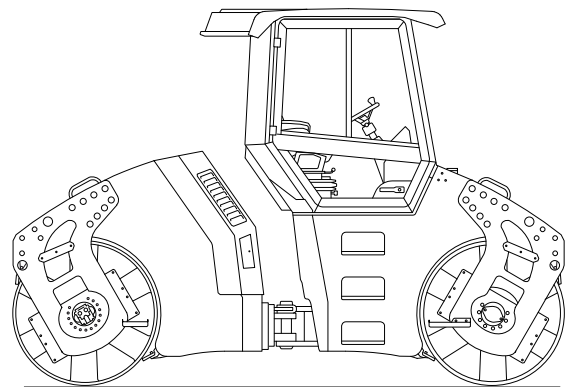


Workshop manual

AV 70 X
Cummins



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SYMBOLS OF THE SAFETY NOTICES:



The notice warns of a serious risk of personal injury or other personal hazards.



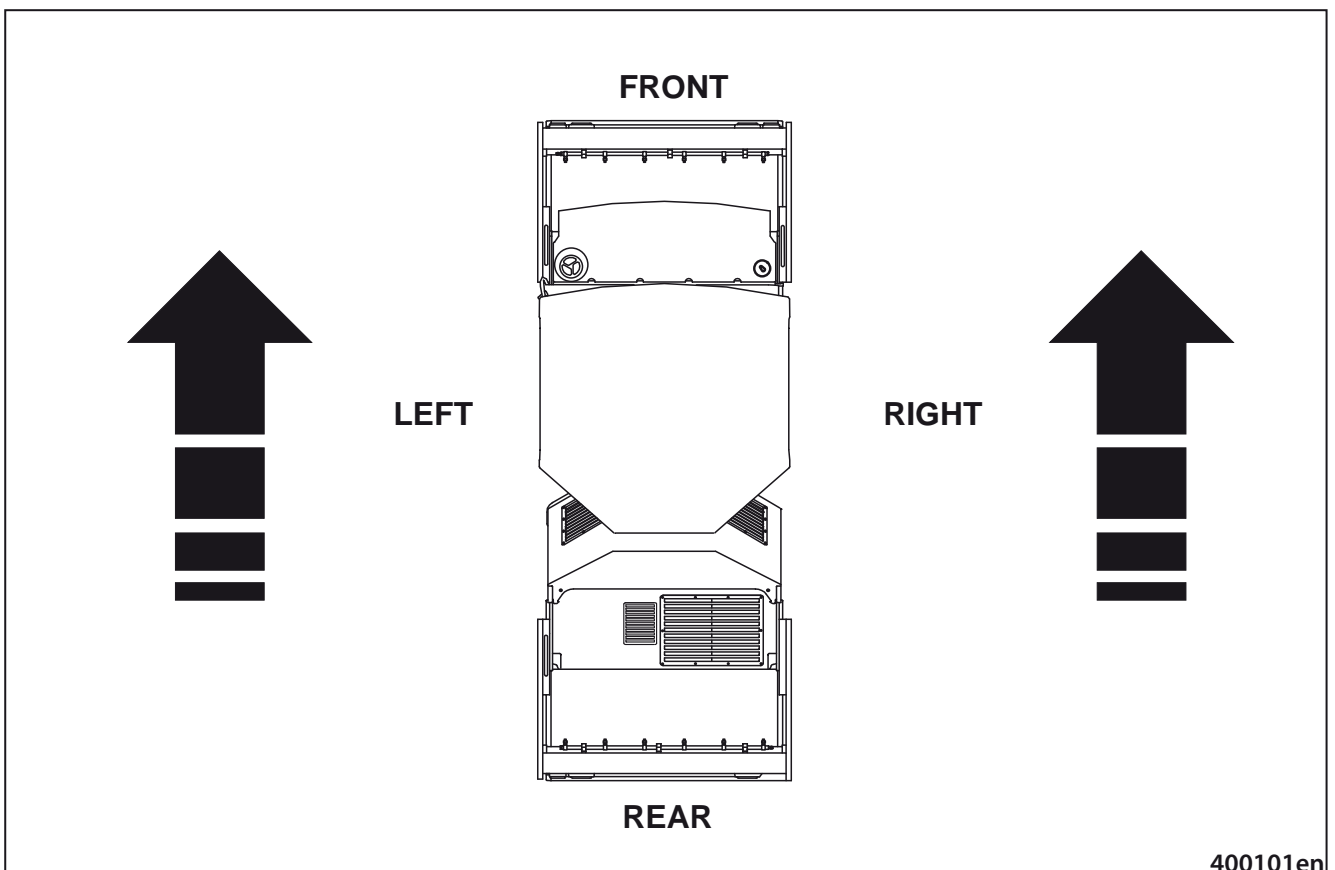
The notice warns of possible damages to the machine or its parts.



The notice warns of the necessity of environmental protection.

! CAUTION !

This Manual uses the terms like RH, LH, in the front, in the rear. These indicate the sides of the Machine viewed during forward drive.



3. Specification manual

4.2. Fuel



Diesel oil is used as the engine fuel:

- EN 590
- ASTM D6078-78: 1-D and 2-D

The ASTM 2D is recommended to use as optimal one.

Fuel viscosity shall be over 1,3 cST at 40 °C (104 °F) to provide for fair characteristics of the liquidity and lubricating of the fuel system components.



At ambient temperatures below 0 °C (32 °F) you must use winter diesel oil. At ambient temperatures below -15 °C (5 °F) it will be necessary to use special diesel oil with additives for these purposes ("engine super diesel oil").

NEVER mix diesel oil with gasoline, with alcohol. These mixtures may cause explosion!

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!

! CAUTION !

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.

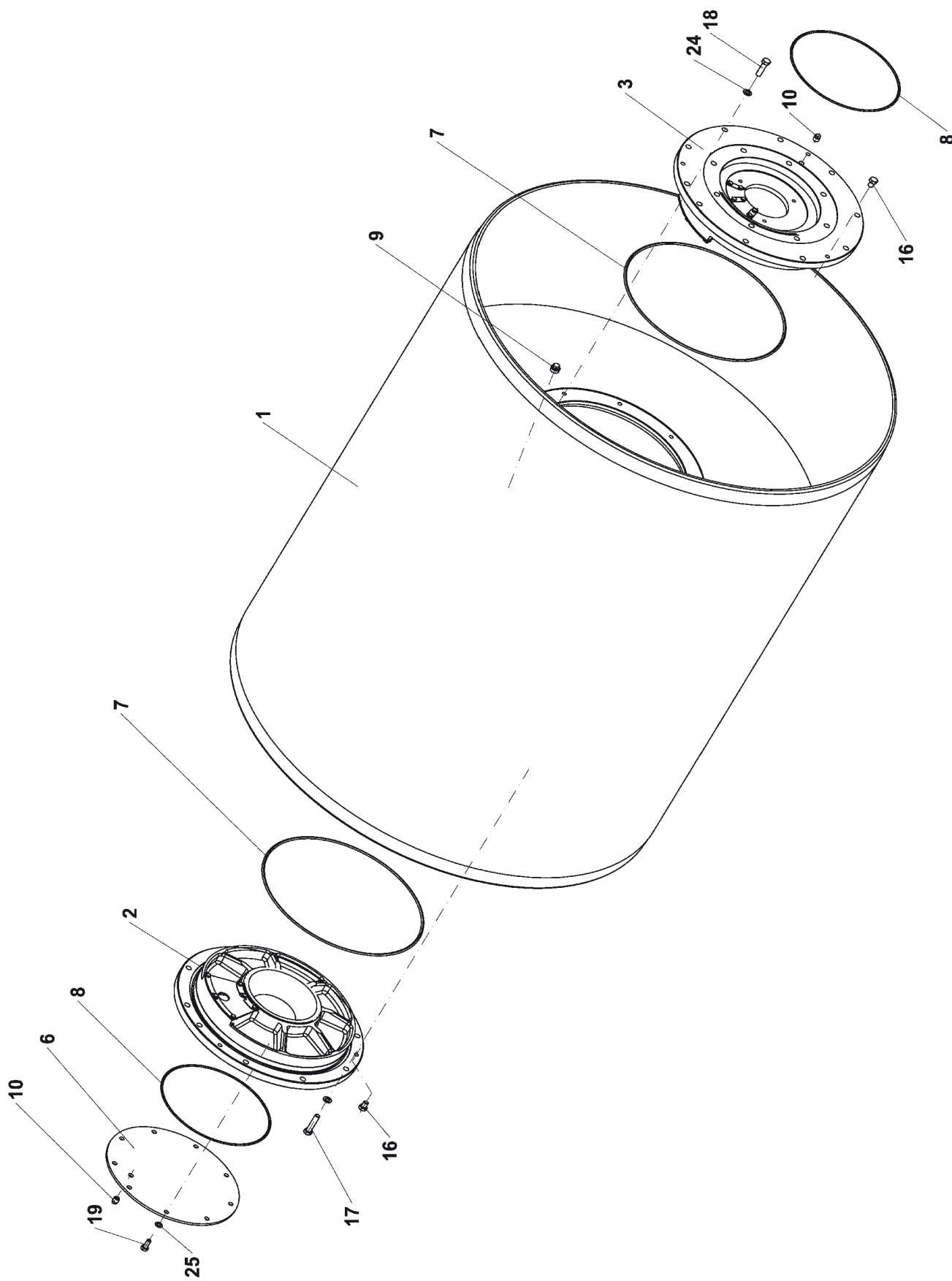
Bionafta has a higher cloud point at a low ambient temperature, which leads to the creation of wax crystals in the fuel resulting in the fuel filter clogging.

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.

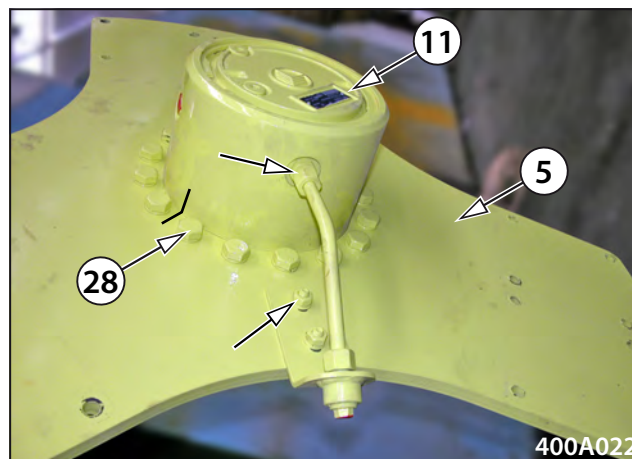


4-10201A

Remove oil filler and drainer, mark the position and remove bolts used to mount aux. transmission 11 to carrier 5, take off the carrier.

Note

When reinstalling, please clean contact surfaces, tighten bolts 28 with 200 Nm (148 lbft) torque.



6.4. Remove front drum

AV70X, AV70X HF

The removal procedure is identical for front drum and rear drum.

Use hand jack to lift a bit the Machine on its LH side and RH side so the drum contacts lightly the ground, put under the supports of sufficient loading capacity.

Mark drum position, on both sides for reinstallation purposes.

RH side:

A - Drain engine oil from the drum

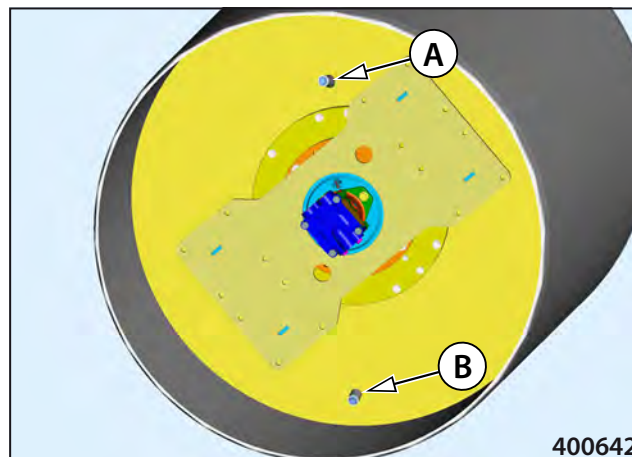
AV70X HF

B - Drum cooling liquid is a life-time fluid and does not need to be changed. If you drain cooling liquid from the drum, fill with:

Mixture:

15 l (4 galUS) of water

25 l (6,6 galUS) of calcium chloride - CaCl₂



Disconnect revolution sensor pickup connector.



Release locking sheet 16.

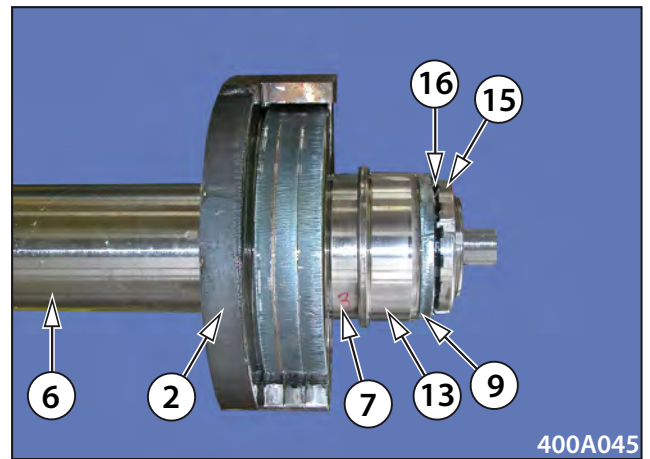
Use fixture No. 5 to remove KM nut 15.

Use puller to pull down inner ring for bearing 13 and ring 9.

Take off rings 7.

Note

Vibrator, i.e. shaft 6 complete with eccentrics 1, 2, is one-piece unit.



RH side

Release locking sheet 16.

Use fixture No. 5 to remove KM nut 15.

Use puller to pull down inner ring for bearing 13 and ring 9.

Take off rings 7.

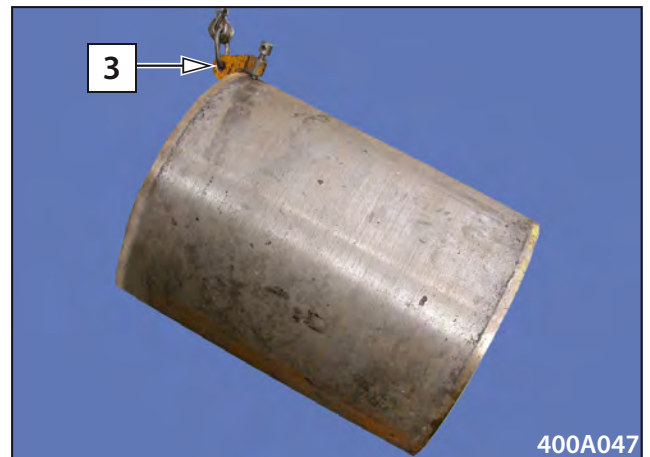
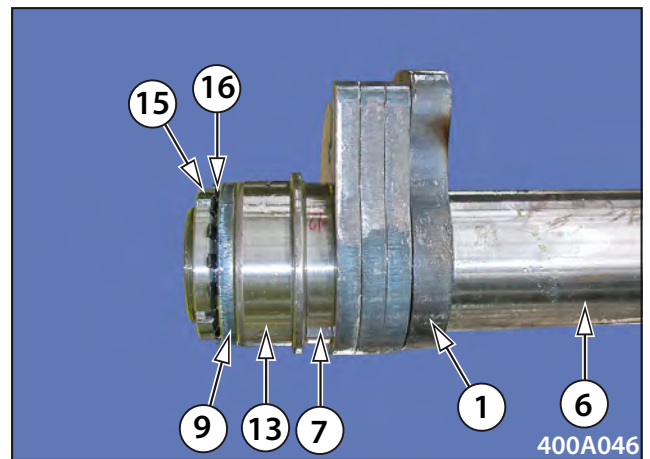
Note

Vibrator, i.e. shaft 6 complete with eccentrics 1, 2, is one-piece unit.

When reinstalling cover assembly (drum is erected – aux. transmission for drive 11 down) ram the vibrator into the bearing in the cover 2, install cover 3 incl. bearing 13, screw lifting lug into the thread and pull the vibrator to check axial clearance of 3 mm (0.12 in).

Remove RH side – drive of travel

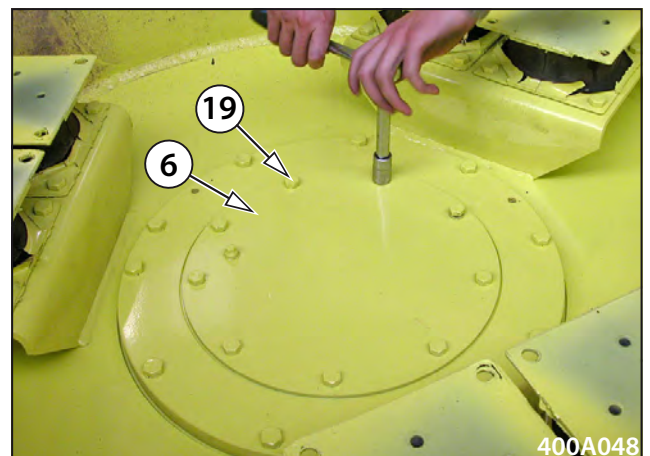
Fasten the clamp (fixture No. 3) of 2000 kg (4410 lb) loading capacity. Hang onto the crane, and erect drum with its LH side onto the ground.



Remove screws 19 used to fix cover 6.

Note

When reinstalling, please clean contact surfaces. We recommend packing rings to be replaced. Check position of cover 6 against holes for screws 19. Use Loxeal 83-54 to cement screws 19, tighten with 48Nm (35 lbft) torque.



Disconnect cabin connector.



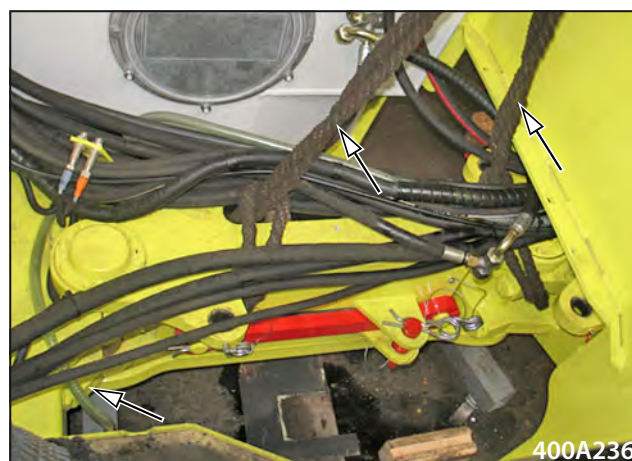
Mark and remove cabin earth connection.



Remove accelerator control cable.



Hang the joint onto crane, remove lower stirrup, and lower the joint below the frame. Shift out the joint.



400A236

7.3. Remove slewing ring bearing

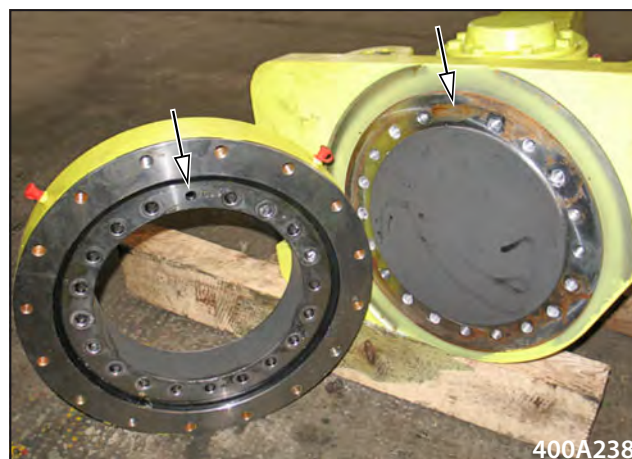
Remove bearing.



400A237

Note

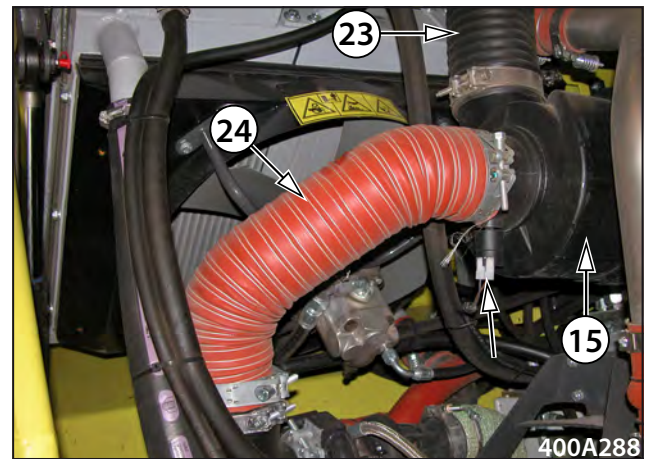
When reinstalling, please position the hole against the gap on the slewing ring. Fill bearing with grease via four lubricating points.



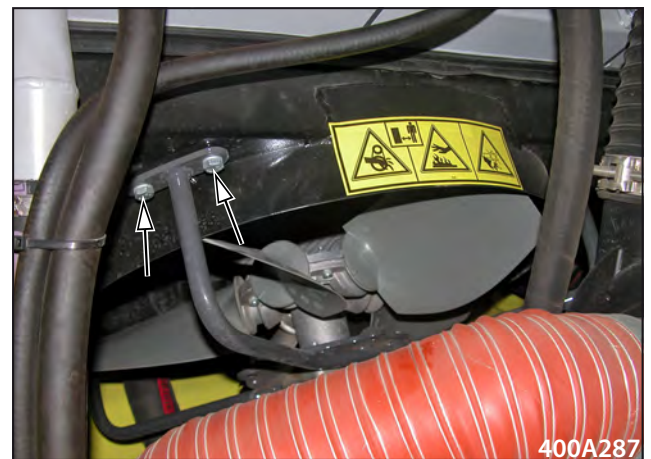
400A238

8.1. Remove cooling hydromotor

Disconnect wiring for vacuum air switch. Remove air filter 15 including hose pipes 23, 24.



Remove holder for cooling air blower (3), lift off.
 Remove bolt 63 for cooling air blower mount.
 Remove screws 61 used to fix hydromotor to the grate.



Put containment tank under hydromotor.

Mark and remove hydromotor hose pipes.



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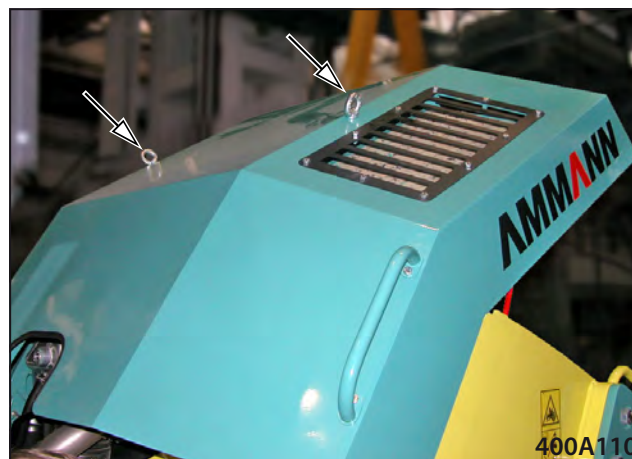
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9. How to remove hydraulic cylinders for steering and CRAB



Lift bonnet and secure with strut!

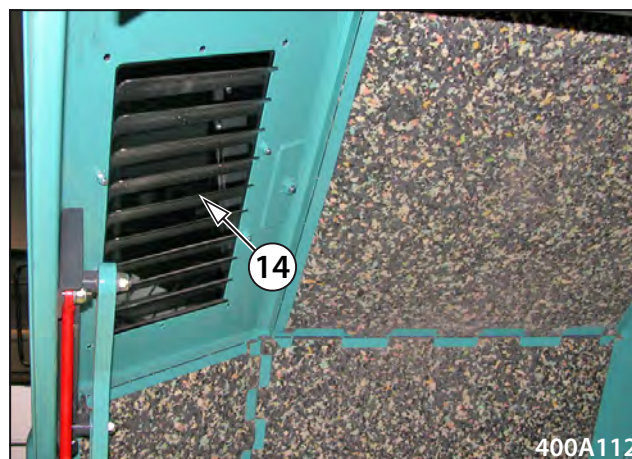
Mount lifting lugs.



Remove shutters 7.



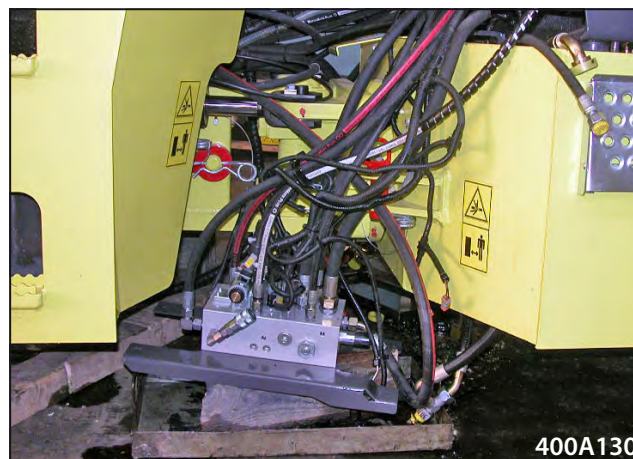
Remove grate 14 on both sides.



Hang complete bonnet onto the crane.



Swing steering block from frame.



Disconnect wiring from battery terminal.



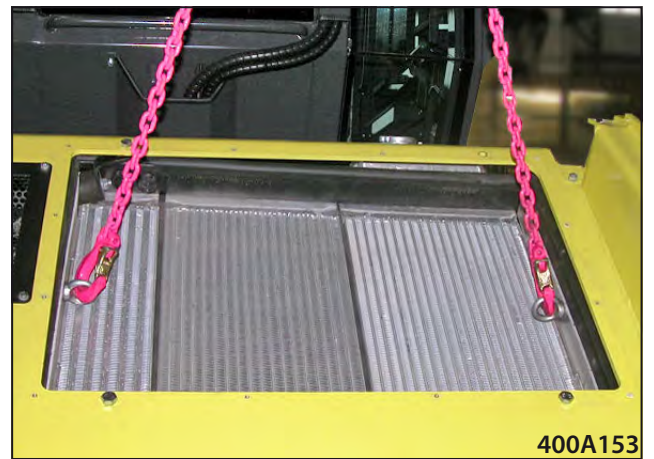
Remove hose pipes from cube.



Remove air piping.



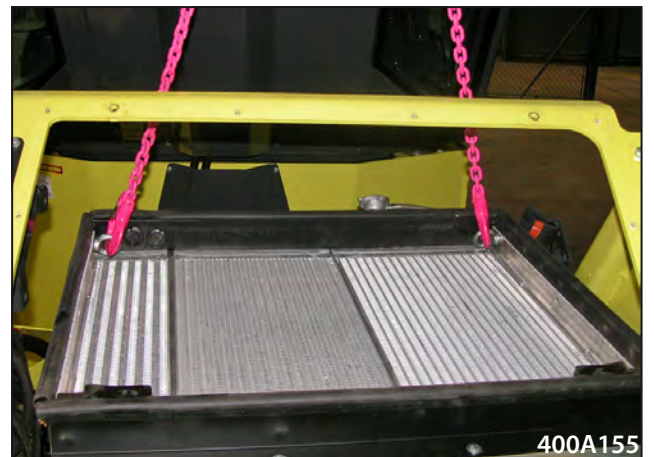
Mount lifting lugs, hang onto crane. Remove other bolts for cooler mount. Lower the cooler onto engine.



Remove top rubber mountings on both sides.



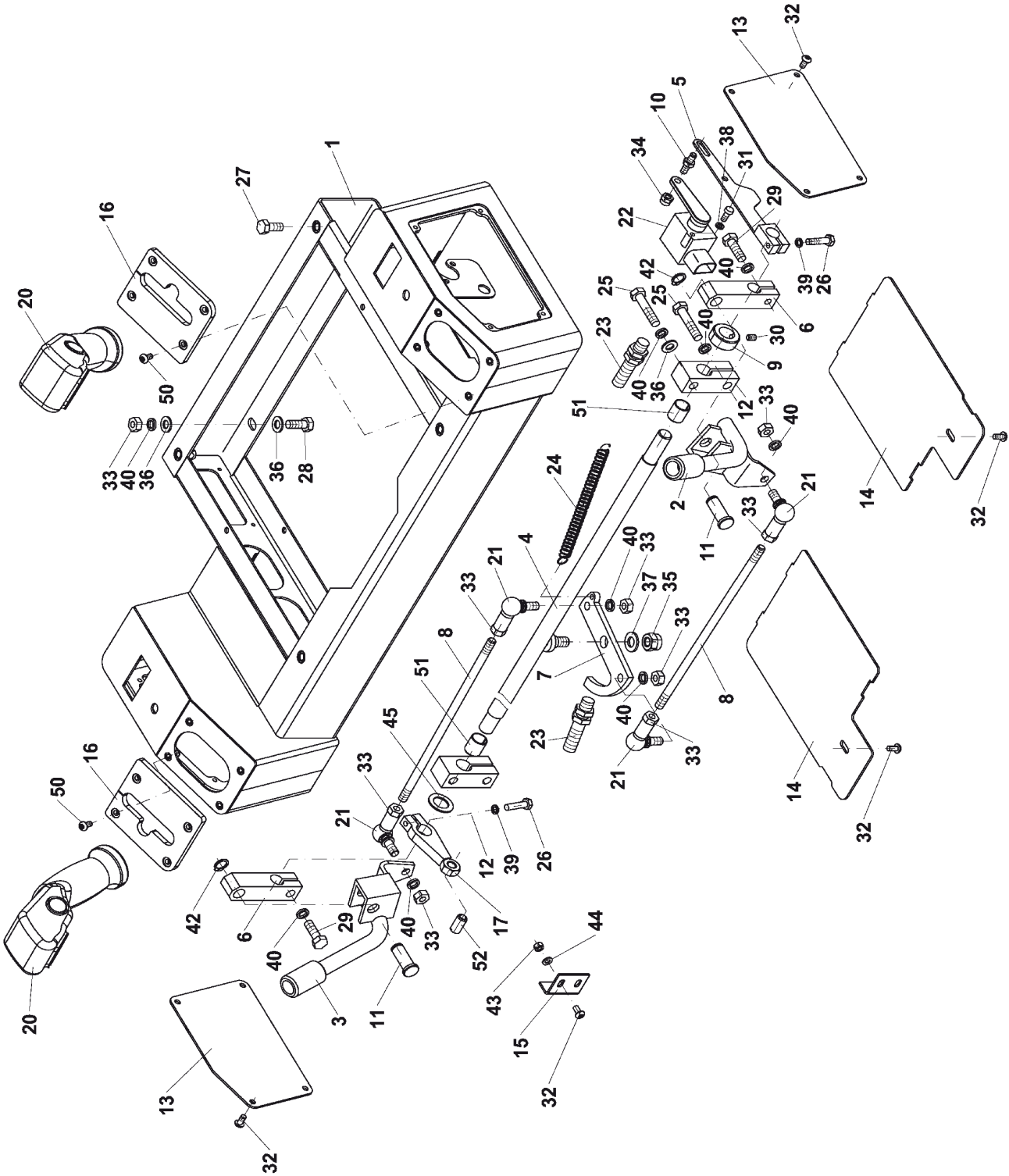
Mount lifting lugs, hang onto crane, lift carefully and put aside.



Remove upper bar.



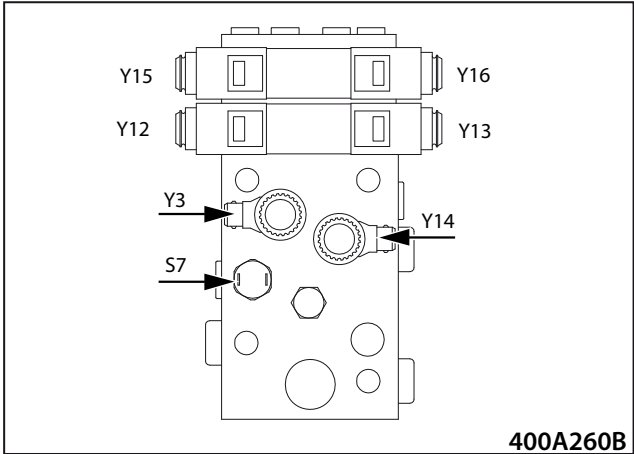
Travel control



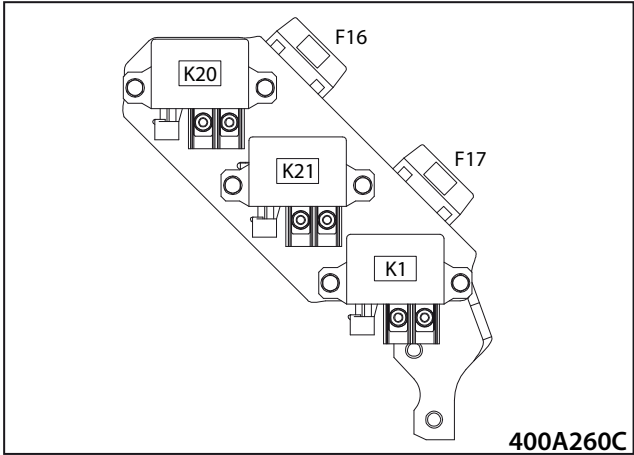
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14. Wiring

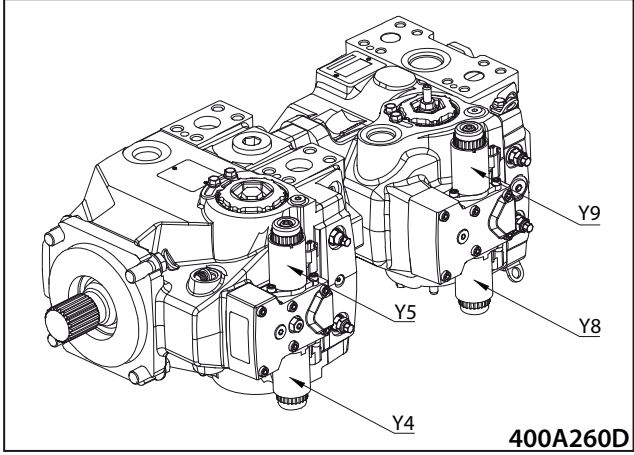
View B



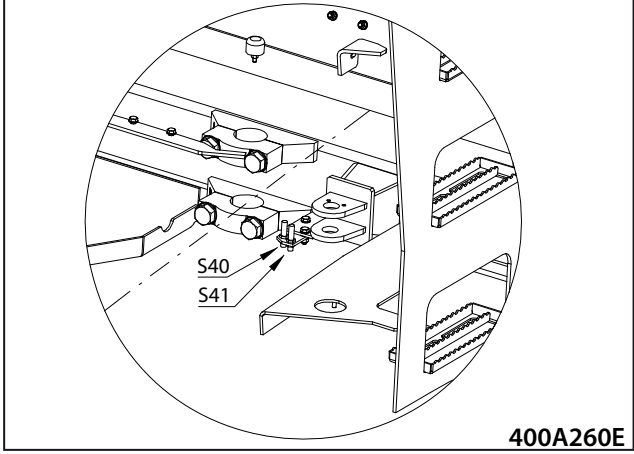
View C

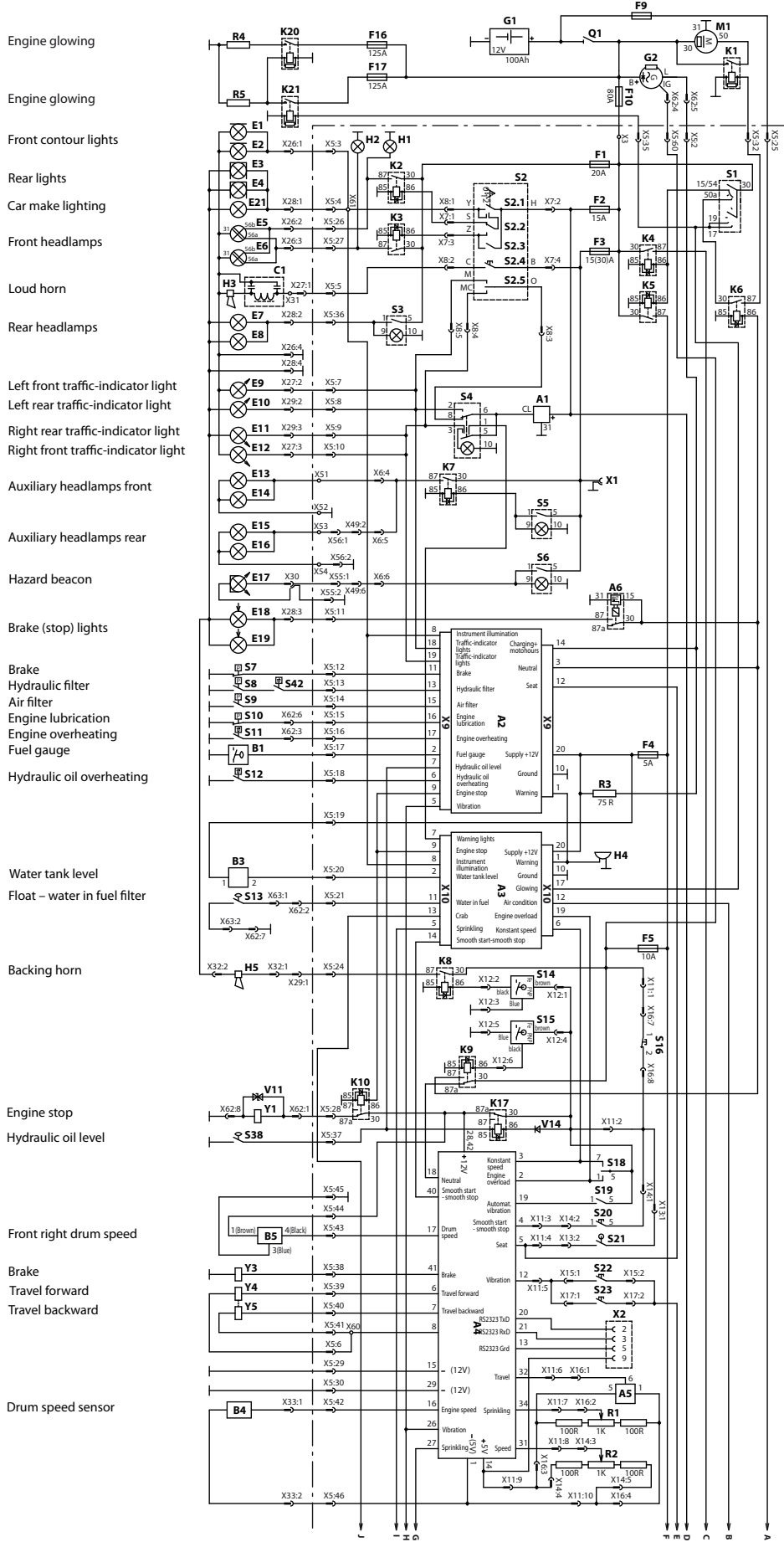


View D

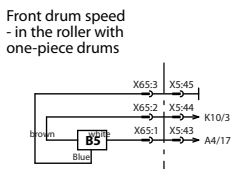


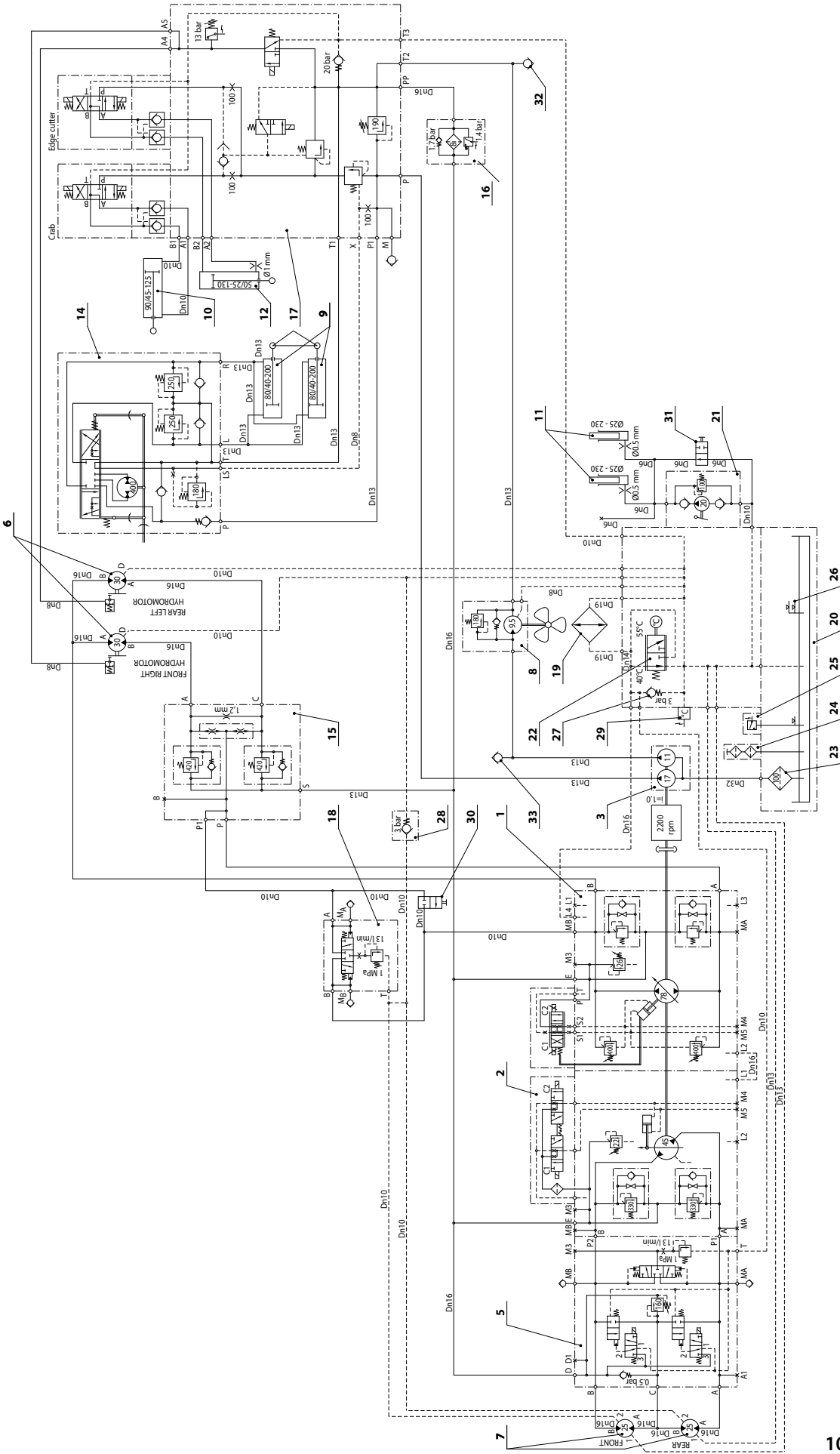
View E





- Engine glowing
- Engine glowing
- Front contour lights
- Rear lights
- Car make lighting
- Front headlamps
- Loud horn
- Rear headlamps
- Left front traffic-indicator light
- Left rear traffic-indicator light
- Right rear traffic-indicator light
- Right front traffic-indicator light
- Auxiliary headlamps front
- Auxiliary headlamps rear
- Hazard beacon
- Brake (stop) lights
- Brake
- Hydraulic filter
- Air filter
- Engine lubrication
- Engine overheating
- Fuel gauge
- Hydraulic oil overheating
- Water tank level
- Float – water in fuel filter
- Backing horn
- Engine stop
- Hydraulic oil level
- Front right drum speed
- Brake
- Travel forward
- Travel backward
- Drum speed sensor





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