

Workshop manual

**CRT 48-37V-PS, CRT 48-35L-PS,
CRT 48-57K-PS**



English

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1 Introduction

1.1 California Proposition 65

WARNING!

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

1.2 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.

1.3 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.

1.4 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.

1.5 Safety



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

1.6 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 specially 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

- Read and obey this workshop manual.
- Obey the local safety regulations when you repair or do servicing of the product.
- The safety equipment you use must obey local regulations.
- Use only the equipment that the manufacturer recommends.
- Use personal protective equipment.
- Use protective gloves and safety glasses. The safety glasses must obey the ANSI Z87.1 for US or EN166 for EU countries.
- Use hearing protection when the product is in operation.
- Always stop the product before you repair or do servicing of the product.
- Remove flammable materials from the work area. The product can cause sparks.
- Do not point compressed air to your body. Compressed air can go into the blood stream.
- Always tighten the nuts and the bolts on the product correctly.
- Do checks of the product for warning labels that are damaged. Replace the warning labels that are damaged.
- Always read the warning labels of product supplies.
- Obey the local waste regulations.
- Gasoline and its fumes are poisonous.
- Gasoline can cause damage to the eyes and the skin.
- Gasoline can cause breathing problems.
- Gasoline is flammable.

2.3 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 manual carefully and make sure that you understand the instructions before you use the product.



Use hearing protection and eye protection.



Keep sparks and flames away from the product. Risk of fire.



Stop the engine before you fill fuel.



Use clean, filtered fuel.



Risk of injury. Be careful around the drive belt.



Hot surface.



Keep your hands away from the blades.



Keep your feet away from the blades.



Lifting point.



Ignition key position OFF.



Ignition key position ON.



Ignition key position, start the engine.



Oil level indicator.



Tie-down bracket.



Water tank.



This product is in compliance with applicable EC directives.



The exhaust fumes from the engine contain carbon monoxide, an odorless, poisonous and very dangerous gas. Do not run the product indoors or in closed spaces.

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

3 Prepare and do servicing on the product

3.1 Maintenance schedule

	Daily	Each 20 h	Each 50 h	Each 100 h	Each 200 h	Each 300 h
Do a check of the fuel level.	X					
Do a check of the engine oil level each 4 hours of operation.	X					
Examine the air filter. Replace the air filter if it is necessary.	X					
Make sure that nuts and screws are tightened.	X					
Clean the product immediately after the operation. Use a high-pressure washer.	X					
Lubricate the trowel arms.	X					
Do a check of the oil level in the gearboxes.		X				
Lubricate the grease nipples of the drive system, the gearboxes and the blade pitch controls.		X				
Lubricate the control linkages.		X				
Examine the drive belt for damage.			X			
Lubricate steering cylinder pivots.			X			
Replace the engine oil after the first 20 h of operation, then at this interval.				X		
Do a check of the fuel filter.				X		
Examine and clean the spark plug. Replace the spark plug if it is necessary.					X	
Replace the oil filter.					X	
Replace the spark plug.						X
Replace the fuel filter.						X
Replace the pressure relief valve on the gearboxes.						X
Replace the oil in the gearboxes.						X

3.2 Air filter



WARNING: Use approved respiratory protection when you clean or replace the air filter. Discard used air filters correctly. Inhalation of the dust in the air filter may be dangerous to your health.



CAUTION: Always replace a damaged air filter, or the dust will go into the engine and cause engine damage.

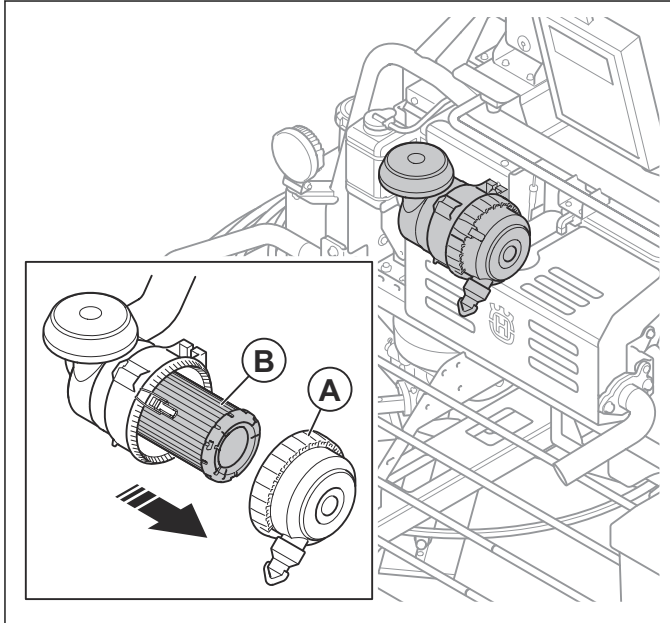
3.2.1 To clean or replace the air filter



WARNING: Do not clean the air filter with compressed air. This causes damage to the air

filter and the risk increases that you breathe the dangerous dust.

1. Remove the air filter cover (A).



2. Remove the foam filter element (B).
3. Clean the air filter housing with a brush.
4. Examine the air filter elements for damage.
5. Tap the paper filter element against a hard surface or use a vacuum cleaner to remove the particles.



CAUTION: Do not let the nozzle of the vacuum cleaner touch the surface of the paper filter element. Keep a small distance. The sensitive surface of the paper filter element becomes damaged if objects touch it.

6. Clean the foam filter element with a solution of soap and water.
7. Flush the foam filter element in clean water.
8. Compress the foam filter element to remove the water and let the foam filter element dry fully.



CAUTION: Do not put oil on the foam filter element.

9. Install the air filter in the opposite sequence.

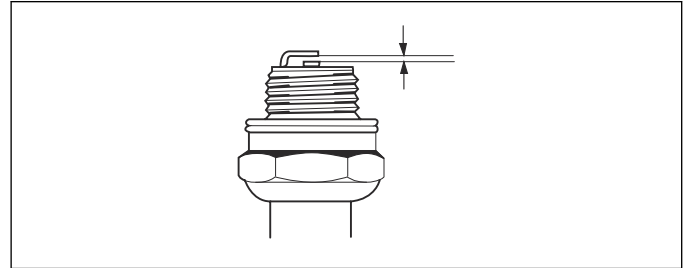
3.3 To examine the spark plug



CAUTION: Always use the recommended spark plug type. Incorrect spark plug type can cause damage to the product.

- Examine the spark plug if the engine is low on power, is not easy to start or does not operate correctly at idle speed.

- To decrease the risk of unwanted material on the spark plug electrodes, obey these instructions:
 - a) Make sure that the idle speed is correctly adjusted.
 - b) Make sure that the fuel mixture is correct.
 - c) Make sure that the air filter is clean.
- If the spark plug is dirty, clean it and make sure that the electrode gap is correct. Refer to the engine manual.



- Replace the spark plug, if necessary.

3.4 To replace the engine oil

If the engine is cold, start the engine for 1–2 minutes before you drain the engine oil. This makes the engine oil warm and easier to drain.



WARNING: Engine oil is very hot directly after the engine stops. Let the engine become cool before you drain the engine oil. If you spill engine oil on your skin, clean with soap and water.

- Refer to the engine manual to replace the engine oil.

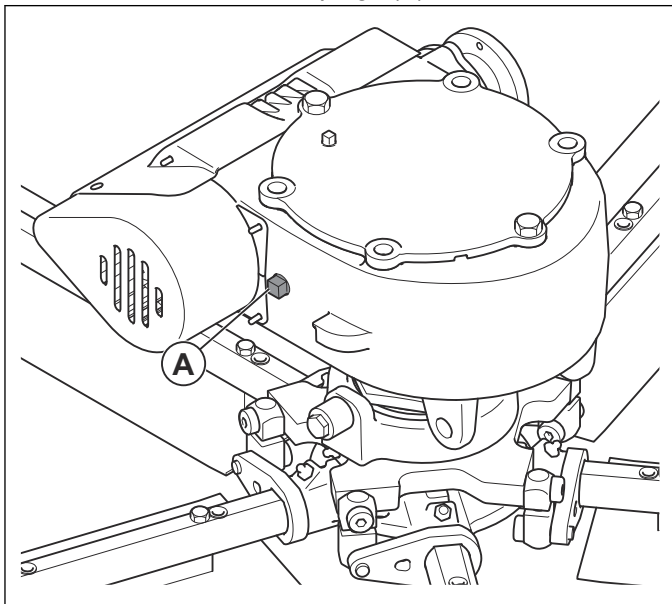
3.5 To replace the oil filter

- Refer to the engine manual to replace the oil filter.

3.6 To do a check of the gearbox oil level

There are 2 gearboxes on the product. Do this procedure for each gearbox.

1. Remove 1 of the oil fill plugs (A).



2. Examine the gearbox oil level. The oil level is correct when it is at the bottom of the threads in the hole for the oil fill plug.
3. If the oil level is low, fill with Glycoyle synthetic gear oil.



CAUTION: Do not fill too much and do not mix different types of gearbox oil. The gearbox can become damaged.

4. Dry the threads of the oil fill hole in the gearbox and the threads of the oil fill plug.
5. Apply LOCTITE® 545™ or equivalent to the threads of the oil fill plug.
6. Install the oil fill plug.
7. Torque the oil fill plugs to 16–20 Nm/12–15 lb-ft.

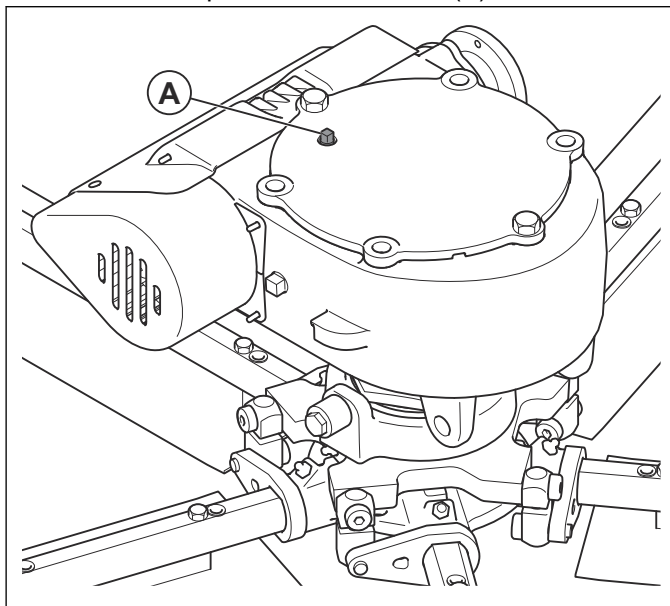
3.7 To do a check of the pressure relief valve on the gearbox

Do this procedure each time that you do a check of the oil level in the gearbox.



CAUTION: If the pressure relief valve is clogged, there is a risk of oil leakage from the gearbox shaft seals.

1. Examine the pressure relief valve (A).

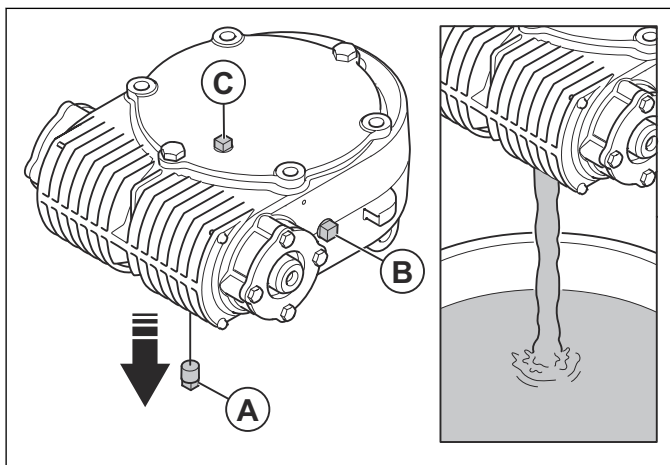


2. If it is clogged, clean it.
3. If the pressure relief valve cannot be cleaned, replace it.

3.8 To replace the oil in the gearbox

There are 2 gearboxes on the product. Do this procedure for each gearbox.

1. Put a container of a minimum 3.8 l/4.0 qts below the gearbox.
2. Remove the drain plug (A), the oil fill plug (B) and the pressure relief valve (C). Let the oil run out into the container.



- a) Lift slightly the rear of the product to let the remaining oil run out.
 - b) When all oil is drained, put the product back on level ground.
3. Dry the threads of the oil drain hole in the gearbox and the threads of the oil drain plug.

4. Apply LOCTITE® 545™ or equivalent to the threads of the oil drain plug.
5. Install the oil drain plug for the gearbox (A).
6. Fill with Glycoyle synthetic gear oil trough 1 of the holes for the oil fill plugs (B).
7. Fill until the oil level is at the bottom of the threads in the hole for the oil fill plug.
8. Dry the threads of the oil fill hole in the gearbox and the threads of the oil fill plug.
9. Apply LOCTITE® 545™ or equivalent to the threads of the oil fill plug.
10. Install the oil fill plug.
11. Torque the oil drain plug and oil fill plugs to 16–20 Nm/12–15 lb-ft.

3.9 To replace the blades

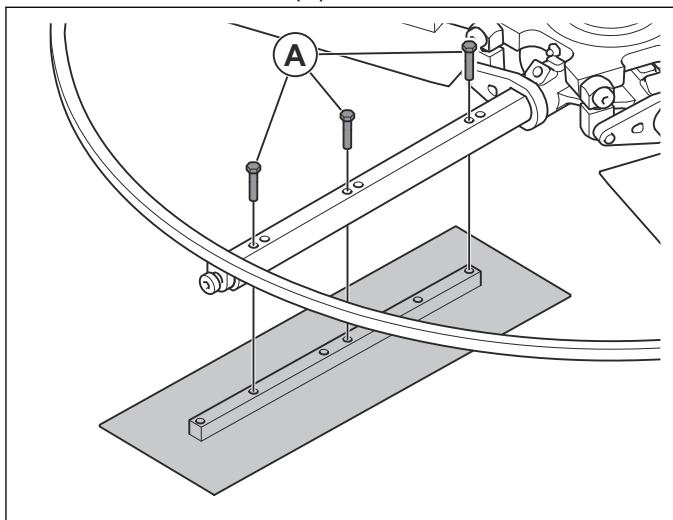


WARNING: Before you replace the blades, stop the product, let the engine become cool and disconnect the battery.



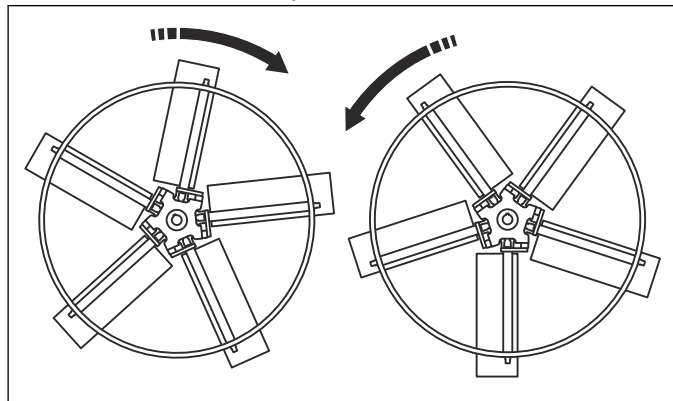
WARNING: Use protective gloves.

1. Lift the product with lifting equipment.
2. Put supports below the frame of the product.
3. Remove the screws (A) and remove the blades.



4. Align the screw holes of the blade shafts with the screw holes of the new blades.

- a) If you install combination blades, put the blades as shown in the picture.



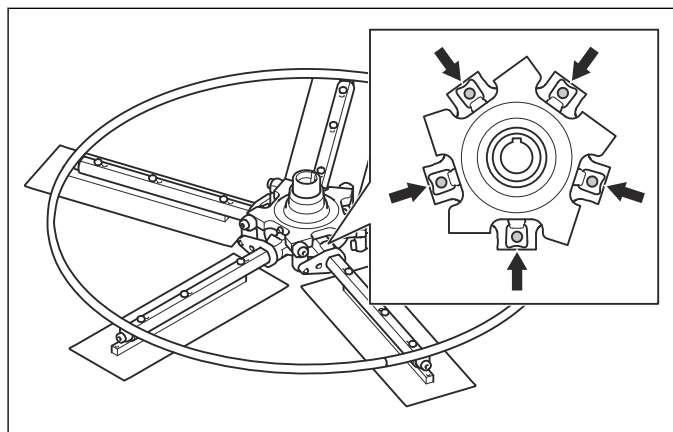
Note: Finish blades are symmetrical. Thus, it is not important which edge points in the direction of rotation.

5. Apply grease to the threads of the screws to make the removal of the screws easier the next time.
6. Install the new blades with the lubricated screws.
7. Put plastic plugs in the remaining holes in the blades. This is to make sure that the holes are not filled with concrete during operation.

3.10 To lubricate the blade shafts

Use a general type of grease.

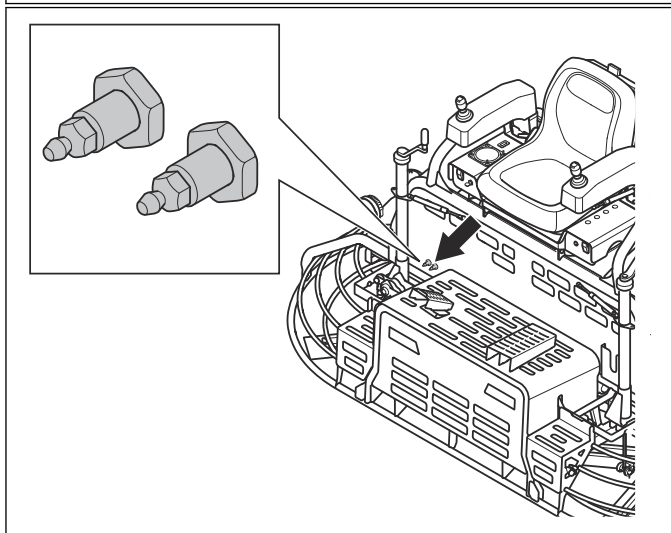
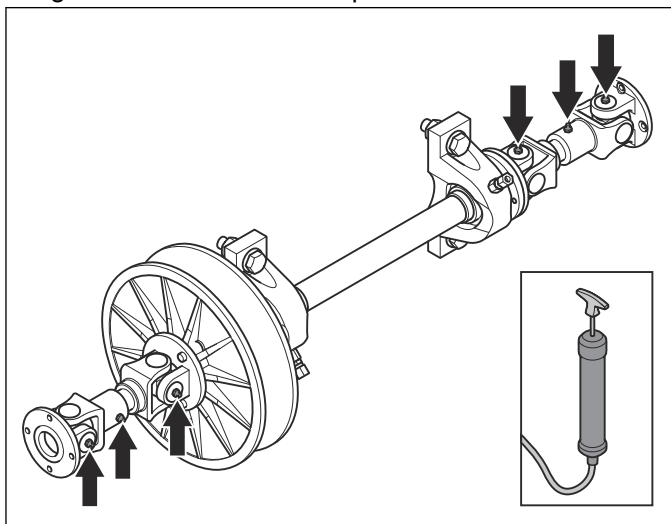
1. Put the product on a flat, level surface with the blades flat.
2. Stop the engine and disconnect the battery.
3. Increase the blade pitch to the maximum angle. This makes it easier to get access to the grease nipples.
4. Replace broken or blocked grease nipples.
5. Push grease through the grease nipples until grease comes out around the blade shafts.



3.11 To lubricate the control linkages, universal joints and the drive system bearings

- Use a general type of grease.

- Lubricate the grease nipples of the drive system, the gearboxes and the blade pitch controls.



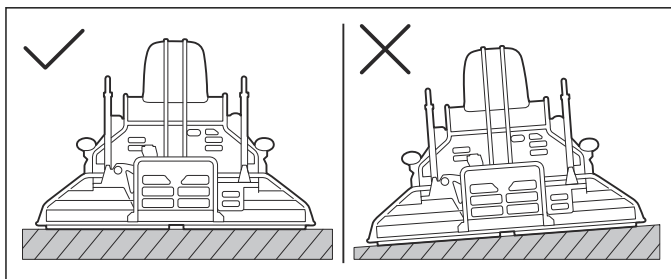
- Replace broken or blocked grease nipples.

3.12 To remove the drive belt



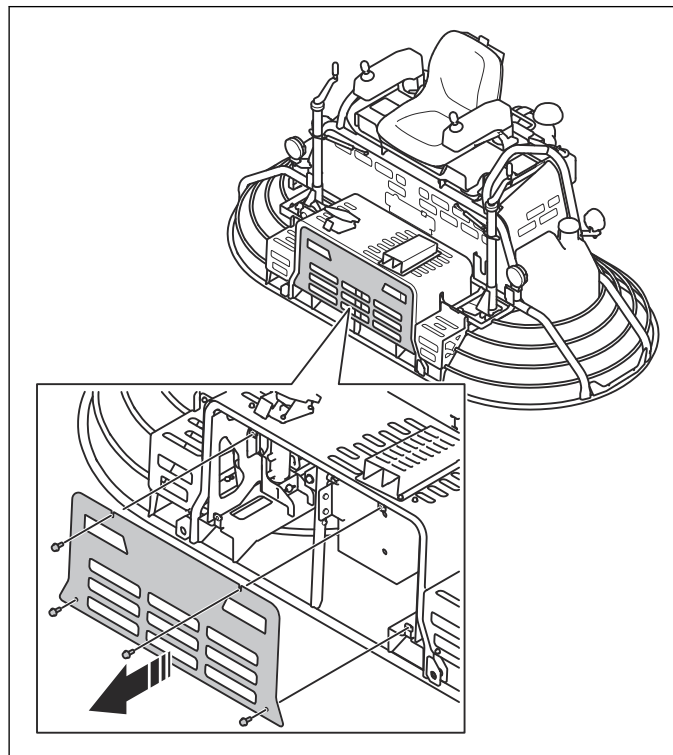
WARNING: Do not operate the product without the V-belt cover installed.

1. Put the product on a flat, level surface with the blades flat.

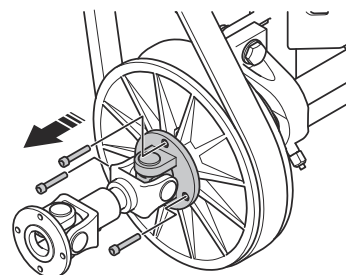


2. Stop the engine and disconnect the battery.

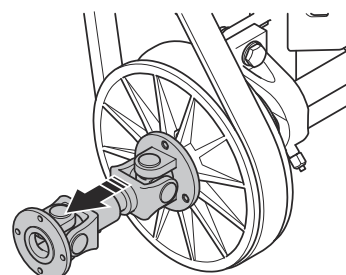
3. Remove the 4 screws and the front cover.



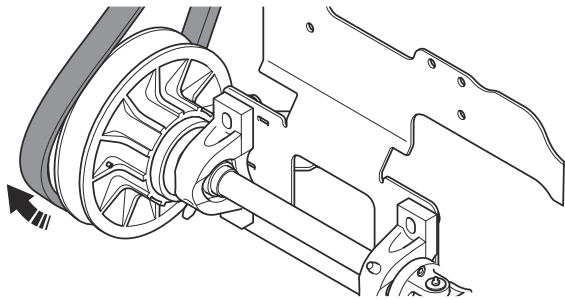
4. Remove the 4 screws that hold the universal joints to the shaft.



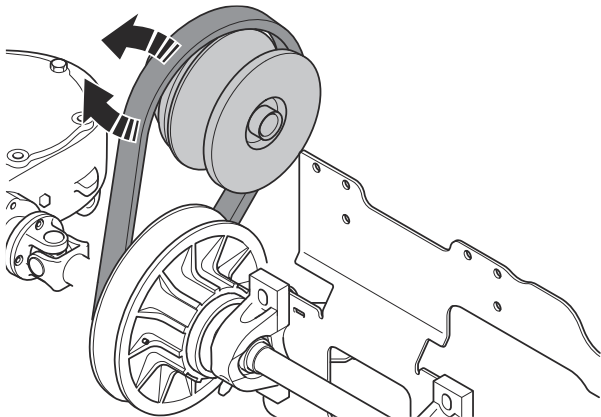
5. Put away the universal joint.



6. Remove the drive belt from the pulley.



7. Remove the drive belt from the clutch pulley.

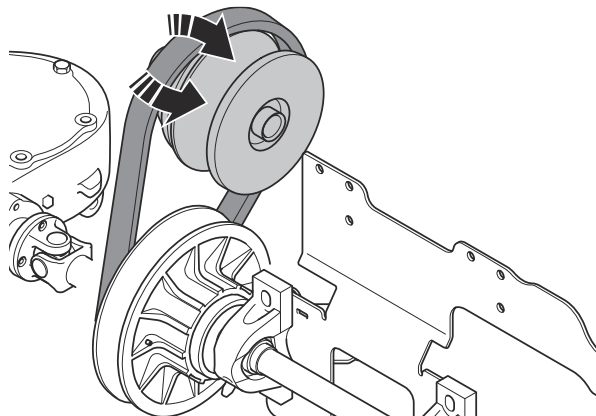


3.13 To install the drive belt

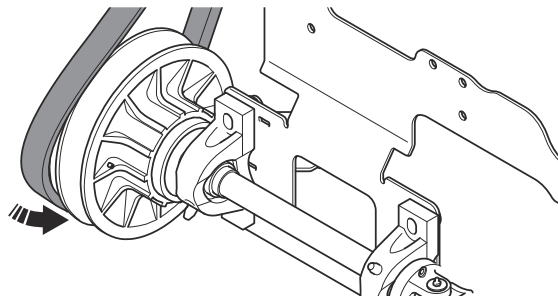


WARNING: Do not operate the product without the drive belt cover installed.

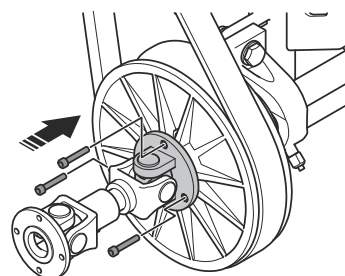
1. Install the drive belt on the clutch pulley.



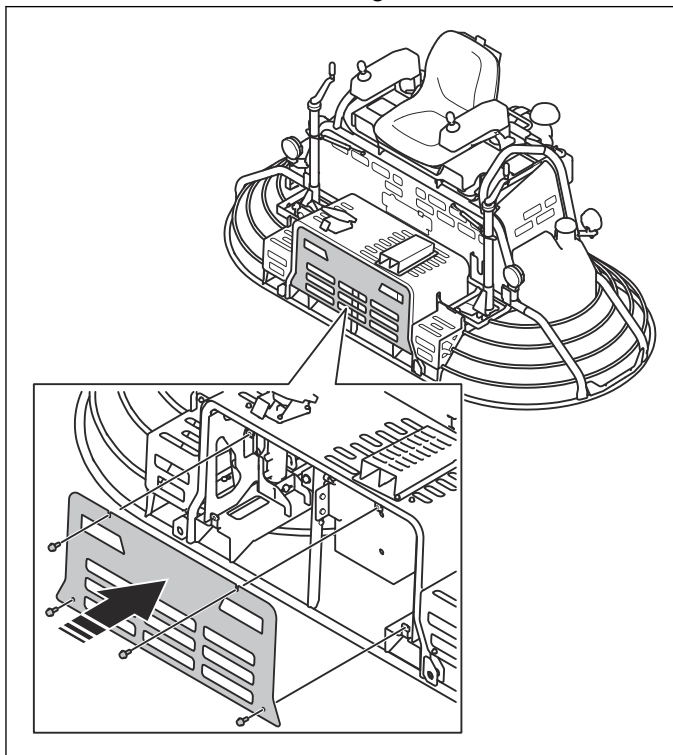
2. Install the drive belt on the pulley assembly.



3. Install and tighten the 4 screws that hold the universal joints to the shaft.



4. Install the front cover and tighten the 4 screws.



3.14 To move the product

- For transportation information, refer to operator's manual of the product.

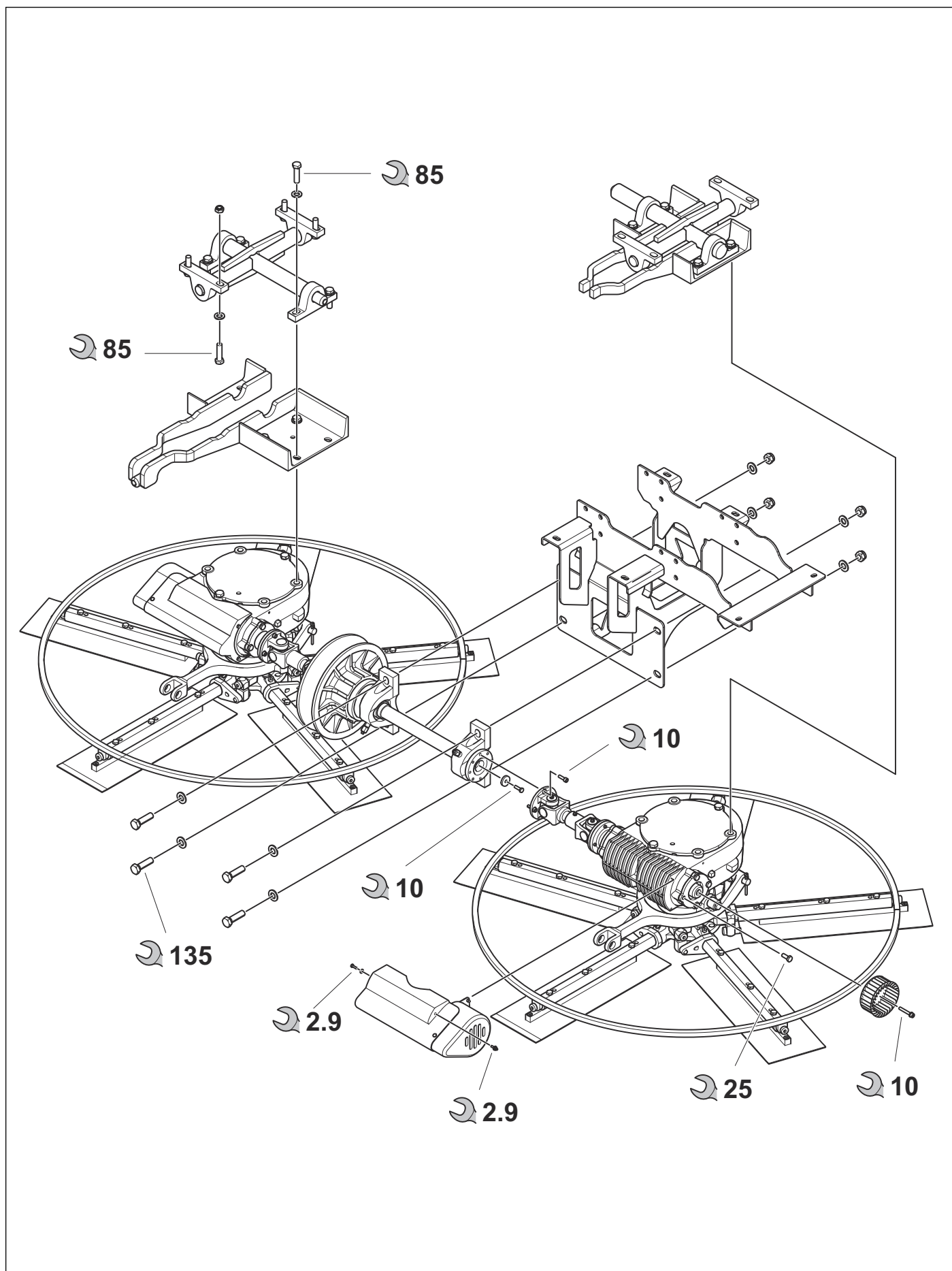
4 Servicing data

4.1 Symbols in the diagrams

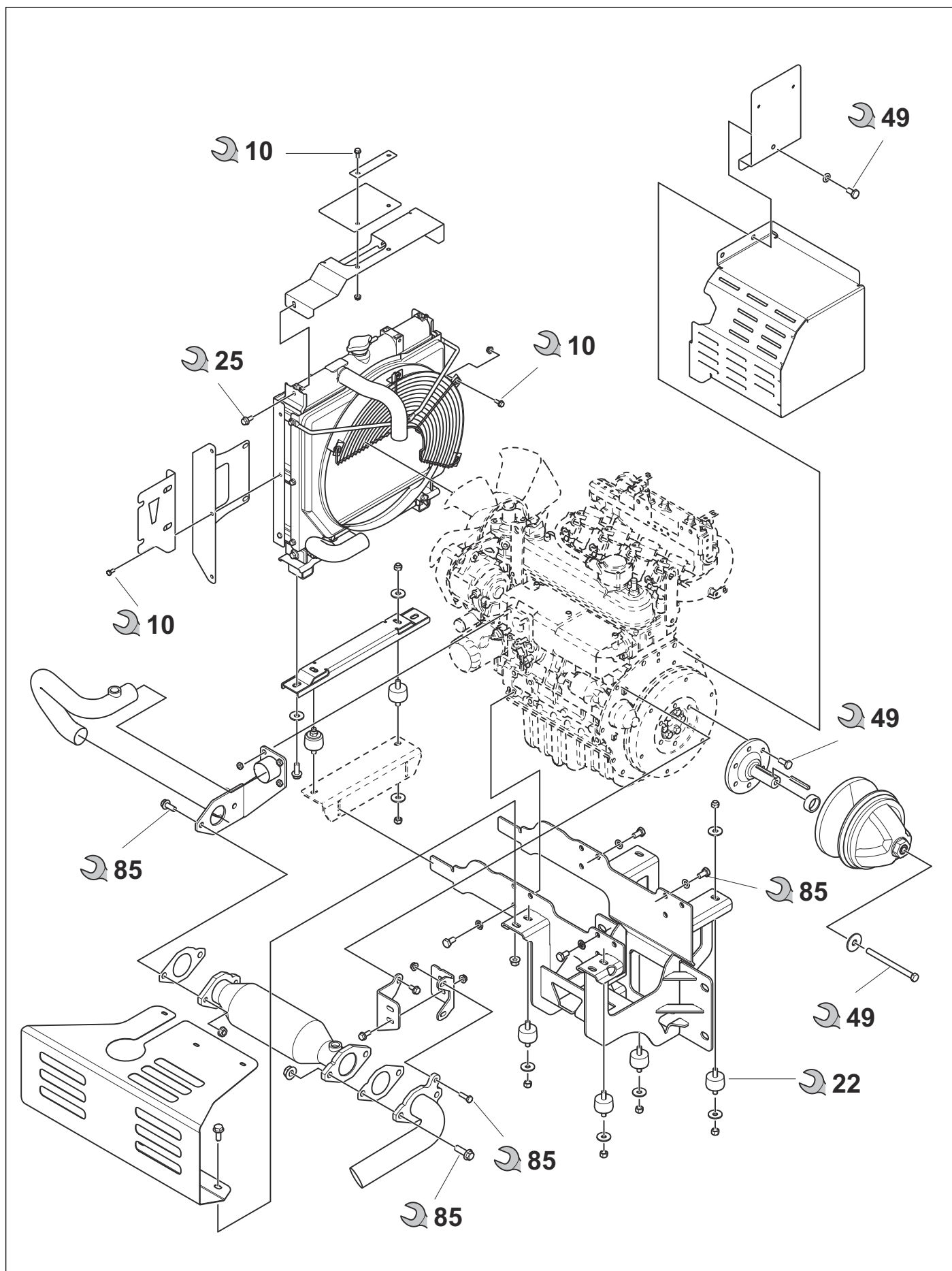


Tightening torque, Nm

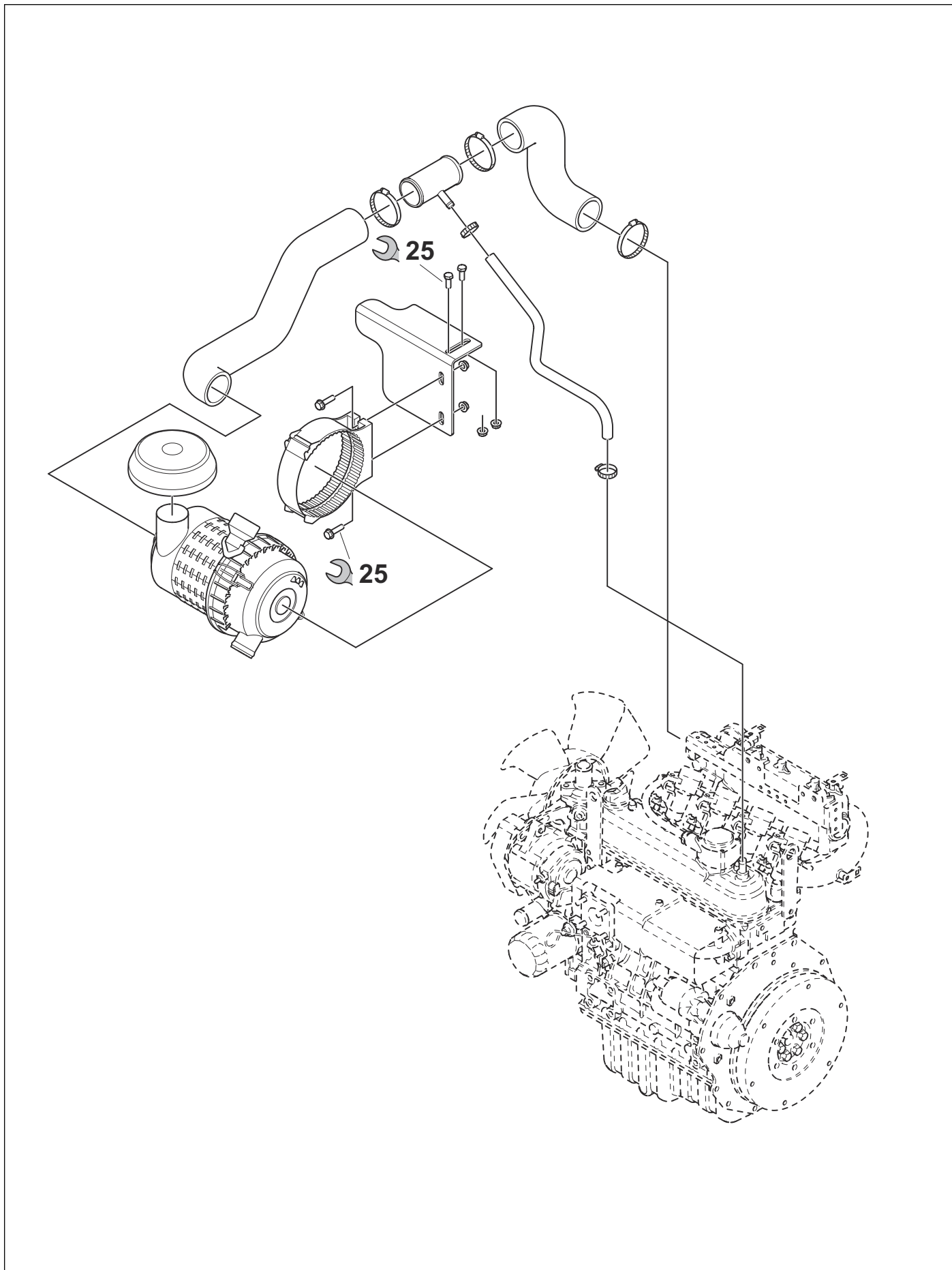
4.2 Tightening torques drive and gearbox



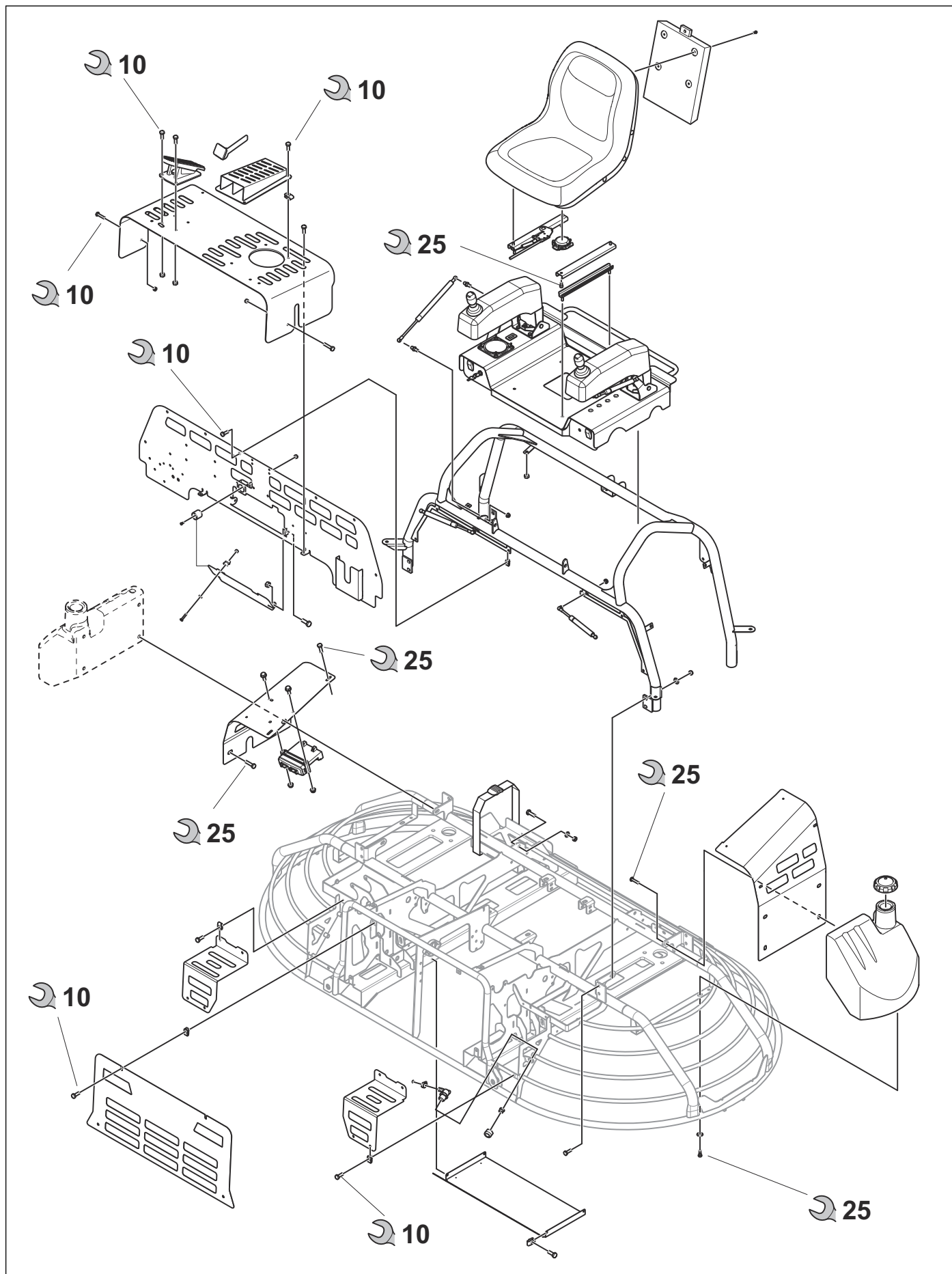
4.3 Tightening torques engine plate and muffler



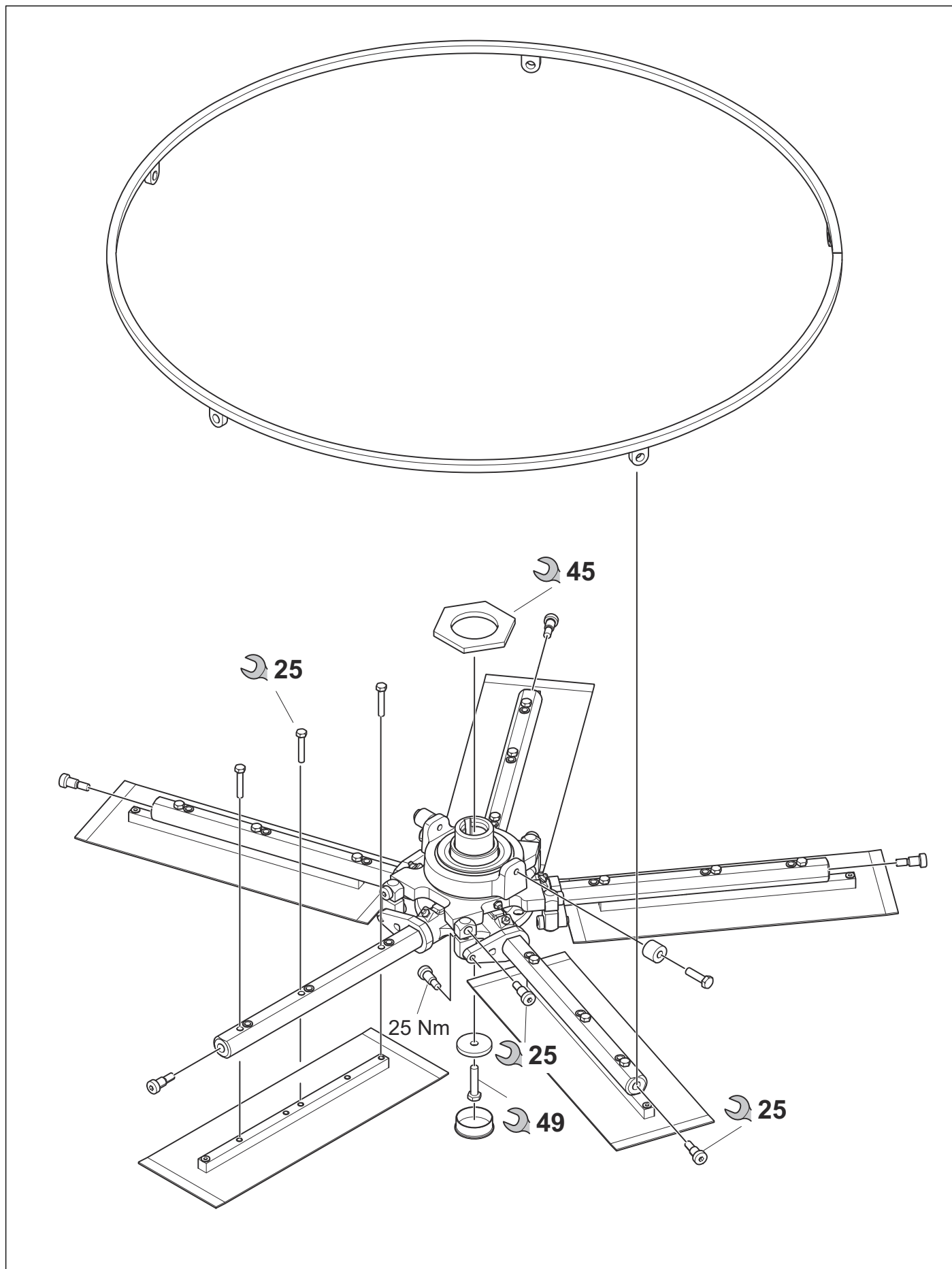
4.4 Tightening torques air filter



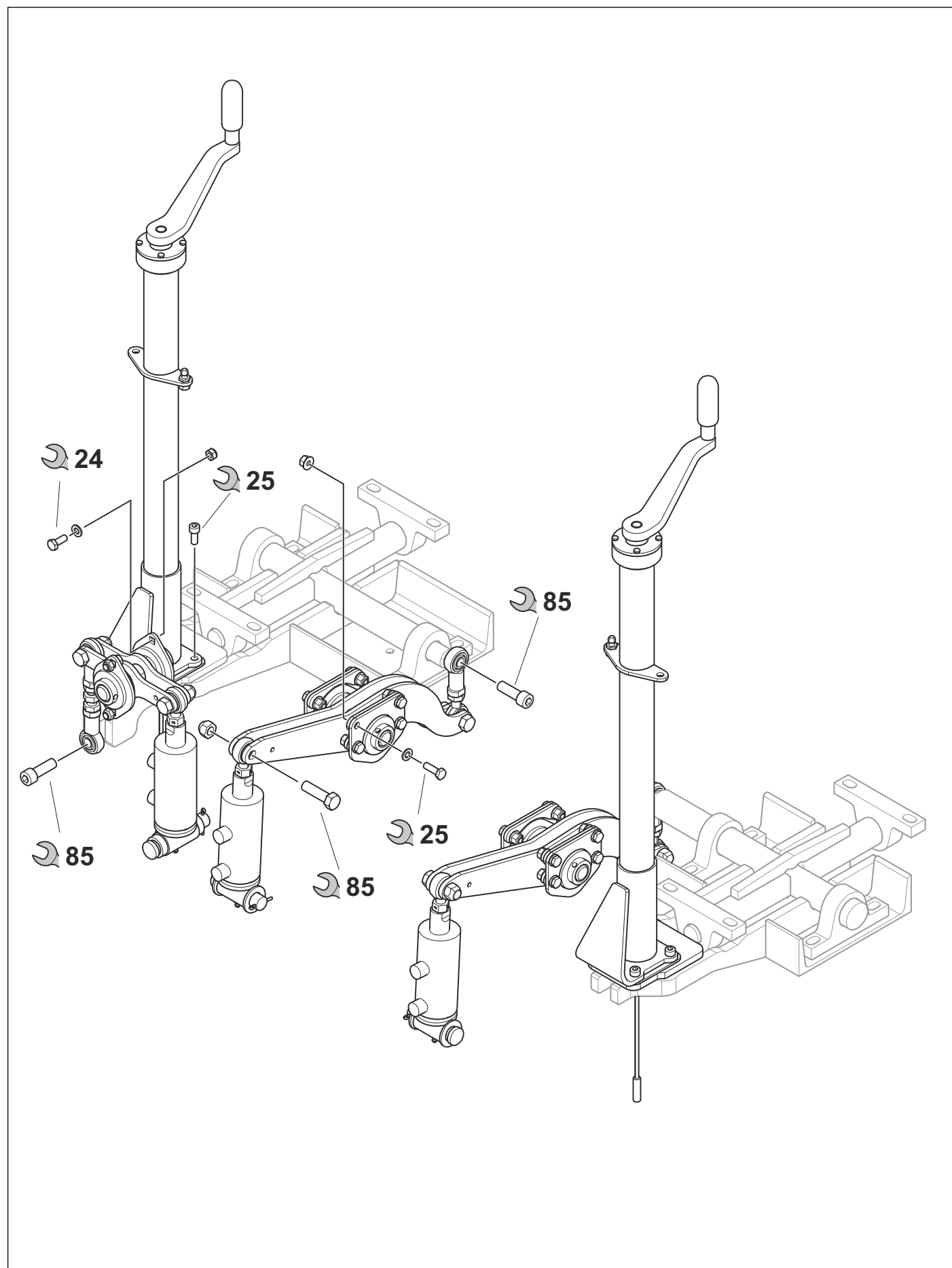
4.5 Tightening torques frame seats and panel



4.6 Tightening torques spider and blades



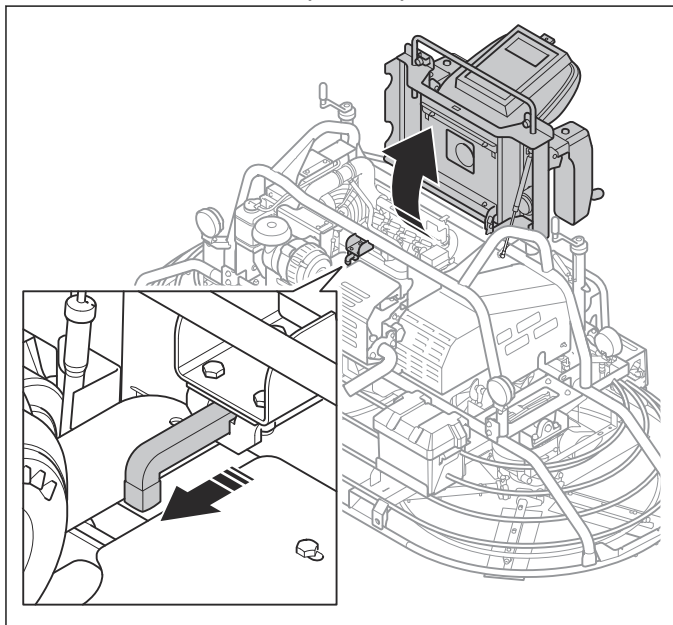
4.7 Tightening torques steering



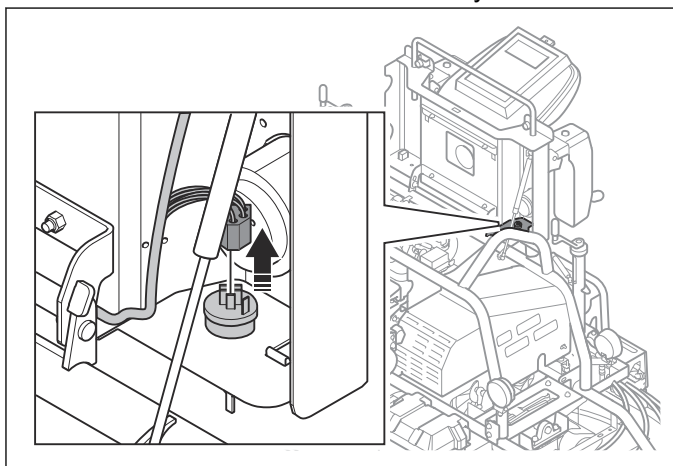
5 Troubleshooting

5.1 To do a check of the ignition switch

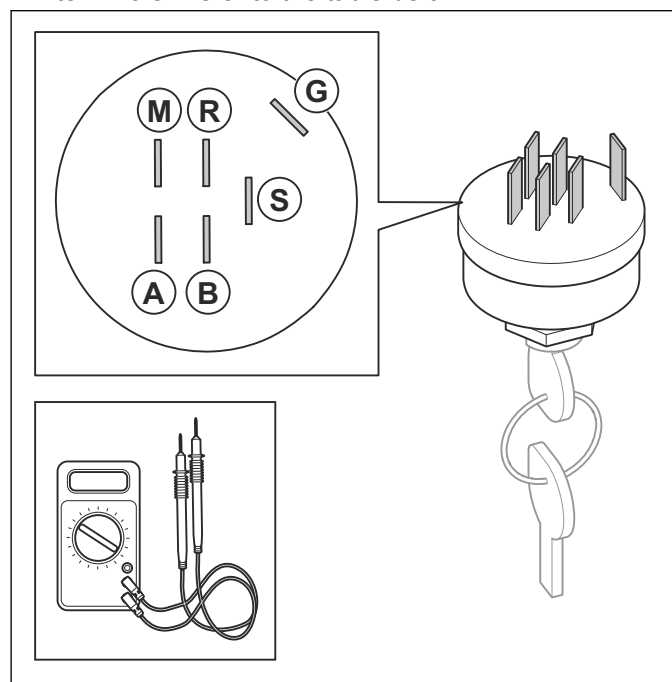
1. Lift the seat and the operator presence control.



2. Remove the connectors from the key switch.



3. Turn the ignition key in the positions OFF, ON and START. Do a check of the connection between the terminals. Refer to the table below.

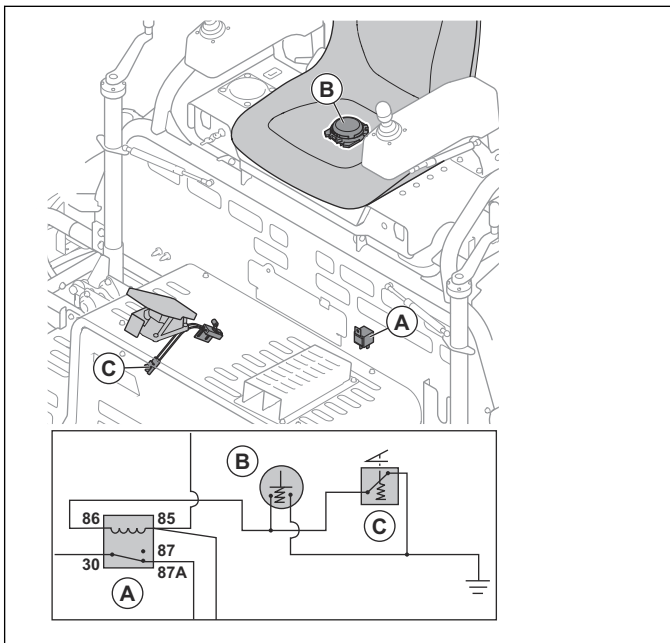


Ignition key position	Terminal
OFF	M-G, M-A, G-A
ON	R-B, R-A, B-A
START	S-B

5.2 Operator presence control

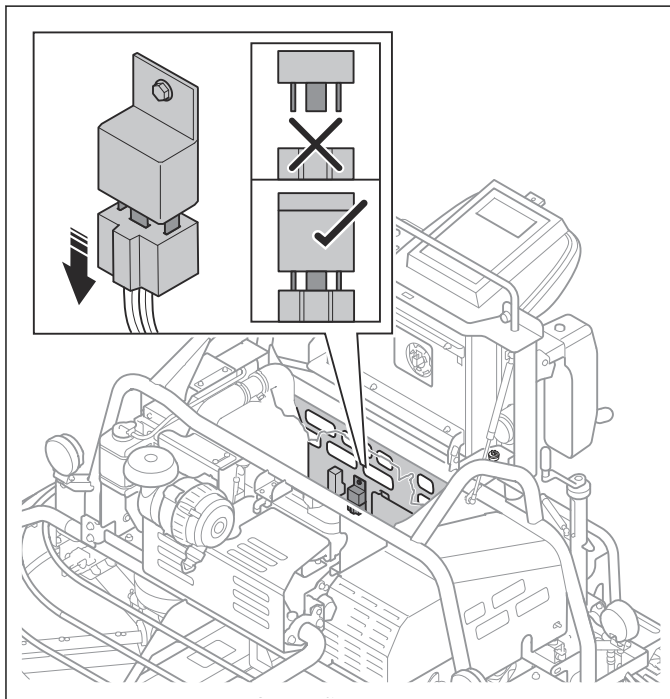
The relay (A) for the operator presence control lets the product operate when the circuit through the coil (terminals 85 and 86) is closed. This is controlled by the switch (B) for the operator presence control or the throttle control switch (C). When an operator is in the

seat or the throttle control is in idle position, the switches are closed. The product can then be operated.



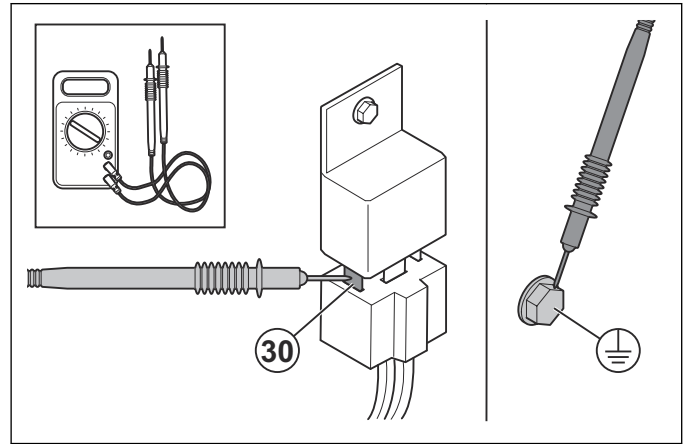
5.2.1 To do a check of the relay for the operator presence control

1. Move the connectors until you can touch them with a multimeter.



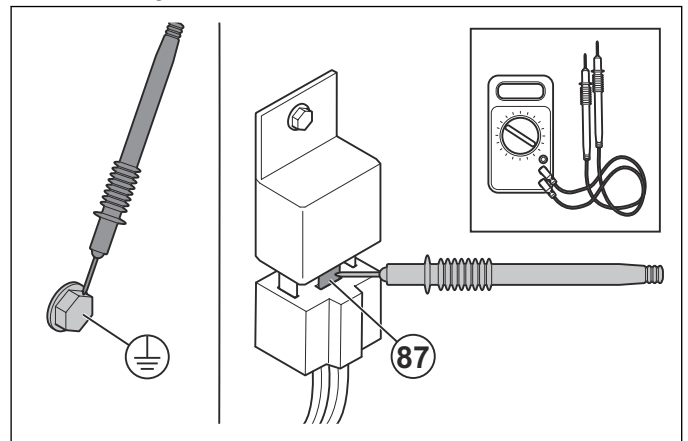
2. Turn the ignition key to ON position.

3. Do a check for battery voltage between terminal 30 and the ground.



- a) If there is battery voltage, the relay for the operator presence control receives power.
- b) If there is no battery voltage, do a check of the wires connection between the relay for the operator presence control and ignition switch. Replace wires, if it is necessary.

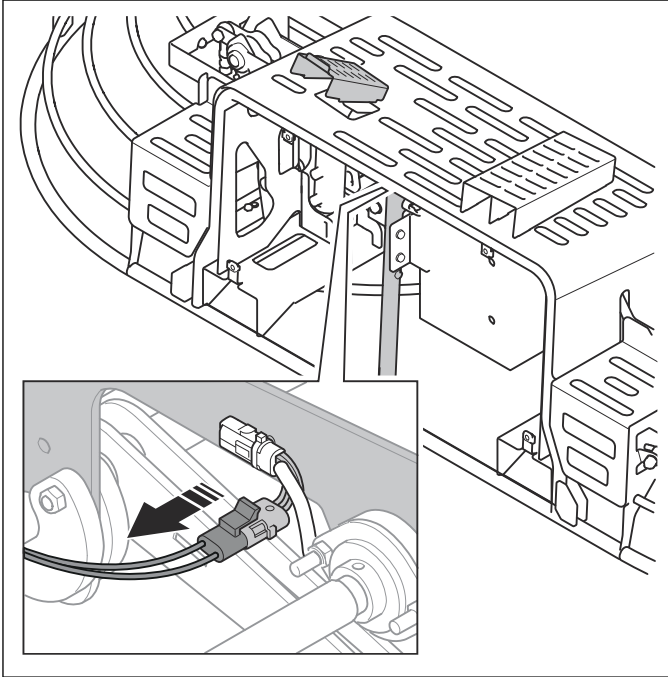
4. Do a check for battery voltage between terminal 87 and the ground.



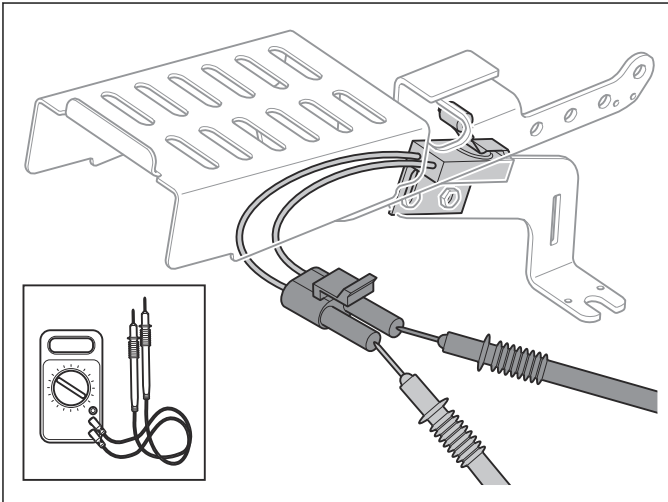
- a) If there is battery voltage, the relay for the operator presence control operates correctly.
- b) If there is no battery voltage, the relay for the operator presence control does not operate correctly. Do a check of the throttle control and the wires to the throttle control.

5.2.2 To do a check of the switches for throttle control and the operator presence control

1. Disconnect the wires to the throttle control switch.

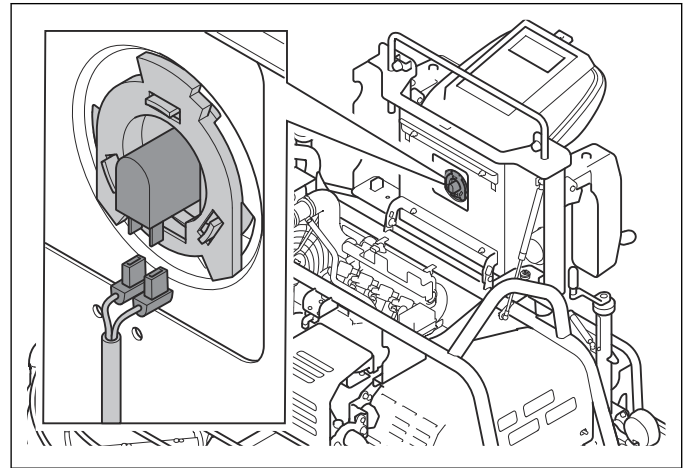


2. Connect a multimeter to the wires from the throttle control switch.

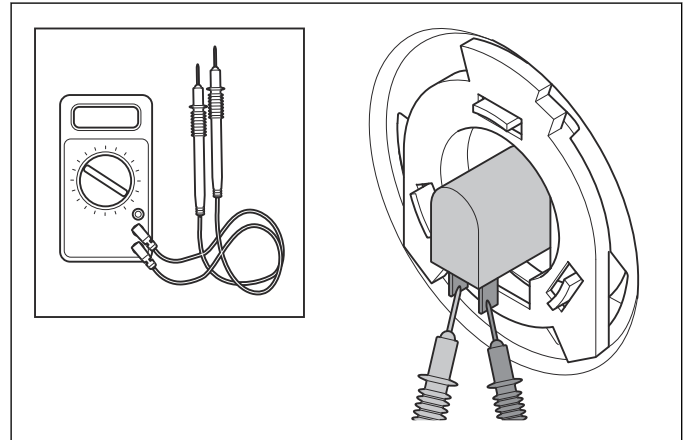


The circuit must be closed when the throttle control, foot pedal, is in idle position. The circuit must be open when the foot pedal is pushed.

3. Disconnect the wires for the switch for the operator presence control.



4. Connect a multimeter to the wires from the switch for the operator presence control.

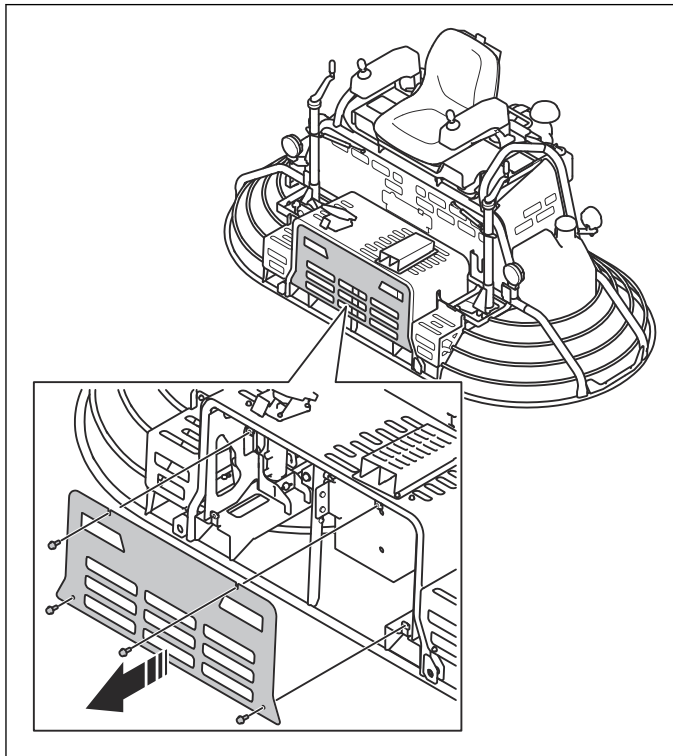


The circuit must be closed when the switch for the operator presence control is closed. The circuit must be open when the switch for the operator presence control is opened.

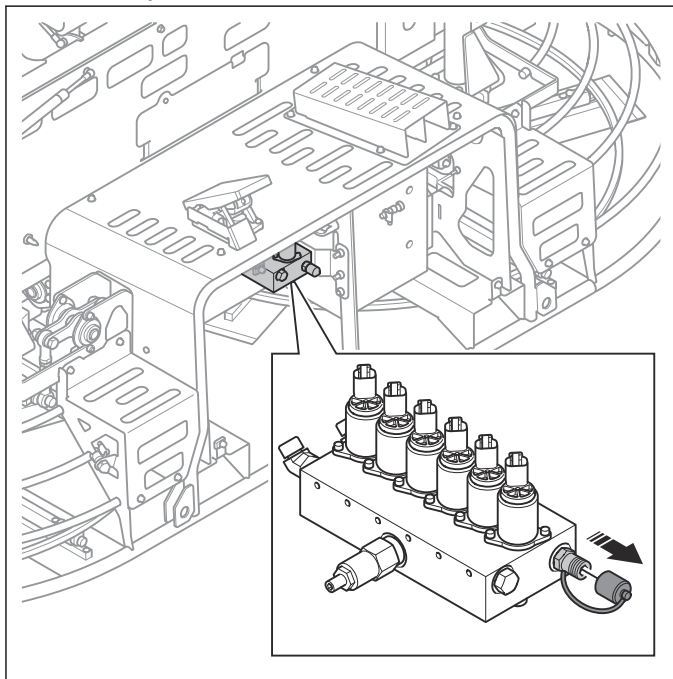
5.3 To do a check of the hydraulic system

Note: Do the test on all hydraulic cylinders in the same procedure.

1. Park the product on flat, level surface and stop the engine.
2. Remove the 4 screws and the front cover to access the hydraulic manifold.



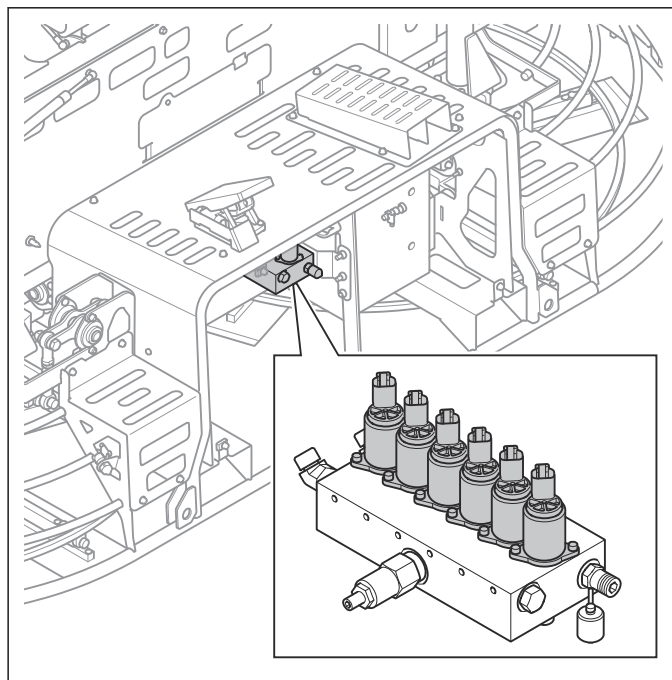
3. Remove the cap from the pressure gauge connector on the hydraulic manifold.



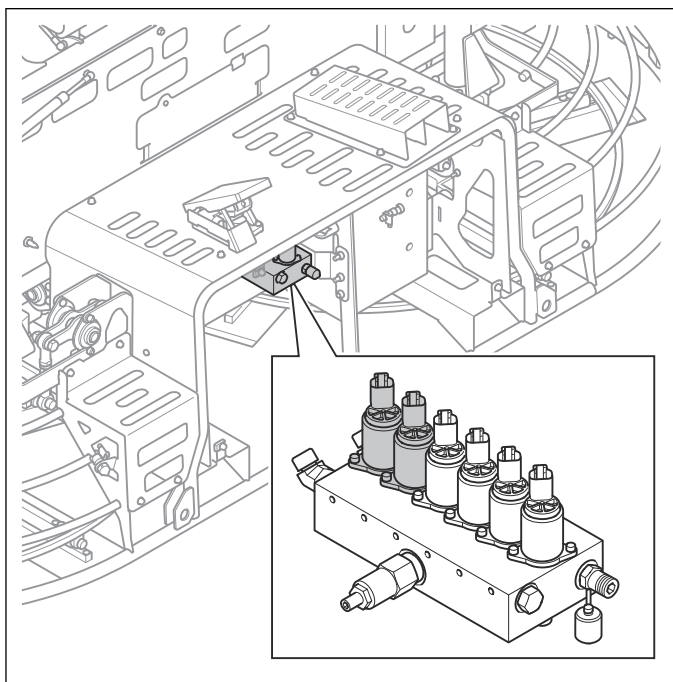
4. Attach the hydraulic pressure gauge to the gauge connector.

Note: Hydraulic pressure gauge 9/16-18 UNF female thread, minimum pressure rated value 69 bar (1000 psi), Hydraulic flowmeter 9/16-18 UNF male-to-female (30 l/min), Digital multimeter.

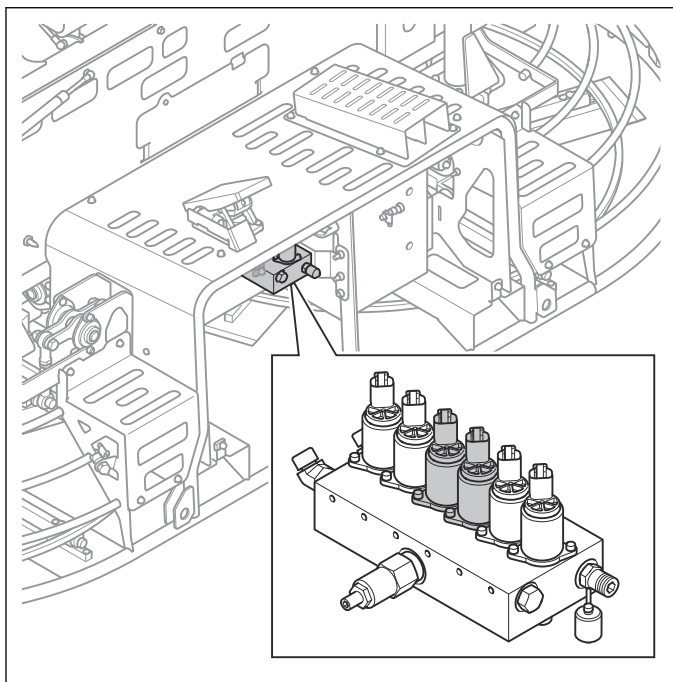
5. Start the product.
6. Make sure that the hydraulic pressure is 950 ± 50 psi (66 ± 4 bar). If the hydraulic pressure is not 950 ± 50 psi (66 ± 4 bar), the relief valve can be clogged.
 - a) Stop the product.
 - b) Remove and clean the relief valve.
 - c) Start the product and do the hydraulic pressure test again with the hydraulic pressure gauge.
7. Read the value on the hydraulic pressure gauge while you operate the joystick. Push the joystick forward, rearward, left and right.
 - a) Make sure that the hydraulic pressure is 950 ± 50 psi (66 ± 4 bar). If the hydraulic pressure is not 950 ± 50 psi (66 ± 4 bar), adjust the relief valve.
 - b) Replace the relief valve if it is unserviceable.
8. Stop the product.
9. Select a valve that you think is damaged and disconnect the electrical connector.



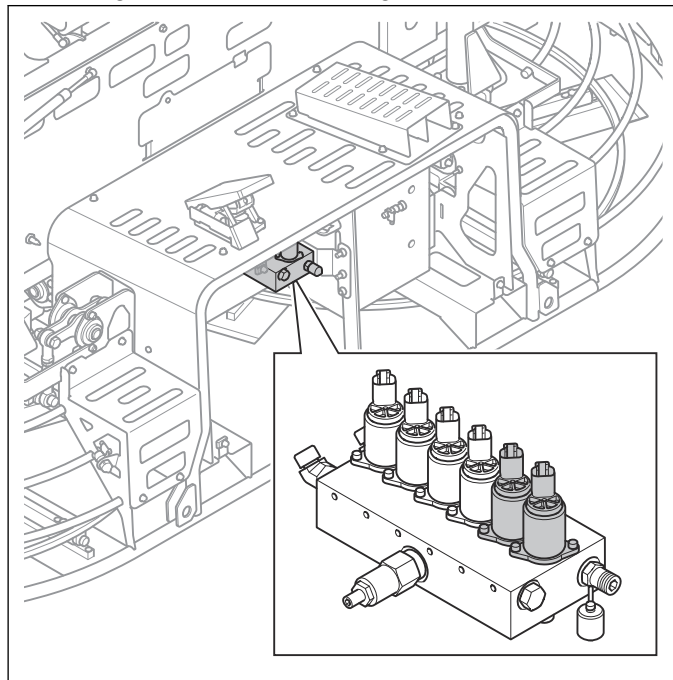
- a) Select valve 1A or 1B, if you think that forward and rearward movement of the left rotor is incorrect.



- b) Select valve 2A or 2B, if you think that forward and rearward movement of the right rotor is incorrect.



- c) Select valve 3A or 3B, if you think that left and right movement of the right rotor is incorrect.



10. Measure the resistance of coil of the selected valve with a digital multimeter. The permitted value is between 5.0 - 5.6 Ω .

- a) Replace a damaged coil.

11. Interchange the selected valve with one of the others on the manifold.

12. Start the product.

13. Operate the steering system to examine if there is a damaged valve.

- a) If the steering system does not operate same as before, the valve is damaged. Replace the damaged valve.
b) If the steering system operates same as before, the valve is not damaged.

14. Stop the product.

15. Select a steering cylinder that you think is damaged and do a leakage check of the cylinder.

16. Connect the flowmeter to the load side of the steering cylinder.

17. Start the product and do a leakage check.

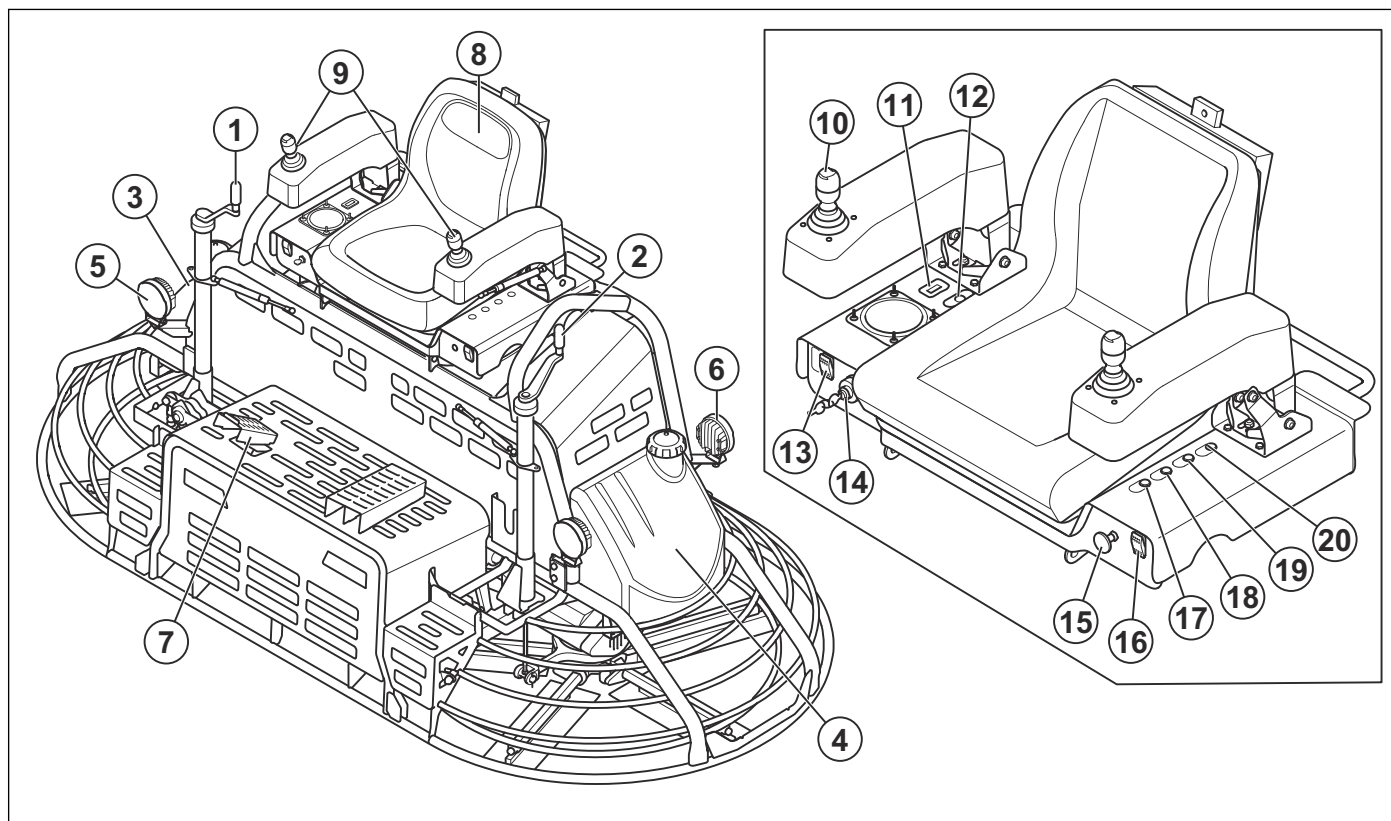
- a) If the flowmeter shows stable hydraulic oil flow, the steering cylinder is damaged. Replace the damaged steering cylinder.
b) If the flowmeter does not show stable hydraulic oil flow, interchange the selected steering cylinder with one of the others.

18. Operate the steering system to examine if the selected steering cylinder is damaged.

- a) If the steering system operates same as before, the selected steering cylinder is not damaged. Install the steering cylinders to their initial location.
 - b) If the steering system does not operate same as before, the steering cylinder is damaged. Replace the damaged steering cylinder.
19. Do a leakage test of the hoses between the steering cylinder and the manifold. Replace the damaged hoses.
20. Disconnect and remove the test equipment.
21. Install all hoses and fittings to their initial location.
22. Install and connect all components to their initial location.
23. Do a check of the hydraulic oil level. Add oil if necessary.

6 Repair and servicing

6.1 Product overview

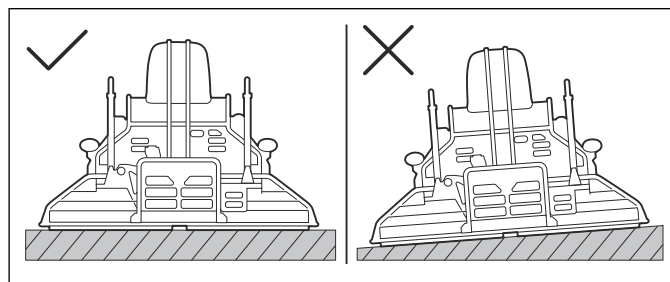


1. Right blade pitch control
2. Left blade pitch control
3. Fuel tank
4. Water tank
5. Front work light
6. Rear work light
7. Throttle control, foot pedal
8. Seat with operator presence control
9. Joysticks
10. Water spray control
11. Hour meter
12. Glow plug indicator
13. Power steering mode switch
14. Key switch
15. Choke
16. Work light switch
17. Oil pressure indicator light
18. Coolant temperature indicator light
19. Status OK indicator light (green)
20. Status error indicator light (red)

6.2 To remove the gearboxes

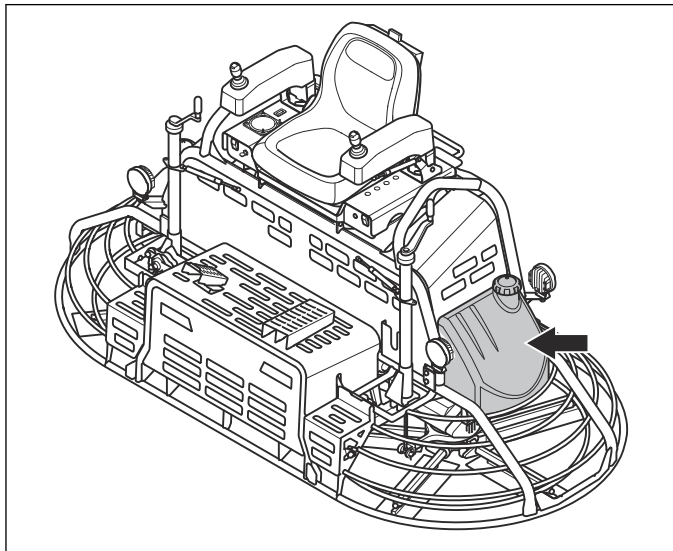
To lift the product, use a lifting equipment with capacity of minimum 660 kg/1456 lbs.

1. Put the product on a flat, level surface with the blades flat.

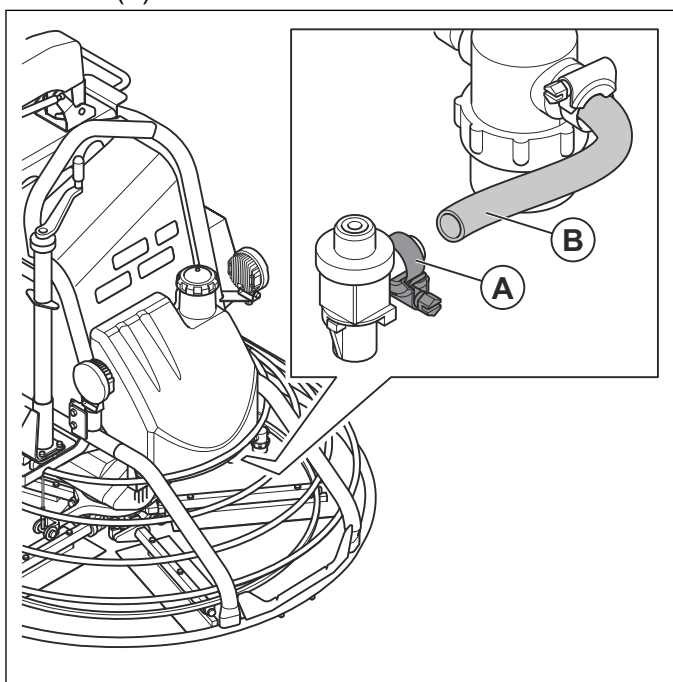


2. Stop the engine and disconnect the battery.

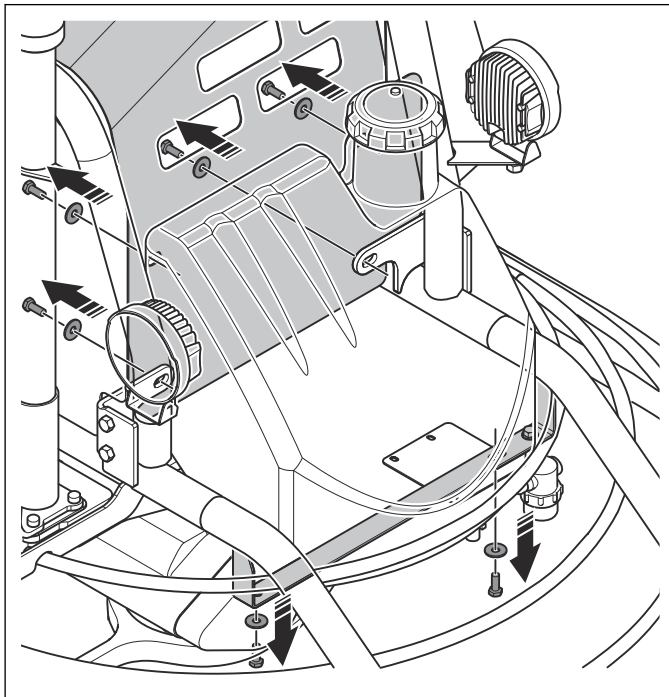
3. Drain the water tank.



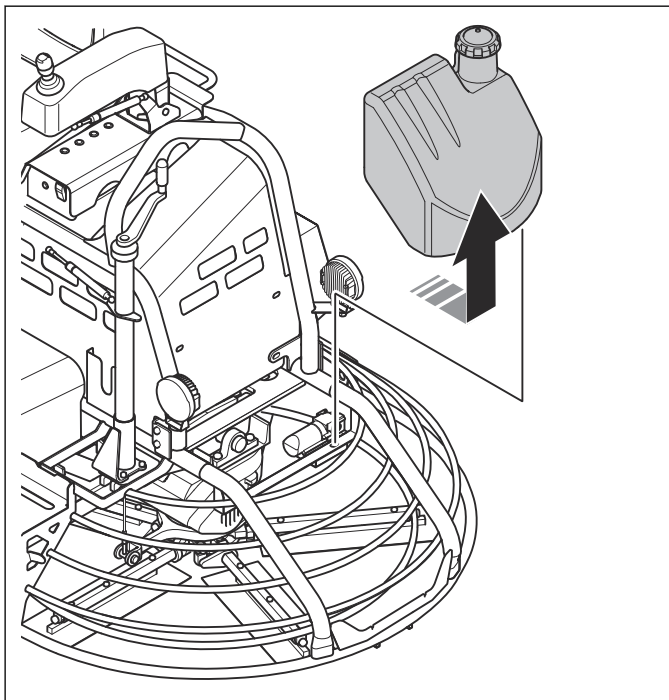
4. Loosen the hose clamp (A) and disconnect the water hose (B).



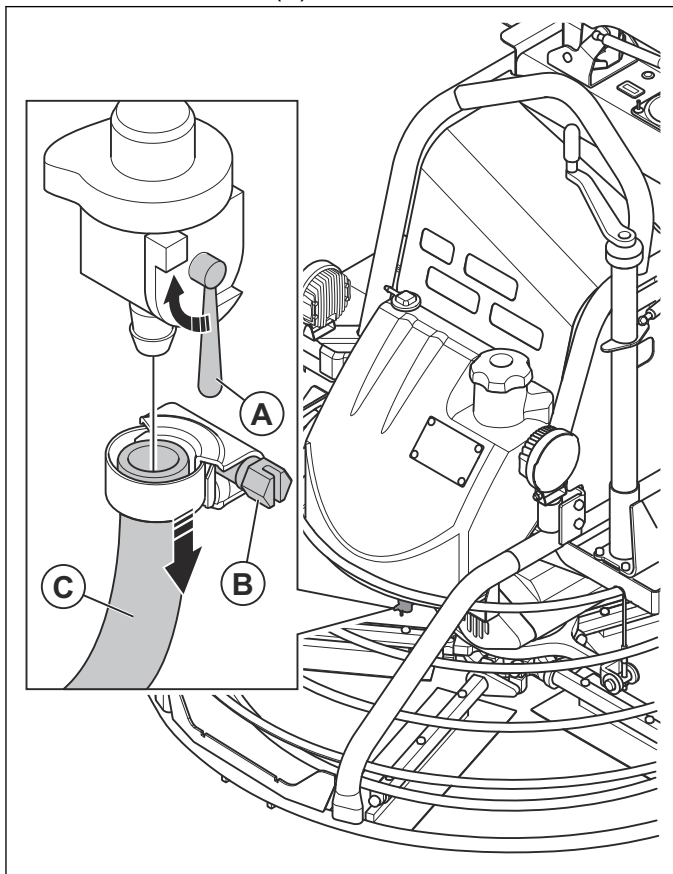
5. Remove the 4 screws for the water tank.



6. Remove the water tank.

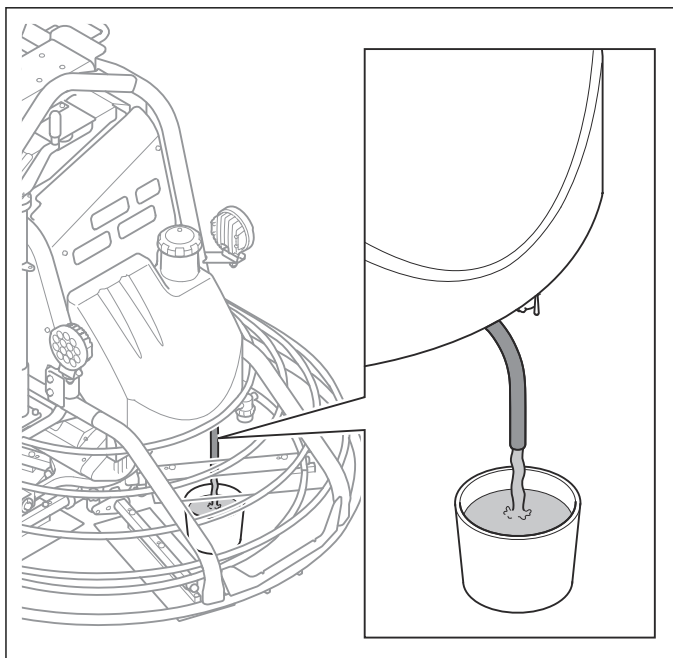


7. Turn the fuel lever (A) to close the fuel valve.

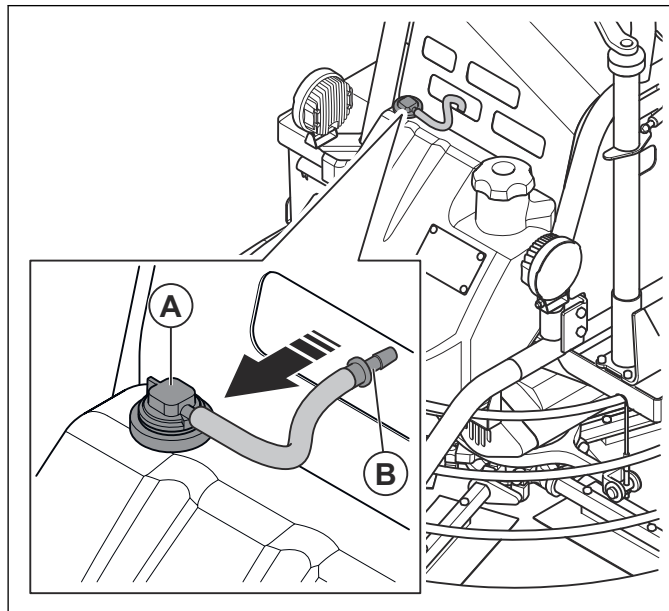


8. Loosen the hose clamp (B) and disconnect the fuel hose (C).

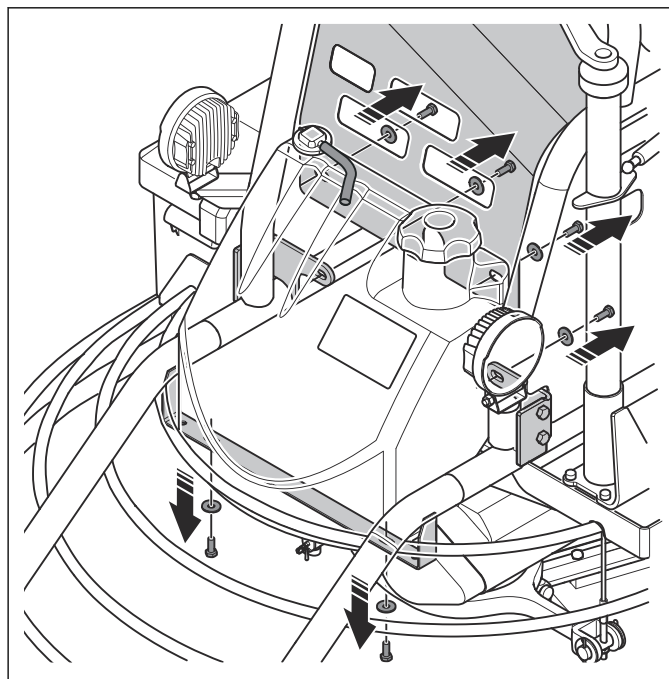
9. Put the remaining fuel from the fuel hose into a container.



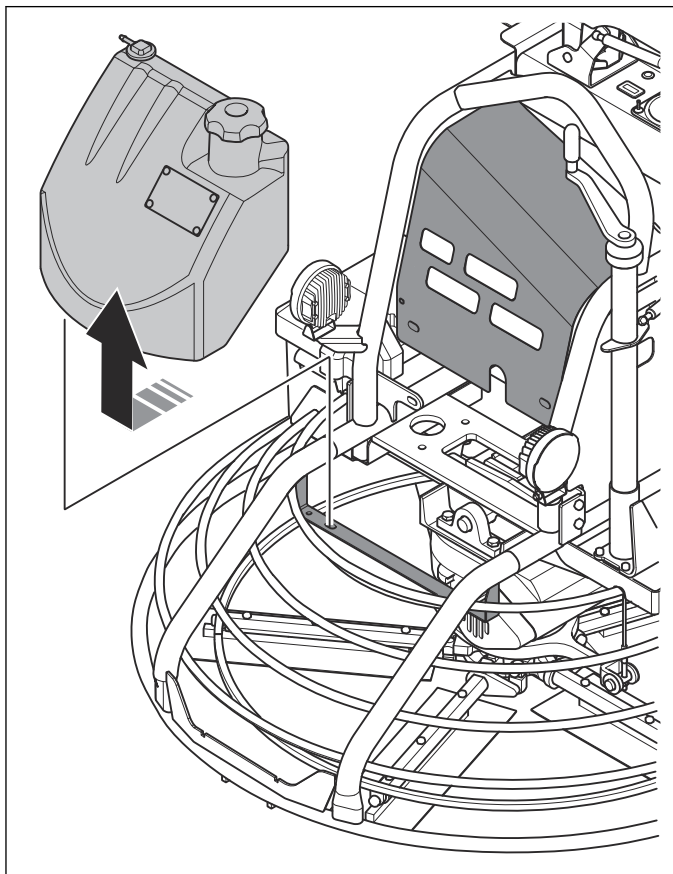
10. Remove the hose (B) for the ventilation valve (A) of the fuel tank.



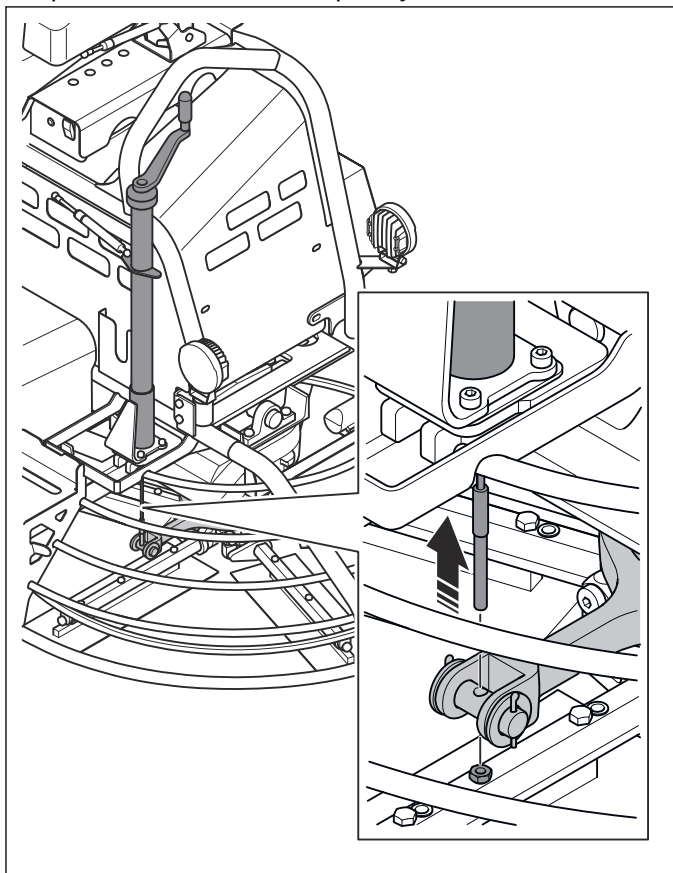
11. Remove the 4 screws for the fuel tank.



12. Remove the fuel tank.

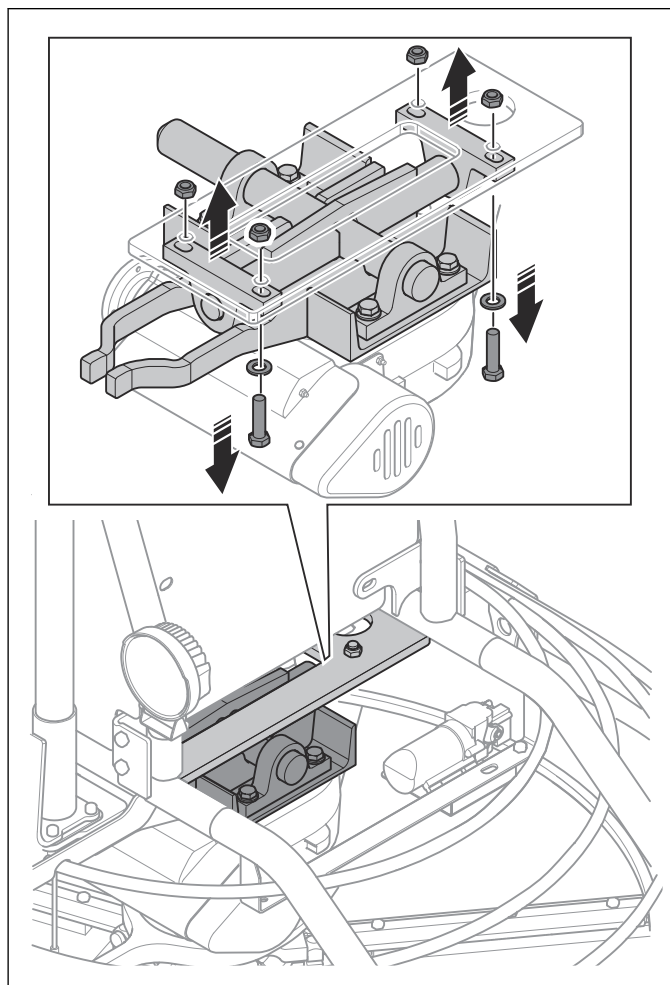


13. Remove the nut from each pitch cable and pull the pitch cable out from the pitch yoke.

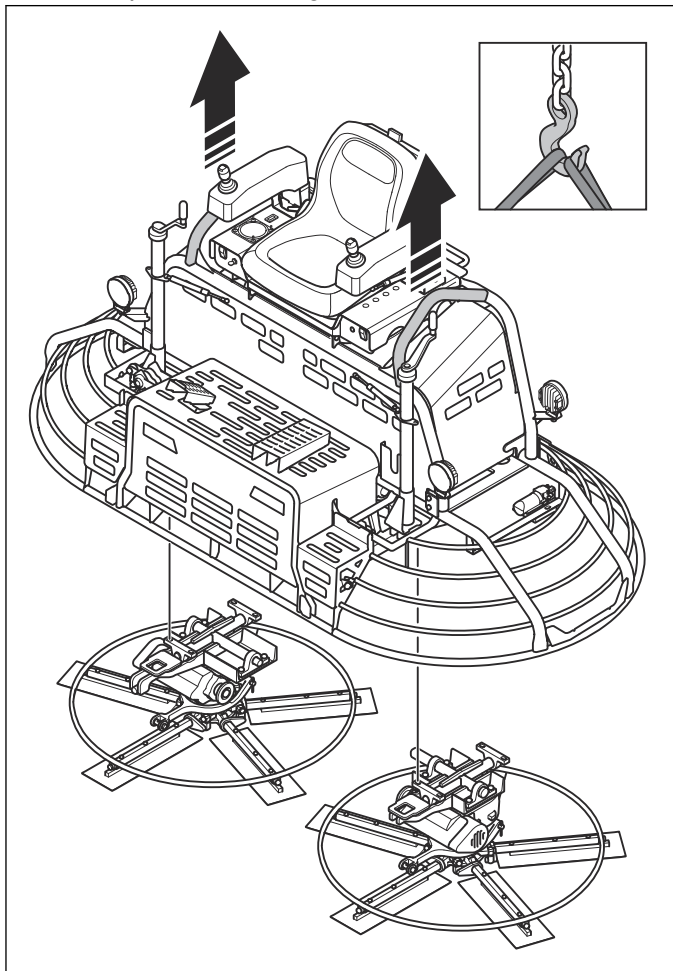


14. Disconnect the universal joints from the gearbox flanges.

15. Remove the bolts, the washers and the nuts for the bearings flanges on the lever couplings on each side.



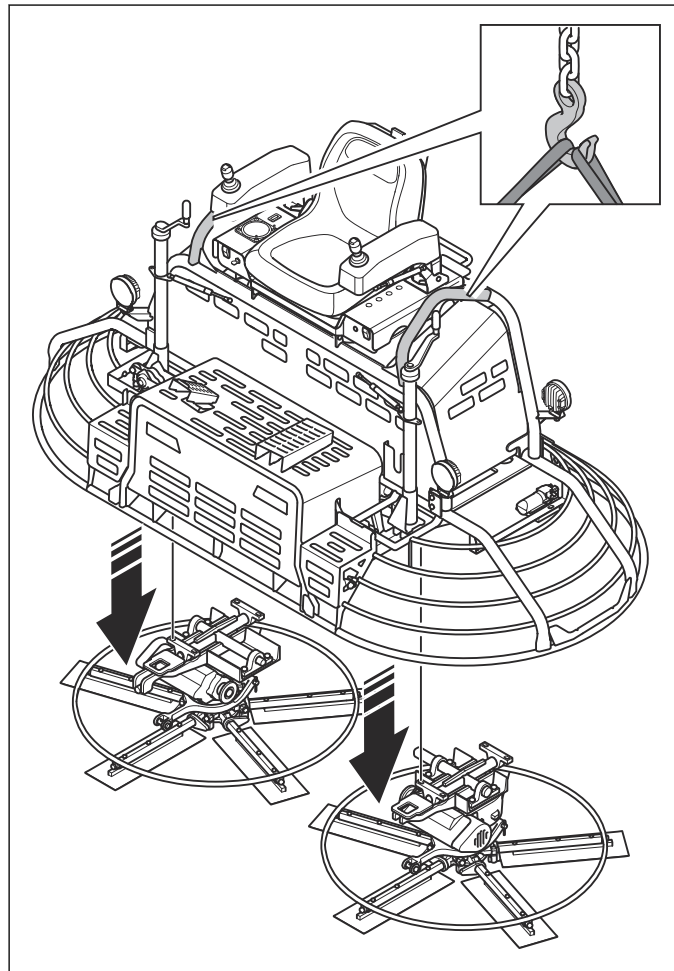
16. Attach the lifting equipment to the lifting points and lift the product off the gearboxes.



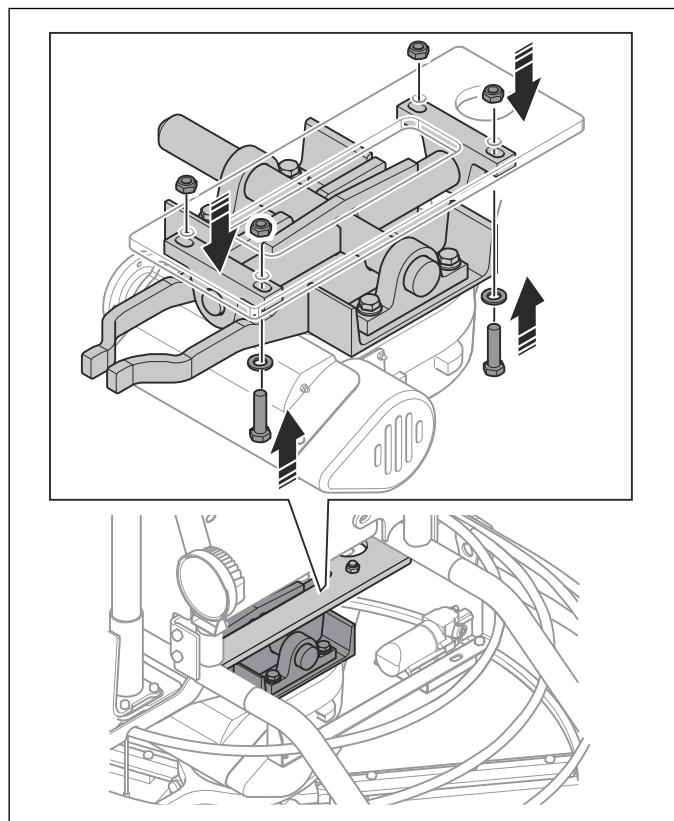
CAUTION: The product can be not balanced when you lift it. Let a bystander help you when you lift the product.

6.3 To install the gearboxes

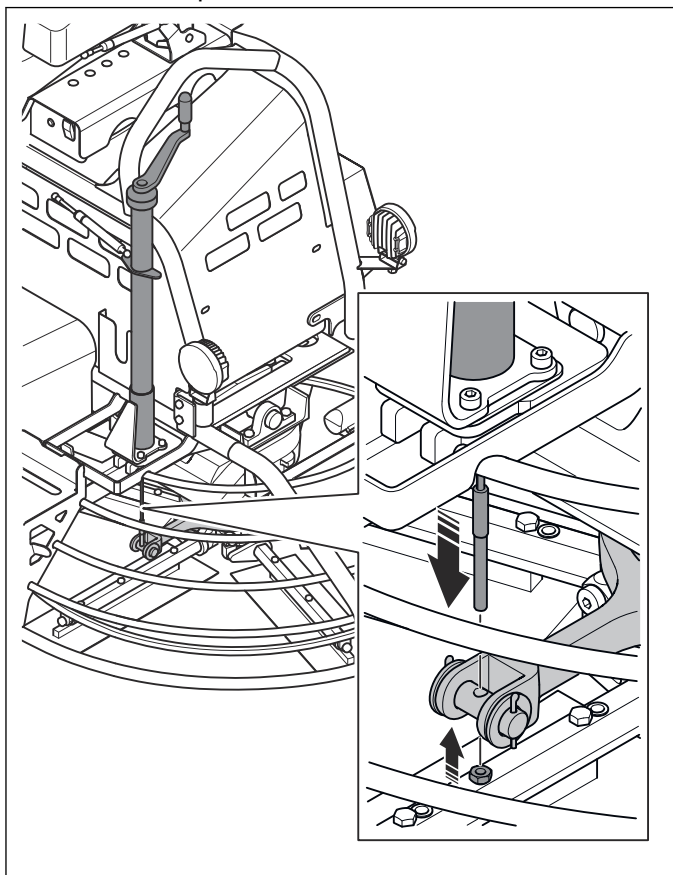
1. Use the lifting equipment to lower the product above the gearbox, the pulley assembly and the drive belt guard..



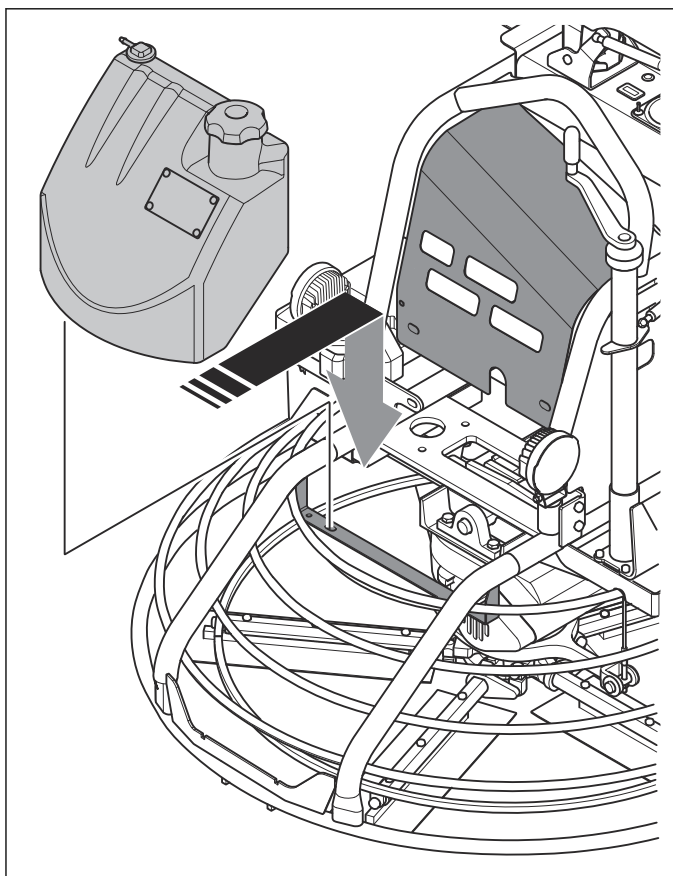
2. Align the bolts holes with the bearing flanges on the lever couplings. Install the bolts, the washes and the nuts.



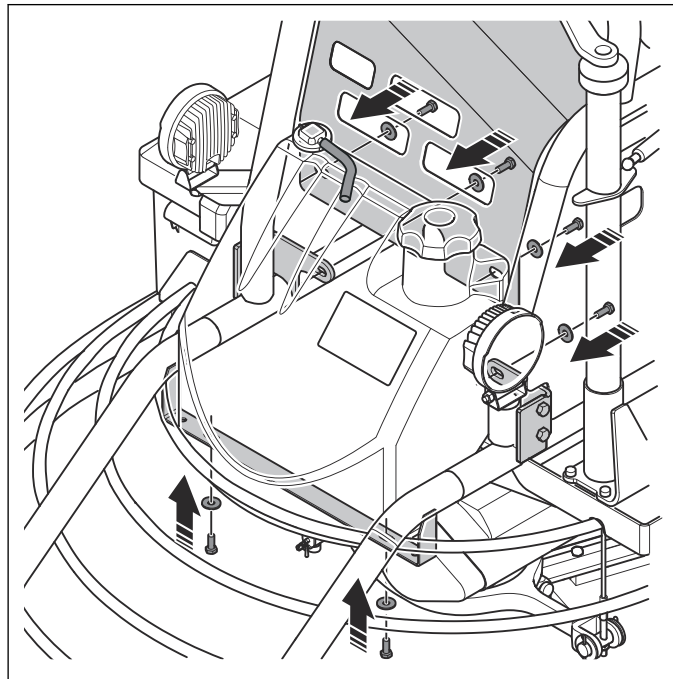
3. Connect the universal joints to the gearbox flanges.
4. Install the pitch cable to pitch yoke and tighten the nut on each pitch.



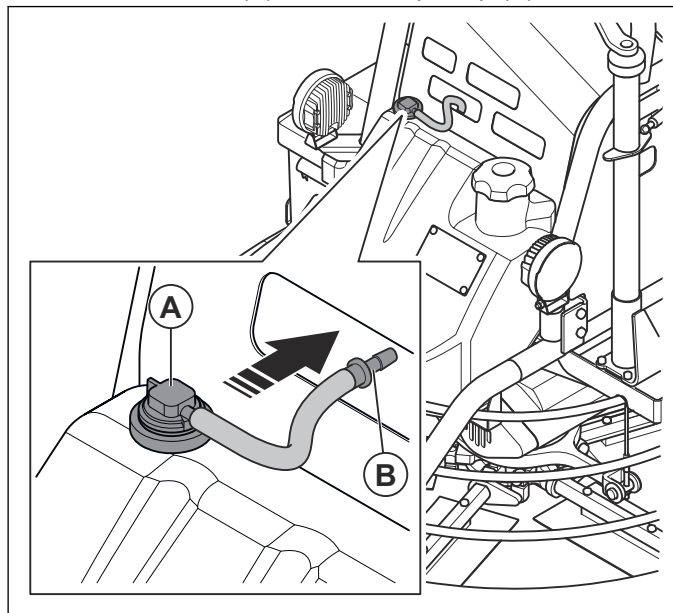
5. Install the fuel tank.



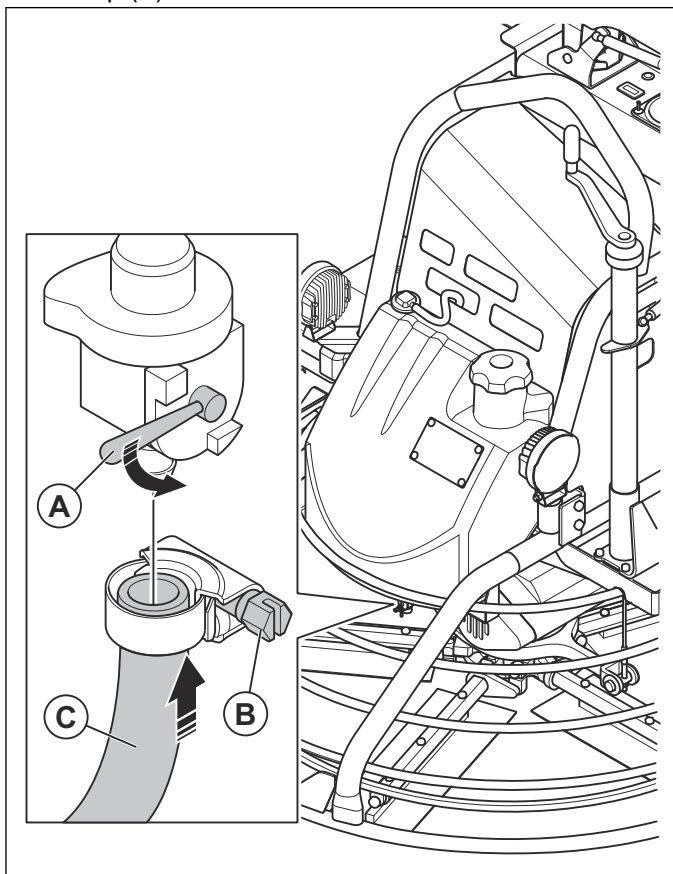
6. Tighten the 4 screws for the fuel tank.



7. Install the hose (A) for the fuel pickup (B).

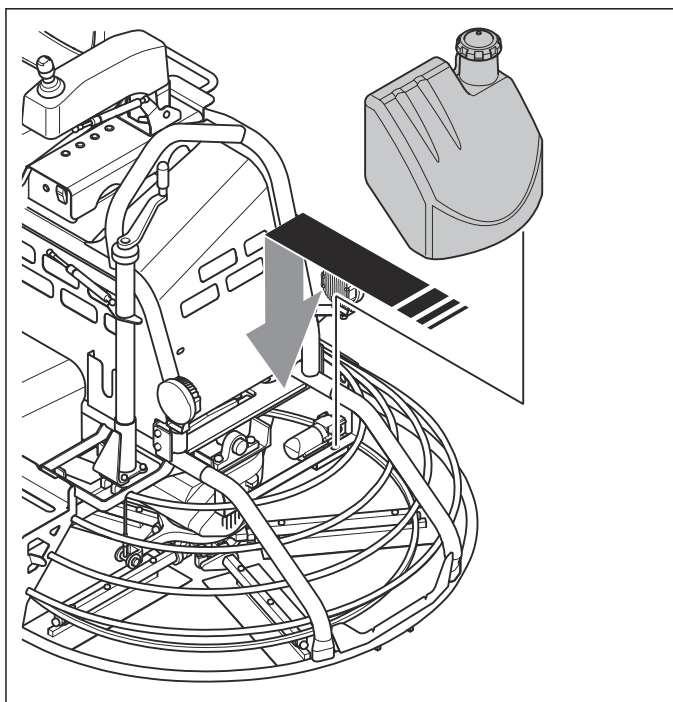


8. Connect the fuel hose (C) and tighten the hose clamp (B).

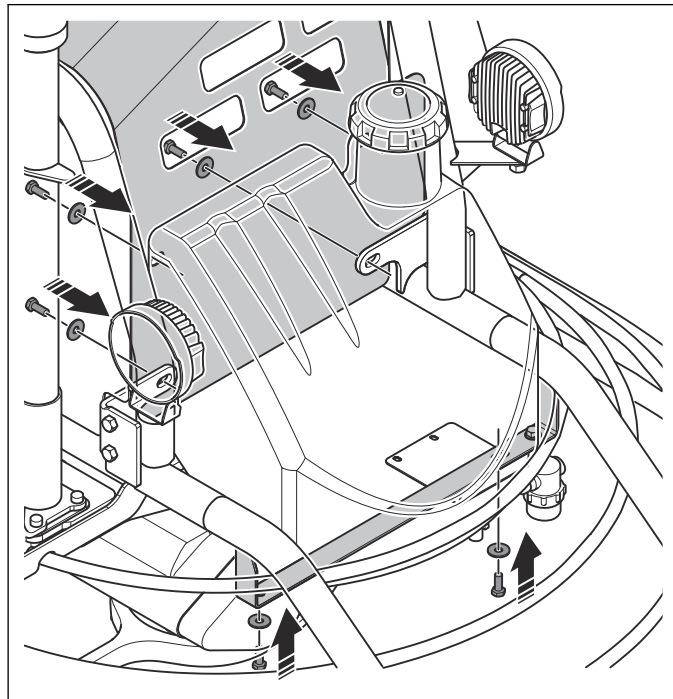


9. Turn the fuel lever (A) to open the fuel valve

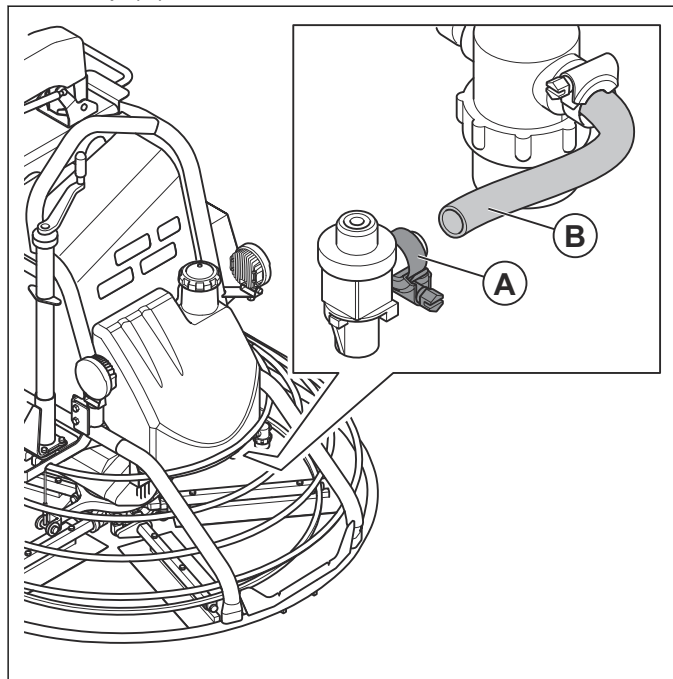
10. Install the water tank.



11. Tighten the 4 screws for the water tank.



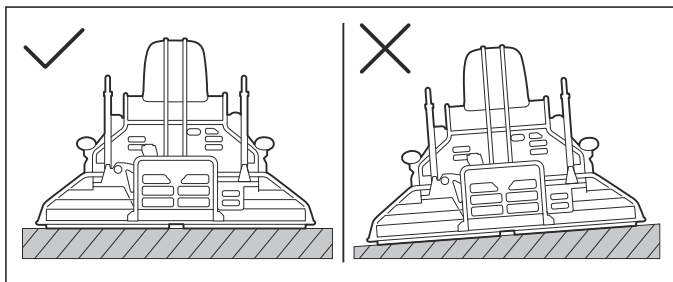
12. Connect the water hose (B) and tighten the hose clamp (A).



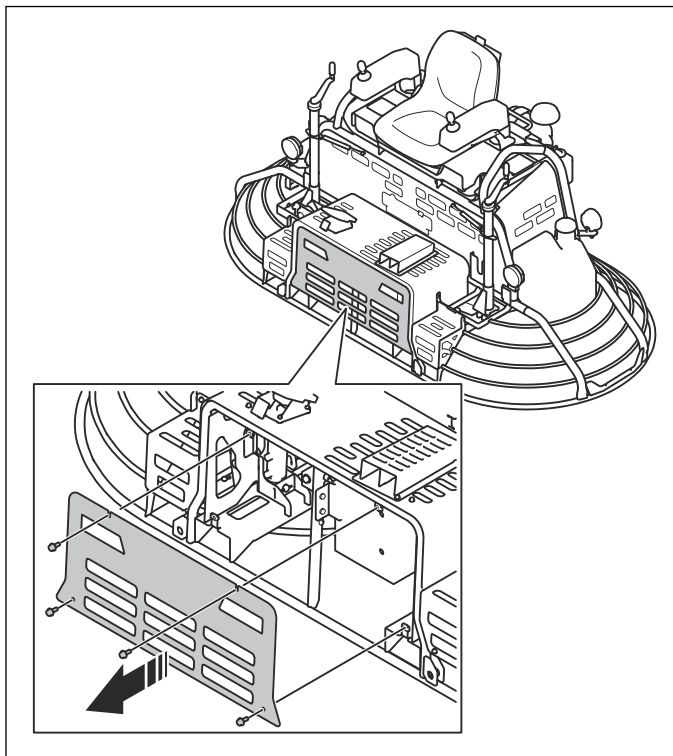
13. Fill the water tank.

6.4 To disassemble the drive system

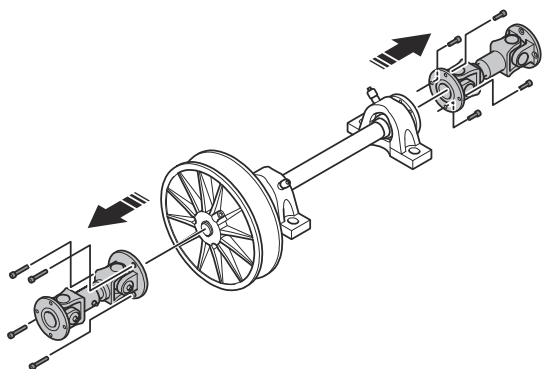
1. Put the product on a flat, level surface with the blades flat.



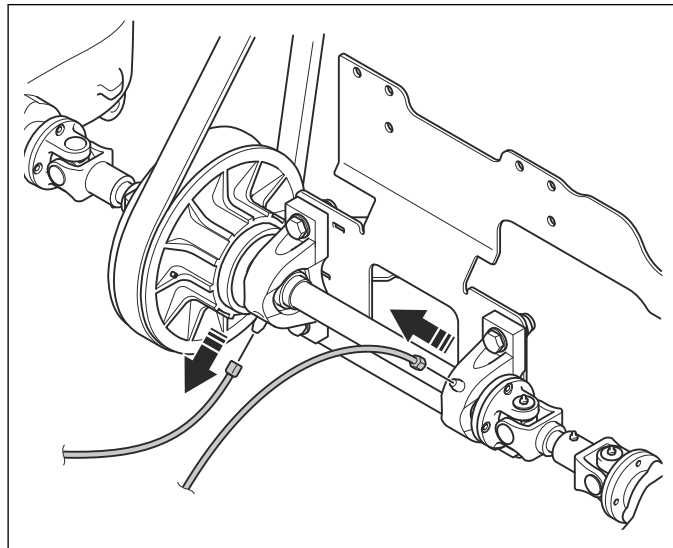
2. Stop the engine and disconnect the battery.
3. Remove the 4 screws and the front cover.



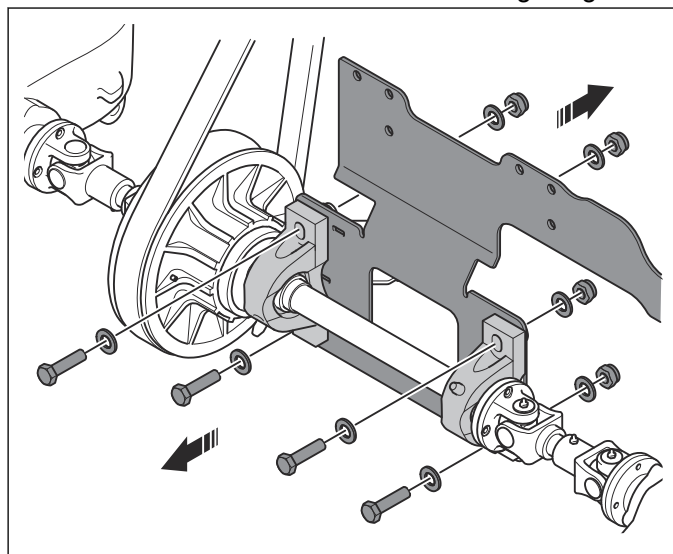
4. Remove the 8 screws that hold the universal joints to the shaft.



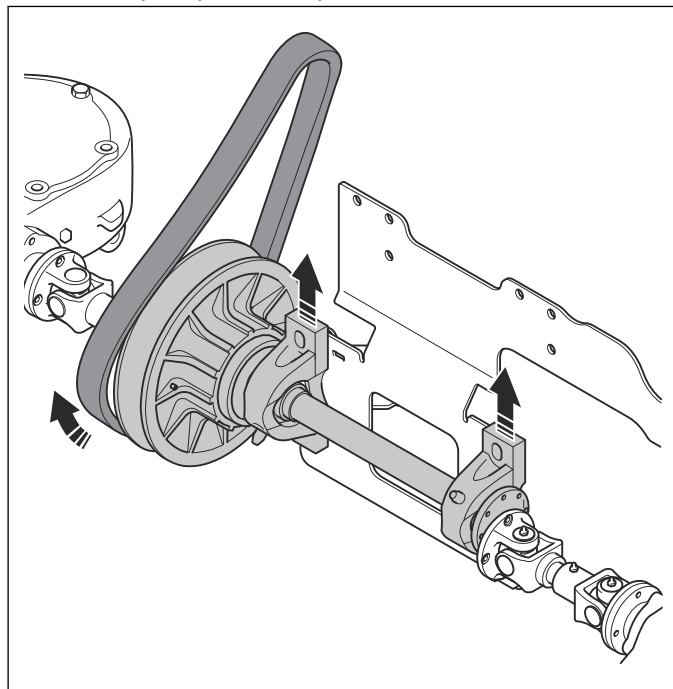
5. Disconnect the 2 hoses at the grease nipples.



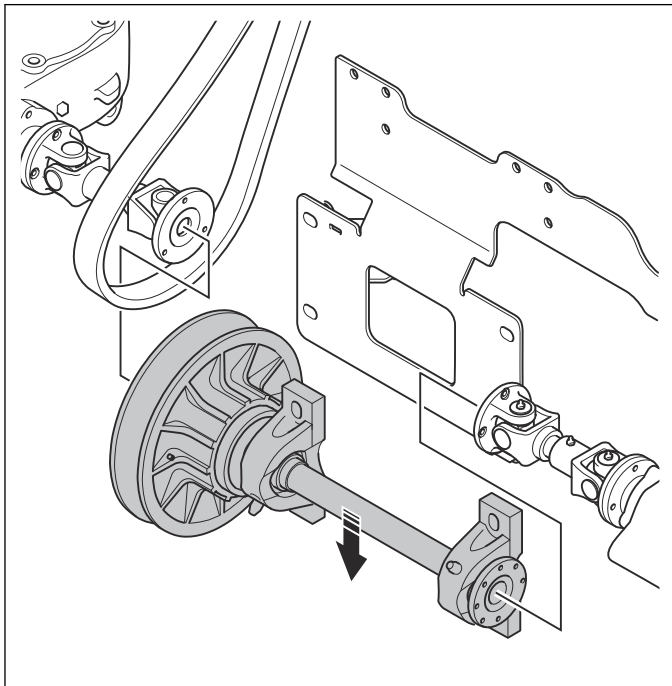
6. Remove the 4 screws from each bearing flange.



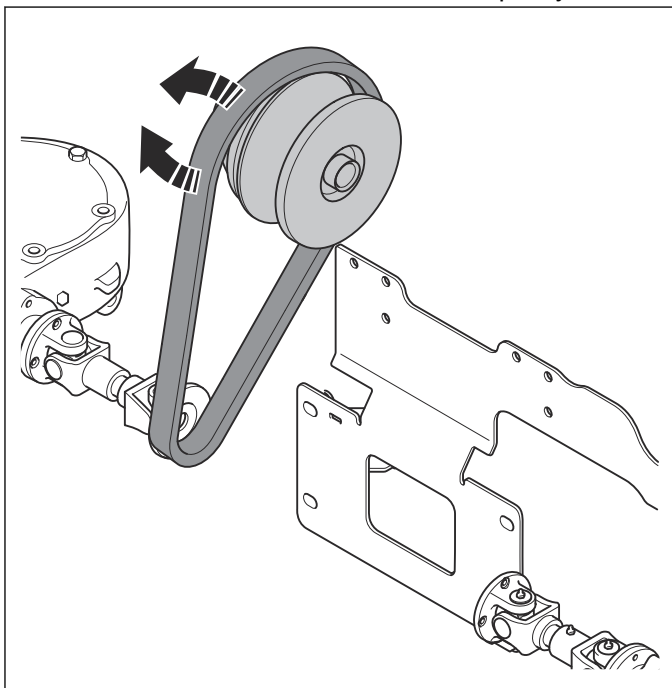
7. Lift the pulley assembly and remove the drive belt.



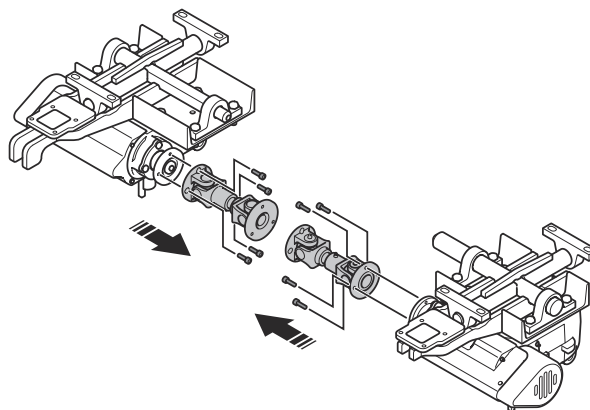
8. Remove the pulley assembly.



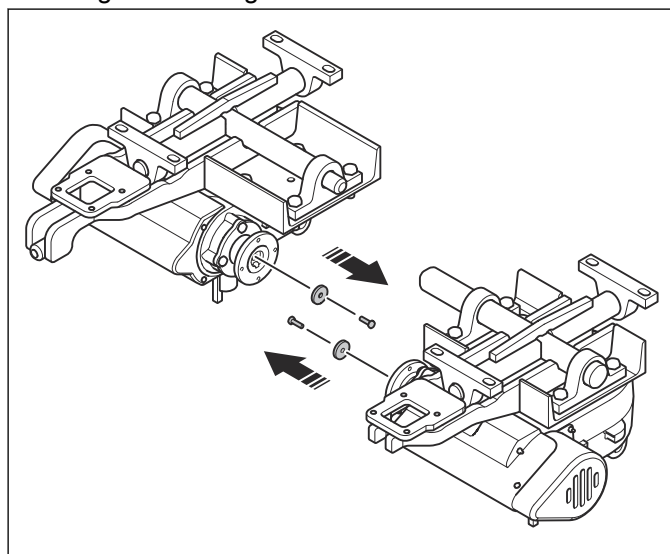
9. Remove the drive belt from the clutch pulley.



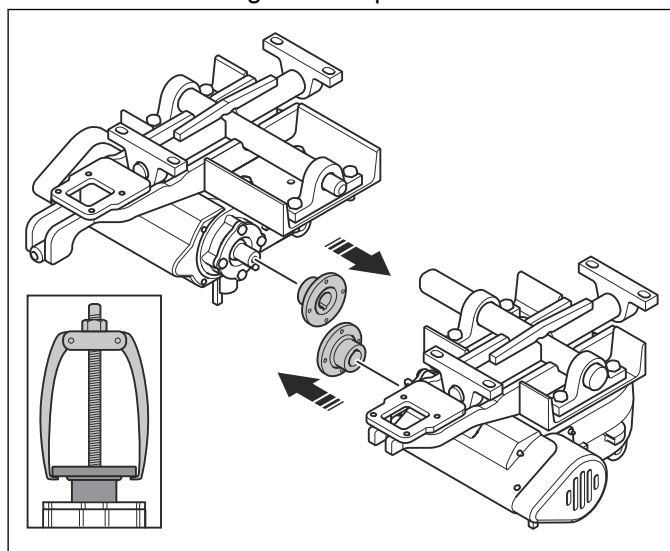
10. Remove the 8 screws and the universal joints.



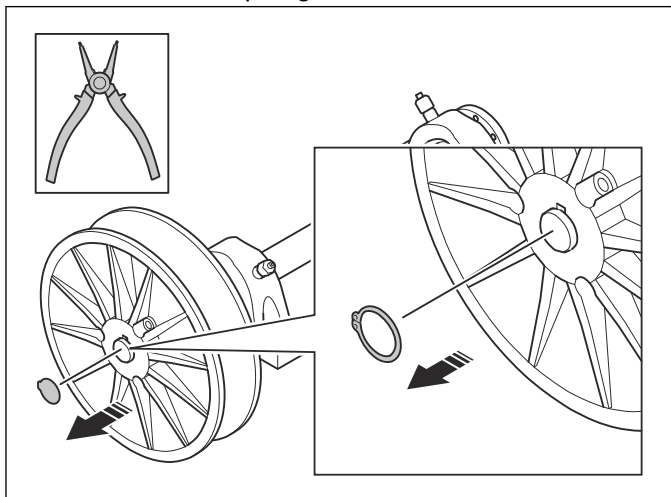
11. Remove the 2 center bolts and the 2 washers from the gearbox flanges.



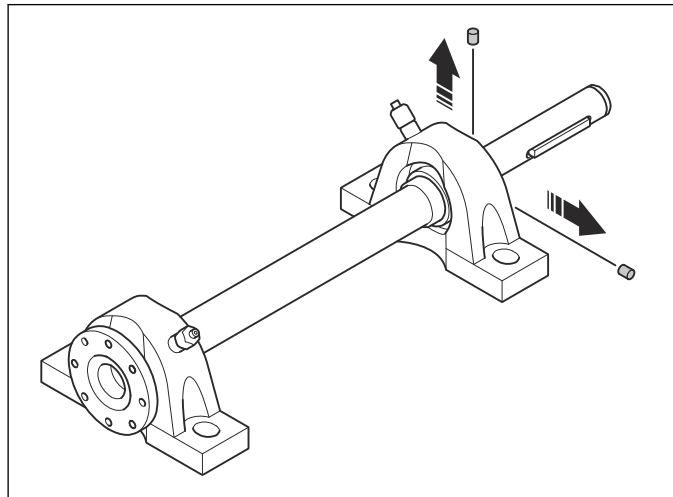
12. Remove the flanges with a puller.



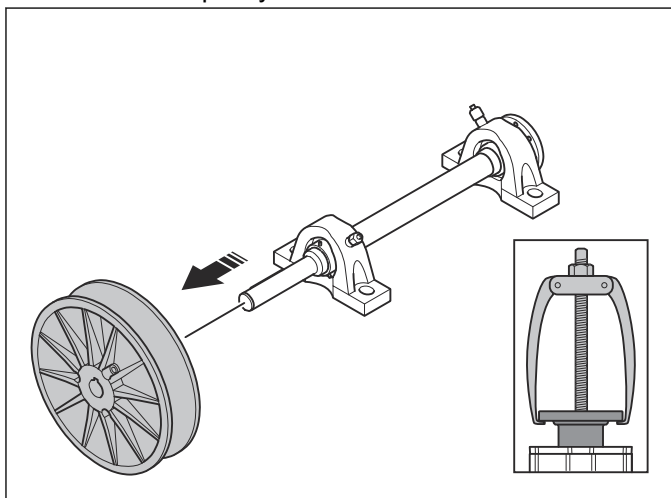
13. Remove the snap ring.



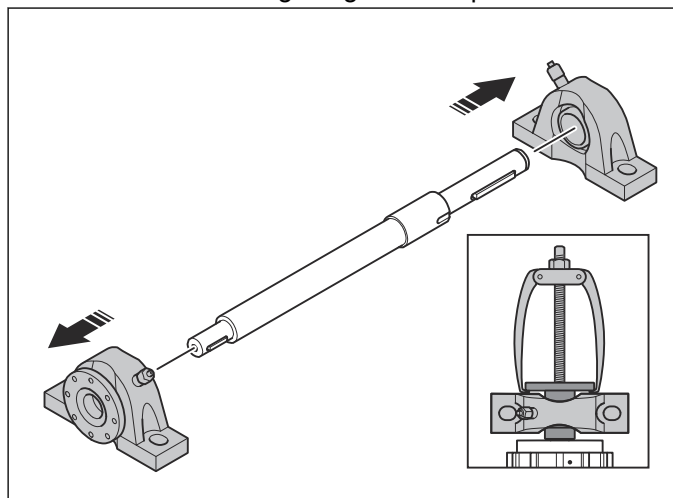
16. Remove the screws from the shaft.



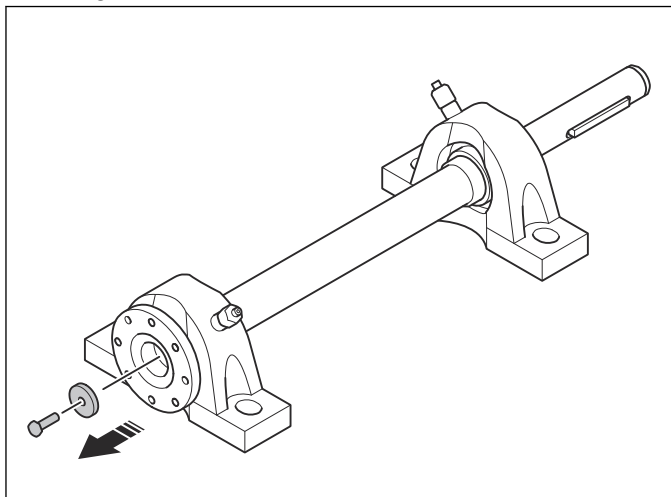
14. Remove the pulley wheel from the shaft.



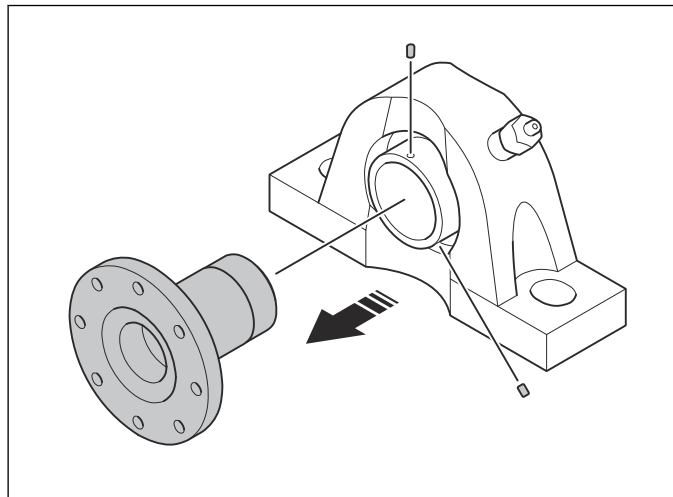
17. Remove the bearing flanges with a puller.



15. Remove the center bolt and washer from the shaft flange.

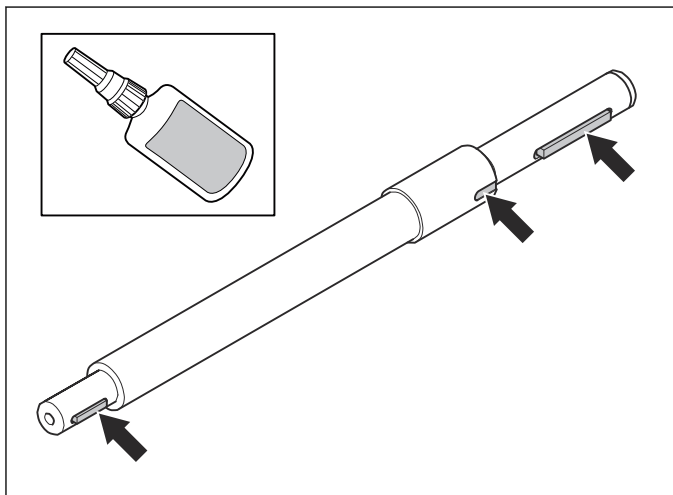


18. Remove the set screws and remove the shaft flange.

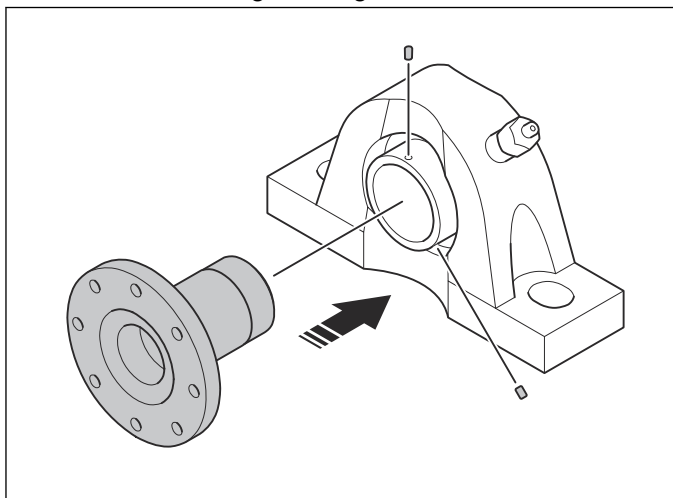


6.5 To assemble the drive system

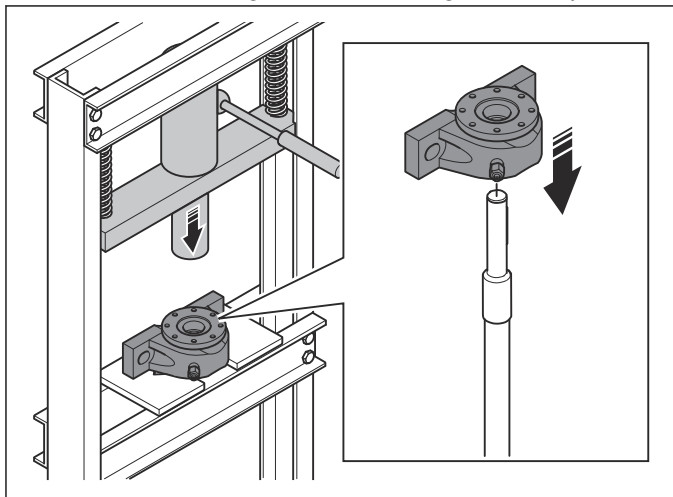
1. Put anti-seize compound to the 3 areas of the drive shaft.



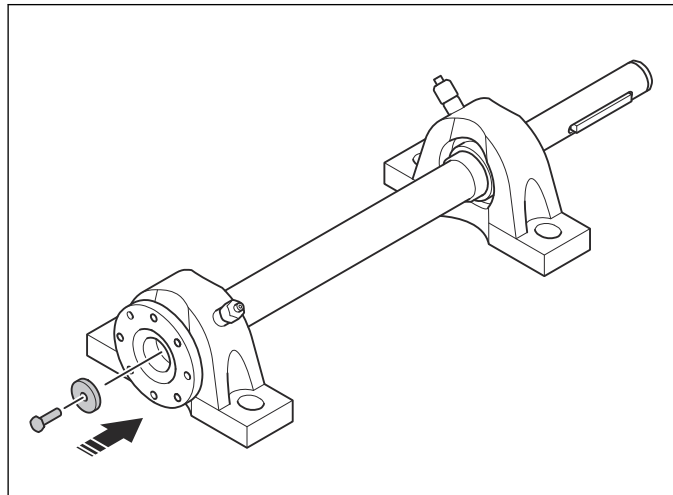
2. Put the shaft flange and tighten the set screws.



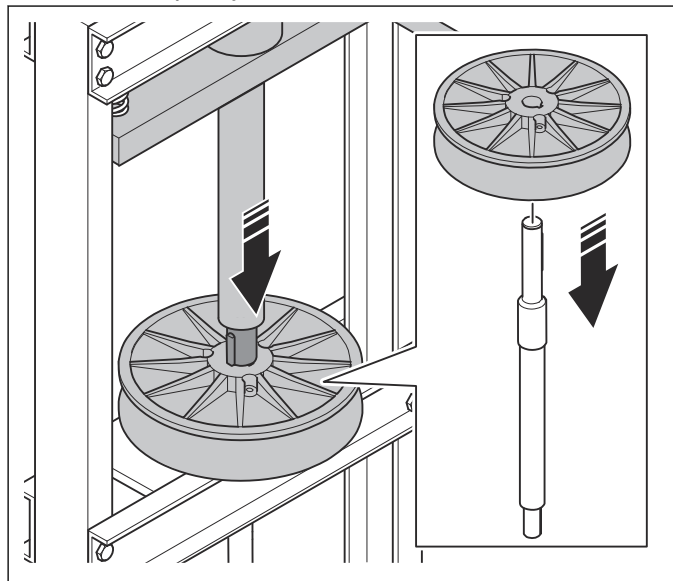
3. Install the bearings and shaft flanges with a press.



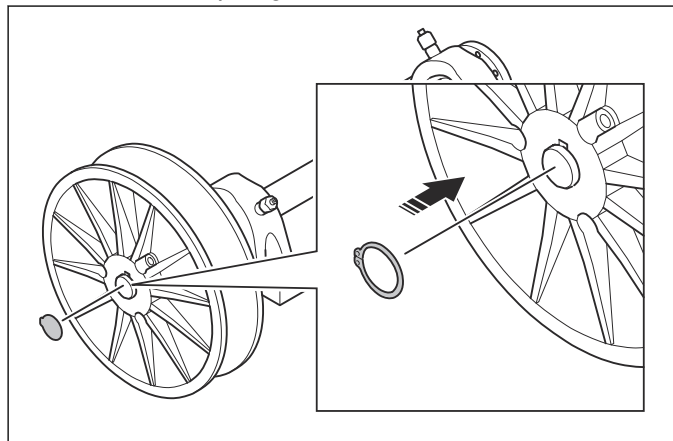
4. Install the washer and the center bolt.



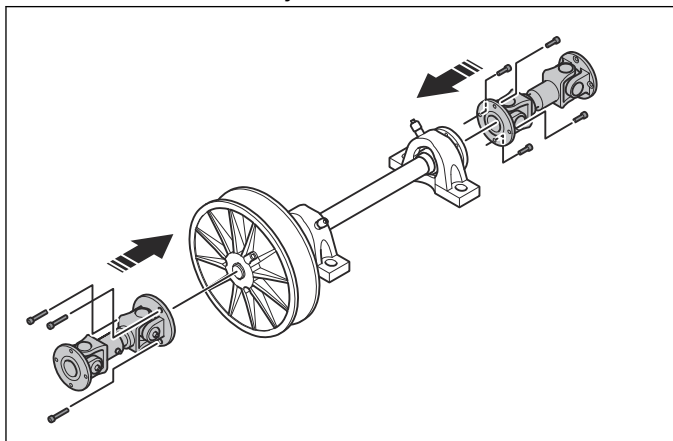
5. Install the pulley wheel.



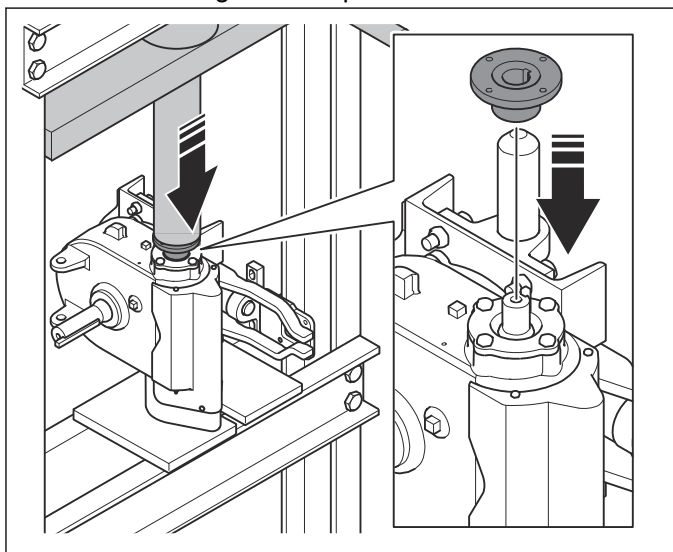
6. Install the snap ring.



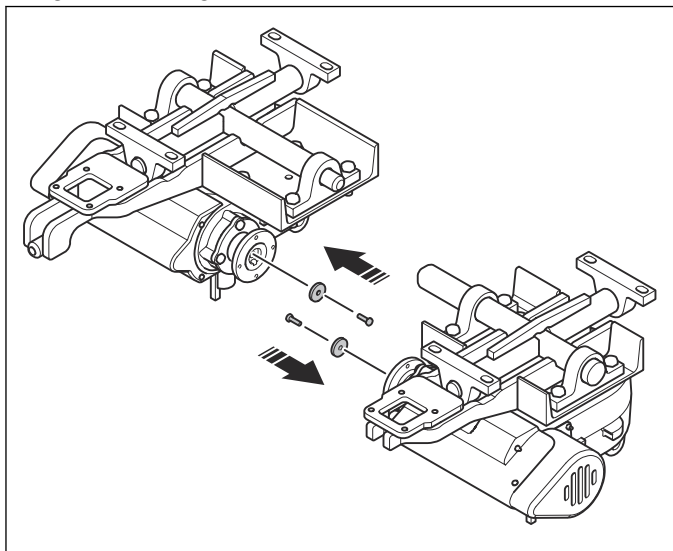
7. Install the universal joints.



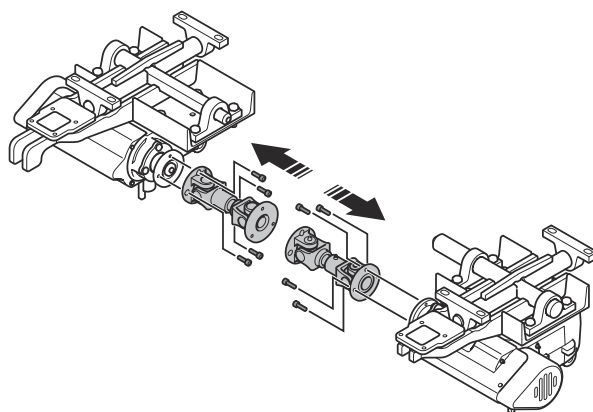
8. Install the flanges with a press.



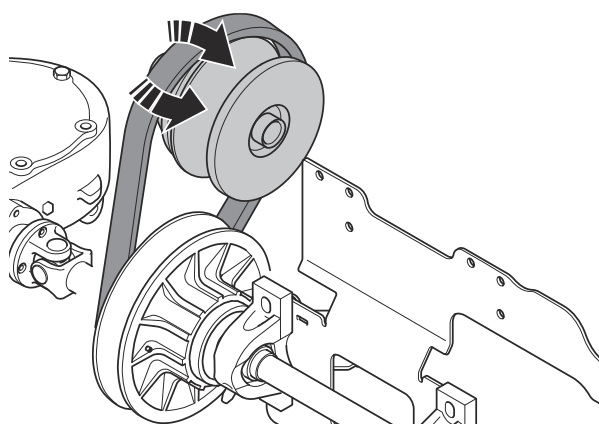
9. Install the 2 washers and the 2 center bolts on the gearbox flanges.



10. Install the universal joints and tighten the 8 screws.

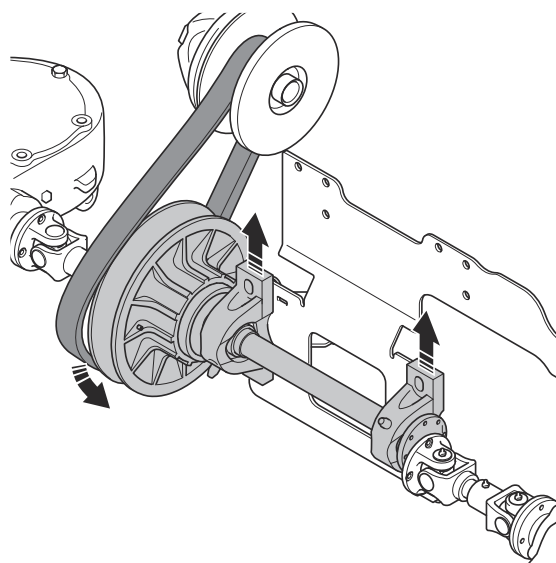


11. Install the drive belt on the clutch pulley.

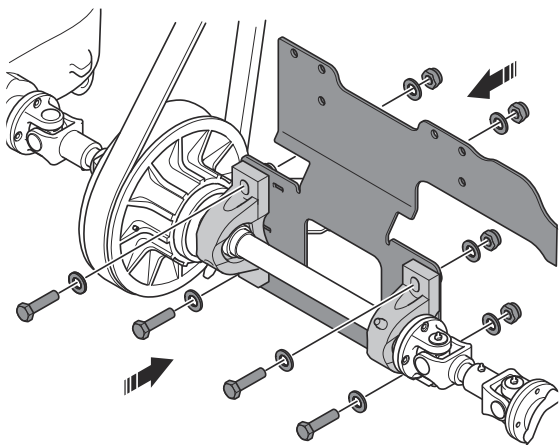


12. Install the pulley assembly, do the procedure that follows.

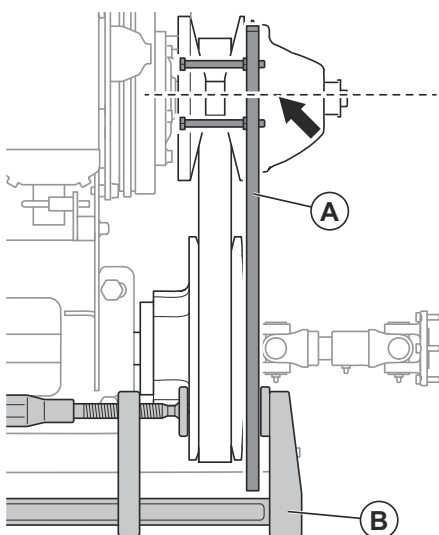
- Put the pulley assembly between the shafts.
- Install the drive belt.



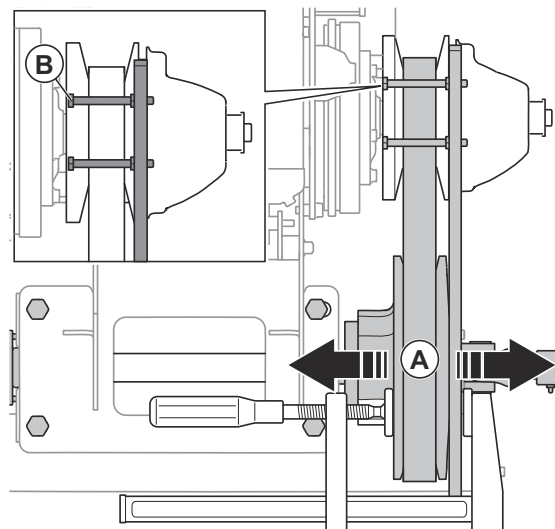
- c) Install the 4 bolts, the 4 washers and the 4 nuts to each bearing flange. Do not tighten the bolts.



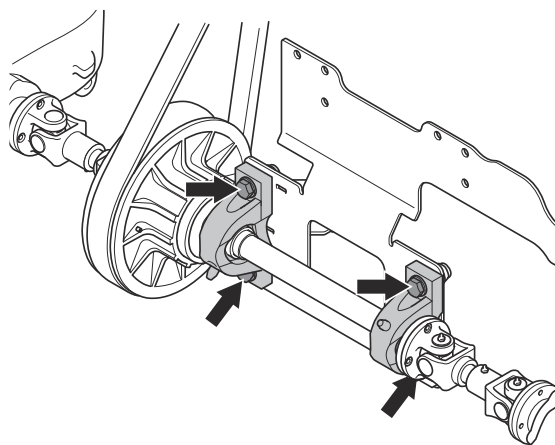
- d) Make the service tool. Refer to *Service tool assembly on page 81*.
- e) Attach the service tool to the drive shaft pulley with a clamp (B). Align the middle points between the bolts of the service tool with the shaft for the clutch pulley (A).



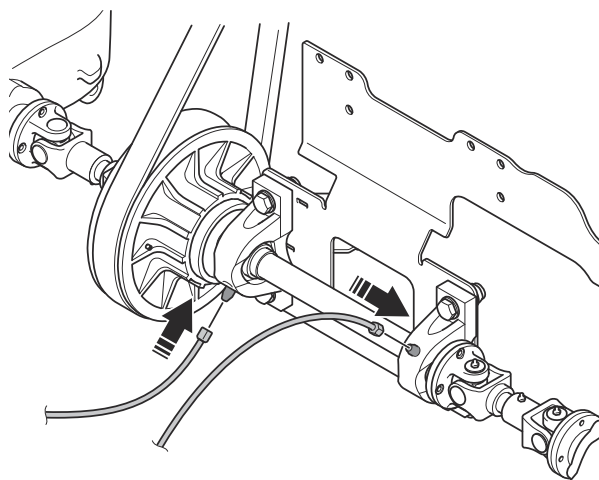
- f) Adjust the drive shaft pulley (A), align the heads of the bolts with the inner edge of the CVT pulley (B).



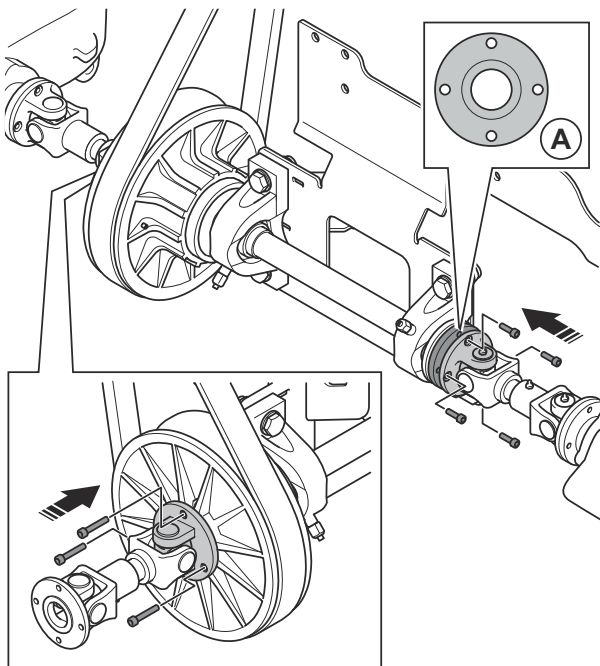
- g) Tighten the 4 bolts for each bearing flange.



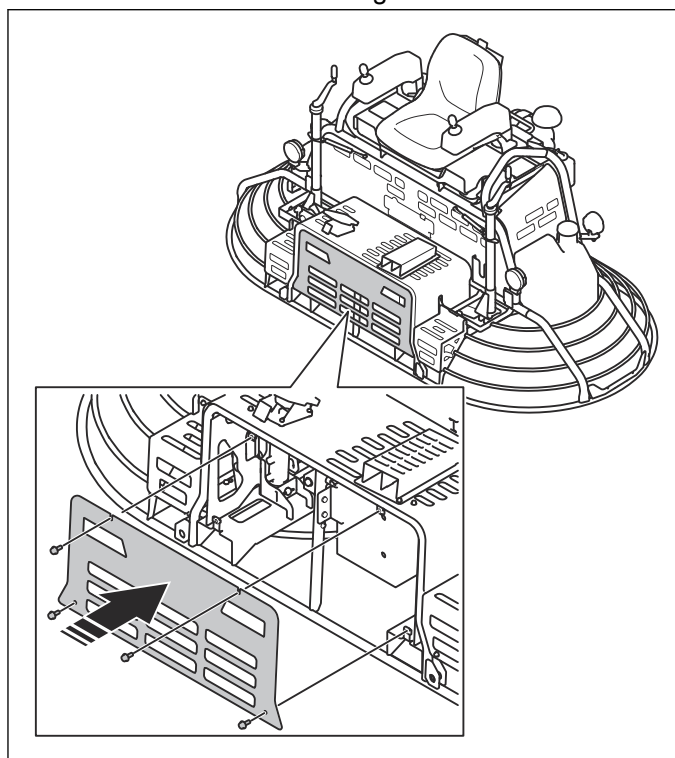
13. Connect the 2 hoses at the grease nipples.



14. Install and tighten the 8 screws that hold the universal joint to the shaft. If it is necessary, use shims (A).

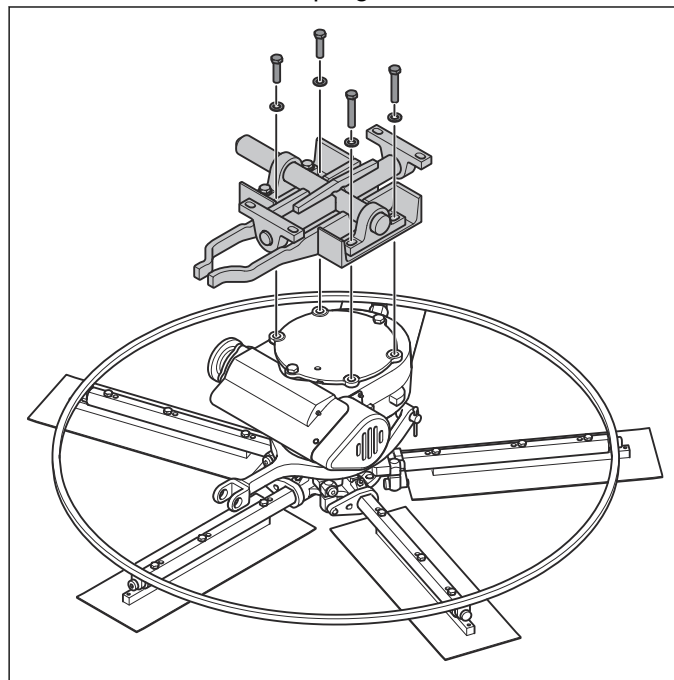


15. Install the front cover and tighten the 4 screws.

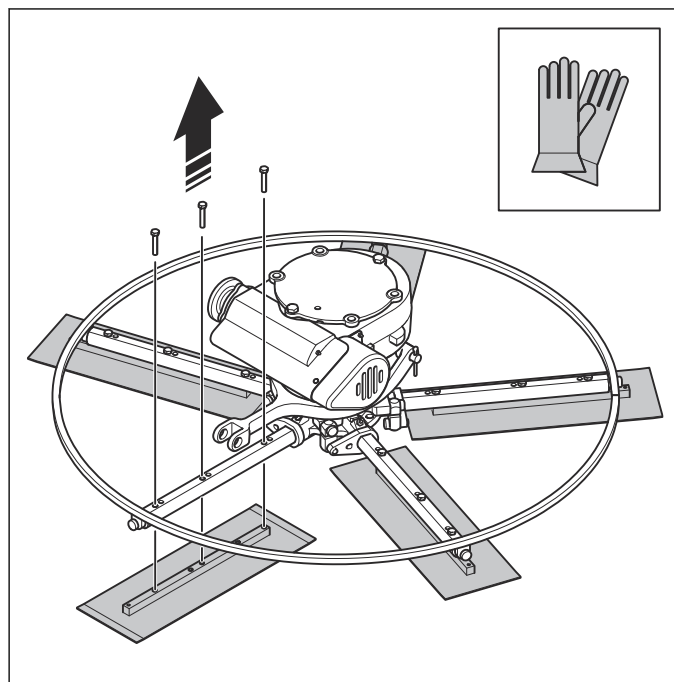


6.6 To disassemble the lower unit

1. Remove the gearboxes from the product. Refer to *To remove the gearboxes on page 26.*
2. Remove the lever couplings.

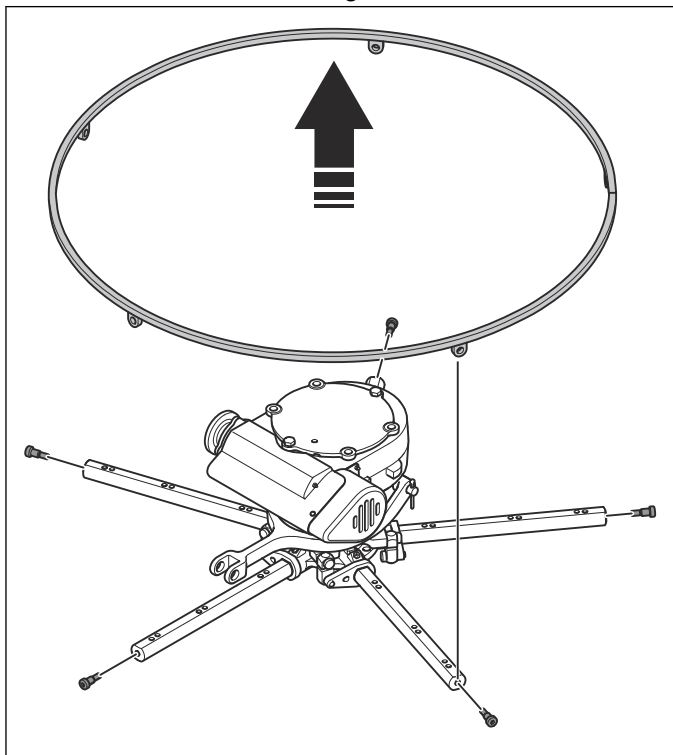


3. Remove the screws and remove the blades.

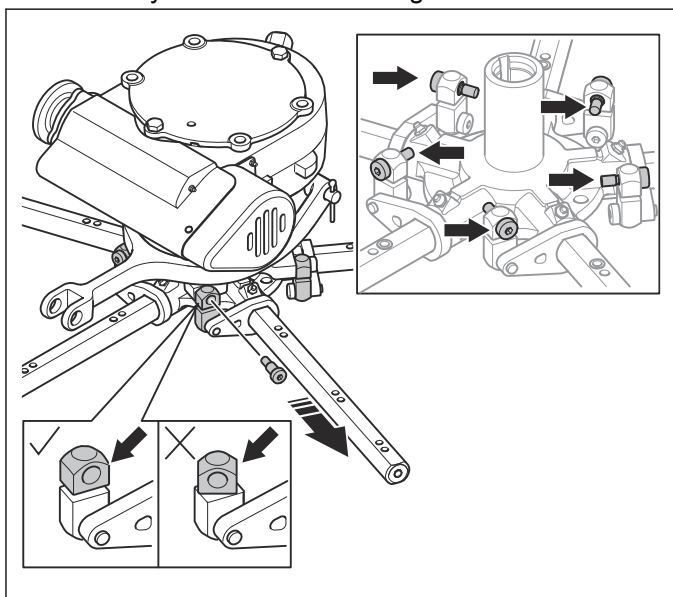


WARNING: Use protective gloves.

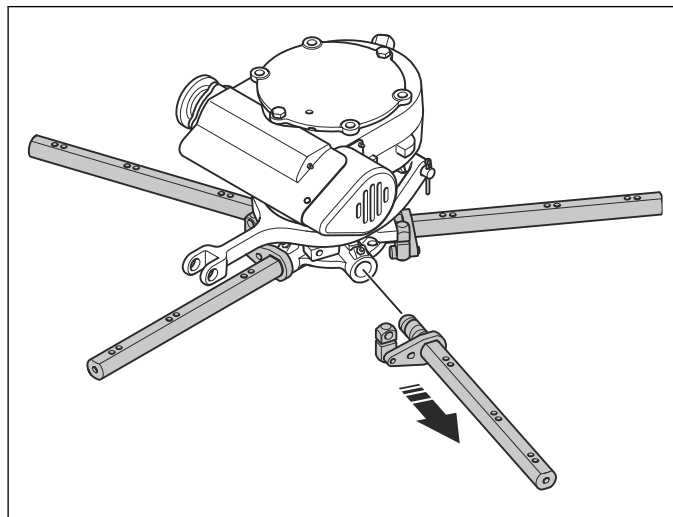
4. Remove the stabilizer ring.



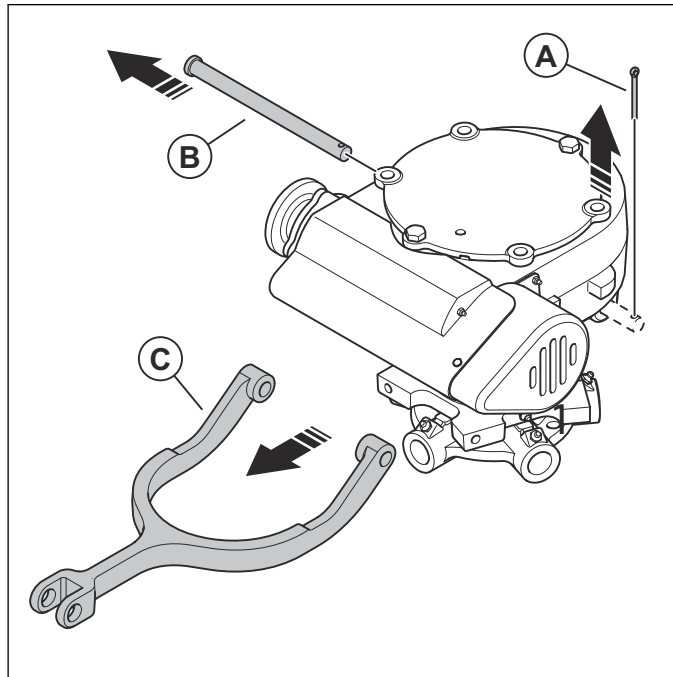
5. Remove the 5 shoulder bolts from the ring assembly. Do not turn the lifting links.



6. Remove the arms.

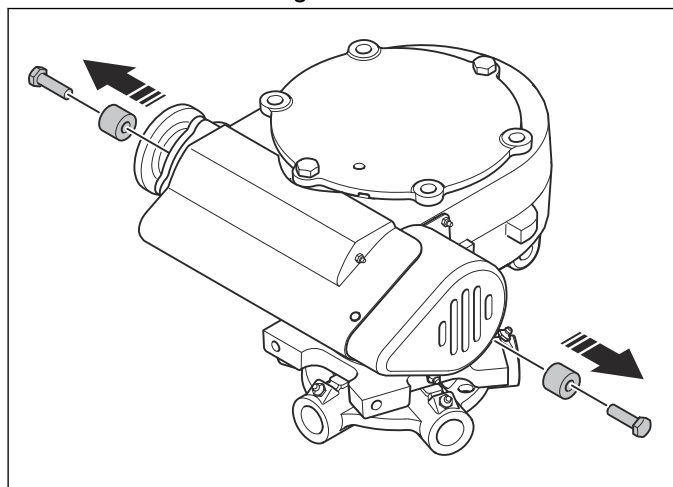


7. Pull out the locking pin (A) and remove the shaft (B).

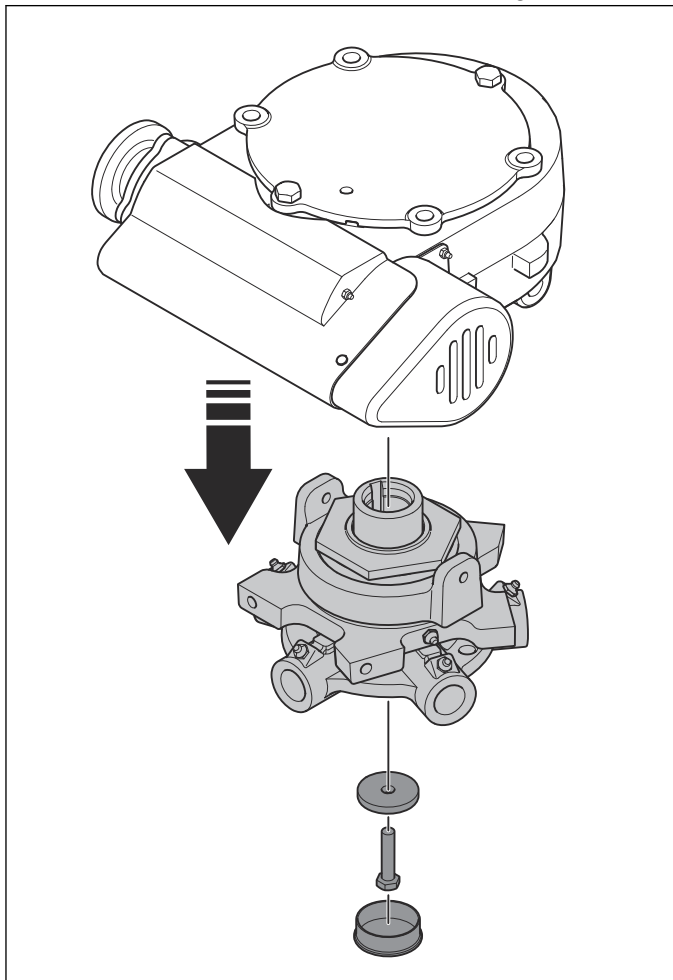


8. Remove the blade yoke (C).

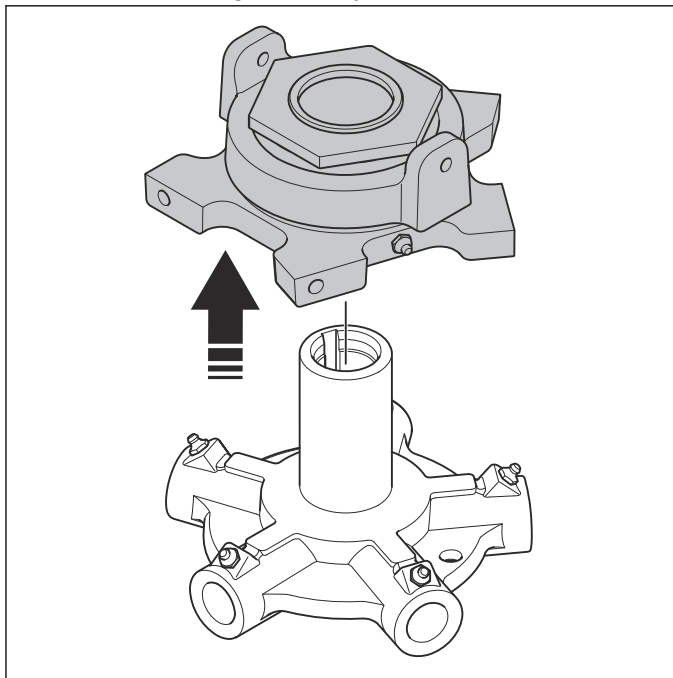
9. Remove the 2 roller guides.



10. Remove the plug, the screw and the washer from the hub. Remove the hub unit from the gearbox.



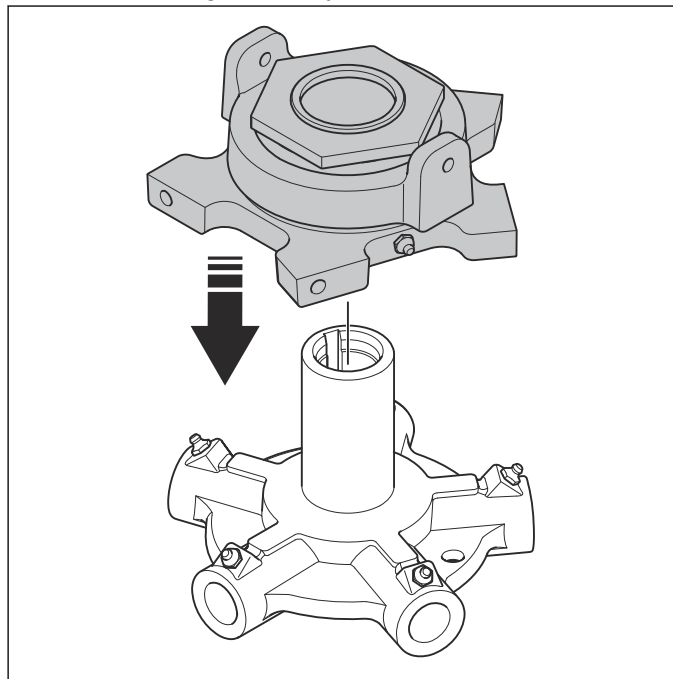
11. Remove the ring assembly.



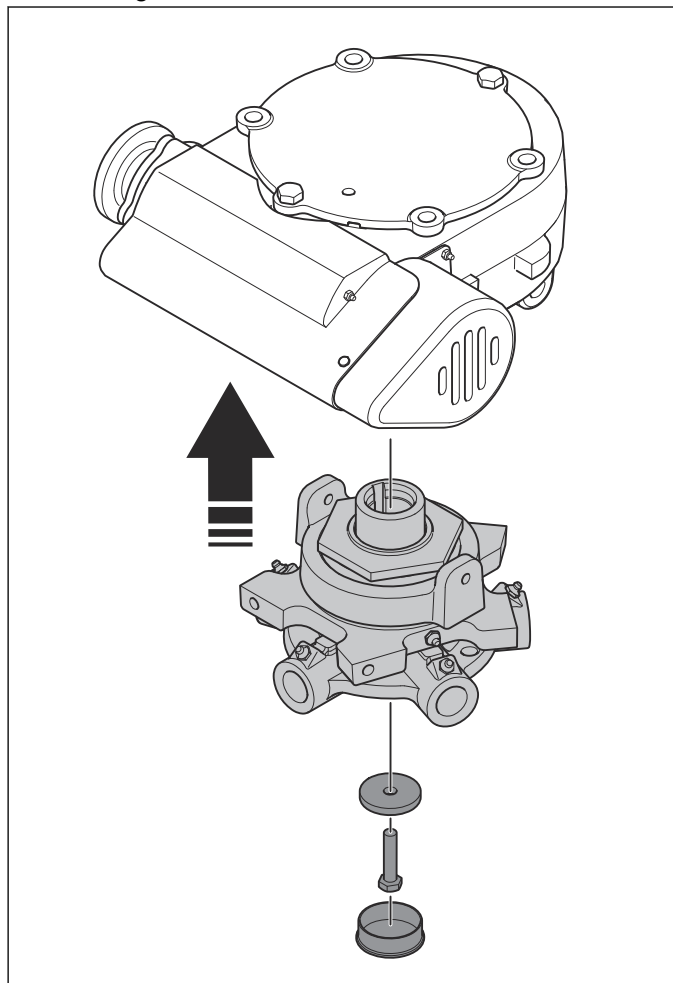
12. Do the procedure for the opposite gearbox.

6.7 To assemble the lower unit

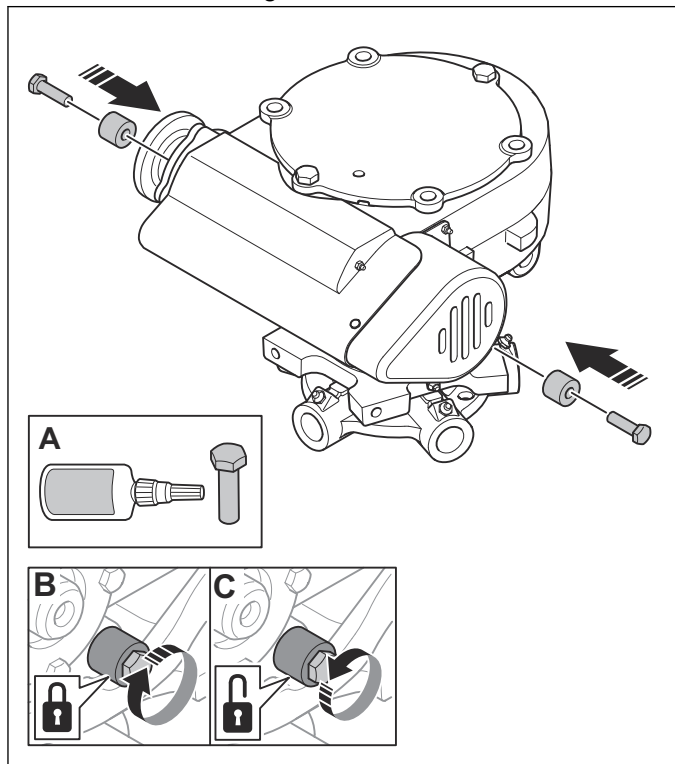
1. Install the ring assembly on the hub.



2. Install the hub, the washer, the screw and the plug on the gearbox.

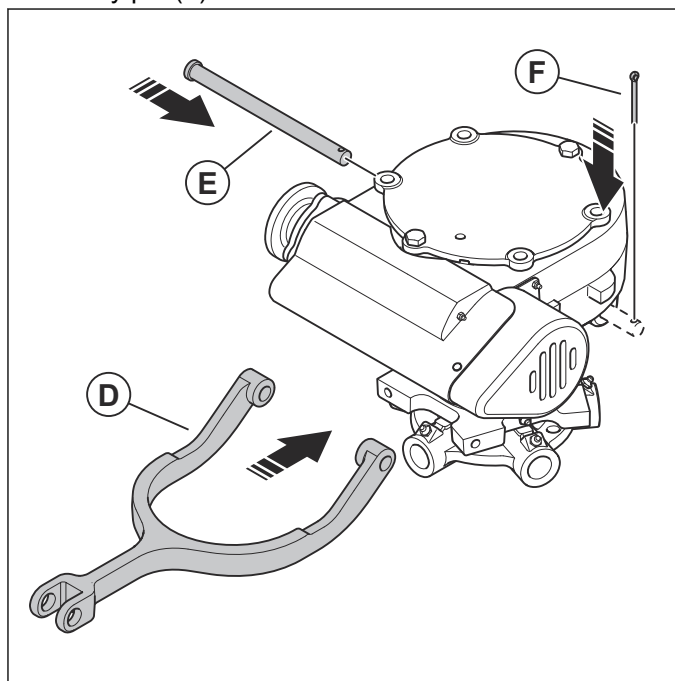


3. Install the 2 roller guides.

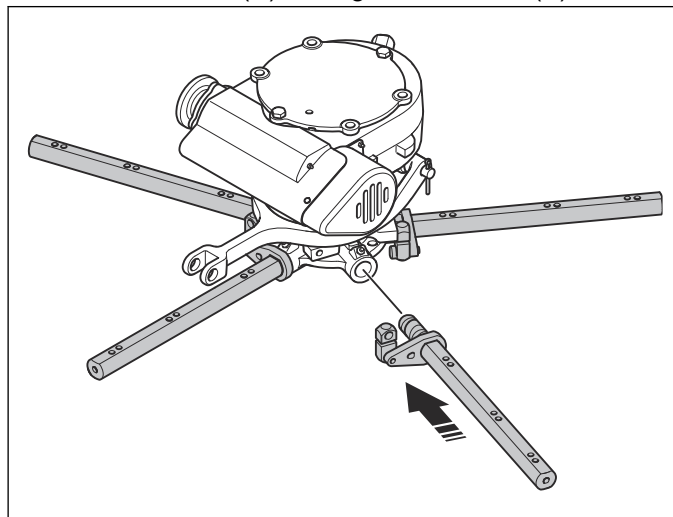


- Put LOCTITE® 271 or equivalent in the holes for the on the bolts (A).
- Install the roller guides and tighten the bolts until the roller guide cannot turn (B).
- Loosen the bolt until the roller guide can turn (C).

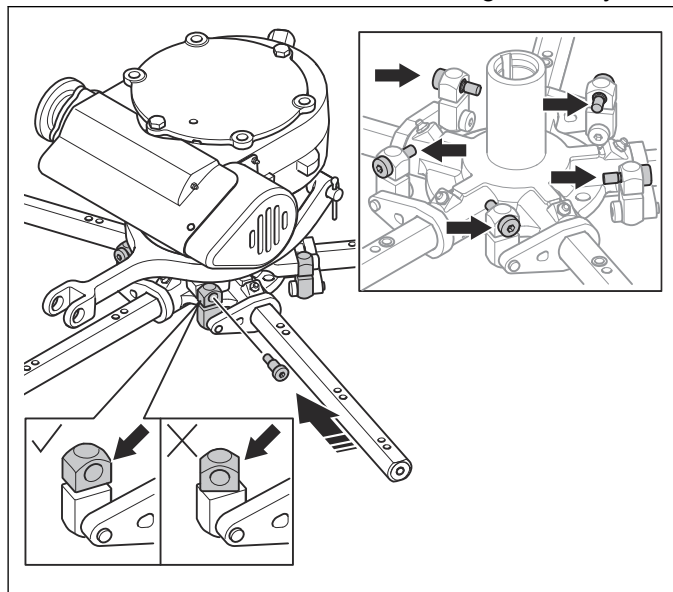
4. Install the blade yoke (D), the shaft (E), and the safety pin (F).



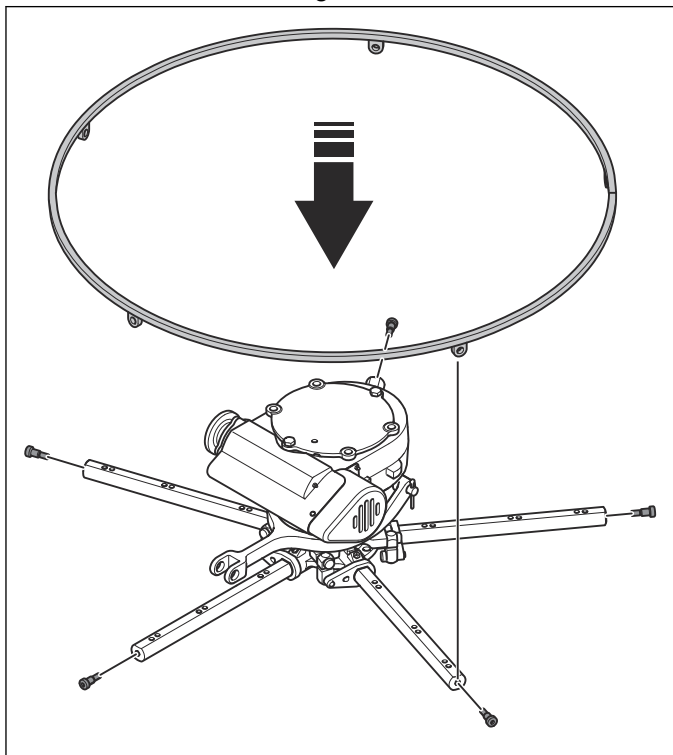
5. Install the arms (D) and tighten the bolts (E)



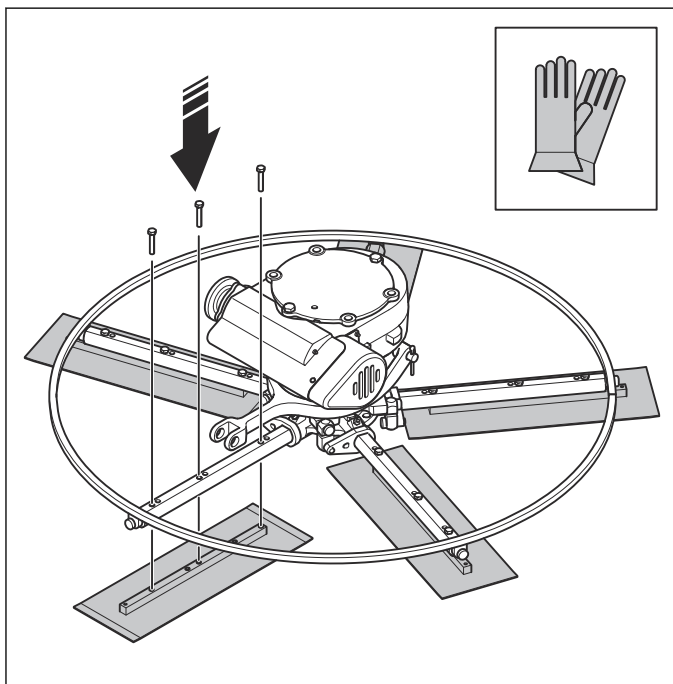
6. Install the 5 shoulder bolts on the ring assembly.



7. Install the stabilizer ring.

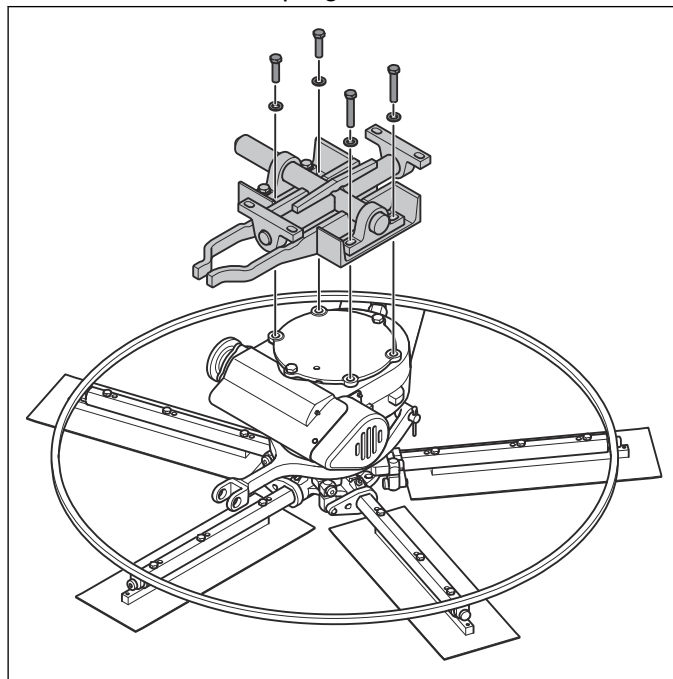


8. Install the blades.



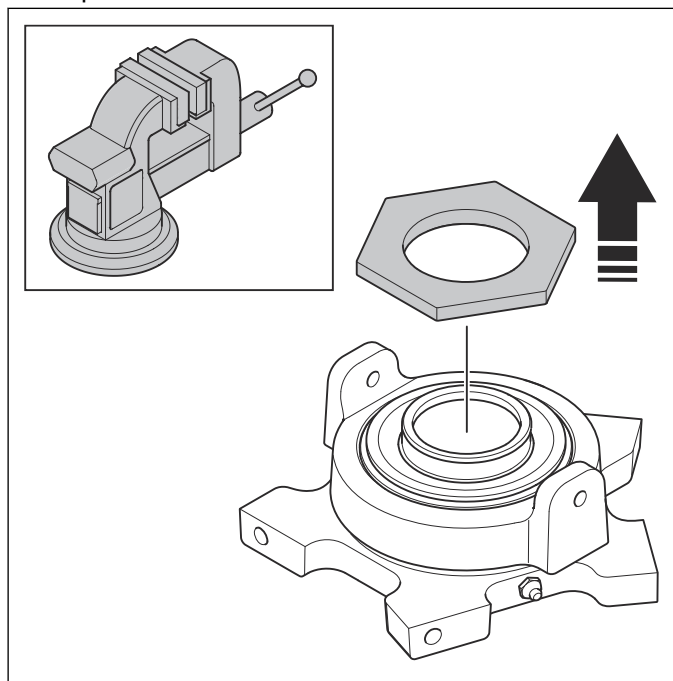
WARNING: Use protective gloves.

9. Install the lever couplings.

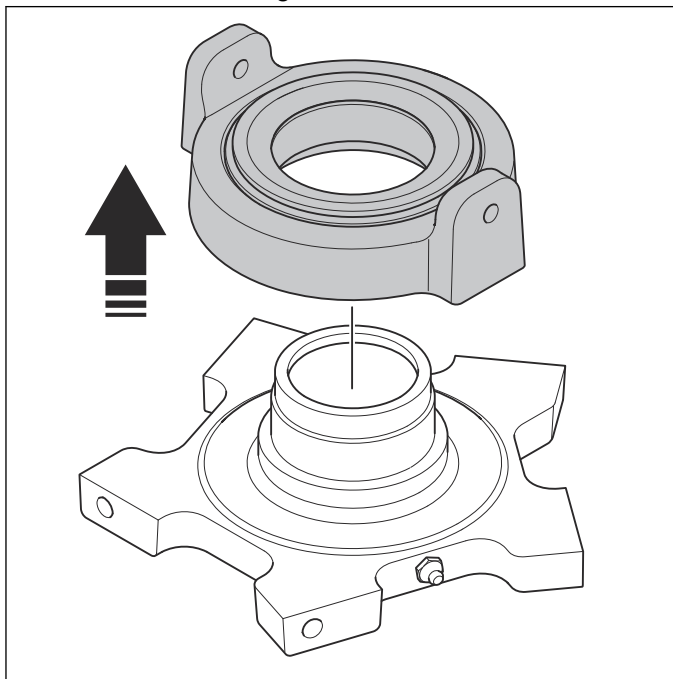


6.8 To disassemble the ring assembly

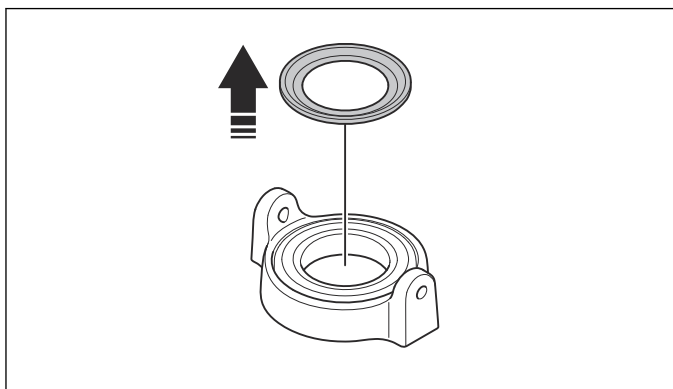
1. Remove the gearbox. Refer to *To remove the gearboxes on page 26*.
2. Remove the lower unit. Refer to *To disassemble the lower unit on page 39*.
3. Put the ring assembly in a vise and remove the ring cap.



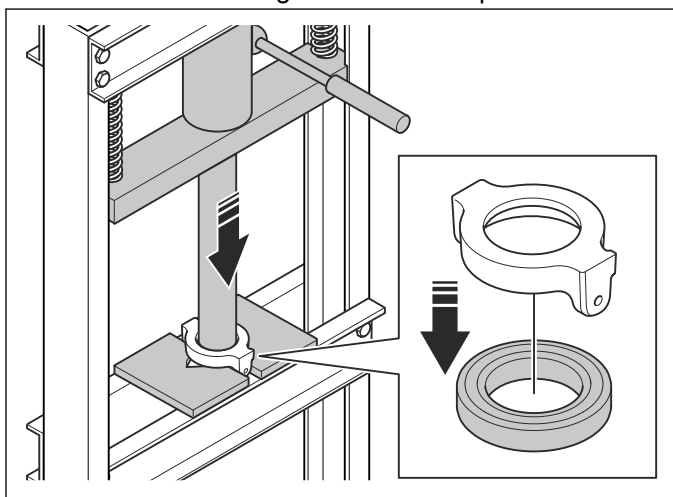
4. Remove the bearing holder.



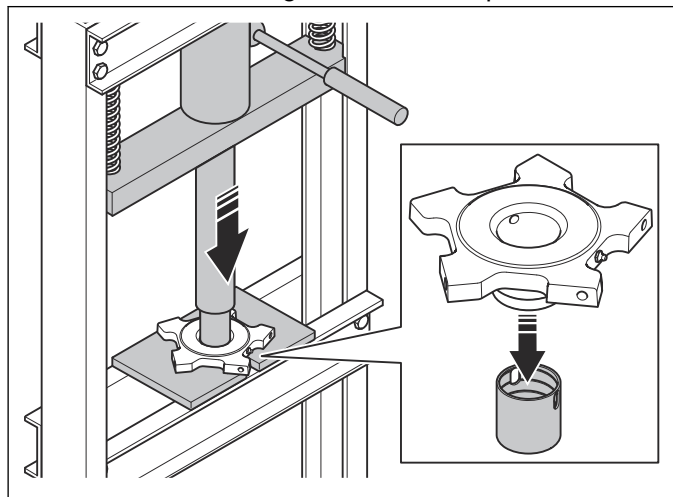
5. Remove the seal.



6. Remove the bearing with a mandrel press.

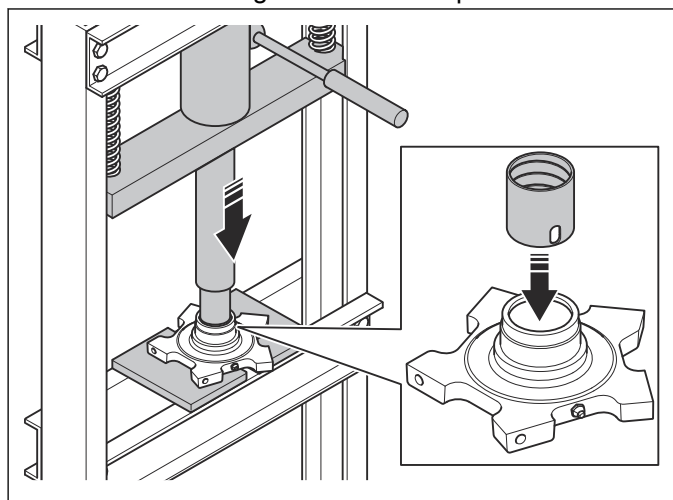


7. Remove the bushing with a mandrel press.

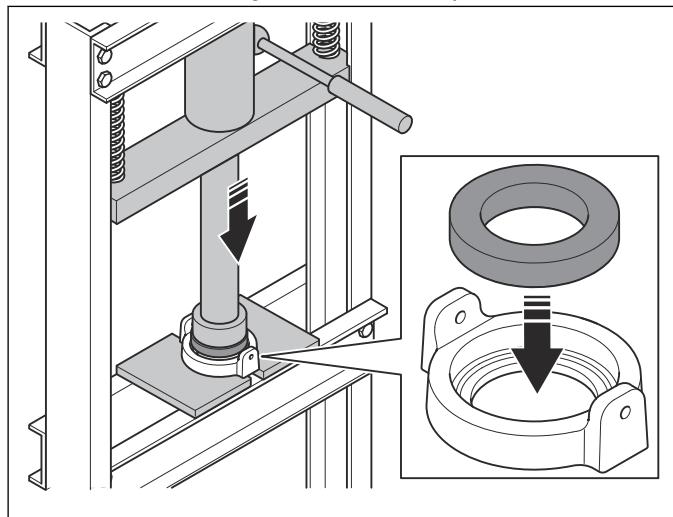


6.9 To assemble the ring assembly

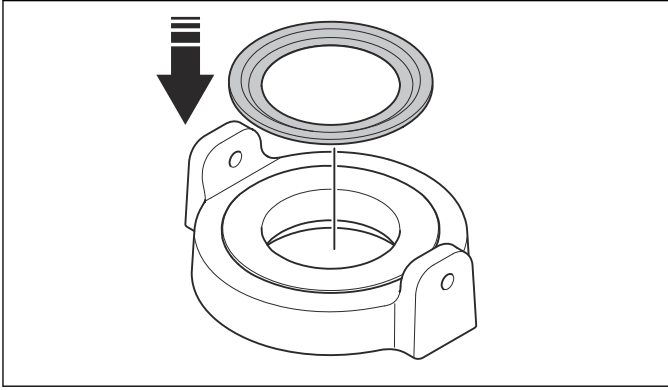
1. Install the bushing with a mandrel press.



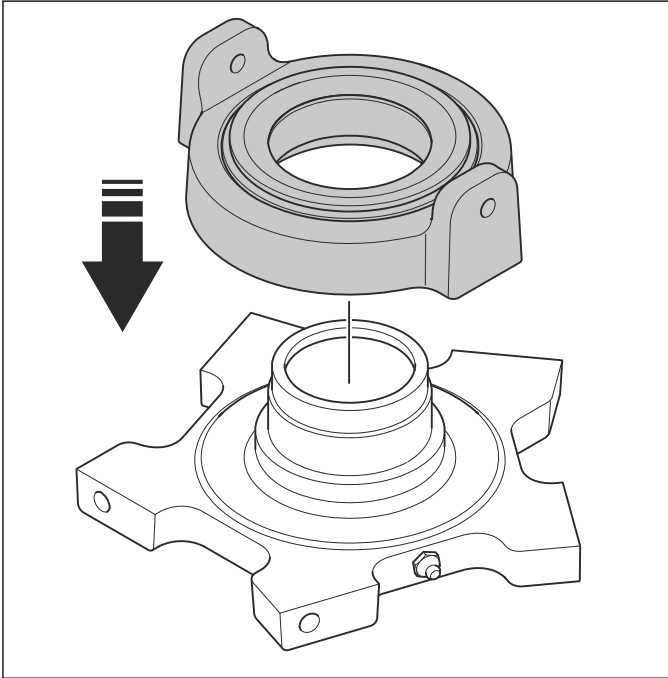
2. Install the bearing with a mandrel press.



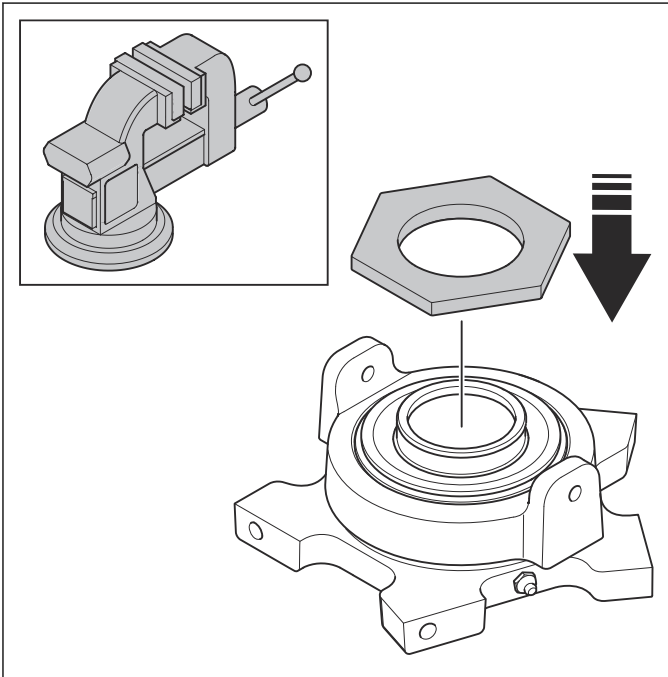
3. Install the seal.



4. Install the bearing.



5. Put the ring assembly in a vise and install the ring cap.

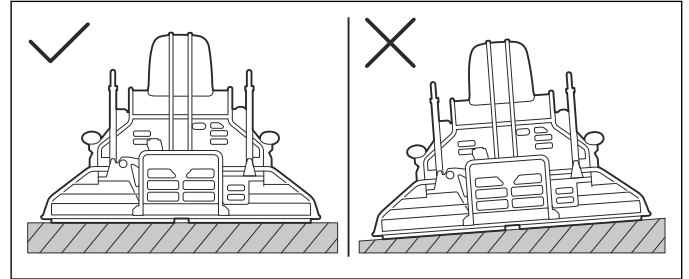


6. Install the lower unit. Refer to *To assemble the lower unit on page 41*.

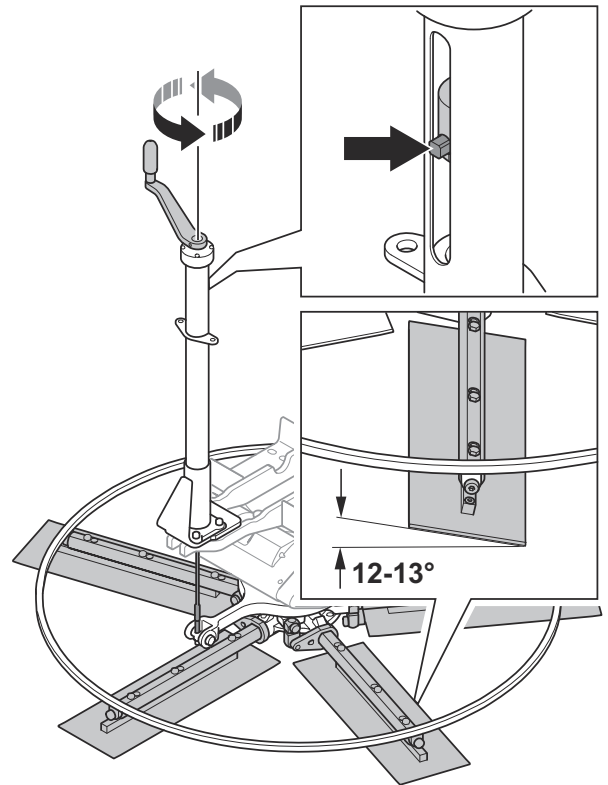
7. Install the gearbox. Refer to *To install the gearboxes on page 30*.

6.10 To adjust the blade pitch

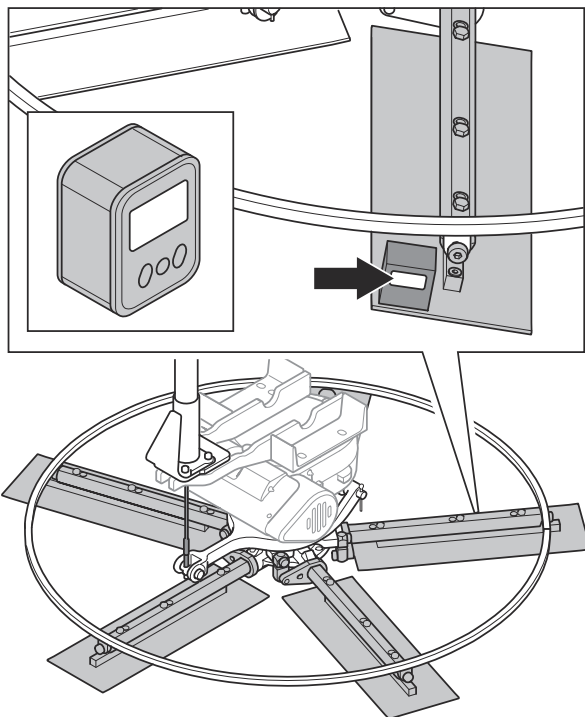
1. Put the product on a flat, level surface and install the new blades.



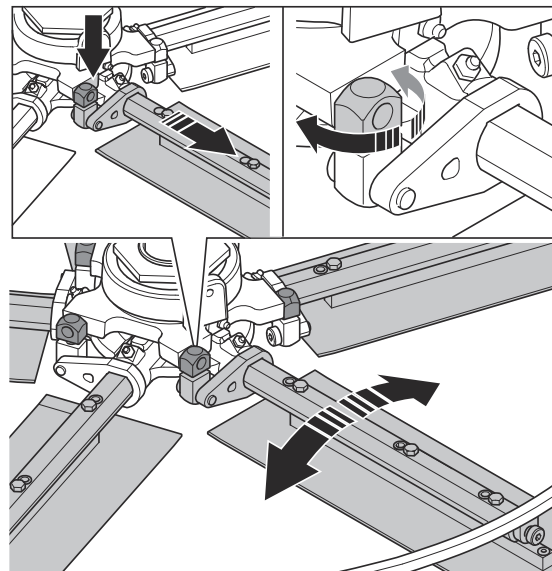
2. Turn the blade pitch controls so the blades are at half the maximum pitch.



3. Check the angle of each blade with an angle gauge.

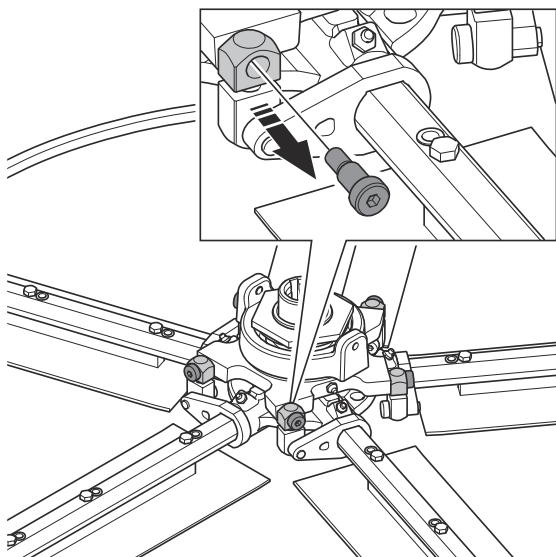


b) Turn the linkage.

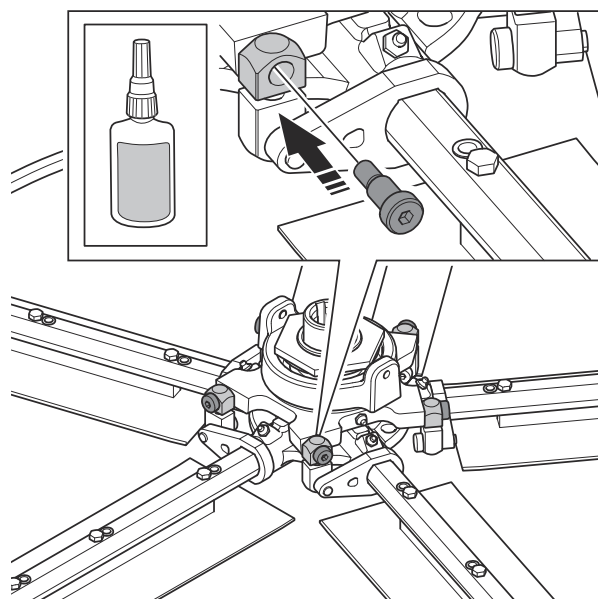


4. Adjust the arms so they have the same angle.

a) Remove the shoulder bolt.



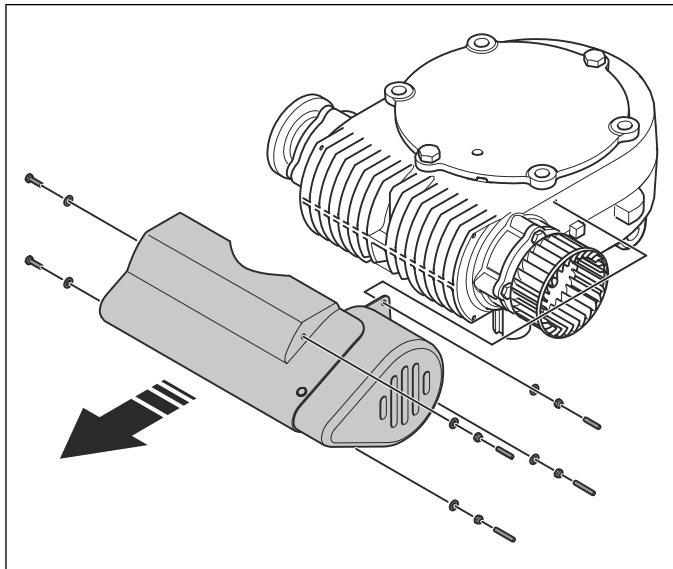
5. Put medium strength threadlocker on each shoulder bolt before you tighten them.



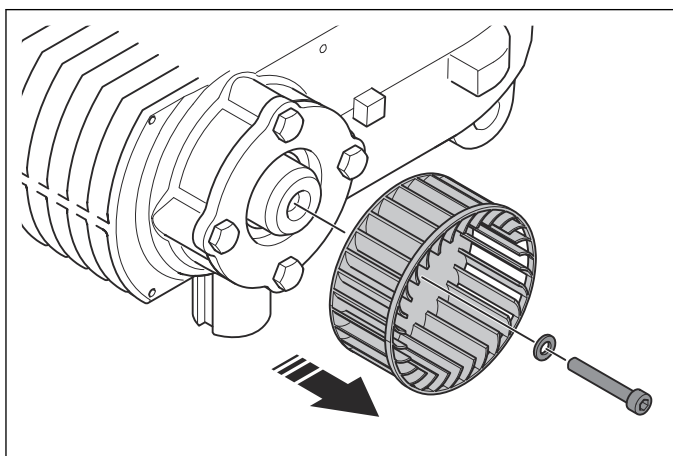
6.11 To disassemble the gearbox

1. Drain the oil in the gearbox. Refer to *To replace the oil in the gearbox on page 8*.
2. Remove the gearbox. Refer to *To remove the gearboxes on page 26*.
3. Remove the lower unit. Refer to *To disassemble the lower unit on page 39*.

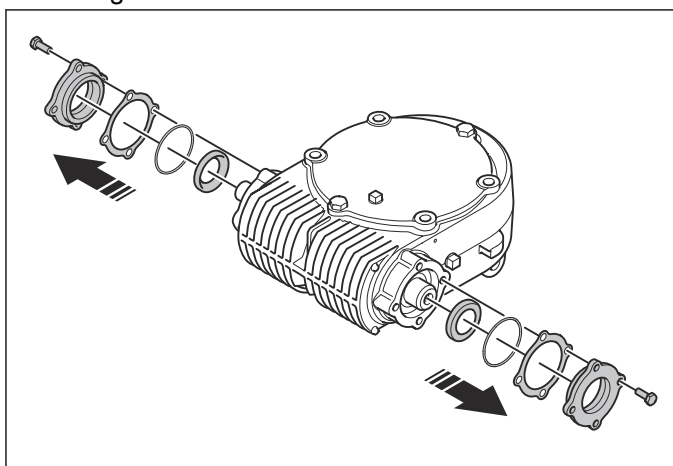
4. Remove the cover.



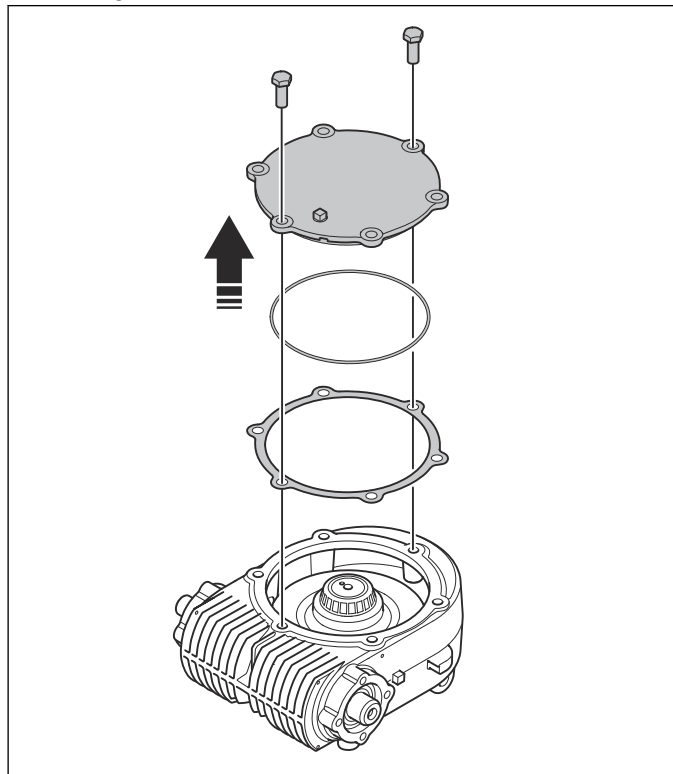
5. Remove the fan.



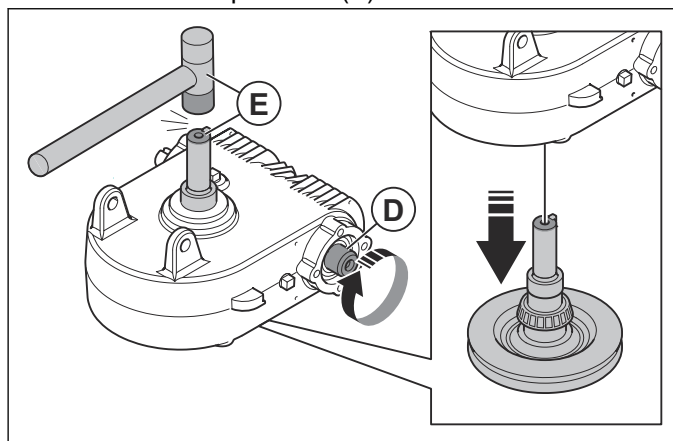
6. Remove the screws, the seal covers, the shims, the O-rings and the seals.



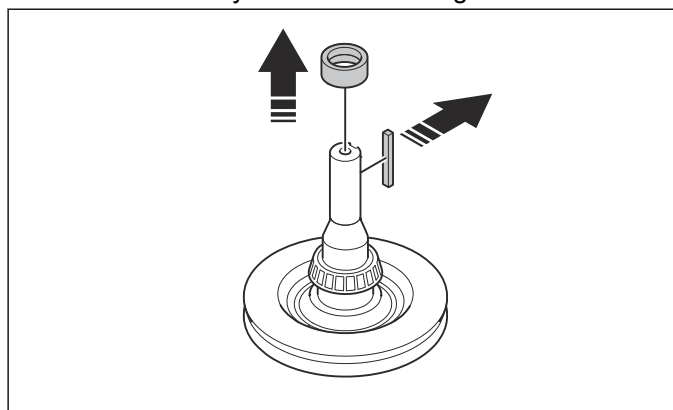
7. Remove the screws, the top cover, the shim and O-ring.



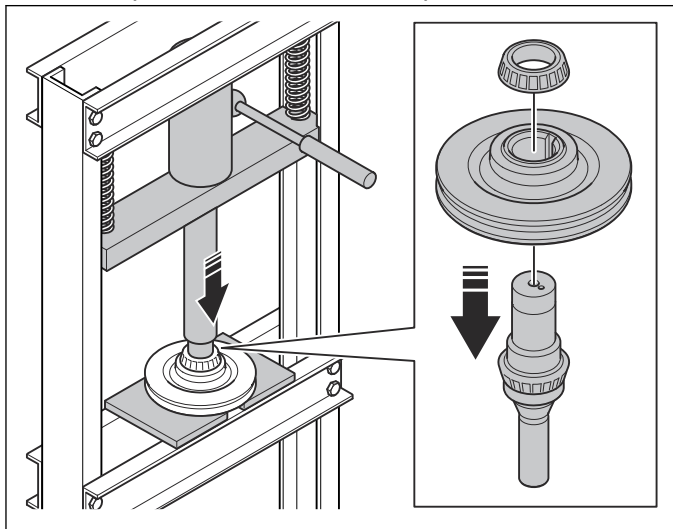
8. Turn the input shaft (D) and at the same time remove the output shaft (E) with a rubber hammer.



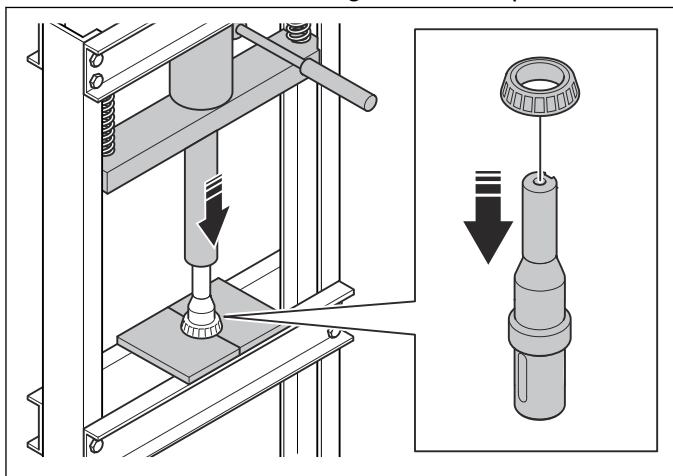
9. Remove the key and thrust bearing.



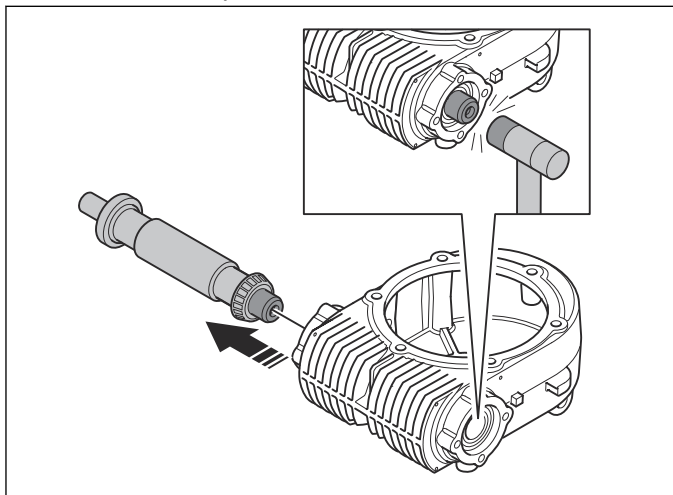
10. Remove the output gear and the top bearing from the output shaft with a mandrel press.



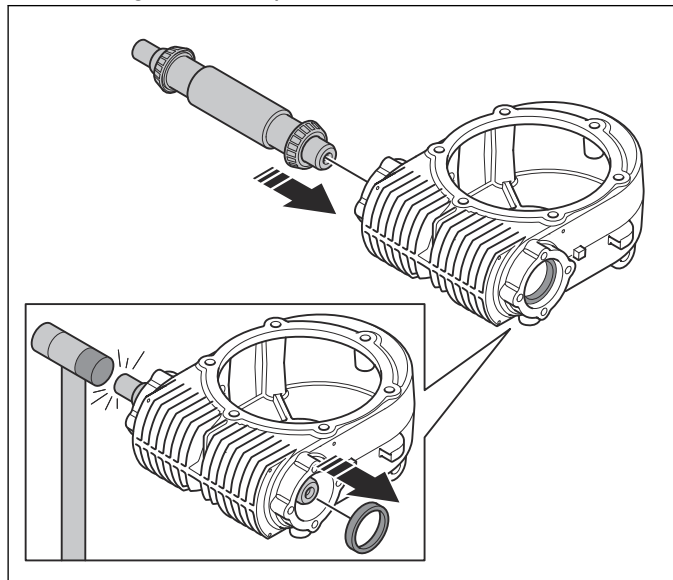
11. Remove the lower bearing from the output shaft.



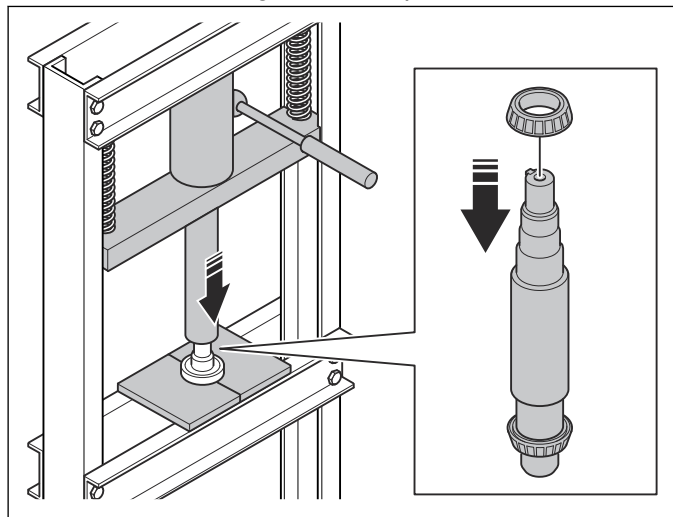
12. Remove the input shaft with a rubber hammer.



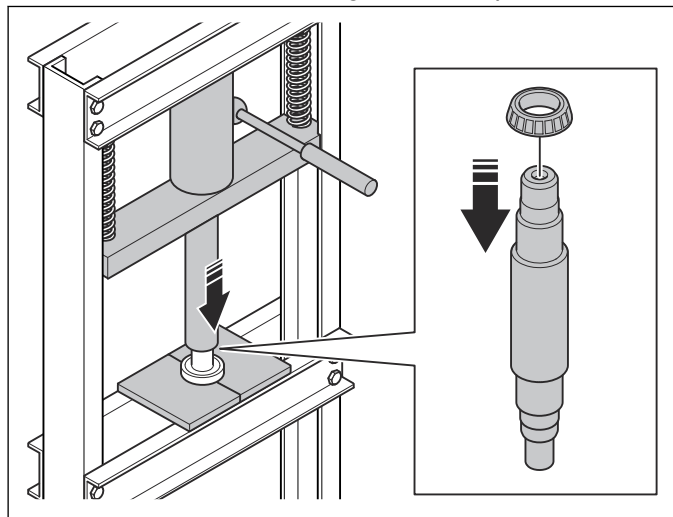
13. Remove the outer bearing race from the gearbox housing with the input shaft and a rubber hammer.



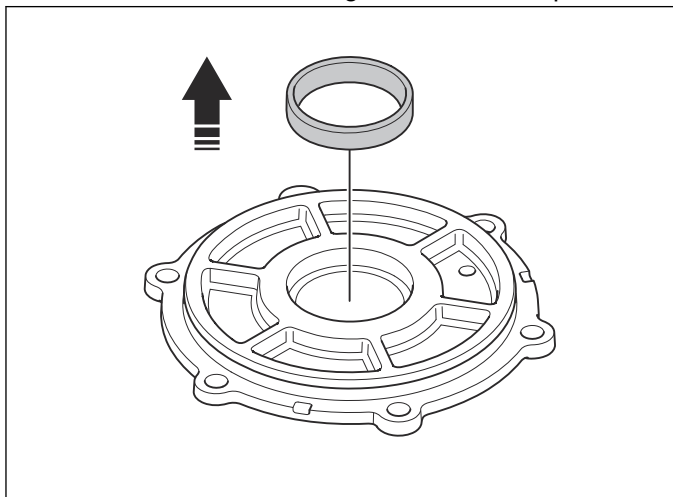
14. Remove a bearing from the input shaft.



15. Remove the other bearing from the input shaft.

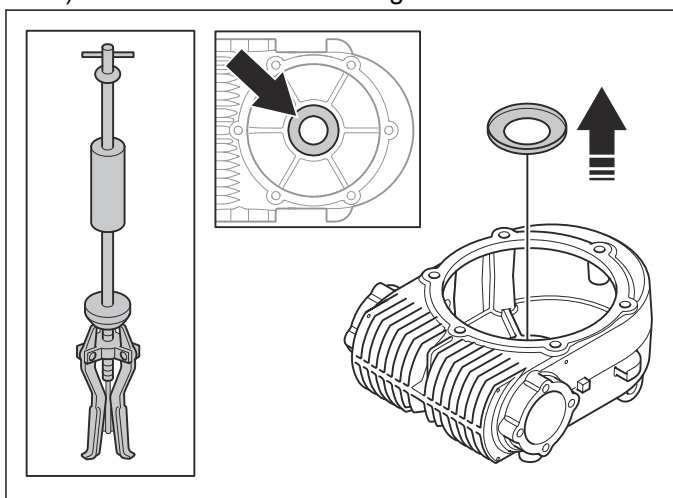


16. Remove the outer bearing race from the top cover.

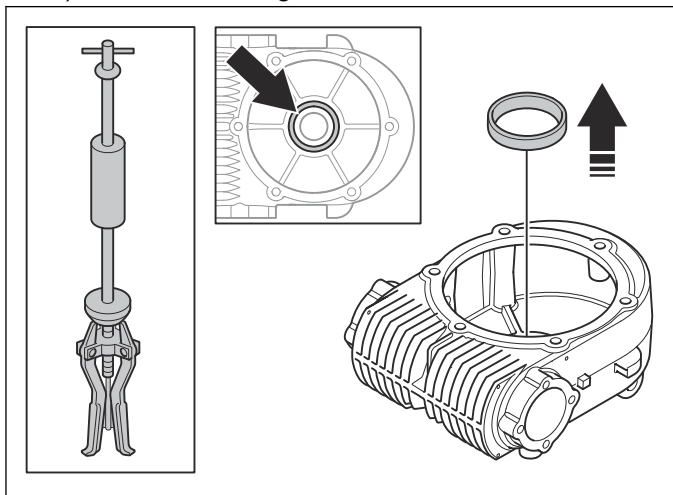


17. Remove the outer bearing race from the gearbox housing with an inner puller.

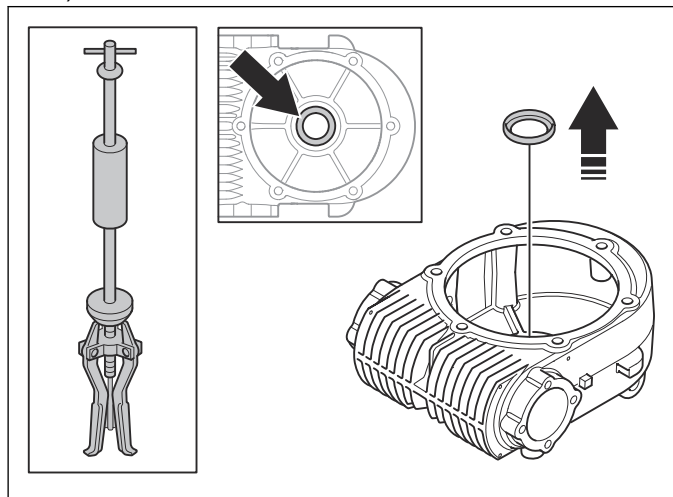
a) Remove the outer bearing race.



b) Remove the large seal.

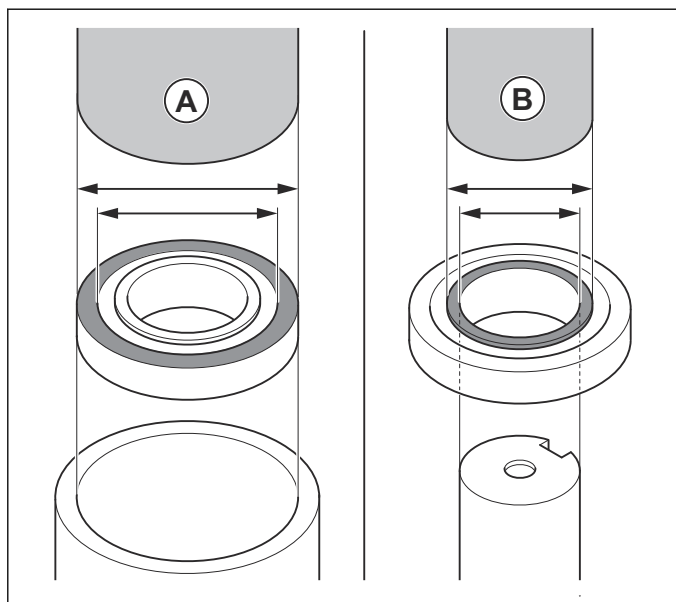


c) Remove the small seal.



6.12 To select correct mandrel dimension

When you install the bearings with a press, use mandrels of the correct dimension.

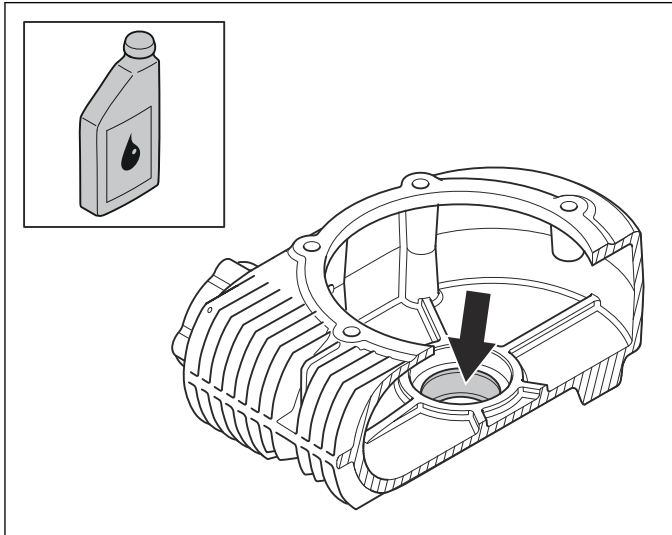


1. Put pressure with the mandrel on the outer bearing ring (A) when you do cylinder press.
2. Put pressure with the mandrel on the inner bearing ring (A) when you do shaft press.

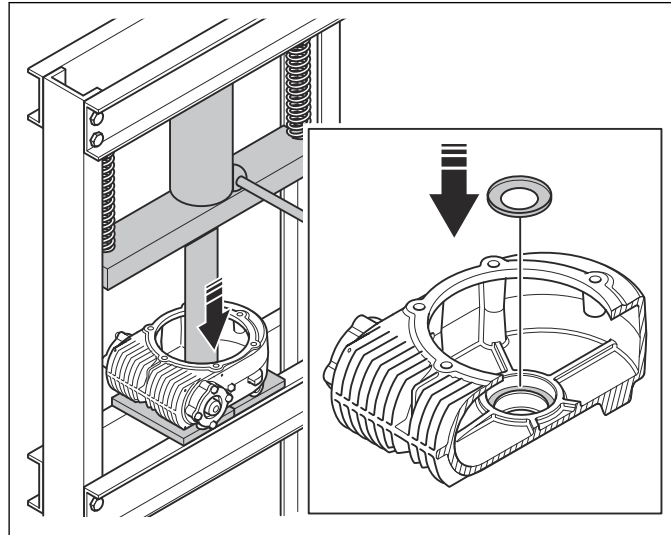
6.13 To assemble the gearbox

1. Assemble the top cover, refer to *To assemble the top cover of the gearbox on page 54*.
2. Assemble the seal covers, refer to *To assemble the seal covers of the gearbox on page 55*.
3. Assemble the input shaft, refer to *To assemble the input shaft of the gearbox on page 55*.
4. Assemble the output shaft, refer to *To assemble the output shaft of the gearbox on page 56*.

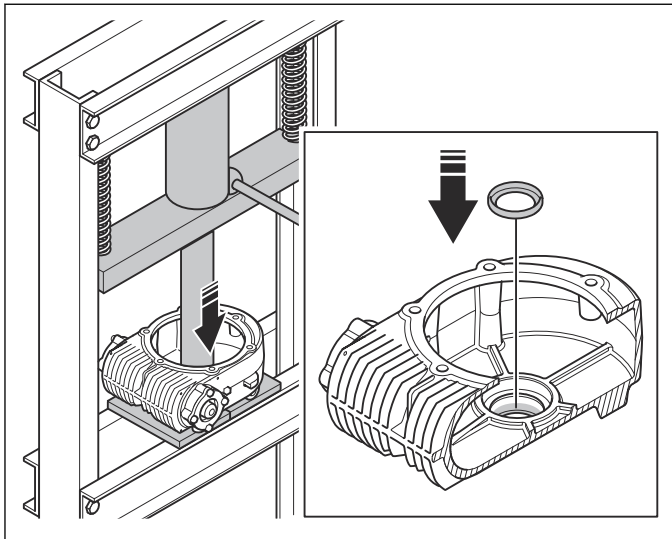
5. Apply ISO 460 gear oil in the bottom of the gearbox.



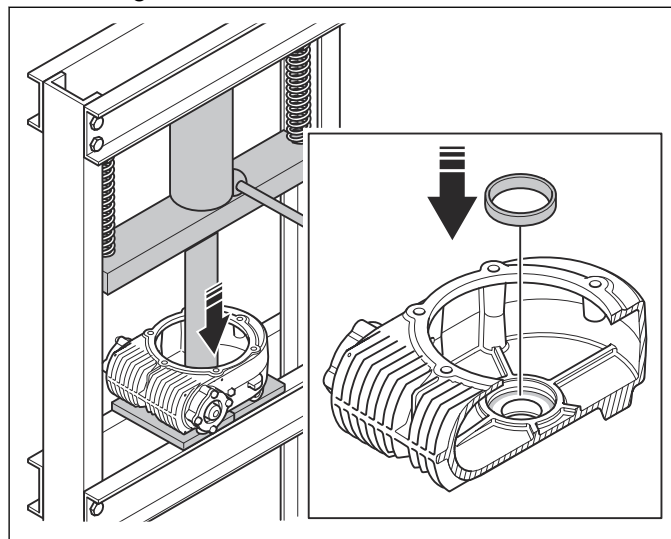
8. Install the large seal into the gearbox housing.



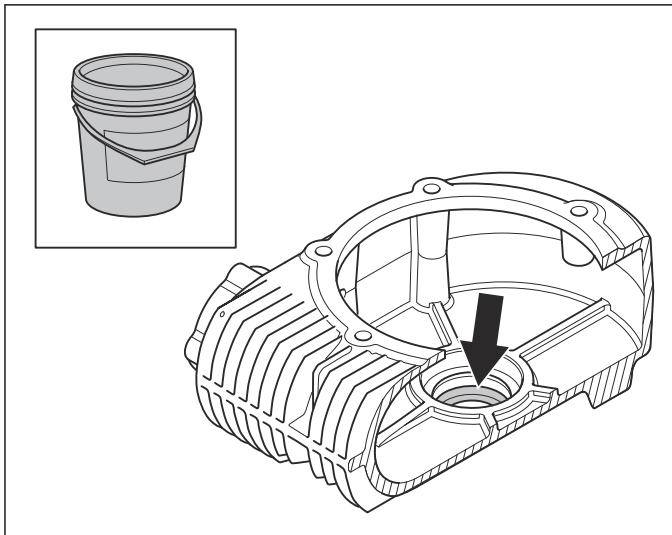
6. Install the small seal into the gearbox housing.



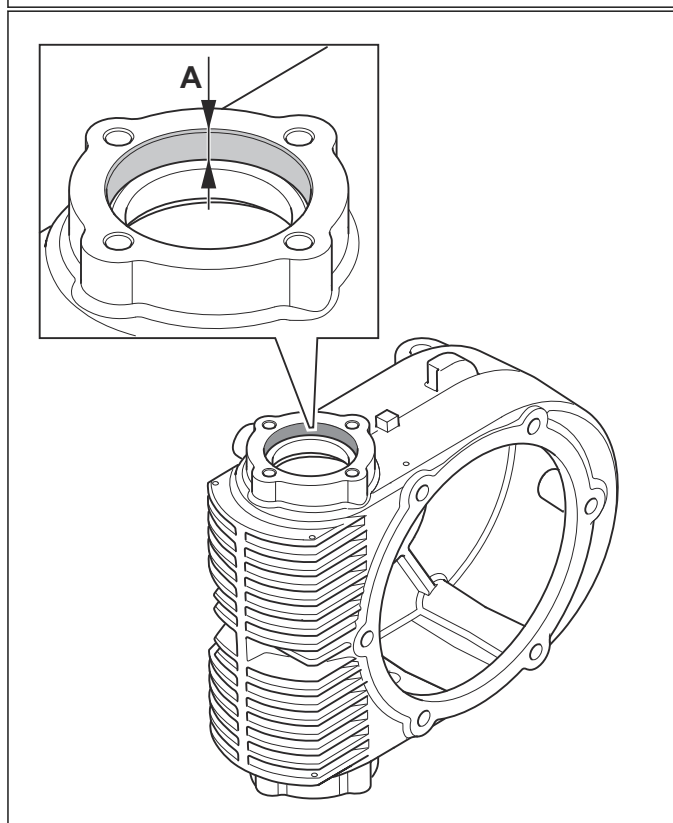
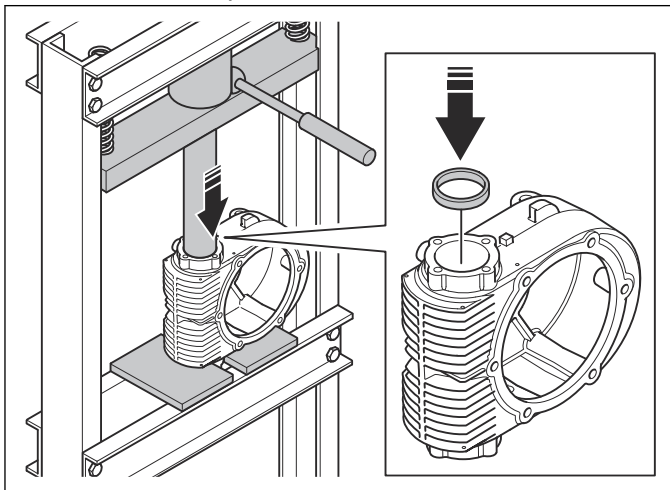
9. Install the outer bearing race into the gearbox housing.



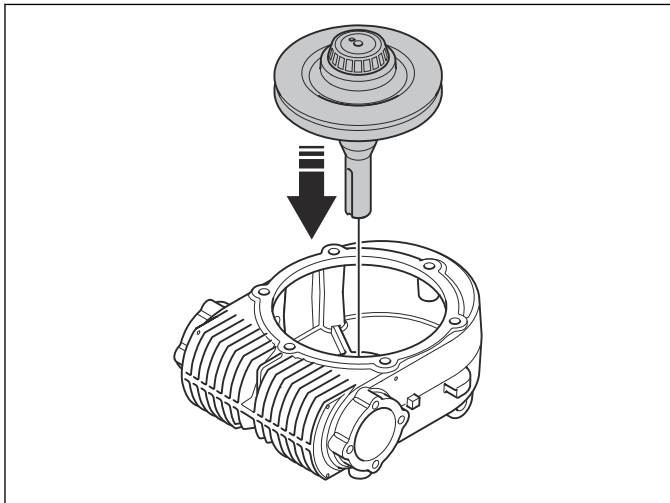
7. Apply Gadus grease on top of the small seal.



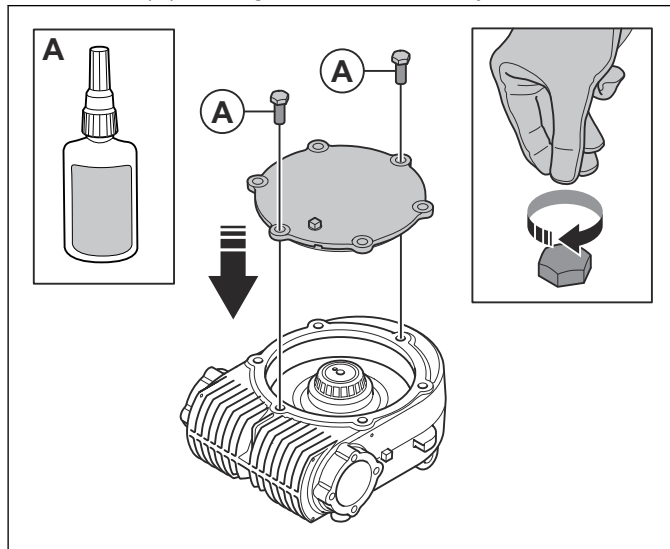
10. Install 1 of the outer bearing races on the input shaft. Press it to a depth of 10mm.



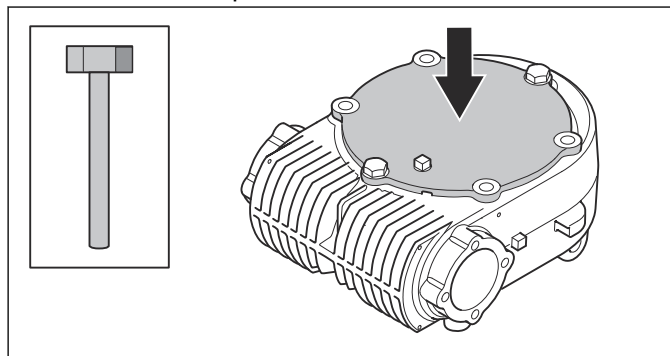
11. Install the output shaft into the gearbox housing.



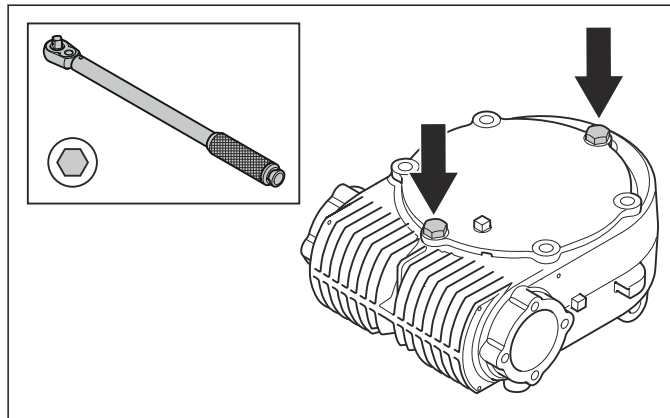
12. Install the top cover. Apply LOCTITE® 243 on the 2 screws (A) and tighten the screws by hand.



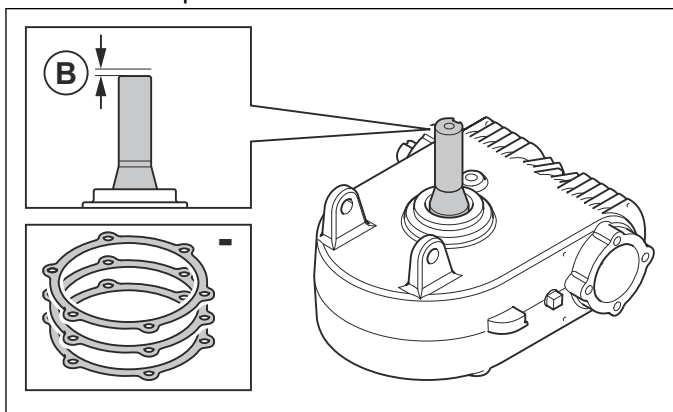
13. Hit the cover top with a rubber hammer.



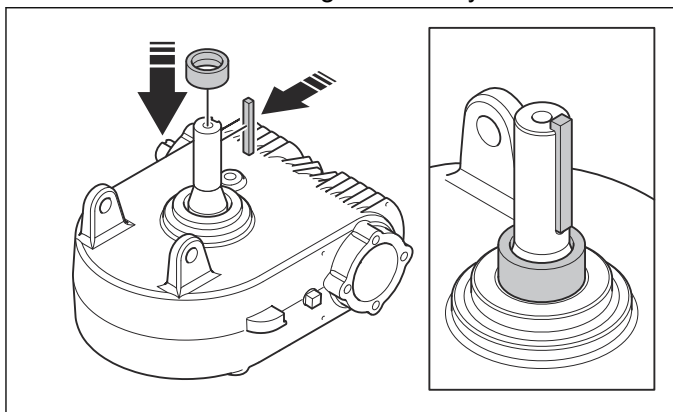
14. Tighten the 2 screws with a torque wrench. Refer to *Tightening torques drive and gearbox on page 14.*



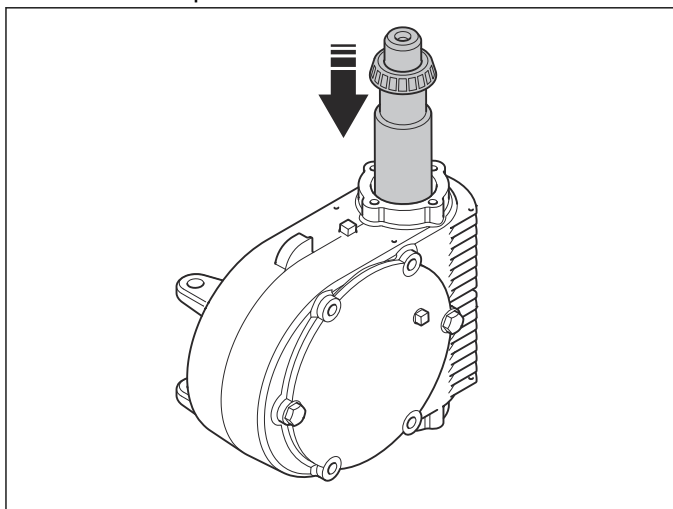
15. Make sure that the axial play (B) on the output shaft is less than 0.55 mm. If it is necessary, remove the shims or replace them with thinner shims.



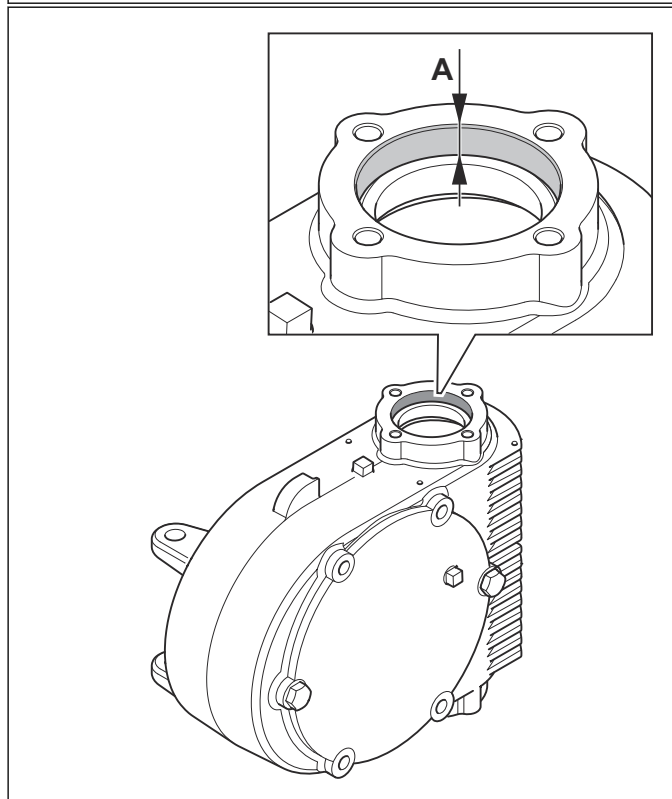
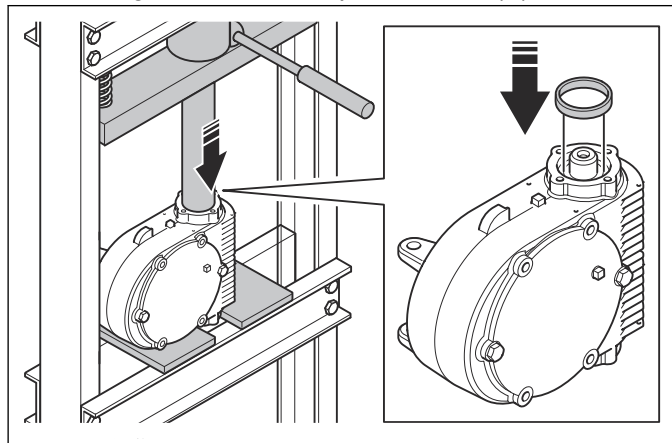
16. Install the thrust bearing and the key.



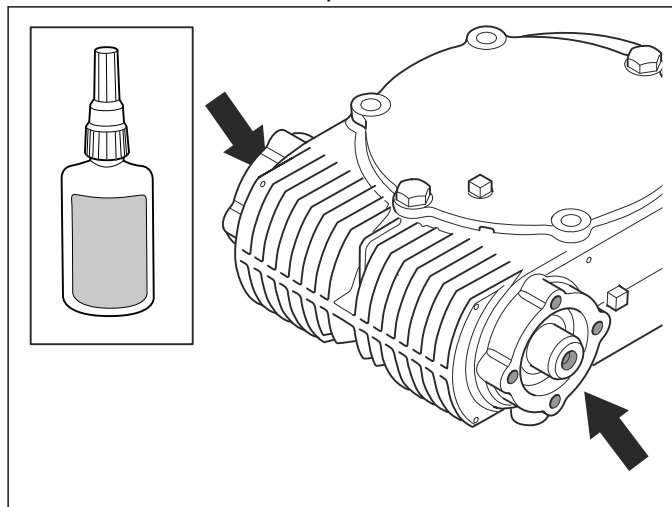
17. Install the input shaft.



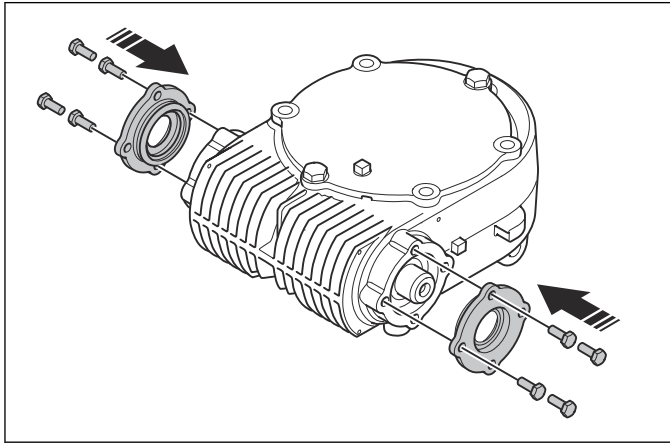
18. Install the outer bearing race on the gearbox housing. Press it to a depth of 10mm (A).



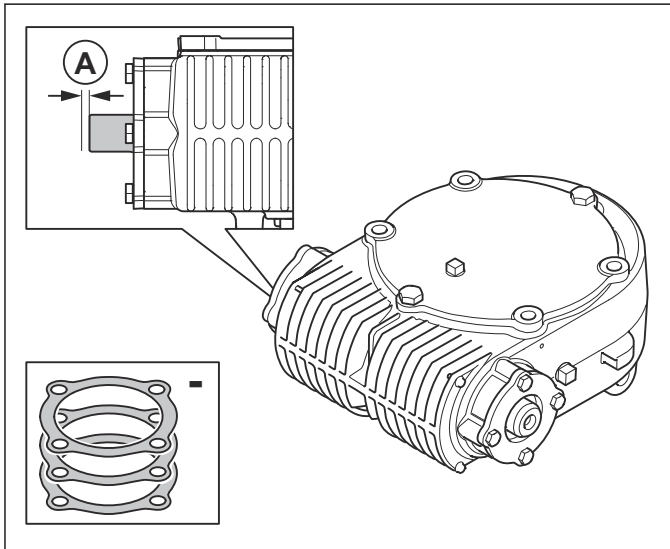
19. Apply LOCTITE® 243 in the 4 holes for the screws and at the end of the input shaft on each side.



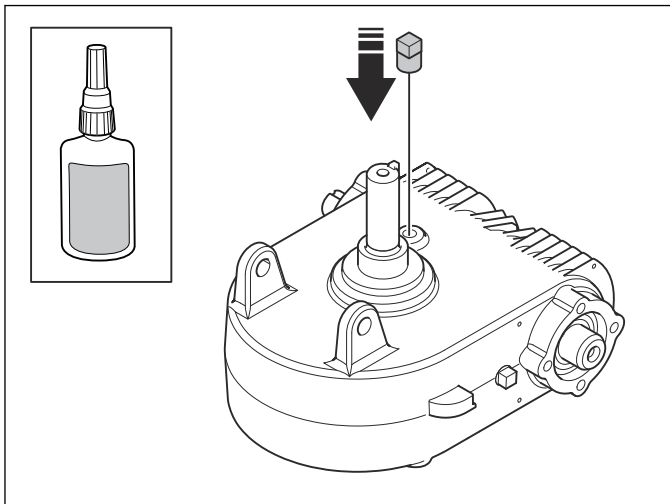
20. Install the seal covers and tighten the screws.



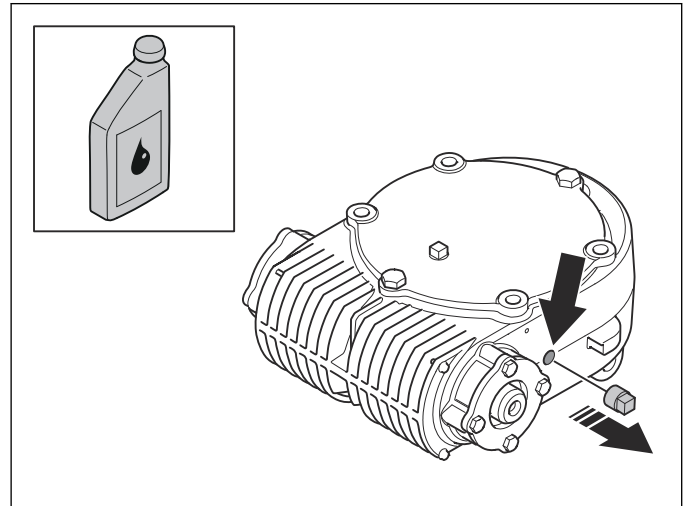
21. Make sure that the axial play (C) on the input shaft is less than 0.55 mm. If it is necessary, remove the shims or replace them with thinner shims.



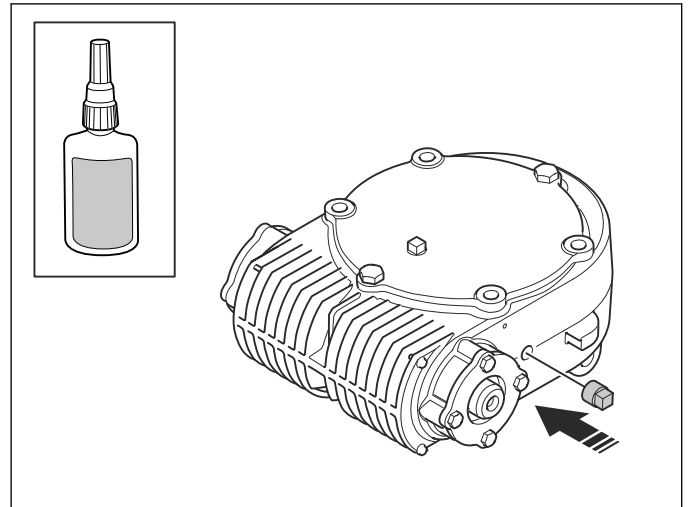
22. Apply LOCTITE® 545™ to the threads of the oil drain plug and install the oil drain plug.



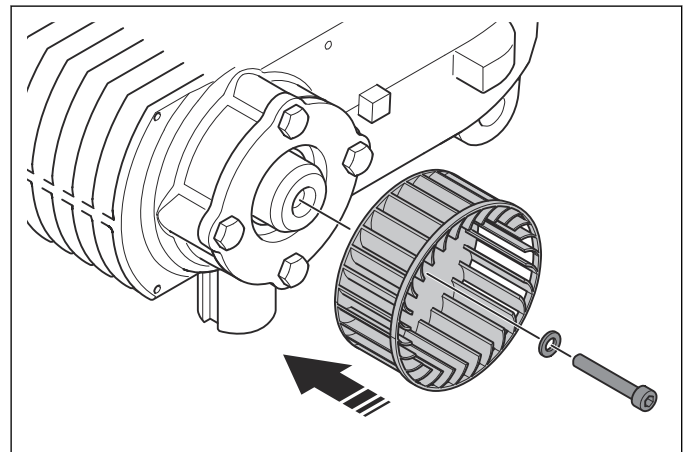
23. Fill with 1.5 liters of Glycoyle synthetic gear oil oil through the hole for the oil fill plug.



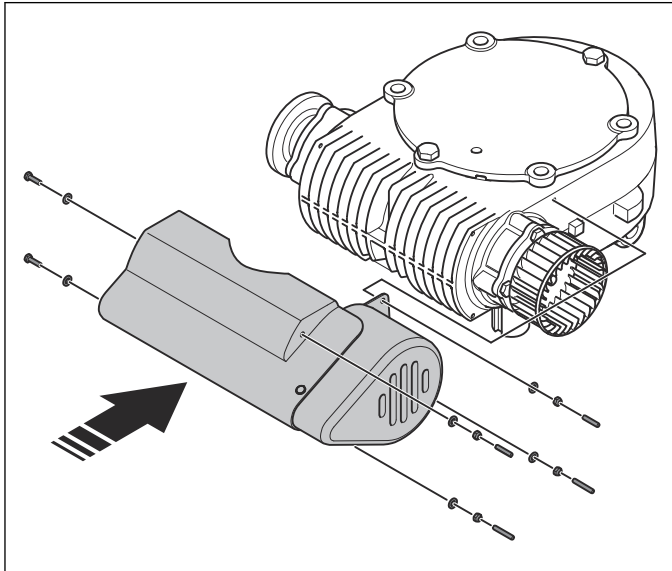
24. Apply LOCTITE® 545™ on the threads of the oil fill plug and install the oil fill plug.



25. Install the fan.



26. Install the cover.

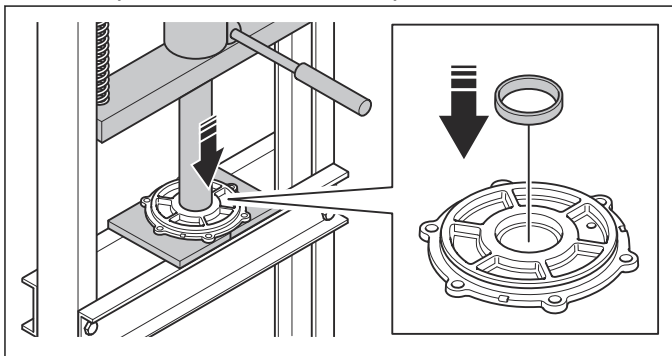


27. Install the lower unit. Refer to *To assemble the lower unit on page 41*.

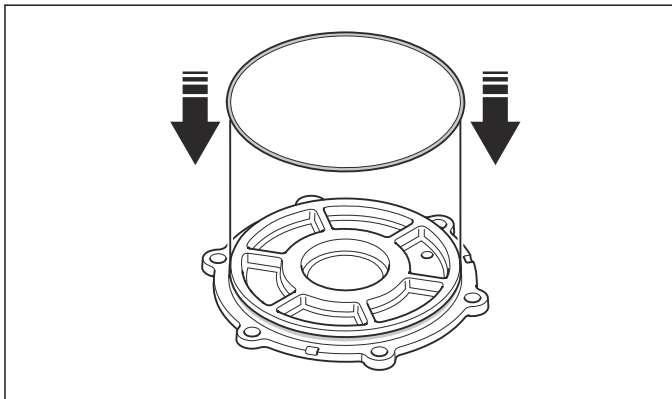
28. Install the gearbox. Refer to *To install the gearboxes on page 30*.

6.13.1 To assemble the top cover of the gearbox

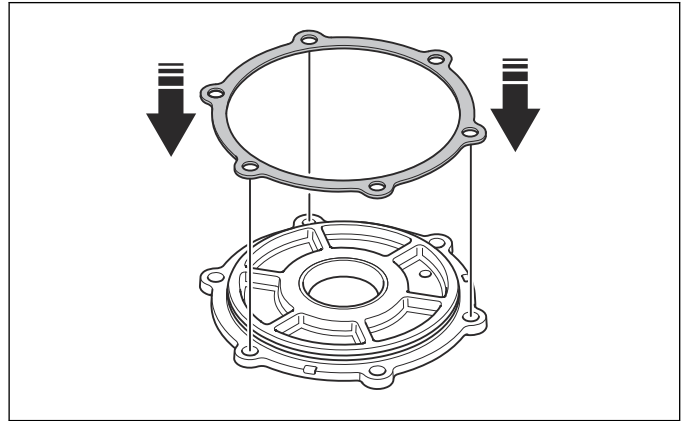
1. Install the outer bearing race for the output shaft into the top cover with a mandrel press.



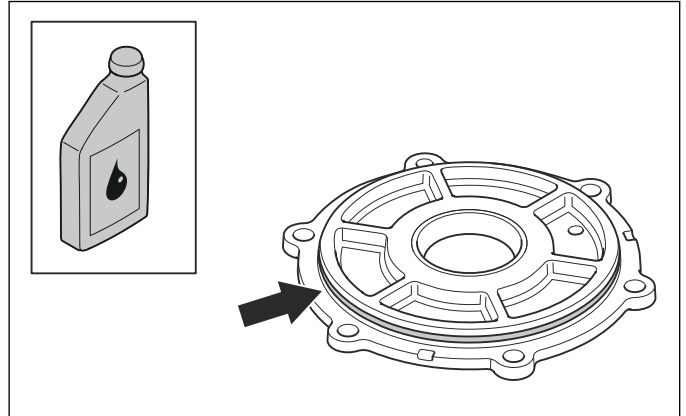
2. Apply oil on the O-ring and install it on the top cover.



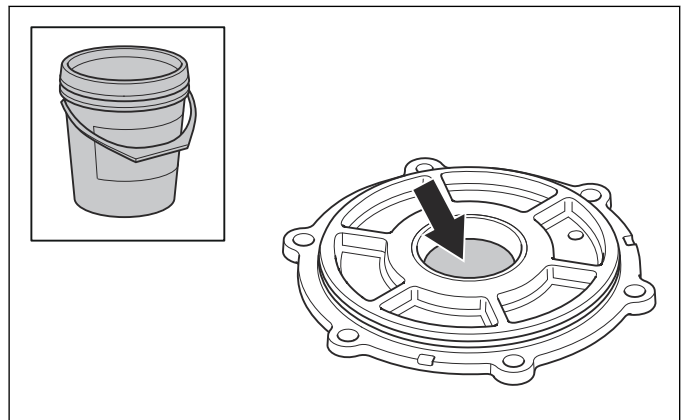
3. Install the shim on the top cover.



4. Apply ISO 460 oil around the O-ring.

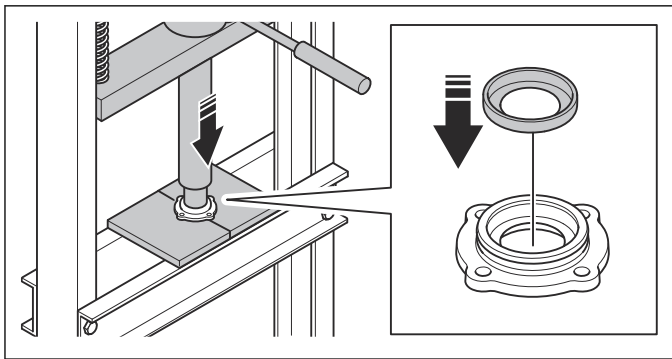


5. Apply Gadus grease in the middle of the top cover.

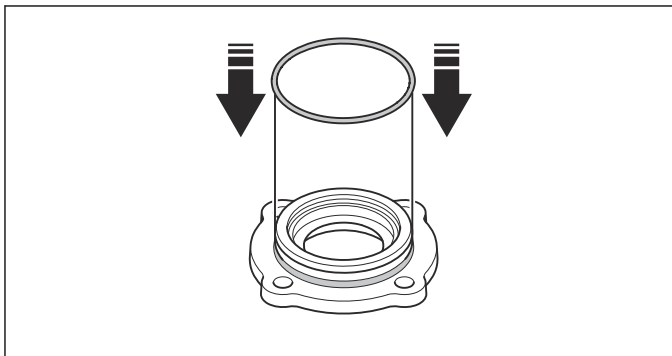


6.13.2 To assemble the seal covers of the gearbox

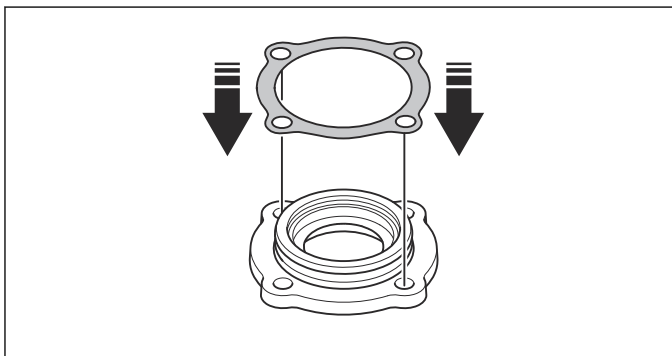
1. Install the seals on the seal covers.



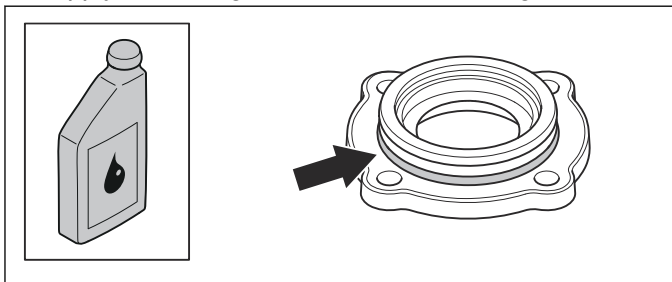
2. Apply oil on the O-rings and install them on the seal cover.



3. Install the shims on the seal cover.

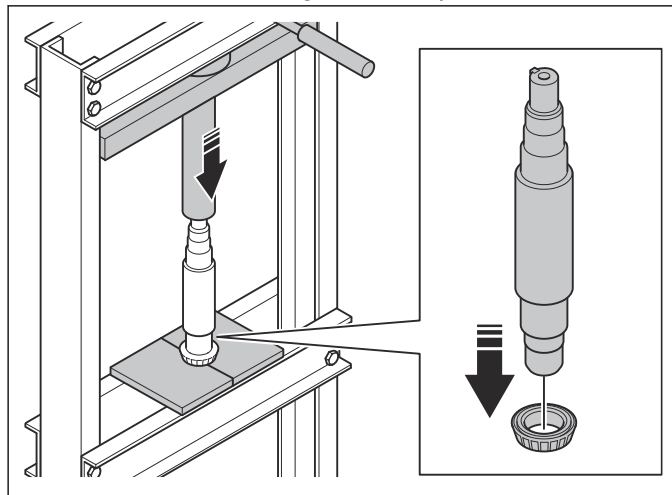


4. Apply ISO 460 gear oil around the O-rings.

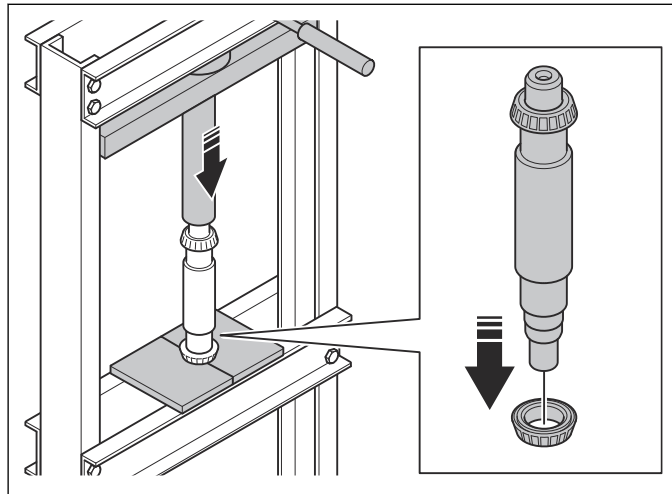


6.13.3 To assemble the input shaft of the gearbox

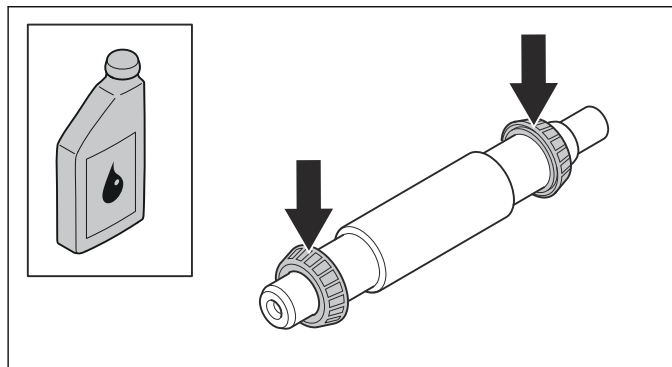
1. Install 1 of the bearings on the input shaft.



2. Install the other bearing on the input shaft.

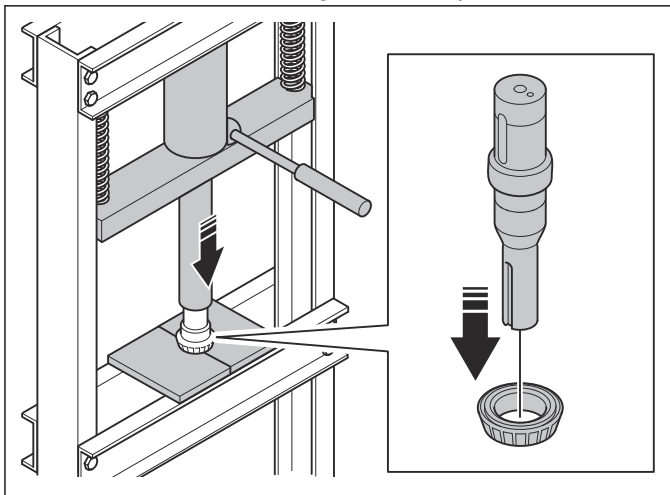


3. Apply ISO 460 gear oil on the bearings on the input shaft.

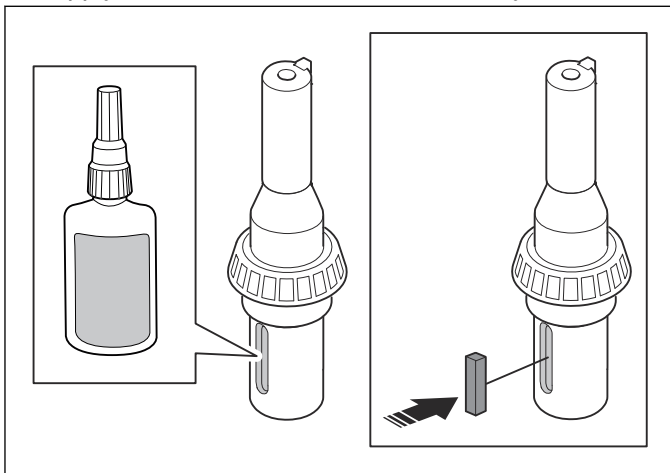


6.13.4 To assemble the output shaft of the gearbox

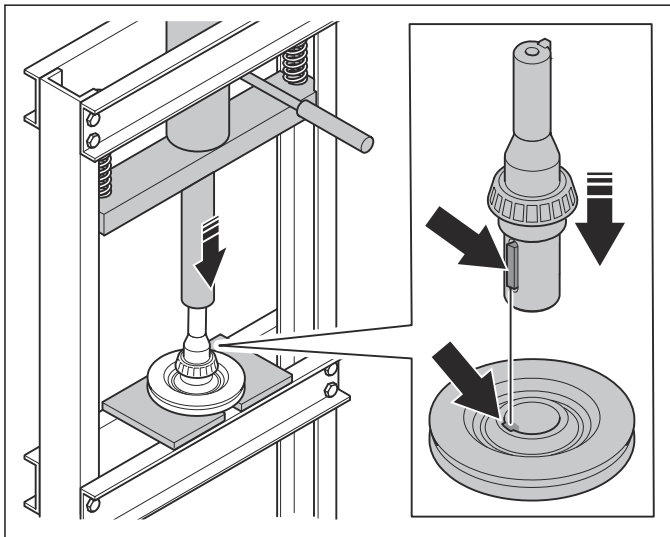
1. Install the lower bearing on the output shaft.



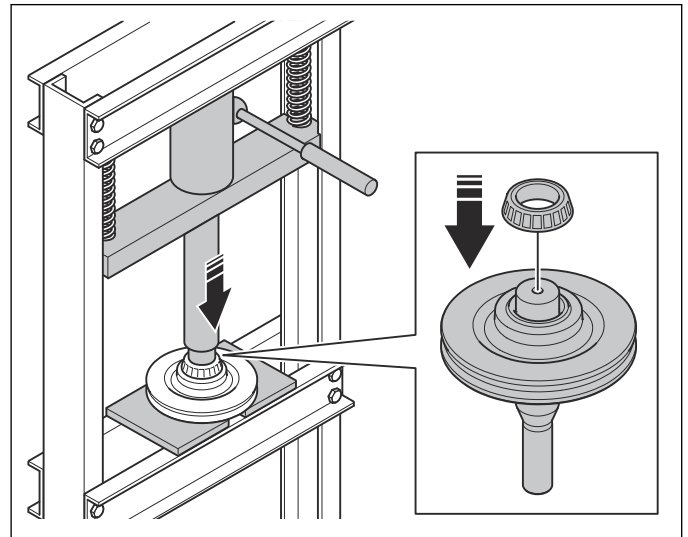
2. Apply LOCTITE® 243 and install the key.



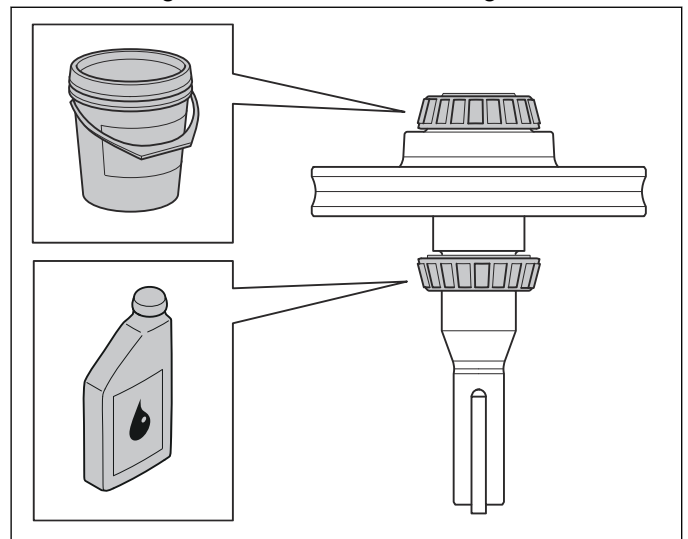
3. Align the hole for the key with the notch in the output gear. Install the output gear on the output shaft.



4. Install the top bearing on the output shaft.

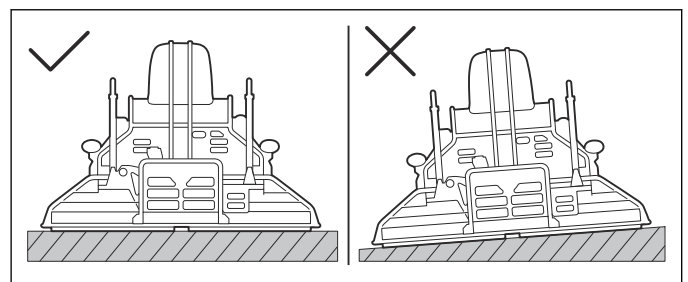


5. Apply Gadus grease grease on the top bearing and ISO 460 gear oil on the lower bearing.



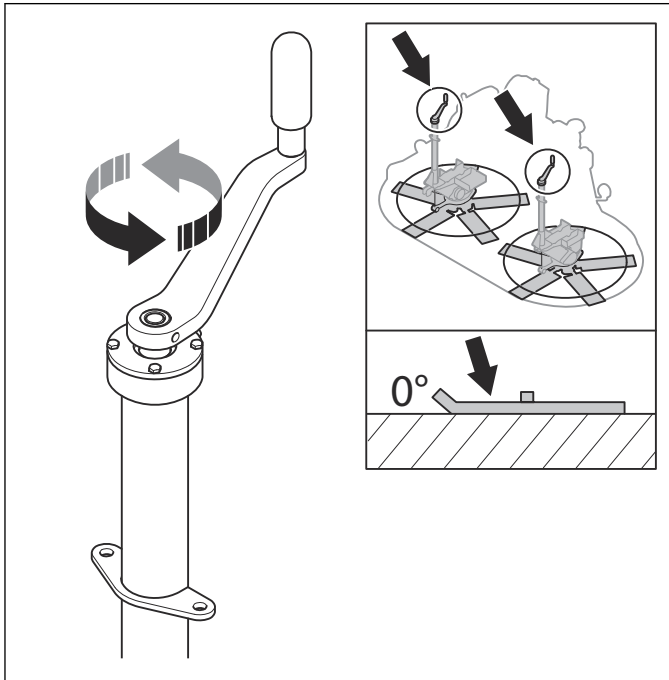
6.14 To disassemble the blade pitch control

1. Put the product on a flat, level surface with the blades flat.



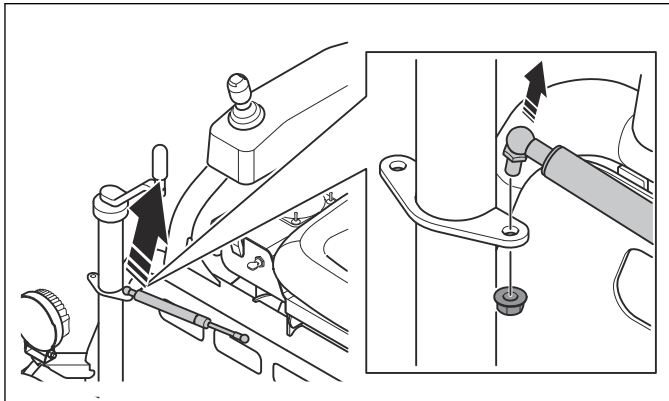
2. Stop the engine and disconnect the battery.

3. Adjust the blade pitch controls until the blades are flat.

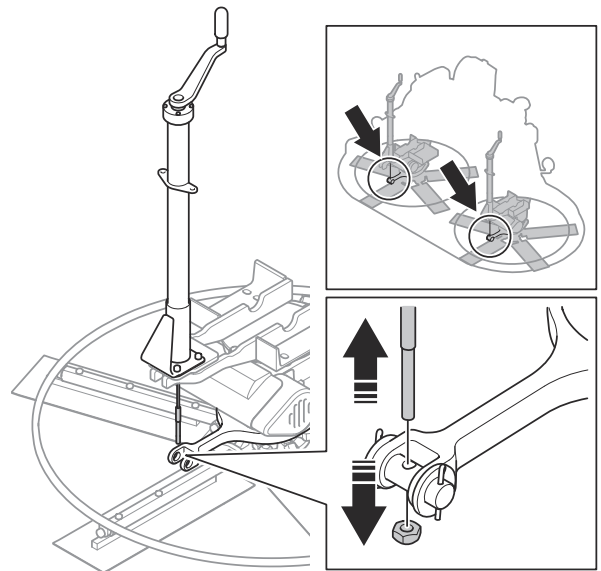


- To increase the blade pitch, turn the left blade pitch control clockwise and the right blade pitch control counterclockwise.
- To decrease the blade pitch, turn the left blade pitch control counterclockwise and the right blade pitch control clockwise.

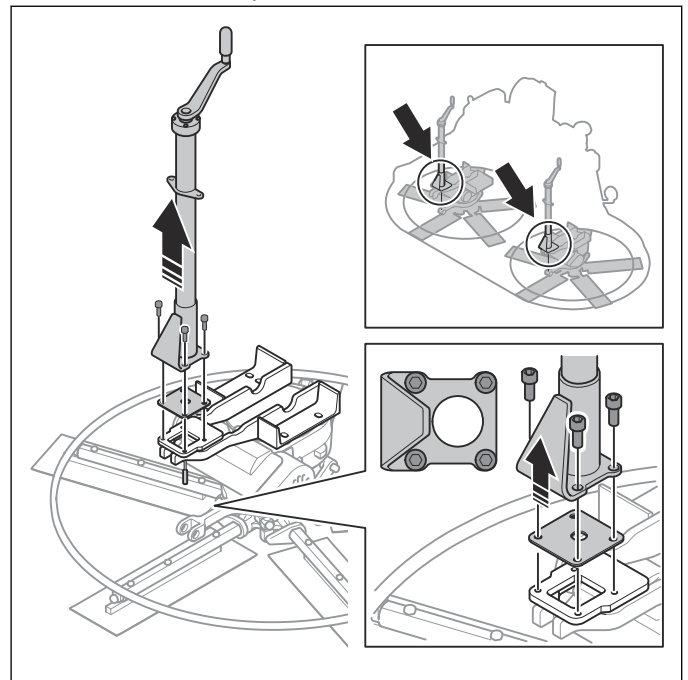
4. Remove the gas springs from the 2 pitch controls.



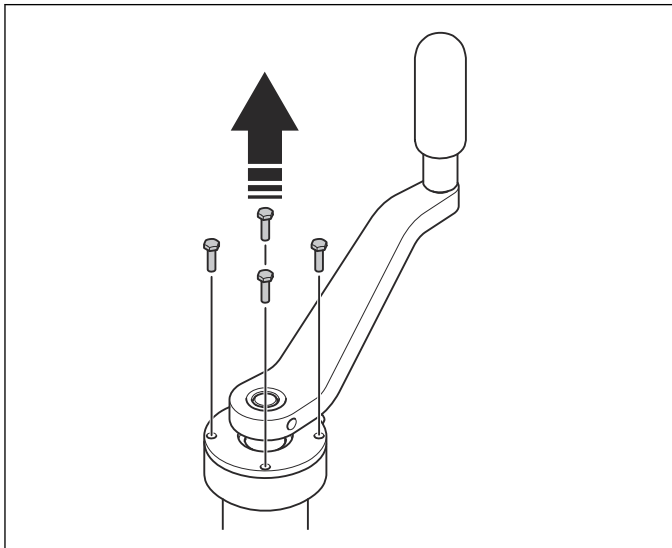
5. Remove the locknuts.



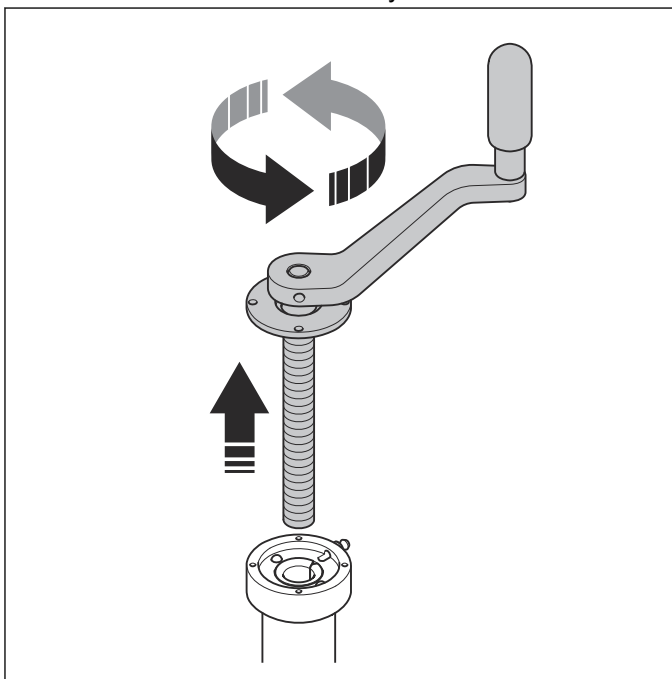
6. Remove the 4 screws and the blade pitch control on each side of the product.



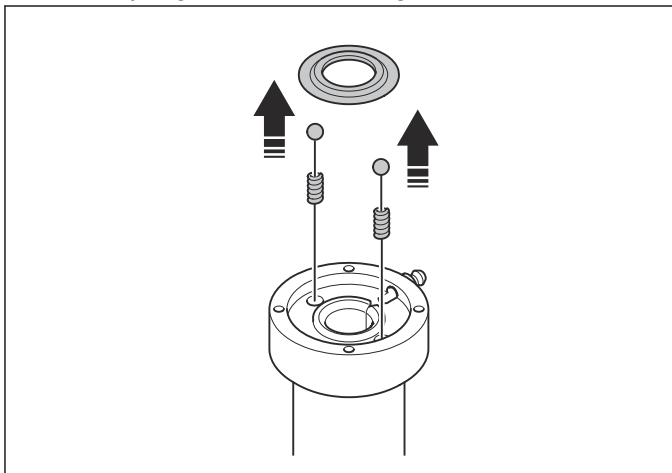
7. Remove the 4 screws.



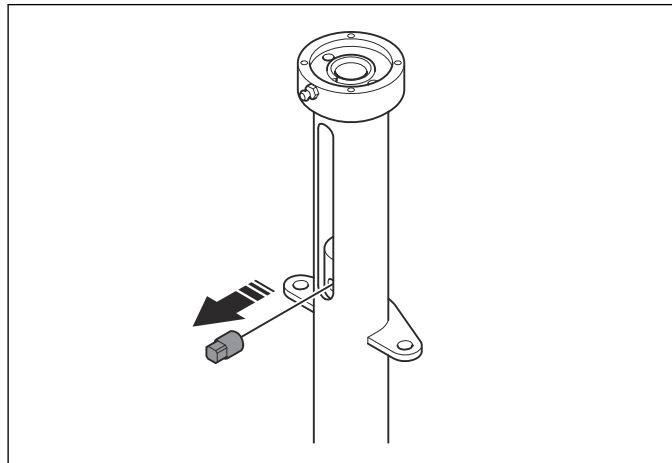
8. Remove the handle assembly.



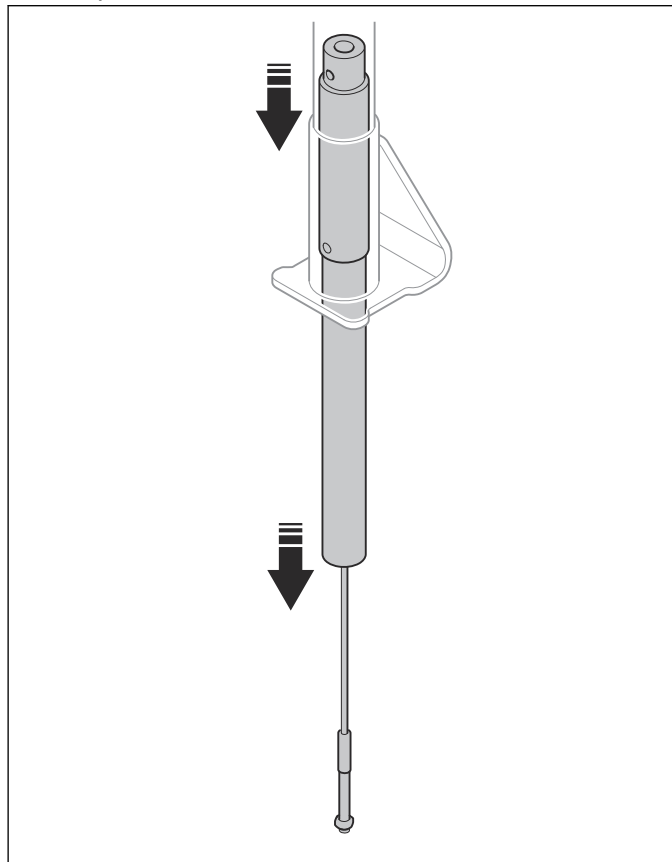
9. Remove the washer, the 2 spring-loaded balls and the 2 springs from the housing.



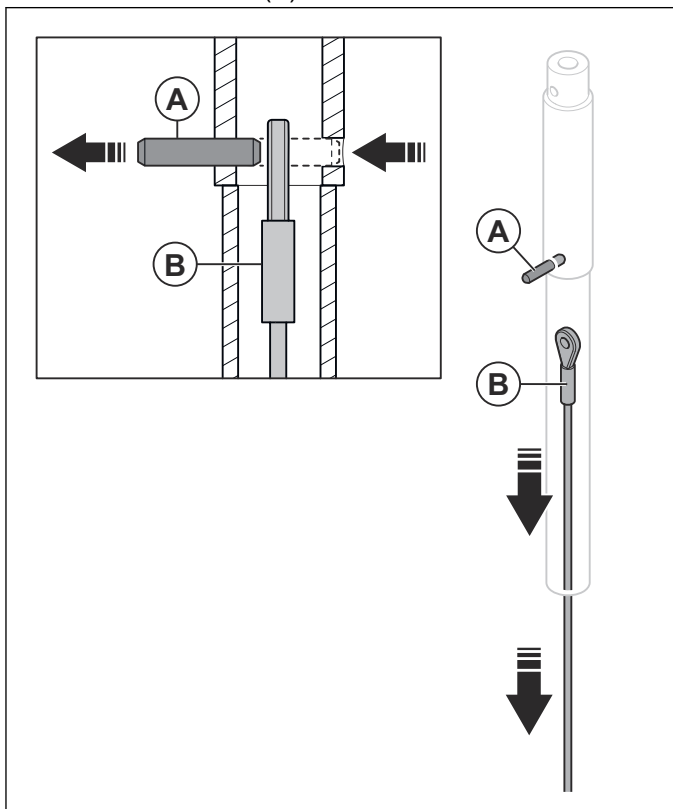
10. Remove the index bolt.



11. Move the rod, the cable tube and the cable out of the pitch control tube.

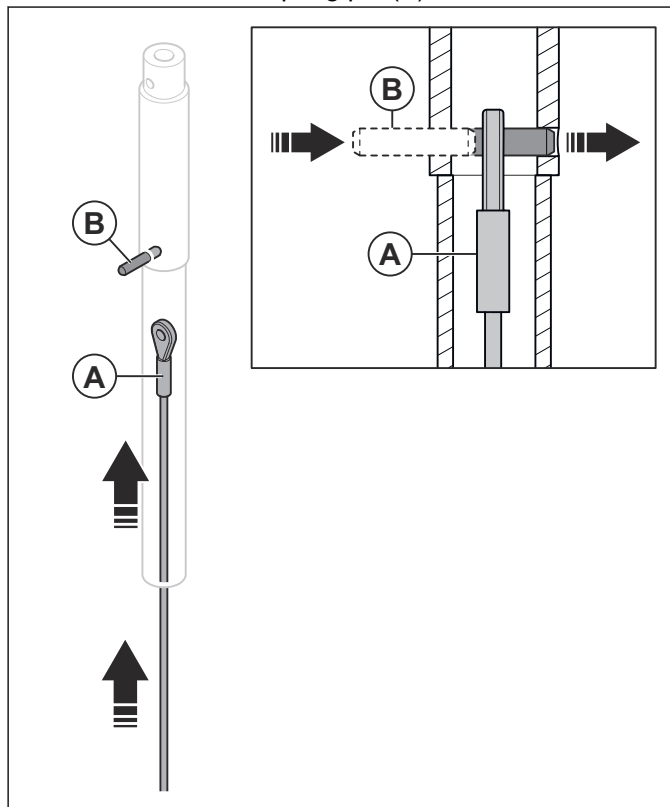


12. Push the pin (A) half through the pitch control and remove the cable (B).

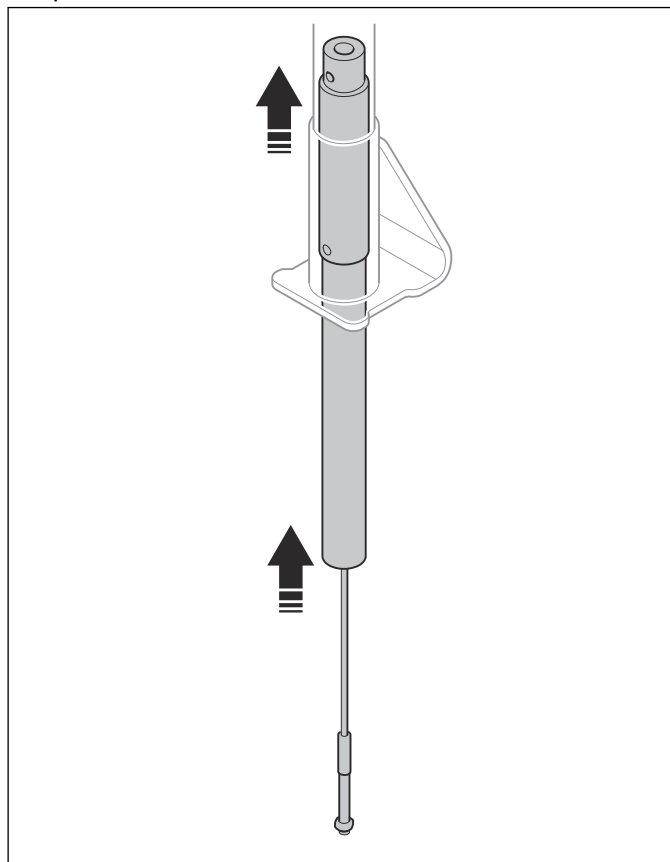


6.15 To assemble the blade pitch control

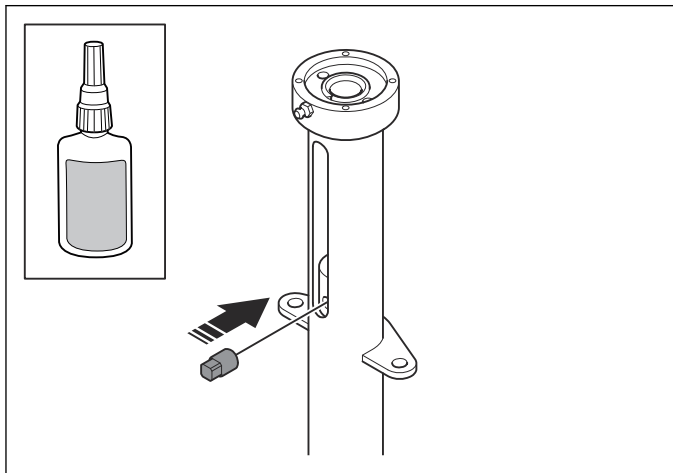
1. Install the cable into the cable tube (A) and attach the cable with the spring pin (B).



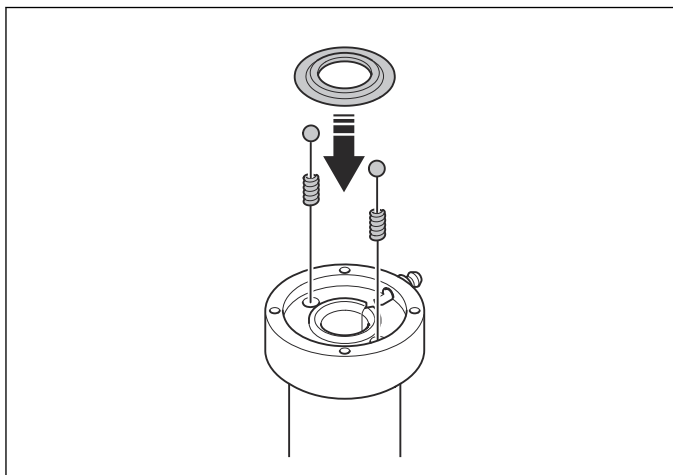
2. Install the rod, the cable tube and the cable into the pitch control tube.



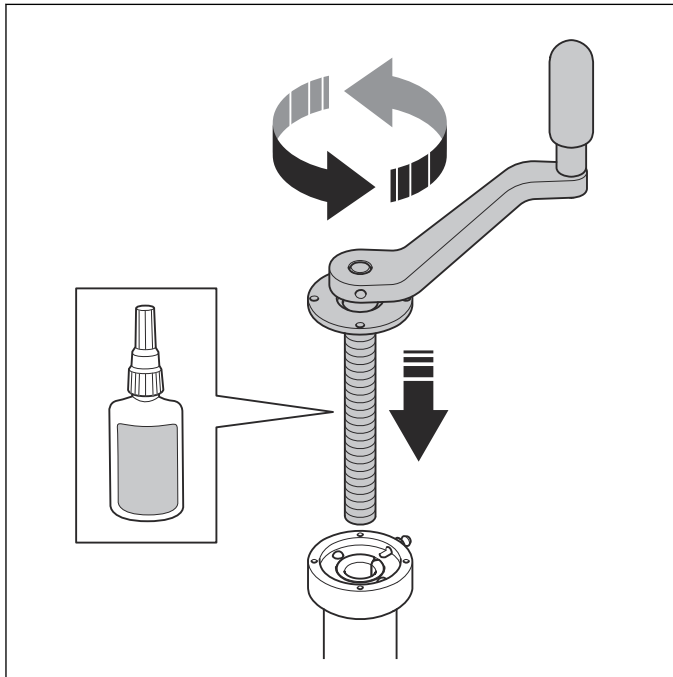
3. Apply LOCTITE® 243 to the threads of the index bolt and install the index bolt.



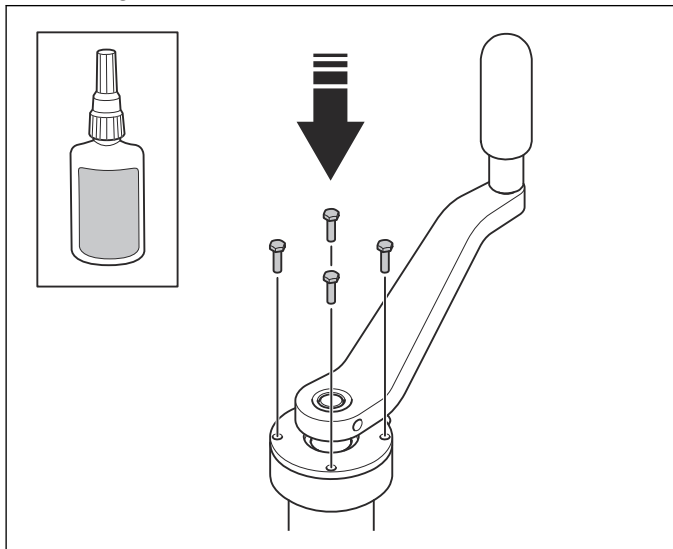
4. Install the washer, the 2 springs and the 2 spring-loaded balls.



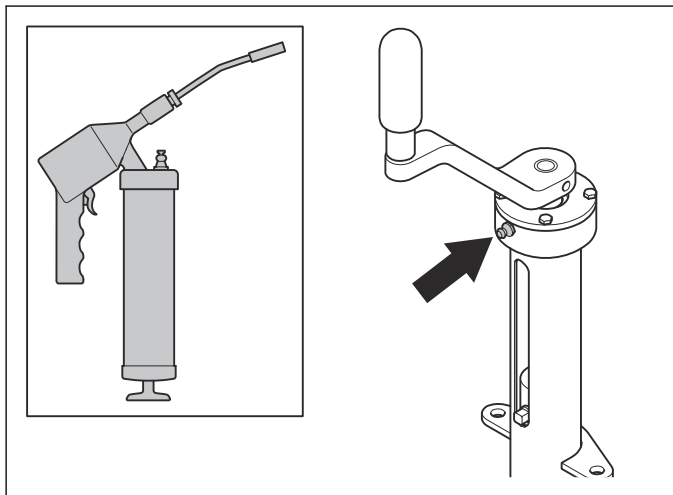
5. Apply oil to the threads of the handle assembly and install the handle assembly.



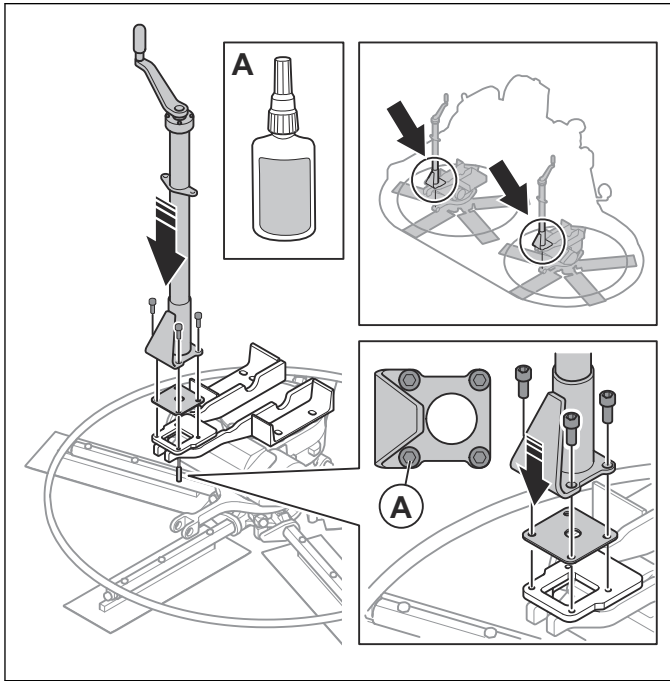
6. Apply LOCTITE® 243 to the threads on the 4 screws and tighten the screws.



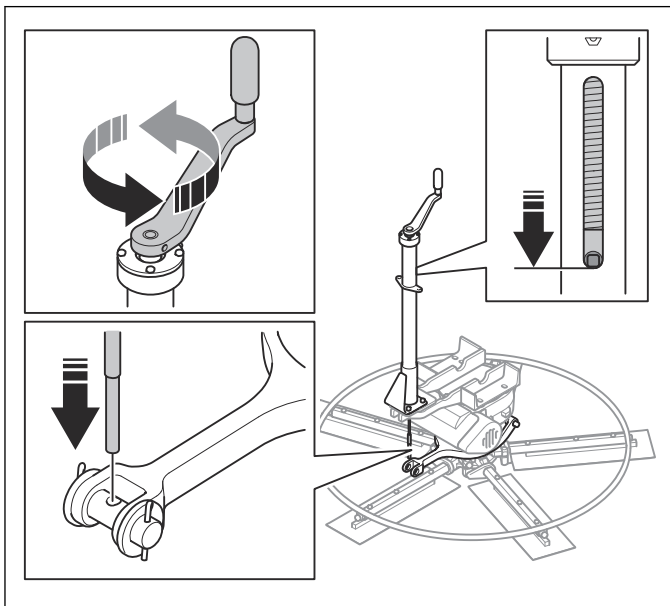
7. Lubricate the housing through the grease nipple. Use Alvania RL 2.



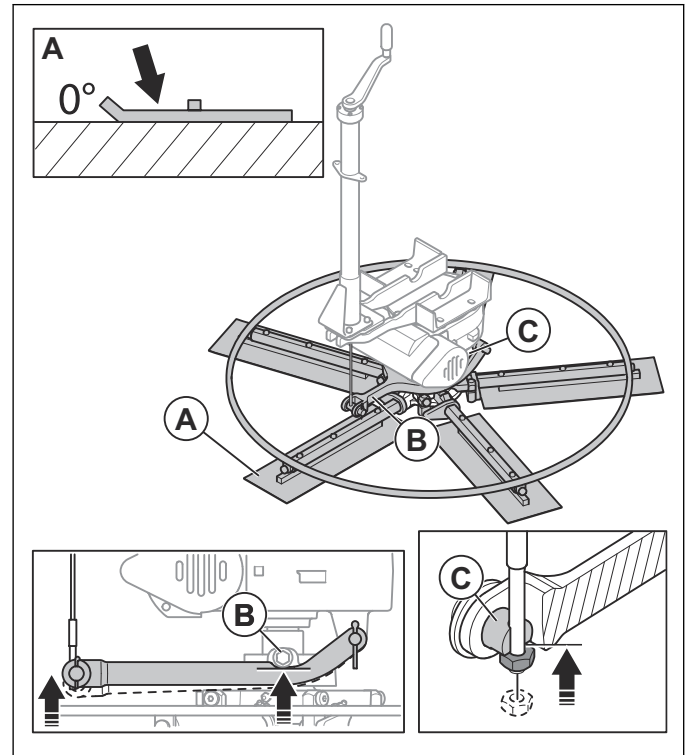
8. Apply LOCTITE® 243 to the threads on the 4 screws (A). Install the blade pitch control on the product and tighten the screws.



9. Turn the handle to its lowest position and put the cable into the cable mount.



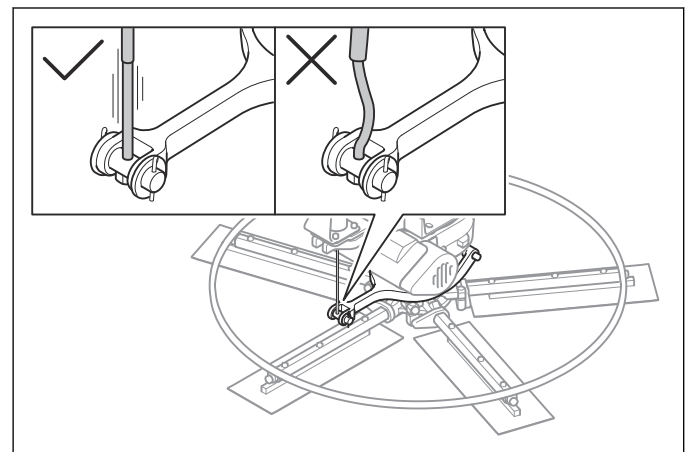
10. Make sure that the blades are flat (B).



11. Lift the yoke until it touches the rollers (C).

12. Turn the locknut until it touches the cable mount (D).

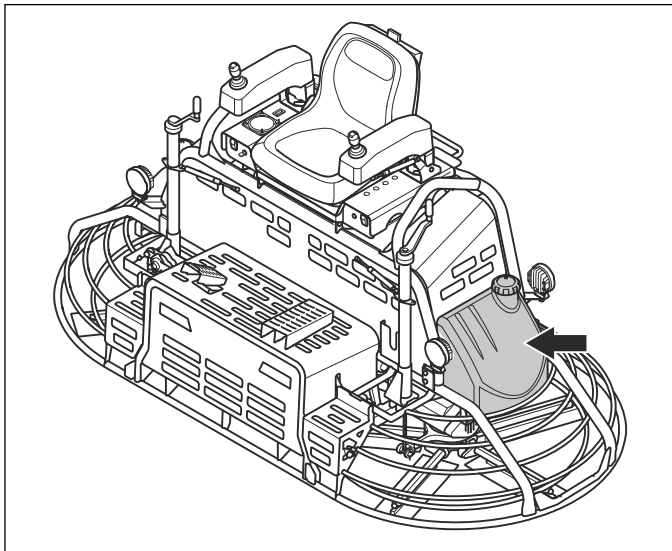
13. Make sure that the cable is tensioned.



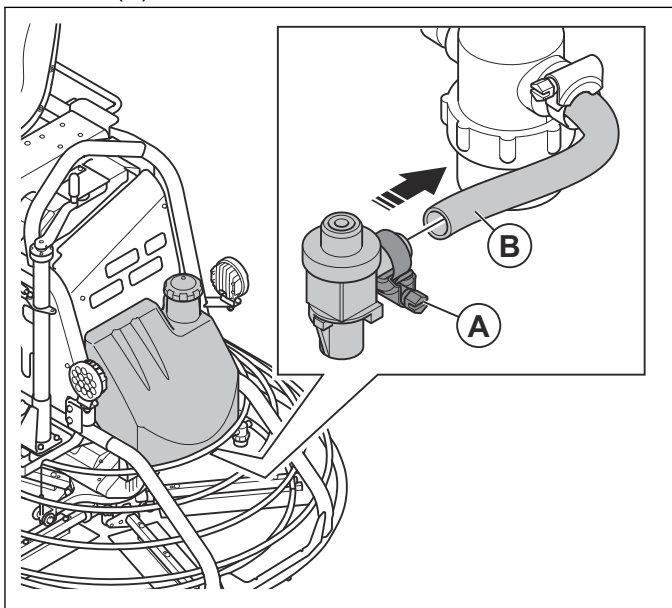
6.16 To remove the engine

1. Stop the engine and disconnect the battery.
2. Remove the drive belt. Refer to *To remove the drive belt on page 10*.

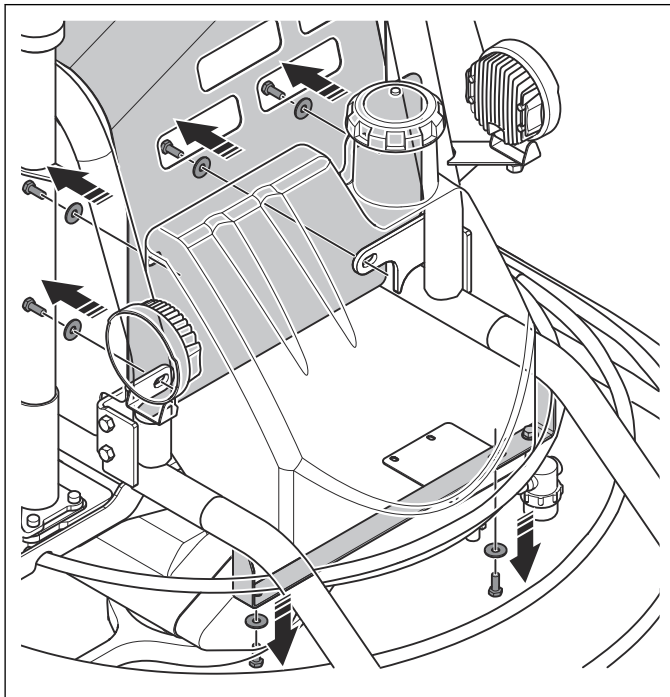
3. Drain the water tank.



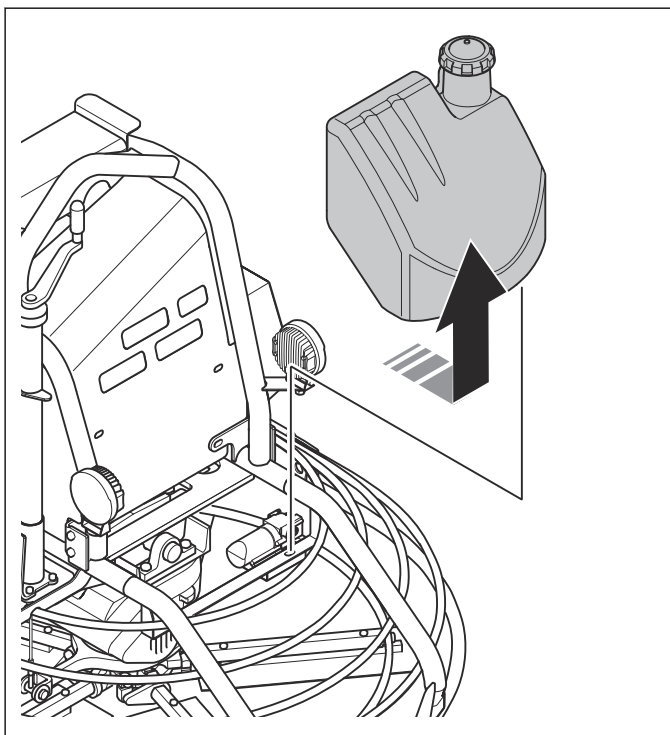
4. Loosen the hose clamp (A) and disconnect the water hose (B).



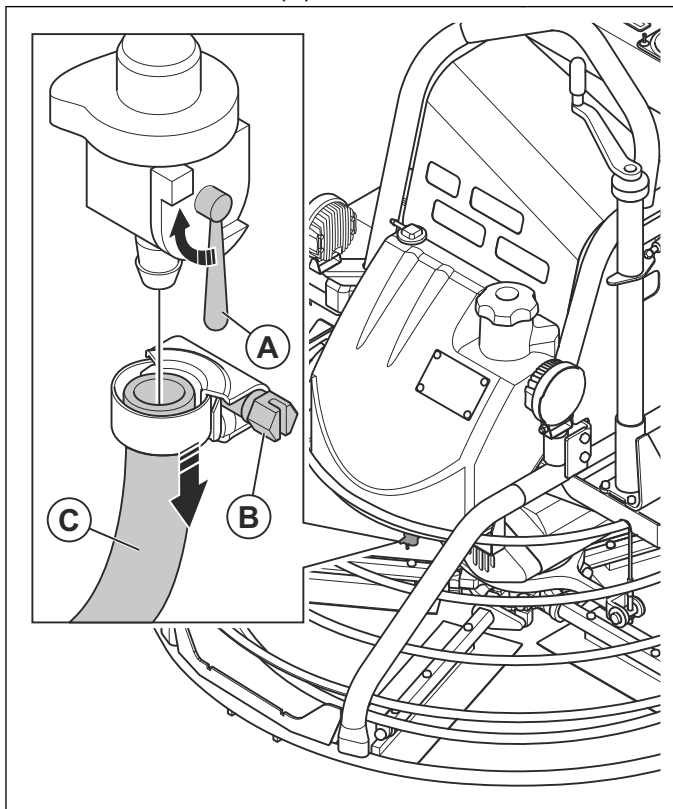
5. Remove the 4 screws for the water tank.



6. Remove the water tank.

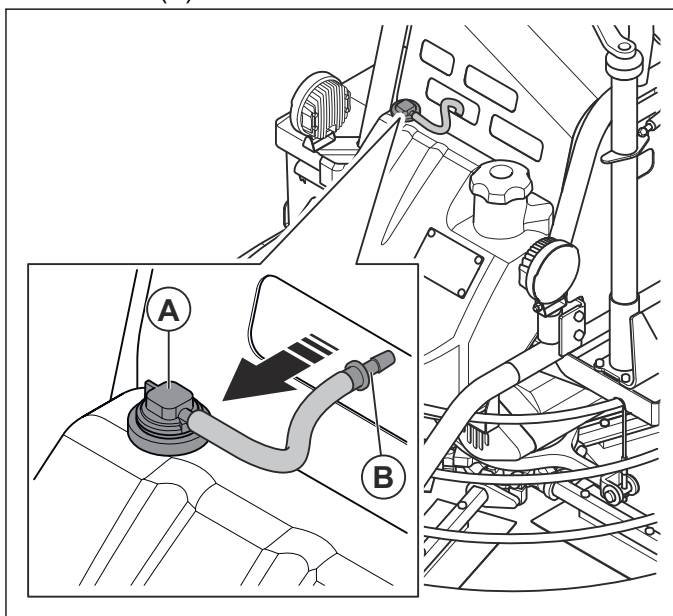


7. Turn the fuel valve (A) to close the fuel valve.

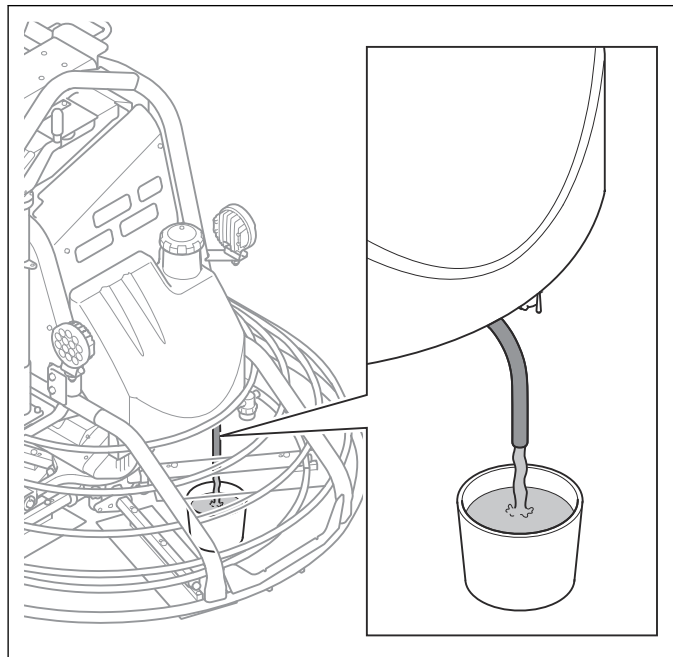


8. Loosen the hose clamp (B) and disconnect the fuel hose (C).

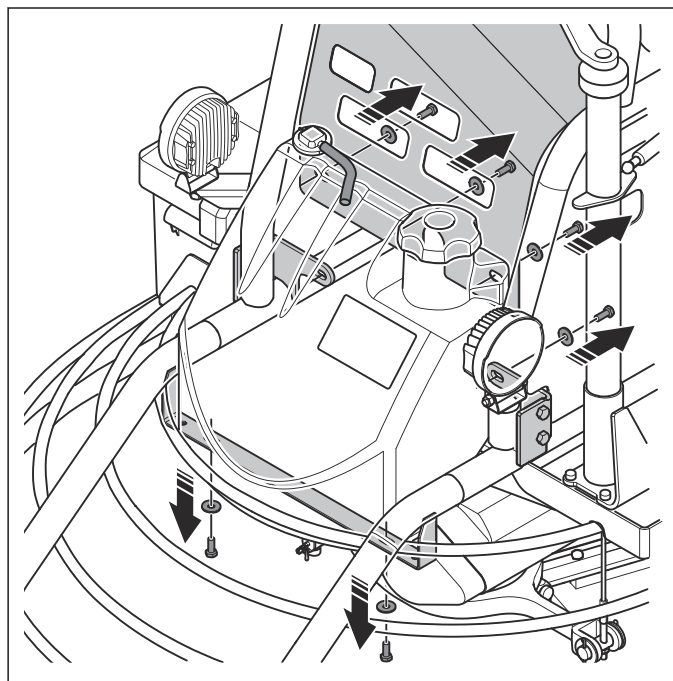
9. Remove the hose (B) for the ventilation valve of the fuel tank (A).



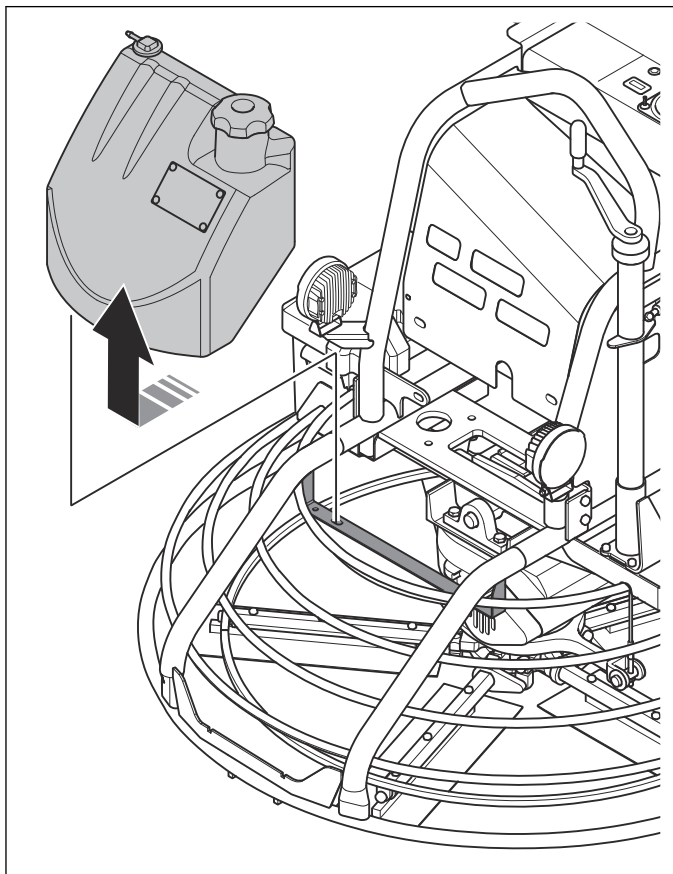
10. Drain the remaining fuel from the fuel hose into a container.



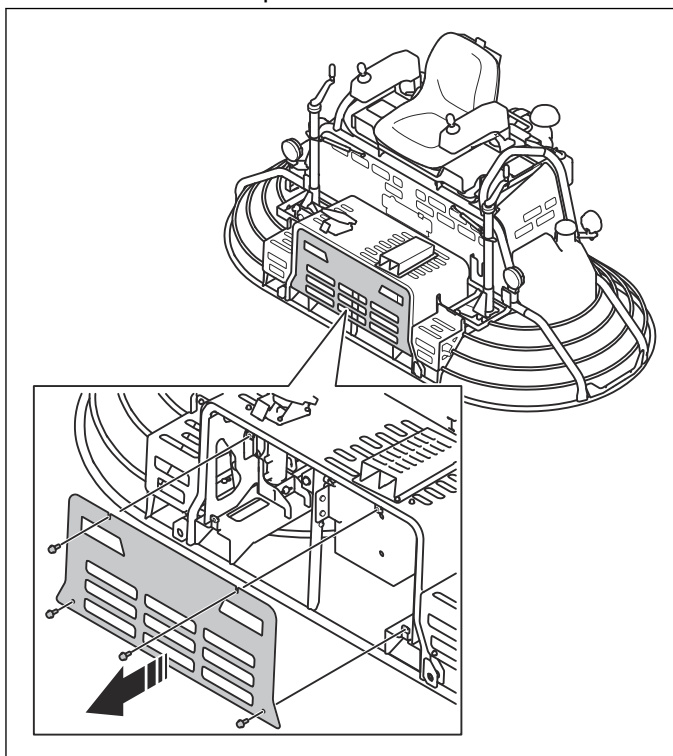
11. Remove the 4 screws for the fuel tank.



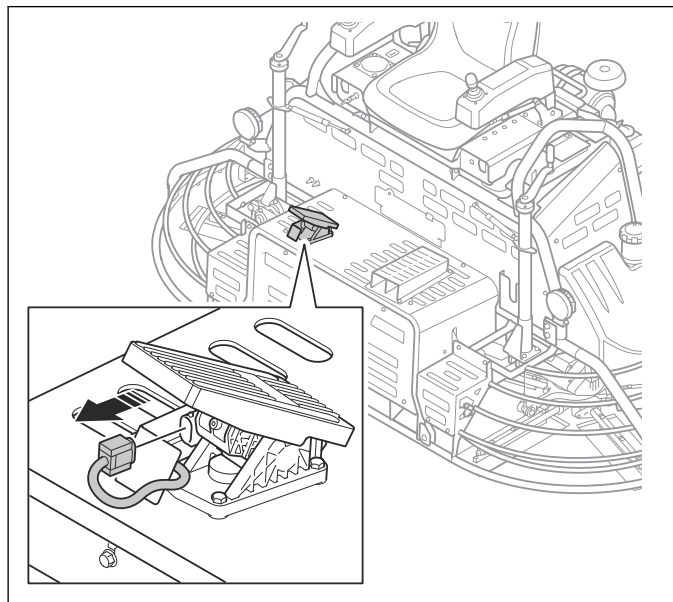
12. Remove the fuel tank.



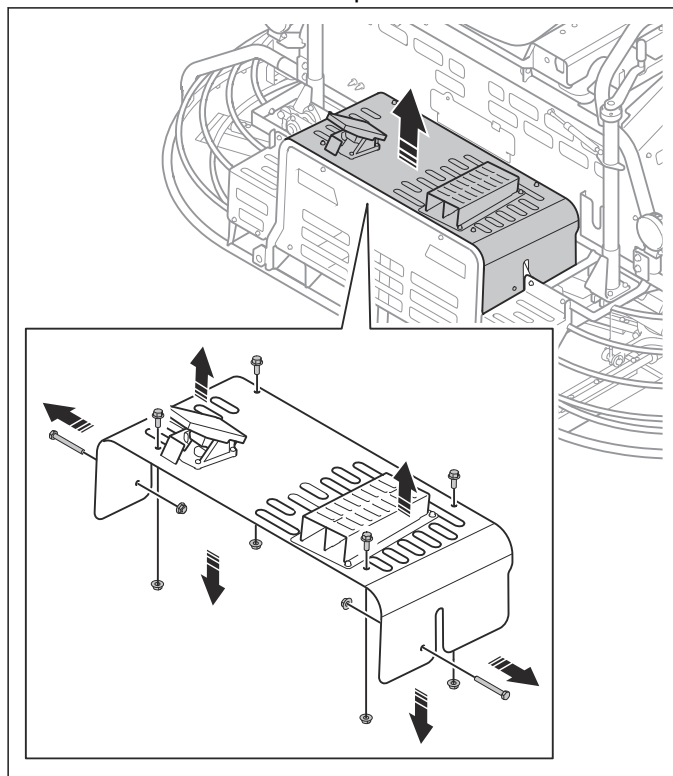
13. Remove the front plate.



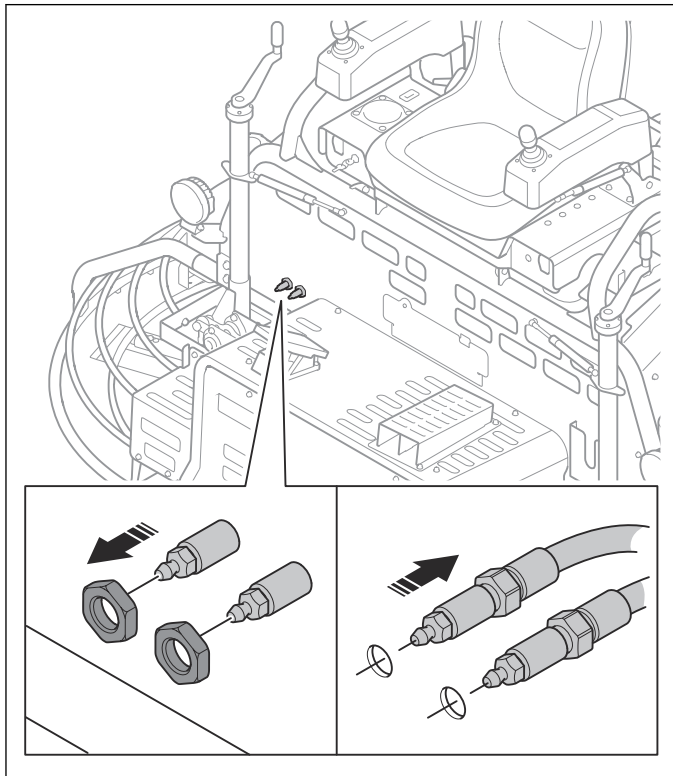
14. Disconnect the wire to the throttle control.



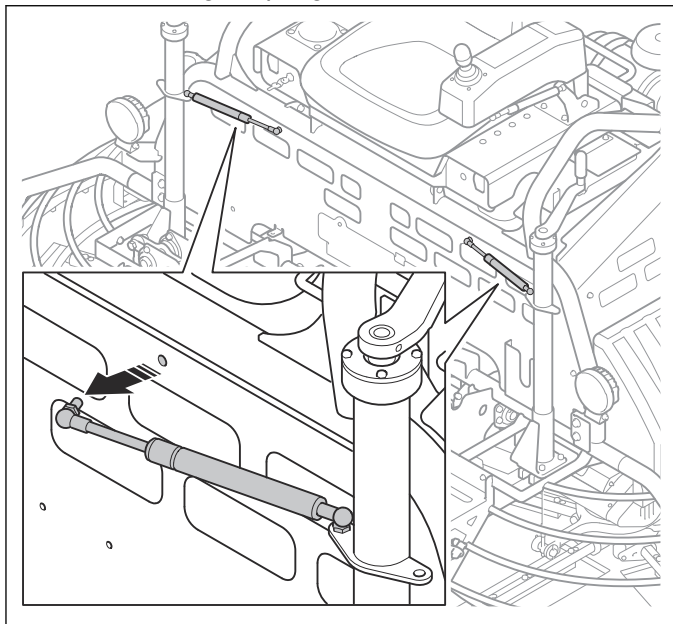
15. Remove the 2 side bolts, 2 side nuts and the 4 top screws. Remove the foot plate.



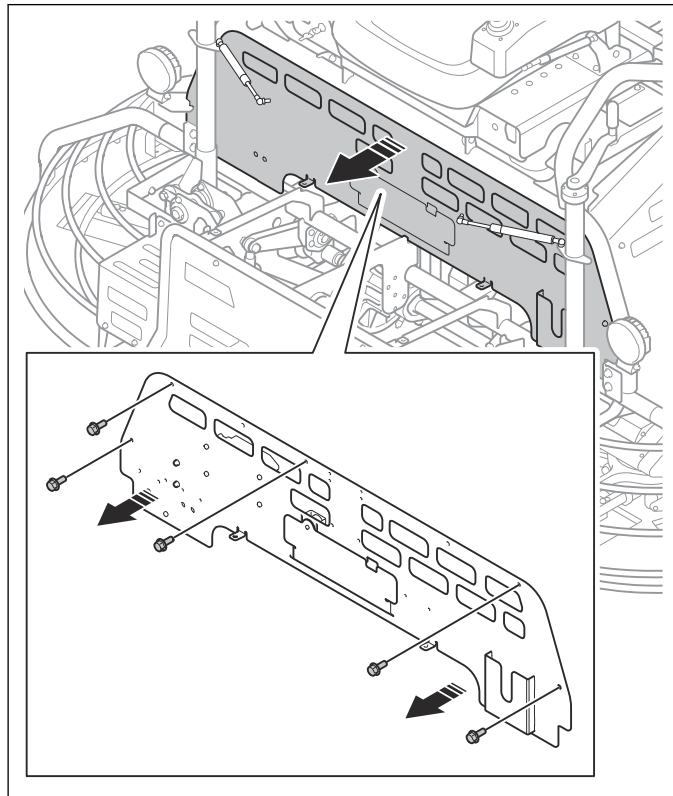
16. Disconnect the grease nipples from the front plate.



17. Remove the gas springs.



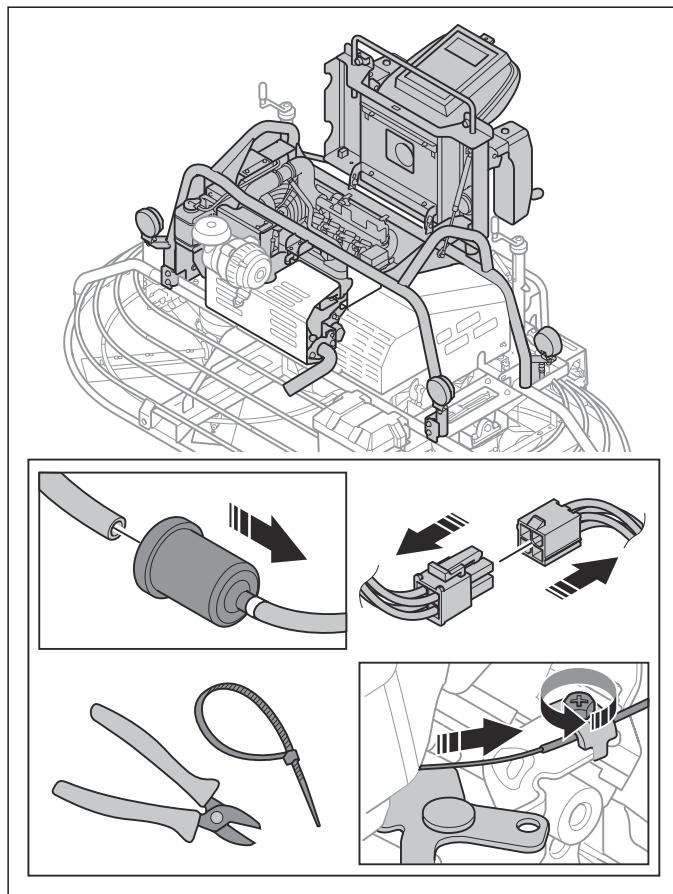
18. Remove the 5 screws for the front plate.



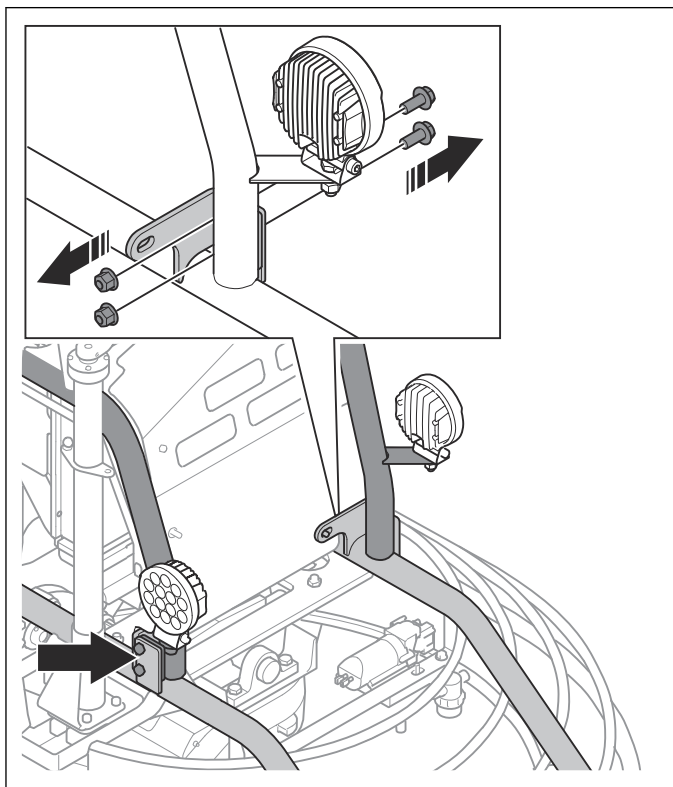
19. Disconnect all the relays, pumps and electronic units that are attached to the front plate.

20. Remove the front plate.

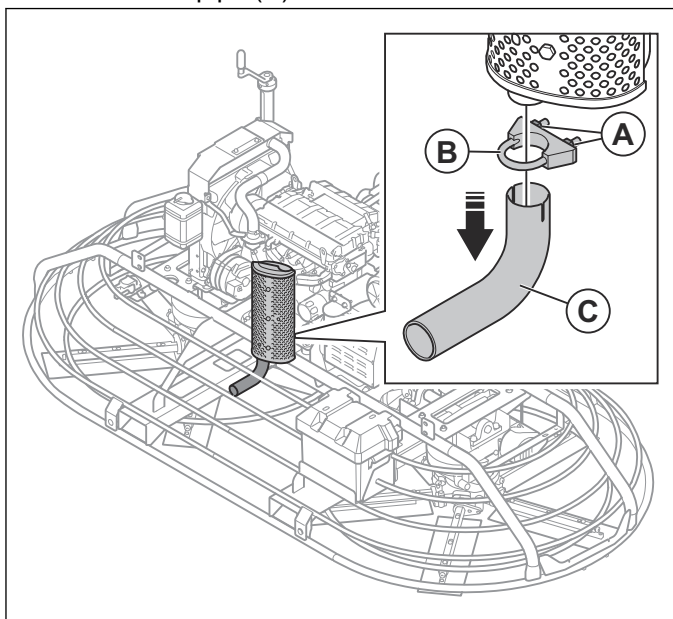
21. Disconnect the cables, wires, hoses and remove the cable ties on the cross brace.



22. Remove the 2 bolts, 2 washers and the 2 nuts for the cross brace.

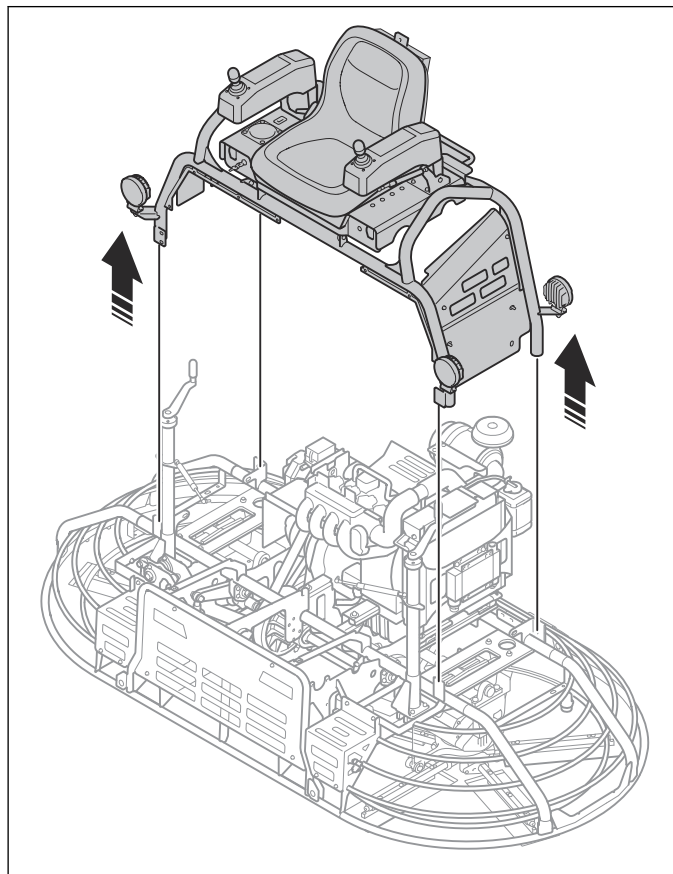


23. Loosen the screws (A) for the U bolt (B) and remove the exhaust pipe (C).

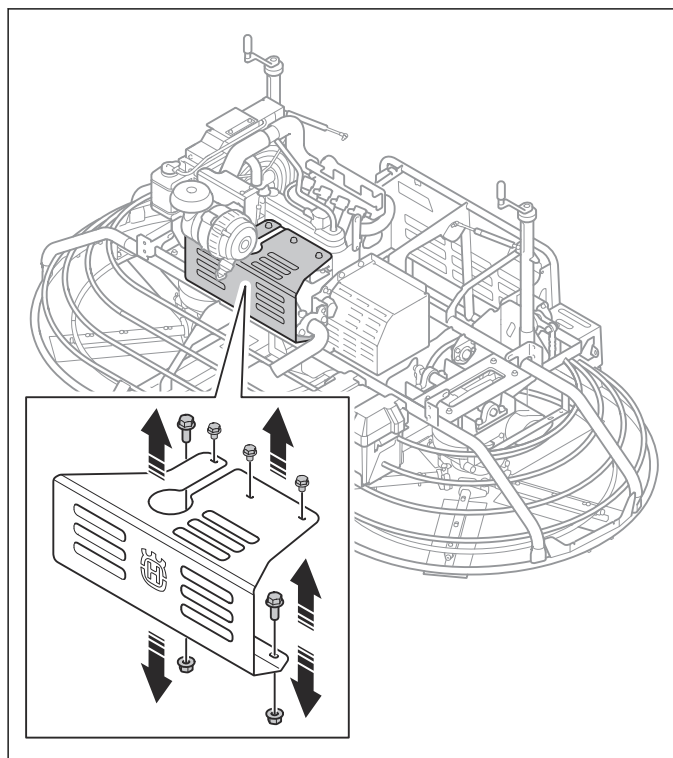


Note: This is only for CRT48-35L.

24. Remove the cross brace.

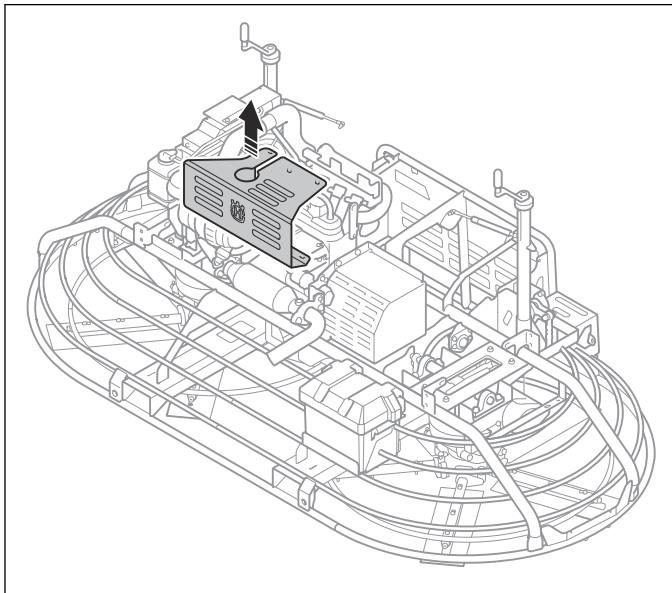


25. Remove the screws for the heat shield.



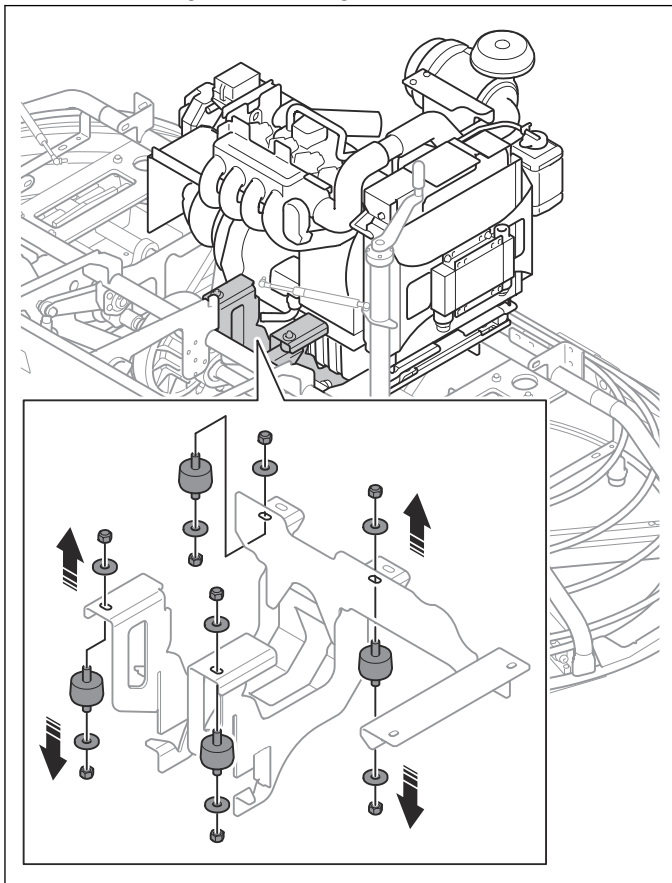
Note: This only for CRT 48-57K.

26. Remove the heat shield.

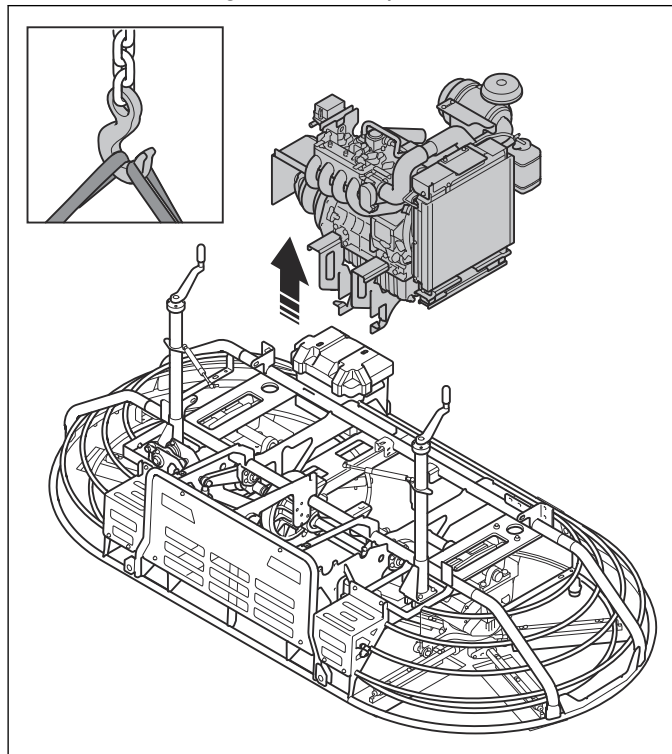


Note: This only for CRT 48-57K.

27. Remove the 4 bolts, the 4 washers and the 4 nuts from the engine mountings.

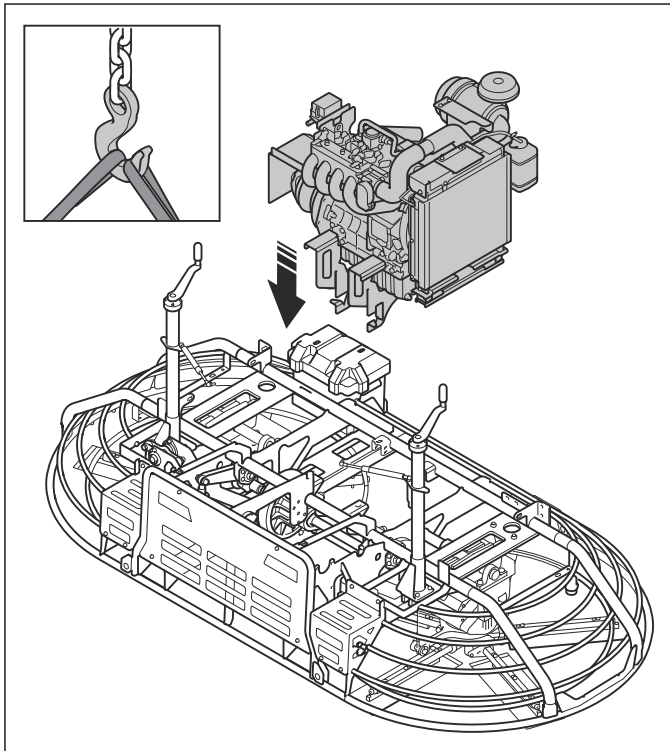


28. Attach the lifting equipment to the engine and remove the engine from the product.

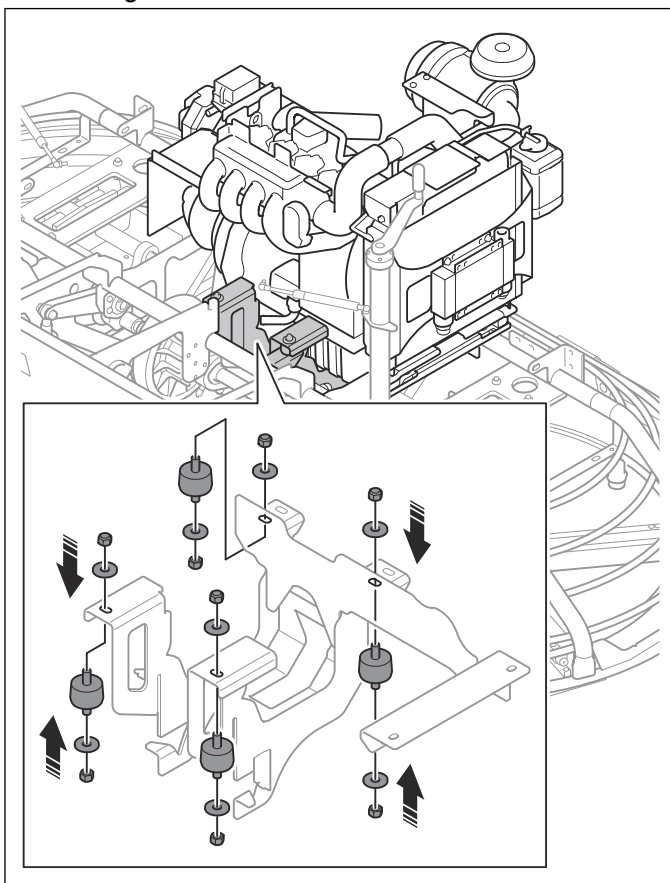


6.17 To install the engine

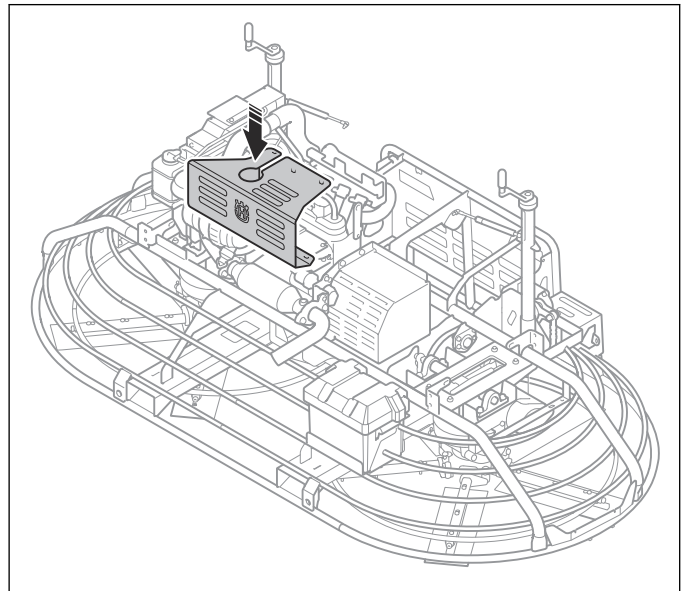
1. Install the engine on the product.



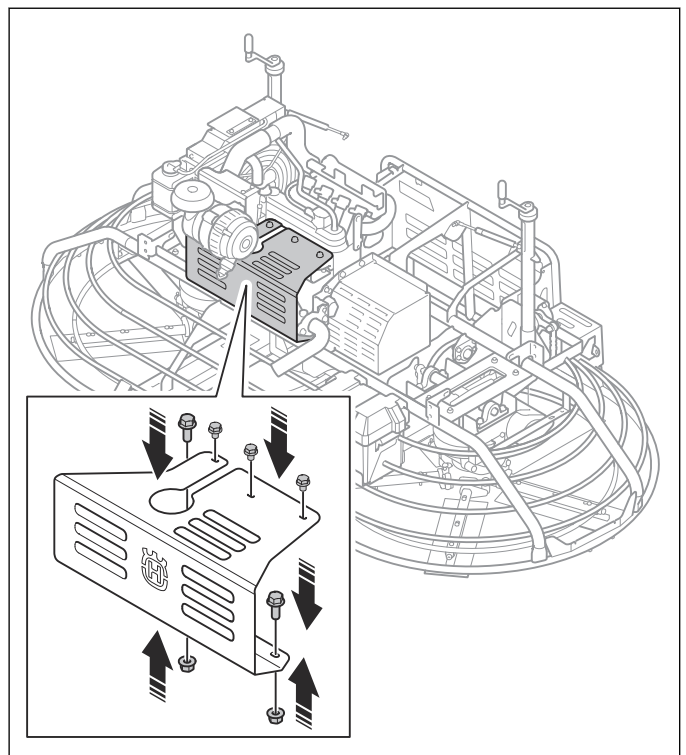
2. Install the 4 bolts, the 4 washers and the 4 nuts for the engine.



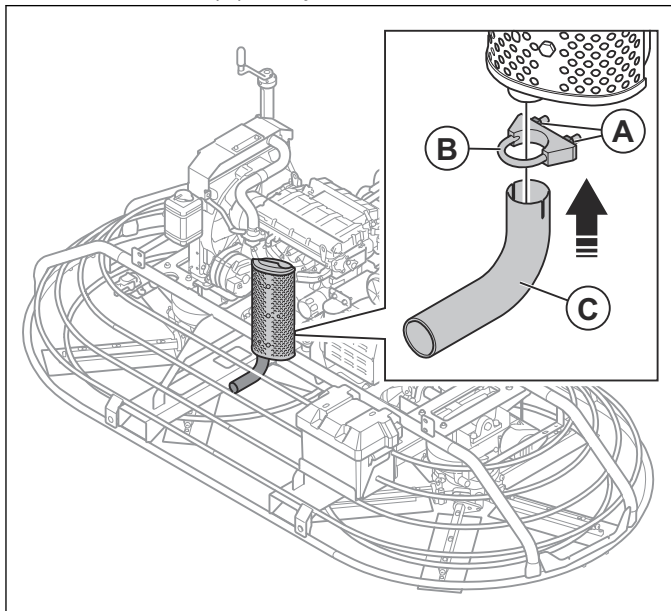
3. Install the heat shield. Only CRT 48-57K.



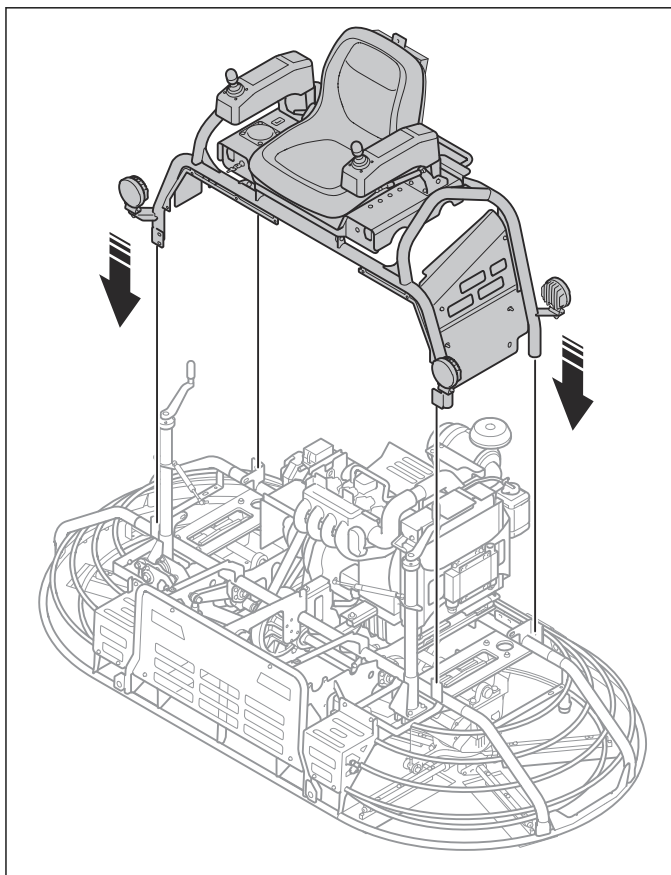
4. Install the screws for the heat shield. Only CRT 48-57K.



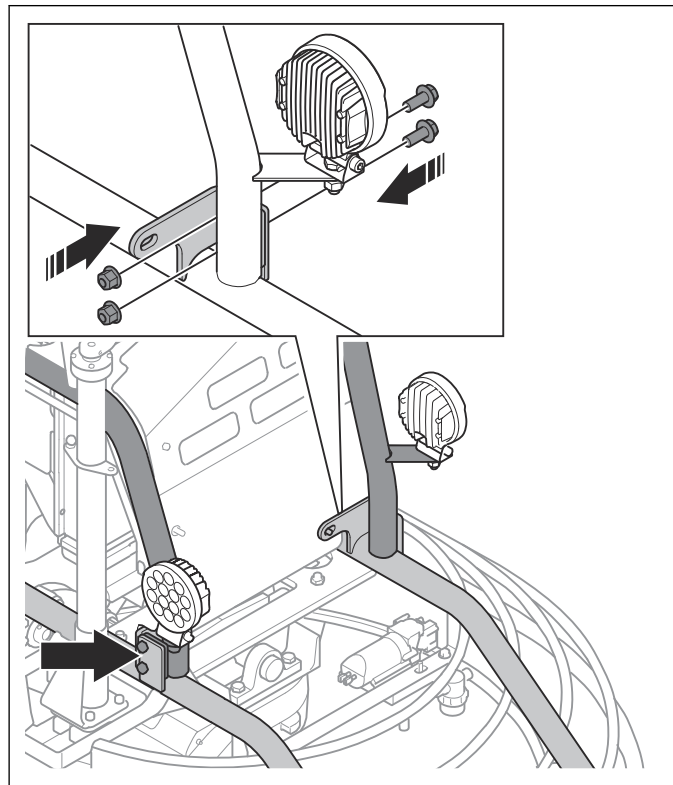
5. Install the exhaust pipe (C) and tighten the nuts (A) for the U bolt (B). Only CRT 48-35L.



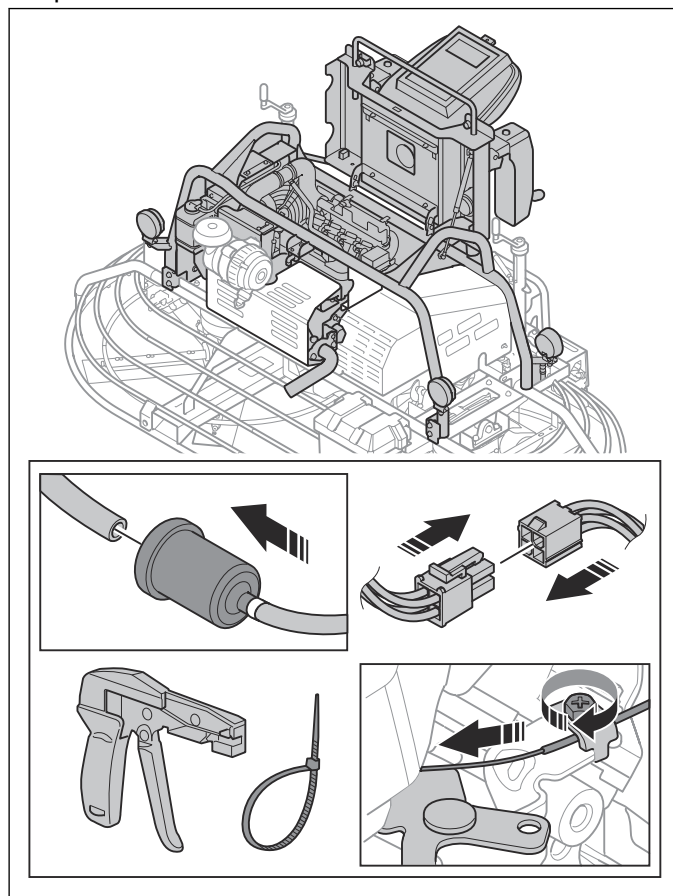
6. Install the cross brace.



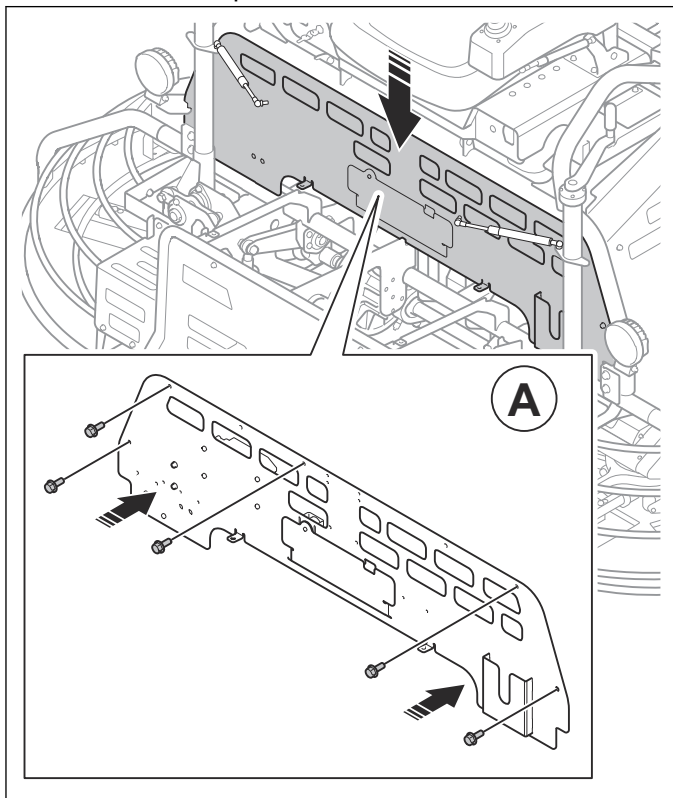
7. Install the 2 bolts, 2 washers and the 2 nuts for the cross brace.



8. Connect the cables, wires, hoses to the engine and put cable ties on the cross brace.



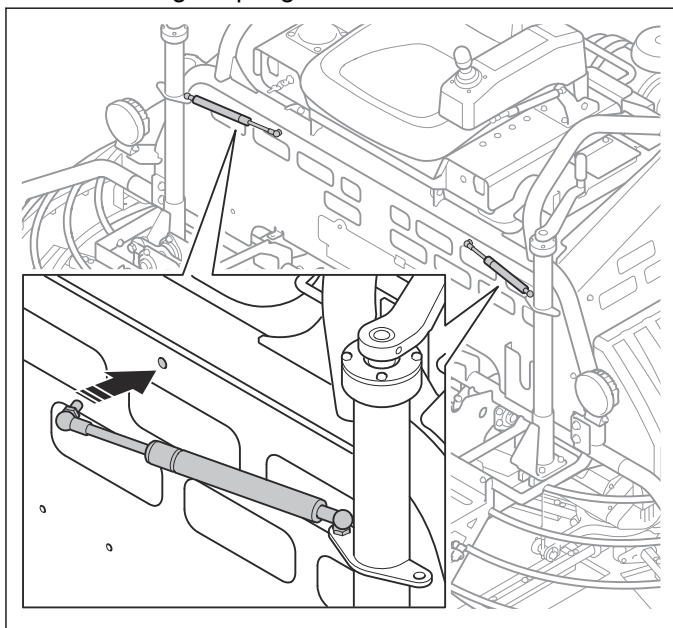
9. Install the front plate.



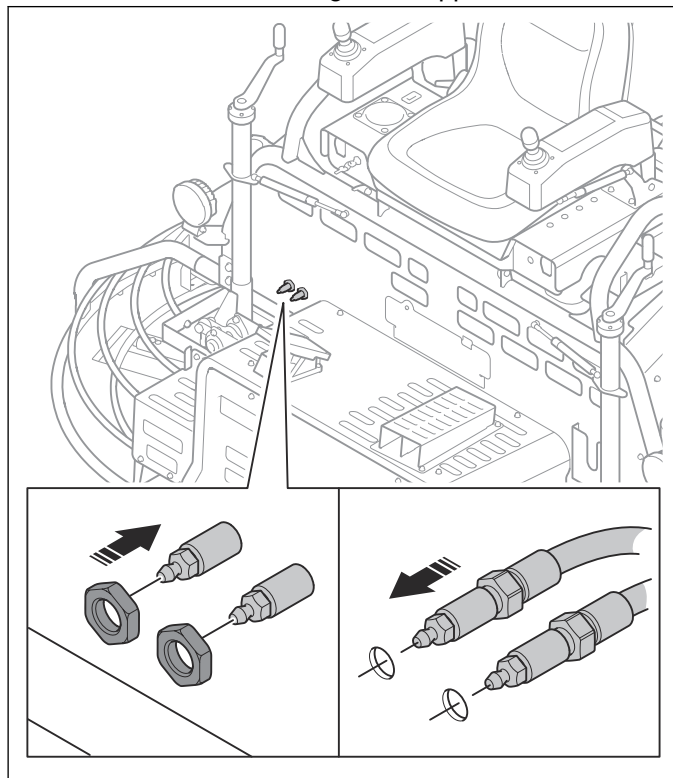
10. Connect all the relays, pumps and electronic units that must be attached to the front plate.

11. Install the 5 screws (A) for the front plate.

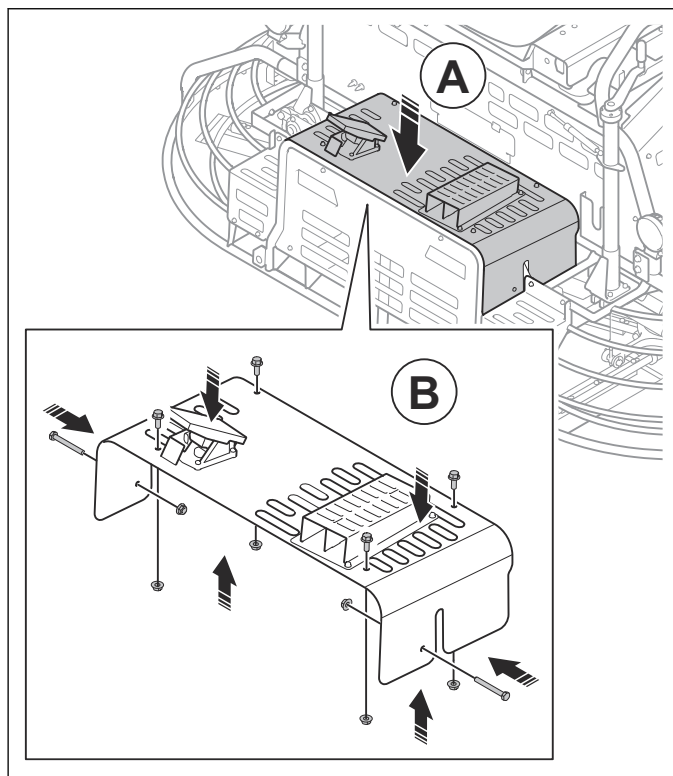
12. Install the gas springs.



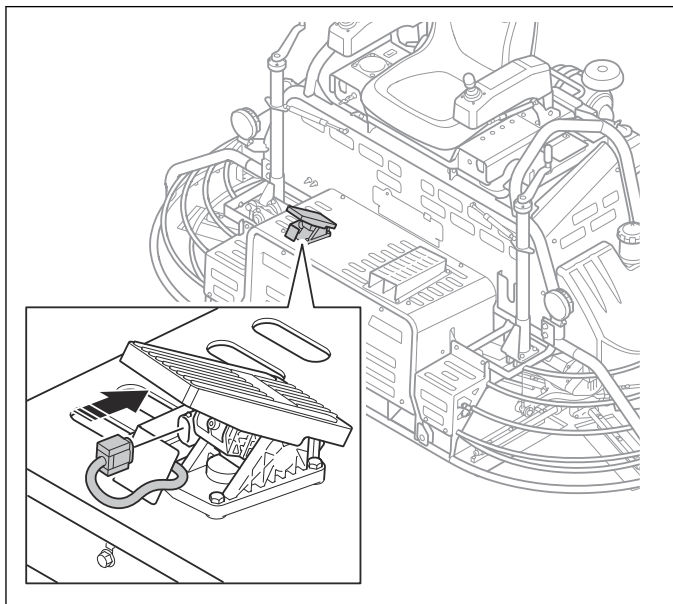
13. Install the nuts and the grease nipples.



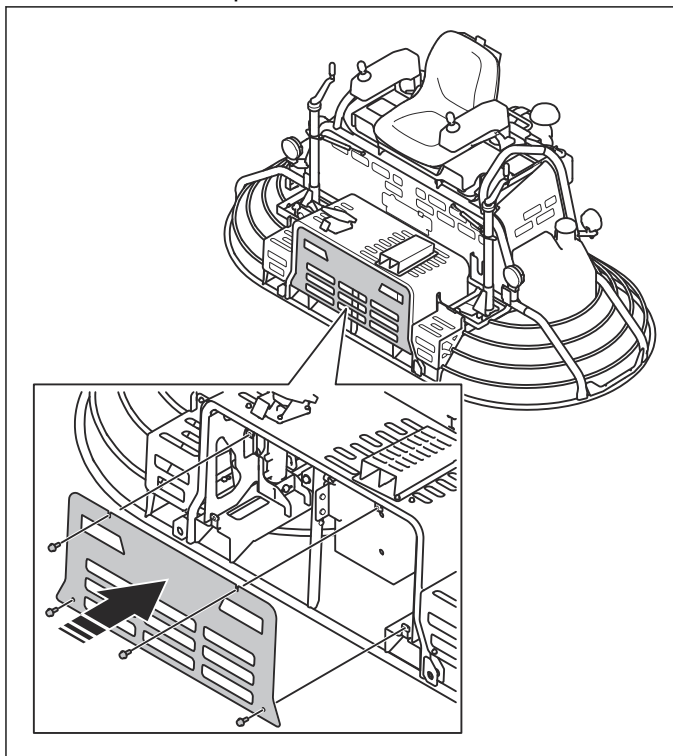
14. Install the foot plate and the 6 bolts and the 6 nuts.



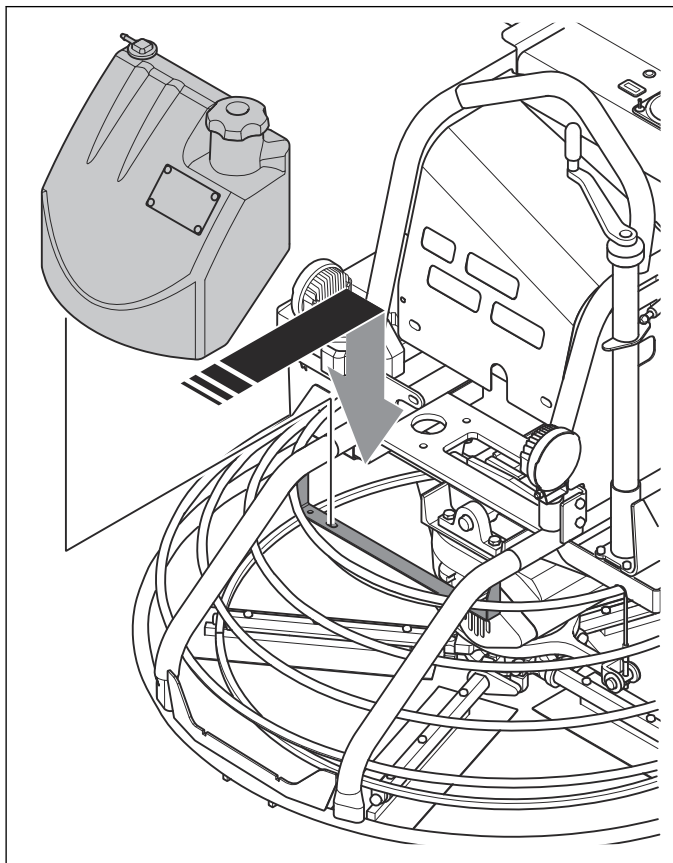
15. Install the connector to the throttle control.



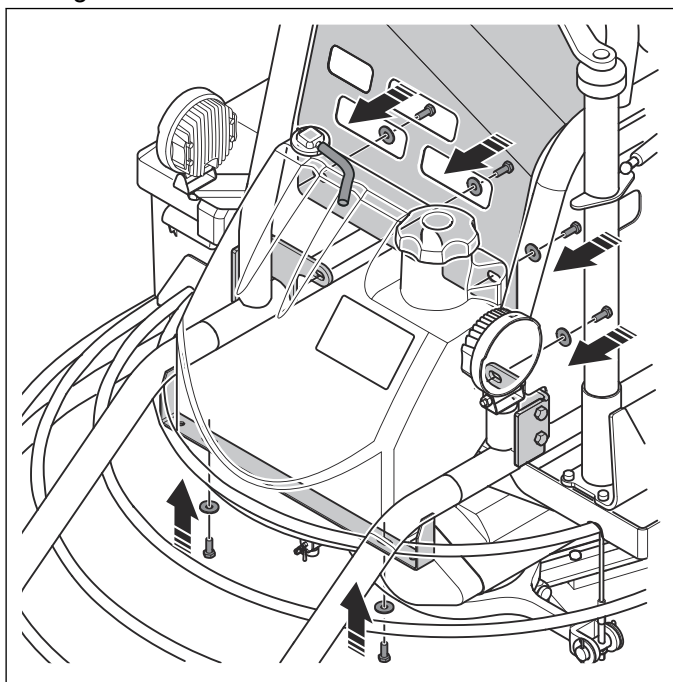
16. Install the front plate.



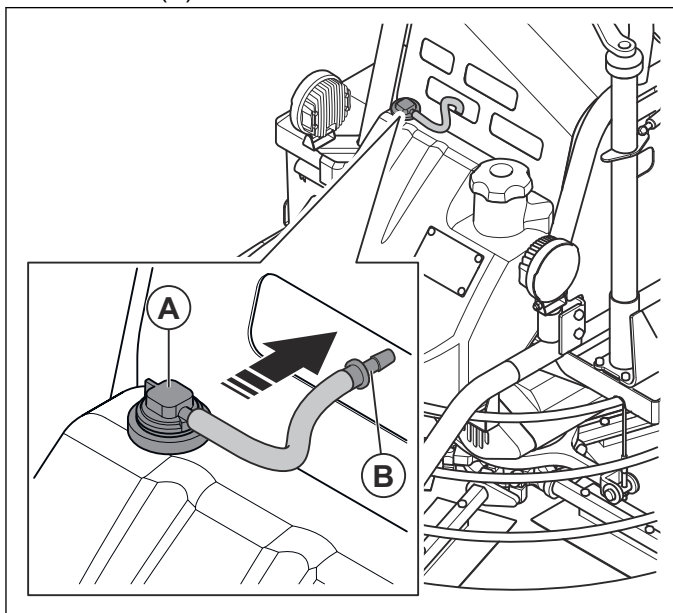
17. Install the fuel tank.



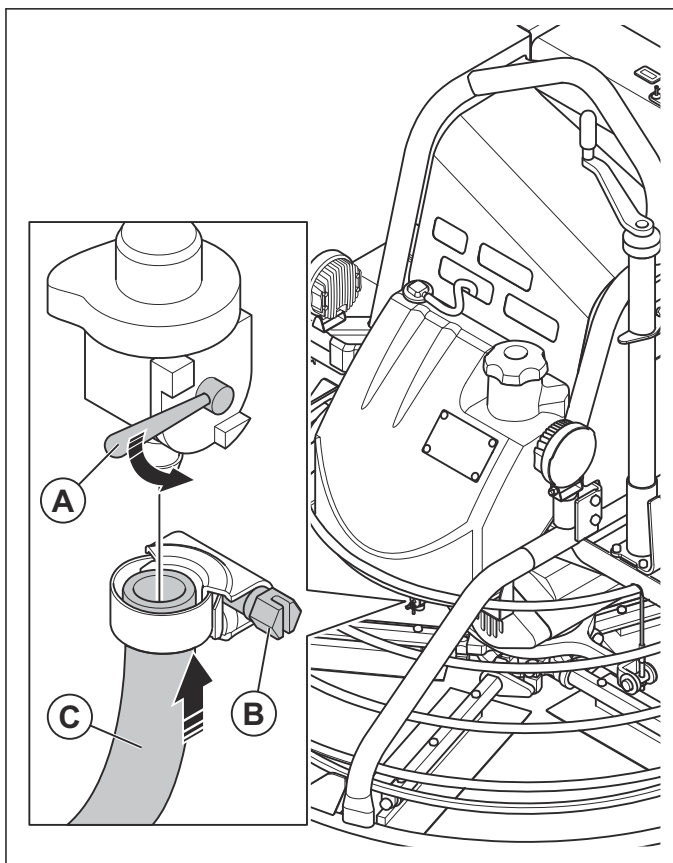
18. Tighten the 4 screws for the fuel tank.



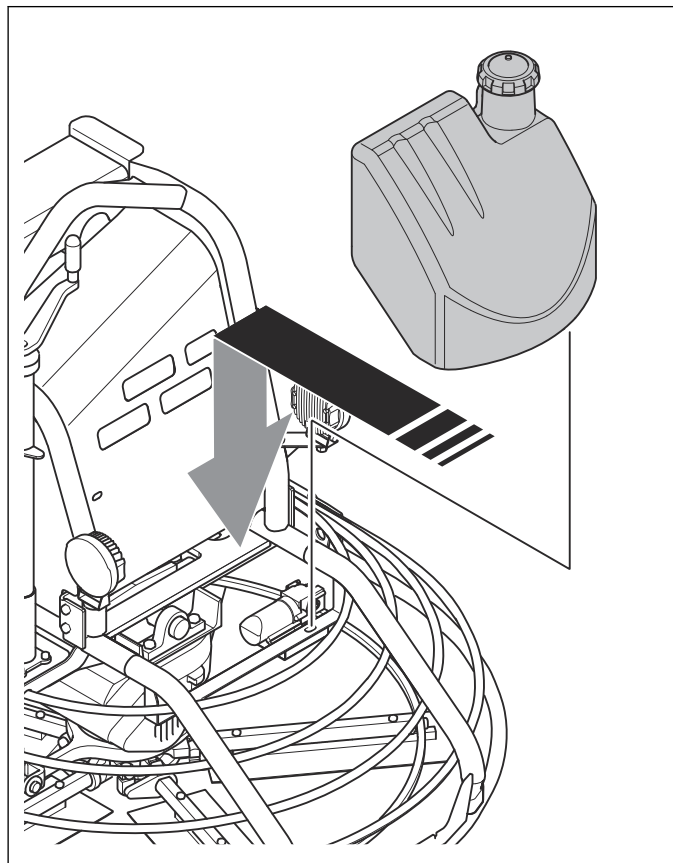
19. Install the hose (B) for the ventilation valve of the fuel tank (A).



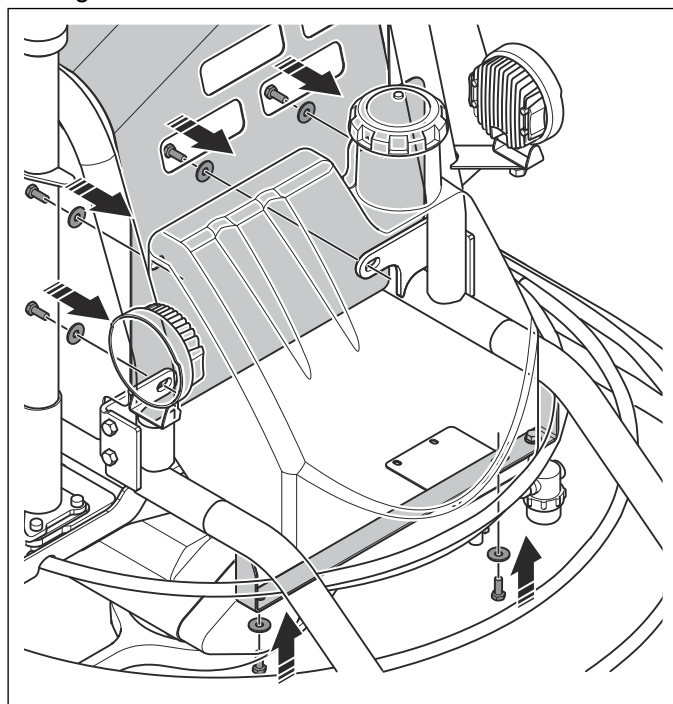
20. Connect the fuel hose (C) and tighten the hose clamp (B). Turn the fuel valve (A) to open the fuel valve.



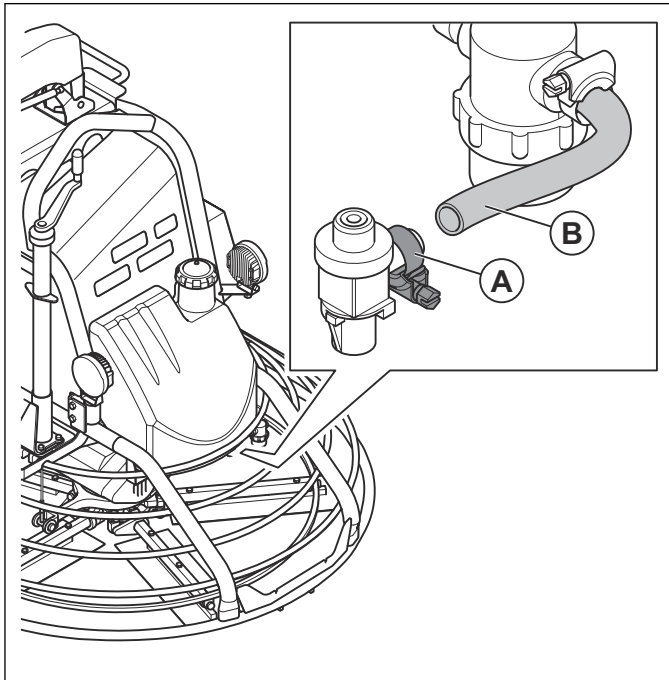
21. Install the water tank.



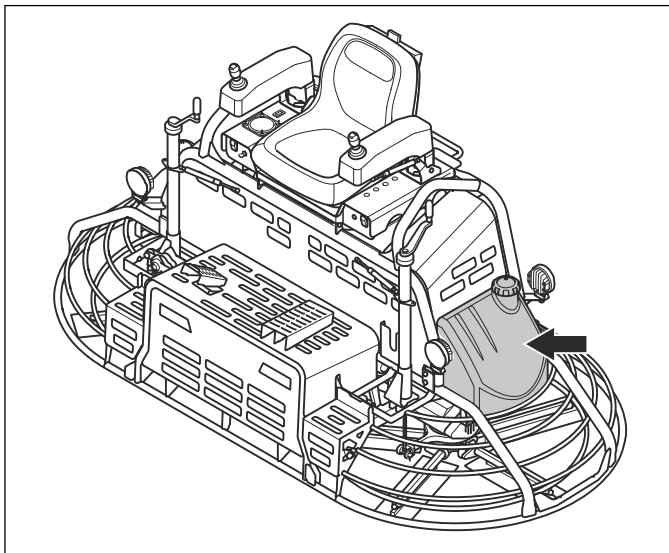
22. Tighten the 4 screws for the water tank.



23. Connect the water hose (B) and tighten the hose clamp (A).



24. Fill the water tank.



25. Install the drive belt. Refer to *To install the drive belt on page 11*.

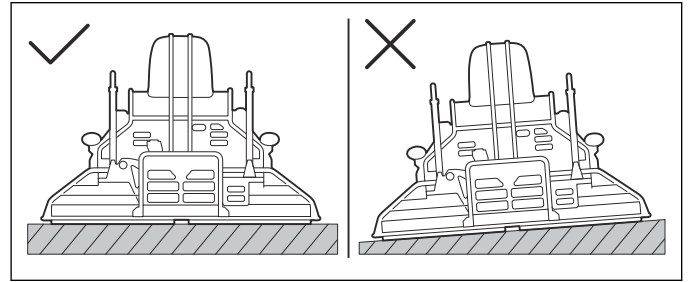
6.18 To remove the hydraulic oil cooler

Put marks on the fittings and hoses before the removal to show the correct position for installation.

Make sure that you drain used fluids into a container when you remove the hoses.

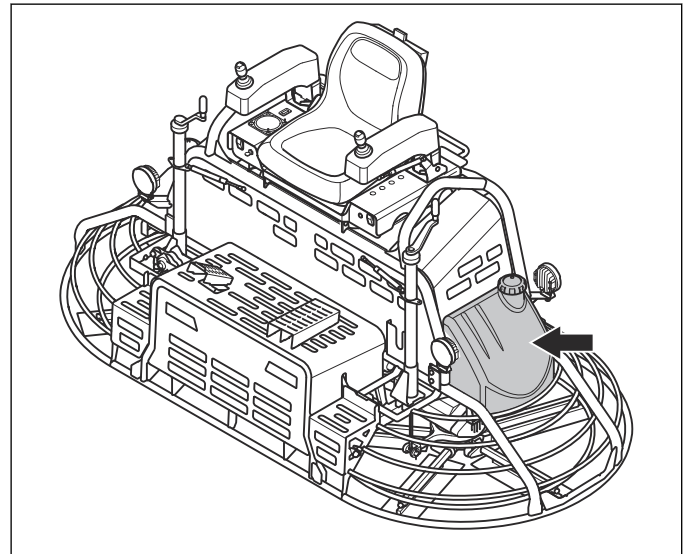
To lift the product, use a lifting equipment with capacity of minimum 660 kg/1456 lbs.

1. Put the product on a flat, level surface with the blades flat.

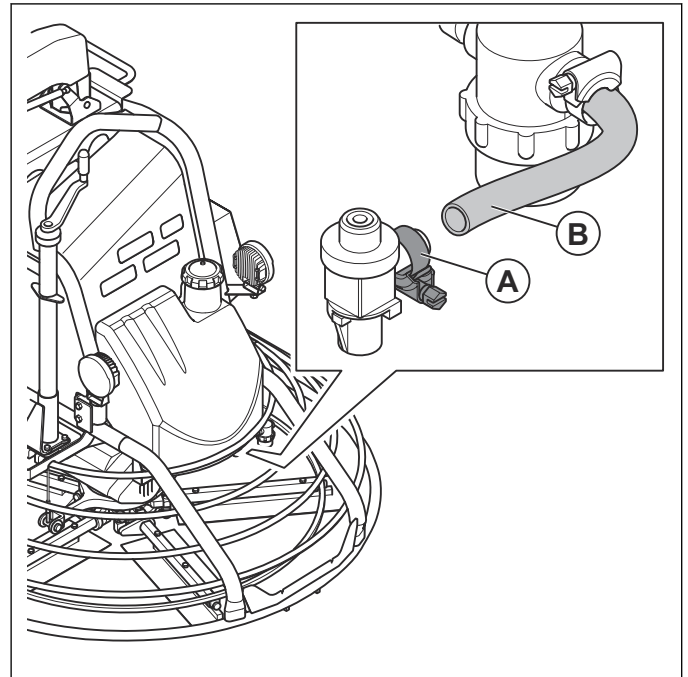


2. Stop the engine and disconnect the battery.

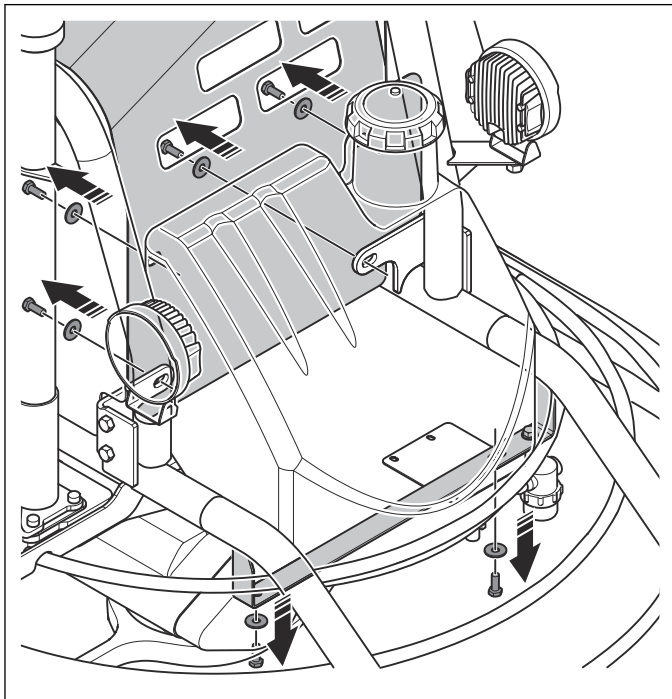
3. Drain the water tank.



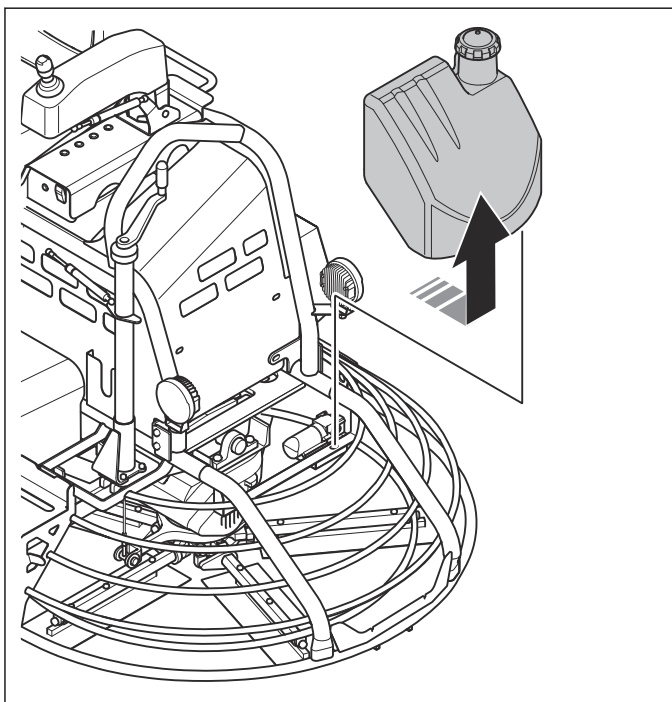
4. Loosen the hose clamp (A) and disconnect the water hose (B).



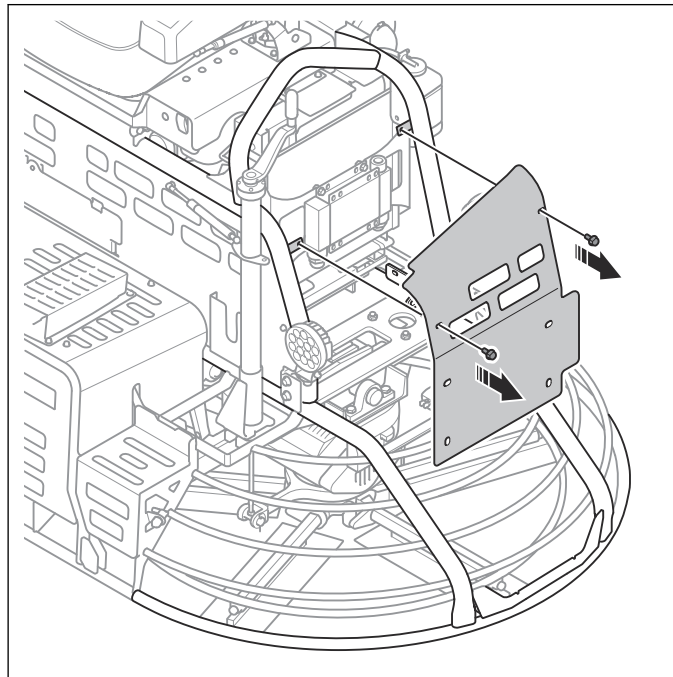
5. Remove the 4 screws for the water tank.



6. Remove the water tank.



7. Remove the 2 screws and the side cover.

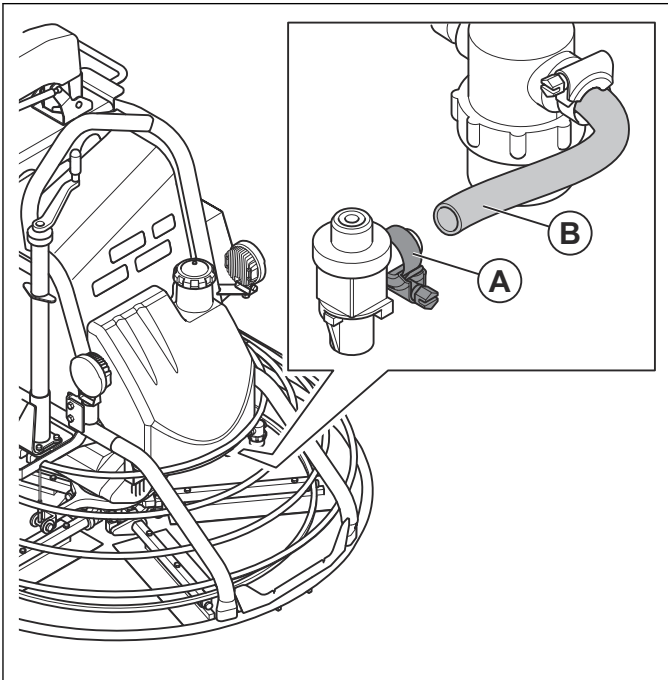


8. Only for CRT 48-35L and CRT 48-57K. Remove one hose from the hydraulic oil cooler to drain the system into a container.
9. Only for CRT 48-37V. Remove the screws, nuts and the protective plate of the hydraulic oil cooler.
10. Only for CRT 48-37V. Disconnect the electrical connector from the hydraulic oil cooler.
11. Only for CRT 48-37V. Remove the lower hose from the hydraulic oil cooler and drain the oil into a container.
12. Remove the second hose.
13. Remove the screws, nuts and the hydraulic oil cooler from the product.

6.19 To install the hydraulic oil cooler

1. Install the the hydraulic oil cooler and tighten the screws and nuts.
2. Attach the hoses.
3. Only for CRT 48-37V. Attach the electrical connector to the hydraulic oil cooler.
4. Only for CRT 48-37V. Attach the protective plate of the hydraulic oil cooler and tighten the screws and nuts.
5. Replace the hydraulic oil filter. Refer to *To replace the hydraulic oil filter on page 78*.
6. Fill the hydraulic tank with hydraulic oil. Refer to *To drain and fill hydraulic oil on page 77*.
7. Attach the side cover and tighten the 2 screws.
8. Attach the water tank and tighten the 4 screws.

9. Attach the water hose (B) and tighten the hose clamp (A).



10. Fill the water tank.
11. Connect the battery and start the product.
12. Examine the hydraulic system for leaks. Make sure that you repair all leaks.
13. Do a check of the hydraulic oil level and add oil if necessary.

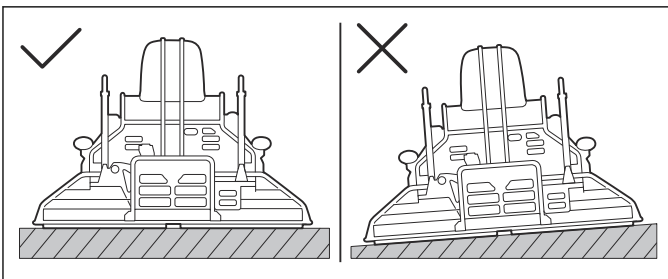
6.20 To remove the hydraulic gear pump

Put marks on the fittings and hoses before the removal to show the correct position for installation.

Make sure that you drain used fluids into a container when you remove the hoses.

To lift the product, use a lifting equipment with capacity of minimum 660 kg/1456 lbs.

1. Put the product on a flat, level surface with the blades flat.



2. For CRT 48-35L
 - a) Remove the engine air filter. Refer to *To clean or replace the air filter on page 6*.
 - b) Remove the clamp and the upper hose from the gear pump. Drain the gear pump fully into a container.
 - c) Remove the lower hose from the gear pump.

- d) Remove screws, washers and the gear pump from the engine.

3. For CRT 48-37V
 - a) Remove the clamp and the hose from the gear pump. Drain the gear pump fully into a container.
 - b) Remove the second hose from the gear pump.
 - c) Remove the belt guard.
 - d) Remove screws, washers, nuts, the gear pump and the pulley.
4. For CRT 48-57K
 - a) Open the panel cover of the engine.
 - b) Remove the clamp and the lower hose from the gear pump. Drain the gear pump fully into a container.
 - c) Remove the upper hose from the gear pump.
 - d) Remove screws and the gear pump from the engine.

6.21 To install the hydraulic gear pump

1. For CRT 48-35L
 - a) Attach the gear pump to the engine and tighten screws, washers
 - b) Attach the lower hose to the gear pump.
 - c) Attach the clamp and the upper hose to the gear pump. Add oil if necessary.
 - d) Install the engine air filter. Refer to *To clean or replace the air filter on page 6*.
2. For CRT 48-37V
 - a) Attach the gear pump and the pulley. Tighten screws, washers and nuts.
 - b) Attach the belt guard.
 - c) Attach the second hose to the gear pump.
 - d) Attach the clamp and the hose to the gear pump. Add oil if necessary.
3. For CRT 48-57K
 - a) Attach the gear pump to the engine and tighten screws
 - b) Attach the upper hose to the gear pump.
 - c) Attach the lower hose to the gear pump and tighten the clamp. Add oil if necessary.
 - d) Close the panel cover of the engine.
 - e) Start the engine and examine the hydraulic system for leaks. Make sure that you repair all leaks.
 - f) Do a check of the hydraulic oil level and add oil if necessary.

6.22 To remove the steering cylinder

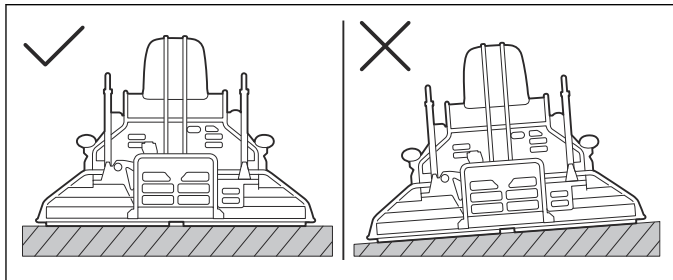
Put marks on the fittings and hoses before the removal to show the correct position for installation.

Make sure that you drain used fluids into a container when you remove the hoses.

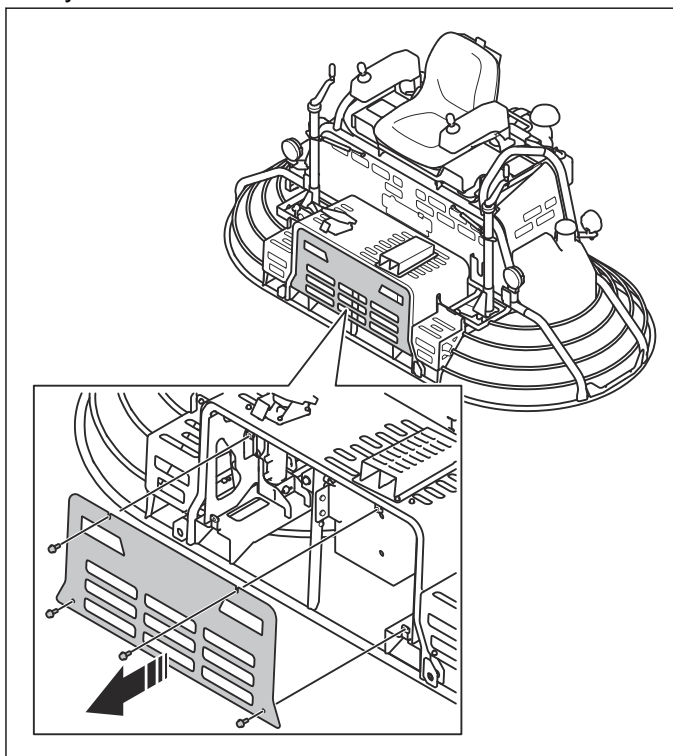
Seal the hoses and fittings with plugs when removed.

Examine O-rings for wear or damage and replace if necessary.

1. Put the product on a flat, level surface with the blades flat.

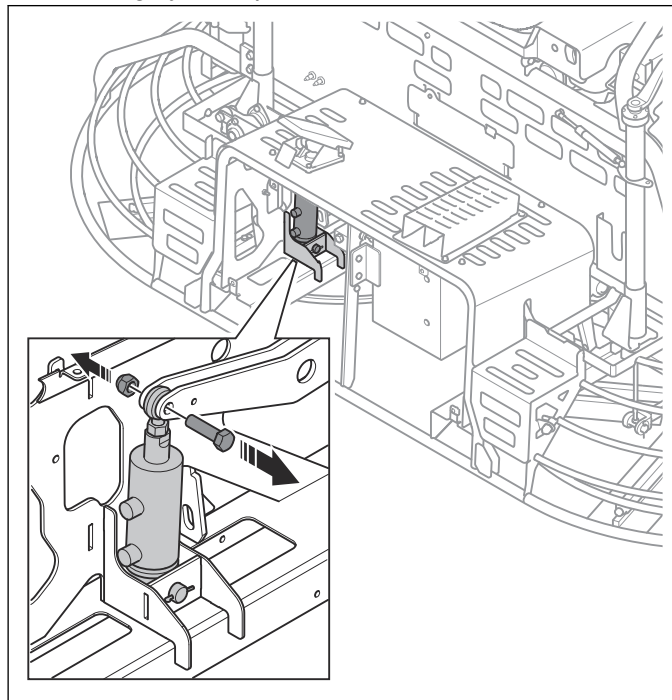


2. Make sure that the blades are flat on the surface.
3. Remove the 4 screws and the front cover to get access to the forward and backward steering cylinders.

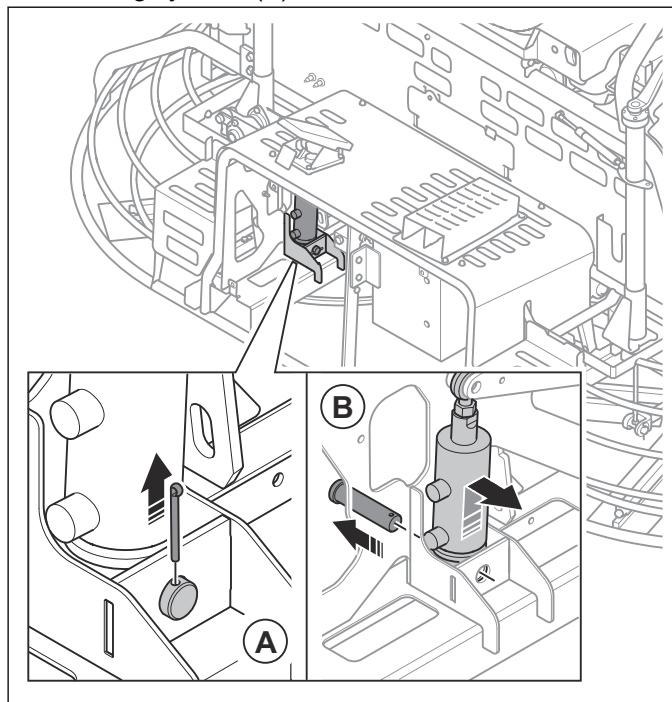


4. Remove the hoses from steering cylinder.

5. Remove the nut, the washer and the bolt from the steering cylinder piston.



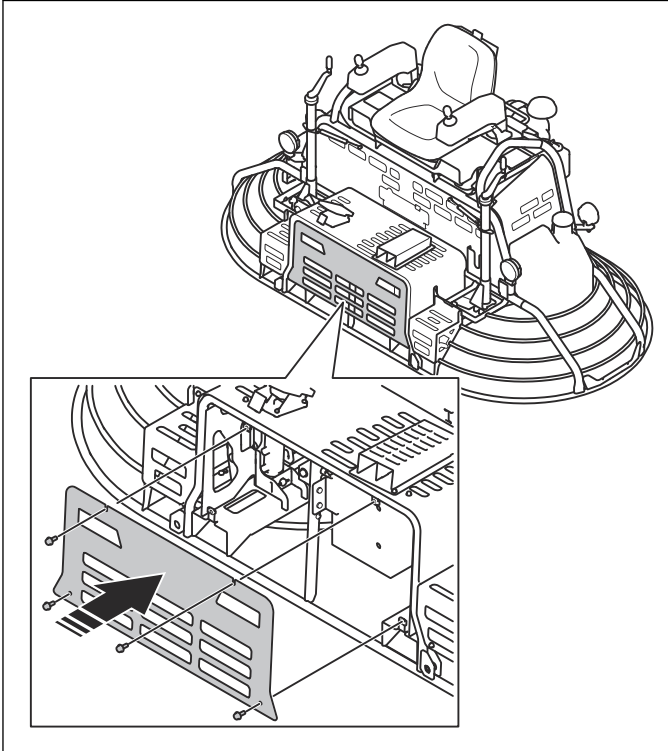
6. Remove the cotter pin (A), clevis pin and the steering cylinder (B).



6.23 To install the steering cylinder

1. Make sure that the piston head of the steering cylinder is centered before installation. Turn the rod end to fit the piston to the correct length.
2. Attach the steering cylinder and tighten the cotter pin and clevis pin.
3. Loosen the lock nut on the steering cylinder piston to fit the nut, the washer and the bolt. Torque them to 86 Nm.

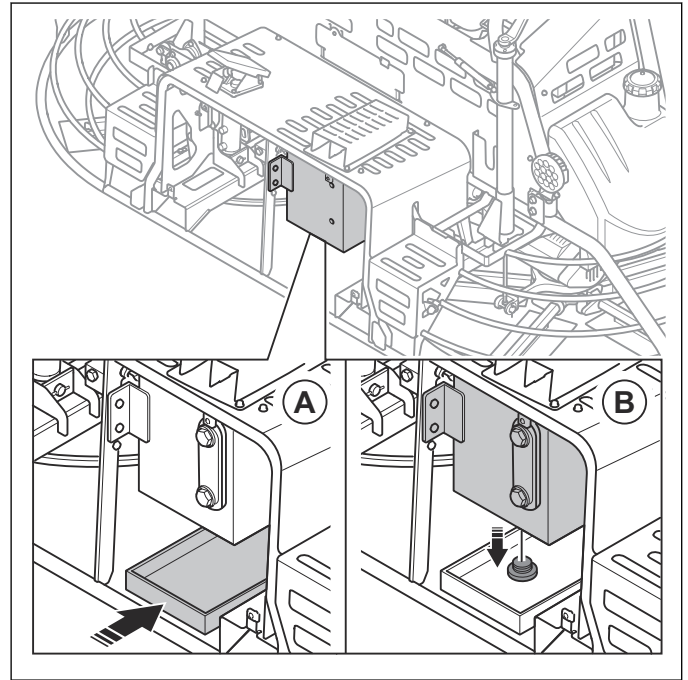
4. Tighten the nut, the washer and the bolt to the piston head of the steering cylinder.
5. Remove the seals from the hoses and attach the hoses to the steering cylinder.
6. Attach the front cover with the 4 screws.



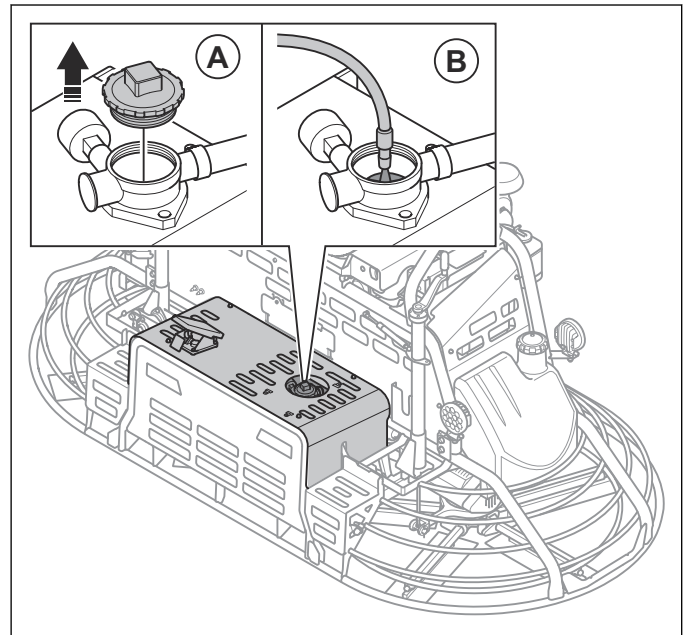
7. Start the product and do a check of the hydraulic system for leaks. Repair if necessary.
8. Do a check of the hydraulic oil level and add oil if necessary. Refer to *To drain and fill hydraulic oil* on page 77.

6.24 To drain and fill hydraulic oil

1. Put a container (A) below the drain plug. Open the drain plug (B) and drain the hydraulic tank.

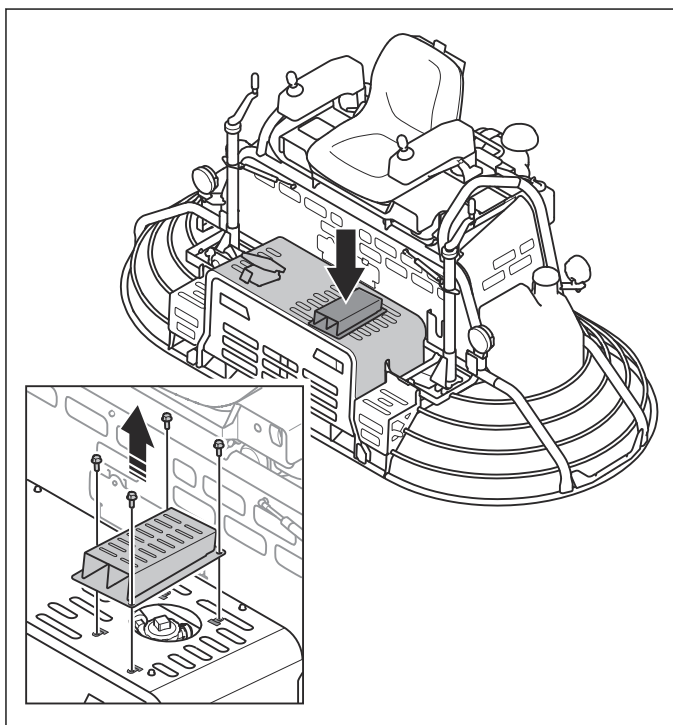


2. Open the hydraulic oil tank and add hydraulic oil.

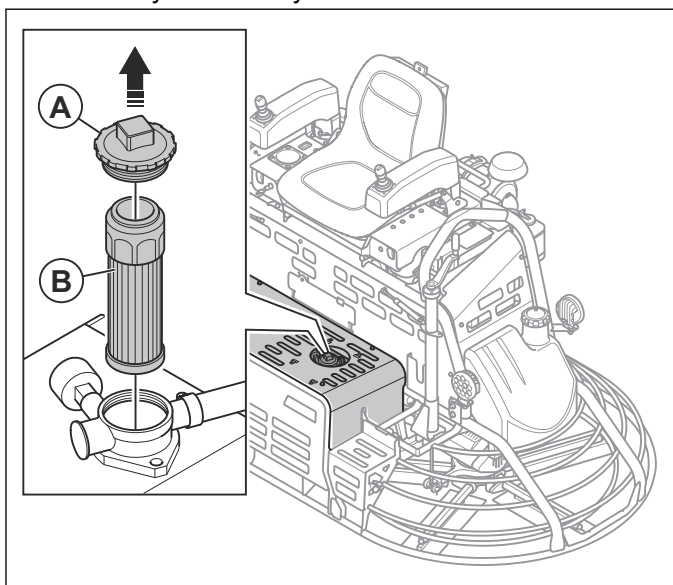


6.25 To replace the hydraulic oil filter

1. Remove the 4 screws and the foot holder.



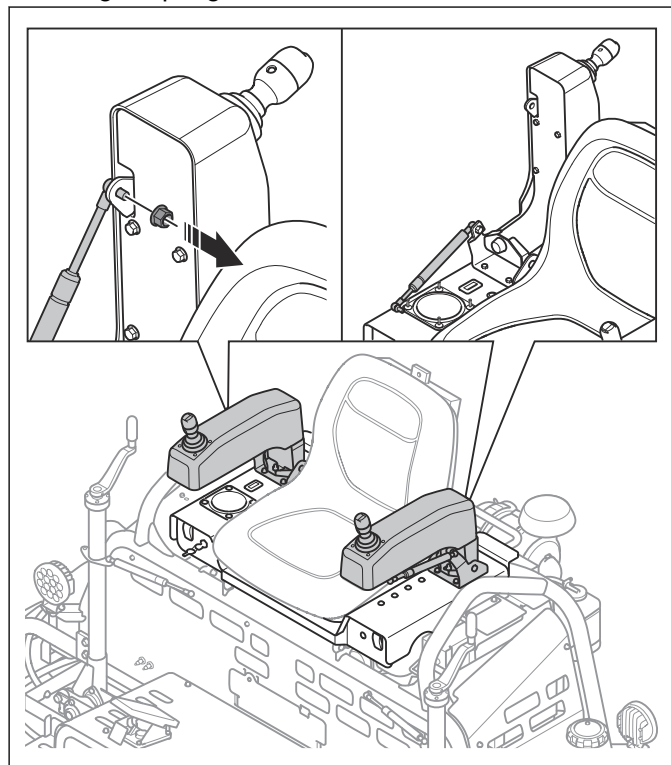
2. Remove the filter cap (A) and pull the filter (B) up and away from the hydraulic tank.



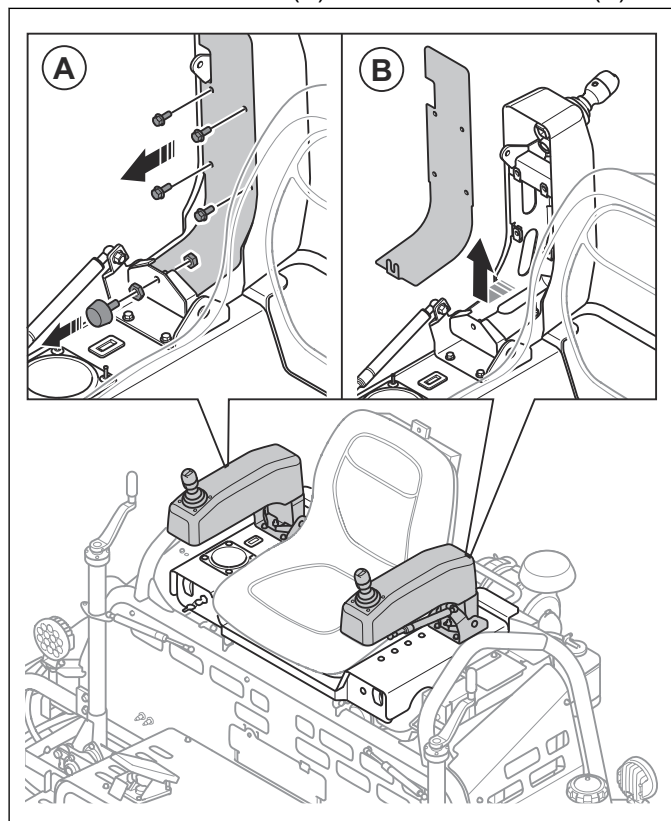
3. Install a new filter and tighten the filter cap.
4. Do a check of the hydraulic oil level and add oil if necessary.

6.26 To replace the joystick

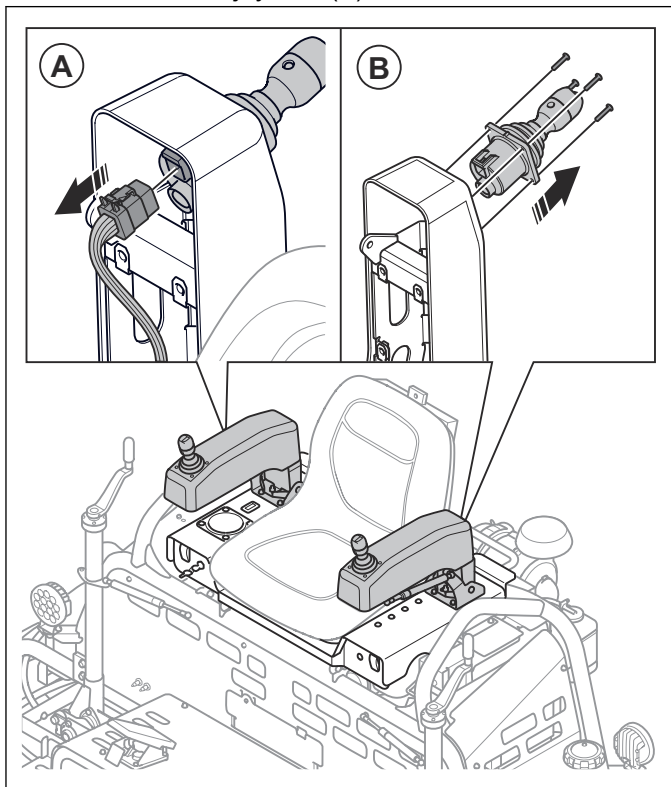
1. Lift the arm rest and remove the bolt to disconnect the gas spring.



2. Remove the 5 bolts (A) and the bottom cover (B).



3. Disconnect the joystick (A).

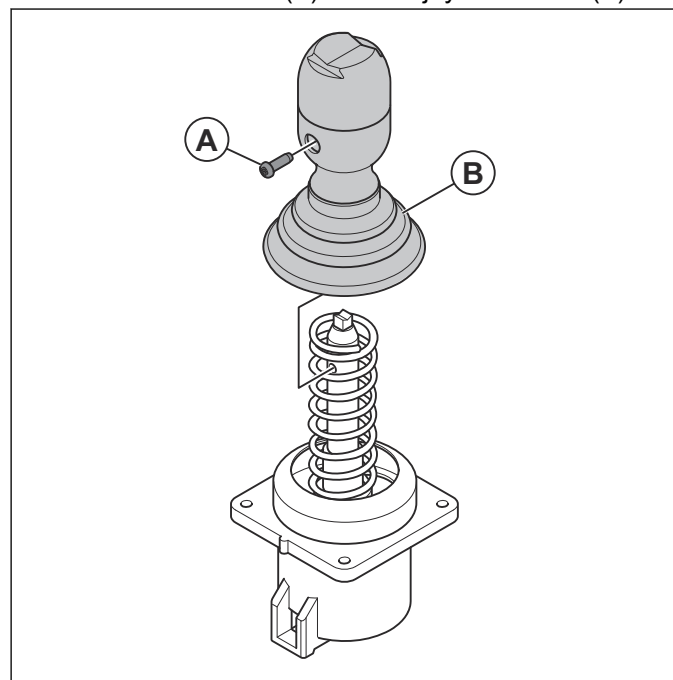


4. Remove the 4 screws (B) and the joystick.

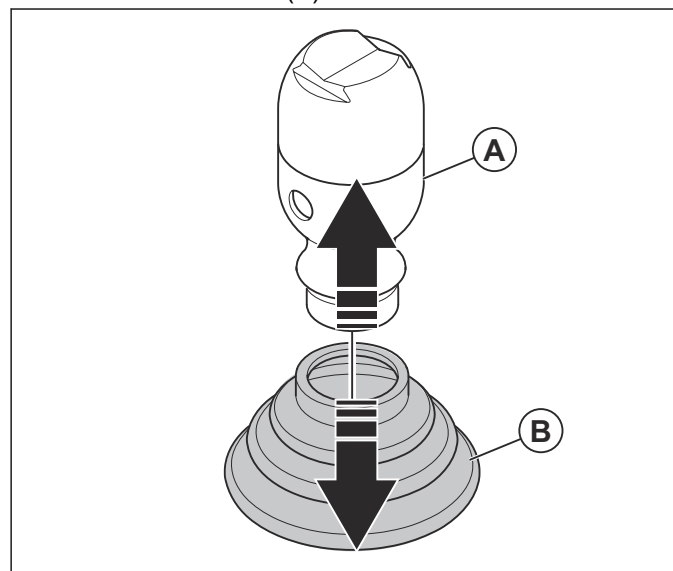
5. Install the joystick in the opposite sequence.

6.27 To replace the joystick seals

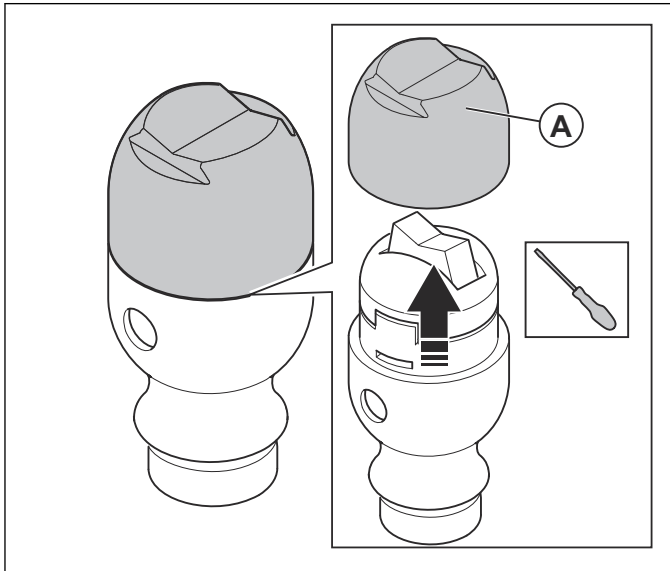
1. Remove the screw (A) and the joystick cover (B).



2. Pull the top of the joystick cover away from the bottom rubber seal (B).



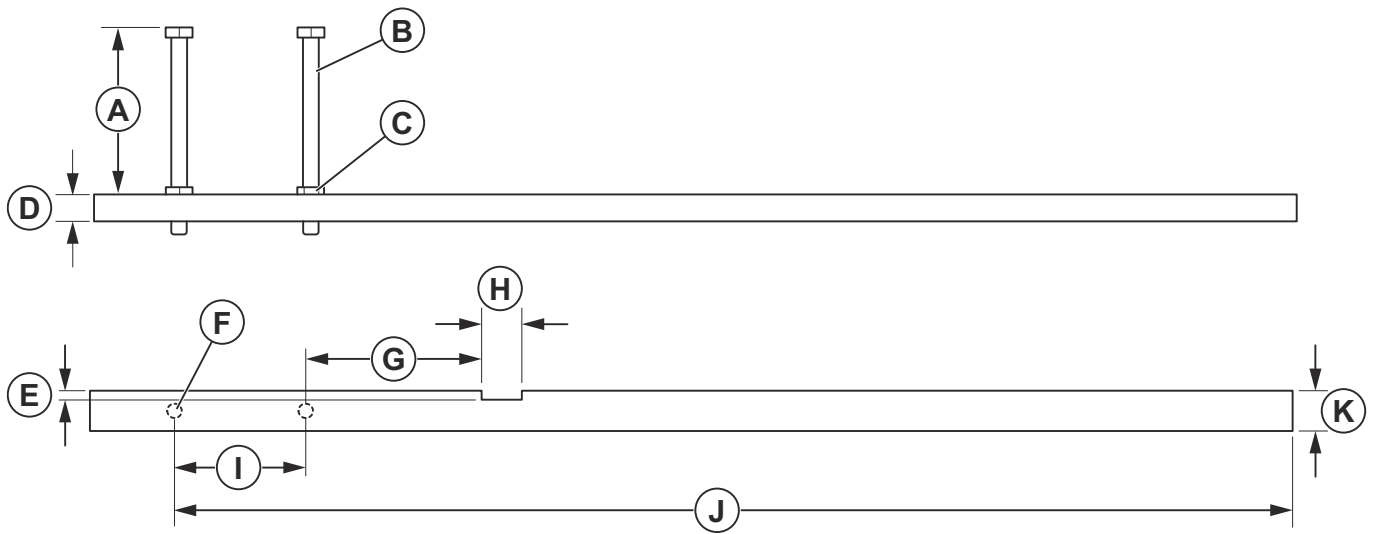
3. Put the point of a flat screwdriver in the edge of the button seal. Remove the button seal (A).



4. Pull out the inner surface of the new button seal for correct installation.
5. Push down the button seal onto the joystick cover. Make sure that the switch is aligned with the notches.
6. Attach the top of the joystick to the bottom rubber seal.
7. Attach the joystick cover to the joystick and tighten the screw. Make sure that screw hole is aligned with the thread.

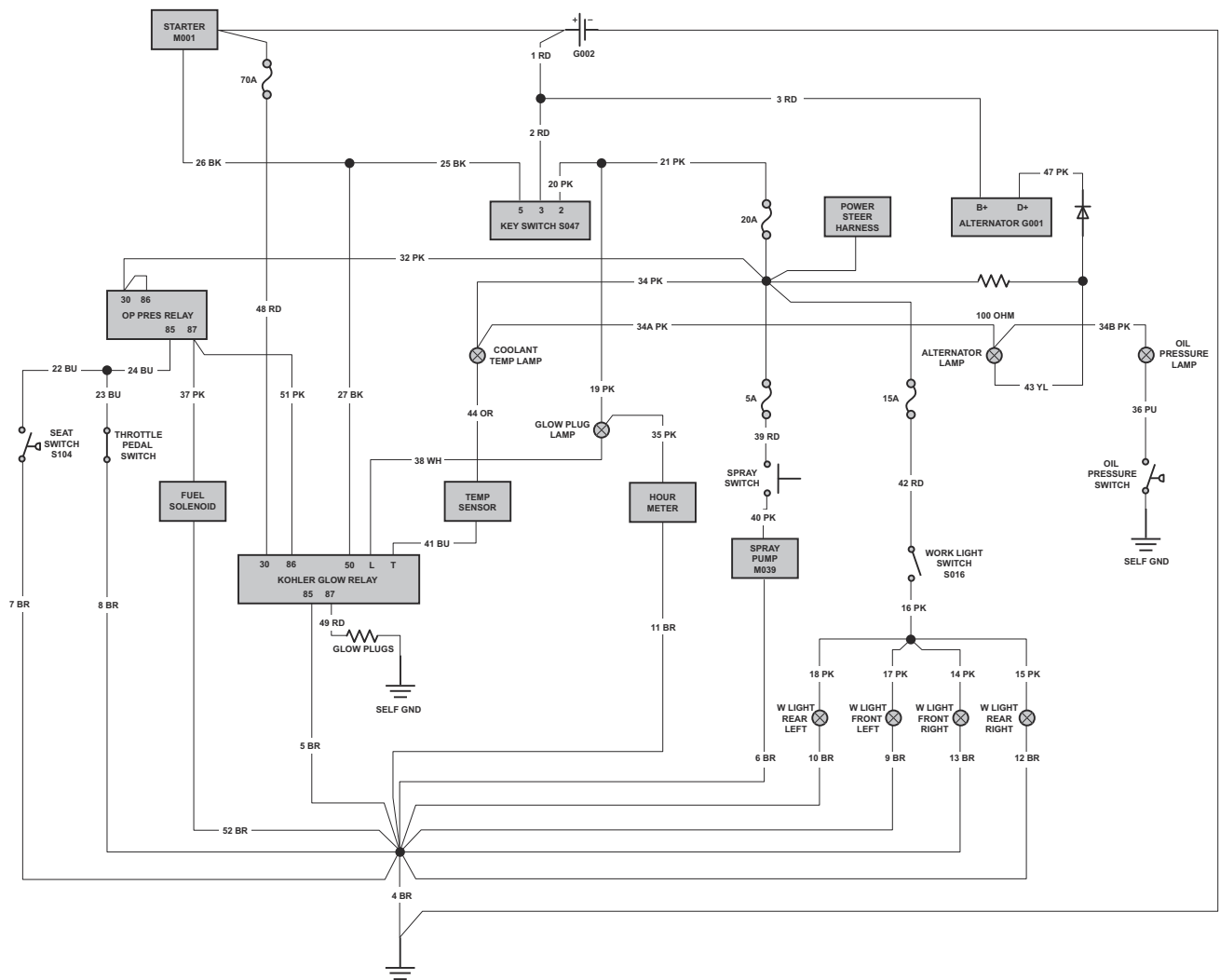
7 Diagrams

7.1 Service tool assembly

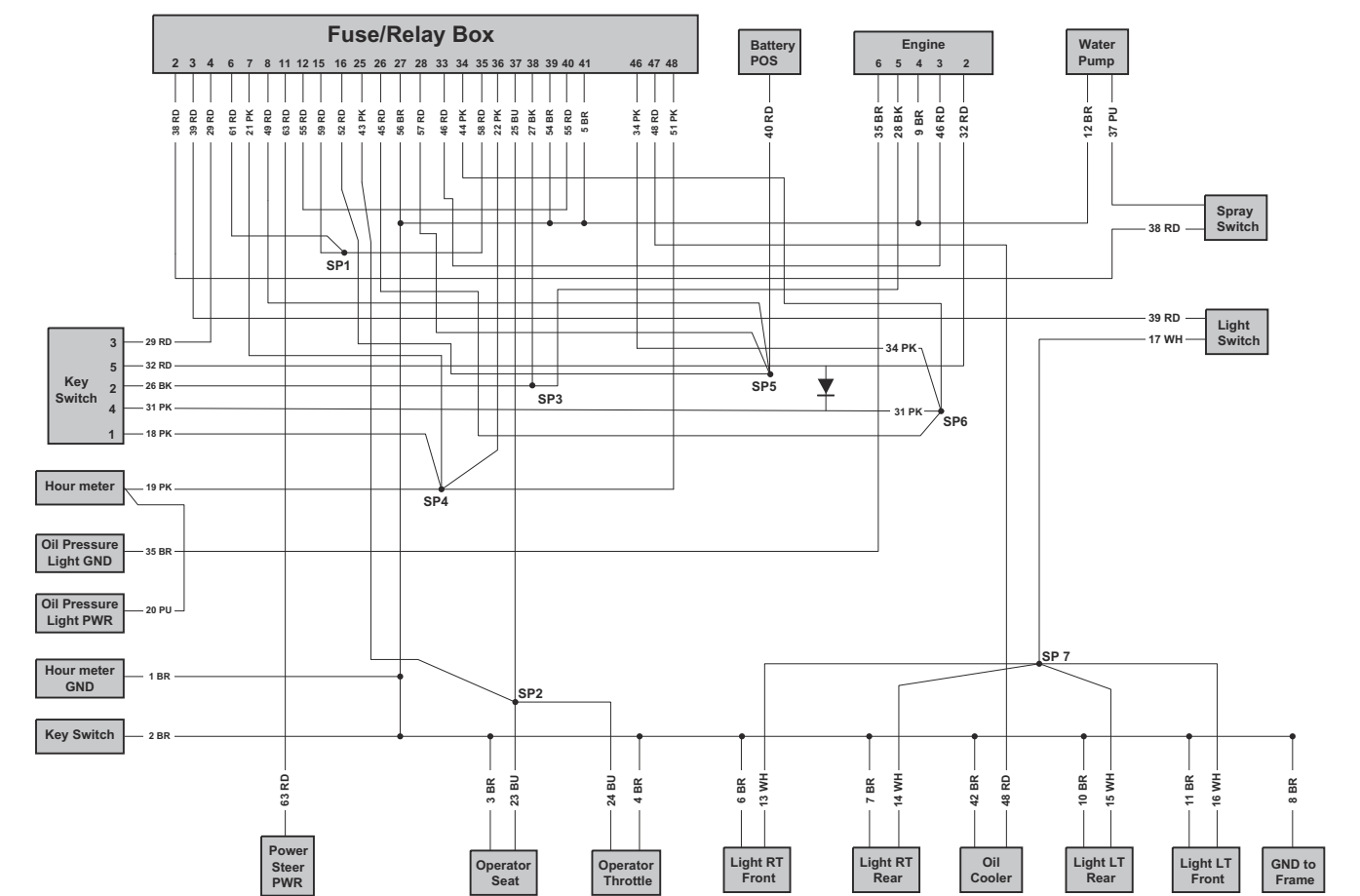


A	64.5 mm	G	67 mm
B	M6 × 1.0 × 75 mm	H	15 mm
C	M6 Jam Nut	I	50 mm
D	10 mm	J	425 mm
E	4 mm	K	16 mm
F	M6 × 1.0 mm × 2		

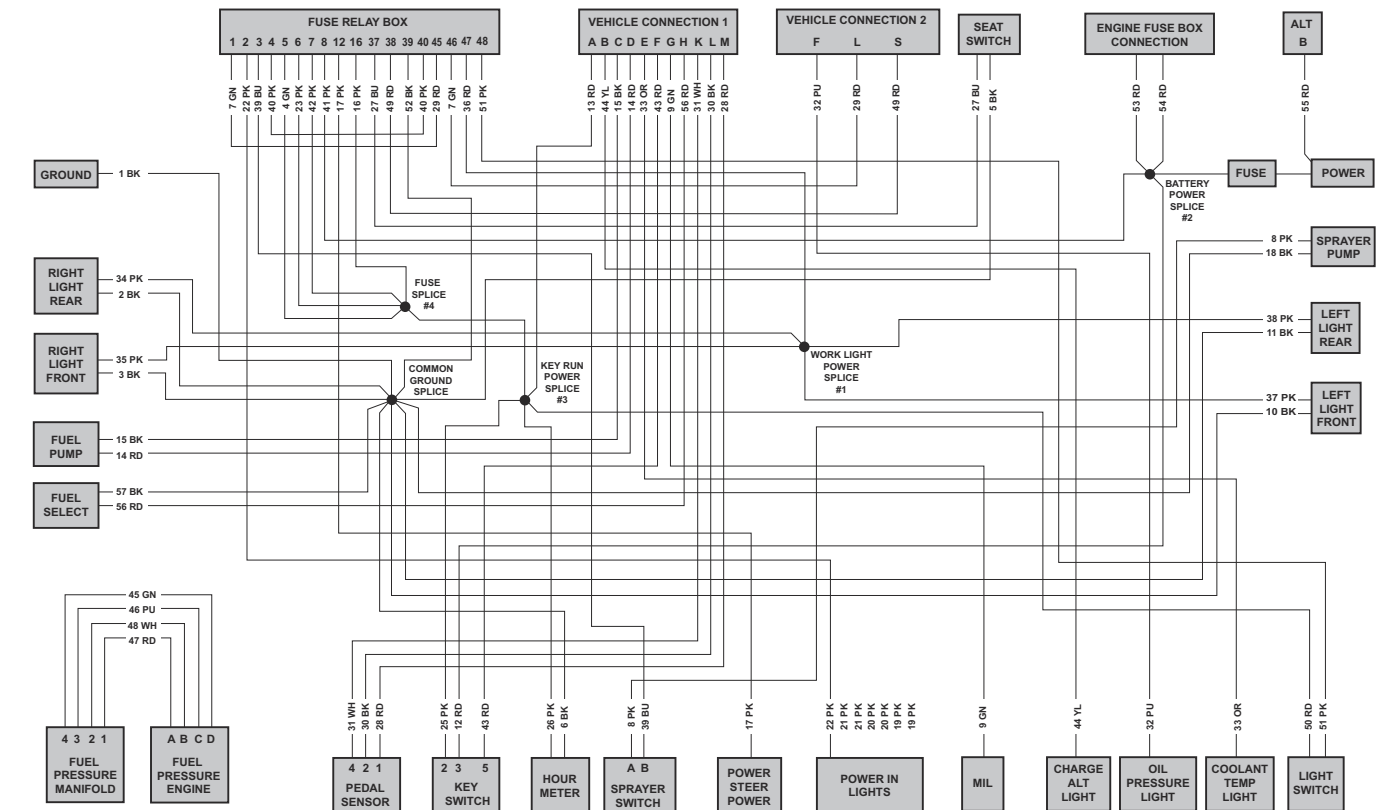
7.2 Wiring diagram CRT 48-35L



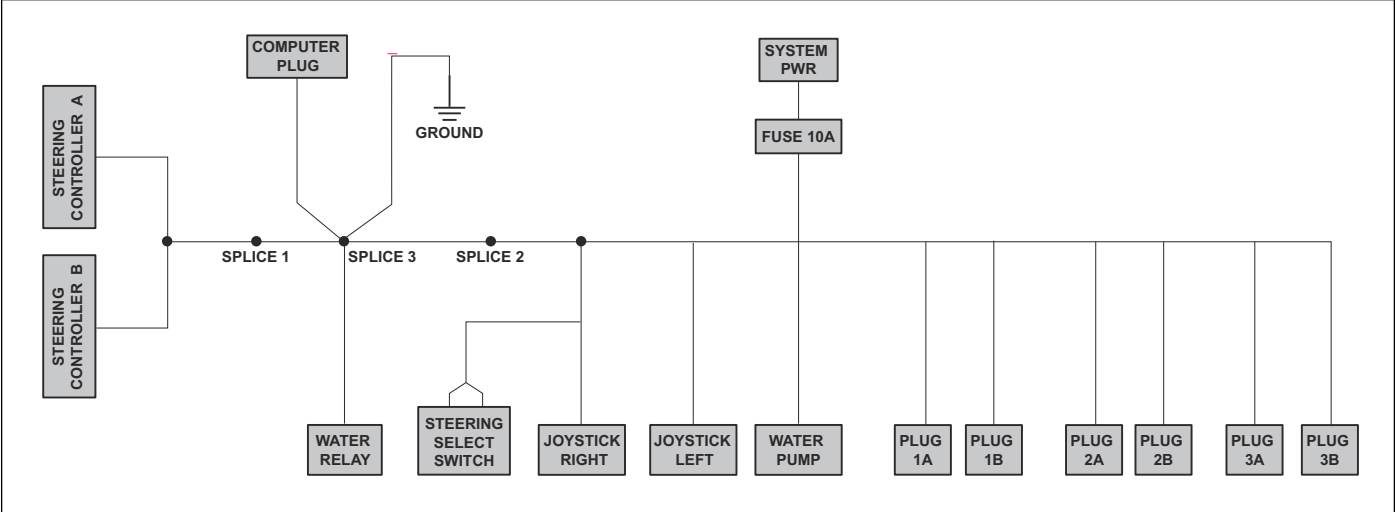
7.3 Wiring diagram CRT 48-37V



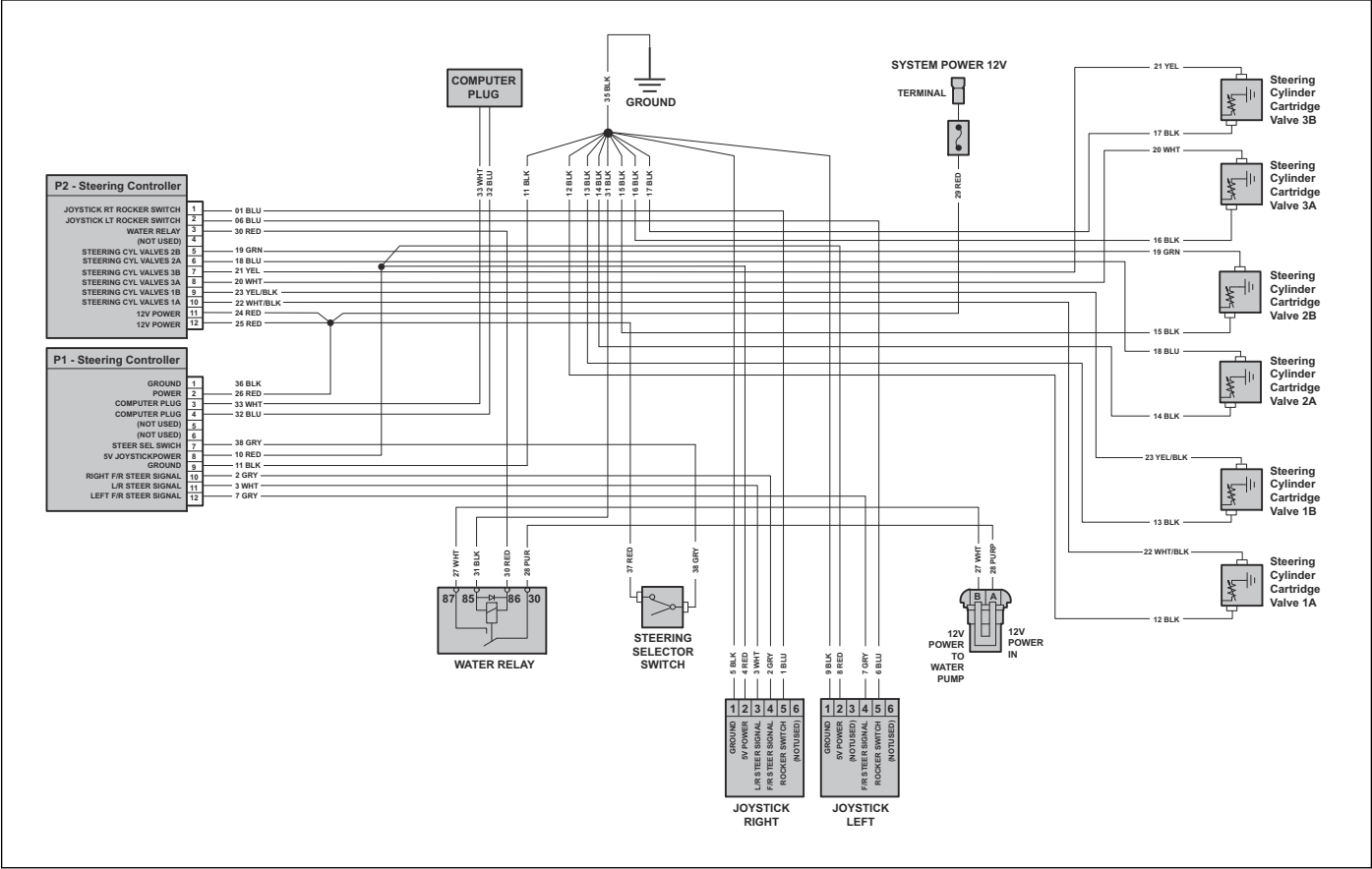
7.4 Wiring diagram CRT 48-57K



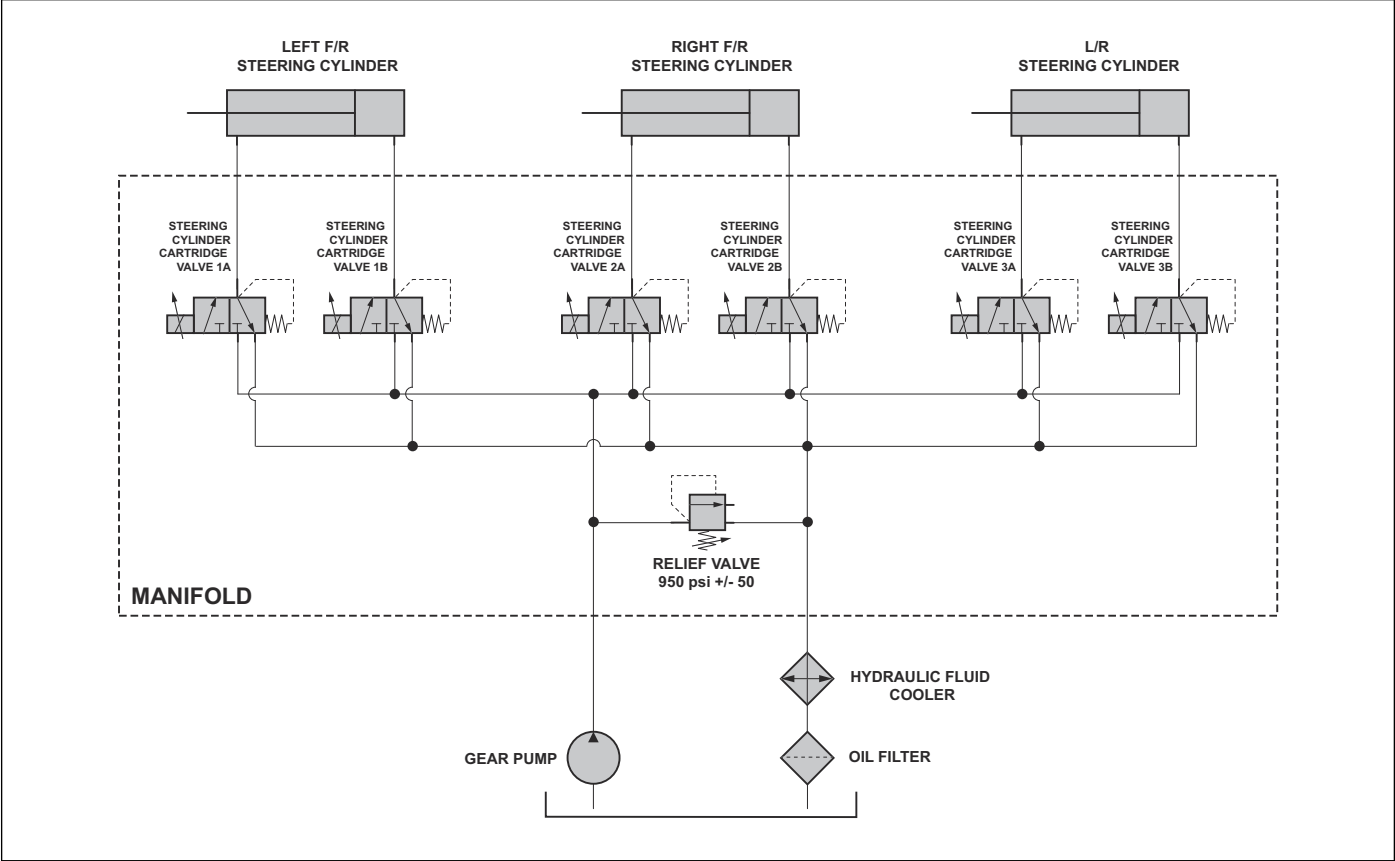
7.5 Power steering wiring harness diagram



7.6 Power steering wiring diagram



7.7 Hydraulic schematic



8 Technical data



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