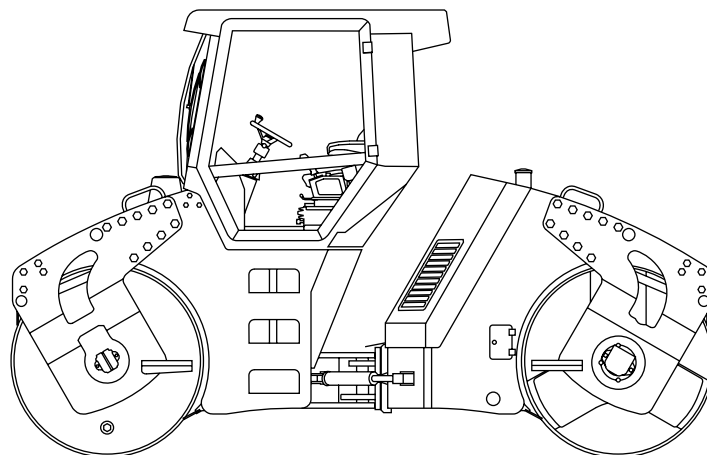


# AV 110 X

TANDEM ROLLER  
CUMMINS QSB3.3-C99  
EU Stage IIIA / U.S. EPA Tier 3



## WORKSHOP MANUAL

EDITION 07/2021 EN  
Product Identification Number 3009927 -

**AMMANN**

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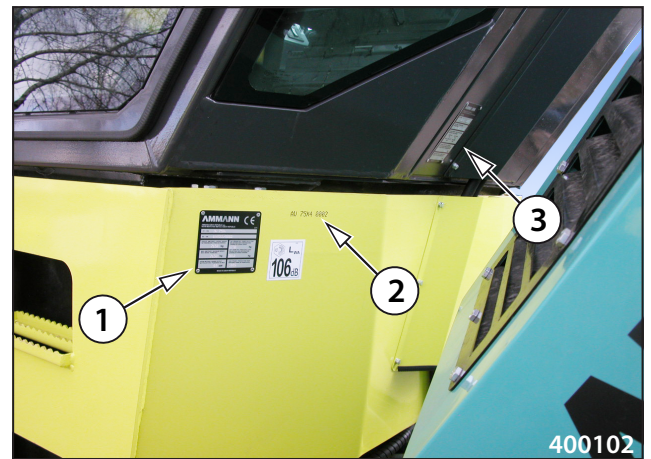
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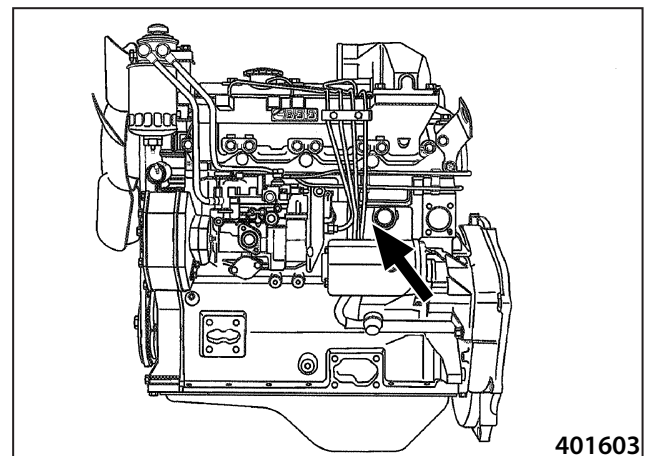
## **2. Safety Precautions and Instructions**

## Placing of the production label

- 1 - Production label
- 2 - Product Identification Number
- 3 - Label of the ROPS cabin



## Cummins engine serial number




4.5. Gearbox oil



Use high-quality oil corresponding to API GL-5, or EP or MIL-L-2105 D to lubricate gearbox, pumps and drum reducers.

Viscosity SAE 80W/90 for outdoor temperature range -10 °C ÷ 30 °C (14 °F ÷ 86 °F).

Viscosity SAE 80W/140 for outdoor temperature range 20 °C ÷ 45 °C (68 °F ÷ 113 °F).



**Operating temperature of oil shall not exceed 85 °C ÷ 90 °C (185 °F ÷ 194 °F).**

4.6. Lube grease



Use plastic lubricant with lithium content to lubricate the Machine under the following standards:


ISO 6743/9 CCEB 2

DIN 51 502 KP2K-30

4.7. Glass washer fluid



Use water (up to 0 °C temperature) and agent for motor vehicle glass washers when filling the glass washer tank.



**Replace water with antifreeze agent at the temperatures below 0 °C (32 °F).**

4.8. Drum cooling liquid



**Mixture AV 110 X:**

44 l (11,6 GalUS) of water

1 l (0,26 GalUS) Rust inhibitor Anticorit SKR 40

**Mixture AV 110 X4:**

11 l (2,9 GalUS) of water

19 l (5 galUS) of calcium chloride - CaCl<sub>2</sub>

4.9. Air-conditioning filling



1 kg (2,2 lb) of coolant Halocarbon 134a

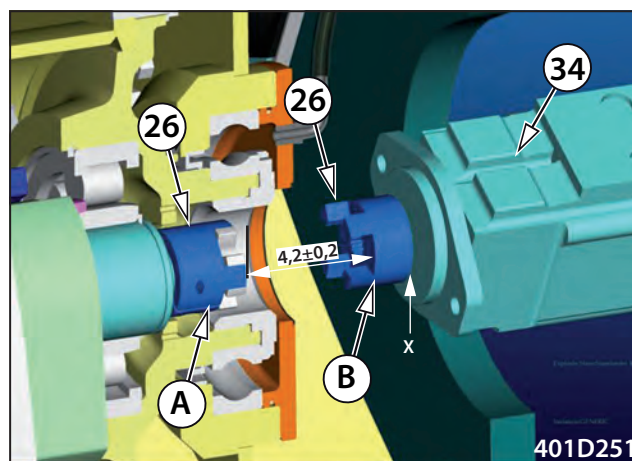
0,2 l (0,05 galUS) of oil PAG 150

0,005 l (0,0013 galUS) of contrast medium

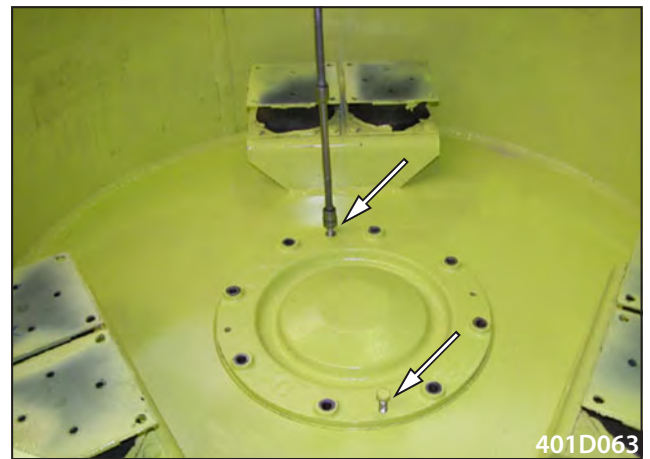
Adjust dimension X from clutch 26 face (hub B) to hydraulic motor face so to maintain  $4\pm0,2$  mm clearance between hub A and hub B.

**CAUTION**

Before you measure, please make final fitting of the vibrator until it stops in bearing 7 placed in flange 11 on the opposite side.



Use 2 bolts to push off the flange (use bolts, pos. 54).



401D063

Screw on the lifting lugs, use crane to remove the flange.



401D064

Remove lock ring.



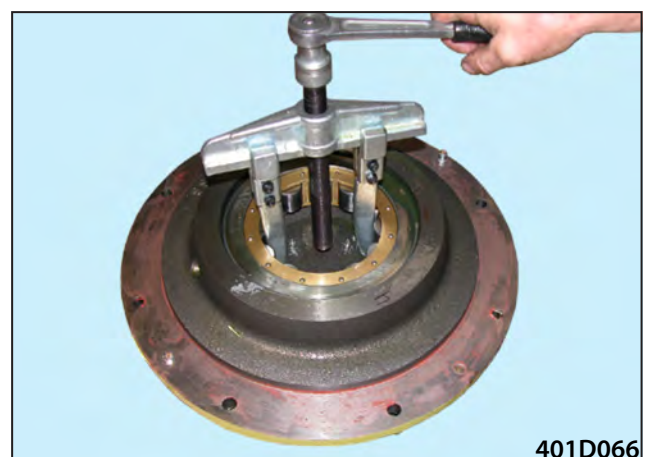
401D065

Use puller to remove bearing.

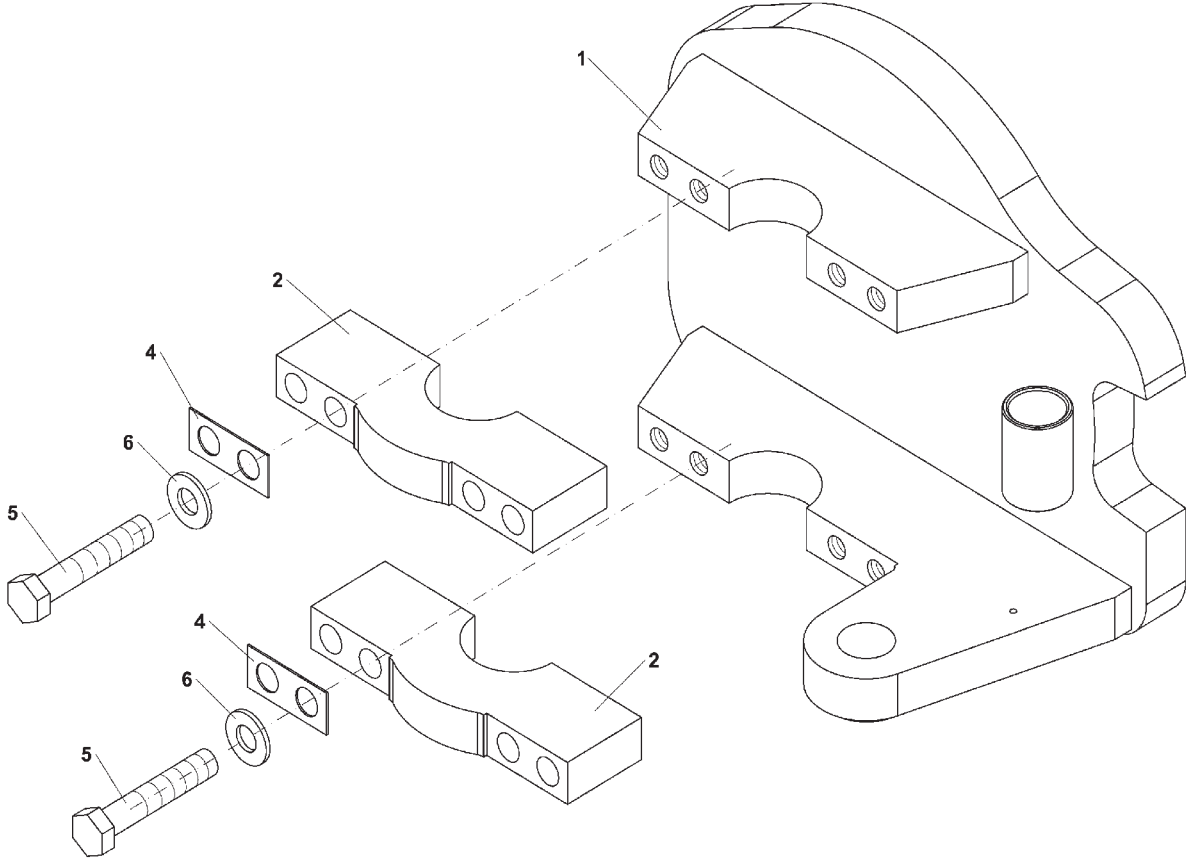
**Note**

When reassembling, please clean contact surfaces and apply sealer Loxeal 58-11. Tighten the flange with 83 Nm (61.22 lb ft) torque.

Following the installation of hydraulic motor, please fill reducer with 2,5 L (0.66 US gal) of gearbox oil. Engine bolts and "O" rings are supplied together with reducer.

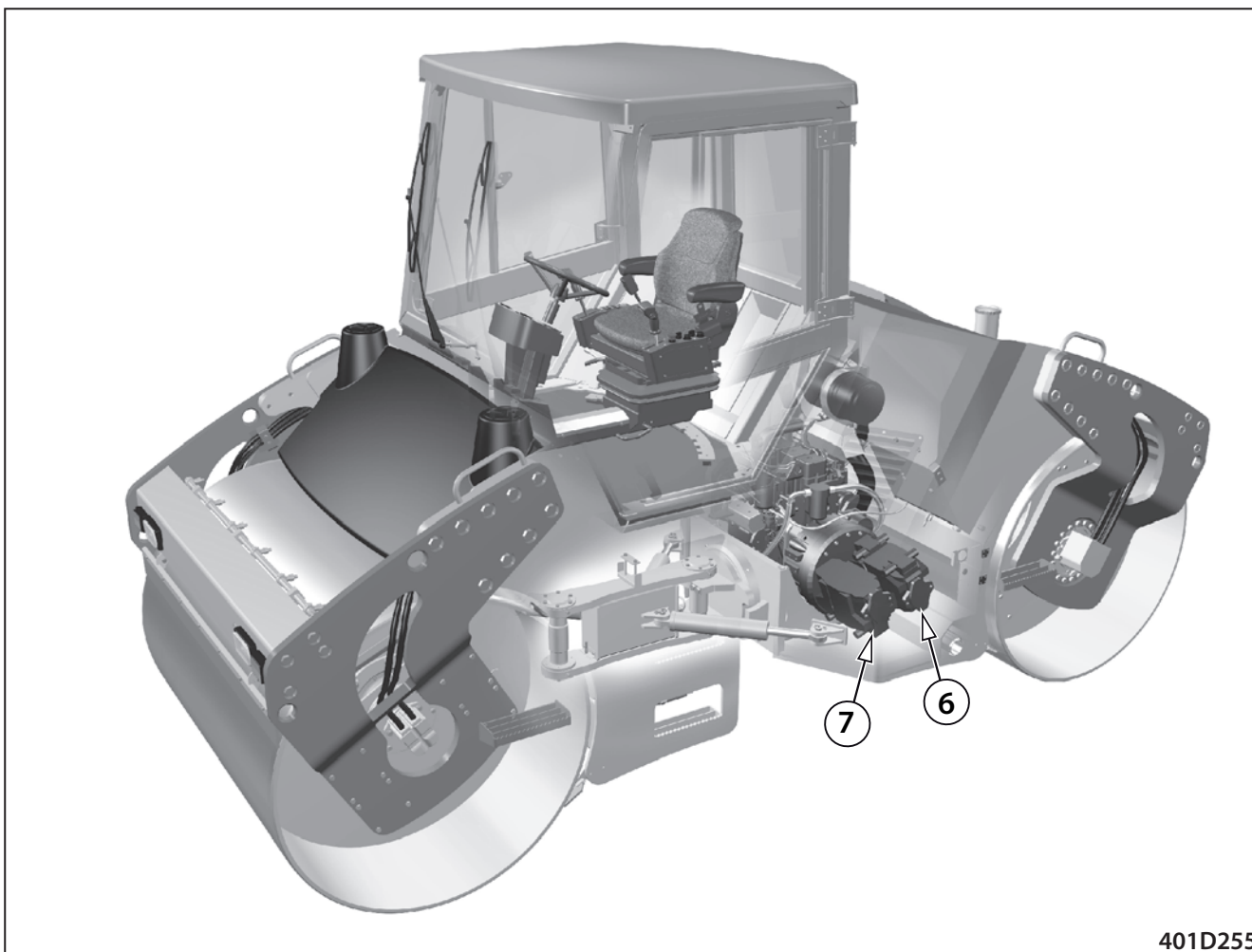


401D066



4-03563A\_050

## 8. Hydraulics



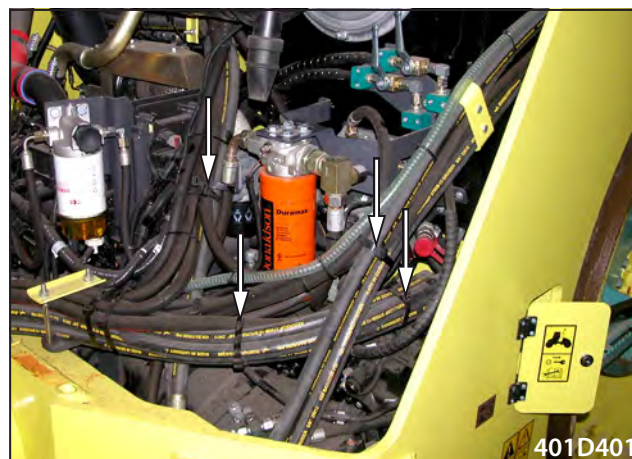
401D255

**8.3. How to remove tandem pumps of vibration and travel**



Use Scotch blocks to secure the Machine against any motion, switch off the master switch.

Cut off joining strips for pipe hoses and wiring if required.



401D401



Put drip pan underneath the pump, blind pump hoses and ports following the removal.



401D128

**9.1. Remove hydraulic cylinders for steering and CRAB**

Remove shims 10.

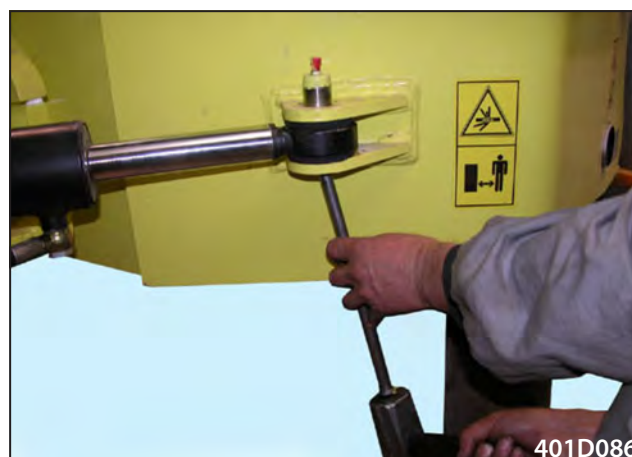


401D085

Press out eyebolts for hydraulic cylinder. Take hydraulic cylinders for steering and crab out from the brackets. Remove hydraulic hoses connection.

**Note**

Removal shall be designed only for those hydraulic cylinders required to be repaired or replaced.



401D086

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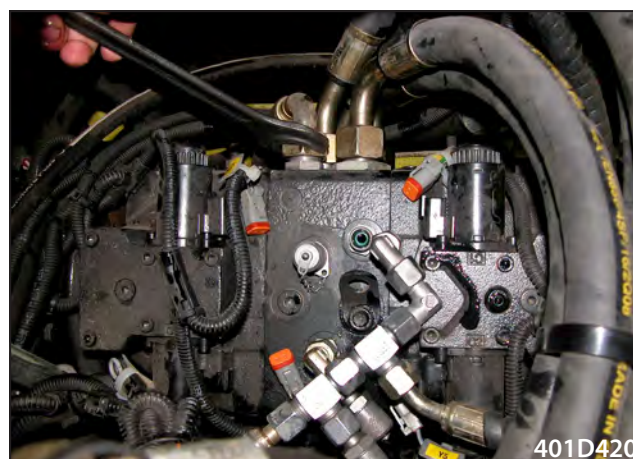
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# 11. Engine Removal

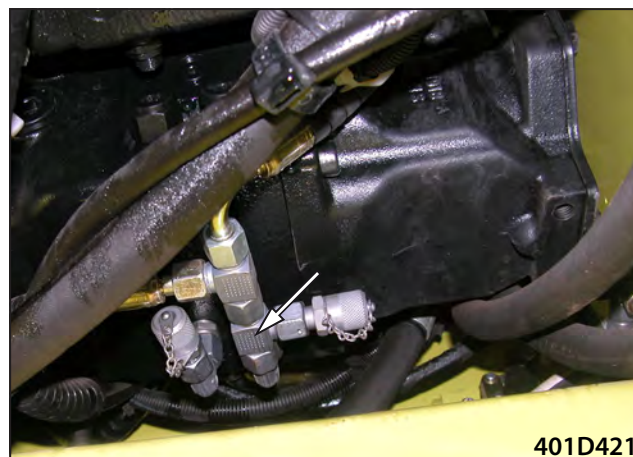
Remove pipe hose from second pump's top.



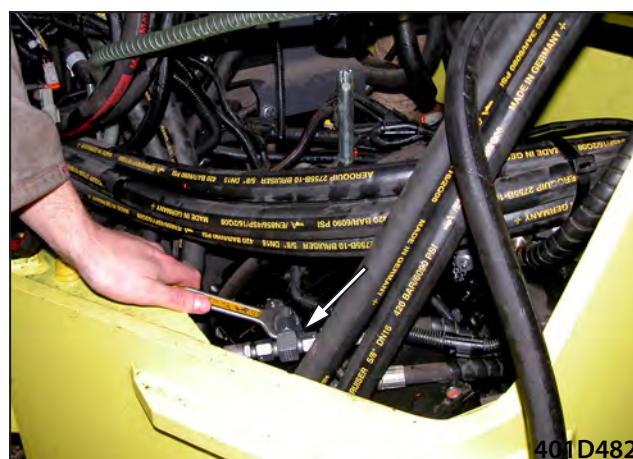
Remove pipe hose from second pump's side.



Remove pipe hose from second pump's bottom.



Remove pipe hose from first pump's top.



Remove bonnet, refer to Section called "How to remove bonnet".

Drain cooling liquid.

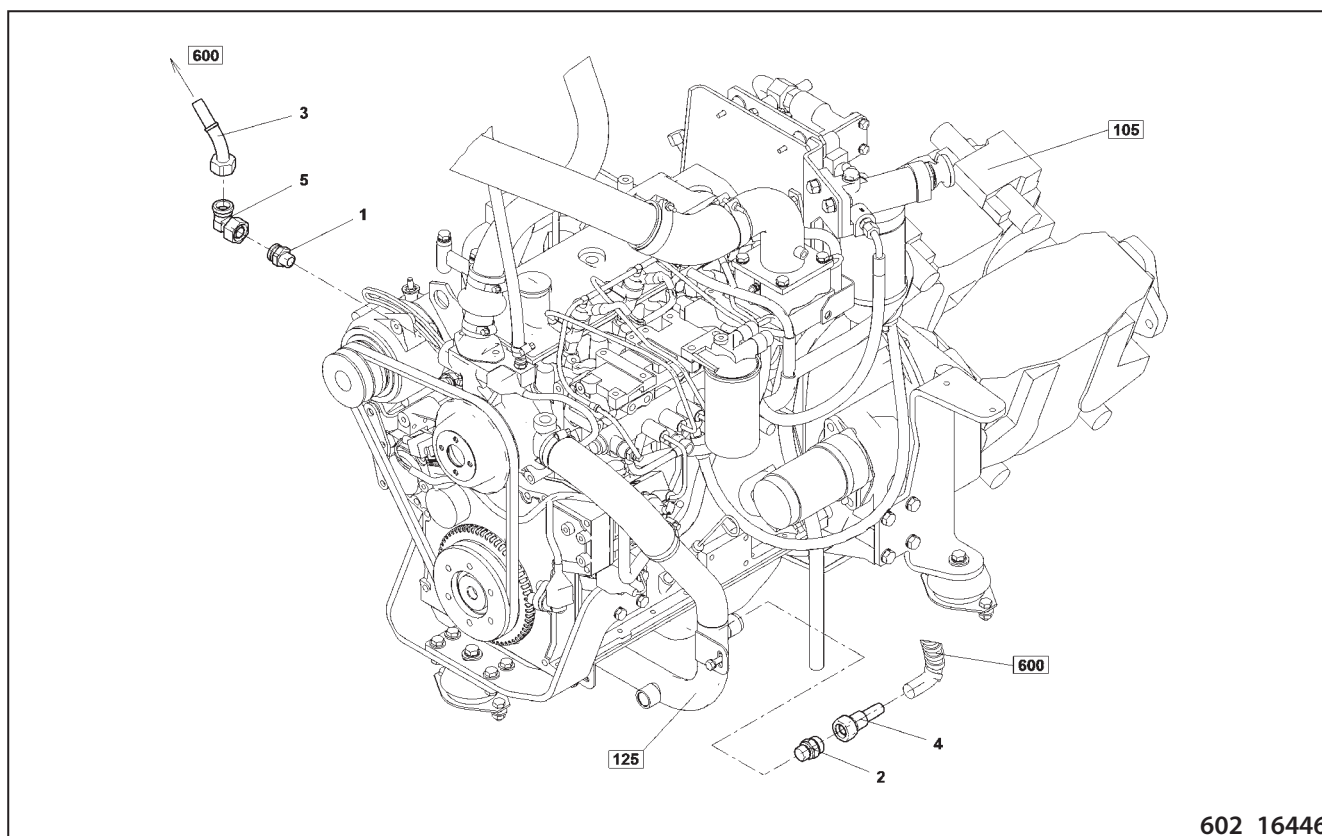


Put drip pan under radiator.



Remove piping from radiator, blind the ports.





602\_16446

### 13.1. Heater Removal

Drain partial amount of cooling liquid, i.e. ca 6 l (1,6 Gal US).



401324

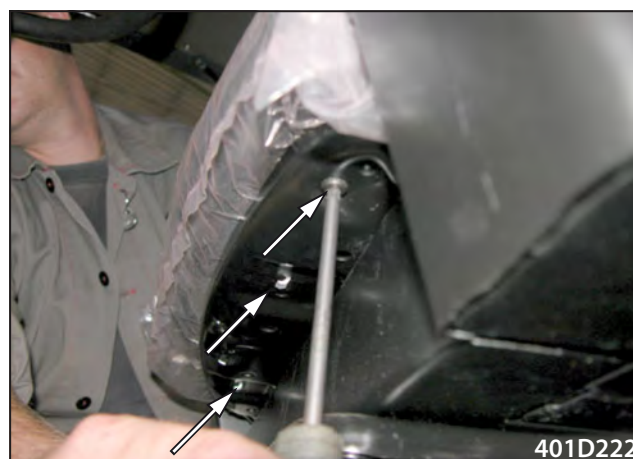
Disconnect hose.



401D209

**13.4. Seat Switch**

Remove three bolts from under so to take out seat upholstery.



Take out seat upholstery.



Fold up the seat.



Replace seat switch after having drilled off 2 rivets.



### 13.9 How to set up PowerView PV101

#### Set up four-parameter display:

- Press Menu key to enter main menu.
- Move arrows to GO TO 4 -UP DISPLAY and press Enter Key to confirm.
- Setting up completed.

#### Hour meter in this four-parameter display will reprogram to instantaneous fuel economy in the following way:

- Press Menu key to enter main menu.
- Move to CUSTOM SETUP.
- Press Enter key to confirm, four-parameter screen will be displayed.
- Use Left Arrow key or Right Arrow key to move to ENG HRS.
- Press Enter key to confirm.
  
- Press Menu key to enter main menu.
- Move to Total Engine Hours 4, press Enter key to delete 4.
- Use Left Arrow key or Right Arrow key to move to Fuel Rate, press Enter key to add 4, press Menu key (4x) to jump up to highest level, then four-parameter screen will be displayed to show current consumption instead of hours.



**Turn off ignition key for 30s and the data programmed will be entered into memory.**

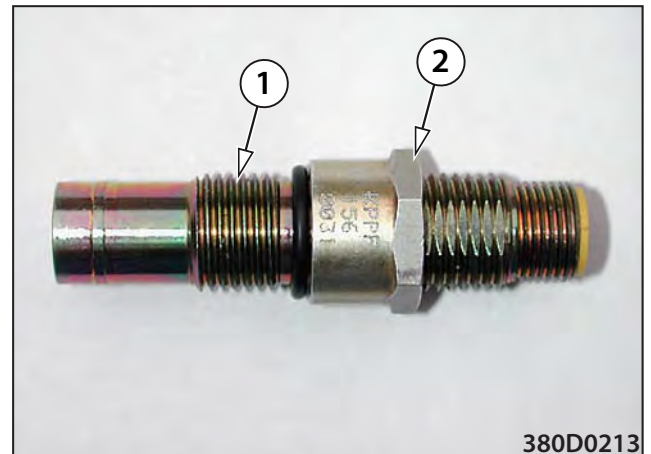
<b>Defect</b>	<b>Cause</b>	<b>Remedy</b>
No reliable operation of starter. Low performance	Battery insufficiently charged	Recharge battery
	Dirty or loosened connections in feeder cables (brush-contact resistances)	Clean, tighten properly
	Malfunctions of battery (normally slow deterioration of starting)	Repair battery failure
	Damaged starter brushes	Replace brushes (normally collector is necessary to repair)
	Dirty and burnt and/or unsoldered collector (commutator)	Clean with petrol or alcohol. When collector is burnt or daze emerges between collector bars (strong sparking during operation), please disassemble starter, and do machining on the collector. Mill out insulation, polish the collector. If required, solder again and/or replace armature (anchor).
	Broken or heated brush springs	Replace spring
	Short circuit to armature	Replace armature
	Part of excitation coils has been disconnected (disrupted)	Replace respective pair of coils
	Starter switch failed (contact resistance)	Replace ignition box
Starter operates with noise	Stator excitation winding disrupted on the lead to starter switch terminal	Solder again at the pin (outlet) point
	Starter loosened within its flange	Tighten bolts
	Armature loosened (seized in bearings)	Repair
	Mechanical defect (various)	Repair defects
Starter heats excessively, low performance	Broken cap (max. noise)	Repair, replace cap
	Short circuit within excitation circuit	Eliminate short circuit, and/or replace relevant pair of coils

**15.3. Adjust pulse sensors**

Adjust again pulse sensor ALWAYS when you replace the sensor of hydraulic motor for travel.

Pulse sensor of KPPF 156 type.

- 1 – Use spanner 1/2 inches to adjust the sensor
- 2 – Use spanner 11/16 inches to tighten the sensor



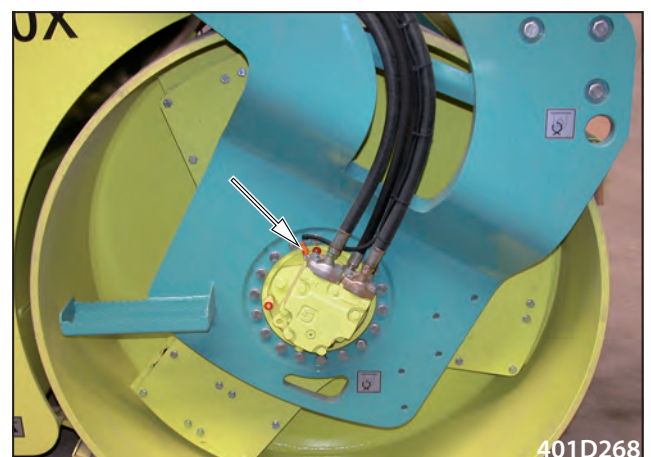
380D0213

- Open-end nut wrench 1 (1/2 in) to adjust the sensor.
- Barrel (tubular box) spanner 2 (11/16 in) to tighten the sensor.



380D0214

Location of pulse sensor on the Machine (front drum).  
On the rear drum, left.



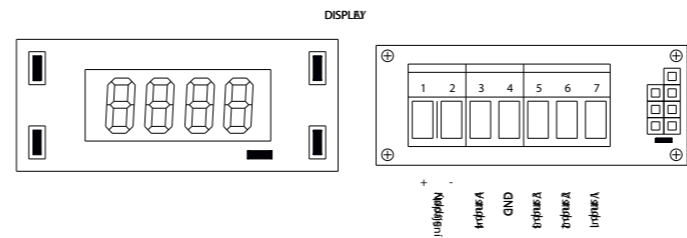
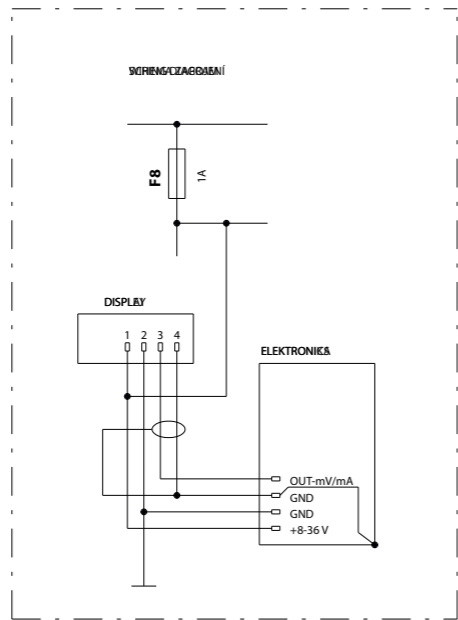
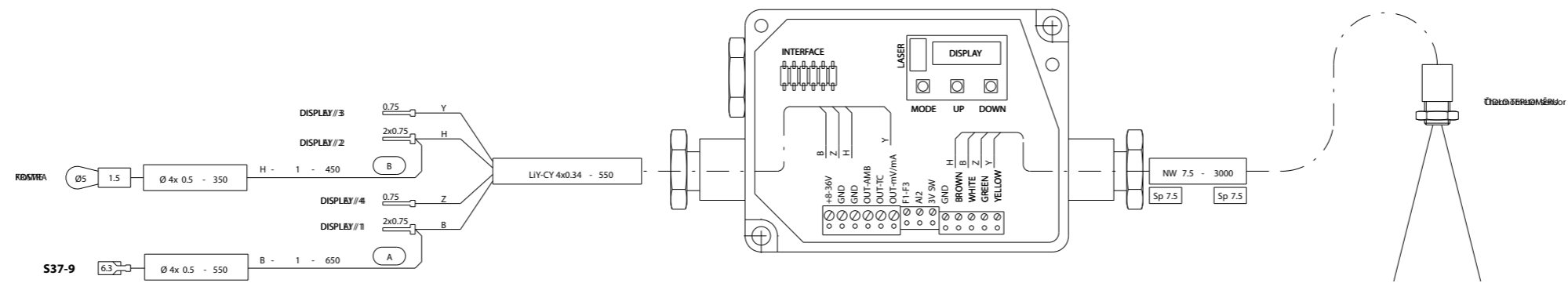
401D268

**15.5. Electric installations cable harnesses**

1	Harness #1 - Wiring system.....	4-211837
2.1	Harness #2 - Wiring system.....	4-211920
2.2	Harness #2 - Wiring system.....	4-211920
2.3	Harness #2 - Wiring system.....	4-211920
2.4	Harness #2 - Wiring system.....	4-211920
3.1	Harness #3 - Wiring system.....	4-211839
3.2	Harness #3 - Wiring system.....	4-211839
4	Harness #4 - Wiring system.....	4-107848
5	Harness #5 - Wiring system.....	4-107879
6	Harness #5 - Wiring system.....	4-212009
7	Harness - Cabin .....	4-444318
8	Harness - Cabin .....	4-211840
9	Harness - Platform.....	4-325256
10	Harness - Beacon.....	4-443405
11	Harness - Reversing horn .....	4-443350
12	Harness - Auxiliary lights .....	4-443225
13	Harness - Auxiliary lights - platform .....	4-443735
14	Harness - Registration plate lighting.....	4-443735
15	Harness - Edge cutter.....	4-324413
16	Harness - Thermometer .....	4-325354
17	Harness - Air conditioner.....	4-325376
18	Harness - Telematik.....	4-325375



**AV110X Tier 3**  
**CABLE HARNESS**  
**Object Number: 325254**



**CABLE HARNESS LEGEND:**

- Faston
  - Ring lock
  - Duct tape
  - Splicing sleeve
  - Contact
  - Sealing plug
  - Sealing wire seal
  - Mask cut
  - No.3
  - No.6.3
  - No.7.5
  - No.13/23
  - No.10
  - T 10-10-7.5
  - SEM 9
  - Resistor
  - Diode
  - Capacitor
  - Inductor
  - Transistor
  - Relay
  - Switch
  - 1 - Connector
  - 2 - Connector
- Wolite:**
- Wire color: R - 1 - 1200 (100) - Wolite number
- Kabel:**
- Typ: H03W-F2X0.75 - 2500 - Wolite
- Ochrana blake:**
- Typ: NW13 - 700 - Wolite

**TABLE OF COLOR SYMBOLS:**

B	Biela
C	Čierna
H	Hnedá
M	Modrá
R	Redá
S	Šedá
Y	Žltá
Z	Zelená

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