

CUKUROVA BACKHOE LOADERS

883

OPERATION AND MAINTENANCE MANUAL





ÇUKUROVA BACKHOE LOADER

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OPERATION AND MAINTENANCE MANUAL

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ÇUKUROVA MAKİNA İMALAT VE TİC.A.Ş.

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FOREWORD

This manual is primarily for the operator and the service engineers and contains information which is vital to the correct operation and proper maintenance of the CUKUROVA BACKHOE LOADER.

It includes:

Accident Prevention, Guidelines and Operating Instructions
Maintenance Instructions.

This Operation and Maintenance manual should be given to the OPERATOR and any other person, who might work on the machine. It is very important that should read the manual carefully before operating or working on the CUKUROVA BACKHOE LOADER and at regular intervals thereafter, for example:

- Operation, including installing and removing the attachments, trouble shooting during operation, cleaning, care, disposing of operating and auxiliary fluids,
- Maintenance work (maintenance, inspection, repair),
- Transportation.

The manual will make it easier for the operator to get accustomed to the BACKHOE LOADER and to prevent any problems due to improper handling.

All maintenance personnel should follow the operating and maintenance instructions and your BACKHOE LOADER will give you constant and reliable service with excellent performance, reducing repair costs and down time.

In addition to the operating and maintenance a guidelines is this manual, additional local and national accident prevention guidelines and environmental regulations may be applicable and must be observe

The Operation and Maintenance Manual is part of the machine and should be left in the storage compartment of the operator's cab.

Note: We cannot honour any claims which could arise due to careless handling, improper operation, inadequate maintenance, use of unauthorized oils or lubricants, non-observance of the safety instructions, etc.

CUKUROVA reserves the right to cancel any warranty claims, service contracts etc. without prior notice if any other than Original CUKUROVA parts or parts sold by CUKUROVA are being used for maintenance and repairs.

This Operation and Maintenance manual contains all necessary information to operate and maintain your BACKHOE LOADER. However, should you need additional information or explanations, please contact CUKUROVA's Technical Documentation or Customer Service Department.

NOTE: CUKUROVA reserves the right to make any alteration without prior notice.

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INFORMATION TO THE OPERATION AND MAINTENANCE MANUAL

ISSUE:

SERIAL/NO:

This Operation and Maintenance Manual is valid for backhoe loaders from the following serial numbers:

We recommend that you fill in the following table as soon as you receive your backhoe loader. This will also be helpful when you order parts.

Serial No.:

Manufacturing Date:

Delivery Date:

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We reserve the right to make any technical changes compared to data and illustrations given in this manual.

Warranty and liability are subject to CUKUROVA's general business terms and conditions are not changed in any way by instructions in this manual.

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Manufacturer: CUKUROVA MAKINA IMALAT VE TIC.A.S.
Şahin Mah. Sait Polat Blv. No.326 PK. 61
33470 Tarsus/Mersin TURKEY

883 BACKHOE LOADER



INFORMATION TO VEHICLE

You should determine the model of the vehicle , serial number and manufacturing year while the spare parts demand and taking information.

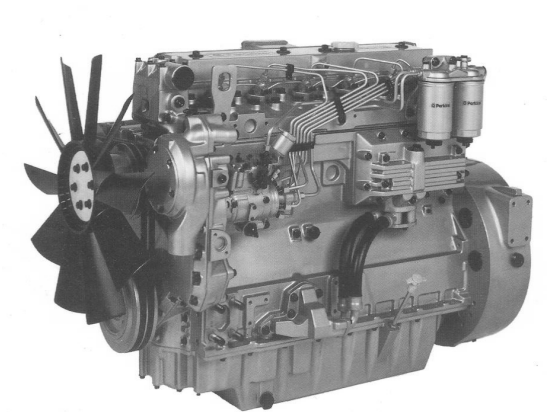
Vehicle



Tipi		Müsaade edilen ön dingil ağırlığı		kg
Seri no		Müsaade edilen arka dingil ağırlığı		kg
Müsaade edilen toplam ağırlık		Motor gücü		kW
Üretim yılı		Max. hız		km/h
ÇUKUROVA MAKİNA İMALAT VE TİC. A. Ş. MERSİN / TÜRKİYE				
ÇUKUROVA		CE		
		CS8025		

- 1 Model
2 Serial number
3 manufacturing year.....

Engine



- 4 Model
5 Serial number

Serial numbers of components

- Hydraulic pump
Front axle
Rear axle.....
Loader control valve
Backhoe control valve
Transmission

OPERATOR'S COMPARTMENT



- Cabin serial number
Max weight of vehicle.....

MACHINE INFORMATION

These are backhoe loaders that are designed with operating weight up to 7.6 tons, rigid frame, bucket capacity of 0.19 m³ and shovel capacity of 1.1 m³. These machines are designed to dig and load in closed and open terrain.



WARNING: Because of exhaust gas, use the machine only in well ventilated areas.

TECHNICAL PROPERTIES

ENGINE

Make	PERKINS
Model	1104C-44T
Engine type	4 stroke diesel, turbocharged
Rated power	100 hp/ 74.5 kW
Rated speed	2200 rpm
Displacement	4,4 lt
Bore and stroke	105x127mm
No of cylinder	4
Max. torque	408 Nm

Electrical system	
Battery	12/120V/Ah
Starter	3 kW

HYDRAULIC SYSTEM

System type	Unload/open center
Hydraulic pump	Tandem gear
Max. flow	90+64 l/min
Max. press.	200 bar
Hydraulic oil filter	Full flow filter in return line with integrated fine filter area
Hydraulic oil cooler	Hydraulic and transmission oil cooler
Backhoe control	Mechanical lever
Loader control	Mechanical lever

BRAKES

2 Wheel /4 Wheel	2 Wheel
Service type	Hydraulic wet multi-disc
Parking type	Mechanical control on rear axle

AXLES

	Front axle	Rear axle
Make	ZF	ZF
Axle oscillations	±10 degree	
Rear axle	Electro hydraulic operated differential lock	

TRANSMISSION

Make	ZF
Type	Powershift
Torque converter ratio	2.121:1
Transmission disconnect	With push button
Travel speed	
1 st	6.50/7.00 km/h
2 nd	11.00/12.00 km/h
3 rd	26.00/30.00 km/h
4 th	40.00 km/h

LOADER

Shovel capacity	1,1m ³
Lift to full height	3275 kg
Breakout force-lift	60,5 kN
Breakout force shovel max.	81,5 kN
Shovel width	2280mm

BACKHOE

Max. bucket tear-out retract	59,1kN
Dipper tear-out	
Retracted	31,8kN
Extended	22,4kN
Lift at max. reach	
Retracted	1116 kg
Extended	1076 kg

CAB

Cab	ROPS(ISO 3741) and FOPS(ISO 3449) type tinted safety glass giving total visibility, two doors full opening rear-side windows, front and rear windscreen wipers
-----	--

Seat	Adjustable to operator's weight.
------	----------------------------------

Heating and ventilation	Fresh air heater/blower unit, full heating control system even in storage compartment, defroster control with only one switch.
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WEIGHTS

Operating weight	7620 kg
------------------	---------

TIRES

Front 4WD-standard	12,5/80-18 12 PR
Rear 4WD-standard	16,9-28 12 PR

CAPACITIES

Engine oil (with filters)	13,3	l
Cooling system	25	l
Fuel tank	140	l
Hydraulic tank	75	l
Hydraulic system	150	l
Axle oil		
Front	7,8	l
Rear	16	l
Brake oil	0,4	l

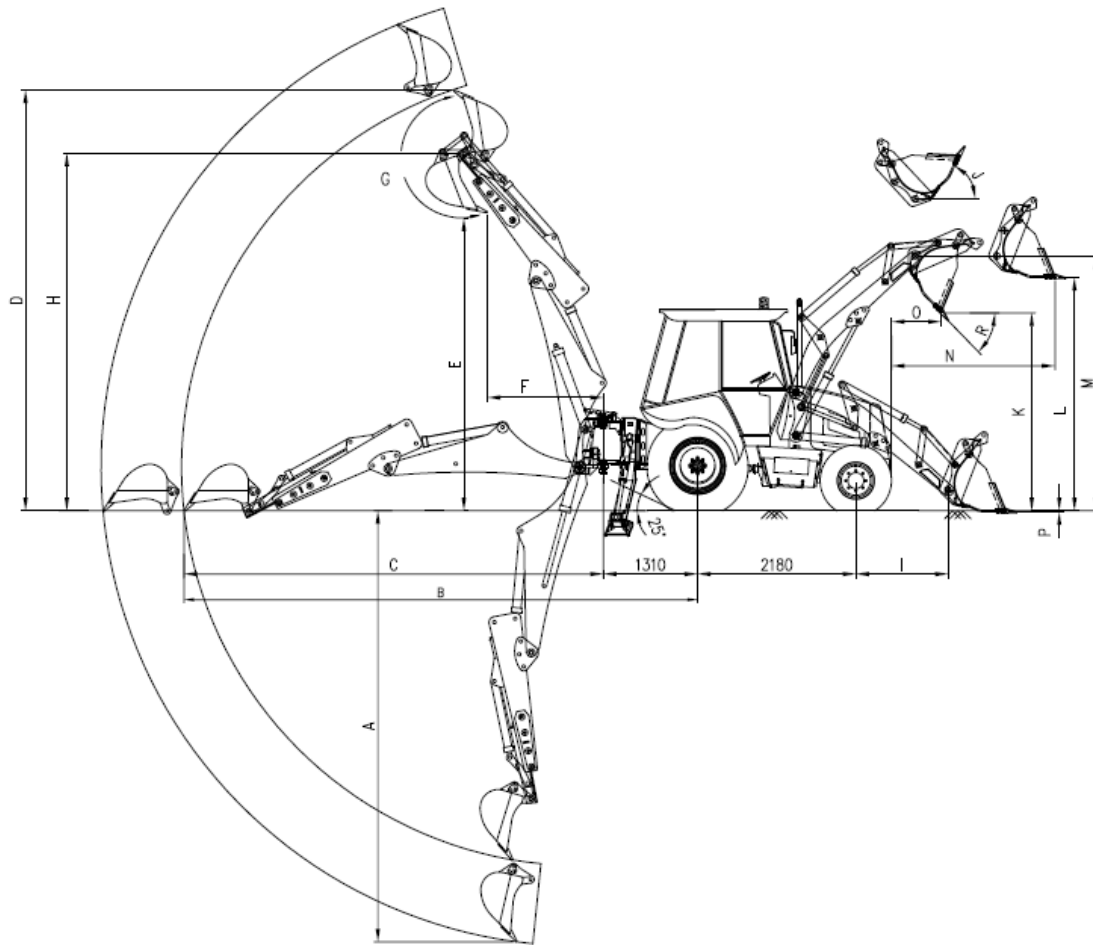
STEERING

Steering type	2 wheel
---------------	---------

Outer tire clearance diameter	8,4m
Without brakes	
Outer bucket clearance diameter	11,1m
Without brakes	

Outer tire clearance diameter	7,3m
With brakes	

Outer bucket clearance diameter	10,5m
With brakes	



Backhoe Dimensions

A- Max. digging depth:	
B- Max. reach from rear axle centre	
C- Max. reach from swing centre	
D- Max. digging height	
E- Max. dumping height	
F- Loading reach	
G- Bucket rotation angle	
H- Max. bucket hinge pin height	

Retracted

4600 mm
7000 mm
5700 mm
5600 mm
3850 mm
1800 mm
200.4°
4750 mm

Extended

5800 mm
8100 mm
6800 mm
6450 mm
4700 mm
2650 mm
200.4°
5550 mm

Loader Dimensions

I- Distance between hinge pin and front axle centre	
J- Max. rollback angle, fully raised	
K- Dump height	
L- Load-over height	
M- Height to hinge pin	
N- Max. reach at full height	
O- Dumping reach	
P- Digging depth	
R- Dump angle	

1220 mm
59.2°
2810 mm
3280 mm
3520 mm
1070 mm
620 mm
115 mm
45°

ATTACHMENTS

Fork attachment

Part number	C06A06
Weight	135 kg/piece

Clamshell attachment

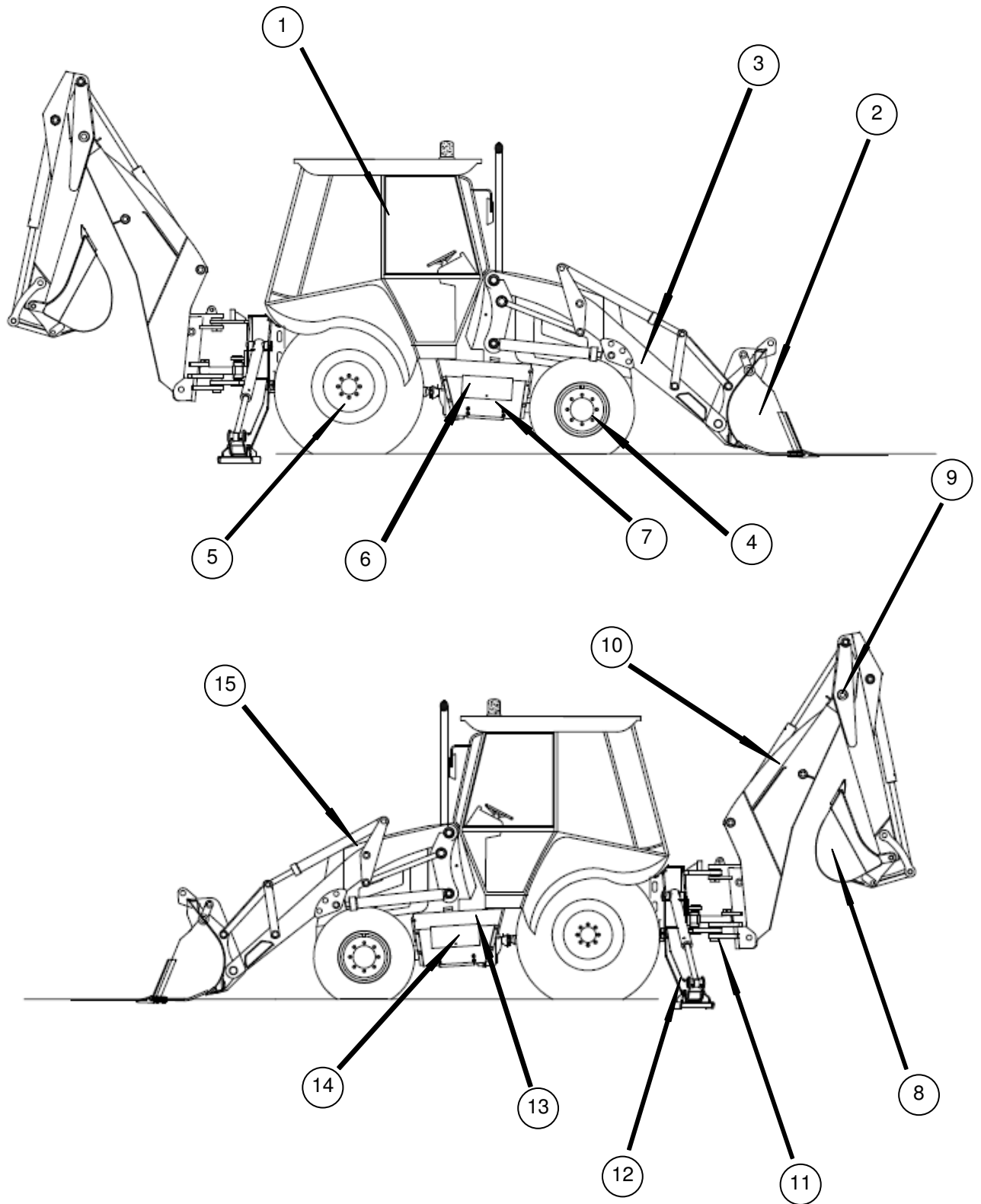
Weight	700kg	
Part number	fixed part	C02B31
	Active part	C02B22

Bucket attachment (standard)

Weight	400 kg
Part number	C02B51

Bucket width	400 mm	600 mm	800 mm
Weight	165 kg	175 kg	190 kg
Part number	C41B85	C41B70	C41B84

MAIN COMPONENTS

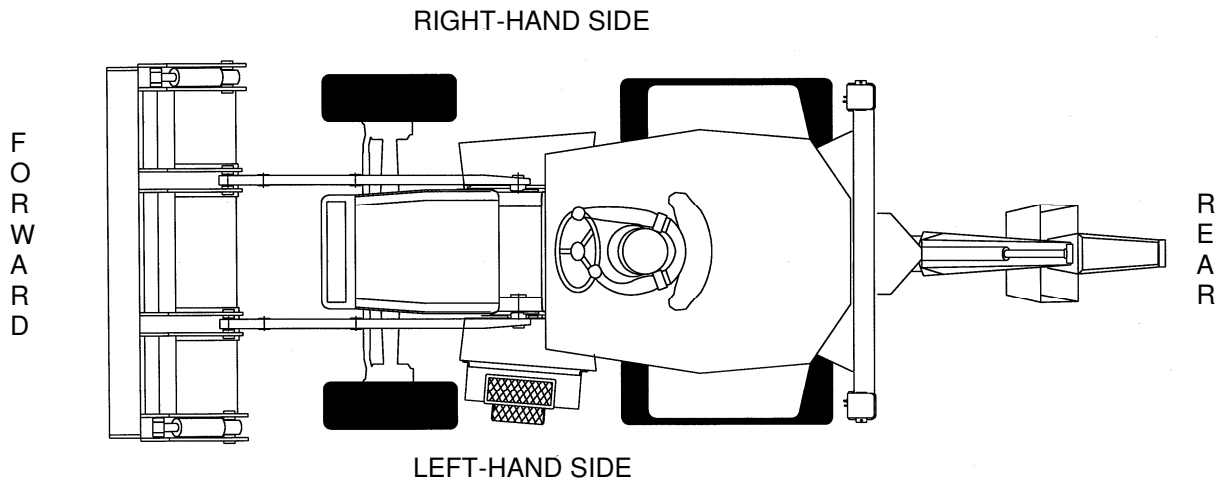


1. OPERATOR'S COMPARTMENT (WITH ROPS / FOPS)
2. LOADER BUCKET
3. LOADER BOOM
4. FRONT AXLE
5. REAR AXLE
6. FUEL TANK
7. TOOL BOX
8. BACKHOE BUCKET
9. BACKHOE TELESCOPIC STICK (EXTENDIBLE DIPPER)
10. BACKHOE BOOM
11. BACKHOE ATTACHMENT SIDESHIFT CARRIAGE
12. STABILISERS
13. HYDRAULIC OIL TANK
14. BATTERY BOX
15. ENGINE BONNET

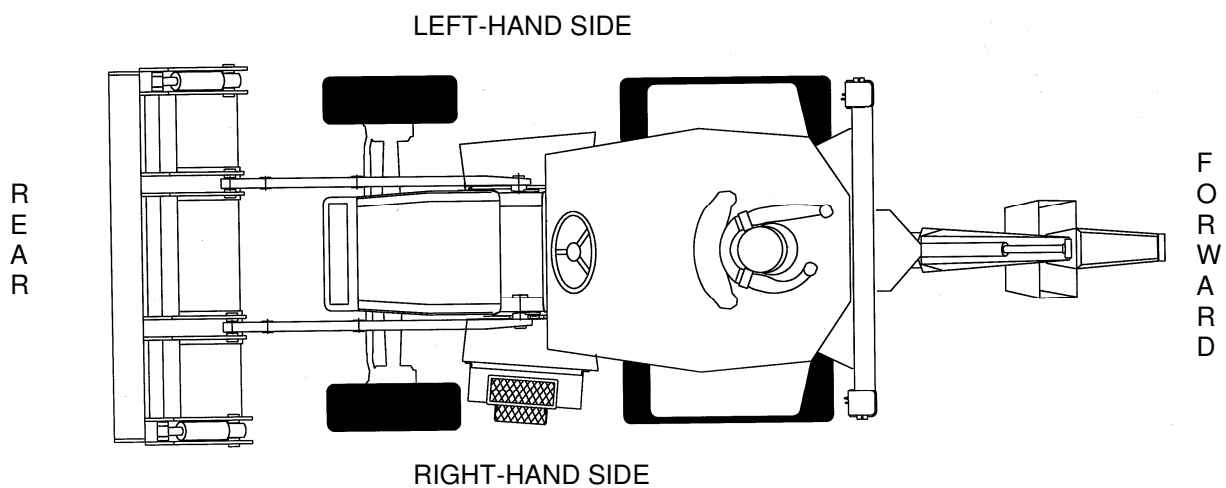
POSITIONS OF THE MACHINE

The terms right, left, front and rear are used referring to the operator seated on the driver seat for the loader and backhoe attachment position.

LOADER ATTACHMENT POSITION



BACKHOE ATTACHMENT POSITION



SAFETY INFORMATION

The information given in this manual provides safe operation and maintenance of the machine and should be fully understood in order to prevent serious injury or death while working with the machine. Don't forget that your safety and the people around you depends on you. Therefore to develop your skill for the correct operation, inspection, lubrication and maintenance:

- You should read this manual carefully and familiarise yourself with the position of controls and of the operations that their movement causes. If you do not understand, you should consult a ÇUKUROVA branch.
- You should understand the warnings and operating procedures used in this manual and on the machine.
- You should understand the capabilities and limitations of the machine.

In this manual safety signs are classified according to the relative seriousness of the hazard situation by the use of the signal word. Two signal words are used: DANGER and WARNING. The signal word alerts you to the existence and relative seriousness of a hazard and it is essential that you understand these signal words fully.



DANGER: used for the situations presenting the most serious hazards and if not avoided, will result in death or serious injury.



WARNING: used for the situations presenting a lesser degree of risk of injury or death than those identified by the signal word DANGER and if not avoided could result in death or serious injury.

In addition to these instructions you must follow the safety regulations applicable to your work environment and job site and any federal, state and local safety requirements.

Keep this manual in good condition and store it in a compartment where you can easily reach it.

GENERAL SAFETY INFORMATION

- Study the Operation and Maintenance Manual before operating or working on the backhoe loader, make sure that you have additional information for special attachments of your machine, read it and understand it!
- Allow only authorized personnel informed about the safety rules to operate, service or repair the backhoe loader, be sure to observe any minimum applicable age requirement.
- Allow only properly trained personnel to operate or work on the backhoe loader, make sure to clearly specify the person who is responsible for set up, maintenance and repairs.
- Make sure the operator knows his responsibility regarding the observance of traffic regulations and permit him to refuse any unsafe instructions given by a third person.
- Any person still in training should only operate or work on the machine under the supervision and guidance of an experienced person.
- Check and observe any person working or operating the backhoe loader periodically and check regularly, if they observe safety instructions and guidelines given in the Operation and Maintenance Manual.
- Wear proper work clothing when operating or working on the backhoe loader. Ring, watches, bracelets and loose clothings such as ties, scarves, unbuttoned or unzipped shirts and jackets are dangerous and could cause injury! Wear proper safety equipment, such as safety glasses, safety shoes, hard hats, work gloves, reflector vests and ear protection.
- Consult your employer or supervisor for specific safety equipment requirements and safety regulations on the job site.
- Do not carry tools, replacements parts or other supplies while climbing on or off the backhoe loader. Never use the steering column, control levers or joysticks as handholds.
- Never jump off the backhoe loader, climb on and off the backhoe loader using only the steps, rails and handles provided.
When climbing on or off the backhoe loader, use both hands for support and face the machine.
- If needed, use the rear window or right door as an escape hatch.
- If no other guidelines are given, perform maintenance and repairs utilising the following precautions:
 - Park backhoe loader on firm and level ground. Rest the attachments on the ground.
 - Place all control in neutral position and engage park brake switch.
 - Turn the engine off and remove the ignition key.
- Before working on the hydraulic circuit, move all levers and pedals with the ignition key in contact position to release the hydraulic accumulator pressure and the remaining pressures in the different main circuits. In addition, relieve the pressure in the hydraulic tank as described in the Operation and Maintenance Manual.
- Make sure there is no leak in the hydraulic system and check the machine daily.
- Check the area where you will work before starting to work. Be certain that all safety systems operate properly.
- Secure all loose parts on the backhoe loader.
- Never operate the backhoe loader without a complete walk around inspection. Check if all warning decals are on the machine and if they are legible.
- Observe all danger and safety guidelines.
- For certain applications, the backhoe loader must be equipped with specific safety equipment. Use the backhoe loader only, if they are installed and functioning properly.
- Never perform any changes, additions or modifications on the machine, which could influence the safety, without obtaining written first permission from the manufacturer. This also applies to the installation and adjustment of safety devices and safety valves as well as to any welding on load carrying parts.
- Do not install any equipment or attachments made by other manufacturers or any which are not specifically authorized by CUKUROVA for installation without first obtaining the written permission from CUKUROVA. CUKUROVA will issue any required technical documentation for approved installations.
- Should the electrical circuit be modified or additional components be installed, so the modification must be performed according to the national standards and safety regulations. The installation must be certificated by an approved organization and a copy of the certification has to be sent to the CUKUROVA company.

CRUSHING AND BURN PREVENTION

- Never work underneath the backhoe loader unless it is safely resting on the ground and / or is properly blocked and supported.
- Never use damaged or insufficient wire ropes, slings or chains. Always wear gloves when handling wire ropes.
- Never reach into bores during attachment installation or removal. Never align bores with fingers or hands. Use proper alignment tools when installing, changing or servicing attachments.
- Keep objects away from the radiator fan. Rotating fans will swirl and throw out objects, which can become very dangerous and cause severe injury to yourself and others.
- Avoid contact with any components containing coolant. At or near operating temperature, the engine coolant is hot and under pressure and could cause severe burns.
- Check the coolant level only after the radiator cap is cool enough to touch. Remove the radiator cap slowly to relieve pressure.
- Do not allow your skin to come in contact with hot oil or components containing hot oil. At or near operating temperature, engine and hydraulic oil is hot and can be under pressure.
- Always wear safety glasses and protective gloves when handling batteries. Keep sparks or open flames away!
- Never permit anyone to hand guide the bucket or grapple into position.
- When working in the engine area, make sure loader safety strut is installed.

FIRE AND EXPLOSION PREVENTION

- Always turn off the machine while refueling the backhoe loader.
- Never smoke or allow an open flame in refueling areas or where batteries are being charged, or where batteries or flammable materials are stored.
- Battery electrolyte can cause severe injury. If electrolyte touches your skin, wash the skin. If drunk by mistake, drink water or milk.
- Battery must be always full to prevent frozen electrolyte.
- Always start the engine as described in the Operation and Maintenance Manual.
- Clean the machine regularly and remove all debris which may cause a fire.
- Don't use flammable cleanser.

- Observe the following recommendations due to be protected from an explosion
 1. Disconnect the negative (-) cable first and reconnect it last.
 2. Never touch battery terminal with a metal object
- Check the electrical system regularly and frequently. All defects, such as loose connections, burnt out fuses and bulbs, burnt or damaged cables must be repaired immediately by an electrician or specially trained person.
- Before work in an area including flammable gas, thoroughly ventilate this area.
- Never store flammable fluids on the machine except in storage tanks intended for the backhoe loader's operation.
- Inspect all component, lines, tubes and hoses for oil and fuel leaks and / or damage. Replace or repair any damaged components immediately. Any oil, which escapes from leaks, can easily cause a fire.
- Be certain that all clamps, guards and heat shields are installed. These components prevent vibration, rubbing, chafing and heat build-up. Install tie wraps to fasten hoses and wires, as required.
- Cold start ether is extremely flammable. Use ether only in ventilated areas and as directed. Never use it near heat sources or open flames. Do not permit anybody to smoke.
- Know the location of the backhoe loader's fire extinguisher and be familiar with its operation. Make sure you know your local fire regulations and fire reporting procedures.

MACHINE START UP SAFETY

- Before backhoe loader start up, perform a thorough walk around inspection.
- Visually inspect the backhoe loader, look for loose bolts, cracks, wear, any leaks and any evidence of vandalism.
- Make sure you know all signals which may be indicated by an experienced person.
- Never start or operate an unsafe backhoe loader.
- Make sure all covers and doors are closed and locked and all warning decals are on the machine.
- Make sure there are no tools in the cabin.
- Make sure all windows, as well as inside and outside mirrors are clean, and secure all doors and windows to prevent any unintentional movement.

- Be certain that the area surrounding the backhoe loader is free of other personnel, and that no one is working on or under the backhoe loader before starting the engine.
- After entering the cab, adjust the operator's seat and controls, the inside and outside mirrors and the arm rests. Be certain that all controls can be reached comfortably.
- All noise protection devices on the machine must be functional during operation.

ENGINE START UP AND OPERATING SAFETY

- Before start up, check if all indicator lights and instruments are functioning properly; place all controls in neutral position.
- Before starting the engine, alert any nearby personnel that the backhoe loader being started by sounding the horn.
- Start machine only when seated in the operator's seat, and with the seat belt fastened.
- If you have no other instructions, start the engine as outlined in the Operation and Maintenance Manual.
- Check all indicators, gauges, warning devices and controls for their proper indication.
- Start and operate the engine only in a well ventilated area. If necessary, open doors and windows. Warm up the engine and hydraulic system to operating temperatures. Low engine and hydraulic oil temperatures can cause the backhoe loader to be unresponsive.
- Check that all attachment functions are operating properly.
- Move the backhoe loader slowly into an open area and check all travel functions for their proper operation, check travel brakes, the steering function as well as the turn signals and lights.

MACHINE OPERATING SAFETY

- Familiarize yourself with jobsite rules. Be informed about traffic and hand signals and safety signs. Ask who is responsible for signaling.
- Check your surroundings for any obstacles in the working and movement range, check the load carrying capacity of the terrain, and secure the job site to shield it from any public highway traffic.
- Always keep a safe distance from overhangs, walls, drop offs, and unstable ground.
- Be alert of changing weather conditions, bad or insufficient visibility and of changing ground conditions.

- Be alert for utility lines, check the location of underground cables, gas and water lines, and work especially careful in that vicinity. If necessary and / or if required, call local authorities to mark the location.
- Keep sufficient distance from electrical lines. When working in the vicinity of high voltage electrical lines, keep a proper distance to assure that the attachment does not come close to the lines.
DANGER! You must inform yourself about safe distances.
- In case you do touch a high voltage line by accident, proceed as follows:
 - Do not leave the machine,
 - Move the machine, if possible, from the danger zone until you reach sufficient distance,
 - Warn any personnel in the vicinity not to come close to the backhoe loader and not to touch it,
 - Instruct or initiate someone to turn off the voltage,
 - Do not leave the machine until you are absolutely sure that voltage in the line, which had been touched or damaged, has been turned off!
- Before moving the machine, make sure that the attachments and equipment is secured properly to avoid accidents.
- Do not run the machine without the backhoe as this can affect the brake system and may cause serious accidents.
- Do not install front wheel weights unless necessary.
- Use the throttle lever while operating the backhoe or for maintenance.
- When travelling on public roads or highways, make sure you observe traffic regulations, and make sure that the machine meets federal and local public highway standards.
- Always turn on the lights if visibility is bad or if you are still working during dusk.
- Never allow other personnel on the backhoe loader.
- Operate the backhoe loader only while seated and with the seat belt fastened.
- Report any problems or needed repairs to your foreman or supervisor and make sure they are corrected immediately.
- Do not move the backhoe loader until you are certain that no one is endangered by moving the backhoe loader.
- Check the brake system before starting to work, as outlined in the Operation and Maintenance Manual.

- MAKE SURE THAT BRAKE PEDALS ARE LOCKED BEFORE ANY ROAD TRAVEL.
- Never leave the operator's seat while the machine is still moving.
- Never leave the machine unattended (within view of machine), with the engine running.
- Prevent any working movements, which could tip the machine over. If the backhoe loader begins to tip or slip on a grade, immediately lower the attachments. If possible, always operate the backhoe loader with the attachment positioned uphill.
- Always travel slowly on rough or slippery ground on slopes, and on loose soil.
- Activate 4 wheel drive switch when travelling on icy or slippery roads.
- Always travel downhill at permissible speed, so you don't lose control over the machine. The engine must run at nominal speed, use only the foot pedals to brake and slow down the machine.
- Never shift gear during down hill travel, always shift to a lower gear before traveling downhill.
- If the road is icy or slippery when travelling uphill or downhill, engage differential lock to prevent accidents.
- Before travelling on public highway, adjust steering column to the most upright position and slide operator's seat to the most forward position. Otherwise operator's field of view become restricted and an accident may occur.
- Engine RPM is adjusted and sealed in the factory. Do not try to readjust the engine RPM. This can cause serious accidents. Should this happen, consult CUKUROVA service personnel.
- Never load over an occupied truck. Request that the driver leave the cab, even if a rock protection is installed.
- If operating in visually obstructed terrain or whenever necessary, have another person guide you. Always have only one person signal to you.
- Allow only experienced persons to attach loads or to guide operators. The guide must be visible by the operator and / or must be in voice contact with him.
- In case of a thunderstorm :
 - Lower the attachment to the ground and if possible anchor the digging tool into the soil.
 - Leave the cab and move away from the machine before the storm breaks out. Otherwise, you must stop the backhoe loader and keep inside the closed cab until the end of the storm.
- Auxiliary control units can have various functions. Always check their functions when starting up the machine.
- Inspect the machine for damage if the attachment has been swung into a wall or any other obstacles.
- Applications in which the attachment is to be used to strike the material being extracted are not permitted, even when working in a longitudinal direction.
- Repeated strikes against an object leads to damage to the steel structures and machine components.
- Please refer to your CUKUROVA dealer if special teeth for heavy-duty or special applications are required.
- Do not attach too large bucket or bucket with side cutters or that are during operations with rocky material. This would prolong the work cycles and may lead to damage to the bucket as well as further machine components.
- Do not lift the machine during operation. Should this happen, lower the machine slowly back to the ground.
- Do not let the machine fall heavily on the ground and do not hold it back with the hydraulics. This would damage the machine.
- A hydraulic hammer must be selected with particular care. When using a hydraulic hammer not permitted by CUKUROVA, steel structures or the other machine components can become damaged.
- Before beginning breaking tasks, position the machine on firm and level ground.
- Use a hydraulic hammer designed exclusively for breaking stone, concrete and other breakable materials.
- Only operate the hydraulic hammer in the longitudinal direction of the machine and with the rear windshield closed or with a protective grill.
- Ensure during hammer operation that no cylinder is entirely extended or retracted and that the stick is not in the vertical position.
- In order to avoid damage to the machine, try not to break stone or concrete while performing retraction and extension motions of the hydraulic hammer.
- Do not apply the hydraulic hammer uninterrupted for more than 15 secs. at a time to the same place. Change the breaking point. Too long uninterrupted operation of the hydraulic hammer leads to an unnecessary overheating of the hydraulic oil.

- Do not use the drop force of the hydraulic hammer to break stone or other materials. Do not move obstacles with the hydraulic hammer. Misuse of this nature would damage both the hammer and the machine.
- Do not use the hydraulic hammer to lift objects.
- While operating, if the operator has a problem, he must lower the attachments, engage the parking brake lever and remove the ignition key. Fix the problem immediately or inform the person who is authorized.

MACHINE PARKING SAFETY

- Park the backhoe loader only on firm and level ground.
If it becomes necessary to park the machine on a grade, properly block and secure it with wedges.
- Lower the attachments to the ground and anchor the bucket lightly in the ground.
- Bring all operating levers in neutral position and engage the parking brake lever.
- Turn the engine off as outlined in the Operation and Maintenance Manual before you leave the operator's seat.
- Lock the machine, remove all keys and secure the backhoe loader against vandalism, or unauthorized use.

MACHINE TRANSPORTING SAFETY

- Use only suitable transporting and lifting devices with sufficient capacity.
- Park the machine on firm and level ground and block the wheels.
- If necessary, remove part of the attachments during transport.
- When loading the machine on a flatbed trailer or railroad car, be sure that the loading ramp incline is less than 30° and covered with wooden planks to prevent skidding.
- Remove all mud, snow or ice from the ramp components before moving up the ramp.
- Align the machine with the loading ramp.
- Have another person guide and signal the operator.
- Have blocks or wedges ready to block the machine, if necessary, to prevent the machine from rolling backwards. Be careful of crushing risks when handling and applying these wedges. Keep clear of wheels and do not attempt to chock or block the machine before its complete standstill.

- Release the hydraulic pressure, remove the ignition key, engage parking brake lever, close and lock the cab and close and secure all other doors and leave the machine.
- Carefully check out the transport route. Make sure that width, height and weight allowances are within the permitted limits.
- Check that there is enough clearance underneath all bridges, underpasses, utility lines, and in tunnels.
- During the unloading procedure, proceed with the same care and caution as during the loading procedure. Remove all chains and wedges. Start the engine as outlined in the Operation and Maintenance Manual. Carefully drive off the loading platform. Keep the attachment as close as possible to the ground level. Have another person guide and signal you.

MACHINE TOWING SAFETY

- Observe the correct procedure: check the index in your Operation and Maintenance manual and refer to the appropriate section: "Towing the Backhoe loader".
- Only tow the backhoe loader if absolutely necessary, for example to remove it for repairs from a dangerous job site.
- Be sure all towing and pulling devices such as cables, hooks, and couplers are safe and adequate.
- Make sure that the cable or the towing rod are strong enough. Be aware that any damage to the machine caused by towing is never covered by the manufacturer's warranty.
- Never allow anyone to stand near the cable when pulling or towing the backhoe loader. Keep the cable tight and free of kinks.
- Engage travel slowly, and do not jerk. With a slack cable, the sudden impact of the load being towed could snap and break the cable.
- Keep personnel out of area. If cable breaks while under stress, it could cause severe injury.
- During the towing procedure, keep within the required transport position, permissible, speed and distance.
- After the towing procedure is completed, return the machine to its previous state.
- Proceed as outlined in the Operation and Maintenance Manual when putting the backhoe loader back in service.

MACHINE MAINTENANCE SAFETY

- The machine must not be made unsafe when performing maintenance work. Never attempt maintenance procedures or repairs you do not understand.
- Check the Operator's and Maintenance Manual for service and maintenance intervals. Make sure you use only appropriate tools for all maintenance work.
- Refer to your Operator's and Maintenance Manual to see, who is authorized to perform certain repairs. The operator should only perform the daily / weekly maintenance procedures.
The remaining work may only be performed by especially trained personnel.
- Use only replacement parts corresponding to the technical requirements specified by the Manufacturer. This is assured by using only original CUKUROVA replacement parts.
- Always wear proper work clothing when maintaining the backhoe loader. Certain work may only be performed with a hard hat, safety shoes, safety glasses and gloves.
- During maintenance, do not allow unauthorized personnel to enter the maintenance area.
- Secure the maintenance area, as necessary.
- Inform the operator before any special or maintenance work. Make sure he knows the person, who is in charge of the work.
- If not otherwise noted in the Operation and Maintenance Manual, always make sure the backhoe loader is parked on firm and level ground and the engine is turned off and parking brake is engaged.
- During maintenance and service work, make sure you always retighten any loosened screw connections!
- If it is necessary to disconnect or remove any safety devices during set up, maintenance or repair, make sure that after completion of repairs, the safety devices are reinstalled and checked for proper function.
- Before any maintenance work and especially when working under the machine, make sure a "Do not operate" tag is attached to the starter switch. Remove the ignition key.
After end of maintenance works or repair, restart the machine according to the instructions "Machine start up", in this manual.
- Before any repairs or maintenance work, clean any oil, fuel and / or cleaning substances from any fittings and connections. Don't use any harsh cleaners and use only lint free cloths.
- Use only nonflammable cleaning fluids to clean the machine.
- Any welding, torch or grinding work on the machine must be explicitly authorized. Written authorization is necessary for welding on load carrying structures. Before any using a welder, torch or grinder, clean off any dust and dirt and remove any flammable materials from the surrounding area. Make sure the area is sufficiently ventilated. Danger of Fire and Explosion!
- Before cleaning the machine with water or steam (high pressure cleaning) or other cleaning fluids, make sure that all openings, which, for safety and/ or functioning reasons should not be exposed to water / steam/ cleaners, are covered and / or masked off. Especially sensitive are electrical motors, control boxes and plug connectors.
Remove all coverings and masking material after completing the cleaning procedure. Then check all fuel lines, engine oil lines and hydraulic oil lines for leaks, loose connections, chafing and / or damage. Fix any problems immediately.
- If you use a high pressure cleaner with steam or hot water to clean the machine, observe following recommendations:
 - the distance between the nozzle and the surface to be cleaned must be no less than 50 cm.
 - the water temperature should not exceed 60°C(140°F)
 - limit the water pressure to 80 bar maximum (1160PSI)
 - if you employ cleaning fluid, only use neutral cleaning agents such as customary car shampoos diluted to 2 or 3 percent maximum
- Never employ high pressure cleaning apparatus during the two first months following machine delivery or repainting.
- Observe all product safety guidelines when handling oils, grease, and other chemical substances.
- Make sure service fluids and replacement parts are disposed of properly and in an environmentally sound manner.
- When using hot service fluids, be very careful. (They can cause severe burns and injury!).
- Operate combustion motors and fuel operated heaters only in well ventilated areas. Before operating these units, check ventilation. In addition, always follow applicable local regulations.

- Never try to lift heavy parts. Use appropriate lifting devices with sufficient load carrying capacity. When replacing or repairing parts or components, make sure they are mounted very carefully on lifting devices, to prevent any possible danger. Use only suitable and technically sound lifting devices, make sure that lifting tackle, wire cables, etc. have adequate load carrying capacity. Never position yourself, walk or work underneath suspended loads.
 - Never use damaged lifting devices, or devices which are not sufficient to carry, the load. Always wear gloves when handling wire cables.
 - Ask only experienced personnel to attach loads and guide and signal the crane operator. The guide must be within the visibility range of the operator and /or must be in direct voice contact with the operator.
 - When working overhead, use appropriate and safe ladders, scaffolding or other working platforms designated for that purpose. Never step on parts or components on the machine when maintaining or repairing items overhead. When working high above ground, make sure you are fitted with ropes and appropriate safety devices which will prevent a possible fall. Always keep handles, steps, platforms and ladders free of dirt, snow and ice!
 - When working on the attachments, for example when replacing the bucket teeth, make sure the attachment is supported properly. Never use metal on metal support!
 - Never work underneath the machine if it is raised or propped up with the attachment.
 - **ALWAYS USE SAFETY BAR WHEN LOADER BOOM IS RAISED.**
 - Only qualified, especially trained personnel may work on travel gear, brake and steering systems.
 - Only qualified, especially trained personnel may work on the hydraulic system.
 - Never check for leaks with your bare hands, always wear gloves. Fluid escaping from a small hole can have enough force to penetrate the skin.
 - Never loosen or remove lines or fittings before the attachment has been lowered to the ground and the engine has been turned off. Then turn the ignition key to contact position, move all servo controls (lever and foot pedals) in both direction to release pressures. Then release the tank pressure as outlined in this Operation and Maintenance Manual.
 - Always disconnect the battery cable before working on the electrical system or before any arc welding on the machine. Always disconnect the negative (-) cable first and reconnect it last.
 - Check the electrical system regularly. Make sure that any problems, such as loose connections, burnt out fuses and bulbs, scorched or chafed cables are fixed immediately by an electrician or qualified personnel.
 - Use only Original fuses with the specified amperage. Never use a different size or stronger fuse than the original fuse.
 - On machines with electrical medium or high voltage systems:
 - If there is any problem with the electrical energy supply, turn the machine off immediately.
 - Follow established lockout / tagout procedures where applicable.
 - Any work on the electrical system may only be performed by a qualified electrician or qualified personnel under the guidance and supervision of an electrician, according to electro-technical regulations.
 - If any work is required on any parts which carry current, use a second person to turn off the main battery switch, if necessary. Rope the work area off with a safety rope or chain, and set up warning signs. Use only insulated tools.
 - When working on medium and high voltage components, shut off the voltage and connect the supply cable to the ground and ground the components.
 - Check all disconnected parts if they are truly free of current, ground them and close them off quickly. Insulate any close-by, current carrying parts.
- ### HYDRAULIC LINES AND HOSES
- Hydraulic lines and hoses may never be repaired!
 - All hoses, lines and fittings must be checked daily, but at least every 2 weeks for leaks and any externally visible damage! Any damaged sections must be replaced immediately! Escaping oil can cause injuries and fires!
 - Even if hoses and lines are stored and used properly, they undergo a natural aging process. For that reason, their service life is limited. Improper storage, mechanical damage and improper use are the most frequent causes of hose failures.

The service life of a hose may not exceed six years, including a storage period of not more than two years (always check the manufacturer's date on the hoses).

Using hoses and lines close to the limit of ranges of permitted use can shorten the service life (for example at high temperatures, frequent working cycles, extremely high impulse frequencies, multi shift or around the clock operations).

- Hoses and lines must be replaced if any of the following points are found during an inspection:
 - Damage on the external layer into the inner layer (such as chaff ings, cuts and rips);
 - Brittleness of the outer layer (crack formation of the hose material);
 - Changes in shape, which differ from the natural shape of the hose or line, when under pressure or when not under pressure, or in bends or curves, such as separation of layers, blister or bubble formation;
 - Leaks;
 - Non observance of installation requirements;
 - Damage or deformation of hose fittings, which might reduce the strength of the fitting or the connection between hose and fitting;
 - Any movement of hose away from the fitting;
 - Corrosion on fittings, which might reduce the function or the strength of the fitting;
 - Storage or service life has been exceeded.

When replacing hoses or lines, always use original replacement parts.

- Route or install the hoses and lines properly. Do not mix up the connections!
- Always take care to avoid torsional strain when installing a new hose. On high pressure hydraulic hoses, the mounting screws must be first mounted on both hose ends (full flange or half clamp) and tightened only thereafter.

On high pressure hoses having one curved end, always tighten first the screws on the curved hose end and only then the screws on the straight hose end.

Install and tighten the hose clips that may be mounted on the hose middle only when the both hose ends are already tightened.

- Always install hoses so to avoid any friction with other hoses and parts.

We recommend keeping a distance between hose and other parts of at least one half of the hose outer diameter. Keep a minimum gap of 1/2 inch (1.2 cm) in any case.

After mounting a hose connecting two parts that are movable relative to each other, check during the return to service that the hose is not rubbing fall full movement.

SIGNS ON THE BACKHOE LOADER

WARNING: Unreadable and insignificant signs may occur trouble. Check the signs on everyday.

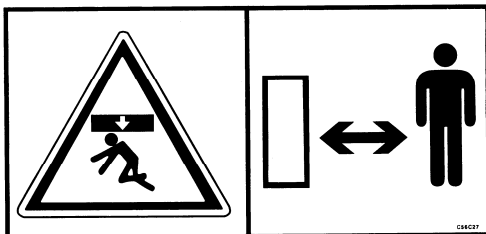
WARNING: Make sure that all signs are readable. Clean the signs everyday. If signs are damaged or painted, replace with new. Make sure that new signs are replaced correctly.

NOTE: Signs are provided by CUKUROVA services. Signs part numbers are below the signs.

NOTE: In this section, only safety and maintenance signs are shown.

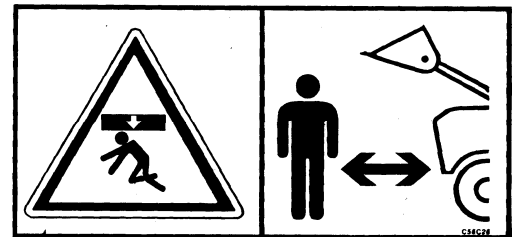
IMPORTANT: Be ensure that signs are replaced correctly.

Keep a safe distance from the machine



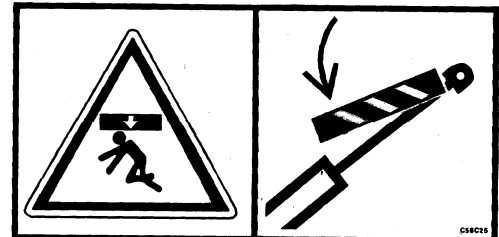
Part number: C56D73

Keep away from the loader boom



Part number: C56C26

Install support strut



Part number: C56C25

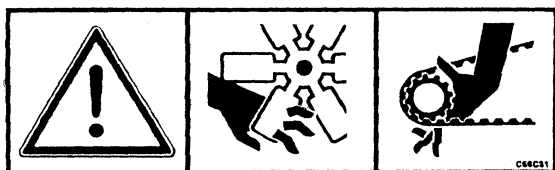
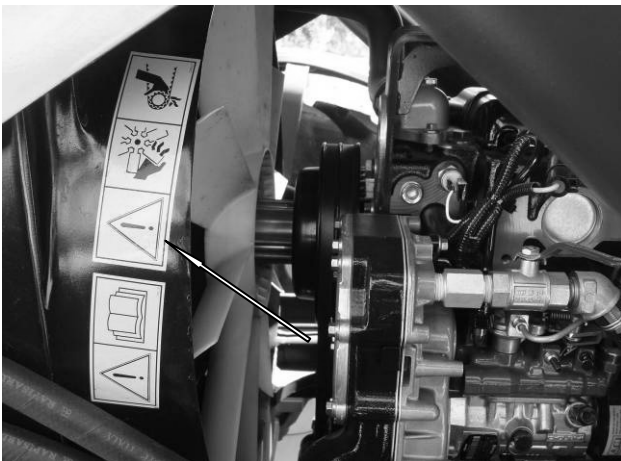
Radiator



Do not touch the radiator when the cooling system is still hot.

Part number: C56C32

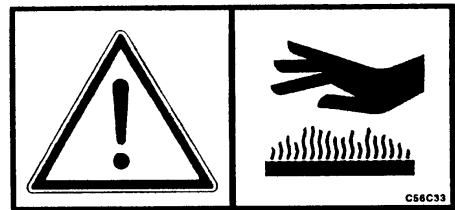
Fan



Do not carry out any operation on the fan when the engine is running.

Part number: C56C31

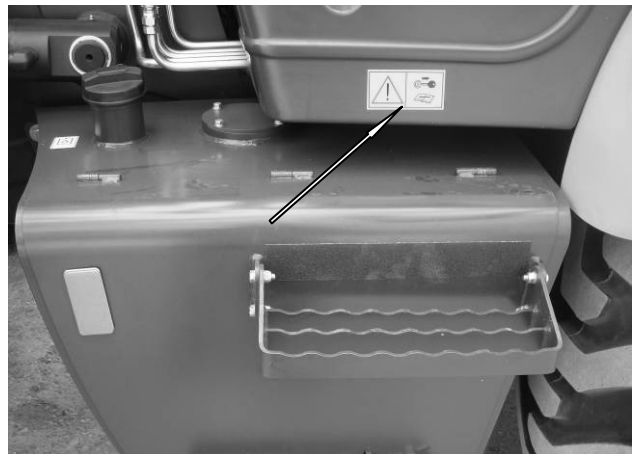
Exhaust



DANGER HOT EXHAUST

Part number: C56C33

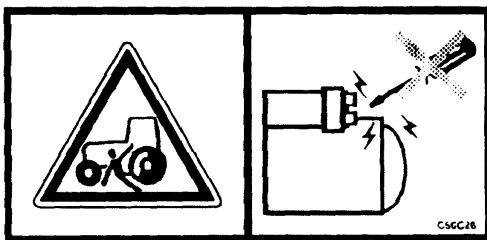
Maintenance work



Do not carry out any maintenance operation without removing ignition key.

Part number: C56C29

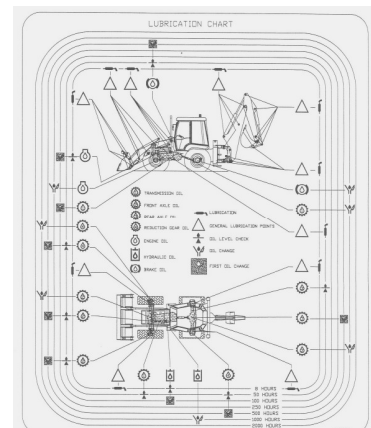
Start engine



Do not start engine by any other means than with the starter key.

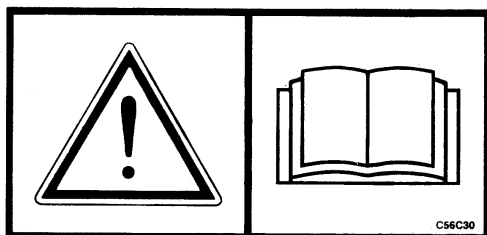
Part number: C56C28

Lubrication chart



Part number: C56G50

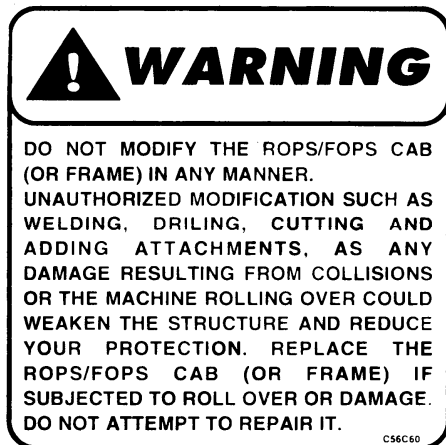
Use operator's manual



Read operator's manual.

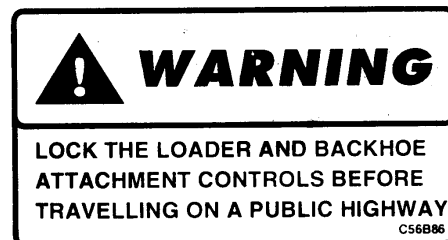
Part number: C56C30

Do not modify the Cab in any manner



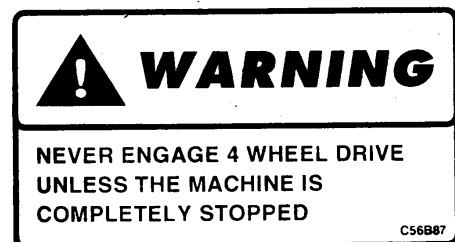
Part number: C56C60

Attachment lock



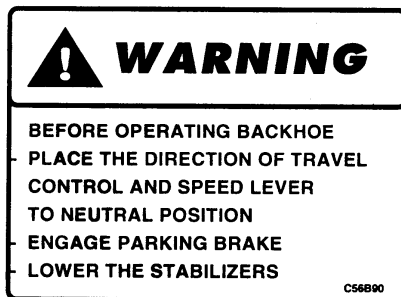
Part number: C56B86

4 Wheel drive



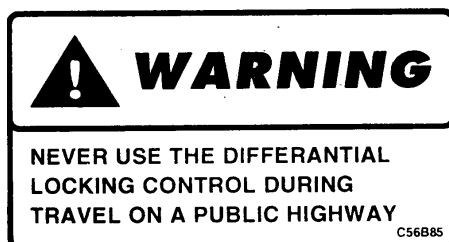
Part number: C56B87

Before operating backhoe



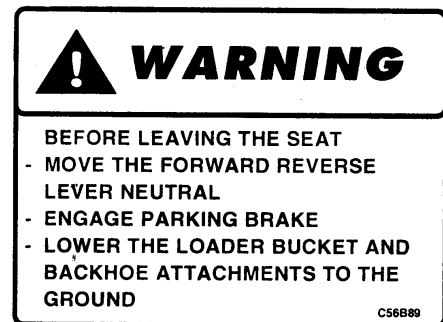
Part number: C56B90

Differential lock



Part number: C56B85

Before leaving the seat



Part number: C56B89

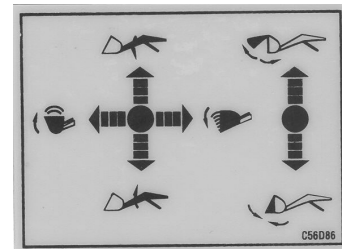
Rops/Fops



ÖREKİDİ FİRMANIN ADI VE ADRESİ : NAME and ADDRESS OF THE MANUFACTURER: YAKARADU KAHINAMAMMA SAN. VE TİC.LTD.ŞTİ.- ORGANİZE SANBOLGESİ ESKİŞEHİR- TÜRKİYE KABİN NUMARASI : IDENTIFICATION NUMBER : C70083 MAKİNA MODELİ: MACHINE NAME/ MODEL : ÇUKUROVA BEG/385/688 BACKHOE LOADER MAX. MAKİNA AĞIRLIĞI : MAXIMUM MACHINE MASS : 8300 kg ROPS/ FOPS STANDART NUMARALARI: INT. STANDARD NUMBER FOR ROPS / FOPS: ISO 3471: 1994 / ISO 3448: 2005 ÇUKUROVA MAKİNA İMALAT VE TİC. A.Ş. MERSİN-TÜRKİYE C56K34

Part number: C56K34

Loader joystick controls



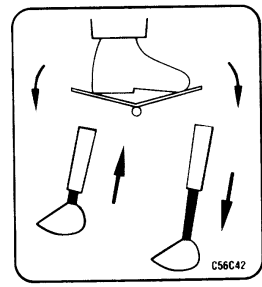
Part number: C56D86

Hand throttle



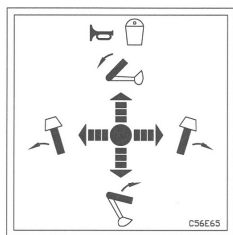
Part number: C56K79

Extendable dipper pedal

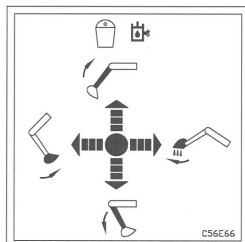


Part number: C56C42

Backhoe joystick controls



Part number: C56D84



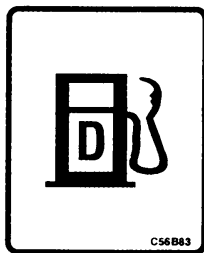
Part number: C56D85

Stabilizers



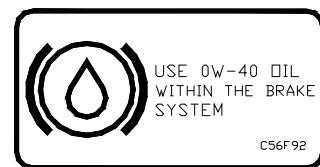
Part number: C56D36

Fuel tank



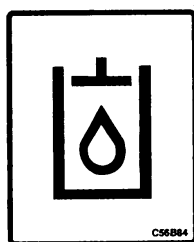
Part number: C56B83

Brake fluid



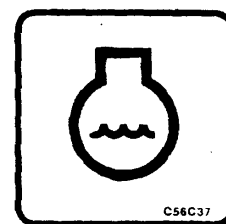
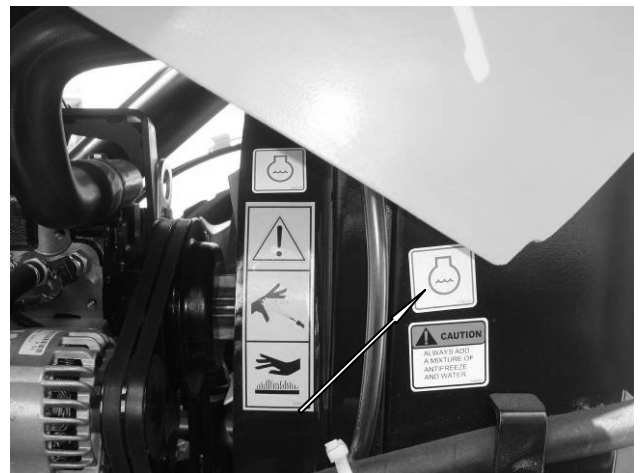
Part number: C56F92

Hydraulic tank



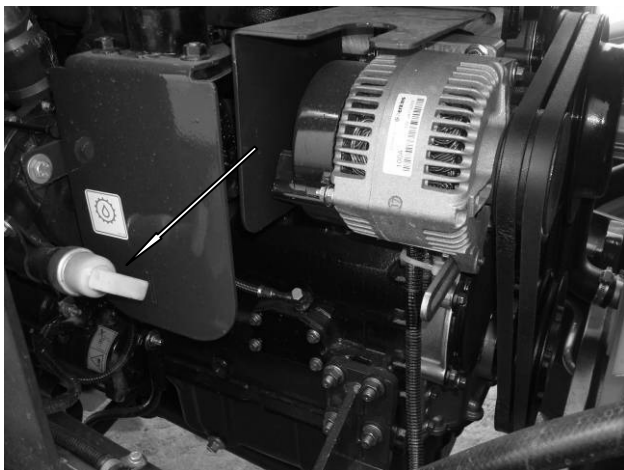
Part number: C56B84

Engine coolant



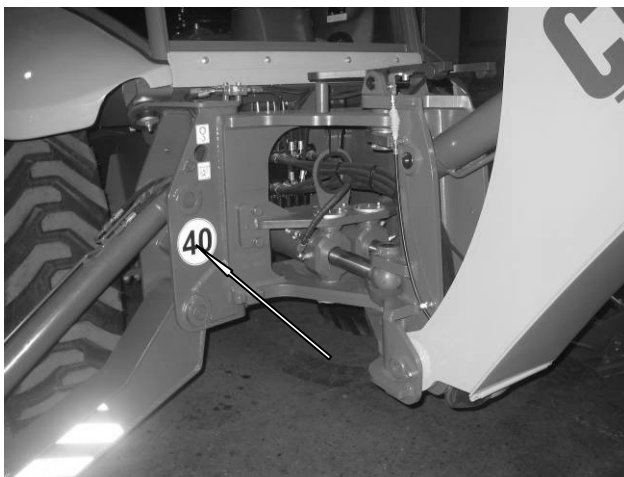
Part number: C56C37

Transmission oil



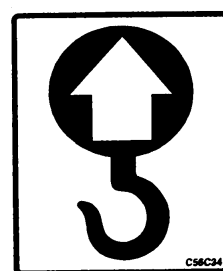
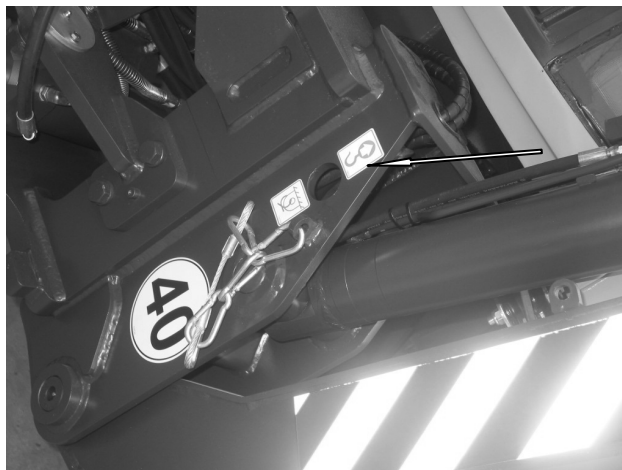
Part number: C56C38

Maximum speed



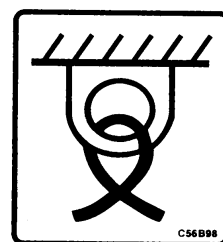
Part number: C56C46

Lifting points



Part number: C56C34

Tie-down points



Part number: C56B98

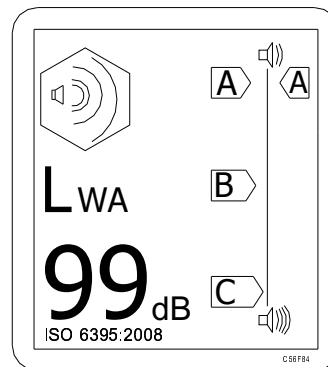
Don't carry any load by tying a rope or cable



Part number: C56F53

NOTE: When you use this machine to carry any load, consult the service to put the safety valve. And don't carry load more than 1000 kg.

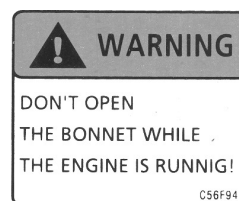
External noise level



Part number: C56F84

Note: Internal noise level is 75dB

Don't open the bonnet



Part number: C56F94

CONTROLS AND INSTRUMENTATION

STEPS AND HANDLES



Use only the steps and the handles while climbing on and off the backhoe loader.



WARNING: Never jump off the backhoe loader. While climbing on or off the backhoe loader, use both hands for support and face the machine. And never use the steering and levers for support.



WARNING: Always keep the steps and the handles free of dirt, snow and ice.

CAB DOORS



To open the doors use handle (1) from the outside and handle (2) from the inside.



Partial opening of the door is possible for ventilation of the cab.

NOTE: Left door is used for climbing on or off the backhoe loader and the right door is used for emergency.



WARNING: Before traveling and operating, close the doors correctly.

OPERATOR'S SEAT

In order to obtain the best operation and comfort, the adjustment of the seat should be made correctly according to the height of the operator.



WARNING: Operate the backhoe loader only while seated and the seat belt fastened.



WARNING: After entering the cab adjust the operator's seat correctly and be certain that all controls can be reached comfortably.

NOTE: Operator's seat meets the requirements according to ISO 7096:2000, EM5.

Adjustment:



Adjusting the operator's seat horizontally is possible after lifting lever 1, then the entire seat can be slid horizontally.

Use lever 2 for adjusting the direction of the seat to the loader and backhoe attachment position. When the lever is lifted, move the operator's seat to the desired position, release the lever.



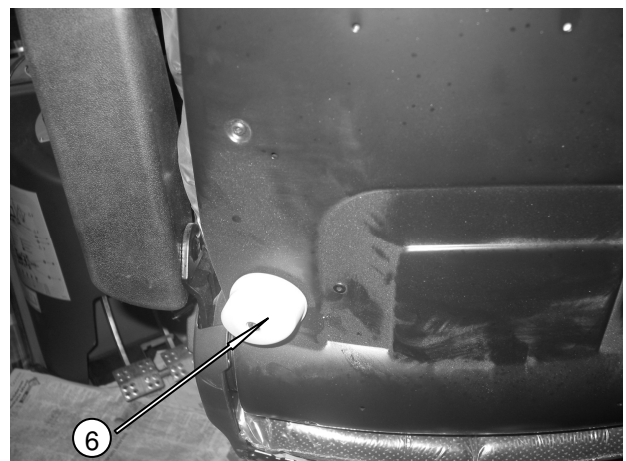
When button 3 is pushed down, the seat area moves forward- backwards. When the position you want is obtained, release the button.



When button 4 is pushed down, front of the seat area moves up- down. When the position you want is obtained, release the button.



Adjusting the weight to the driver's weight is done by turning lever 5 to clockwise and anticlockwise direction when the lever is turned to clockwise, the weight and the seat height increases.



Adjusting the lower back support in the back rest is done with the rotary switch 6. When the switch is turned the right, the waist cavity is filled. When the switch is turned the left the lumbar cavity increases.



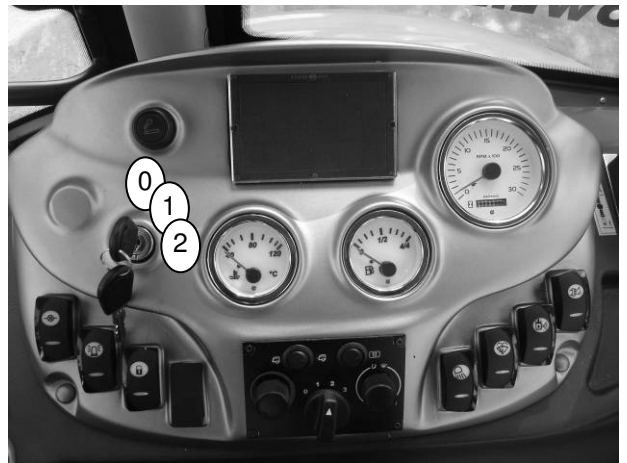
- Adjusting the angle of the back rest is done with the button 7. When the button is lifted, the back rest can move 90° forward, 70° backwards. Move the back rest to the desired angle then, lower the button and lock the back rest.

WARNING: Before traveling on public highway, adjust steering column to the most upright position and slide operator's seat to the most forward position. Otherwise operator's field of view become restricted and an accident may occur.



The seat belt can be adjusted according to the operator's body.

STARTER SWITCH



It is located on the side control panel, it has four positions.

Position 0: Off
Position 1: Contact
Position 2: Pre-heat, Start

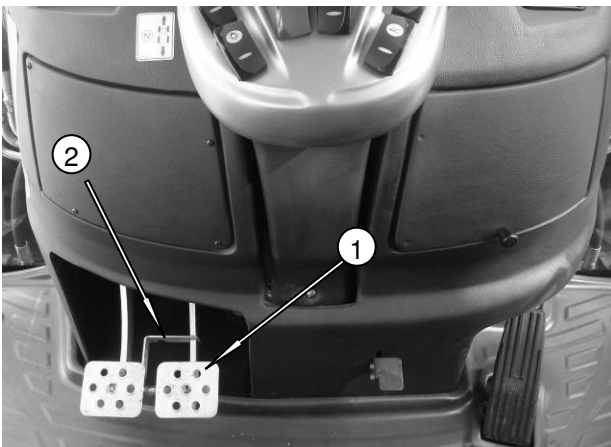
STEERING COLUMN TILTING LEVER



It is located under the steering wheel. It is used for tilting the steering column forwards and backwards to obtain a good driving position for the operator.

- Pull the lever.
- Position the steering column.
- Release the lever.

BRAKE PEDALS



They are located under the steering column. A pin (2) is used to lock the pedals (1) together. After locking, the two pedals can be used as one pedal. If they are unlocked, the right of the machine is braked by pressing the right brake pedal and the left of the machine is braked by pressing the left brake pedal.

To lock:

- Raise the pin.
- Slide it to right.
- Turn it downwards to lock the pedals.

To unlock:

- Raise the pin.
- Slide it to left.
- Turn it downwards to unlock the pedals.

Note: Check the brake system before starting to work, as outlined in the Operation and Maintenance Manual.



DANGER: Lock the brake pedals together before any road travel or travel in third or fourth gear. Otherwise an accident may occur.

ENGINE ACCELERATOR PEDAL



It is located under the steering column. It is used for traveling and operating the loader attachment controls. Pressing the pedal increases the speed of the machine and releasing the pedal reduces the speed of the machine.

Note: Never use this pedal when working with the backhoe attachment controls.



WARNING: Before using the pedal, make sure that the throttle lever is in the minimum speed position



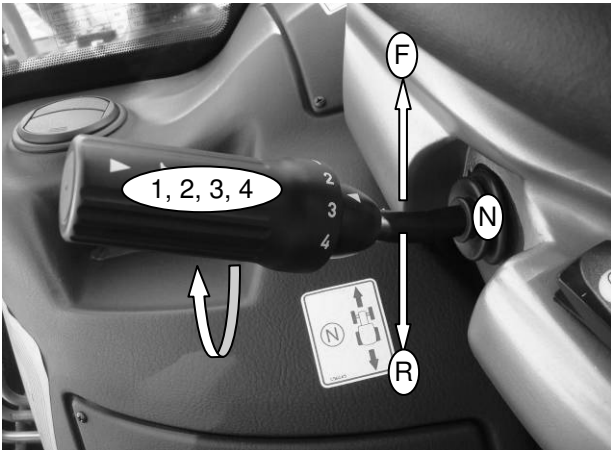
DANGER: Before traveling in reverse make sure that it is clear and nobody is in your way.

ENGINE THROTTLE LEVER



It is located to the left of the operator's seat when working with backhoe attachment. Pushing the lever forwards increases the speed of the engine, and pulling the lever backwards reduces the speed of the engine.

DIRECTION OF TRAVEL CONTROL AND SPEED LEVER



There are four forward and four reverse speed.
Position (N): Neutral
In this position movement of the machine is not possible.
Position (F): Forward
After pushing the lever, the machine moves forward.
Position (R): Reverse
After pulling the lever, the machine moves reverse.
And back up alarm will sound.



WARNING: Before traveling in reverse direction; make sure, it is clear and nobody is in your way.

Position (1): First speed
Position (2): Second speed
Position (3): Third speed
Position (4): Fourth speed

After turning the lever once or further, the machine travel speed can be selected.

Note: The buzzer will sound in the cab if the lever is activated when the parking brake lever is engaged.



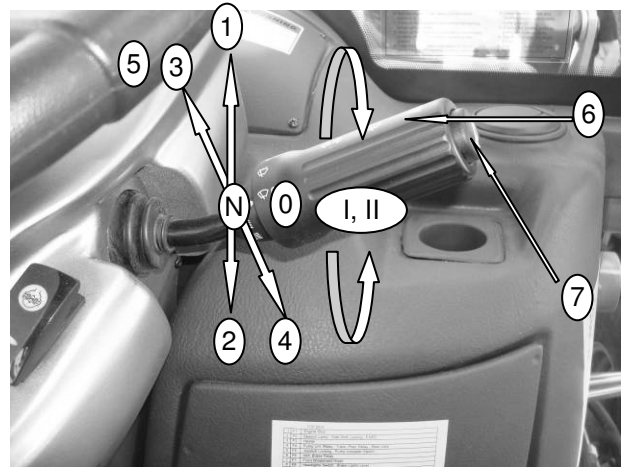
WARNING: Bring the lever into neutral position before working with the backhoe attachment controls.



WARNING: Make sure that the lever is in neutral position before stopping or starting the engine.

Note: This machine has a semi-automatic transmission: the machine can begin travel with any powershift gear selected. However if 4th gear is selected, the transmission will begin travel in 2nd gear and automatically shift to 4th as the travel speed increases. Also with 4th gear selected, if travel speed decreases the transmission will automatically shift to 3rd gear.

DIRECTION INDICATOR, LIGHTING, WINDSHIELD CONTROL AND HORN LEVER



It is located to the right of the steering wheel. There are 2 positions to select speed of windshield wiper, 3 position for headlights, 1 position for windshield washer, 1 position for horn and 2 position for direction indicator lights.

Position (N): The lever is in neutral position.
Position (0): The windshield wiper is off.
Position (I): After turning lever once the windshield wiper works in first speed.
Position (II): After turning the lever once more reverse, the windshield wiper works in second speed.
Position (1): After pushing the lever forward, left direction indicators and the indicator lamp on the front control panel light up.

Position (2): After pulling the lever towards the operator, right direction indicators and the indicator lamp on the front control panel light up.

When the headlights' switch is pressed on twice:

Position (3): After pushing the lever up to the operator, low beam lights up.

Position (4): After pulling the lever down to the operator, main beam and the indicator lamp on the front control panel light up.

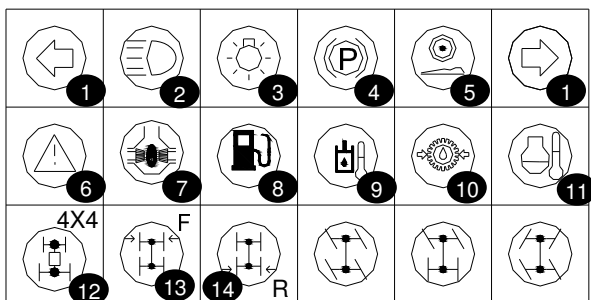
Position (5): Pull and push the lever rapidly then Flash lights up

Position (6): By pressing the part (6) at the end of the lever, the front windshield washer is operated.

Position (7): By pressing the switch at the end of the lever, the horn is activated.

FRONT CONTROL PANEL

FRONT CONTROL PANEL - WARNING AND INDICATOR LIGHTS



DIRECTION INDICATOR LAMP (1)

This indicator lamp flashes when the direction indicator lever is moved.

HIGH BEAM INDICATOR LAMP (2)

This indicator lamp lights up when head lights are on main beam.

MASTER LIGHT INDICATOR LAMP (3)

This indicator lamp lights up when the master light switch is activated.

PARKING BRAKE INDICATOR LAMP (4)

This indicator lamp lights up when the parking brake is engaged.

ELECTRO HYDRAULIC SUSPENSION SYSTEM INDICATOR LAMP (5)

This indicator lamp lights up when electro hydraulic suspension system switch is activated.

HAZARD (WARNING) INDICATOR LAMP (6)

This indicator lamp lights up when engine oil pressure, transmission oil temperature, brake hydraulic level, air filter warning lamp and engine temperature warning lamp lights up.

DIFFERENTIAL LOCK INDICATOR LAMP (7)

This indicator lamp lights up when the differential locking switch is activated.

FUEL LEVEL INDICATOR LAMP (8)

This indicator lamp lights up when the level of the fuel in the fuel tank is too low.

HYDRAULIC OIL TEMPERATURE INDICATOR LAMP (9)

This warning lamp lights up when the hydraulic oil temperature is so high. If the lamp lights up during operation stop working, turn the engine off, pull the parking brake lever, find and correct the problem.

TRANSMISSION OIL PRESSURE INDICATOR LAMP (10)

This lamp lights up when the transmission oil pressure is so low, the warning lamp lights up and the buzzer will sound in the cab. Stop working, turn the engine off, pull the parking brake lever, find and correct the problem.

ENGINE COOLANT TEMPERATURE INDICATOR LAMP (11)

If the engine coolant temperature exceeds 100°C, the warning lamp lights up and the buzzer will sound in the cab. Stop working, turn the engine off, find and correct the problem

4X4 INDICATOR LAMP (12)

This 4x4 lamp lights up when 4x4 switch is engaged.

FRONT –REAR INDICATOR LAMP (13-14)

This indicator lamp lights up when the front wheels are straight (13). When the rear wheels are straight (14) indicator lamp lights up.

FRONT CONTROL PANEL - CONTROLS

HAZARD WARNING SWITCH



During short park or any failure, this switch is used. After pressing switch, direction indicator lamps flash and the lamp on the switch lights up.

FRONT WORKING LIGHTS SWITCH



During night operation or poor light area front working lamps are used. After pressing the switch, the lights and the lights on the switch light up

MASTER LIGHT SWITCH



When pressing the switch once, the parking lamps light up. When pressing the switch once more, the low beams light up if the head light lever is in low beam position or high beams light up if the head light lever is in high beam position. When pressing master light switch the lamp on the switch lights up. And when the high beam is active, the warning lamp on the front control panel lights up.

DIFFERENTIAL LOCKING SWITCH



In soft, slippery and muddy conditions, this switch enables equal power to be transmitted to both rear wheels.



WARNING: This pedal should never be used during travel on a public highway.



WARNING: Do not engage differential lock with wheels spinning



WARNING: Engage the differential lock only when the machine is stopped.

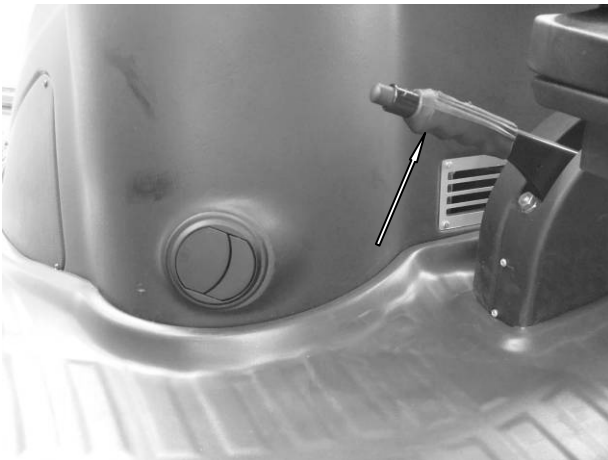
FRONT DRIVE AXLE ENGAGEMENT SWITCH



Before pressing this switch, only the rear axle is engaged. After pressing the switch, the front drive axle is engaged, too. And the lamp on the control panel lights up.

WARNING: Do not use the third or fourth gear and do not work on hard ground when the front drive axle is engaged.

PARKING BRAKE LEVER

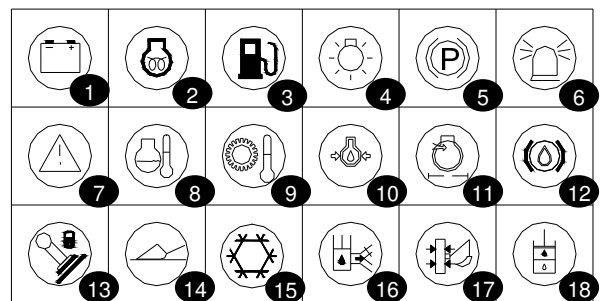


It is placed at the left of the operator's seat. It is used for parking the machine safely. By pulling the lever upwards, it is engaged and the lamp on the front control panel lights up.

WARNING: Engage the parking brake lever before working with the backhoe attachment controls.

WARNING: Make sure that the lever is engaged before stopping or starting the engine.

SIDE CONTROL PANEL - WARNING AND INDICATOR LIGHTS



ALTERNATOR CHARGE INDICATOR LAMP (1)

This warning lamp lights up if the starter key is moved to contact position and turns off as soon as the engine starts. If the lamp lights up during operation the alternator/fan belt is defective, stop working soon, turn the engine off, find and correct the problem.

PRE-HEAT INDICATOR LAMP (2)

This indicator lamp lights up when the preheat action is activated.

FUEL LEVEL INDICATOR LAMP (3)

This indicator lamp lights up when the level of the fuel in the fuel tank is too low.

MASTER LIGHT INDICATOR LAMP (4)

This indicator lamp lights up when the master light switch is activated.

PARKING BRAKE INDICATOR LAMP (5)

This indicator lamp lights up when the parking brake is engaged.

ROTATING BEACONS INDICATOR LAMP (6)

This indicator lamp lights up when the rotating beacons switch is activated.

HAZARD (WARNING) INDICATOR LAMP (7)

This indicator lamp lights up when engine oil pressure, transmission oil temperature, brake hydraulic level, air filter warning lamp and engine temperature warning lamp lights up.

ENGINE COOLANT TEMPERATURE INDICATOR LAMP (8)

This warning lamp lights up when the engine cooling system overheats. If the lamp lights up during operation stop working, turn the engine off, find and correct the problem.

TRANSMISSION OIL TEMPERATURE INDICATOR LAMP (9)

This warning lamp lights up when the transmission oil temperature is too high. If the lamp lights up during operation stop working, turn the engine off, find and correct the problem.

ENGINE OIL PRESSURE INDICATOR LAMP (10)

This warning lamp lights up if the starter key is moved to contact position and turns off as soon as the engine starts. If the lamp lights up during operation, the engine oil pressure is too low, stop working soon, turn the engine off, pull the parking brake lever, find and correct the problem.

AIR FILTER RESTRICTION INDICATOR LAMP (11)

This warning lamp lights up when the air filter becomes dirty. If the lamp lights up clean and replace the air filter as soon as possible.

BRAKE HYDRAULIC LEVEL INDICATOR LAMP (12)

This warning lamp lights up when the level of brake hydraulic fluid decrease. If the lamp lights up during operation, stop working, turn the engine off, check the level of brake hydraulic fluid and if necessary add some fluid.

ATTACHMENTS LOCK INDICATOR LAMP (13)

This indicator lamp lights up when both loader and backhoe attachment controls are locked.

ATTACHMENTS UNLOCK INDICATOR LAMP (13)

This indicator lamp will go out when both loader and backhoe attachment controls are unlocked.

RETURN TO DIG INDICATOR LAMP (14)

This indicator lamp lights up when the tilt automatic is activated.

AIR CONDITION INDICATOR LAMP (15)

This lamp lights up when air condition is on.

HYDRAULIC PUMP FLOW INDICATOR LAMP (16)

This lamp lights up when the hydraulic pump flow control switch is activated.

SIDE SHIFT HYDRACLAMP INDICATOR LAMP (17) (OPT.)

This lamp lights up when the side shift hydra clamp switch is activated.

HYDRAULIC FILTER INDICATOR LAMP (18)

This indicator lamp lights up when hydraulic filter is clogged.

SIDE CONTROL PANEL – CONTROLS



Test switch is used to check engine oil pressure warning lamp, engine oil temperature warning lamp, brake hydraulic oil pressure warning lamp and air filter warning lamps. After pressing the switch, these warning lamps and the lamp on the switch light up.

ROTATING BEACONS SWITCH



After pressing the switch, rotating beacon is activated and both the lamp on the switch and on the indicator lights up.



WARNING: Use the rotating beacons during road travel.

REAR WORKING LIGHTS SWITCH



After pressing the switch, rear work lamps and the lamp on the switch light up. It's used while working in poor light.

REAR WINDOW WINDSHIELD WIPER SWITCH



After pressing the switch the windshield wiper is activated and the lamp on the switch lights up.

SIDE SHIFT HYDRACLAMP SWITCH (OPT.)



After pressing the switch, the side shift is locked and both the lamp on the switch and on the indicator lights up.



WARNING: Do not use the side shift switch during working and road travel.

HYDRAULIC PUMP FLOW CONTROL SWITCH



After pressing the switch, only the larger pump operates to provide low flow position for more precise movement of the loader and backhoe attachment and both the lamp on the switch and on the indicator light up.

BACKHOE BOOM SHIFT LEVER



By pulling the backhoe boom shift lever upwards, the backhoe boom shift is locked.

ENGINE COOLANT TEMPERATURE GAUGE



This gauge shows the temperature of the engine coolant. If the engine coolant temperature exceeds 100°C, the warning lamp lights up and the buzzer will sound in the cab. Stop working, turn the engine off, find and correct the problem.

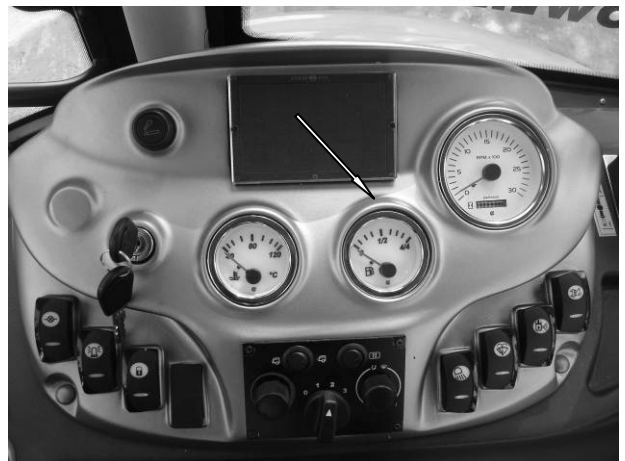
ENGINE SPEED GAUGE AND HOURMETER



This gauge (1) shows the engine speed and, the engine RPM can be set by using the engine throttle lever.

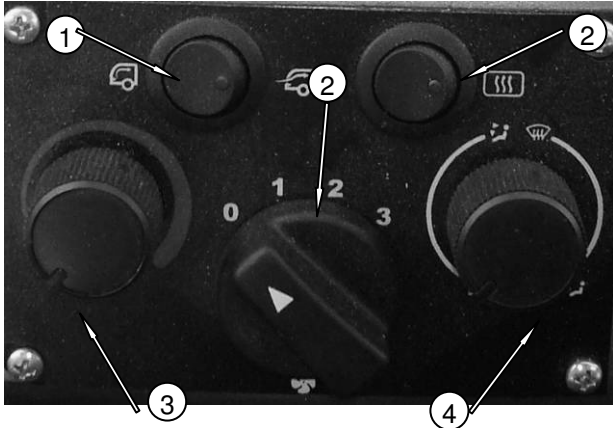
The hour meter (2) displays the hours for which the engine has been operated and also it enables the service intervals to be scheduled.

FUEL LEVEL GAUGE



This gauge shows the level of the fuel in the fuel tank.

THE HEATING AND VENTILATION CONTROLS



As standard equipment the driver's cab is fitted with a heater which can be used for heating and also fresh air ventilation for the cab.

Control switches for heater

- 1 Fresh air admission on/off
- 2 Heater on/off, blower fan on/off
- 3 Adjustment of heating
- 4 Turning of the blow direction

Fresh and re-circulated air

The switch (1) controls the flow of fresh air entering the cab:

In position "fresh air" flaps are opened, and about 10% fresh air is admitted into the cab (depending on the contamination of the filters)

In position "re-circulated air" the fresh air flaps are closed.

Heater and blower fan

Turn the regulating knob (2) clockwise, to increase the the heater fan RPM.

Adjustment of heating

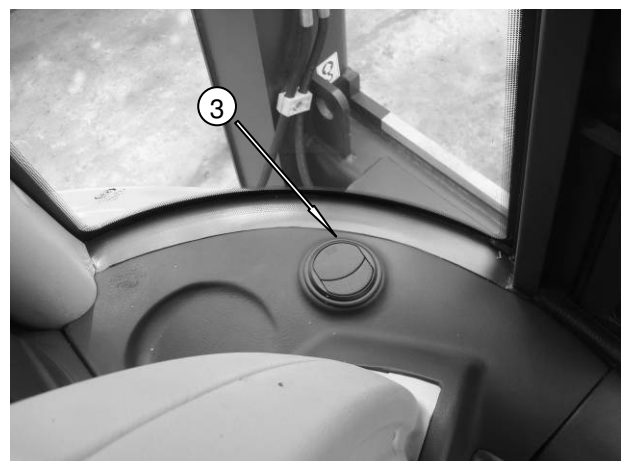
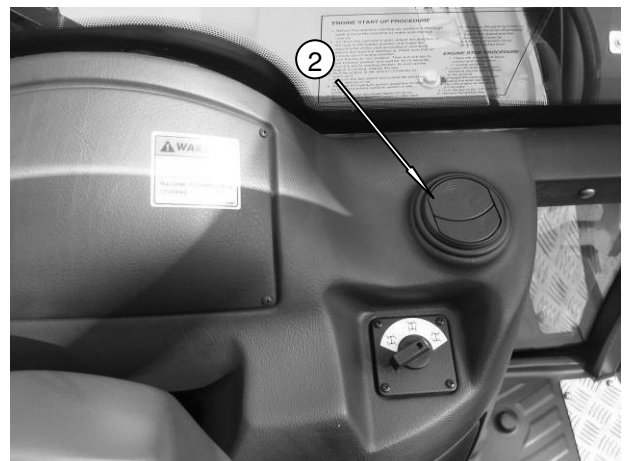
Turn the regulating knob (3) to adjust the air temperature in the cab. The heating of the cab is started when turning the knob to select the desired heating capacity (amount of warm water flowing through the heater). To increase the temperature, turn the knob clockwise and to decrease the temperature, turn the knob counterclockwise.

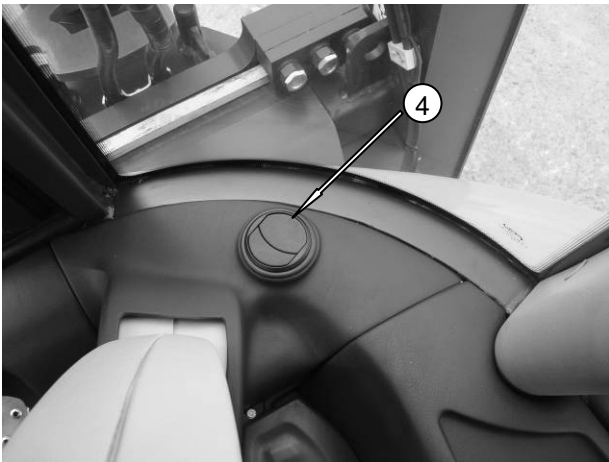
Turning of blow direction

To blow the air to only front glass, turn the knob (4) left side. To blow the air whole cab, turn the knob right side.

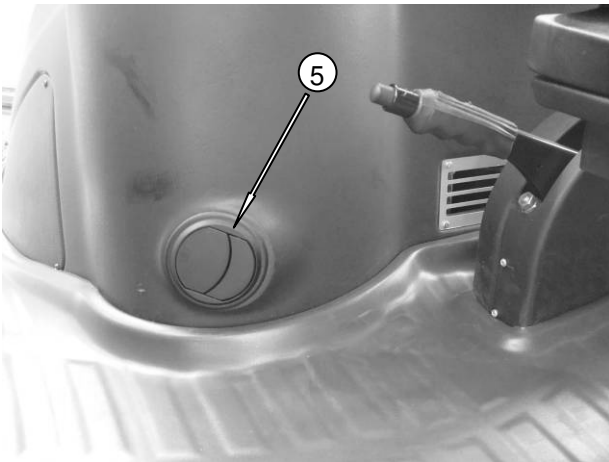
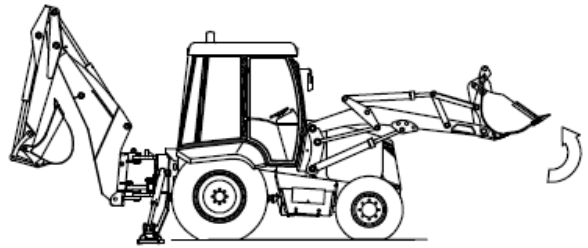
Air vents

The air enters the cab via the adjustable louvers , 1 behind the front windscreen, 2 behind the front windscreen either, 3 and 4 at the left and right floor of the cab (with the operator seat in backhoe attachment position), 5 front of the brake hand lever.

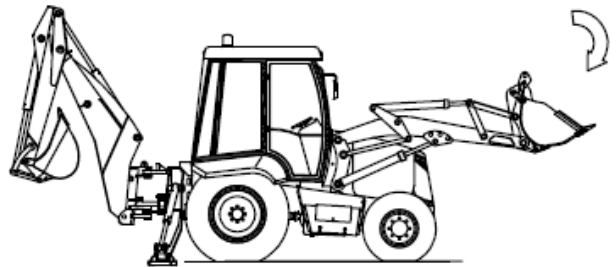




Position (1): When the lever is pulled backwards, the loader boom rises.



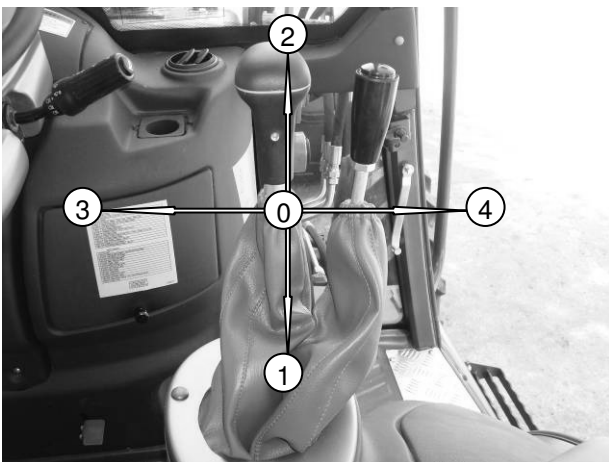
Position (2): When the lever is pushed forward, the loader boom lowers.



LOADER ATTACHMENT CONTROLS

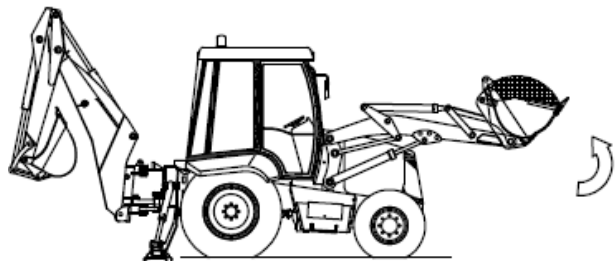


WARNING: After entering the cab, adjust the operator's seat and controls, the inside and outside mirror and the arm rests. Be certain that all controls can be reached comfortably.



Position (0): When the lever is released, it automatically returns to neutral position and the movement of the loader boom stops.

Position (3): When the lever is pushed to the left, the loader rolls back.



Position (4): When the lever is pushed to the right, the loader dumps.

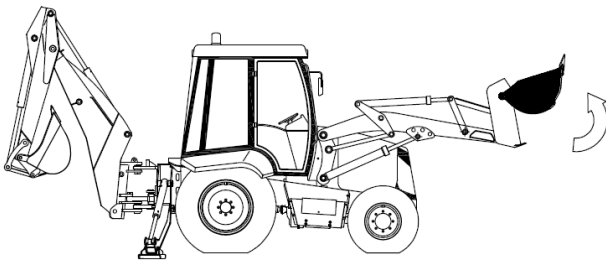


Clamshell switch

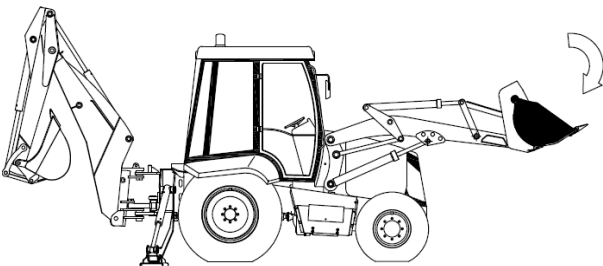


Position (0): When the switch is released, it automatically returns to neutral position and the movement of clam stops

Position (1): When the switch is pushed right, the clamshell is opened.



Position (2): When the switch is moved left, the clamshell is closed.



BACKHOE ATTACHMENT CONTROLS



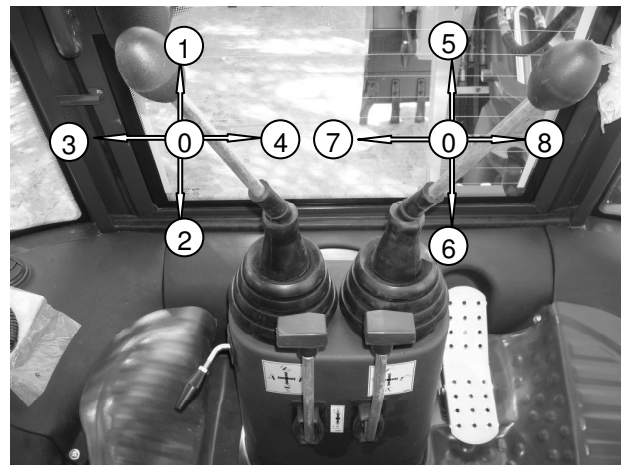
WARNING: After entering the cab, adjust the operator's seat in backhoe attachment position. Be certain that all controls can be reached comfortably.



WARNING: Bring all operating levers in neutral position and engage the parking brake before working with the backhoe attachment controls.



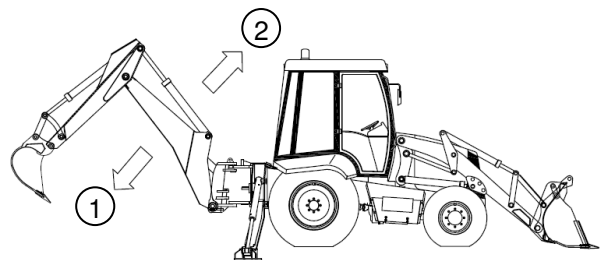
WARNING: Before operating the backhoe attachment controls, lower the stabilizers to the ground.



Position (0): When the lever is released, it automatically returns to neutral position and the movement of the backhoe attachment stops in the last position.

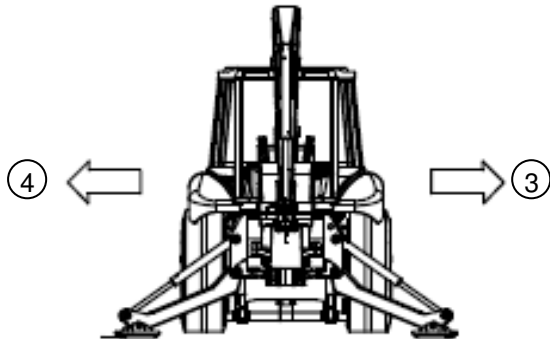
Position (1): When the lever is pushed forward, the backhoe boom is lowered.

Position (2): When the lever is pulled backwards, the backhoe boom is raised.



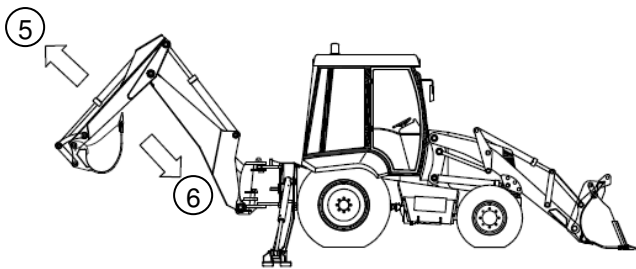
Position (3): When the lever is pushed to the left, the backhoe attachment swings to left.

Position (4): When the lever is pushed to the right, the backhoe attachment swings to right.



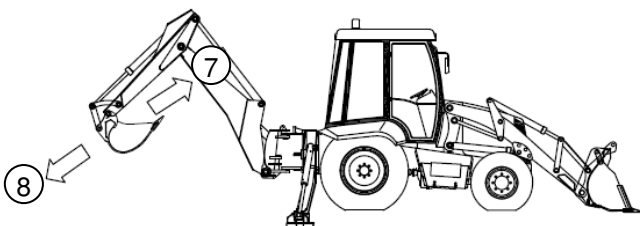
Position (5): When the lever is pushed forward, the backhoe dipper extends.

Position (6): When the lever is pulled backwards, the backhoe dipper retracts.



Position (7): When the lever is pushed to the left, the backhoe bucket digs.

Position (8): When the lever is pushed to the right, the backhoe bucket dumps.



STABILIZER CONTROLS



WARNING: Bring all operating levers in neutral position and engage the parking brake lever before using the stabilizer controls..



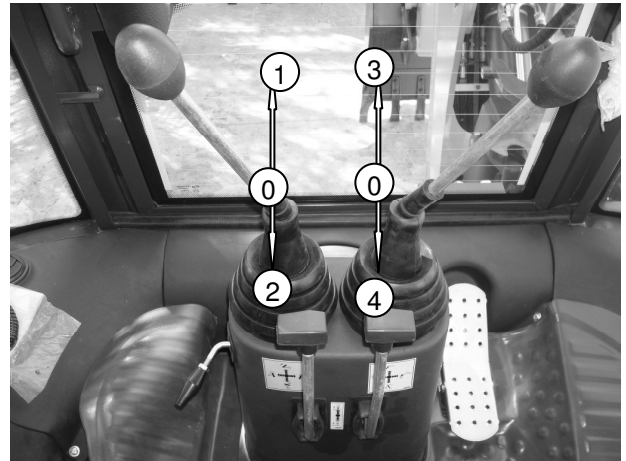
WARNING: After entering the cab, adjust the operator's seat in backhoe attachment position. Be certain that all controls can be reached comfortably.



WARNING: Before operating the backhoe attachment controls, lower the stabilizers to the ground.



WARNING: Before any road travel, the stabilizers must be raised completely.



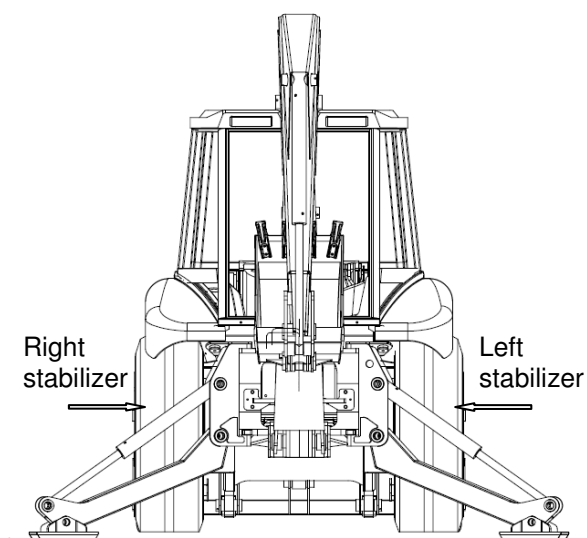
Position (0): When the lever is released, it automatically returns to neutral position and the movement of the left stabilizer stops in the last position.

Position (1): When the lever is pushed forward, the left stabilizer is lowered.

Position (2): When the lever is pulled backwards, the left stabilizer is raised.

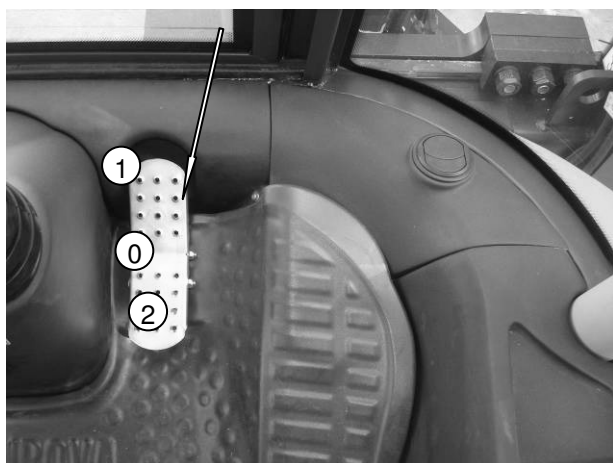
Position (3): When the lever is pushed forward, the right stabilizer is lowered.

Position (4): When the lever is pulled backwards, the right stabilizer is raised.



Note: Using the levers together raises or lowers the stabilizers at the same time.

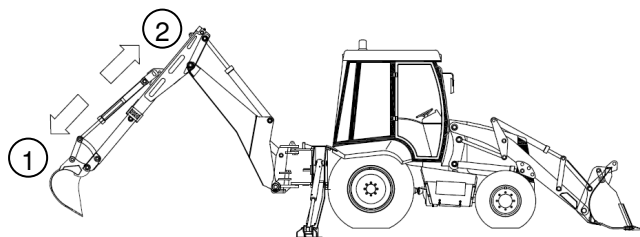
**Telescopic Dipper Stick Control Pedal
(Extendable Dipper)**



Position (0): The extendable dipper is at neutral position.

Position (1): Pushing the pedal forward extends the telescopic stick.

Position (2): Pushing the pedal backwards retracts the telescopic stick.



ACCESSORIES

SUNVISOR



CAB INTERIOR LIGHT



This light is used to illuminate inside of the cab.

BEACON LAMP



REAR VIEW MIRRORS



Adjust mirrors before driving the machine.

BATTERY MASTER SWITCH



Insert battery switch to connect the circuit. Remove battery switch before carrying out any maintenance work or after each working day.

TOOL BOX



This box is used to store the parts needed during servicing operations.



WINDSHIELD WASHER RESERVOIR



CIGAR LIGHTER



STORAGE COMPARTMENT



This storage compartment can be used for first aid kit or documentation pack storage compartment.

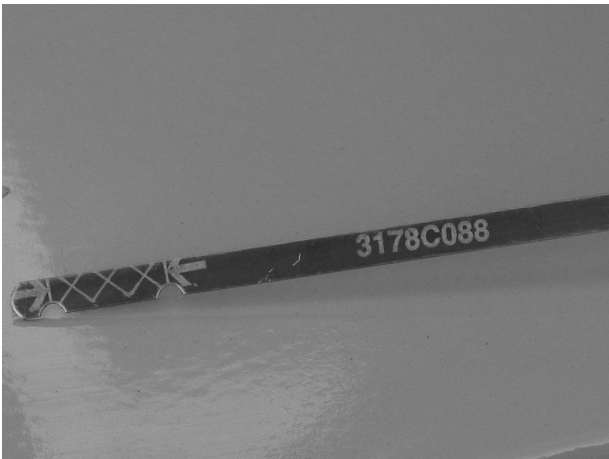
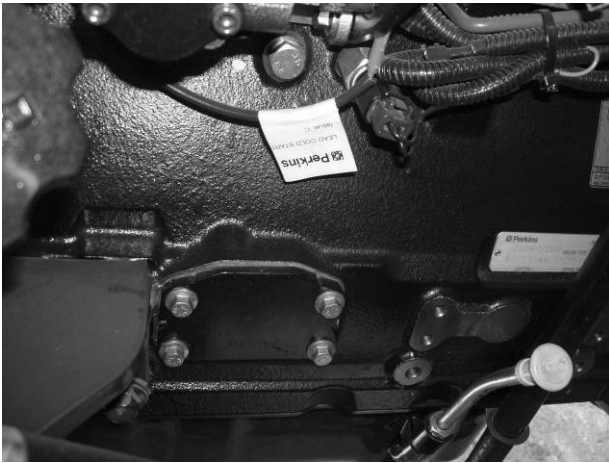
REAR ADJUSTABLE WORKING LIGHTS



OPERATING PROCEDURES

PRE-STARTING INSPECTION

ENGINE OIL LEVEL



Check the engine oil level with the machine on level ground. After engine shut down, allow 5 minutes for the oil to drain into the oil pan.

The oil level should not exceed the upper mark on the dipstick.



WARNING: The engine oil is very hot at or near operating temperature.



WARNING: Avoid contact with hot oil and components containing oil, since it could cause severe burns.

COOLANT LEVEL



WARNING: At or near operating temperature, the engine coolant is hot and under pressure.



WARNING: Avoid contact with components containing coolant, since it could cause severe burns.



WARNING: Check coolant level only after the cap of expansion reservoir is cool enough to touch. To check the coolant level, turn the reservoir cap slowly to relieve pressure.



When the coolant is cold, the coolant level should reach the lower end of the filler neck under the cap of the expansion reservoir.

The backhoe loader is delivered from the factory with a cooling system protection to -35 °C. The proper antifreeze concentration (50% antifreeze) must be maintained all year long.

ENGINE COOLANT RESERVOIR LEVEL



WARNING: At or near operating temperature, the engine coolant is hot and under pressure.



WARNING: Avoid contact with components containing coolant, since it could cause severe burns.



WARNING: Check coolant level only after the cap of expansion reservoir is cool enough to touch. To check the coolant level, turn the reservoir cap slowly to relieve pressure.



The engine coolant reservoir level should not exceed the maximum level.

CHECK FUEL SYSTEM / FUEL LEVEL

The condensation in the fuel system must be checked daily.



Turn the plug on the water separator of the fuel filter, drain the condensation until fuel drains off and retighten the plug.

Check the fuel gauge on the side control panel before starting to work.

If the warning lamp lights up on the front and side control panel, only a little reserve of fuel remains in the tank. Refill the tank, if fuel level is low.

Notice: Since a high fuel level in tank reduces condensation inside the tank, the refueling should be done preferably at the end of the working day.

HYDRAULIC OIL

When checking the oil level or adding oil,

- Park the machine on level ground,
- Lower the loader bucket flat on the ground.
- Position the backhoe attachments to road travel position.
- Turn the engine off and wait a few minutes.

Check oil level in the hydraulic tank



The fluid level should be in the middle of the sight gauge. If, in this position, the oil level is below the middle mark on the sight gauge and oil has to be added through the oil filler until the oil reaches the middle mark.

BRAKE FLUID RESERVOIR LEVEL



Check the brake fluid level with the machine on level ground.

The oil level must be between the MIN. and MAX. mark on the reservoir.

MACHINE START UP SAFETY

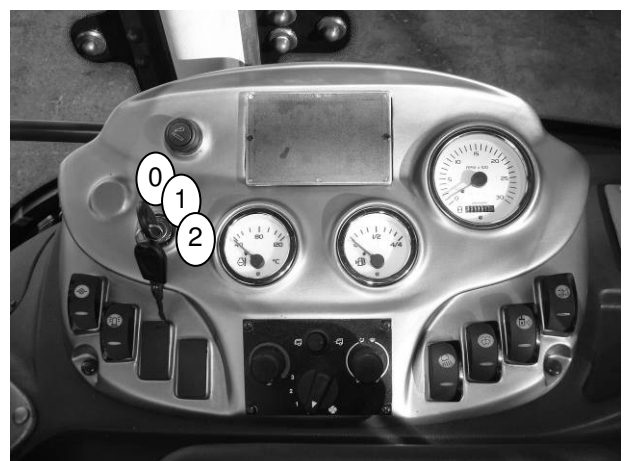
- Before backhoe loader start up, perform a thorough walk around inspection.
- Visually inspect the backhoe loader, look for loose bolts, cracks, wear, any leaks and any evidence of vandalism.
- Never start or operate an unsafe backhoe loader.
- Make sure all covers and doors are closed and locked and all warning decals are on the machine.
- Make sure all windows, as well as inside and outside mirrors are clean, and secure all doors and windows to prevent any unintentional movement.
- Be certain that the area surrounding the backhoe loader is free of other personnel, and that no one is working on or under the backhoe loader before starting the engine.
- After entering the cab, adjust the operator's seat and controls, the inside and outside mirror and the arm rests. Be certain that all controls can be reached comfortably.
- All noise protection devices on the machine must be functional during operation.

ENGINE START UP AND OPERATING SAFETY

- Before start up, check if all indicator lights and instruments are functioning properly, place all controls in neutral position.
- Before starting the engine, alert any nearby personnel that the backhoe loader being started by sounding the horn.
- Start machine only when seated in the operator's seat, and with the seat belt fastened.
- If you have no other instructions, start the engine as outlined in the Operation and Maintenance Manual.
- Check all indicators, gauges, warning devices and controls for their proper indication.
- Start and operate the engine only in a well ventilated area. If necessary, open doors and windows. Warm up the engine and hydraulic system to operating temperatures. Low engine and hydraulic oil temperatures can cause the backhoe loader unresponsive.
- Check that all attachment functions are operating properly.
- Move the backhoe loader slowly into an open area and check all travel functions for their proper operation, check travel brakes, the steering function as well as the turn signals and lights.

ENGINE START UP PROCEDURE

- Make sure that direction of travel control and speed lever is in neutral position and parking brake lever is engaged.
- Make sure that engine throttle lever is in low idle position.
- Turn the key to contact position "1". Immediately after turning the system on, the display and the control unit will run through a self test, i.e. engine oil pressure and alternator charge warning lamp on the front control panel should light up.





- Press the accelerator pedal down about a quarter of the way.

- Turn the key to pre-heat position “2”. Immediately after turning the system to pre-heat position, the indicator lamp on the front control panel lights up. According to the ambient temperatures hold the key in the pre-heat position about 10-30 seconds. Never hold the key in the pre-heat position for more than one minute.

- Turn the key to starting position “2”. As soon as the engine is running, release the key. The engine can not be cranked for more than ten seconds. If the engine does not start, repeat the starting procedure at one minute intervals to allow the starter motor to cool off. After running the engine, oil pressure and alternator charge warning lamp must turn off.



DANGER: Only run the engine if good ventilation is provided. Open the doors and windows, if necessary, to provide sufficient ventilation.

Note: Do not run the engine at idle for too long, since this may cause the formation of deposits in the oil. Whenever conditions of use and safety allow it, run the engine at maximum speed.

- Make sure that all indicators and indicator lamps, and all controls function properly after running the engine.
- Press the accelerator pedal, increase the engine speed slowly until the engine has reached operating temperature.

ENGINE SHUT DOWN PROCEDURE

- Place direction of travel control and speed lever in neutral position.
- Apply parking brake.
- Reduce the engine speed to low idle and run the engine 1 minute at low idle. In cold weather, you must run the engine 3-5 minutes at the low idle.

- Turn the key to “off” position. Remove the starter key.

Note: Do not suddenly turn the engine off when the engines are running at high idle.



WARNING: Do not turn the starter while the engine is running, this could damage the starter and the starter gear.

MACHINE OPERATING SAFETY

- Familiarize yourself with jobsite rules. Be informed about traffic and hand signals and safety signs. Ask who is responsible for signaling.
- Check your surroundings for any obstacles in the working and movement range, check the load carrying capacity of the terrain, and secure the job site to shield it from any public highway traffic.
- Always keep a safe distance from overhangs, walls, drop offs, and unstable ground.
- Be alert of changing weather conditions, bad or insufficient visibility and of changing ground conditions.
- Be alert for utility lines, check the location of underground cables, gas and water lines, and work especially careful in that vicinity. If necessary and / or if required, call local authorities to mark the location.
- Keep sufficient distance from electrical lines. When working in the vicinity of high voltage electrical lines, keep a proper distance to assure that the attachment does not come close to the lines.
DANGER! You must inform yourself about safe distances.
- In case you do touch a high voltage line by accident, proceed as follows:
 - Do not leave the machine,
 - Move the machine, if possible, from the danger zone until you reach sufficient distance,
 - Warn any personnel in the vicinity not to come close to the backhoe loader and not to touch it,
 - Instruct or initiate someone to turn off the voltage,
 - Do not leave the machine until you are absolutely sure that voltage in the line, which had been touched or damaged, has been turned off!
- Before moving the machine, make sure that the attachments and equipment is secured properly to avoid accidents.

- Do not run the machine without the backhoe as this can effect the brake system and may cause serious accidents.
- Do not install front wheel weights unless necessary.
- Use the throttle lever while operating the backhoe or for maintenance.
- When travelling on public roads or highways, make sure you observe traffic regulations, and make sure that the machine meets federal and local public highway standards.
- Always turn on the lights if visibility is bad or if you are still working during dusk.
- Never allow other personnel on the backhoe loader.
- Operate the backhoe loader only while seated and with the seat belt fastened.
- Report any problems or needed repairs to your foreman or supervisor and make sure they are corrected immediately.
- Do not move the backhoe loader until you are certain that no one is endangered by moving the backhoe loader.
- Check the brake system before starting to work, as outlined in the Operation and Maintenance Manual.
- **MAKE SURE THAT BRAKE PEDALS ARE LOCKED BEFORE ANY ROAD TRAVEL.**
- Never leave the operator's seat while the machine is still moving.
- Never leave the machine unattended (within view of machine), with the engine running.
- Prevent any working movements, which could tip the machine over. If the backhoe loader begins to tip or slip on a grade, immediately lower the attachments. If possible, always operate the backhoe loader with the attachment positioned uphill.
- Always travel slowly on rough or slippery ground on slopes, and on loose soil.
- Activate 4 wheel drive switch when travelling on icy or slippery roads.
- Always travel downhill at permissible speed, so you don't lose control over the machine. The engine must run at nominal speed, use only the foot pedals to brake and slow down the machine.
- Never shift gear during down hill travel, always shift to a lower gear before traveling downhill.
- If the road is icy or slippery when travelling uphill or downhill, engage differential lock to prevent accidents.
- Before travelling on public highway, adjust steering column to the most upright position and slide operator's seat to the most forward position. Otherwise operator's field of view become restricted and an accident may occur.
- Engine RPM is adjusted and sealed in the factory. Do not try to readjust the engine RPM. This can cause serious accidents. Should this happen, consult CUKUROVA service personnel.
- Never load over an occupied truck. Request that the driver leave the cab, even if a rock protection is installed.
- If operating in visually obstructed terrain or whenever necessary, have another person guide you. Always have only one person signal to you.
- Allow only experienced persons to attach loads or to guide operators. The guide must be visible by the operator and / or must be in voice contact with him.
- In case of a thunderstorm :
 - lower the attachment to the ground and if possible anchor the digging tool into the soil.
 - leave the cab and move away from the machine before the storm breaks out. Otherwise, you must stop the backhoe loader and keep inside the closed cab Until the end of the storm.
- Auxiliary control units can have various functions. Always check their functions when starting up the machine.
- Inspect the machine for damage if the attachment has been swung into a wall or any other obstacles.
- Applications in which the attachment is to be used to strike the material being extracted are not permitted, even when working in a longitudinal direction.
- Repeated strikes against an object leads to damage to the steel structures and machine components.
- Please refer to your CUKUROVA dealer if special teeth for heavy-duty or special applications are required.
- Do not attach too large bucket or bucket with side cutters or that are during operations with rocky material. This would prolong the work cycles and may lead to damage to the bucket as well as further machine components.
- Do not lift the machine during operation. Should this happen, lower the machine slowly back to the ground.

- Do not let the machine fall heavily on the ground and do not hold it back with the hydraulics. This would damage the machine.
- An hydraulic hammer must be selected with particular care. When using a hydraulic hammer not permitted by CUKUROVA, steel structures or the other machine components can become damaged.
- Before beginning breaking tasks, position the machine on firm and level ground.
- Use a hydraulic hammer designed exclusively for breaking stone, concrete and other breakable materials.
- Only operate the hydraulic hammer in the longitudinal direction of the machine and with the rear windshield closed or with a protective grill.
- Ensure during hammer operation that no cylinder is entirely extended or retracted and that the stick is not in the vertical position.
- In order to avoid damage to the machine, try not to break stone or concrete while performing retraction and extension motions of the hydraulic hammer.
- Do not apply the hydraulic hammer uninterrupted for more than 15 secs. at a time to the same place. Change the breaking point. Too long uninterrupted operation of the hydraulic hammer leads to an unnecessary overheating of the hydraulic oil.
- Do not use the drop force of the hydraulic hammer to break stone or other materials. Do not move obstacles with the hydraulic hammer. Misuse of this nature would damage both the hammer and the machine.
- Do not use the hydraulic hammer to lift objects.
- While operating, if the operator has a problem, he must lower the attachments, engage the parking brake lever and remove the ignition key. fix the problem immediately or inform the person who is authorized.

NOTE: Release the hydraulic system pressure by pressing brake pedal down a few times.

NOTE: Even if engine stops, attachments can be lowered by using attachments control levers.

BACKHOE ATTACHMENT WORKING POSITION



WARNING: After entering the cab, adjust the operator's seat in backhoe attachment position. Be certain that all controls can be reached comfortably.



WARNING: Bring all operating levers in neutral position and engage the parking brake lever before working with the backhoe attachment controls.



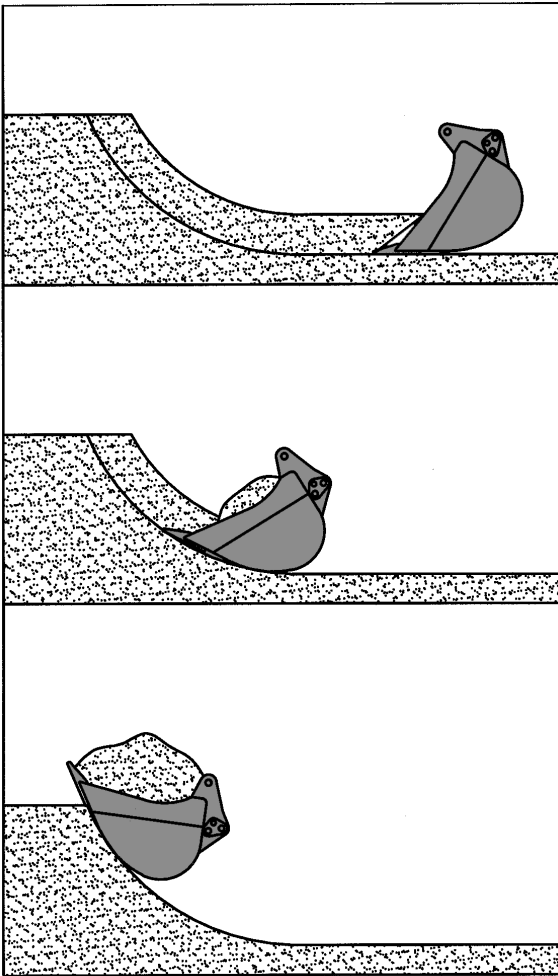
WARNING: Before operating the backhoe attachment controls, lower the stabilizers to the ground.

- Make sure that direction of travel control and speed lever is in neutral position and parking brake lever is engaged.
- Start the engine.
- Level the loader bucket and lower it to the ground.
- Turn the seat to the backhoe attachment position and adjust if necessary.
- Make sure that the side shift is locked.
- By using engine throttle lever accelerate the engine at operating speed. The speed must be between 1500 to 1800 rpm.
- Lower the stabilizers to the ground.

The side shift

- To shift the backhoe attachment to the right or to the left;
 - To unlock the side shift press the side shift switch. After pressing the switch the indicator lamp lights up.
 - If you want to shift the backhoe attachment (which is at the right) to the left, lift the right stabilizer. At that time, the left stabilizer must be on the ground.
 - If you want to shift the backhoe attachment (which is at the left) to the right, lift the left stabilizer. At that time, the right stabilizer must be on the ground.
 - Lock the side shift at the desired position by pressing again the side shift switch. The indicator light must turn off.

Excavating position



WARNING: Don't operate with the backhoe bucket in order to break big materials; otherwise, hydraulic failures may occur.

BACKHOE POSITION

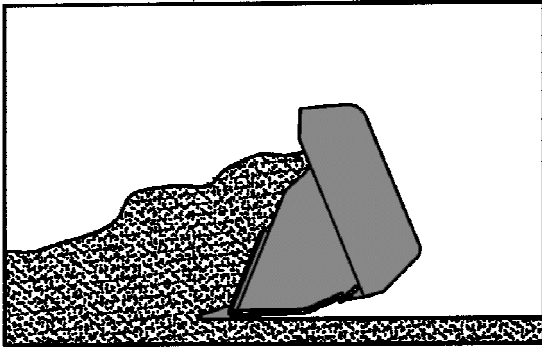
ATTACHMENT

TRAVELLING

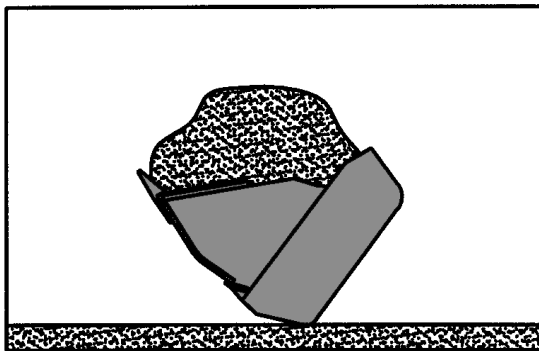
- Make sure that the direction of the travel control and speed lever is in neutral position and the parking brake lever is engaged.
- Make sure that the stabilizers are lowered and the loader bucket is adjusted that it is about 20-25 cm above the ground.
- Slide the side shift to the left completely (according to the loader position).
- Position the backhoe attachment to be parallel to the side shift.
- Lock the side shift, by pressing the side shift switch.
- Lock the backhoe boom shift by pressing the backhoe boom shift switch.
- Raise the stabilizers, the buzzer will sound in the cabin if the stabilizers aren't raised enough.
- Adjust the engine throttle lever to the low RPM position.
- Lock the backhoe attachment switch by pressing the switch.
- Turn the seat to the loader attachment position.
- Release the parking brake .
- Make sure that the direction of travel control and speed lever is in neutral position.
- Lift the loader bucket that shouldn't be an obstacle for the operator's visual range.

OPERATIONS WITH LOADER BUCKET

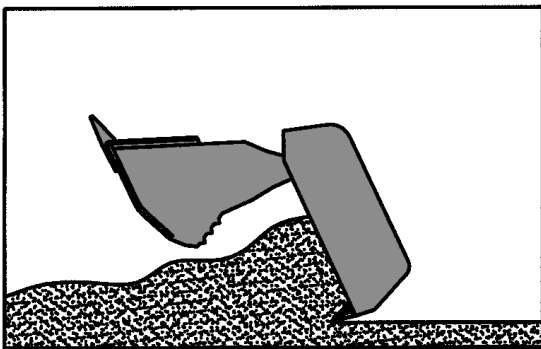
- Digging position



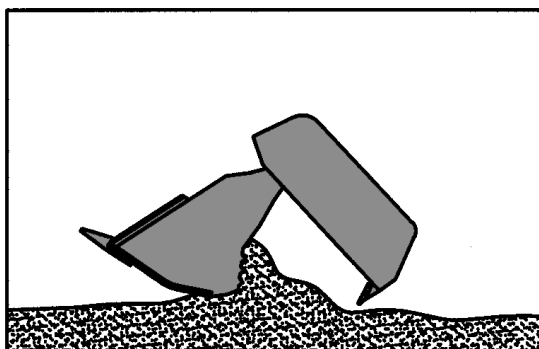
- Loading position



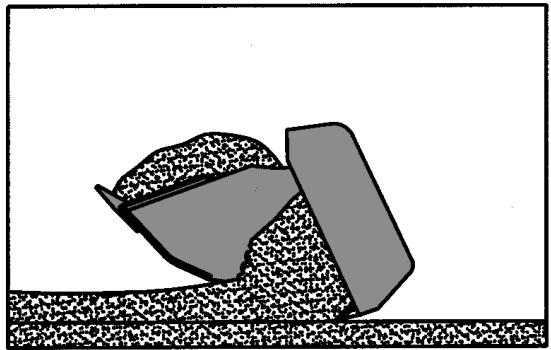
- Dozer blade position



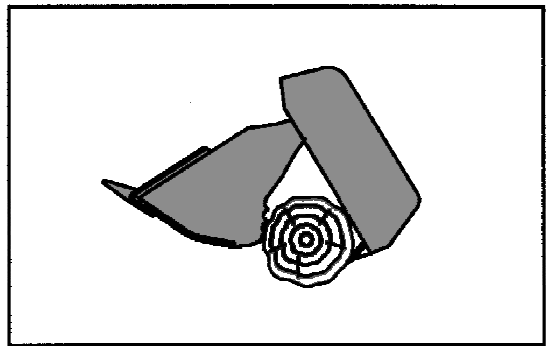
- Grader position



- Filling position



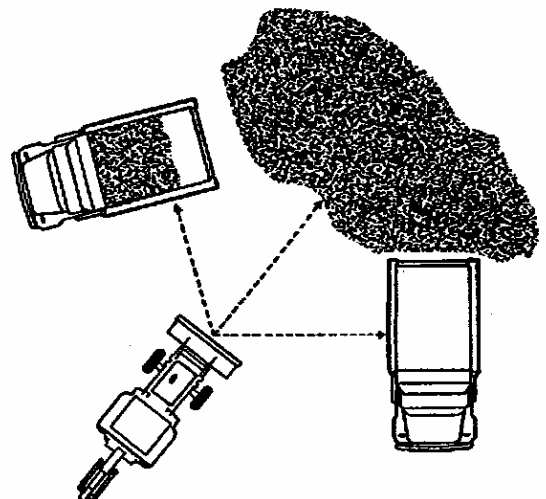
- Handling position



 **WARNING:** Being on level ground is helpful to operate the machine easily.

 **WARNING:** While operating the backhoe loader at the inclined terrain with a full bucket, keep bucket as low as possible.

 **WARNING:** While operating the backhoe loader at the slippery or inclined terrain, travel slowly, otherwise accidents may occur.



ROAD TRAVELLING FUNCTION

When travelling with backhoe loader, some procedures should be followed to provide safety.



WARNING: When travelling on public roads or highways, make sure to observe traffic regulations, and make sure that the machine meets federal and local public highway standards.



WARNING: Check all indicators, gauges, warning devices and controls for their proper indication before travelling on the road.



WARNING: Start machine only when seated in the operator's seat, and with the seat belt fastened before travelling on the road.



WARNING: Adjust backhoe attachment to road travel position before travelling on the road.

- Make sure that direction of travel control and speed lever is in neutral position and parking brake lever is engaged.
- Adjust the operator's seat to the backhoe attachment position correctly.
- Run the engine
- Lower the stabilizers to the ground.
- Retract the telescopic stick and lock it by placing the pin to the locking hole.
- Slide the sideshift carriage to the right.
- Position the backhoe attachment parallel to the machine.
- Retract the backhoe attachment completely.
- Swing the backhoe attachment completely to the left.
- Raise the stabilizers, the buzzer will sound in the cab if the stabilizers are not raised enough.
- Make sure that all covers and doors are closed and locked.
- Reduce the engine speed to low idle speed.
- Turn the seat to the loader attachment position and adjust if necessary.
- Raise the loader attachment about 20-25 cm above the ground and roll back the loader bucket.
- Stop the engine and engage parking brake.
- Place the loader bucket tooth-cover.
- Position the mirrors correctly.
- Make sure that all covers and doors are closed and locked.
- Lock the two brake pedals.

- Start the engine.
- Lock the attachments by pressing the attachment lock switch. After pressing the switch the indicator lamp lights up.
- Make sure that the front drive axle is disengaged.
- If necessary press the rotating beacons switch to activate it. After pressing the switch the indicator lamp lights up.
- Press the brake pedals down and release the parking brake.
- Move the direction of travel control and speed lever forward and turn the lever to select the speed.
- Release the brake pedals press the accelerator pedal down for controlling the engine speed.

JOB SITE TRAVELLING FUNCTIONS



WARNING: Check all indicators, gauges, warning devices and controls for their proper indication before travelling on the job-site.



WARNING: Start machine only when seated in the operator's seat, and with the seat belt fastened before travelling on the job-site.

- Make sure that the engine throttle lever is in the low idle position.
- Make sure that the stabilizers are completely raised, the buzzer will sound in the cab if the stabilizers are not raised enough
- Make sure that all covers and doors are closed and locked.
- Adjust the operator's seat and fasten the seat belt.
- Make sure that the direction of travel control and speed lever is in neutral position.
- Start the engine.
- Raise the loader attachment about 18-20 cm above the ground and roll back the loader bucket.
- Press the brake pedals down and release the parking brake.
- Move the direction of travel control and speed lever forward or reverse and turn the lever to select the engine speed.
- Release the brake pedals press the accelerator pedal down for controlling the engine speed.

NOTE: This machine's max. Operation incline is 24°



WARNING: Before you travel in reverse make sure that it is clear and nobody is in your way.



WARNING: While operating ,make sure that the front drive axle is engaged.(4x4 is on.)



WARNING: During operation on the inclined terrain in vertical position against the inclination, lower the loader bucket to the ground.



WARNING:Don't operate the backhoe loader without observing the following recommendations:

- Under 57,000 voltage: your distance from electric cables shouldn't be less than 3.5 meter.
- Above 57,000 voltage: your distance from electric cables should not be less than 5.5 meter.

TRANSPORTING THE BACKHOE LOADER

Safety procedure

- Use only suitable transporting and lifting devices with sufficient capacity.
- Park the machine on firm and level ground and block the wheels.
- If necessary, remove part of the attachments during transport.
- When loading the machine on a flatbed trailer or railroad car, be sure that the loading ramp incline is less than 30° and covered with wooden planks to prevent skidding.
- Remove all mud, snow or ice from the ramp components before moving up the ramp.
- Align the machine with the loading ramp.
- Have another person guide and signal the operator.
- Have blocks or wedges ready to block the machine, if necessary, to prevent the machine from rolling backwards. Be careful of crushing risks when handling and applying these wedges. Keep clear of wheels and do not attempt to chock or block the machine before its complete standstill.
- Release the hydraulic pressure, remove the ignition key, engage parking brake lever, close and lock the cab and close and secure all other doors and leave the machine.
- Carefully check out the transport route. Make sure that width, height and weight allowances are within the permitted limits.

- Check that there is enough clearance underneath all bridges, underpasses, utility lines, and in tunnels.
- During the unloading procedure, proceed with the same care and caution as during the loading procedure. Remove all chains and wedges. Start the engine as outlined in the Operation and Maintenance Manual. Carefully drive off the loading platform. Keep the attachment as close as possible to the ground level. Have another person guide and signal you.

Loading procedure

- Carefully align the machine with the loading ramp.
- Place a block or wedges behind the wheels of the trailer to block the trailers.
- Adjust backhoe attachment to road travel position, retract the attachments as far as possible and slide the side shift to the left.
- Raise the loader bucket about 18-20 cm above the ground.
- Select first speed from the direction of travel control and speed lever, and, very carefully drive up to the ramp.
- Lower the loader attachment, stabilizers and rest the loader bucket on the bed of the trailer.
- Lock the attachments by pressing the attachment lock switch.
- Release the hydraulic pressure, remove the starter key, engage parking brake , close and lock the cab and close and secure all other doors and leave the machine.
- Carefully secure the attachments and the other parts with chains and blocks to the trailer to prevent any slippage or movement.(Place blocks behind and front of the stabilizers.)
- Tie the rope to tie-down points and tie the other end of rope to the tying points on trailer .
- Turn the rear view mirrors inside.
- Carefully check out the transport route. Make sure that width, height and weight allowances are within the permitted limits.

Unloading procedure

- During the unloading procedure, proceed with the same care and caution as during the loading procedure. Remove all chains and wedges. Start the engine as outlined in the Operation and Maintenance Manual. Carefully drive off the loading platform. Keep the attachment as close as possible to the ground level. Have another person guide and signal you.

LIFTING THE BACKHOE LOADER

- Be sure all lifting devices such as, hooks, slings, and lifting points are safe and adequate and that they can take the weight of the machine.
- The lifting points are shown on the machine by decals.
- Using any other lifting points may not take the weight of the machine and can cause accidents.
- Adjust backhoe attachment to road travel position and retract the attachments as far as possible before lifting the backhoe loader.
- Keep personnel out of area.



TOWING THE BACKHOE LOADER



The vehicle being towed:

- Set the parking brake to off.
- Adjust the direction of travel control and speed lever to neutral position.
- After open the engine bonnet, tie the cable to the front weight.
- Turn on the hazard warning by pressing the hazard warning switch.

The vehicle towing the backhoe loader:

- Turn on the hazard warning by pressing the hazard warning switch.
- Tow the backhoe loader with the first speed.
- Don't jerk suddenly.

IMPORTANT: The speed of vehicle towing the backhoe loader should be 10 km/h and towing distance shouldn't be more than 10 km.



WARNING: While travelling downhill, run the engine in first gear..

Note: While travelling downhill or climbing uphill, the max.angle of inclination is 30°.

Don't travel at jobsite where inclination angle is more than 30°.

The backhoe loader should not be towed until absolutely necessary. If it is possible carry out the repair work at the location without towing the machine.

Towing is always the responsibility of the operator.



DANGER: Never allow anyone to stand near the cable when pulling or towing the backhoe loader.Keep the cable tight and free of kinks. Pull the cable slowly. The cable could snap and break if it suddenly jerked.

- Only tow the backhoe loader if absolutely necessary, for example to remove it for repairs from a dangerous job site.
- The vehicle should have enough capacity for towing the machine.
- Observe traffic regulations while towing.
- Be sure all towing and pulling devices such as cables, hooks, and couplers are safe and adequate.
- Make sure that the cable or the towing rod are strong enough. Be aware that any damage to the machine caused by towing is never covered by the manufacturer's warranty.
- Engage travel slowly, and do not jerk. With a slack cable, the sudden impact of the load being towed could snap and break.
- Keep personnel out of area. If cable breaks while under stress, it could cause severe injury.
- During the towing procedure, keep within the required transport position, permissible, speed and distance.
- After the towing procedure is completed, return the machine to its previous state.

- Proceed as outlined in the Operation and Maintenance Manual when putting the backhoe loader back in service.

PARKING THE BACKHOE LOADER

- Park the backhoe loader only on firm and level ground.
If it becomes necessary to park the machine on a grade, properly block and secure it with wedges.
- Lower the attachments to the ground and anchor the bucket lightly in the ground.
- Bring all operating levers in neutral position and engage the parking brake.
- Turn the engine off as outlined in the Operation and Maintenance Manual before you leave the operator's seat.
- Lock the machine, remove all keys and secure the backhoe loader against vandalism, unauthorized use, and any attractive nuisance.



WARNING: Make sure that width, height and weight allowances are within the permitted limits. If not, put the necessary signs on.

WORKING IN THE WATER

- The ground under the water should be stable to not to drag the machine weight.
- The water level should not be higher than the center axis of the front wheel.
- Before working in the water, lubricate the machine.

LUBRICATION

GENERAL SAFETY INFORMATION

It is very important that all guidelines describing lubrication, checking the oil level, replacing the oil are strictly adhered to!

Regular maintenance increases the life of the backhoe loader and improves its reliability.

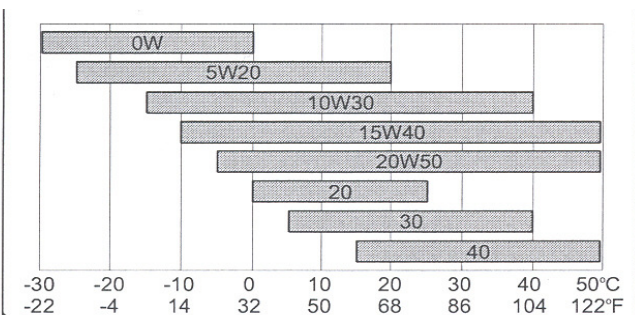
It is especially important to change the oil regularly and at the intervals noted in the maintenance schedule! Only use specified lubricants and oil!

When checking or replacing the oil, observe the following:

- Park the machine on level ground, if not otherwise stated, and turn the engine off.
- When working in the engine area, make sure the covers and side doors are secured.
- Only add fuel when the engine is turned off.
- Never smoke or allow an open flame in refueling areas.
- Cleanliness is especially important when changing engine, gear or hydraulic oil. Before removing fittings or plugs, make sure the surrounding areas are cleaned. When changing the oil, clean the fill and drain plugs.

IMPORTANT!

Be sure to drain oil into a suitable container and dispose of oil and filter cartridges properly.

LUBRICANT AND FUEL CHART																																								
COMPONENTS	SYMBOL	VISCOSITY SAE DIN 51512	SPECIFICATION	QUANTITY																																				
DIESEL ENGINE (TURBOCHARGED) -Lubricant		 API CI-4/CH-4/CG-4/CF-4/CF/SL/SJ,ACEA E5/E3/B4/B3/A2		8.4 liter 2.2 US gal																																				
-Fuel		Use only Diesel fuels with a sulfur content of less than 0,5% <table><tr><th colspan="2">Ambient Temperature</th><th colspan="2">Summer</th><th colspan="2">Winter</th></tr><tr><th>C°</th><th>F°</th><th>% Diesel fuel</th><th>% Addition</th><th>% Diesel fuel</th><th>% Addition</th></tr><tr><td>0 → -10</td><td>32 → 14</td><td>70</td><td>30</td><td>100</td><td></td></tr><tr><td>-10 → -15</td><td>14 → 5</td><td>50</td><td>50</td><td>100</td><td></td></tr><tr><td>-15 → -20</td><td>5 → -4</td><td></td><td></td><td>70</td><td>30</td></tr><tr><td>-20 → -25</td><td>-4 → -13</td><td></td><td></td><td>50</td><td>50</td></tr></table>	Ambient Temperature		Summer		Winter		C°	F°	% Diesel fuel	% Addition	% Diesel fuel	% Addition	0 → -10	32 → 14	70	30	100		-10 → -15	14 → 5	50	50	100		-15 → -20	5 → -4			70	30	-20 → -25	-4 → -13			50	50		140 l 36.9 US gal
Ambient Temperature		Summer		Winter																																				
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-20 → -25	-4 → -13			50	50																																			
-Coolant		Ethylene glycol based antifreeze and anticorrosive mixture Protected to: °C																																						

BRAKE		MOBIL 1 0W-40 API SL/CF , ACEA A3/B3/B4	0.4 liter 0.11 US gal
TRANSMISSION		SAE 10W SAE 10W-30/SAE 10W-40 SAE 15W-30/SAE 15W-40 SAE 20W-20 SAE 30 °C -30 -20 -10 0 +10 +20 +30 +40 +50 -22 -4 14 32 50 69 86 104 122 °F ZF TE-ML 03 oils	15 liter 4 US gal
FRONT AXLE		PO TMS OIL 500 API GL-4	7.8 liter 3 US gal
REAR AXLE		PO TMS OIL 500 API GL-4	16 liter 4.2 US gal
GREASE		CONSISTENCY 2 NLGI N°2 Grade PO SUPER GRES EP 2 MULTIPURPOSE GREASE KP2k OR EP2 (Extreme pressure N°2 Grade)	
WINDSHIELD WIPER SYSTEM		Commercial windshield washing detergent or denaturated alcohol	

LUBRICANT AND OPERATING MATERIALS SPECIFICATIONS

NOTES ON LUBRICANT AND OPERATING MATERIALS CHART AND ON LUBRICATION SCHEDULE

The amounts indicated on the lubricant and operating materials chart and on the lubrication schedule are guidelines.

Check level in appropriate aggregate after every oil change or refill.

1) DIESEL ENGINE LUBRICANTS

Lubricant regulation for diesel engines is based on the following specifications and regulations:

API Classification : CI-4, CH-4, CG-4, CF-4 (American Petroleum Institute)

ACEA (CCMC) Classification : E5, E4, E3, E2

(Association des Constructeurs Européens de l'Automobile)

Intervals for Oil Change

- Oil and filter changes at:
 - at 250 operating hours when using running in oil.
- Oil change depending on climate zone, sulphur content in fuel and oil quality according to sulphur chart below.
- If indicated operating hours are not reached, change engine oil and filter at least once a year.

Oil change intervals in operating hours:

		Turbo engine	
Working conditions	Sulphur content in fuel	Oil Quality	
		CG-4, CF-4, E2-96, D4	E3-96, D5, E4-98
>-10°C	< 0,5%	250 h	500 h
	> 0,5%	125 h	250 h
<-10°C	< 0,5%	125 h	250 h
	> 0,5%		125 h



DIESEL FUEL:

Authorized Diesel fuel specifications

Use only Diesel fuel with a sulfur content of less than 0,5 % and complying with one of the following standards:

DIN EN 590

ASTMD975-89a: 1-D and 2

The sulfur content in Diesel fuel should be less than 0.5%.

Higher sulphur contents influence oil change intervals and engine life.

Lubricity

By reducing sulphur content, the question of engine fuel lubricity arises. It has been clearly shown that engine fuels with the maximum allowable sulphur content (in Europe 0.05% by volume) can cause damage to the injector systems (especially in the case of distributor injection pumps).

Improving Diesel fuel fluidity in cold climates

Addition of regular gasoline or kerosene

When ambient temperature are below 0 °C (32 °F), Diesel fuels normally used during the summer may suffer a decline in fluidity due to paraffin separation. The same occurs if Diesel fuels normally used during the winter are used at temperature below -15 °C (5 °F).

Often, additive diesel fuel is on offer with operating temperatures down to -20 °C (-4 °F).

In order to prevent operating problems at these low temperatures, the Diesel fuel must be mixed with regular gasoline or kerosene.

Mixing regular gasoline should be considered at last resort, under no circumstances should the ratio of gasoline exceed 30%.

Never use super grade gasoline for mixing.

Ambient temperature		Summer		Winter	
°C	°F	% Diesel fuel	% Addition	% Diesel fuel	% Addition
0 ↘ -10	32 ↘ 14	70	30	100	
-10 ↘ -15	14 ↘ 5-	50	50*	100	
-15 ↘ -20	5 ↘ -4			70	30
-20 ↘ -25	-4 ↘ -13			50	50*

* If an additive of 50% is necessary, only use petrol (no normal gas).

Depending on the ratio of Diesel fuel to gasoline or kerosene, engine output may somethat decline.

Depending on the ambient temperature, add as little gasoline or kerosene as possible to the Diesel fuel.

Other Fuel additives (flow improvers):

Widely available flow improvers also enhance Diesel fuel ability to perform reliably in cold climate conditions. When using such flow improvers, follow the manufacturer's recommendations closely.



ENGINE COOLANT - Specifications for anticorrosion and antifreeze protection

Using mixture of antifreeze and anti-corrosion with "DCA4" anti-corrosion additive.

To assure the protection from corrosion of the cooling system, the coolant must contain at least 50% corrosion / coolant mixture all year round. This protects the cooling system to about - 35 °C (- 33 °F).

When fluid is added to the coolant mixture, it must be assured that the mixture maintains a 50% antifreeze content.

Caution : The percentage of antifreeze should not exceed 60 % . A higher concentration would lead to reduced antifreeze and cooling properties.

In addition, the cooling system must contain DCA4 (DCA = Diesel Coolant Additive) from FLEETGUARD. The prescribed concentration is from 0.3 to 0.8 DCA units per liter of coolant (1.2 to 3.0 units per US Gallon).

The coolant must be changed every 2 years. Before adding new coolant, check the circuit for cleanness and if necessary flush it with water.

Using a mixture of water and DCA4 (without antifreeze and anticorrosion)

In certain circumstances, and if ambient temperatures are constantly above the freezing point, for instances in tropical regions, and if there are no corrosion or antifreeze fluids available, then a mixture of water and DCA4 additives may be used.

To maintain sufficient anticorrosion properties however, the DCA4 concentration of the coolant must in this case be about doubled in comparison with the one prescribed when using a mixture also containing antifreeze and anticorrosion, it equals a concentration from 0.6 to 1.6 DCA units per liter of coolant (2.4 to 6.0 units per US Gallon).

Important:

if employing a mixture consisting only of water and DCA4 additives :

- the use of coolant refiners (corrosion protective oils) is not authorized,
- the coolant change interval must be reduced to once a year.

Fresh water guidelines:

To mix the coolant fluid, only clean, preferably soft water should be used. Often, but not always, regular drinking water can be used. Sea water, brackish waters, sole water or industrial waste water may not be used.

Fresh water quality

Sum of alkalies (water hardness)	0,6to2,7 mmol/l (3 to 15°d)*	1 ° dGH (total hardness - germany)
Ph value at 20° C (68° F)	6,5 to 8,0	= 1,2° (englisch hardness)
Chloride - ion content	max. 80 mg/l	= 17.9ppm (US hardness)
Sulfate - ion content	max. 80 mg/l	



HYDRAULIC OIL

Hydraulic oil specifications

1. Mineral oils

For single viscosity oils: For multi viscosity oil :

Recommended and approved are engine oils, which conform to the following specifications and regulations: For single viscosity oils: Vickers I-286 S, M-2950-S, Denison HF-0, HF-1,2

2. Environmentally friendly hydraulic fluids (also called "BIO oils" -bio degradable oils-)

The "environmentally friendly hydraulic fluids" recommended by CUKUROVA are limited to synthetic ester based hydraulic fluids with a viscosity according to ISO VG 46.

Initial filling is performed ex works according to customer desires. The use of environmentally-friendly hydraulic fluids must be arranged with the CUKUROVA beforehand.

Organic oils should not be used due to their poor temperature consistency.

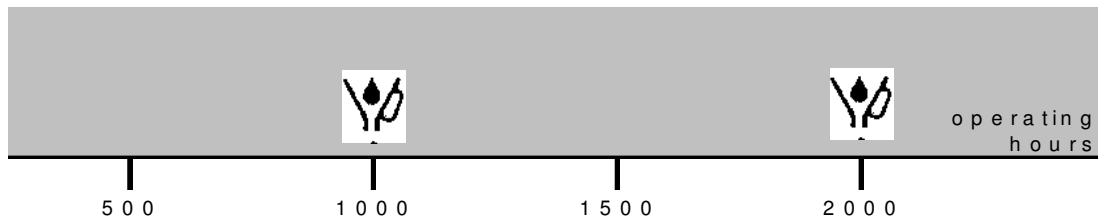
Note: It is absolutely necessary never to mix different brands of environmentally friendly hydraulic fluids or to mix fluids with mineral oils.

Hydraulic oil change intervals

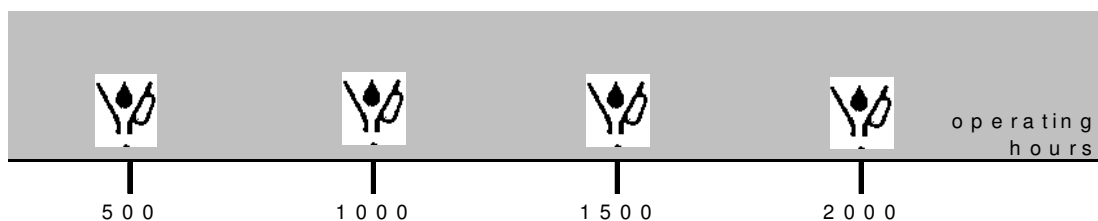
1. Oil changes in preset intervals

Note: Oil changes in preset intervals are only permitted for mineral oils. When using environmentally friendly hydraulic fluids, oil sample analysis reports must be used determine the time of the oil change.

a) In standard applications



b) In dust intensive applications



To limit the hydraulic oil contamination when working under extreme dusty conditions

On backhoe loaders working under very dusty conditions or with a hydraulic hammer attachment, the contamination of the hydraulic oil may be significantly increased.

In order to avoid any premature wear and failure of hydraulic components in consequence of this contamination reduce the oil change intervals as described above and, in addition, observe following recommendations:

- The tank return filter element(s) must be replaced every 1000 operating hours.
- The breather filter on the hydraulic tank must be replaced with a 75 µm fine breather filter.
- This 75 µm breather filter must be replaced every time the hydraulic oil is changed (every 1000 operating hours).



BRAKE OIL

Intervals for oil change:

- Brake oil changes every 1000 hours.



TRANSMISSION OIL

Lubricant regulations for transmission oils based on the following specifications and regulations:

API CF / SF

Intervals for oil change:

- First oil change at: 100 operating hours
- First filter changes at: 100 operating hours.
- Further filter changes every 500 hours and oil change depending on climate zone and oil quality.



FRONT AXLE OIL

Front axle oils for viscosity classification SAE 90 must meet the specifications API GL-5

Intervals for oil change:

- First oil change at: 500 operating hours.
- Further oil changes every 1000 hours.



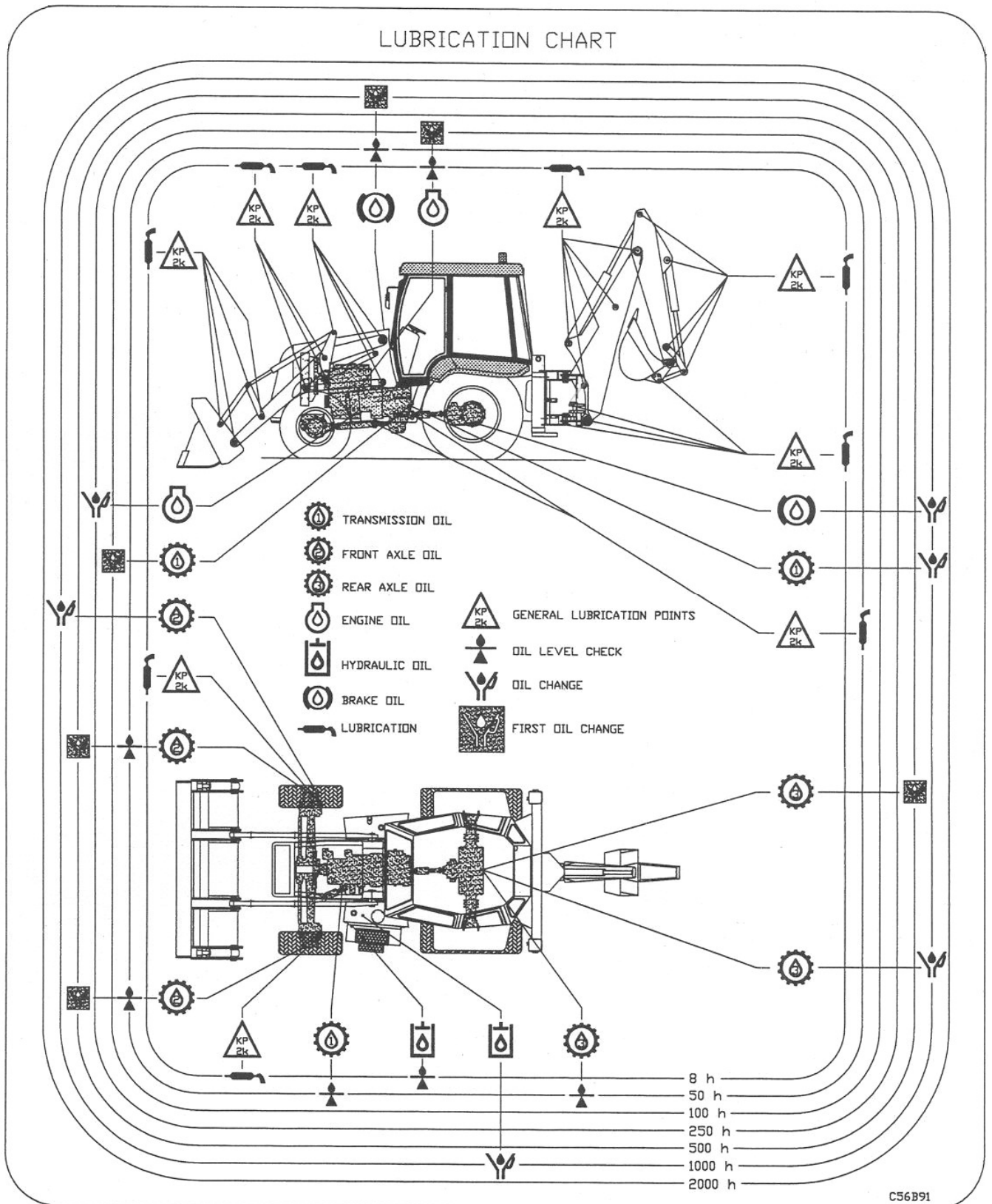
REAR AXLE OIL

Rear axle oils must meet the specifications API GL-4.

Intervals for oil change:

- First oil change at: 500 operating hours.
- Further oil changes every 1000 hours.

LUBRICATION SCHEDULE



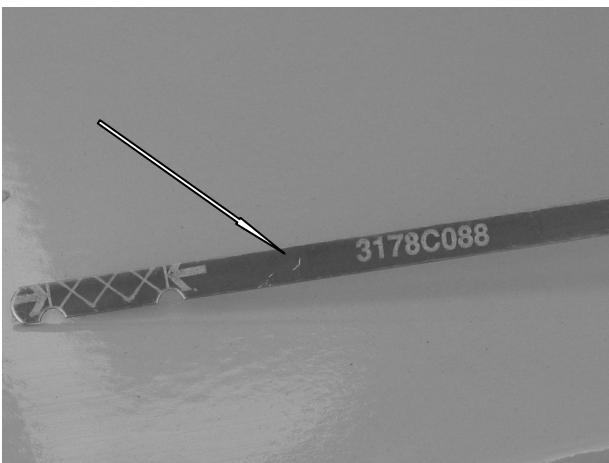
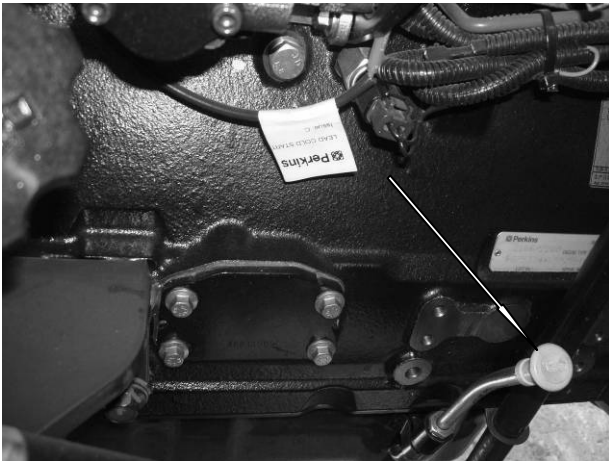
DIESEL ENGINE

See Lubrication Chart for oil quality and oil quantities.

Maintenance Instruction

Checking oil level:.....every 8 hours or everyday
Interval for oil change:.....every 250 hours
(first and only interval..... 100 hours)
Capacity 8.4 liter
Interval for oil filter change:.....every 250 hours
Oil type.....PO SUPERSARJ SAE 30

Checking the engine oil level



Park the machine on firm, level ground to check the engine oil level. Lift the loader attachment, place the safety bar and .Engage the parking brake .Turn the engine off and wait a few minutes for the oil to collect in the oil pan.Open the engine bonnet.

A few minutes later, remove the dip stick and clean it and place it. Remove the dip stick in order to check the oil level.

The oil should not exceed the upper mark on the dipstick. If the oil level is below the mark, remove the filler cap and add oil up to mark on the dipstick.

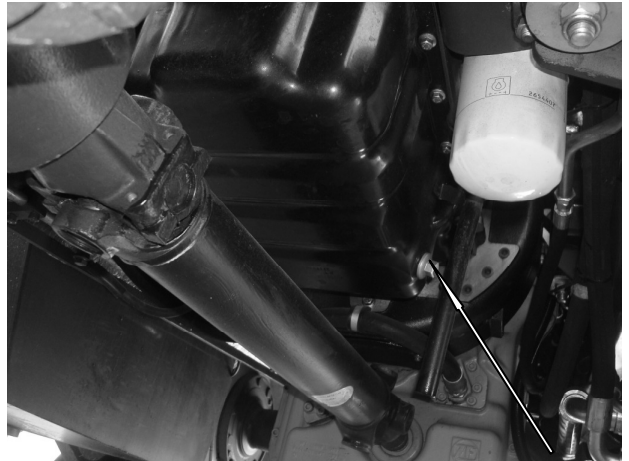


WARNING: The engine oil is very hot at or near operating temperature. Avoid contact with hot oil and components containing oil, since it could cause severe burns.

To drain the oil:

Maintenance Tools: combination wrench 16 mm

To change the oil, bring the engine to operating temperature.



Place an appropriate container under the drain plug, remove the drain plug and drain the used oil into the container.

To replace the oil filter element

Maintenance Tools: filter wrench



Remove the filter element by using the filter wrench.Clean the sealing surface on the filter mount.

Lightly lubricate the seal with oil and tighten the filter element, using both hands.

To add oil



Fill the engine with new oil to the upper mark of the dipstick.

Run the engine for few minutes and check for leaks and the level again. Close the engine bonnet.

COOLING SYSTEM

See Lubrication Chart for coolant quality and coolant quantities.

Maintenance Instruction

Checkig the coolant level.....every 8 hours
Draining:.....every 2000 hours
Capacity 25 liter
Thermostat Interval.....77 °C -82 °C (170 °F-180 °F)
Pressure of the radiator cap.....0.8 bar



WARNING: At or near operating temperature, the engine coolant is hot and under pressure. Avoid contact with components containing coolant, since it could cause severe burns. Check coolant level only after the cap of radiator and coolant reservoir is cool enough to touch.

Checking the coolant level in radiator



Park the machine on firm, level ground to check the engine coolant level. Lift the loader attachment, place the safety bar and engage the parking brake lever. Turn the engine off .Remove the ignition key.

To check the coolant level in the radiator, turn the cap of the radiator, when the coolant is cold, the coolant level should reach the lower end of the filler neck under the cap of the radiator. If it is under it, add the proper coolant mixture.

Checking the coolant level in coolant reservoir



To check the coolant level in the coolant reservoir, turn the cap of coolant reservoir slowly to relieve pressure.

When the coolant is cold, the coolant level should not exceed the upper level of the coolant reservoir. If necessary, remove the radiator cap and add coolant until the level reaches the upper level on the coolant reservoir.

Antifreeze and corrosion protection of the coolant

Never add water to the warm engine .Add the proper coolant mixture to the cooling system on a year round basis, not just in the cold season.

The backhoe loader is delivered from the factory with a cooling system protection to -37 °C (this corresponds to about 50% antifreeze).

For the cooling system capacity: see lubrication chart.

Also the correct concentration of corrosion inhibitors inside the coolant must be maintained permanently.

The concentration has to be checked after each important coolant make up, and at regular intervals if smaller coolant quantities are refilled frequently. If necessary, anticorrosion additives must be added to the cooling system.

If it is possible, use clean and soft water at the cooling system. Adding antifreeze to the coolant prevents damages of freezing. Anti-corrosion such as sodium benzoate or sodium nitrite is advised. At the coolant mixture, the rate of the antifreeze shouldn't be more than %50.

The proper coolant mixture should be like follows:

Min temperature ^{°C}	-9	-16	-24	-37	-52
The rate of antifreeze %	20	30	40	50	60
The rate of water %	80	70	60	50	40

Even if you don't need to prevent freezing, the coolant mixture is necessary in order to prevent corrosion. If you don't use the antifreeze, you should add the proper anti-corrosion to water. While adding the anti corrosion, you should observe recommendation of the manufacturer.

Changing the coolant

The coolant in the cooling system has to be changed at least every 2000 working hours.

Preferably keep the valves for the cab heating circuit closed when changing the coolant. If the coolant in the heating circuit has to be drained too, the heater core must be vented correctly when refilling the circuit. The water flow through the cab heater is possible only with ignition key in contact position.

To drain coolant:

Park the machine on firm, level ground to check the engine oil level. Lift the loader attachment; place the safety bar. Engage the parking brake lever. Turn the engine off. Remove the ignition key.

Unscrew the cover of the drain valve. Place an appropriate container under the drain plug, remove the drain plug and drain the used coolant into the container.

Important: In order to totally drain the coolant from the engine (also when the machine has not been used for a long period of time), the coolant also has to be drained from the cooling pump.



To clean the circuit and add coolant:

Fill the cooling system with clean water. Run the engine about 10 minutes to stir up possible rust or sediment. Stop engine and immediately drain water from the system before rust and sediment settle.

Close all drain plugs.

Remove the loader safety bar and lower the loader attachment.

Add coolant to the radiator tank and coolant reservoir through the filler plug.

Important: Air must be expelled from cooling system when system is refilled. Loosen temperature sending unit fitting at rear of cylinder head or plug in thermostat housing to allow air to escape when filling system. Retighten fitting or plug after filling the cooling system.

Start the engine, run it at low idle for about 30 seconds. This mixes the solution uniformly and circulates it through the entire system.

After running engine, check coolant level and entire cooling system for leaks.

Important: When adding coolant, make sure that the radiator tank is filled all the way to the top of the fitting, add coolant until the level does no longer drop (it is not possible to overfill the tank if the pressure relief valve is not removed).

To clean the oil cooler and the radiator

Maintenance Tools: combination wrench 10 -13 -17 mm



For removing the dust on the oil cooler and radiator use compressed air. Protect your face when using compressed air.

For removing the mud on the oil cooler and radiator, use water.

See maintenance chart for cleaning intervals.

OIL IN THE HYDRAULIC SYSTEM

See Lubrication Chart for oil quality and oil quantities.

Maintenance Instruction

Checking hydraulic oil level:...every 8 hours or everyday

Changing hydraulic oil:.....every 1000 hours

Capacity of hydraulic tank :.....75 liter

Oil type: PO HYDRO OIL HD 46

Replacing the return filter:.....every 1000 hours

Cleaning the suction strainer.....every 1000 hours

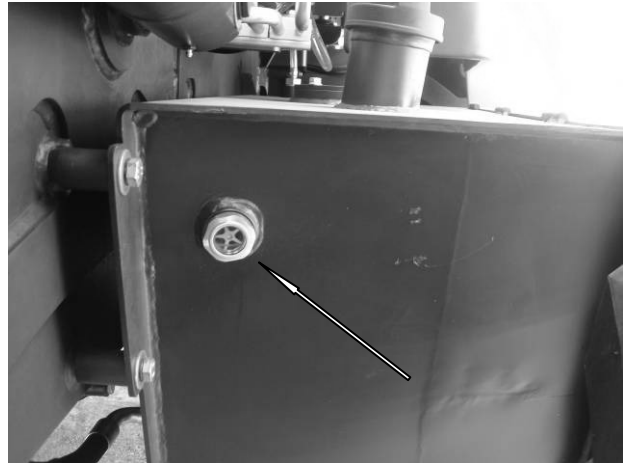
Cleaning the breather.....every 1000 hours

Replacing the breather filter.....every 1000 hours

When checking the oil level or adding oil,

- Park the machine on level ground,
- Lower the loader bucket flat on the ground.
- Position the backhoe attachments to road travel position.
- Turn the engine off and wait a few minutes.

Check hydraulic oil level



The fluid level should be in the middle of the sight gauge. Fill up if necessary.

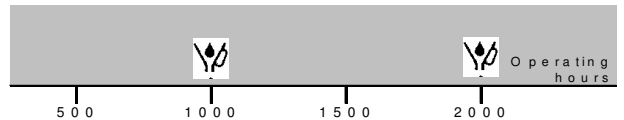
To drain oil

Maintenance Tools: ratched handle 12.5 square drive, socket wrench 27 mm

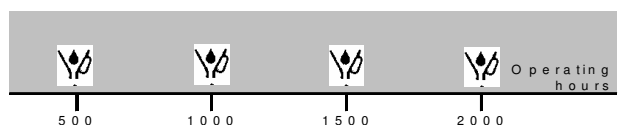


Place an appropriate container under the drain plug, remove the drain plug and drain the used oil into the container. The oil should be at operating temperature when draining.

Interval of changing the oil level at the normal condition

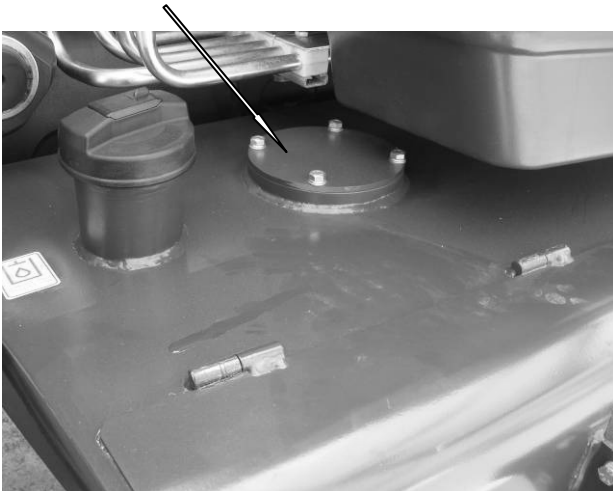


Interval of changing the oil level at the dusty condition



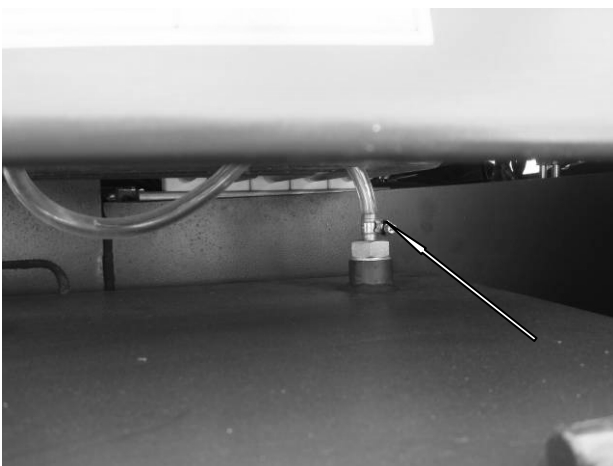
To replace the return filter

Maintenance Tools: combination wrench 13 mm



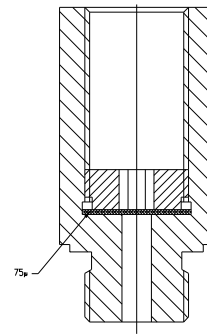
Remove the bolts. Remove the filter element by hand. Clean the sealing surface on the filter mount. Lightly lubricate the seal with oil and tighten the new filter element, using both hands. Install the bolts.

To clean the breather on the hydraulic tank



Check the breather on the hydraulic tank for contamination. Clean if necessary.

To replace breather filter on the hydraulic tank



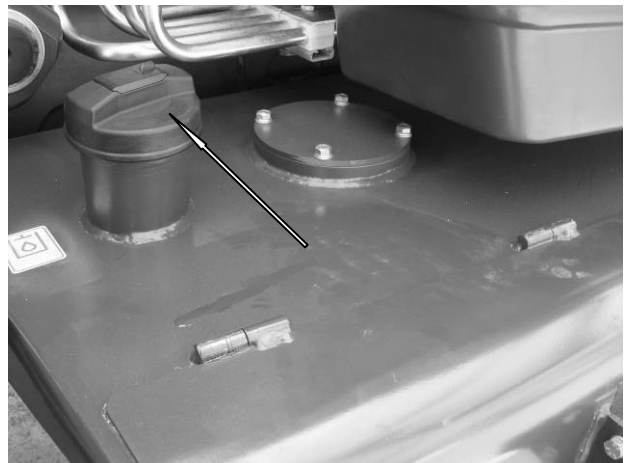
The breather filter on the hydraulic tank must be replaced with a 75 µ fine breather filter. This 75 µ breather filter must be replaced every time the hydraulic oil is changed (every 1000 operating hours).

To clean the suction strainer

Maintenance Tools: combination wrench 13-19 mm

Remove the tank hydraulic pump intake hose flange by star wrench. put the flange in a plastic bag to prevent it from becoming dirty. Remove the intake strainer by hand. After cleaning and drying the intake strainer, carefully install and tighten the strainer. Install the flange.

To add oil



Install the drain plug. Add oil through the filler cap, until the oil level reaches middle level on the sight gauge. Close the filler cap.

See lubricant chart for oil specifications and maintenance chart for oil change intervals.

THE FUEL SYSTEM

See Lubrication Chart for fuel quality and oil quantities.

Maintenance Instruction

Draining the contaminant from the fuel tank.....every 500 hours
 Draining the contaminant (water) from the fuel filter..... every 250 hours
 Replacing the fuel filter.....every 500 hours
 Capacity of the fuel tank 140 liter

Ability of flow at the cold weather

You should add benzine (gasoline) or gas oil (kerosene) to the fuel regularly.

Falling ambient temperature under 0 °C causes the fuel flow poorly.

To prevent use, prefer the fuel with additive which is effective up to -20 °C.

The rate of the benzine in the mixture shouldn't be more than 30%.

Ambient temperature		Summer		Winter	
°C	°F	% Diesel fuel	% Addition	% Diesel fuel	% Addition
0 ~ -10	32 ~ 14	70	30	100	
-10 ~ -15	14 ~ 5	50	50*	100	
-15 ~ -20	5 ~ -4			70	30
-20 ~ -25	-4 ~ -13			50	50*

Never use super benzine for the mixture.

Adjust the rate of benzine (gasoline) or gas oil (kerosene) in the mixture by observing the ambient temperature.

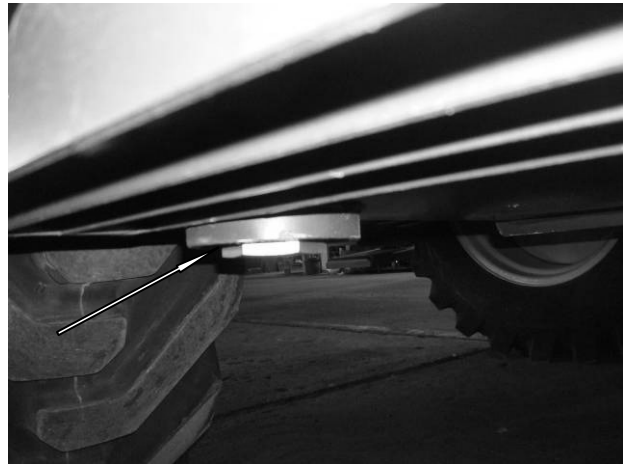
To drain the contaminant from the fuel filter



Drain water from the fuel system daily. Place an appropriate container under the filter, unscrew the tap located under the filter and drain the water until fuel emerges, then retighten the drain plug.

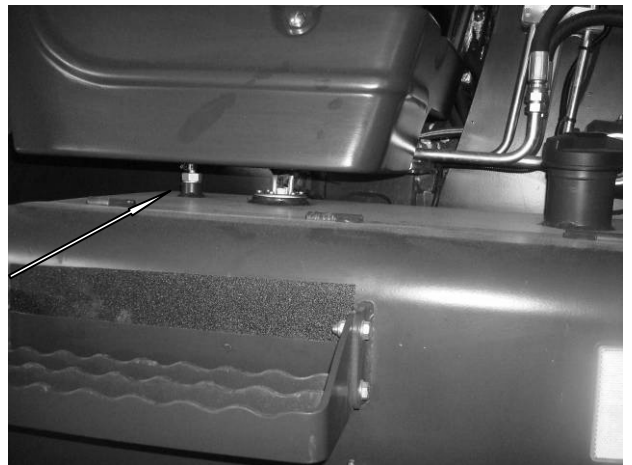
To drain the contaminant from the fuel tank

Maintenance Tools: ratched handle 12.5 square drive, socket wrench 27 mm



Place an appropriate container under the fuel tank, unscrew the drain plug one up two turns and drain the contaminant from the fuel tank then retighten the drain plug.

To clean fuel tank breather



Check the fuel tank breather for contamination. Clean if necessary.

To replace the filter elements



Remove the fuel filter elements. Lightly grease the seal of the new filter elements and reinstall the elements. After that, bleed the fuel system.

To add fuel



Install the drain plugs. Add oil through the filler cap. Close the filler cap.

TRANSMISSION

See Lubrication Chart for oil quality and oil quantities.

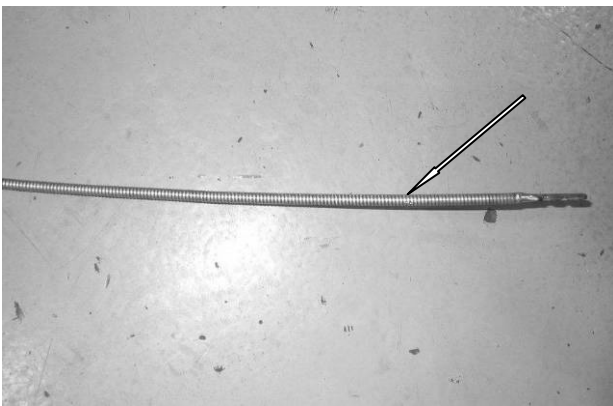
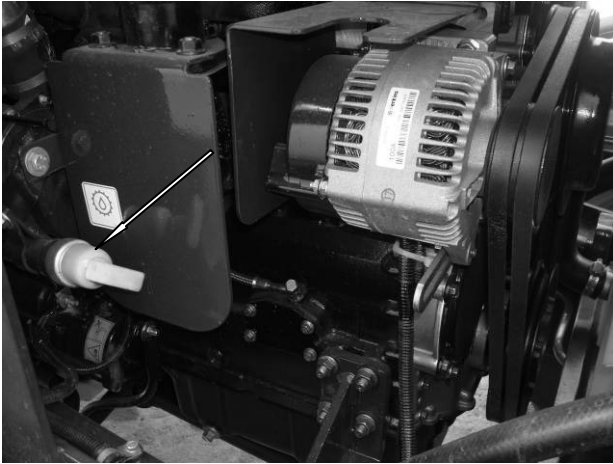
Maintenance Instruction

Checking oil level every 50 hours
Changing oil every 1000 hours
(first and only interval.....100 hours)
Oil type.....PO SUPERSARJ SAE 30
Capacity.....15 liter
Replacing the filter every 1000 hours
(first and only interval.....100 hours)

When checking the oil level or adding oil,

- Park the machine on level ground
- Lift the loader attachments and place the safety bar
- Transmission in Neutral position „N“
- At engine idling speed about 1000 min⁻¹
- At operating temperature of the transmission (about 80 °C)

Checking oil level

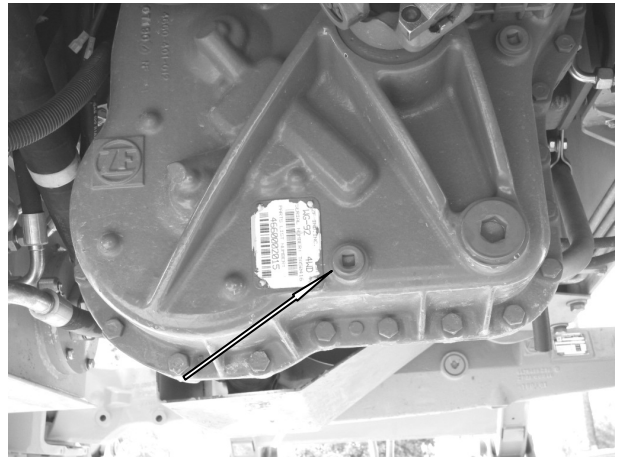


Remove and clean the dipstick. Insert oil dipstick into the oil level tube until contact is obtained and take it out again.

The level of oil should be between upper mark and below mark: in cold weather the oil level should be near the lower mark and in hot weather it should be near the upper mark. If the level is under the lower mark, add oil. And replace the dipstick.

To drain oil

Maintenance Tools : extension bar 12,5 square drive



Place an appropriate container under the drain plug, remove the drain plug and filler cap. Drain the used oil into the container. Install the drain plug and filler cap.

To replace the filter elements

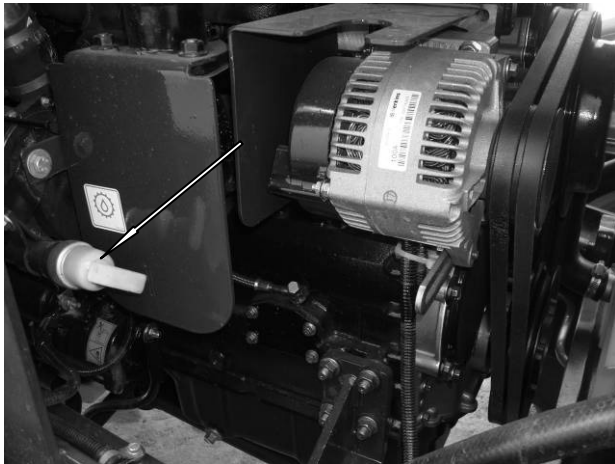
Maintenance Tools: filter wrench



Clean the surface of filter. Take care that no dirt or oil sludge can penetrate the circuit. Place an appropriate container under the filter. Remove the filter by using filter wrench. Lightly grease the seal of the new filter elements, screw filter in until contact with the sealing surface is obtained.

NOTE: While placing new filter do not use the filter wrench.

To add oil



Add oil through the filler neck, and then check the oil level. The level of oil should be between upper mark and below mark. If necessary, add oil. Place the dipstick. Remove support and close the bonnet.

FRONT DRIVE AXLE AND REDUCTION GEARS

See Lubrication Chart for oil quality and oil quantities.

Maintenance Instruction

Checking oil level every 50 hours
Changing oil every 1000 hours
(first and only interval.....500 hours)
Capacity.....7.8 liter
Oil type PO TMS OIL 500

Front Drive Axle

When checking the oil level or adding oil,
- Park the machine on level ground.
- Turn the engine off.

To check front axle oil level

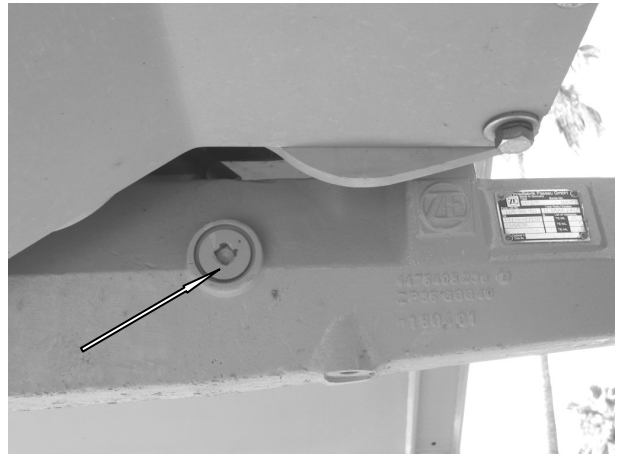
Maintenance Tools: combination wrench 17 mm



Remove the plug and check that the oil is level with the orifice. If necessary, fill up. Install the plug.

To drain oil

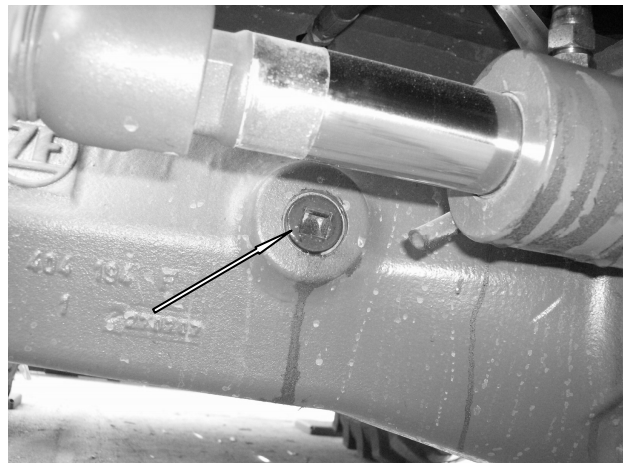
Maintenance Tools: combination wrench 17 mm



Place an appropriate container under the drain plugs, clean the surface of plug. Remove the drain plugs and drain the used oil into the container. Install the drain plug.

To add oil

Maintenance Tools: combination wrench 17 mm



Add oil until the oil is level with the orifice. Install the plug.

Reduction Gears

When checking the oil level or adding oil,
- Park the machine on level ground.
- Make sure that the direction of travel control and speed lever is in neutral position.
- Turn the engine off.

To check reduction gear oil level

Maintenance Tools: extension bar 12,5 square drive



- Park the machine that the level mark on the wheel is parallel to the ground. Remove the plug and check that the oil is level with the orifice. If necessary, fill up. Install the plug.

To add oil

Maintenance Tools: extension bar 12,5 square drive



Park the machine that the level mark on the wheel is parallel to the ground. Remove the plug. Fill up and check that the oil is level with the orifice. and install the plug.

Note: Repeat the same procedure for the other reduction gears.

To drain reduction gear oil

Maintenance Tools: extension bar 12,5 square drive



Park the machine that the level mark on the wheel is the lowest position. Place an appropriate container under the drain plug, remove the drain plug and drain the used oil into the container. Install the drain plug.

REAR AXLE

See Lubrication Chart for oil quality and oil quantities.

Maintenance Instruction

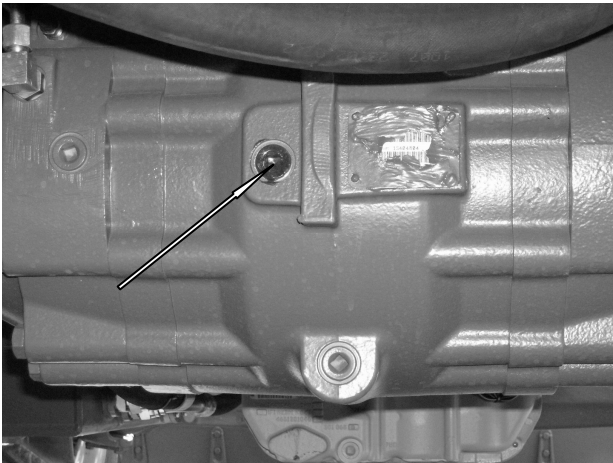
Checking oil level every 50 hours
Checking the rear axle breather every 50 hours
Changing oil every 1000 hours
(first and only interval.....500 hours)
Capacity 16 liter
Oil type PO TMS OIL 500

When checking the oil level, draining or adding oil,

- Park the machine on level ground.
- Turn the engine off.

To check rear axle oil level

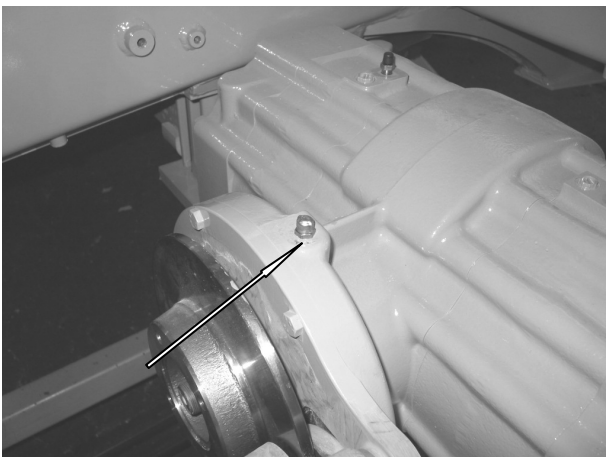
Maintenance Tools: extension bar 12,5 square drive



Remove the plug and check that the oil is level with the orifice. If necessary, fill up. Install the plug.

To clean the rear axle breather

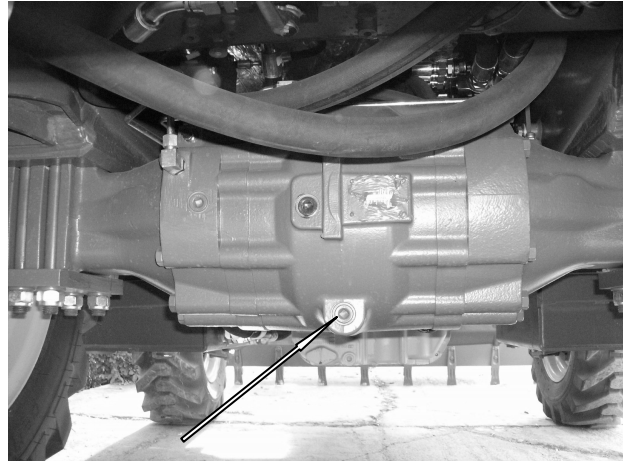
Maintenance Tools: combination wrench 14mm



Check the rear axle breather for contamination.
Clean if necessary.

To drain oil

Maintenance Tools: extension bar 12,5 square drive



Place an appropriate container under the drain plug, remove the drain plug and drain the used oil into the container. Install the drain plug.

To add oil

Maintenance Tools: extension bar 12,5 square drive



Add oil until the oil is level with the orifice. Check the level and install the plug.

BRAKE FLUID

Maintenance Instruction

Checking oil level every 50 hours
Changing oil every 1000 hours
Capacity 0,4 liter
Oil type Mobil 1 0W-40
(synthetic oil)

When checking the oil level, draining or adding oil,

- Park the machine on level ground.
- Turn the engine off.
- Engage parking brake.

Checking brake fluid reservoir level



The oil level should be between the MIN. and MAX. mark on the reservoir.

To add oil



Add oil through the filler cap. Install the drain plug and filler cap. Bleed the system.

See lubricant chart for oil specifications and maintenance chart for oil change intervals.

To bleed the brake system

Lock the brake pedals. Loosen the bleeding screw. And press down until the pedal reaches end of the stroke. Hold the pedal end of the stroke and tighten the bleeding screw. Repeat this procedure until the oil flows form the bleeding screw without any air bubbles.

MAINTENANCE AND ADJUSTMENTS

MACHINE MAINTENANCE SAFETY

- The machine must not be made unsafe when performing maintenance work. Never attempt maintenance procedures or repairs you do not understand.
- Check the Operator's and Maintenance Manual for service and maintenance intervals. Make sure you use only appropriate tools for all maintenance work.
- Refer to your Operator's and Maintenance Manual to see, who is authorized to perform certain repairs. The operator should only perform the daily / weekly maintenance procedures.
The remaining work may only be performed by especially trained personnel.
- Use only replacement parts corresponding to the technical requirements specified by the manufacturer. This is assured by using only original CUKUROVA replacement parts.
- Always wear proper work clothing when maintaining the backhoe loader. Certain work may only be performed with a hard hat, safety shoes, safety glasses and gloves.
- During maintenance, do not allow unauthorized personnel to enter the maintenance area.
- Secure the maintenance area, as necessary.
- Inform the operator before any special or maintenance work. Make sure he knows the person, who is in charge of the work.
- If not otherwise noted in the Operation and Maintenance Manual, always make sure the backhoe loader is parked on firm and level ground and the engine is turned off and parking brake is engaged.
- During maintenance and service work, make sure you always retighten any loosened screw connections!
- If it is necessary to disconnect or remove any safety devices during set up, maintenance or repair, make sure that after completion of repairs, the safety devices are reinstalled and checked for proper function.
- Before any maintenance work and especially when working under the machine, make sure a "Do not operate" tag is attached to the starter switch. Remove the ignition key.

After end of maintenance works or repair, restart the machine according to the instructions "Machine start up", in this manual.
- Before any repairs or maintenance work, clean any oil, fuel and / or cleaning substances from any fittings and connections. Don't use any harsh cleaners and use only lint free cloths.
- Use only nonflammable cleaning fluids to clean the machine.
- Any welding, torch or grinding work on the machine must be explicitly authorized. Written authorization is necessary for welding on load carrying structures. Before any using a welder, torch or grinder, clean off any dust and dirt and remove any flammable materials from the surrounding area. Make sure the area is sufficiently ventilated. Danger of Fire and Explosion!
- Before cleaning the machine with water or steam (high pressure cleaning) or other cleaning fluids, make sure that all openings, which, for safety and/ or functioning reasons should not be exposed to water / steam/ cleaners, are covered and / or masked off. Especially sensitive are electrical motors, control boxes and plug connectors.
Remove all coverings and masking material after completing the cleaning procedure. Then check all fuel lines, engine oil lines and hydraulic oil lines for leaks, loose connections, chafing and / or damage. Fix any problems immediately.
- If you use a high pressure cleaner with steam or hot water to clean the machine, observe following recommendations:
 - the distance between the nozzle and the surface to be cleaned must be no less than 50 cm.
 - the water temperature should not exceed 60°C(140°F)
 - limit the water pressure to 80 bar maximum (1160PSI)
 - if you employ cleaning fluid, only use neutral cleaning agents such as customary car shampoos diluted to 2 or 3 percent maximum
- Never employ high pressure cleaning apparatus during the two first months following machine delivery or repainting.
- Observe all product safety guidelines when handling oils, grease, and other chemical substances.
- Make sure service fluids and replacement parts are disposed of properly and in an environmentally sound manner.

- When using hot service fluids, be very careful. (They can cause severe burns and injury!).
- Operate combustion motors and fuel operated heaters only in well ventilated areas. Before operating these units, check ventilation. In addition, always follow applicable local regulations.
- Never try to lift heavy parts. Use appropriate lifting devices with sufficient load carrying capacity. When replacing or repairing parts or components, make sure they are mounted very carefully on lifting devices, to prevent any possible danger. Use only suitable and technically sound lifting devices, make sure that lifting tackle, wire cables, etc. have adequate load carrying capacity. Never position yourself, walk or work underneath suspended loads.
- Never use damaged lifting devices, or devices which are not sufficient to carry, the load. Always wear gloves when handling wire cables.
- Ask only experienced personnel to attach loads and guide and signal the crane operator. The guide must be within the visibility range of the operator and /or must be in direct voice contact with the operator.
- When working overhead, use appropriate and safe ladders, scaffolding or other working platforms designated for that purpose. Never step on parts or components on the machine when maintaining or repairing items overhead. When working high above ground, make sure you are fitted with ropes and appropriate safety devices which will prevent a possible fall. Always keep handles, steps, platforms and ladders free of dirt, snow and ice!
- When working on the attachments, for example when replacing the bucket teeth, make sure the attachment is supported properly. Never use metal on metal support!
- Never work underneath the machine if it is raised or propped up with the attachment.
- **ALWAYS USE SAFETY BAR WHEN LOADER BOOM IS RAISED.**
- Only qualified, especially trained personnel may work on travel gear, brake and steering systems.
- Only qualified, especially trained personnel may work on the hydraulic system.
- Never check for leaks with your bare hands, always wear gloves. Fluid escaping from a small hole can have enough force to penetrate the skin.
- Never loosen or remove lines or fittings before the attachments have been lowered to the ground and the engine has been turned off. Then turn the ignition key to contact position, move all servo controls (lever and foot pedals) in both direction to release pressures. Then release the tank pressure as outlined in this Operation and Maintenance Manual.
- Always disconnect the battery cable before working on the electrical system or before any arc welding on the machine. Always disconnect the negative (-) cable first and reconnect it last.
- Check the electrical system regularly. Make sure that any problems, such as loose connections, burnt out fuses and bulbs, scorched or chafed cables are fixed immediately by an electrician or qualified personnel.
- Use only Original fuses with the specified amperage. Never use a different size or stronger fuse than the original fuse.
- On machines with electrical medium or high voltage systems:
 - If there is any problem with the electrical energy supply, turn the machine off immediately.
 - Follow established lockout / tagout procedures where applicable.
 - Any work on the electrical system may only be performed by a qualified electrician or qualified personnel under the guidance and supervision of an electrician, according to electro-technical regulations.
- If any work is required on any parts which carry current, use a second person to turn off the main battery switch, if necessary. Rope the work area off with a safety rope or chain, and set up warning signs. Use only insulated tools.
- When working on medium and high voltage components, shut off the voltage and connect the supply cable to the ground and ground the components.
- Check all disconnected parts if they are truly free of current, ground them and close them off quickly. Insulate any close-by, current carrying parts.
- If a tyre becomes flat, it may cause serious accidents. Check the tyre pressure regularly by observing the model of the tyre (shape and thread pattern) and the ground under the tyre.

HYDRAULIC LINES AND HOSES

- Hydraulic lines and hoses may never be repaired!
- All hoses, lines and fittings must be checked daily, but at least every 2 weeks for leaks and any externally visible damage! Any damaged sections must be replaced immediately! Escaping oil can cause injuries and fires!
- Even if hoses and lines are stored and used properly, they undergo a natural aging process. For that reason, their service life is limited. Improper storage, mechanical damage and improper use are the most frequent causes of hose failures.

The service life of a hose may not exceed six years, including a storage period of not more than two years (always check the manufacturer's date on the hoses).

Using hoses and lines close to the limit of ranges of permitted use can shorten the service life (for example at high temperatures, frequent working cycles, extremely high impulse frequencies, multi shift or around the clock operations).

- Hoses and lines must be replaced if any of the following points are found during an inspection:
 - Damage on the external layer into the inner layer (such as chaff ings, cuts and rips);
 - Brittleness of the outer layer (crack formation of the hose material);
 - Changes in shape, which differ from the natural shape of the hose or line, when under pressure or when not under pressure, or in bends or curves, such as separation of layers, blister or bubble formation;
 - Leaks;
 - Non observance of installation requirements;
 - Damage or deformation of hose fittings, which might reduce the strength of the fitting or the connection between hose and fitting;
 - Any movement of hose away from the fitting;
 - Corrosion on fittings, which might reduce the function or the strength of the fitting;
 - Storage or service life has been exceeded.

When replacing hoses or lines, always use original replacement parts.

- Route or install the hoses and lines properly. Do not mix up the connections!

- Always take care to avoid torsional strain when installing a new hose. On high pressure hydraulic hoses, the mounting screws must be first mounted on both hose ends (full flange or half clamp) and tightened only thereafter.

On high pressure hoses having one curved end, always tighten first the screws on the curved hose end and only then the screws on the straight hose end.

Install and tighten the hose clips that may be mounted on the hose middle only when the both hose ends are already tightened.

- Always install hoses so to avoid any friction with other hoses and parts.

We recommend to keep a distance between hose and other parts of at least one half of the hose outer diameter. Keep a minimum gap of 1/2 inch (1.2 cm) in any case.

After mounting a hose connecting two parts that are movable relative to each other, check during the return to service that the hose is not rubbing fall full movement.

During Maintenance

Obey the service interval by checking the hourmeter everyday.park the backhoe loader on a level and firm ground by lowering the backhoe and the loader buckets until they touch the ground, before any maintenance work.

Perform all maintenance by stopping the engine and remove the ignition key. Wait to cool all systems, before any maintenance work.

Before lubricating, clean all fittings.



WARNING: Wrong maintenance and adjustments may cause serious accidents. If you don't understand how to do the maintenance, consult authorities in CUKUROVA branches.



WARNING: In case of using the backhoe loader attachmentss or moving the backhoe loader without the operator,serious accidents may occur. Follow these instructions carefully, before any maintenance work:

- Park the machine on a level ground.
- Lower tha loader and backhoe attachmentss until they touch the ground.
- Place the safety bar while doing the engine maintenance.
- Stop the engine and remove the starter key.



IMPORTANT: Reduce the maintenance interval while operating in hard conditions.

NOTE: You can see maintenance chart for all maintenance intervals.

HOURLMETER

Maintenance operations are programmed by observing the hourmeter. you always should observe the hourmeter for safety of maintenance interval and the machine yield. Perform all maintenance work regularly by obeying the operating and maintenance manual.



FRONT AND REAR WINDSHIELD WASHER RESERVOIR

Checking the windshield reservoir level....every 8 hours or everyday



Check the level of windshield washer reservoir level. Do not operate the windshield washer when the reservoir is empty. In cold weather, prepare an antifreeze solution for windshield washer to prevent freezing of the water.

THE DRY AIR FILTER

Maintenance Instruction

Cleaning the filter elements.....every 8 hours or everyday

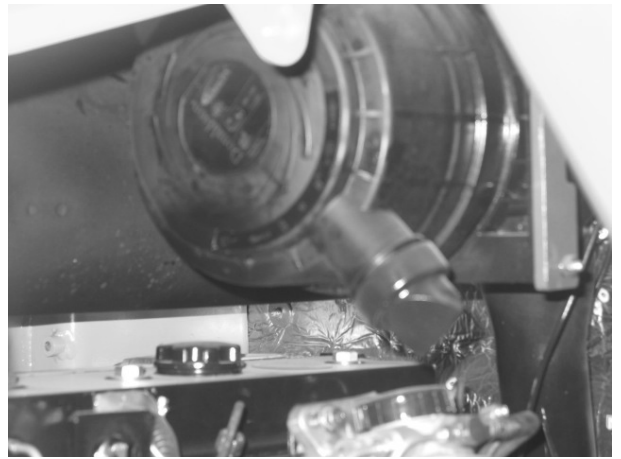
Replacing the filter primary element...every 500 hours

Replacing the secondary element...every 500 hours.



WARNING: If you operate the machine in dusty terrain, you should reduce the maintenance intervals.

Engine air intake system



For maximum engine protection, the air intake system must be checked and serviced at regular intervals.

The air cleaner is designed to give maximum protection at longest maintenance intervals.

Maintenance consists of cleaning the primary element and replacing both the primary and secondary filter elements. We do not recommend cleaning the secondary element.

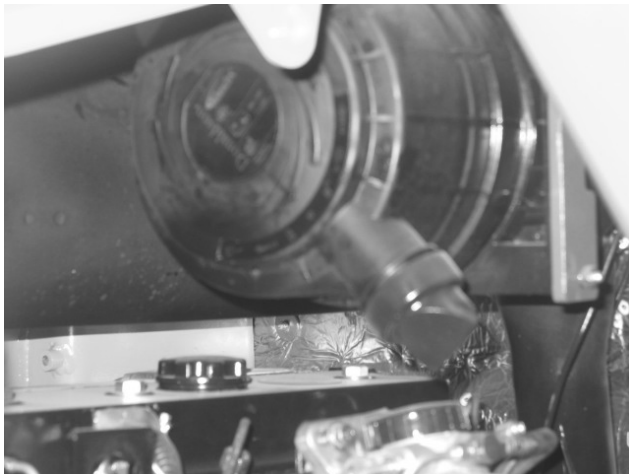
Always check air filter restriction lamps located on both front control panel and side control panel.

At that time, the primary filter element must be replaced.

Seals between filter element and housing can be damaged if the filter element is removed too often. Before installing the new elements, carefully clean the seal and the sealing surface of the filter housing.

Cleaning the primary element

If the primary element is dry;



Park the machine on firm, level ground to check the engine oil level. Lift the loader attachments, place the safety bar and .Engage the parking brake .Turn the engine off .Remove the ignition key.

Remove the cover by opening the clips. Carefully remove the primary element. For cleaning, use low pressure compressed air until there is no more dust on the primary element. Compressed air pressure should not exceed the 7 bar.



WARNING: Protect your face when using compressed air, otherwise a serious accident may occur.

If the primary element is oily;

For cleaning, use warm water and dissolve a small amount of suitable non-soapy detergent in it, and put the filter element in this solution. Shake it slowly and rinse it with clean water until the detergent and dust have been removed and water appears clear. Leave it to dry before installation.



WARNING: Never use compressed air when the filtering element is wet or moist.

Replacing the filter elements



After removing the filter elements, clean inside of the filter housing and the sealing surface with a damp rag. Do not direct compressed air into the housing. Carefully install the secondary element and then the primary element. Make sure that they are seated correctly. Install the cover by turning it and close it by fastening the clips. Start the engine, run it at low idle and check that if the air filter restriction lamp turns off. Remove the safety bar and lower the loader attachments.

NOTE: During placement of the filter elements and the cover, don't force. Be sure that you place the elements in their places correctly. Don't forget that damages of the air filter can cause to damage your engine, too.

CAB AIR INTAKE FILTER

Maintenance Instruction

Cleaning cab air intake filter every 50 hours

Maintenance Tools: combination wrench 10 mm



Remove the screws and the cab grille. Remove the cab air intake filter. Clean the filter with compressed air. Install the filter.



WARNING: Protect your face when using compressed air, otherwise a serious accident may occur.

TYRES

Maintenance Instruction

Checking the pressure of tyre every 50 hours

Checking the torque every 50 hours



Check the condition of tyres and observe the inflation pressures. Replace if necessary.

	ÖLÇÜ	BASINÇ	
ÖN 4WD-standart	12.5/80-18	3.7 bar	54 lbf/in ²
ARKA 4WD-standart	16.9-28	2.6 bar	38 lbf/in ²

To replace a wheel

Maintenance Tools: socket wrench 20 square drive-27 mm, ratched handle 20 square drives, extension bar 20 square drives, torque wrench



WARNING: Do not perform any welding operation near a tyre. First remove the tyre then make welding.



WARNING: If a tyre becomes flat, it may cause serious accidents. Check the tyre pressure regularly.



WARNING: When removing the tyre always use inflation cage and never face the tyre.

Park the machine on firm, level ground. Loosen the nuts from the tyre. Lift the machine above the ground by using loader attachments and stabilizers. Engage the parking brake. Turn the engine off. Place the blocks under the axle to provide safety. Take off the nuts and remove the tyre. Install a new tyre by carefully observing the orientation of the tread pattern. Install the nuts and adjust their torque. Remove the blocks. Start the engine and lower the machine.



Wheel nut torque settings



Check the torque of the tyre for correct torque value.

Front wheel nut 300 Nm
Rear wheel nut 300 Nm

ENGINE ALTERNATOR AND FAN BELT

Maintenance Instruction

Checking the fan belt every 50 hours



The belt tensioner is designed operate within the limit of hand movement. Depress the fan belt by hand. Check mounting bracket and the belt length. The length of the deflection should be 13-20 mm. Inspect belts for cracks, fraying, or stretched out. Replace new belt if necessary.

Replacing fan and alternator belt

Maintenance Tools: combination wrench 10-13 mm
Release tension on belt by loosening the bolts, and remove belt from pulleys. Install new belt, making sure belt is correctly seated in all pulley grooves. Apply tension to belt by stretching the bolts. Remove the safety bar. Lower the loader attachments.

HYDRAULIC CYLINDERS



Important:

Before attempting to repair, replace or reseal hydraulic cylinders or any other components, contact your CUKUROVA dealer.

Clean the rod before checking then run the engine 5-10 minutes. Extend the rod, check whether there is some leaks or not.

ROD APPEARANCE	TEST	RESULT
dry	When rubbing the rod with a paper if there is little stain on the paper	Normal
Little oily	If the paper is suspended to the rod	Normal
oily	If the paper sticks the rod	normal
Very oily and oozy	When the rod is extended, if oil appears on the rod	Consult CUKUROVA Branches
oozy	When the rod is retracted, if oil droplets appears on the rod	

Piston rod preservation:

Corrosion is comparable to wear and tear. Therefore, if the machine is not being used for longer than 4 weeks or if the machine is transported by ship, the following should be done:

Park the backhoe loader in a way so that the piston rods are retracted as much as possible.

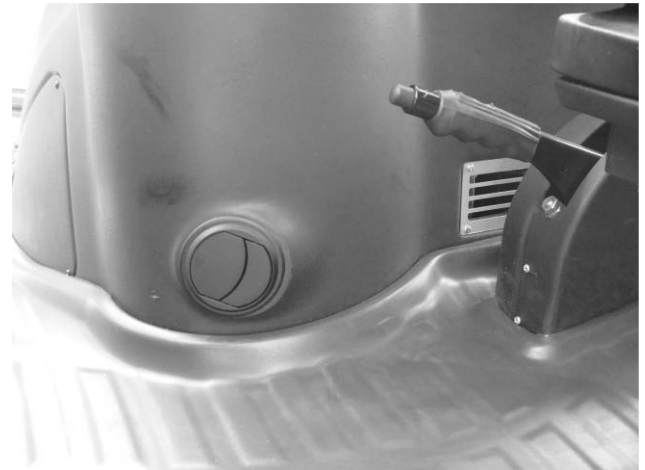
Lubricate all bearings, ball joints, hinges, exposed parts, cable connections and exposed cylinder rods with anti-corrosive grease. If the machine is used during certain working applications with only a short stroke, the cylinder should also be lubricated.

If the machine is transported by ship (sea water) or in the winter (road salt), the preservation of the piston rods must be rechecked after the machine has been loaded since the anti corrosive grease may have been removed by the wiper ring.

PARKING BRAKE LEVER

Maintenance Instruction

Checking of parking brake.....every 50 hours



Check the parking brake for proper function.

Engage the parking brake and start the engine. Select forward direction and speed 3 from the direction indicator control and speed lever. The buzzer will sound in the cab. Press down the accelerator pedal to increase the engine speed. The machine must not move. If it moves:

- Park the machine on level ground.
- Check park brake cable
- If there is any extension the brake cable, tighten the cable.
- Then repeat the test.



Note: After the cable is tightened a few times, check the brake mechanism. If there is any damage at the brake mechanism, consult the Cukurova service.

BRAKE PEDALS

Maintenance Instruction

Checking of brake pedals every 50 hours



Check the brake pedals for proper function. Lock the brake pedals and start the engine. Select forward direction and speed 2 from the direction indicator control and speed lever. The buzzer will sound in the cab. Press down the accelerator pedal to increase the engine speed at maximum speed. Press down the brake pedals The machine must stop. If it does not stop, consult CUKUROVA service personnel.

ENGINE VALVE CLEARANCE

Maintenance Instruction

Checking of the engine valve clearance every 2000 hours.

Consult CUKUROVA service personnel.

ELECTROHYDRAULIC SUSPENSION SYSTEM (OPT)

Maintenance Instruction

Checking of the electrohydraulic suspension system every 2000 hours.

Consult CUKUROVA service personnel.

ROPS/FOPS CAB

Maintenance Instruction

Checking of ROPS / FOPS every 250 hours.

Cab of the machine is equipped with protective structure ROPS in conformance with ISO 3471 and FOPS in conformance with ISO 3449.

- Check the tightness of the mounting bolts and bumpers. Tighten if necessary.
- Check if there is any rust or holes in the cab or cab components.
- Check the tightness of operator's seat and seat belt mounting bolts. Tighten if necessary.



DANGER: Do not modify or remove the ROPS/FOPS cab in any manner. Unauthorized modification, such as welding, drilling, cutting and adding attachments, as well as any damage resulting from collisions or the machine rolling over could weaken the structure and reduce the protection. Operating the machine without ROPS/FOPS cab can cause serious injury or death when the machine rolls over. Replace the ROPS/FOPS cab if subjected to roll over or damage. Do not attempt to repair it.

REPLACING A BACKHOE AND LOADER BUCKET TOOTH

Maintenance Instruction

Checking of torque every 8 hours or everyday.
The bolt of bucket teeth 205 Nm

Maintenance Tools: combination wrench 22 mm, socket wrench 22 mm, ratched handle 12.5 square drive, torque wrench



Check the bucket teeth regularly for wear. Greater force is needed to dig if bucket teeth are worn. Never work with a missing bucket tooth.

Remove the mounting bolts, remove the tooth. Replace a new tooth and install mounting bolts. Tighten the bolts for the correct torque 205 Nm.

TRANSMISSION

Maintenance Instruction

Checking of torque every 250 hours

Check the tightness of the transmission mounting bolts for the correct torque value.

BATTERY



- In order for the batteries to function properly, it is important to keep them clean at all times. The battery poles and cable clamps in particular should be cleaned regularly and then coated with acid resistant grease.
- Check the charged battery voltage before placing the battery in the battery box. The battery voltage should be 12.40 V and should be more than 12.40 V. If the voltage is less than 12.40 V, first charge it then place it in the battery box.
- At the temperature 27°C, dry charged batteries should be filled with sulfuric acid which of density should be 1,280 gr/cm³ until max level or upper 1.5 cm than separator. Check the battery voltage after waiting half an hour. If the battery voltage is more than 12.40 V, electrolytic level of battery compartments are checked and are cleaned. In case of the voltage being less than 12.40 V, charge the battery and place it in the battery box.
- The battery water may decrease as the machine used. This may occur because of electrical problems, too. At that time add pure water into the battery and never use sulfuric acid instead of pure water.
- Before storing the battery in the battery box or another place, charge the battery completely. If charge level is low, charge the battery completely and store it in a cool and dry place. While storing the battery, never reduce the water level. After 3 months the storage beginning date, check the battery voltage. Then check the battery voltage once a month. If the battery voltage is less than 12.40 V, charge it.



DANGER: Wear protective gloves and safety glasses when handling batteries!

Keep sparks and open flame away from battery.

Battery fumes are highly flammable and explosive. Because of batteries including sulfuric acid, mount the battery which of poles are at top of the battery. Batteries contain acid which should not be touched. In case of contact, flush with water and get medical attention.

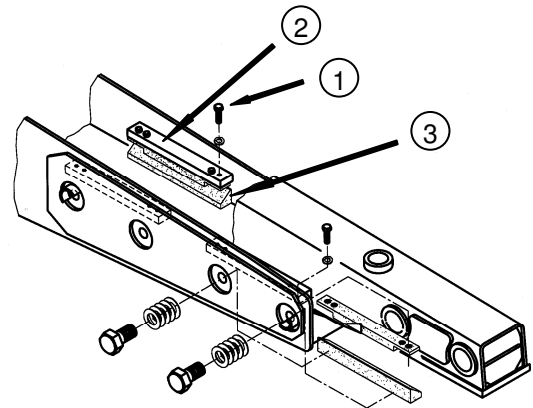
In order to prevent a fire, always disconnect the battery cable before working on the electrical system or before any arc welding on the machine. Always disconnect the negative (-) cable first and reconnect it last.

While charging, explosive gas occurs. Therefore, don't approach to the machine with a cigar, or flame.

TELESCOPIC STICK (OPT)

Top bearing pads

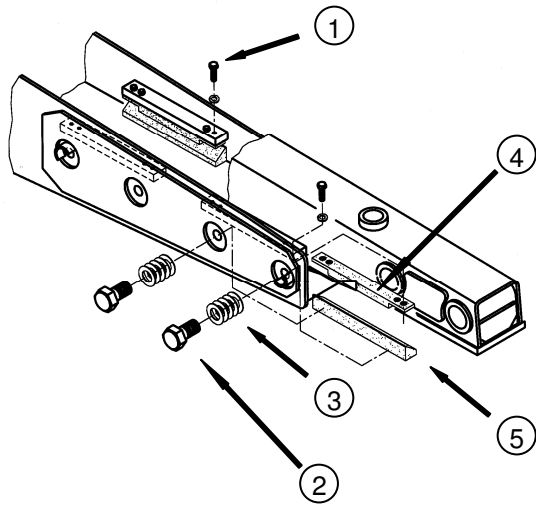
Maintenance Tools: combination wrench 30 mm, socket wrench 17 mm, extension bar 12.5 square drive, ratchet handle 12.5 square drive, torque wrench



Remove all bolts (1) and top plates (2). Take out the 4 old polyamide bearing pads (3) and replace the new polyamide bearing pads. Install the top plates and tighten the bolts to 51 Nm. Measure the clearance and if necessary install a shim.

Side bearing pads

Maintenance Tools: combination wrench 30 mm, socket wrench 17 mm, extension bar 12.5 square drive, ratched handle 12.5 square drive



Remove all bolts (1), (2) and shims (3). Remove the rod pin and slide the rod. Take out the telescopic stick housing and remove the plates (4). Take out the 4 old polyamide bearing pads (5) and replace it with the new ones. Install the telescopic stick housing, the plates and shims. Tighten the bolts. Measure the clearance and adjust the shims.

WELDING

Any welding on structural parts may only be done by CUKUROVA service personnel. If this rule is neglected, the warranty is voided.

Before welding repairs on other parts, always disconnect the battery. Always remove the negative terminal first and reconnect it last.

 **WARNING:** Before welding, connect the ground cable as close as possible to the welding point, so the welding current will not run through the joints, gears, bushings, rubber parts and seals.

MACHINE CLEANING

Maintenance Instruction

Checking and cleaning of the machine..... every 1000 hours.



WARNING: Before cleaning the machine with water or steam (high pressure cleaning) or other cleaning fluids, make sure that all openings, which, for safety and/ or functioning reasons should not be exposed to water / steam/ cleaners, are covered and / or masked off. Especially sensitive are electrical motors, control boxes and plug connectors.



WARNING: Remove all coverings and masking material after completing the cleaning procedure. Then check all fuel lines, engine oil lines and hydraulic oil lines for leaks, loose connections, chafing and / or damage. Fix any problems immediately.

If you use a high pressure cleaner with steam or hot water to clean the machine, observe following recommendations:

- the distance between the nozzle and the surface to be cleaned must be no lower than 50 cm (20 inches)
- the water temperature should not exceed 60°C(140°F)
- limit the water pressure to 80 bar maximum (1160 PSI)
- if you employ cleaning fluid, only use neutral cleaning agents such as customary car shampoos diluted to 2 or 3 percent maximum

Engine Troubleshooting		
Symptom	Problem	Solution
Engine cranks but will not start	Incorrect starting procedure.	Verify correct starting procedure.
	No fuel.	Check fuel in tank and manual shut-off valve.
	Exhaust restricted.	Check and correct exhaust restriction.
	Fuel filter plugged or full of water. from filter.	Replace fuel filter or drain water
	Injection pump not getting fuel or air in fuel system.	Check fuel flow at supply pump or bleed fuel system.
	Faulty injection pump or nozzles. station for repair or replacement.	Consult CUKUROVA servicing dealer
Engine hard to start or will not start	Engine starting under load.	Disengage PTO.
	Improper starting procedure.	Review starting procedure.
	No fuel.	Check fuel tank.
	Air in fuel line.	Bleed fuel line.
	Cold weather.	Use cold weather starting aids.
	Slow starter speed.	See "Starter Cranks Slowly".
	Crankcase oil too heavy.	Use oil of proper viscosity.
	Improper type of fuel.	Consult fuel supplier; use proper type fuel for operating conditions.
	Water, dirt, or air in fuel system.	Drain, flush, fill, and bleed system.
	Clogged fuel filter.	Replace filter element.
	Dirty or faulty injection nozzles.	Have authorized servicing dealer or engine distributor check injectors.
	Injection pump shut-off not reset.	Turn key switch to "OFF" then to "ON".
Engine knocks	Low engine oil level.	Add oil to engine crankcase.
	Injection pump out of time.	Consult CUKUROVA servicing dealer
	Low coolant temperature.	Remove and check thermostat.
	Engine overheating.	See "Engine Overheats".
Engine runs irregularly or stalls frequently	Low coolant temperature.	Remove and check thermostat.
	Clogged fuel filter.	Replace fuel filter element.
	Water, dirt, or air in fuel system.	Drain, flush, fill, and bleed system.

Engine Troubleshooting		
Symptom	Problem	Solution
	Dirty or faulty injection nozzles.	Have authorized servicing dealer or engine distributor check injectors.
Below normal engine temperature	Defective thermostat.	Remove and check thermostat.
	Defective temperature gauge or sender.	Check gauge, sender, and connections.
Lack of power	Engine overloaded.	Reduce load.
	Intake air restriction.	Service air cleaner.
	Clogged fuel filter.	Replace filter elements.
	Improper type of fuel.	Use proper fuel.
	Overheated engine.	See "Engine Overheats".
	Below normal engine temperature.	Remove and check thermostat.
	Improper valve clearance.	Consult CUKUROVA servicing dealer
	Dirty or faulty injection nozzles.	Have authorized servicing dealer or engine distributor check injectors.
	Injection pump out of time.	Consult CUKUROVA servicing dealer
	Turbocharger not functioning. (Turbocharger engines only.)	Consult CUKUROVA servicing dealer
	Leaking exhaust manifold gasket.	Consult CUKUROVA servicing dealer
	Defective aneroid control line.	Consult CUKUROVA servicing dealer
	Restricted fuel hose.	Clean or replace fuel hose.
	Low fast idle speed.	Consult CUKUROVA servicing dealer
Low oil pressure	Low oil level.	Add oil.
	Improper type of oil.	Drain, fill crankcase with oil of proper
High oil consumption	Crankcase oil too light.	Use proper viscosity oil.
	Oil leaks.	Check for leaks in lines, gaskets, and drain plug.
	Restricted crankcase vent tube.	Clean vent tube.
	Defective turbocharger.	Consult CUKUROVA servicing dealer
Engine emits white smoke	Improper type of fuel.	Use proper fuel.
	Low engine temperature.	Warm up engine to normal operating temperature.
	Defective thermostat.	Remove and check thermostat.

Engine Troubleshooting		
Symptom	Problem	Solution
Engine emits black or gray exhaust smoke	Defective injection nozzles.	Consult CUKUROVA servicing dealer
	Engine out of time.	Consult CUKUROVA servicing dealer
	Improper type of fuel.	Use proper fuel.
	Clogged or dirty air cleaner.	Service air cleaner.
	Engine overloaded.	Reduce load.
	Injection nozzles dirty.	Consult CUKUROVA servicing dealer
Engine overheats	Engine out of time.	Consult CUKUROVA servicing dealer
	Turbocharger not functioning.	Consult CUKUROVA servicing dealer
	Engine overloaded.	Reduce load.
	Low coolant level.	Fill radiator to proper level, check radiator and hoses for loose connections or leaks.
	Faulty radiator cap.	Have serviceman check.
	Stretched poly-vee belt or defective belt tensioner.	Check automatic belt tensioner and belt tensioner. check belts for stretching. Replace as required.
	Low engine oil level.	Check oil level. Add oil as required.
	Cooling system needs flushing.	Flush cooling system.
	Defective thermostat.	Remove and check thermostat.
High fuel consumption	Defective temperature gauge or sender.	Check water temperature with thermometer and replace, if necessary.
	Incorrect grade of fuel.	Use correct grade of fuel.
	Improper type of fuel.	Use proper type of fuel.
	Clogged or dirty air cleaner.	Service air cleaner.
	Engine overloaded.	Reduce load.
	Improper valve clearance.	Consult CUKUROVA servicing dealer
	Injection nozzles dirty.	Consult CUKUROVA servicing dealer
	Engine out of time.	Consult CUKUROVA servicing dealer
	Defective turbocharger.	Consult CUKUROVA servicing dealer
	Low engine temperature.	Check thermostat.

Engine Troubleshooting		
Symptom	Problem	Solution
Undercharged system	Excessive electrical load from added accessories.	Remove accessories or install higher output alternator.
	Excessive engine idling.	Increase engine rpm when heavy electrical load is used.
	Poor electrical connections on battery, ground strap, starter, or alternator.	Inspect and clean as necessary.
	Defective battery.	Test battery.
	Defective alternator.	Test charging system.
Battery uses too much water	Cracked battery case.	Check for moisture and replace as necessary.
	Defective battery.	Test battery.
	Battery charging rate too high.	Test charging system.
Batteries will not charge	Loose or corroded connections.	Clean and tighten connections.
	Sulfated or worn-out batteries.	Consult CUKUROVA servicing dealer
	Stretched poly-vee belt or defective belt tensioner.	Adjust belt tension or replace belts.
Starter will not crank	PTO engaged.	Disengage PTO.
	Loose or corroded connections.	Clean and tighten loose connections.
	Low battery output voltage.	Consult CUKUROVA servicing dealer
	Faulty start circuit relay.	Consult CUKUROVA servicing dealer
	Blown fuse	Replace fuse.
Starter cranks slowly	Low battery output.	Consult CUKUROVA servicing dealer
	Crankcase oil too heavy.	Use proper viscosity oil.
	Loose or corroded connections.	Clean and tighten loose connections.
Starter and hour meter functions; rest of electrical system does not function	Blown fuse	Replace fuse.
Entire electrical system does not function	Faulty battery connection.	Clean and tighten connections.
	Sulfated or worn-out batteries.	Consult CUKUROVA servicing dealer
	Blown fuse	Replace fuse.

MAINTENANCE CHART									
Maintenance interval	Service points	P.NUMBER	AMOUNT	Grease	Check	Clean	Drain	Replace	Person Responsible
every 8 hours daily	Loader attachment pivots			x					Customer
	Backhoe attachment pivots			x					Customer
	Front axle pivots			x					Customer
	Hydraulic circuit oil level				x				Customer
	Engine oil level				x				Customer
	Engine coolant level				x				Customer
	Indicator lights and gauges				x				Customer
	Air filter elements					x			Customer
	Bucket teeth for wear				x				Customer
	Windshield washer reservoir level				x				Customer
every 50 hours weekly	Front cardan shaft joints			x					Customer
	Rear cardan shaft joints			x					Customer
	Transmission oil level				x				Customer
	Brake fluid level				x				Customer
	Front axle oil level				x				Customer
	Reduction gear oil level				x				Customer
	Rear axle oil level, breather				x				Customer
	Tyres pressure				x				Customer
	Tightening of the wheel nuts				x				Customer
	Parking brake				x				Customer
	Brake pedal				x				Customer
	Fan belt				x				Customer
	Cab intake filter					x			Customer
every 100 hours	Engine oil	157C05	10 LT/10 LT				x		Service
	Engine oil filter	C01AJ75						x	Service
	Transmission oil	C77A22	14 LT/16 LT				x		Service
	Transmission filter	C77AH22						x	Service
every 250 hours	Engine oil	157C05	10 LT/10 LT				x		Service
	Engine oil filter	C01AJ75						x	Service
	Engine mounts				x				Service
	Fuel filter	C01AM73						x	Service
	Water separator bowl in the fuel filter	C01AP54					x		Service
	ROPS / FOPS cab				x				Service
	Battery	C36B28			x				Service
	Transmission mounting bolts				x				Service
first 500. hours	Reduction gear oil	C77A22	8 LT/10 LT				x		Service
	Front axle oil	C77A22	12 LT/14 LT				x		Service
	Rear axle oil	C77A22	14 LT/16 LT				x		Service
every 500 hours	Fuel tank						x		Customer
	Transmission oil	C77A22	14 LT/16 LT				x		Service
	Transmission filter	C77AH22						x	Service
	Air filter internal elements	C01D90						x	Service
	Air filter external elements	C01D89						x	Customer
first 1000. hours	Reduction gear oil	C77A22	8 LT/10 LT				x		Service
	Front axle oil	C77A22	12 LT/14 LT				x		Service
	Rear axle oil	C77A22	14 LT/16 LT				x		Service
	Hydraulic oil	157E02	100 LT/100 LT				x		Service
	Hydraulic oil strainer					x			Service

Maintenance interval	Service points	P.NUMBER	AMOUNT	Grease	Check	Clean	Drain	Replace	Person Responsible
every 1000 hours	Hydraulic oil filter (suction)	C17C91						x	Service
	Hydraulic oil filter (return)	C17C93						x	Service
	Hydraulic breather filter					x			Service
	Brake oil	C56E24	2 LT/2 LT					x	Service
	Machine Cleaning					x		x	Customer
	Alternator				x				Service
	Starter Motor				x				Service
per year-every 2000 hours	Engine coolant	L31704						x	Service
	Thermostat				x				Service
	Engine valve clearance				x				Service
	Torque checking				x				Service
If necessary	Tightening of bucket teeth				x				Customer
	Bucket teeth							x	Service
	Extendable dipper bearing pads							x	Service
	Engine alternator and fan belt	201AA04						x	Service

STORAGE

PREPARING THE MACHINE FOR STORAGE

If the machine is not going to be used for a long period, it is useful to store the machine under a cover and take the following precautions:

- Clean the machine completely and paint the damaged parts of the machine.
- Grease all greasing points.
- Drain the fuel tank and add approximately 10 lt of special washing fuel. Run the engine for about 10 minutes until the residual normal fuel is eliminated. Fill the fuel tank with diesel fuel.
- Check the air filter, clean or replace if necessary.
- Drain the engine oil and replace the filter.
- Drain the cooling system and do not close the drain plugs. Put a label onto the control panel showing that "the cooling system is empty".
- Check the electrolyte level. Make sure that the battery is charged. Remove the battery and place it in dry place at room temperature.
- Place blocks under the axles to prevent tyre deformation.
- Lubricate shafts.
- Cover the exhaust with a cloth.
- Engage the parking brake.

PREPARING THE MACHINE FOR WORK AFTER A LONG PERIOD OF STORAGE

- Fill the cooling system with engine coolant.
- Fill the engine with oil and check the oil level.
- Replace the fuel filter, fill the fuel tank and bleed the fuel system.
- Replace the battery and make sure that it is charged.
- Check the hydraulic oil level.
- Check the transmission oil level.
- Check the front drive axle and reduction gears oil level.
- Check the rear axle oil level.
- Check the brake oil level.
- Use a special solvent to clean the hydraulic cylinder rods.
- Check the tyre pressures and tightness of wheel nuts.
- Check that the indicator and warning lights on the control panels work properly.
- Start the engine after removing the cloth on the exhaust. Run the engine 20 minutes.

ÇUKUROVA

Operation and maintenance manual- Service information

You can contact the nearest Çukurova service for any maintenance or any failure by using following addresses and telephone numbers

FIRM	CITY	LOCATION	PHONE
AHZEN İŞ MAK. OTOMOTİV MAKİNE JEN.	ANTALYA	Küçük Akdeniz San. Sit. 5009SK. No:98	0 242 221 41 55
ANIL MAKİNA	AFYON	2.Küçük San. Sitesi 13.Ada, 1.Blok No:5	0 272 223 20 88
BERKİN MAKİNA SAN.TİC.LTD.ŞTİ.	ADANA	Mersin yolu üzeri 10. Km Sasa fabrikası karşısı No:50	0 322 441 22 77
BULUT MAKİNA	ANTALYA	Akdeniz Sanayi Sitesi 5046 sk. No:28	
DELTA İŞ MAKİNALARI	ADANA	Yeni San.Sit. 67SK 9 No'lu cd no:36	0 322 428 66 16
DETAY MAKİNA	TRABZON	İpekyolu San.Sit. A Bl. No:37/B	0 462 328 00 00
DOSTLAR İŞ MAKİNALARI	BALIKESİR	Yeni Sanayi Sit. 19 Ağustos Cad. No:10	0 266 246 01 45
EMRE MAKİNA İŞ MAK.ı TAMİR ve BAKIMI	MARAŞ	Yeni Sanayi Sitesi 14. Çarşı No:15	0 344 236 25 31
GAZİOVA İŞ. MAKİNALARI	GAZİANTEP	Küçük Sanayi Sitesi A Blok 21 nolu Cad.	0 342 235 18 14
GÖKSEL MAKİNA İMALAT ve TİC.	MANİSA	Sanayi Sitesi C Blok No:19-21	0 236 357 49 66
HEDEF İŞ MAKİNALARI	KAYSERİ	Yeni San.Sit.Gazali Cd. 30.Sk No:13	0 352 331 80 04
HİDROTEKNİK HİDROLİK MAK.SAN.	İSTANBUL	Deniz Harp Okulu Yolu Rauf Orbay Cad.	0 216 446 13 24
İSTANBUL MAKİNA	ÇORUM	Küçük Sanayi sitesi 17.cad.67 sok. No:7	0 364 234 89 95
KARDEŞLER İŞ MAK.	İSTANBUL	İkitelli Org.San.Böl.Demirciler Koop.	0 212 671 38 70
KARDEŞLER İŞ. MAKİNALARI	BURSA	Küçük San. Sitesi 8. Blok No:32	0 224 441 08 73
KARTAL İŞ MAKİNALARI	TARSUS	Tekke Mah. San. Sit. No:9	0 324 624 50 05
KAZANOĞULLARI MAHRUKAT	ESKİŞEHİR	Orta Mahalle Savra Sok. No:5	0 222 338 15 15
KİSMET OTOMOTİV SAN.TİC.LTD.ŞTİ.	DİYARBAKIR	Sanayi Sitesi oto parçacılar c blok no:51-52	0 412 238 08 81
KOCATAŞ İŞ MAKİNALARI TİC.LTD.ŞTİ.	EDREMIT	Kuruçay Mevkii Oto Sanatkarlar Sit. B Blok No:50	0 266 392 12 95
ÖZKARA HİDROLİK MAK.SAN.TİC.LTD.ŞTİ.	ANKARA	100. Yıl Bulvarı No:80 06370	0 312 354 27 33
SEÇKİN TRAKTÖR	MUĞLA	Çalica mah. Karaçulha Fethiye	0 252 646 93 22
ŞAFAK İŞ MAKİNALARI TAMİR BAKIM Y.P.	KONYA	Karatay Sanayi Bahçeli Sok. No:16	0 332 236 02 88
ŞAH MAKİNA	DENİZLİ	Merkezefendi Mah. 415/01 Sok. No:1	0 258 268 36 16
TEKNİK DİZEL POMPA & İSTİF MAK.	TEKİRDAĞ	Yeni Sanayi Sit. 05A Blok No:16/17	0 282 673 19 95
TEYZEOĞLU İŞ MAK. SAN. ve TİC.	ANTALYA	Sanayi Sitesi 18. Blok No:39	0 242 721 08 50
TİTİZ MAKİNA	MALATYA	Özsan San.Sit.30.Bl.No:51	0 422 238 32 30
TOPRAK MAKİNA	ERZURUM	Oto Sanayi Siteleri Karşısı No:33	0 442 242 31 50
TÖY MAKİNA SAN. PAZ. Ve TİC. LTD. ŞTİ.	İZMİR	Ankara Cad. No:377/1	0 232 478 33 10
ÜNMER HİDROLİK İŞ MAKİNALARI	DENİZLİ	3.Sanayi Sitesi 69 Sok. No:39	0 258 251 83 28
YAVAŞ HİDROLİK HORTUM -TORNA	ÇANAKKALE	Yeni Sanayi sitesi . Karşıyaka Mah.	0 286 416 64 93
YILMAZ MAKİNA SANAYİ VE TİC.	KÜTAHYA	Bereket Sanayi Sit. 1.Blok no:7	0 274 231 94 67
ZAHİT MAKİNA	NİĞDE	Ata San. 21. Blok Karşısı NO:37/	0 388 233 17 94

NOTE: ÇUKUROVA reserves the right to make any alteration without prior notice.