Operating Instructions for agria®-Hydrostatic Tool Carrier Type 5900 Bison

Kubota Petrol Engine
- Recoil Starter Version
- Electric Starter Version

Yanmar Diesel Engine
- Recoil Starter Version

Before commissioning the machine, read operating instructions and observe warnings and safety instructions.

Operating Instructions No. 998 760-B 11.04
Please complete:

<table>
<thead>
<tr>
<th>Machine Type No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID/Machine No.:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Engine Type:</td>
</tr>
<tr>
<td>Engine No.:</td>
</tr>
<tr>
<td>Date of Purchase:</td>
</tr>
</tbody>
</table>

For name plate, refer to page 3/fig. A/4.
For engine type and number, refer to page 64/Fig. C/4 petrol engine to page 69/Fig. J/17 diesel engine

Please state these data when ordering spare parts to avoid wrong deliveries.

**Only use original agria spare parts!**

Specifications, figures and dimensions stated in these instructions are not binding. No claims can be derived from them. We reserve the right for improvements without changing these instructions.

This delivery comprises:
- Operating instructions
- Tool carrier
- Tool kit

→agria - Service←
= contact Your agria-workshop

Symbols

- **Warning – danger**
- **Important information**
- **Fuel**
- **Choke**
- **Battery charge indicator**
- **Clutch**
- **Forward**
- **Reverse**
- **Fast**
- **Slow**
- **Hydraulic system**
- **PTO**
- **Brake**
- **Hand brake**
- **Closed (locked)**
- **Open (unlocked)**
- **Clockwise**
Designation of Parts

Fig. A

Fig. B

Petrol Engine

Diesel Engine

Hydrostatic Tool Carrier Bison

3
**Fig. A:**

1. Transmission / hydraulic oil dipstick and filling opening
2. Ball head for hood carrier front
3. Idle speed shifting mechanism (bypass)
4. Nameplate (vehicle identification-no.)
5. Ball head for hood carrier rear
6. Transmission venting plug
7. Loading belt
8. Steering handle locking bolt rollers
9. Steering handle, central screw
10. Lower steering handle
11. Steering bar
21. Eye bolt with cap nut, top
22. PTO-shaft
23. Eye bolt with cap nut, bottom
24. Transmission oil drain screw
25. Brake drum
26. Wheel hub
27. Oil filter cartridge
28. Engine

**Fig. B:**

1. Ball handle for lateral steering bar adjustment
2. Eccentric lever for central brake
3. Engine-off switch (Version petrol engine)
4. Safety circuit lever
5. Engine clutch engagement lever
6. Pawl for engine clutch lever (Version petrol engine)
   Pawl for engine clutch lever (Version diesel engine)
7. Connection mechanism for PTO-shaft
8. Operating mechanism for steering handle lock
9. Speed adjusting lever
10. Lever for stepless adjustment of driving speed and forward-reverse driving
11. Operating hour counter/speed counter (optional)
12. Twist grip for stepless adjustment of driving speed and forward-reverse driving
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Lubricants and Anti-Corrosive Agents

Use the specified lubricants for engine and transmission (see “Specifications”).
We recommend using **bio-lubricating oil** or **bio-lubricating grease** for “open” lubricating points or nipples (as specified in the operating instructions).
We recommend using bio anti-corrosive oil for preservation of machines and implements (do not apply on painted external covers). Oil can be brushed or sprayed on.
Anti-corrosive agents are kind to the environment and degrade fast.
Using ecologically safe bio-lubricants and bio-anti-corrosives, you contribute to environmental protection and to the wellbeing of humans, animals and plants.

Maintenance and Repair

The trained mechanics of your agria workshop carry out expert maintenance and repair.
You should only carry out major maintenance work and repairs on your own, if you have the proper tools and knowledge of machines and internal combustion engines.
Do not hammer against the flywheel with a hard object or metal tools as it might crack and shatter in operation causing injuries and damage. Only use suitable tools for pulling the flywheel.
Petrol Engine
This engine runs smoothly on commercial unleaded regular and supergrade petrol as well as on leaded supergrade petrol.

Do not add oil to petrol.

If, for environmental reasons, you use unleaded petrol, make sure the fuel is drained completely when shutting down the engine for more than 30 days. This is to prevent resin residues from depositing in the carburetor, fuel filter, and tank. Or add a fuel stabilizer.

For further instructions refer to “Engine Preservation”.

Diesel Engine
This Diesel engine runs on conventional Diesel fuel of a min. cetane rating of 45.

Do not use Diesel fuel oil substitutes, they may be harmful to the fuel system. Fuel should be free of water or dust.

Winter operation:
To ensure reliable winter operation use “winter diesel fuel”, to be purchased at filling stations.

At outside temperatures of below -15°C, take the following additional precautions:
- add commercial flow conditioners
- or
- add paraffine oil to depress diesel pour-point:

<table>
<thead>
<tr>
<th>Paraffine oil</th>
<th>winter fuel</th>
<th>summer fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>pour-point</td>
<td>app. -31°C</td>
<td>app. -25°C</td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30%</td>
<td>app. -26°C</td>
<td>app. -15°C</td>
</tr>
<tr>
<td>10%</td>
<td>app. -20°C</td>
<td>app. -9°C</td>
</tr>
</tbody>
</table>

As a last resort, you can add up to 30% of regular petrol to avoid paraffine deposits. However, this has negative effects on consumption rate and performance.
General Instructions on Safety and Accident Prevention

Basic Rule:
The standard accident prevention regulations must be adhered to, as well as all other generally accepted rules governing operational safety, occupational health and road traffic regulations.

For drives on public roads, the latest traffic code applies.

Accordingly, check the tool carrier for road and operational safety each time you take up operation.

Only persons familiar with the tool carrier and instructed on the hazards of operation are allowed to use, maintain and repair the tool carrier.

Young persons of 16 years or younger may not operate the tool carrier!

Only work in good light and visibility.

Operator’s clothes should fit tightly. Avoid wearing loosely fitting clothes. Wear solid shoes.

Note the warning and instruction signs on the tool carrier for safe operation. Compliance is for your own safety.

When transporting the tool carrier on vehicles or trailers outside the area to be cultivated, ensure that the engine is shut off.
1. Safety Instructions

Careful with rotating tools – keep at a safe distance!

Beware of coasting tools. Before you start any maintenance or repair on them, wait until tools have come to a complete stop.

Foreign powered parts shear and crush!

Riding on the attachment during operation is not permitted.

Implements and weights affect the driving, steering, braking, and tip-over characteristics of the tool carrier. Therefore, ensure steering and braking functions are sufficient. Match operating speed to conditions.

Do not change settings of governor. High engine speed increases risk of accidents.

Working Area and Danger Zone

The user is liable to third parties working within the tool carrier’s working range.

Staying in the danger zone is not permitted.

Check the immediate surroundings of the tool carrier before you start it. Watch out for children and animals.

Before you start work, clear the area from any foreign object. During operation, always watch out for further objects and remove them in time.

For operation in enclosed areas, ensure that a safety distance is kept to enclosures to prevent damage to tools.

Operation and Safety Devices

Before you start the engine

Become familiar with the devices and operating elements and their functions. Above all, learn how to turn the engine off quickly and safely in an emergency situation.

Ensure that all protective devices are mounted and positioned to provide protection.

With no implement mounted, make sure PTO-shaft is covered with the protective cap.

Starting the engine

Do not start engine in closed rooms. The carbon monoxide contained in the exhaust fume is extremely toxic when inhaled.

Before you start the engine set all operating elements to neutral or idling position.

For starting the engine, do not step in front of the tool carrier and the implement.

Do not use assist-starting liquids when using electrical assist-starting devices (jumper cable). Danger of explosion.

Operation

Never leave the operator’s position at the steering handle while tool carrier is at work.

Never adjust the operating handles during work – danger!
1. Safety Instructions

For all works with the tool carrier, in particular for turning, the machine operator must keep the distance to the machine given by the steering handles.

Riding on the implement during operation or in transport is not permitted.

If clogging occurs in the implement, shut off the engine and clean the implement with an appropriate tool.

In case of damage to the tool carrier or to the implement, immediately shut off the engine and have it repaired.

If steering causes problems, immediately bring the tool carrier to a halt and turn it off. Have the malfunction removed without delay.

To prevent the tool carrier from sliding on slopes make sure it is secured by another person using a bar or a rope. This person must stay at a higher position than the vehicle and at a safe distance from the attachment at work.

If possible, always work across the slope.

End of Operation

Never leave the tool carrier unattended with the engine running.

Before you leave the tool carrier, shut off the engine. Then close fuel taps.

Secure tool carrier against unauthorized use. If tool carrier is equipped with ignition key, remove the key. For all other versions, remove spark plug connector.

Implements

Only mount implements with the engine and PTO shut off.

Always use appropriate tools and wear gloves when changing implements and parts thereof.

For mounting and dismounting implements bring stand into proper position and ensure stability.

Secure tool carrier and implements against rolling off (parking brake, wheel chocks).

Be aware of injuries while coupling implements. Work with particular care.

Hitch implements as specified and only couple at specified points.

Secure tool carrier and implement against unauthorized use and rolling off when you leave the machine. If necessary, install transport or security devices and secure.

Mowing Implement

Handle with care! Sharp blades of the cutter bar may cause injuries! Remove knife guards only for mowing and refit immediately after work has finished.

For transport and storage always mount the knife guards. Secure finger bars additionally with tension springs.

Do not transport the dismounted cutter bar without knife guards.
1. Safety Instructions

When mounting and dismounting the cutter bar, make sure all blades are protected by the knife guards.

To exchange the knife and to mount/dismount the knife driver, make sure that you turn screws away from cutting blades.

For grinding the mowing knives, always wear safety goggles and gloves.

**Weights**

Fit weights properly and at specified points.

**Maintenance**

Never carry out any maintenance or cleaning with the engine running.

Before you work on the engine, always remove spark plug connector.

Check regularly and, if necessary, replace all protecting devices and tools subject to wear and tear.

Replace damaged cutting tools.

Always wear safety gloves and use proper tools when exchanging cutting tools.

Do not carry out repairs like welding, grinding, drilling, etc. on structural and safety-relevant parts (e.g. hitch)!

Keep tool carrier and implement clean to avoid risk of fire.

Check nuts and bolts regularly for tight fit and re-tighten, if necessary.

Ensure that you re-install all safety and protective devices and adjust them properly after maintenance and cleaning.

Only use original agria spare parts. All other commercial spare parts must correspond to quality and technical requirements specified by agria.

**Storage**

It is not allowed to store the tool carrier in rooms with open heating.

Never park the tool carrier in closed rooms with fuel left in tank. Fuel vapours are hazardous.

**Engine, Fuel, and Oil**

Never let the engine run in closed rooms. Extreme danger of intoxication! For the same reason, also replace damaged exhaust pipe immediately.

Be careful when handling fuel. Great danger of fire! Never refill fuel close to open fire, inflammable sparks or hot engine parts. Do not refill fuel in closed rooms. Do not smoke when refilling!

Refill only with the engine shut off and cooled down.
1. Safety Instructions

Hydraulic System

- Do not spill any fuel, use a proper filling device (e.g. funnel).
- In case of fuel-spillage, pull the tool carrier away from the spillage before you start the engine.
- Make sure fuel is of specified quality.
- Store fuel in approved cans only.
- Liquids leaking under high pressure, e.g. fuel, can penetrate the skin and cause severe injuries. Immediately see a doctor.

Hydraulic oil emerging under high pressure may penetrate the skin and cause serious injuries. In case of injuries, immediately consult a physician – risk of infections.

Prior to works on the hydraulic system, render the latter pressureless and shut down engine (specialized workshop).

When searching leakages, use suitable aids considering the risk of injuries (specialized workshop).

Regularly check hydraulic hose lines for damage and ageing and replace them, if necessary.

Only use original agria hydraulic hoses.

Tyres and Tyre Air Pressure

- Be careful when draining hot oil, danger of burns.
- Make sure oil used is of specified quality. Storage is in approved cans only.
- Dispose of oil, greases, and filters seperately and properly.

When working on wheels, make sure tool carrier is parked properly and secured against rolling off.

Any repairs are to be carried out by trained mechanics only and with the appropriate tools.

Regularly check tyre air pressure. Excessive pressure may cause bursts.
1. Safety Instructions

Use appropriate tyre air pressure for operation with implements.

Re-tighten attachment bolts of drive-wheels or check tightness when doing maintenance work.

**Electrical System and Battery**

When working on the electrical system, make sure the battery is disconnected (negative pole) (for tool carriers equipped with battery).

Make sure to connect battery properly – first connect positive pole and then negative pole. Disconnect in reverse order.

Be careful with battery gases – explosive!

Avoid spark discharge and open flames near batteries.

Remove plastic cover (if included) to recharge battery to prevent highly explosive gases from building up.

Be careful when handling battery acid!

Only use specified fuses. Stronger fuses will destroy the electrical system – danger of fire.

Always cover positive pole with specified cover or terminal cap.

Persons having a pacemaker may not touch live parts of the ignition system when the engine is running.

---

**Explanation of Warning Signs**

Before any cleaning, maintenance, and repair work shut off the engine and pull spark plug connector.

Do not work without protective covers mounted. Before starting the engine, bring covers in proper position.

With engine running, keep at a safe distance from cutting knife.

Do not touch moving machinery parts. Wait until they have come to a complete stop.

With engine running, keep at a safe distance.

**Signs**

When working with the machine, wear individual protective ear plugs.

Wear protective gloves.
2. Specifications

Track Widths Table

<table>
<thead>
<tr>
<th>AS</th>
<th>R</th>
<th>TG</th>
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<tr>
<td>AS</td>
<td>R</td>
<td>TG</td>
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<tr>
<td>AS</td>
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<td>TG</td>
</tr>
<tr>
<td>AS</td>
<td>R</td>
<td>TG</td>
</tr>
</tbody>
</table>

Dimensions:

\( a_i, e_i \) = axle displaced forwards

<table>
<thead>
<tr>
<th>Machine</th>
<th>a (mm)</th>
<th>a_i (mm)</th>
<th>b (mm)</th>
<th>c (mm)</th>
<th>e (mm)</th>
<th>e_i (mm)</th>
<th>h (mm)</th>
<th>l (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH400 + L100AE</td>
<td>510</td>
<td>623</td>
<td>760</td>
<td>270</td>
<td>270</td>
<td>167</td>
<td>ca. 990</td>
<td>1350</td>
</tr>
<tr>
<td></td>
<td>290</td>
<td>1350</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( j^2 = \) track-width adjuster ..... 5519 031
\( j^3 = \) track-width adjuster ..... 5616 511
\( j^4 = \) traction cage wheels ..... 5917 531
\( j^5 = \) traction cage wheels ..... 5917 541
\( j^6 = \) traction cage wheels ..... 5917 511
\( j^7 = \) traction cage wheels ..... 5917 521
\( j^8 = \) traction cage wheels ..... 5517 531

Version with continuous partial axle and diesel engine always + 40 mm
2. Specifications

**Clutch:** Single disc dry clutch

**Transmission:** Hydrostat

Driving speeds
- **Forward:** 0–7.0 km/h
- **Reverse:** 0–3.6 km/h

**PTO:** 805 rpm gear independent at 3600 engine rpm direction of rotation: clockwise, looking on PTO, constant in forward and reverse

**Steering:** Fully hydraulic steering handle

Steering handle fixable with disconnection of the hydraulic system for manual steering

**Steering handle:** Height adjustable, side adjustable without tools

**Oil for transmission and hydrostat:**
- Multi-purpose oil: SAE 10W-40 API-SE/SF (or higher)
- Bio hydraulic oil:
  - Synthetic ester basis: HEES
  - Viscosity as per ISO: VG 46
  - Purity class: min. 16/13-ISO 4406 e.g.
  - ARAL: Vitam EHF 46
  - BP: Biohyd SE 46
  - ESSO: HE 46
  - FUCHS: Plantohyd S 46
  - PANOLIN: HLP Synth 46

Filling volume at:
- **First filling:** abt. 7.0 l
- **Oil change:** abt. 5.0 l
- **Oil filter:** Screw-type cartridge AW 14

**Vibration acceleration value:**
- On handlebar grip: $a_{hw} = 1.3 \text{ m/s}^2$ in accordance with EN 12733.

**Weights:**

<table>
<thead>
<tr>
<th></th>
<th>without drive-wheels</th>
<th>with drive-wheels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Empty weight:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kubota Recoil starter</td>
<td>171.3 kg</td>
<td>204.5 kg</td>
</tr>
<tr>
<td>Kubota Electric starter</td>
<td>184.8 kg</td>
<td>218.0 kg</td>
</tr>
<tr>
<td>Yanmar</td>
<td>180.8 kg</td>
<td>214.0 kg</td>
</tr>
</tbody>
</table>

**Tyres:** 23x8.5-12 wide track field tyre (series equipment)

Optionally:
- 3291 051 ............... 6-12 field tyre
- 3490 511 ...... 20x 8.00-10 grass tyre
- 3490 611 ....... 21x11.00-8 terra tyre

For this Terra-Grip design, track-width adjusters are required:
- Article ......................... 5519 031
- 5990 71126x10.5-12 wide track field tyre

**Tyre air pressure at:**
- 5.0-10 ....................... 1.5 bar
- 6-12 ....................... 1.5 bar
- 21x11.00-8 ............... 0.8 bar
- 20x8.00-10 ............... 0.8 bar
- 23x8.5-12 .................. 1.3 bar
- 23x10.5-12 .................. 1.3 bar

- 5917 511 ...... traction cage wheels 10" für 5.0-10 AS narrow track
- 5917 521 ...... traction cage wheels 12" für 6-12 AS narrow track
- 5917 531 . traction cage wheels für 23x8.5-12 narrow track
- 5917 541 ...... traction cage wheels 12" für 23x8.5-12 wide track

**Drive-wheel attachment and application:** see page 25 - 26
2. Specifications

Petrol Engine

**Manufacturer:** ......................... Kubota

**Type:** ........................................ GH400

**Version:** ................................. Fan-air-cooled

1 cylinder-4-stroke OHV engine (petrol)

**Bore:** ................................. 84.2 mm

**Stroke:** .............................. 70 mm

**Cubic capacity:** ............ 389 ccm

**Output:** .................. 9.6 kW (13 SAE-hp)

at 3600 rpm

**Max torque:** ...... 25.5 Nm at 2400 rpm

**Compression:**

without compression reducer 8–11 bar

with compression reducer ...... 2–4 bar

**Spark plug:** ............ Bosch WR8BC

NGK BPR4HS-10

Spark plug gap .................... 1.0 mm

**Ignition:**

Electr. magnetic ignition, contactless

Ignition time ............. 23° bef ore upper dead center

Air gap ................. 0.4–0.6 mm

Radio remote screened ....... as per VDE 0879

**Valve clearance** (engine cold):

Intake and outlet ....... 0.03–0.08 mm

**Starter:**

Recoil starter with mechanical compression reducing system

Generator ....................... 12V 50W

or, on E-starter version:

**Electrical starter** ............... 12V 0.6kW

**Battery** ....................... 12V 20Ah

Generator ....................... 12V 168W

**Fuel:** .......................... Commercial petrol

min. octane number 90 RON

(refer to fuel recommendations)

**Fuel tank capacity:** ............. abt. 8 l

**Fuel consumption:** ............. 312 g/kWh

Air filter: ........ Dry filter element with foamed preliminary filter

**Carburetor:** .................. Horizontal float carburetor

**Mixture control screw:**

Base setting ............... 1.5 revs. open

**Rated speed:** ............... 3600 rpm

**Top no-load speed:** ........... 3800 rpm

**Idling speed:** .................. 1400–1600 rpm

**Engine oil:**

Filling quantity ............... approx. 1.1 l

Multi-grade oil

at ambient temperature -15° to +45°C:

SAE 10W-40 API-SC (or higher)

at ambient temperature -25° to +15°C:

SAE 10W-20 API-SC (or higher)

**Lubrication system:**

Oil circulation lubrication

Oil pressure:

in the idle run ............... min. 0.2 bar

at rated speed ............... 0.3–1.0 bar

**Noise level:**

with flail mower 100 cm

In accordance with EN 12733 appendix B:

Noise level at operator's ear $L_p = 90$ dB(A)

In accordance with 2000/14/EC, appendix III, part B, chapter lawn mower:

Acoustic power level: .... $L_w =101$ dB(A)

**Operability on Slopes:**

Engine is suited for use on slopes (with oil level at “max” = upper level mark)

Continuous operation possible up to ..... 30° inclination (66%)

Temporary operation up to ............ 45° inclination (100%)

**Tightening:**

Fan flywheel nut M18x1.5  98–127 Nm

Cylinder head bolts ............ 42–50 Nm
2. Specifications

## Diesel Engine

**Manufacturer:** ................. Yanmar

**Type:**
- Electric starter version .... L100AE-DEI
- Recoil starter version ....... L100AE-DI

**Version:** ......................... Fan-air-cooled 1-cylinder-4-stroke diesel engine

**Bore:** ..................... 86 mm

**Stroke:** ..................... 70 mm

**Cubic capacity:** ............ 406 ccm

**Output:** ................... 7.4 kW at 3600 rpm

**Max torque:** ............. 27 Nm at 1700 rpm

**Injection pressure:** ........... 200 bar

**Valve lash** (engine cold)
- Intake: ..................... 0.15 ± 0.02 mm
- Outlet: ..................... 0.15 ± 0.02 mm

**Starter:** ............ Recoil or electric starter, depending on version

**Battery:** .................... 12V 20Ah
- Glass fuse .............. 15A (30 x 6.5 mm)

**Fuel:** .................... conventional fuel,
- Min. cetane rating: ................... 45 (refer to fuel recommendations)

**Fuel filter:**
- Coarse-mesh strainer ...... in filler neck
- Fine-mesh strainer .......... in fuel tank drain hole

**Fuel tank capacity:** ........ approx. 5.5 l

**Rated speed:** ................... 3600 rpm

**Top no-load speed:** ............ 3800 rpm

**Idling speed:** .................. 1700 rpm

**Lubrication:** ...... Pressure lubrication via gear pump
- Full flow oil filter

**Min engine oil pressure:** .......... 1 bar

**Engine oil:**
- Filling quantity ................ approx. 1.65 l
- Multi-grade oil
  - at ambient temperature -15° to +45°C: SAE 10W-40 API-SC (or higher)
  - at ambient temperature -25° to +15°C: SAE 5W-20 API-SC (or higher)

**Noise level:**
- with flail mower 100 cm
  - In accordance with EN 12733 appendix B:
  - Noise level
    - at operator’s ear ...................... 90 B(A)
    - In accordance with 2000/14/EC, appendix III, part B, chapter lawn mower:
      - Acoustic power level: $L_{WA}$: ... 101 dB(A)

**Operability on Slopes:**
- Engine is suited for use on slopes (oil level at “max” = upper mark)
- Continuous operation possible up to ................... 20° inclination (44%)
The tool carrier agria type 5900 Bison is a base power machine and is always operated with an implement mounted. Therefore, the machine is suited for all common applications in farming and forestry, as well as for winter service.

Available implements:
- Front implements for
  - mowing
  - sweeping
  - snow clearing and tilling
  - gravel and salt spreading

For a choice of further attachments refer to our price-list.

**Engine**

- The **four-stroke petrol engine** runs on commercial petrol (refer to fuel recommendations page 7).

**Ignition System**

The engine is equipped with a contactless ignition system. We recommend to have necessary check-ups done by an expert only.

- The **four-stroke diesel engine** runs on commercial diesel fuel (refer to fuel recommendations p3). See to using proper fuel in winter.

During the first 20 operating hours (break-in period) do not use engine to maximum power.

Even after break-in period never use engine at higher speed than necessary for the work in hand.

**High engine speed is harmful to any engine and considerably affects its durability. This applies especially for no load operation. Any overspeed (have the engine roar) can result in immediate damage.**

**Cooling System**

The cooling system is fan-cooled. Therefore keep screen at recoil starter and cooling fins of cylinder clean and free from sucked-in plant trash.

**Idling-speed**

Always ensure that idling-speed is adjusted correctly. At low speeds and with the speed control lever set to idle, the engine is supposed to run smoothly and without run-out.

**Air Filter**

The air filter purifies the air intake. A clogged filter reduces engine output.
3. Devices and Operating Elements

Petrol Engine Version

Speed Control Lever
The speed control lever (B/9) on the steering handle is for stepless setting of engine speed from min. = idle to max. = full throttle.

Engine Shut-off Switch
With the electric shut-off switch (B/3) the ignition is turned on or off.

Position “I” = Operation
Position “0” = Engine off

The engine shut-off switch also serves to shut off the engine in an emergency situation. Set the switch to “0” for fast shut-off.

Safety circuit

1. **Stop position:** When releasing the safety shifting lever (B/4) the ignition system is turned off (engine is shut off).
   - Beware – engine keeps running due to centrifugal mass.

2. **Start position:** For starting the engine and for short breaks press down safety circuit lever, pull the clutch lever (B/5) and lock with pawl (B/6).

3. **Operating position:** To operate the machine press safety circuit lever (B/4).

Do not fasten safety circuit lever.

Release the safety circuit lever in an emergency, the lever will automatically go to STOP position!
3. Devices and Operating Elements

Diesel Engine Version

**Speed Control Lever**

The speed control lever (B/9) on the steering handle is for stepless setting of engine speed from min. = IDLE to max. = FULL THROTTLE. The lever also is for shutting the engine off. For settings refer to Fig. L.

The speed control lever also serves to shut off the engine in an emergency situation. Set the speed control lever to “STOP” for fast shut-off!

**Safety Circuit**

The tool carrier is equipped with a safety circuit switch (lever B/4).

1. **Stop position:** When releasing the lever (B/4), the ignition system is turned off (engine is shut off).
   Beware—engine keeps running due to centrifugal mass!

2. **Start position:** For starting the engine and for short breaks, press the safety circuit lever (B/4), pull the clutch lever (B/5) and lock with pawl (B/6).

3. **Operating position:** For machine operation, press safety circuit lever (B/4).

Do not fasten safety circuit lever.

The safety circuit lever also serves to shut off the engine in an emergency. Release the safety circuit lever for fast engine shut-off. The lever automatically goes to STOP position.
3. Devices and Operating Elements

Clutch

The single disc dry clutch is operated via the clutch lever (B/5).

With clutch lever pulled up to position “0”, the clutch is decoupled, i.e. the engine stops driving the machine.

Watch for the correct clutch play to avoid clutch slipping away during operation.

Do not park the machine with the clutch pulled and the engine running. This may damage the clutch release bearing.

PTO-Shaft Connection

The speed-independent PTO (A/22) is connected with a connection mechanism (B/7). With the connection mechanism drawn backwards, the PTO-drive is connected, when slid forwards, the PTO-drive is disconnected.

Ensure the lever is pulled and locked (pawl is locked in place) when you park the machine with the engine stopped, otherwise clutch problems might arise due to corrosion.
Transmission

The agria tool carrier is equipped with a hydrostatic drive.

Setting the Driving Speed and Direction

Twist-grip shift model

- The driving speed forward or reverse is steplessly set or changed with the twist grip (B/12).

Lever shift model

- The driving speed forward or reverse is steplessly set or changed with the forefinger or the thumb at the driving lever (B/10).

- The zero-position is set, when the marking at the driving lever is congruent with the “0” at the pictogram.

- When swiveling the twist grip clockwise, the driving speed is steplessly increased forwards.

- When swiveling the twist grip anti clockwise, the driving speed is steplessly increased backwards.

- The locking lever can be used to prevent the twist-grip from turning accidentally.

   Locking lever
   = locked

   Locking lever
   = unlocked
3. Devices and Operating Elements

The machine can be coasted without engine, if the idle shift is opened (position “0”).

The idle shift (A/3) is arranged at the right front of the tool carrier underneath the hood and can be operated by turning the shifting knob (or shifting lever).

The hydraulic drive is activated again, when the idle shift is closed (position “I”). Prior to starting the works, check shifting position!

Coasting operation or towing up to max. 4 km/h.

Trailing is not permitted!

Hydraulic Steering

With the hydraulic steering, the inner wheel at the curve becomes slower up to the standstill, the outer wheel at the curve keeps it velocity.

Steering

- By the steering movement at the steering handle, the hydraulic steering is activated with running engine.
- Steering only during driving, not upon a standstill.
- The stronger the steering movement, the quicker the hydraulic steering

Locking the Hydraulic Steering

By pulling and turning the shifting mechanism (B/8), the hydraulic steering is locked and steering is realized by muscular strength.

When the lock is opened, the hydraulic steering is connected again.

Use: Operation at the slope! – similar to a differential lock! or for lifting out an implement.

Hydrostatic Tool Carrier Bison
3. Devices and Operating Elements

Central Brake

To slow down or park the machine on hilly ground, use the combined central hand brake.

- **Central Brake**
  Swivel the eccentric lever (B/2) backwards and up – both drive-wheels are braked.
  Release the eccentric lever and the lever swivels back to the original position – brake is released.

- **Hand Brake**
  Swivel the eccentric lever (B/2) backwards and up beyond the dead centre. The eccentric lever automatically comes to a stop – both drive-wheels are blocked.
  To release hand brake, swivel eccentric lever back to original position – brake is released.

- **Do not drive and brake at the same time.**
- **Prior to starting driving, absolutely disengage brake as otherwise risk of damage due to overpressure (failure of wheel motors).**

Steering Handle

**Do never adjust operating handles during working – risk of accidents!**

- **Steering Handle – Height Adjustment**
  - Unfix counter nuts and hexagon bolts (A) on either side until the detents (B) are free.
  - Bring left and right steering handle to the desired height and introduce into the respective detent.
  - Tighten hexagon bolts again and fix them with counter nuts.

- **Steering Handle – Lateral Adjustment**
  From its normal position (centre position), the steering handle can be turned by about 30° to the left or right.
  - Pull ball handle (B/1) upwards and keep it in position; then turn steering handle to the left or right into the desired position.
  - Release ball handle and slightly move steering handle to the left and right until the fixing bolt is engaged.
### 3. Devices and Operating Elements

**Loading Belt**

For loading the machine and for suspending the retaining rope for works on slopes, the loading belt (A/7) is provided. To that end, remove hood.

Check loading belt for damage; replace it, if necessary.

---

**Drive-Wheels**

For full tractive power, mount wheels with pointed parts of lugs showing in driving direction (wheels seen from above). Fit the countersunk side of spring-lock washer into countersink-type holes of disk wheel (see fig. “Wheel Attachment Bolts”).

The wheels can also be mounted either on their inner or outer sides for variable track widths (narrow track / wide track – refer to track widths table, p14).

---

### Drive-Wheel Use

<table>
<thead>
<tr>
<th>Tyre</th>
<th>Tread Profile</th>
<th>Use</th>
<th>Item No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0-10</td>
<td>field tyre</td>
<td>general maintenance</td>
<td>0190 111</td>
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<tr>
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<td>general maintenance</td>
<td>3291 051</td>
</tr>
<tr>
<td>20x8.00-10</td>
<td>grass tyre</td>
<td>grass maintenance</td>
<td>3490 511</td>
</tr>
<tr>
<td>21x11.00-8</td>
<td>terra tyre</td>
<td>general maintenance</td>
<td>3490 611</td>
</tr>
<tr>
<td>23x8.5-12</td>
<td>wide-track field tyre</td>
<td>general maintenance</td>
<td>5990 611</td>
</tr>
<tr>
<td>23x10.5-12</td>
<td>wide-track field tyre</td>
<td>general maintenance</td>
<td>5990 711</td>
</tr>
</tbody>
</table>

---

*field tyre*  
*grass tyre*  
*terra tyre*  
*wide-track field tyre*
3. Devices and Operating Elements

Wheel Attachment Bolts

Version A wheel bolt with spring-lock washer.

Version B locking bolt with spring-lock washer and wheel nut.

Screw short thread end of locking bolt tightly into hub, if possible, glue with LOCTITE 270 (or similar glue).

Fit countersunk side of spring-lock washer onto disk wheel.

On a new machine or after wheel change, re-tighten wheel bolts and nuts after the first 2 operating hours with 100 Nm. Re-tighten bolts and nuts in each maintenance.

Snow Chains

When working with snow chains fitted on wheels, observe manufacturer’s instructions, make sure there is sufficient clearance between chains and machine parts.

Wheel-Track Adjustment System

- Item 5519 031 used to fit terra tyre drive wheels 21 x 11.00-8 TG.

Drive-Wheels for Slopes

It is recommended to use twin wheels or strake wheels for mowing areas on extremely steep slopes.
**Hood**

**Remove Hood**
- Lift rear end of hood.
- Lift front end of hood and completely remove it.

**Placing Hood**
- Place front and rear of hood with the rubber cups onto the ball heads.
- By slightly applying pressure to the rear and front of the engine cowling, have the ball cups engage in the ball heads.

**Portal Axle Adjustment**

To improve the weight distribution with heavy implements, the axle can be displaced forwards.
- For that purpose, install the complete wheel motors (M/2) to the front flange bolting template (M/2).
- Previously, clean flange bolting template.
- Do not unfix hydraulic lines and bowden cables!
- Tighten attachment bolts (M/3) with 45 Nm.
- Befestigungsschrauben (M/3) mit 45 Nm festziehen
Continuous portal axle adjustment (option for article 5939 011)

Adjustment to front for heavy attachments

1. Pull parking brake

2. Release ball handle lever

3. Pull machine back on steering spar
   - Min. clearance to attachment for drive wheels 20 mm!

4. Pull ball handle lever

5. Ball handle lever must not point downward
   - Press ball handle lever axially inward - until it unlocks - and turn upward
3. Devices and Operating Elements

Adjustment to rear for light attachments

1. Pull parking brake

2. Release ball handle lever

3. Move machine forward on steering spar
   Min. clearance to attachment for drive wheels 20 mm!

4. Pull ball handle lever

5. Ball handle lever must not point downward

- Press ball handle lever axially inward - until it unlocks - and turn upward
3. Devices and Operating Elements

Mounting and Dismounting Implements

Only mount and dismount implements with engine off.

Mounting Implements:
- Ensure that coupling surfaces on tool carrier and implement are clean.

1. For PTO driven implements, set shift lever (4) on implement to position “0”.

2. Slide pegs (2) of base machine into hooks (3) of implement.

3. Fold both eye bolts (1) over coupling flange.

Attention:
- Make sure flanges (5) are properly centred and flat fitted.
- Tighten cap nuts evenly.

4. For PTO-driven implements: Set shift lever (4) at the implement to “I” – shifting takes place at the base machine.

For dismounting, proceed in reverse order.
3. Devices and Operating Elements

E-Starter Version

Battery

There is no dry pre-charging of batteries on the new machines or trailers. Therefore the battery must be filled with accumulator acid and charged (charging current = 1/10 of battery capacity).

Note manufacturer’s instructions!

Starter Switch

The ignition start switch (33) for electric starter has 3 settings:

0 = Charging current off, key removable

I = Operation

START = Start position, ignition key automatically goes into operating position

Battery Charge Indicator

Battery charge indicator (32) flashes when ignition key is in position “I” and goes out as soon as the engine runs and the generator starts charging the battery.

It also goes out when the ignition key is in position “0” or is removed.

If the battery charge indicator flashes while the engine is running, the generator does not charge the battery correctly. Have it checked by a professional workshop.

Do not set ignition start switch to “0” while the engine is running. This can damage the charging regulator.

Fuse

A 15 amps fuse (35) is located between the regulator and electric starter to protect the regulator and generator from a short circuit induced from outside.

Replace the fuse if it is defective. To do this, open the fuse holder.
Commissioning

Please note that durability and operational safety of the engine depend to a large extent on its breaking-in. Always allow a cold engine to warm up for some minutes and never run it at full throttle at the beginning.

Please note: for the first 20 hours of operation (break-in period) do not use the engine at full power.

**Make sure you check and maintain air filters regularly and use clean fuel. Only use branded petrol.**

Only use fresh, clean fuel (not older than 3 months) and approved fuel cans to be purchased in special shops. Rusty sheet metal cans or fuel cans not suited for petrol are not permitted.

For the first commissioning or after longer periods of no operation, fill fuel tank to maximum to avoid starting problems.

Be careful when dealing with fuel.

**Fuel is easily inflammable and explosive in certain conditions!**

- Do not refill in closed rooms.
- Before each fuel fill, shut off the engine and wait until it has cooled off.
- Never refill close to open fire, inflammable sparks or hot engine parts.
- Do not smoke during filling!
- Do not spill any fuel, use a proper filling device.

Do not cause fuel tank to overflow, but leave a 5 mm margin for the fuel to expand.

- **Check transmission oil level** (see page 51).

---

Note: For reasons of transport, the engine is not filled completely with engine oil!

Before you operate the engine the first time, fill in engine oil (see page 43)!
Commissioning

Please note that durability and operational safety of the engine depend to a large extent on its breaking-in. Always allow a cold engine to warm up for some minutes and never run it at full throttle at the beginning.

Please note: for the first 20 hours of operation (break-in period) do not use the engine at full power.

Make sure you check and maintain air filters regularly and use clean fuel. Only use branded Diesel, ensure timely provision of “winter Diesel fuel” (see page 9).

Only use approved fuel cans to be purchased in special shops. Rusty sheet metal cans or fuel cans not suited for petrol are not permitted.

For the first commissioning or after longer periods of no operation, fill fuel tank to maximum to avoid starting problems.

Be careful when dealing with fuel.

- Do not refill in closed rooms.
- Before each fuel fill, shut off the engine and wait until it has cooled off.
- Never refill close to open fire, inflammable sparks or hot engine parts.
- Do not smoke during filling!
- Do not spill any fuel, use a proper filling device.

Do not fill the fuel tank beyond the red mark on the filler strainer.

- Check transmission oil level (see page 51).

Note: For reasons of transport, the engine is not filled completely with engine oil!

Before you operate the engine the first time, fill in engine oil (see page 47)!
4. Commissioning and Operation

**Petrol Engine Version**

**Before starting the Engine**

1. **Sufficient fuel is filled into the tank?**

2. **Air filter cleanful?**

3. **Check the engine oil level.**

4. **Check transmission oil level.**

5. **Check all bolts and nuts for tight fit.**

---

**Only take machine into operation with all protective devices mounted and positioned to provide protection!**

**Careful when starting the engine in closed rooms!**

**Ensure good ventilation and fast escape of exhaust fumes. Exhaust fumes contain carbon monoxide which acts toxic when inhaled.**

**Do not touch the hot engine - danger of burns!**

Do not touch or remove the ignition line and spark plug connector while the engine is running.
Starting Petrol Engine Recoil Starter Version

1. Mount spark plug connector.

2. Open both fuel taps (D/13 + 14).

3. **Cold engine**: put CHOKE lever (D/20) to "CHOKE" position.
   - **Warm engine**: leave CHOKE lever in normal operating position.

4. Set engine-OFF switch (B/3) to operating position ("I").

5. Set speed control lever (B/9) to 1/3 throttle.

6. Pull hand clutch lever (B/5) and lock pawl (B/6) - start position.

7. Start engine from a position outside the danger zone:
   Pull starting-rope on handle (C/6) until you feel starter clutch engage. Then **pull hard and fast** to start the engine. After the start, carefully let rope glide back. Do not let snap.

   **Trailing is not permitted!**

8. Once the engine has started, let it warm up for some time. Slowly push choke back into operating position, if necessary.
4. Commissioning and Operation

Petrol Engine Version/Recoil Starter

Shutting off Petrol Engine
Recoil Starter Version

1. Set speed control lever to idle position and let engine run idle for approx. half a minute.

2. Set engine shut-off switch to “0”.

3. Close both fuel taps.


Engine shut-off switch (B/3) also serves as emergency off-switch. If necessary, set switch to “0” to turn engine off.

For parking the machine for longer periods of no operation, do not use engine shut-off switch to shut off engine, but close fuel taps and let engine run until it slowly comes to a complete stop. This ensures carburetor to be empty and no resin residue to deposit.
Starting Petrol Engine
E-Starter Version

1. Open both fuel taps (D/13 and D/14).

2. **Cold engine**: put CHOKE lever to “CHOKE” position (D/20).
   - **Warm engine**: leave CHOKE lever in normal operating position.

3. Set engine shut-off switch (B/3) to operating position (“I”).

4. Set speed control lever (B/9) to 1/3 throttle.

5. Pull clutch lever (B/5) and lock pawl (B/6) – start position.

6. Insert key into ignition-start-switch (C/33) and turn right to position “I”.
   - Battery charge indicator (C/32) lights up.

7. Start engine from a position outside the danger zone:
   Turn ignition key further to the right to position “START”.
   As soon as the engine starts, let go ignition key – it automatically moves back into position “I”.
   If the engine does not start and re-start is necessary, turn key back to position “0” to repeat start (re-start lock).

8. **Trailing is not permitted!**

9. Once the engine has started, let it warm up for some time. Slowly push choke back into operating position, if necessary.
Shutting off Petrol Engine
E-Starter Version

1. Set speed control lever to idle position and let engine run idle for approx. half a minute.

2. Set engine shut-off switch to “0”.

3. Turn key back to position “0” – battery charge indicator goes out.

4. Close both fuel taps.

5. Secure tool carrier against unauthorized use – disconnect ignition key.

Engine shut-off switch (B/3) also serves as emergency off-switch. If necessary, set switch to “0” to turn engine off.

For parking the machine for longer periods of no operation, do not use engine shut-off switch to shut off engine, but close fuel taps and let engine run until it slowly comes to a complete stop. This ensures carburetor to be empty and no resin residue to deposit.
Starting Diesel Engine

1. Open the fuel tap (J/3).

2. Engage central brake (B/2) to improve machine stability.

3. Set speed control lever (B/9) to "max.".

4. Set safety circuit lever (B/4) and clutch lever (B/5) to start position and lock with pawl.

5. Pull starting-rope on handle (J/6) until you feel resistance (piston in compressing position).

6. Pull decompression rope (J/8) downwards.

7. Start engine from a position outside the danger zone: Pull starting-rope (J/6) hard and fast to start the engine. After the start, carefully let rope glide back. Do not let snap.
   - Decompression automatically goes back in former position.

8. Once the engine has started, slowly push speed control lever to centre position and let engine warm up for some time.
   - In case the engine does not start, repeat the starting procedure as described above.
Shutting off Diesel Engine

1. Before you shut off the engine let it run at increased idling speed for 1 minute to cool down and to avoid carbon to deposit on the injection valve. This ensures continued and reliable operation.

2. Set speed control lever (B/9 to “STOP”.

3. Close the fuel tap (J/3).

For shutting off the engine never activate decompression, as this might damage the valves.
### 4. Commissioning and Operation

#### Operating the Machine

1. **Check safety circuit function - Only operate the machine if, safety circuit works!**
   - Start the engine as specified in chapter “Starting the Engine”.
2. **Wear individual protective ear plugs and solid shoes.**
3. **For operation with PTO-powered attachments:**
   - Switch on PTO using the PTO shifting mechanism (B/7).
4. **Pull slightly clutch lever (B/5), unlock pawl (B/6) and slowly let go while pressing the throttle.**

   - **Carefully engage the clutch, the exact 0-position of the twist grip or driving lever is not always reached – the implement will possibly start directly!**

5. **Set driving speed with the twist grip (B/12) or the driving lever (B/10) according to the conditions and requirements.**

**Danger Zone**

- **Keep out of the machine’s danger zone during starts and operation.**

**Changing the driving direction from forward to reverse:**

- **Slowly move twist grip (B/12) or driving lever (B/10) to the rear bottom.**
- **Proceed vice versa for direction change from reverse to forward.**

**Never leave tool carrier unattended with the engine running.**

---

**Note for Mowing**

After mowing or in case of grass clogging:

1. **Set driving lever to idle-position.** The mower comes to a stop but not the knives, thus freeing the cutter bar from grass.
2. **Set PTO shifting mechanism to position “0”**
Working on Slopes

To prevent the tool carrier from sliding on slopes make sure it is secured by another person using a bar or a rope. This person must stay at a higher position than the vehicle and at a safe distance from the attachment at work. If possible, always work across the slope.

Starting the Engine on Slopes

If the engine comes to a halt while working and re-start becomes necessary, proceed as follows:

1. Engage central brake.
2. Move clutch lever and safety circuit lever to start position.
3. Re-start engine.

If cleaning becomes necessary during operation, the engine must be shut off and the spark plug connector disconnected or the ignition key removed for safety reasons.
5. Maintenance

Apart from observing all operating instructions, it is also important to pay attention to the following maintenance instructions.

Please note:

Only do all maintenance work with the engine shut off and spark plug connector disconnected.

Engine

Checking Oil Level

- each time you take up operation and after 8 operating hours,

- only with engine shut off and in horizontal position.

- Clean oil dip stick (1) and surrounding parts.

- Remove oil filler plug, clean dipstick, with a clean cloth and dip back into oil tank (do not screw in), take out dip-stick and read oil level.

- In case oil level is below lower mark, refill engine oil (refer to “Specifications”) until oil level reaches rim of oil filler neck.

Changing Engine Oil

The first oil change is after 25 operating hours. Following oil changes are every 100 operating hours, while engine is still warm, but not hot – danger of burns!

- Clean oil filler plug, drain plug and surrounding parts.

- Change the oil and dispose of properly.

Check sealing washer for good condition and exchange, if necessary!

- For engine oil quality refer to “Specifications”.

Spark Plug

After every 100 operating hours or ignition problems:

- remove soot from spark plug electrodes using a wire brush,

- check spark plug gap and set to 1.0 mm.

Exchange spark plugs after every 200 hours of operation.

Fuel Hoses

Exchange fuel hoses every 2 years. Leaking hoses must be exchanged immediately.
5. Maintenance

Petrol Engine

Dry-Type Air Filter

When you take up operation, check the air filter (C/19) on dirt, clean it if necessary.

Clean the air filter at least every 25 operating hours or at 3-month intervals, after some hours in very dusty conditions:

1. Clean the air filter and surrounding parts.
2. Loosen the wing nut and take off the filter cap.
3. Carefully remove both foamed preliminary filters.
4. Wash the foamed preliminary filter in warm lye (do not use petrol).
5. Squeeze the foamed preliminary filter like a sponge and dry it.
6. Remove the filter element.
7. Tap the filter element against a smooth surface.
8. Do not clean the foamed preliminary filter and the filter element using compressed air and do not soak it in oil!
9. Reinstall the filter element and the foamed preliminary filters.
10. Reposition the filter cap and fasten the wing nut.

- Replace the filter element after 5 cleaning actions or approx. every 200 operating hours.

- Replace immediately damaged filter elements.
5. Maintenance

Cleaning the Cooling System
After mowing for longer periods of time, clogging of plants and dust may occur in the cooling system. Sustained operation with the cooling system clogged lets the engine heat up and causes damage.

- Always check cooling-air screen (C/5) and remove dirt and plants sucked in.

Exhaust System
Check exhaust system (C/18) on a regular basis for plant trash and clean, if necessary. Otherwise danger of fire results.
Check each time before you put the tool carrier into operation.

Checking Engine Compression
Always after 400 operating hours, check the compression; if required, lap valve seat.

Re-adjusting Valve Clearance
After every 400 hours of operation, re-adjust valve clearance; intake and outlet valve at 0.03…0.08 mm when the engine is cold.

Cleaning Carburetor and Fuel Tank
Always after 400 operating hours, clean carburetor and fuel tank.

Cleaning Cylinder Head
After every 400 hours of operation take off cylinder head and remove carbon deposits on cylinder head and exhaust port with a wire brush. Afterwards, clean with soft brush. Renew head gasket and reassemble to cylinder head. Tighten cylinder head bolts in turn. Tighten with a torque of 42…50 Nm.
5. Maintenance

Petrol Engine

Idling Speed

Always ensure that idling engine speed is adjusted correctly. Ensure smooth running of engine by positioning speed control lever to idling position at stop.

Setting is done by alternating adjustment of the idle mix regulating screw (2) and the idle speed limiting screw (1) as well as the setting screw for the lower idle speed controller. Then, the acceleration mechanism must be set without gap at the clamping screw or the setting screw for the lower idle speed. Setting must be done at operating temperature. (Idle speeds as per “Specifications”).

Speed Regulator

With the setting screws (B/15), the stop for the upper and lower idle speed is set.

The control levers (C/16) and the controller springs (at the carburetor C/17) must always be kept free from dirt, mowed material residues and plant parts.

Battery

There is no dry pre-charge of batteries on new machines, therefore batteries must be totally charged after filling them with accumulator acid (charge current = 1/10 of battery capacity).

If the machine or trailer will not be used for a longer period, the battery must be kept fully charged with a current of 0.06A and checked every 4 weeks and recharged, if necessary. Before recharge, disconnect negative pole.

Never leave battery in uncharged state. Note manufacturer’s instructions. Avoid sparking and open flames near batteries. Careful when handling battery acid – etching! Only use specified fuses. If fuses are too strong, the electric system will be destroyed – danger of fire!
5. Maintenance

Apart from observing all operating instructions, it is also important to pay attention to the following maintenance instructions.

Do all maintenance work only with the engine shut off!

When working on mowing knives, wear safety gloves!

Engine

Checking Oil Level

- each time you take up operation and after 8 operating hours,
- only with engine shut off and in horizontal position.
- Clean oil dip stick (1) and surrounding parts.
- Remove oil filler plug, clean dip-stick, with a clean cloth and dip back into oil tank (do not screw in), take out dip-stick and read oil level.
- In case oil level is below lower mark, refill engine oil (refer to “Specifications”) until oil level reaches rim of oil filler neck.

Changing Engine Oil

The first oil change is after 50 operating hours. Subsequent oil changes are after 200 operating hours or once a year, depending on which period is completed first. At extreme strain and high temperatures, change oil after 100 operating hours. Only change oil while the engine is still warm, but not hot – danger of burns!

- Clean oil filler plug, drain plug and surrounding parts.
- Open the drain plug and the filling plug and drain the oil into a suitable container!
- Each time you change engine oil, wash engine oil filter in Diesel fuel.
- Fill fresh engine oil into the oil filling opening.

Check sealing washer for good condition and exchange, if necessary!

Refer to Specifications for oil quantity and quality. Use a funnel or a similar device to fill the oil reservoir.
5. Maintenance  

Diesel Engine

Dry-Type Air Filter

When you take up operation check the air filter (J/4) on dirt, clean it if necessary. Clean air filter (J/4) after a maximum of every 50 operating hours or at least after 3 months, in case of heavy dust occurrence even earlier.

1. Clean air filter and outside surrounding parts.
2. Remove the wing nut and air filter cap including the cyclone pre-filter.
3. Rotate the air filter cap to allow any dirt inside the cyclone pre-filter drop out.
4. Carefully remove foamed pre-filter.
5. Wash foamed pre-filter in detergent and water (no petrol).
6. Squeeze foamed pre-filter and dry it.
7. Remove paper filter element.
8. Slightly tap the element on a smooth surface.
9. Do not use compressed air to blow out dust of foamed pre-filter and paper filter element. Do not treat with oil.
10. Re-insert the filter element and attach the foamed pre-filter.
11. Reposition air filter cap and fasten with wing nut.

Replace paper filter element after every 400 operating hours or at least once a year.

Replace immediately damaged filter elements.
5. Maintenance

**Draining fuel**

- Provide a proper container with funnel or similar.
- Remove the drain plug (16) and drain the fuel into a proper container.
- Re-attach the drain plug (16) with O-ring and tighten it (check the O-ring and replace it if necessary)

**Fuel filter**

Clean the fuel filter insert at approx. **200** operating hour intervals, earlier, if engine output drops.

**Filter disassembly/assembly:**

- Drain the fuel.
- Remove hex head nuts (X/7)
- Remove the filter insert (X/4) from the fuel tank through the filling hole.
- Clean the fuel filter with diesel oil and replace the insert if it is damaged.
- Reverse the above order to reassemble the fuel filter after checking and replacing (if necessary) the gasket (X/5) and o-ring (X/6).
- Tighten the hex nuts.
- Fill fuel and check the fuel system for leakages.
- Bleed the fuel system.
- Exchange the fuel filter after **400** hours.

**Fuel Hoses**

Exchange after every **2 years**; exchange leaking fuel hoses immediately.

---

**Bleeding the Fuel System**

Bleeding the fuel system becomes necessary after the fuel tank was emptied completely or after exchanging or cleaning the fuel-filter/fuel hoses.

Although the engine is equipped with an automatic bleeding system, proceed as follows:

- Fill diesel fuel into fuel tank.
- Crank engine several times with recoil starter or electric starter and start engine.
- Let engine run for approx. 1 minute.
Cleaning the Cooling System
After a long period of operation the cooling system may become clogged by dirt and plant trash. Uninterrupted operation with a clogged cooling system causes the engine to heat up and become damaged.
- Always check cooling-air screen (J/10) and free from dirt and plant trash taken in.
- After every 100 operating hours or at least once a year before season starts remove fan case to clean cooling fins on cylinder and cylinder head as well as guiding plates and cooling-air screen, both serving for smooth air circulation.

Exhaust System
Constantly check exhaust system (J/9) for plant trash and clean, if necessary. Otherwise danger of fire!

Re-adjusting Valve Lash
After every 400 operating hours re-adjust valve lash. Re-adjust outlet and intake valve lash to be 0.15±0.02mm when the engine is cold.

Injection Jet
After every 400 operating hours, clean and check injection jet.

Idling Speed
Always ensure that idling engine speed is adjusted correctly. At low speeds, the engine is supposed to run smoothly, with speed control lever at stop in neutral.
5. Maintenance

Machine

Transmission

Transmission oil is also hydraulic oil

When changing to Bio hydraulic oil HEES, drain oil filling and twice rinse the system (see after-sales service information).

Check oil level in transmission each time before you take the machine into operation and after every 8 operating hours (oil dip-stick and filling opening (A/1). With the tool carrier parked in horizontal position, the oil level must be between the “max” and “min” marks.

- Screw out oil dip-stick, clean with clean cloth and screw back in.
- Take dip-stick out again and read oil level, refill transmission oil, if necessary. (Refilling volume between “min.” and “max.” = 1 l).

Transmission oil filter change after the first 50 operating hours and then always after 200 operating hours.

Tilt machine forwards onto the connection flange.

Screw out oil filter (A/27) and replace it – for new filter, wet the sealing ring with some oil. Dispose of oil filter as directed.

Transmission oil change with simultaneous oil filter change after the first 50 operating hours and after every 600 operating hours while the engine is still warm.

- Keep oil filler plug (A/1) and drain plug (A/24) extremely clean as well as surrounding parts to prevent dirt from penetrating into the transmission.
- Open drain plug, collect old oil in proper container and dispose of properly.
- Clean drain plug; the drain plug has a magnetic core and therefore attracts metallic powder.
- Check sealing rings and exchange, if necessary.
- Screw in drain plug with o-ring and tighten.
- Fill in fresh transmission oil, up to level mark “max.”.
- For proper oil quantity and quality, refer to chapter “Specifications”.
- Close filling opening with plug/dipstick.
5. Maintenance

Steering Handle Locking Bolt
At certain intervals, lubricate at the grease nipple with Bio lubricating grease. At least once per year and after cleaning with a high-pressure cleaner.

Steering Handle Lock
Always after 200 operating hours and always after cleaning with a high-pressure cleaner, apply some Bio lubricating grease to either side of the rollers (A/8) for the steering lock.

Steering Handle Ultra-Bushes
- Check condition always after 200 operating hours.
→agria - Service←

Steering Handle Central Screw
- Always after 200 operating hours, retighten central screw (A/9) with 140 Nm and counter it again.
→agria - Service←

Loading Belt
Check loading belt for damage every year, replace it not later than 10 years.

Hydraulic Hoses
Check hydraulic hoses always after 200 operating hours or at least once per year for closeness.

Drive-Wheels
- When commissioning the tool carrier and each time you change wheels, check and tighten wheel bolts and nuts after the first 2 operating hours with 100 Nm (10 kpm). Proceed likewise when doing maintenance work.
- Check tyre air pressure regularly. For smooth driving, make sure that there is the same pressure in front and rear tyres respectively.

Wheel Hubs
- Always after 50 operating hours, retighten the hex nuts (A/26) on the wheel hubs to 240...300 Nm.

Brake
Always after 200 operating hours or at least once per year, check brake jaws and brake operating system for unhindered movement and efficiency.
→agria - Service←

Wheel Motors
Always after 200 operating hours, check for straight driving with the steering handle in neutral position.
→agria - Service←
5. Maintenance

Petrol Engine Version

Safety Circuit
Check safety circuit function each time You take up operation and each time You maintain the machine.

- With clutch engaged and upon release of safety lever (B/4), the engine must automatically come to a stop.

- Check electric lines and connections and exchange, if necessary.

Diesel Engine Version

Safety Circuit
Check safety circuit function each time You take up operation and each time You maintain the machine.

- At release of lever (B/4), the engine must automatically come to a stop.

- If necessary, correct STOP-Bowden cable with Bowden cable set screw.

Engine Shut-off Switch
Check function of engine shut-off switch each time you do maintenance work.

- With shut-off switch in position “0” the engine must come to a stop.

- Check electric lines and connections and exchange.

Engine Shut-off Switch
Check function of engine shut-off switch each time you do maintenance work.

- If the speed control lever is in STOP” position, the engine must come to stop. If necessary, correct engine speed cable or STOP-Bowden cable on Bowden cable set screws.
5. Maintenance

Clutch Lever

Check clutch play or clutch adjustment each time you operate the machine. If necessary, re-adjust (especially after commissioning the machine, during break-in period, and after exchanging clutch linings and brake pads).

Petrol Engine Version

[Diagram]

Clutch:

\[ X = 3 \text{ - } 5 \text{ mm} \]  
(Clutch play)

! = The Bowden cable must be placed in the hand lever support on bottom position

Adjustment:

1. Remove retaining spring (2) and use set pin (4) to press cable end (3) out of bracket in hand lever.

2. Adjust the set pin (4) to a play of \( X \). Screw set pin in to reduce play, screw out to increase play.

3. Use set pin to place cable end back into bracket and check, and fit retaining spring (2).

Diesel Engine Version

[Diagram]

- Set the adjustment screw (1) to a play of “A”. Turn screw in to reduce play, turn screw out to increase play.

- Then fix adjustment screw with a lock nut (2).

Free play of clutch and differential lock:

\[ A = 5\text{–}6 \text{ mm} \]
5. Maintenance

Twist-grip shift
Check for proper operation and adjustment when performing maintenance and adjust, if necessary

Setting
Set the twist-grip shift on the Bowden cable adjustment screw so there is no play, so that the marking point on the twist-grip matches the 0 position of the pump and the pictograph.

Twist-grip locking lever
Setting the clamp
Loosen threaded rod about 1 revolution with hex key
Set locking lever so that:

= twist-grip can turn
= twist-grip is clamped, cannot turn

General Maintenance

- Every time You take up operation watch out for fuel and oil leakage, repair if necessary.
- Regularly check bolts and nuts for tight fit, re-tighten, if necessary.
- At least once a year and after cleaning: Slightly grease all gliding and moving parts (e.g. speed control lever, lever bearing, etc.) with bio-lubricating grease and bio-lubrication oil.

Cleaning
After each cleaning (spraying with water, especially with air-compressed water jets) lubricate all lubrication points, oil and let tool carrier run for a short time to press water out.
Apply grease generously to leave a grease ring around bearings to prevent water, plant sap, and dirt from penetrating.
Clean engine only with a cloth. Avoid spraying with air-compressed water jets, as water might leak into ignition and fuel system causing malfunctions.
5. Maintenance

Storage

For longer periods of no operation:

a) Clean thoroughly
Repair paint coat.

b) Spray all shining parts and the cutter bar with Bio-slushing oil.

c) Engine preservation

- **Petrol Engine**
  - Drain fuel completely or fill fuel tank and add fuel stabilizer (agria No. 799 09).
  - Observe enclosed instructions.
  Let engine run for approx. 1 minute.
  - Change the engine oil.
  - Fill a tea-spoon (approx. 0.03l) of engine oil into the spark plug opening. Slowly crank the engine.
  - Set the piston to compression via the recoil starter (pull the starter grip until resistance is felt) – valves are closed.
  - Slowly crank the engine after every 2–3 weeks (spark-plug connector is removed). Then set the piston to compression again.

- **Diesel Engine**
  - Change engine oil.
  - For longer storage, close exhaust pipe and air filter opening with crape or similar tape.

d) Drive-wheels

Support drive-wheels in such a way that tyres have no ground contact. Pneumatic tyres are quickly destroyed, if left standing under load and unsupported.

e) Clutch

Always park two-wheel tractor with clutch lever pulled (pawl locked in place). Otherwise clutch problems may result due to corrosion.

f) Parking

Because of severe corrosion **do not park the tractor**

- in humid rooms
- in rooms where fertilizer is stored
- in stables or adjacent rooms.

g) Covering the machine

Protect the machine with cloth or a similar cover.
Lubricants, Varnishes, Wear Parts

agria Order No.

Lubricants

604 80 Special purpose grease, water resistant cartridge 400g

Fuel Stabilizer for Petrol Engine

799 09 Fuel stabilizer pouch 5 g

Anti-Corrosive Agents

690 36 Bio anti-corrosive oil bottle 500ml

Varnishes

181 03 Spray varnish birch-green spray tin 400ml
712 98 Spray varnish red, RAL 2002 spray tin 400ml
509 68 Spray varnish black spray tin 400ml

Glues (for screw fastening)

559 94 Glue (medium) LOCTITE 242 bottle 50ml
559 95 Glue (strong) LOCTITE 270 bottle 50ml
559 96 Glue (ultra strong) LOCTITE 638 bottle 50ml

Surface Sealing

509 68 Surface sealing (liquid) LOCTITE 573 tube 250ml

Wear Parts

Petrol Engine

419 011 Air filter element
419 012 Foamed preliminary filter
685 60 Spark plug, Bosch WR8 BC
009 18 Sealing ring 12 x 16 x 1.5, oil drain plug
759 28 Flat plug fuse 15A

Diesel Engine

415 060 Air filter element
415 010 Fuel filter
415 011 Sealing ring fuel filter
021 43 O-ring 14x1.6, fuel tap
009 16 O-ring 16x22x1.5, oil drain plug

Transmission:

009 16 O-ring 16x22x1.5, oil dip-stick and oil drain plug
527 06 Oil filter cartridge

Emergency Tyre Repair:

713 13 Tyre repair gel Terra-S bottle 1l

Lists of Spare Parts

997 153 Tool carrier Bison 5900
997 083 Implements for 3400, 5500, 5900
997 062 Cutter Bars
997 146 Kubota Engine
997 147 Yanmar Engine
6. Troubleshooting

Observe safety instructions! Have all serious malfunctions on the machine or engine repaired by your agria workshop. They have the proper tools. Improper repairs can only add to the damage.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Petrol Engine:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine does not start</td>
<td>- Spark plug connector not connected</td>
<td>Connect spark plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Choke is not operated</td>
<td>Set choke lever to position CHOKE</td>
<td>35, 37</td>
</tr>
<tr>
<td></td>
<td>- Engine shut-off switch is set to “0”</td>
<td>Set engine shut-off switch to “I”</td>
<td>35, 37</td>
</tr>
<tr>
<td></td>
<td>- Safety circuit is not set to start position</td>
<td>Set safety circuit to start position</td>
<td>35, 37</td>
</tr>
<tr>
<td></td>
<td>- Fuel tank empty or poor fuel</td>
<td>Fill fuel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fuel line clogged</td>
<td>Clean fuel line</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>- Defective spark plug</td>
<td>Clean, adjust or exchange spark plug</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>- Engine too much fuel (&quot;flooded engine&quot;)</td>
<td>Dry and adjust spark plug and start at full throttle</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>- Engine-off-line defective</td>
<td>Check line and connections</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>- Inleaked air due to loose caburetor and suction line</td>
<td>Tighten attachment bolts</td>
<td></td>
</tr>
<tr>
<td>Misfirings in engine</td>
<td>- Engine running in CHOKE range</td>
<td>Set CHOKE lever to operating position</td>
<td>35, 37</td>
</tr>
<tr>
<td></td>
<td>- Loose ignition cable</td>
<td>Fix ignition cable retaining device</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>- Clogged fuel line or poor fuel</td>
<td>Clean fuel line, fill fresh fuel</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>- Vent opening in fuel tank cap clogged</td>
<td>Exchange fuel tank cap</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Water or dirt in fuel system</td>
<td>Drain fuel and fill fresh fuel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Air filter clogged</td>
<td>Clean air filter or exchange</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>- Carburetor misadjusted</td>
<td>Re-adjust carburetor</td>
<td>* 45</td>
</tr>
<tr>
<td>Excessive temperature in engine</td>
<td>- Low engine oil level</td>
<td>Refill oil immediately</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>- Impaired cooling</td>
<td>Clean cooling fan screen, clean internal cooling fins</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>- Air filter clogged</td>
<td>Clean air filter</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>- Carburetor misadjusted</td>
<td>Re-adjust carburetor</td>
<td>* 45</td>
</tr>
<tr>
<td>Misfirings in engine at high speeds</td>
<td>- Short firing intervals</td>
<td>Adjust spark plug</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>- Incorrect idle mixture</td>
<td>Adjust carburetor</td>
<td>* 45</td>
</tr>
<tr>
<td>Engine frequently stalls in idle</td>
<td>- Firing interval too long, defective spark plug</td>
<td>Adjust or replace spark plug</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>- Carburetor misadjusted</td>
<td>Re-adjust carburetor</td>
<td>* 45</td>
</tr>
<tr>
<td></td>
<td>- Air filter clogged</td>
<td>Clean air filter</td>
<td>44</td>
</tr>
<tr>
<td>Engine does not run smoothly</td>
<td>- Speed control linkages clogged or jammed</td>
<td>Clean speed control linkages</td>
<td>45</td>
</tr>
<tr>
<td>Engine does not stop when set to stop</td>
<td>- Defective engine-stop-line, earth missing</td>
<td>Check line and connection, check ground contact</td>
<td>*</td>
</tr>
</tbody>
</table>

---

58 Hydrostatic Tool Carrier Bison
### 6. Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine output too low</td>
<td>- Air filter clogged</td>
<td>Clean air filter</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>- Loose cylinder head or damaged gasket</td>
<td>Tighten cylinder head, exchange gasket</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>- Poor compression</td>
<td>Have engine checked</td>
<td>*</td>
</tr>
</tbody>
</table>

#### E-Start Version:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-starter does not start</td>
<td>- Battery is empty</td>
<td>Charge or replace the battery</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>- Fuse is defective</td>
<td>Replace fuse</td>
<td>31</td>
</tr>
<tr>
<td>No battery charge control when engine stops</td>
<td>- Start switch not activated</td>
<td>Move start switch to &quot;I&quot;</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>- Control light is defective</td>
<td>Replace control light</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>- Harness is damaged</td>
<td>Check harness</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>- Regulator is defective</td>
<td>Check regulator</td>
<td>*</td>
</tr>
<tr>
<td>Battery charge control comes on during operation</td>
<td>- Fuse is defective</td>
<td>Replace fuse</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>- Harness is damaged</td>
<td>Check harness</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>- Regulator is defective</td>
<td>Check regulator</td>
<td>*</td>
</tr>
</tbody>
</table>

#### Diesel Engine:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine does not start</td>
<td>- Speed control lever set to “STOP”</td>
<td>Move speed control lever to “Max”</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>- Fuel tank empty or poor fuel</td>
<td>Fill fresh fuel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fuel line or fuel filter clogged</td>
<td>Clean fuel line or filter</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>- Injector nozzle or injection line clogged</td>
<td>Clean injector nozzle or injection line</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>- Wrong injection pressure</td>
<td>Check pressure</td>
<td>*</td>
</tr>
<tr>
<td>Misfiring in engine</td>
<td>- Clogged fuel line or poor fuel</td>
<td>Clean fuel line, fill fresh fuel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Vent opening in fuel tank cap clogged</td>
<td>Exchange fuel tank cap</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Water or dirt in fuel system</td>
<td>Drain fuel and fill fresh fuel</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>- Air filter clogged</td>
<td>Clean air filter</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>- Injector nozzle or injection line clogged</td>
<td>Clean injector nozzle or injection line</td>
<td>50</td>
</tr>
<tr>
<td>Excessive temperature in engine</td>
<td>- Lack of engine oil</td>
<td>Refill engine oil immediately</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>- Impaired cooling</td>
<td>Clean fan grid, clean internal cooling fins</td>
<td>50</td>
</tr>
<tr>
<td>Misfiring at high speeds</td>
<td>- Injector nozzle clogged</td>
<td>Clean injector nozzle</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>- Wrong injection pressure</td>
<td>Re-adjust injection pressure</td>
<td></td>
</tr>
<tr>
<td>Engine frequently stalls in idle</td>
<td>- Air filter clogged</td>
<td>Clean air-filter</td>
<td>48</td>
</tr>
<tr>
<td>Engine does not stop when set to “STOP”</td>
<td>- Improper adjustment of engine-off-cable</td>
<td>Re-adjust engine-off-cable</td>
<td>53</td>
</tr>
</tbody>
</table>
## 6. Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine output</td>
<td>- Loose cylinder head or damaged gasket</td>
<td>Tighten cylinder head, exchange gasket</td>
<td>*</td>
</tr>
<tr>
<td>too low</td>
<td>- Poor compression</td>
<td>Have engine checked</td>
<td>*</td>
</tr>
</tbody>
</table>

**Machine in General:**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch does not decouple</td>
<td>- Clutch lever misadjusted</td>
<td>Adjust clutch free play</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>- Worn out clutch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clutch slips</td>
<td>- Clutch lever misadjusted</td>
<td>Adjust clutch free play</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>- Worn out clutch</td>
<td>Exchange clutch disc</td>
<td>*</td>
</tr>
<tr>
<td>No wheel drive</td>
<td>- Clutch is not engaged</td>
<td>Engage clutch using the clutch lever</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>- Idle shift is operated</td>
<td>Activate hydraulic drive</td>
<td>23</td>
</tr>
<tr>
<td>Excessive vibration</td>
<td>- Loosened attachment bolts</td>
<td>Tighten attachment bolts</td>
<td>55</td>
</tr>
</tbody>
</table>

*= For this purpose contact your agria workshop.*
**Safety Circuit**

1. Engine
2. Magnet ignition system
3. Engine shut-off switch
4. Switch in clutch lever
5. Switch in safety circuit lever

\[ bl = \text{blue} \]
\[ br = \text{brown} \]
\[ rt = \text{red} \]

**E-Starter**

1. Generator 12V 14A
2. Charge controller
3. Flat plug fuse 15A
4. E-starter 12V 0.6kW
5. Line set
6. Battery 12V 20Ah
7. Battery charge indicator lamp 12V 2W
8. Ignition starter switch
9. Socket

\[ bl = \text{blue} \]
\[ br = \text{brown} \]
\[ ge = \text{yellow} \]
\[ gr = \text{green} \]
\[ ro = \text{red} \]
\[ sw = \text{black} \]
\[ ws = \text{white} \]
### Inspection and Maintenance Chart

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Item</th>
<th>2</th>
<th>4</th>
<th>8</th>
<th>25</th>
<th>50</th>
<th>100</th>
<th>200</th>
<th>400</th>
<th>600</th>
<th>J</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check safety circuit function</td>
<td>K</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Check engine shut-off switch function</td>
<td>K</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Check free play of levers</td>
<td>K</td>
<td></td>
<td></td>
<td></td>
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<td>Check wheel motors for straight driving</td>
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<td>Lubricate all sliding parts</td>
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<td>Replace fuel hoses</td>
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**P** = Item in lubrication chart (page 65)

**A** = Each time before you take up operation

**B** = After each cleaning, especially with a high-pressure cleaner

**J** = min. yearly

**K** = Checks and maintenance to be executed by operator

**W** = Maintenance to be executed by professional workshop

**F** = Maintenance should be carried out by your agria workshop

**"** = after 2 years
Designation of Parts

Fig. C

Engine GH 400

1 Spark plug/spark plug connector
2 Oil dip-stick/oil filling opening
3 Oil drain plug
4 Engine identification number
5 Recoil starter/cooling air screen
6 Starter handle
11 Fuel tank cap
12 Fuel tank
13 Fuel tap right
14 Fuel tap left
15 Adjusting screw for speed regulator
16 Speed regulator lever
17 Carburetor
18 Muffler
19 Air filter
20 Choke lever

only for E-starter version:

31 Battery
32 Battery charge indicator light
33 Starter switch
34 Socket
35 Fuse holder (with flat plug fuse)
B = yearly and after each cleaning with a high-pressure cleaner
Roller guard

Option: Parts set 760 58

Assembly:
A Clip roller guard support (1) to draw spindle of wheel motors
B Push roller guard (2) over wheel motors
- Note notch for brake lever. Fasten with screws (4) and washers (3)
Hydraulic hoses

Fixed portal axle model
A = Hydraulic hose Petrol engine ......................... 768 47 ............... 768 46
A = Hydraulic hose Diesel engine ......................... 774 25 ............... 774 26
B = Hydraulic hose ............................................. 768 45 ............... 768 48

Adjustable portal axle model
A = Hydraulic hose ............................................. 774 25 ............... 774 26
B = Hydraulic hose ............................................. 768 43 ............... 768 44
Designation of Parts

Fig. J
Engine L100AE

1 Fuel tank cap
2 Fuel tank
3 Fuel tap
4 Air filter
5 Preliminary air filter
6 Starter grip
7 Cooling air grille
8 Decompression lever
9 Exhaust
10 -
11 Engine oil filler opening, dipstick
12 Engine oil drain plug
13 Engine oil filter
14 -
15 Injection pump
16 Fuel drain plug
17 Engine type plate; engine I.D.
18 -
Hydrostatic Tool Carrier Bison

Declare Conformity

EG-Konformitätserklärung
CE Déclaration de conformité
EC Declaration Conformity
EG conformiteitsverklaring

agria-Werke GmbH
Bittelbronner Str. 42
D-74219 Möckmühl/Württ.

erklären, dass das Produkt
déclarons que le produit
erewith declare that the product
verklaren dat het produkt

Geräteträger
Porte-Outils
Tool Carrier
Werktuigdrager

für die Verwendung in
der Land- oder Forstwirtschaft
pour être utilisée dans le domaine forestier,
pour l'entretien des espaces verts et des sols
bestemd voor gebruik in: de bosbouw, gras- en weilandverzorging

mit folgenden EG-Richtlinien übereinstimmt:
est conforme aux spécifications des directives CE suivantes:
conforms to the specifications of the following EC directives:
overeenkomt met de desbetreffende EG-norm:

98/37/EG, 89/336/EWG, 2000/14/EG
98/37/CE, 89/336/CEE, 2000/14/CE
98/37/EC, 89/336/EEC, 2000/14/EC
98/37/EG, 89/336/EG, 2000/14/EG

Angewendete Normen: Standards appliqués: Applied standards:

EN 12733

Möckmühl, 02.01.2002

Siegfried Arndt
Geschäftsführer
Managing Director
Bedrijfisleider

Karl Graf
Entwicklung & Konstruktion
Développement et études
Research and Development
Ontwikkeling en constructie

Hydrostatic Tool Carrier Bison
THE WINNING TEAM

Cutter bar mower  Tool Carrier  Ride-on Brushcutter
Motor hoe  One-Wheel Hoe  Two-wheel tractor
Sweeper  Scarifier  Multi-Purpose Machine

Contact your authorised agria dealer for service and prompt delivery of spare parts