

TUAREG 92

APACHE 92

(CROSSJET)

TUAREG 92 4x4

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(CROSSJET 4x4)



Service manual

UNPACKING AND MACHINE INSPECTION

After the packaging material removal, carefully remove the machine from the palette. Use ramps to easily push the machine down from the pallet. Otherwise you may damage your machine. Make sure that no damage has been

inflicted during shipping. Also, unpack all dismantled parts and inspect them for damages.

The basic package include:

mowing machine

steering wheel

seat

protective frame, spark plug wrench

documentation, (packaging list, user's manual, engine user's manual, battery user's manual and service book)

STEERING WHEEL INSTALLATION

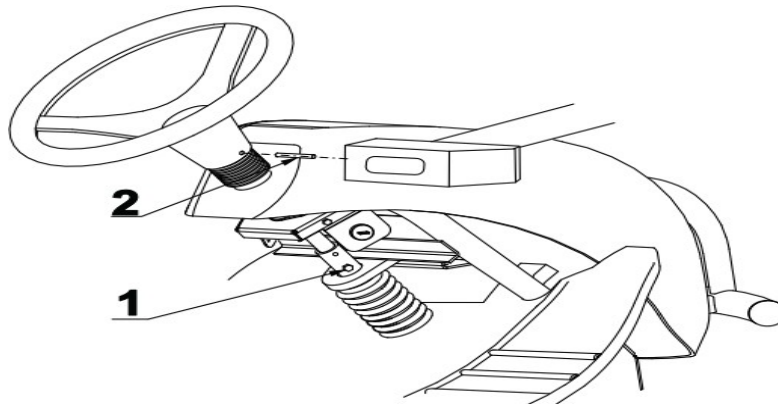
Place the mowing machine on even and flat surface and straighten up the front wheels.

Install the steering wheel and secure it in place with stud 2.

SETTING THE STEERING WHEEL HEIGHT

Remove the screw 1, pull out the steering wheel and secure it in the new position

with the same screw by screwing it in to the other hole.



SEAT ASSEMBLY

Place the nuts inside the holes in the seat backrest.

Mount the rest holder and the rest to the seat.

SETTING THE SEAT POSITION

Press and hold the adjusting switch and move the seat backward or forward as needed.

INSTALLATION OF THE PROTECTIVE FRAME

Mount the protective frame to the seat sides. Use screws to secure it in place.

CONNECTING THE BATTERY

When installing and using the battery, observe the rules described in the battery manual. The battery is located

underneath the front machine hood.

Open the hood and loosen the terminal screws.

Connect the red cable (+) to the positive battery terminal and secure it in place with the screw. Connect the brown

cable (-) to the negative battery terminal and secure it in place with the screw.

If you removed the battery from the battery compartment, make sure to secure the battery in place with the supplied holder.

Caution !!!

Make sure to connect the battery correctly as described above or you may damage your machine.

If you want to disconnect the battery, always disconnect the (-) terminal first.

Observe the maintenance instruction included in the battery manual.

HYDRAULIC SYSTEM OIL LEVEL CHECK UP (model AC 92-23 4x4)

Your machine is delivered with fully operational and fully bled hydraulic system and with equalizing container filled

with the correct amount of oil. The oil level may go down during transport.

- make sure that the oil level is between the two markings on the lid dipstick and refill if needed.

When you finish, clean the lid and the intake surrounding with a cloth. Clean the entire tank as well because dirt in

the oil lowers the oil filter life or it may cause breakdowns.

The system is thoroughly bled during the first hours of operation. We recommend to let your machine work with

low load for about 1 - 2 hours.

TIRE PRESSURE INSPECTION

Inspect the tire pressure regularly. Make sure the pressure is according to the requirements. Other than the recommended pressure values may worsen the driving capabilities of your machine or may even cause loss of

control.

- Front wheel tire pressure 150 kPa
- Rear wheel tire pressure 80kPa

OIL CHANGE

The engine is equipped with oil drain screw.

- Place a flat container that may safely take at least 2 liters of oil under the engine.

Slide a piece of suitable wood under the opposite side of the drain screw to lift the machine slightly.

That way you better drain the oil out of the engine.

- Unscrew the drain screw and loosen the oil-filling lid to ensure easy oil drain.

- When all oil is drained, screw the screw back and fill the engine with suitable oil. Make sure to pour in the correct amount of oil. (See the engine user's manual).

Close the oil filling lid.

- Take the used oil to the recycling facility for further processing.

ENGINE COOLING SYSTEM MAINTENANCE

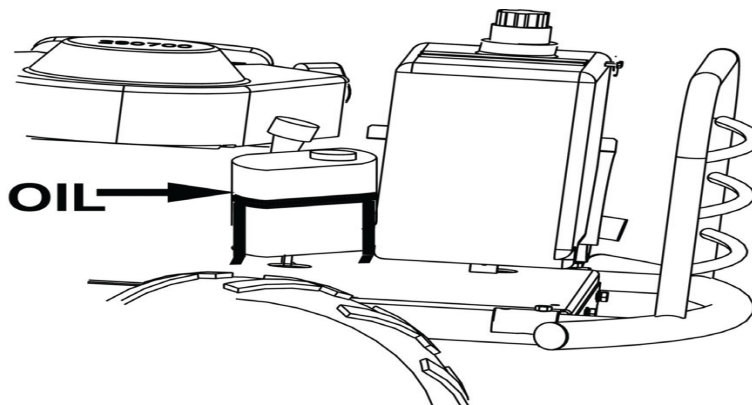
Before each use and during work inspect the engine grill. The grill must be free of grass or other foreign subjects.

If needed clean the grill!

After every 100 hours of use or once a year, remove the ventilator cover and clean all clogged areas and the cooling engine ribs. That way you prevent engine overheating. If needed, clean the cooling system more often.

HYDROSTATIC TRANSMISSION MAINTENANCE

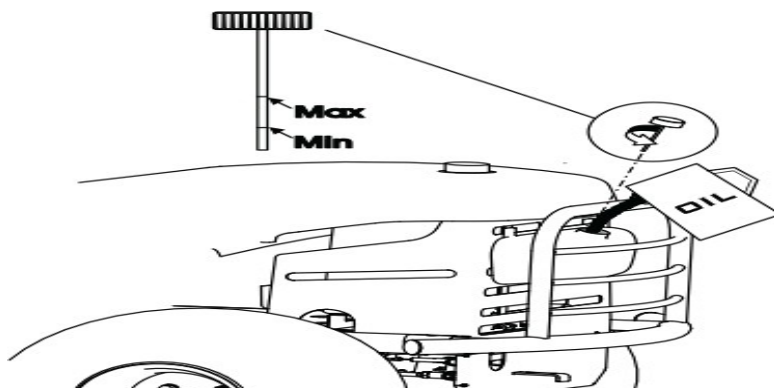
To ensure flawless operation of the transmission, maintain the oil level on the correct marking.



model AC 92-18(20)

Oil specification SAE 10W-30, API CD

Oil level make sure the oil level reaches the half of the allowed ration
equalizing container



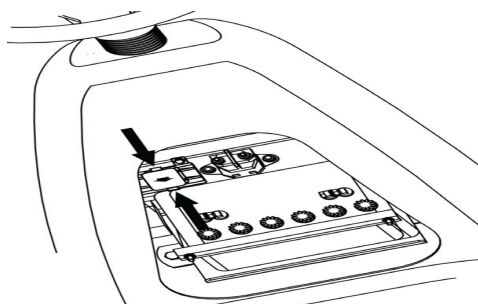
model AC 92-23 4x4

Oil specification SAE 5W-50 synthetic oil

Oil level must be between the marking lines on the lid dipstick (the total amount of oil in the hydraulic system is 6l)

FUSE CHANGE

Loosen the hood fastening screw and lift the hood up.
remove the protective cover, remove the old fuse and insert new one
with the same rating as the old one (15A or 5A).



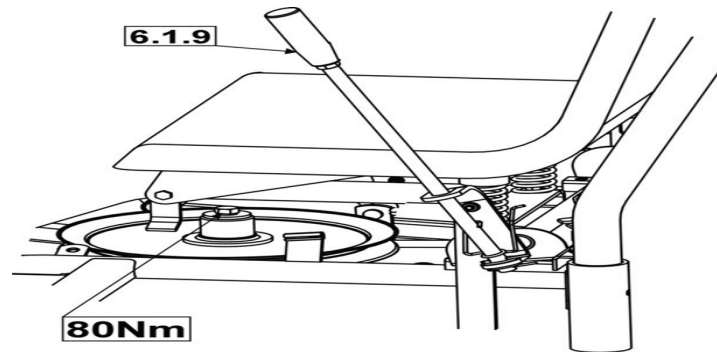
LIGHT BULB CHANGE

Loosen the hood fastening screw and lift the hood up.
Slightly open the light bulb holder and remove the old bulb out.
Place the new light bulb inside. Bend the light bulb holder back again. Close
the hood.

Model AC 92-23 4x4: Turn the locking knob on the front hood, remove the
cover and follow the procedure described above.
Light bulb type and its power output may be find in the spare part catalogue.

MOWING MECHANISM PULLEY INSPECTION

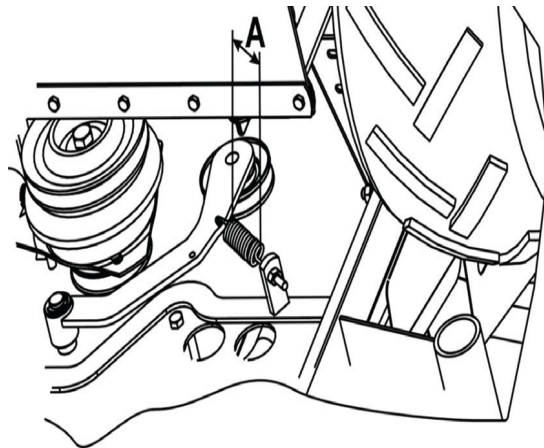
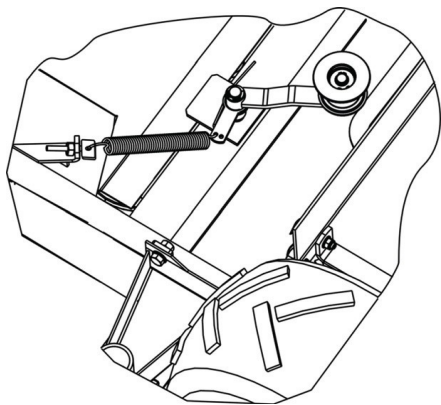
Before each use check if the pulley fastening screw
is properly tightened. The proper tightening torque should be 80 Nm.



V-BELTS OF THE POWER TRAIN

The V-belts are tensioned automatically by spring and pulley mechanism. V-belt wear and tear and the proper functioning of the tensioning mechanism must be inspected before starting your work or after every 50 hours of use. The tensioning pulley mechanism setting is done with the adjustment nuts A= 60 ± 2 mm.

Note: After you have replaced the V-belt pay extra attention to your machine because the new belt has not been properly run in yet.



CONDITION OF THE MOWING KNIVES

Before each use, inspect the conditions of the cutting knives (wear and tear, sharpness etc.). If the knives are dull, bent or damaged, the quality of the cut will be significantly lowered. Damaged knives are very dangerous. Small parts of the knives may get loose and may be catapulted away from the spinning head.

Make sure to change damaged knives for new ones immediately. **Always change both knives at the same time.**

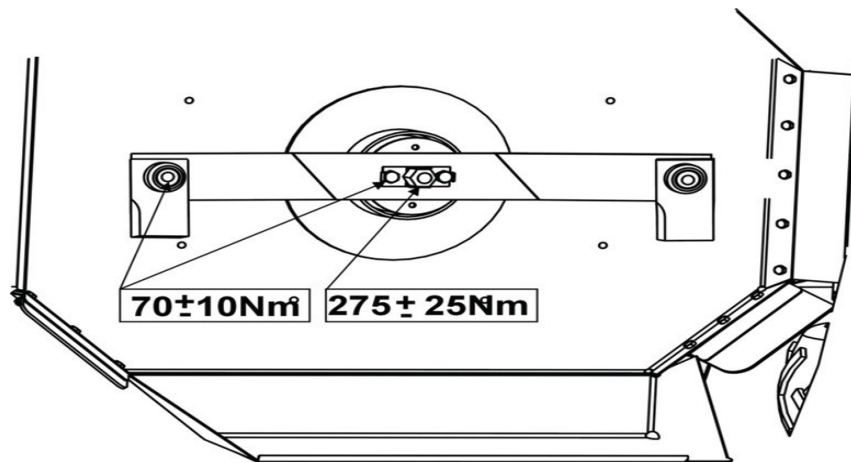
Use self-securing nuts M16 to fasten the knives in place !

That way you will have a safely balanced mowing mechanism and safe knife mount.

If the knives are dull and there is no other sign of damage, you may sharpen them again. After you have sharpened

both knives, you must balance them. Well-balanced knives do not produce unwanted vibrations. **The difference in**

weight between each knife may be 2g maximum. Also inspect the condition and wear and tear of the distancing casings and fastening screws.



Caution !!!

Always use new self-securing nuts M16. Never use old and used self-securing nuts. There is no guaranty that they will hold the knives in place securely!

MOWING KNIFE CHANGE

- Stop the engine and remove the key from the ignition.
 - Use personal protection gear when working and changing cutting knives.
 - Secure your machine against movement.
 - Lift the mowing mechanism to the transport position.
 - Flip open the steel cover on the right side of the mowing mechanism.
 - Unscrew the self-securing nut M16.
 - Remove the fastening screw, distancing casing and knife.
- Install the new or sharpened knife. Follow the procedure described earlier in reverse order.**
- Use brand new self-securing nuts M16.
 - Before you change the second knife, turn the knife holder by 180°.

Change the second knife using the same procedure.

Make sure to place and install the knives correctly. Tighten the nuts securely!

MACHINE CLEANING

Do not use high-pressure cleaners to clean your machine! If you want to use pressure cleaning, make sure that no water will enter the engine carburettor, ignition system, exhaust, battery and electrical system. Never aim the pressure gun at ball bearings, (knife holders bearings, wheels) and other parts that needs to be well lubricated or may get damaged (oil filter, tank bottle neck etc.). We recommend leaving the engine and the transmission mechanism running at least 3 minutes after cleaning. That way the remaining water evaporates.

MOWING MECHANISM CLEANING

Clean the mowing mechanism after each use. Pay extra attention to the inner wall of the mechanism. Use water, scrubber or wooden spatula for cleaning. Regular and thorough maintenance extends the operation life of your machine and improves the cut quality.

- Make sure to secure the machine against movement before cleaning.
- Lift the mowing mechanism to the transport position.
- Flip open the steel cover on the right side of the mowing mechanism. Clean the entire inner area of the mowing mechanism.
- Always inspect the knife condition during cleaning.

LUBRICATION

To ensure flawless operation,
you must lubricate
the following parts with plastic grease
regularly:

- steering segment - use the grease nipple
- steering wheel studs - use the grease nipples
- mowing mechanism lifting arm - use the grease nipples
- tensioning pulley - must be disassembled and lubricated
- centre rotary stud of the front axle - use the grease nipple (model AC 92-23 4x4 is equipped with self-lubricating casings)
- angular joints of the steering connection rods - must be disassembled and lubricated

Use oil to lubricate these turning points:

- differential lock pedal
- break pedal
- travel control lever



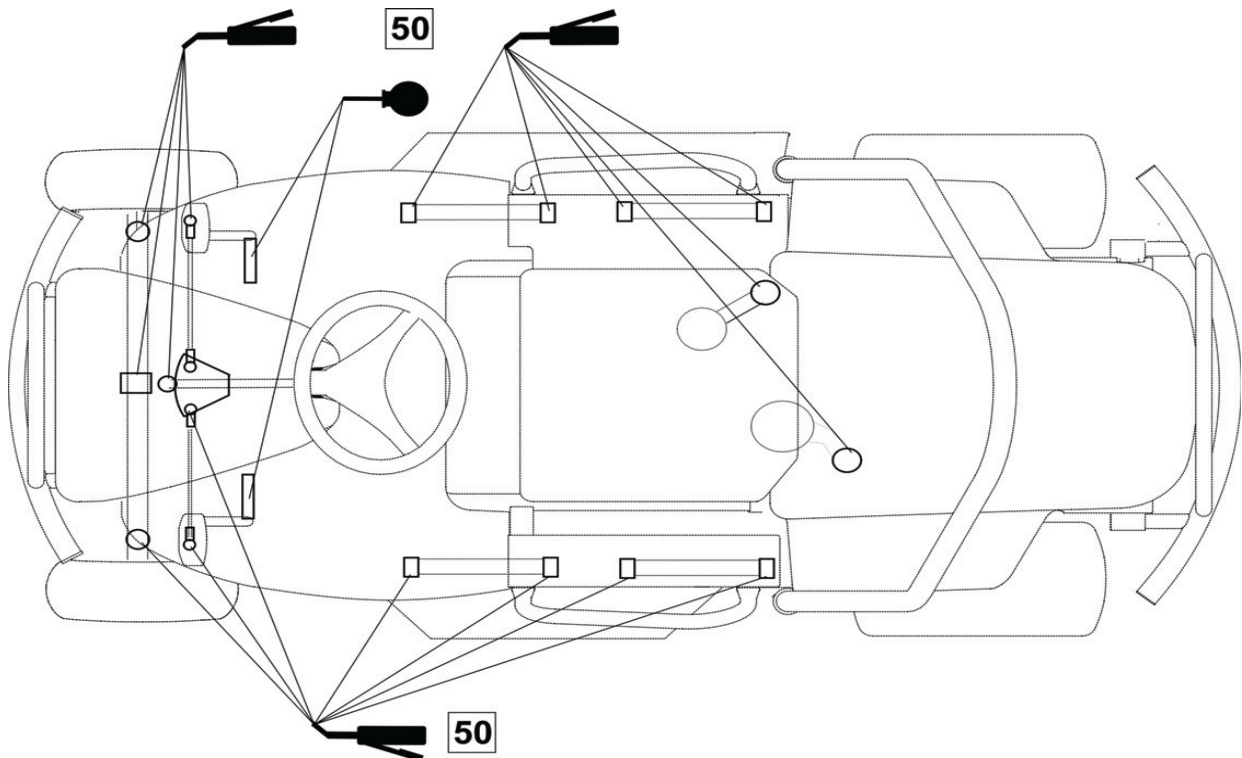
plastic grease



oil SAE 30



50 hour lubrication interval



WHEEL CHANGE

Before changing the wheel, place the machine on an even and solid ground.

- Stop the engine and remove the key from the ignition.

- Secure your machine against movement. Do not attempt to change the wheel if the lifted machine is not secured!

Follow this procedure when changing the front wheel:

- Place the jack under the front bumper, close to the wheel that you want to change.
(model AC 92-23 4x4 – place the jack against the frame - do not lean it against the transmission! You may damage the transmission) You may damage the transmission)
- Lift the machine so the wheel that you want to change does not touch the ground.
- Remove the safety ring and washer.
- Pull out the wheel.

Follow this procedure when changing the rear wheel:

- Loosen all four fastening wheel screws.
- Place the jack under the axle of the wheel you want to change.
- Remove the loosen screws and pull the wheel out of the axle.

To put the wheel back, use the above described procedure in reverse order. Check the tire pressure.

LIST OF CONTROL POINTS AND MAINTENANCE PROCEDURE

Part	Before each use	After every 50 hours of operation or 1x a year.	After every 100 hours of operation or 1x a year.	Notes
Engine oil	check the oil level and refill if needed	change the oil		
Air filter		clean	change	if used a lot - clean more often
Oil filter			change	
Engine cooling system	remove the grass on the radiator grill intake and exhaust	clean		
Ventilator, engine rib structure			clean	
Spark plugs			clean, adjust or change	
Battery		check the electrolyte level		check the connection
Control elements		inspection		
Fuel filter			change	
Tires	check the pressure and tire conditions			front 150kPa rear 80kPa
Cutting knives	check the conditions and if they are securely fastened			
Knife holders	inspection			
Mowing mechanism and gear	check the conditions and if the mechanism is securely fastened			
Front covers	Inspect their condition			
Cutting height	inspection, lubricate studs			
Travel control lever	Check its functionality	check the belt tension		
Parking break	Check its functionality	check the mechanism		
Electrical wiring	inspect all safety switches	inspect cable sets		
Transmission housing	check for leakage	check the belt pulley condition	check the oil level	use oil SAE 10W-30
Steering		Check its functionality		
Front axle	check the steering stud and wheel condition	lubricate the vertical studs		
Front driven axle. (Model AC 92-23 4x4)	Inspect the condition of all spherical studs and the connecting steering rod			The tolerance of the spherical studs must be minimal. The connecting steering rod must not show any signs of damages such as cracks etc.
Hydraulic system	check for leakage			
Mowing mechanism V-belt	check its conditions, tension and wear out.			
Drive train V-belt	check its conditions, tension and wear out.			
V-belt tensioning mechanism	Check its functionality	Inspect their condition		
All pulleys	check the condition and functionality			
Hydraulic system oil				Change the oil after 200 hours of operation
Transmission fluid filter				Change the oil after 200 hours of operation

TROUBLESHOOTING AND PROBLEM SOLVING

The machine cuts the grass unevenly

- * check if the knives are dull or damaged
- * check if the knives are securely and properly fastened
- * check the mount of the knife holders
- * check the shaft and bearings

Some areas are not cut at all

- * check the cutting height
- * lower the driving speed
- * inspect the knives for sharpness and good working conditions
- * inspect the mowing mechanism V-belt tension and conditions

The V-belt stops during mowing

- * the belt may be damaged if it "jumps" out of the pulley during operation. If the problem persists even after you have checked the following checkpoints, you must change the belt.
- * check the belt wear and tear
- * check the belt tension
- * check the belt guiding pulleys
- * check the cutting height
- * check if a foreign object prevents the belt from free movement - if so, remove the foreign object
- * inspect all pulleys
- * bent or cracked pulleys must be changed immediately
- * check the engine pulley
- * inspect the tensioning mechanism (spring, pulley)
- * lower or adjust the driving speed
- * lift the mowing mechanism higher

The mowing mechanism V-belt is sliding

- * if the grass or the vegetation is too thick, tall or wet the belt may start to slide on the pulley
- * lower the driving speed
- * check the belt wear and tear
- * check the belt tension
- * inspect the tensioning mechanism (spring, pulley)
- * lift the mowing mechanism higher

The mowing belt is getting worn out too quickly

- * check the belt guiding pulley
- * check if a foreign object prevents the belt from free movement - if so, remove the foreign object
- * inspect the pulleys - if needed, change the pulleys
- * check the cutting height setup - if needed, adjust the cutting height
- * check the belt tension

The mowing machine is not moving

- * check the cutting height The mowing mechanism is in the transport position and the safety switch is on. The electromagnetic clutch cannot be engaged. Move the lever to the working position.
- * check the setting of the mowing mechanism switch
- * check the belt for wear and tear, tension. If needed, change the belt
- * inspect the belt tensioning mechanism Broken spring must be changed
- * check if a foreign object prevents the belt from free movement - if so, remove the foreign object

When the mowing mechanism produces high vibration during work

- * inspect the knife conditions - wear and tear, sharpness, damages. Change and balance the knives if needed.
- * check the belt tension
- * check the belt for damages. If needed, change it.
- * inspect the pulleys - if needed, change the pulleys
- * check the inside of the mowing mechanism for dirt and grass deposits. If needed, clean it thoroughly
- * inspect the engine mount. If needed, tighten all screws that hold the engine to the frame

The driving belt is sliding

- * check the belt tension and the tensioning spring. If needed, change the spring
- * check the belt wear and tear
- * check if a foreign object prevents the belt from free movement - if so, remove the foreign object
- * inspect the pulleys - if needed, change the pulleys

The driving belt is getting worn out too quickly

- * check the belt tension
- * check the belt tensioning mechanism. If needed, change the spring
- * check if a foreign object prevents the belt from free movement - if so, remove the foreign object
- * inspect the pulleys - if needed, change the pulleys

The machine is not moving after gear has been engaged

- * check the shifting mechanism - inspect the travel control lever mount
- * check the oil level in the equalizing container

After you have shifted the gear, the machine runs unusually loud

- * check the oil level in the equalizing container - if needed, refill the oil
- * there are air pockets in the hydraulic system. Drive the machine for few minutes slowly forward and backward.

The machine is losing power during uphill driving

- * during extremely hard working conditions and high temperature of the environment, the oil temperature may rise above the maximum working value. Lower the load on the machine.