Operating Instructions 480 / 9
Model 4800
Compact Tractor
Important!
The Compact Tractor may already have been demonstrated and explained to you by your local Agria Service Station. Even so these operating instructions should be read carefully until you are thoroughly acquainted with every detail. If damage occurs as a result of these instructions not being complied with, the consequences may not only be aggravating but also expensive.
Your Compact Tractor will prove a faithful helpmate if you maintain it well and treat it with the care it deserves.

Contents

<table>
<thead>
<tr>
<th>Operating the tractor:</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake system</td>
<td>14</td>
</tr>
<tr>
<td>Clutch</td>
<td>13</td>
</tr>
<tr>
<td>Description of main functions</td>
<td>13 - 15</td>
</tr>
<tr>
<td>Driving</td>
<td>15</td>
</tr>
<tr>
<td>Electrical system</td>
<td>14</td>
</tr>
<tr>
<td>Front and rear p.t.o.</td>
<td>14</td>
</tr>
<tr>
<td>Gear change</td>
<td>13</td>
</tr>
<tr>
<td>Gearing</td>
<td>13</td>
</tr>
<tr>
<td>Power lift</td>
<td>13</td>
</tr>
<tr>
<td>Starting and operating the tractor</td>
<td>15</td>
</tr>
<tr>
<td>Steering</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance</td>
<td>18</td>
</tr>
<tr>
<td>Oil change</td>
<td>16</td>
</tr>
<tr>
<td>Starting the engine</td>
<td>15</td>
</tr>
<tr>
<td>Stopping the engine</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Care and maintenance:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing the oil in the gearbox</td>
<td>15</td>
</tr>
<tr>
<td>Changing the oil in the hydraulic system</td>
<td>16</td>
</tr>
<tr>
<td>Garaging the tractor</td>
<td>16</td>
</tr>
<tr>
<td>Lubricating plan</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical information:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation of main components</td>
<td>6 - 12</td>
</tr>
<tr>
<td>Lubrication plan</td>
<td>18</td>
</tr>
<tr>
<td>Technical details</td>
<td>5</td>
</tr>
<tr>
<td>Wiring plan</td>
<td>19</td>
</tr>
</tbody>
</table>

| Accident Prevention    | 4    |
**Accident Prevention**

1. The operating instructions and safety precautions contained in this booklet should be studied before using the tractor and should be strictly observed.
2. Before commencing any maintenance and cleaning work on the tractor or removing the safety guards switch off the engine. Always replace the guards immediately.
3. Persons below the age of 16 are not permitted to use the machine.
4. The operator is responsible for the safety of persons and animals in the working vicinity of the machine, and must ensure that no-one is endangered or injured by the machine or its implements.
5. Before leaving the tractor switch off the engine, engage gear, pull the hand brake and withdraw the ignition key.
6. Do not fill up with fuel while the engine is running. Caution: Increased fire hazard when engine is hot! Wipe away spill petrol before starting the machine.
7. Apart from the operator no other persons is authorized to be on the tractor.
8. Note the safety precautions for the implements. The individual implements are marked accordingly.

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**Technical Details**

### A) Tractor

<table>
<thead>
<tr>
<th>Dimensions:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>2500 mm</td>
</tr>
<tr>
<td>Width</td>
<td>930 - 1086 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1810 mm</td>
</tr>
<tr>
<td>ind. roller safety bar</td>
<td>4600 mm</td>
</tr>
<tr>
<td>Turning circle</td>
<td>1216 mm</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>735 - 860 mm</td>
</tr>
<tr>
<td>Track width front</td>
<td>960 - 1000 mm</td>
</tr>
<tr>
<td>Ground clearance</td>
<td>280 mm</td>
</tr>
<tr>
<td>Height of implement (adjustable)</td>
<td>500 - 660 mm</td>
</tr>
<tr>
<td>Toe-in</td>
<td>2 - 3 mm</td>
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<table>
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<tr>
<th>Tyres:</th>
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<tbody>
<tr>
<td>Agricultural</td>
<td>Municipal</td>
</tr>
<tr>
<td>Front wheels (optional)</td>
<td>4.00 - 12 AS or 5.50 - 12</td>
</tr>
<tr>
<td>Rear wheel 7.50 - 16 AS</td>
<td>155 R 12</td>
</tr>
<tr>
<td>10 - 12 AM</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Front wheels 2.3 bar</td>
<td>1.3 bar</td>
</tr>
<tr>
<td>Rear wheels 1.5 bar</td>
<td>0.9 bar</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Weights:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight empty</td>
<td>780 kg</td>
</tr>
<tr>
<td>Permissible gross weight</td>
<td>1200 kg</td>
</tr>
<tr>
<td>Permissible axle load front</td>
<td>550 kg</td>
</tr>
<tr>
<td>Permissible axle load, rear</td>
<td>900 kg</td>
</tr>
<tr>
<td>Vertical load on implement coupling</td>
<td>220 kg</td>
</tr>
<tr>
<td>Permissible trailer load, trailer with brake</td>
<td>2000 kg</td>
</tr>
</tbody>
</table>

**Fuel tank capacity:** 9.5 ltr. Diesel fuel

**Electrical system:** 12 V, 44 AH DC or three-phase current dynamo

**Air cleaner:** Oil bath air filter with pre-separator

**Clutch:** Single-plate dry clutch

**Power lift:** Hydraulic for front and rear

**Implement coupling:** Implement jaw-coupling with pistol-grip bolt for one-man operation

**Steering:** Segment-gear steering

**Front axle:** Jointed cross shaft axle

**Brakes:** Foot brake and steering brake acting mechanically on the rear wheels; hand brake acting on transmission

**Gearing:** 3-speed shift/reversing gearing with 2-speed auxiliary transmission, Total of 6 forward and 6 reverse speeds.

**Oil requirements:** Hydraulic system 2.5 ltr, HD motor oil SAE 10 W-30

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### Rear p.t.o.:

<table>
<thead>
<tr>
<th>Gear</th>
<th>Stage I (slow)</th>
<th>Stage II (fast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st gear</td>
<td>1.1 km/h</td>
<td>1.9 km/h</td>
</tr>
<tr>
<td>2nd gear</td>
<td>3.4 km/h</td>
<td>6.0 km/h</td>
</tr>
<tr>
<td>3rd gear</td>
<td>9.0 km/h</td>
<td>15.0 km/h</td>
</tr>
</tbody>
</table>

**Reverse gear:** same as for each relevant forward gear

### Driving speed (agricultural)

<table>
<thead>
<tr>
<th>Gear</th>
<th>Stage I (slow)</th>
<th>Stage II (fast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st gear</td>
<td>1.2 km/h</td>
<td>5.0 km/h</td>
</tr>
<tr>
<td>2nd gear</td>
<td>3.8 km/h</td>
<td>8.2 km/h</td>
</tr>
<tr>
<td>3rd gear</td>
<td>10.1 km/h</td>
<td>16.0 km/h</td>
</tr>
</tbody>
</table>

**Reverse gear:** same as for each relevant forward gear

---

**B) Engines**

<table>
<thead>
<tr>
<th>Make and type of engine:</th>
<th>Single cylinder</th>
<th>Two-cylinder</th>
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<tbody>
<tr>
<td>Design:</td>
<td>Ruggerini CRD 100 P</td>
<td>Ruggerini RD 92/2</td>
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<tr>
<td>Fuel system:</td>
<td>Fan-cooled, single-cylinder 4-stroke</td>
<td>Diesel engine</td>
</tr>
<tr>
<td>Bore:</td>
<td>90 mm</td>
<td>92 mm</td>
</tr>
<tr>
<td>Stroke:</td>
<td>85 mm</td>
<td>85 mm</td>
</tr>
<tr>
<td>Cubic capacity:</td>
<td>741 cm³</td>
<td>1130 cm³</td>
</tr>
<tr>
<td>Compression:</td>
<td>18 : 1</td>
<td>18.4 : 1</td>
</tr>
<tr>
<td>Rating:</td>
<td>11.9 kW (16 HP)</td>
<td>17 kW (23 HP)</td>
</tr>
<tr>
<td>Engine speed:</td>
<td>3000 rev/min</td>
<td>2400 rev/min</td>
</tr>
<tr>
<td>Engine cooling:</td>
<td>800 - 1000 rev/min Bosch PFR</td>
<td>Bosch PFR</td>
</tr>
<tr>
<td>Injection pump:</td>
<td>1:1 K 76 A 615/2 2X 76 A 459/2 Bosch Dlla</td>
<td></td>
</tr>
<tr>
<td>Injection nozzle:</td>
<td>160 S 707 Bosch Dlla</td>
<td></td>
</tr>
<tr>
<td>Injection pressure:</td>
<td>200 bar</td>
<td>210 bar</td>
</tr>
<tr>
<td>Cold starting device:</td>
<td>Quantity controlled by pull-button operated</td>
<td>Oil-hydraulically operated</td>
</tr>
<tr>
<td>Lubrication:</td>
<td>Oil requirements</td>
<td>Oil requirement lever</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
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<td>---</td>
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</table>

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**Oil requirements:**

- 2.0 ltr. HD motor oil SAE 10 W-30
- 0.20 mm
- Outlet 0.25 mm
1 Pedal for single-wheel brake (right)
2 Operating lever for differential lock
3 Hand lever for parking brake
4 Operating lever for driving direction (F/R)
5 Gear lever
6 P.t.o. control lever
7 Operating lever for reduction gear "slow-fast"

1 Engine hood
2 Pre-separator for oilbath air filter
3 Button for horn
4 Blinker switch
5 Pilot lamps
6 Fuse box
7 Starter button
8 Steering wheel
9 Hand throttle lever
10 Lighting/ignition switch
11 Operating hour meter
12 Operating lever for rear hydraulic lift (for built-in double control system)
13 Operating lever for rear hydraulic lift (for built-in single control system)
13.1 Operating lever for front hydraulic lift (for built-in double control system)
14 Locking lever for hydraulic lift
15 Pushbutton for hazard warning system
16 Electric socket
17 Holder for start pilot
   (start pilot is not included in delivery)
18 Hydraulic oil tank
19 Clutch pedal
19.1 Stop for clutch pedal
20 Grease nipple for brake spindle
21 Oil bath air filter
22 Grease nipple for steering bolt
23 Grease nipple for front axle pivot pin
24 Grease nipple for steering swivel pin
25*) Motor oil filter
26 Retaining bolt
27*) Exhaust assembly

*) Different for 2-cylinder engine
Tractor with single-cylinder engine

1 Battery  
2 Fuel tank  
3 Fuel tank cap  
4 Air filter for hydraulik oil tank  
5 Hydraulic oil tank  
6 Oil bath air filter  
7 Exhaust muffler  
8 Idler screw  
9 Oil dipstick  
10 Dynamo  
11 Oil filter with vent  
12 Hydraulic hose for front ram cylinder  
13 Grease nipple for brake spindle  
14 Clutch pedal  
15 Stop for clutch pedal  
16 Hydraulic hose  
17 Lug

Tractor with single-cylinder engine

1* Pulley (motor driven)  
2* Idler pulley  
3* Front p.t.o. shaft  
4* Pulley for front driven implements  
5 Regulator cut-out  
6* V-belt for drive belt pulley  
7 V-belt for dynamo and fan  
8 Hydraulic pump  

*) = only for municipal type

Tractor with two-cylinder engine

1 Flywheel  
2 Air intake screen  
3 Pulley  
4 V-belt for dynamo  
5 Hexagon screw for swivel arm  
6 Three-phase dynamo  
7 Hexagon screw for swinging support  
8 Hydraulic oil pump
Description of main functions

Gearing
The tractor is equipped with a three-speed reversing gear with a two-speed auxiliary transmission which can be operated in two speed stages, so that a total of 6 different speeds are available for forwards and reverse travel.

Forward and reverse travel is controlled by the shift lever (Fig. 4, page 6).

When this lever is pushed downwards the gearing is switched to "forwards", when it is pulled upwards the gearing is switched to "reverse". Idling position is in the centre.

Slow and fast speed stages
Both speed stages are operated by the shift lever (Fig. 7, page 6).

When this lever is pushed downwards the slow speed is engaged, when it is pulled upwards the fast speed stage is engaged.

Idling position is in the centre.

Care should be taken to operate this shift lever correctly, as the tractor does not move even when the gears are engaged.

Differential gear
In order to increase traction under difficult operating conditions the built-in differential gear can be locked. The appropriate lever is provided in front of the driving seat on the right (Fig. 2, page 6). This lever can and must not be fixed.

When the differential is to be locked, the lever must be pulled upwards and held in this position as long as necessary. As soon as the load is removed, the lever snaps back under spring tension into its original position and releases the lock. This is a safety precaution to prevent damage to the transmission if the differential lock should be used incorrectly.

Clutch
A single-plate dry clutch is installed, which is operated by the pedal (Fig. 19, page 7 and Fig. 14, page 10) on the left side of the tractor. Movement of the pedal is limited by an adjustable stop.

The pedal should have a play of 15 - 20 mm. If, after long usage, the play can no longer be regulated by adjusting the stop, the pedal must be renewed.

The gears are shifted the same way as in a motor car: depress the engine clutch pedal, engage gear and slowly release the pedal while opening the throttle.

If a gear cannot be engaged despite the clutch pedal being depressed, briefly release the clutch pedal. When the pedal is depressed again, the gear will engage. Do not use force, but operate the gears gently as in a motor car.

Gear change
The gears 1 - 8 - 11 are changed by means of the gear shift lever (Fig. 5, page 6) as follows:

1st gear: push gear shift lever downwards to its limit.
2nd gear: pull gear shift lever upwards to centred position.
3rd gear: pull gear shift lever upwards to limit.

An idling point is clearly noticeable between the gears.

Steering
Segment drive steering: steering linkage with maintenance-free ball and socket joints.

Hydraulic power lift
Maximum lifting power of front hydraulics approx. 500 kp
Ditto of rear hydraulics on lifting arms approx. 1000 kp

Care should be taken to ensure that the permissible axle load or the permissible gross weight of the tractor is not exceeded when lifting or transporting loads (see under "Technical Details" on page 9).

Method of operation
To raise rear lift attachments pull operating lever (Fig. 12, page 7). To raise front lift attachments raise operating lever shown in Fig. 13, page 7.

When the operating levers are shifted to the centre, the lift ceases to operate and any raised implements remain at the height to which they have been raised. If the levers are depressed the implements are lowered, at the end of the lowering movement the lever snaps perceptibly into place (floating position).

The power lift is not rigid in operation but adapts itself to the movement of the implement in the ground. Working depth is not therefore regulated by the power lift but by the various setting devices on the implements.

Caution:
if the tractor is to be driven on public roads, any implements raised on the rear or front hydraulics must be locked to prevent accidental operation of the lift levers; raise the rate grip of the lift locking lever (Fig. 14, page 7), which should be in its centre position an shift it to the left into locking position.

When the tractor is not in use (this applies to work breaks also), any raised implements should be lowered to the ground.

(Accident prevention)

Implement coupling
The jaw coupling (Fig. 13, page 12) is mounted in the holed support (Fig. 8, page 12).

If the jaw coupling is to be removed the power lift must be lowered right down to its bottom limit to enable the shackles (Fig. 26, page 12) to be withdrawn. The jaw coupling must be removed for mounting the three-point rear implement hitch.
Brake system

The tractor is equipped with a brake which operates uniformly on both rear wheels. It is operated by means of the brake pedal (Fig. 13, page 8) on both wheel(s). Adjustment is possible on either side of the tractor by means of adjusting screws.

The parking brake is operated by the hand brake lever with pressbutton release catch (Fig. 3, page 6). Pull the lever upwards to apply, push down to release. To release the brake the button must first be pressed at the top of the hand brake lever.

Turning aid

A smaller turning circle can be achieved by operating the single wheel brake pedals on the left and on the right (Fig. 1, page 6).

Caution: Never apply the single wheel brakes when the differential is locked, as this will damage the transmission.

Rear p.t.o.

Pull the operating lever upwards (Fig. 6, page 6) to switch on the p.t.o.

Note: the direction of rotation of the p.t.o. shaft changes when the tractor is driven in reverse (see also: "Technical details" on page 5).

Front p.t.o. (municipal model)

The front p.t.o. is switched on and off by means of the operating lever (Fig. 5, page 9). Pull this lever to the rear to switch on the drive and push it forwards to switch off the drive.

(See also: "Technical Details").

When connecting up rear of front driven p.t.o. implements ensure that the fork sections of the cardan shaft are mounted on the ends of the p.t.o. shaft such that the retaining pins snap into place in the slot provided.

When no implements are connected the front or rear p.t.o. shafts the latter must be protected with the caps provided.

Electrical system

To insert the ignition key raise the cap covering the lighting ignition switch (Fig. 10, page 7).

Position 1 = parking light. Both parking lights and both combined stop and numberplate lights are on.

If the ignition key is depressed to position "0": this switches on the tinnie. The pilot lamp for the oil pressure (red in Fig. 5, page 7) and the charge indicator lamp (yellow) lights up.

The blinker lamps are operated by swivelling the lever of the blinker switch (Fig. 4, page 7) to left or right. At the same time, the green pilot lamp (in Fig. 5, page 7) on the right blinks in the same rhythm.

When a trailer is attached the green pilot lamp on the left blinks in addition.

When a blinker fails, the pilot lamp blinks at increased speed.

After withdrawing the key, press on the cap again.

The hazard warning system is switched on by pulling the knob of the hazard warning switch (Fig. 15, page 7). All blinkers, incl. the lamp in the knob, blink in rhythm.

When a cab is fitted to the tractor, the windshield wipers or a lamp can be connected to the electric socket (Fig. 8, page 7).

Five 8 ampere fuses in fuse box (Fig. 6, page 7) protect the electrical system. When a short-circuit occurs in the electrical system the corresponding fuse melts. Fuses must not be replaced before the cause of the failure is determined.

To replace a fuse, remove the cover of the fuse box and take out the faulty fuse by pressing it against the spring clamp holding it.

The components of the electrical system protected by the fuses are:

Fuse 1 = stop light
Fuse 2 = parking light
Fuse 3 = low beam (driving light)
Fuse 4 = horn, elf, socket, charging indicator lamp
Fuse 5 = blinkers

Before working on the electrical system do not forget to detach the negative cable from the battery, in order to prevent short-circuits. The built-in three-phase dynamo must always be galvanically connected to the battery. During operation neither the dynamo cable nor a pole terminal on the battery nor the connections to the electronic control system should be detached, removed or interchanged. The battery must not be charged unless it is disconnected from the electric system, i.e. the plus and negative cables must be detached.

For trailer operation the connecting cable must be plugged into the socket (Fig. 5, page 12) behind the driver's seat.

Starting and operating the tractor

Please note that the service life and efficiency of the engine of the new tractor depend to a great extent on the running-in period. During the first 10 operating hours the engine should not exceed about half of its maximum load, and not more than 75% of max. load during the next 10 hours.

The running-in period is concluded after 20 operating hours.

The cold engine should be run warm for some minutes before opening the throttle to the maximum. Ensure that the filters are maintained properly and that motor oil of the correct quality is used.

Before the tractor is put into operation, i.e. before the engine is started, ensure that:

- there is sufficient fuel in the tank (Fig. 18, page 8 and Fig. 2, page 10).
- there is sufficient motor oil in the engine, according to the mark on the oil dipstick (Fig. 8, page 8 and Fig. 9, page 10).
- there is sufficient motor oil in the hydraulic oil tank (Fig. 5, page 10) up to the bottom of the filler connection.
- there is sufficient oil in the oil bath filter container (Fig. 6, page 10) up to the mark on the container.
- there is sufficient acid in the battery (approx. 1 cm above the top edge of the edge of the plates).
- the gear lever (Fig. 6, page 6) is in the idling position.
- the parking brake (Fig. 3, page 6) is applied and engaged, all screws and nuts are tightened correctly.

Always ensure that the tank is refilled before it is empty.

All pipes are wet when the tractor leaves our factory, and the tank contains a small amount of fuel. If, for any reason, venting becomes necessary, proceed as follows:

1. Fill the fuel tank.
2. Unscrew vent screw (painted yellow) on the fuel filter (Fig. 8, page 8) and screw it in again as soon as fuel emerges free of bubbles.
3. Unscrew vent screw for the fuel pipe on the injection pump (for 2-cylinder engine also operate the lever of the fuel pump) until fuel emerges free of bubbles, then retighten vent screw.

Starting the engine

1. Open the throttle lever (Fig. 9, page 7) wide.
2. Insert the ignition key into the lighting/ignition switch (Fig. 10, page 7) and depress it. The oil pressure lamp (red in Fig. 5, page 7) and the charging indicator lamp (yellow) must light up.
3. Press the starter button (Fig. 7, page 7).

Note: The starter can only be operated when the clutch is depressed (safety lock).

As soon as the engine starts, regulate the throttle. The oil pressure lamp and the charging indicator lamps must now go out. If these light up while the tractor is in operation there must be a fault either in the oil feed to the engine or in the electrical system. Stop the engine immediately and check the oil level. If the disturbance is caused by some other fault consult your dealer.

Starting at low temperatures

When the temperature is below zero "start-pilot" should be used as a starting aid (available as an extra).

The spray bottle is connected up in its holder. Shortly before or during starting this liquid is sprayed directly into the air intake by pressing the button (for approx. 1 to 2 seconds).

Take care when starting the engine in a closed room! Ensure that there is good ventilation and that the exhaust gases are quickly drawn off.

Stopping the engine

Shift the hand throttle lever (Fig. 9, page 7) to neutral position, pull back the knob (Fig. 16, page 7) and Fig. 4 page 8) until the engine stops.

Withdraw the ignition key from "0" position in the ignition switch, press down the cap, engage first gear, pull the hand brake. Do not leave the ignition key in switch if the tractor is unattended.

Driving with the tractor

Adjust the driving seat according to the weight of the driver (thumb nut Fig. 3, page 12).

Start the engine, depress the clutch pedal (Fig. 19, page 7), switch to fast or slow gear stage depending on requirements (Fig. 7, page 6), operate F/R shift lever (Fig. 4, page 6) engage required gear (Fig. 5, page 6), carefully engage the clutch, at the same time opening the throttle.

Caution: All shift movements should be carried out carefully. The shift lever for slow and fast speed stage (Fig. 7, page 6) must only be operated when the clutch pedal is depressed.

Care and Maintenance

a) Tractor

Apart from following the instructions that apply to the tractor, it is of equal importance to pay special attention to the following instructions for care and maintenance.

1. Change the oil promptly. Keep the oil inlet and drain screws absolutely clean, so that no dirt penetrates into the interior of the machine. The gear oil should be changed after the first 50 and then after every 1000 operating hours, while the engine is warm.

Drain screw for gear oil is located at the front of the gear box (bottom).

Fill in 7 hr hypoid gear oil SAE 90 up to the top mark on the oil dipstick with the tractor standing on level ground.

(Oil inlet = Fig. 23, page 12).
2. Change the oil in the hydraulic system the first time after 50 operating hours and then every 250 operating hours, at least, however, once yearly. 2.5 litres of motor oil 10 W-30 are required.

To drain the oil, remove the hydraulic hose (Fig. 16, page 10) (Unscrew hose clip). The air filter in the hydraulic tank (Fig. 4, page 10) must also be cleaned or changed every time the oil is changed. Before removing the oil filter, dip it in motor oil and dip off the surplus oil. Take this opportunity to check all seals and replace as necessary. The hydraulic oil Filter (Fig. 3, page 9) must be replaced every time the oil is changed.

Under no circumstances should unions in the hydraulic system be slackened off or tightened while the system is under pressure. If leakage is detected at unions, nuts or locking screws on pump, filter or cylinder the load must be lowered and the engine stopped.

Damaged pipes or hoses must be replaced at once. For safety reasons, only use genuine spare parts!

Before uncrewing unions, clean their surroundings thoroughly. Close all openings immediately with rubber plugs to prevent loss of oil, and dirt from entering the unit.

3. Fuel filter (Fig. 9, page 8 and Fig. 6, page 9).

The screw-off filter (disposable filter cartridge) must be replaced every 250 operating hours. Before uncrewing the filter, detach the fuel line from the fuel tank. After changing the filter, vent the whole fuel line as far as the injection pump as described on page 15.

4. Oil bath air filter

This filter should be cleaned at regular short intervals or daily if dust deposit is high.

Proceed as follows:

- a) Remove pre-separator (Fig 2, page 7) from the engine hood and wash it in petrol.
- b) Open and check clip; lift off the oil container, remove the old oil and clean the container.
- c) Check the oil intake openings and clean as necessary.
- d) Fill the oil container with motor oil up to the mark (not more) and refit.
- e) Screw on the pre-separator and ensure that the connection is tight.

Important: After repeated oil changes of when the filter is very dirty, screw off the latter, remove the oil container, thoroughly rinse the filter by dipping it in diesel fuel, then shake dry. Screw on the filter again and fill in oil as above described. (Never rinse the filter in petrol, water, lyes or liquids).

5. Ensure that the engine is cooled sufficiently. Always keep the air intake to the fan clean (single-cylinder, Fig. 7, page 11) 2-cylinder engine (Fig. 2, page 11).

6. Oil or grease all moving parts periodically (see lubrication plan on page 18).

7. Check the oil level in the battery every 200 service hours, more frequently in warm weather, and top up with distilled water if necessary. The battery must be filled to approx. 1 cm above the edge of the plate.

8. Brakes (driving and parking brakes).

Have the brakes checked regularly. At least every second the brake must be stripped and cleaned. This is best done by your Agria Service Station.

9. Check the tire pressure of the front and rear wheels frequently. It is important to ensure that the tire pressure of both wheels is the same to guarantee trouble-free driving.

10. Do not garage the tractor in damp rooms, in rooms where fertilizer is stored, in stables of adjoining rooms as this will cause severe corrosion.

11. If the tractor is not to be used for some time

a) thoroughly clean the tractor.

b) Jack up the tractor so that the pneumatic tires do not touch the ground! Pneumatic tires become unseparable in a very short time if left under load without air.

12. After the tractor has not been used for some time change the oil in the gearbox and in the engine, oil or grease all moving parts.

Check the fuel tank with all pipes, including those to the fuel filter and the injection pump and clean if necessary. Finally, do not forget to vent the fuel pipes.

Check the lighting, signaling and blinker systems.

B) Engine

Regular maintenance:

1. Oil change

With new engines the oil should be changed after the first 25 operating hours and then after every 50 operating hours. Change the oil only when the engine is warm!

Use only recognized motor oils! We recommend HD motor oil SAE 10 W-30.

To drain off the oil, unscrew the drain screw (single-cylinder engine Fig. 12, page 9; two-cylinder engine — at the front beneath the flywheel) and drain off the oil. When the oil is completely drained fill in fresh motor oil (for amounts see "Technical details", page 5) up to the top mark on the oil dipstick (Fig. 23, page 8).

The motor-oil filter (Fig. 25, page 7 and Fig. 12, page 9) must be changed every 200 operating hours.

2. Check the valve clearance every 50 operating hours and adjust, if necessary. The valves should be checked and adjusted only when the engine is cold! (see "Technical details" on page 5 for setting data).

3. Fuel injection

Check the injection pressure every 100 operating hours. (see "Technical details" on page 5).
Lubrication Plan

1 Oil dipstick for motor oil (two-cylinder engine)
2 Oil inlet for motor oil
3 Grease nipple for brake pedal
4 Grease nipple for brake spindle
5 Hydraulic oil tank
6 Gear oil inlet (oil dipstick)
7 Drain screw for gear oil
8 Grease nipple for brake spindle
9 Grease nipple for steering pins
10 Grease nipple for steering swivel pins
11 Drain screw for motor oil
12 Oil dipstick for motor oil (single-cylinder engine)

Maintenance Work

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<tr>
<th>Maintenance Item</th>
<th>Fig 11</th>
<th>Location</th>
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Ensure plug connections fit correctly!

Color code: br = br, cogn = re, gn = ro, rd = red, bl = blue, vb = vi, sv = wh, bles = blue wh, grays = gn ye, sw = bl wh, venge = wh yo