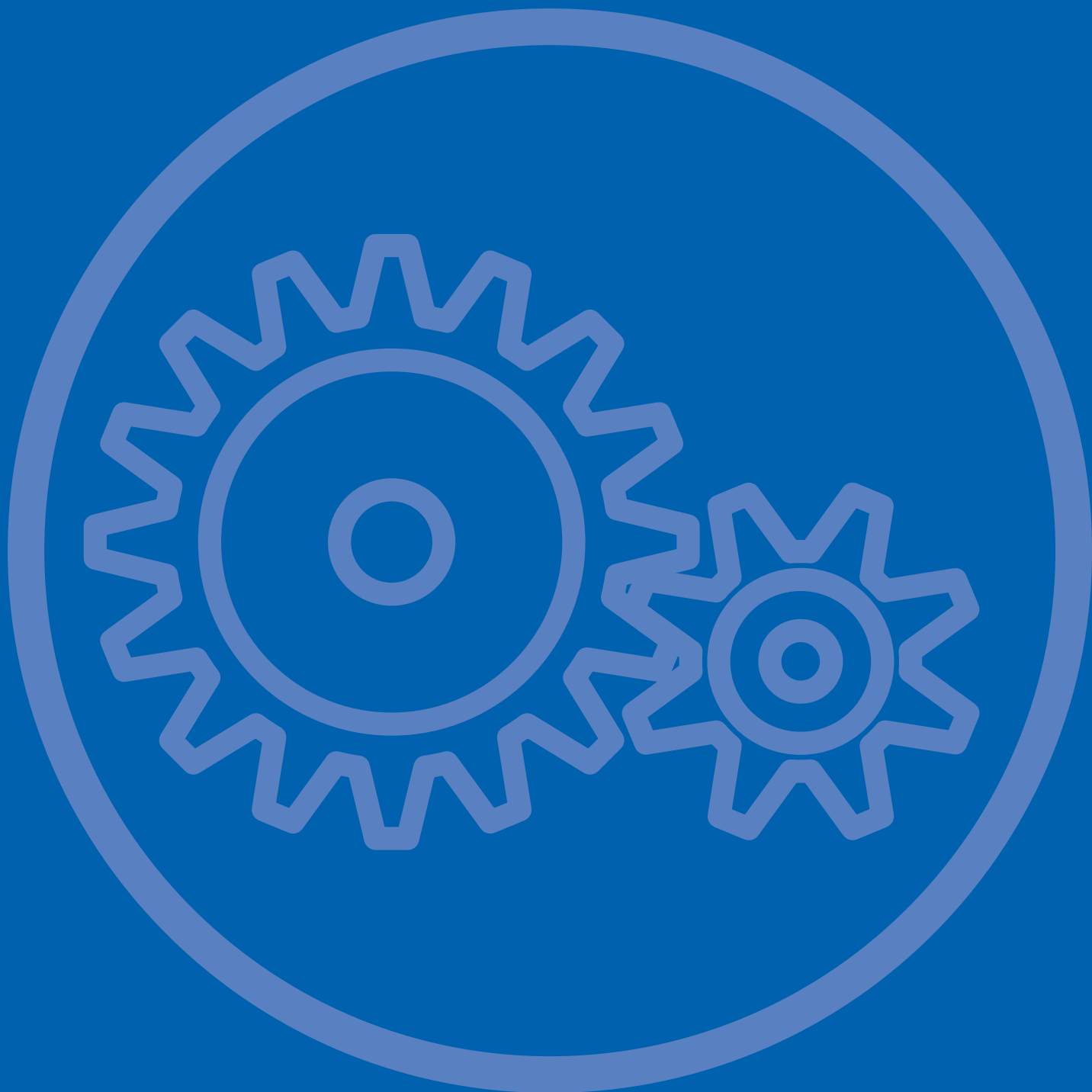




Workshop manual

FS 5000D II



English

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1 Introduction

1.1 Document description

This manual gives a full description of how to do maintenance and repair on the product. It also gives safety instructions that the personnel must obey.

1.2 Target group

This manual is for personnel with a general knowledge of how to do repair and do servicing. All personnel that do repair or do servicing on the product must read and understand the manual.

1.3 Revisions

Changes to the product can cause changes to the maintenance work and spare parts. Separate information is sent out for each change.

Read the manual together with all received information about changes to maintenance and spare parts for the product.

1.4 Safety



WARNING: All personnel that repair or do servicing on the product must read and understand the safety instructions in this workshop manual.

1.5 Servicing tools

The manual gives information about necessary servicing tools. Always use original tools from Husqvarna.

2 Safety

2.1 Safety definitions

Warnings, cautions, and notes are used to point out particularly important parts of the manual.



WARNING: Used if there is a risk of injury or death for the operator or bystanders if the instructions in the manual are not obeyed.



CAUTION: Used if there is a risk of damage to the product, other materials or the adjacent area if the instructions in the manual are not obeyed.

Note: Used to give more information that is necessary in a given situation.

2.2 General safety instructions



WARNING: Read the warning instructions that follow before you use the product.

- This product is a dangerous tool if you are not careful or if you use the product incorrectly. This product can cause serious injury or death to the operator or others. Before you use the product, you must read and understand the contents of this operator's manual.
- This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.
- Save all warnings and instructions.
- Comply with all applicable laws and regulations.
- The operator and the employer of the operator must know and prevent the risks during operation of the product.
- Do not let a person operate the product unless they read and understand the contents of the operator's manual.
- Do not operate the product unless you receive training before use. Make sure that all operators receive training.
- Do not let a child operate the product.
- Only let approved persons operate the product.
- The operator is responsible for accidents that occur to other persons or their property.
- Do not use the product if you are tired, ill, or under the influence of alcohol, drugs or medicine.
- Always be careful and use your common sense.
- This product produces an electromagnetic field during operation. This field can under some circumstances interfere with active or passive medical implants. To decrease the risk of serious injury or death, we recommend persons with medical implants to speak to their physician and the medical implant manufacturer before operating this product.

- Keep the product clean. Make sure that you can clearly read signs and decals.
- Do not use the product if it is damaged.
- Do not make modifications to this product.
- Do not operate the product if it is possible that other persons have made modifications to the product.

2.3 Special safety instructions

- When you use compressed air, do not point the airflow in the direction of your body. Air can go into the blood circulation and kill you.
- Use eye protection when you do work on springs that have tension.
- Do not use accessories that are not approved by the manufacturer. Do not do changes that are not approved by the manufacturer. This can cause injury or death to the operator or other persons.
- Always use original spare parts and accessories.
- Use approved hearing protection. Noise from the product can result in permanent hearing loss.
- Always disconnect the battery before you repair electrical parts.

2.4 Safety instructions for operation



WARNING: Read the warning instructions that follow before you use the product.

- Read the warning instructions that are supplied with the cutting blade by the cutting blade manufacturer.
- Make sure that the product is assembled correctly.
- Use personal protective equipment. Refer to *Personal protective equipment on page 5*.
- Do not operate the product without the blade guard and the protective covers installed.
- Do not operate the product with the blade guard front lifted unless it is necessary to get access to the work area.
- Make sure that you are in a safe and stable position during operation.
- Be very careful during operation on slopes. The product is heavy and can cause serious injury if it falls.
- Do not operate the product outside of the work area.
- Do not use the product in areas where fire or explosions can occur.
- Make sure that only approved persons are in the work area.
- The product can cause objects to eject at high speed. Make sure that all persons in the work area use approved personal protective equipment. Remove loose objects from the work area.
- Incorrect operation of the product can cause the cutting blade to break and cause injury or damage.
- Make sure that you know how to stop the engine quickly in an emergency.

- Keep children, bystanders and animals away from the work area and at a safe distance from the product. A safe distance is 5 m to all sides of the product.
- Keep the work area clean and bright.
- Make sure that electrical cables in the work area are not live.
- Before you operate the product, find out if there are hidden wires, cables and pipes in the work area. If the product hits a hidden object, stop the engine immediately and examine the product and the object. Do not start to operate the product again until you know that it is safe to continue.
- Do not use the product in bad weather conditions, such as thick fog, heavy rain, strong wind or intense cold. To do work in bad weather makes you tired and can cause dangerous conditions, for example slippery surfaces.
- Before you go away from the product, stop the engine and make sure that there is no risk of accidental start.
- Make sure that no material can become loose and cause injury to the operator.
- Dress properly. Do not wear loose clothing or jewelry. Keep your hair and clothing away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
- Do not operate the product unless you can get aid if an accident occurs.
- Do not use the product if you are fatigued. It is important that you stop the operation regularly.
- Some variants of the product do not have parking wedges. If your product does not have parking wedges, do not go away from it if it is on a slope. If it is necessary to park the product on a slope, make sure that the product is sufficiently attached and cannot move.
- Set the operation handles to the shortest position when you do not operate the product. This reduces the risk of tripping and falling over the operation handles.

2.5 Safety instructions for maintenance



WARNING: Read the warning instructions that follow before you use the product.

- Use personal protective equipment. Refer to *Personal protective equipment on page 5*.
- If the maintenance is not done correctly and regularly, the risk of injury and damage to the product increases.
- Stop the engine and let the product become cool before you do the maintenance.
- Clean the product to remove dangerous material before you do the maintenance.
- The exhaust fumes from the engine are hot and can contain sparks. Do not operate the product in indoor areas or near flammable material.

- Do not change the product. Modifications that are not approved by the manufacturer, can cause serious injury or death.
- Always use original accessories and spare parts. Accessories and spare parts that are not approved by the manufacturer, can cause serious injury or death.
- Replace damaged, worn or broken parts.
- Only do the maintenance as given in this operator's manual. Let an approved service center do all other servicing.
- Remove all tools from the product before you start the engine after maintenance. Loose tools or tools attached to rotating parts can eject and cause injury.
- Let an approved service center do servicing on the product regularly.
- Do the maintenance on a level surface.
- Always put jack stands below the product as support if it is necessary to lift the product during maintenance.

2.6 Personal protective equipment



WARNING: Read the warning instructions that follow before you use the product.

- Always use approved personal protective equipment when you operate, do maintenance on or install/remove the cutting blade on the product. Personal protective equipment cannot fully prevent injury but it decreases the degree of injury if an accident does occur. Let your dealer help you select the correct personal protective equipment.
- Regularly do a check of the condition of the personal protective equipment.
- Use an approved protective helmet.
- Use approved hearing protection. Long-term exposure to noise can result in permanent hearing impairment. Be aware of warning signals or shouts when you are wearing hearing protection. Always remove your hearing protection as soon as the motor stops.
- The product makes dust and fumes that contain dangerous chemicals. Use approved respiratory protection.
- Use approved eye protection with side protection when you operate the product or do maintenance or repairs. There is a high risk of eye injury from thrown objects.
- Operation of the product causes slurry that can be corrosive. Use protective gloves when it is necessary, for example when you install, examine or clean the blade.
- Use boots with steel toe-cap and non-slip sole.
- Use approved work clothing or equivalent close-fitting clothing that has long sleeves and long legs.

2.6.1 Fire extinguisher

- Keep a fire extinguisher near during operation.

- Use a powder fire extinguisher of "ABE" class or a carbon dioxide fire extinguisher of "BE" type.

2.7 Symbols on the product



WARNING! This product can be dangerous and cause serious injury or death to the operator or others. Be careful and use the product correctly.

Read the operator's manual carefully and make sure that you understand the instructions before you use this product.



The dust can cause health problems. Use an approved respiratory protection. Do not breathe exhaust fumes. Do not use a combustion engine product indoors or in areas that do not have sufficient airflow.

Use respiratory protection. Refer to *Personal protective equipment* on page 5.



Risk of cut injuries. Keep all body parts away from the cutting blade.

Use safety foot wear. Refer to *Personal protective equipment* on page 5.



The blade guards must always be installed on the product. Do not let more than 180° of the cutting blade show.

Never operate the product without a blade guard installed.



Keep body parts away from the cutting blade and other moving parts.

Never reach inside the product during operation.

Always have the blade guard installed covering more than 180° of the cutting blade.



Never go forward down ramps and inclines.

Always reverse down ramps and inclines.

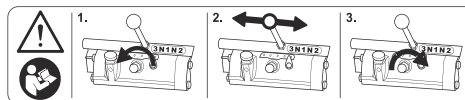


All displacement of the machine outside the cutting area shall be carried out with the tool not in rotation.

Remove the cutting blade before transportation and before you lift the product, to prevent damage to the cutting blade.

Never operate the product without a blade guard installed.

Always have the blade guard installed covering more than 180° of the cutting blade.



WARNING! Read the operator's manual before changing gears.



Risk of crushing foot. Keep body parts away from the 5th wheel.



Make sure that the cutting blade is not blunt or has damages, such as cracks.



Do not use the product near flammable material or gases.



Make sure that the cutting blade is applicable to the same speed or a higher speed than the value given on the product type plate. A cutting blade that is operated at too high speed can break and cause injury or damage.



Do not clean the control panel with high pressure water.



Hot surface.



Engine oil.



Dipstick.



Do not lift the saw when you do a check of the engine oil level.



Make sure that the saw is level without cutting blade when you examine the engine oil level.



Saw blade rotation direction.



Use approved eye protection with side protection. Refer to *Personal protective equipment on page 5*.



Use approved hearing protection. Refer to *Personal protective equipment on page 5*.



Use head protection. Refer to *Personal protective equipment on page 5*.



Use approved protective gloves. Refer to *Personal protective equipment on page 5*.



Maximum allowed blade size.



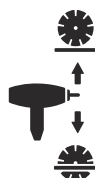
Lever for the water cooling system.



Knob for adjustment of the blade lowering speed.



Knob for adjustment of the blade depth stop.



Switch to lift or lower the cutting blade.



Forward drive speed.



Neutral position.



Reverse drive speed.



Engine off.



Ignition on.



Engine starts.



To lift the product, attach lifting equipment to the lift point on the product.



Engage or disengage the clutch.



Button to lift or lower the 5th wheel.



Fuel symbol.



This product complies with applicable EU Directives.



This product comply with EESS and ACMA for New Zealand and Australia.



This product complies with applicable Ukrainian regulations.



Noise emission to the environment label as refer to EU and UK directives and regulations. The guaranteed sound power level of the product is specified in *Personal protective equipment on page 5* and on the label.

Note: Other symbols/decals on the product refer to certification requirements for some markets.

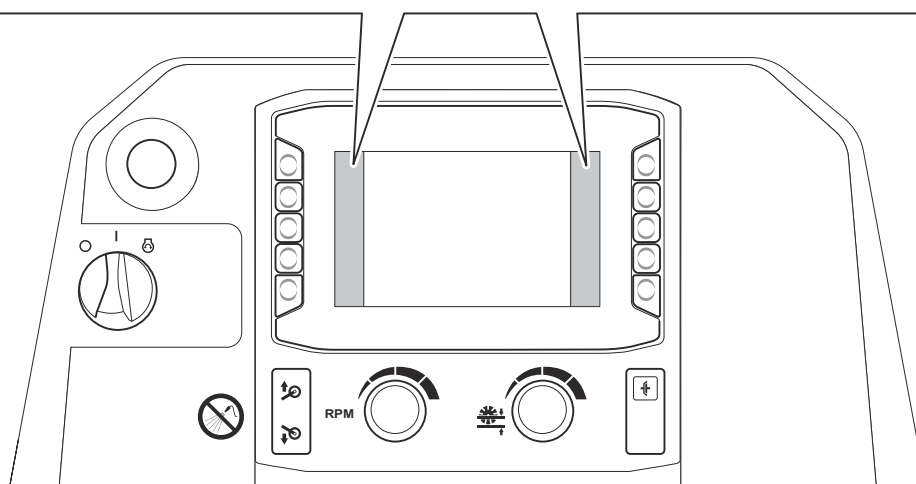
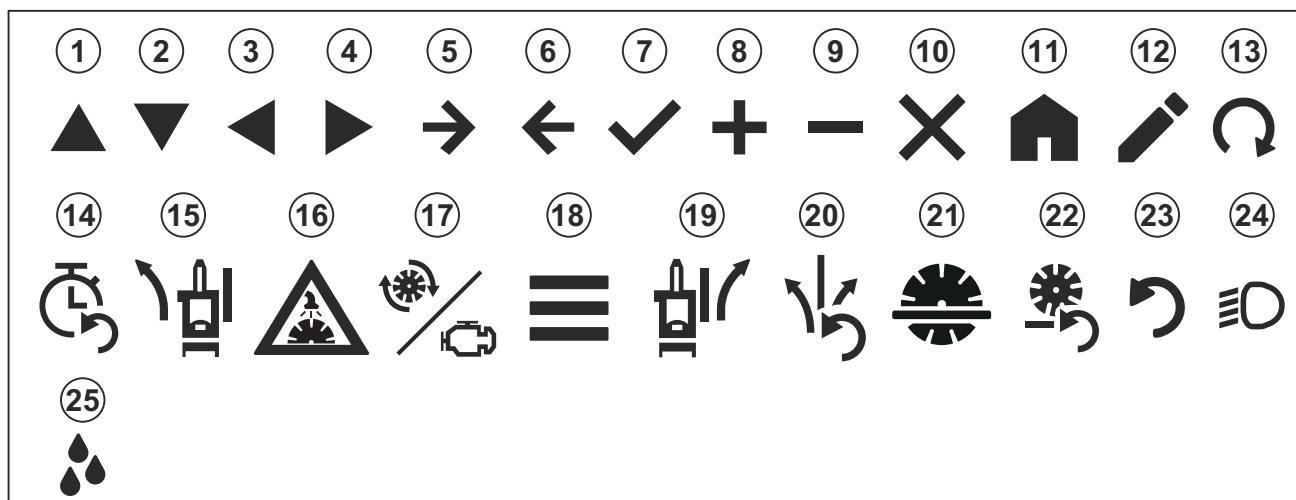
2.8 Symbols on the HMI

2.8.1 Symbols in the top bar on the HMI

The diagram shows the top bar of the HMI with two symbols highlighted by a callout box. Symbol 1 is a battery icon with '-' and '+' signs. Symbol 2 is a thermometer icon with a wavy line below it. The HMI interface includes a central display, a left-side control knob, and a bottom section with various indicators and gauges.

Position	Description
1	Battery voltage
2	Current coolant temperature

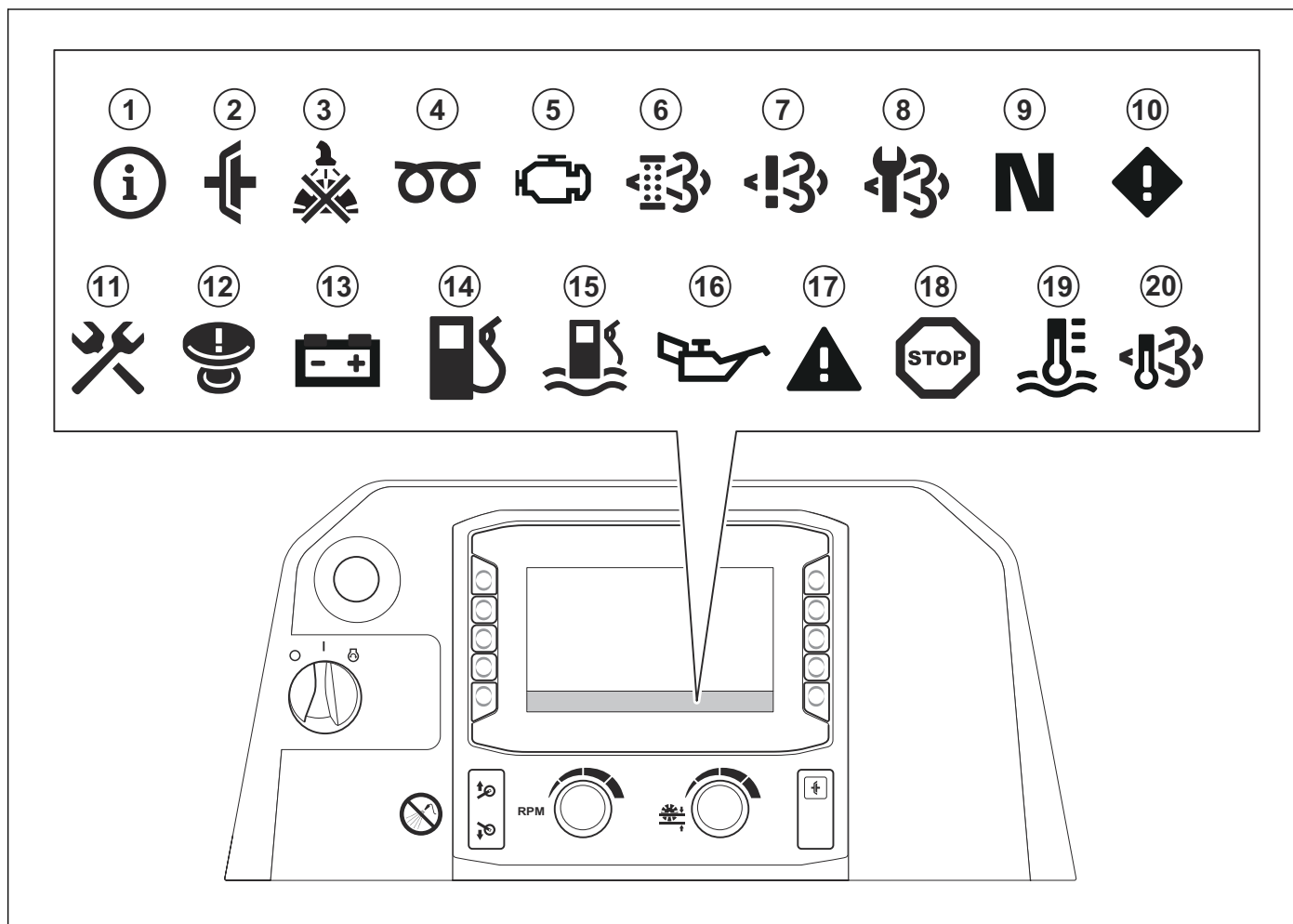
2.8.2 Symbols in the side bars on the HMI



Position	Description
1	Up
2	Down
3	Left
4	Right
5	Forward
6	Back
7	Confirm
8	Increase
9	Decrease
10	Close/cancel
11	Home
12	Edit
13	Start regeneration
14	Reset service timer
15	E-track adjustment left (optional)
16	Water safety system ON/OFF
17	Blade/engine RPM

Position	Description
18	Main menu
19	E-track adjustment right (optional)
20	E-track reset (optional)
21	Blade depth stop
22	Reset blade depth stop
23	Reset
24	Lights (accessory)
25	Water pump (accessory)

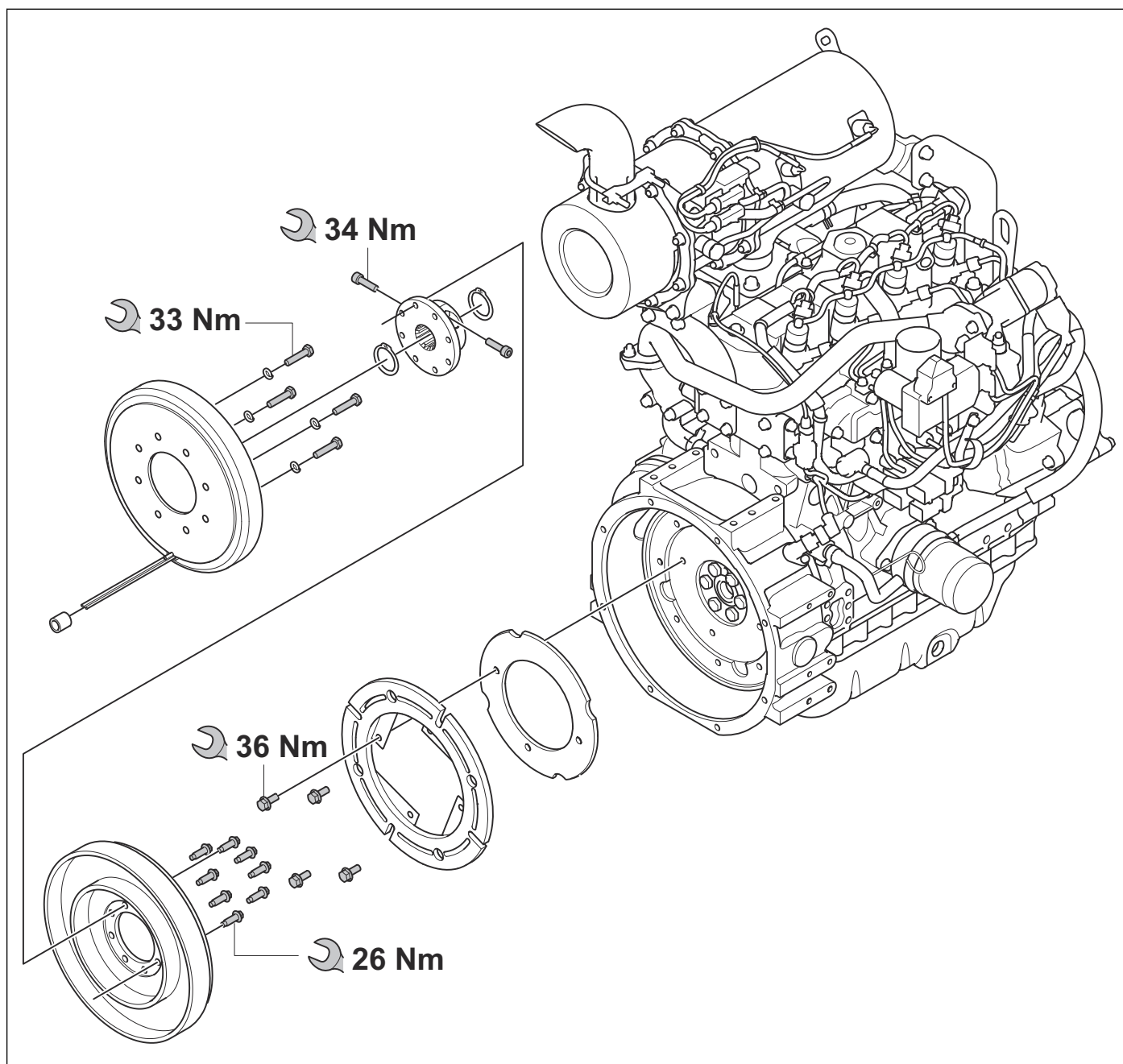
2.8.3 Symbols in the bottom bar on the HMI

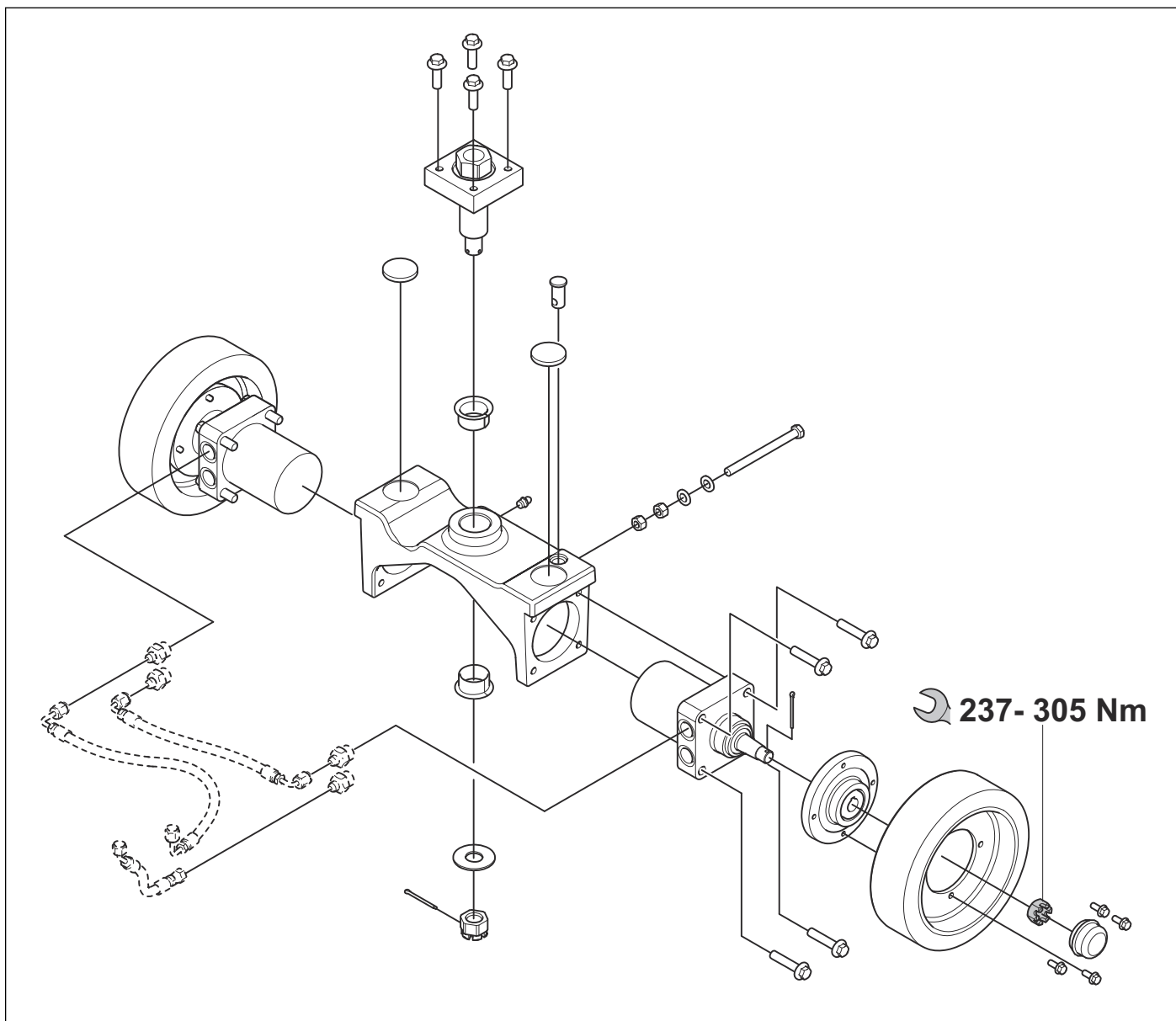


Position	Description
1	Information
2	The clutch is engaged when you try to start the product. Disengage the clutch before you start the product.
3	There is too low or no water pressure to the water cooling system for the cutting blade.
4	Engine preheating. Refer to the engine manual for more information.
5	There is an engine failure. Refer to the engine manual for more information.
6	It is necessary to do a regeneration. ¹
7	There is a failure in the NOx Diagnostic Control System.
8	Do servicing on the diesel particulate filter (DPF). Speak to a Husqvarna service agent.
9	The drive control lever is in the neutral position.
10	Caution message.
11	Yellow symbol: It is necessary to do servicing on the product in less than 10 hours of operation. Red symbol: It is necessary to do servicing on the product.
12	The machine stop engaged. Reset the machine stop button and cycle ignition.
13	The battery does not charge.
14	The fuel level is low.
15	There is water in the fuel.
16	The engine oil pressure is low.
17	Red and black symbol: Warning message. Red and white symbol: Error message.
18	The engine is stopped. The operation cannot continue.
19	The engine too hot. The operation cannot continue. Refer to the engine manual for more information.
20	The temperature of the exhaust fumes is high.

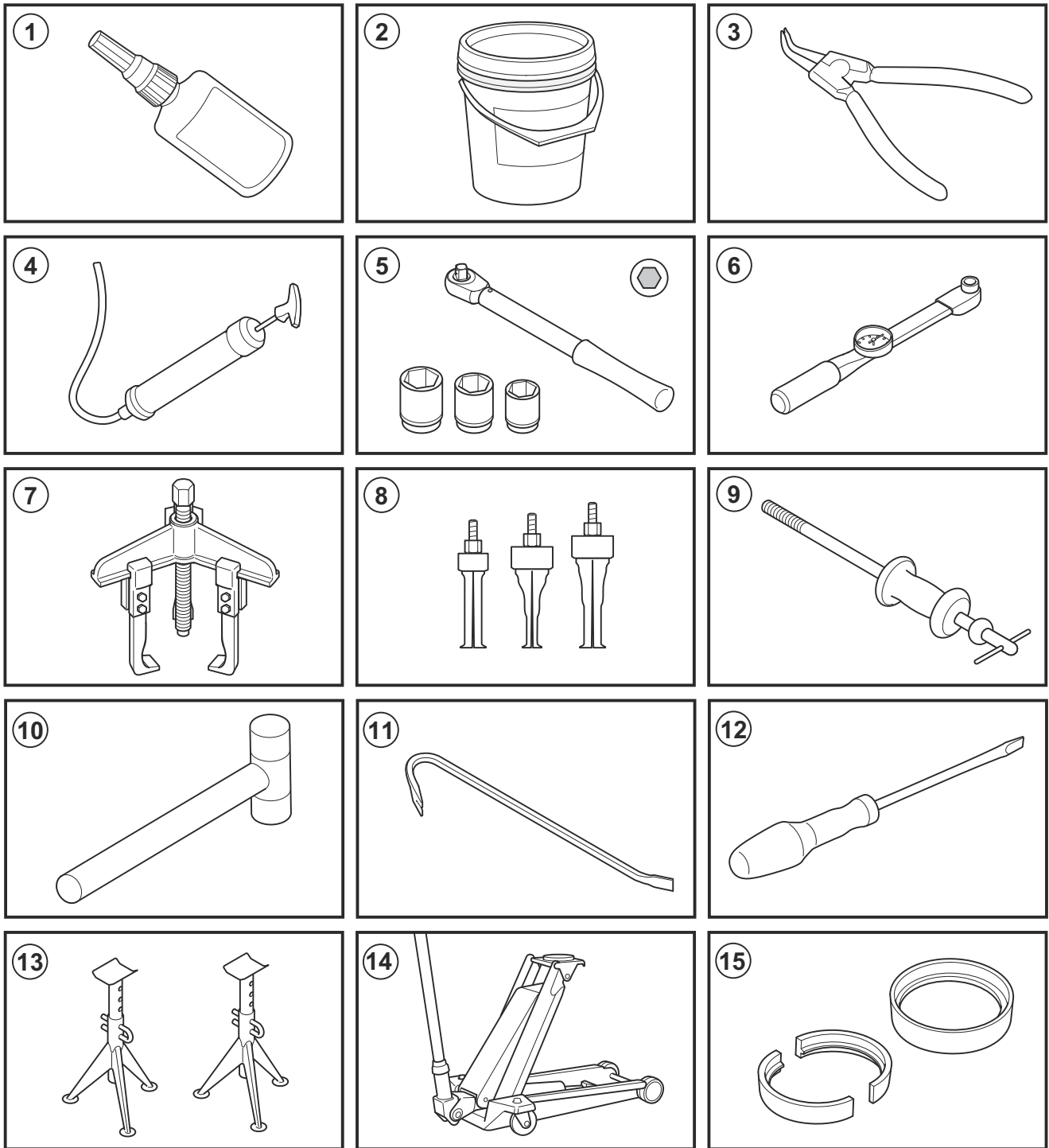
¹ Only applicable for products that comply with the Euro V Emission standard.

3 Tightening torques





4 Placeholder - Servicing tools overview



Item	Description	Use	Article number/Source
1	Loctite	For general use.	N/A
2	Grease	To lubricate the product.	N/A
3	Snap ring pliers	For general use.	N/A
4	Manual oil pump	To replace the hydraulic oil	N/A
5	Socket wrench	For general use.	N/A
6	Torque wrench	For general use.	N/A
7	Puller	To remove the V-belt pulleys.	N/A
8	Internal bearing extractor	To remove the front wheel bearings.	N/A
9	Slide hammer	For general use.	N/A
10	Rubber mallet	For general use.	N/A
11	Crow bar	For general use.	N/A
12	Screwdriver PH/S2, flat-blade 3mm	For general use.	N/A
13	Jack stands	To support the product.	N/A
14	Trolley jack	To support the product.	N/A
15	Special tool	To remove the V-belt pulleys.	541207100

Item	Description	Use	Article number/Source
1	Soft hammer	For general use.	N/A
2	Grease	For general use.	Loctite
3	Torque wrench	For general use.	N/A
4	Hex key, 3mm, 4mm	For general use.	N/A
5	Socket wrench, 10mm	For general use.	N/A
6	Puller	To remove flanges and pulleys.	N/A
7	Screwdriver PH/S2, flat-blade 3mm	For general use.	N/A
8	Wrench, 13mm, 15mm, 16mm	For general use.	N/A
9	Grease gun	To lubricate the product.	N/A
10	Supports	To put below the product for supports.	N/A
11	Wire cutter	For general use.	N/A
12	Snap ring pliers	For general use.	N/A

5 Maintenance schedule

Maintenance	Daily and after transportation	Each 50 h	Each 100 h	Each 250 h	Each 500 h	Yearly	Each 6000 h
Clean the product.	X						
Do a check of the engine coolant level.	X						
Do a check of the engine oil level.	X						
Examine all hoses and hose clamps. Look for damage where the hoses rub against other hoses or parts of the product.	X						
Clean the outer air filter.	X						
Do a check of the protective covers and blade guards.	X						
Drain water from the gearbox.	X						
Do a check of the water supply to the cutting blade.	X						
Drain the water separator for the fuel filter.	X						
Lubricate the pivot on the hydraulic cylinder.	X						
Clean the radiator air filter.		X					
Do a check of the V-belts.		X					
Lubricate the front wheels.		X					
Lubricate the 5th wheel. (Only applicable to products with 5th wheel.)		X					
Replace the engine oil and engine oil filter. ²			X				
Lubricate the pivot bearings of the front axle.			X				
Examine the wheels, the wheel hubs and the parking wedges for damage and make sure that they are installed correctly.			X				
Examine the air filter hose and hose clamps.			X				
Do a check of the hydraulic oil level.			X				
Replace the fuel filter.			X				
Replace the hydraulic system filter.				X			
Lubricate the blade shaft.				X			
Lubricate the rear axle bearing.				X			
Replace the hydraulic oil.					X		
Replace the oil in the gearbox.					X		
Replace the engine coolant.					X		
Replace the air filters.						X	
Do a check of the engine coolant and make sure that the mixture is correct.						X	
Replace the clutch button.							X
Replace the clutch relay.							X

² The first time after 50 h of use.

Maintenance	Daily and after transportation	Each 50 h	Each 100 h	Each 250 h	Each 500 h	Yearly	Each 6000 h
Replace the engine start switch.							X

6 Troubleshooting

6.1 Troubleshooting



WARNING: If the engine or cutting blade stops, lift the cutting blade fully from the cut. Set the

engine start switch to the position "0" and push the machine stop button on the control panel. Examine the product fully before you start the product again.

For more information about warning symbols, refer to .

Problem	Cause	Solution
The engine stops during operation.	The fuel tank is empty.	Fill the fuel tank with correct fuel type.
	The water safety switch stops the engine because there is no water pressure.	Disengage the water safety switch. Do a check of the water supply.
	The machine stop button is pushed down.	Disengage the machine stop.
	The load on the cutting blade is too high.	Listen to the sound of the engine. If the engine speed decreases, pull the lever for speed control rearward.
	A fuse is broken.	Replace broken fuses.
The cutting blade stops during operation.	The drive belt tension is not sufficient.	Examine the tension of the drive belt.
	The blade clutch is disengaged.	Engage the blade clutch to engage the blade drive. Make sure that the engine speed is 1200 rpm or less when you engage the blade clutch.
	The blade clutch has an electrical failure or broken fuse.	Examine the fuses. Replace broken fuses.
The cutting blade lowers too quickly.	The valve that controls the speed for the cutting blade position is open too much.	Turn the knob for adjustment of the blade lowering speed clockwise until an applicable speed is set.
The cutting blade cuts too slowly.	The cutting blade is blunt or the feeding pressure is too high.	Decrease the cutting depth and engine speed for a short time.
The control unit re-starts when you try to start the engine.	The battery voltage is too low.	Charge the battery, replace the battery or use jumper cables.
The product vibrates more than usual.	The blade is damaged.	Replace the blade.

6.2 Codes for different types of messages

Code	Message on the HMI	Cause	Solution
1	"Machine stop button. Pressed."	The machine stop button is engaged.	Disengage the machine stop.
2			
3	"Machine stop state. Active."	The engine start switch has not been set to the position "0" after the machine stop button has been disengaged.	Set the engine start switch to the position "0" and start the product again.
4	"Drive control lever. In wrong position."	The drive control lever is not in the neutral position when the engine tries to start.	Set the drive control lever to the neutral position before you start the engine.
5	"Blade clutch. Engaged."	The blade clutch is engaged when the engine tries to start.	Disengage the blade clutch before you start the engine.
6	"Engine RPM. Too high."	It is not possible to engage the clutch when the engine speed is 1200 RPM or higher.	Lower the engine RPM before you push the clutch button.
7	"Water pressure. Low"	There is no water flow or not sufficient water flow to the water cooling system.	Do a check of the water cooling system. Make sure that the water supply is connected, that it is not clogged and that the water valve is open.
8			
20	"Service. Needed."	It is necessary to do servicing on the product.	Speak to a Husqvarna service agent.
22	"Low idle timer. Engine will shut off soon."	The product has been at low idle speed for more than 5 minutes.	Stop the product.
23	"Low idle timer. Engine is turned off."	The product has been at low idle speed for more than 10 minutes and the engine is stopped.	Restart the product.
40	"Control module. Communication lost."	There is no CAN signal from the control module. It is possible that the product does not operate correctly.	Stop the product and speak to a Husqvarna service agent.
41	"Engine. Communication lost."	There is no CAN signal from the engine ECU. It is possible that the product does not operate correctly.	Stop the product and speak to a Husqvarna service agent.
42	"Control system. Incompatible devices."	The software in the display and the control module do not match.	Operate the product with caution and only for a short distance. Stop the product and speak to a Husqvarna service agent.
43	"Machine configuration. Incorrect."	The configuration in the control module does not agree with the engine on the machine.	Speak to a Husqvarna service agent.
44	"Control module. Internal fault."	The product does not operate correctly.	Speak to a Husqvarna service agent.
45	"Control module. Over temperature."	The internal temperature of the control module is too high.	Speak to a Husqvarna service agent.
46	"Machine stop function. Failure."	The machine stop function does not operate correctly.	Speak to a Husqvarna service agent.
47	"E-track. Malfunction."	The E-track function does not operate correctly.	Speak to a Husqvarna service agent.

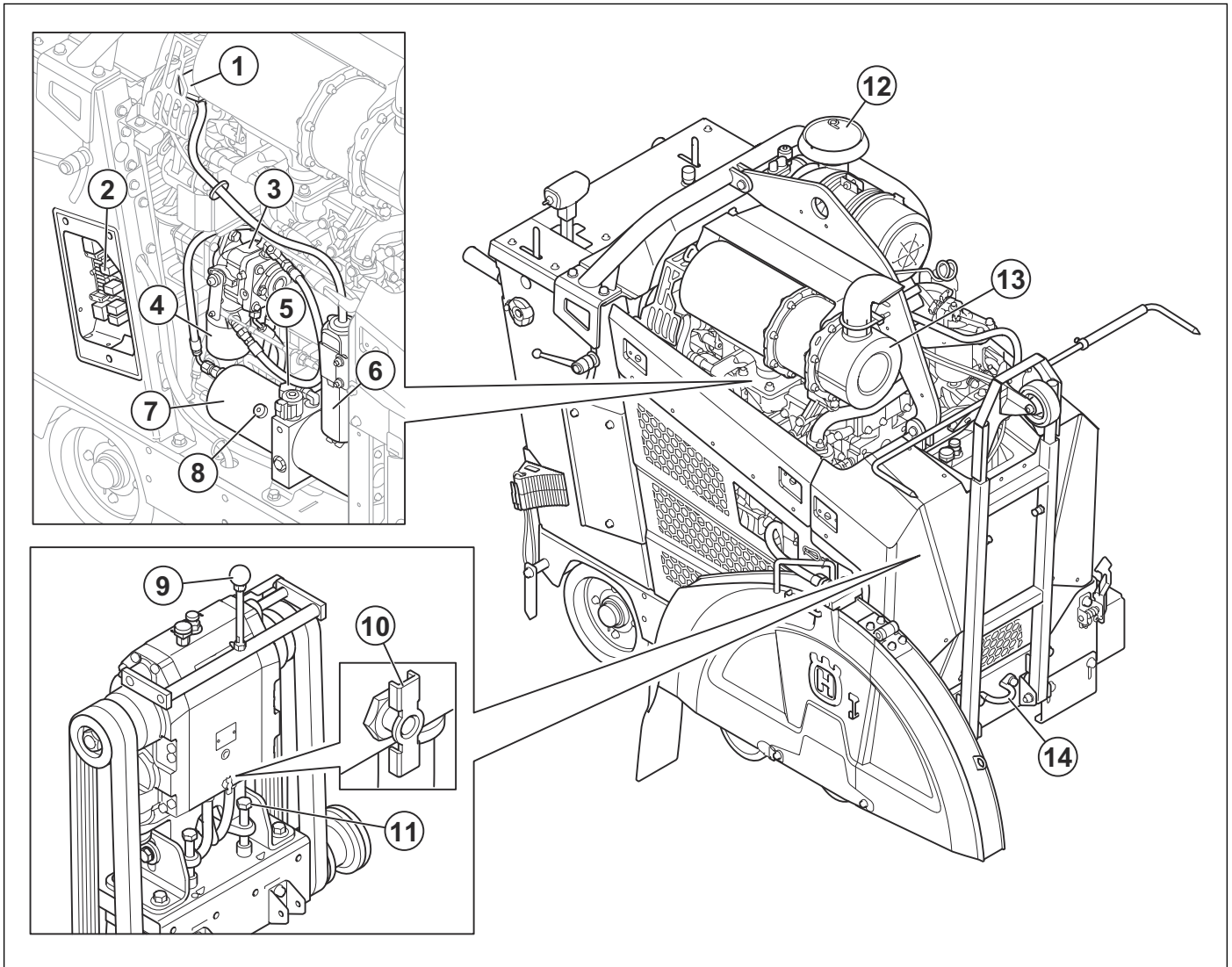
Code	Message on the HMI	Cause	Solution
48	"E-track. Malfunction."	The E-track function does not operate correctly.	Make sure that there is no blockage in the wheels.
			Move the E-track in the opposite direction.
			Speak to a Husqvarna service agent.
50	"E-track. Malfunction."	The position of the E-track can not be determined.	Speak to a Husqvarna service agent.
56	"Battery. Not charging"	The battery does not charge.	Speak to a Husqvarna service agent.
57	"Control module. Uncontrolled shut off."	The machine settings may have been lost.	Speak to a Husqvarna service agent.
61	"Ignition output. Malfunction."	There is a fault in the control signal for the ECU ignition.	Speak to a Husqvarna service agent.
62	"Crank output. Malfunction."	There is a fault in the control signal for the ECU engine start.	Speak to a Husqvarna service agent.
63	"Hydraulic pump. Malfunction."	There is a fault in the control signal for the hydraulic lift pump relay.	Speak to a Husqvarna service agent.
64	"Hydraulic valve. Malfunction."	There is a fault in the control signal for the hydraulic lowering valve.	Speak to a Husqvarna service agent.
65	"Clutch output. Malfunction."	There is a fault in the control signal for the clutch relay.	Speak to a Husqvarna service agent.
66	"Work light. Malfunction."	There is a fault in the control signal for the work light relay.	Speak to a Husqvarna service agent.
67	"5th wheel. Malfunction."	There is a fault in the control signal for the 5th wheel relay.	Speak to a Husqvarna service agent.
68	"Water pump. Malfunction."	There is a fault in the control signal for the water pump relay.	Speak to a Husqvarna service agent.
69	"ECU relay. Malfunction."	There is a fault in the control signal for the ECU relay.	Speak to a Husqvarna service agent.
70	"Start enable. Malfunction."	There is a fault in the control signal for the start enable relay.	Speak to a Husqvarna service agent.
71	"External power. Malfunction."	There is a fault in the power supply for the switch and sensors in the product control system.	Speak to a Husqvarna service agent.
72	"Unused pin X1.36. Malfunction."	There is a fault in the wiring harness.	Speak to a Husqvarna service agent.
73	"Unused pin X1.39. Malfunction."	There is a fault in the wiring harness.	Speak to a Husqvarna service agent.
74	"Unused pin X1.40. Malfunction."	There is a fault in the wiring harness.	Speak to a Husqvarna service agent.
79	"Engine start switch. Start signal failure."	There is a fault in the control signal from the engine start switch.	Stop the product and make sure that you do all the steps that are necessary when you start the product.

Code	Message on the HMI	Cause	Solution
80	"Machine stop button. Malfunction."	There is a fault in the control signal from the machine stop button.	Speak to a Husqvarna service agent.
81	"Water pressure switch. Malfunction"	There is a fault in the control signal from the water pressure switch.	Speak to a Husqvarna service agent.
82	"Blade raise switch. Malfunction"	There is a fault in the control signal from the blade raise switch.	Speak to a Husqvarna service agent.
83	"Blade lowering switch. Malfunction."	There is a fault in the control signal from the lowering switch.	Speak to a Husqvarna service agent.
84	"Neutral sensor. Malfunction."	There is a fault in the control signal from the neutral sensor.	Speak to a Husqvarna service agent.
85	"Unused pin X1.29. Malfunction."	There is a fault in the wiring harness.	Speak to a Husqvarna service agent.
86	"Clutch switch. Malfunction."	There is a fault in the control signal from the clutch switch.	Speak to a Husqvarna service agent.
87	"Unused pin X1.10. Malfunction."	There is a fault in the wiring harness.	Speak to a Husqvarna service agent.
88	"E-track position sensor. Malfunction."	There is a fault in the signal from the E-track position sensor.	Speak to a Husqvarna service agent.
89	"Blade speed sensor. Malfunction."	There is a fault in the signal from the blade speed sensor.	Speak to a Husqvarna service agent.
90	"Blade depth encoder. Malfunction."	There is a fault in the signal from the blade depth encoder.	Speak to a Husqvarna service agent.
91			
92	"Engine speed encoder. Malfunction."	There is a fault in the signal from the engine speed encoder.	Speak to a Husqvarna service agent.
93			
94	"Blade depth. Malfunction."	There is a fault in the signal from the blade depth sensor.	Speak to a Husqvarna service agent.
100	"Regeneration. Requested."	The soot load in the DPF is too high.	Make sure that the fuel level is minimum 50% and do a stationary regeneration.
101	"Regeneration. Required."	The soot load in the DPF is too high, and the engine operates at decreased speed until a regeneration is done.	Make sure that the fuel level is minimum 50% and do a stationary regeneration.
102	"Regeneration. Limp home."	The soot load in the DPF is too high, and the engine operates at decreased torque and speed until a regeneration is done.	Stop the product. Make sure that the fuel level is minimum 50% and do a recovery regeneration.
103	"Regeneration. Requested."	The soot load in the DPF is too high.	Make sure that the fuel level is minimum 50% and do a regeneration.
104	"Regeneration. Limp home."	The soot load in the DPF is too high, and the engine operates at decreased torque until a regeneration is done.	Make sure that the fuel level is minimum 50% and do a regeneration.

Code	Message on the HMI	Cause	Solution
105	"Regeneration. Limp home."	The soot load in the DPF is too high, and the engine operates with decreased torque and at low speed.	Speak to a Husqvarna service agent.
106	"DPF failure. Limp home."	The soot load in the DPF is too high, and the engine operates with decreased torque and at low speed.	Speak to a Husqvarna service agent.
107	"DPF ash load. High."	The ash load in the DPF is too high.	Speak to a Husqvarna service agent.
108		The ash load in the DPF is too high and the engine operates at decreased torque.	
109			
110	"Engine. NOx diagnostics error."	There is a fault in the EGR gas temperature sensor.	Speak to a Husqvarna service agent.
111	"Engine. NOx or engine error."	NOx emission related failure in the exhaust aftertreatment systems.	Speak to a Husqvarna service agent.
112	"Exhaust. High temperature."	The temperature of the exhaust fumes is high.	N/A
120	"Oil pressure. Low"	The oil pressure is low.	Do a check of the engine oil level.
121	"Engine coolant. Over temperature."	The engine is too hot.	Do a check of the engine coolant level and fill engine coolant if it is necessary.
			Do a check of the radiator air filter and clean it if it is necessary.
122	"Fuel pressure. Low."	The fuel level is too low.	Fill fuel.
123	"Fuel system. Water level high."	There is too much water in the water separator.	Drain the water separator.
124	"Fuel system. Water level high."	There is too much water in the water separator, and the engine operates at low speed until the water separator has been drained.	Drain the water separator.

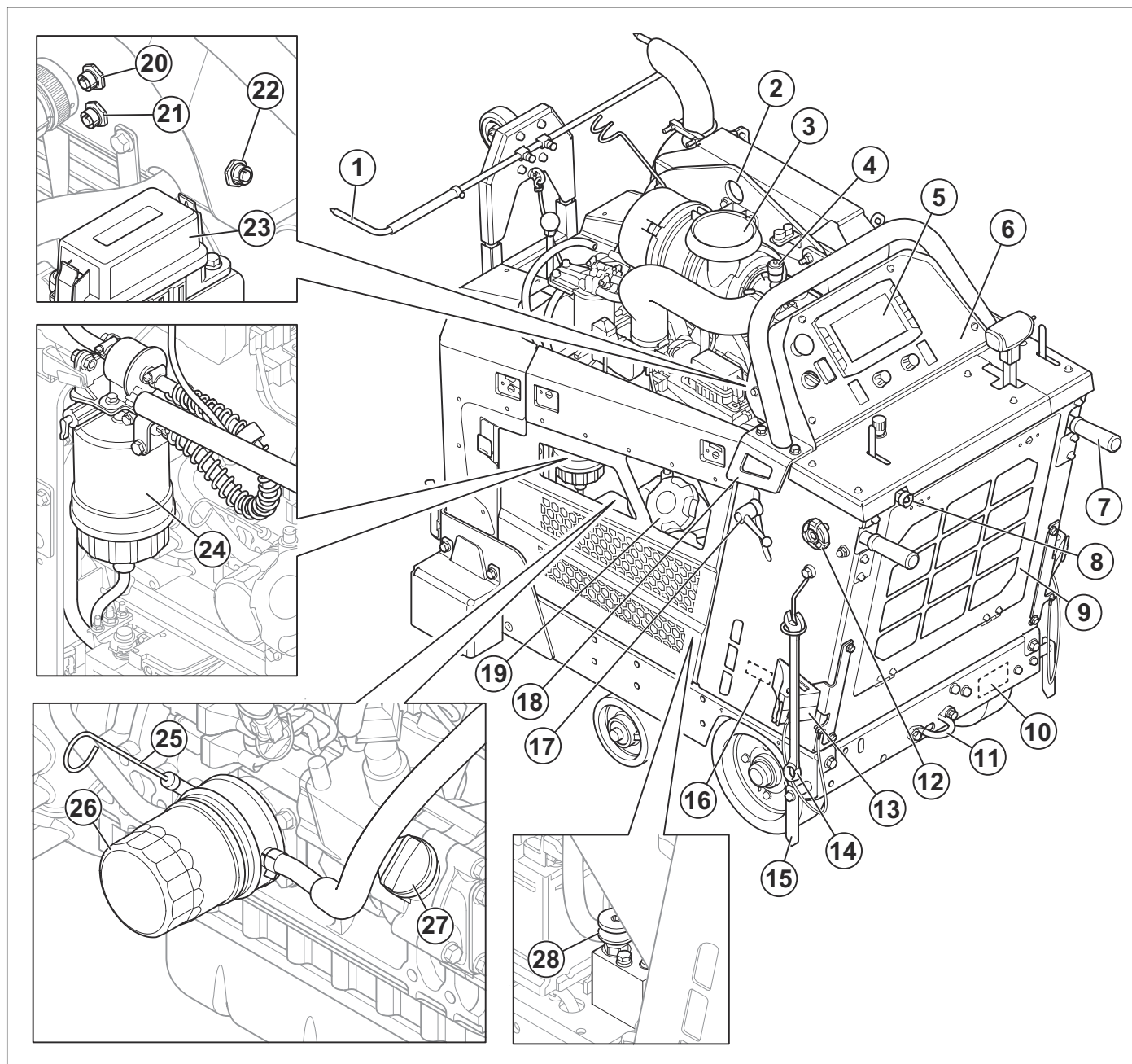
7 Product overview for repair and servicing

7.1 Product overview, right side



- | | |
|---|--|
| 1. Engine coolant lid | 9. Gearshift level, 3-speed gearbox model |
| 2. Relay and fuse box. Refer to <i>Diagrams on page 101</i> . | 10. Water drain valve for the gearbox |
| 3. Pump for the hydrostatic transmission | 11. Bolt for belt tension |
| 4. Hydraulic system filter | 12. Air filter |
| 5. Hydraulic reservoir opening | 13. Muffler |
| 6. Container for engine coolant spill | 14. Front tie down bracket |
| 7. Hydraulic reservoir | 15. Parking wedge (optional for North America) |
| 8. Pump for the hydraulic lift | |

7.2 Product overview, left side

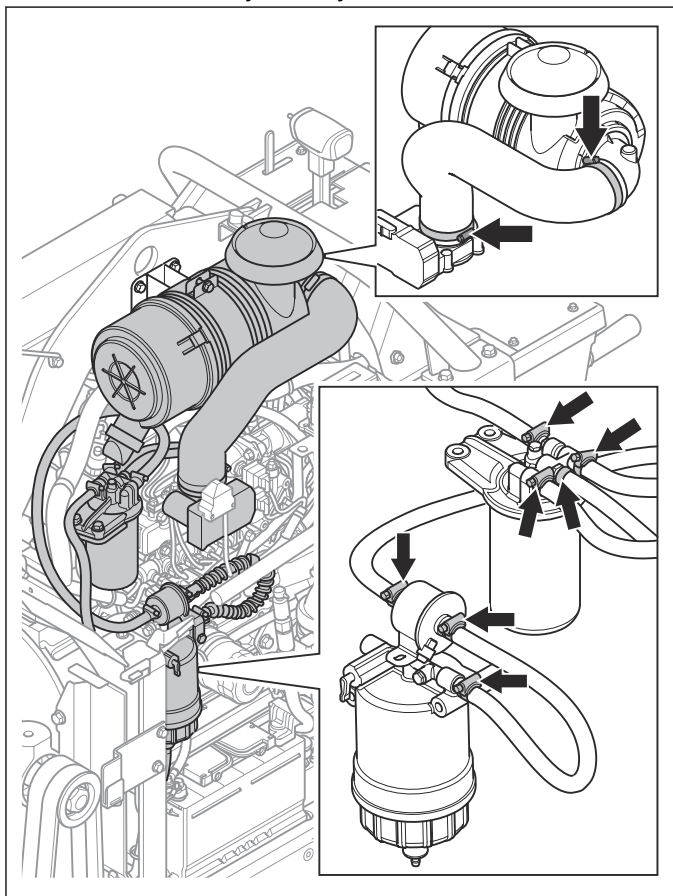


- | | |
|---|--|
| 1. Adjustable pointer | 16. Type plate for US/Canada |
| 2. Lift point | 17. Locking knob for operation handles, adjustment in height |
| 3. Air filter | 18. Rear tie-down bracket |
| 4. Air filter indicator | 19. Fuel tank cap |
| 5. Human machine interface. Refer to <i>Overview of the Human Machine Interface (HMI)</i> on page 50. | 20. -X54 camera |
| 6. Control panel. Refer to <i>Overview of the control panel</i> on page 49. | 21. -X77 connectivity |
| 7. Operation handles | 22. -X50 HSH |
| 8. Water inlet | 23. Relay and fuse box |
| 9. Radiator air filter | 24. Water separator for the fuel filter |
| 10. Type plate for EU | 25. Engine oil dipstick |
| 11. Rear tie-down bracket | 26. Engine oil filter |
| 12. Locking knob for operation handles, adjustment in length | 27. Engine oil tank cap |
| 13. Parking wedge | |
| 14. Wrench | |
| 15. Rear pointer | |

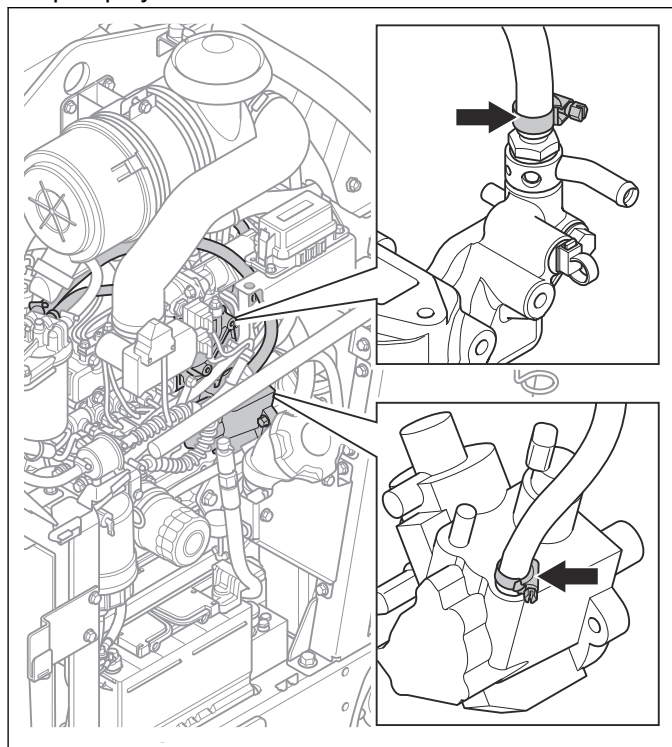
8 Repair and servicing

8.1 To do a check of the hoses and hose clamps

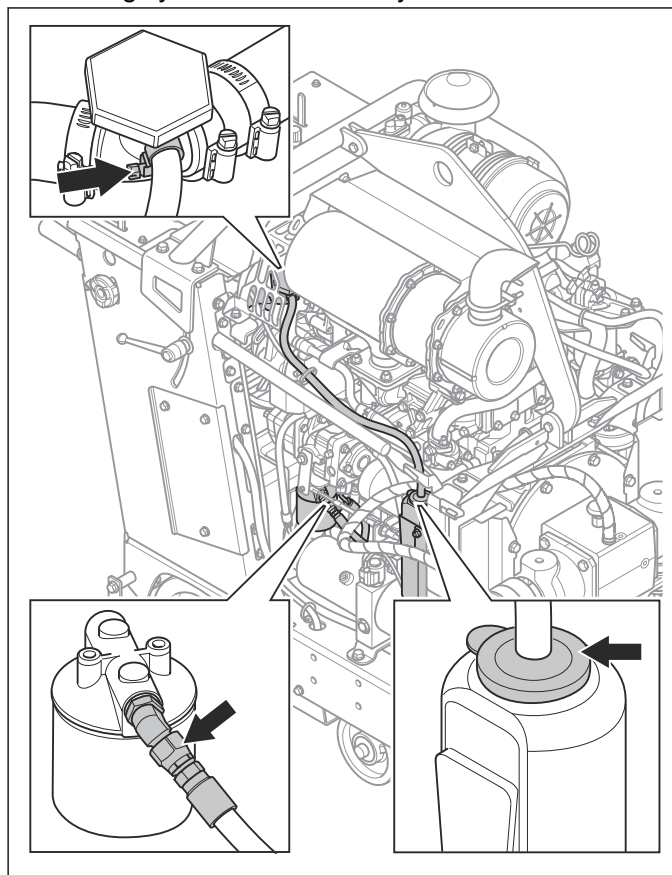
- Do a check of the hoses and hose clamps to the air intake and fuel system system.



- Do a check of the hoses and hose clamps to the fuel pump system.



- Do a check of the hoses and hose clamps to the cooling system and the fuel system.



8.2 To do a check of the fixtures, nuts and bolts

- Make sure that all fixtures are correctly tightened. Tighten the fixtures if it is necessary.
- Make sure that bolts and nuts are correctly tightened. Tighten the bolts and nuts if it is necessary.

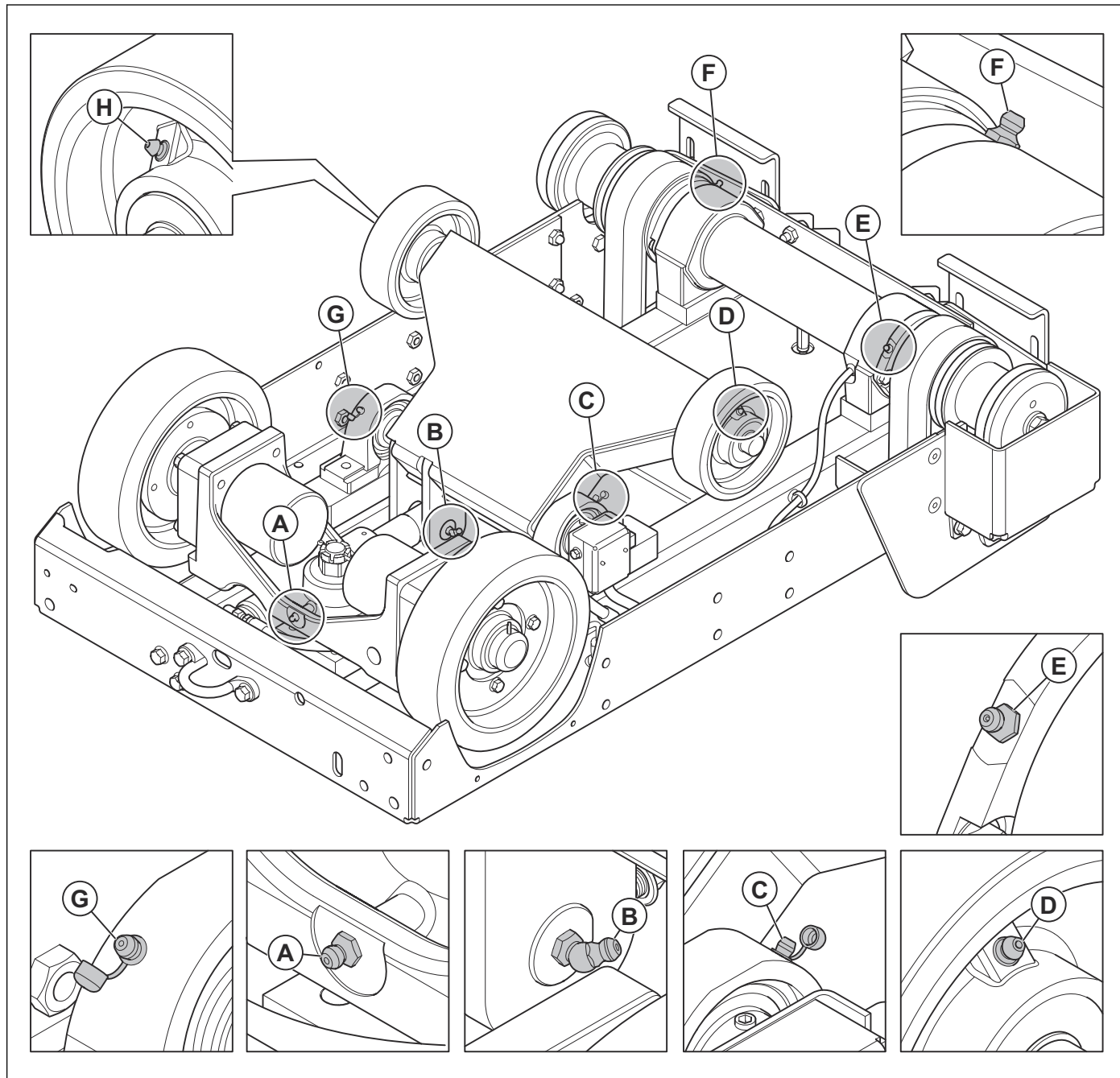
8.3 To do a check of the coolant mixture

The coolant mixture must be ethylene glycol and water, 50/50 mixture.

Note: Use only ethylene glycol in this engine.

- Do not mix the coolant mixture in the tank for the coolant mixture. Mix the coolant mixture in a separate container.

8.4 To lubricate the product



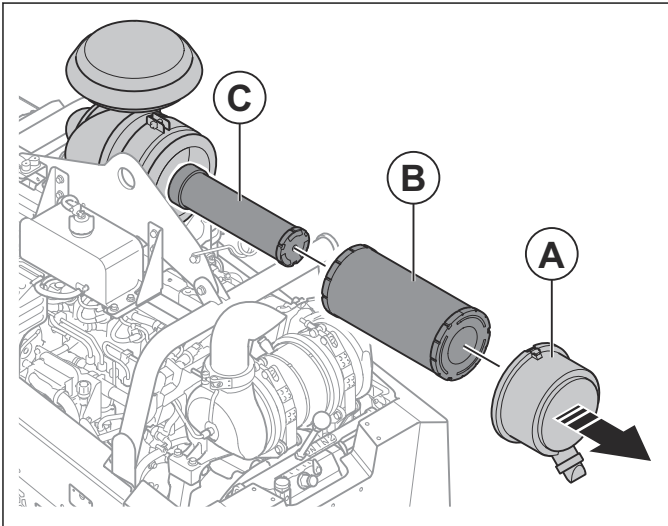
1. Remove the cutting blade from the product.
2. Clean the grease nipple (A). Replace it if it is broken or blocked.
3. Push grease trough the grease nipple (A).
4. Raise the front part of the product. Refer to *To raise the front part of the product on page 30*.
5. Clean the grease nipples (B)–(H).
6. Replace broken or blocked grease nipples.

7. Lubricate the front wheels.
 8. Lubricate the pivot bearings of the front axle.
 9. Lubricate the blade shaft. Push the grease pump 2 times at each end of the blade shaft.
 10. Lubricate the pivot pin on the hydraulic cylinder.
 11. Lubricate the rear axle bearing.
3. Install the air filters in opposite sequence.

For more information about lubrication, refer to *Technical data on page 115*.

8.5 To replace the air filters

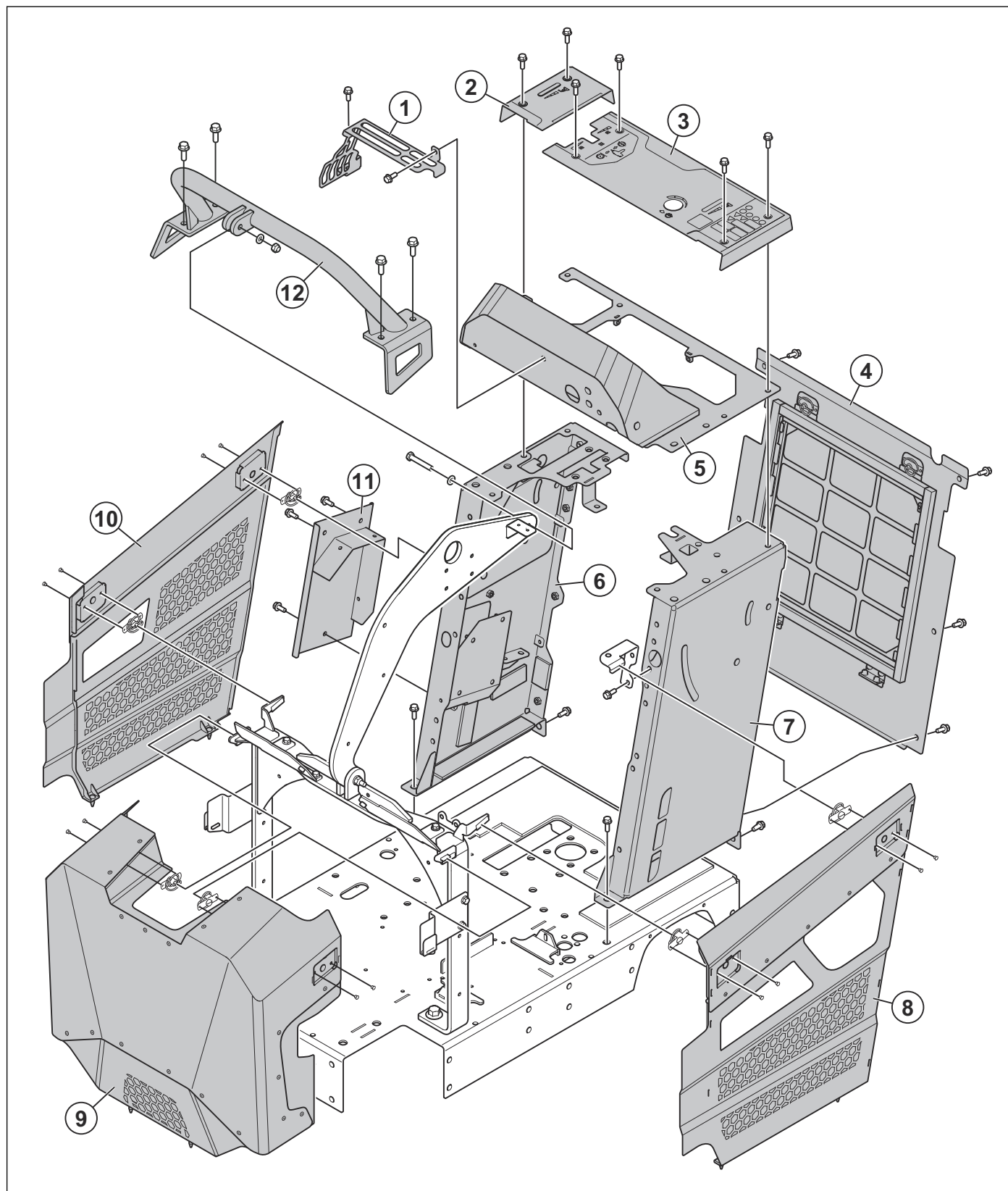
1. Remove the air filter housing (A).



2. Remove the outer air filter (B) and the inner air filter (C).

8.6 Frame

8.6.1 Covers overview



- | | |
|-------------------------------|----------------------------------|
| 1. Protection cover | 7. Left rear cover |
| 2. Narrow control panel cover | 8. Left side cover |
| 3. Wide control panel cover | 9. Front cover |
| 4. Rear cover | 10. Right cover |
| 5. Control panel housing | 11. Cover for relay and fuse box |
| 6. Right rear cover | 12. Bracket, rear lift bail |

8.6.2 To lift the product



WARNING: Make sure that the lifting equipment has the correct dimension.



WARNING: Do not lift a damaged product. Make sure that the lifting eye is correctly installed and not damaged.

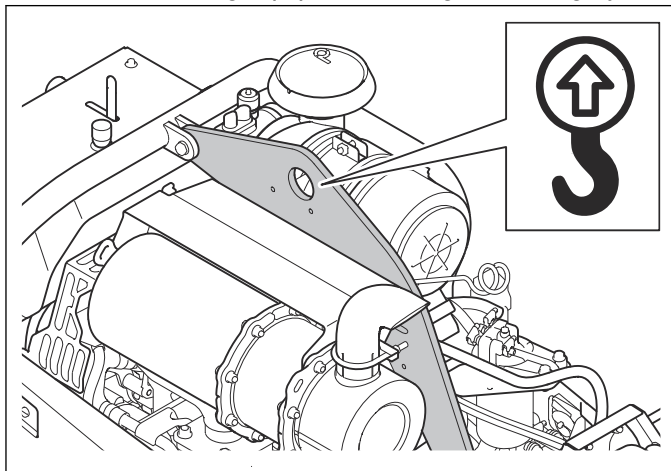


WARNING: Do not walk or stay below or near a lifted product.

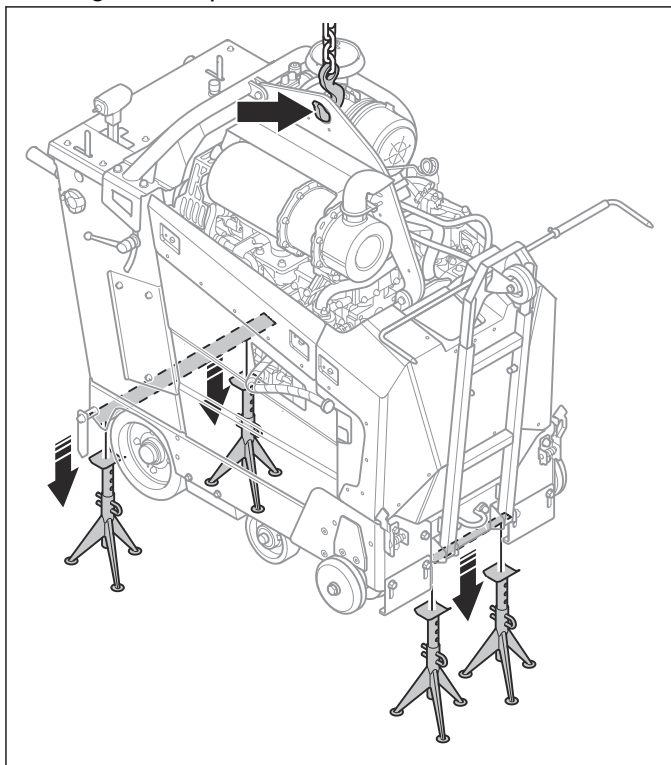


CAUTION: Do not use the operation handles to lift the product.

1. Attach the lifting equipment through the lifting eye.

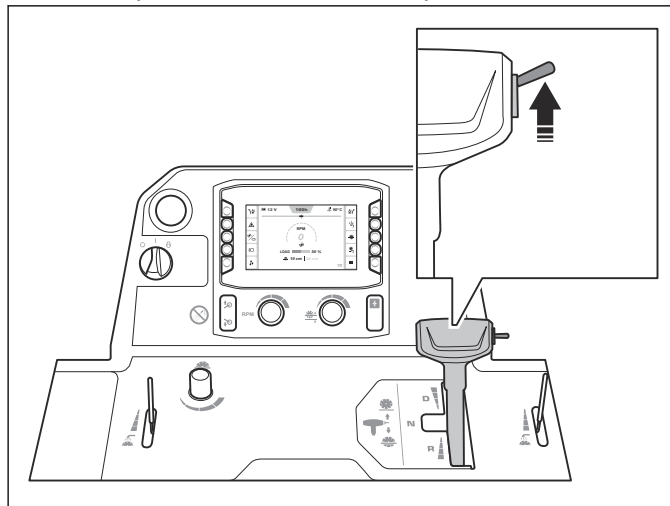


2. Lift the product and lower it on to 4 jack stands. Make sure that the lifting equipment still supports the weight of the product.



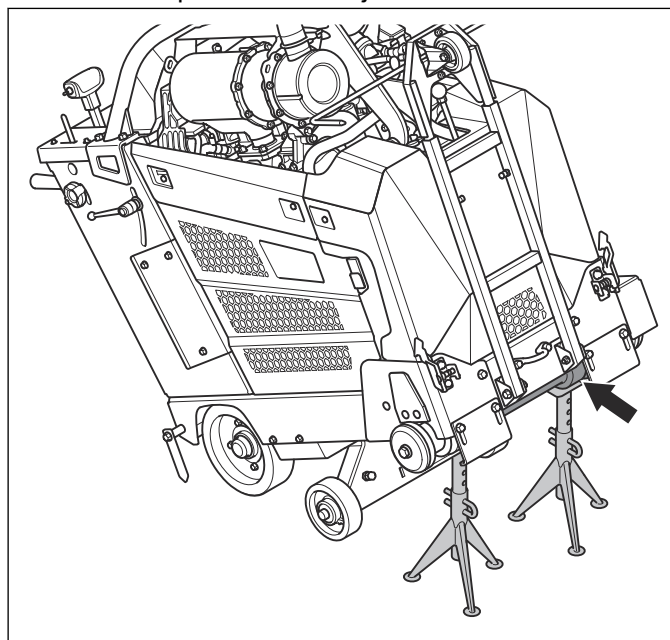
8.6.3 To raise the front part of the product

1. Push up the switch to raise the product.



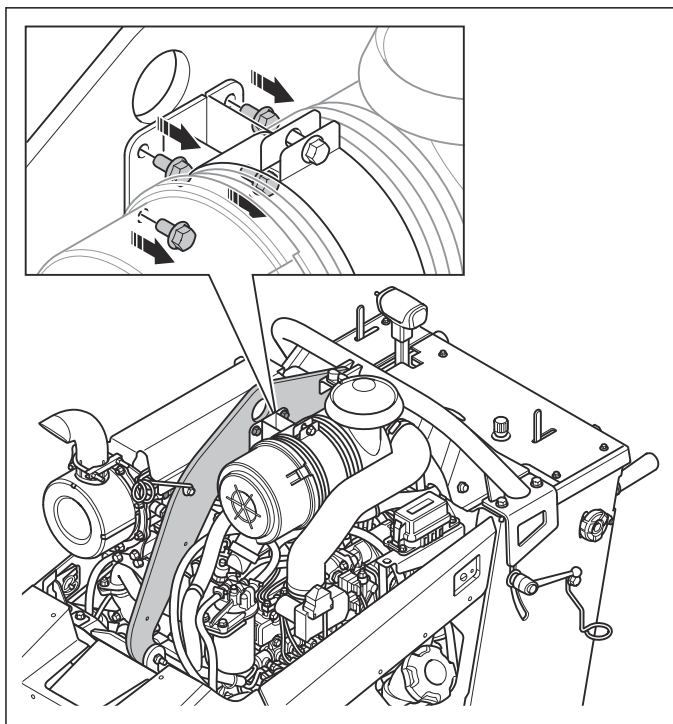
WARNING: If you have the 5th wheel engaged, keep your feet away from the 5th wheel when you lift the cutting blade. There is a risk of crush injuries.

2. Put 2 jack stands below the front axle.
3. Lower the product on to 2 jack stands.

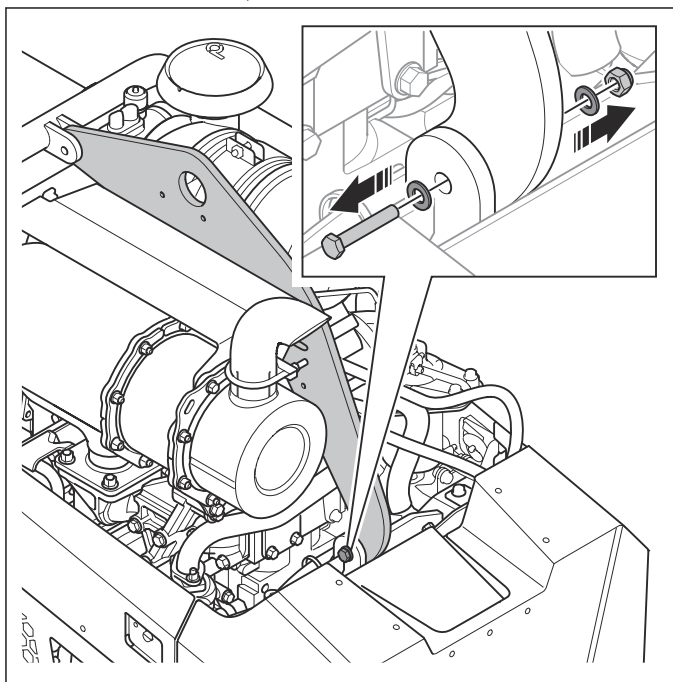


8.6.4 To remove and install the lifting eye

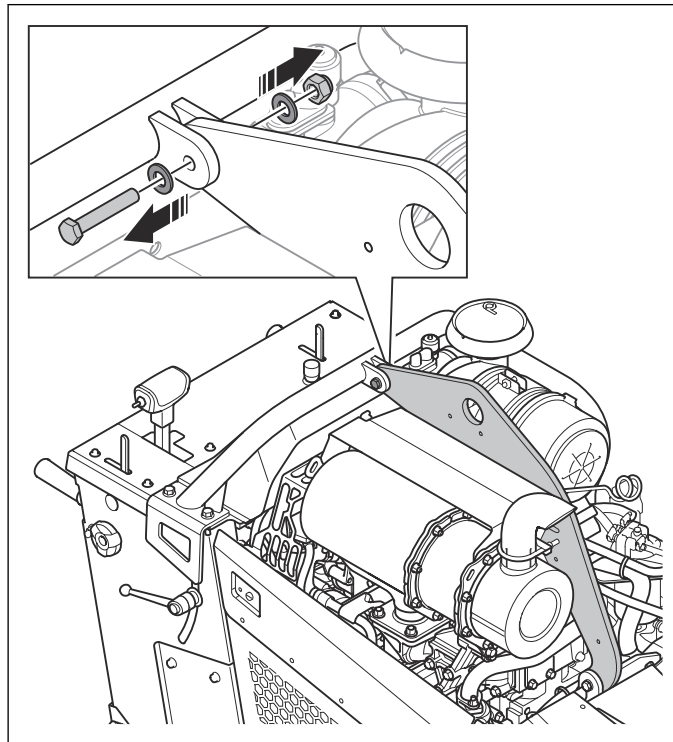
1. Remove the 4 screws.



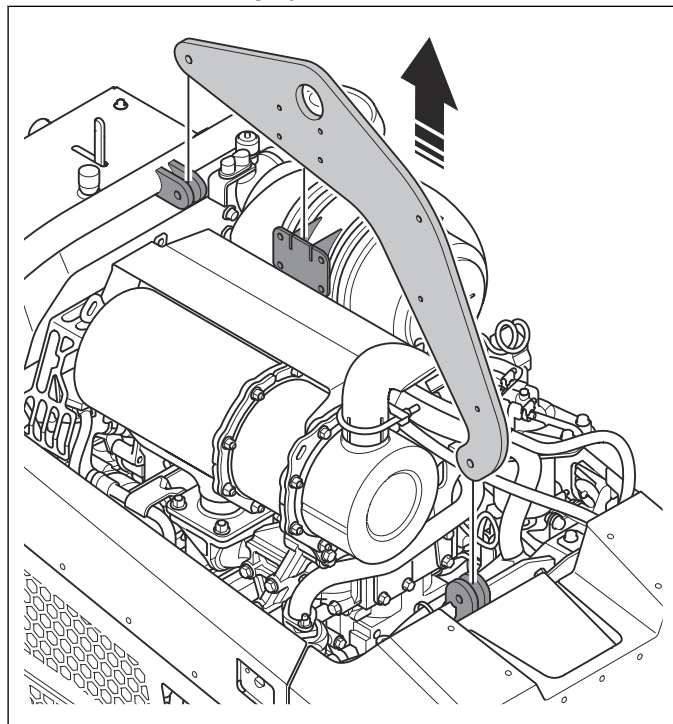
2. Remove the bolt, the nut and the 2 washers.



3. Remove the bolt, the nut and the 2 washers.



4. Remove the lifting eye.



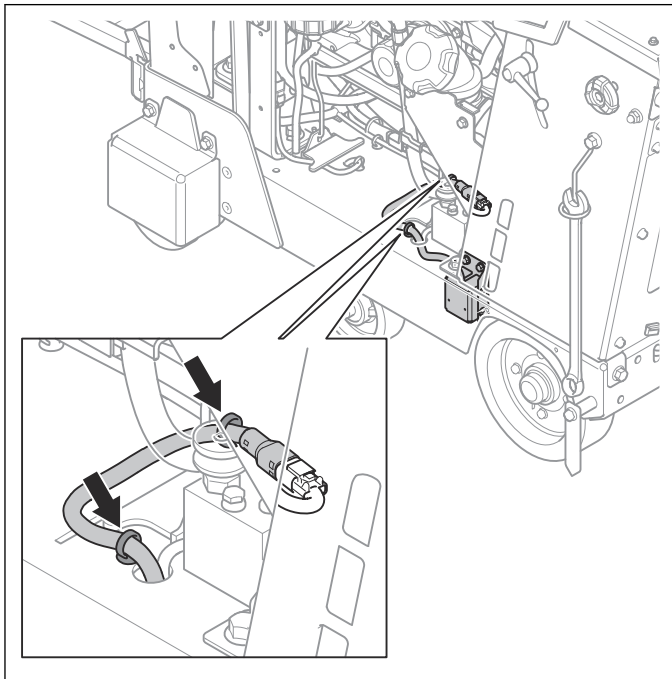
5. Install in the opposite sequence.

8.7 Electrical system

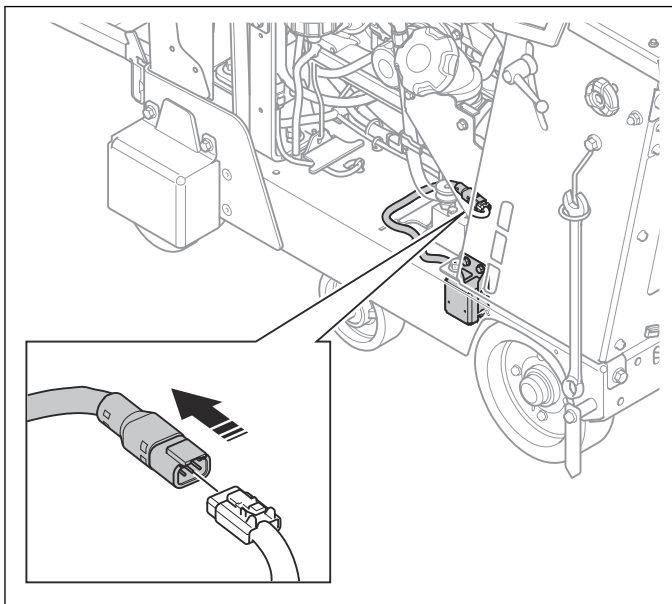
8.7.1 To remove and install the blade depth sensor

1. Remove the left side cover. Refer to *Covers overview on page 29*.
2. Remove the battery.

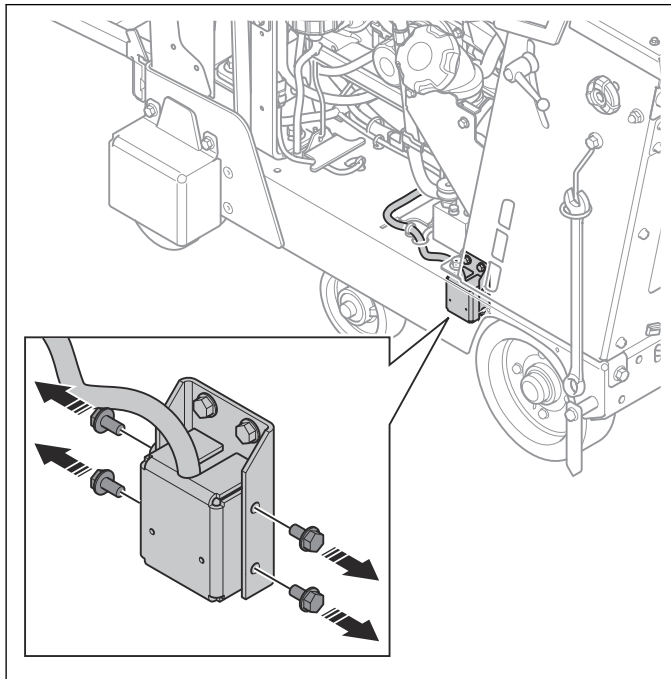
3. Cut the 2 cable ties.



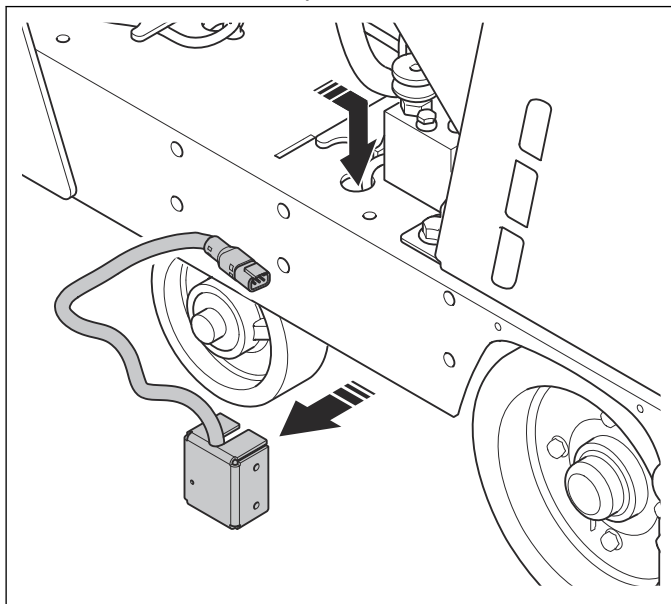
4. Disconnect the connector.



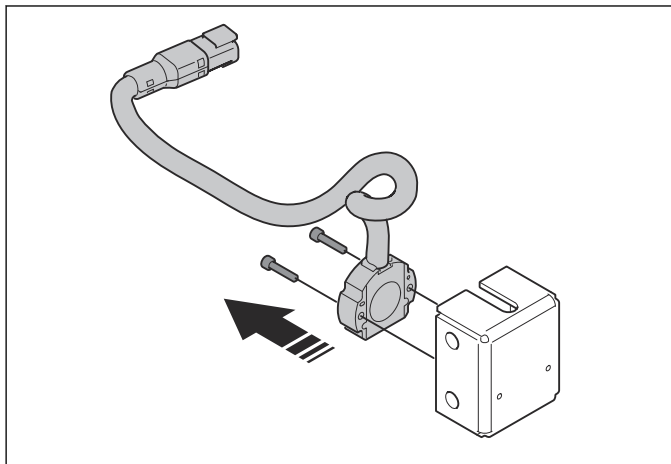
5. Remove the 4 screws.



6. Remove the blade depth sensor with the cover.



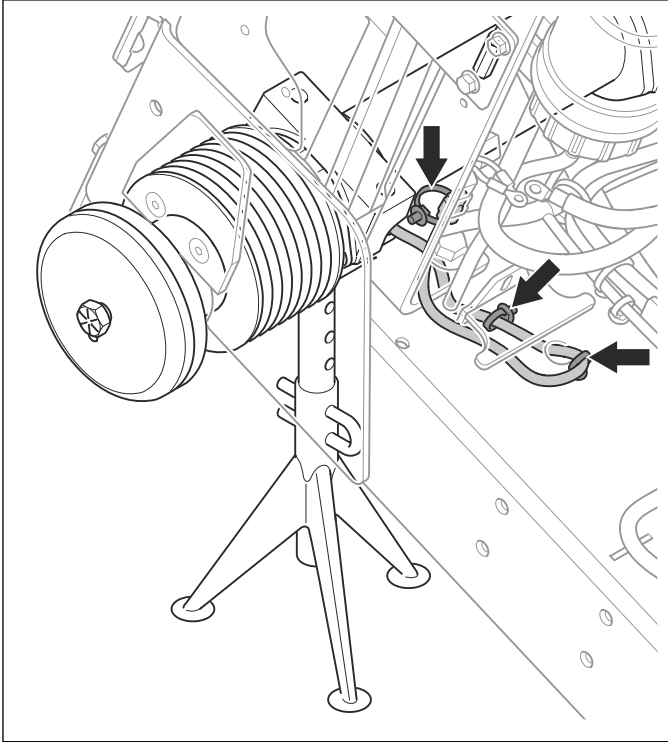
7. Remove the 2 screws. Remove the blade depth sensor from the cover.



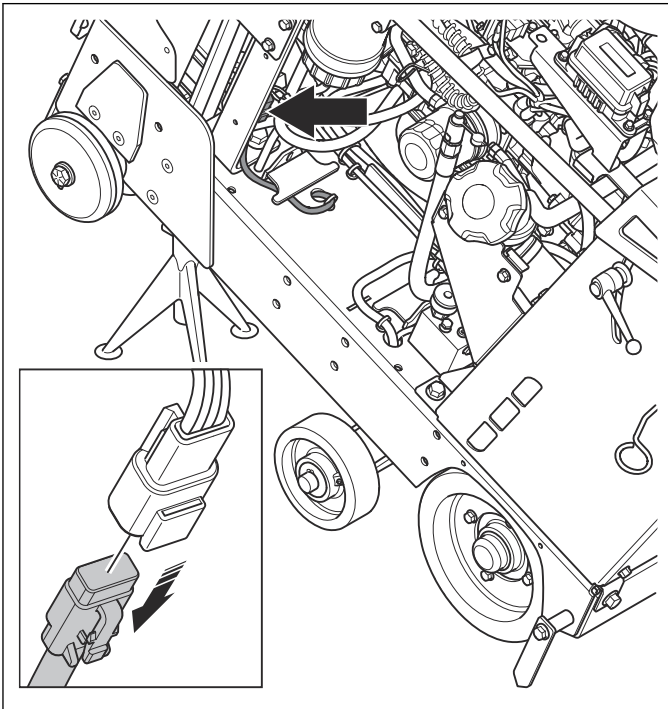
8. Install the blade depth sensor in the opposite sequence.

8.7.2 To remove and install the blade speed sensor

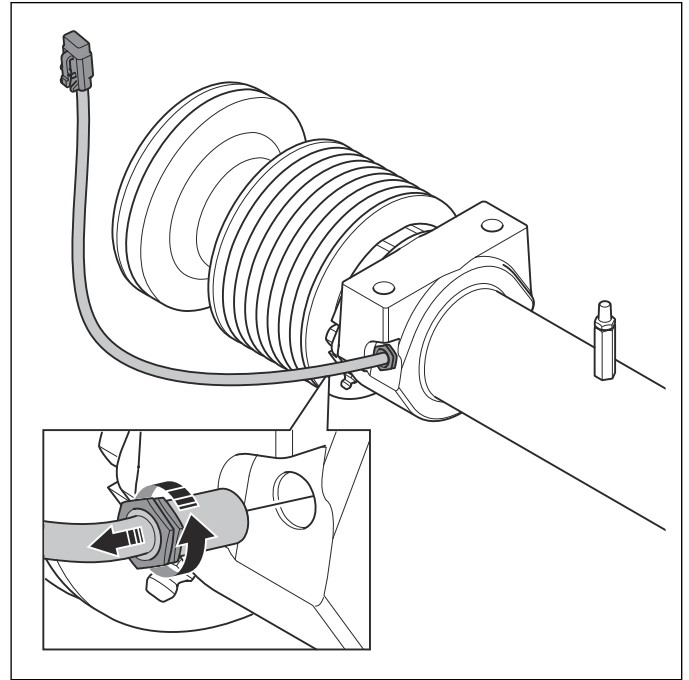
1. Raise the front part of the product. Refer to *To raise the front part of the product on page 30*.
2. Remove the left side cover. Refer to *Covers overview on page 29*.
3. Remove the battery.
4. Cut the 3 cable ties.



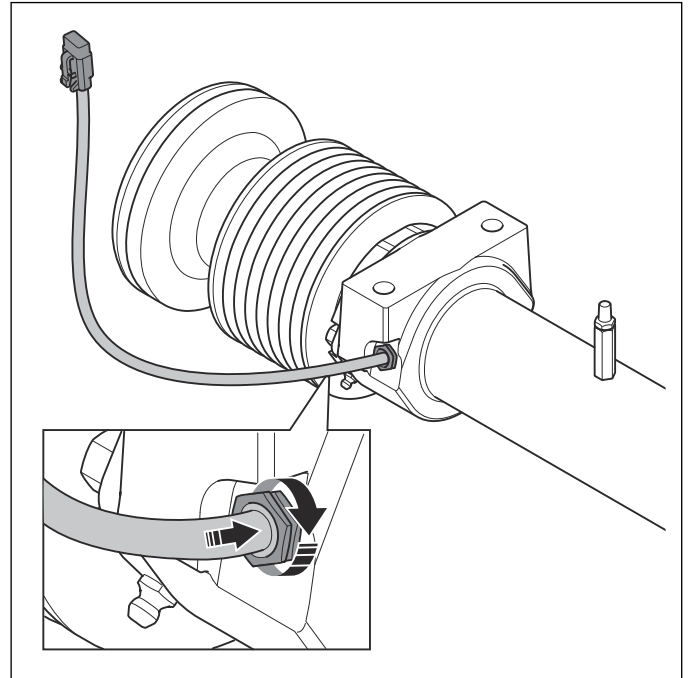
5. Disconnect the connector.



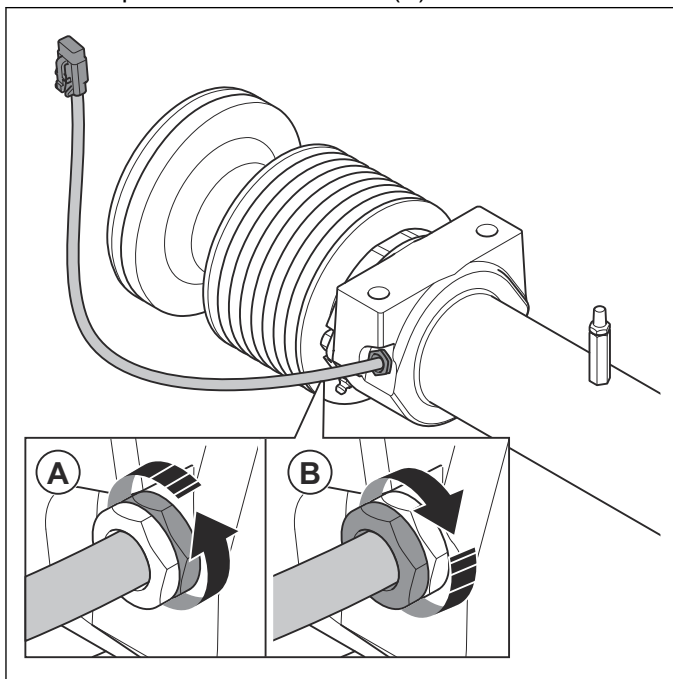
6. Remove the blade speed sensor.



7. Install the new sensor and tighten it fully.

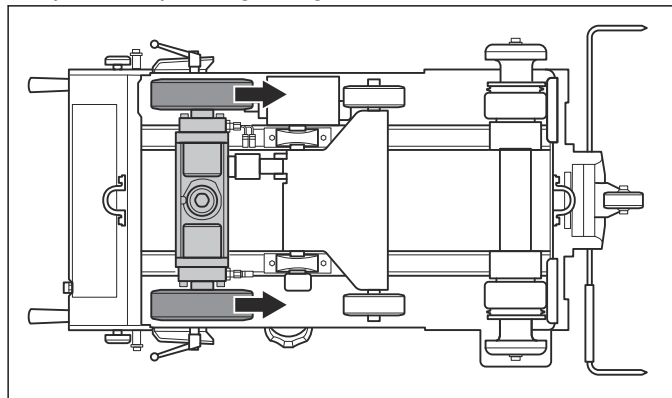


8. Loosen the blade speed sensor (A) 2 turns and lock it into place with the lock nut (B).

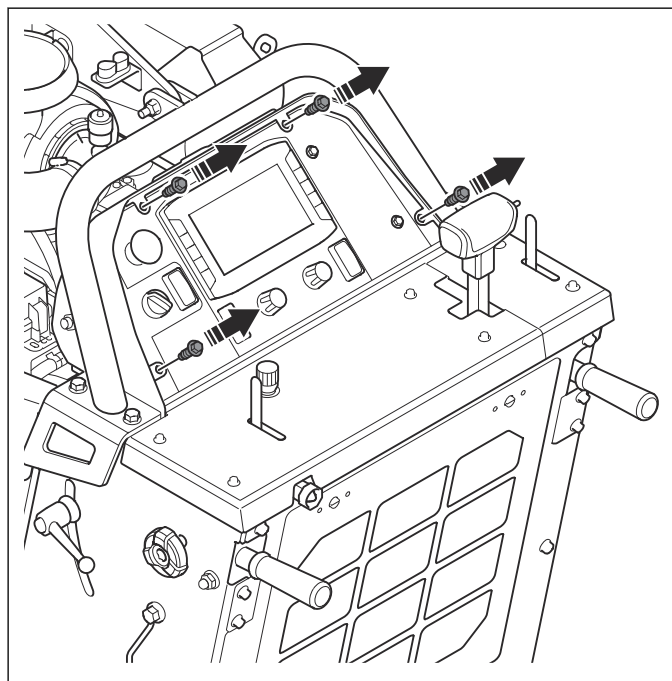


8.7.3 To remove and install the E-track

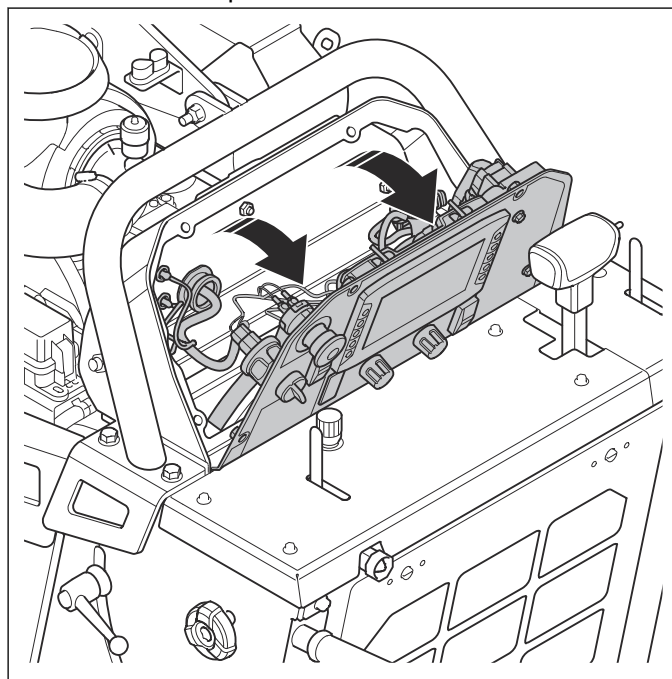
1. Make sure that the rear wheels are in a neutral position, pointing straight forward.



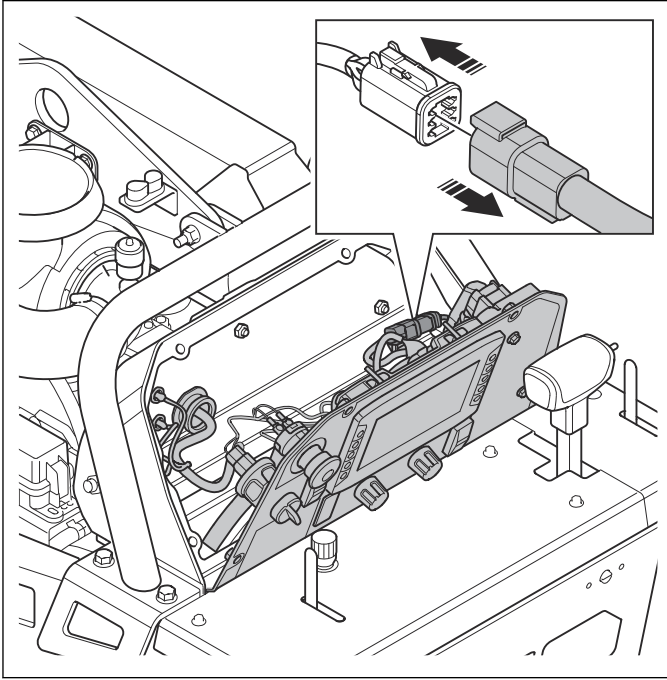
2. Remove the 4 bolts.



3. Tilt the control panel forward.



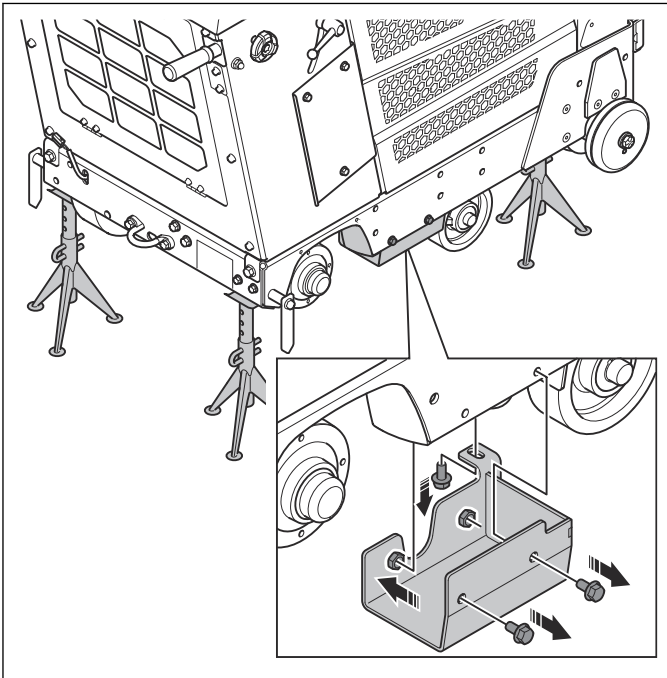
4. Disconnect the connector for the E-track.



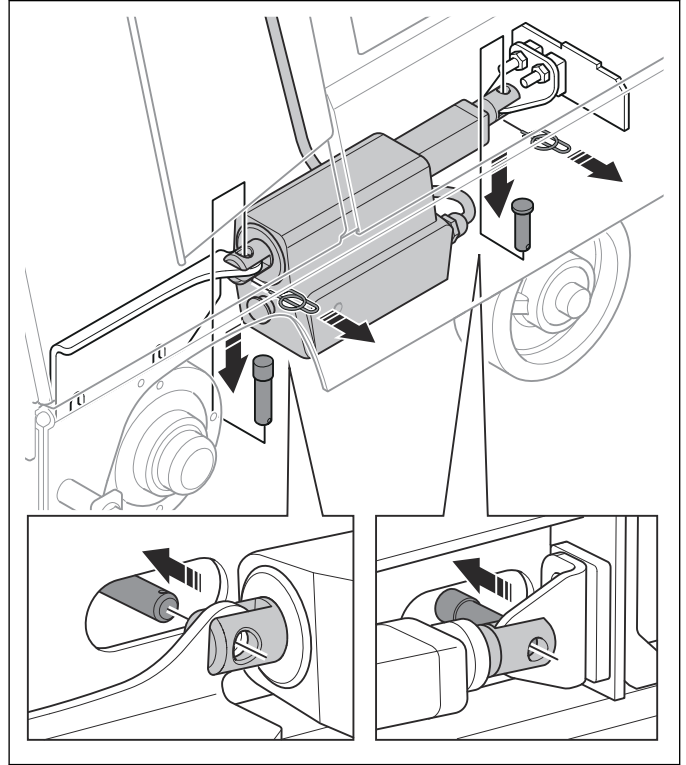
5. Lift the product and put supports below the product. Refer to *To lift the product on page 30*.

6. Remove the right rear wheel. Refer to *To remove and install the rear wheels on page 94*.

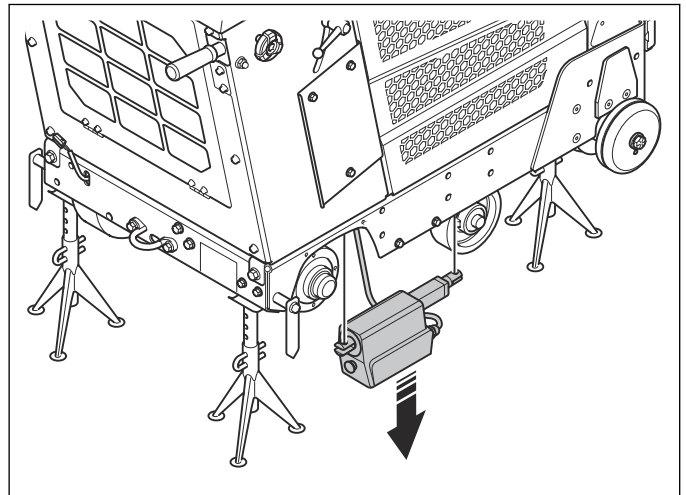
7. Remove the screw, the 2 bolts, the 2 nuts and the cover.



8. Remove the 2 pins.

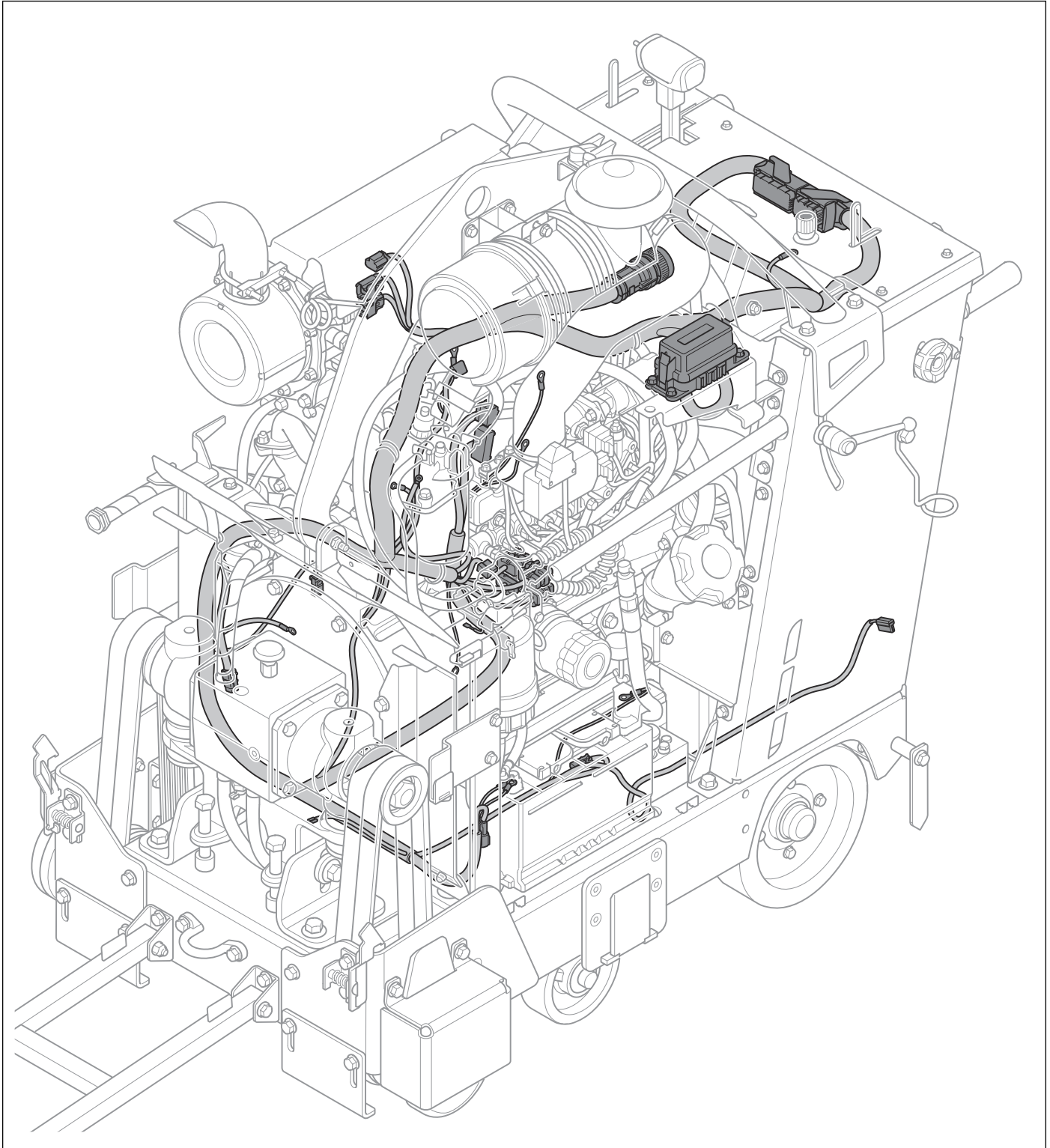


9. Remove the E-track.



10. Install the E-track in the opposite sequence.

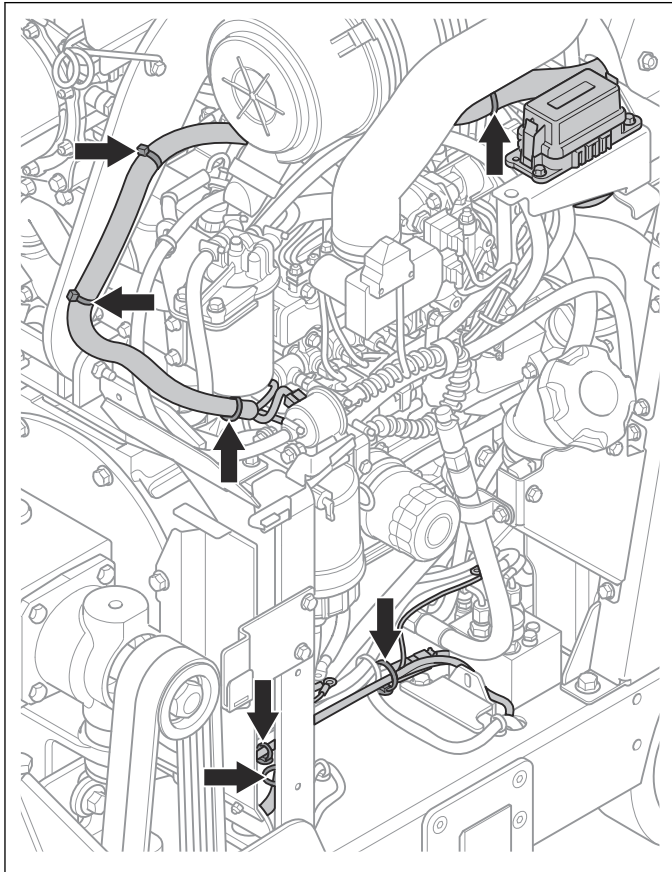
8.7.4 Overview of the main wiring harness



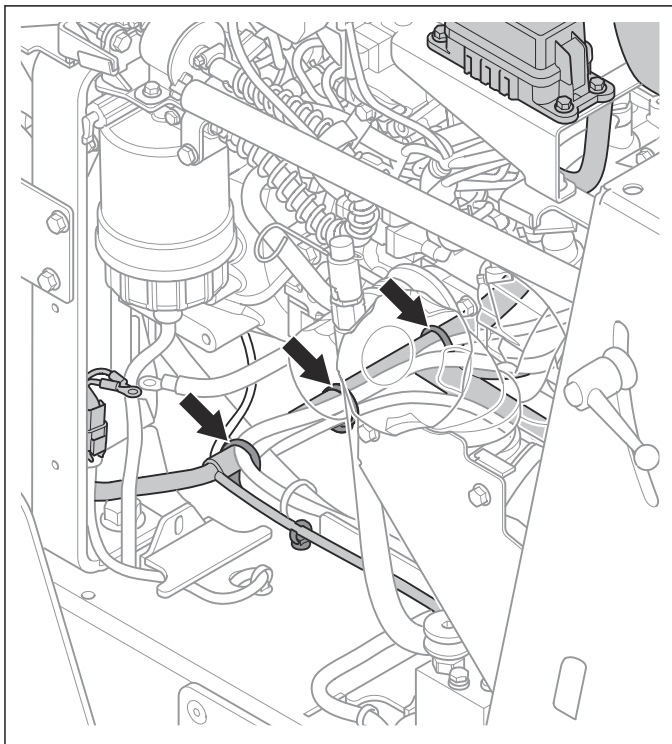
8.7.4.1 To disconnect and connect the wiring harness

1. Remove the control panel. Refer to *To remove and install the control panel on page 51*.
2. Remove the rear cover, the right side cover, the left side cover, the front cover, the cover for the relay and fuse box, the narrow control panel cover, the wide control panel cover and the control panel housing. Refer to *Covers overview on page 29*.
3. Remove the battery.
4. Remove the electrical harness for the control panel. Refer to *To remove and install the electrical harness for the control panel on page 55*.

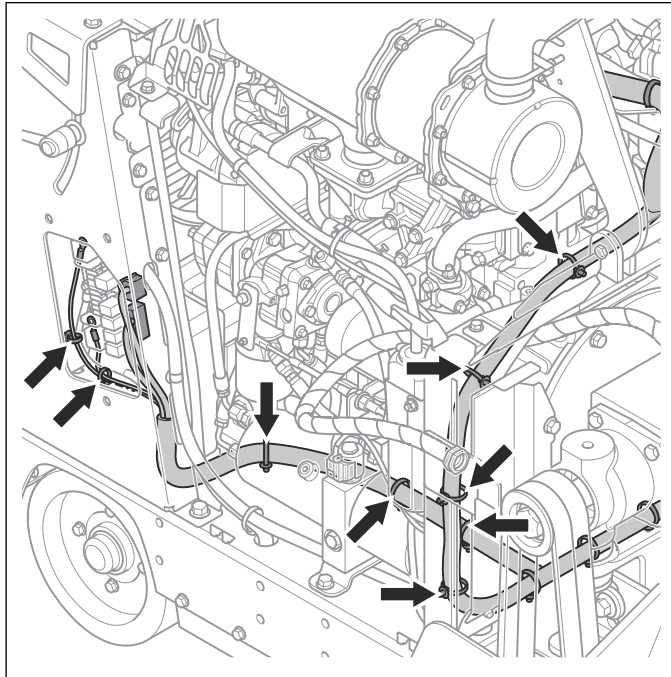
5. Cut the cable ties on the left side of the product.



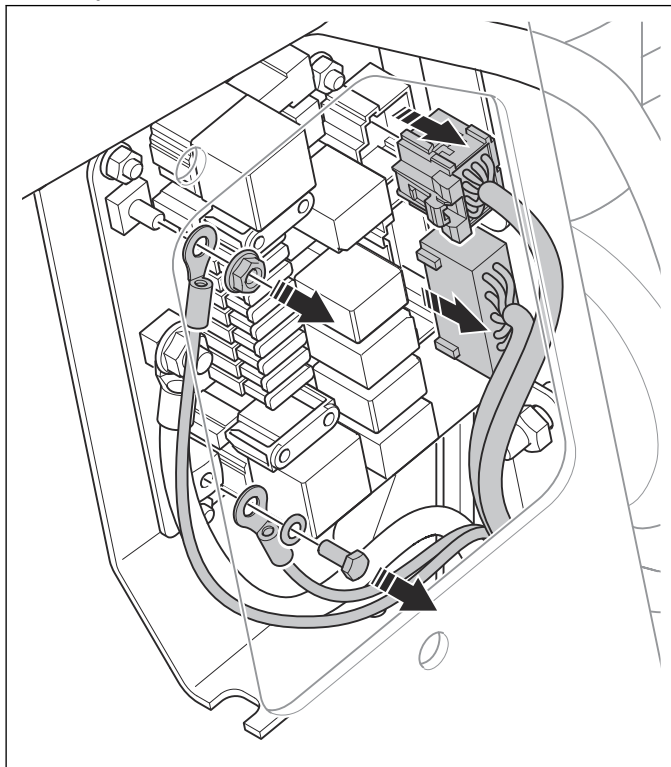
6. Cut the cable ties below the clutch.



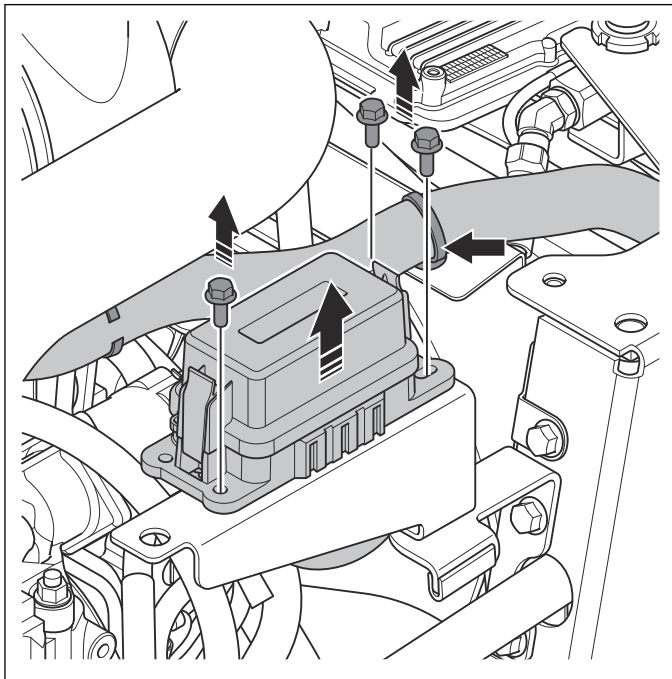
7. Cut the cable ties on the right side of the product.



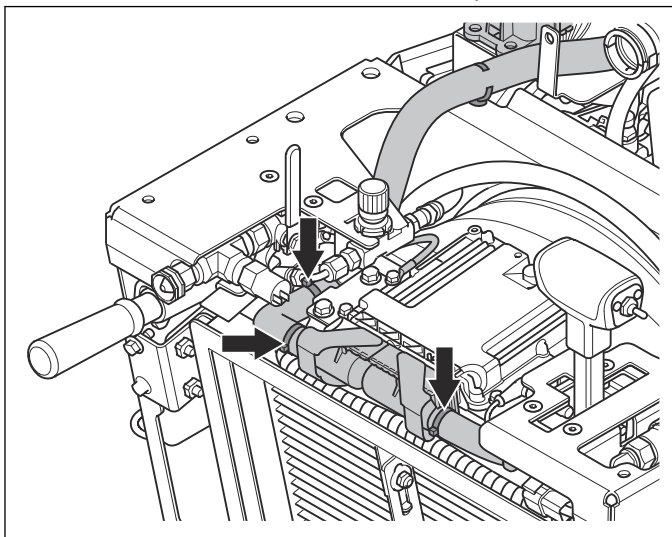
8. Disconnect the 2 wires and the 2 connectors in the relay and fuse box.



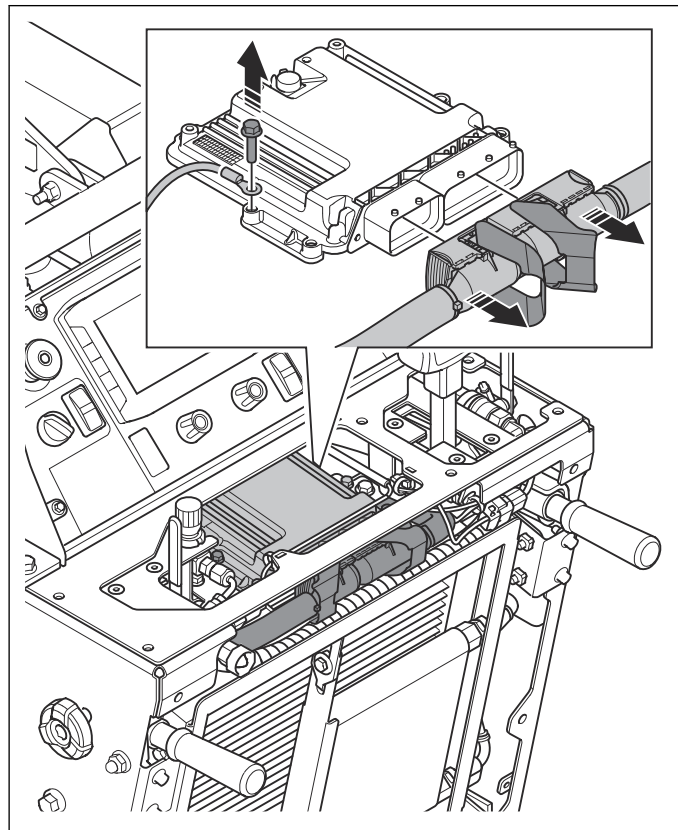
9. Remove the 3 screws.



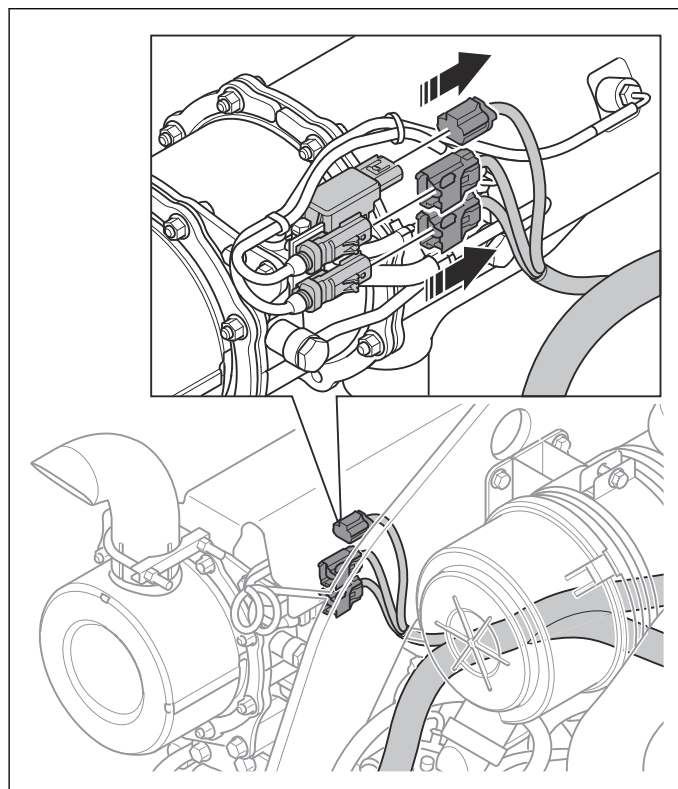
10. Cut the cable ties on the rear of the product.



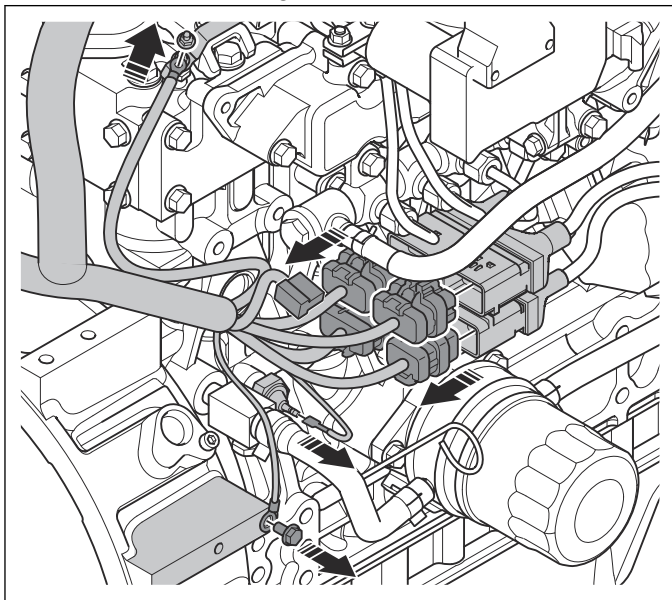
11. Disconnect the 2 connectors and remove the ground wire.



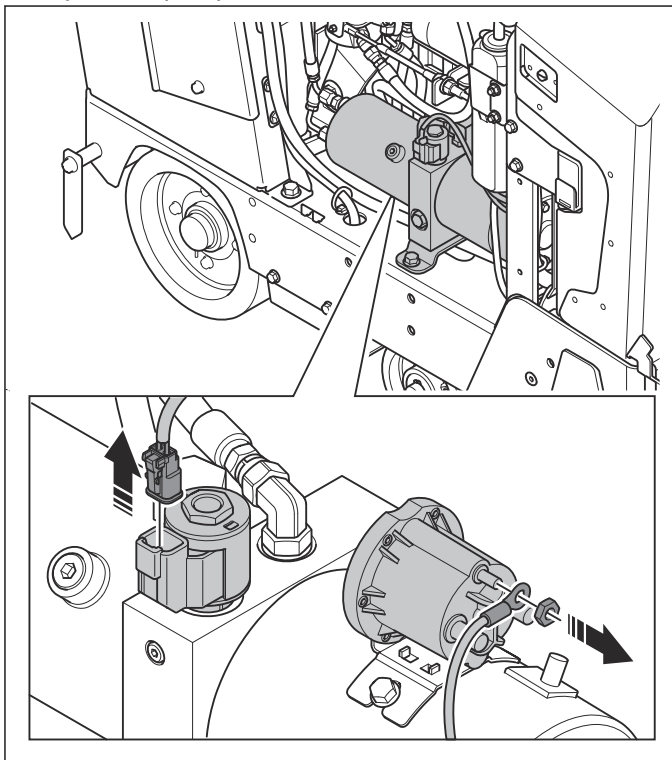
12. Disconnect the connectors to the DPF.



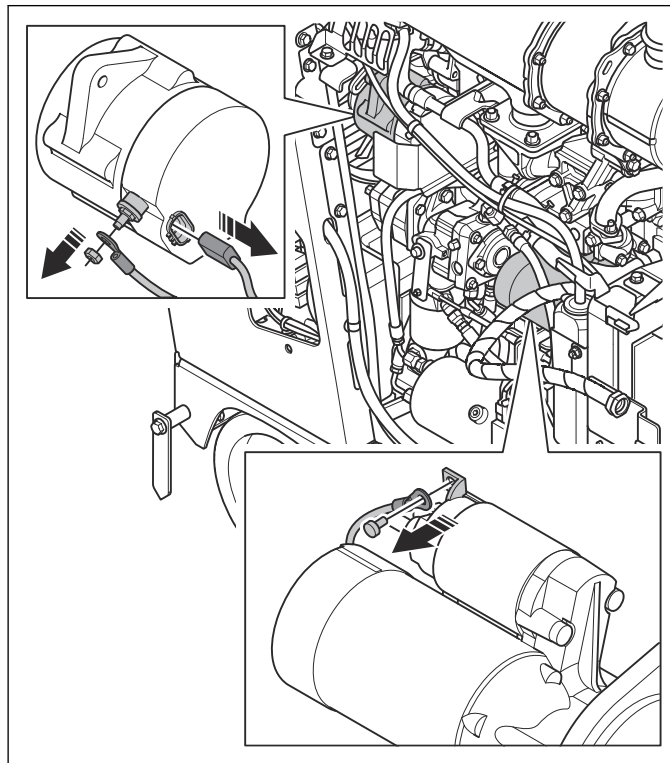
13. Disconnect the 4 engine harness connectors and the 3 wires from the engine.



14. Disconnect the connector and the wire from the hydraulic pump.

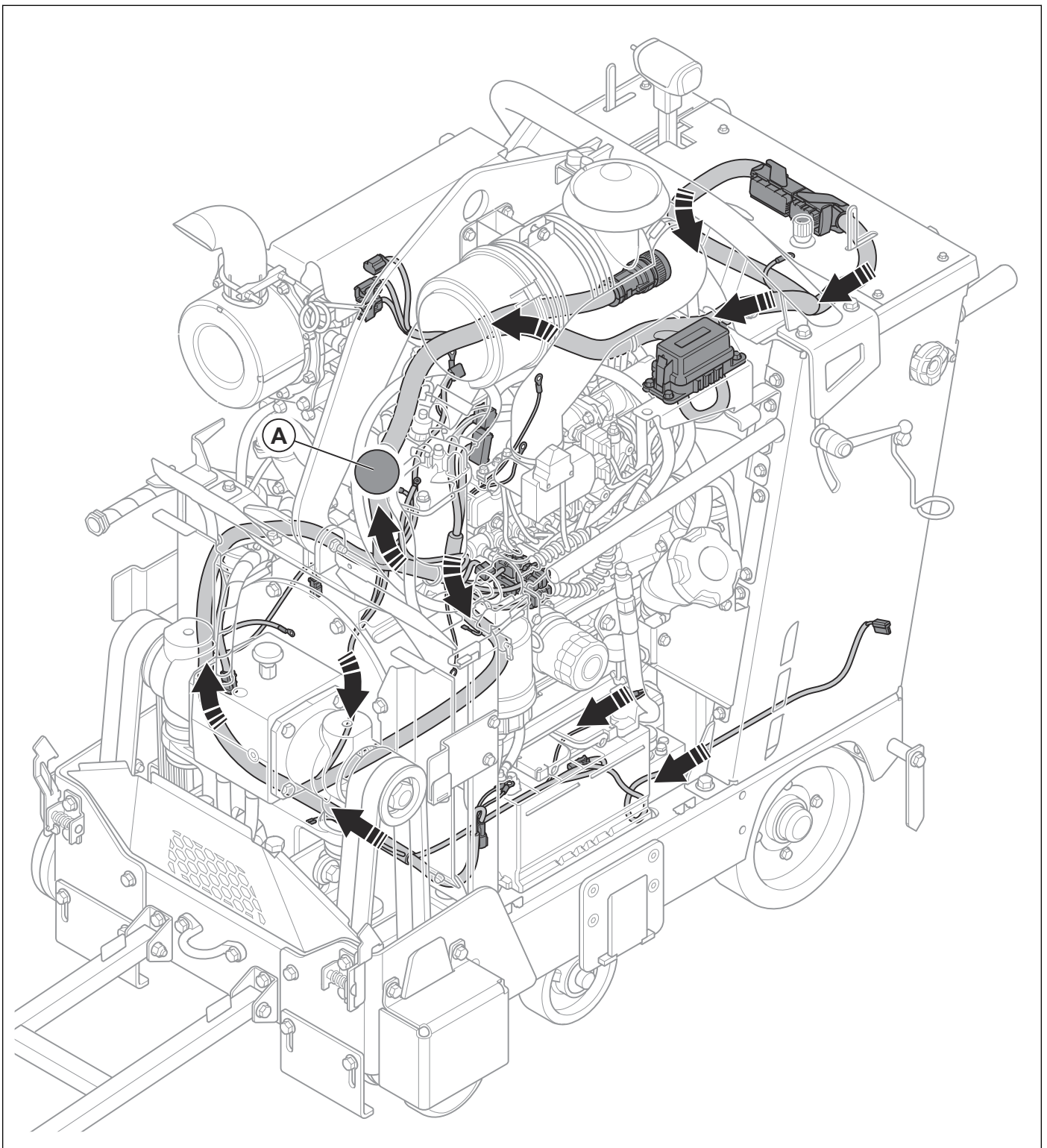


15. Disconnect the wires to the alternator and the solenoid for the start motor.



8.7.4.2 To remove and install the wiring harness

Disconnect the wiring harness before you remove it.
Refer to *To disconnect and connect the wiring harness* on page 36.



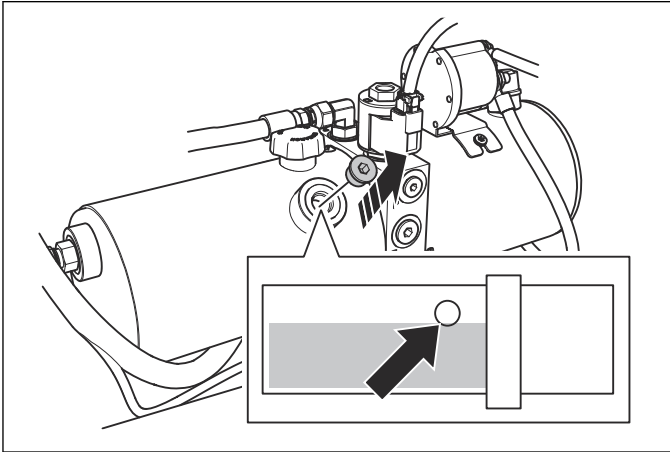
1. Use point (A) as the start point from where all the branches of the wiring harness are routed. Remove the wiring harness from point (A).
2. Install the wiring harness in the opposite sequence.

8.8 Hydraulic system

8.8.1 To do a check of the hydraulic oil level

1. Park the product on level ground.
2. Remove the right side cover. Refer to .

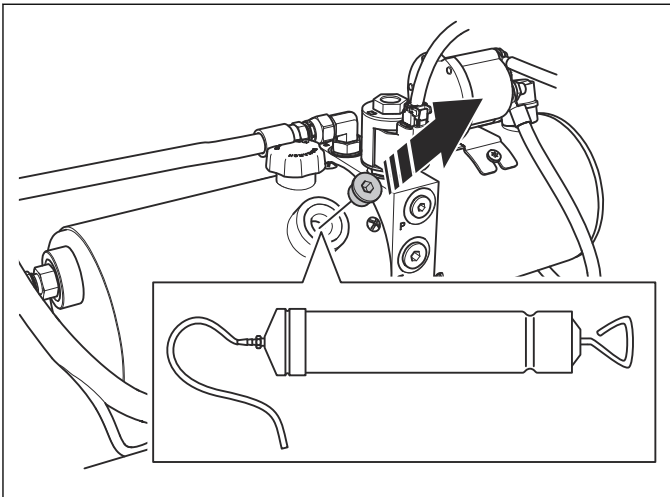
3. Remove the plug in the inspection opening on the hydraulic reservoir. Refer to *Product overview, right side on page 24* for the hydraulic reservoir position.



4. Do a check of the hydraulic oil level. The hydraulic oil level is correct when the oil level is at the bottom edge of the opening on the hydraulic reservoir.
5. If it is necessary, fill hydraulic oil through the inspection opening. Refer to *Technical data on page 115* for information about the correct type of oil.
6. Install the plug in the inspection opening on the hydraulic reservoir.

8.8.2 To replace the hydraulic oil

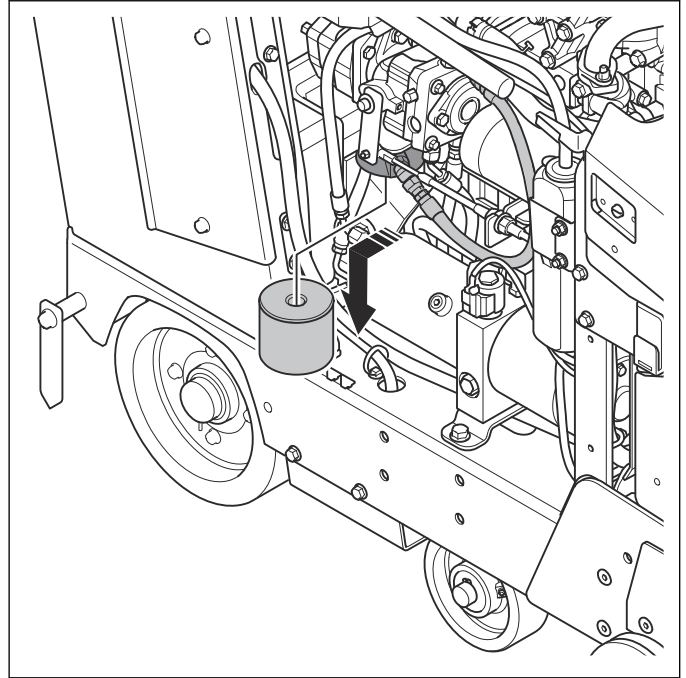
1. Remove the right side cover. Refer to .
2. Remove the plug from the inspection opening on the hydraulic reservoir.



3. Use a manual oil pump to drain the oil through the inspection opening on the hydraulic reservoir.
4. Replace the hydraulic oil filter. Refer to *To replace the hydraulic oil filter on page 41*.
5. Fill hydraulic oil through the inspection opening. Refer to for information about the correct type of oil.
6. Install the plug in the inspection opening on the hydraulic reservoir.

8.8.3 To replace the hydraulic oil filter

1. Remove the right side cover. Refer to .
2. Remove the oil filter and discard it.

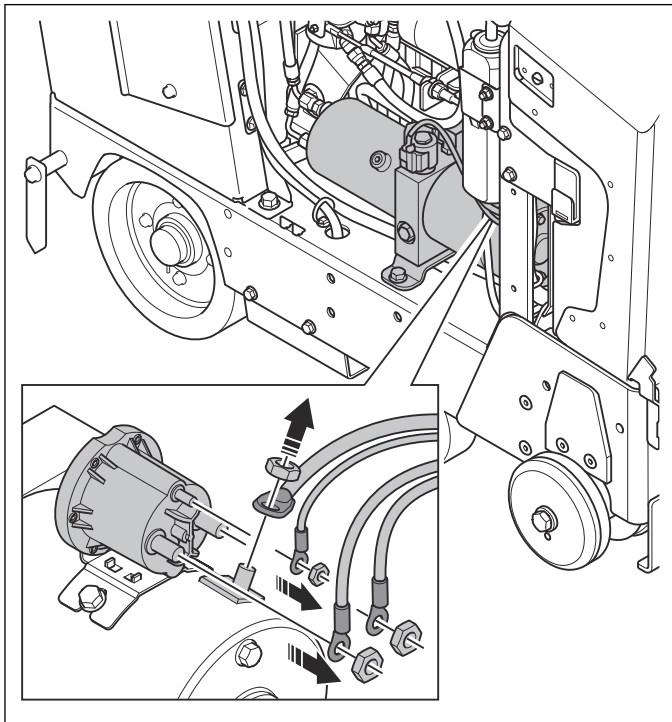


3. Fill a new oil filter with oil. Refer to *Technical data on page 115* for information about the correct type of oil.
4. Lubricate the seal with some drops of oil.
5. Install the oil filter.
6. Make sure that the product is level.
7. Do a check of the hydraulic oil level. Refer to *To do a check of the hydraulic oil level on page 40*.

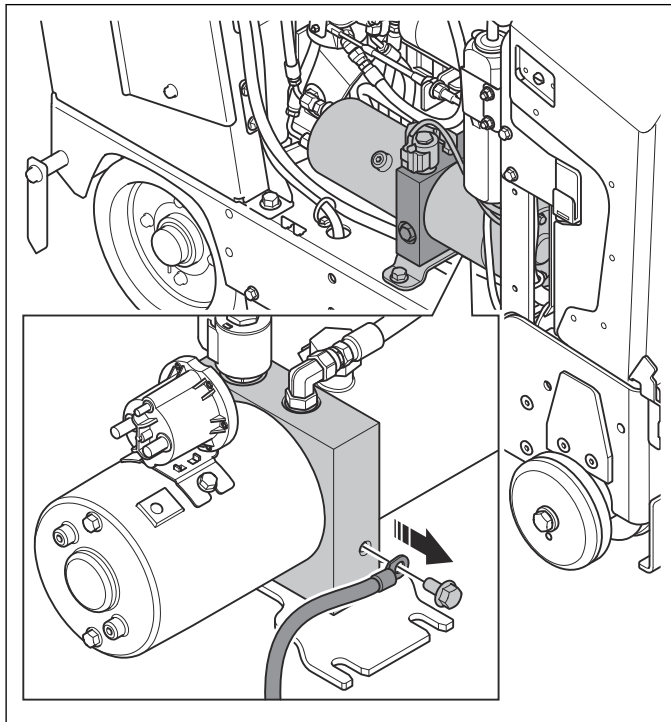
8.8.4 To remove and install the hydraulic lift pump

1. Remove the right side cover and the left side cover. Refer to *Covers overview on page 29*.
2. Disconnect the battery.

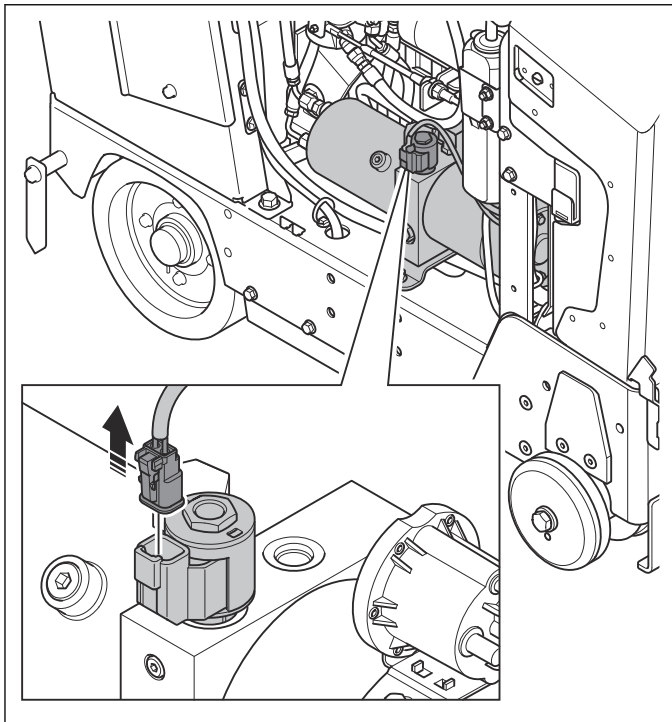
3. Disconnect the wires from the solenoid.



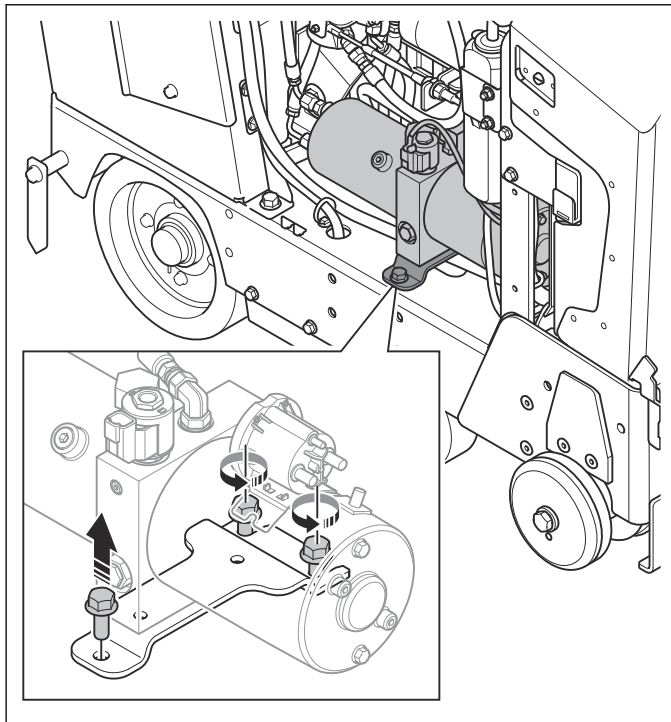
5. Disconnect the wire.



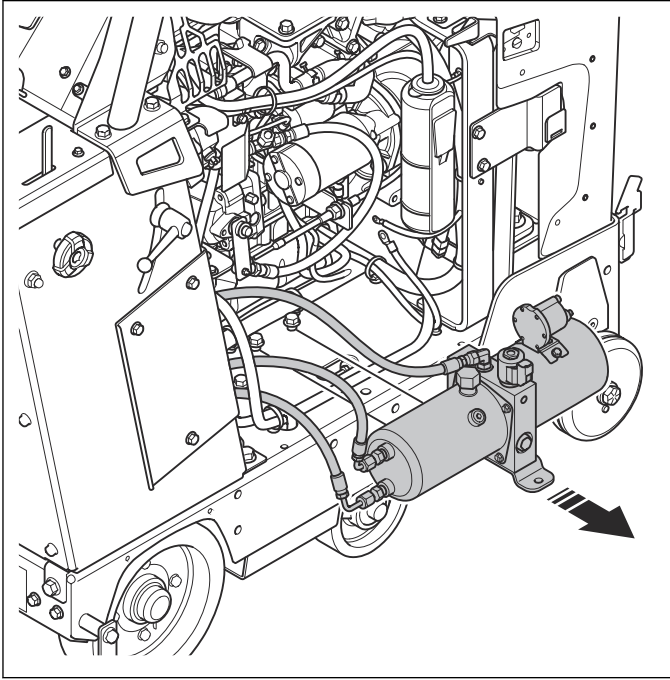
4. Disconnect the connector.



6. Remove the 3 bolts.

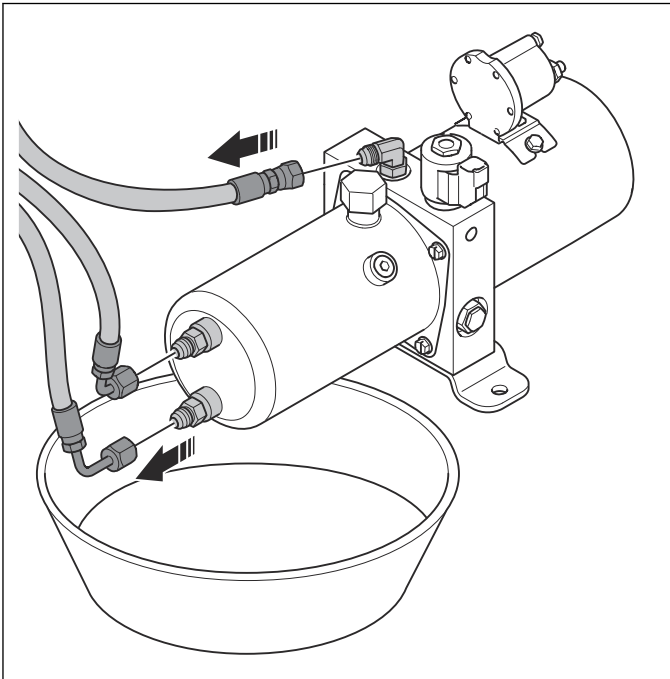


7. Remove the hydraulic lift pump.

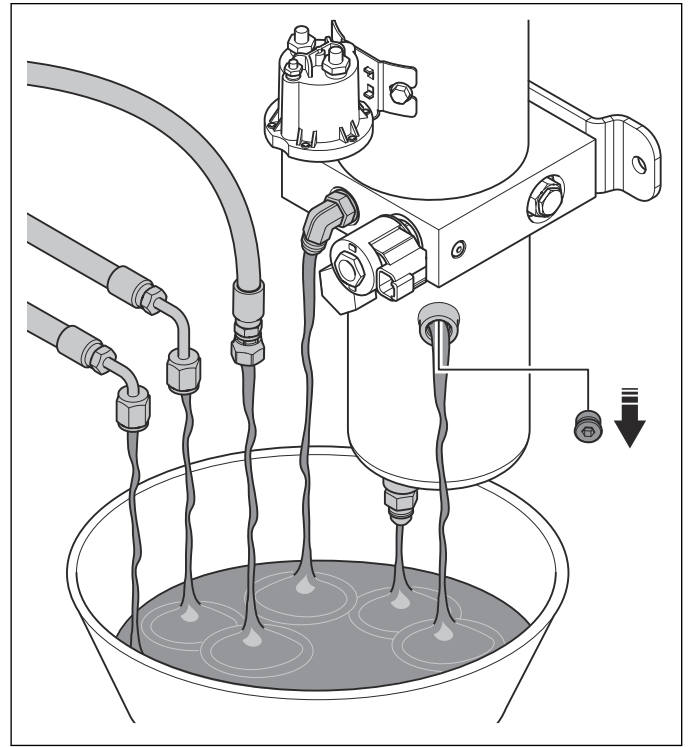


8. Put a container below the hydraulic lift pump.

9. Disconnect the hoses from the hydraulic lift pump.



10. Remove the oil drain plug and drain the oil into the container.



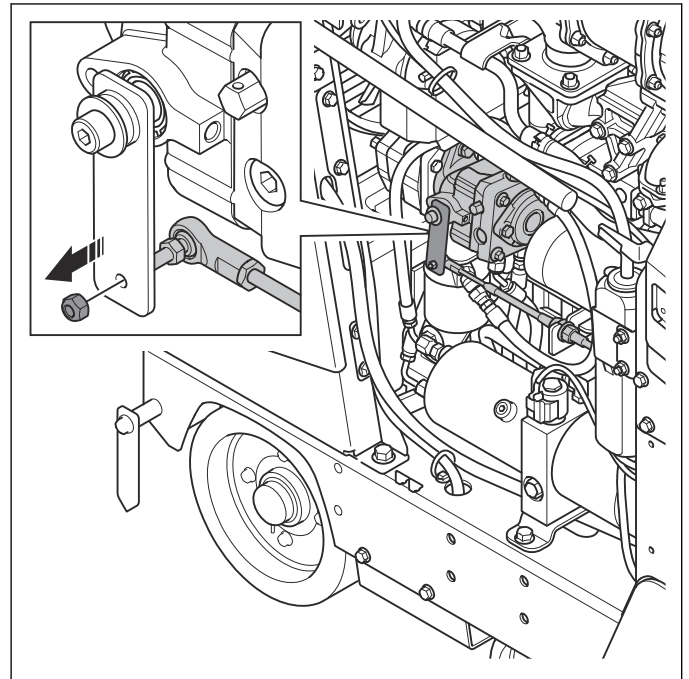
11. Close off the hydraulic openings.

12. Install in the opposite sequence. Fill with new oil, refer to *Technical data on page 115* for information about the correct type of oil.

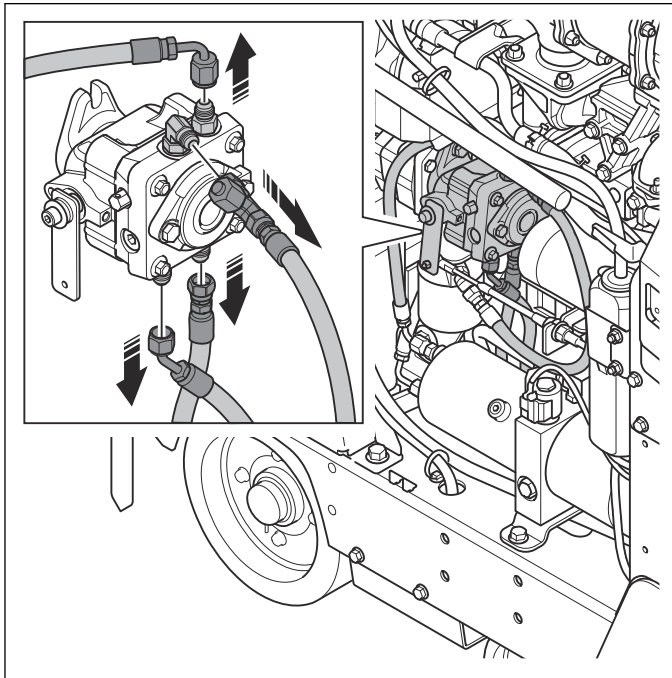
8.8.5 To remove and install the drive pump for the hydraulic propulsion system

1. Remove the right side cover. Refer to *Covers overview on page 29*.

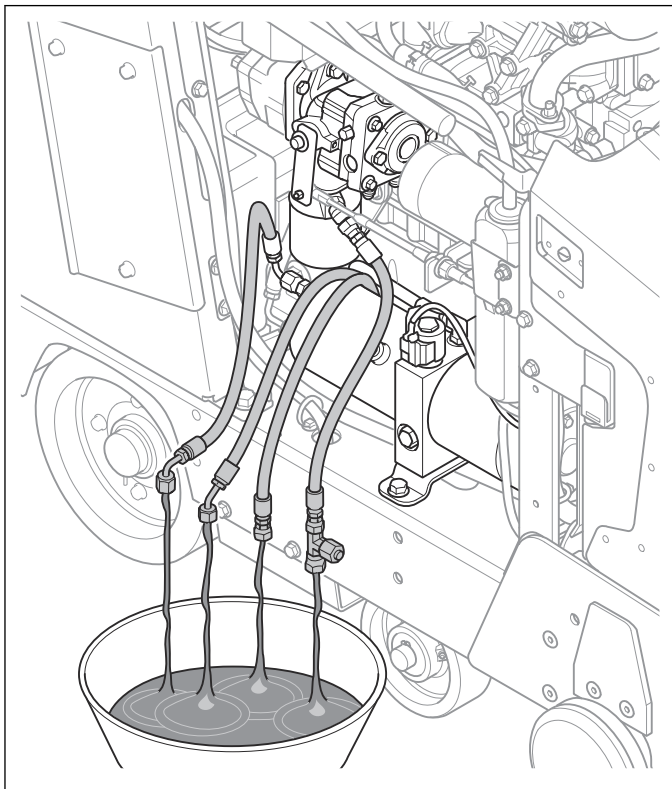
2. Remove the nut and the wire.



3. Disconnect the 4 hydraulic hoses from the drive pump.

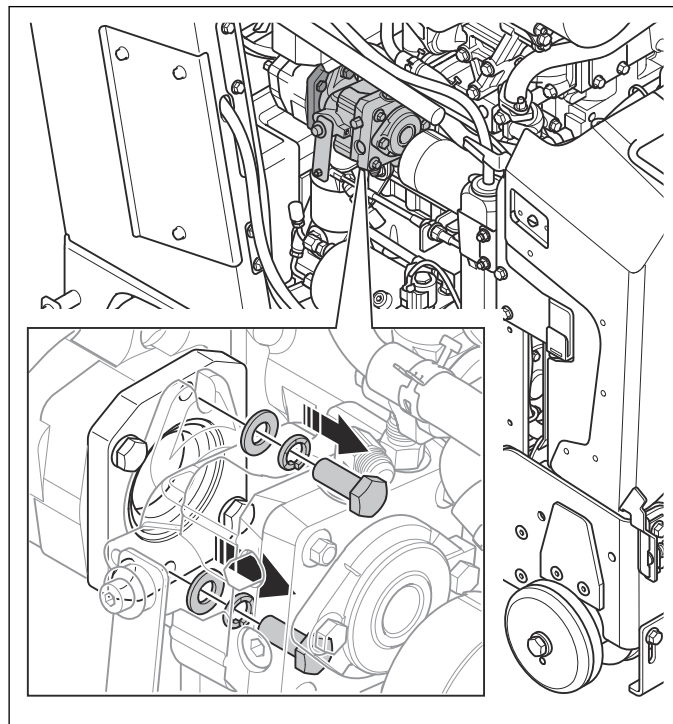


4. Drain the oil from the hydraulic hoses into a container.

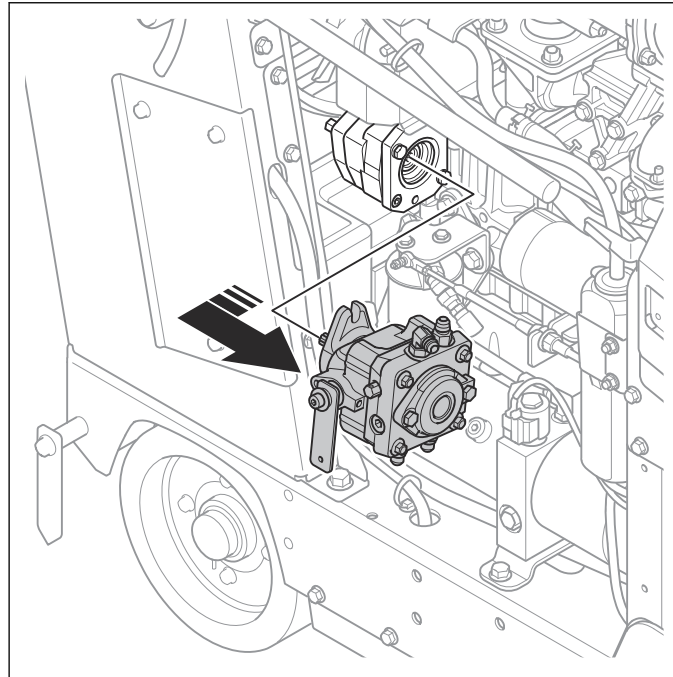


5. Close off the hydraulic openings.

6. Remove the 2 screws and the 4 washers.



7. Remove the hydraulic drive pump.

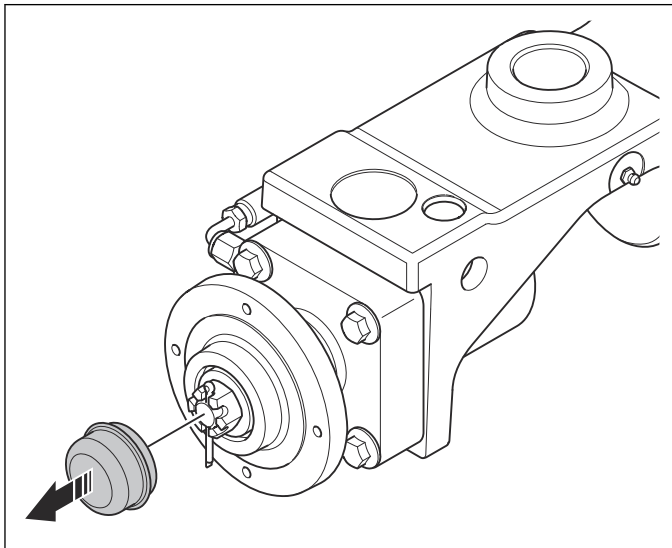


8. Install in the opposite sequence.

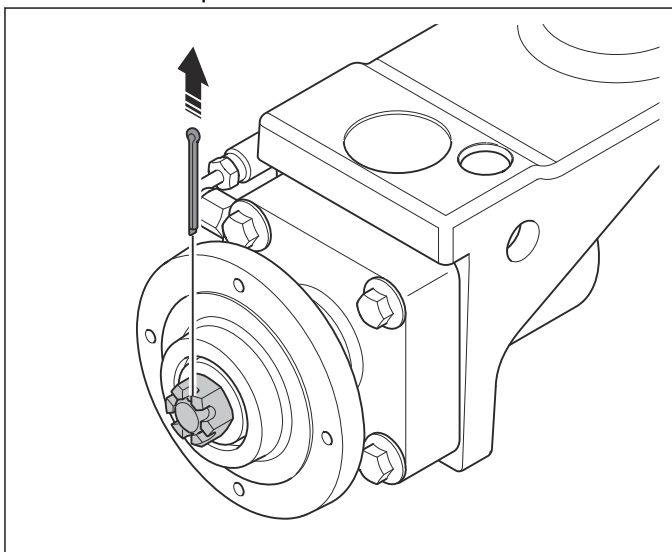
8.8.6 To remove and install the hydraulic drive motors

1. Lift the product and put supports below the product. Refer to *To lift the product on page 30*.
2. Remove the rear wheels. Refer to *To remove and install the rear wheels on page 94*.
3. Remove the rear axle. Refer to *To remove and install the rear axle on page 99*.

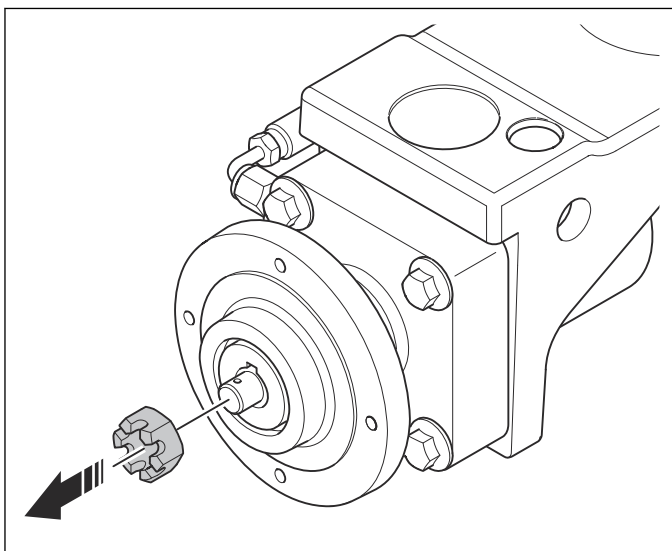
4. Remove the cover.



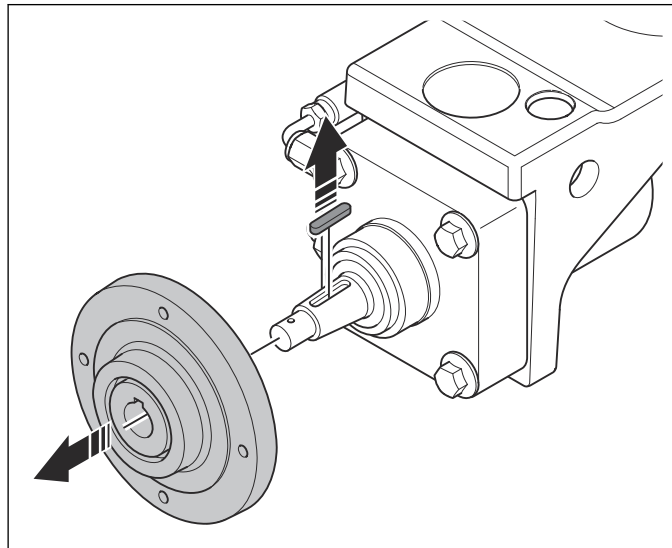
5. Remove the pin.



6. Remove the castle nut.

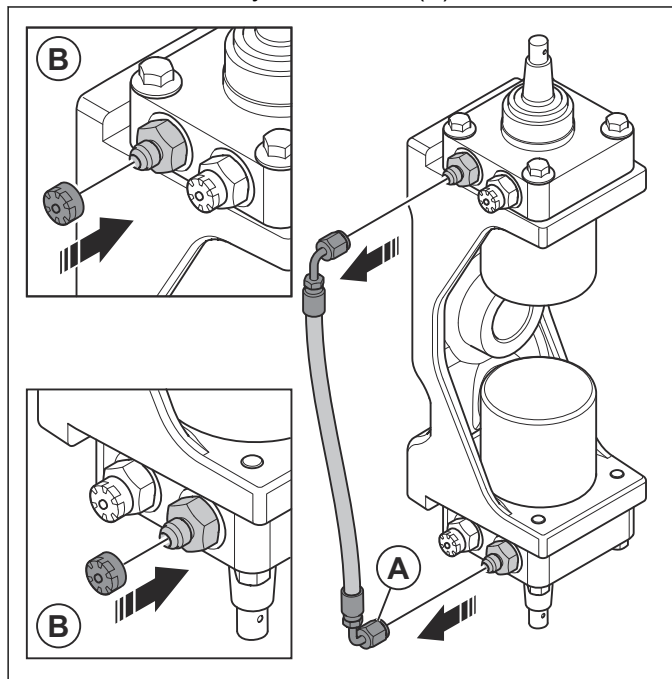


7. Remove the bearing bracket and the key.



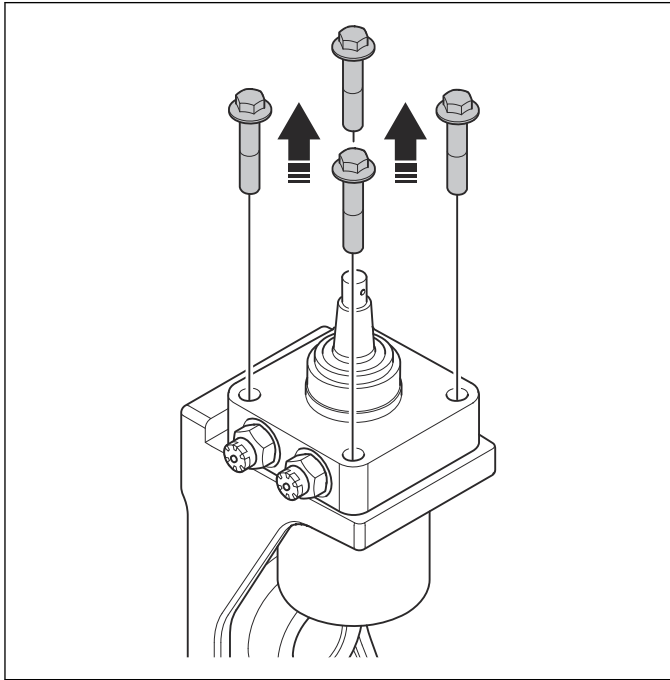
8. Put the axle in a vertical position in a vice.

9. Disconnect the hydraulic hose (A).

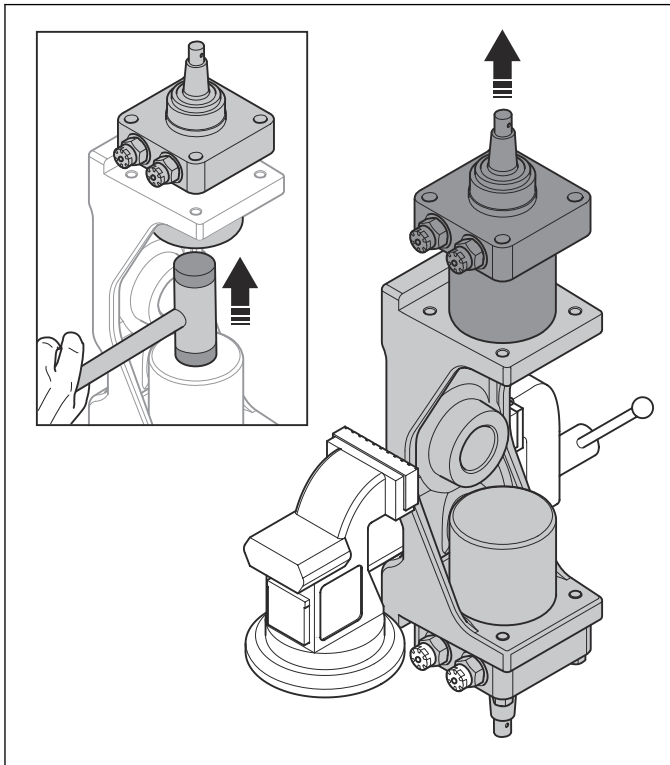


10. Close off the hydraulic openings with plugs (B).

11. Remove the 4 screws.



12. Remove the drive motor with a rubber mallet.

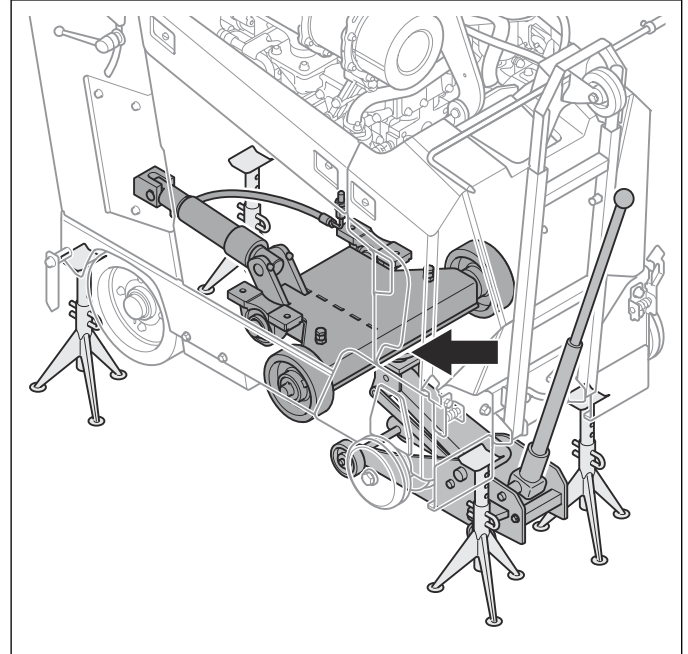


13. Do the same procedure to remove the bearing bracket and the drive motor on the opposite side of the rear axle.

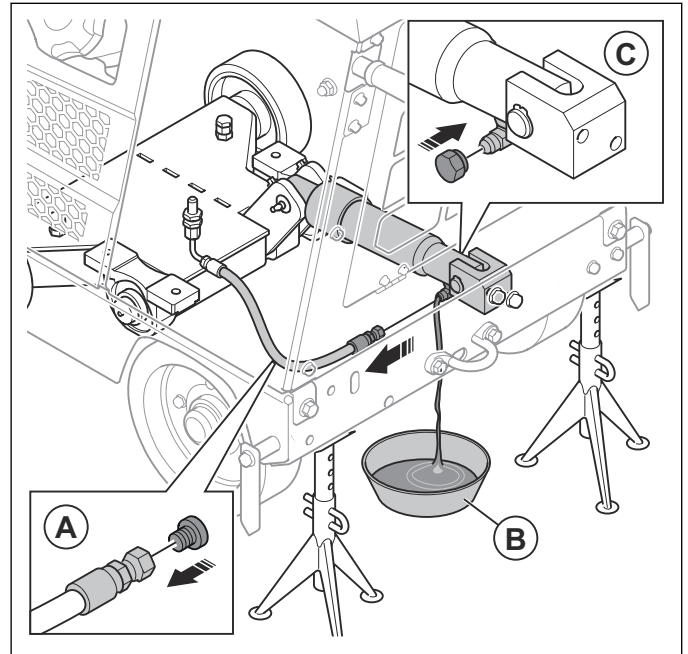
14. Assemble the rear axle in the opposite sequence. Tighten the castle nuts to the correct torque, refer to .

8.8.7 To remove and install the hydraulic lift cylinder

1. Start the product and retract the cylinder as much as possible to keep the quantity of oil in the cylinder to a minimum..
2. Lift the product and put supports below the product. Refer to .
3. Support the front axle with a trolley jack..

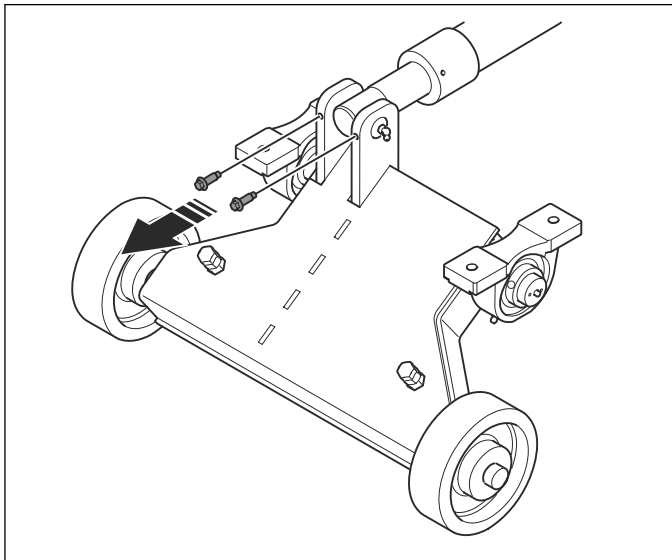


4. Disconnect the hydraulic hoses and install a plug in it (A).

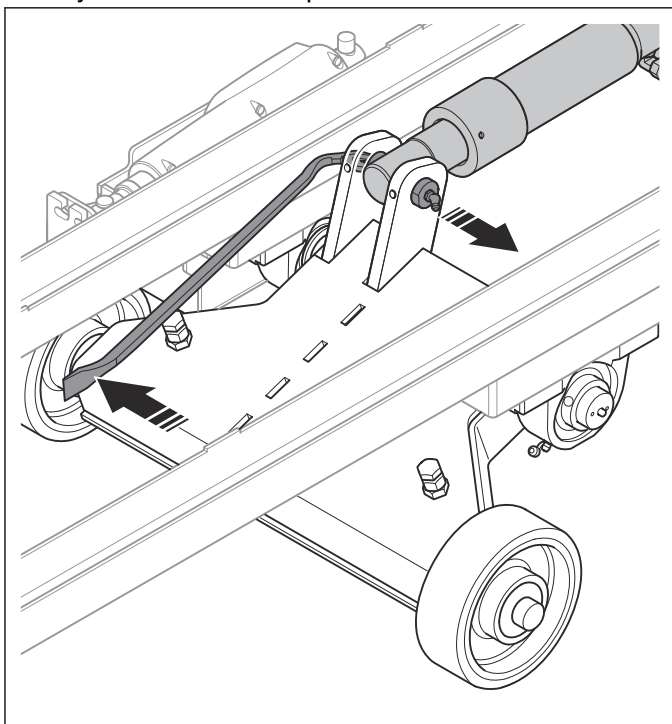


5. Drain the hydraulic cylinder into a cointainer (B).
6. Install a plug in the hydraulic opening in the cylinder (C).

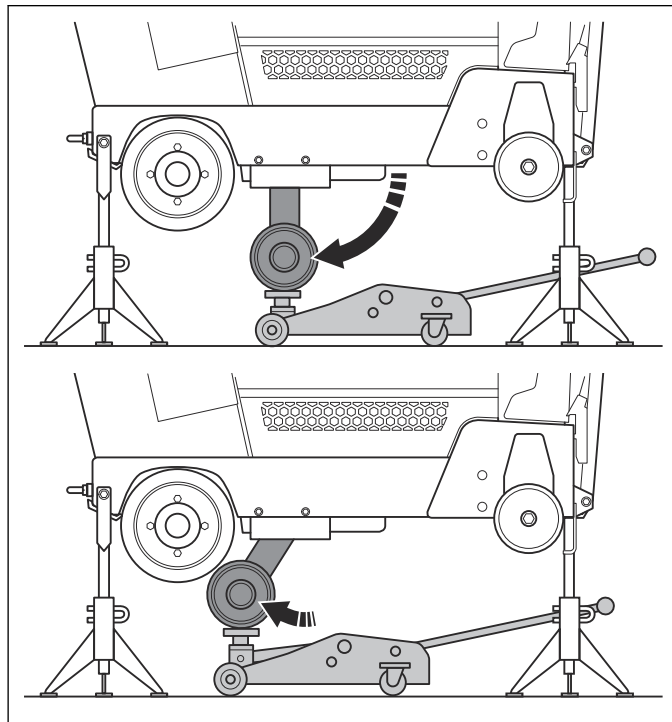
7. Remove the 2 screws.



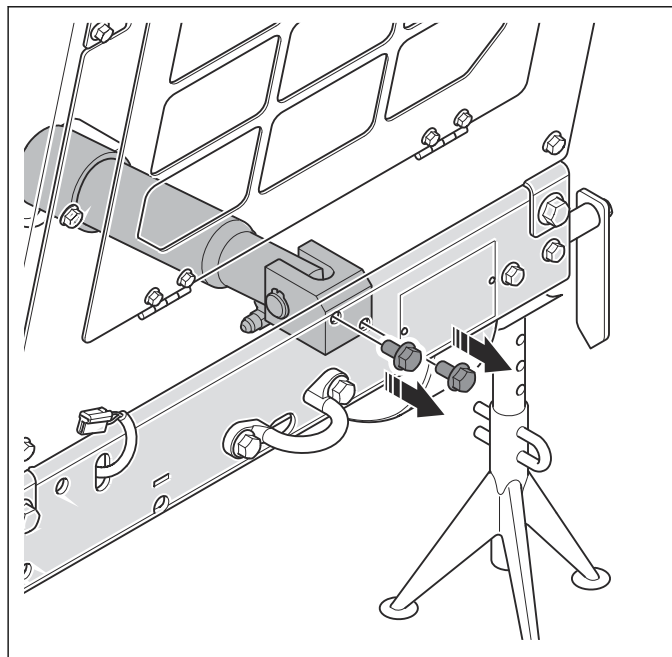
8. Pry with a crowbar to push out the shaft.



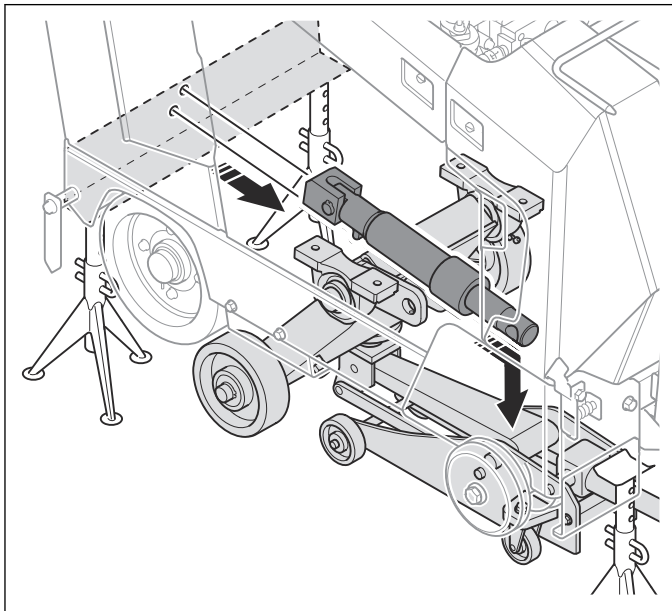
9. Lower the trolley jack until the front axle hangs vertically to the ground. Use the trolley jack to swing the front axle rearwards.



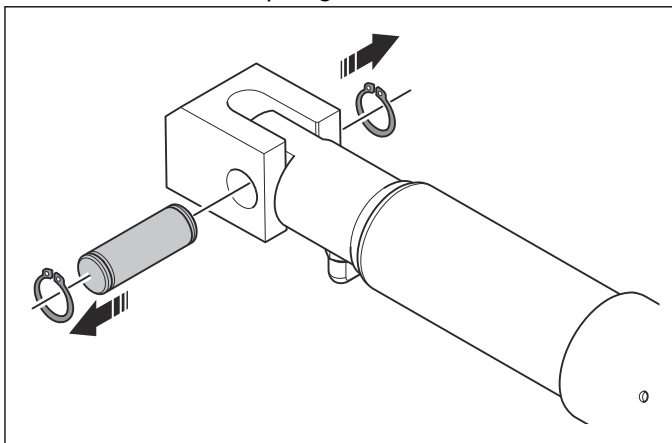
10. Remove the 2 screws.



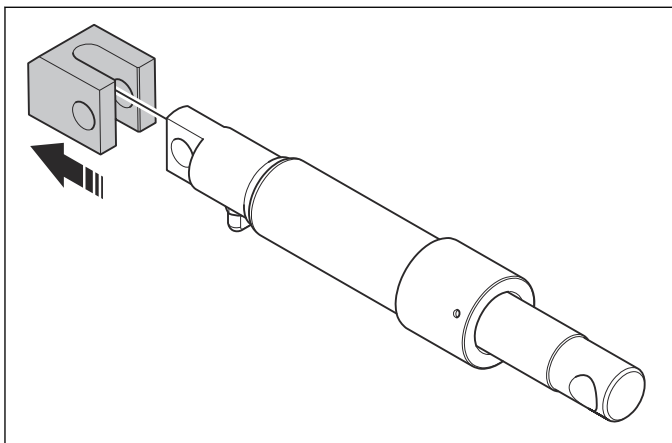
11. Remove the hydraulic lift cylinder



12. Remove the 2 snap rings and the shaft.



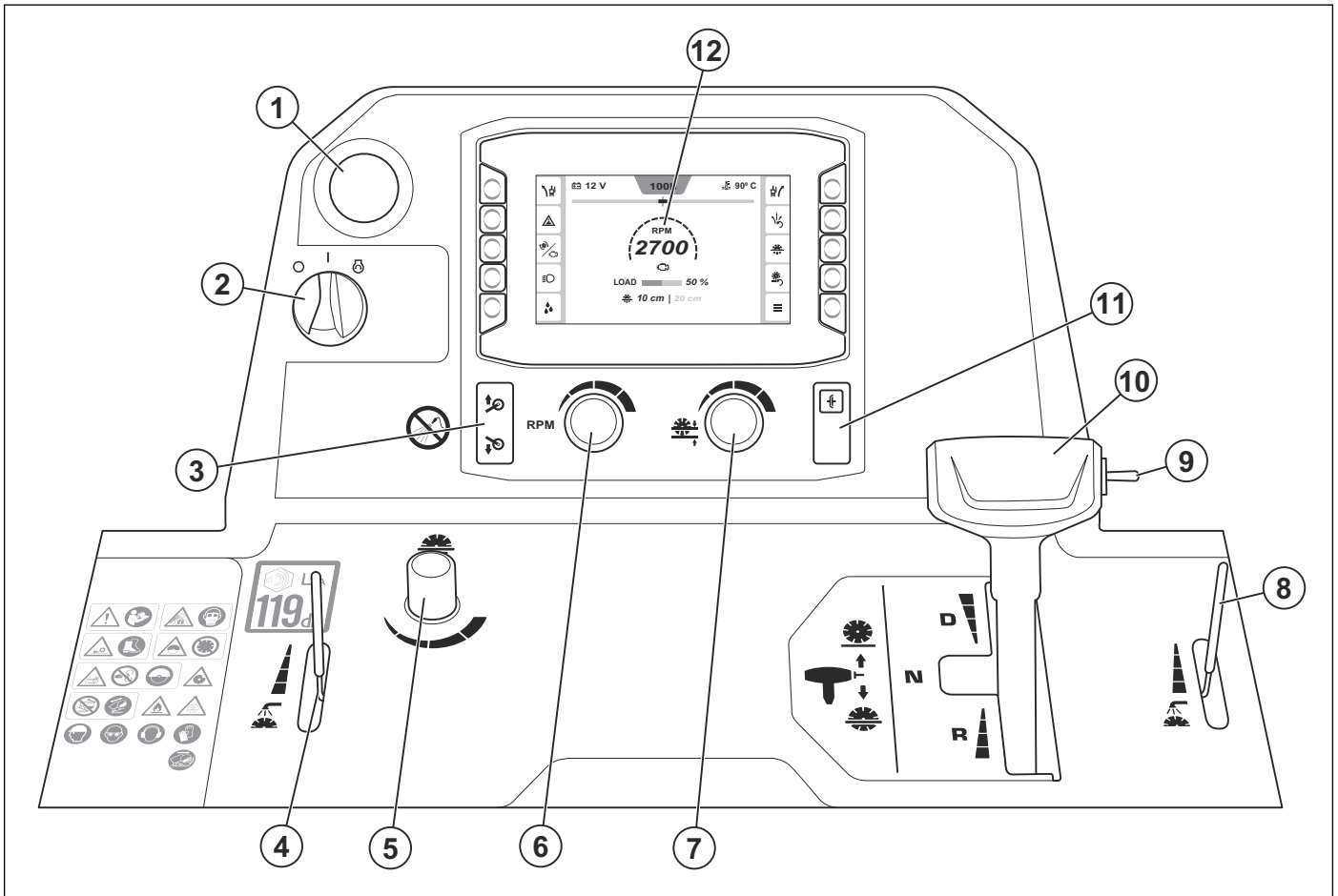
13. Remove the bracket.



14. Install the hydraulic lift cylinder in the opposite sequence.

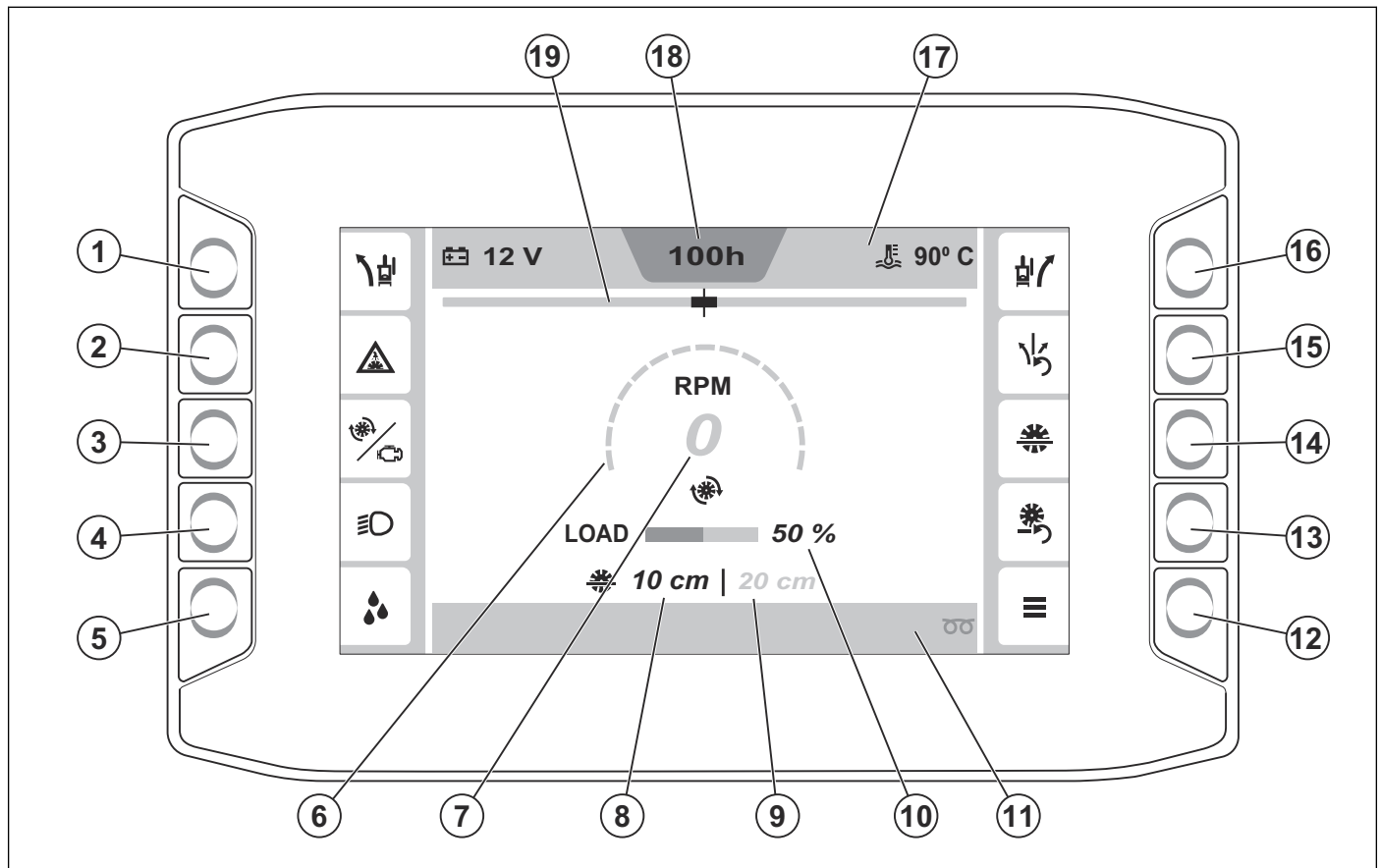
8.9 Control panel and HMI

8.9.1 Overview of the control panel



1. Machine stop
2. Engine start switch
3. Button to lift or lower the 5th wheel
4. Lever to adjust the water valve
5. Adjustment knob for the blade lowering speed
6. Speed adjustment knob for the engine and the cutting blade
7. Adjustment knob for the blade depth stop
8. Lever to adjust the water valve
9. Switch to lift or lower the cutting blade
10. Drive control lever
11. Clutch
12. Human machine interface (HMI), refer to *Overview of the Human Machine Interface (HMI) on page 50*

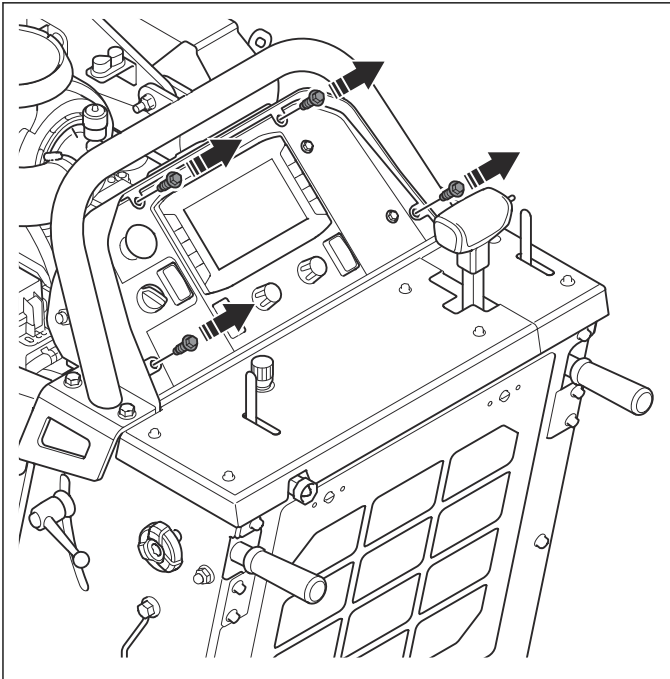
8.9.1.1 Overview of the Human Machine Interface (HMI)



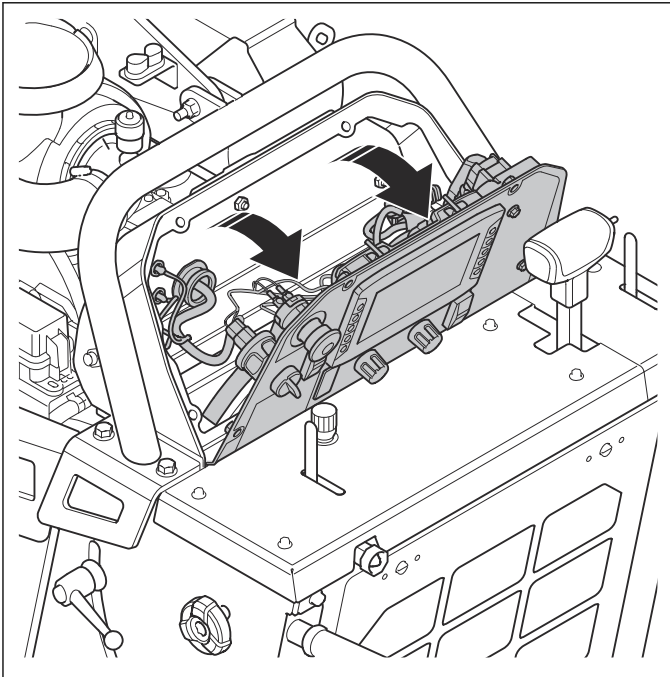
1. Button to adjust the E-track function to the left.
2. Button to engage or disengage the water safety switch.
3. Button to switch between information about the RPM of the engine or the cutting blade.
4. ON/OFF button for the lights. (If installed. The lights are an accessory.)
5. ON/OFF button for the water pump. (If installed. The water pump is an accessory.)
6. Gauge for RPM of the engine or the cutting blade.
7. Value of the RPM of the engine or the cutting blade.
8. Current blade depth
9. Set blade depth
10. Current work load
11. Bottom bar. Refer to *Symbols in the bottom bar on the HMI on page 11* for more information.
12. Main menu.
13. Reset button for blade depth
14. ON/OFF button for the blade depth stop.
15. Reset button for the E-track function.
16. Button to adjust the E-track function to the right.
17. Top bar. Refer to *Symbols in the top bar on the HMI on page 9* for more information.
18. Engine hour meter
19. Indicator for the E-track function

8.9.2 To remove and install the control panel

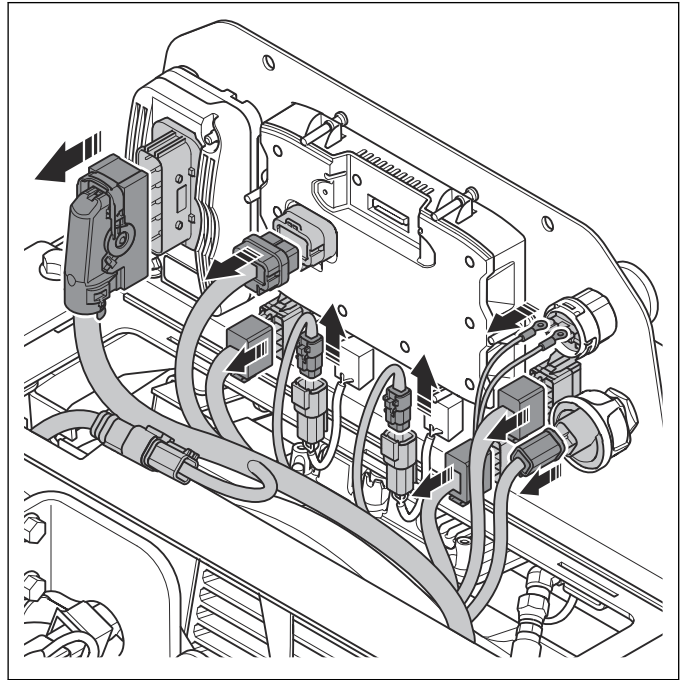
1. Remove the 4 bolts.



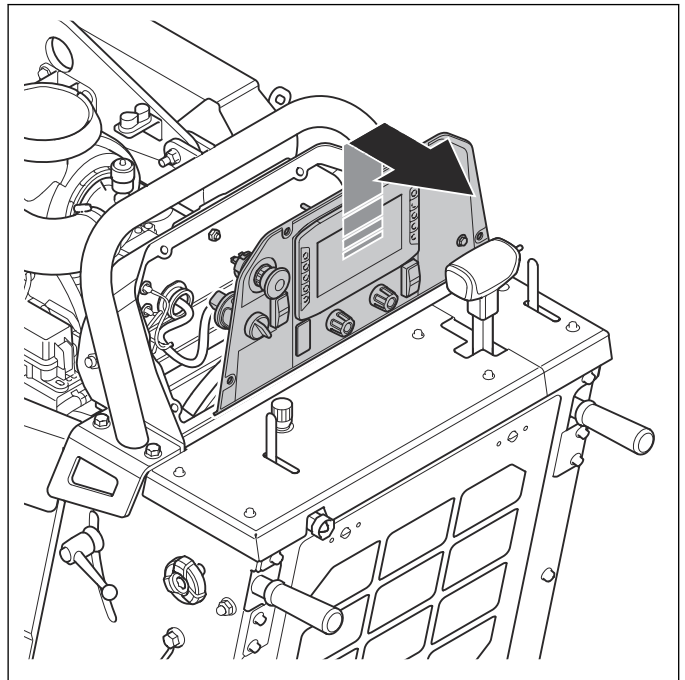
2. Tilt the control panel forward.



3. Disconnect the 8 connectors and the 2 wires.



4. Remove the control panel.

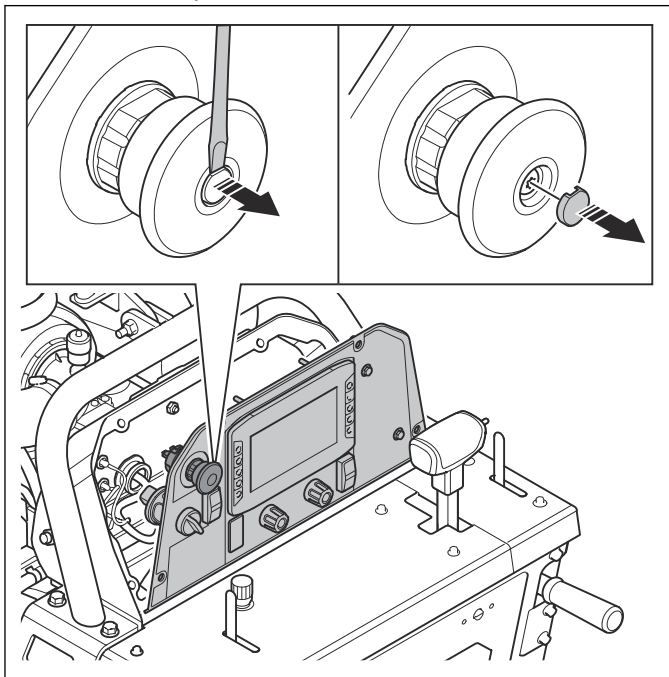


5. Install in the opposite sequence.

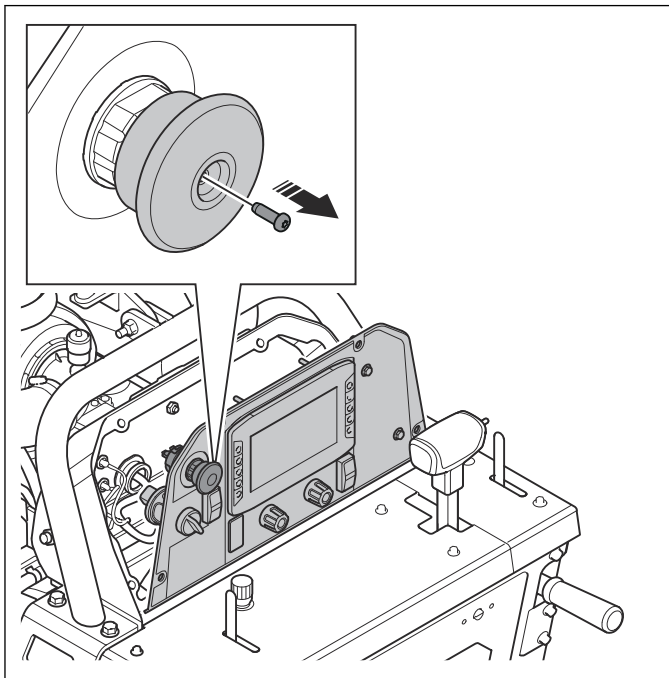
8.9.2.1 To remove and install the machine stop button

1. Tilt the control panel forward. Refer to *To remove and install the control panel* on page 51.
2. Remove the 2 wires to the machine stop button.

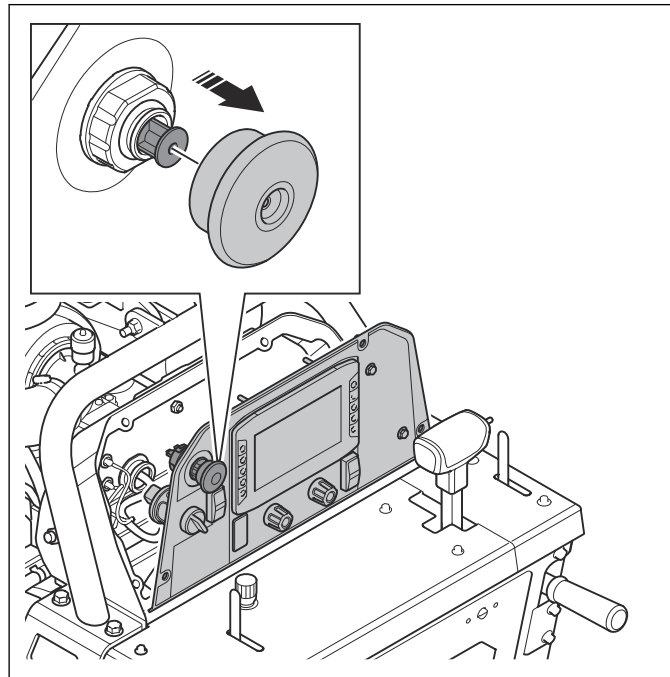
3. Remove the plastic cover in the middle of the machine stop button with a screw driver.



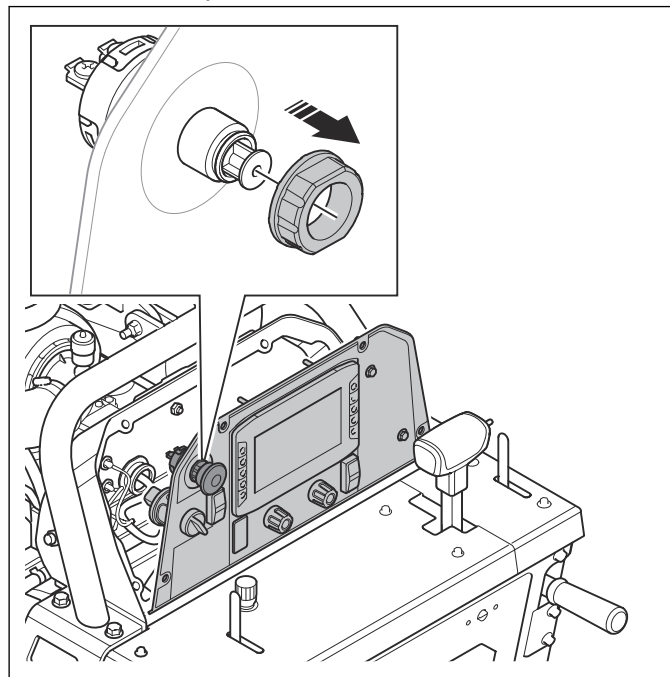
4. Remove the screw.



5. Remove the top part of the machine stop button.



6. Remove the plastic nut.

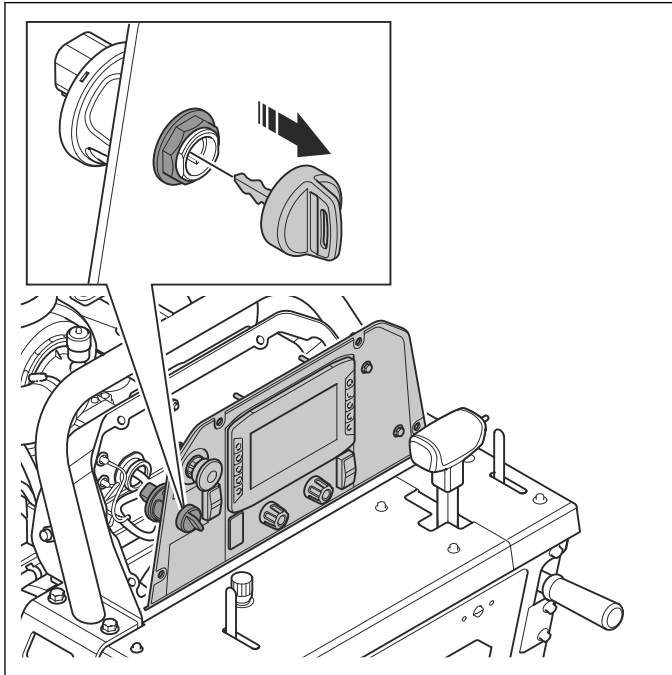


7. Install in the opposite sequence.

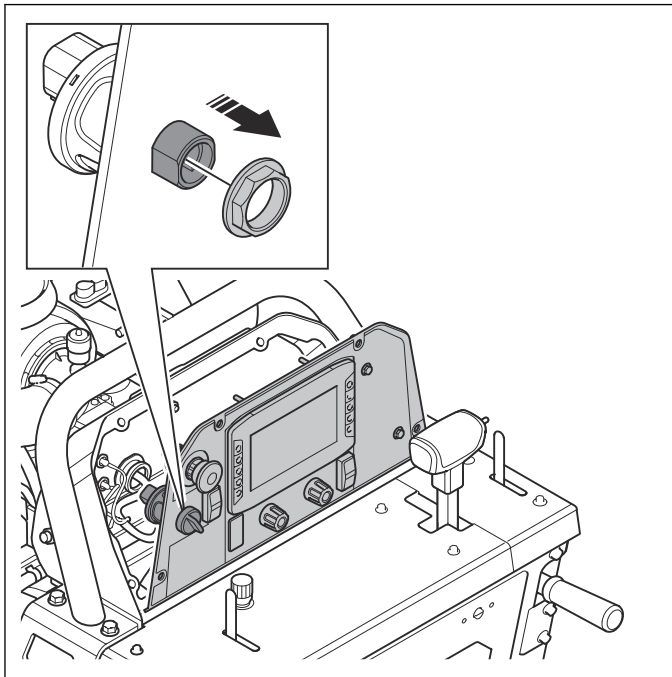
8.9.2.2 To remove and install the engine start switch

1. Tilt the control panel forward. Refer to *To remove and install the control panel on page 51*.
2. Disconnect the connector to the engine start switch.

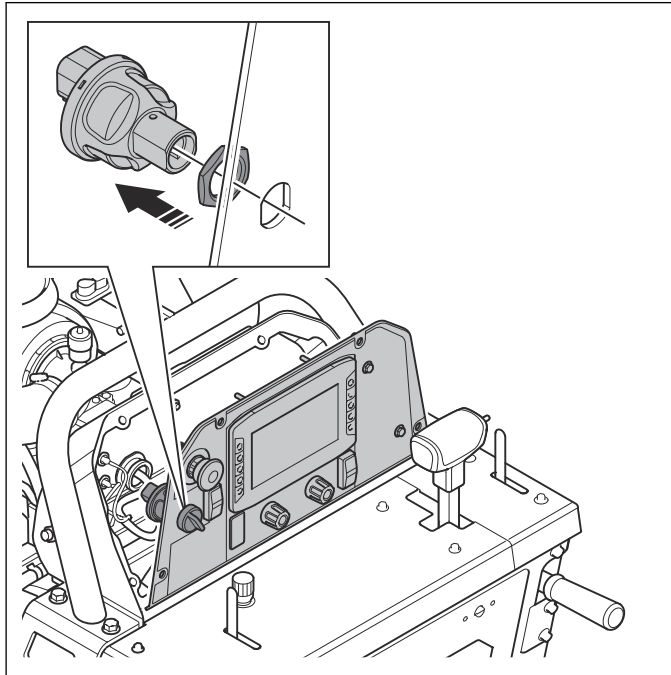
3. Remove the ignition key.



4. Remove the nut.



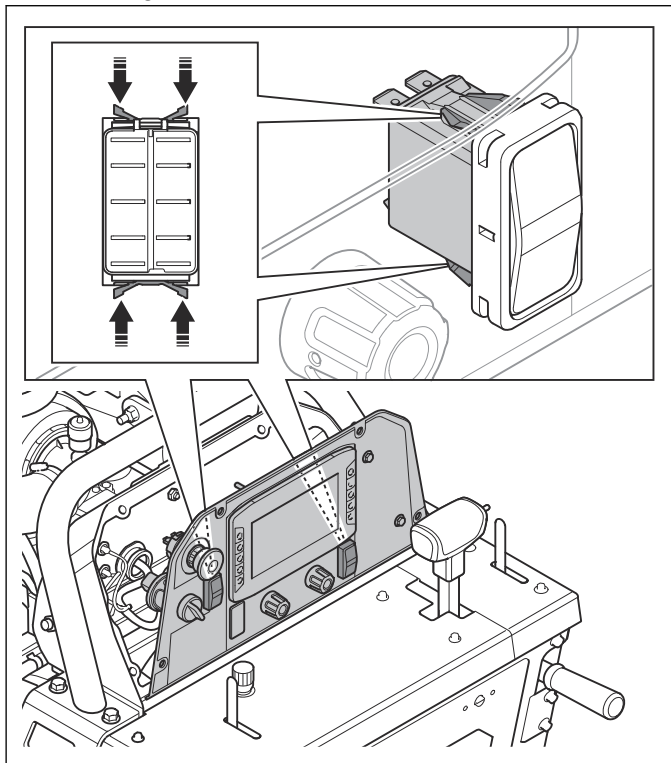
5. Remove the engine start switch.



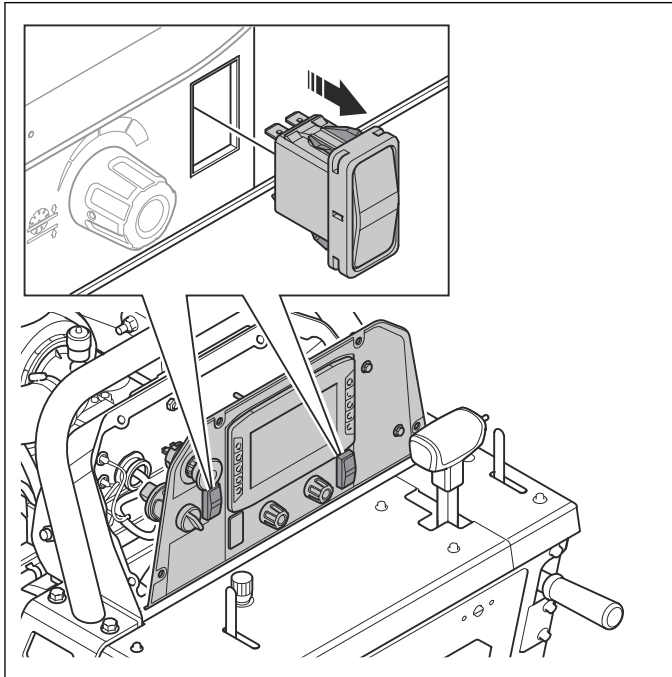
6. Install in the opposite sequence.

8.9.2.3 To remove and install the buttons

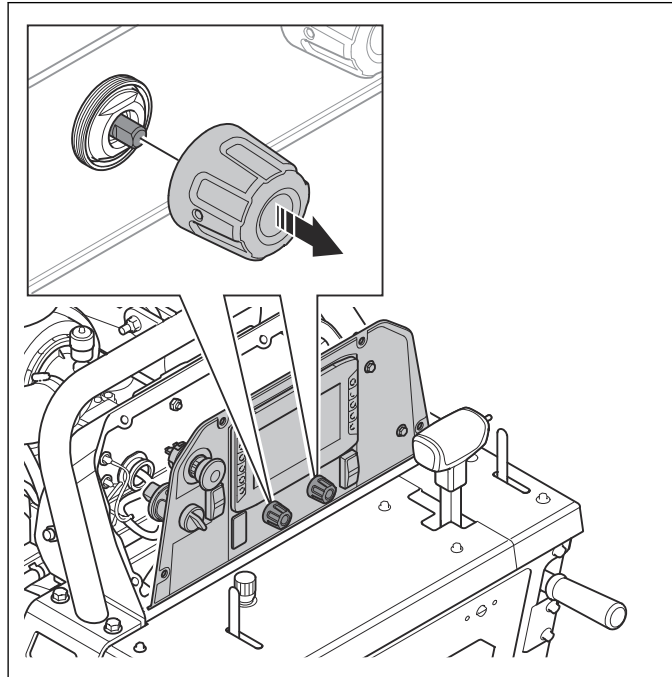
1. Tilt the control panel forward. Refer to *To remove and install the control panel on page 51*.
2. Disconnect the connectors to the buttons.
3. Push together the tabs.



4. Install in the opposite sequence.

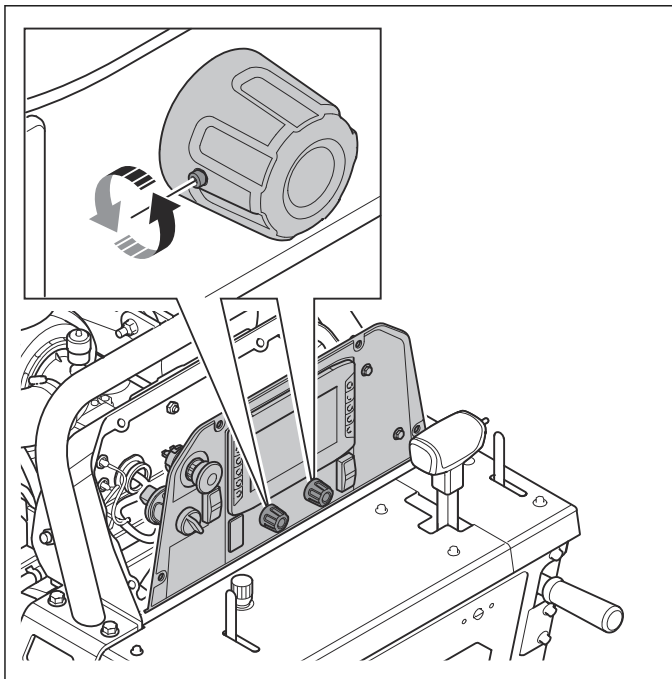


4. Remove the knob.

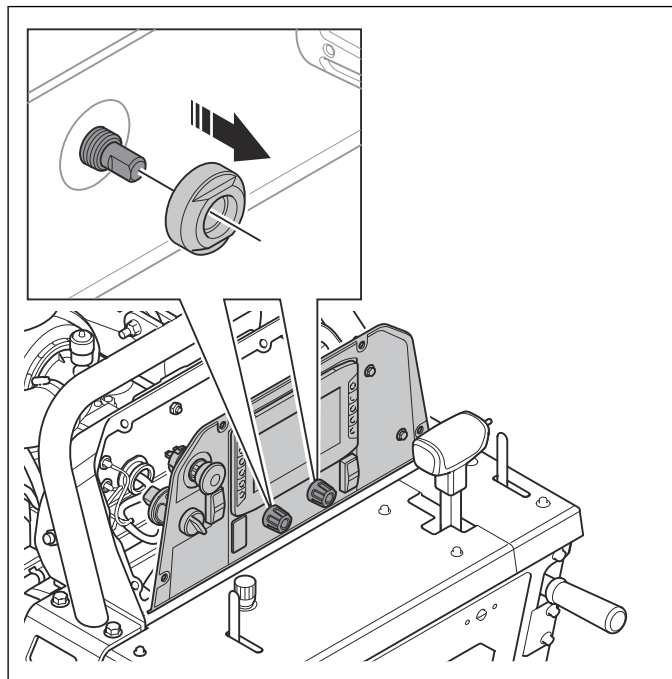


8.9.2.4 To remove and install the knobs

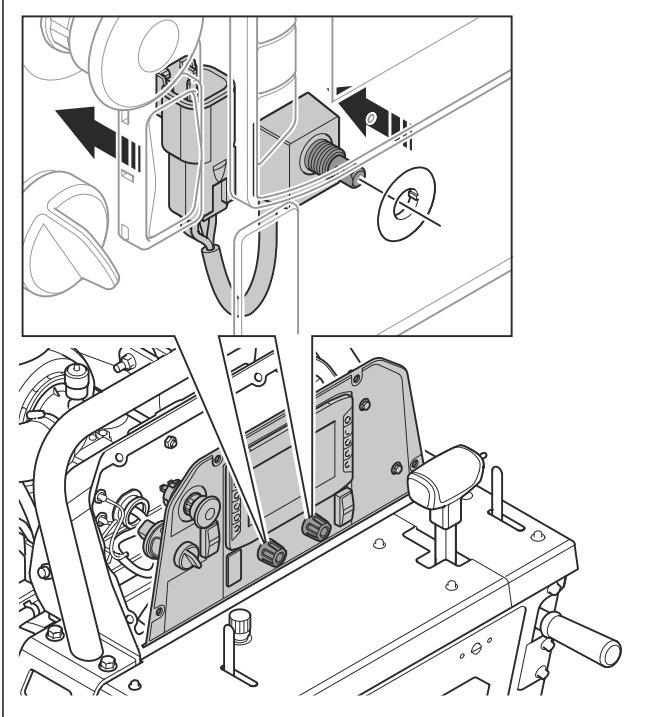
1. Tilt the control panel forward. Refer to *To remove and install the control panel on page 51*.
2. Disconnect the connectors to the knobs.
3. Loosen the screw in the hole on the knob.



5. Remove the nut.



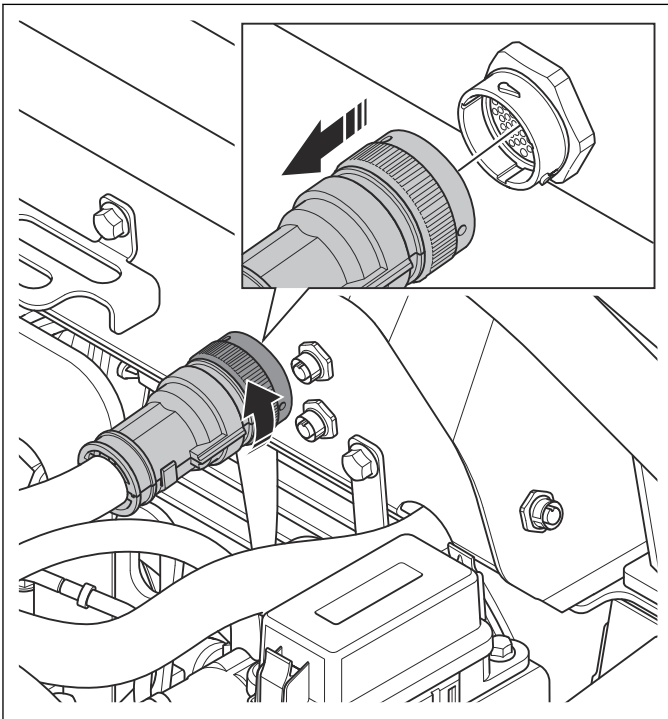
6. Remove the encoder.



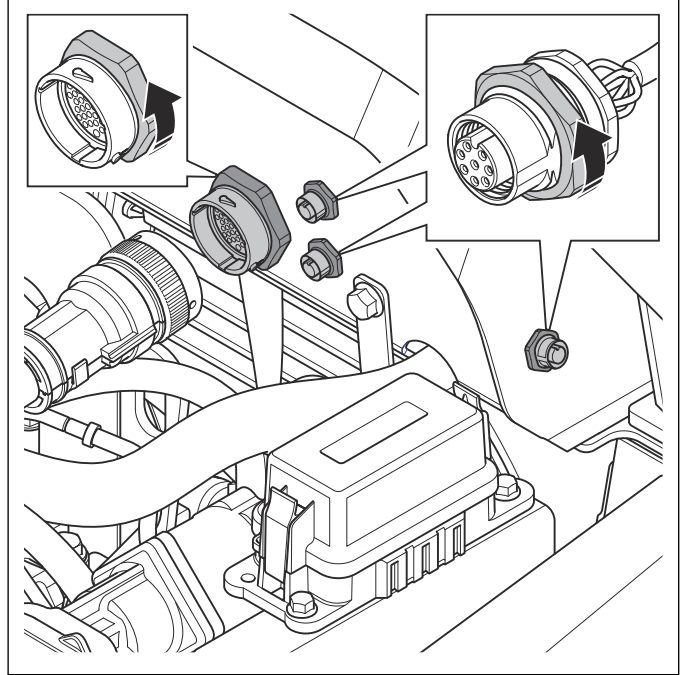
7. Install in the opposite sequence.

8.9.3 To remove and install the electrical harness for the control panel

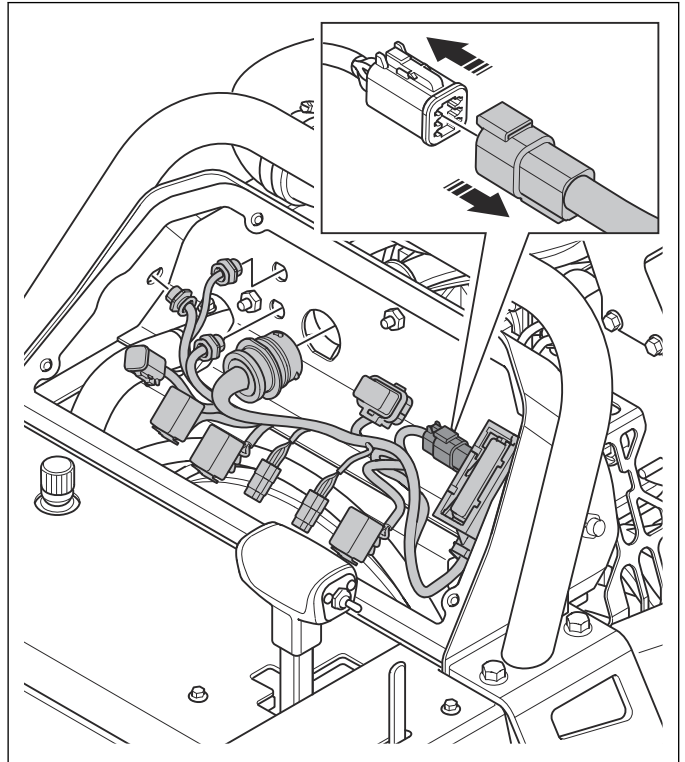
1. Remove the control panel. Refer to *To remove and install the control panel on page 51*.
2. Disconnect the X cable.



3. Loosen the 4 nuts.

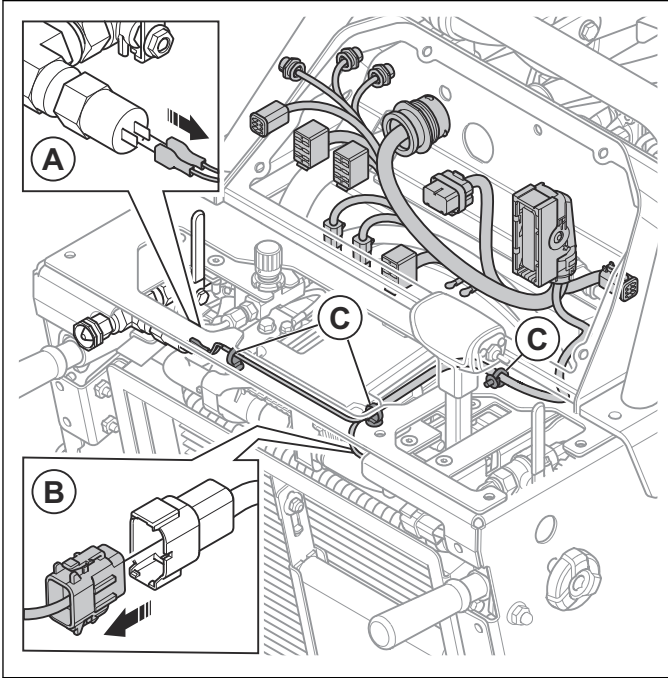


4. Pull out the wires and disconnect the connector to the E-track.

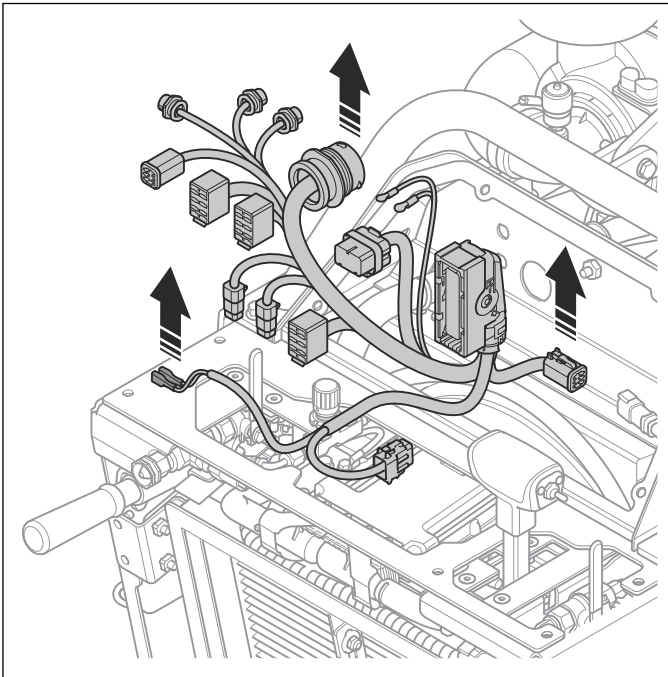


5. Remove the wide control panel cover, the narrow control panel cover and the rear cover. Refer to *Covers overview on page 29*.

6. Disconnect the 2 wires (A) and the connector (B).



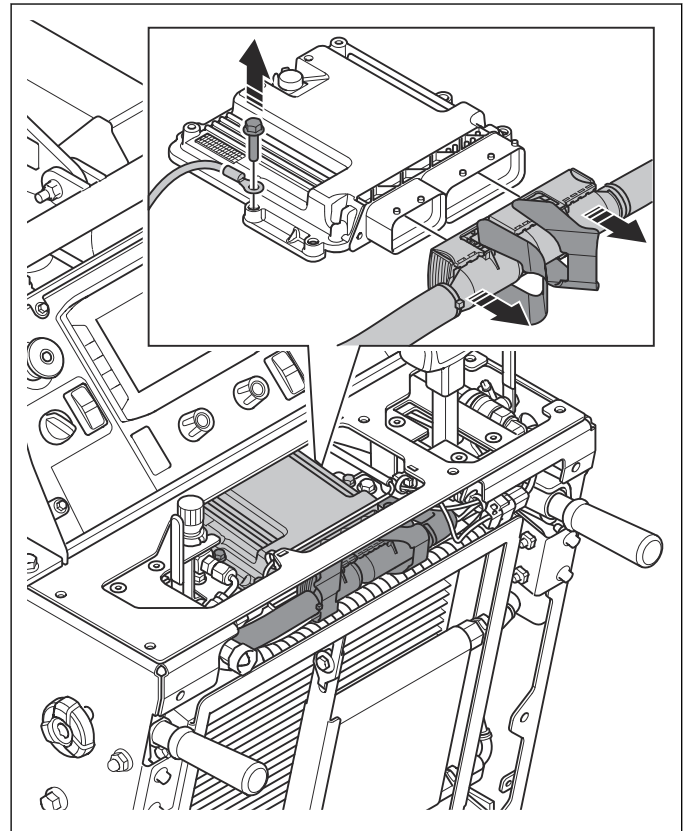
7. Cut the 3 cable ties (C).
8. Remove the electrical harness for the control panel.



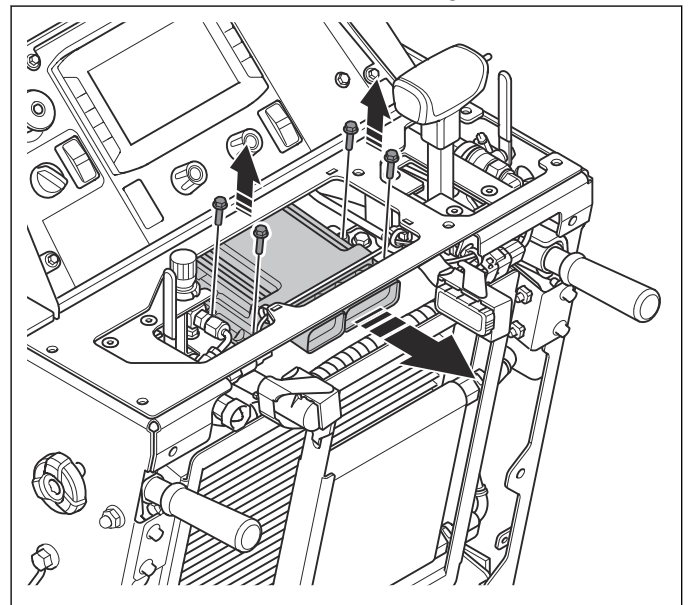
9. Install in the opposite sequence.

8.9.4 To remove and install the engine control unit (ECU)

1. Remove the wide control panel cover, the narrow control panel cover and the rear cover. Refer to *Covers overview on page 29*.
2. Disconnect the 2 connectors, remove the screw and remove the ground wire.



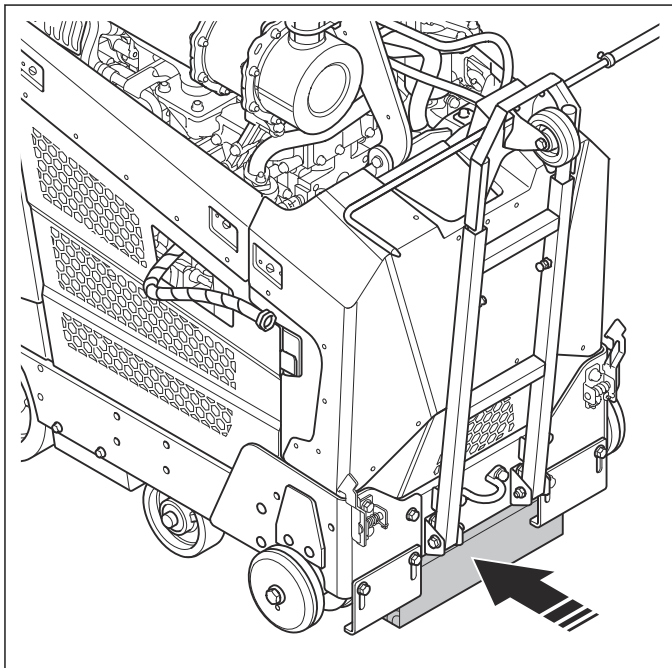
3. Remove the 3 screws and the engine control unit.



4. Install in the opposite sequence.

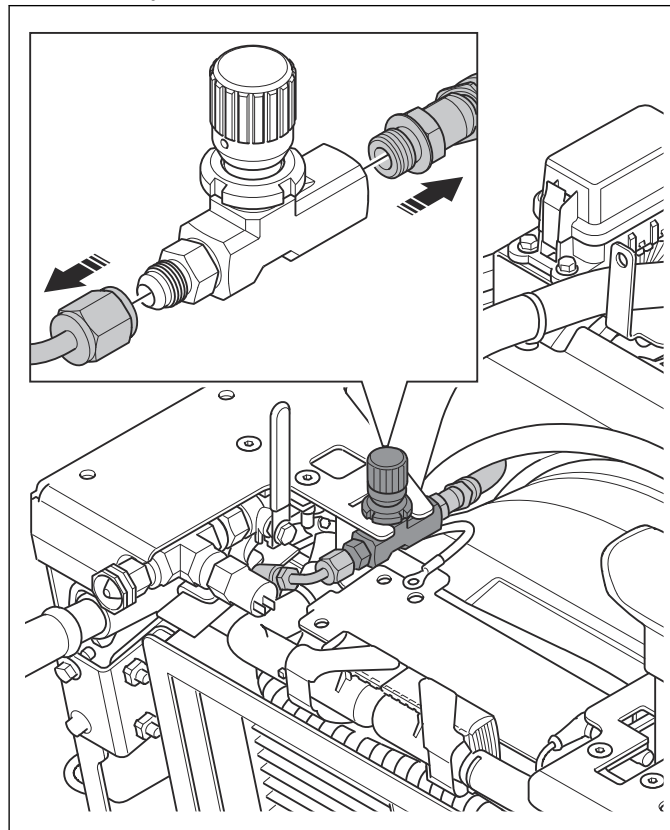
8.9.5 To remove and install the blade lowering speed valve

1. Put a support below the front part of the product.

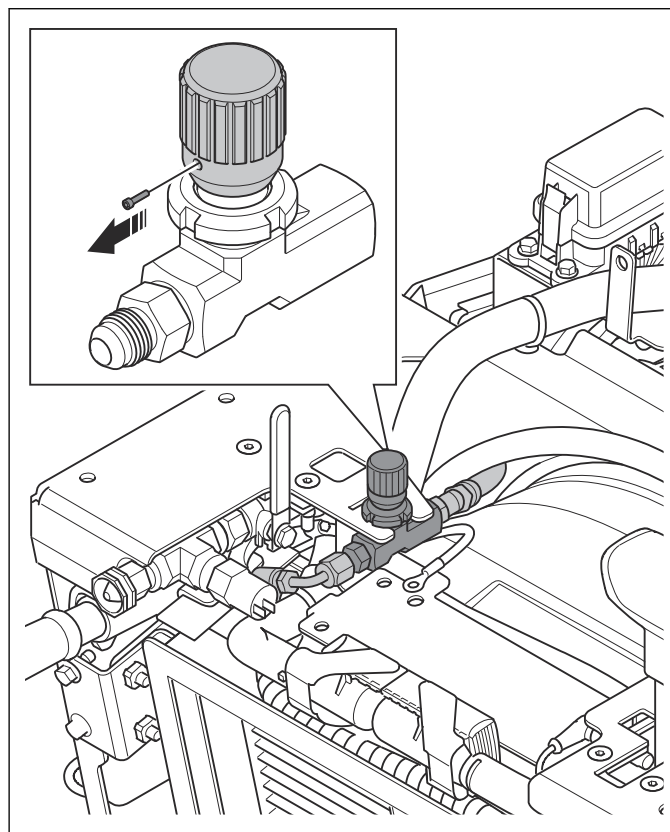


2. Remove the control panel. Refer to *To remove and install the control panel* on page 51.
3. Remove the electrical harness for the control panel. Refer to *To remove and install the electrical harness for the control panel* on page 55.
4. Remove the wide control panel cover, the narrow control panel cover and the rear cover. Refer to *Covers overview* on page 29.
5. Remove the engine control unit. Refer to *To remove and install the engine control unit (ECU)* on page 56.

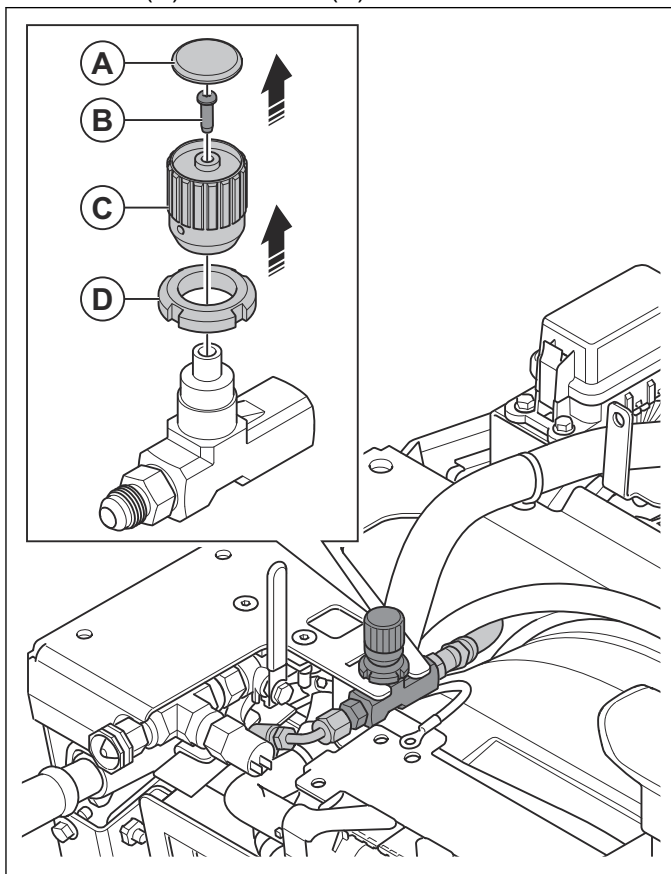
6. Disconnect the hydraulic couplings and install plugs on the hydraulic hoses.



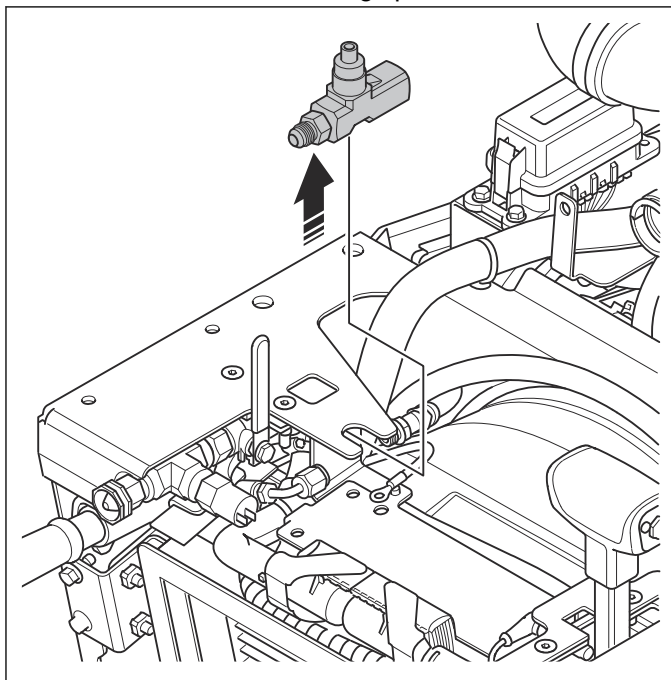
7. Remove the screw.



8. Remove the top part of the dial (A), the screw (B), the dial (C) and the nut (D).



9. Remove the blade lowering speed valve.

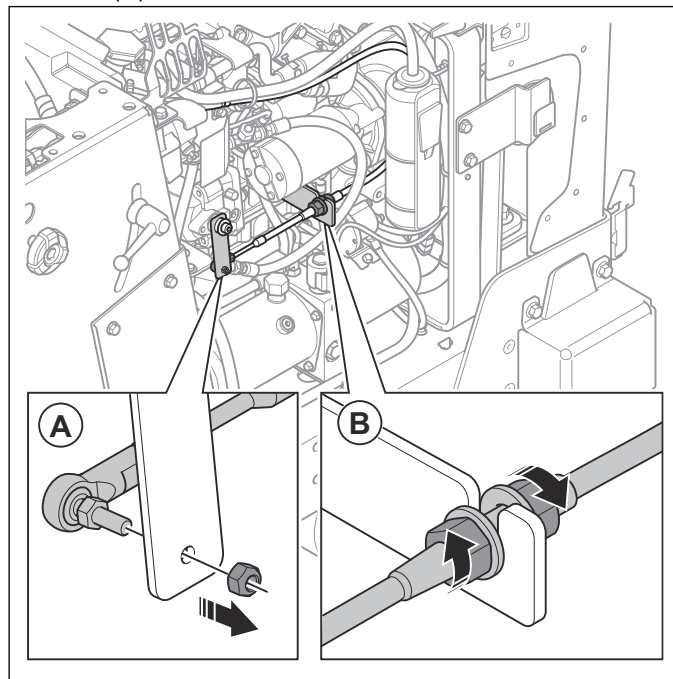


10. Install in the opposite sequence.

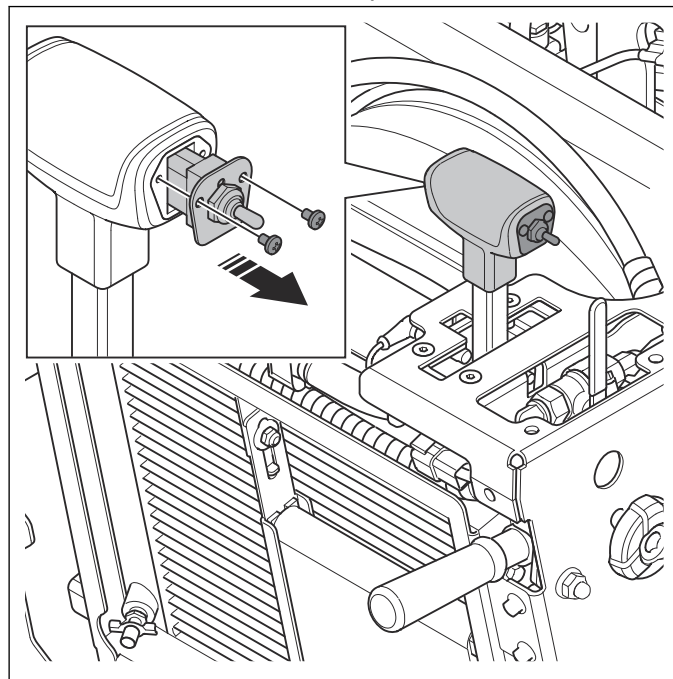
8.9.6 To remove and install the drive control lever

1. Remove the control panel. Refer to *To remove and install the control panel on page 51*.
2. Remove the electrical harness for the control panel. Refer to .

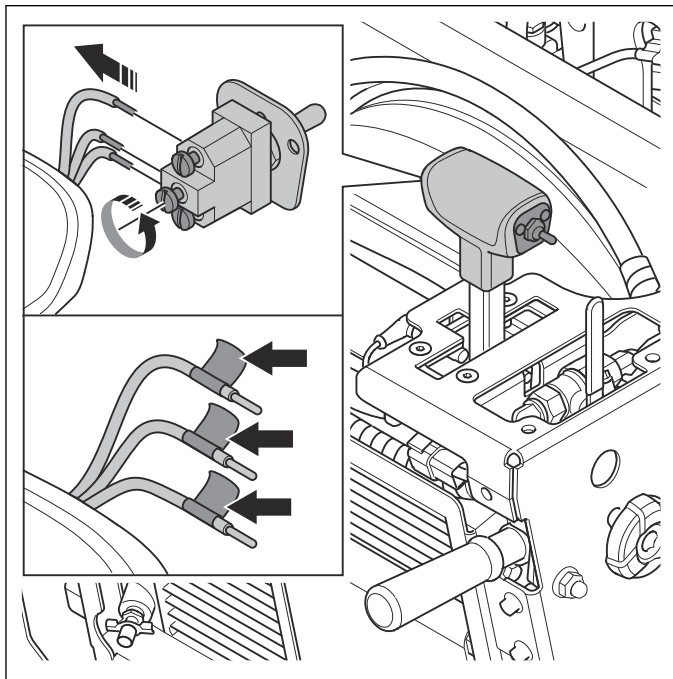
3. Remove the wide control panel cover, the narrow control panel cover, the rear cover, the rear lift bail, the control panel housing and the right side cover. Refer to *Covers overview on page 29*.
4. Remove the nut and the wire (A) and loosen the nuts (B).



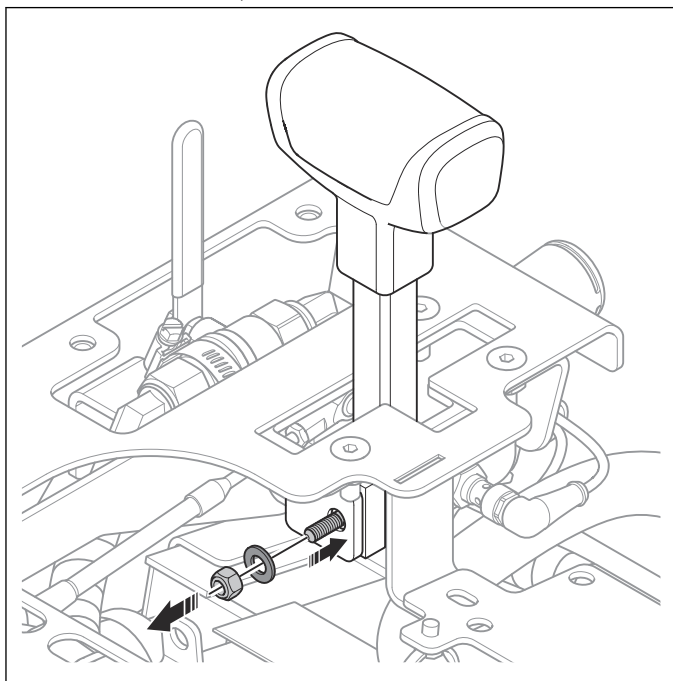
5. Remove the 2 screws and pull out the switch.



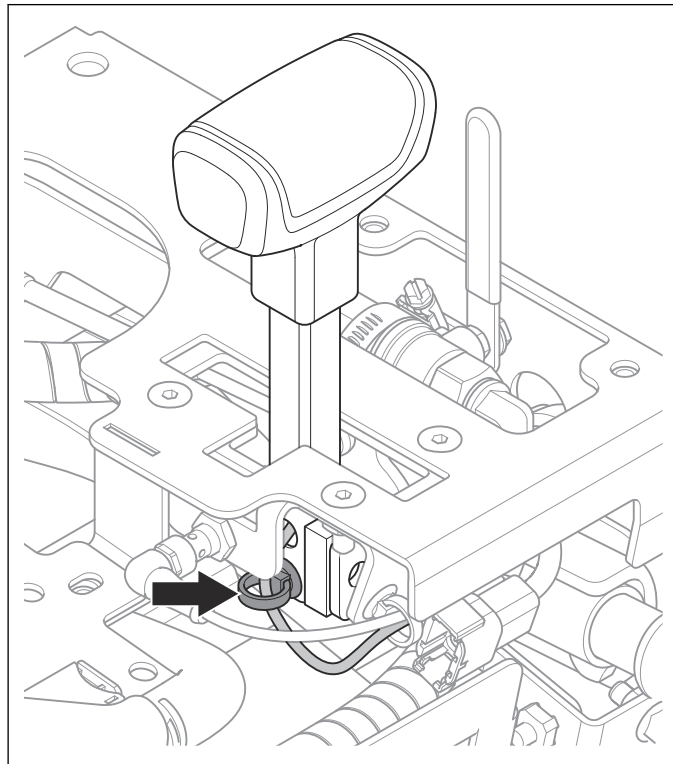
6. Mark the wires with tape or a pen to note how the wires are connected. Loosen the 2 screws and remove the 3 wires.



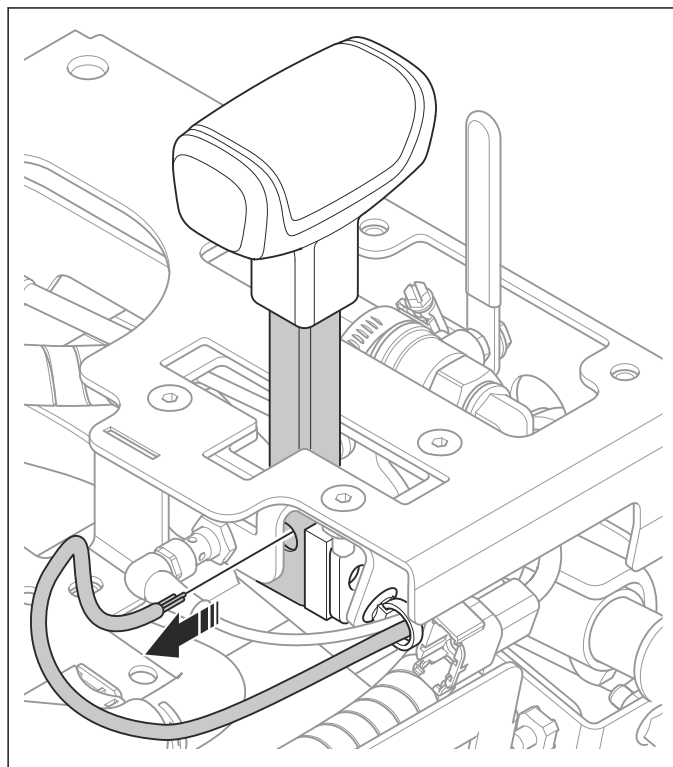
7. Remove the nut, the washer and the bolt.



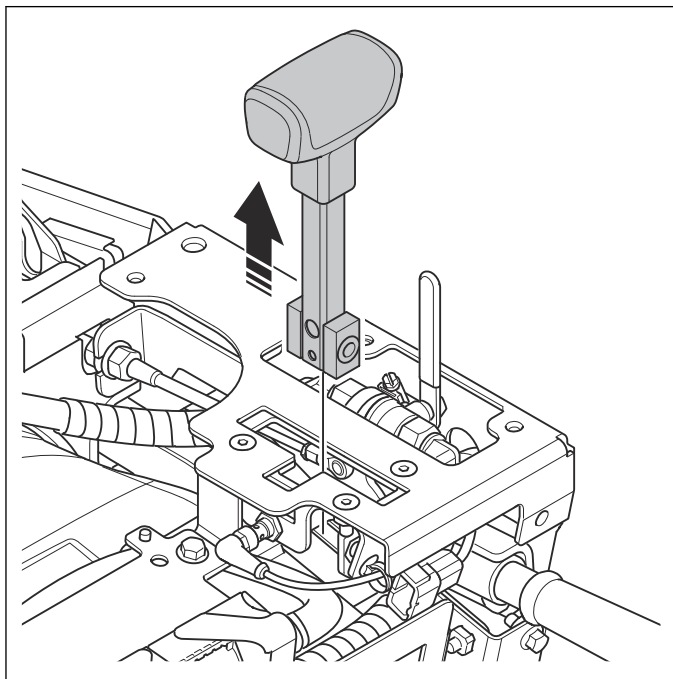
8. Cut the cable tie.



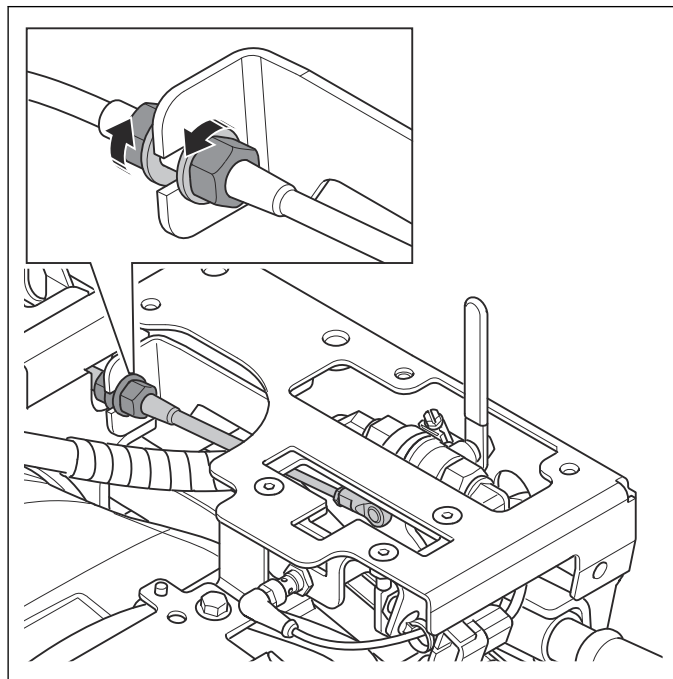
9. Remove the wire.



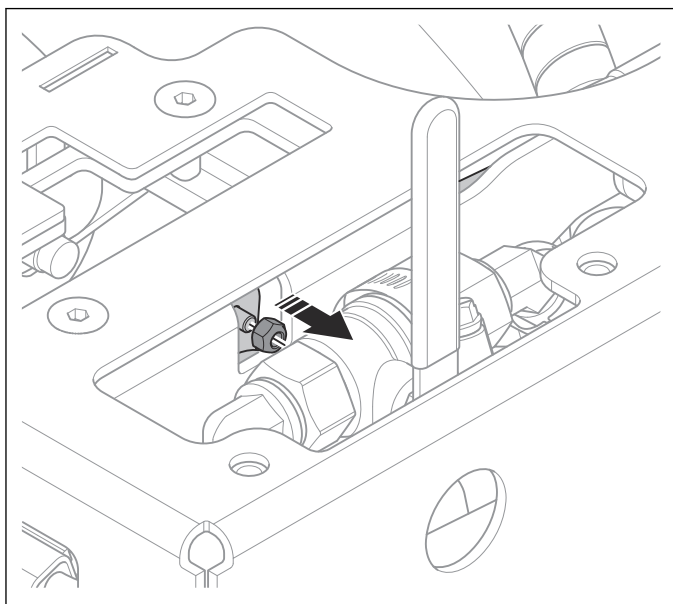
10. Remove the drive control lever.



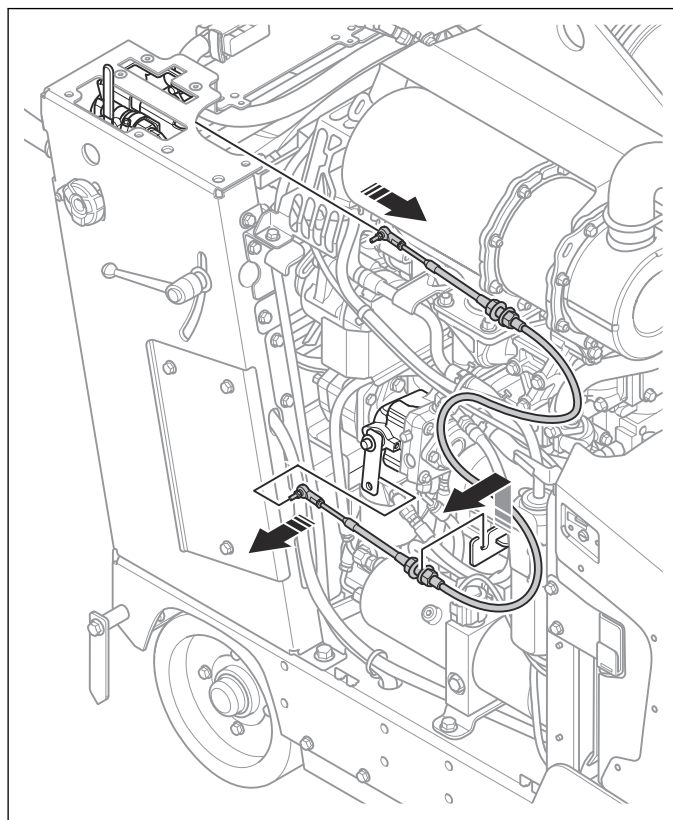
12. Loosen the 2 nuts.



11. Remove the nut.



13. Remove the wire for the drive control lever.



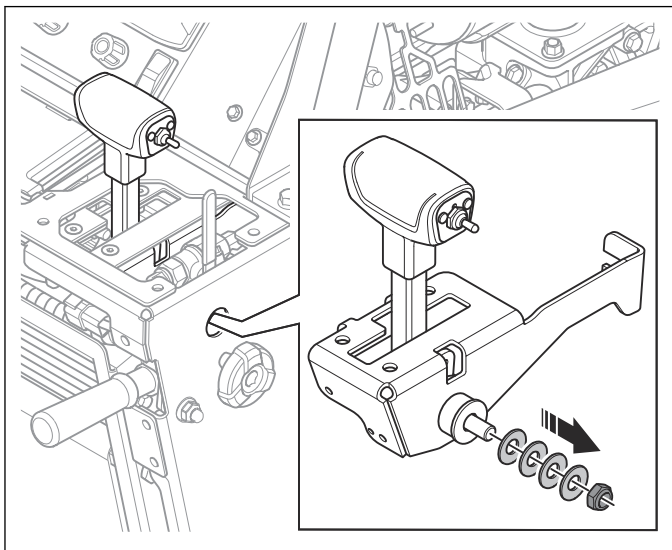
14. Install in the opposite sequence.

8.9.7 To remove and install the bracket for the drive control lever

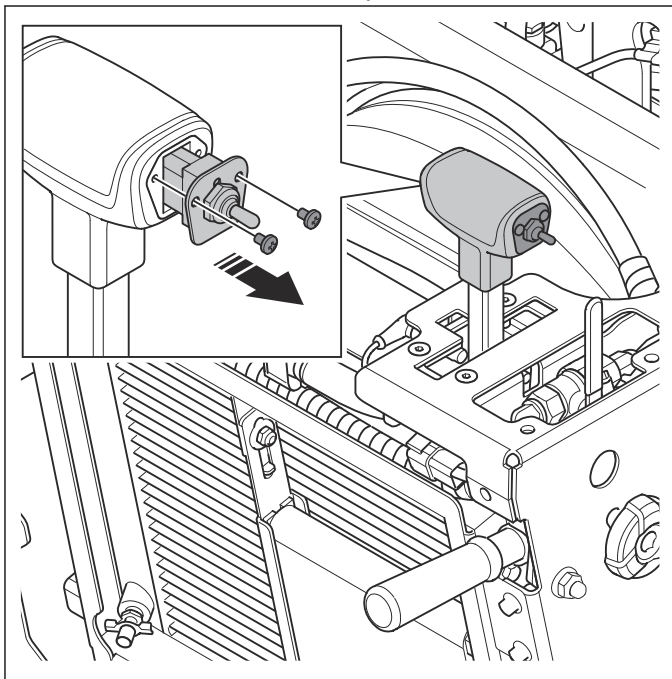
1. Remove the control panel. Refer to .
2. Remove the electrical harness for the control panel. Refer to .

3. Remove the wide control panel cover, the narrow control panel cover, the rear cover, the rear lift bail and the control panel housing. Refer to *Covers overview on page 29*.

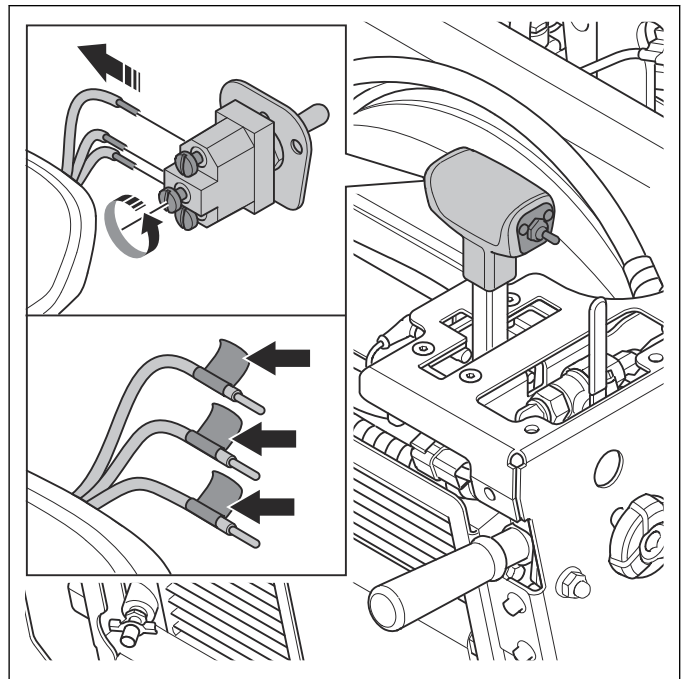
4. Remove the nut and the 4 washers.



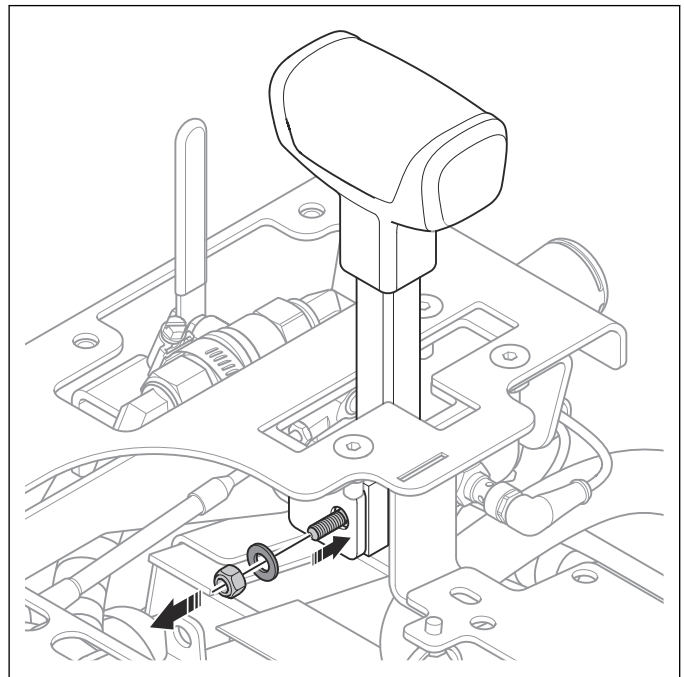
5. Remove the 2 screws and pull out the switch.



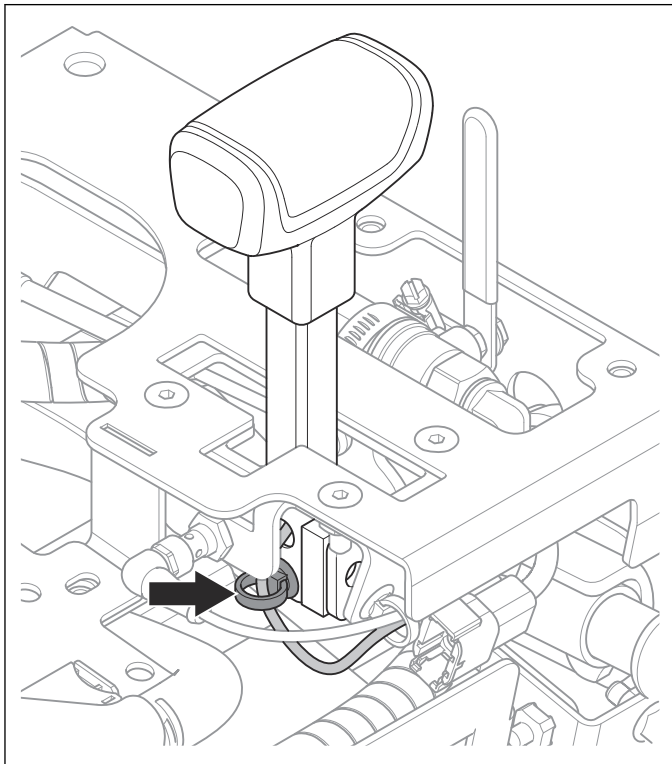
6. Mark the wires with tape or a pen to note how the wires are connected. Loosen the 2 screws and remove the 3 wires.



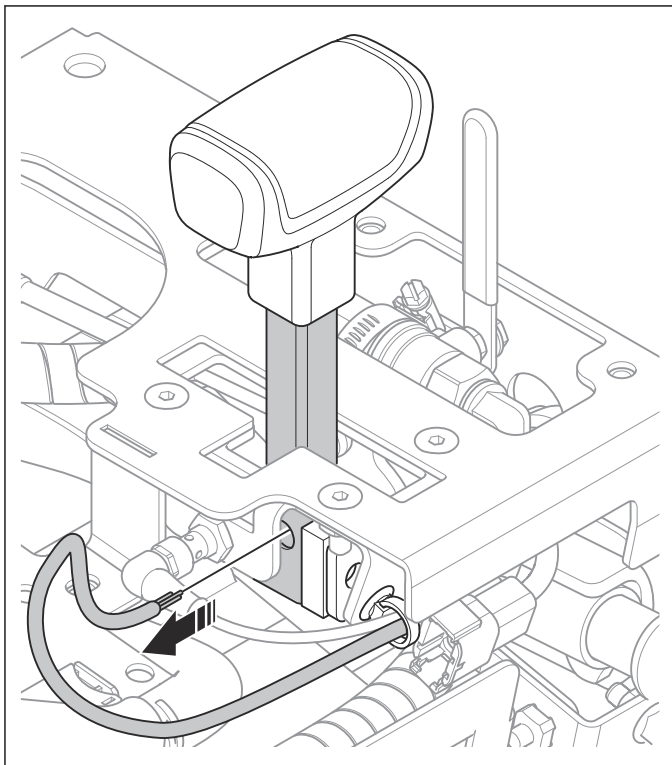
7. Remove the nut, the washer and the bolt.



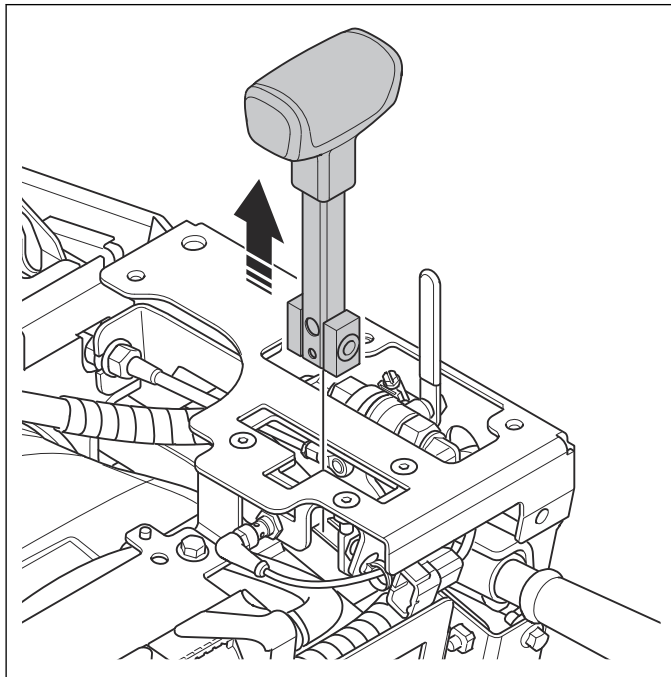
8. Cut the cable tie.



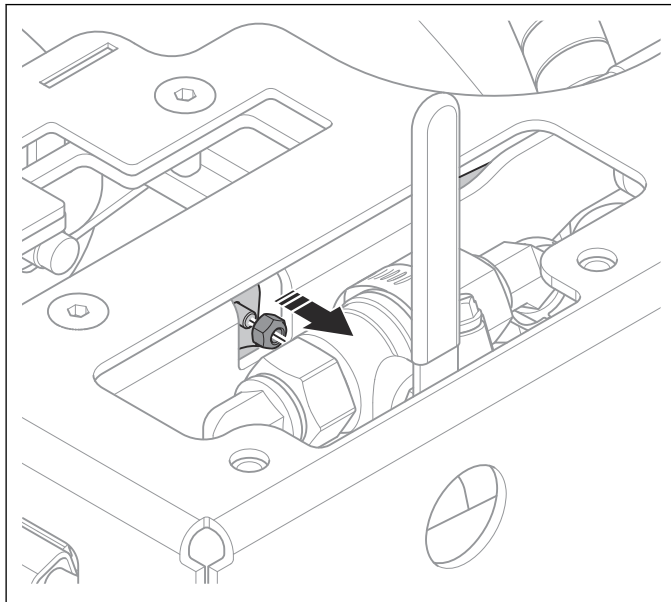
9. Remove the wire.



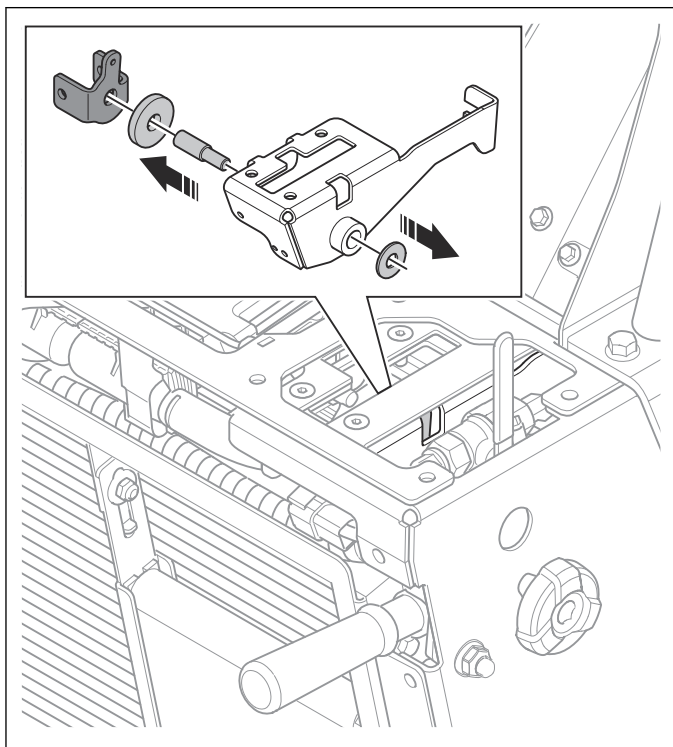
10. Remove the drive control lever.



11. Remove the nut.



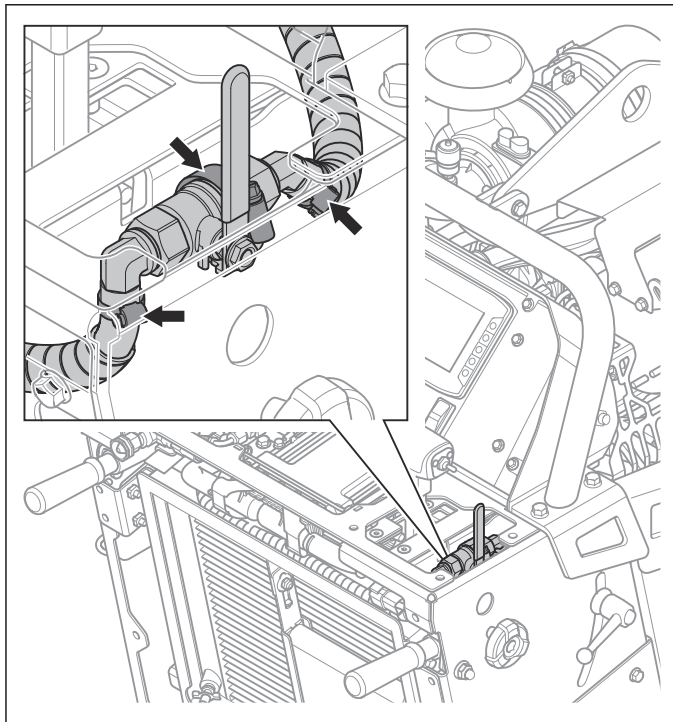
12. Remove the bracket, the nylon washer, the shaft and the washer.



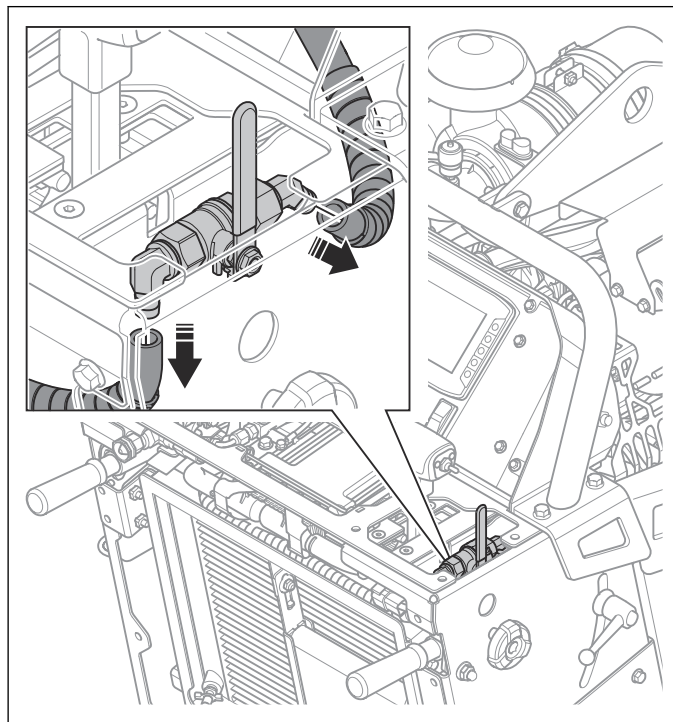
13. Install in the opposite sequence.

8.9.8 To remove and install the water valve lever

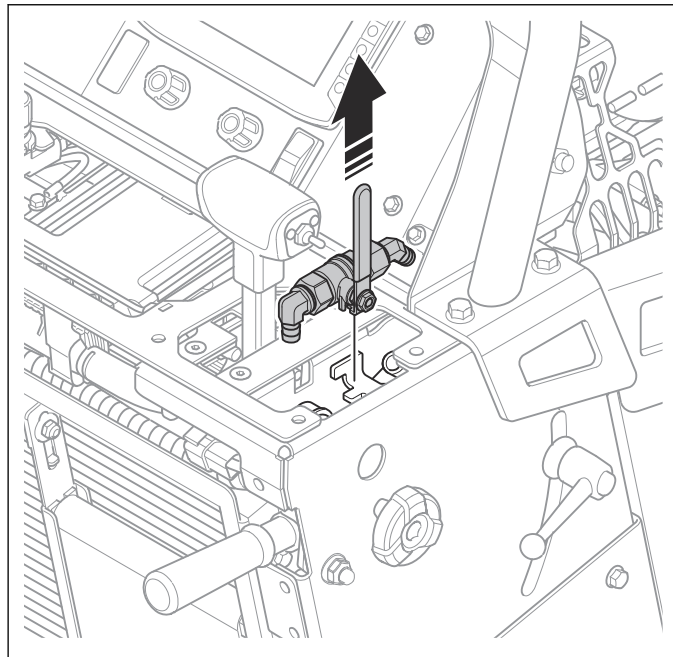
1. Remove the narrow control panel cover, the wide control panel cover and the rear cover. Refer to *Covers overview on page 29*.
2. Remove the 3 hose clamps.



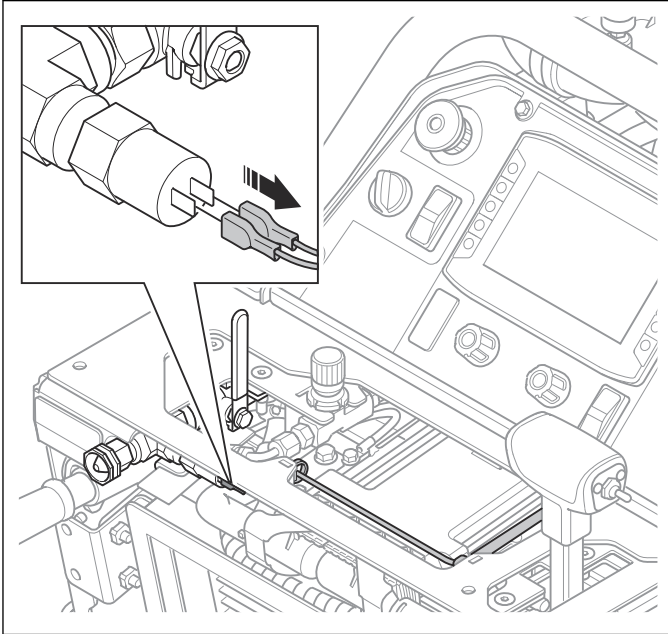
3. Loosen the 2 hoses.



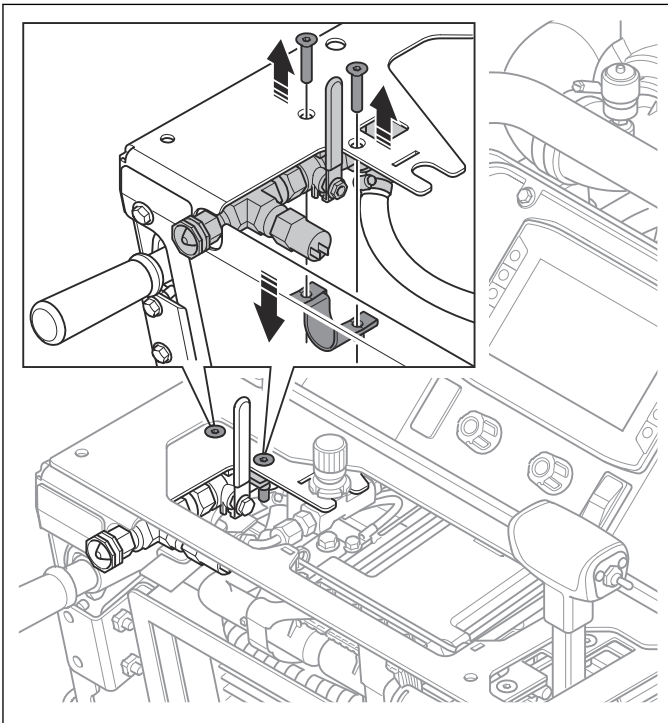
4. Remove the right water valve lever.



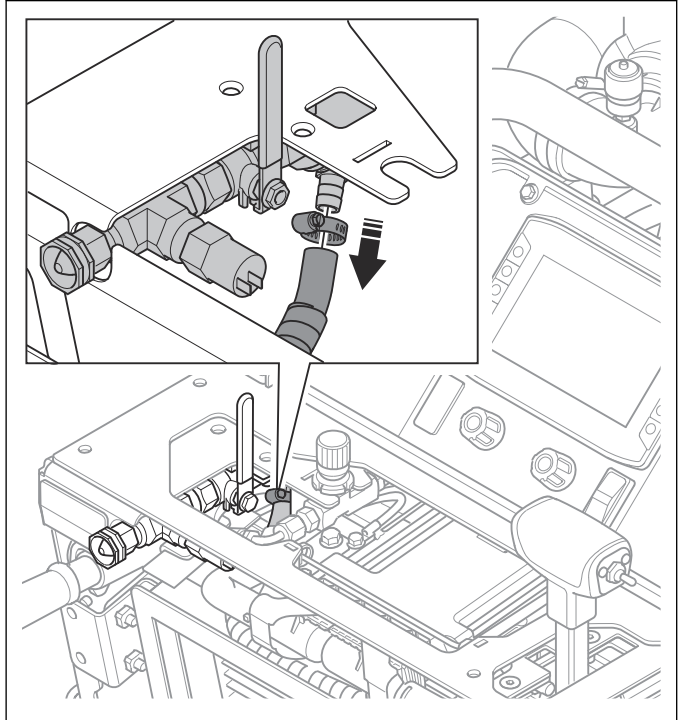
5. Disconnect the 2 connectors.



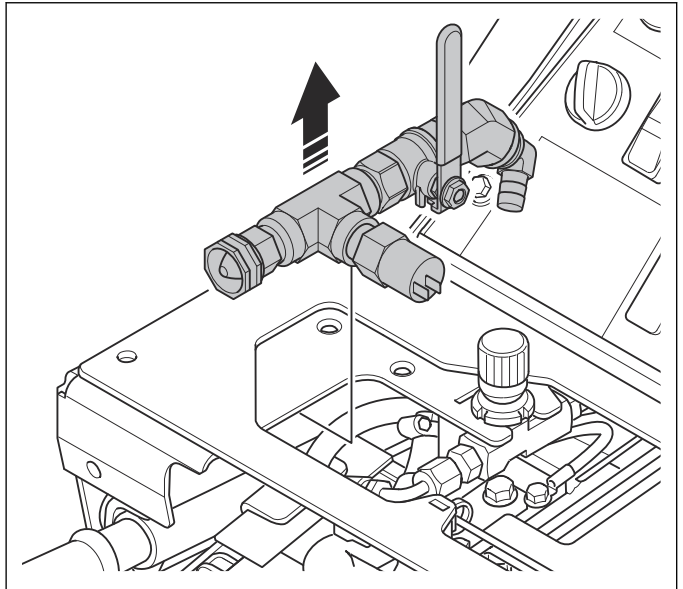
6. Remove the 2 screws and the bracket.



7. Remove the hose clamp and loosen the hose.



8. Remove the left water valve lever assembly.

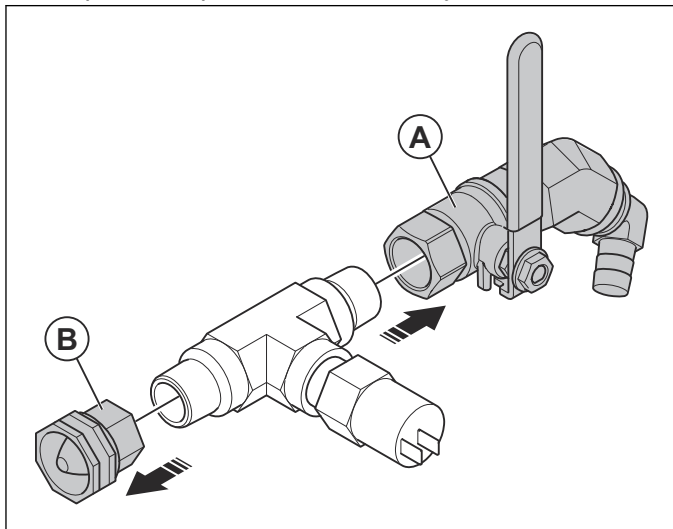


9. Install in the opposite sequence.

8.9.9 To disassemble the left water valve lever

1. Remove the narrow control panel cover, the wide control panel cover and the rear cover. Refer to .
2. Remove the left water valve lever assembly. Refer to *To remove and install the water valve lever on page 63.*

3. Remove the water lever (A) and the filter washer (B). Replace the parts if it is necessary.



4. Assemble in the opposite sequence.

8.10 Engine

8.10.1 To do a check of the engine coolant level

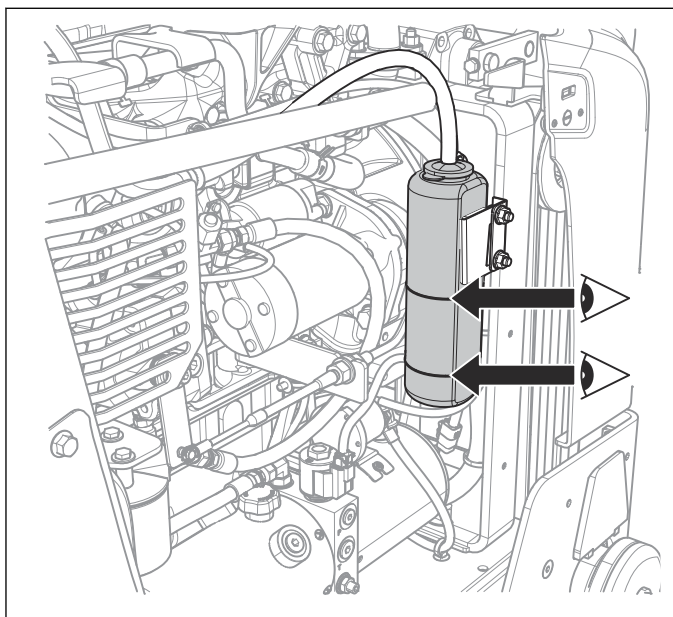


WARNING: The engine coolant container is pressurized.

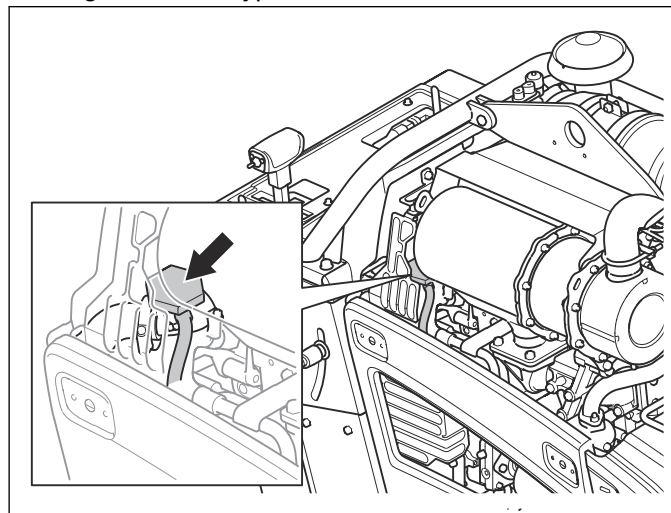


WARNING: Risk of burn injuries. Let the engine become cool before you open the engine coolant lid.

1. Make sure that the engine is cool.
2. Remove the right side cover. Refer to .
3. Examine the engine coolant level at the container for engine coolant spill. The coolant level is correct when it is between the 2 marks.



4. If the engine coolant level is too low, remove the lid and fill until the level is correct. Refer to *Technical data on page 115* for information about the correct engine coolant type and mixture.

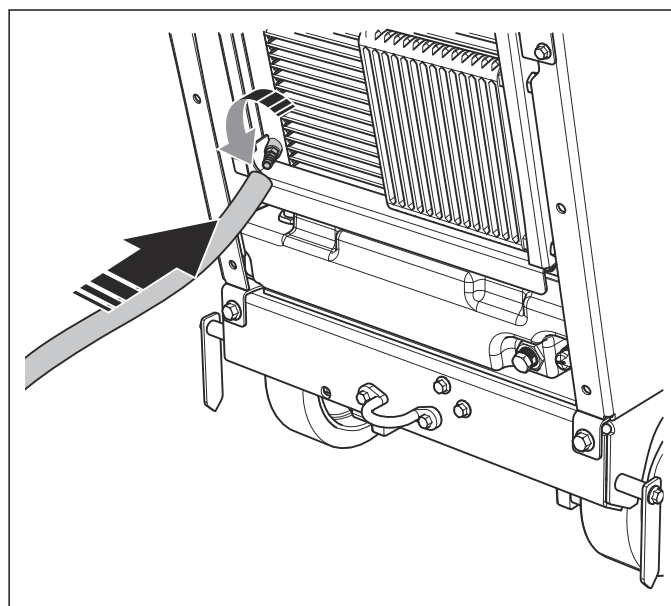


8.10.2 To replace the engine coolant



WARNING: Risk of burn injuries. Let the engine become cool before you open the engine coolant lid.

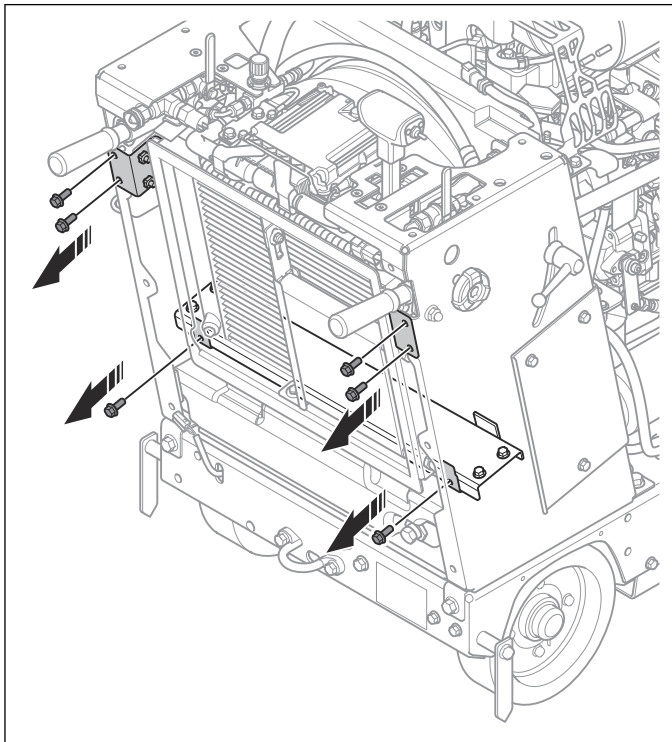
1. Make sure that the engine is cool.
2. Remove the rear cover. Refer to .
3. Put an extension on the valve.



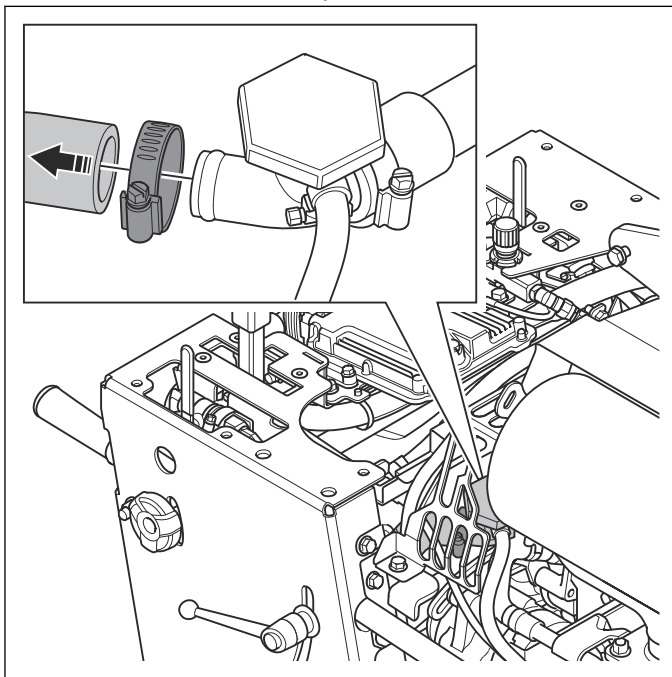
4. Open the valve.
5. Remove the engine coolant lid. The engine coolant drains from the system.
6. Close the valve.
7. Fill with engine coolant until the level is between the 2 marks on the engine coolant bottle. Refer to *Technical data on page 115* for information about the correct engine coolant type and mixture.

8.10.3 To remove and install the radiator

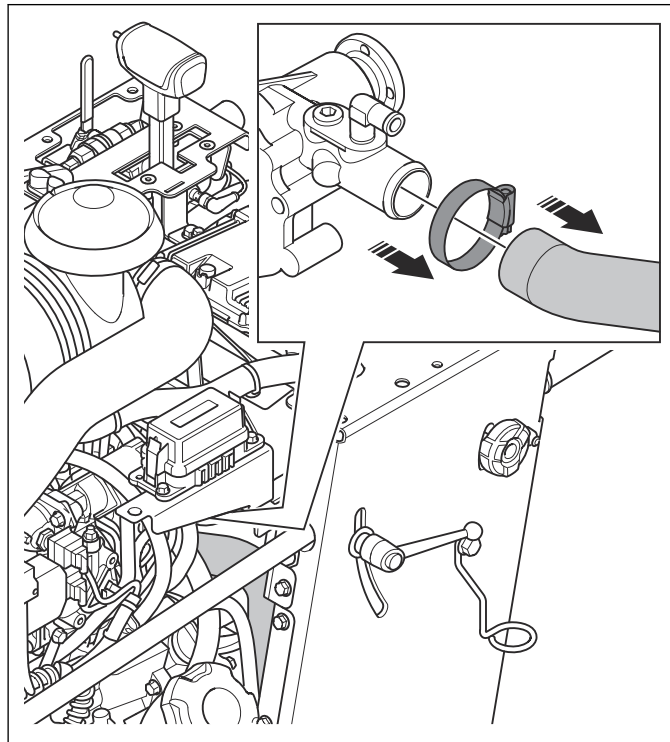
1. Drain the engine coolant from the system. Refer to *To replace the engine coolant on page 65*.
2. Remove the control panel. Refer to *To remove and install the control panel on page 51*.
3. Remove the electrical harness for the control panel. Refer to .
4. Remove the narrow control panel cover, the wide control panel cover, the rear cover, the rear lift bail, the protection cover, the control panel housing, the right side cover and the left side cover. Refer to *Covers overview on page 29*.
5. Remove the 6 screws.



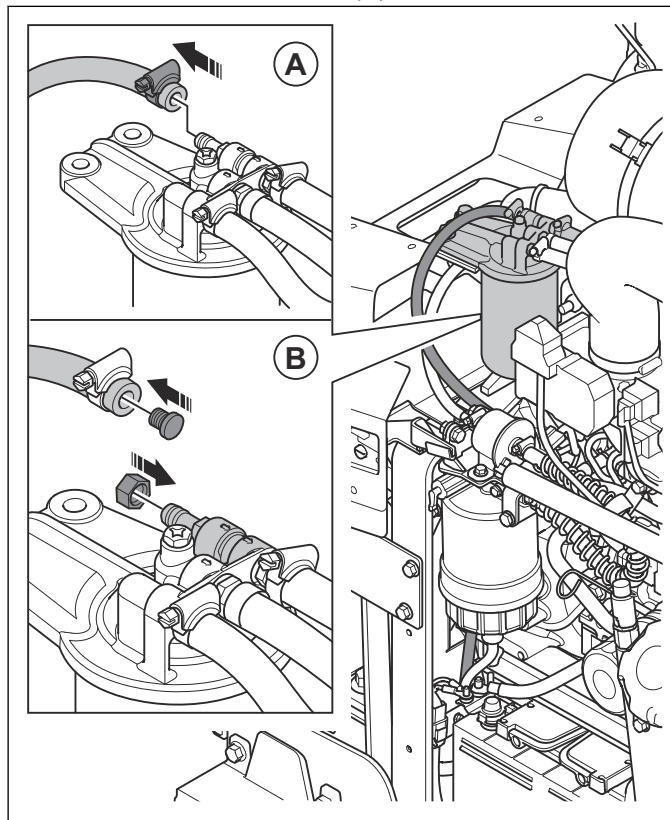
6. Remove the hose clamp and disconnect the hose.



7. Remove the hose clamp and disconnect the hose.

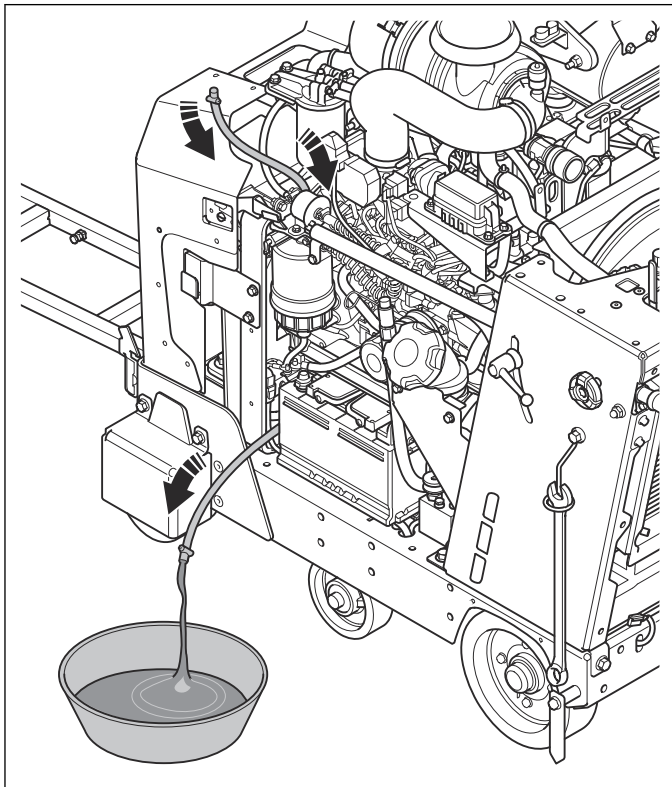


8. Disconnect the fuel hose (A).

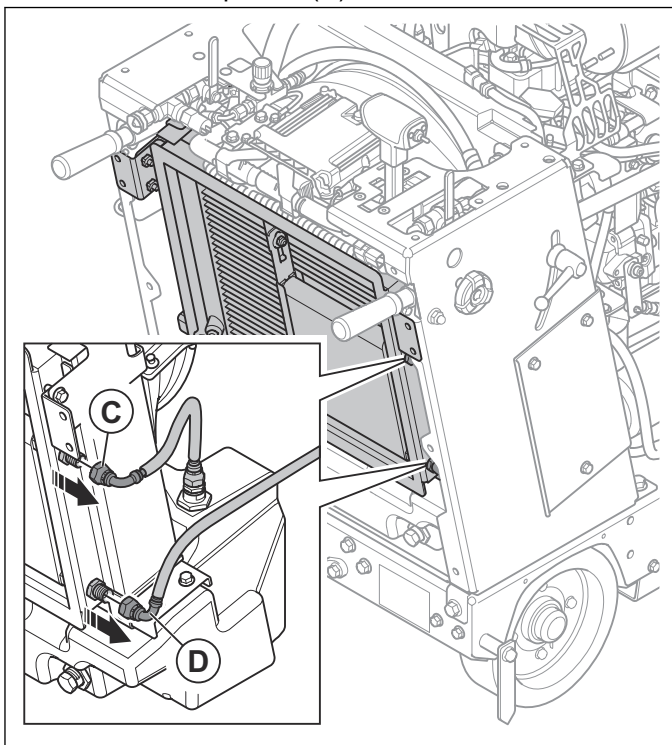


9. Install plugs in the openings (B).

10. Pull down the fuel hose and drain the fuel.



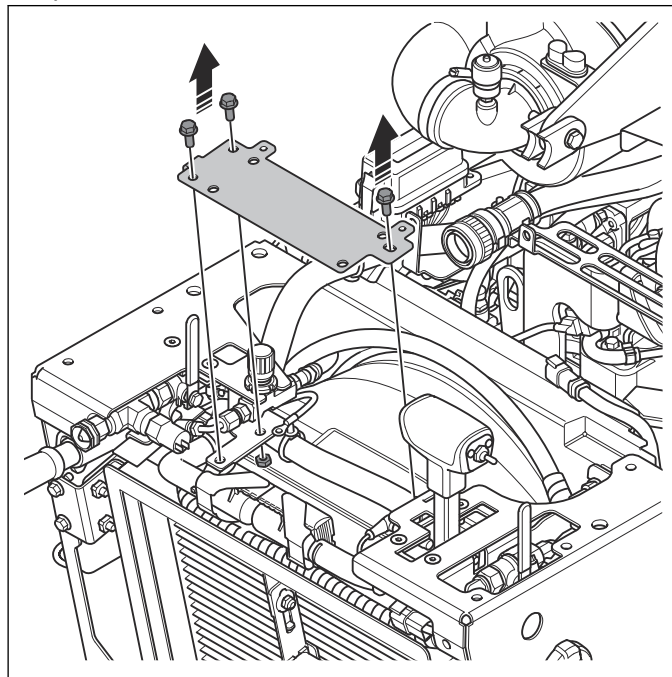
11. Remove the top hose (C).



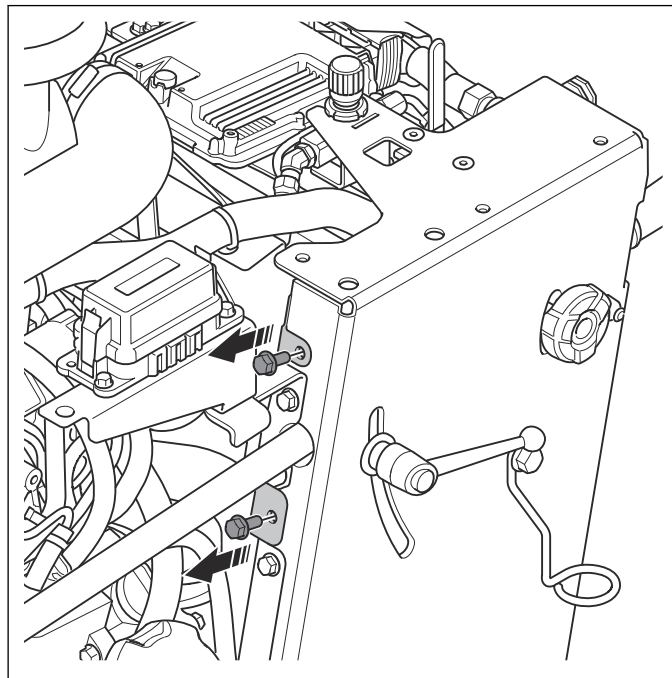
12. Remove the hose (D) and drain the remaining fuel.

13. Remove the ECU. Refer to *To remove and install the engine control unit (ECU)* on page 56.

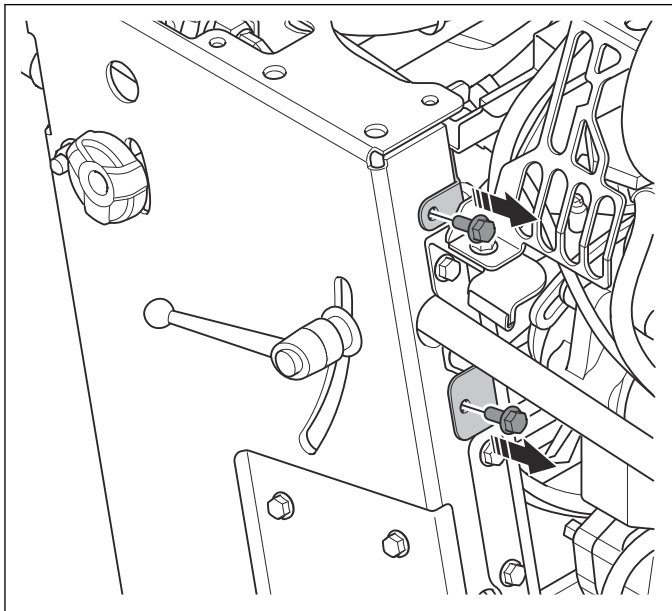
14. Remove the 3 bolts, the 3 nuts and the ECU mount plate.



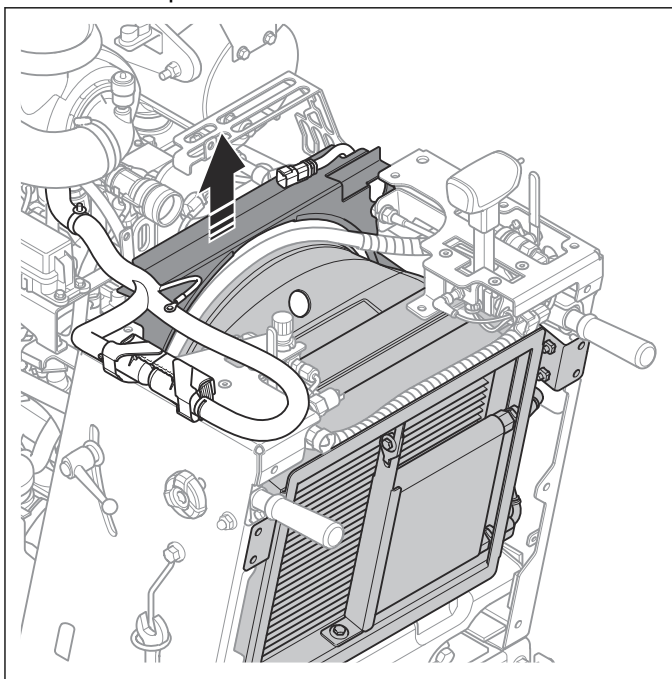
15. Remove the 2 screws.



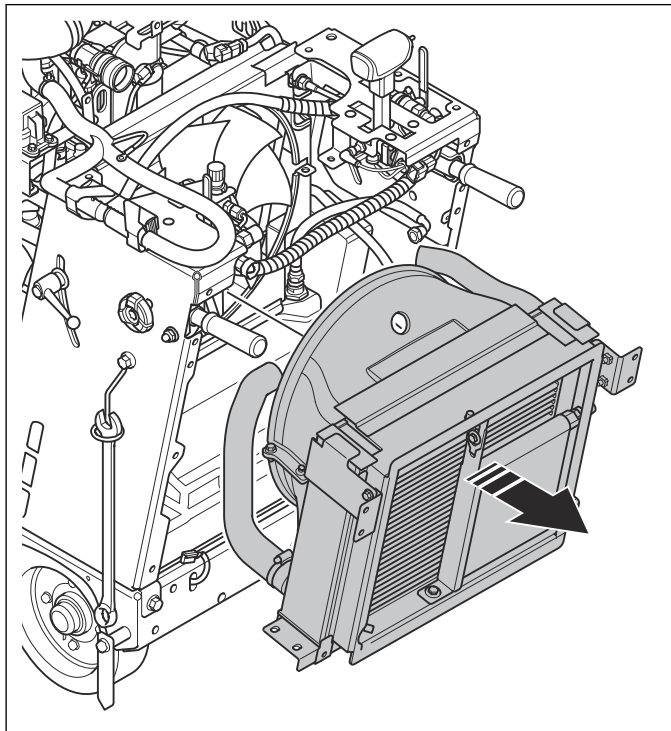
16. Remove the 2 screws.



17. Move the cable to the ECU to the side and lift up the back flow plate 2 cm.



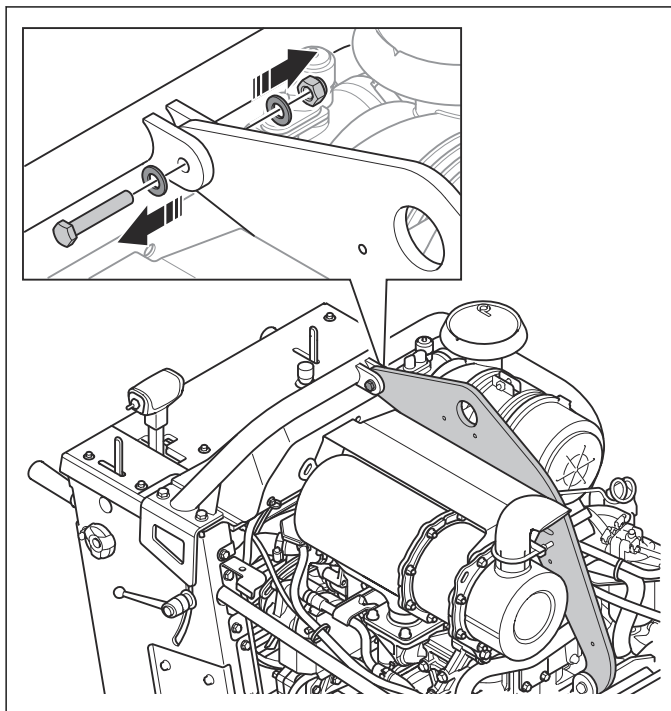
18. Pull out the radiator.



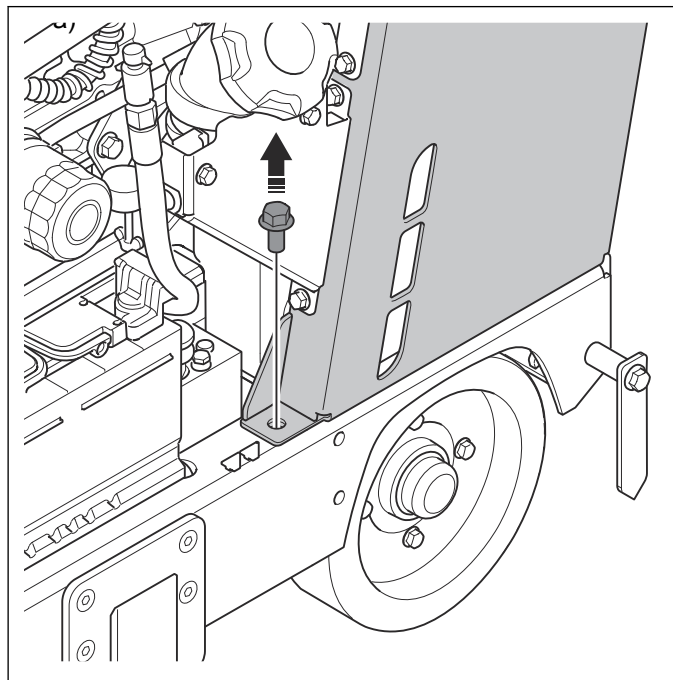
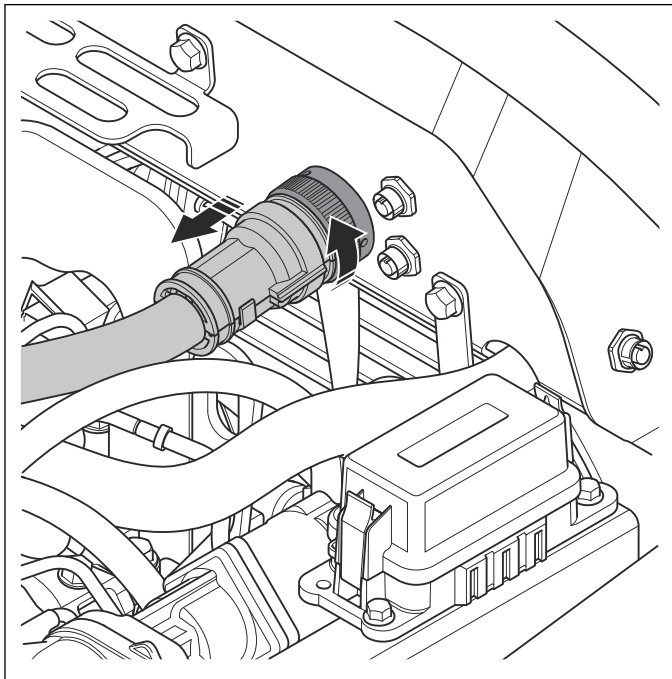
19. Install in the opposite sequence.

8.10.4 To remove and install the fan

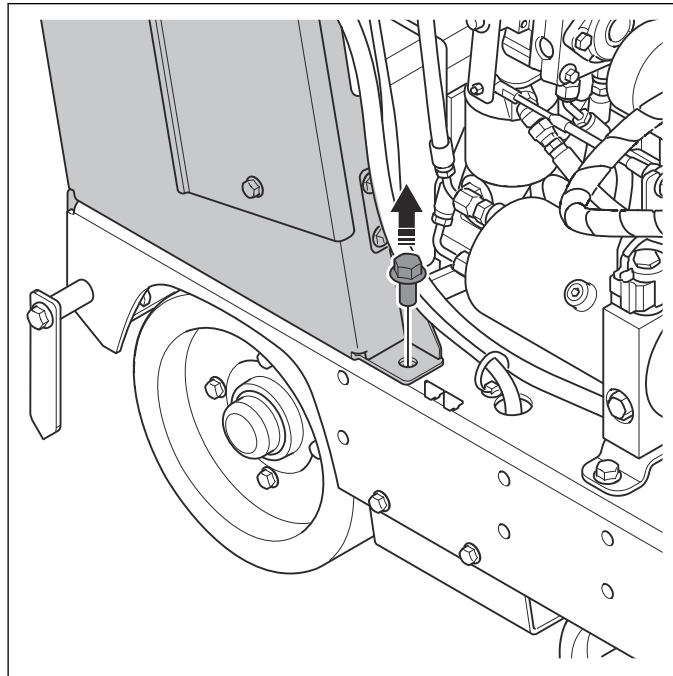
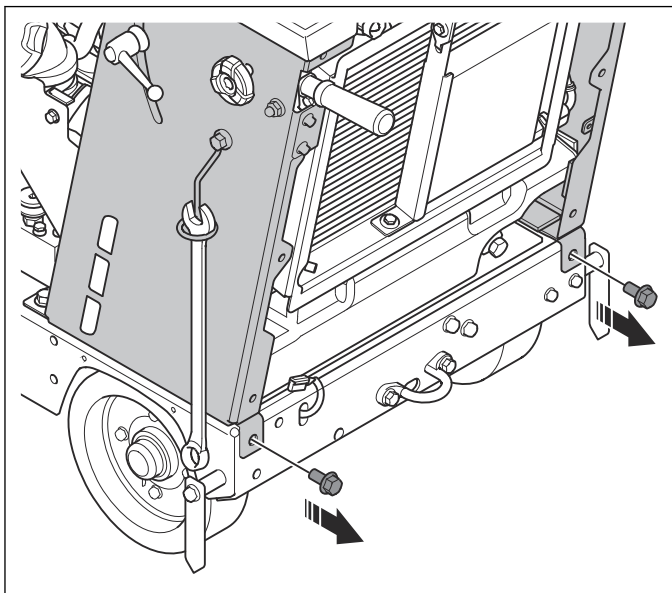
1. Drain the engine coolant from the system. Refer to *To replace the engine coolant on page 65*.
2. Remove the rear cover, the protection cover, the right side cover and the left side cover. Refer to *Covers overview on page 29*.
3. Remove the bolt, the nut and the 2 washers.



4. Disconnect the connector.

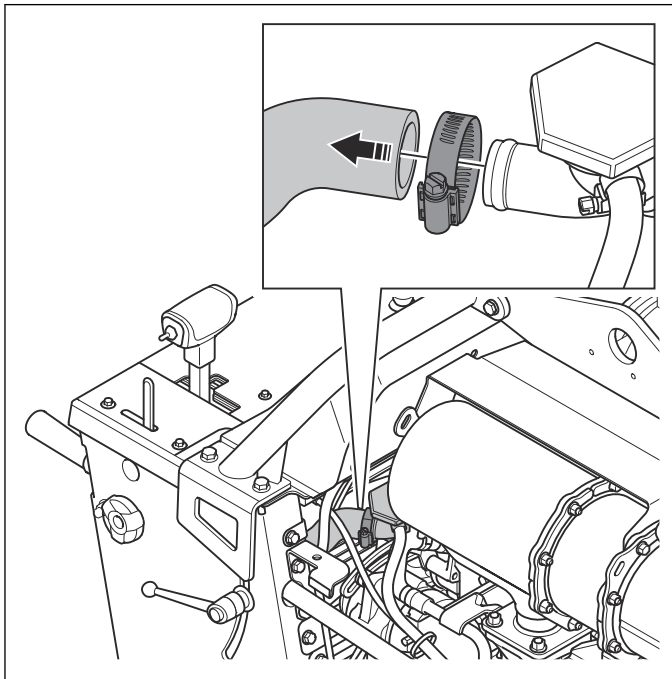


5. Remove the 2 screws.

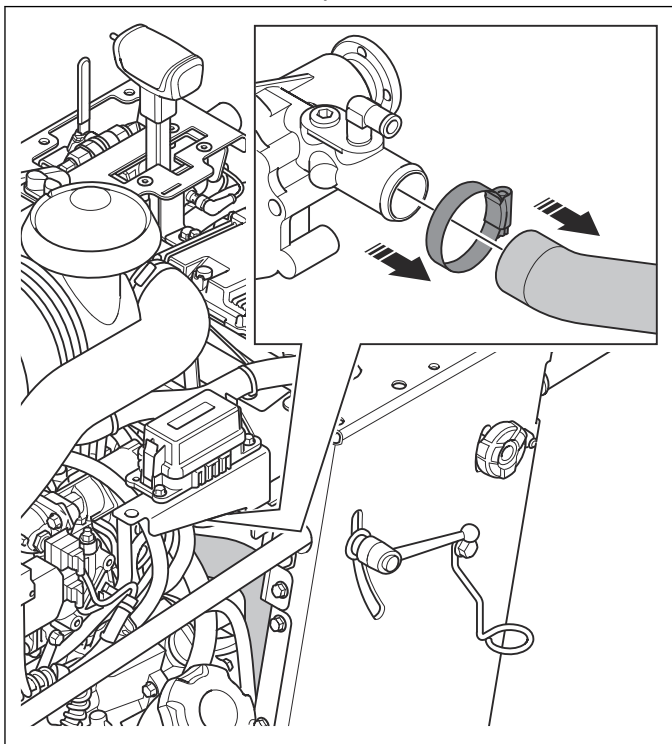


6. Remove the 2 screws, 1 one each side of the product.

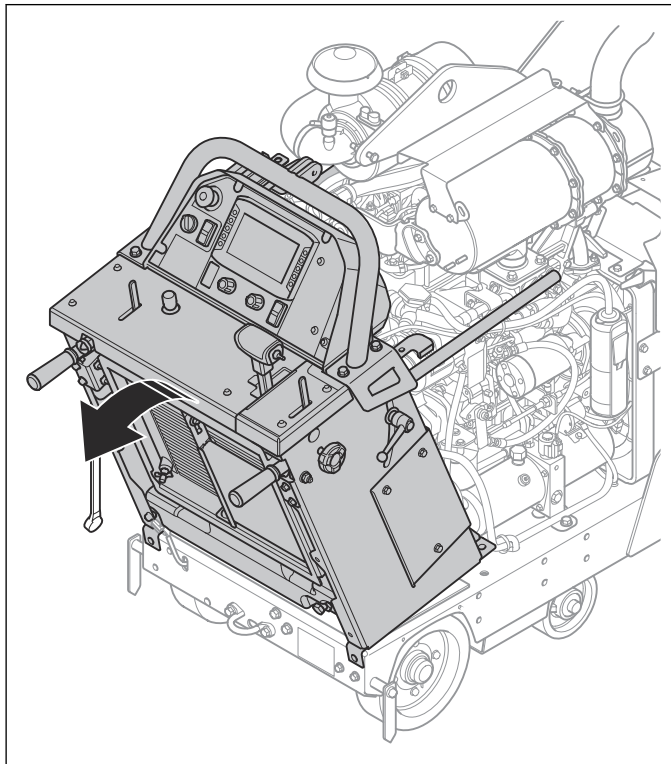
7. Remove the hose clamp and disconnect the hose.



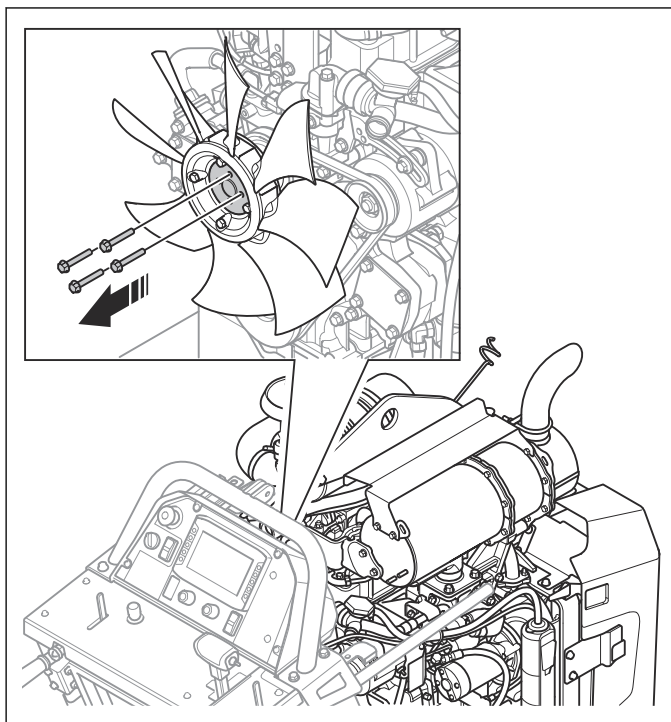
8. Remove the hose clamp and disconnect the hose.



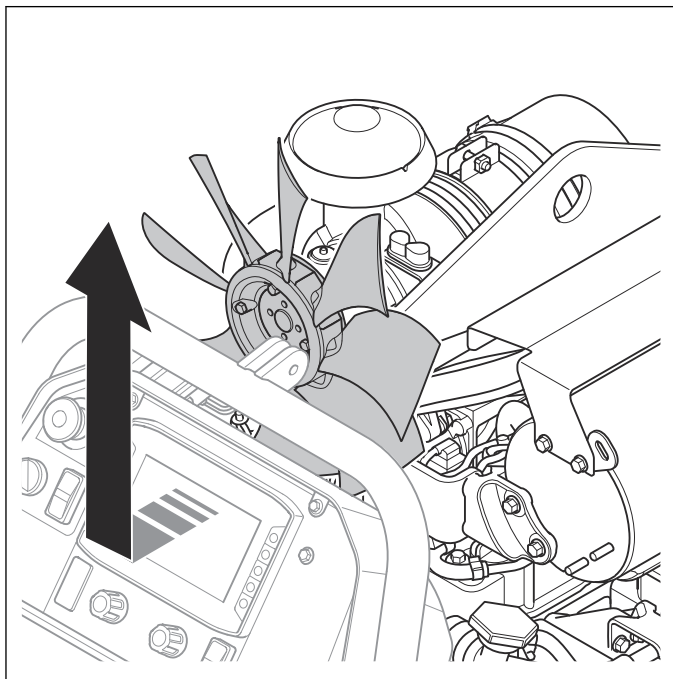
9. Carefully tip the rear part of the product rearward.



10. Remove the 4 screws.



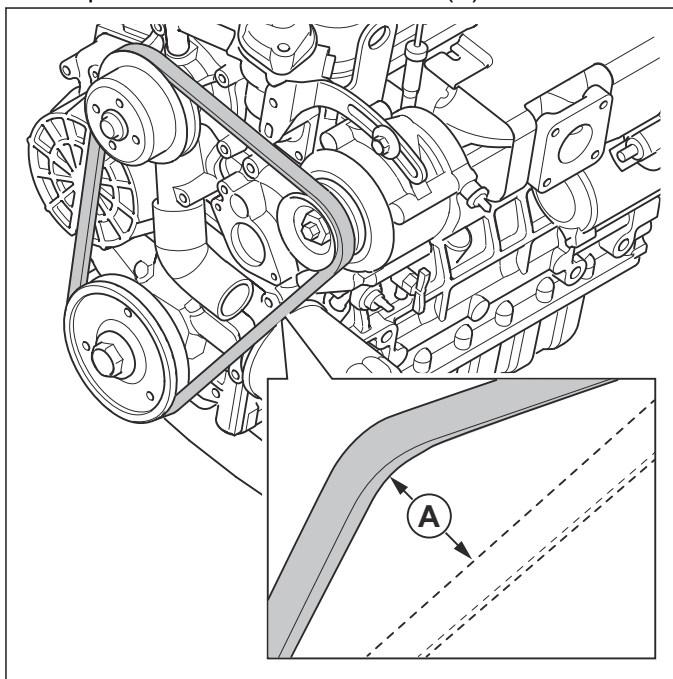
11. Remove the fan.



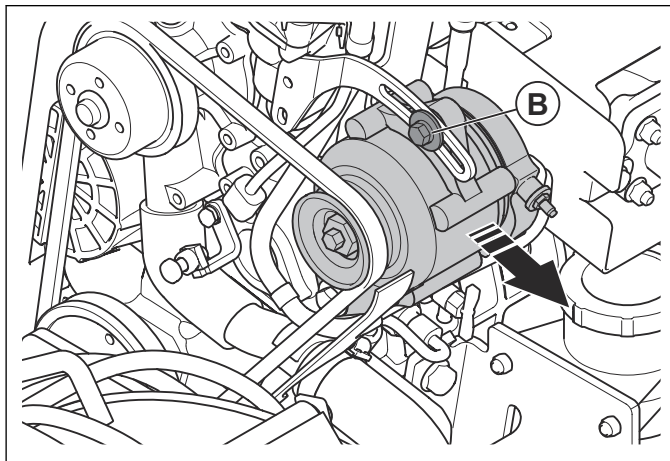
12. Install in the opposite sequence.

8.10.5 To do a check of the engine belt

1. Remove the right side cover. Refer to *Covers overview on page 29*
2. Push the middle of the engine belt. The tension of the engine belt is correct when the engine belt can be pushed 0.28–0.35 in./7–9 mm (A).



- a) If the tension of the engine belt is too low, loosen the bolt for the alternator (B) and push the alternator forward to increase the belt tension.



- b) Tighten the bolt for the alternator.
- c) Do this procedure until the engine belt tension is correct.

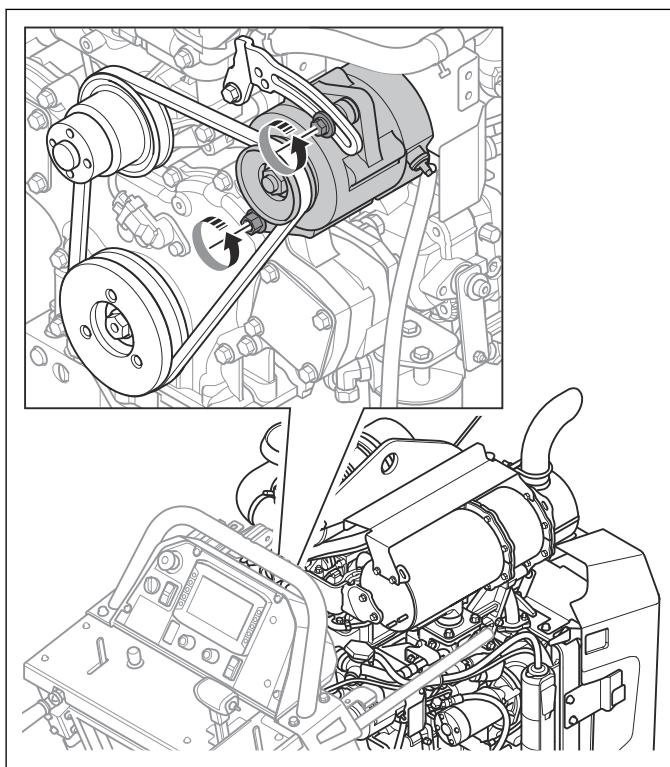


CAUTION: Do not adjust the tension of the engine belt too much.

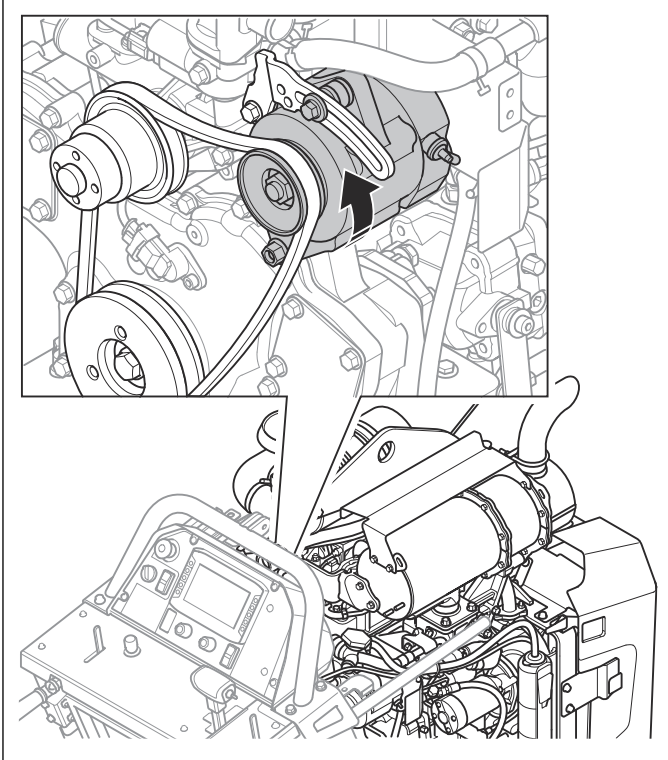
3. Install the right side cover.

8.10.6 To remove and install the engine belt

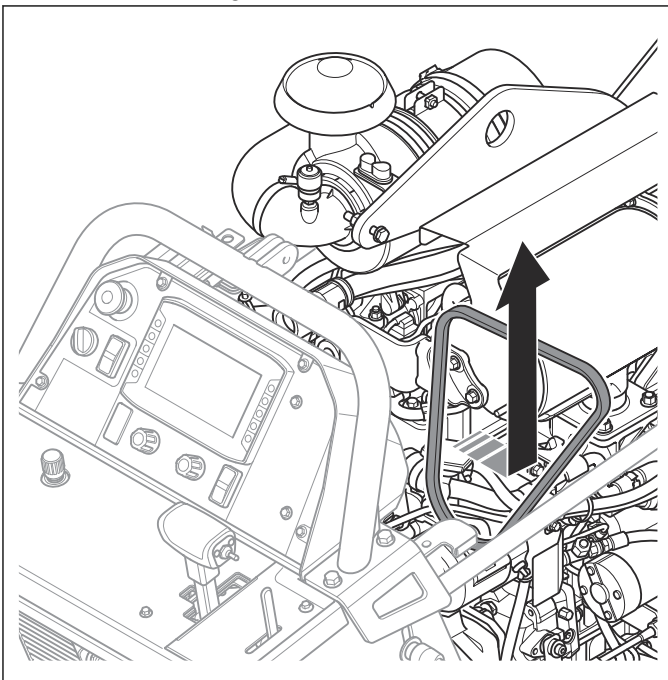
1. Drain the engine coolant from the system. Refer to .
2. Remove the rear cover, the protection cover, the right side cover and the left side cover. Refer to .
3. Remove the fan. Refer to *To remove and install the fan on page 68*.
4. Loosen the 2 nuts.



5. Move the tension pulley to the left.



6. Remove the engine belt.

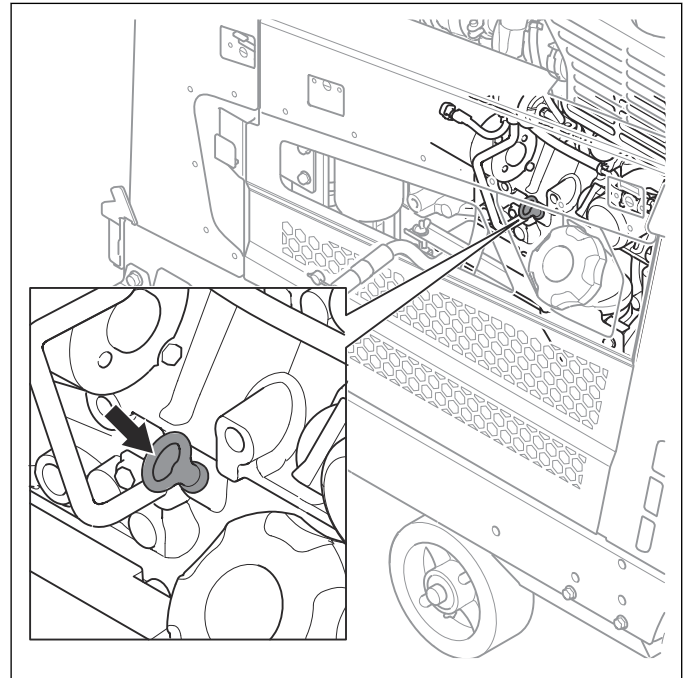


7. Install in the opposite sequence.

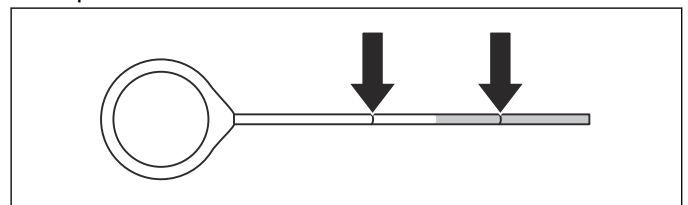
8.10.7 To do a check of the engine oil level

To read the oil level correctly the product must be in horizontal position.

1. Make sure that the cutting blade is removed and that the product is level when you do a check of the engine oil level.
2. Remove the dipstick from the oil tank.



3. Clean the oil from the dipstick.
4. Put the dipstick back fully into the oil tank.
5. Remove the dipstick.
6. Examine the oil level on the dipstick. Make sure that the level of engine oil is between the marks on the dipstick.

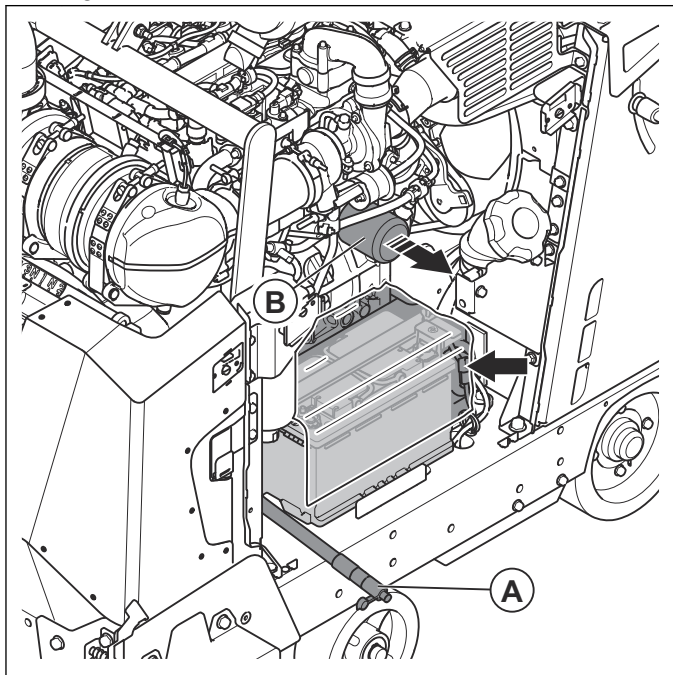


7. If the oil level is low, fill with engine oil and do a check of the oil level again. Refer to *Technical data on page 115* for information about the correct engine oil type.

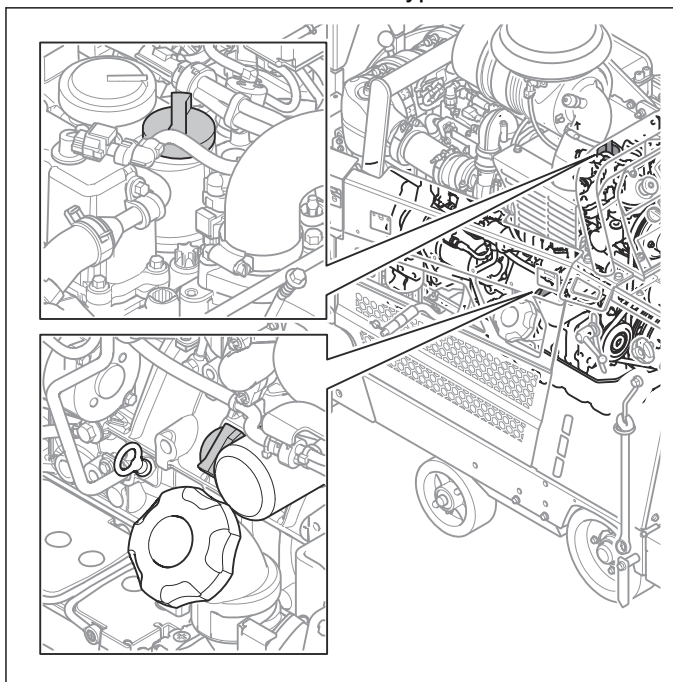
8.10.8 To replace the engine oil and engine oil filter

1. Remove the left side cover. Refer to .
2. Put a cover on the battery to prevent oil spill on the battery.

3. Remove the cap (A) from the oil drain hose for engine oil.



4. Open the valve and bend the hose down to drain the engine oil.
5. Remove the engine oil filter (B) and discard it.
6. Close the valve.
7. Fill a new engine oil filter with oil and install the engine oil filter on the product.
8. Open an oil tank cap and fill the system with engine oil. Refer to *Technical data on page 115* for information about the correct type of oil.



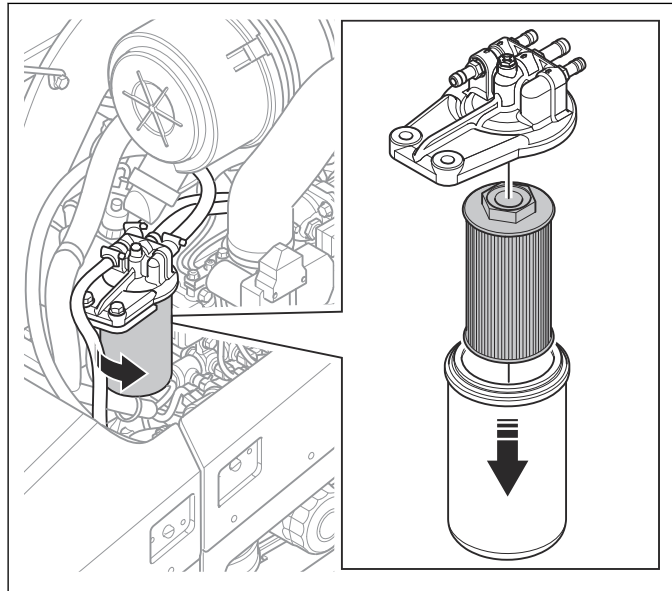
Note: There are 2 oil tank caps for engine oil.

8.10.9 To replace the fuel filter



WARNING: Use protective gloves and eye protection to prevent skin irritation. Fuel can come from the fuel filter and onto your skin.

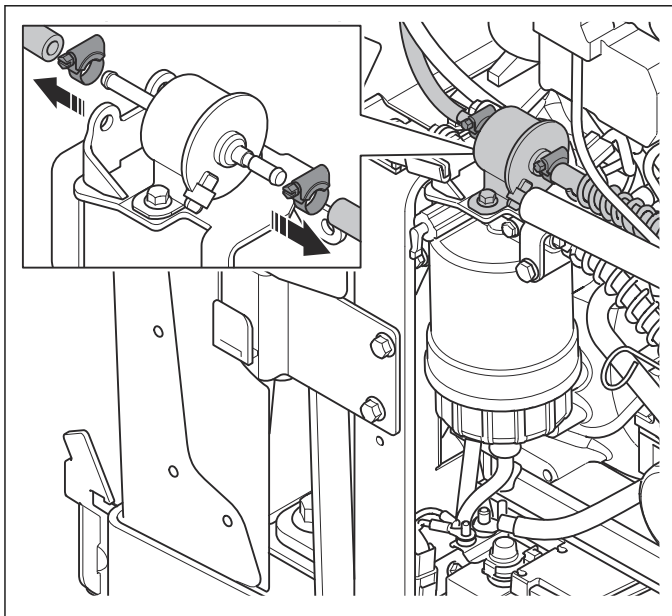
1. Close the valve of the prefilter. For more information, refer to the engine manual.
2. Turn the fuel filter counterclockwise to remove it.



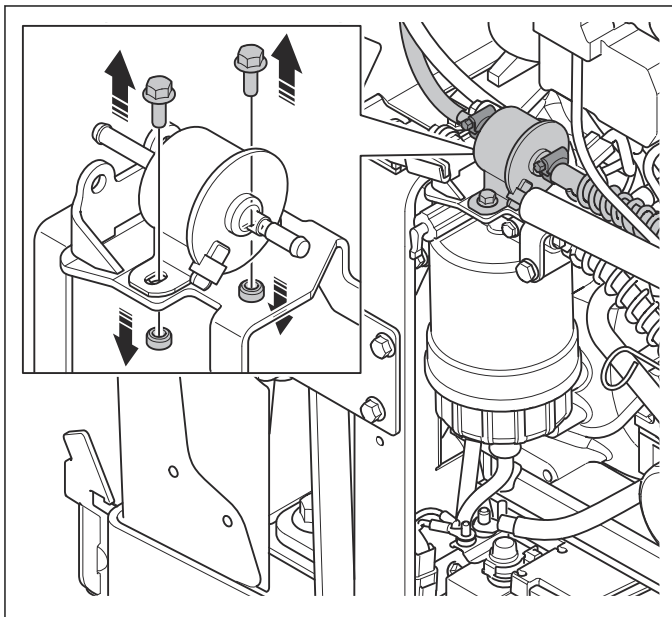
3. Replace the fuel filter.
4. Fill the new fuel filter with diesel fuel. Refer to *Technical data on page 115* for information about the correct type of fuel.
5. Lubricate the seal with some drops of diesel fuel.
6. Install the fuel filter.
7. Open the valve of the prefilter before you start the engine.

8.10.10 To remove and install the fuel pump

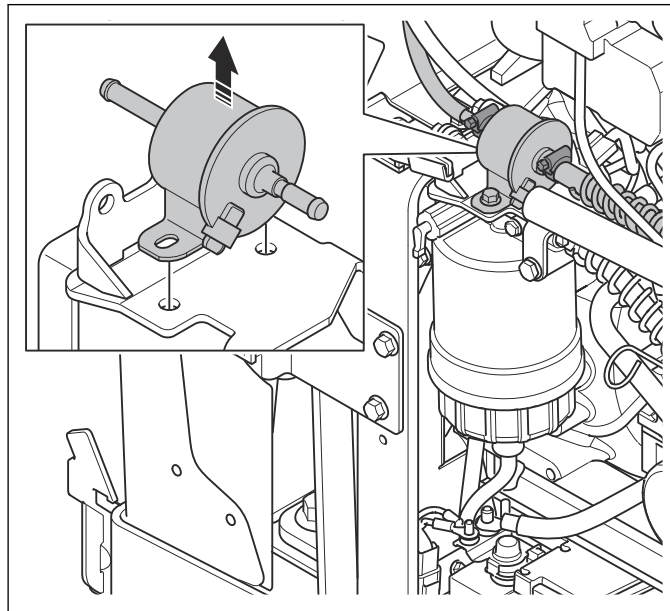
1. Remove left side cover. Refer to *Covers overview on page 29*.
2. Remove the 2 hose clamps and disconnect the 2 hoses.



3. Remove the 2 bolts and the 2 nuts.



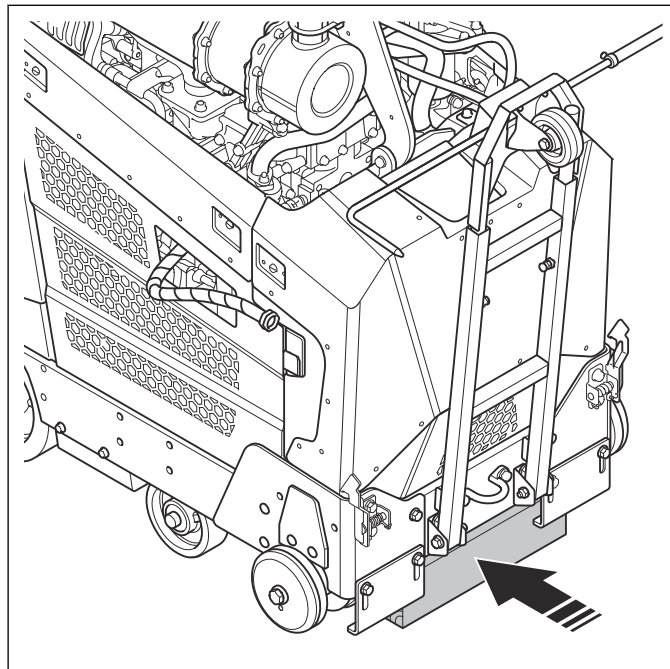
4. Remove the fuel pump.



5. Install in the opposite sequence.

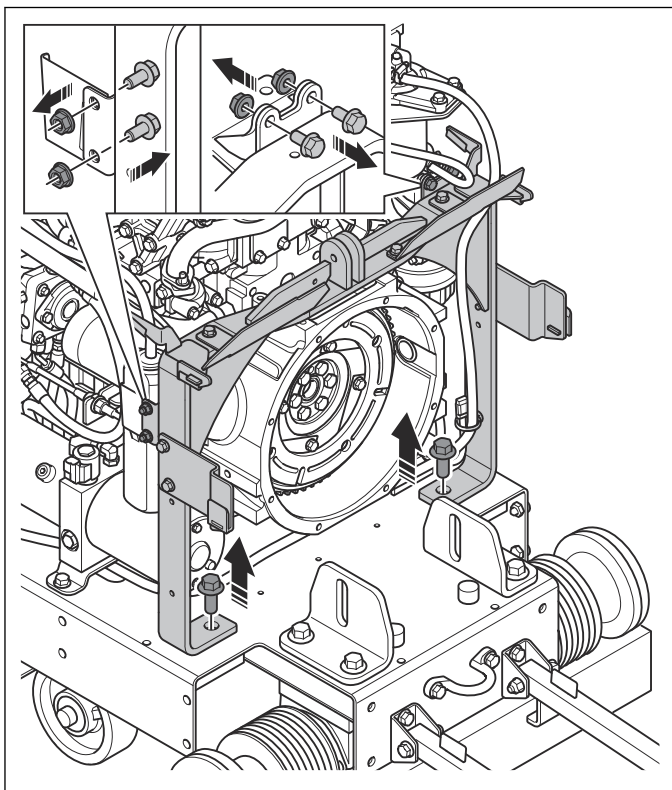
8.10.11 To remove and install the engine

1. Put a support below the front part of the product.

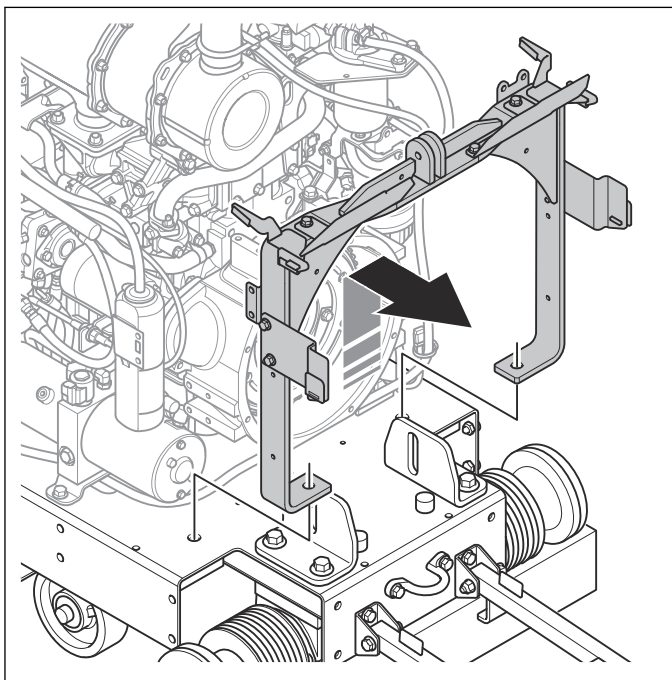


2. Drain the engine coolant from the system. Refer to *To replace the engine coolant on page 65*.
3. Drain the engine oil from the system. Refer to *To replace the engine oil and engine oil filter on page 72*.
4. Remove the right side cover, the left side cover and the front cover. Refer to *Covers overview on page 29*.
5. Remove the battery.
6. Remove the lifting eye. Refer to *To remove and install the lifting eye on page 31*.

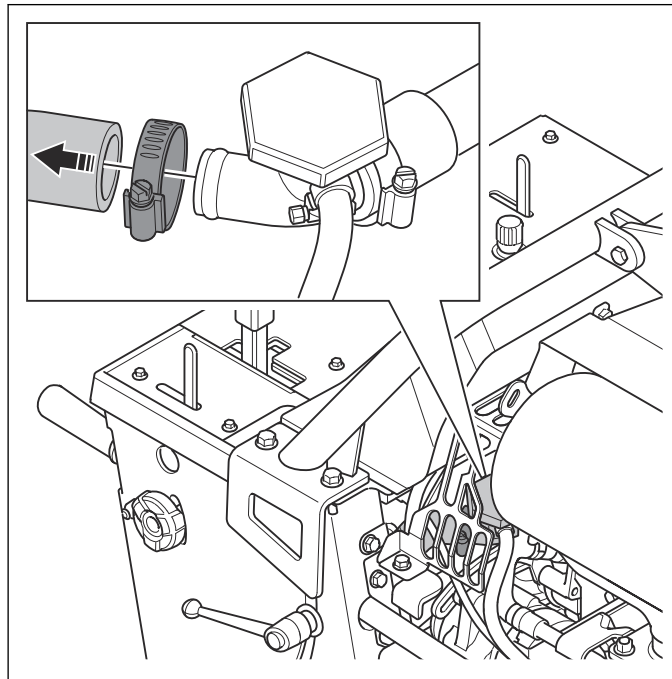
7. Remove the main wiring harness. Refer to *To remove and install the wiring harness on page 39.*
8. Remove the gear box. Refer to *To remove and install the gearbox on page 82.*
9. Remove the 6 bolts and the 6 nuts.



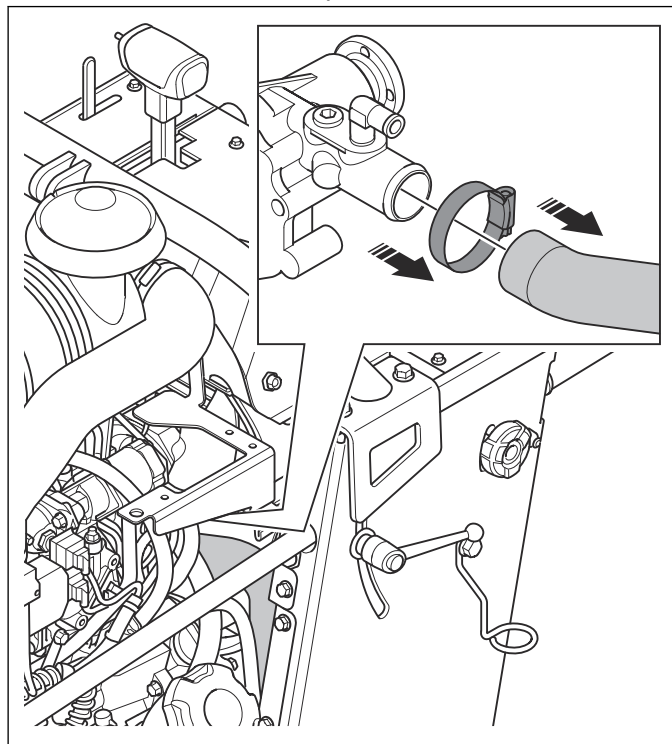
10. Remove the frame.



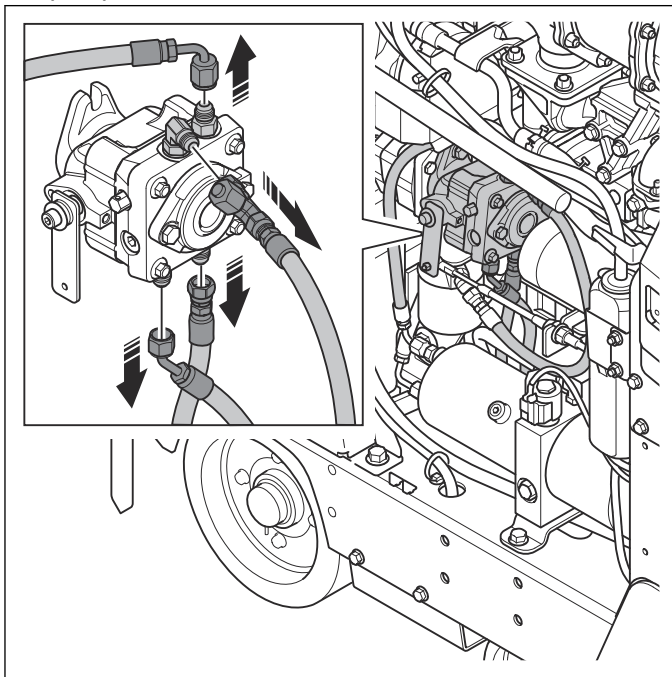
11. Remove the hose clamp and disconnect the hose.



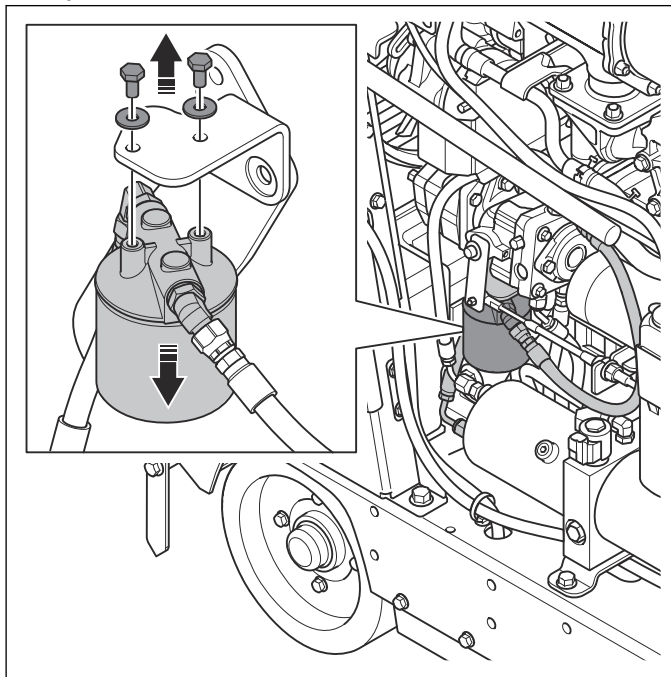
12. Remove the hose clamp and disconnect the hose.



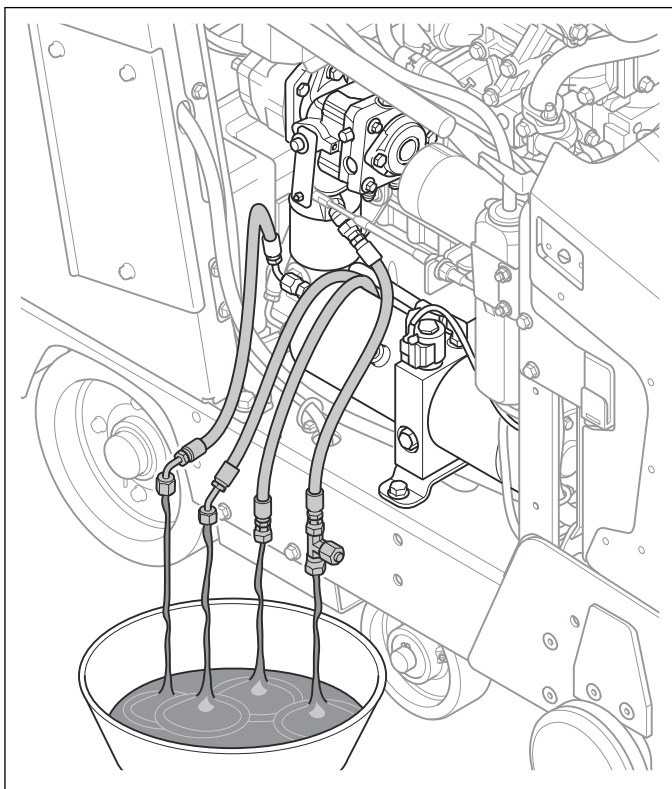
13. Disconnect the 4 hydraulic hoses from the drive pump.



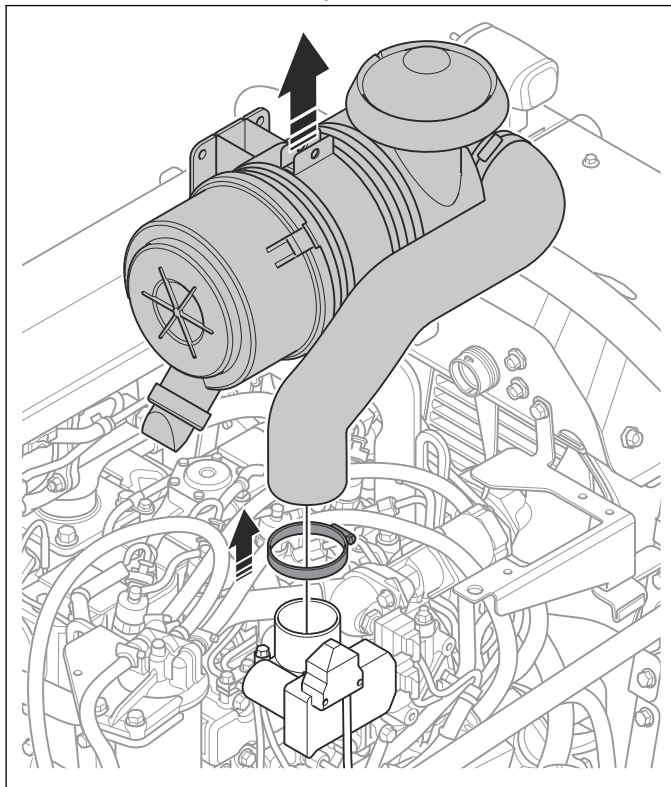
16. Remove the 2 screws, the 2 washers and the hydraulic filter.



14. Drain the oil from the hydraulic hoses into a container.

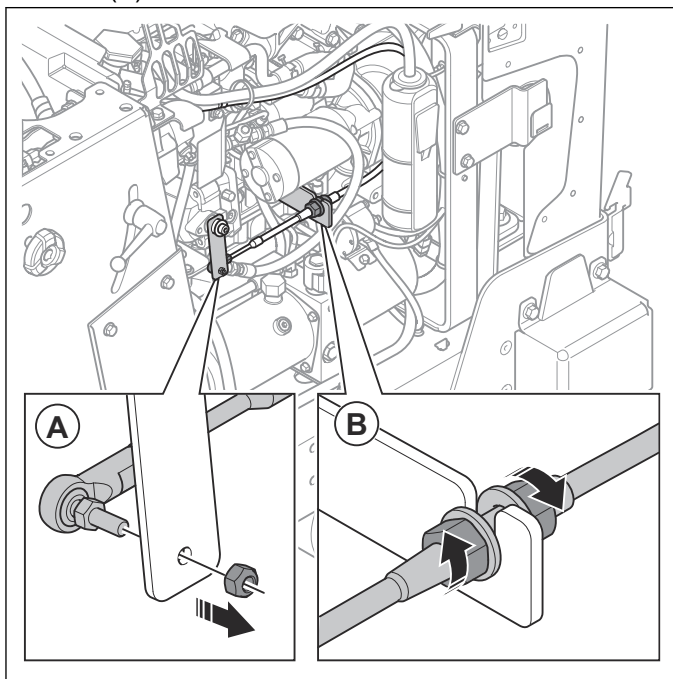


17. Remove the hose clamp and the air cleaner.

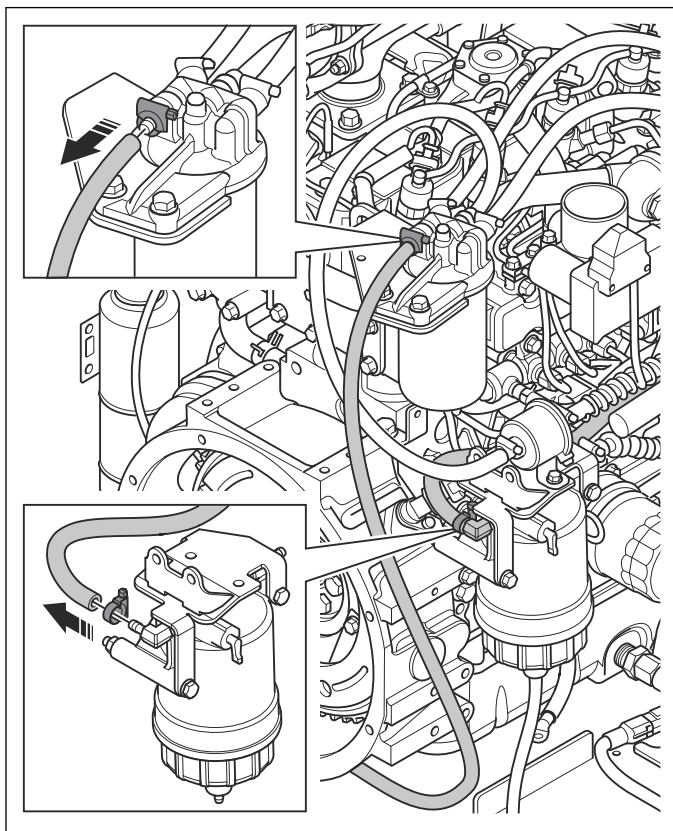


15. Close off the hydraulic openings.

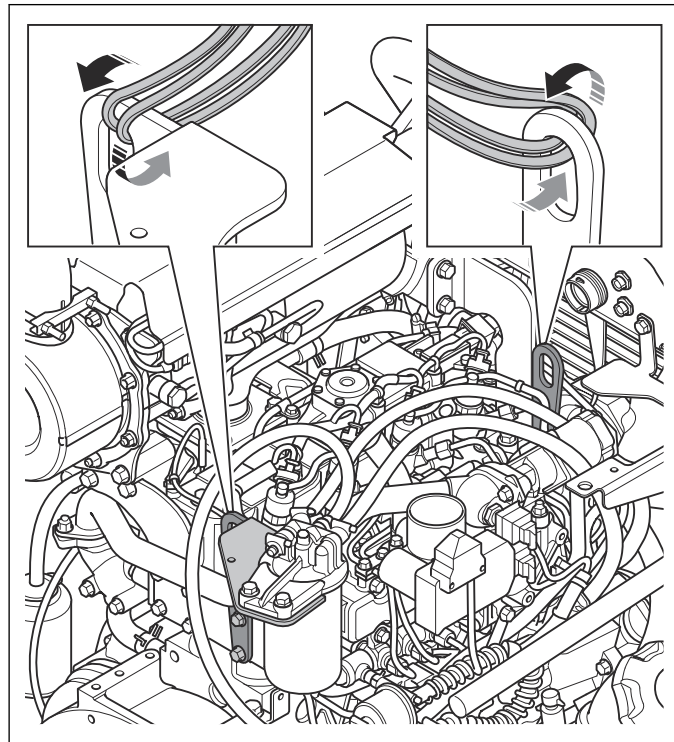
18. Remove the nut and the wire (A) and loosen the nuts (B).



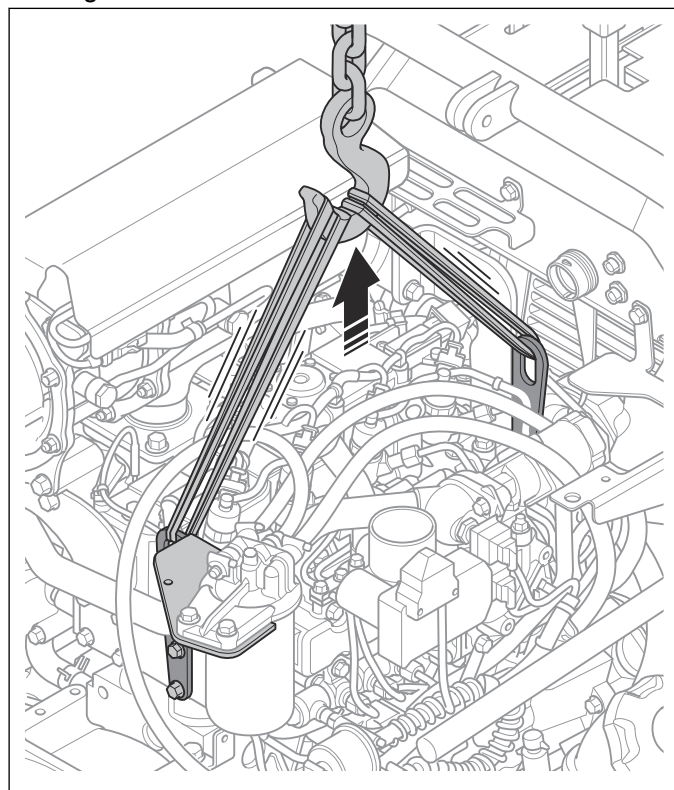
19. Disconnect the 2 fuel hoses. Install plugs in the hoses.



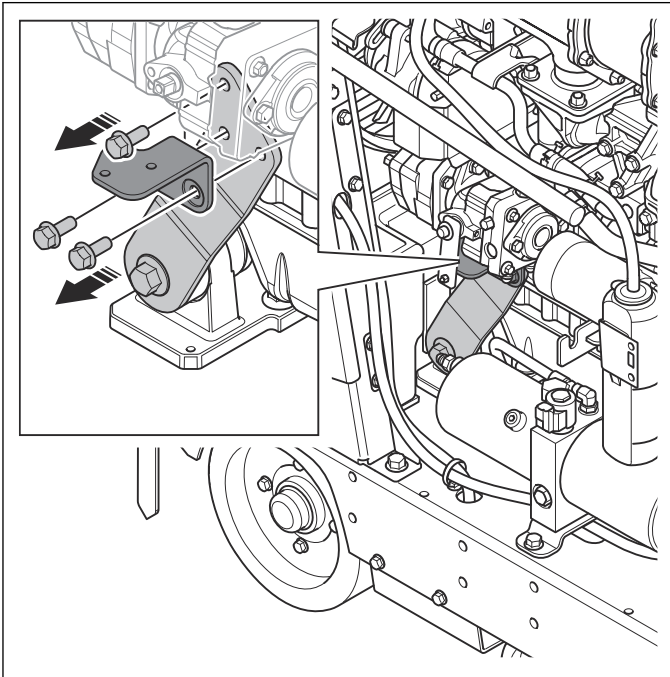
20. Attach the lifting equipment to the 2 lifting eyes.



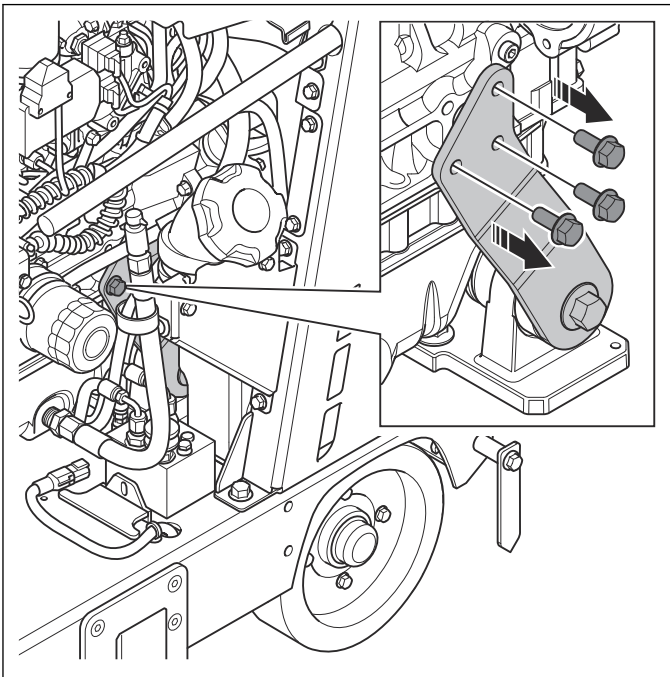
21. Slowly lift the lifting equipment until the lifting straps are fully tensioned and support the weight of the engine.



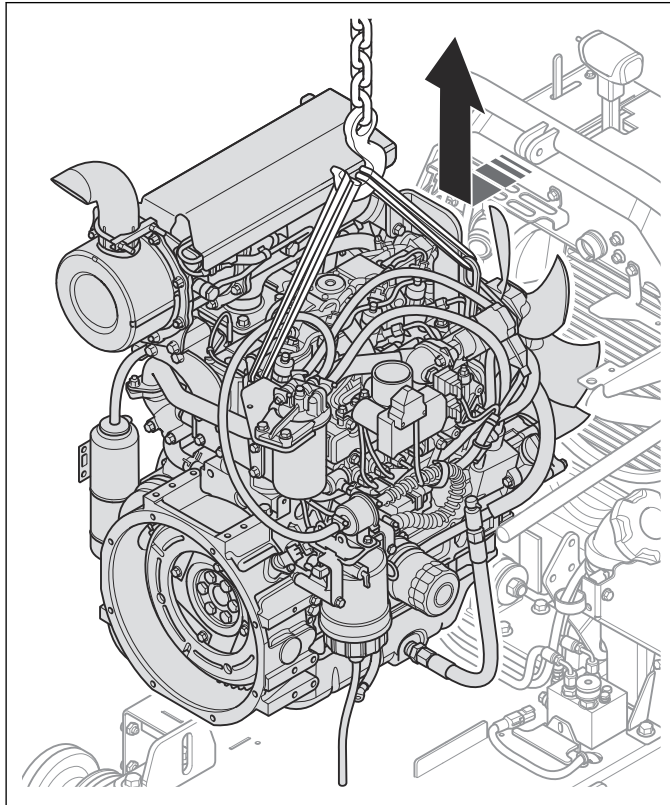
22. Remove the 3 screws and the bracket.



23. Remove the 3 screws.



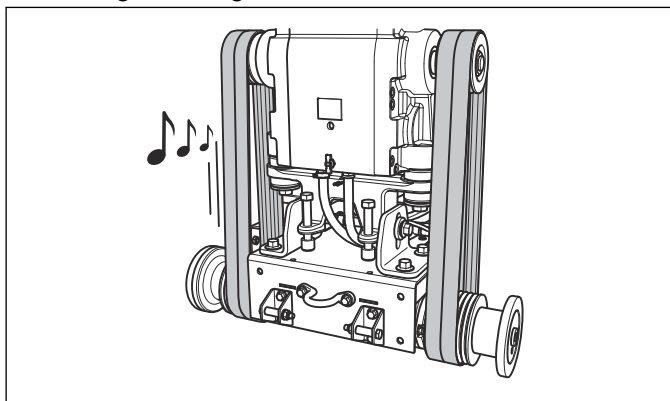
24. Remove the engine with the lifting equipment.



8.11 Gearbox and blade shaft

8.11.1 To do a check of the V-belts

1. Remove the front cover. Refer to .
2. Pull and release the V-belts, 1 at a time. The belts must give a long sound, not a short sound.



- a) If you hear a long, clear sound from the V-belts, the tension is correct.
- b) If you hear only a short sound from the V-belts, the tension is too low. Refer to *To increase the tension of the V-belts on page 79*.
3. Examine the V-belts for wear and damages. Replace damaged V-belts.



CAUTION: Do not replace only 1 of the V-belts. Always replace all 4 V-belts at the same time.

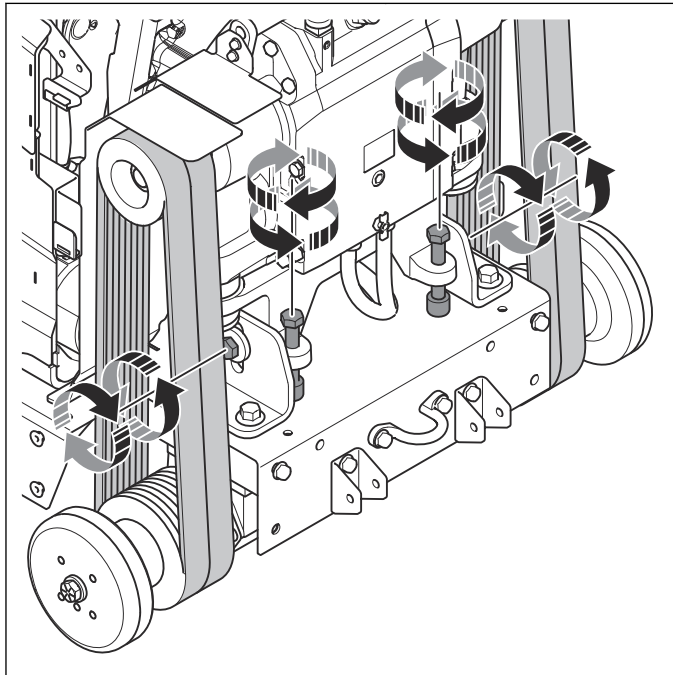
4. Install the front cover.

8.11.2 To increase the tension of the V-belts



CAUTION: The tension of new V-belts must be increased after the first 2–4 hours of operation.

1. Remove the front cover. Refer to .
2. Loosen the 2 lock bolts with the blade shaft wrench.

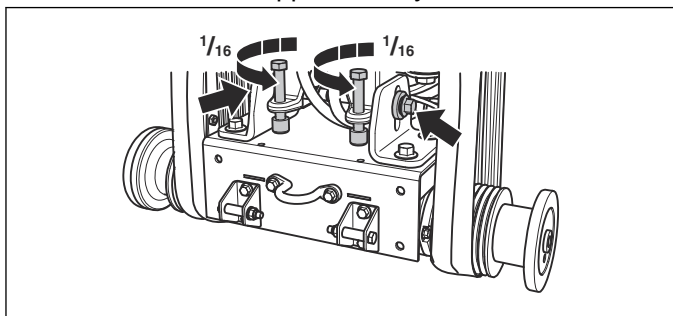


3. Turn the bolts for the belt tension clockwise until the V-belts are tight.



CAUTION: Turn the 2 bolts for the belt tension equally. The tension must be the same in the 2 V-belts.

4. Do a check of the V-belts. Refer to *To do a check of the V-belts on page 78*.
 - a) If the tension of the V-belts is too low, turn the bolts for the belt tension some more.
 - b) Do this procedure again until the V-belt tension is correct.
5. Tighten the 2 lock bolts.
6. Loosen the bolts for the belt tension counterclockwise approximately 1/16 of a turn.

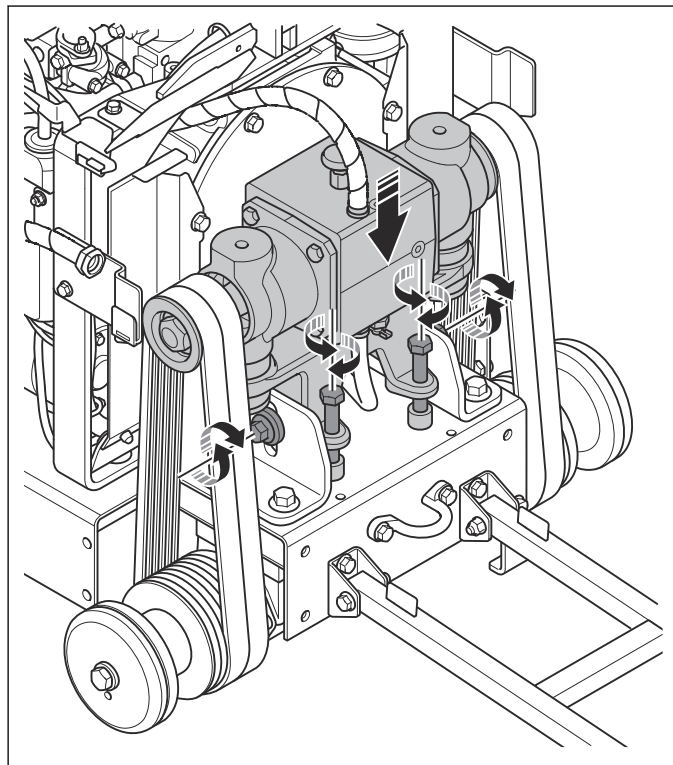


CAUTION: Make sure that the 4 V-belts have the same tension. Do not adjust the tension of the V-belts too much.

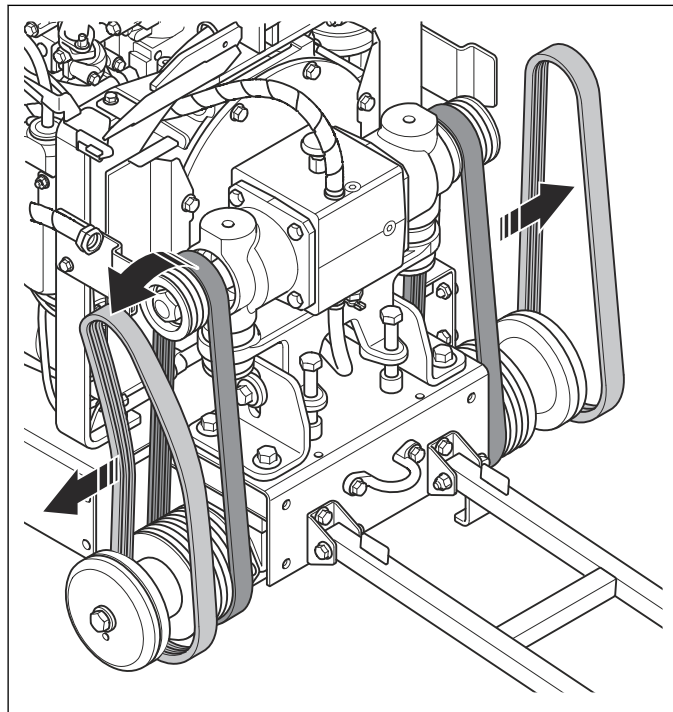
7. Install the front cover.

8.11.3 To remove and install the V-belts

1. Remove the front cover. Refer to *Covers overview on page 29*.
2. Loosen the lock bolts and the bolts for the belt tension.



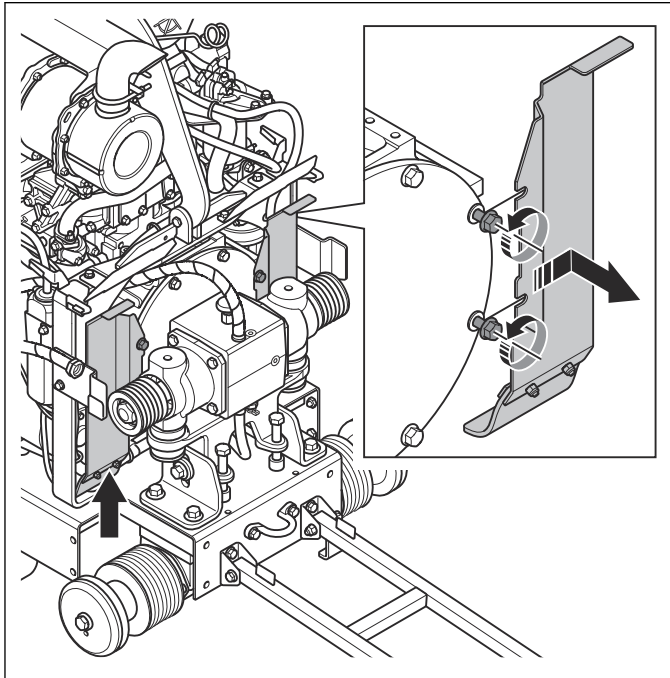
3. Remove the V-belts.



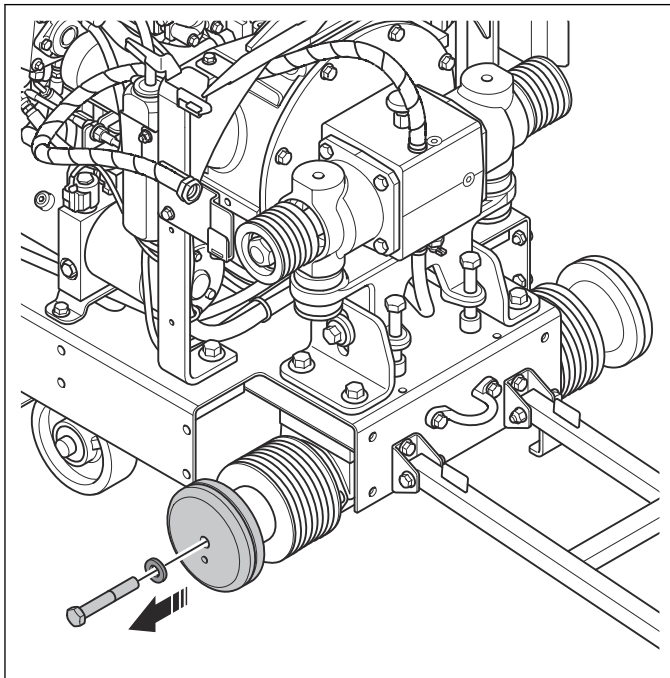
4. Install the V-belts in the opposite sequence. Adjust the tension of the V-belts when you replace the V-belts. Refer to *To increase the tension of the V-belts on page 79*.

8.11.4 To remove and install the V-belt pulleys

1. Remove the right side cover, the left side cover and the front cover. Refer to *Covers overview on page 29*.
2. Remove the V-belts. Refer to *To remove and install the V-belts on page 79*.
3. Remove the battery.
4. Remove the 2 screws and the cover on the 2 sides of the product.

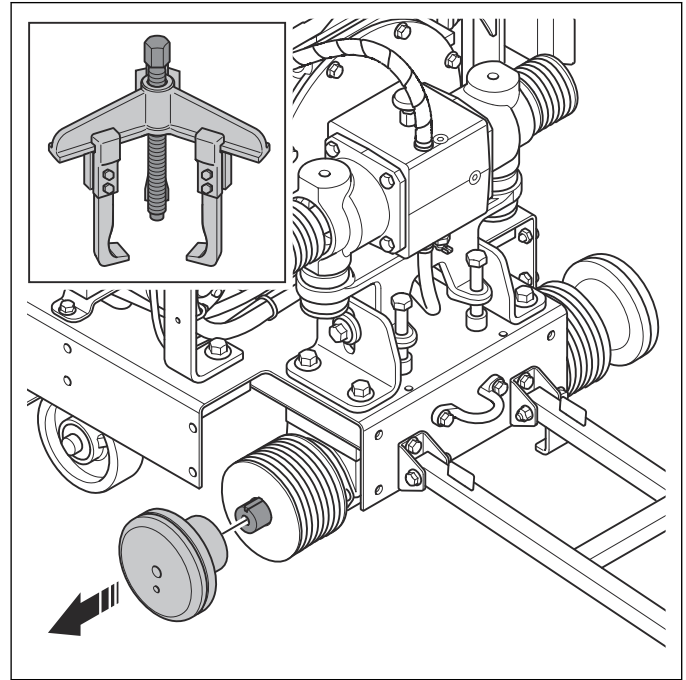


5. Remove the blade shaft bolt and the washer.

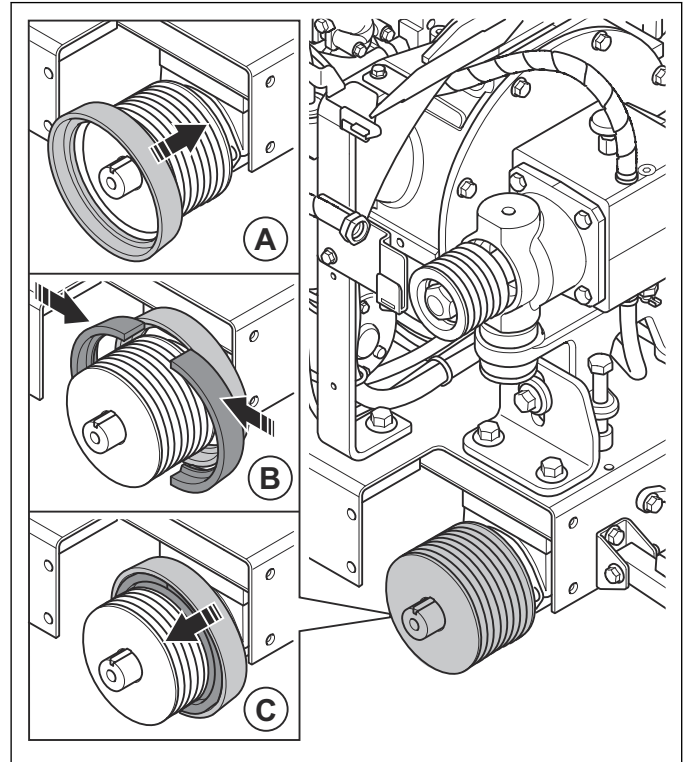


Note: The right side blade shaft bolt is left hand threaded.

6. Remove the blade flange with a puller.

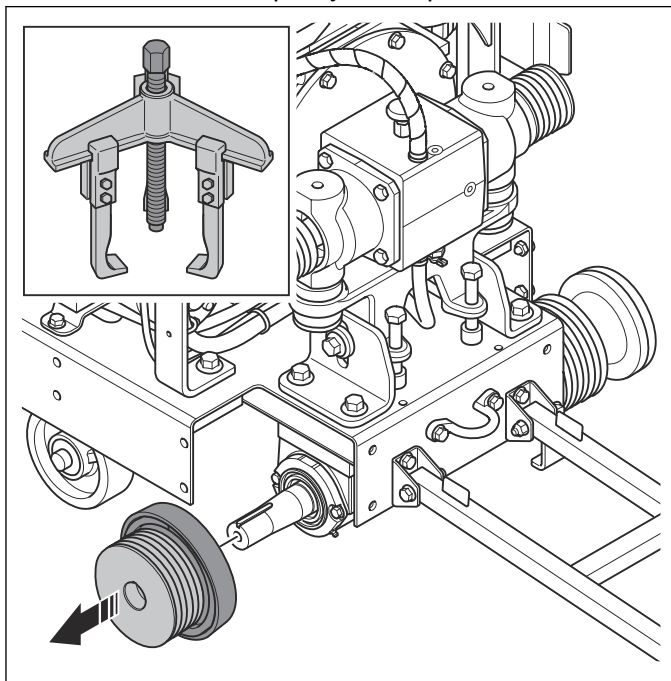


7. Install the collar (A) of the special tool 541207100 on the lower pulley.



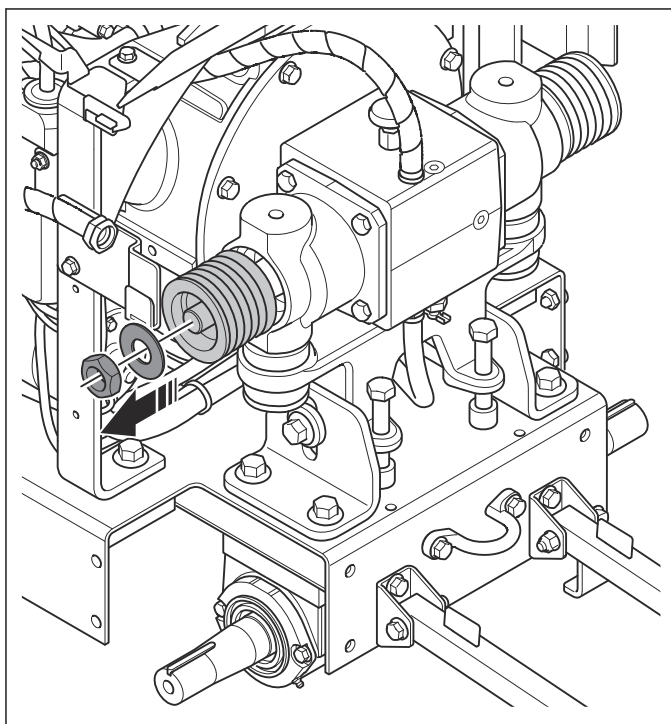
8. Install the jaws (B) of the special tool on the lower pulley.
9. Install the collar of the special tool over the jaws of the special tool (C).

10. Remove the lower pulley with a puller.

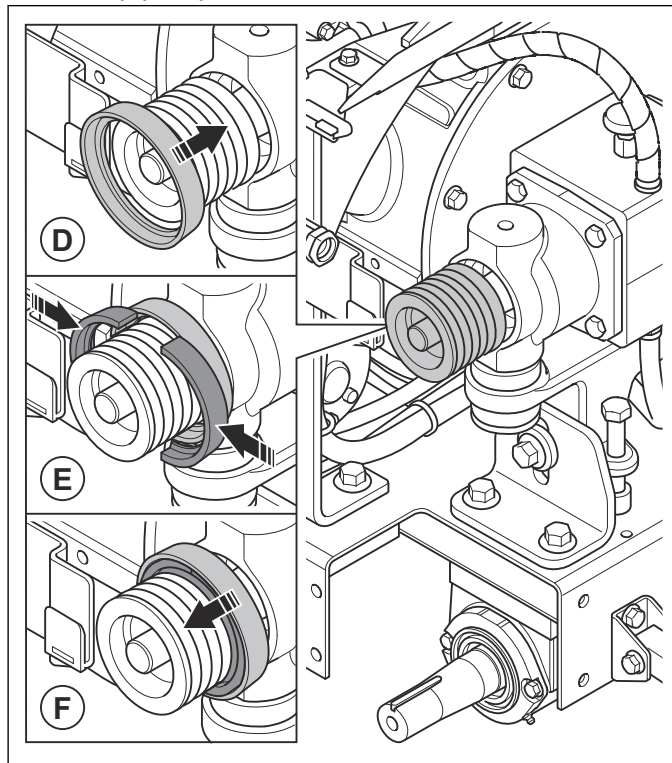


Note: The lower pulley fits tight on the shaft. Use a lot of force to remove the lower pulley.

11. Remove the nut and the washer.



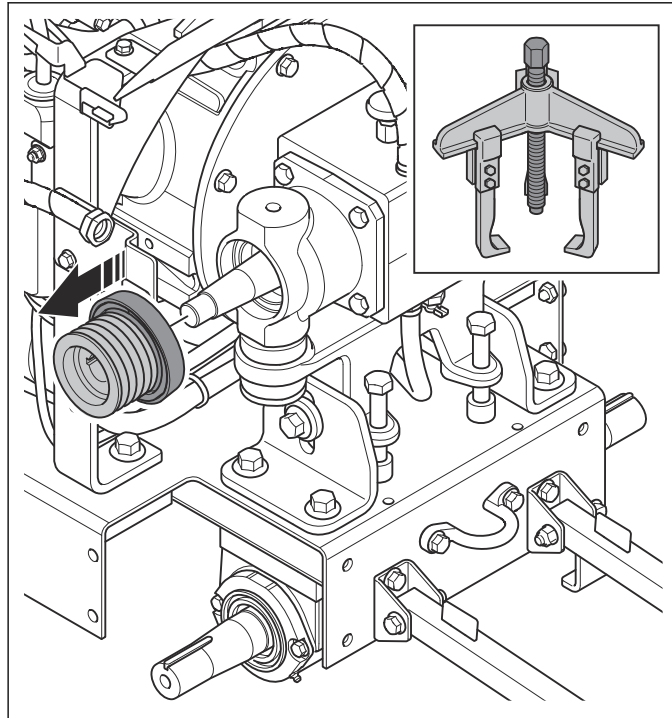
12. Install the collar (D) of the special tool 541207100 on the top pulley.



13. Install the jaws (E) of the special tool on the top pulley.

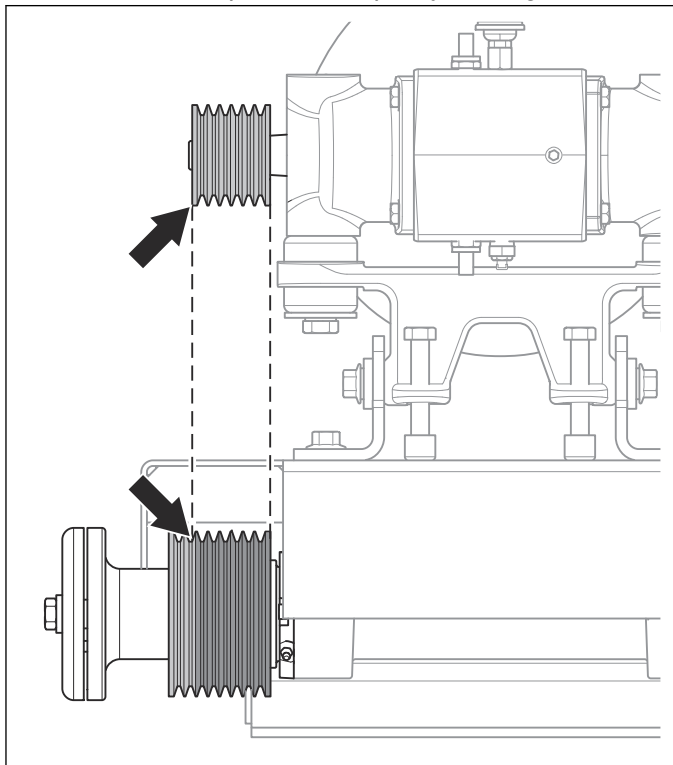
14. Install the collar of the special tool on the jaws of the special tool (F).

15. Remove the top pulley with a puller.



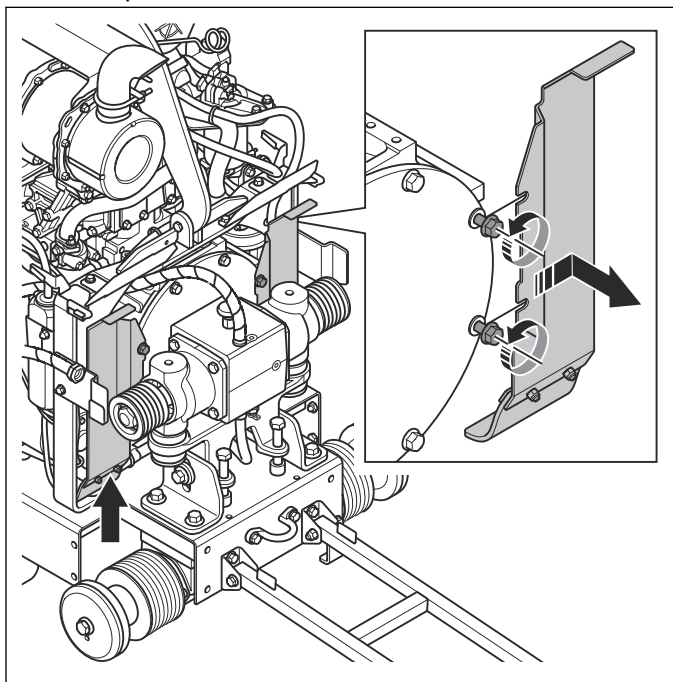
16. Do the same procedure on the opposite side of the product.

17. Install the pulleys in the opposite sequence. Make sure that the top and lower pulley are aligned.

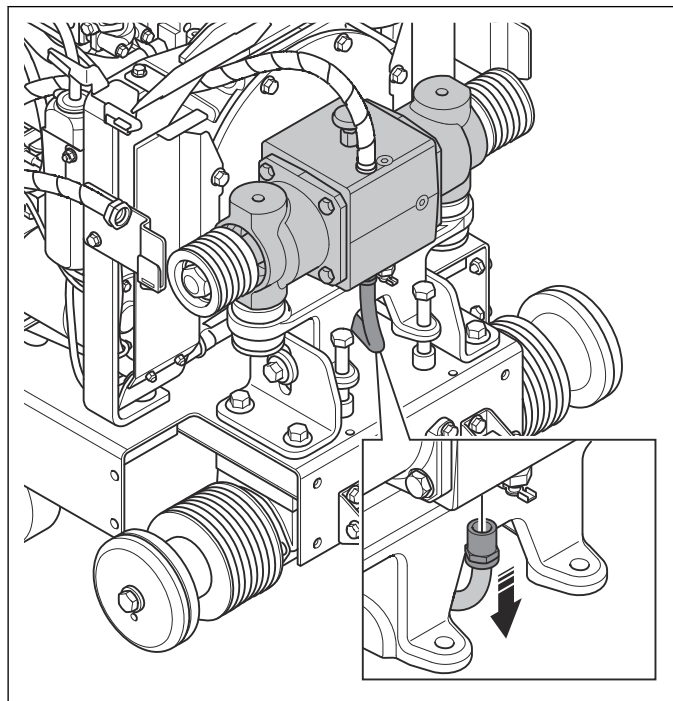


8.11.5 To remove and install the gearbox

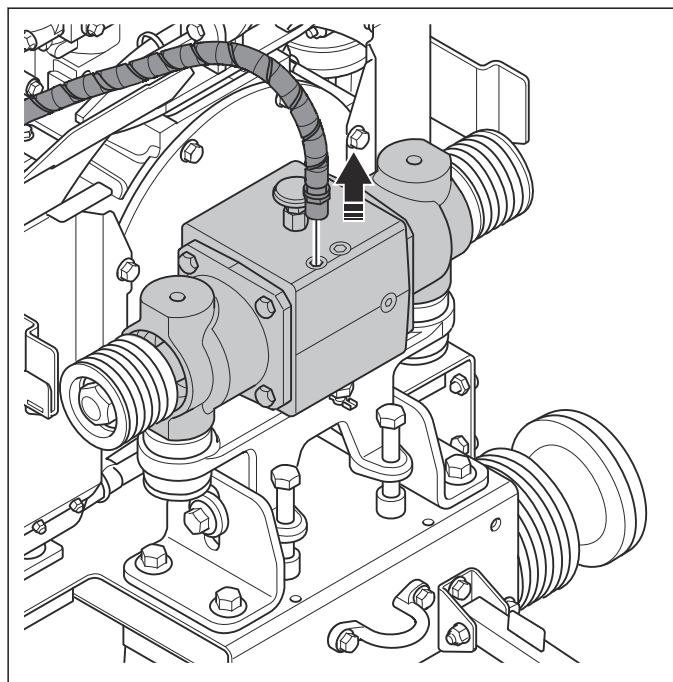
1. Remove the right side cover, the left side cover and the front cover. Refer to *Covers overview on page 29*.
2. Remove the V-belts. Refer to *To remove and install the V-belts on page 79*.
3. Remove the battery.
4. Remove the 2 screws and the cover on the 2 sides of the product.



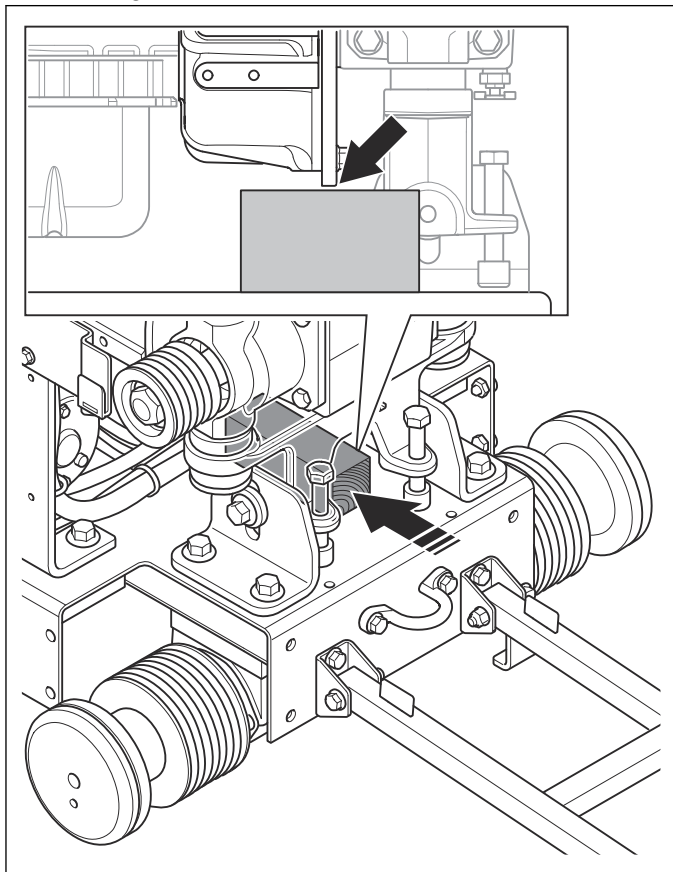
5. Disconnect the hose.



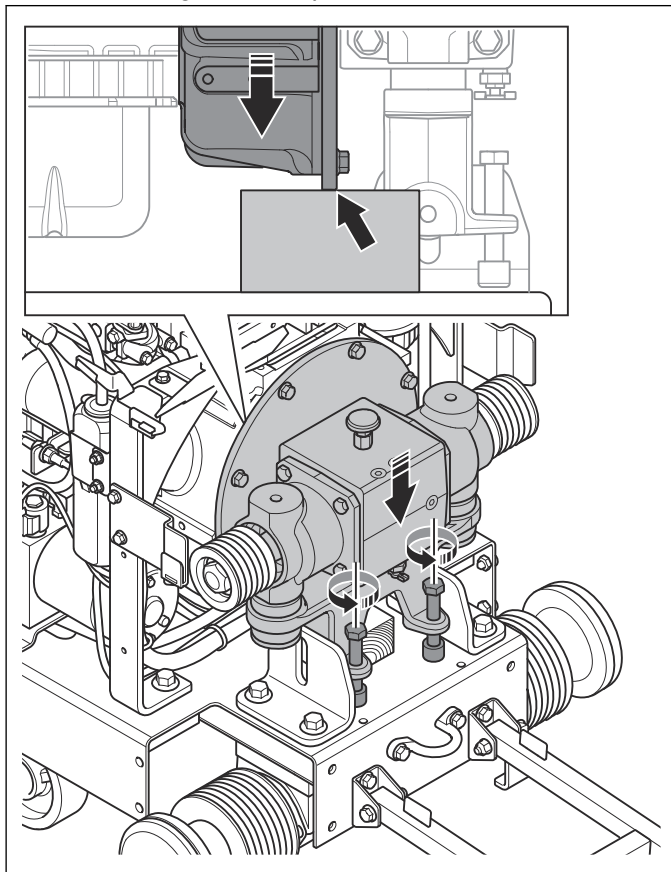
6. Disconnect the hose.



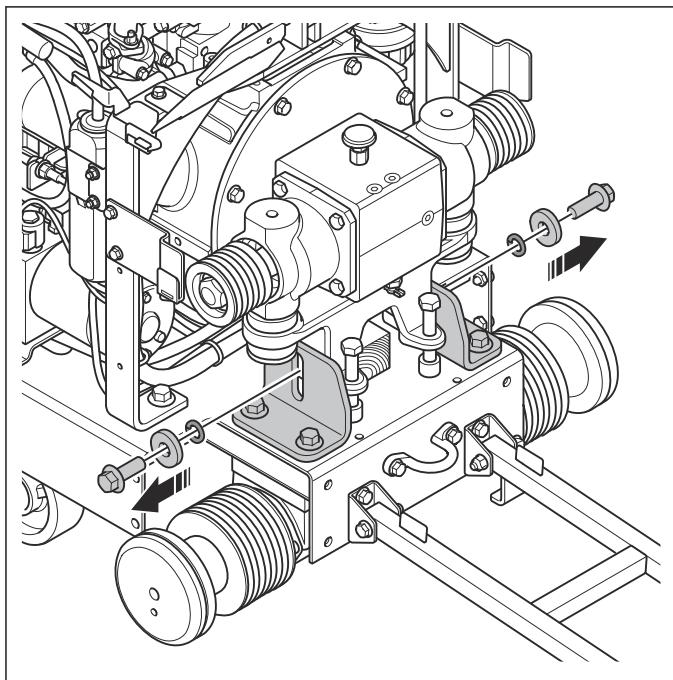
7. Put a piece of wood as support below the bell housing.



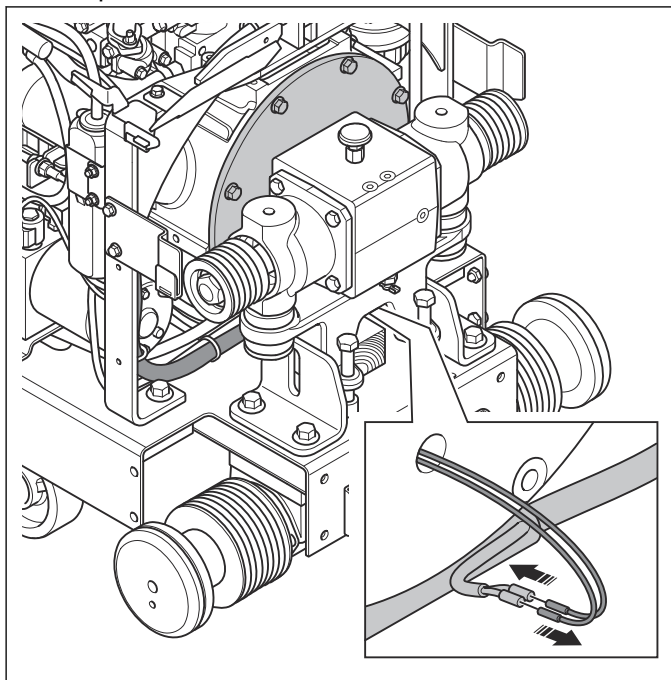
9. Loosen the 2 bolts for the belt tension to lower the bell housing on to the piece of wood.



8. Remove the 2 screws and the 4 washers.

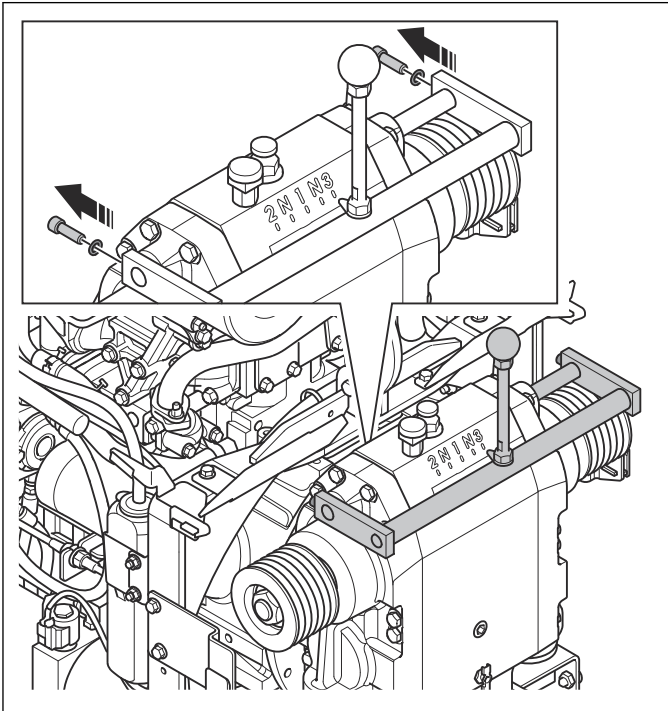


10. For products with a clutch, disconnect the connector.

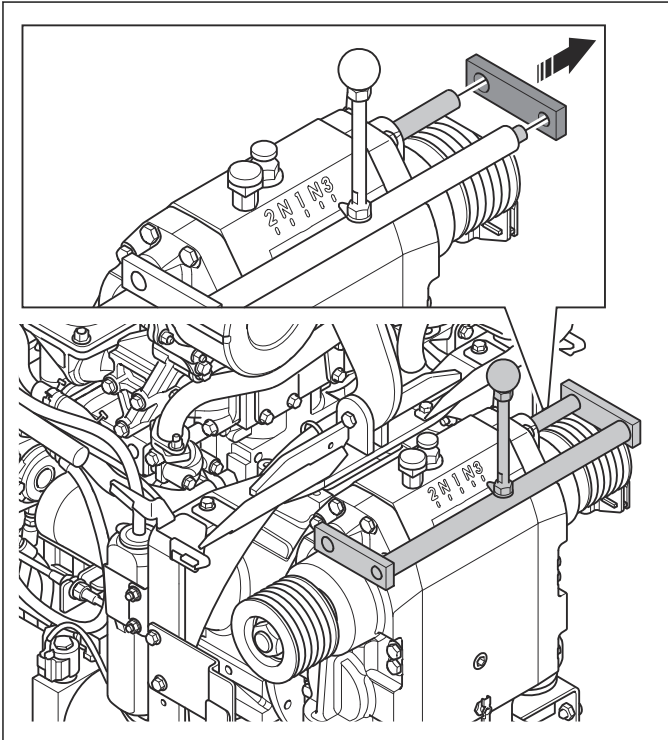


11. For products with a 3 speed gearbox model, do the steps that follow:

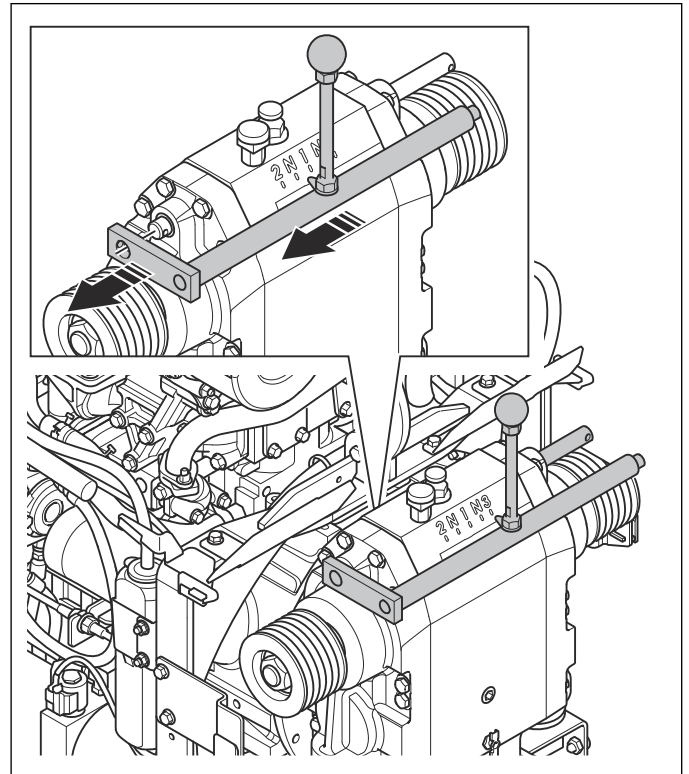
a) Remove the 2 screws and the 2 washers.



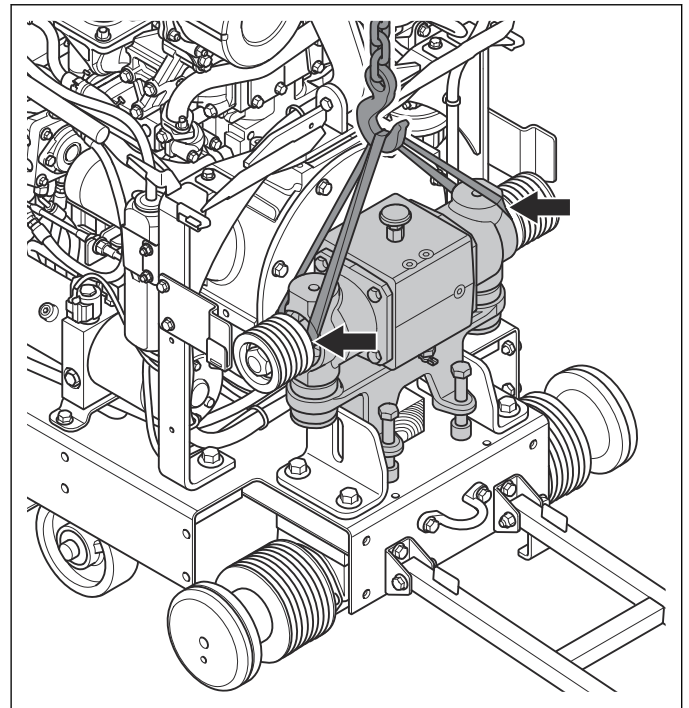
b) Remove the plate on the left side of the product.



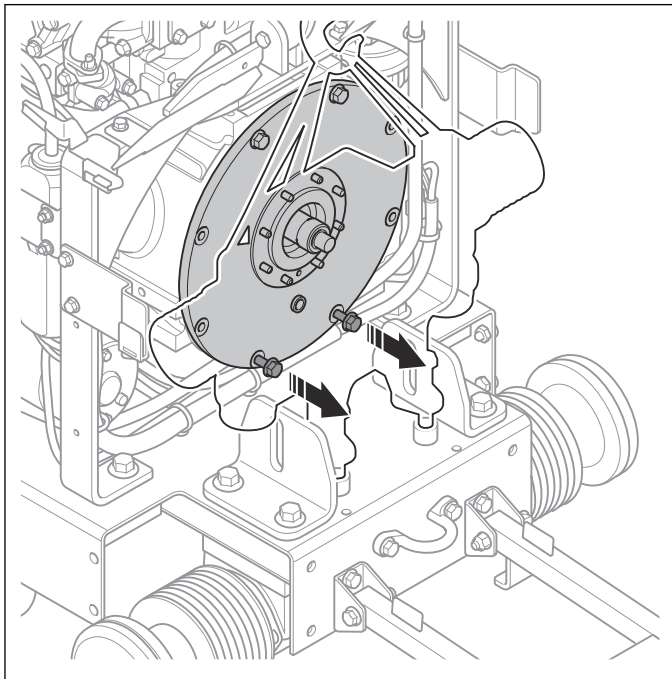
c) Slide the gear selector lever to the side to remove it from the gear box.



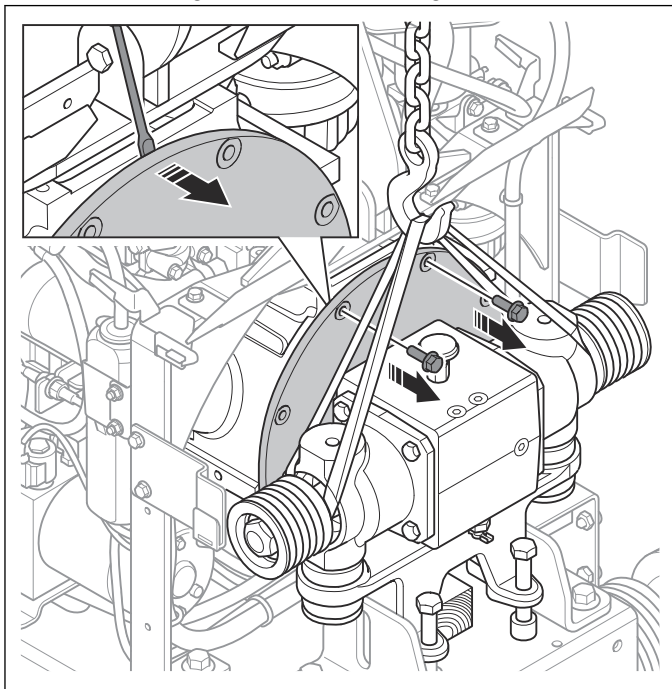
12. Attach lifting equipment around the 2 top V-belt pulleys. Make sure that the lifting equipments supports the weight of the gearbox.



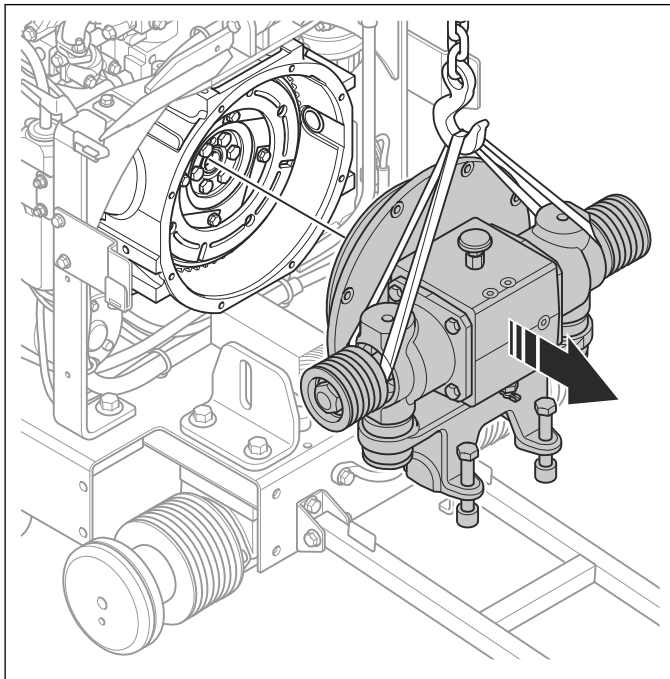
13. Remove the 2 screws.



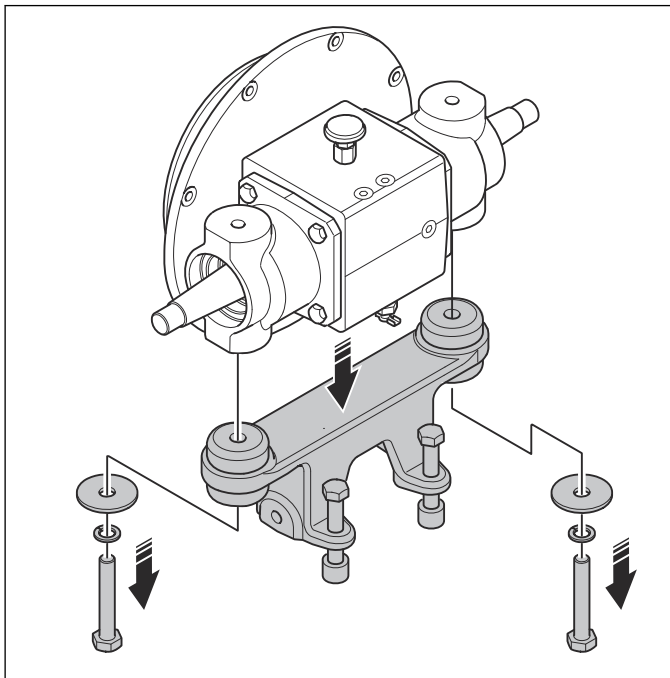
14. Remove the 2 screws. Pry with a screwdriver to remove the gearbox from the engine.



15. Remove the gearbox with the lifting equipment.



16. Remove the 2 screws, the 4 washers and the bracket.



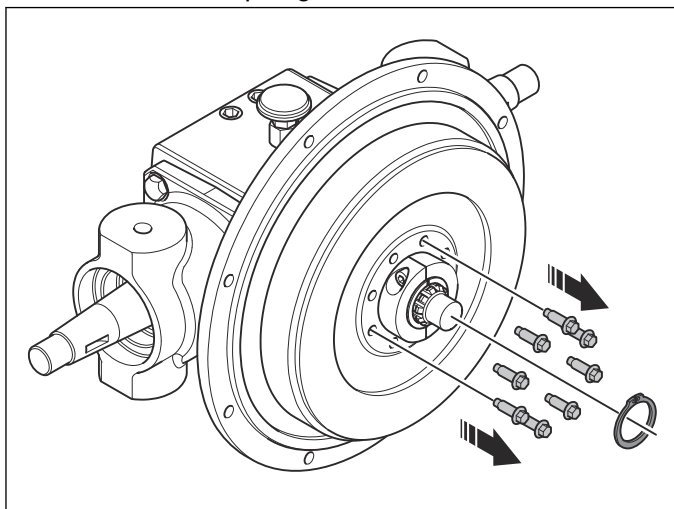
17. Install in the opposite sequence.

8.11.6 To remove the clutch

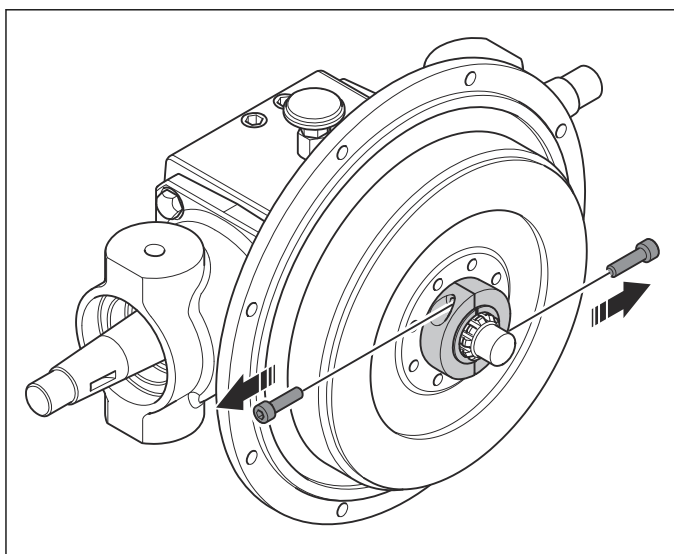
1. Remove the right side cover, the left side cover and the front cover. Refer to *Covers overview on page 29*.
2. Remove the V-belts. Refer to *To remove and install the V-belts on page 79*.
3. Remove the battery.
4. Remove the gearbox. Refer to *To remove and install the gearbox on page 82*.

5. Remove the top V-belt pulleys. Refer to *To remove and install the V-belt pulleys on page 80*.

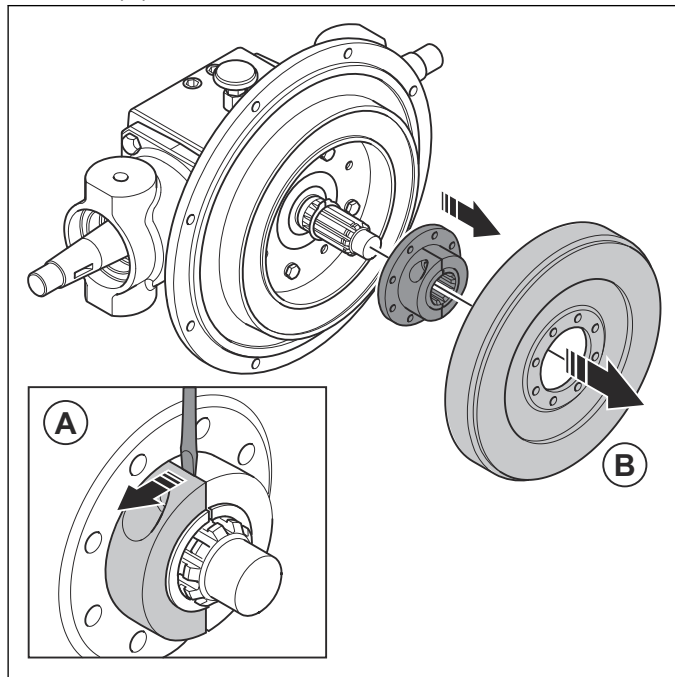
6. Remove the snap ring and the 8 screws.



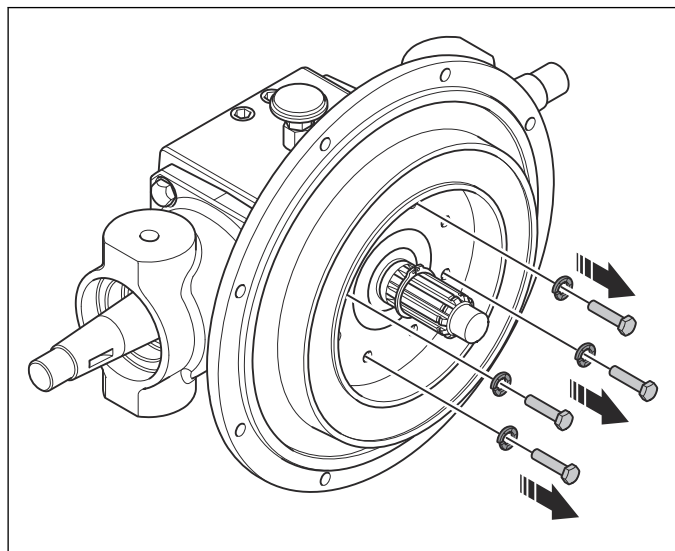
7. Remove the 2 screws.



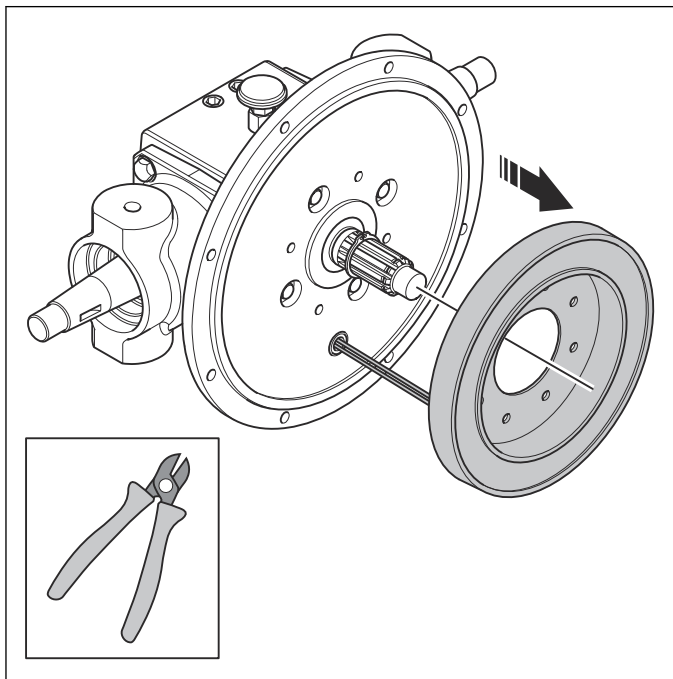
8. Pry with a screwdriver (A) to remove the hub and the rotor (B).



9. Remove the 4 screws and the 4 washers.

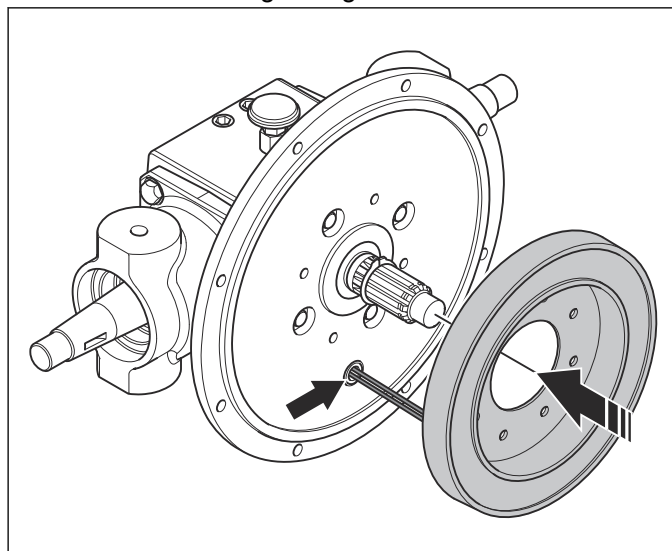


10. Cut the cable ties and remove the coil.

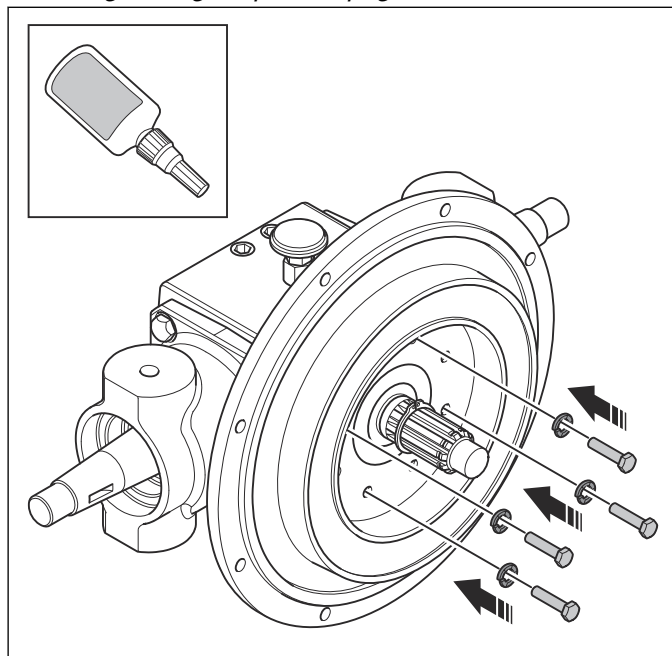


8.11.7 To install the clutch

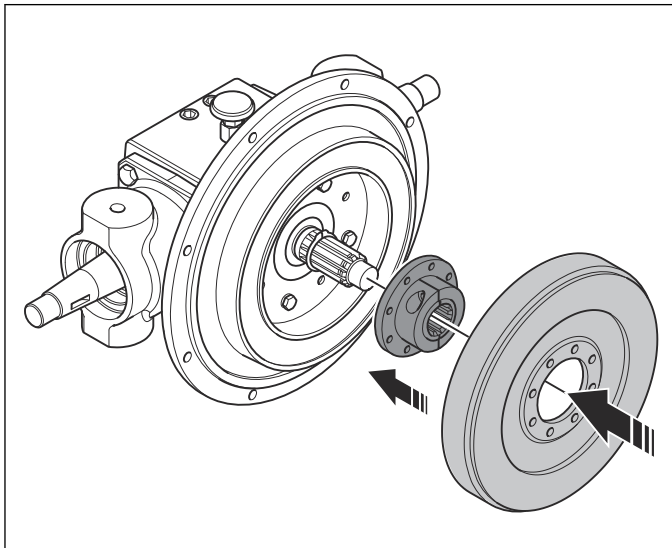
1. Put the wires through the gearbox and install the coil.



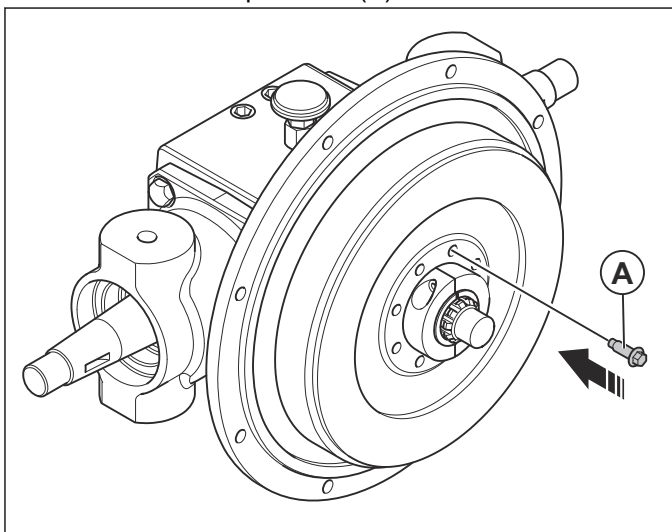
2. Apply Loctite to the 4 screws. Install the 4 washers and the 4 screws. Tighten to the correct torque, refer to *Tightening torques on page 13*.



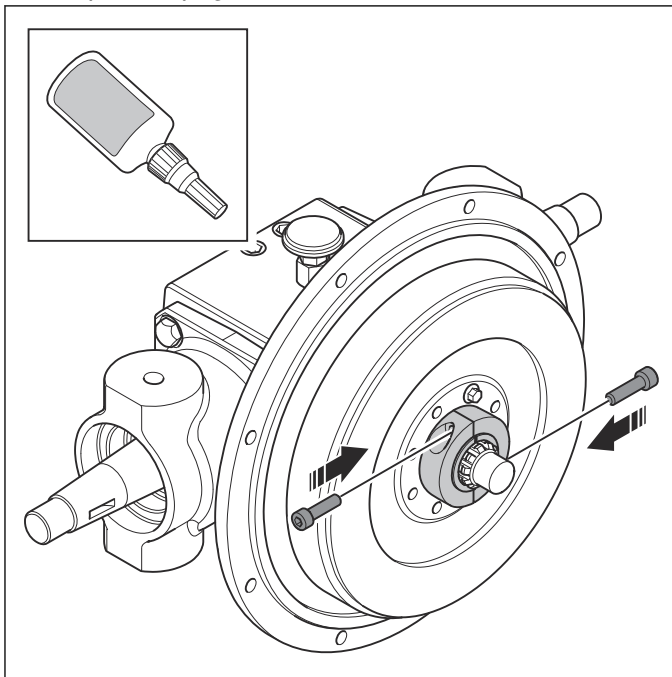
3. Install the hub and the rotor.



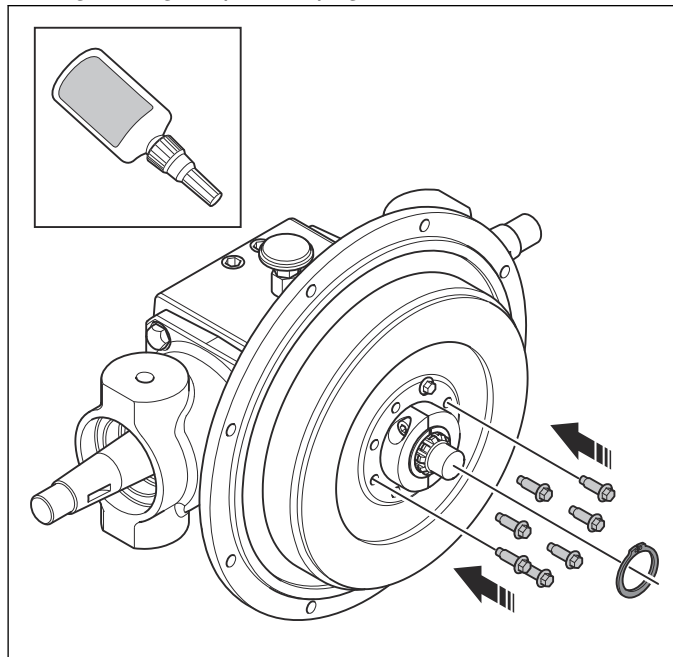
4. Install 1 of the top screws (A).



5. Apply Loctite to the 2 screws and install them. Tighten to the correct torque, refer to *Tightening torques on page 13*.

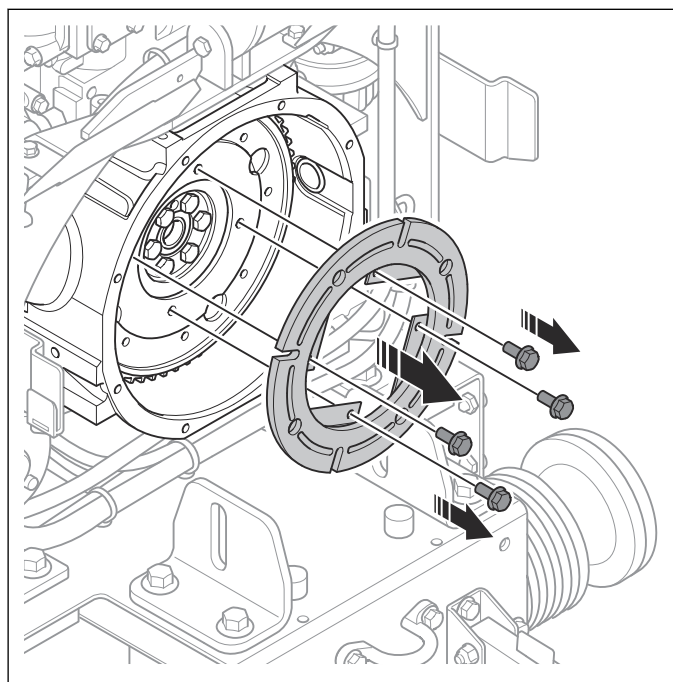


6. Apply Loctite to the 7 screws and install them and the snap ring. Tighten to the correct torque, refer to *Tightening torques on page 13*.



8.11.8 To remove and install the clutch armature

1. Remove the right side cover, the left side cover and the front cover. Refer to *Covers overview on page 29*.
2. Remove the V-belts. Refer to *To remove and install the V-belts on page 79*.
3. Remove the battery.
4. Remove the gearbox. Refer to *To remove and install the gearbox on page 82*.
5. Remove the 4 screws and the clutch armature.



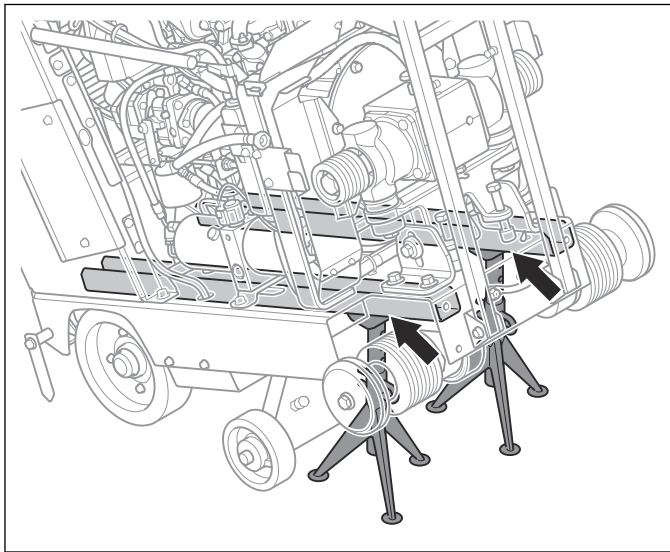
6. Install the clutch armature in the opposite sequence. Apply Loctite to the screws before you install them and tighten to the correct torque, refer to *Tightening torques on page 13*.

8.11.9 To remove and install the blade shaft

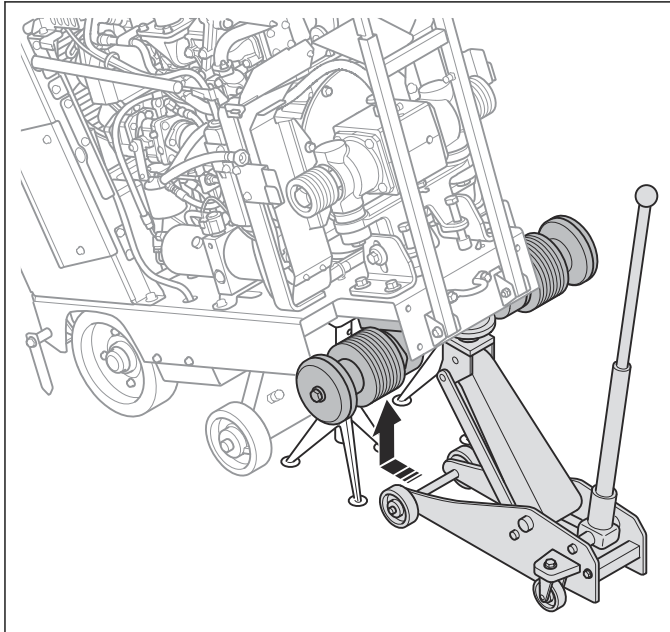


CAUTION: The blade shaft is heavy.

1. Remove the right side cover, the left side cover and the front cover. Refer to *Covers overview on page 29*.
2. Remove the V-belts. Refer to *To remove and install the V-belts on page 79*.
3. Raise the front part of the product. Refer to *To raise the front part of the product on page 30*. Do not put the 2 jack stands on the blade shaft. Put 1 jack stand below each beam.

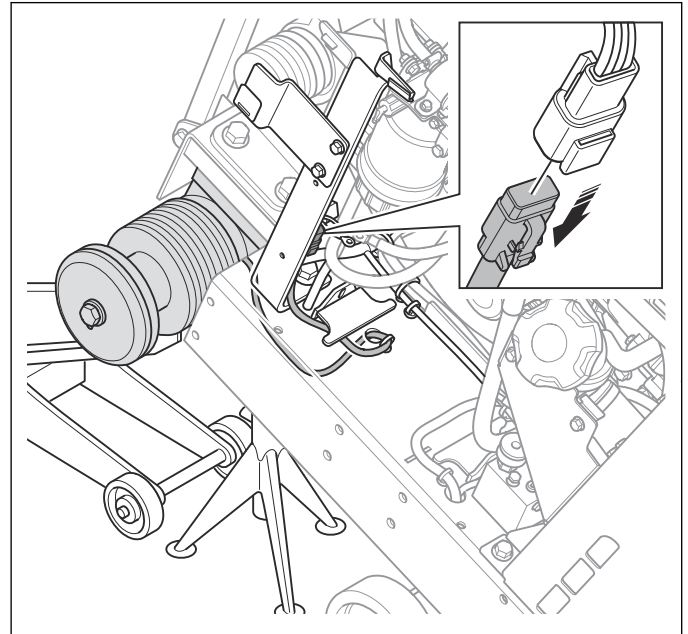


4. Support the blade shaft with a trolley jack.

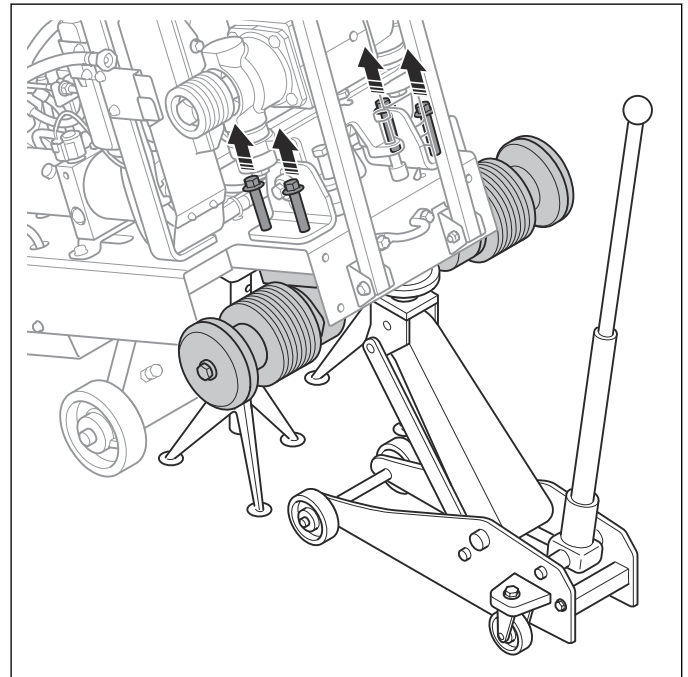


5. Remove the battery.

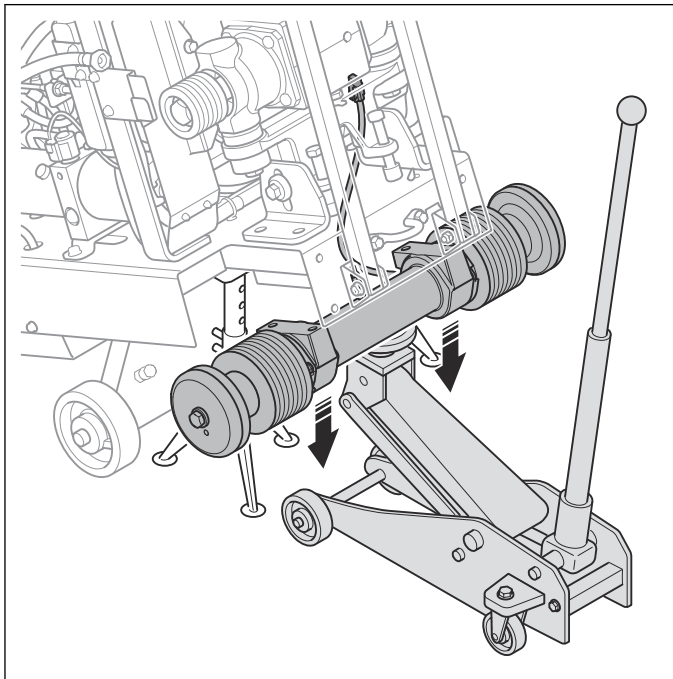
6. Cut the 2 cable ties and disconnect the connector.



7. Remove the 4 screws.



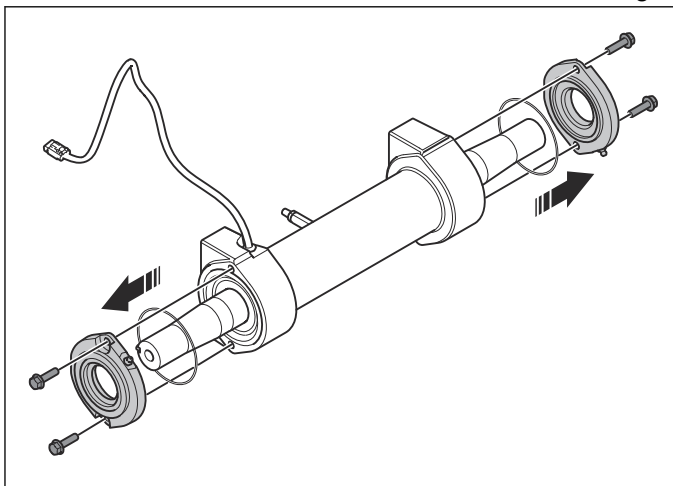
8. Remove the blade shaft with the trolley jack.



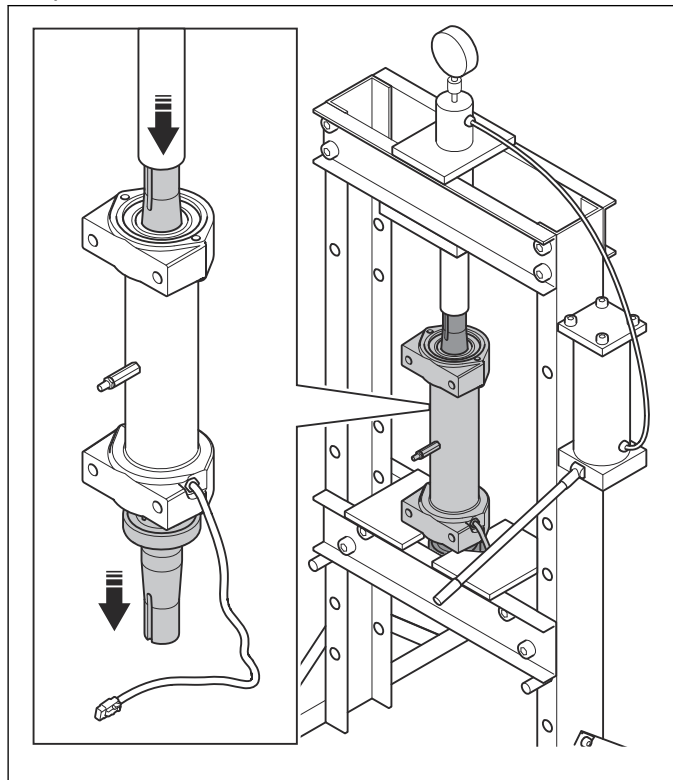
9. Install the blade shaft in the opposite sequence.

8.11.10 To disassemble the blade shaft

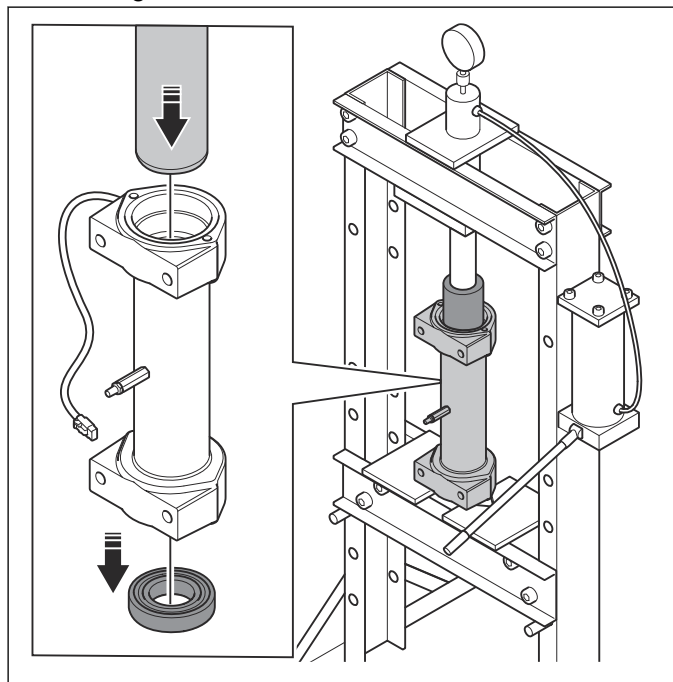
1. Remove the right side cover, the left side cover and the front cover. Refer to *Covers overview on page 29*.
2. Remove the V-belts. Refer to *To remove and install the V-belts on page 79*.
3. Remove the lower V-belt pulleys. Refer to *To remove and install the V-belt pulleys on page 80*.
4. Remove the blade shaft. Refer to *To remove and install the blade shaft on page 89*.
5. Remove the 4 screws, the 2 seals and the 2 O-rings.



6. Remove the shaft and the bottom bearing with a press tool.

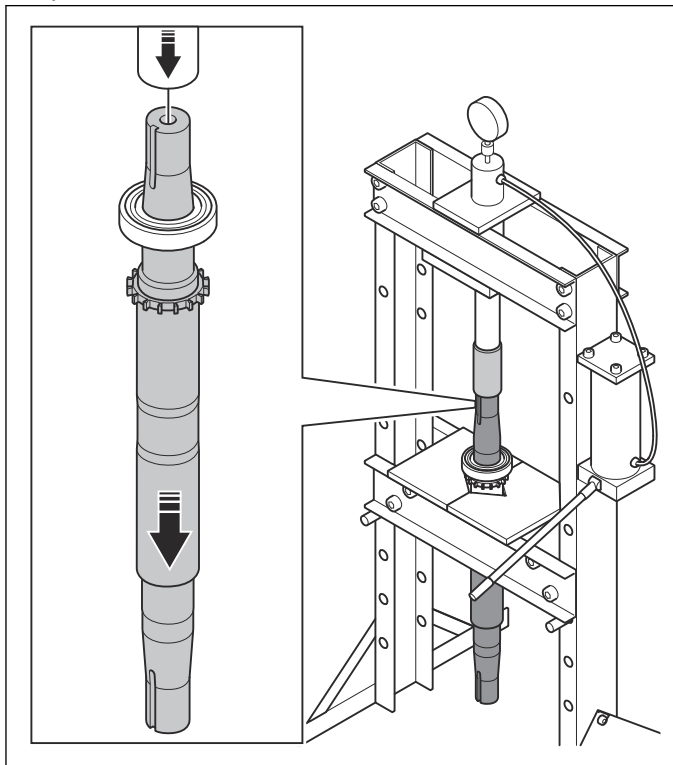


7. Turn the blade shaft around and put a 350 mm long pipe with diameter 50 mm in the blade shaft housing.

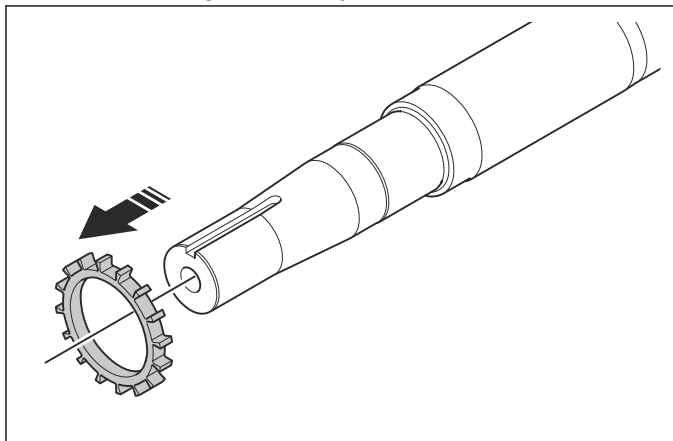


8. Press the pipe with a press tool to remove the second bearing from the blade shaft housing.

9. Remove the bearing from the shaft with a pipe and a press tool.

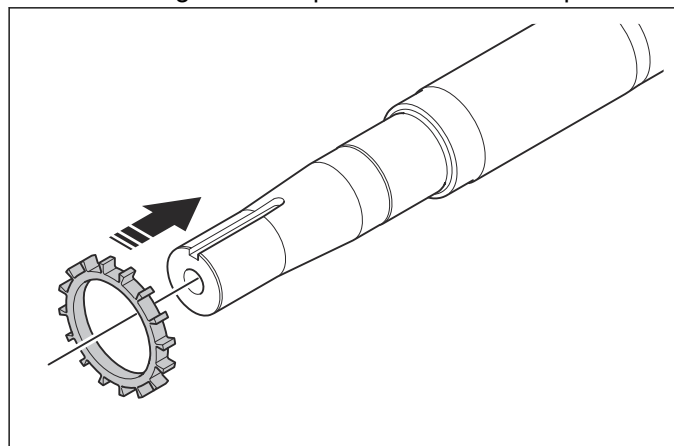


10. Remove the gear wheel prox switch.

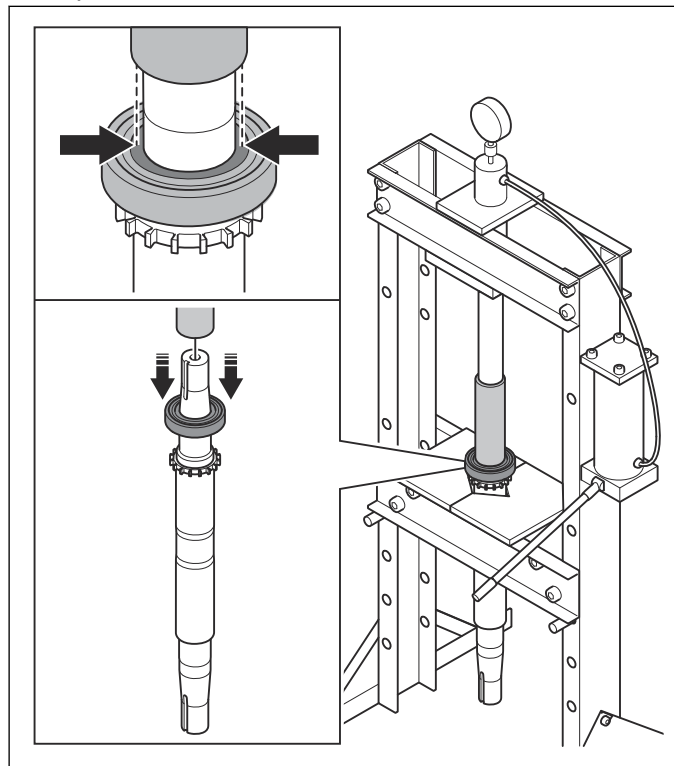


8.11.11 To assemble the blade shaft

1. Install the gear wheel prox switch and the spacers.

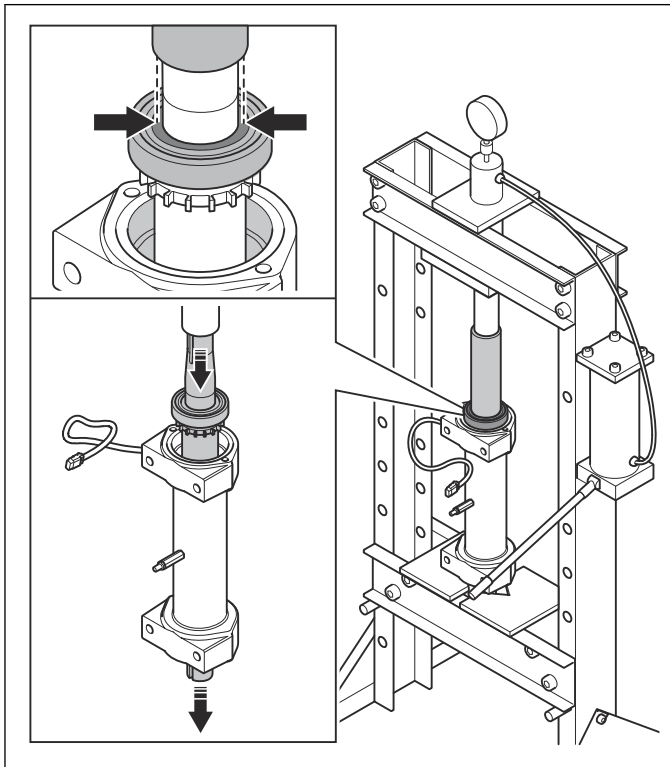


2. Install the bearing from the shaft with a mandrel and a press tool.



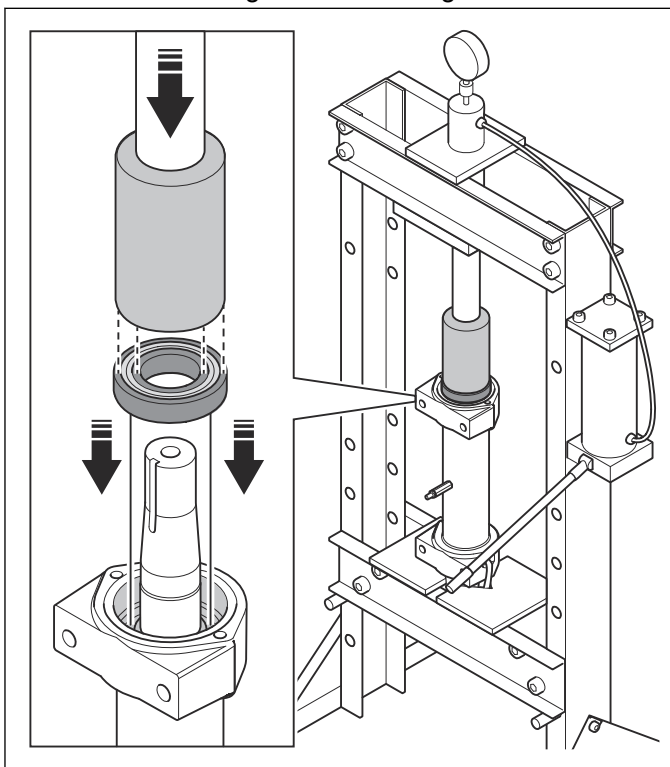
CAUTION: Use a mandrel that presses the inner ring of the bearing.

3. Install the shaft and the bearing into the housing.



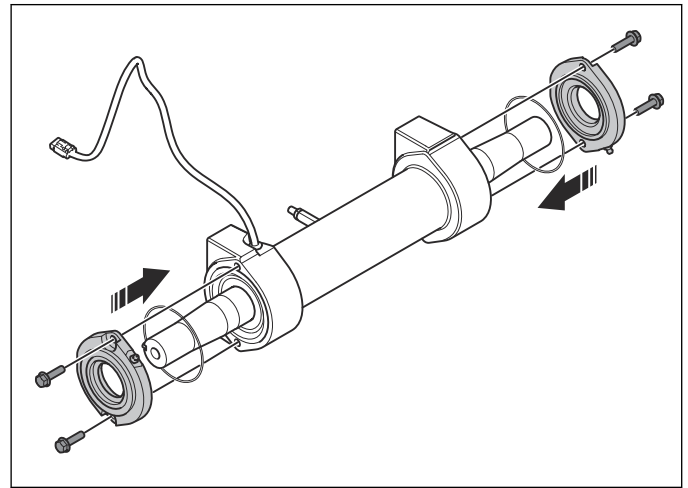
CAUTION: Use a mandrel that presses the inner ring of the bearing.

4. Install the bearing into the housing.



CAUTION: Use a mandrel that presses the both the inner and outer ring of the bearing.

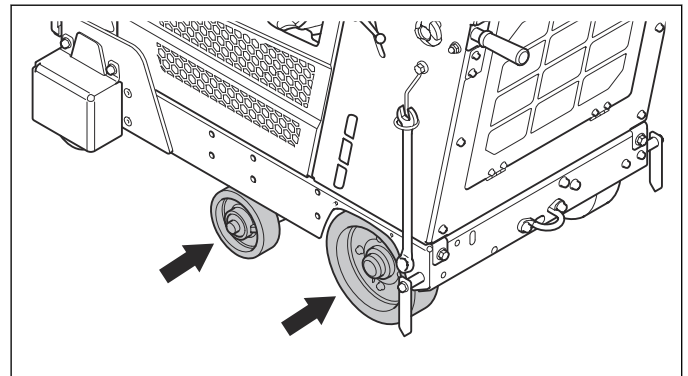
5. 5. Install the 4 screws, the 2 seals and the 2 O-rings.



8.12 Wheels and axles

8.12.1 To examine the wheels

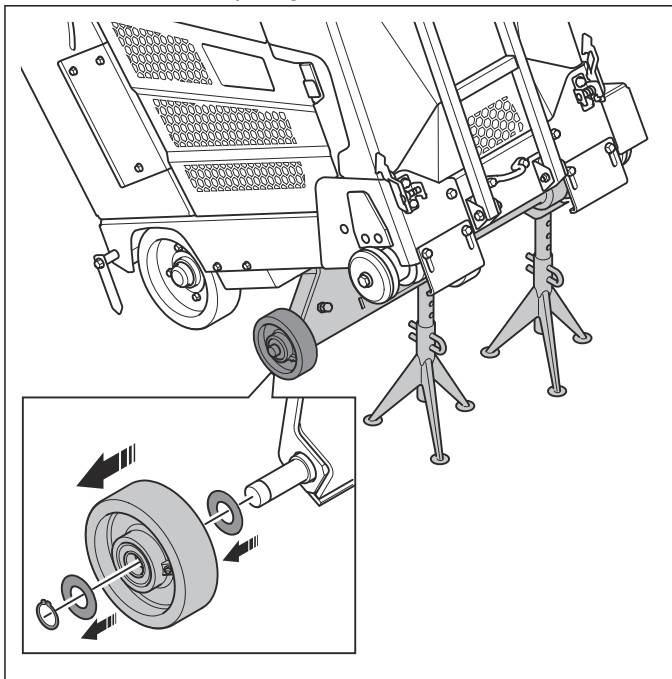
- Examine the wheels for wear or damage. Replace wheels and hubs if they are damaged or worn out.



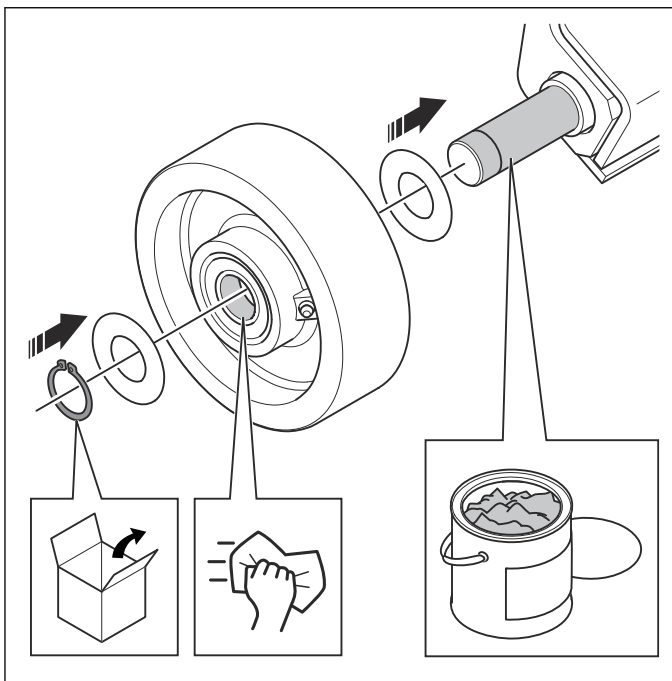
- Examine if the rear wheel hubs and wheels are loose. Tighten loose screws and nuts.

8.12.2 To remove and install the front wheels

1. Raise the front part of the product. Refer to *To raise the front part of the product on page 30*.
2. Remove the snap ring, the wheel and the 2 washers. Discard the snap ring.



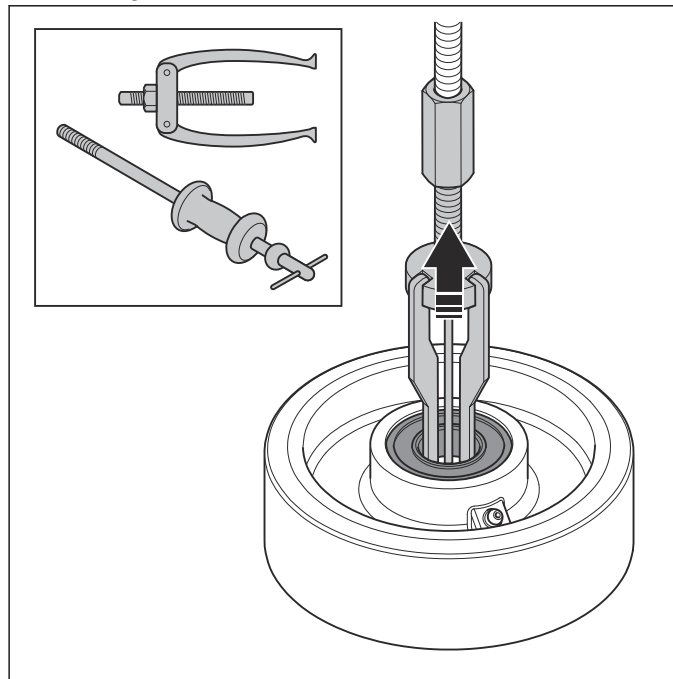
3. Clean the inside of the wheels and the axle.



4. Apply grease to the axle and install the wheels in the opposite sequence. Use new snap rings.

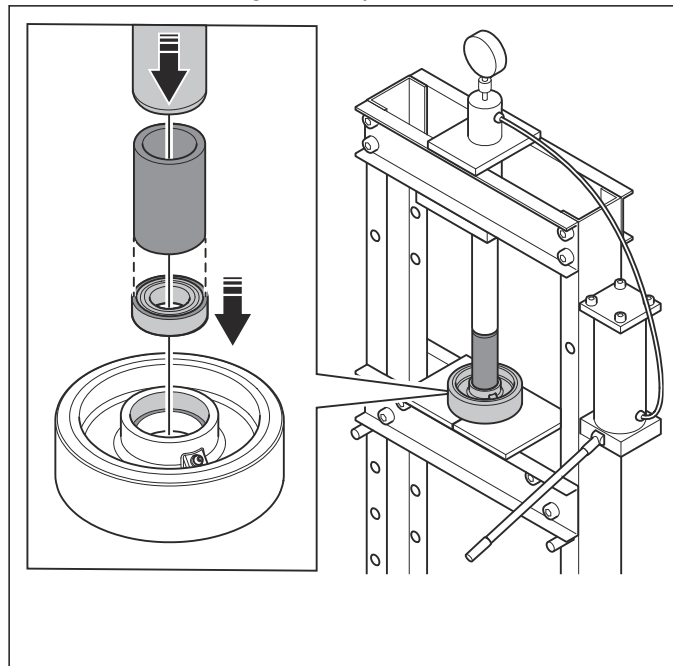
8.12.3 To remove the front wheel bearings

1. Remove the front wheels. Refer to *To remove and install the front wheels on page 93*.
2. Use an internal slide hammer to remove the 2 bearings from each front wheel.



8.12.4 To install the front wheel bearings

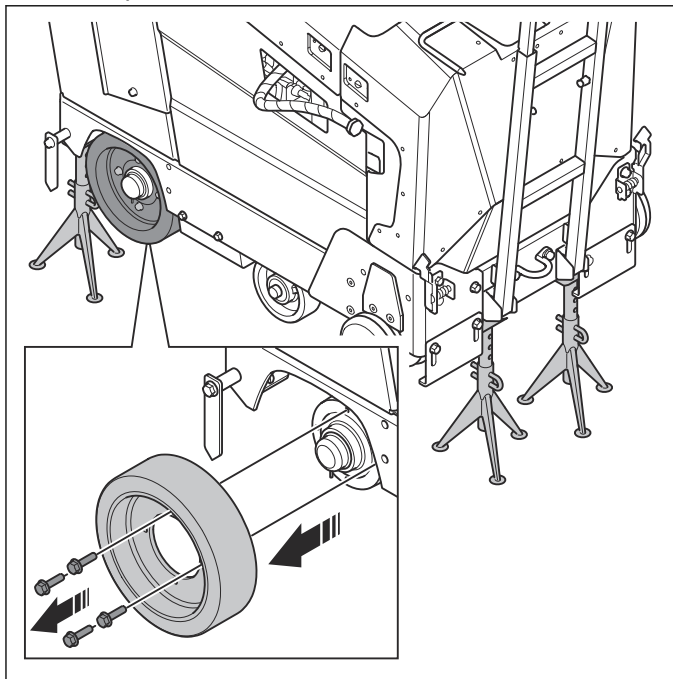
- Install the bearings with a press tool.



CAUTION: Make sure the mandrel only presses the outer ring of the bearing.

8.12.5 To remove and install the rear wheels

1. Lift the product and put supports below the product. Refer to *To lift the product on page 30*.
2. Remove the 4 screws and the wheel on the 2 sides of the product.

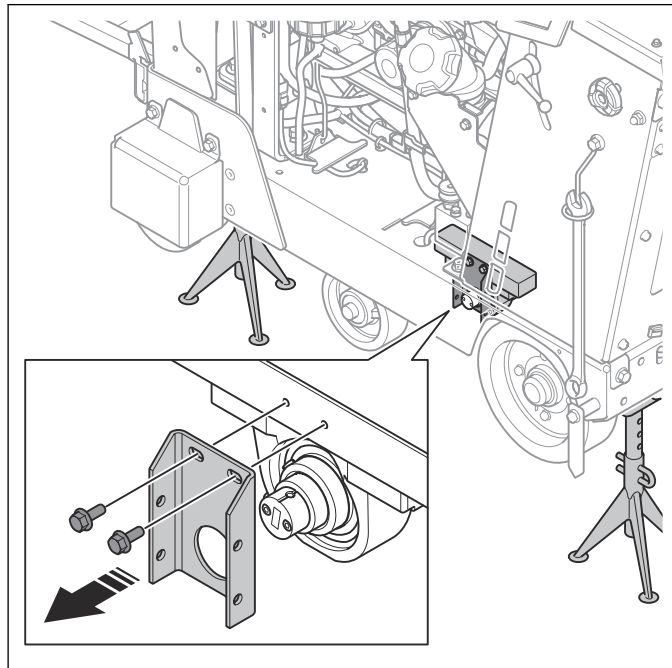


3. Install the wheels in the opposite sequence.

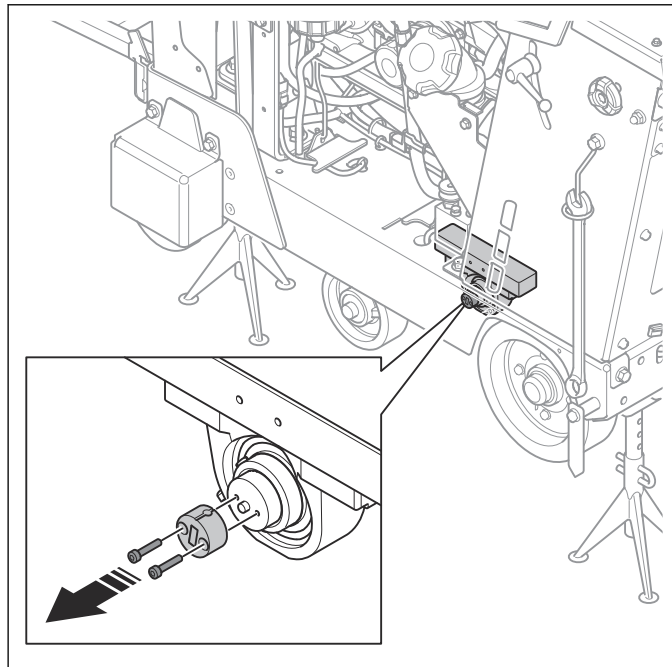
8.12.6 To remove the front axle and bearing brackets

1. Remove the right and the left side cover. Refer to *Covers overview on page 29*.
2. Remove the battery.
3. Remove the blade depth sensor. Refer to *To remove and install the blade depth sensor on page 31*.
4. Lift the product. Refer to *To lift the product on page 30*.

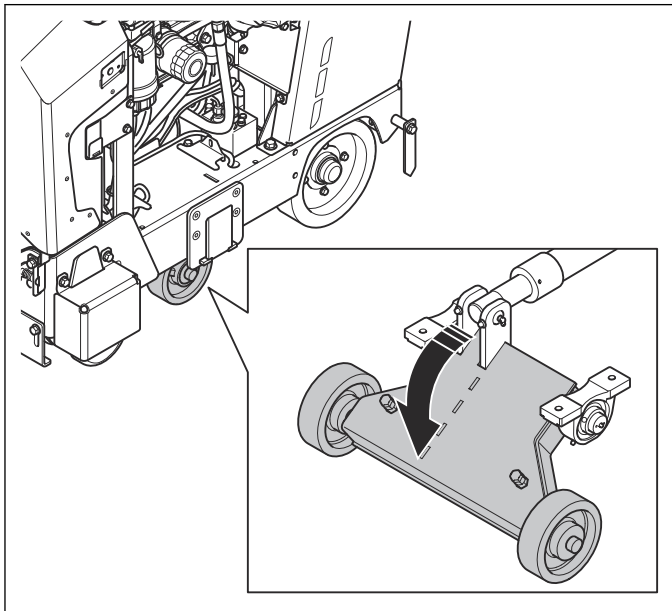
5. Remove the 2 screws and the bracket.



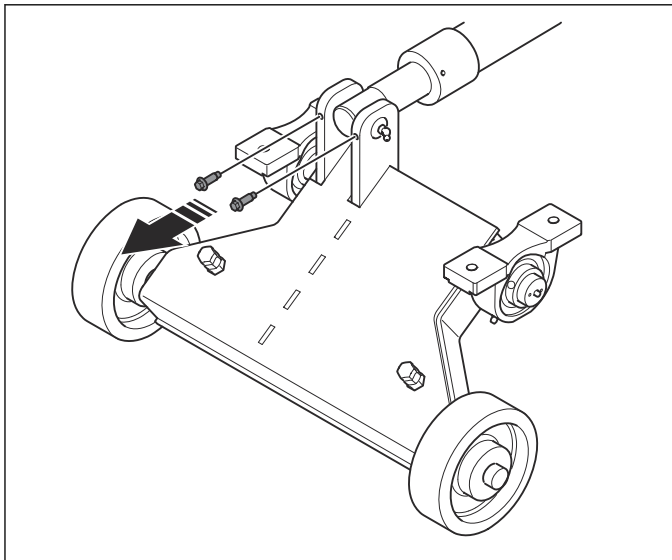
6. Remove the 2 screws and the magnet.



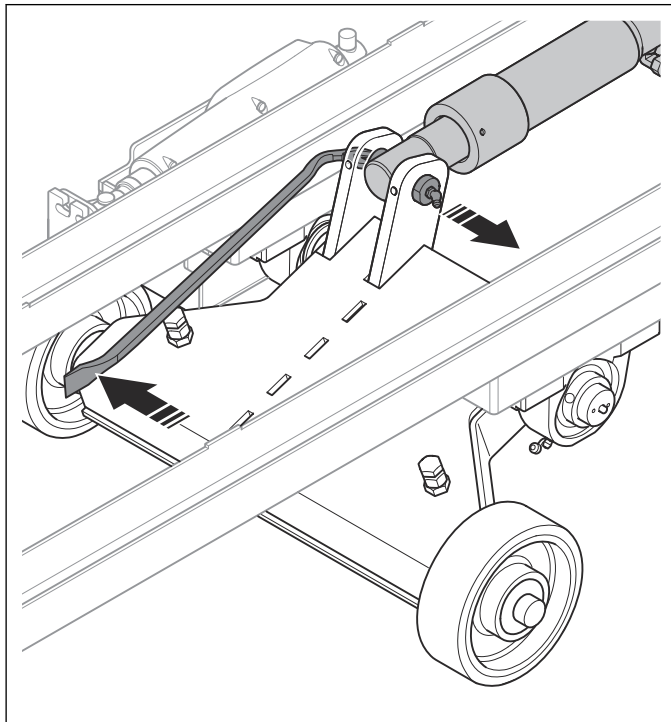
7. Lower the front axle.



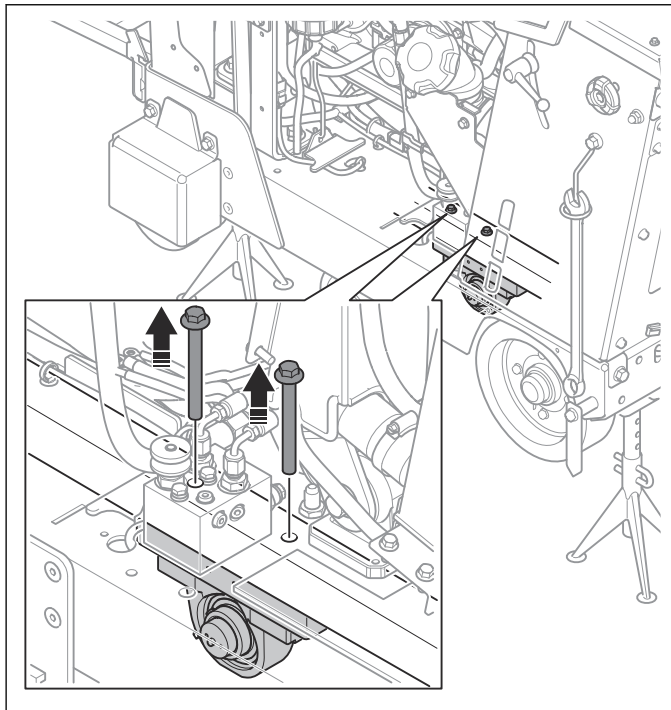
8. Remove the 2 screws.



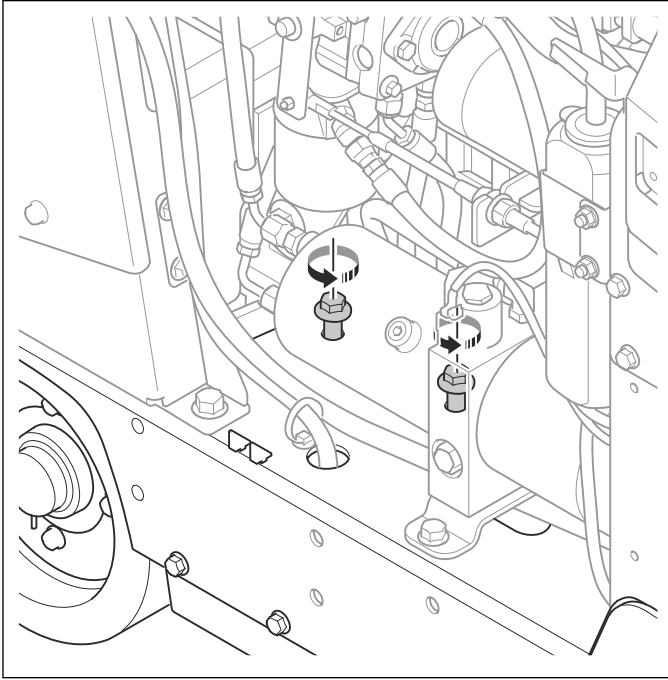
9. Pry with a crowbar to push out the shaft.



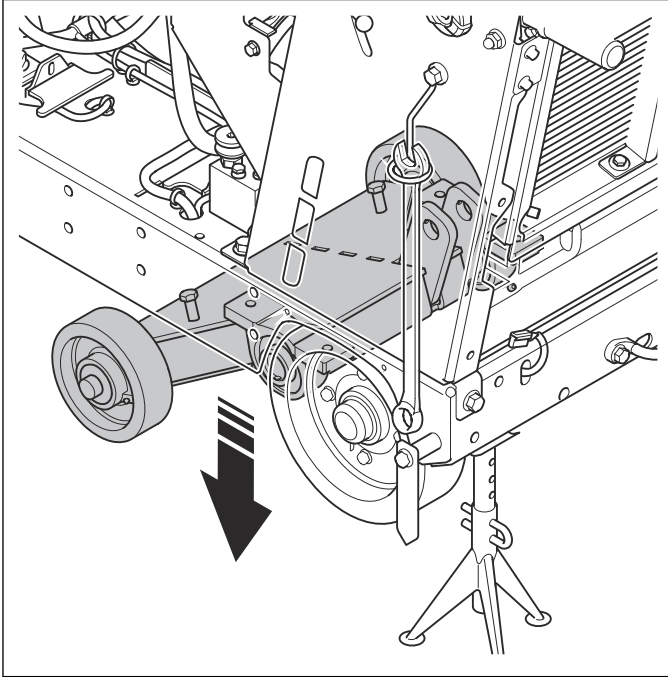
10. Remove the 2 screws.



11. Remove the 2 screws.



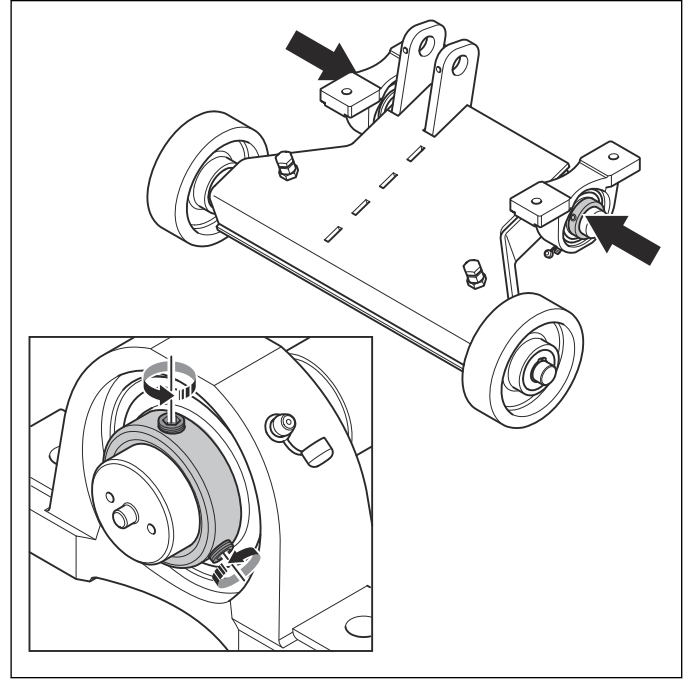
12. Remove the front axle.



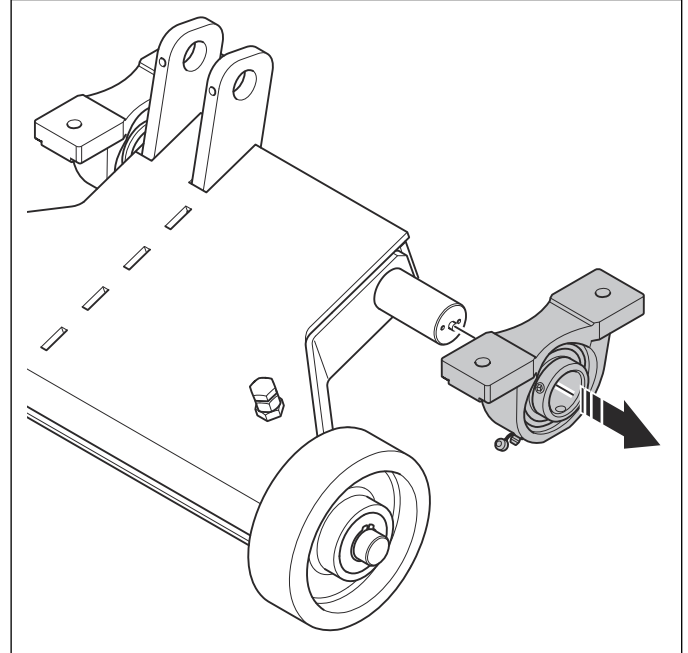
8.12.7 To do a check of the bearing brackets

1. Remove the right and the left side cover. Refer to *Covers overview on page 29*.
2. Remove the battery.
3. Remove the blade depth sensor. Refer to *To remove and install the blade depth sensor on page 31*.
4. Remove the front axle and the bearing brackets. Refer to *To remove the front axle and bearing brackets on page 94*.

5. Loosen the 2 screws on each bearing bracket.

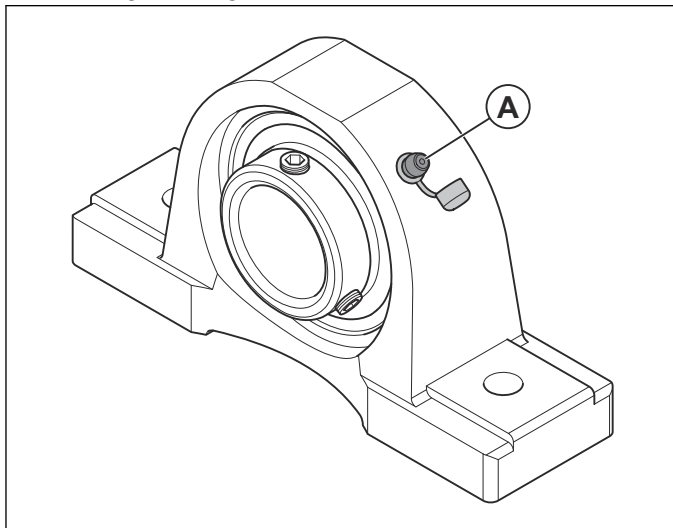


6. Remove the bearing bracket.



7. Clean the bearing.

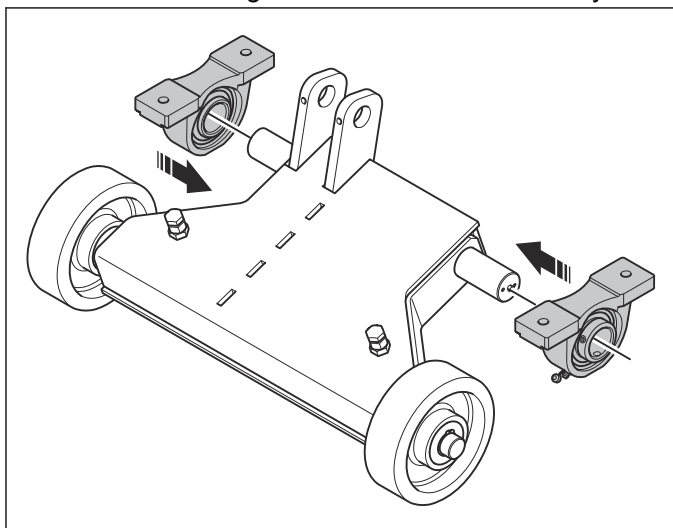
8. Push grease through the grease nipple (A) until grease comes out between the bearing and the bearing housing.



9. Do the same procedure on the bearing bracket on the opposite side of the lift assembly.

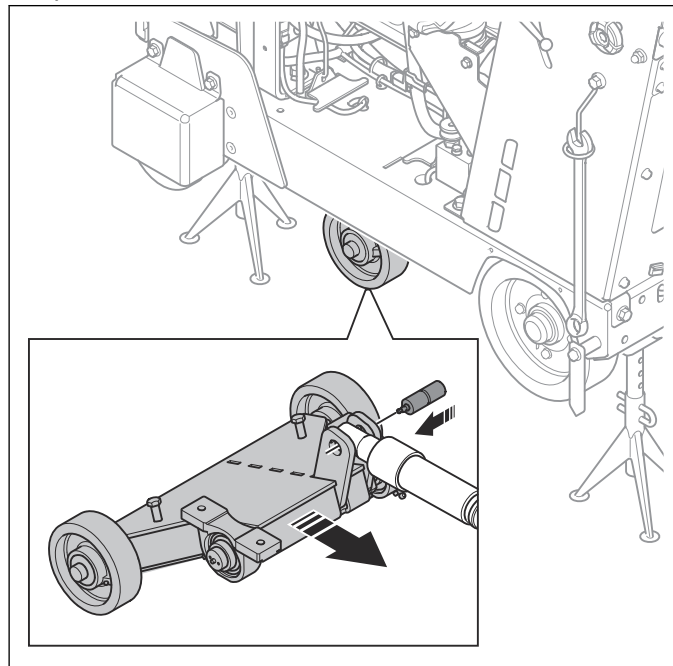
8.12.8 To install the front axle and bearing brackets

1. Lift the product and put supports below the product. Refer to *To lift the product on page 30*.
2. Install the bearing brackets on the lift assembly.

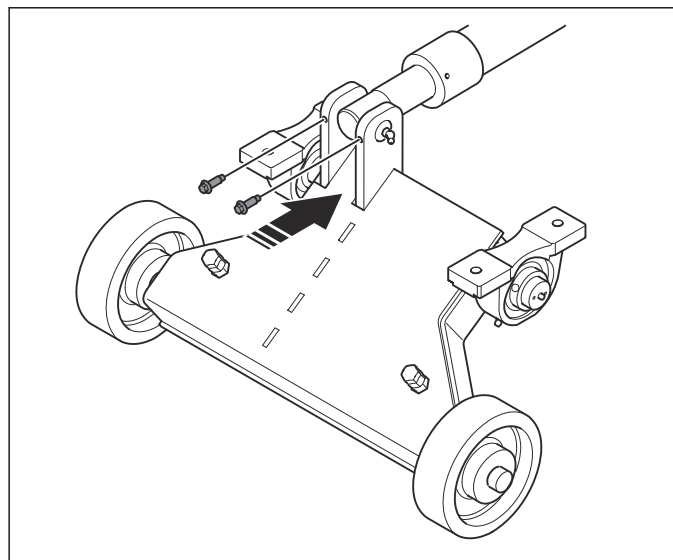


3. Apply grease to the shaft.

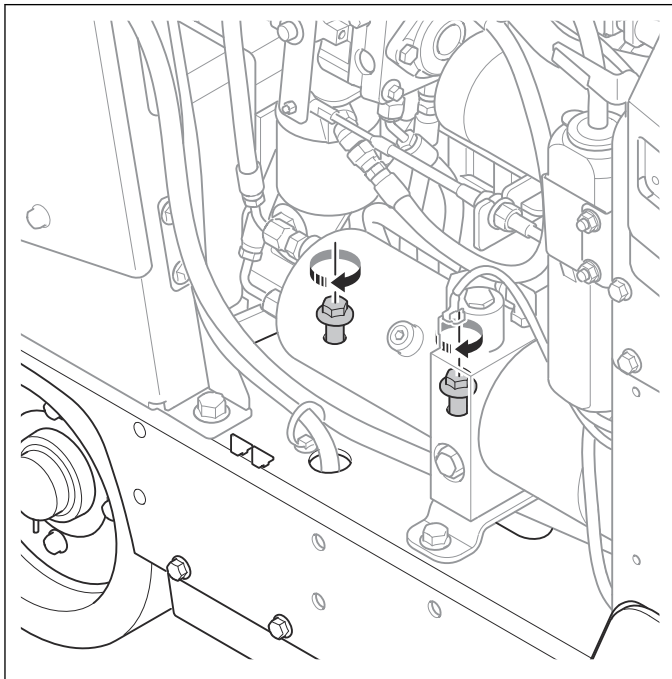
4. Put the front axle in the correct position on the product and install the shaft.



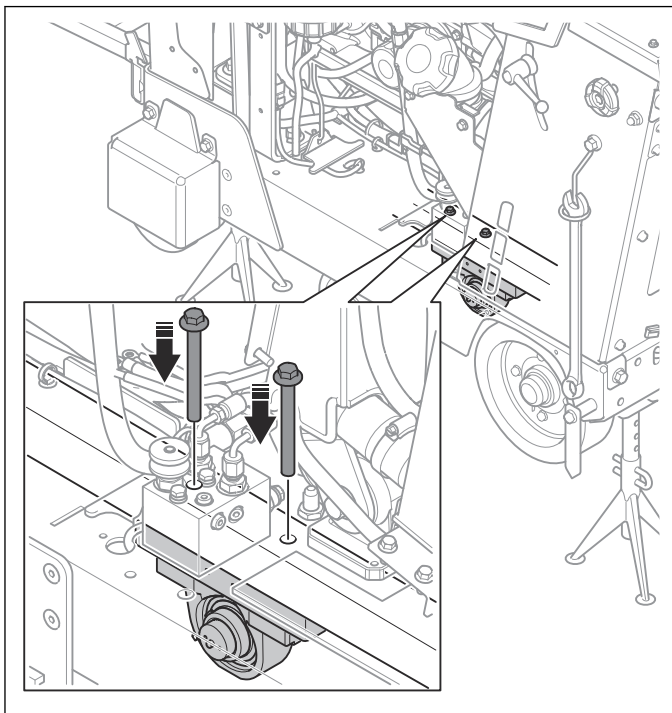
5. Install the 2 screws.



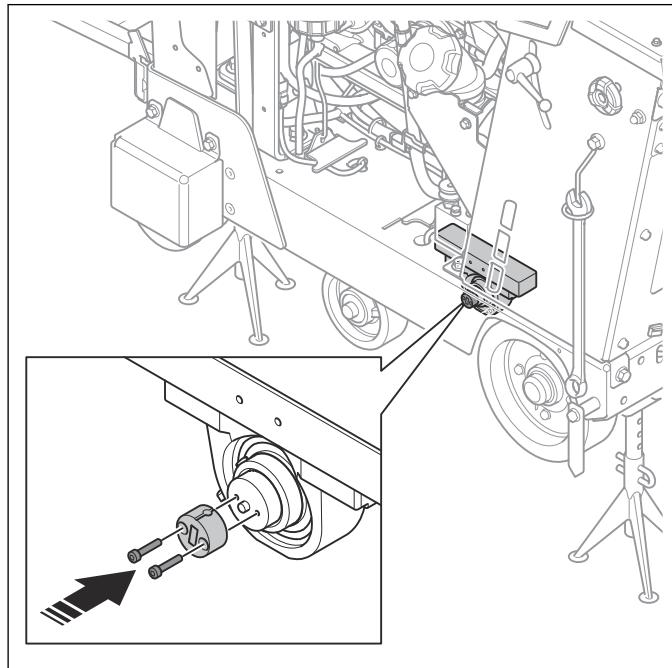
6. Install the 2 screws.



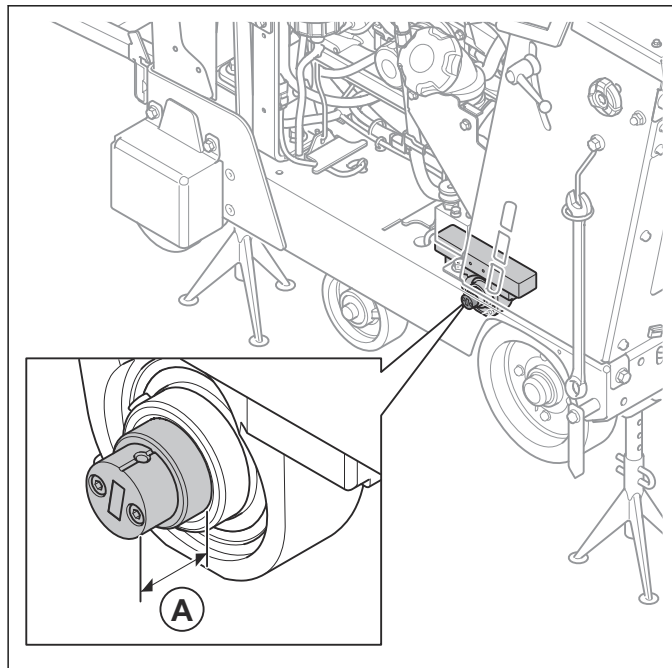
7. Install the 2 screws.



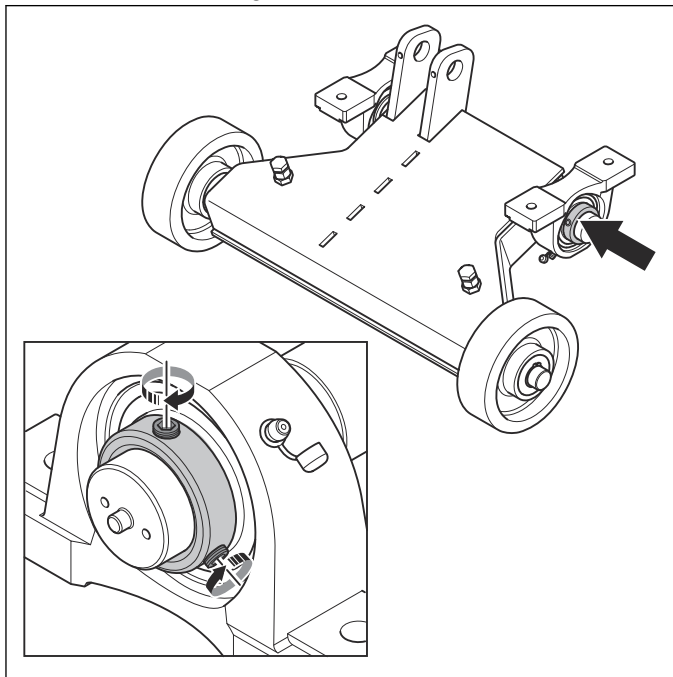
8. Install the magnet and the 2 screws.



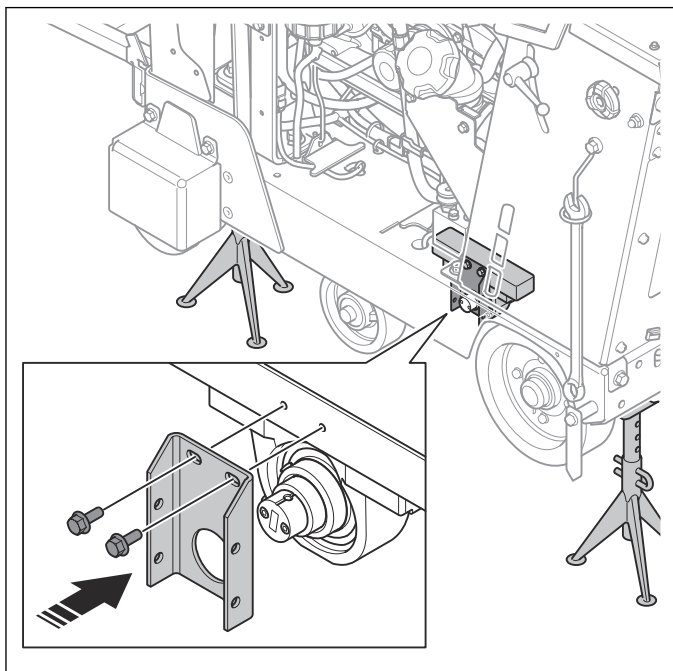
9. Adjust the left bearing bracket until the distance from the magnet surface to the product frame (A) is 25 mm.



10. When the distance is correct, tighten the 2 screws on the left bearing bracket.



11. Install the 2 screws and the bracket.



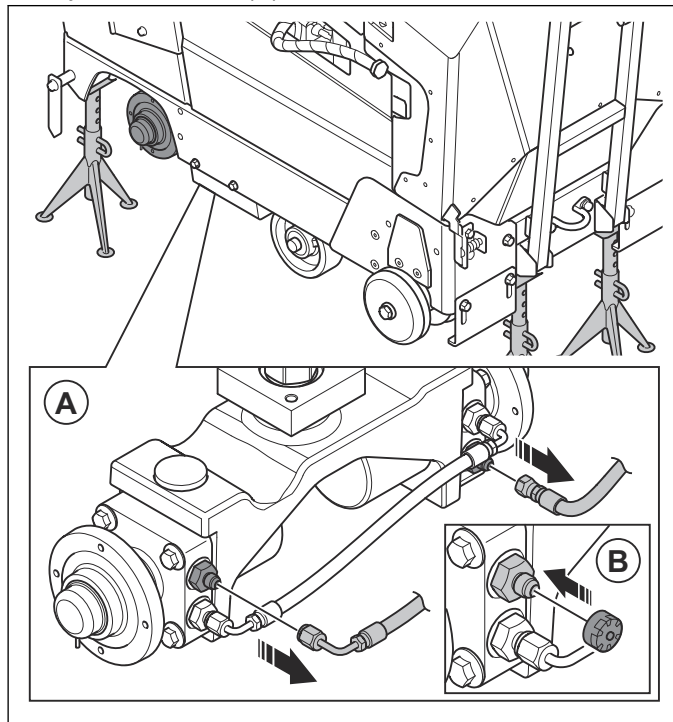
8.12.9 To remove and install the rear axle



WARNING: A minimum of 2 persons are necessary to remove the rear axle. The rear axle is heavy.

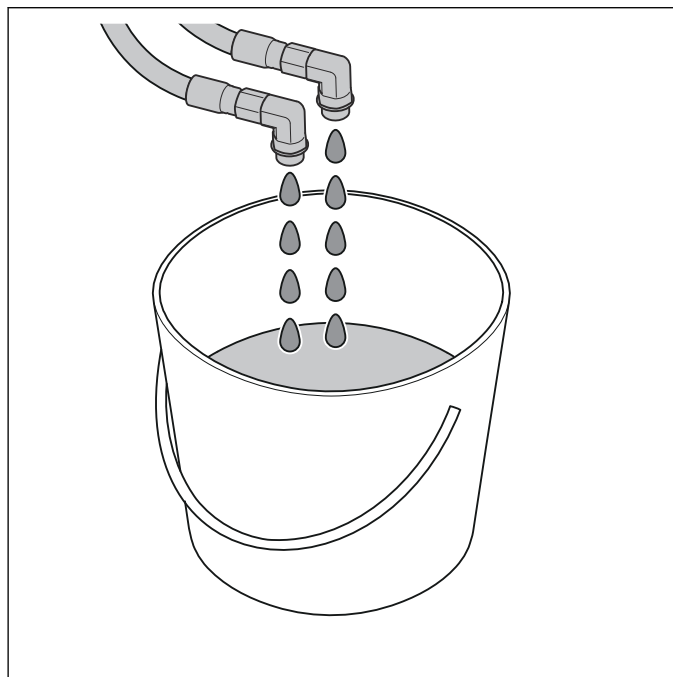
1. Lift the product and put supports below the product. Refer to *To lift the product on page 30*.
2. Remove the rear wheels. Refer to *To remove and install the rear wheels on page 94*.

3. Put a cover below the product and disconnect the hydraulic hoses (A).



4. Close off the hydraulic openings (B).

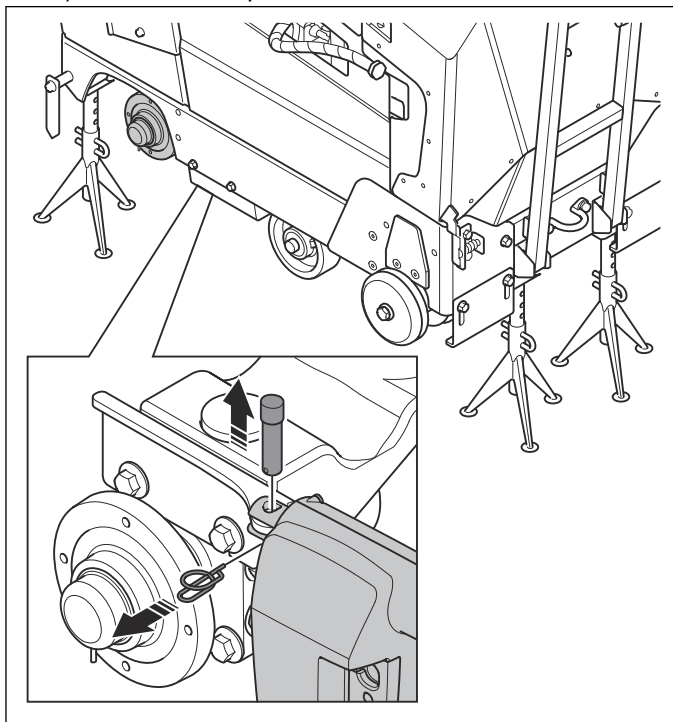
5. Drain the oil from the hydraulic hoses into a container.



6. Close off the hydraulic openings with plugs.

7. For products with E-track function, do the steps that follow:

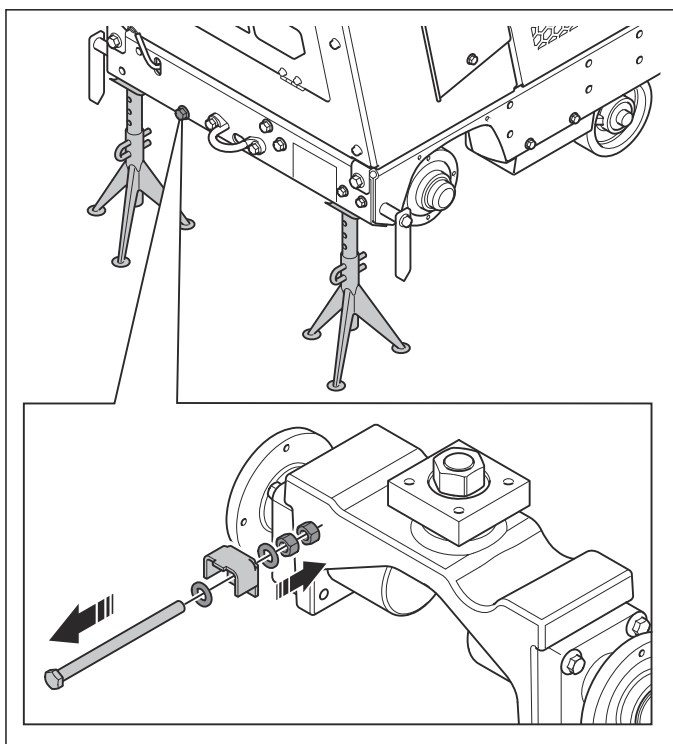
a) Remove the pin.



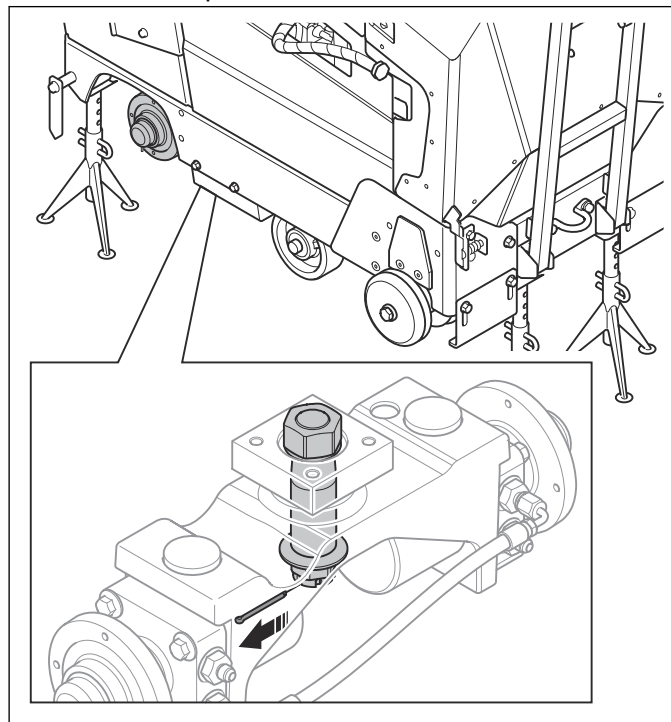
b) Push again and again on the right E-track button on the control panel to retract the fork as much as possible.

8. For products with manual rear axle adjustment, do the step that follow:

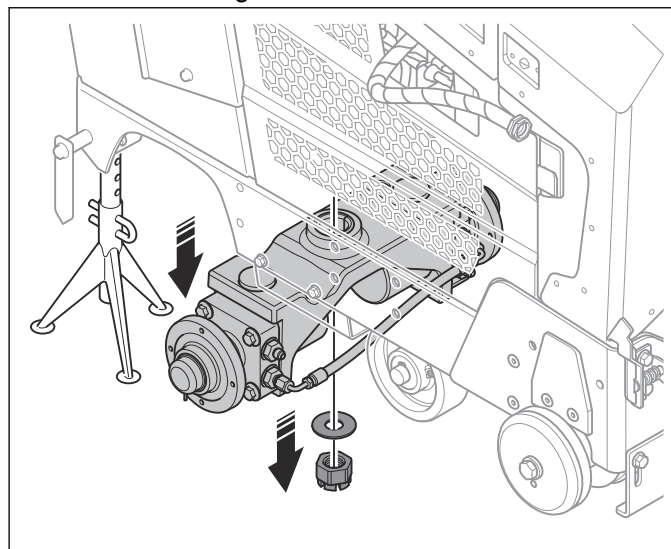
a) Remove the 2 nuts, the screw and the 2 washers.



9. Remove the pin.



10. Remove the large nut with a 37 mm socket.

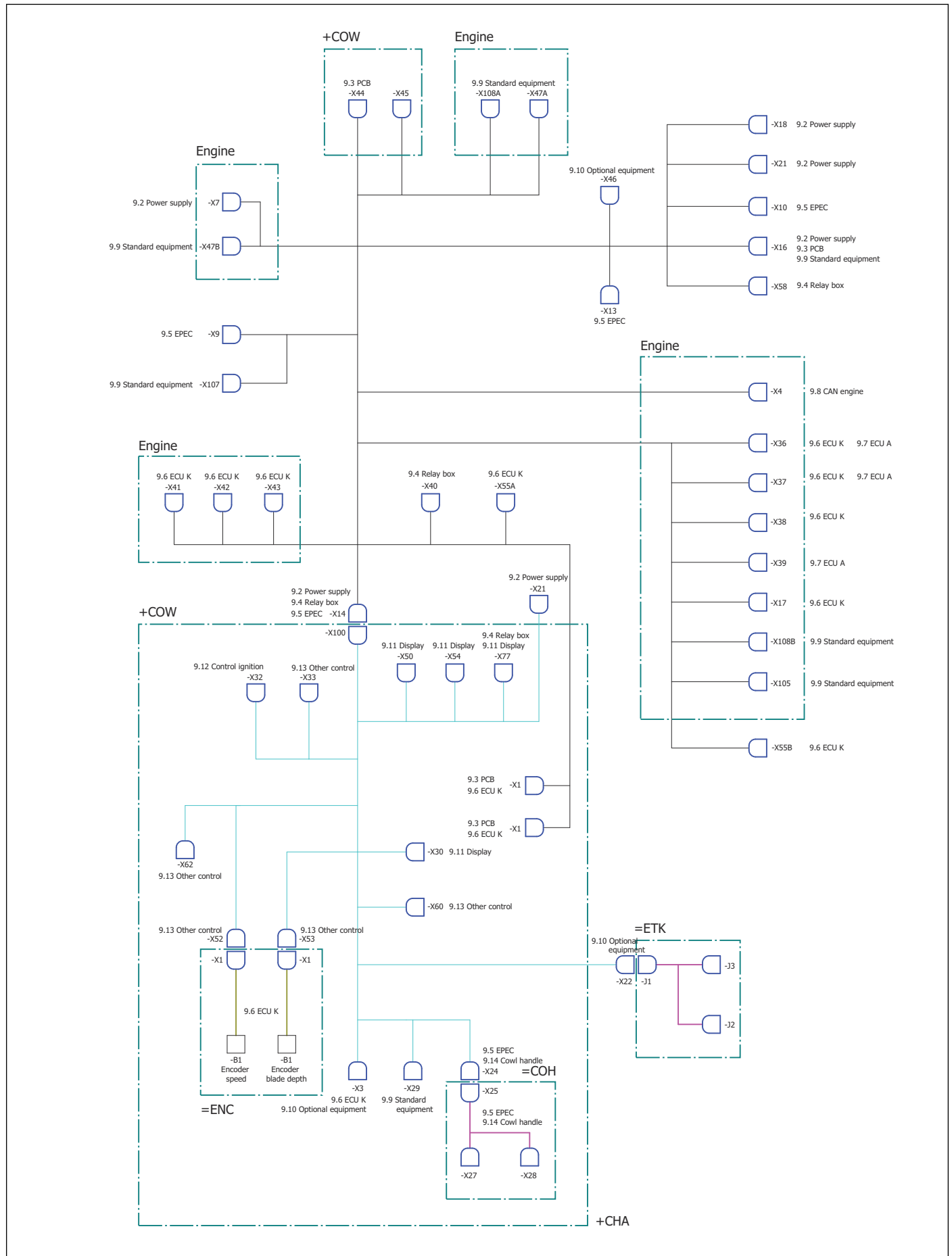


11. Remove the washer and the rear axle.

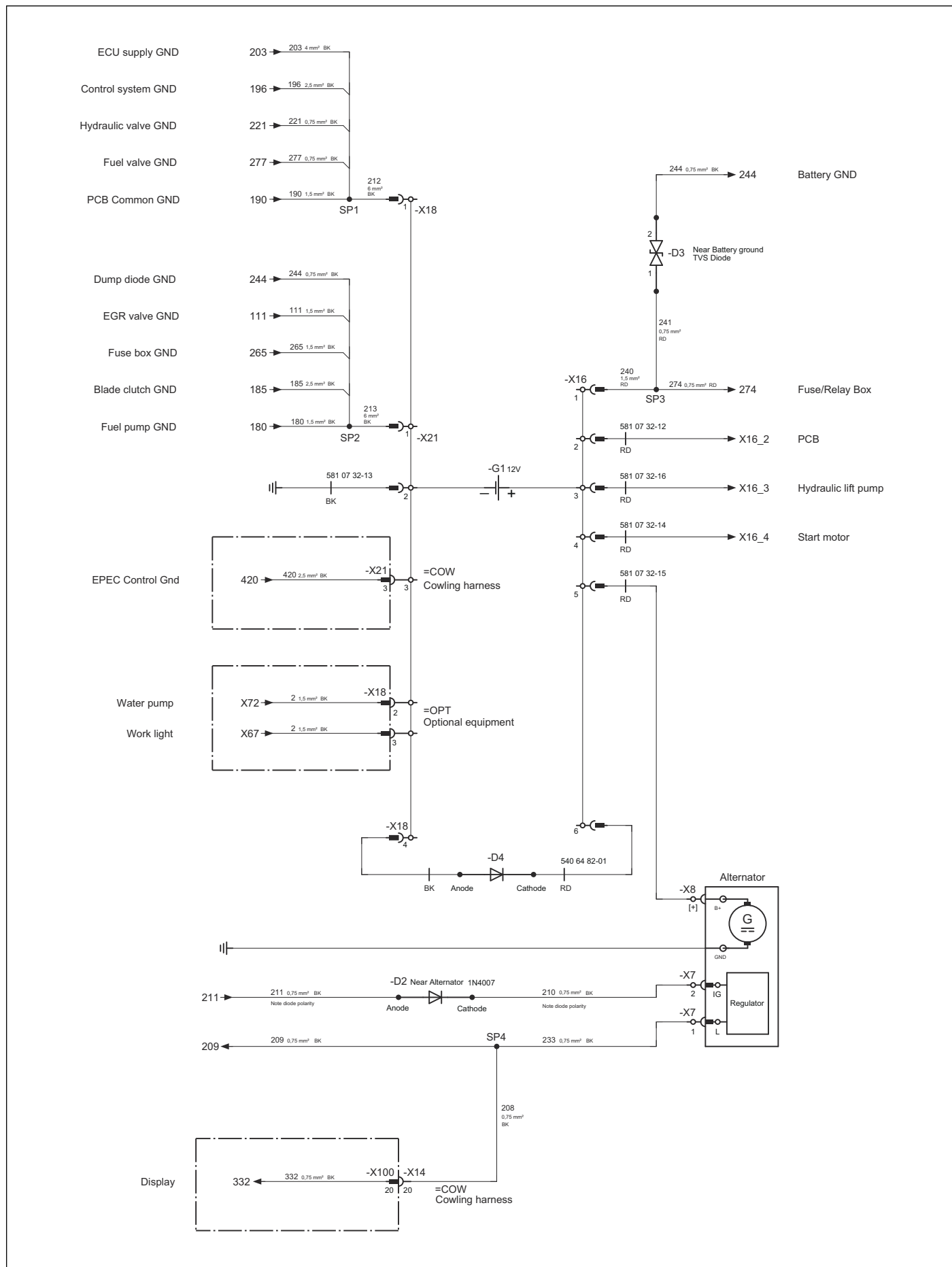
12. Install the rear axle in the opposite sequence. Apply grease to the large nut before you install it.

9 Diagrams

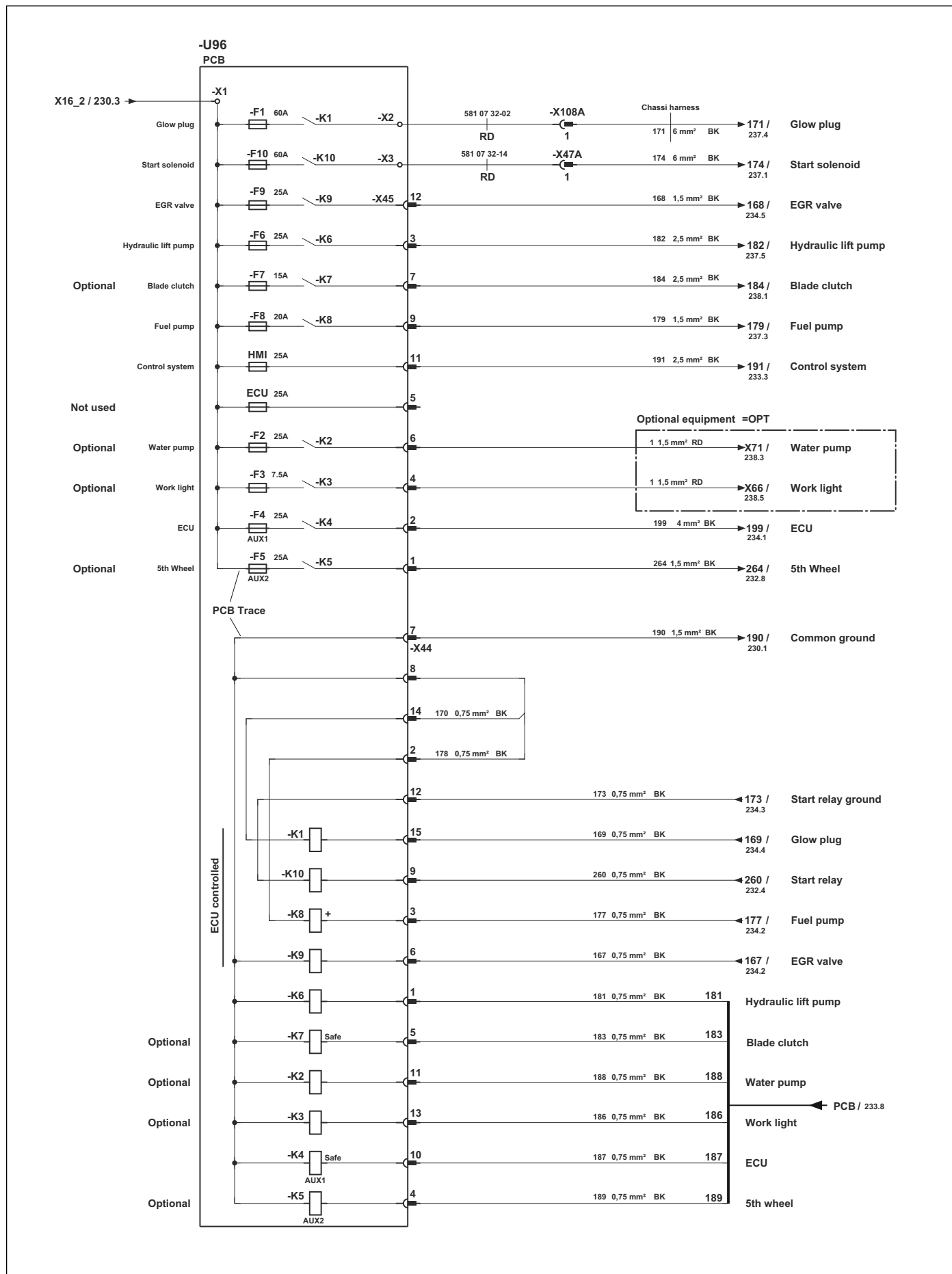
9.1 Control panel



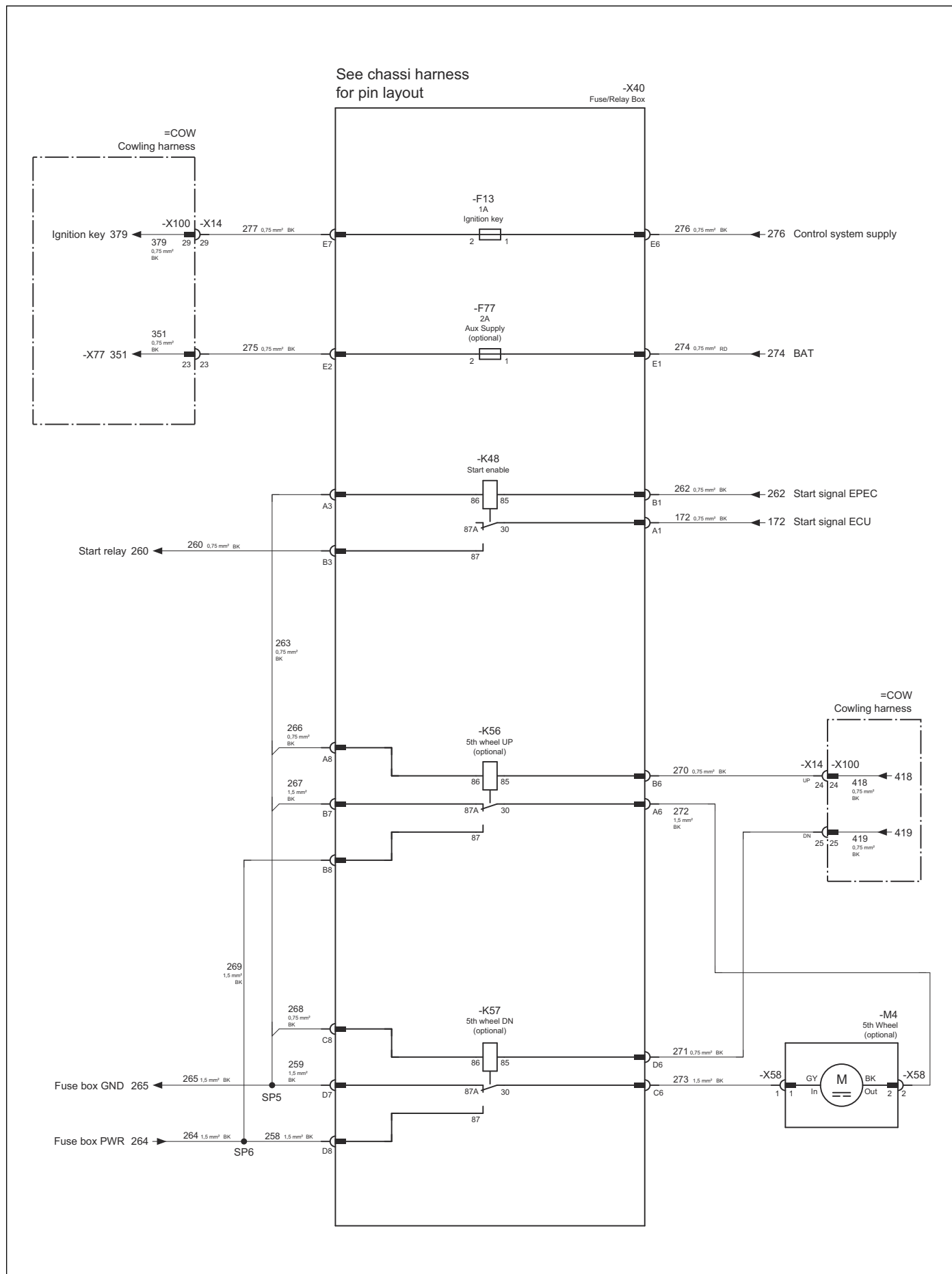
9.2 Power supply



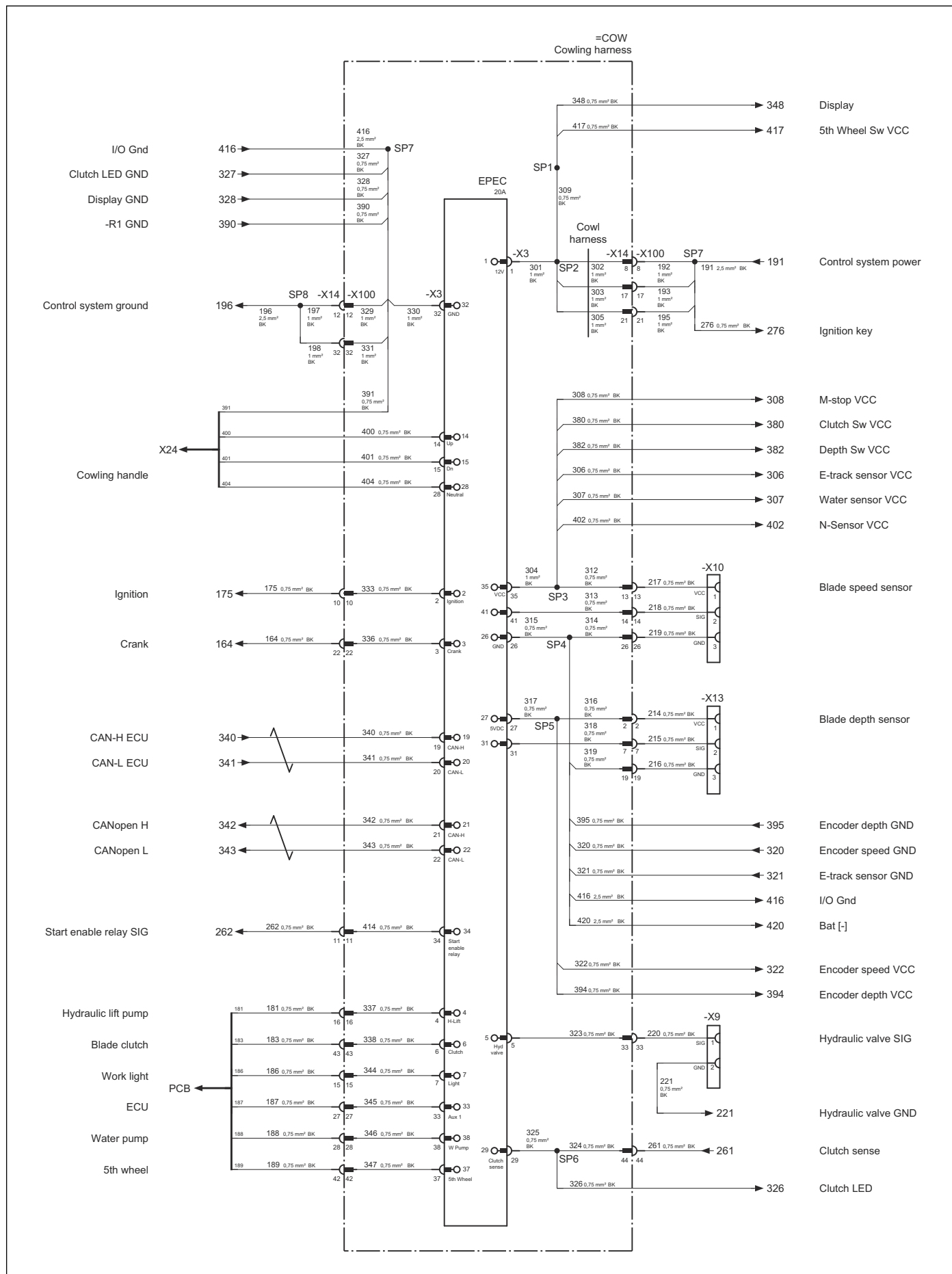
9.3 PCB



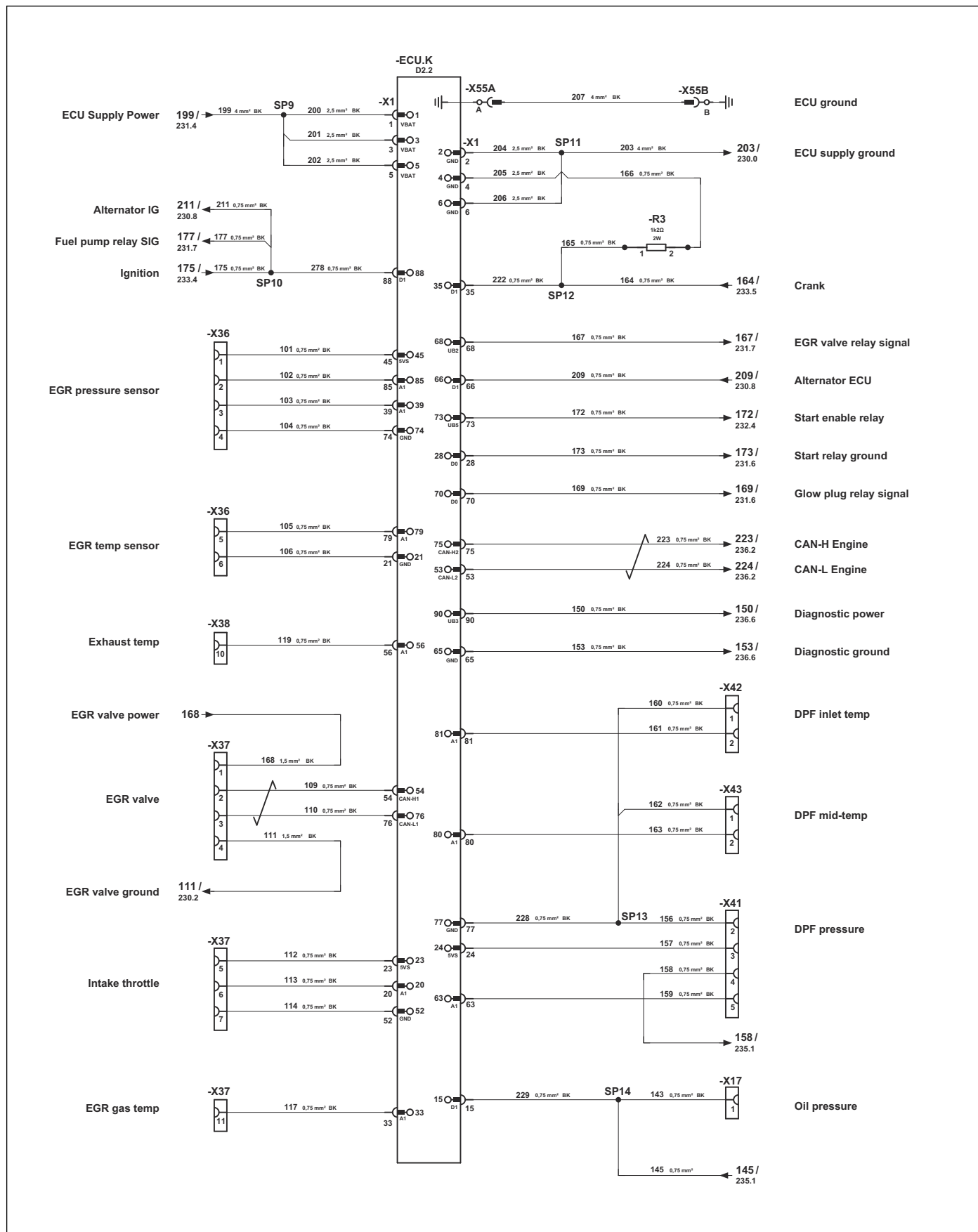
9.4 Relay box



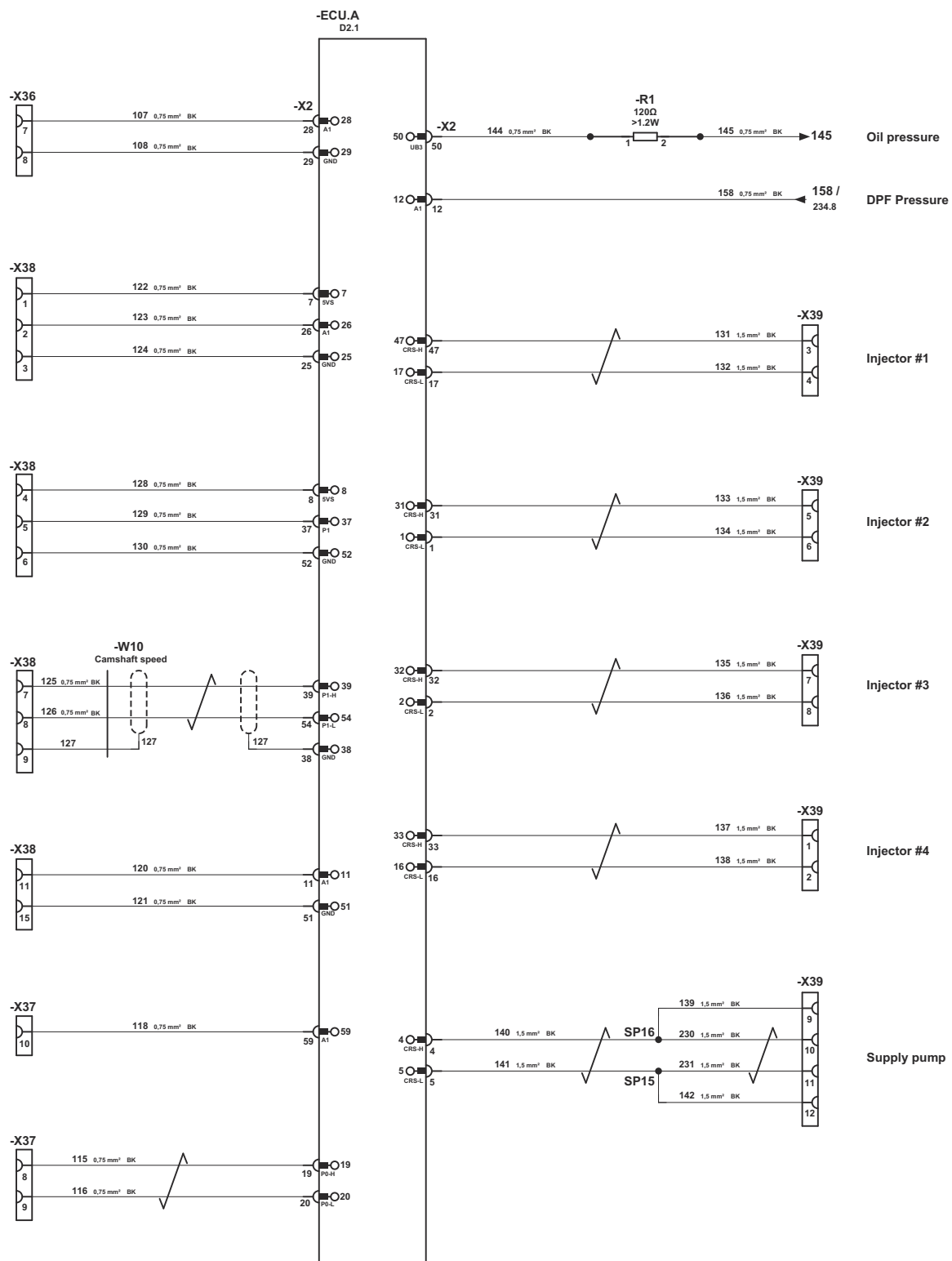
9.5 EPEC



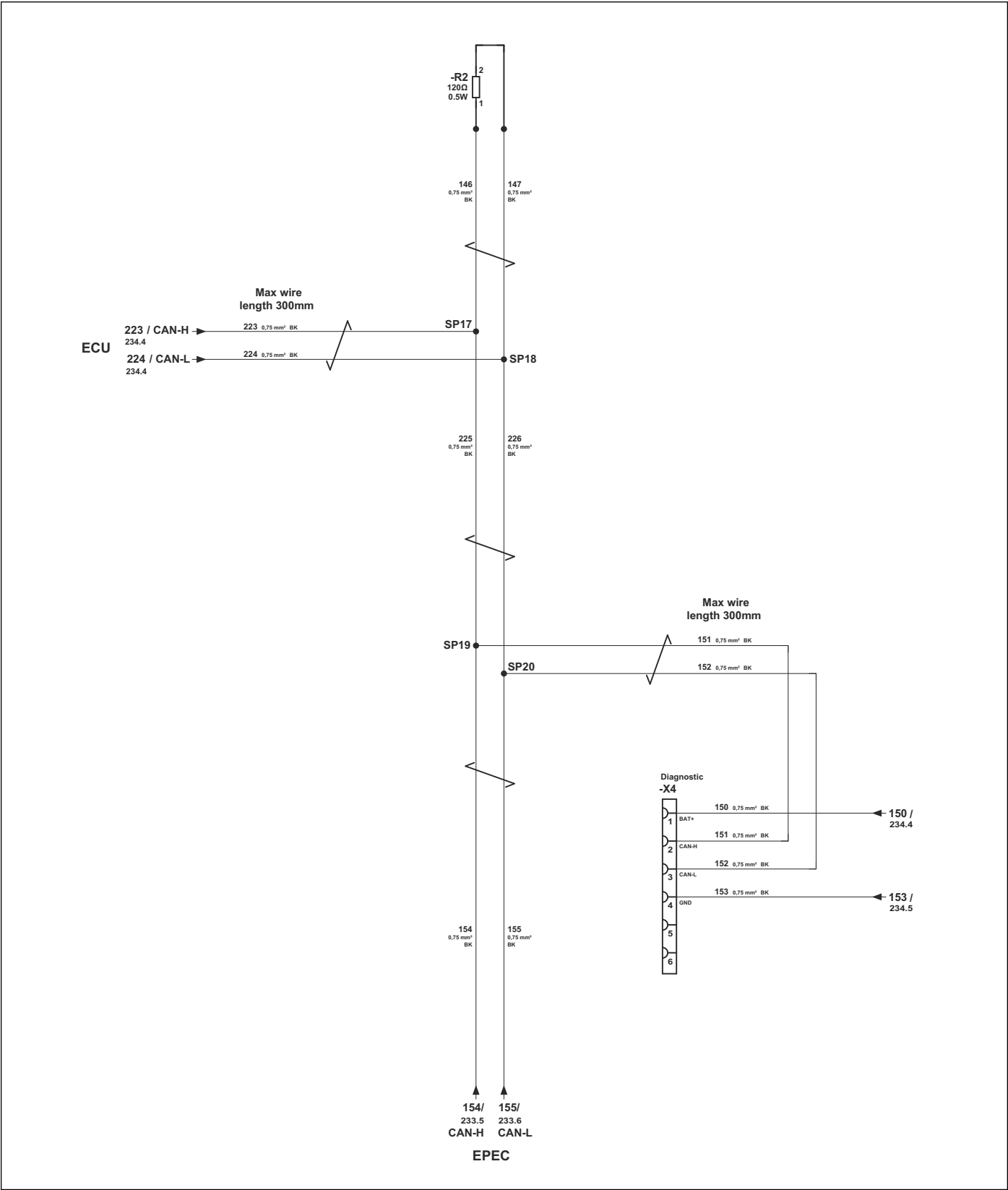
9.6 ECU K



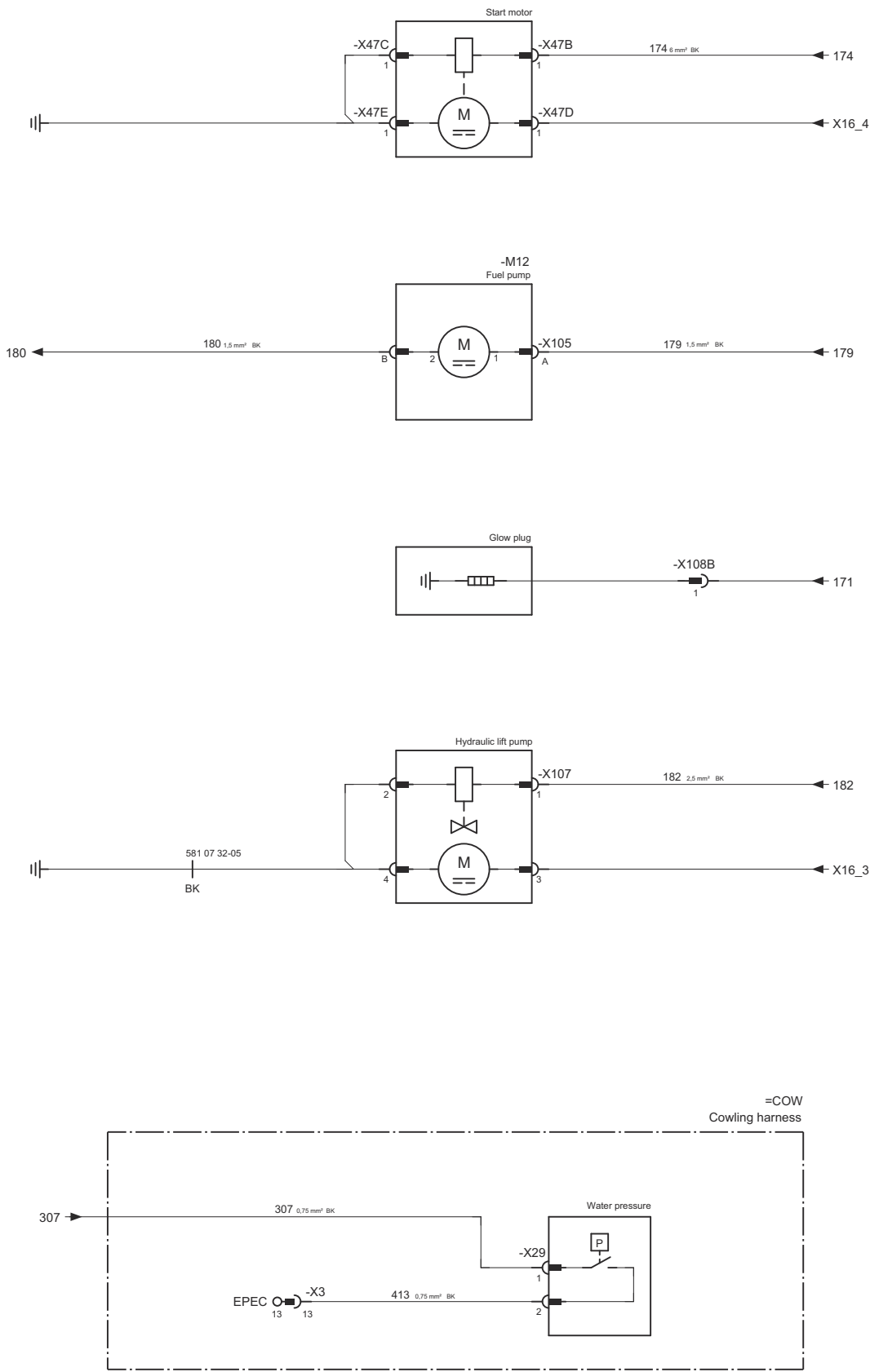
9.7 ECU A



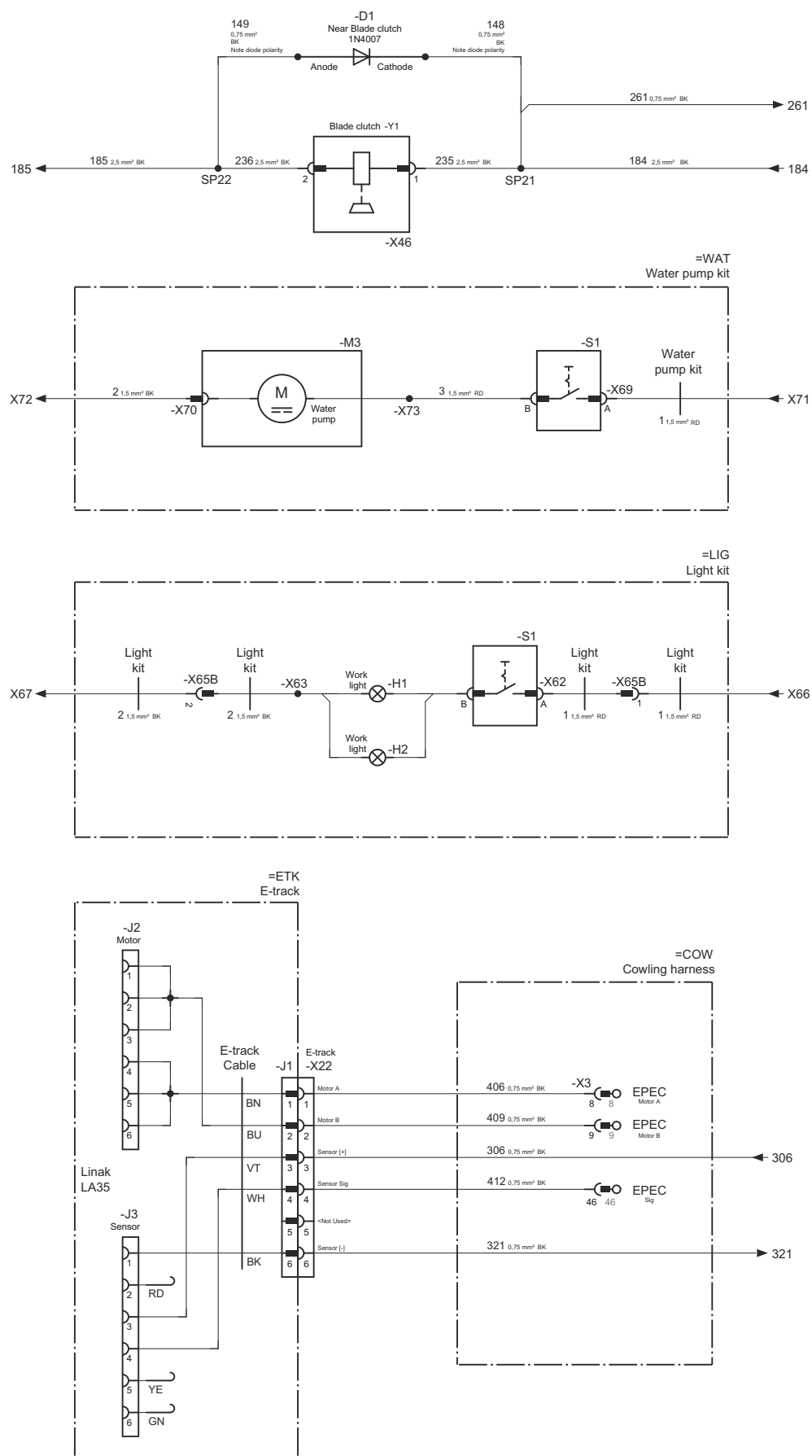
9.8 CAN engine



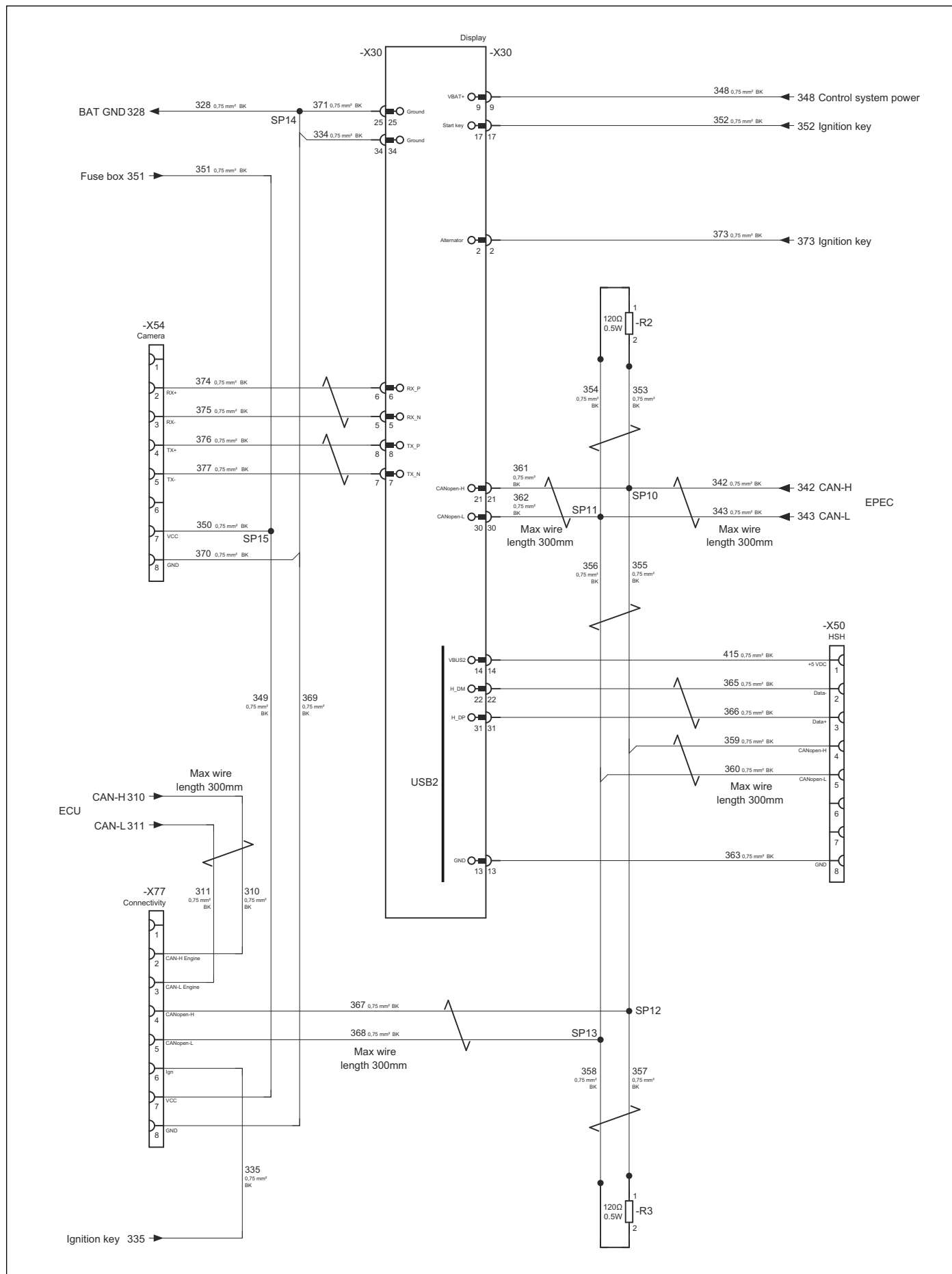
9.9 Standard equipment



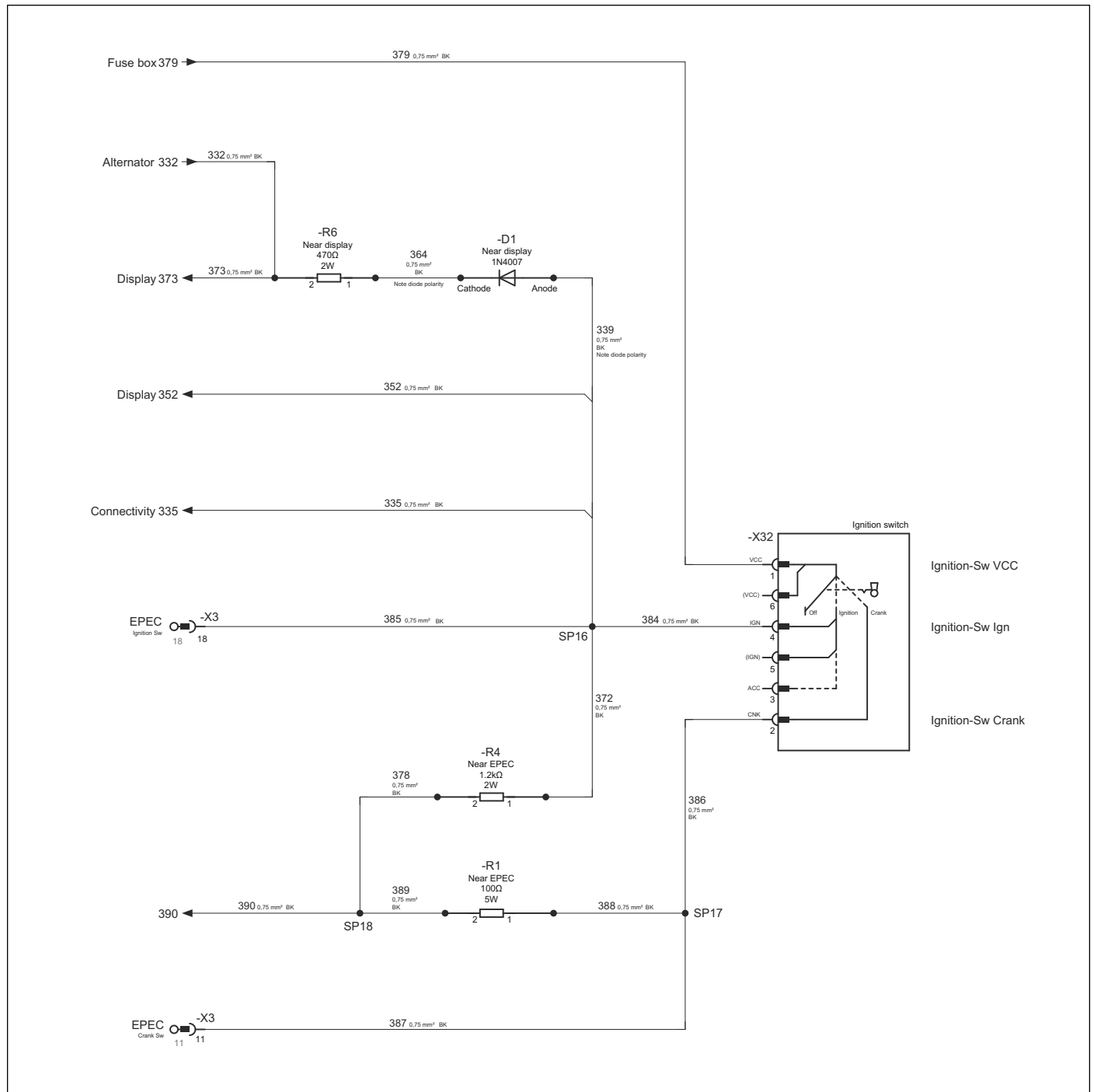
9.10 Optional equipment



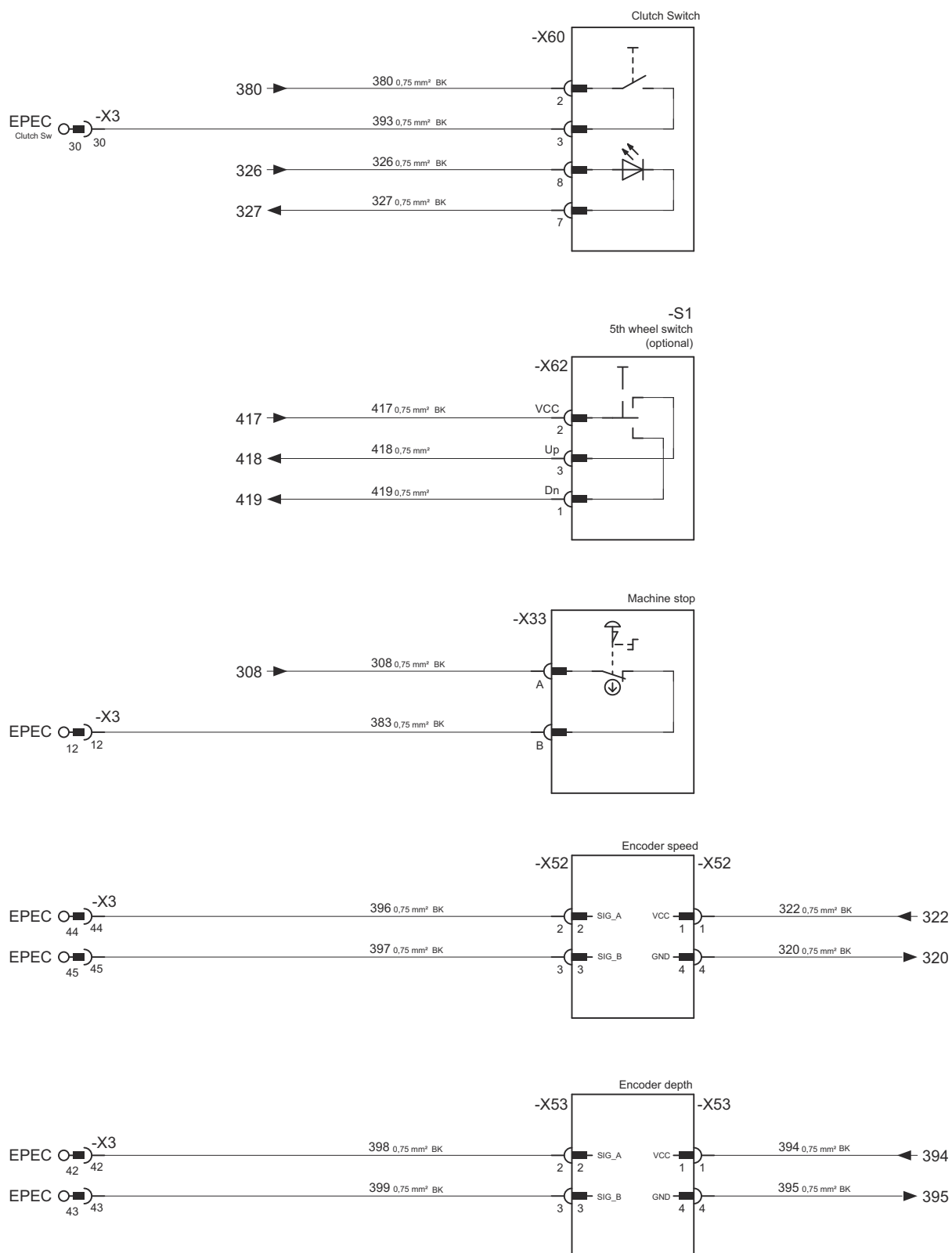
9.11 Display



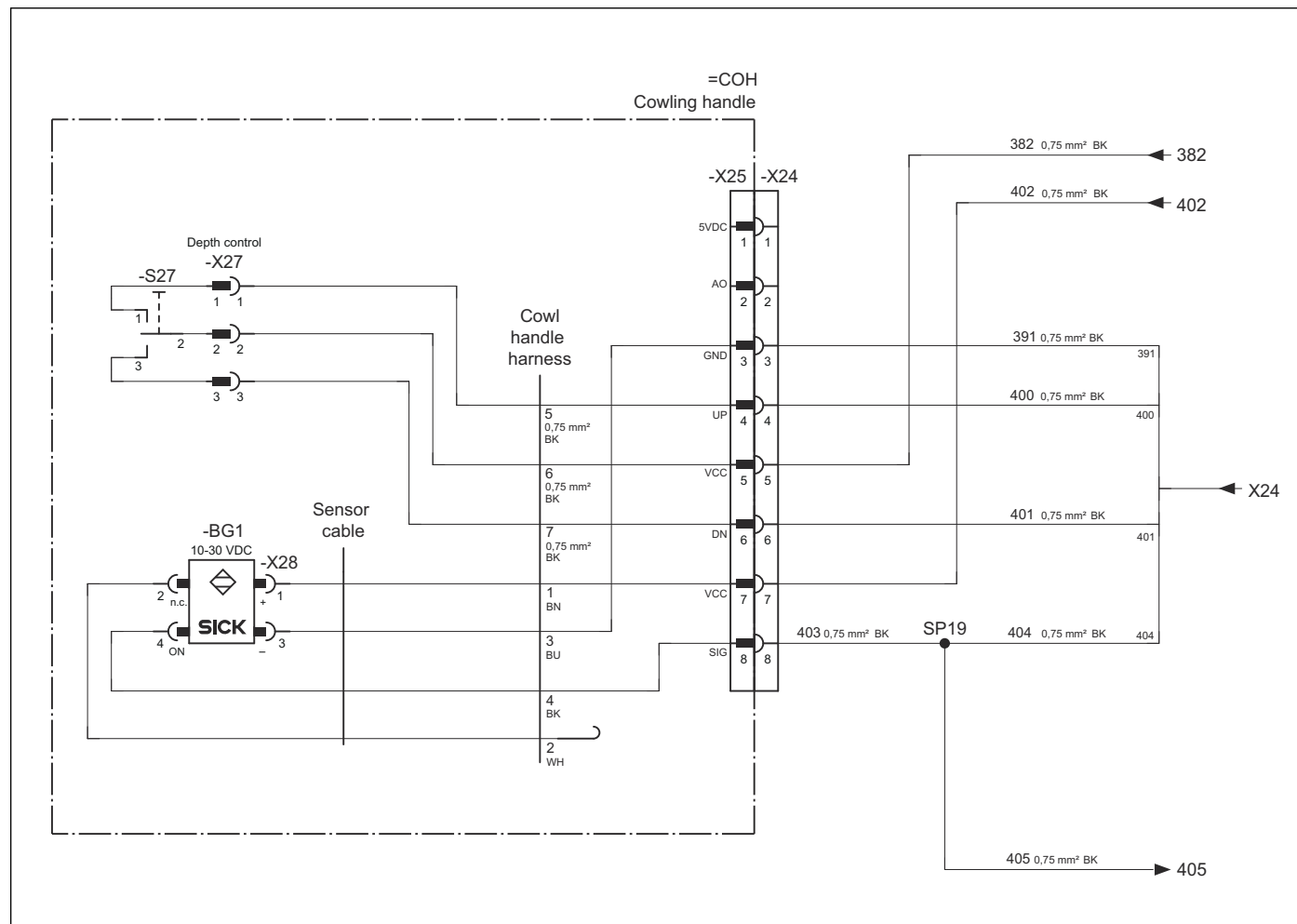
9.12 Control ignition



9.13 Other control



9.14 Cowl handle



10 Technical data

Engine *	
Engine brand, type	Yanmar, 4TNV88C-DHQ
Engine power, kW/hp@rpm ³	35.5/47.6@3000
Displacement, dm ³ /cu.in.	2.2/134
Cylinders	4
Air filter	Radial seal with pre-cleaner and restriction indicator
Starter	Electric
Fuel	Ultra-low-sulfur diesel fuel only

* = For further information and questions about this specific engine, refer to the engine manual or the web site of the engine manufacturer.

Fuel and lubrication system	
Fuel tank capacity, l/gal	24.5/6.5
Oil tank capacity, l/qts	7.4/7.8
Engine oil	SAE 15W40 or SAE 10W30, API Class CJ-4, ACEA E6-08, ACEA E9-08
Engine fuel filter	
Engine oil filter	standard filter
Gearbox oil	SAE 75W90
Gearbox oil tank capacity, l/qts	1-Speed gearbox model: 0.95/1 3-Speed gearbox model: 1.77/1.87
Grease	Quality: NLGI 2. Standard: SAE J310
Hydraulic oil	SAE 15W40, API Class SE, API Class CC, API Class CD
Hydraulic oil tank capacity, l/qts	0.95/0.53
Coolant fluid	Ethylene glycol and water, 50/50 mixture. Supplied in the product at purchase. Propylene glycol and water, 50/50 mixture  CAUTION: Do not make the mixture directly in the tank. It is easier to get the correct 50/50 mixture if you make the mixture in a container.

Battery	
Terminal type	T6
BCI	91
Voltage, V	12
Capacity, Ah	60–100
CCA, A	660–760
Max. size L×W×H, mm/in.	280×175×175/11×6.9×6.9

³ As specified by engine manufacturer. The power rating of the engines indicated is the average gross power output (at specified r.p.m.) of a typical production engine for the engine model measured to SAE J1995.

Saw setup	500/20	650/26	750/30	900/36
Blade guard capacity, mm/in.	500/20	650/26	750/30	900/36
Max. cutting depth, mm/in.	193/7.75	262/10.5	312/12.5	374/15
Blade shaft speed, rpm	2400	1866	1628	1355
Approximate blade shaft output, kW/hp	31/42			
Arbor size, mm/in.	25.4/1 with single drive pin			
Quick disconnect blade flange diameter, mm/in.	114.5/4.5	127/5	127/5	152.5/6
Blade shaft drive	3 VX V-belts per side			
Blade coolant	Water			
Blade guard attachment	Slip-on, auto-latch			
Propulsion	Hydraulic			
Max. ground speed	Infinitely variable: 0–37 m/min or 0–122 fpm forward and reverse. 25 m/min maximum reverse speed on CE models.			
Chassis	Heavy duty, rigid, box and channel section construction			
Nominal weight (uncrated), kg/lb	756/1667	761/1678	765/1687	771/1700
Max. operating weight incl. optional accessories, kg/lb	799/1761	808/1781	817/1801	829/1828
Max. slope angle, degrees	10	10	10	10

Noise and vibration emissions	
Sound power level, measured dB (A)	113
Sound power level, guaranteed L_{WA} dB (A) ⁴	119
Sound pressure level at the operator's ear, dB (A) ⁵	104
Vibration level, a_{hv} , m/s^2 , right handle/left handle ⁶	<3.8/<2.9

⁴ Noise emissions in the environment measured as sound power (L_{WA}) in conformity with EC directive 2000/14/EC. The difference between guaranteed and measured sound power is that the guaranteed sound power also includes dispersion in the measurement result and the variations between different machines of the same model according to Directive 2000/14/EC.

⁵ Noise pressure level according to EN 13862. Reported data for noise pressure level has a typical statistical dispersion (standard deviation) of 2.5 dB(A).

⁶ Vibration level according to EN 13862. Reported data for vibration level has a typical statistical dispersion (standard deviation) of 1 m/s^2 .



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TBD

2026-05-28