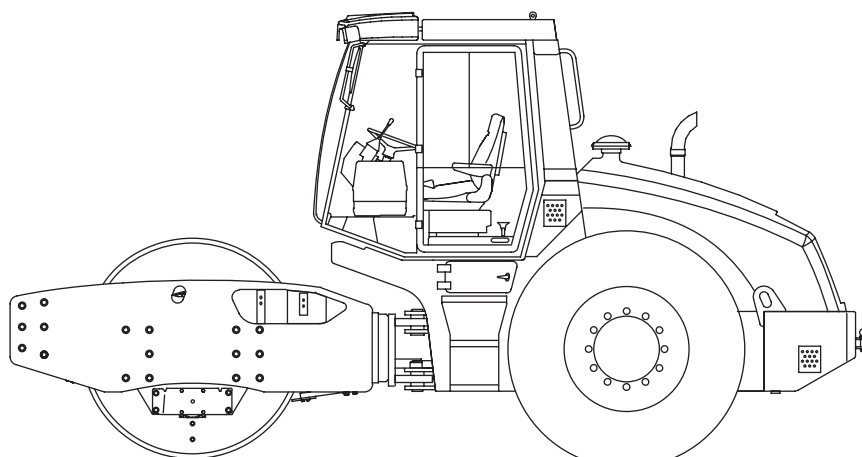


ASC 110

SINGLE DRUM ROLLER
CUMMINS QSB4.5-C160
EU Stage IIIA / U.S. EPA Tier 3



OPERATING MANUAL

EDITION 01/2021 EN
Product Identification Number 3001328 -

AMMANN

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		ASC 110			
		EU Stage IIIA / U.S. EPA Tier 3			
		D	HX	PD	HXPD
Wiring					
Voltage	V	24	24	24	24
Battery capacity	Ah	2x100	2x100	2x100	2x100
Noise and vibration emissions					
Measured sound power level A, L_{pA} at the operator's position (cab) *	dB	77	77	77	77
Uncertainty K_{pA} *	dB	2	2	2	2
Guaranteed sound power level A, L_{WA} **	dB	107	107	107	107
Declared highest weighted effective value of vibration acceleration transmitted to the whole body (cab) ***	m/s ² (ft/s ²)	<0.5 (<1.6)	<0.5 (<1.6)	<0.5 (<1.6)	<0.5 (<1.6)
Declared total value of vibration acceleration transmitted to hands (cab) ***	m/s ² (ft/s ²)	<2.5 (<8.2)	<2.5 (<8.2)	<2.5 (<8.2)	<2.5 (<8.2)
* measured according the EN 500-4					
** measured according the DIRECTIVE 2000/14/EC					
*** measured according the EN 1032+A1 on the gravel base under the vibration travel					

2.1.4. Forbidden activities – safety and guarantee

Banned are the following

- Vibrating on the spot. When it is vibrated on the spot, bearings of the vibrator are not lubricated.
- Filling the hydraulic circuit during the guarantee period in a different way than using the hydraulic unit.
- Changing the vibration amplitude when driving – It is always necessary to stop and only then set a different amplitude.
- Using the machine in case of an evident defect of the machine.
- Using the machine when any operating fluid level is low.
- Wilful repair of the engine – Except common changes of operating fluids and filters, only the Cummins service department can intervene in the engine, in particular in peripheral components of the engine – alternator, starter, thermostat, electrical installation of the engine.
- Controlling the heating valve control rod while driving.
- Quickly increase and decrease engine speed. It can damage the engine.
- Using the emergency brake for turning off the engine during normal operation of the machine.
- Operate the machine in potentially explosive atmospheres (ATEX) and underground areas.
- To use the Machine following ingestion of alcoholic beverages or dopes.
- To use the Machine if its operation might put its technical condition, safety (life, health) of persons, facilities or objects, or road traffic and its continuity, at risk.
- Put into operation and use the Machine when other persons are within its hazardous reach - exception is training a driver by lecturer.
- Putting the machine into operation and using the machine when a safety device (emergency brake, hydraulic locks, etc.) has been removed or damaged.
- To roll and compact at such slopes where Machine stability would be disrupted (turning over). Machine's static stability stated will lower by drive's dynamic effects.
- To roll and compact at such angles of slopes where hazard of soil breaking off (dropping) under the Machine exists, or loss of adhesion followed by uncontrolled slip might occur.
- To control the Machine in some other way than stated in Driving Manual.
- To roll and compact per bearing capacity of subsoil at such a distance from the edge of slope or trenches, where hazard of landslide or shoulder breaking off (dropping) together with the Machine would occur
- To roll and compact with vibration at such a distance from the walls, cuts, slopes, where their slip (slide) would happen and the Machine covered in.
- Driving with vibration on hard (frozen, concrete, overcompacted) surface or on bedrock. There is a danger of damage to the machine.
- To compact with vibration at such a distance from buildings or facilities and equipment within which the risk of them being damaged due to vibration transfer impact, would occur.
- To operate the Machine unless driver control stand fixed properly.
- To operate the Machine when engine bay cover is open.
- To move and transport persons on the Machine.
- To operate the Machine when within hazardous reach thereof are other machines or transportation means aside from those that operate in mutual concert with the Machine.
- To operate the Machine at places impossible to see from driver's stand, and where hazard to people or property could occur unless work safety has been secured through some other way like for instance via signalling by duly instructed person.
- To work with the Machine at a protected zone of electric lines or substations.
- To cross electric cables if these are not properly protectedli against mechanical damage.
- To operate the Machine under lowered visibility or at night, unless Machine's working area and workplace are illuminated sufficiently.
- To leave driver's cockpit of the Machine when the Machine is running.
- Boarding or or getting off while on the run, jumping off the Machine.
- Sit or stand on the outside parts of the Machine when driving, or stand on the steps.
- Leave unsecured Machine - move away from the Machine without having prevented its misuse.
- Disable safeguarding, protective or locking systems or alter their parameters.
- Use the Machine with oil, fuel, cooling liquid or other fillings leaking.
- Start the engine through some other way than given in the Driving Manual.
- Locate some other items (tools, accessories) aside from personal needs at driver's stand.
- Lay away material or other objects on the Machine.
- Remove dirt while the Machine is running.
- Perform maintenance, cleaning or repairs with the Machine not secured against spontaneous move or accidental start, and when contact of a person with moving parts of the Machine is not excluded.
- Contact of moving parts of the Machine with human body or objects and tools held in hands.
- Smoke or handle open fire when checking or pumping fuels, refilling oils, lubricating the Machine, or inspecting the accumulator or making up the accumulator.
- Carry rags soaked with flammable materials, or carry flammable liquids in free vessels on the Machine (in engine bay).
- Leave the engine running in enclosed, unventilated areas. Exhaust fumes are dangerous to life.
- Drive with open doors.
- Perform any adjustments on the machine without the prior consent of the manufacturer.
- Drive without the seat belt fastened.
- Shift electrical conductors.
- Use other than original spare parts.
- Interfere in the electrical and electronic units in any manner.



Breaching these provisions can influence the judgement of a possible complaint and effectiveness of the engine guarantee period.

2.3. Machine preservation and storage

2.3.1. Short-term preservation and storage for a period of 1 – 2 months

Wash and clean thoroughly the entire Machine. Before shutting down the Machine for preservation and storage, please heat the engine to its operating temperature while running. Park the Machine on paved, flat surface, in safe location with no danger of damage to the Machine due to natural disasters (floods, landslides, fire origination, etc.).

In addition:

- Repair spots where paint has been impaired,
- Lubricate all lubricating points, actuator cables (cable assemblies), joints of the actuators, etc.,
- Check water media have been drained,
- Confirm cooling liquid has the antifreezing properties required,
- Check condition of the battery charges; let them be recharged if required,
- Spread chromated surfaces of piston rods with preservation fat,
- We recommend to protect your Machine against corrosion through spraying the preservation agent (spray-applied), and this especially in places of corrosion hazard.

The Machine treated like that needs no special preparation (set-up) before its subsequent putting into operation.

2.3.2. Preservation and storage for the period over 2 months long

To shut down the Machine the same principles apply like with short time preservation.

In addition, we recommend the following:

- Remove the batteries, check their condition and store in cold, dry room (recharge the batteries on regular basis),
- Bottom the drum frame up so the damping system has minimal sag,
- Protect rubber elements with paint using special preservation agent,
- Inflate tyres to their required pressure, and protect against sun radiation effects,
- Spread preservation fat over piston rods' chromated surfaces,
- Preserve the Machine through spraying with special agent, and this particularly in places of possible corrosion,
- Blind the induction manifold and exhaust of the engine with double PE foil, attach thoroughly with adhesive tape,
- Protect headlamps, external back mirrors and other elements of external wiring through spraying with special agent and wrapping in PE foil,
- Preserve engine according to the Manufacturer's Directions - mark visibly the engine has been preserved.



Following 6 months we recommend to inspect the condition of preservation and renew it if required.

If storing the Machine under field conditions, please check the parking place is not exposed to any flooding hazard due to deluges, or whether any other type of risk occurs within such area!

NEVER start the engine in course of storage!



Before restoration of the Machine service, please dewax and wash the preservation agents away with high pressure stream of hot water added with normal degreasers while observing Directions for Use along with ecological principles.

Carry out dewaxing and washing of the Machine at places equipped with collection sumps to catch rinsing water and dewaxing agents.

Dashboard & Actuator Panel

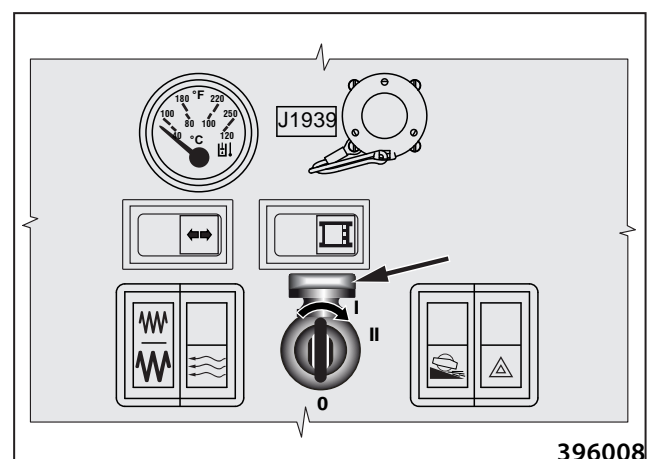
- 1 - Ignition box
- 2 - Travel joy stick
- 3 - Not assigned
- 4 - Not assigned
- 5 - Vibration switch
- 6 - Not assigned
- 7 - Not assigned
- 8 - Working/transport speed switch
- 9 - Emergency brake button
- 10 - Engine speed selector
- 11 - Power View Display
- 12 - Hydraulic oil thermometer
- 13 - ECM engine socket
- 14 - Switches
- 15 - Pilot lamps
- 16 - Fuses

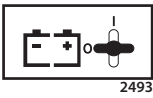
Ignition box (1)

While in "0" position the lights, cab/bonnet lifting and AC are connected. While in "I" position the dashboard instruments are connected. Position "II" is used to start the Machine.

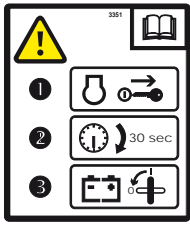
Note

Ignition key is common for cab door, service door underneath cab, and for tool kit.





Master switch



3351

When driving is ended, please use master switch to disconnect battery!

Cut OFF master switch only after 30 sec. following ignition key removed from switch box.

Time limits must be observed for ECM engine data to be stored.

When washing the Machine ALWAYS cut OFF master switch!



ERROR MESSAGES	
Error message	Signature
" WAIT TO START PREHEATING " is displayed	The ECU is broadcasting a ,Wait To Start' message. Engine manufacturers typically recommend against starting the engine while the ECU is broadcasting this message. Once the ECU stops broadcasting this message, this screen will no longer be displayed on the Power View.
" CANBUS FAILURE " is displayed	The Power View has not received any valid J1939 CAN messages for at least 30 seconds.
" TIMEOUT ECU NOT RESPONDING " is displayed	The Power View sent a request to the ECU for Stored Fault Code (DM2) information, and the ECU did not respond to the request. This message on the PowerView indicates the ECU may not support Stored Fault Code (DM2) functionality over J1939.
" NO STORED CODES " is displayed	The Power View sent a request to the ECU for Stored Fault Code (DM2) information, and the ECU responded. There are zero stored codes.
" NO GAGE DATA " is displayed	The Power View has no record of gages connected to the RS485 bus.
" NO DATA " is displayed in place of a parameter value	The Power View has not received data for the selected parameter for at least 5 seconds.
" NOT SUPPORTED " is displayed in place of a parameter value	The ECU is sending a message that it does not support this parameter.
" DATA ERROR " is displayed in place of a parameter value	The ECU is sending a message that there is a data error with this parameter. Or (PV101 only) FUEL LEVEL has been selected for display, ANALOG INPUT has been set to FUEL LEVEL, but no Murphy Fuel Sender has been connected to the analog input.
One of the 4-UP quadrants is empty	No parameter has been selected for display in this quadrant.
Display is not readable, either very dim or very dark	The LCD contrast may have been over or under adjusted. Press and hold the MENU key for approximately 5 seconds. This will reset the LCD contrast setting to factory default.

2.7.7. Cab and bonnet raising and lowering



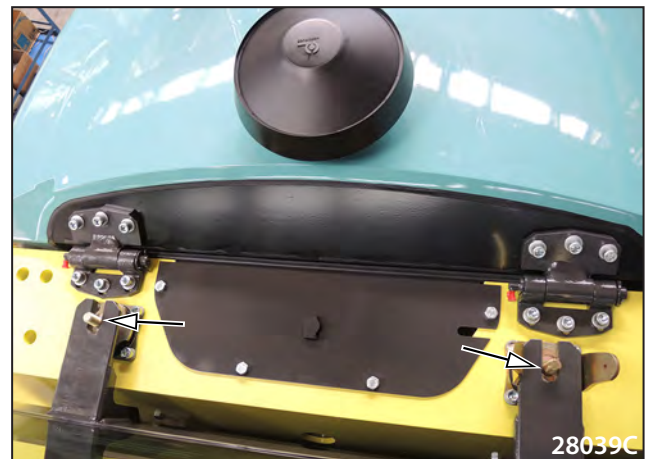
Lifting, lowering and keeping the cabin or platform in the raised position must only be performed with an empty cabin or platform.



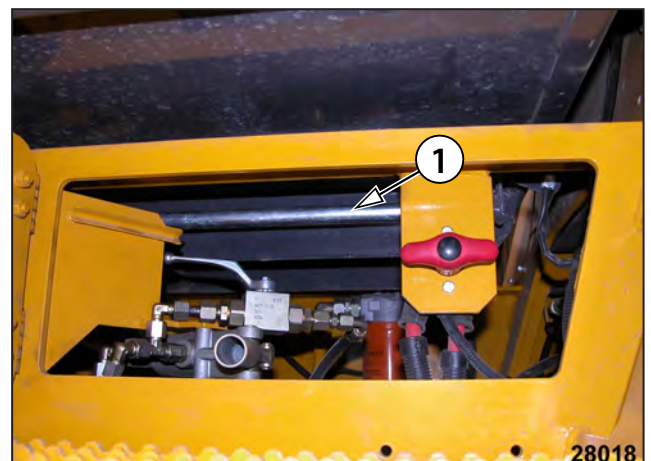
Before lifting Driver's control stand with the Machines that have a canopy with ROPS, please fold down the backrest and arms.



- Loosen nuts of the cab.

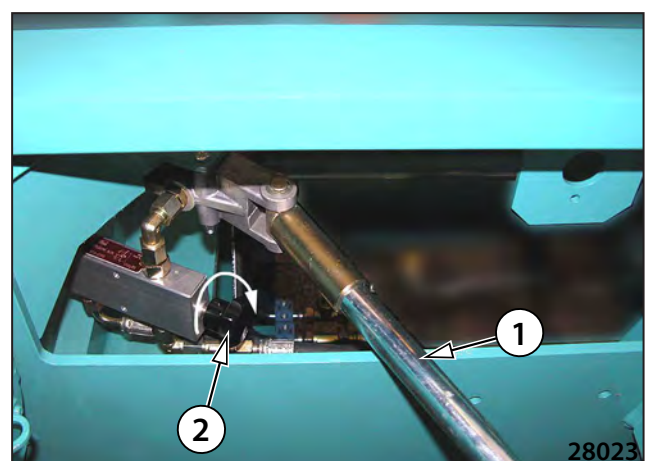


- Open the cover on the left side under the cab. Take out the pump control lever (1).



Lifting:

- Close the valve (2), insert the control lever (1) into the pump and simultaneously lift the cab and bonnet by pumping.

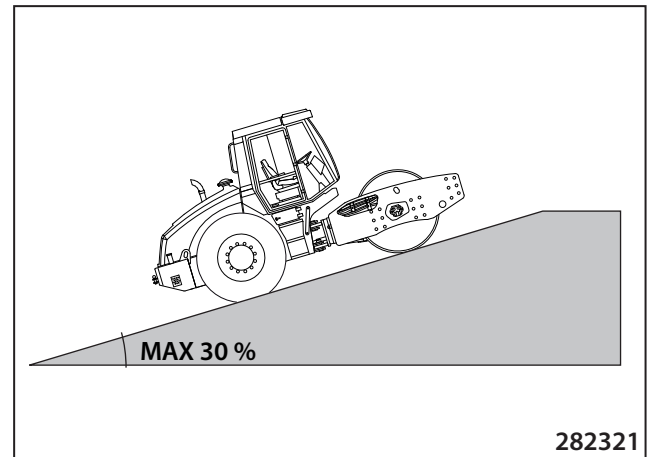


2.8.1. Loading the machine

- Use a loading ramp or crane to load the machine onto the transport vehicle.

2.8.1.1. Loading the machine using a ramp

- When loading the machine using a ramp, all safety regulations related to loading of the machine valid in the place of loading must be adhered to. The ramp must have appropriate loading capacity, antislip surface and must be stored on a flat surface. We recommend that you adhere to regulation BGR 233.
- Maximum permissible incline of the ramp is 30 %.



Non-adherence to the prescribed parameters of the ramp may result in damage to the machine.

When loading the machine, a second person must be present to signal approach onto the ramp. See the list of hand signals in chapter 2.1.6.



Pay increased attention when loading the machine. Improper handling can cause serious injury or death.

2.9.5. Operating the Machine at high altitudes

With higher altitudes the engine capacity will drop due to reduced atmospheric pressure and specific weight of air induced.

If the engine has black smoke at high altitudes (over 1500 m), please contact engine Manufacturer's service centre who will make adjustment to your fuel injection pump for these operating conditions.



The engine power is affected by the environment in which the machine is working.

The machine may be used up to a maximum altitude of 3,658 m (12,000 ft).

2.9.6. Work of the machine in the dusty environment

When operating in very dusty environment, you must cut short the intervals for cleaning and replacement. Cut the intervals of cleaning the engine cooler, hydraulics, and also of the replacement of cab's dust filter.

2.9.7. Driving with vibrations on compacted and hard materials

When operating the Machine with vibration on hard materials (e.g. stony loose material), or with high level of compacting the base material, there can be even loss of contact between the drum and the material compacted (so called vibro-hit). This state will show in the increased vibration transfer into the Machine frame and onto the Driver's control stand. Its partial elimination is possible via increasing the travel speed or changing the Machine vibration parameters (with the use of lower amplitude).

When it is necessary to operate the Machine under conditions where the Operator might be exposed to higher vibrations, then the Machine Operator will be liable to adjust the work procedures so as to prevent any injury to Driver's health.

Note

When driving the Machine with vibrations on a different base material than stated in "Specification Manual", the emission figures for vibration acceleration will be different - "Noise and vibration emissions".



The driving with vibration on hard (frozen, concrete, overcompacted) surface or on bedrock is forbidden. There is a danger of damage to the machine.

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3.2.2. Fuel



Diesel is used as fuel:

- CEN EN 590
- ASTM D 975-88: 2-D

NOTE

Engine producer recommends to use fuel with sulphur content less than 0.05 weight percent.



Therefore use winter Diesel fuel at outdoor temperatures below 0 °C (32 °F). Special Diesel fuel with additives intended for very low temperatures must be used at outdoor temperatures below -15 °C (5 °F) ("super Diesel").

Use of biofuel (Diesel fuel)

Using the fuel mixture under the trade name of Bionafta is in principle approved by the engine manufacturer for the engine on the machine if it conforms to the specifications under EN 14214 or ASTM D6751.

Before using Bionafta on the machine, make sure that it is supplied by a reputable supplier who supplies fuels corresponding to the above-mentioned standards.

Always ask the supplier of Bionafta for information concerning the condition under which it can be used.



Guarantee for the engine will be rejected when using Bionafta not conforming to the above-mentioned standards and if the fuel system or engine is damaged as a result of using improper Bionafta!



When using Bionafta, power can be reduced by up to 12% depending on the used mixture of Bionafta. Therefore, do not adjust the engine or the setting of the injection pump for increasing the power in any case. Never mix the fuel mixture at the place of use.

Bionafta has a higher cloud point at a low ambient temperature, which leads to the creation of wax crystals in the fuel resulting in the fuel filter clogging.

When using Bionafta, it is necessary to shorten the intervals of the engine oil exchange and replacement of an oil filter and fuel filter.

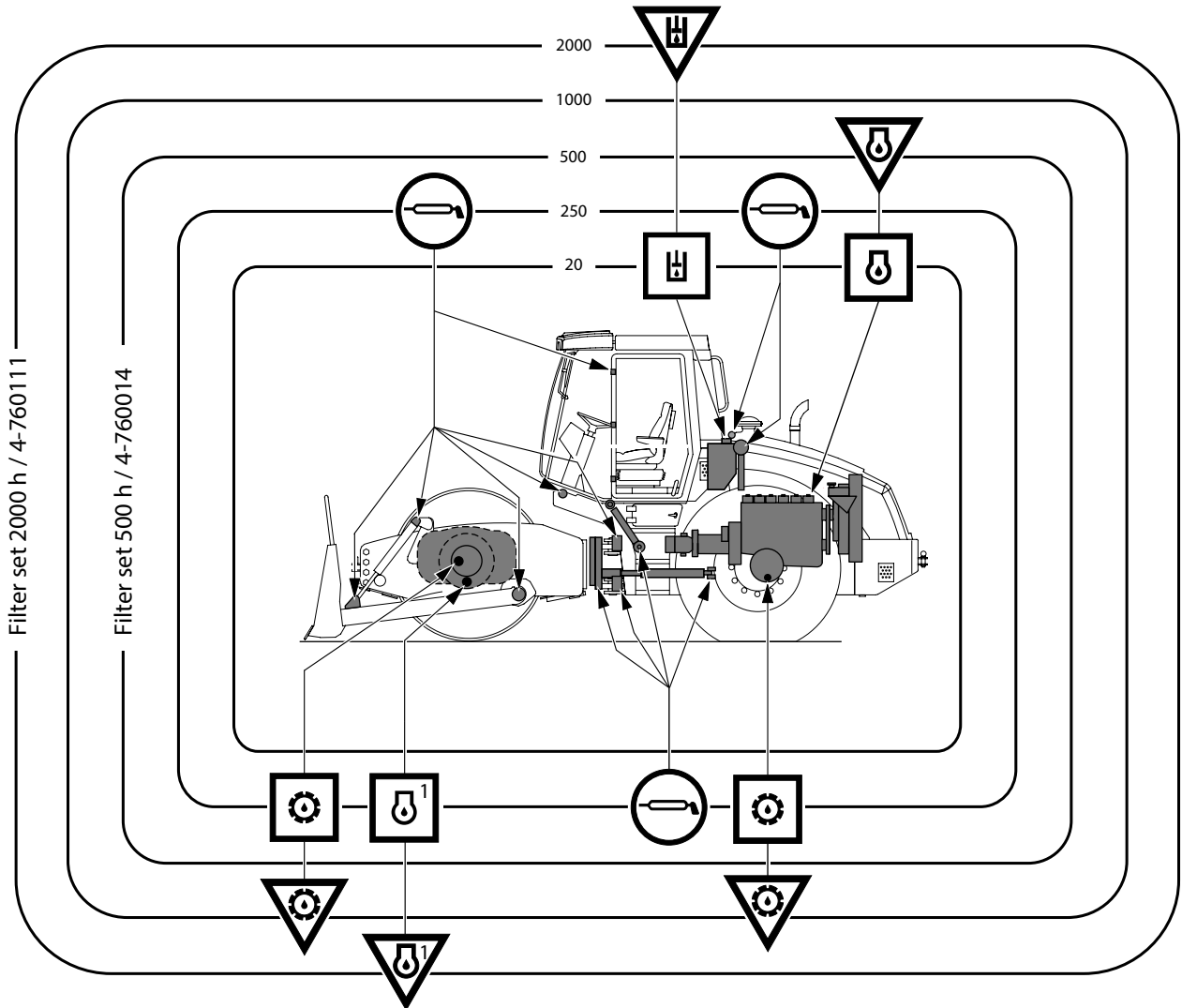
When changing over to Bionafta, the action of Bionafta releases corrosion and impurities created on the fuel tank internal walls. Impurities are brought by the fuel to the filter catching them and the filter must be replaced afterwards.

Bionafta has a higher ability to absorb atmospheric moisture, which results in the condensation of atmospheric moisture on the internal walls of the tank and a higher content of water in the fuel and the need for more frequent discharging of water from the fuel filter separators. The possibility of the occurrence of the problem increases in cold weather.

If Bionafta (Biodiesel) is used all the year round, it is necessary to clean the fuel system under the engine operation with a clean diesel fuel for at least 30 minutes before parking the machine for longer than 3 months. Further, it is necessary to drain off the fuel tank, clean it, and either fill it with diesel fuel or minimise the occurrence of moisture and limit the microbiological growth inside the tank. Consult the measures with the fuel supplier.

LUBRICATION AND SERVICE PLAN - ACE Pro

□	CONTROL
○	LUBRICATE
▽	EXCHANGE



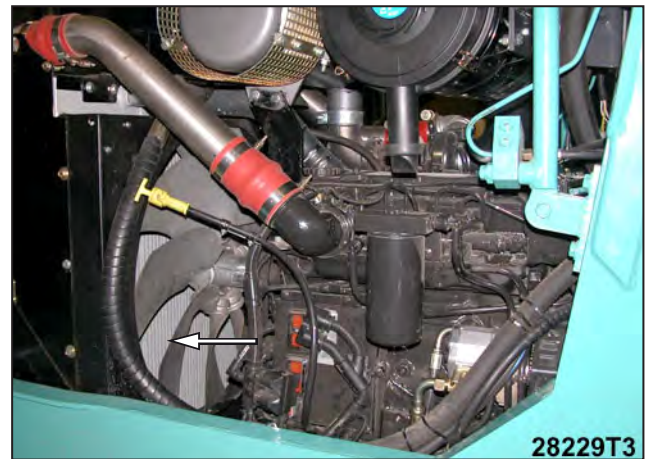
	Engine oil:	SAE 15W/40	API CI-4
	Engine oil:	SAE 10W/40	API CI-4
	Hydraulic oil:	ISO VG 68	ISO 6743/HV
	Grease:	ISO 6743/9	CCEB 2
	Transmission oil:	SAE 80W/90; SAE 80W/140	API GL-5

1 Applicable to the rollers with the ACE Pro system

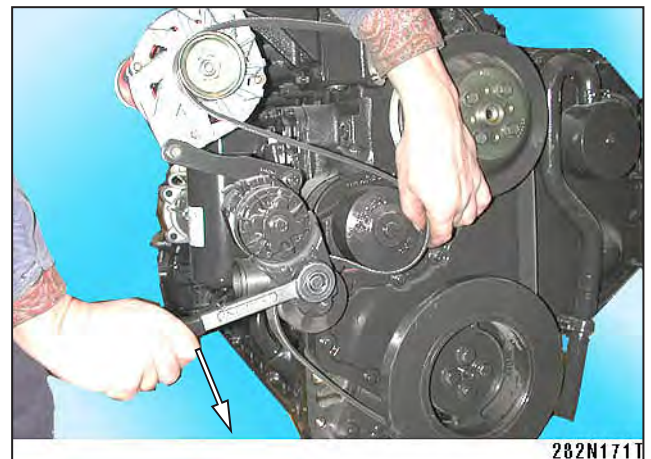
ACE24en

3.6.10. Check of the fan and engine belt condition

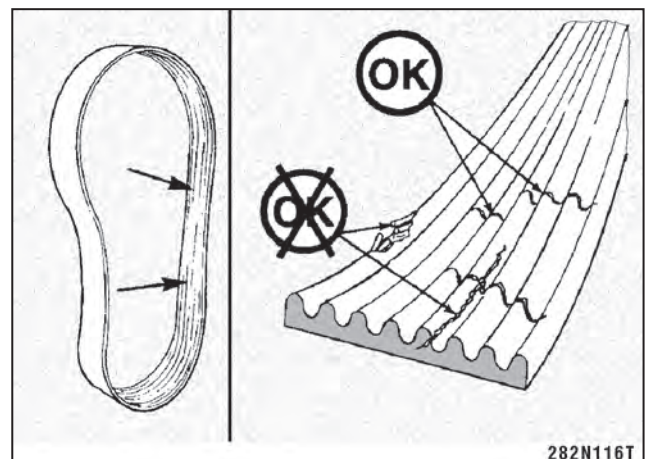
- Check the ventilator visually. In case of any damage (e.g. missing parts of the material, cracks, changes in shape etc.) replace the ventilator.



- Lift the belt-tensioning pulley using the lever and remove the belt.



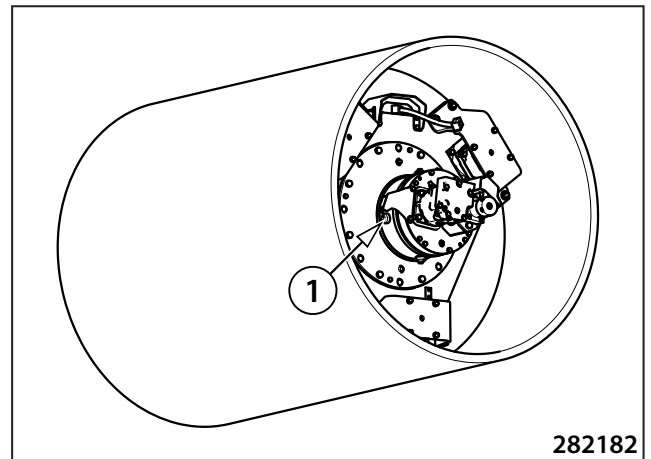
- Check visually the belt, for intersecting cracks. Traverse (across the belt width) cracks are acceptable. Longitudinal (direction of belt length) cracks that intersect with traverse cracks are not acceptable. Replace the belt if it is frayed or has pieces of material missing.



3.6.17. ACE Pro oil check

Left side:

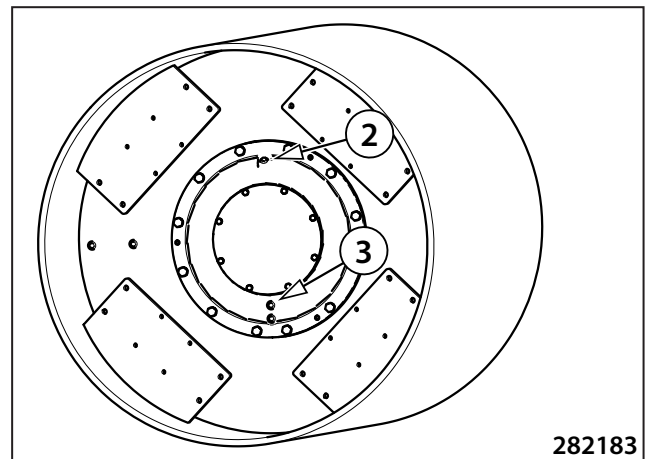
- Unscrew the plug (1) and check the oil level.
- The oil level must reach the checking opening or slightly flow out.



282182

Right side

- Move the Machine so the plug (2) is in its highest position.
- Unscrew the plug (3) and check the oil level.
- The oil level must reach the checking opening or slightly flow out.



282183

- If necessary, fill up the oil.



Check oil when it is cooled down.



Refill the identical type of oil.



Avoid leakage of oil to the soil.

3.6.23. Filters of the cab ventilation and heating replacement

Cab

- Remove the top grate.



- Replace the filter.

Filter cartridge

Order number: 4-613780

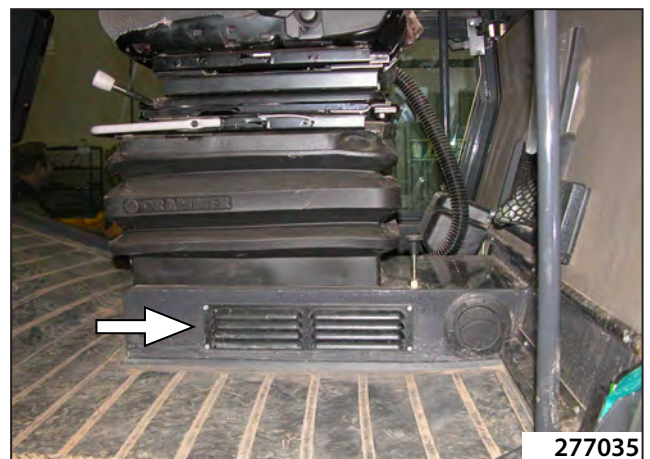


Heating:

- Remove the top grate on either side.
- Replace the filters.

Filter cartridge

Order number: 4-612044

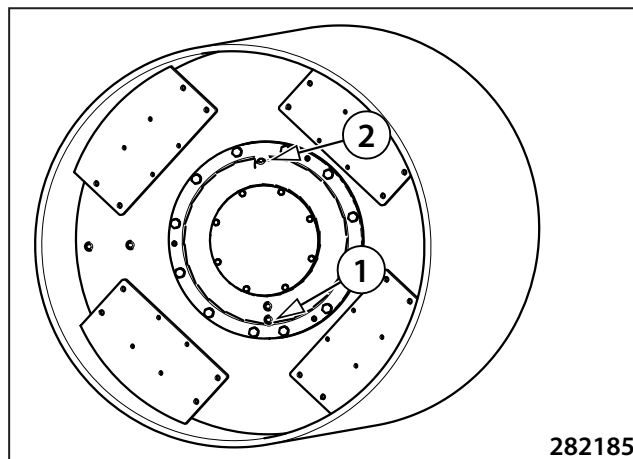


3.6.33. ACE Pro oil change

Draining procedure:

Right side:

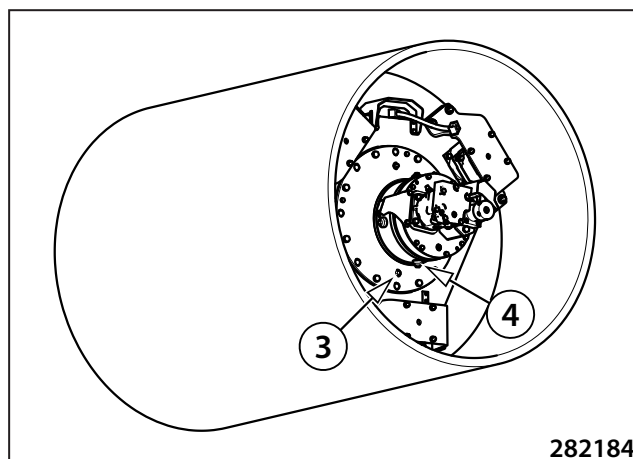
- Move the Machine so the plug (2) is in its highest position.
- Dismantle the drain plug (1).
- Let oil drain into a prepared vessel.



282185

Left side:

- Dismantle the drain plug (3), (4).
- Let oil drain into a prepared vessel - the total amount of oil is approximately 25.5l (6.74 gal US).
- Mount the plugs (1), (3), (4) replace damaged plug sealings.
- Replace the filters, see chapter 3.6.21. ACE Pro filters replacement.



282184

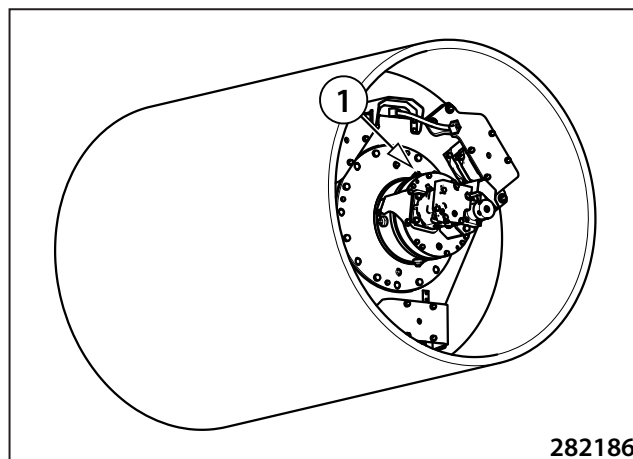
Filling procedure:

Left side:


- Dismount the plug (1). Fill with 5l (1.32 gal US) of oil.


Right side:

- Dismount the plug (2). Fill up the remaining quantity of the filling.
- Drive the machine for a few meters, then check the oil level on both sides.

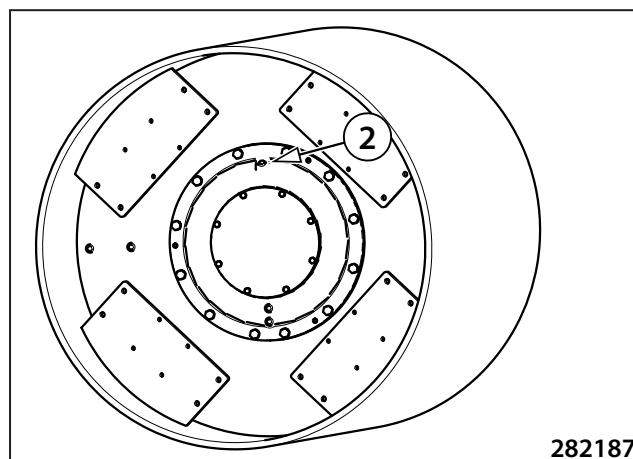


282186

 **Exchange oil when it is warm, preferably after the machine stops.**
Let drained oil cool down to less than 50 °C (122 °F).

 **Refill the identical type of oil.**

 **Avoid leakage of oil to the soil.**

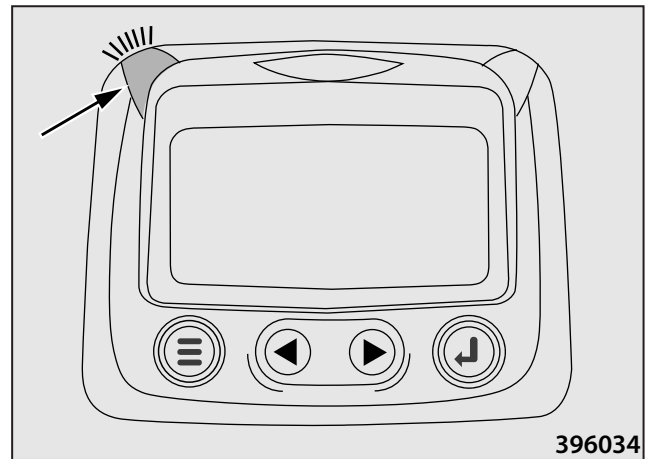


282187

Maintenance - As Needed

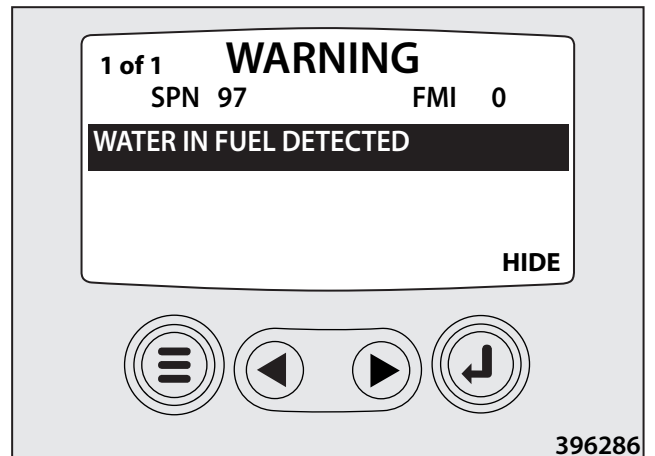
3.6.39. Water separator cleaning

- Yellow indicator lamp signal.



396034

- The message. SPN 97 is displayed.



396286

- Twist the separator valve , drain the water from filter.



Shut off the engine during separator draining!



Drain water/fuel into a container and dispose of in accordance with local environmental regulations.



28232T3

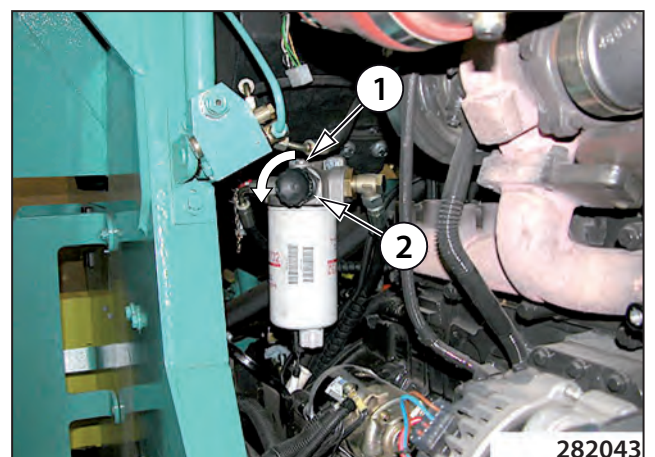
- If you drained over 60 cm³ [0.63 quarts] of fuel refill the fuel into fuel filter. Open the bleed screw 1. Unscrew a transfer pump and operate until the fuel flowing is free of air.



**Do not bleed the fuel with the hot engine flowing out fuel may cause a fire!
No smoking et Work on fuel system!**



Drain fuel into a container and dispose of in accordance with local environmental regulations.



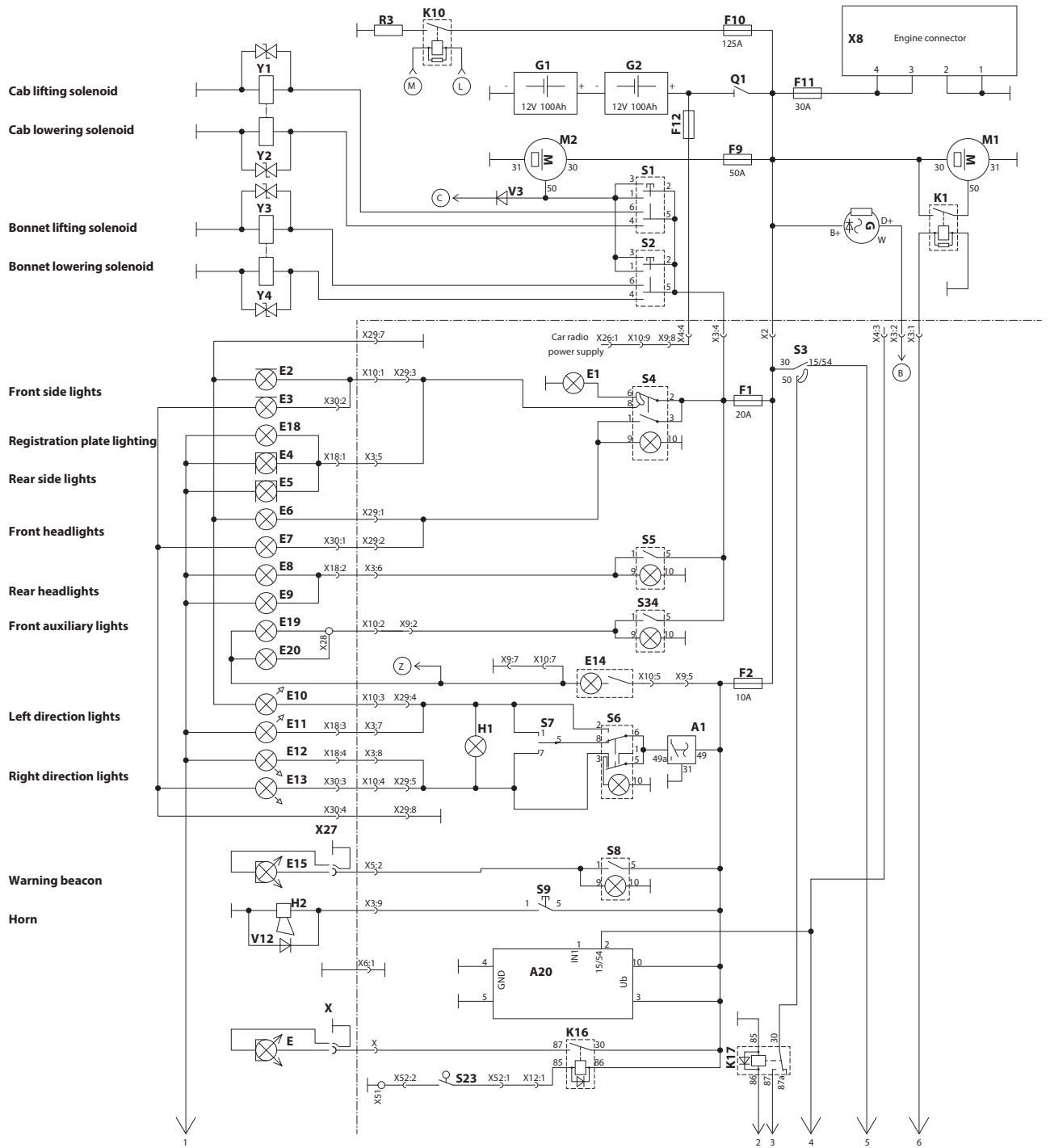
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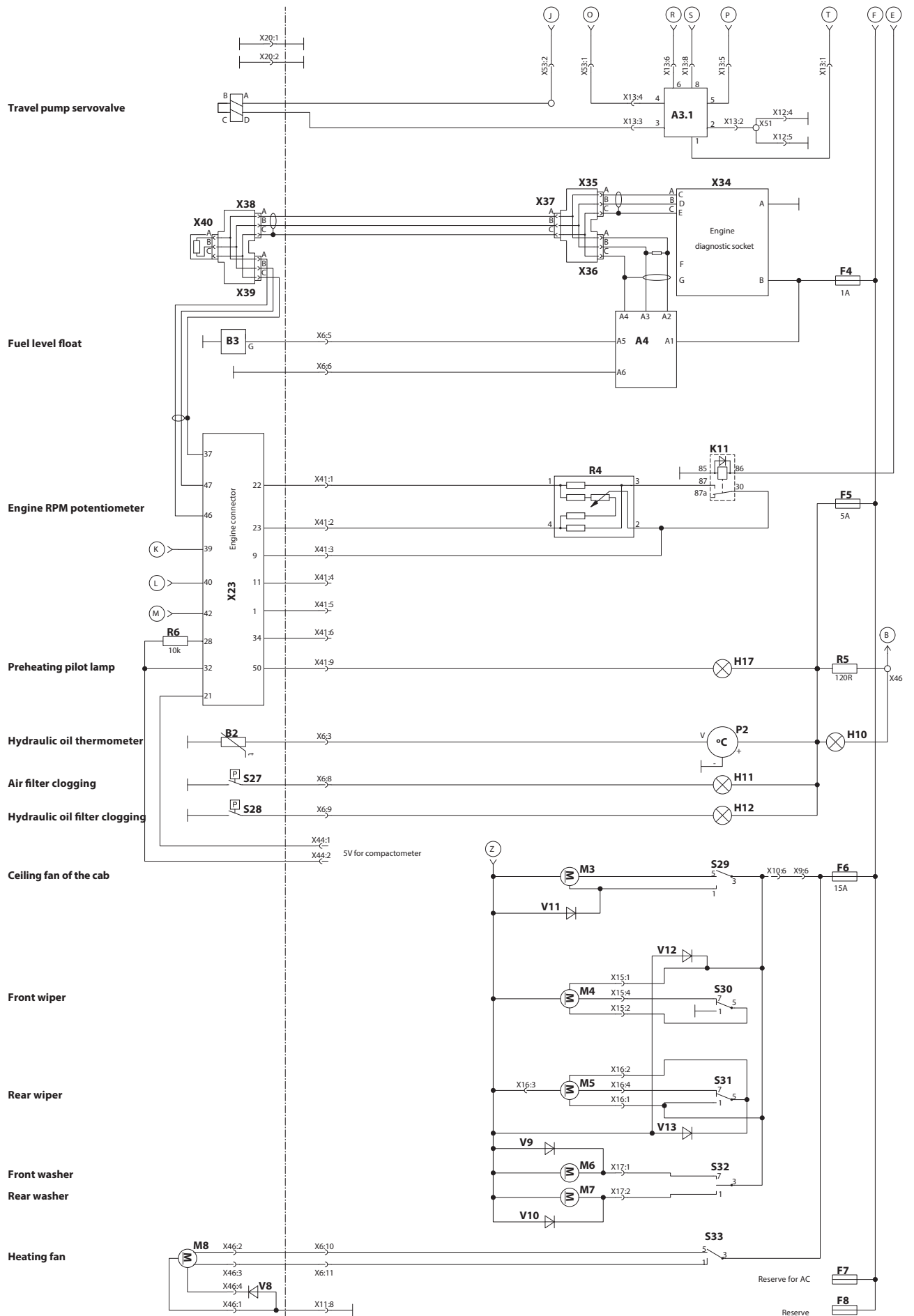


Usually, defects are caused by incorrect operation of the machine. Therefore, in case of any troubles read again properly through the instructions given in the operation and maintenance manual for the machine and engine. If you cannot identify the cause, contact a service department of an authorised dealer or the manufacturer.

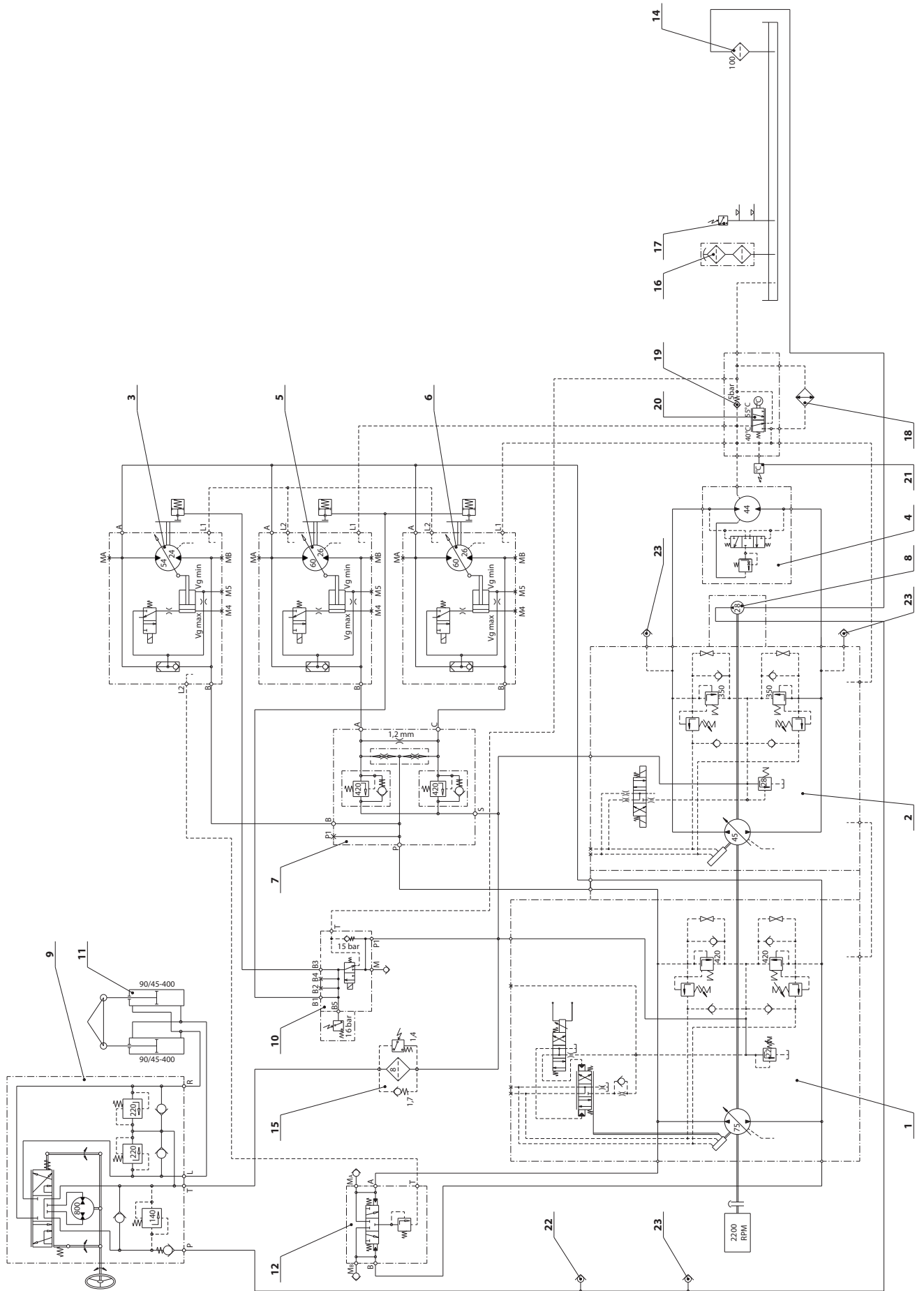


Troubleshooting in hydraulic and electric systems requires knowledge of these systems; therefore a service department of an authorised dealer or the manufacturer should be called to solve these problems.





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