

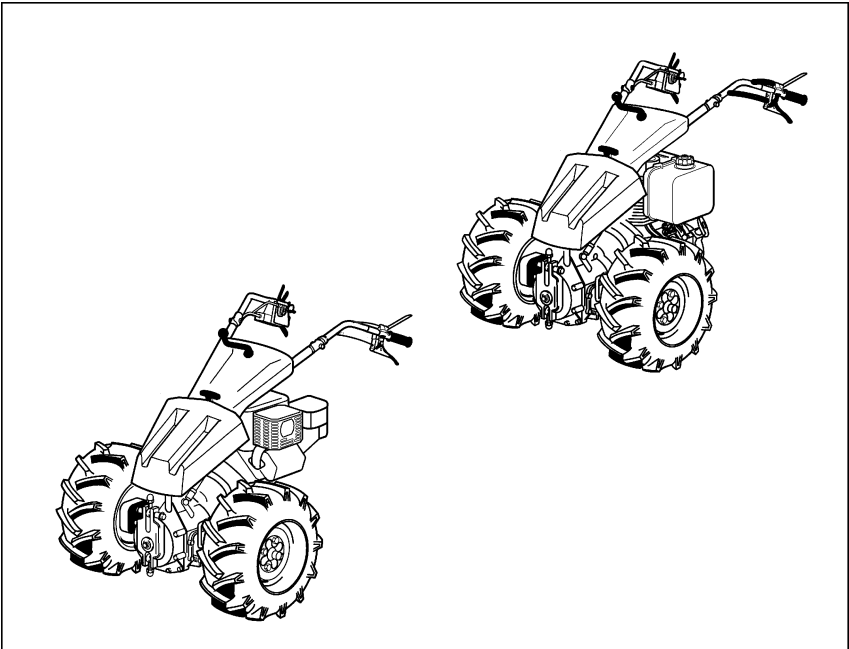
Translation of the original Operating Instructions

Hydrostatic Implement Carrier agria 5900 Bison

Dieselengine: Yanmar

Petrol engine: Briggs & Stratton

5900 142, -152; -431



Before commissioning please read the operating instructions and note the safety and warning information!



Nameplate

Please enter here:

Machine art. no.:
ID/machine no.:
Engine type:
Engine no.:
Date of purchase:

For nameplate see page 4, Fig. A/4

Petrol engine: For engine no. see page 93, fig. C/4

Diesel engine: Engine no. see page 95, Fig. D/17

Please provide this information for each spare parts order, to prevent errors in delivery.

Only use genuine Agria spare parts!

The technical data, illustrations and dimensions provided in these operating instructions are non-binding. No claims may be derived from them. We reserve the right to make improvements without amending this manual.









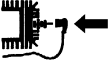





















Scope of delivery

(please check):

- Equipment carrier
- Tool kit
- Original Operating Instructions
- Original engine operating instructions
- Machine identity card
(in envelope on outside of box)

Please complete the machine identity card and return it to Agria-Werke.

Symbols

	Warning symbol, reference to danger point		Brake
	Important information		Parking brake
	Fuel		Closed (locked)
	Choke		Open (unlocked)
	Spark plug connector on		Turn anti-clockwise
	Engine start		Turn clockwise
	Engine stop		Visual inspection
	Engine speed		Attachment point for recovery, lashing, towing
	Engine oil level		Wear protective gloves
	Air filter		Fan cooling
	Battery		Grease lubrication point
	Clutch		Maintenance interval
	Wheel drive	A	Before each start-up
	Transmission oil level	B	After each cleaning (in particular with a high-pressure cleaner)
	Hydraulic steering	J	Annually
	Manual steering		See separate engine operating instructions
	PTO shaft		- agri^a-Service - = contact your agria service centre

Designation of parts

Fig. A

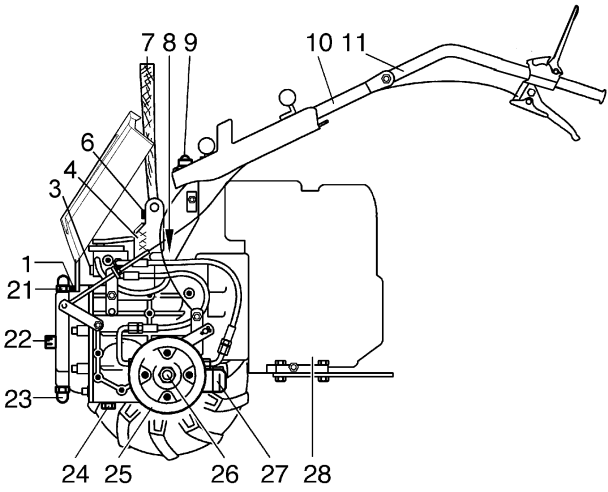


Fig. B

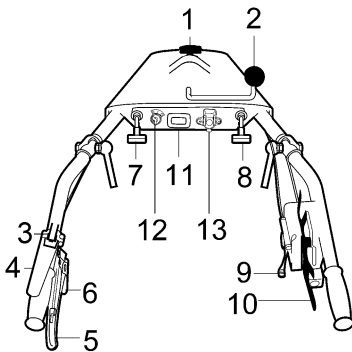


Fig. A

- 1 Transmission/hydraulics oil dipstick and oil-filling hole
- 3 Open circuit (bypass)
- 4 Nameplate (ID/machine no.)
- 6 Transmission vent plug
- 7 Strap
- 8 Bar rollers
- 9 Steering bar centre screw
- 10 Lower bar
- 11 Handlebars
- 21 Eye bolt with cap nut, top
- 22 PTO shaft
- 23 Eye bolt with cap nut, bottom
- 24 Transmission oil drain plug
- 25 Brake drum
- 26 Wheel hub
- 27 Oil filter cartridge
- 28 Engine

Fig. B

- 1 T-handle for handlebar sideways movement
- 2 Cam lever for brake
- 3 Safety lever stop pawl
- 4 Safety lever
- 5 Manual clutch lever
- 6 Ratchet for manual clutch lever
- 7 Shifting cable for PTO shaft
- 8 Shifting cable for steering bar
- 9 Speed control lever
- 10 Control lever for infinitely variable travel speed and forwards/backwards
- 11 Operating hours counter
- 12 Ignition lock (only in E-start model)
- 13 Socket (only in E-start model)

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1 Safety Instructions

Before commissioning, please read the operating instructions and note:

Warning symbol



This symbol has been used throughout these operating instructions to highlight all sections relevant to your safety. Also pass on all safety instructions to other users.

Intended use

The machine meets the current state of the art and complies with the applicable safety regulations at the time of marketing within the context of the approved use. In terms of design it was not possible to eliminate either the foreseeable misuse or the remaining risk without limiting the functionality in accordance with the regulations.

The **agriA 5900 Bison** equipment carrier is a manually guided, self-propelled, single-axle machine which powers add-on devices approved in the Agria sales list (based on intended use).

Any other use is considered to be contrary to the intended purpose. The manufacturer is not liable for any damages resulting from such use and the risk is entirely the user's own.

Intended use also includes observance of the operating, servicing and maintenance conditions stipulated by the manufacturer.

Unauthorized changes to the machine, especially to the safety equipment, may lead to increased levels of danger, which would rule out any manufacturer liability for resulting damage.

When using the machine on public roads – and when being transported – the national road traffic regulations of the relevant country must be complied with (marking, lighting, etc.).

The machine must be operated as directed in the operating instructions. Other operators must given instruction if required.

Any improper use or execution of activities of the machine not described in these instructions constitutes unauthorized misuse and is not within the statutory limits for liability of the manufacturer.

Improper use of the machine can endanger people and may result in damage to the machine or other property of the operator. It can also impair the functionality of the machine.

Reasonable foreseeable misuse

Foreseeable misuse and improper handling include inter alia:

- Removal or manipulation of protective and safety devices
- Use of non-approved add-on devices
- Failure to observe maintenance intervals
- Omitting measurements and tests for the early detection of damage
- Failure to replace wearing parts
- Incorrectly executed maintenance or repair work
- Improper use.
- Working with defective electrical or mechanical devices
- Transport and manoeuvring movements with add-on devices switched on

General safety and accident prevention regulations

Basic rule:

Please observe the relevant accident prevention regulations as well as the generally recognized rules pertaining to

safety, occupational health and traffic laws.

The use of public transportation routes is subject to the Road Traffic Act in its latest version.

Please check the traffic and operating safety of the machine before each commissioning!

The machine may only be used, serviced and repaired by persons who are familiar with it and have been instructed in the hazards involved.

Persons under the age of 16 must not operate the machine!

Only work with good visibility and in good lighting conditions.

Operator clothing must fit tightly. Wear sturdy footwear.

The affixed warning and information signs provide important information for safe operation; please observe them for your own safety!

The engine must be switched off for transport on motor vehicles or trailers outside the working area.

Be careful with rotating tools - keep a safe distance!

Be careful with coasting tools. Before you start working on them, wait until they have come to a complete stop!

There is a risk of crushing and shearing on power-operated parts!

Riding on the implement during operation is not permitted.

Driving behaviour, steering – and possibly – braking capability and tipping behaviour are influenced by attached or suspended devices and loads. Therefore ensure adequate steering and braking capability.

Match the operating speed to the conditions.

Do not adjust the setting of the engine speed governor. A high speed increases the risk of accidents.

Working area and danger zone

The working area is the entire area to be worked on. The user is responsible for third parties in the working area.

Staying in the danger zone of the machine is not permitted (see page 41).

Check the work area before starting and moving. Pay special attention to children and animals.

Foreign objects are to be removed from the area to be worked on prior to starting work. Look out for additional foreign objects while working and remove these promptly.

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

Operation and protective devices

Before you start work

Familiarize yourself with the equipment and operating elements and their functions. Above all, learn how to turn the engine off quickly and safely in an emergency!

Ensure that all protective devices are mounted and properly adjusted!

If no add-on device is attached, the PTO shaft must be switched off and covered with the protective cap.

Suitable shoes must be worn depending on the type of ground surface (vegetation, humidity ...), so that the operator does not slip or fall.

Startup

Do not start the engine in closed rooms, the exhaust fumes contain carbon monoxide, which is very toxic if inhaled!

Before starting the engine, set all operating elements to neutral or idle position.

Do not step in front of the machine or the add-on device to start the engine.

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 bar while working.

Never adjust operator bars while work is in progress – risk of accident!

For all work with the device, especially when turning, the machine operator must maintain the distance from the device shown by the bars.

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

In the event of any clogging to the work equipment or add-on device, the engine must be stopped and the work equipment or add-on device must be cleaned with appropriate tools. There may be tension in the drive train as a result of the blockage, which is why you should resolve the blockage carefully.

In the event of any damage to the machine or the add-on device, shut down the engine immediately and have the damage repaired.

In the event of any malfunctions to the steering, stop and park the machine immediately. Have the fault resolved without delay.

If there is a risk of skidding down on sloping terrain, then the machine must be held by an attendant using a bar or a rope. The attendant must be located above the machine at a safe distance from the work equipment.

Work across the slope along contour lines if possible. If possible, turn the machine in uphill direction.

Finishing work

Never leave the machine unsupervised while the engine is running.

Switch the engine off before leaving the machine. Then close the fuel tap(s) (if present).

Protect the machine against unauthorized use. In ignition key models, remove the ignition key; otherwise, remove the spark plug connector.

Implements

Attach an implement only when engine and implement drive are switched off.

Prior to attaching and starting the implement, read and observe the operating instructions of the implement.

Use adequate tools and wear gloves to replace implements and parts thereof.

Put the supporting equipment to the proper position and ensure stability when you attach or remove an implement.

Secure machine and implements against rolling away (parking brake - if installed, wheel chocks).

There is a risk of injuries when you attach an implement. Take special care.

Attach an implement in accordance with the regulations and only at the specified fixtures.

Always switch off the working tools during a transport ride or when you drive to adjacent working areas.

Secure machine and implement against unauthorized use and rolling away when you leave it. If necessary, install transport or safety equipment, and put it in protective position.

Mowing equipment

When handled improperly, the sharp edges of the mower knives can cause significant injuries. Always wear protective gloves when you work on the knives.

Ensure that the screwing movements are away from the cutting edges when you replace a knife and loosen or secure the knife driver.

Wear protective goggles and protective gloves when you grind the knives.

Ballast

Always attach ballast properly at the attachment points provided.

Maintenance and cleaning

Only trained specialist personnel, who can carry out professional maintenance and repair, may carry out this work.

Do not carry out maintenance and cleaning with the engine running.

When working on the engine always remove the ignition key (if present) and also the spark plug connector in the case of petrol engines.

Protective devices and tools that are subject to wear and tear must be regularly inspected and replaced if necessary!

Damaged cutting tools must be replaced!

When replacing cutting tools use suitable tools and protective gloves.

Do not carry out repair work such as welding, grinding, drilling, etc. on structural, safety-relevant parts (such as steering bar, tractor hitches, etc.)!

Disconnect the battery before commencing welding work.

During welding work, make sure that the electrical and electronic components of the machines are not influenced.

Keep the machine and attachments clean, to avoid the risk of fire.

Regularly check nuts and bolts for tightness and retighten if necessary.

After maintenance and cleaning, ensure that the protective devices are re-installed and properly adjusted!

Only use genuine Agria spare parts.

Carry out a functional and safety test after completing the work.

Storage

Never store the machine in rooms with open heating.

Do not park the machine in closed rooms with fuel left in the tank. Fuel vapours are hazardous.

Engine, fuel and oil

Do not run the engine in a closed room. There is a high risk of poisoning! Therefore always replace damaged exhaust parts.

Handle hot engine components with caution!

The silencer and other engine parts get very hot when the engine is running and are still hot directly after the engine is switched off. Keep a sufficient distance from hot surfaces and keep children away from the running engine.

Caution is needed when handling fuel. There is an increased risk of fire. Never handle fuel near open flames, ignitable sparks or hot engine parts.

Do not refuel in closed rooms. No smoking when refuelling!

Refuel only with the engine switched off and cooled down.

Do not spill fuel. Use a suitable filling device.

If you spilled fuel, push the machine away from the spilled liquid before you start the engine.

Make sure fuel is of the specified quality.

Store fuel in approved containers only.

Drain fuel only outdoors and into suitable containers.

In the interests of safety, replace the fuel tank cap and other tank caps if damaged.

Store anti-corrosion agents and stabilizer fluids out of the reach of children. If sickness and vomiting occur, consult a doctor immediately. In the event of con-

tact with the eyes rinse immediately with plenty of water. Avoid inhaling vapours.

Read and observe enclosed instructions! Before disposing of opened and seemingly empty pressurized tins make sure they are completely empty. Empty them in a well-ventilated area safe from sparks and flames. Dispose of tins as hazardous waste if necessary.

When working with oil, fuel and grease wear suitable protective gloves and use skin protection agents if necessary.

Be careful when draining hot oil, danger of burns.

Make sure the oil used is of the specified quality. Store in approved containers only.

Dispose of oil, fuel, grease and filters separately and properly.

Hydraulic system

The hydraulic system is at high pressure.

Ensure that the hydraulic hoses are connected correctly when you connect hydraulic components.



High-pressurized hydraulic oil can penetrate your skin and cause severe injuries. Danger to life!

See a doctor immediately when you are hurt. Risk of infection!

Prior to working on the hydraulic system depressurize it and switch off the engine (specialized workshop).

To avoid injuries, use suitable devices when you try to locate leaks (specialized workshop).

Check hydraulic hose lines at regular intervals for leaks and ageing. Replace them as necessary. Always replace them after the specified intervals at the latest.

Only use genuine Agria hydraulic hoses.

Tyres and tyre pressure

When you work on the wheels ensure that the machine is parked securely and is secured against rolling away.

Only skilled specialists are allowed to repair tyres, using suitable installation tools.

Check the tyre pressure at regular intervals. There is a risk of explosion from excessive tyre pressure.

Observe the required tyre pressure when you use ballast.

During each service work, tighten the drive wheel bolts and nuts and check the tightening torque.

Electrical system and battery

Persons with cardiac pacemakers are not allowed to touch the energized parts of the ignition system as long as the engine is running.

When working on the electrical system always disconnect the battery (if installed) (negative terminal).

Ensure that the battery is connected correctly - first the positive terminal and then the negative terminal! Reverse the sequence when disconnecting!

Be careful with battery gases - risk of explosion!

Avoid sparks and naked flames in the vicinity of batteries.

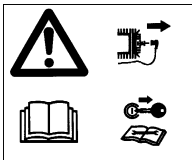
Remove the plastic cover (if installed) before you recharge a battery. This avoids the accumulation of highly explosive gases!

Caution when handling battery acid - caustic!

Only use specified fuses. If the rating of the fuses used is too high, the electrical system may be irreparably damaged - danger of fire!

Always cover the positive terminal with the specified cover or terminal cap.

Description of the warning, prohibition and mandatory signs



Prior to starting up the machine, read and observe the operating instructions and safety instructions.

Prior to starting cleaning, maintenance or repair work, switch off the engine and pull the sparking-plug connector. Remove the ignition key if there is one.



Caution - risk of fire

- Refuel only with the engine switched off and cooled down.
- No naked flame.



The engine exhausts contain poisonous gas

- Keep your distance.

Never run the engine in a closed room.



Handle hot engine components with caution!

Keep sufficient distance to hot surfaces.



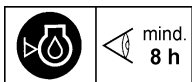
Keep a safe distance to the mower knives when the engine is running!



When working with the machine wear individual hearing protection.



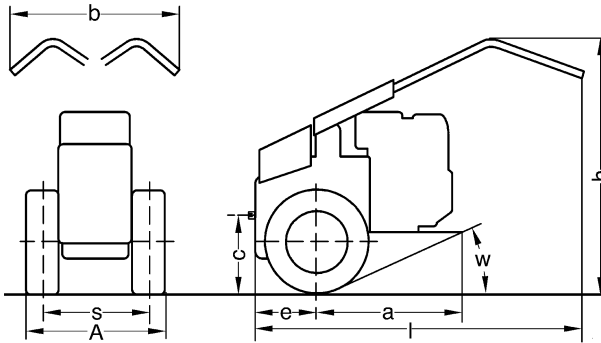
Wear sturdy footwear.




Check the engine oil level at least every 8 operating hours.

2 Technical Data

Machine



Machine dimensions: a_1 ; e_1 = wheel axle offset to the front

	(mm)							
	a	a_1	b	c	e	e_1	h	l
5.00-10 AS	550	663	760	270	270	167	ca. 990	1350
20x8.00-10								
21x11.00-8								
5.00-12 AS				290			ca. 1010	
23x8.50-12								
23x10.50-12								

Clutch: Dry single-disc clutch

Gearbox: Hydrostat

Travel speeds:..... Forward 0 - 7 km/h
Reverse 0 – 3.6 km/h

PTO shaft:..... 805 rpm
independent of gear at an engine speed of 3600 rpm
Sense of rotation: Clockwise, looking on the PTO shaft. The same for forward and reverse drive.

Steering: Fully hydraulic bar steering
Steering bar lockable with shutdown of the hydraulic system for hand bar steering

Steering bar:..... Height adjustment
Side adjustment without tools

Oil for gearbox and hydrostat: Optionally:

Multigrade oil: SAE 10W-40 API-SE/SF (or higher)

Bio-grade hydraulic oil: Synthetic Ester Base: HEES
Viscosity to ISO: VG 46
Cleanliness 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: approximately 7.0 l

Oil change:..... approximately 5.0 l

Oil filter:..... Screwed cartridge AW 14

Weights:

Empty weight (with full fuel tank, without portal axle):		
	without driving wheels	with 23x8.50-12
B&S electric starter	181 kg	208 kg
Yanmar rev. start	191 kg	218 kg
Yanmar electric starter	203 kg	230 kg
Empty weight (with full fuel tank, with portal axle 5939 011):		
	without driving wheels	with 23x8.50-12
B&S electric starter	201 kg	228 kg
Yanmar cable-pull starter	207 kg	234 kg
Yanmar electric starter	219 kg	246 kg

Possible tyres:

- 5990 611 23x8.50-12 field wide tyres
- 0190 112 5.00-10 field profile
- 3490 411 5.00-12 field profile
- 3490 511 20x 8.00-10 lawn profile
- 3490 611 21x11.00-8 Terra-Grip

Terra-Grip tyres require wheel track enlargement:

- 5519 031 2 x 9 cm
- 5990 711 23x10.50-12 field wide tyres

Tyre pressure at:

- 5.00-10 1.5 bars
- 5.00-12 1.5 bars
- 21x11.00-8 0.8 bars
- 20x8.00-10 0.8 bars
- 23x8.50-12 1.3 bars
- 23x10.50-12 1.3 bars

- 5917 011 grab wheels 10 in fir 5.00-10 AS
- 5917 021 grab wheels 12 in for 5.00-12; 23x8.50-12; 23x10.50-12
- 5913 011 sprocket drums 12 in

Driving wheel attachment and utilization see page 30

Wheel combinations, track dimensions

Version with portal axle
with axle adjustment
and with Diesel engine
always + 40 mm.

30 = Art. 2519 011
60 = Art. 2416 011
90 = Art. 5519 031
220 = Art. 5616 511
220A = Art. 5519 011
V = Art. 5916 211
G (10") = Art. 5917 011
G (12") = Art. 5917 021

B	Track	30						60						90											
		A	S	i	A	S	i	A	S	i	A	S	i	A	S	i									
1	23x8.50-12 AS	830	615	400	1050	835	620	890	675	460	1110	895	680	950	735	520	1170	955	740	1010	795	580	1230	1015	800
2	23x10.50-12 AS	960	685	410	1040	765	490	1020	745	470	1100	825	650	1080	805	630	1160	885	610	1140	865	690	1220	945	670
3	5.00-12 AS	790	635	480	970	815	680	850	695	540	1030	875	720	910	755	600	1090	935	780	970	815	660	1150	995	840
4	5.00-10 AS	780	650	520	930	800	670	840	710	580	990	860	730	900	770	640	1050	920	790	960	830	700	1110	980	850
5	20x8.00-10 R	870	680	490	960	770	580	930	740	550	1020	830	640	990	800	610	1080	890	700	1050	860	670	1140	950	760
6	21x11.00-8 Terra																								

B	Track	60		220		220A		+B1		+B2		+B3		+B4		+B4		+B1		+B2		+B3		+B4		+B5		+G			
		A	S	i	A	i	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
1	23x8.50-12 AS			1500	620	1500	620	1260		1140		1480		1480		1360		1360		1314	12	1534	12	1314	12	1534	12	1314	12	1534	12
2	23x10.50-12 AS			1490	490	1490	490			1510	1270			1590	1350	1350		1350		1444	12	1524	12	1444	12	1524	12	1444	12	1524	12
3	5.00-12 AS			1420	660	1420	660			1100				1280		1280		1280		1274	12	1454	12	1274	12	1454	12	1274	12	1454	12
4	5.00-10 AS			1280	670	1280	670													1264	10	1414	10	1264	10	1414	10	1264	10	1414	10
5	20x8.00-10 R			1410	660	1410	660																								
6	21x11.00-8 Terra																														

Petrol engine

Engine:	Briggs & Stratton
Type:	OHV 13 hp 25T2 37 0142
Design:	Forced air-cooled 1-cylinder, four-stroke engine (petrol) overhead valves
Bore x stroke:	90 x 66 mm
Displacement:	420 cc
Power:	9.7 kW (13 hp) at 3600 rpm
Torque:	28.5 Nm at 2600 rpm
Spark plug:	Champion N9YC
	Electrode gap: 0.76 mm
Ignition:	Electronic magneto ignition, contactless, fixed ignition point, radio-interference-suppressed to VDE 0879
Valve play: (with cold engine)	Inlet and outlet 0.13 ... 0.18 mm
Starting device:	Electric starter
Generator:	12 V 16 A
Battery:	12 V 18 Ah
	Blade fuse 15 A
Fuel:	Commercially available car petrol, octane rating see engine operating instructions
Fuel consumption:	312 g/kWh
Capacity of the fuel tank:	approximately 6.6 l
Air filter:	Dry filter cartridge with foam prefilter
Carburettor:	Horizontal float carburettor
Nominal speed:	3600 rpm
Upper no-load speed:	3800 rpm
Idle speed:	1850
Engine oil:	Multigrade oil, filling volume approximately 1.1 l at ambient temperature -15 ... +45 °C: SAE 10W-40 API-SF, SG or higher at ambient temperature -25 ... +15 °C: SAE 5W-20 API-SF, SG or higher
Noise values:	See page 21
Vibrational acceleration value:	See page 21
Slope capability:	
The engine is suitable for use on slopes (with "max." engine oil level = upper fill- ing mark):	Continuous operation up to inclination of 45° (100 %)

Diesel engine

Engine:	Yanmar
Type:	L100V
Design:	Fan-air-cooled 1-cylinder four-stroke diesel engine
Bore x stroke:	86 x 75 mm
Displacement:	435 cc
Power:	6,8 kW (9,2 HP) at 3600 rpm
Max. torque:	21 Nm at 3000 rpm
Injection pressure:	
Valve play: (with cold engine).....	Inlet and outlet 0.15 ± 0.02 mm
Starting device:	Cable-pull starter or electric starter depends on version
Battery:	12 V 15 Ah Glass fuse 20 A (30x6.5 mm)
Fuel:	Commercially available diesel fuel. cetane rating see engine operating instructions
Fuel consumption:	280 g/kWh
Capacity of the fuel tank:	Approximately 4.7 l
Fuel filter:	
Coarse filter screen.....	in the filler neck
Fine filter screen.....	installed in the fuel tank outlet
Air filter:	Dry filter cartridge with foam prefilter and cyclone prefilter
Nominal speed:	3600 rpm
Upper no-load speed:	3800 rpm
Idle speed:	1400 rpm
Lubrication:	Pressure lubrication, full-flow oil filter
Engine oil:	Filling volume approximately 1.6 l multigrade oil at ambient temperature -15 ... +45 °C: SAE 10W-40 API-CD or higher at ambient temperature -25 ... +15 °C: SAE 5W-20 API-CD or higher
Noise:	See page 21
Vibrational acceleration value:	See page 21
Slope capability:	
The engine is suitable for use on slopes (with "max." engine oil level = upper filling mark):	Continuous operation up to inclination of 20° (37 %)

Noise and vibrational acceleration values

	Engine version		
		B&S 13 hp	Diesel L100
Noise values:			
Sound-pressure level to EN 12733 Appendix B, at the ear of the operator with:			
Dual blade mower unit	$L_{pA} =$	91.8 dB	95.1 dB
Sickle chopper	$L_{pA} =$	89.7 dB	-
Flail tiller	$L_{pA} =$	91.2 dB	95.5 dB
Safety tiller	$L_{pA} =$	91.0 dB	95.8 dB
without implement	$L_{pA} =$	89.6 dB	94.3 dB
Sound-power level to 2000/14/EC, Appendix III, Part B, Section 32 lawn mower, with:			
Dual blade mower unit	$L_{WA} =$	105.4 dB	106.0 dB
Sickle chopper	$L_{WA} =$	105.2 dB	-
Flail tiller	$L_{WA} =$	104.0 dB	106.3 dB
Safety tiller	$L_{WA} =$	104.5 dB	107.0 dB
without implement	$L_{WA} =$	99.1 dB	104.6 dB
Vibration acceleration values:			
To directive 2002/44/EC and EN 12733 at the handlebar handle with:			
Dual blade mower unit	$a_{hw} =$	5.60 m/s ²	7.05 m/s ²
Sickle chopper	$a_{hw} =$	-	< 2.5 m/s ²
Safety tiller	$a_{hw} =$	-	3.41 m/s ²
Sickle chopper, safety tiller	$a_{hw} =$	< 2.5 m/s ²	-

3 Devices and Operating Elements

The device carrier **agri^a 5900 Bison** is a base motor unit that is always used together with an implement. It is thus suitable for use in municipalities, agriculture and forestry, and in winter service.

When the machine is used on public roads – also during transport movements, for example – ensure that the national road traffic regulations are observed (marking, lighting, etc.).

Engine

The **four-stroke petrol engine** is to be used with standard petrol (see chapter Startup, page 37).

The **four-stroke diesel engine** is to be used with standard diesel fuel (see chapter Startup, page 39).

During the first 20 hours of operation (running-in period) do not use the engine at full power.

The rule of never using the engine at a higher speed than necessary for the work in hand applies even after the **running-in period**.



High speeds are detrimental to all engines and significantly reduce their service life. This especially applies for no-load operation! Over-revving the engine (letting it roar) can result in immediate damage.

The implements released in the Agrida sales list are available.

Cooling

The engine is cooled with an air blower. Keep the fan grille at the cable-pull starter and the cooling fins of the cylinder free of dirt and aspirated plant debris.

Idling

Always ensure that the engine idle speed is adjusted correctly. With speed regulating lever at idling, the engine should continue running smoothly.

- **agri^a-Service** -

Air filter

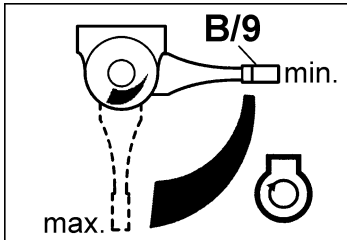
The air filter cleans the aspirated air. A contaminated filter reduces the engine output.

Ignition system

The petrol engine is equipped with a contactless electronic ignition system. We recommend that any necessary inspections are carried out by a skilled person only.

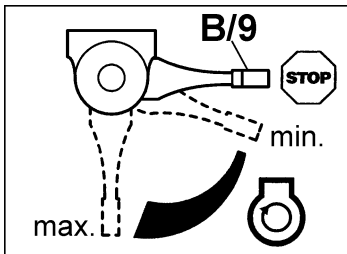
Speed regulating lever

Version Petrol engine



Use the speed regulating lever (B/9) on the steering bar to continuously adjust the engine speed between min = IDLE and max = FULL THROTTLE as required.

Version Diesel engine

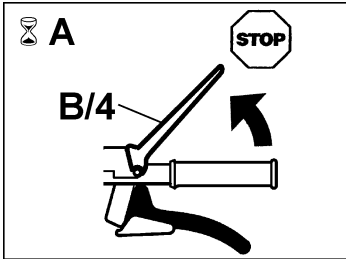


Use the speed regulating lever (B/9) at the steering bar for continuous speed control from min. = IDLING to max. = FULL THROTTLE, and for actuating the engine stop switch.



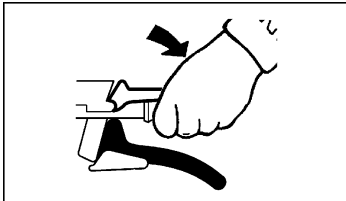
In a dangerous situation, set the engine stop switch to "STOPP" to switch off the engine.

Safety circuit



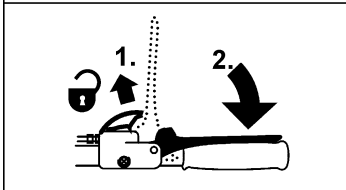
Stop position:

The clutch is disengaged when the safety lever (B/4) is released. This disengages traction drive and PTO shaft. The engine continues running!



Operating position:

Press down the safety lever (B/4) during work.



- The safety circuit must be operated in two steps:

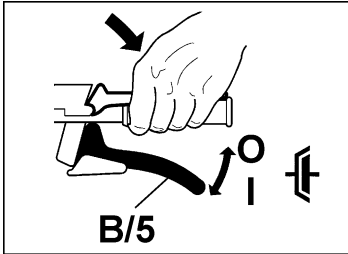
- 1) Pull pawl (unlatch)
- 2) Press the safety lever down.

⚠ With activated wheel drive / tilling drive, the wheels / tilling tools start rotating immediately. Consequently, press down the safety lever only when the drives are at O position and/or are disengaged at the manual clutch lever.

⚠ Never tamper with the safety circuit. Never tie up the safety lever.

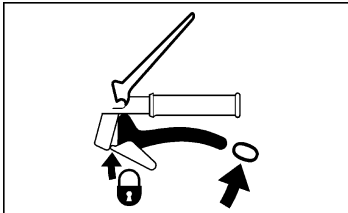
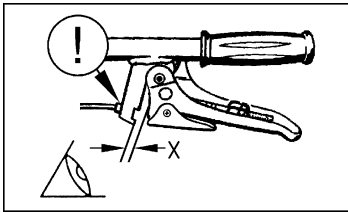
i The safety lever is used as an **emergency off switch**: Release the lever in a dangerous situation. It swings automatically to "STOP" position!

Clutch



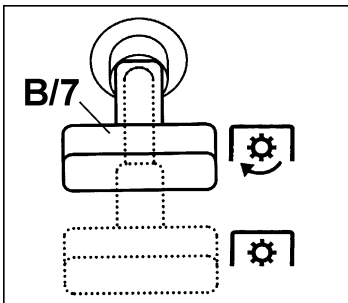
The clutch is operated by the safety lever and the manual clutch lever (B/5).

- The machine is disengaged when the manual clutch lever is pulled in position "O". This means that the engine no longer drives the machine.
- The machine is engaged when the safety lever is pressed and the manual clutch lever is released to position "I". This means that the engine drives the machine.
- Ensure that the coupling is properly adjusted so that it does not slip during operation. See page 68.



i Do not park the machine for too long a time with released safety lever or disengaged clutch while **the engine is running**. This can damage the clutch release bearing.

PTO shaft shifting



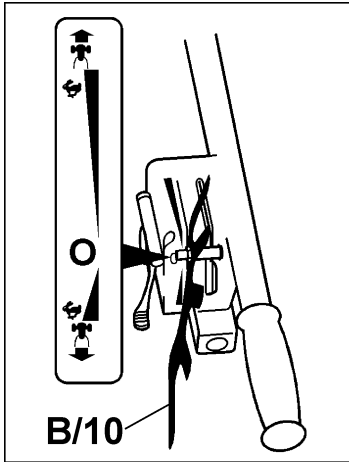
The gear-independent PTO shaft (A/22) is switched on with the shifting cable (B/7).

The PTO shaft drive is switched off when the shifting cable is pulled back. It is switched on when the cable is pushed forward.

Gearbox

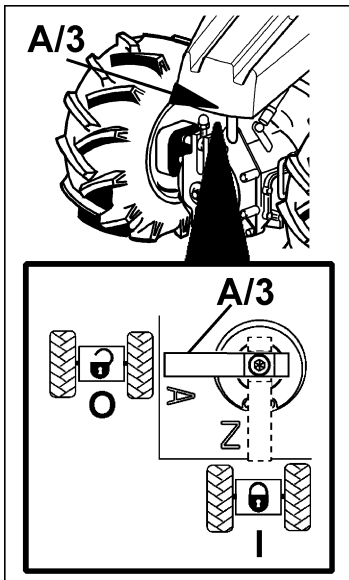
The **agriA 5900 Bison** machine is equipped with a hydrostatic traction drive.

Drive control



- Use your index finger or thumb to adjust or change the driving speed continuously forward / backward at the drive lever (B/10).
- The O position is reached when the mark on the drive lever is aligned with the "O" in the pictogram, and hits the spring notch.
- Swing the drive lever forward to increase the driving speed continuously. Swing the drive lever back downwards to reverse accordingly.

Pushing operation

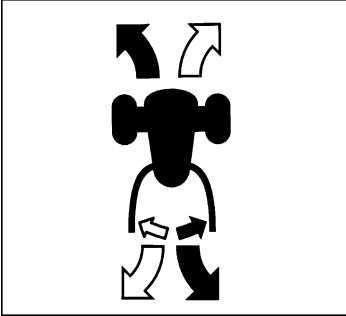


- Pushing the machine without engine propulsion requires the idling loop to be opened (position "O"). **Caution: There is no hydraulic braking effect in idling position.**
- The idling loop (A/3) sits at the front right underneath the hood. Rotate the shift lever to switch it.
- Hydraulic drive is resumed when the idling loop is closed (position "I").
- Check the switching position before you start work!

i Pushing operation / towing up to max. 4 km/h.

Tow-start is not permitted!

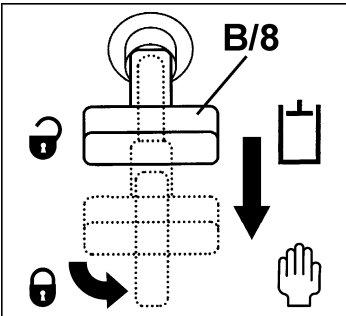
Hydraulic steering



Hydraulic steering reduces the speed of the inside wheel down to stop, the outside wheel maintains its speed.

Steering

- The steering movement at the steering bar activates the hydraulic steering when the engine is running.
- Steers only when the machine is moving, not when it is stopped.
- Hydraulic steering is faster as you increase the steering movement.



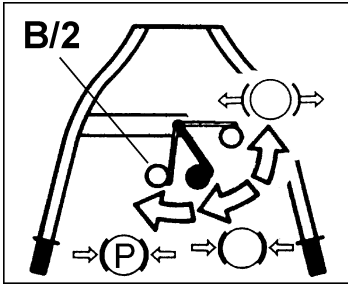
Disabling hydraulic steering

Pull and turn the handle of the shifting cable (B/8) to lock hydraulic steering. Steering the machine will then be heavy.

Hydraulic steering is activated when you release the lock.

Utilization: Basically the same effect as a **differential lock**.

Service and parking brake



The combined service and parking brake is used for braking and parking the machine on hilly grounds.

Service brake

- Swing the eccentric lever (B/2) up and to the rear - both driving wheels are braked. The eccentric lever swings back to its home position when you release it - the brake is released.

Parking brake

- Swing the eccentric lever (B/2) up and to the rear beyond the dead point. The eccentric lever stops automatically - both driving wheels are blocked.

To open the parking brake, swing the eccentric lever back to the initial position - the brake is released.



Never drive and brake at the same time.

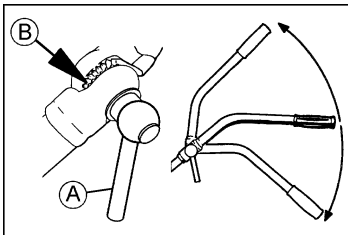
Before you start moving the machine, ensure that the brake is released. Failure to do so can cause damage due to overpressure (failure of wheel motor).

Steering bar



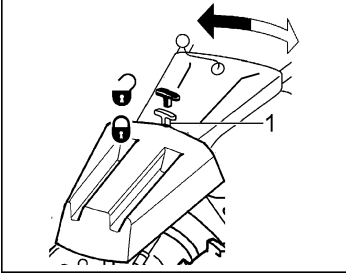
Adjust the steering bar only when traction drive and PTO drive are switched off - risk of accident!

Steering bar height adjustment



- Press the clamping levers (A) at both sides until the notches (B) are released.
- Move the left and the right steering bar to the required height and allow it to engage in the corresponding notch.
- Tighten the clamping levers (A).

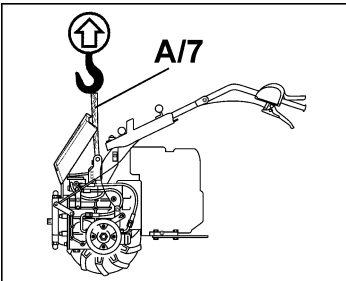
Lateral steering bar adjustment



From its normal position (centre position), you can swing the steering bar through approximately 30° to the left / right.

- Pull up and hold the T-handle (B/1). Swing the steering bar to the left or right to the required position.
- Release the T-handle and move the steering bar slightly to the left or right until the locking pin engages.

Loading strap



The loading strap (A/7) is provided to load the machine and to attach the retaining rope when you work on a slope. Open the hood.

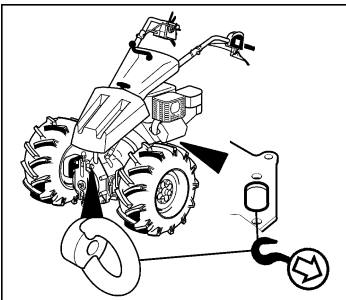
Check the loading strap for damage. Replace it if necessary!


Do not use sharp-edged load carrying equipment (e.g. sharp-edged hooks, eyes etc.)!



Never walk or stand under suspended loads. Danger to life!

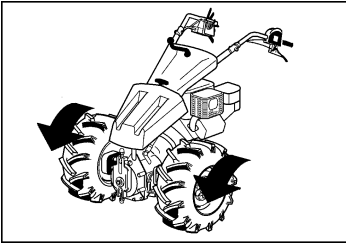
Attachment points



Always use the lashing points  for towing, recovery, securing for safe transport and loading the machine. (= eyelets at connection flange and engine protection plate).

Lashing to other points can cause damage.

Driving wheels



Install the wheels such that the tip of the tyre pattern points in driving direction (seen from above). This provides full traction power. Install the spring washers such that their spherical side points towards the counterbore in the disc wheel (see Fig. Wheel mounting bolts on page 31).

The wheels can be mounted inward or outward (wide / narrow track), so that the required wheel track can be obtained (see track width table on page 18).

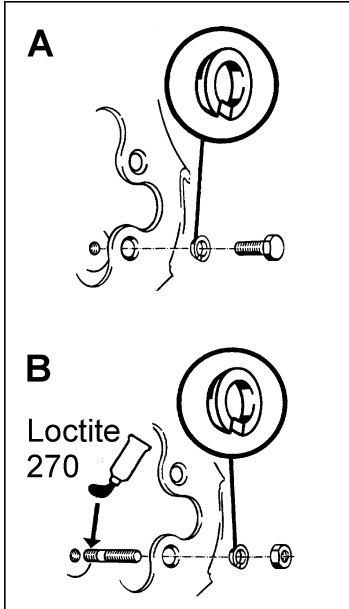
	Size	Tyre pattern	Utilization	Part no.
	5.00-10	Field profile	General maintenance work	0190 112
	5.00-12	Field profile	General care work	3490 411
	20x8.00-10	Lawn profile	Lawn care	3490 511
	21x11.00-8	Terra-Grip	General care work	3490 611
	23x8.50-12	Field tyres wide	General care work	5990 611
	23x10.50-12	Field tyres wide	General care work	5990 711

Driving wheels for hillside positions



For work at **extreme hillside positions** we recommend twin tyres or grab wheels.

Wheel mounting bolts



Version **A** wheel bolt with spring washer

Version **B** stud bolt with spring washer and wheel nut

- Firmly screw the short thread of the stud bolt into the wheel hub. If possible, use **LOCTITE 270** (or a similar product) to secure it.
- Install the spring washer such that its spherical side (centring) points towards the disc wheel!

On a new machine and after each wheel change, tighten the wheel bolts or wheel nuts after the first 2 operating hours with **100 Nm**, and always during maintenance work.



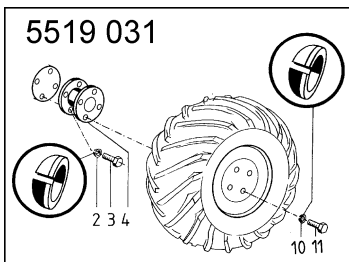
To avoid damage to the brake system:

- **ALWAYS** use spring washers with spherical side.
- Use **ONLY** original length of the bolts.

Snow chains

Observe the manufacturer's instructions when you use snow chains. Ensure that there is enough clearance at the machine components.

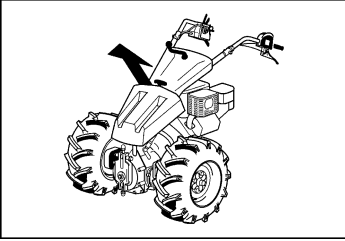
Wheel track enlargement



- Part 5519 031 to attach the Terra driving wheels 21x11.00-8 TG.

- 2 Spring washer (spherical)
- 3 Wheel bolt
- 4 Wheel track enlargement 5519 031
- 10 Spring washer (spherical)
- 11 Wheel bolt

Hood and tool set

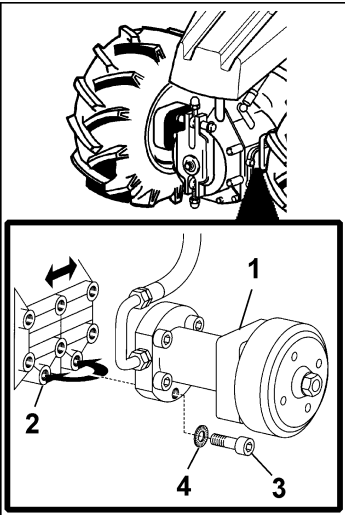


Open hood

Fold hood forward.

The tool set is stored in a recess underneath the hood.

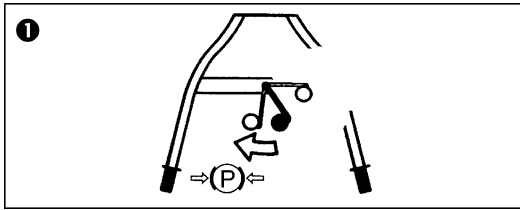
Gantry axle adjustment



To improve the weight distribution when heavy implements are attached, you can relocate the axle to the front.

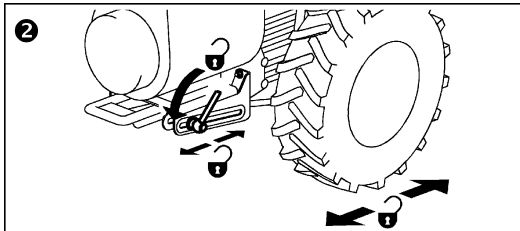
- To do this, relocate the complete wheel motors (1). Install them as shown in the front flange pattern (2).
- Clean the flange pattern first.
- Never release any hydraulic lines or Bowden cables!
- Tighten the fastening screws (3) with **45 Nm**.

Continuous gantry axle adjustment (option part 5939 011).

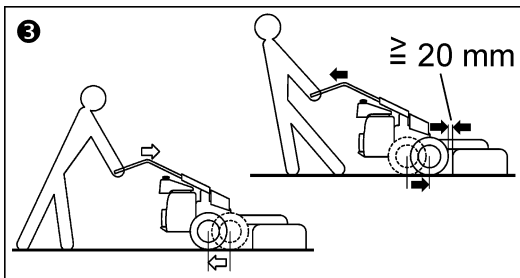


Adjustment to the front / rear for weight compensation to the implement

1 Pull the parking brake (B/2)

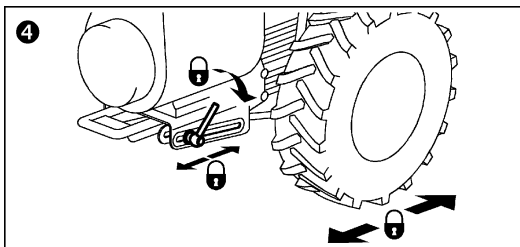


2 Release the handle

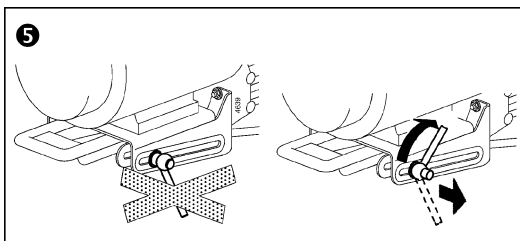


3 Hold the steering bar to pull the machine rearwards or to push it forward

i At least 20 mm clearance between driving wheels and implement!



4 Tighten the handle



5 The handle must not point downward

- While you are turning the handle upwards, pull it axially from the outside until it is disengaged

Installing and removing implements

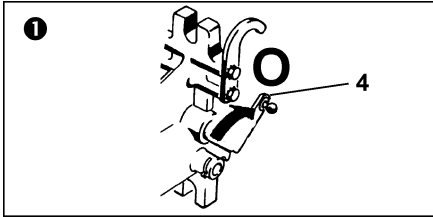


Ensure that the engine is switched off!

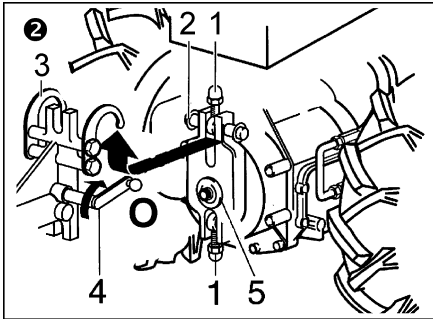
Prior to attaching and starting the implement, read and observe the operating instructions of the implement.

Attachment:

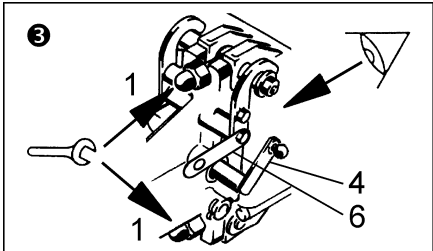
- The contact surfaces of machine and implement must be clean.



- ❶ In a PTO-driven unit: Set the shift lever (4) at the implement to "O".



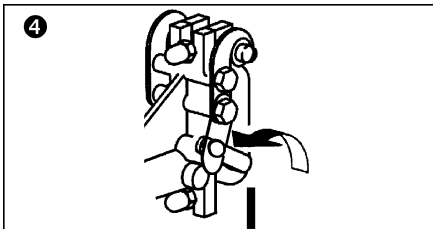
- ❷ Insert the machine with the arrestor pins (2) from below into the arrestor hooks (3) of the implement.



- ❸ Fold both eyebolts (1) over the connecting flange.

Attention:

- Is the flange centring (5) correct?
- Are the flange surface plane on each other?
- Tighten the cap nuts uniformly.



- ❹ In a PTO-driven unit: Set the shift lever (4) at the implement to "I", allow the strip spring shift lock (6) to engage (if installed) - shifting is at the base machine.

Removal in reverse sequence.

Battery

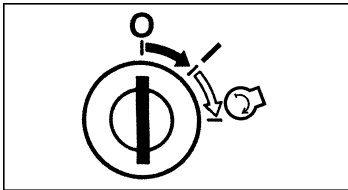


The battery of a new machine is not dry pre-charged. It must be charged fully after it has been filled with battery acid (charging current = 1/10 of the battery capacity).

See leaflet of the battery manufacturer!

See page 61.

Ignition lock



The ignition lock (B/12) for the electrical starter has 3 switching positions:

O = Charging current switched off,
the key can be removed

I = Operating position



= Engine start position

Ignition key returns automatically
to operating position "I"

Warning signal

The warning signal sounds when the ignition key is turned to position "I" while the engine is stopped. The signal stops as soon as the engine is running and the generator charges the battery.

The warning signal stops also when you return the ignition key to position "O", or when you remove the key.



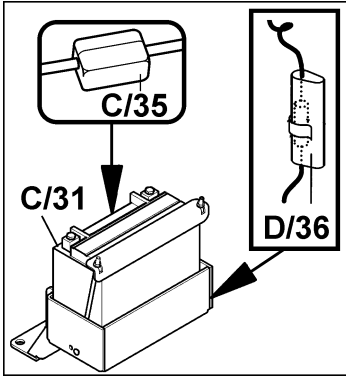
The battery is discharged when the ignition is switched on for a longer time without the engine running.

Battery charging from the generator is not OK when the warning signal sounds while the engine is running. - **agriA-Service** -



Do not turn the ignition switch to "O" position while the engine is running. This can cause a defect in the voltage regulator!

Fuse



A fuse between voltage regulator and electric starter protects voltage regulator and generator against short-circuit from the outside:

(C/35) for petrol engine,

(D/36) for diesel engine.

Open the fuse holder to replace a defective fuse.

- Ensure that you have a spare fuse on stock.

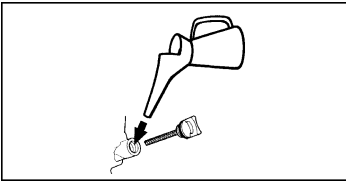
4 Commissioning and Operation

Commissioning

Petrol engine

Please note that the engine's service life and operational reliability are heavily dependent on the running-in time. Always allow a cold engine to warm up for a few minutes first of all and do not run up to full power immediately.

During the first **20** hours of operation (running-in period) do not use the engine at full power.

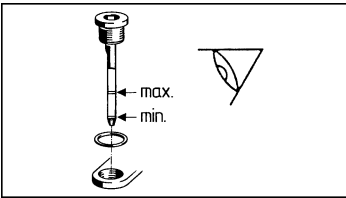


Attention: The engine is not filled up with engine oil for transport reasons!

Fill the engine with engine oil before first commissioning, but do not go beyond the maximum level!



Engine operating instructions



Prior to startup, check the **gearbox oil level**. See page 63.

This engine runs smoothly with conventional **unleaded regular and premium petrol (also E10)** as well as **Super plus**.

Do not add oil to petrol.

Only use fresh, clean fuel (no older than 3 months) and only use approved fuel cans available from specialist dealers. Do not use rusted metal cans or plastic containers which are not fuel-resistant.



Always remember good filter care and clean fuel. Use only branded petrol.



Caution is needed when handling fuel.



Petrol is highly flammable and explosive under certain conditions!



Do not refuel in closed rooms.



Refuel only with the engine switched off and cooled down.

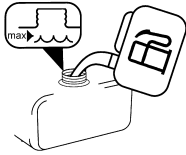


Never refuel near naked flames, ignitable sparks or hot engine parts.



No smoking when refuelling!

Do not spill fuel. Use a suitable filling device.



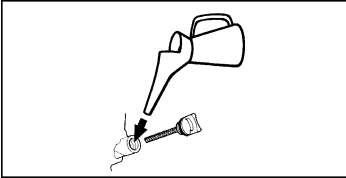
Do not fill the fuel tank until it overflows. Leave approximately 5 mm space to allow the fuel to expand.

If you spilled fuel, push the machine away from the spilled liquid before you start the engine.

Diesel engine

Please note that the engine's service life and operational reliability are heavily dependent on the running-in time. Always allow a cold engine to warm up for a few minutes first of all and do not run up to full power immediately.

During the first **20** hours of operation (running-in period) do not use the engine at full power.

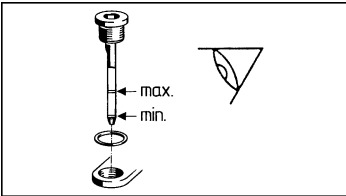


Attention: The engine is not filled up with engine oil for transport reasons!

Fill the engine with engine oil before first commissioning, but do not go beyond the maximum level!



Engine operating instructions



Prior to startup, check the **gearbox oil level**. See page 63.

This engine can be operated with commercial **diesel fuel**. See engine operating instructions.

Do not use diesel oil substitutes. They can damage the fuel system. The fuel must be free of water and dirt.

Use only approved fuel containers from specialized dealers. Do not use rusted metal cans or plastic containers which are not fuel-resistant.

Winter operation:

To ensure the operational reliability of the diesel engine during the cold season, ensure that you use "winter fuel" that is sold at the petrol stations during this time of year.



Always remember good filter care and clean fuel. Use only brand-name diesel, and use winter diesel in time



Be careful when you handle fuel.



Do not refuel in closed rooms.



Refuel only with the engine switched off and cooled down.

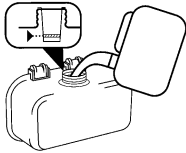


Never refuel near naked flames, ignitable sparks or hot engine parts.



No smoking when refuelling!

Do not spill fuel. Use a suitable filling device.



Diesel

Do not fill the fuel tank until it overflows. Leave approximately 5 mm space to allow the fuel to expand.

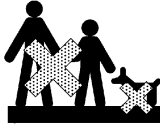
If you spilled fuel, push the machine away from the spilled liquid before you start the engine.

Danger zone

Observe the operating instructions of the implements and the safety instructions.



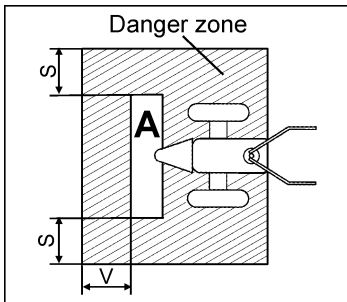
Staying in the danger zone of the machine during startup and operation is not permitted.



If the operator notices that people or animals are in the working area, the machine must be switched off immediately and not restarted until this area is clear.

The user is responsible for third parties in the working area (entire area to be worked on).










The hazard zone differs with the installed implement (A) (for work and transport drive):




	V	S
Mower head	2 m	1 m
Rotary tiller	*25 m	*25 m
Flail tiller	*20 m	3 m
Safety tiller	*10 m	2 m
Belt rake	2 m	2 m
Baler	3 m	2 m
Sweeping machine	3 m	3 m
Snowplough	2 m	1 m
Reverse tiller	2 m	2 m
Rotary harrow	2 m	2 m
Path maintenance unit	2 m	2 m
Wild plant brush	3 m	3 m


Transport ride with * only 3 m

Before starting the engine

	<p>Actuate the parking brake (B/2)</p>
	<p>Sufficient fuel in the tank?</p>
	<p>Air filter clean? → </p>
	<p>Check engine oil level →  or page 54 and/or page 57</p>
	<p>Checking the gearbox oil level See page 63</p>
	<p>Checking all nuts and bolts for tightness</p>
	<p>Plug on the sparking-plug connector</p>

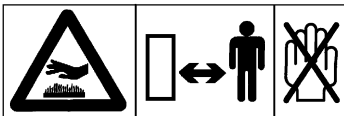
 **Only put the machine into operation after all protective devices have been mounted, are functional and in protection position.**




 **Never start or allow the engine to run in enclosed rooms or rooms that are not ventilated.**

It is essential to ensure for sufficient ventilation and a quick extraction of the exhaust fumes. The exhaust fumes contain carbon monoxide that is highly toxic when inhaled.

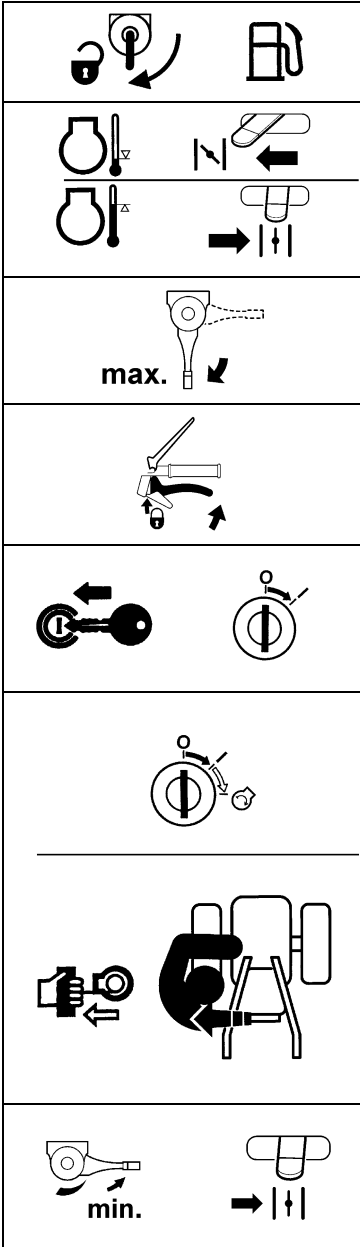
Handle hot engine components with caution!



The silencer and other engine parts get very hot when the engine is running and are still hot directly after the engine is switched off. Keep a sufficient distance from hot surfaces and keep children away from the running engine.

 **When the petrol engine is running, do not touch or remove the ignition cable or spark plug connector.**

Starting the petrol engine



1. Open the fuel cock (C/13)

2. **Cold** engine: Set CHOKE actuator (C/20) to "CHOKE". Reset CHOKE when the engine is hot

Engine **at operating temperature**: Leave CHOKE in normal operating position

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

4. Pull the manual clutch lever (B/5), the stop pawl (B/6) engages (start position)

5. Insert the ignition key into the ignition lock (B/12) and turn it clockwise to position "I" - even if you start the engine with cable-pull starter
- The warning signal sounds

6. Start the engine from outside the hazard zone:
- Continue turning the ignition key clockwise to "START" position

As soon as the engine starts, release the ignition key. The key returns automatically to position "I", and the warning signal disappears.

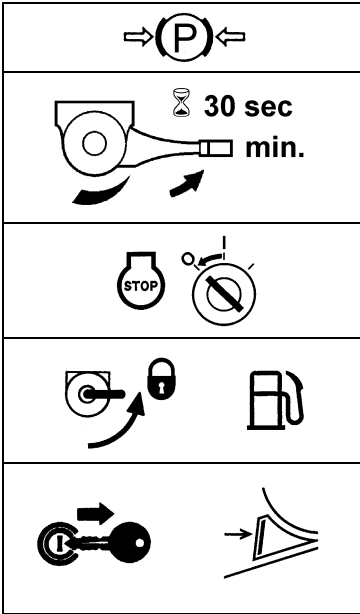
If the engine does not start, turn the ignition key back to position "O" before you try again to start (start repetition lock).

- Or manual start with cable-pull starter

i **Tow-start is not permitted!**

7. Once the engine is running, set the engine speed to min and allow the engine to warm up for a short time. Slowly move the choke actuator back to operating position (if actuated).

Stopping the petrol engine



Actuate the parking brake (B/2)

Set the speed regulating lever to idle position, and allow the engine to idle (min.) for approximately 30 seconds

Turn the ignition key back to position "O"

Close the fuel cock (C/13)

Secure the machine against unauthorized use and rolling away

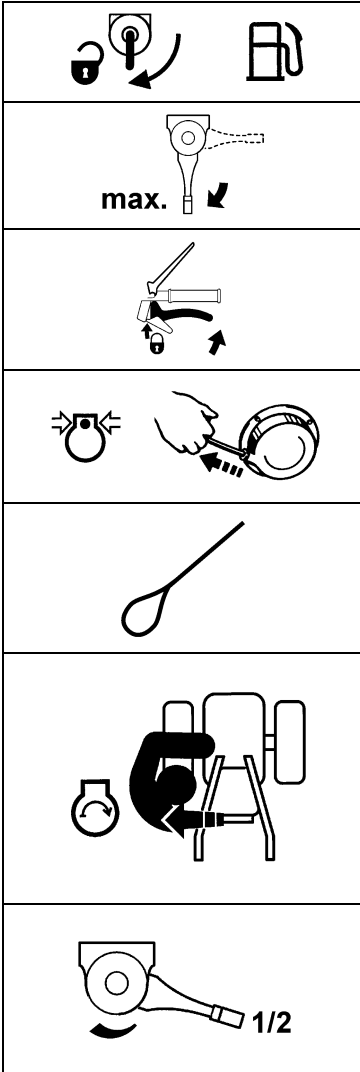
- Remove the ignition key
- Use wheel checks

i In a dangerous situation, set the ignition key to "O" to switch off the engine.

i If you want to shut down the machine for a longer time, do not stop the engine at the ignition key. Close the fuel cock(s) and let the engine run until it stops. This empties the carburettor and prevents resinification.


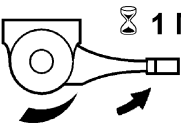
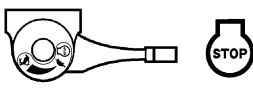


Turn the ignition key back to position "O" and remove it.

Starting the diesel engine, cable-pull starter version

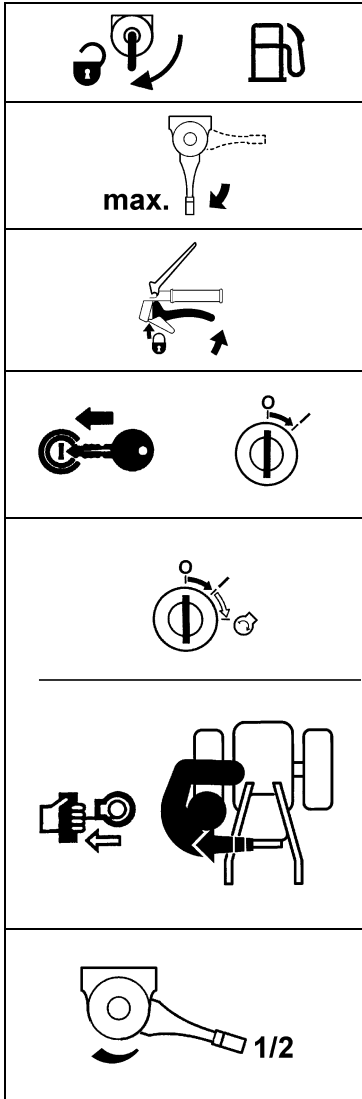


1. Open the fuel cock (D/3)
2. Set speed regulating lever (B/9) to max.
3. Pull the manual clutch lever (B/5), the stop pawl (B/6) engages (start position)
4. At the starter handle (D/6), slowly pull the starter cable until you can feel resistance (piston in compression position)
5. Actuating the decompression valve: Pull the rope (D/8)
6. Start the engine from outside the hazard zone:
Hold the starter rope at the starter handle (D/6) and pull it out **vigorously** and **rapidly** to start the engine. Guide the handle back after the engine has started. Do not allow it to shoot back.
 - Decompression automatically moves back to the initial position during the starting process
7. Hold the speed regulating lever at middle position (medium throttle) and allow the engine to warm up for a short time.
 - If the engine does not start, repeat the starting process in the same sequence.

Stopping the diesel engine, cable-pull starter version

	<p>Actuate the parking brake (B/2)</p>
	<p>Allow the engine to run for 1 minute at increased idling speed to cool down. This prevents the injection nozzle from carbonizing and maintains the operational reliability.</p>
	<p>Move the speed regulating lever to STOP position until it hits the stop</p>
	<p>Close the fuel cock (D/3)</p>
	<p>Secure the machine against unauthorized use and rolling away</p> <ul style="list-style-type: none"> • Use wheel chocks

Starting the diesel engine, electric starter version



1. Open the fuel cock (D/3)

2. Set speed regulating lever (B/9) to max.

3. Pull the manual clutch lever (B/5), the stop pawl (B/6) engages (start position)

4. Insert the ignition key into the ignition lock (B/12) and turn it clockwise to position "I" - even if you start the engine with cable-pull starter
- The warning signal sounds

5. Start the engine from outside the hazard zone:
- Continue turning the ignition key clockwise to "START" position

As soon as the engine starts, release the ignition key. The key returns automatically to the "I" position.

If the engine does not start, turn the ignition key back to position "O" before you try again to start (start repetition lock).

- Or manual start with cable-pull starter

Tow-start is not permitted.

6. Hold the speed regulating lever at middle position (medium throttle) and allow the engine to warm up for a short time.

• If the engine does not start, repeat the starting process in the same sequence.

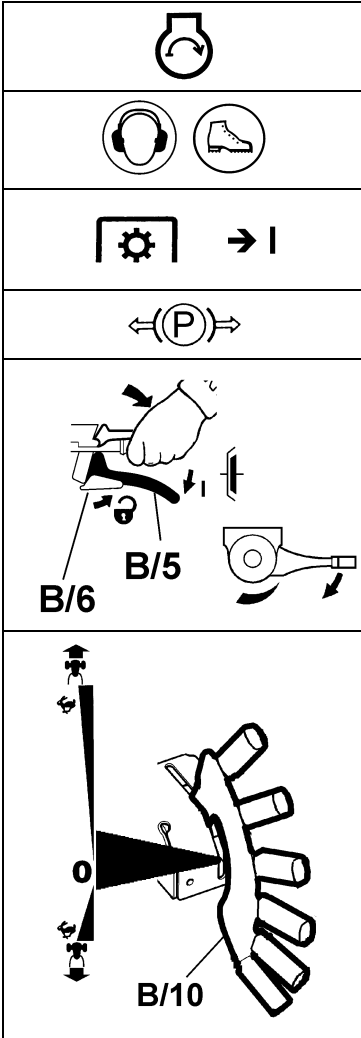
Stopping the diesel engine, electric starter version

	<p>Actuate the parking brake (B/2)</p>
	<p>Allow the engine to run for 1 minute at increased idling speed to cool down. This prevents the injection nozzle from carbonizing and maintains the operational reliability.</p>
	<p>Set the speed regulating lever (B/9) to "STOP" - warning signal sounds.</p> <p>(i) Never use the decompression device to switch off the engine. This can damage the valves.</p>
	<p>Turn the ignition key back to position "O" - The warning signal disappears</p>
	<p>Close the fuel cock (D/3)</p>
	<p>Secure the machine against unauthorized use and rolling away</p> <ul style="list-style-type: none"> • Remove the ignition key • Use wheel chocks

Working

⚠️ Check the function of the safety circuit. See page 67.

- Start the machine only when the safety circuit is working!



Start the engine as described at "Starting the engine". See page 42

Wear hearing protection and solid shoes.

Working with PTO-driven machines: Switch on the PTO shaft with the PTO shaft shifting cable (B/7).

Open the parking brake (B/2)

Lightly pull the manual clutch lever (B/5), disengage the stop pawl (B/6), release it slowly while you are opening the throttle.

⚠️ Engage the clutch carefully. The exact O position of the drive lever (B/10) is not always reached - the unit may start up immediately!

At the drive lever (B/10), select the driving speed as required by circumstances and demand.

Changing the driving direction:

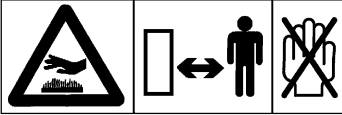
- Slowly rotate the drive lever (B/10) to the opposite driving direction.

⚠️ In particular when reversing or manoeuvring, watch out for obstacles to prevent surprises.


Never leave the machine unattended while the engine is running.

⚠️ Always switch off the working tools during a transport ride or when you drive to adjacent working areas.

Handle hot engine components with caution!



The silencer and other engine parts get very hot when the engine is running and are still hot directly after the engine is switched off. Keep a sufficient distance from hot surfaces and keep children away from the running engine.

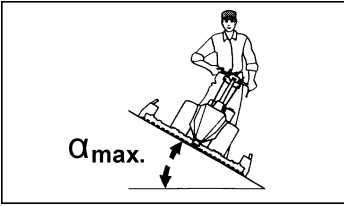
 **Never leave the machine unattended while the engine is running.**



If you have to clean the machine during work, switch off the engine and remove sparking-plug connector(s) and ignition key for safety reasons.



Working on slopes



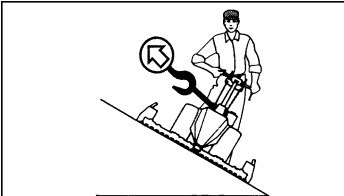
Slope capability

Petrol engine: $\pm_{\max} = 45^\circ$, see page 19

Diesel engine: $\pm_{\max} = 20^\circ$, see page 20

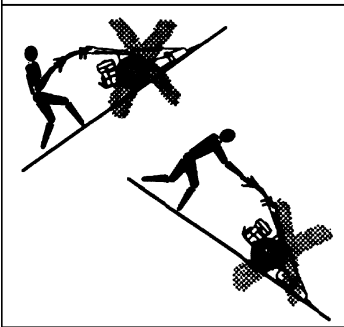
Observe the operating instructions of the implements and the safety instructions.

Depending on the type of ground surface (vegetation, humidity ...), wear suitable shoes so that you do not slip or fall.



If there is a risk of slipping on a slope, have a second person who holds the machine with a bar or a rope. The second person must stand above the machine at a safe distance from the hazard zone.

Work across the slope along contour lines if possible. If possible, turn the machine in uphill direction.



Starting the engine on a slope

Use the following procedure if you have to restart a stalled engine:

- Actuate the parking brake
- Set clutch and safety circuit to "Start position"
- Restart the engine

Notes on mowing/mulching

When mowing/mulching, only work uphill to clear the headland.

Never work downhill. The machine could start slipping. Never try to stop a slipping machine. The machine is too heavy. You can not hold it. If possible, steer the machine across the slope. Release the safety lever to activate the safety circuit.

At the end of the mowing work or in case of plugging:

- Switch the traction drive to idle. The machine stops while the knives continue moving. This removes the debris from the mowing system.

Safety instructions for handling

- Never let the engine run in a closed room. Dangerous carbon monoxide can accumulate.
- Always wear safety shoes and long trousers during the work. Never operate the machine when you are barefooted or in sandals.
- Check the complete terrain on which you want to use the machine. Remove all objects that could be ejected by the machine.
- Always work during daylight or with good lighting.
- Always ensure a secure position on a slope.
- Guide the machine only at walking speed.
- Work across the slope, never uphill or downhill.
- Be particularly careful when you change the driving direction on the hill.
- Never work on excessively steep slopes.
- Be particularly careful when you turn the machine or pull it towards yourself.
- When hoeing or tilling difficult soil (stony, hard), there can be jerky movements of the machine to the front and upwards. Be particularly careful.
- Always switch off the working tools during a transport ride or when you drive to adjacent working areas.

- Switch off the PTO shaft drive
- Switch off the engine
- Install the knife protection bar

- Never change the basic setting of the engine. Never allow the engine to overspeed.
- Carefully start the engine in accordance with the manufacturer's instructions. Ensure that your feet are at a safe distance from the tools.
- Never approach your hands or feet to rotating parts.
- Never lift or carry the machine while the engine is running.
- Switch off the engine: - when you leave the machine; - before you refuel.
- Close the fuel cock(s) after work.
- Never store the machine with petrol in the tank inside a building if petrol vapours could get into contact with naked flames or sparks, or ignite.
- Empty a tank only outdoors.
- Allow the engine to cool down before you store the machine in a closed room.
- For safety reasons, replace worn-out or damaged parts.

5 Maintenance and Repair



As well as observing the operating instructions valid for the machine, it is equally important to pay due attention to the following instructions on care and maintenance.

Larger maintenance and repair tasks may only be carried out by trained specialists who can carry out professional maintenance and repair.

You should only undertake smaller maintenance and repair tasks yourself if you have the relevant tools and training for machinery and combustion engines.

Only use genuine Agria spare parts.

Carry out a functional and safety test after completing the work.

Lubricants and anti-corrosive agents

Use the lubricants specified for engine and gearbox (see "Technical data").

For "open" lubricating points or nipple lubricating points we recommend **bio lubricating oil** or **bio lubricating grease** (as specified in the operating instructions).

We recommend using **bio-anti-corrosive oil** to preserve machines and attachments (do not apply on painted covers). The oil can be brushed or sprayed on.

Bio-lubricants and bio-anti-corrosive agents are environmentally friendly, as they are quickly biodegradable.

By using bio-lubricants and bio-slushing oil you act environmentally responsible, protecting the environment and promoting the well-being of humans, animals and plants.



Always switch off the engine before you start any maintenance or repair work!

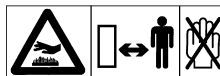


Additionally remove the sparking-plug connector of a petrol engine!



Wear protective gloves when you work on the mowing and tilling tools!

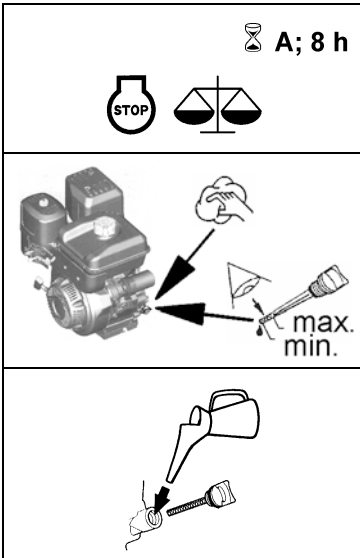
When working with oil, fuel and grease, wear suitable protective gloves and use skin care products if necessary.



Handle hot engine components with caution!

Petrol engine

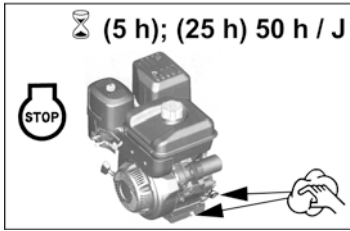
Check engine oil level



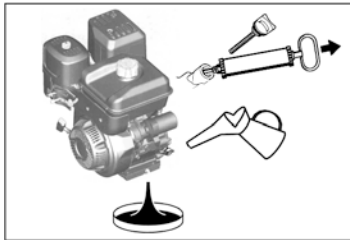
Before each start-up and after every 8 hours of operation

- Only with the engine switched off and on level ground.
- Clean the oil filler plug and its environment.
- Unscrew the oil filler plug, wipe the oil dipstick with a clean cloth and reinsert it (do not screw it in). Remove the oil dipstick and check the oil level.
- If the oil level is below the lower "min" mark, fill in engine oil (see "Technical data") up to the rim of the oil filler neck "max".

Change engine oil



For the first time after 5 operating hours, then after every **50** operating hours or **Yearly** (depending on which occurs first). At heavy duty or high ambient temperature, change the oil already after **25** operating hours. Change the oil when the engine is still warm, but not hot - **danger of burns!**



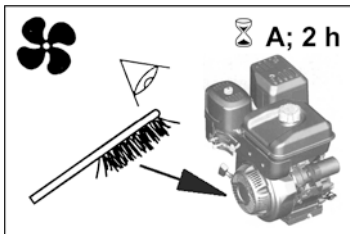
- Clean oil filler plug / oil dipstick, oil drain plug and their environment.
- Open oil filler plug and oil drain plug, collect the used oil in a suitable container. Alternatively, you can use a drain pump to suck the used oil through the filling hole.
- Ensure proper disposal of the used oil.

i Check the sealing rings. Replace if necessary. Tighten the oil drain plug!

Oil filling volume and quality see "Technical data".

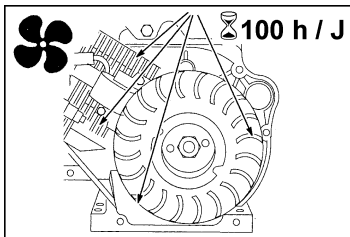
- If possible, use a funnel or a similar fixture to fill in the oil.

Air cooling system



After long periods of operation the cooling system can be obstructed with dust or plant particles. Continuous operation with an obstructed cooling system causes the engine to overheat and can damage the engine.

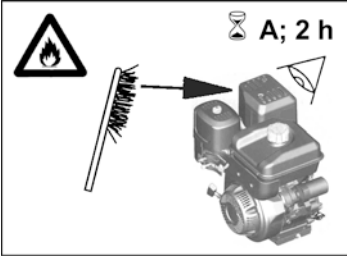
Never spray water on the engine. Use a brush or compressed air.



- Continually check the **fan grille (C/5)**, and remove aspirated dirt and plant debris.
- Remove the **fan housing** after every **100** operating hours or **at least yearly**, ideally before the season. Clean the cooling fins on cylinder and cylinder head, and the deflector plates and the fan wheel that are necessary for air circulation.

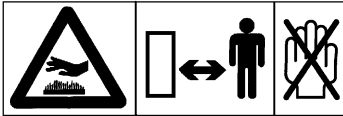
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Exhaust system and speed governor



Regularly check the exhaust system (C/18), governor lever, linkage and governor springs for soiling and plant debris and clean with a brush or compressed air if necessary. **Danger of fire - due to dirty exhaust system!**

Check before each start-up.
Replace damaged exhaust parts.




Handle hot engine components with caution!

The silencer and other engine parts get very hot when the engine is running and are still hot directly after the engine is switched off. Keep a sufficient distance from hot surfaces and keep children away from the running engine.

Idle speed

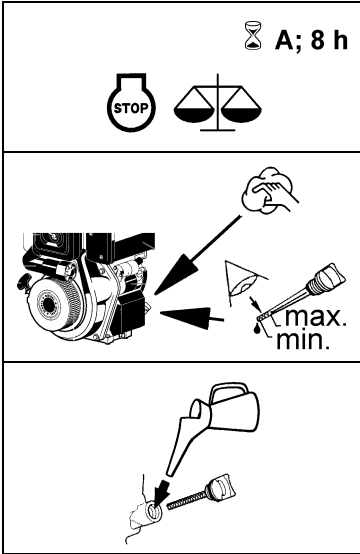
Always ensure that the engine idle speed is adjusted correctly. With speed regulating lever at idling, the engine should continue running smoothly.

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All further maintenance and care of the engine →  Engine operating instructions

Diesel engine

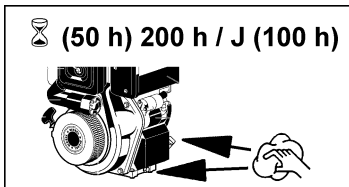
Check engine oil level



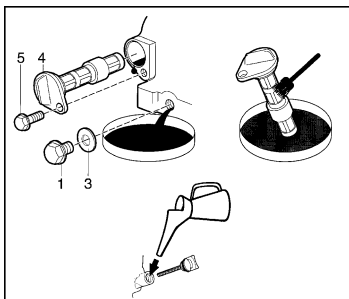
Before each start-up and after every 8 hours of operation

- Only with the engine switched off and on level ground.
- Clean the oil filler plug and its environment.
- Unscrew the oil filler plug, wipe the oil dipstick with a clean cloth and reinsert it (do not screw it in). Remove the oil dipstick and check the oil level.
- If the oil level is below the lower "min" mark, fill in engine oil (see "Technical data") up to the rim of the oil filler neck "max".


Change engine oil



For the first time after 50 operating hours, then after every **200** operating hours or **annually** (depending on which occurs first). At heavy duty or high ambient temperature, change the oil already after **100** operating hours. Change the oil when the engine is still warm, but not hot - **danger of burns!**

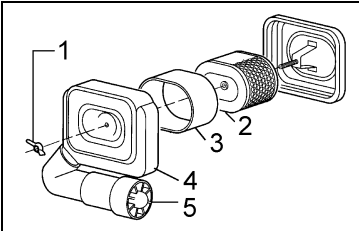


- Clean oil filler plug, oil drain plug and their environment.
- Open the oil filling and drain plug, collect the used oil in a suitable container.
- Ensure proper disposal of the used oil.
- Whenever you change the engine oil, clean the engine oil filter (D/13) with diesel fuel.

 Check the sealing rings. Replace if necessary. Tighten the oil drain plug!

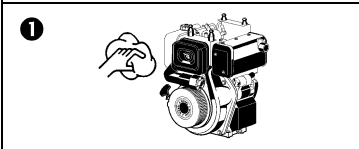
Oil filling volume and quality see "Technical data". If possible, use a funnel or a similar fixture to fill in the oil.

Dry air filter

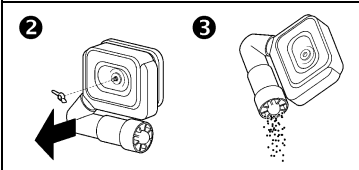


Prior to each startup, check the air filter (D/4) for contamination. Clean if necessary.

At the latest every **50** operating hours or every **3 months**. After a few hours in very dusty environments.

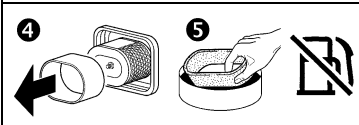


1 Clean air filter and surrounding area.



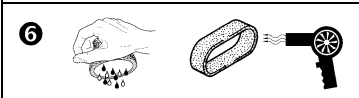
2 Loosen the wing nut (1), remove air filter cover (4) and cyclone prefilter (5).

3 Rotate the air filter cover (4) such that any dirt falls out of the cyclone prefilter (5)

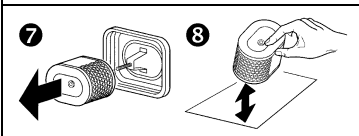


4 Carefully pull off the foam prefilter (3).

5 Wash the foam prefilter in soapy water (no not use petrol).

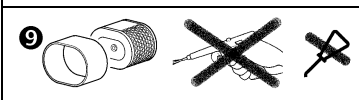


6 Squeeze out the foam prefilter and dry it.

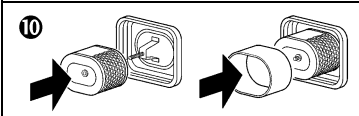


7 Remove the filter element (2).

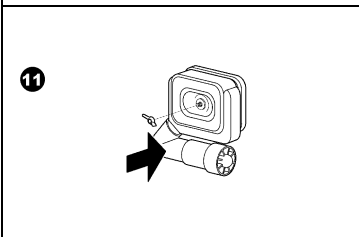
8 Knock out the filter element on a level surface.



9 Do not blow out foam prefilter or filter element with compressed air, or soak it with oil!



10 Insert the filter element and the foam prefilter.

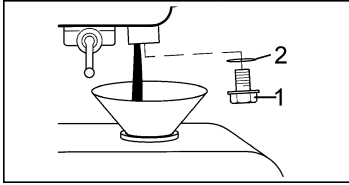


11 Position the air filter cover and tighten the wing nut.

Replace the filter element after every **400** operating hours or at **least yearly**.

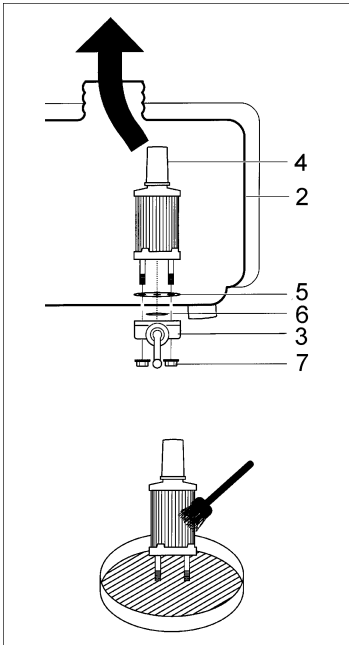
i Replace a damaged filter element immediately.

Draining fuel



- Provide a suitable container with funnel or a similar device.
- Unscrew the drain plug (1) and drain the fuel into a suitable container.
- Screw the drain plug (1) with sealing ring (2) back in and tighten it (check the sealing ring, replace it if necessary).

Fuel filter



Clean the fuel filter insert after approximately **200** operating hours. Clean earlier when the engine output deteriorates.

Removing / installing the filter insert:

- Drain the fuel.
- Unscrew the hexagonal nuts (7) at the fuel cock (3).
- Remove the filter insert (4) through the filling opening from the fuel tank (2).
- Clean the fuel filter with diesel fuel. Replace a damaged filter insert.
- Insert the fuel filter in reverse sequence. Check seal (5) and sealing ring (6). Replace if necessary.
- Tighten the hexagonal nuts.
- Fill in fuel and check the fuel system for leaks.
- Bleed the fuel system.
- Replace the fuel filter after **400** operating hours.

Bleeding the fuel system

Bleeding the fuel system is necessary after the fuel tank has been emptied while the engine was running, or after fuel filter / fuel lines has/have been cleaned or replaced.

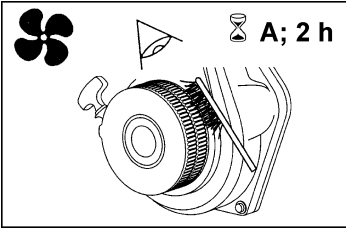
Although the engine is equipped with an automatic bleeding system, use the following procedure:

- Fill the fuel tank with diesel fuel.
- Using the cable-pull starter or electric starter, crank the engine several times and start the engine.
- Let the engine run for approximately 10 minutes.

Fuel hoses

Replace every **2 years**. Replace leaking plastic hoses immediately.

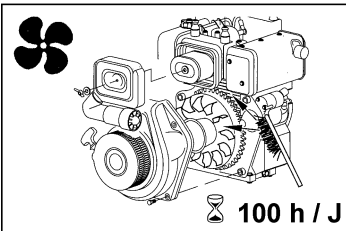
Air cooling system



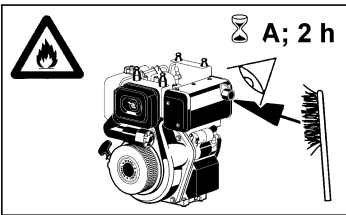
After long periods of operation, the cooling system can be obstructed with dust or plant particles. Continuous operation with an obstructed cooling system causes the engine to overheat, and can damage the engine.

Never spray water on the engine. Use a brush or compressed air.

- Continually check the **fan grille** (D/7), and remove aspirated dirt and plant debris.
- Remove the **fan housing** after every **100** operating hours or **at least yearly**, ideally before the season. Clean the cooling fins on cylinder and cylinder head, and the deflector plates and the fan wheel that are necessary for air circulation.
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Exhaust



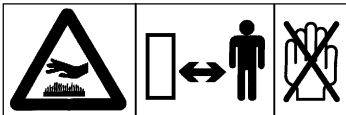
- Continually check the exhaust system (D/9) for contamination and plant parts. Failure to do so can lead to

! fire hazard!

Check before each start-up.

Replace damaged exhaust parts.

Handle hot engine components with caution!



The silencer and other engine parts get very hot when the engine is running and are still hot directly after the engine is switched off. Keep a sufficient distance from hot surfaces and keep children away from the running engine.

Adjusting the valve play

Adjust the valve play after every **400** operating hours. Inlet and outlet valves 0.15 ± 0.02 mm with cold engine.

- agria-Service -

Injection nozzle

Clean and check the injection nozzle after every **400** operating hours.

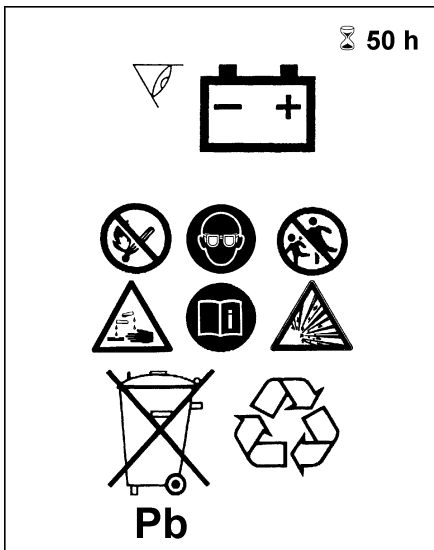
- agria-Service -

Idle speed

Always ensure that the engine idle speed is adjusted correctly. The engine shall continue running smoothly at low speed when the speed regulating lever is at the stop in idle position.

- agria-Service -

Battery



Observe the instructions of the battery manufacturer!

Charging:

- Only use suitable DC chargers.
- For recharging use a charger with a constant charging voltage of 14.4 V.
- Ensure good room ventilation.
- Remove the battery from the machine. Disconnect the battery poles, starting at the negative terminal.
- Connect the positive terminal of the battery to the positive output of the charger, and likewise for the negative connection.
- Switch on the charger only after you have connected the battery.
- Recommended charging current: 1/10 A of battery capacity Ah.
- Interrupt charging, if the acid temperature exceeds 45 °C.
- The battery is fully charged when the charging voltage has not increased in 2 hours.

Maintenance

- Keep the battery clean and dry
- Only wipe the battery with a damp cloth, as otherwise there is a danger of explosion
- Do not open the battery
- Check the battery condition at least every **50** operating hours



Never leave the battery discharged! Avoid sparks and open flames near batteries. Caution when handling battery acid - **caustic!** Only use specified fuses. Using incorrectly dimensioned fuses destroys the electrical system – **Risk of fire!**

Putting the battery out of service

- Charge battery, store it at a cool place, and disconnect the negative terminal from the machine.
- Check the battery charge at regular intervals. Recharge if necessary.

Disposal

- Deliver used batteries to a collecting point (to prevent acid from escaping, store and transport them in an upright position and protected against tipping).
- Never dispose of batteries in domestic waste!

Machine

Gearbox

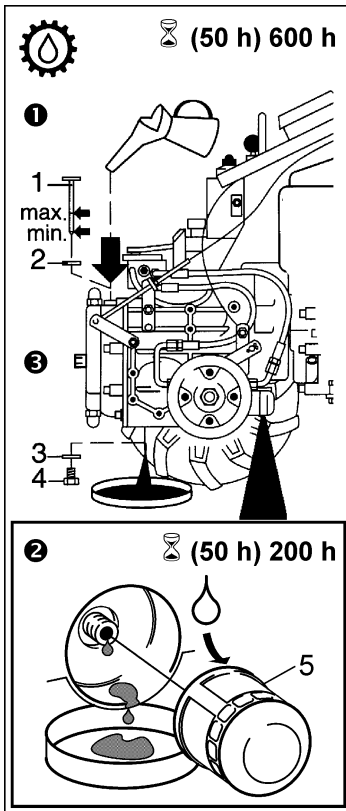


The hydraulic oil in the gearbox has the same specification as the engine oil.

When you change to hydraulic bio-oil, drain the previously used oil and purge twice.



Allow the gearbox to cool down before you start maintenance work. The temperature during maintenance work should not be higher than 51° C.



① Check the **gearbox oil level** before each startup and after every **25** operating hours - oil dipstick and oil-filling orifice (1). With the machine in a horizontal position, the oil level must be between the **max.** and **min.** marks.

- Unscrew the oil dipstick, wipe it with a clean cloth, and screw it back in.
- Unscrew the oil dipstick and check the oil level. Top up oil if necessary (refill volume between min. and max. = 1 l).

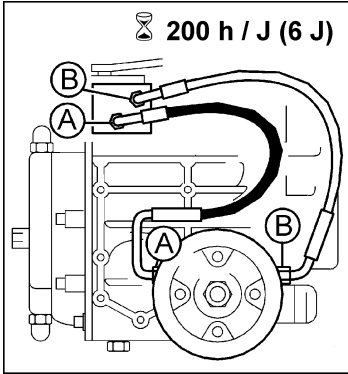
② **Change the gearbox oil** after the first **50** operating hours and then after every **200** operating hours.

- Tilt the machine forward on the connecting flange.
- Unscrew the oil filter (5) and replace it. Moisten the sealing ring of a new filter with oil.
- Dispose of the used oil filter properly.

③ **Change the gearbox oil oil** and the oil filter after the first **50** operating hours, and afterwards every **600** operating hours when the oil is at operating temperature.

- Thoroughly clean oil filler plug (1) and oil drain plug (4) and their environment to prevent dirt from getting into the gearbox.
- Open the drain plug, collect the used oil in a suitable container, and dispose of it properly.
- Clean the drain plug. It is equipped with a magnetic core that attracts metallic particles.
- Check the sealing rings (2) and (3). Replace them if necessary.
- Screw in and tighten the drain plug with sealing ring.
- Fill in fresh gearbox oil up to the "max." mark.
- Oil filling volume and oil grade see "Technical data".
- Close the filling hole with the plug/dipstick.

Hydraulic hoses



- Check for leaks, damage and ageing after **200** operating hours, at least **yearly**.
- Replace hydraulic hoses after **6 years**. Use only new (not older than 2 years) genuine Agria hydraulic hoses.

⚠ High-pressurized hydraulic oil can penetrate your skin and cause severe injuries. Danger to life!

To avoid injuries, use suitable devices when you try to locate leaks - specialized workshop!

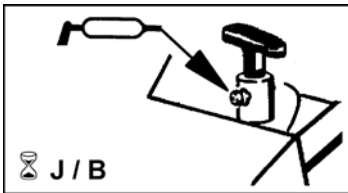
Brake

- Check smooth operation and efficiency of brake pads and brake actuation after every **200** operating hours or at least yearly.
- agria-Service -

Wheel motors

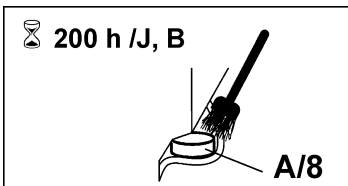
- Check for straightline driving at steering bar neutral position every **200** operating hours.
- agria-Service -

Bar latching pin



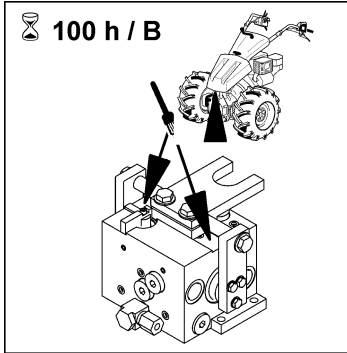
Lubricate the lubricating nipple of the bar latching pin every now and then with bio lubricating grease, at least **yearly** and after each cleaning with a high-pressure cleaner.

Steering bar lock



After every **200** operating hours and after each cleaning with a high-pressure cleaner coat at both sides the bar lock rolls (A/8) for the bar rollers with some bio lubricating grease.

Steering valve

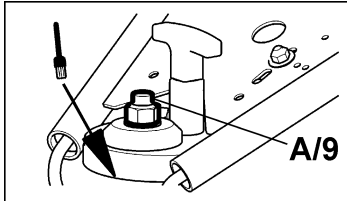


After every **min. 100** operating hours and after each cleaning with a high-pressure cleaner coat at both sides the sliding surfaces of the adjusting plate on the steering valve with some bio lubricating grease.

Steering bar ultra bushings

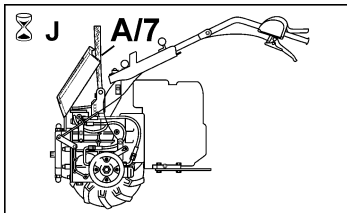
- After every **200** operating hours, check function and firm seating of the ultra bushings in the steering tower (vibration-damped steering bar bearing).
- agria-Service -

Steering bar centre screw



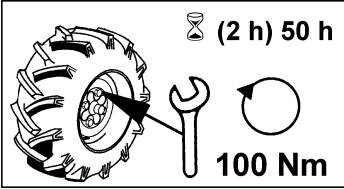
- After every **200** operating hours, check the steering bar centre screw (A/9). The steering bar should rest on the steering tower without any play, but still easily rotatable. Grease the rotating/sliding surface as necessary.
- agria-Service -

Loading strap



Check for damage before each use and during each maintenance work. Replace if necessary. Replace after **10 years** at the latest.


Driving wheels



- During **initial startup** and after **each wheel change**, check and tighten the wheel bolts or wheel nuts after the first **2** operating hours and then during each service work and after every **50** operating hours with **100 Nm**.

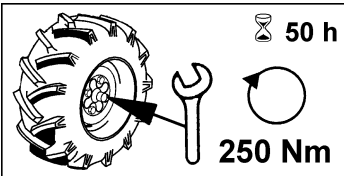
- Check the tyre pressure of the wheels frequently. For smooth driving ensure that the tyre pressure in both wheels is the same. Never exceed the maximum tyre pressure!

The max. tyre pressure is shown on the side of the tyre.

 **There is a risk of explosion from excessive tyre pressure.**

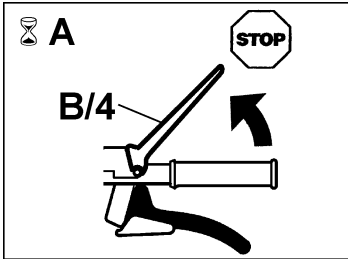
Only skilled specialists are allowed to repair and change tyres, using suitable installation tools.

Wheel hubs



- Tighten the hexagonal nuts (A/26) for the wheel hubs at both sides with **250 Nm** after every **50** operating hours.

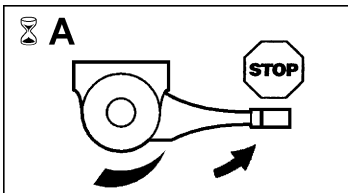
Safety circuit



Check the function of the safety circuit before each startup and during each maintenance work.

- Travel drive and PTO shaft drive must stop automatically when the safety lever (B/4) is released.
- Standstill occurs automatically when the clutch is disengaged. The engine continues running.
- Check adjustment and function of Bowden cables on manual safety lever and manual clutch lever, readjust if necessary, or replace.
- **agriA-Service** -

Engine stop circuit

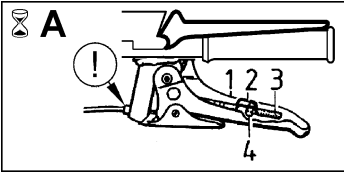


Diesel engine

Check the function of the engine stop circuit before each startup and during each maintenance work.

- The engine must stop when the speed regulating lever is in "STOP" position at the stop. If necessary, adjust the speed / stop bowden cable at the bowden cable adjusting screw on the engine.
- **agriA-Service** -

Clutch adjustment

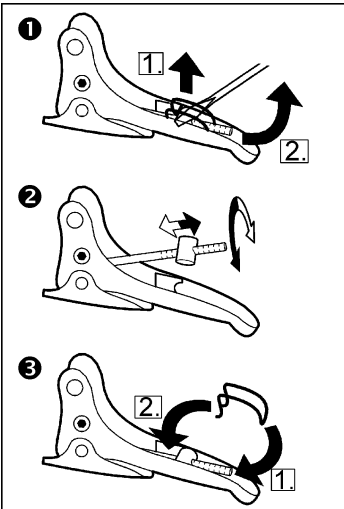


- 1 Hand lever
- 2 Shaped spring
- 3 Cable pull thread end
- 4 Adjusting pin

Check adjustment before each startup. Readjust if necessary (in particular during the running-in period after initial startup and after the clutch lining has been replaced).



= Bowden cable in hand lever bearing inserted in **down** position.



Adjustment

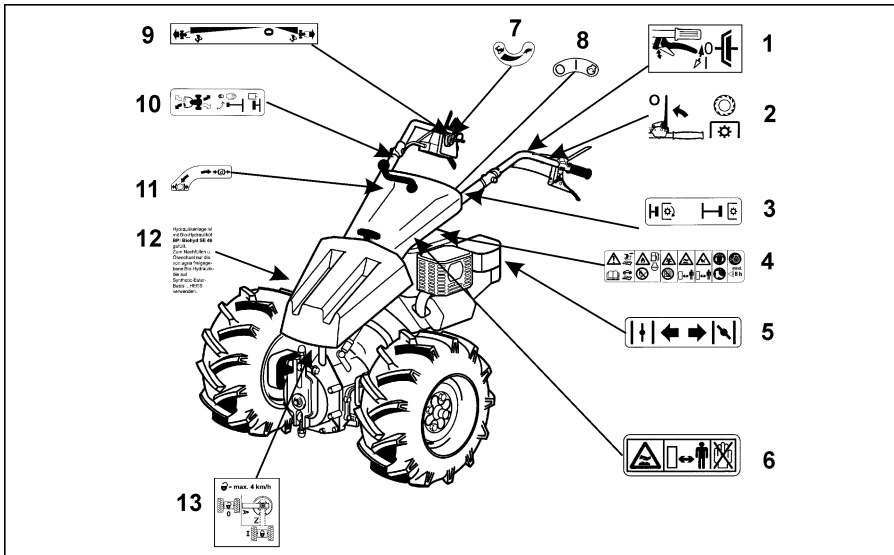
1 Remove shaped spring (2) and remove the cable pull end (3) with the adjusting pin (4) from the retainer in the hand lever.

2 Screw the adjusting pin in / out until there is a distance "X" or idling at position 0.

3 Reinsert the cable pull end with the adjusting pin in the retainer and install the shaped spring (2).

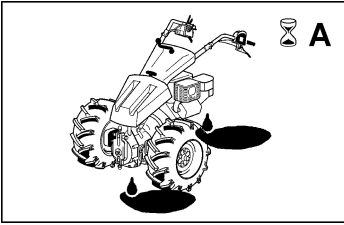
Labels

Replace worn-out and missing signs for operating and safety instructions.



- 1 75750 clutch
- 2 104228 drives off
- 3 79442 PTO shaft
- 4 79427 warning icon set
- 5 69883 choke (petrol engine)
- 6 79426 warning icons for hot parts
- 7 75755 speed (petrol engine)
75754 speed/stop (diesel engine)
- 8 61487 0-1-Start
- 9 75736 drive lever
- 10 79440 steering
- 11 79443 brake
- 12 75757 Biohyd SE46
(provided that the hydraulic system is filled with bio hydraulic oil)
- 13 78929 bypass

General

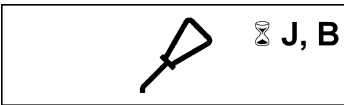


Before each start-up check for escaping fuel and oil and eliminate the cause.

- **agri^a-Service** -



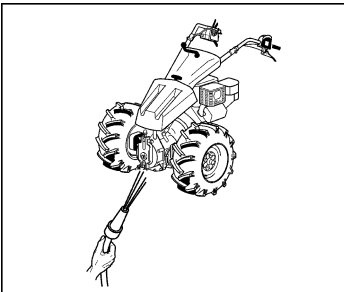
Regularly check nuts and bolts for tightness and retighten if necessary.



At least **yearly** and after cleaning:

Lubricate all sliding or moving parts (such as speed regulating lever, hand lever bearing, etc.) with bio lubricating grease or bio lubricating oil.

Cleaning



Machine

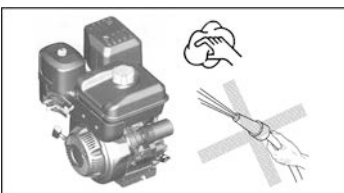
Clean thoroughly with water immediately after each use.

Do not expose electric cables and components to direct water jets.

Then lubricate all sliding parts with bio-lubricating oil or grease with bio-lubricating grease.

In addition lubricate the lubrication points on the machine immediately after cleaning with a high pressure cleaner, and put the machine briefly into operation to press out the penetrated water.

To protect the bearings against penetrating dirt, sap and water, there shall be a grease collar at the bearing points.



Engine

Only clean the engine with a cloth. Do not spray with water, as water could enter the ignition and fuel system and cause malfunctions.

Storage

If the machine is out of operation for an extended period:

- (1) **Clean.** Touch up the paint.
- (2) Spray **all bare parts** and mower head with bio corrosion-inhibiting oil.
- (3) **Preserve the engine.**

Petrol engine

- Completely drain the fuel outdoors into a suitable container.



Petrol is highly flammable and explosive under certain conditions! Never smoke in the working area. Stay away from naked flames and sparks.

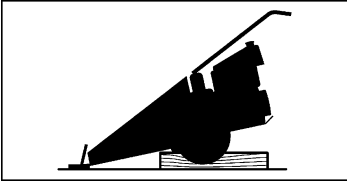
Alternatively fill the fuel tank completely and add a fuel stabilizer (Agria no. 799 09) to the fuel

- Observe the operation instructions! Let the engine run for approximately 10 minutes.

- Change engine oil.
- Fill a teaspoon (approximately 0.03 l) of engine oil into the sparking-plug hole. Slowly crank the engine.
- Reinstall the sparking plug and set the piston with the cable-pull starter to compression (slowly pull at the starter handle until you can feel resistance). The valves are now closed.
- Slowly crank the engine every 2...3 weeks (sparking-plug connector removed!) and set the piston back to compression.

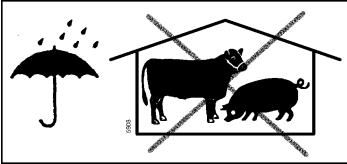
Diesel engine

- Change engine oil.
- For an extended storage time close exhaust openings and air inlet openings at the air filter with masking tape or something similar.



(4) **Driving wheels**

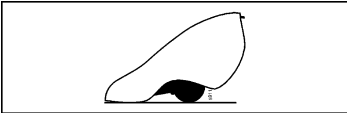
Jack up the machine such that the wheels are not on the ground. A flat pneumatic tyre is unserviceable within a very short time when it is under load on the ground.



(5) **Shelter the machine**

To avoid heavy corrosion:


- Protect against weather influence
- Do not store in
 - damp rooms
 - synthetic fertiliser stores
 - stables and adjacent rooms



(6) **Cover the machine**

Cover the machine with a cloth or something similar

6 Troubleshooting and Remedies

 **Observe the safety instructions!** Faults on the machine or on the engine that make a major intervention necessary must always be repaired by a specialist agria workshop that have the necessary tools. Incorrect intervention will only lead to damage.

Petrol engine

Fault	Possible cause	Remedy	Page
The petrol engine does not start	Sparking-plug connector not connected	Connect sparking-plug connector	
	Fuel cock closed	Open the fuel cock	43, 93
	Choke not actuated	Actuate choke (only for cold start)	43
	Ignition key at "O"	Switch ignition key to "I" position"	43
	Fuel tank empty or unsuitable fuel	Fill fuel container with fresh fuel	37
	Fuel line obstructed	Clean fuel line - agria-Service -	
	Sparking plug defective	Clean, adjust or replace sparking plug	BM
	Too much fuel in engine (flooded)	Clean and dry spark plug, start with FULL THROTTLE	BM
	Engine stop line defective	Check line and connections - agria-Service -	
	Air infiltration through loose carburettor and intake pipe	Tighten fixing screws	

Fault	Possible cause	Remedy	Page
Petrol engine has misses	Fuel cock closed	Open the fuel cock	43, 93
	Loose ignition cable	Ensure firm connection between sparking-plug connector and ignition cable Clamp ignition cable attachment Firmly plug sparking-plug connector onto sparking plug	
	Engine runs in choke mode	Set choke to operation position	43
	Fuel line obstructed or unsuitable fuel	Clean fuel line - agria-Service - Fill up fresh fuel	
	Ventilation in fuel tank cap obstructed	Replace fuel tank cap	
	Water or dirt in fuel system	Drain fuel and fill with clean, fresh fuel	
	Air filter contaminated	Clean or replace air filter	BM
	Incorrect carburettor adjustment	Adjust carburettor - agria-Service -	BM
Petrol engine gets too hot	Insufficient engine oil	Top up engine oil immediately	54
	Cooling air system restricted	Clean fan grille, Clean interior cooling fins - agria-Service -	55
	Air filter contaminated	Clean or replace air filter	BM
	Carburettor incorrectly adjusted	Adjust carburettor - agria-Service -	BM
Engine cut-out at high speed	Ignition distance too small	Adjust sparking plug	BM
	Idle mixture incorrectly adjusted	Adjust carburettor - agria-Service -	BM

Fault	Possible cause	Remedy	Page
Petrol engine frequently stalls when idling	Ignition distance too large; sparking plug defective	Adjust or replace sparking plug	BM
	Carburettor incorrectly adjusted	Adjust carburettor - agriA-Service -	BM
	Air filter contaminated	Clean or replace air filter	BM
Petrol engine works erratically	Control linkage contaminated, sticking	Clean control linkage	BM
Engine does not stop in stop position	Engine stop line defective	Check line and connections - agriA-Service -	
	Missing ground	Check ground contact - agriA-Service -	
Petrol engine has insufficient power	Cylinder head loose or gasket damaged	Tighten cylinder head, replace gasket - agriA-Service -	
	Insufficient compression	Have engine checked - agriA-Service -	
	Air filter contaminated	Clean or replace air filter	BM

Diesel engine

Fault	Possible cause	Remedy	Page
The diesel engine does not start	Fuel cock closed	Open the fuel cock	45, 47, 95
	Speed regulating lever at "STOP"	Speed regulating lever at "max."	45, 47
	Ignition key at "O"	Switch ignition key to "I" position	47
	Fuel tank empty or unsuitable fuel	Fill fuel container with fresh fuel	39
	Fuel line / fuel filter contaminated	Clean fuel line / fuel filter - agriA-Service -	60
	Injection nozzle or injection line contaminated	Clean injection nozzle, injection line - agriA-Service -	61
	Injection pressure not correct	Adjust injection pressure - agriA-Service -	

Fault	Possible cause	Remedy	Page
Diesel engine has misses	Fuel cock closed	Open the fuel cock	45, 47, 95
	Fuel line obstructed or unsuitable fuel	Clean fuel line, fill with fresh fuel - agria-Service -	
	Ventilation in fuel tank cap obstructed	Replace fuel tank cap	
	Water or dirt in fuel system	Drain fuel and fill with clean, fresh fuel	59
	Air filter contaminated	Clean or replace air filter	58
	Injection nozzle or injection line contaminated	Clean injection nozzle, injection line - agria-Service -	61
Diesel engine gets too hot	Insufficient engine oil	Top up engine oil immediately	57
	Cooling air system restricted	Clean fan grille, Clean interior cooling fins - agria-Service -	60
Engine misses at high speed	Injection nozzle contaminated	Clean the injection nozzle - agria-Service -	61
	Injection pressure not correct	Adjust injection pressure - agria-Service -	
Diesel engine frequently stalls when idling	Air filter contaminated	Clean air filter	58
Diesel engine does not stop in stop position	Engine stop cable not correctly adjusted	Adjust engine stop cable - agria-Service -	67
Diesel engine has insufficient power	Cylinder head loose or gasket damaged	Tighten cylinder head, replace gasket - agria-Service -	
	Insufficient compression	Have engine checked - agria-Service -	
	Air filter contaminated	Clean air filter	58

Electric start equipment

Fault	Possible cause	Remedy	Page
Electric starter is not working	Battery dead	Charge or replace battery	61
	Fuse defective	Replace the fuse	36
	Defective harness, electric starter	Check harness and electric starter - agria-Service -	
Warning signal does not sound when the motor is stopped	Ignition is not switched on	Switch ignition key to "I" position	35
	Beeper defective	Replace beeper - agria-Service -	
	Fuse defective	Replace the fuse	36
	Harness defective	Check harness - agria-Service -	
	Voltage regulator defective	Check voltage regulator - agria-Service -	
Warning signal sounds during operation	Fuse defective	Replace the fuse	36
	Harness defective	Check harness - agria-Service -	
	Voltage regulator defective	Check voltage regulator - agria-Service -	
	Generator defective	Check generator - agria-Service -	

Machine

Fault	Possible cause	Remedy	Page
Clutch does not disengage	Manual clutch lever incorrectly adjusted	Adjust clutch	68
Clutch slips	Manual clutch lever incorrectly adjusted	Adjust clutch	68
	Clutch lining worn-out	Replace clutch disc - agria-Service -	
No forward movement	Clutch not engaged	Engage with manual clutch lever	25
	Push mode activated	Switch over to hydraulic operation	26
Excessive vibration	Fixing screws loose	Tighten fixing screws	70

BM= See separate operating instructions for engine

7 Decommissioning / Disposal

If the machine will not be further used, it must be correctly decommissioned.



To avoid injuries during decommissioning, park the machine in a stable position and protect it against tipping over and rolling away.



Wear protective gloves.

After decommissioning, the remaining fuel and oil must be drained and disposed of in a correct and environmentally compatible manner.



The machine consists of valuable raw materials, which can be recycled and reused.

Take the machine including the remaining technical fluids to a recycling facility for disposal.



Dispose of old batteries and electrical/electronic parts in accordance with the applicable legal provisions. Do not dispose of as domestic waste.

Paints, Wear parts

Agria order no.

Petrol engine fuel stabilizer:

673 50 Fuel stabilizer 250 ml

Paints:

181 03 Spray paint, birch green Spray can 400 ml

712 98 Spray paint red, RAL 2002 Spray can 400 ml

509 68 Spray paint black, RAL 9005 Spray can 400 ml

Wearing parts:

Petrol engine B&S 13 hp

410 258 Air filter insert

759 99 Sparking plug Champion N9YC

759 28 Blade fuse 15 A

Diesel engine Yanmar L100

415 060 Air filter element

415 010 Fuel filter

415 011 Fuel filter seal

021 43 Sealing ring (O-ring) fuel cock 14x1.6

009 16 Oil drain plug sealing ring 16x22x1.5

778 56 Glass tube fuse 20 A (30x6.5)

Gearbox

009 16 Oil dipstick sealing ring and oil drain plug 16x22x1.5

527 06 Screwed oil filter cartridge

Tyre failure protection:

713 13 Tyre sealing gel Terra-S Bottle 1 l

Spare parts lists:

997 153 Device carrier 5900 Bison

997 083 Implements for 3400, 5500, 5900

997 062 Mower head

997 137 Briggs-&-Stratton engine

997 147 Yanmar engine

Inspection and Maintenance Overview

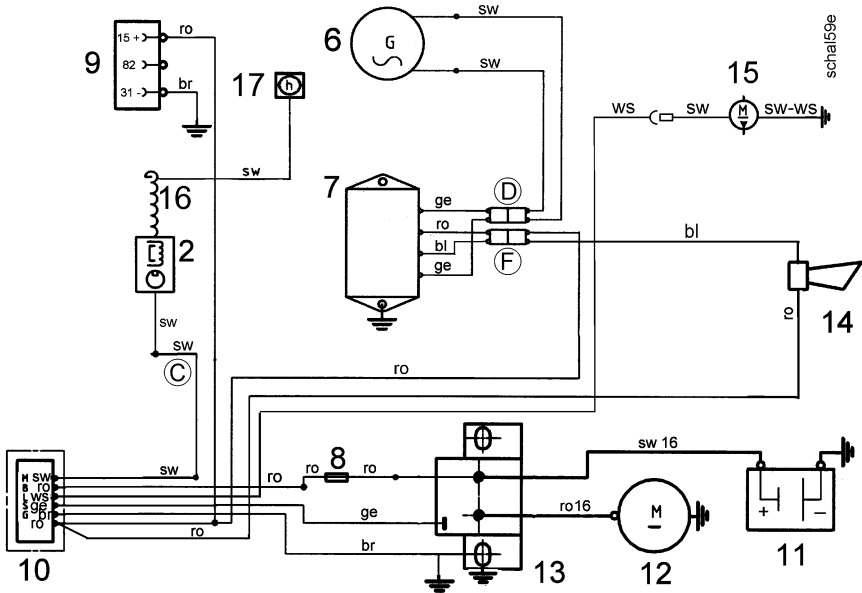
		P	A	After every ... operating hours (h)								J	B	■	●	
				2	5	8	25	50	100	200	400					600
				Page	Page											
Safety circuit, check function			K											67	67	
Engine stop circuit, check function	●		K												67	
Hand lever, check play adjustment			K											68	68	
Check air filter			K	K										BM	58	
Clean fan grille			K	K										55	60	
Clean exhaust environment			K	K										56	56	
Check engine oil level, top up if necessary		1	K		K									54	57	
Check bolts and nuts			K			K								70	70	
Tighten wheel bolts or wheel nuts				K			K							66	66	
First engine oil change, all others	■	2		W		W	W				W			55		
Check gearbox/hydraulic oil level		5				K								56	63	
Cleaning						K								70	70	
Clean air filter insert	■					K		K						BM		
First engine oil change, all others	●	2					W	W	W		W				57	
Cleaning engine oil filter for the first time, all the other times	●						W		W						57	
Clean air filter insert	●						K								58	
Tighten wheel hub nuts							W							66	66	
Check battery							W							61	61	

	P	A	After every ... operating hours (h)								J	B	■	●	
			2	5	8	25	50	100	200	400					600
			Page	Page											
First change of gearbox oil filter all others	3							W			W			63	63
First change of gearbox oil all others	4						W				W			63	63
Check loading strap								K				K		65	65
Clean deflector plates, cooling fins; earlier if necessary									F			F		55	60
Clean sparking plug, adjust electrode gap	■								K					BM	
Lubricate steering valve sliding surfaces	6								K				K	65	65
Replace sparking plug	■									K				BM	
Grease steering bar locking rolls	7									K		K	K	64	64
Replace air filter insert, earlier if necessary!	■									K		K		BM	
Clean fuel filter	●									K					59
Check hydraulic hoses										W		W		64	64
Check steering bar ultra bushings										F				65	65
Tighten steering bar centre screw										F				65	65
Check brake										F				64	64
Check the wheel motors for straightline driving										F				64	64
Replace air filter insert, earlier if necessary!	●										K	K			58
Change fuel filter	●										K				59
Clean and adjust carburettor	■										F			BM	
Check compression pressure	■										F			BM	

		P	A	After every ... operating hours (h)								J	B	■	●	
				2	5	8	25	50	100	200	400					600
										F	F					
Adjust valve play														BM	61	
Clean cylinder head	■													BM		
Clean and check injection nozzle	●														61	
Lubricate all sliding parts		9											K	K	70	70
Lubricate bar latching pins		8											K	K	64	64
Replace fuel hoses													W*		BM	60
Replace hydraulic hoses													W6		64 88	64 88

- A = before each start-up
- B = after each cleaning, especially with a high-pressure cleaner
- BM = See separate operating instructions for engine
- F = maintenance tasks should be performed by your **agri^a** service centre
- J = at least annually
- K = inspection and maintenance tasks can be performed by the operator
- P = position in lubrication plan
- R = as required
- W = maintenance tasks can be performed by a specialist workshop
- * = after 2 years
- 6 = after 6 years
- = petrol engine
- = diesel engine

Electric diagram of petrol engine

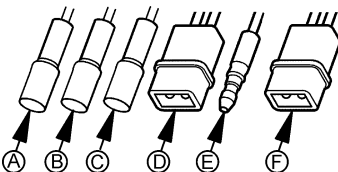


bl = blue
br = brown
ye = yellow
or = orange

rd = red
bk = black
wt = white

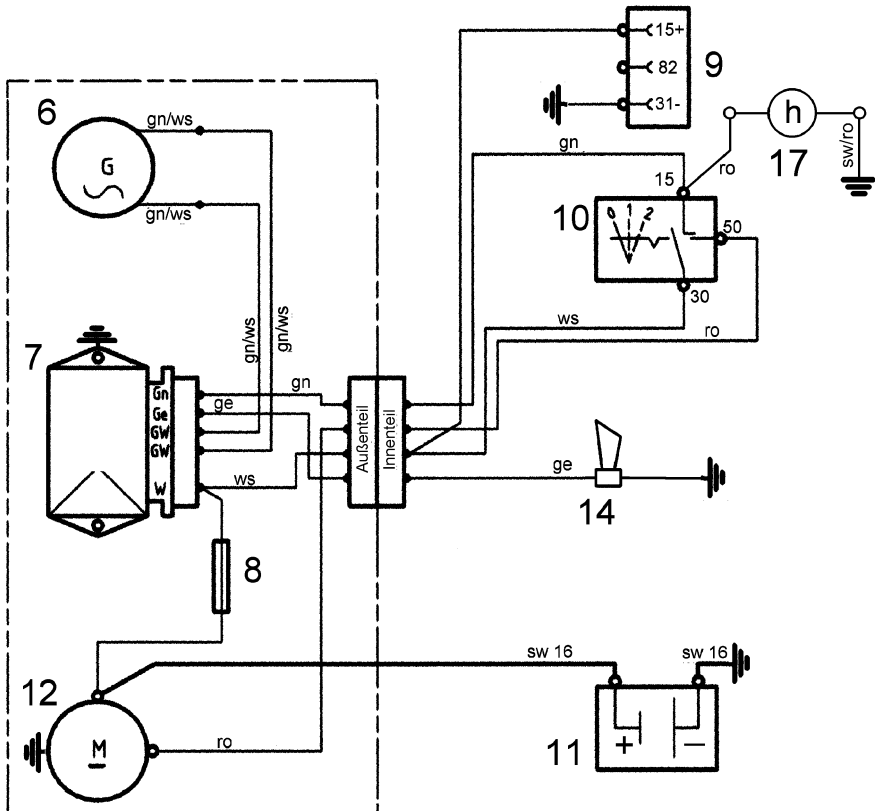
- | | | | |
|---|------------------------------|----|--|
| 2 | Magneto ignition system | 10 | Ignition lock / start switch |
| 6 | Generator 12 V 16 A | 11 | Battery |
| 7 | Regulator 12 V | 12 | Electric starter 12 V |
| 8 | Fuse 15 A | 13 | Start relay |
| 9 | Socket outlet 12 VDIN 9680-A | 14 | Beeper |
| | | 15 | Fuel pump |
| | | 16 | Ignition cable |
| | | 17 | Operating hours-/ rotation speed display |

Connection at the engine:



- Ⓐ (bk) free
- Ⓑ (bk) free
- Ⓒ (bk) → start switch (bk)
- Ⓓ (2x bk) → regulator (2x ye)
- Ⓔ (ye) free (oil guard connection)
- Ⓕ (rd/bl) regulator → start switch and beeper (rd/bl)

Electrical diagram of diesel engine



ye = yellow
 gn = green
 gn/wt = green/white
 rd = red

bk = black
 bk/rd = black/red
 wt = white

6 Generator 12 V 18 A

11 Battery

7 Regulator 12 V

12 Electric starter 12 V 0.8 kW

8 Fuse 20 A

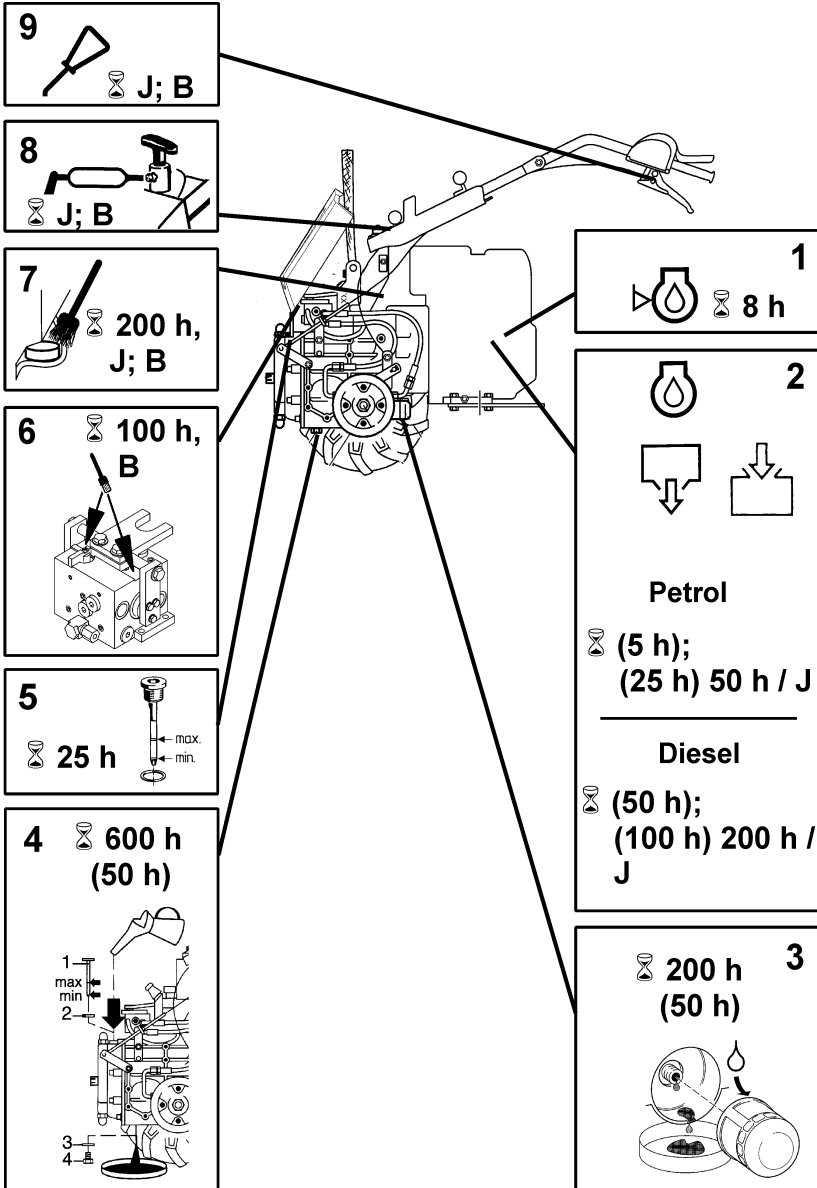
14 Beeper

9 Socket outlet 12 VDIN 9680-A

17 Operating hours counter

10 Ignition lock

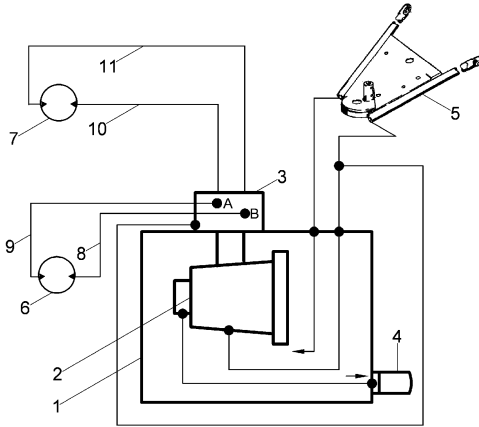
Lubrication plan



⌚ J = at least yearly

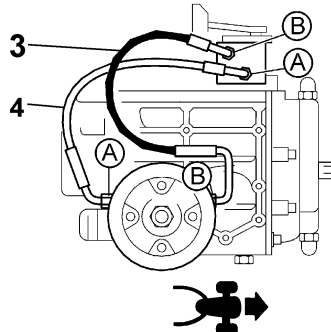
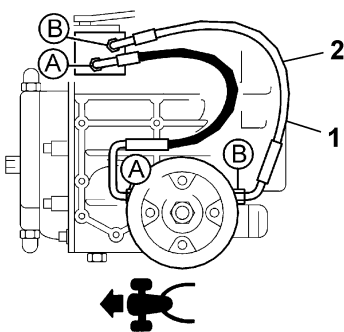
⌚ B = after each cleaning, in particularly with a high-pressure cleaner

Hydraulic diagram



- 1 Gearbox including oil tank
- 2 Hydro pump
- 3 Steering valve
- 4 Screwed filter cartridge
- 5 Lower bar with oil cooler
- 6 Wheel motor left
- 7 Wheel motor right
- 8 Hydraulic hose left B
- 9 Hydraulic hose left A
- 10 Hydraulic hose right A
- 11 Hydraulic hose right B

Hydraulic hoses



left

right

Connection (A) = hydraulic hose

Item 1 = 774 25

Item 4 = 774 26

Connection (B) = hydraulic hose

Item 2 = 768 43

Item 3 = 768 44

Check for leaks, damage and ageing after **200** operating hours, at least **yearly**. Replace hydraulic hoses after **6 years**. Use only new (not older than 2 years) genuine Agria hydraulic hoses.

! High-pressurized hydraulic oil can penetrate your skin and cause severe injuries. **Danger to life!**

To avoid injuries, use suitable devices when you try to locate leaks - specialized workshop!

Declaration of Conformity

**EG-Konformitätserklärung
EC Declaration of Conformity**

**CE Déclaration de conformité
EG conformiteitsverklaring**

(D)

Wir

(F)

Nous

(GB)

We

(NL)

Wij

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

erklären, dass das
Produkt

déclarons que le produit

herewith declare that
the product

verklaren dat het
produkt

Geräteträger

Porte-Outils

Implement Carrier

Werktuigdrager

Bison 5900 142, -152, -431

mit allen einschlägigen
Bestimmungen der EG-
Maschinenrichtlinie
2006/42/EG in
Übereinstimmung ist.
Die Maschine ist auch in
Übereinstimmung mit allen
einschlägigen
Bestimmungen der
folgenden EG-Richtlinie:
2004/108/EG

est conforme à toutes les
exigences respectives
selon la directive relative
aux machines **2006/42/CE**.

La machine est aussi
conforme à toutes les
exigences respectives
selon la directive CE
suivante:
2004/108/CE

conforms to all relevant
specifications of the
Directive on Machinery
2006/42/EC.

It also conforms to all
relevant specifications of
following EC directive:
2004/108/EC

voldoet aan de
desbetreffende bepalingen
van de EG-machinerichtlijn
2006/42/EG.

De machine voldoet ook
aan de desbetreffende
bepalingen van het
volgende EG-richtlijn:
2004/108/EG

Folgende harmonisierte
Normen (oder Teile davon)
oder techn. Spezifikatio-
nen wurden angewendet:

Les normes harmonisées
(ou extraits de celles ci) ou
les spécifications
techniques suivantes ont
été appliquées:

Following harmonized
standards (or parts of it) or
technical specifications
have been applied:


De volgende
geharmoniseerde normen
(of delen ervan) of
technische specificaties
werden toegepast:

**EN 12733: 2018;
DIN EN ISO 12100: 2010**

Möckmühl, 21.11.2019



Klaus Mies
Geschäftsführer
Directeur
Managing Director
Bedrijfsleider



Manfred Beek
Leiter Entwicklung & Konstruktion
Responsable développement et études
Head, Research and Development
Hoofd ontwikkeling en constructie

Herr Beek ist bevollmächtigt die technischen Unterlagen zusammenzustellen.
Monsieur Beek est habilité à agencer la documentation technique.
Mr. Beek is authorized to compile the technical documents.
De heer Beek is gemachtigd om de technische documentatie op te stellen.
Anschrift/adresse/address/adres:
Agria-Werke GmbH, Bittelbronner Str. 42, D-74219 Möckmühl

Designation of parts Fig. C

Petrol engine

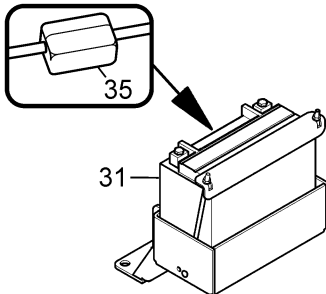
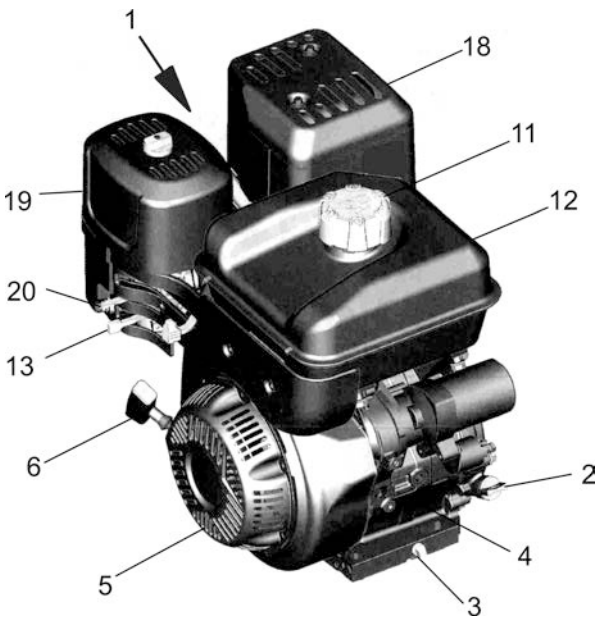
- 1 Spark plug/spark plug connector
- 2 Oil dipstick / oil filler neck
- 3 Oil drain plug
- 4 Engine no.
- 5 Cable-pull starter / fan grille
- 6 Starter handle
- 11 Fuel tank cap
- 12 Fuel tank
- 13 Fuel cock
- 18 Exhaust
- 19 Air filter
- 20 Choke actuation

- 31 Battery
- 35 Fuse holder with blade fuse

Briggs & Stratton OHV 13 hp

Fig. C

Petrol engine



Designation of parts Fig. D**Diesel engine**

- 1 Fuel tank cap
- 2 Fuel tank
- 3 Fuel cock
- 4 Air filter
- 5 Air filter preliminary separator
- 6 Starter handle
- 7 Fan grille
- 8 Decompression cable
- 9 Exhaust
- 10 Electric starter (only electric starter version)
- 11 Engine oil filling hole, oil dipstick
- 12 Engine oil drain plug
- 13 Engine oil filter
- 15 Injection pump
- 16 Fuel drain plug
- 17 Engine type plate, engine no.

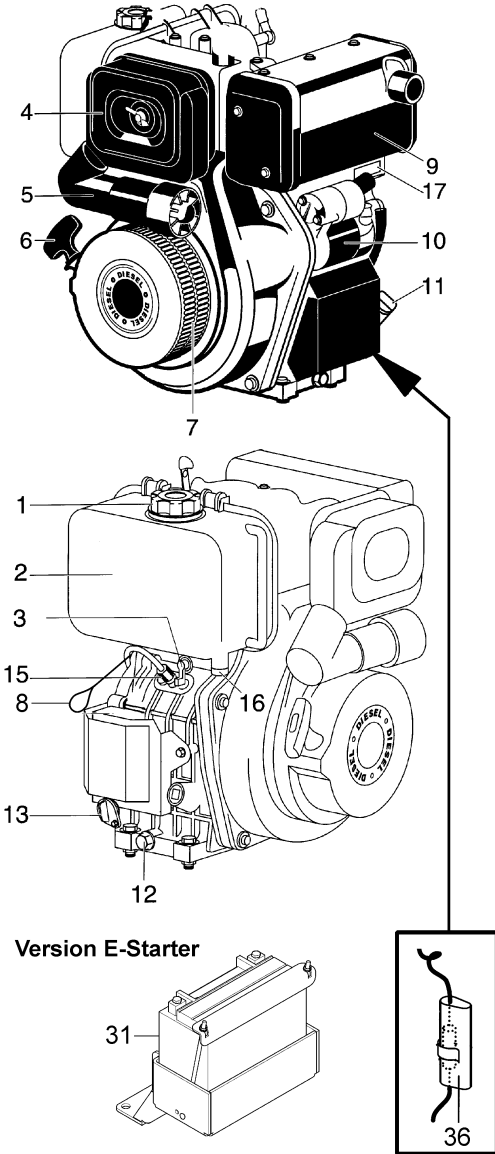
only with electric starter version

- 31 Battery
- 36 Fuse holder (with glass fuse)

Yanmar L100

Fig. D

Diesel engine





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Internet: www.agria.de

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