned to the right by one side. If it points to the right, it has to be turned to the left by one side.
This means that the screwhead should always be turned – by one side – in the direction in which the clamping lever is to be corrected.

The head of the hexagon screw (ill. 4, page 21) can be turned only after the clamping lever is stacked off and the screw is knocked downwards, until the screwhead emerges from its seating.

**Fitting the rubber drive wheels**

The rubber drive wheels can only be fitted together with the relevant wheel hubs. The wheel hubs are pushed on to the hosing shaft and each is locked in place by means of a hexagon screw with spring ring and hexagon nut. Should the mounting holes of the wheel hub and the hosing shaft not match up, the wheel hubs must be turned 180°. The rubber drive wheels are attached to the wheel hubs. The profile tips point in the direction of travel. Ensure by regular checks that the screw connections are secure.

**Track widths:**

<table>
<thead>
<tr>
<th>Rubber drive wheels</th>
<th>Track width</th>
<th>Outside width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve outward</td>
<td>535 mms</td>
<td>685 mms</td>
</tr>
<tr>
<td>Valve inward</td>
<td>365 mms</td>
<td>515 mms</td>
</tr>
<tr>
<td>6 - 6 AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve outward</td>
<td>350 mms</td>
<td>470 mms</td>
</tr>
<tr>
<td>Valve inward</td>
<td>500 mms</td>
<td>620 mms</td>
</tr>
<tr>
<td>4.00 x 12 Tractor Type</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maximum tyre pressure with 6 - 6 AM = 1.0 atue (14 p.s.i.)
with 4.00 x 12 Tractor Type = 2.0 atue (28 p.s.i.)

Wheel weights can be fitted to both rubber drive wheels to increase traction.
Ensure that both tyres have the same air pressure!

---

**Starting the engine**

1. With cold engine

1. Check, whether gear shift rod (ill. 1, page 9) is in idling position ("0"). (Illustration of the different positions on page 17).

2. Open fuel cock (ill. 2, page 18). (Lever should point downwards).

3. Open throttle (ill. 6, page 9) wide.

4. Press primer on carburettor, until fuel overflows.

5. Close throttle to about 1/3.

6. Slowly pull grip of recoil starter (ill. 7, page 8), until resistance is felt, then pull briskly and guide the rope back to its support.

**Do not let the rope snap back!**

7. If the engine does not start, press the primer on carburettor again, and repeat the starting procedure.

8. If the engine stops after a short run, start it again and then press the primer until the engine runs steadily.

9. The engine may also run irregularly, if air has entered the fuel line due to lack of fuel. In this case proceed as described under "8".
II. With warm engine

1. Open throttle only about 1/4.

2. Do not press the primer on the carburettor.

3. Slowly pull grip of recoil starter (ill. 7, page 8), until resistance is felt, then pull briskly and guide the rope back to its support.

   Do not let the rope snap back!

Take care when starting the engine in a confined space! Ensure that there is good ventilation and that the exhaust gases are quickly drawn off! They contain invisible, odorless but highly poisonous carbon monoxide gas.

---

Stopping the engine

1. Pull clutch lever (ill. 5, page 9).

2. Put gear shift rod (ill. 1, page 9) into idling position (position “0”). (Illustration of the different positions on page 17).

3. Close throttle (ill. 6, page 9) until engine idles.

4. Close fuel cock (ill. 2, page 18) (lever in horizontal position, pointing to the left, letter “Z” visible from above).

5. Press short circuit button (ill. 1, page 8) against air guide plate, until engine stops.

6. If the machine is not to be used for a longer period, do not stop engine as described under “5”, but let it run until the fuel in the carburettor is exhausted and the engine stops by itself.
Care and maintenance

Apart from following the instructions for the machine and the engine, it is of equal importance to observe the following instructions on care and maintenance.

Good performance depends on good service!

1. Check oil level before using the machine.

2. Always change the oil promptly! Keep the oil inlet and the drain plug on the engine gearbox (ill. 9, page 8) and the surrounding area perfectly clean, so that no dirt penetrates into the interior of the gearbox.

   The oil should be changed after the first 25 hours of operation, thereafter every 50 operating hours.

   Approx. 0.3 liters of gear oil SAE 80, such as, for example, ESSO GEAR OIL ST 80 are necessary. The oil should be changed while the engine is still warm.

   See illustration 3/4, page 20, for oil drain screw.

3. Fuels: use only recognized fuels in the correct mixture ratio (see directions on page 10). Keep the cap of the fuel tank clean to ensure good venting and to avoid interruptions of the fuel flow.

4. Do not forget to clean the filter (as described on page 12).

5. Ensure that the engine is cooled efficiently. Keep the relevant devices clean and in good working order.

6. Check the exhaust every 200 working hours; decarbonize and clean if necessary!

7. Ensure that fuel tank, fuel line, carburettor and strainer of fuel cock are kept clean.

8. Tighten loose screws and nuts.

9. Oil the Bowden cables, the hand lever and the throttle from time to time, (let some oil drip into the cable spiral).

10. Check the oil level in the hoeing gearbox (ill. on page 18).

   Approx. 150 g viscous gear grease, such as ESSO FLUID GEAR GREASE are provided in the top part and approx. 350 g viscous fluid gear grease in the bottom part (hoeing gearbox).

   The inlet and outlet opening for the upper part of the gearbox is closed by the sealed cover (ill. 1, page 18), for the lower part by the oil inlet and outlet screw (ill. 7, page 18).

   It is advisable to have this lubricant changed during the annual overhaul by the responsible AGRIA Service-Station.

11. Check the tire pressure of the drive wheels, see pages 22 and 38.

   Special care should be taken to keep the tire pressure equal in both wheels, as this ensures trouble-free straight-ahead steering.

12. Do not forget to check and service the brakes on your trailer.
Important points

A) Do not garase the machine
   in damp rooms,
   in rooms where fertilizer is stored,
   in stables or adjacent rooms,
   as this will cause severe corrosion.

B) If the machine is not to be used for some time:

1. Thoroughly clean the machine. Remove rust from bright parts, grease them carefully, repair damages to paint, if necessary. Check Bowden cables, clutch, ignition and spark plug.

   Replace damaged parts at once. Clean air cleaner, replace fuel and air lines, if worn. Clean air screen and cooling ribs of cylinder under cowling. Decarbonize exhaust slots and muffler.

2. Drain fuel tank. Clean tank, carburettor and fuel line. If this is not done, oil may separate from the petrol in the tank and the carburettor and thicken due to long standing, which will cause starting difficulties.

3. Drain oil from engine gearbox. It is advisable to rinse out the gearbox with petroleum (after warming up the machine). Then fill in appr. 0,3 liters of new gear oil SAE 80, such as ESSO GEAR OIL ST 80.

4. Approx. 150 g viscous gear grease, such as ESSO FLUID GEAR GREASE, are provided in the top part and approx. 350 g viscous fluid gear grease in the bottom part of the hoeing gearbox.

   It is advisable to have the maintenance work carried out during the annual overhaul by the responsible AGRIA Service-Station.

5. Laying up the engine.

   The constant use of recognized brands of petrol mixed with the recommended brand of motor oil (see instructions on page 10) makes additional preservation of the engine unnecessary, because all recognized brands of fuel and motor oil contain corrosion preventive ingredients.

   Before putting the machine out of operation for a longer period and before following the advice given under 1-4, run the machine on a 1:15 fuel mixture for a short while, in order to provide a more intense lubrication.

   After the above mentioned work is completed, screw out the spark plug and cover the plug passage with a clean cloth or fine-mesh filter gauze. This is to improve the circulation of air inside the engine and to prevent condensation.

6. If rubber drive wheels are mounted: Jack up the machine, so that the pneumatic tires do not rest on the ground. Pneumatic tires become unserviceable in a very short time, if left under load without air.
Causes of faults

1. Engine will not start
   Fuel tank empty
   Fuel cock closed
   Fuel cock or fuel line blocked
   Float on float pin displaced
   Float pin sticks
   Water in carburettor
   Primer of carburettor not activated sufficiently
   Primer pressed too much (spark plug wet), engine flooded
   Nozzle blocked
   Spark plug dirty or sooted; electrodes bridged
   Electrode gap incorrect (see page 15)
   Spark plug defective
   Ignition cable loose or defective
   Short circuit button jammed
   Ignition system faulty

2. Engine is difficult to start
   Fuel mixture too lean
   Idle nozzle blocked
   Electrode gap of spark plug too wide (see page 15)

3. Engine starts, but stops again after a short time
   Causes as mentioned in paragraph 1

4. Engine starts, but backfires when throttle is opened
   Engine very cold
   Fuel mixture too rich
   Nozzles choked
   Suction pipe leaks
   Exhaust carbonized

5. Carburettor overflows
   Dirt between float pin seating and pin
   Float leaks
   Float pin detached from clamp spring of float

6. Engine lacks power
   Air cleaner or its intake slots dirty
   Exhaust muffler blocked
   Exhaust slot in engine blocked by oil carbon
   Oil sealing rings on crankshaft defective
   Engine clutch slips
   Piston leaks owing to cylinder or piston wear
   Piston rings stuck, worn or broken
   Suction pipe leaks
   Trailer brakes adjusted too tightly
   Fuel mixture too rich
   Spark plug with wrong thermal value
   Ignition wrongly timed
   Mechanical resistance in the machine

7. Machine
   If clutch will not disengage, adjust Bowden cable.
**Hoeing Tools**

- Hoeing tools 24 cms working width  3003 011
- Hoeing tools 41 cms working width  3007 011
- Hoeing tools 75 cms working width  3010 011
- Slip-on hoeing tools  3003 311
- End hoeing tools  1003 611
- Protective circular shields  1003 911

**Combinations of hoeing sets for various working widths**

- 24 cms  1 set 3003 011
- 32 cms  1 set 3003 011, 1 set 1003 611
- 41 cms  1 set 3003 011, 1 set 3003 311
- or 41 cms  1 set 3007 011 (rigid)
- 49 cms  1 set 3003 011, 1 set 3003 311, 1 set 1003 611
- or 49 cms  1 set 3007 011 (rigid), 1 set 1003 611
- 58 cms  1 set 3007 011 (rigid), 1 set 3003 311
- 66 cms  1 set 3007 011 (rigid), 1 set 3003 311, 1 set 1003 611
- 75 cms  1 set 3010 011 (rigid)
- 83 cms  1 set 3010 011 (rigid), 1 set 1003 611
- 92 cms  1 set 3010 011 (rigid), 1 set 3003 311
- 100 cms  1 set 3010 011 (rigid), 1 set 3003 311, 1 set 1003 611
- * 109 cms  1 set 3010 011 (rigid), 2 sets 3003 311
- * 117 cms  1 set 3010 011 (rigid), 2 sets 3003 311, 1 set 1003 611

* for model 6000 only
Protective rotor covers

The protective cover is in two parts. The two halves are slipped on to two tubular arms and screwed on.

There are three different overall widths available: 40, 60 and 75 cms.

Mount as illustrated.

Hoeing

Necessary attachments:

a) Hoeing tools
   Nos. 3003 011 – 3003 311 – 1003 611 depending on required working width (see page 33)

b) Protective circular shields
   No. 1003 911

c) Protective rotor covers Nos. 1010 011 – 1012 011 depending on working width

It is imperative to have a protective rotor cover mounted while hoeing as this protects to a great extent the oil bath air cleaner and the cooling air intake against thrown-up dust. These covers also protect against injuries from the hoeing rotors.

Mounting

1. Assemble hoeing tools according to required hoeing width. If the holes for the hexagon screws do not match give the hoeing tools one half turn (180°). The cutting edges of the hoeing tines must point in driving direction.

   Secure hoeing tools by hexagon screw, spring washer and hexagon nut.

Fasten nuts tightly and check correct fitting frequently, possibly before every operation, especially after longer periods of non-usage. Damage to the tines will otherwise be unavoidable.
3. Slip on protective circular shields and secure them by hexagon screw, spring washer and hexagon nut.
4. Mount protective rotor covers (see illustration on page 34).

Working
1. If your machine is equipped with an auxiliary gear for reverse travel, take care to ensure that the shift lever 1, as shown in the illustration on page 17, is switched to forwards travel (F), i.e. is pushed downwards to its limit.
   (See also description and illustration on page 17).
2. Take care that gear shift rod (ill. 1, page 9) is in idling position “0” (see illustration on page 17).
3. Start engine (see description on page 23).
4. Pull clutch lever (ill. 5, page 9).
5. Change to required gear (hoeing is done in first or second gear depending on soil conditions).
6. Slowly release clutch lever while opening throttle. The tail skid can be used in the following positions:

   ![Diagram of tail skid positions]

   on heavy soil
   on medium to light soil
   on sandy soil

The working depth can be controlled by the operator's handling of the machine.
The deeper the hoeing tail skid is pressed into the ground, the finer the crumbling and the deeper the soil cultivation.

Driving with trailer

Necessary attachments:

a) 1 Set of drive wheels with pneumatic tires 6 - 6 AM, item No. 4091 011
b) 1 Set of mudguards, item No. 4024 011
c) 1 Trailer with pneumatic tires and lighting installation, item No. 4081 011

Mounting
1. Slip on and secure wheels (see description on page 22).
2. Fasten mudguards.
3. Take off hoeing spur (ill. 6, page 7).
4. Attach trailer, insert retaining bolt (ill. 7, page 7) and secure with spring clip.
5. Connect cable of trailer lighting system to machine (ill. 8, page 8).

Driving
1. Put gear shift rod (ill. 1, page 9) into idling position “0” (as shown on page 17).
2. Start engine (as described on page 23) and let it warm up.
3. Gear change
   a) Pull clutch lever, adjust throttle.
   b) Change gear (position of the different gears described on page 17).
   c) Slowly release clutch while opening throttle.

4. To stop
   a) pull clutch lever, adjust throttle,
   b) put gear shift rod (ill. 1, page 9) into idling position “0”,
   c) release clutch lever,
   d) apply hand brake of trailer.

It is absolutely necessary to operate the throttle at short intervals when driving downwards, in order to provide sufficient lubrication for the engine. If this is not observed, the engine may be damaged through insufficient lubrication; in this case no guarantee claim will be accepted.

The trailer, item No. 4081 011, is equipped with a robust and well dimensioned internally acting shoe brake which guarantees absolutely safe braking of the laden vehicle to a stillstand, even on steep hills. It is therefore not necessary to use the engine as a brake.

When travelling down steep hills the 3rd gear should therefore always be used on principle and the throttle opened at short intervals.

Observe the permissible pay load of the trailer and avoid overloading, which influences not only the trailer but also the machine!

Tire pressure on trailer: 2,5 atue (35,6 p.s.i.)

Check that all the wheels, especially the drive wheels on the machine, have the same pressure, to ensure easy, straight-ahead driving.
Ridging

Necessary attachments:

a) Equipment of machine as described on page 35 under "Hoeing" (hoeing widths 32–58 cms)
   but without protective rotor cover

b) 1 Ridger with leg No. 4052 011

Mounting

1. Mount hoeing tools and protective circular shields as described on page 35.

2. Fasten leg of ridger in coupling device of machine.

Working

1. As described on page 36 under "Working".

2. Adjust ridger after the first few yards.

Ploughing

Necessary attachments:

a) 1 pair of drive wheels with pneumatic tires 6 - 6 AM No. 4091 011

b) 1 front weight with holder No. 4028 011

c) 1 Coupling device No. 2040 011

d) 1 single plough No. 4041 011.

Mounting

1. Slip on drive wheels and screw tight (as described on page 22).

2. Connect coupling device to machine.

3. Insert bed plough into coupling device and secure.

   Mount front weight. After loosening the mounting screw the position of the weight may be adjusted as required.
Lawn Mowing

Necessary attachments:
1 Lawn mower No. 4093 011

Good performance of the lawn mower depends on an even lawn area which is free from stones. The grass should be dry and not higher than appr. 8 cms (3 ins).

The knife drum should be set in such a manner that the knives would cut a sheet of paper. It can be readjusted by means of the two hexagon screws (ill. 3, page 44) which are secured by two lock nuts.

The cutting height may be regulated by adjusting the tracking rollers (ill. 4, page 44). The counter bearings of the adjusting segments are provided with grooves to simplify setting. The upper mark is for short cutting, the lower mark for long cutting.

New lawns should not be cut too short. In such cases the tracking rollers (ill. 2, page 44) should be set to the lowest mark.

Mounting

1. Insert the hoeing end of the AGRIA between the two shackles of the lawn mower and secure it by means of the clamping tubes and clamping screws (ill. 1, page 44) and the two eyelets for the protective covers. Slip the connecting pieces (ill. 5, page 44) on to both ends of the hoeing shaft and secure them by spring plugs (ill. 6, page 44).
Ensure that the springs are folded backwards, seen in driving direction.

**Working**

1. Start engine as described on page 23. Engage first gear and mow.

   **Slowly release clutch lever, while opening throttle.**

2. Start at the edge of the lawn and mow in spirals to the centre.

3. When turning, press down the handlebar and turn the machine on the tracking rollers (2). These tracking rollers not only roll the lawn but also serve as turning aids.

4. Narrow strips of lawn and inaccessible corners which do not permit turning are mowed in one direction and the machine is pulled back on the tracking rollers.

5. **After mowing** clean the lawn mower at once and lubricate all moving parts and the knife edges.

---

**Mowing**

**Necessary attachments:**

a) 1 mowing attachment No. 4046 011

b) 1 cutterbar No. 4047 … (depending on type and size)

c) 1 set of pneumatically tired wheels 6 - 6 AM No. 4091 011

---

**Mounting**

1. Mount drive wheels and fasten (as described on page 22).

2. Clean p.t.o. shaft and connecting flange and grease them slightly.

3. Clean connecting flange and p.t.o. shaft sleeve on mowing attachment and grease them slightly. Check movement of lever (ill. 1, page 46) and p.t.o. shifting sleeve.

4. Flange on mowing attachment and fasten by tightening the cup nuts on eye bolts.

5. Screw cutterbar on to head of casing, do not forget to fit the two adjusting plates (ill. 10, page 46) correctly. By this means, the cutting angle of the cutterbar is corrected. If rubber drive wheels 6 - 6 AM are used, the thicker part should point to the front, if rubber drive wheels 4,00-12 AS are used, the thicker part should point to the rear. The crank slide piece should rest between the two jaws of the knife driver (ill. 11, page 46). The grease nipple (ill. 6, page 46) on the crank slide piece should be on top.
9. Screw on swath boards on the left and right side of the cutterbar, if required.
   Take care that the castle nuts are screwed in only so far that the splint can be inserted.

**Woking**

1. Take care that the gear shift rod is in idling = “0” position (see illustration on page 17).

2. Start engine (as described on page 23).

3. Pull clutch lever, engage first gear, slowly release clutch lever while opening throttle. Drive machine on to mowing area.

4. Slowly push forward the shift rod for the mowing attachment, to switch on the mowing drive. Caution, mowing knife is working!

5. The second gear may be used for travelling. Do not forget to switch off mowing attachment (pull shifting rod back).

6. After finishing mowing or when the cutterbar is choked, switch to position “0”. The machine stops but the blade continues to run. The cutterbar shakes itself clean.

**Caution!** If during the mowing process the cutterbar has to be cleaned, the engine should be stopped beforehand for safety reasons.
Please note: After working for appr. 1/2 hour, retighten all screws and nuts on mowing attachment and cutterbar (especially on cutterbar fastening, on knife driver and mowing attachment connection).

Grease crank slide piece and lubricate all sliding parts on the knife, every 2 hours.

After work

1. The mowing attachment is disassembled in reverse order to its assembly. It is advisable not to remove the cutterbar from the mowing attachment in order to avoid unnecessary work.

2. Clean and oil mowing attachment and especially the cutterbar immediately after work is finished.

Care and maintenance

A) Mowing attachment

I. Lubrication

The gearbox of the mowing attachment contains appr. 500 g fluid gear grease, as for example ESSO Fluid Gear Grease. The grease should be renewed once a year, this is best done before the beginning of the new mowing season. The old grease is removed by washing the gears in kerosene or Diesel fuel. This service is best done by your local AGRIA agent. It is advisable to have the cutterbar checked at the same time. This will give you the best possible guarantee for an efficient mowing attachment during the mowing season.

The mowing attachment is provided with one grease nipple only. When the yearly maintenance work is carried out, this nipple should also be checked to ensure that it is not blocked. The nipple is situated on the crank slide piece (ill. 6, page 46). Use lubricating grease such as ESSO Multi-Purpose Grease. (See further details under “Working” on page 48).

II. Cleaning

Always clean the complete mowing attachment, the cutterbar and the machine after working. Special care should be taken to ensure that the air intake of the engine is free of sucked-in dirt or foreign particles (grass, weeds etc.), so that the engine is always sufficiently cooled.

If in continuous operation, this cleaning and lubricating process should be repeated every 3-4 hours.

III. Maintenance

Frequently check tight fitting of all bolts and nuts and retighten as necessary.
B) Cutterbar

As all parts coming into contact with plant juices during mowing usually get gummed up all mowing parts should be oiled frequently and well to ensure easy running of the knife.

This also applies, of course, after each mowing work is ended and/or for daily cleaning.

Replacing the mowing blade

a) Stop the engine!

b) Screw off knife driver (ill. 11, page 46) and grass divider (ill. 9, page 46).

c) Pull out mowing blade to the side.
   Insert the hexagon socket wrench into the hole in the outside knife blade and pull out the mowing blade.

d) Mount new blade in reverse order.

e) Check working of the new blade by turning the engine by hand; take care that all knife holders are fitted correctly.
   See also description on page 51.

Readjusting the blade guide

After some time the mowing quality decreases due to unequal wear of the blade guides.

This can be corrected by readjusting the blade guides as follows:

Cross section of a knife holder

1. Cutterbar back
2. Rubbing plate
3. Hexagon screw
4. Knife holder
5. Mowing blade
6. Double finger

a) Clean and lubricate cutterbar, so that the mowing blade moves smoothly.

b) Unscrew hexagon screws (3) of the knife holders (4).

c) According to the degree of wear remove shim plates between knife holder and rubbing plate (2).

d) Tighten hexagon screws (3) until the rubbing plate (2) can just be pushed forward by hand.
   Ensure that the wearing plate is evenly pressed against the guide bar of the blade (5).

e) Tighten hexagon screws (3).

Repeat this procedure with all knife holders (4).

g) Check the movement of the mowing blade after finishing this work. It should not run too hard nor should it be lifted off the finger plates by pressure on the grass divider.
Pest control

Necessary attachments:
For these attachments the basic machine must be equipped with a p.t.o. shaft.
a) 1 pair drive wheels with pneumatic tires
b) 1 spraying unit item 4035 011
c) 1 each pressure and suction hose (from local recognized dealer)

Mounting
1. Fit the machine with the rubber drive wheels provided.
2. Check cleanliness of connecting surfaces on machine (p.t.o. shaft) and sprayer unit.
   Lightly grease p.t.o. shaft profile and coupling sleeve.
   Connect up sprayer unit. Tighten both cap nuts evenly on the eye screws.
3. Connect up pressure and suction hose. Ensure that the suction screen supplied with the pump is fitted to the suction hose.

Operation
1. Place the suction hose with suction screen in the spray tank (never allow the pump to run dry!)
2. Close hand wheel (5) for pressure regulation, open cut-off valve on pressure hose/steel tube.
   Switch shift-rod to idling position (0), (see description on page 17).
   Push forward switch lever (1) to cut out the pump.
4. Start engine (see description on page 23).
5. Carefully pull back switch lever (1) on sprayer unit to operate the pump.
   Operate the throttle lever to obtain the necessary engine speed.
   The pump should start operating slowly, as this introduces the suction process by the fastest means.
   If the manometer shows 25 atue (355 p.s.i.), the necessary pressure can be set by opening the hand wheel (5).
   If, instead of the manometer, a pressure indicator is provided, the hand wheel can be opened as soon as the first red notch becomes visible below the rubber cap.
   The pressure indicator has 3 notches, which indicate, read from bottom to top, approx. 10, 20, 30 atue (143, 285, 430 p.s.i.), depending on which notch becomes visible below the rubber cap, which is raised by the pressure pin.

Pump output:
Approx. 14—16 ltrs./min. (3—3.5 imp. gals/min.)
Max. working pressure 30 atue (430 p.s.i.)
Care and maintenance

1. Clean the spraying unit immediately after each use with clean water and rinse through under pressure.

2. At intervals check the grease level in the grease cup (4). By screwing in the cap, press in grease until it emerges at the grease escape nipple (8).

Possible faults:

1. **No outflow from the pump:**
   a) the screen in the suction cup is clogged;
   b) the valve reeds are stuck; this can happen if the pump has not been sufficiently rinsed with clean water after the last spraying.

   Usually the valve reeds can be released again by knocking against both sides of the valve seating.

2. **After a short pause, the pump produces no liquid:**

   Air is being sucked in which cannot escape from the fuel hose. Loosen the connection to the pump until the air can escape while the pump is running.

3. **Manometer no longer indicates pressure or pressure valve no longer works:**

   May be caused by dried, clogging spray liquid, because the pump has not been sufficiently rinsed through after the last spraying.

   Screw off and clean the manometer or the pressure valve until the pressure pin can be moved easily.
### Notes for personal use

#### My Tractor
- bears the designation: 4000/6000
- and the machine number: (to be found as shown on ill. 4 or ill. 5, page 20)

#### The engine
- bears the designation: 64/66
- and the engine number: (impressed on the top left side of the engine)

#### The tractor was bought on
- from Messrs.

### Maintenance work

<table>
<thead>
<tr>
<th>Last oil change on</th>
<th>The air filter was cleaned on</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>