Husqvarna®

Workshop manual

English

2004 - 001 - 29.08.2023

Contents

1 Introduction

1.1 Document description

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

1.2 Target group

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

1.3 Revisions

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

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

1.4 Safety

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

1.5 Servicing tools

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

2.1 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

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

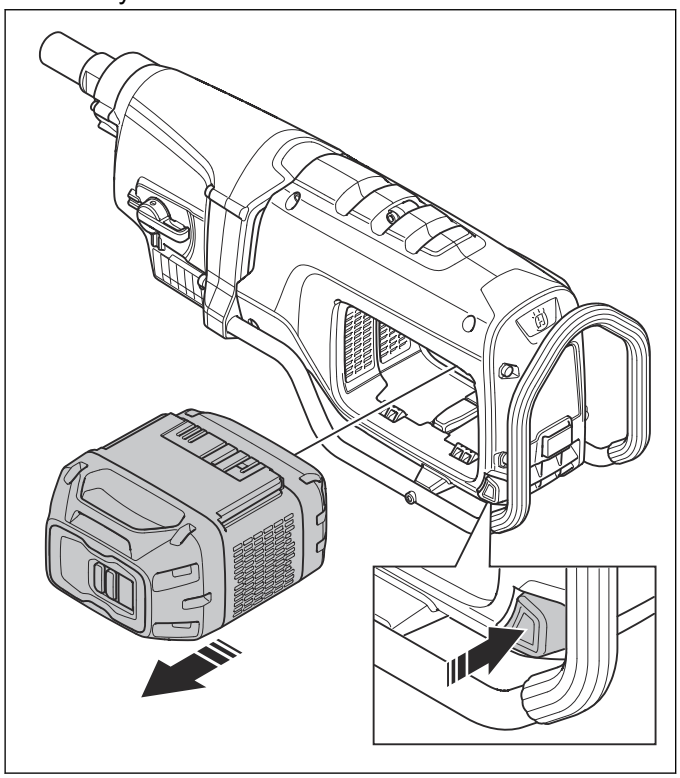
The service center that repairs the product must have safety devices that obey local regulations. Warnings and cautions are used to point out specially important parts of the workshop manual.

2.2.1 To remove the battery

WARNING: Always remove the battery before you do repairs or do servicing on the product.

WARNING: Do not put the battery in the battery holder before the product is assembled.

- Push the battery release button and remove the battery.



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

Always use approved personal protective equipment.

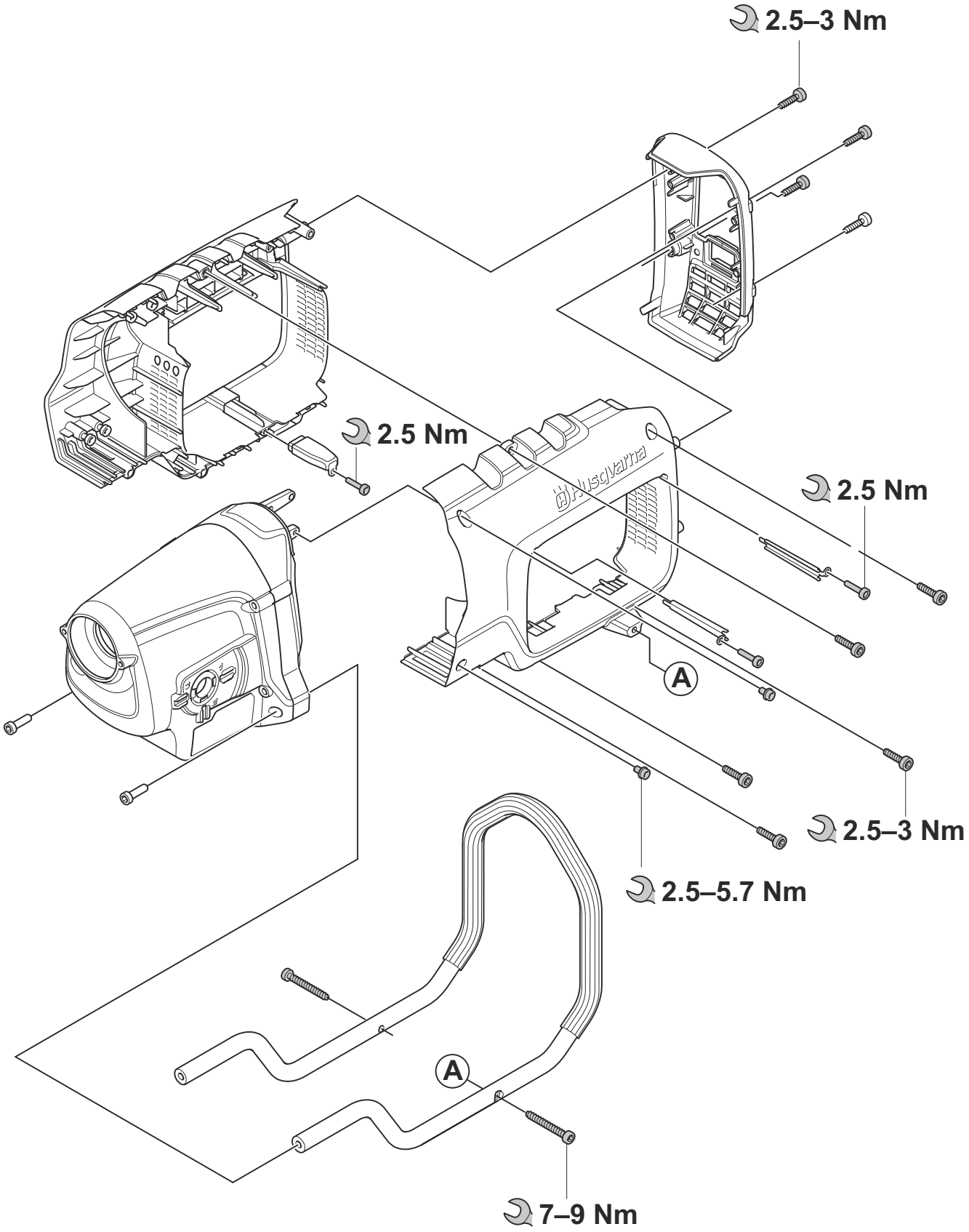
This product complies with applicable EC directives. (EU only).

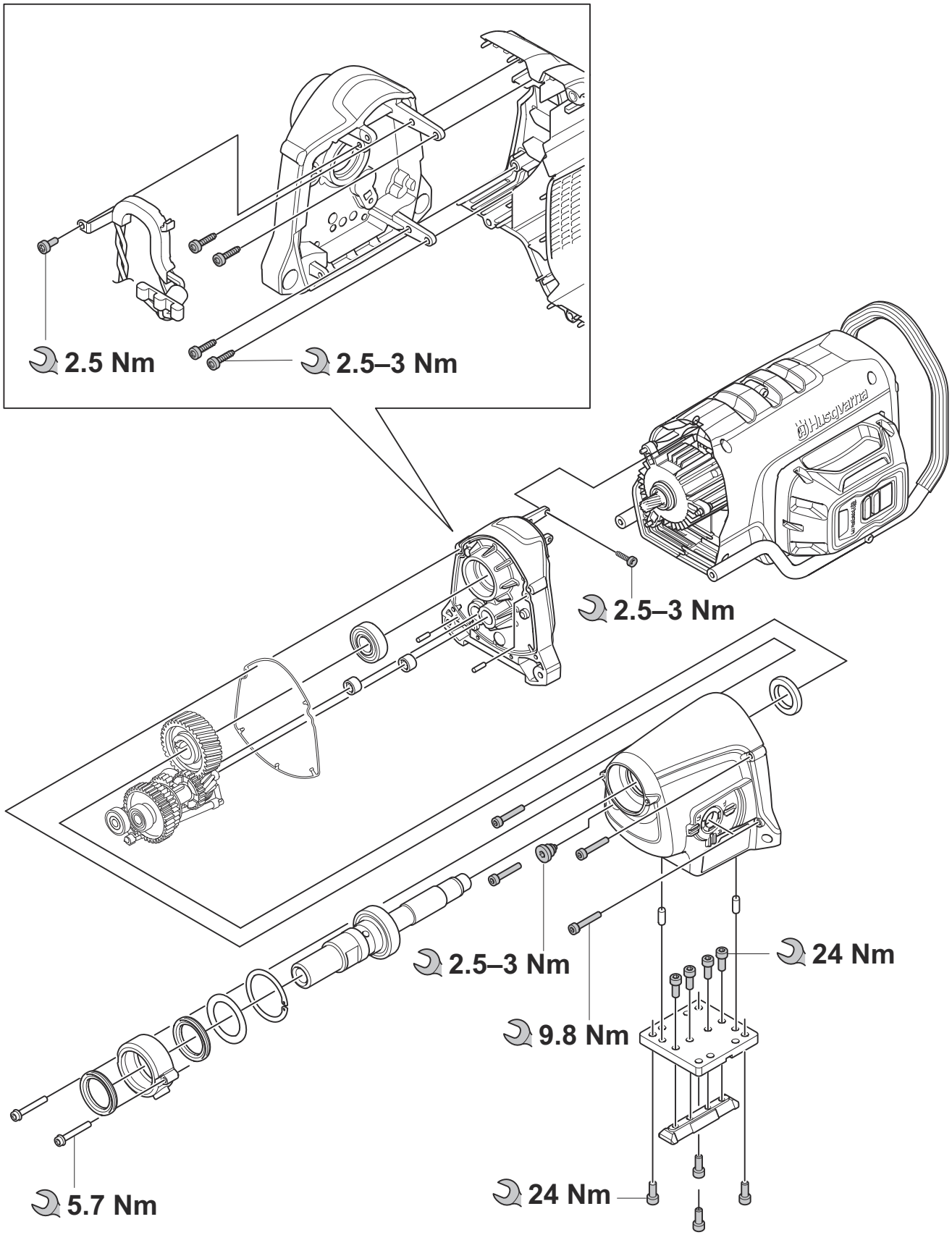
Environmental mark. The product or package of the product is not domestic waste. Recycle it at an approved disposal location for electrical and electronic equipment.

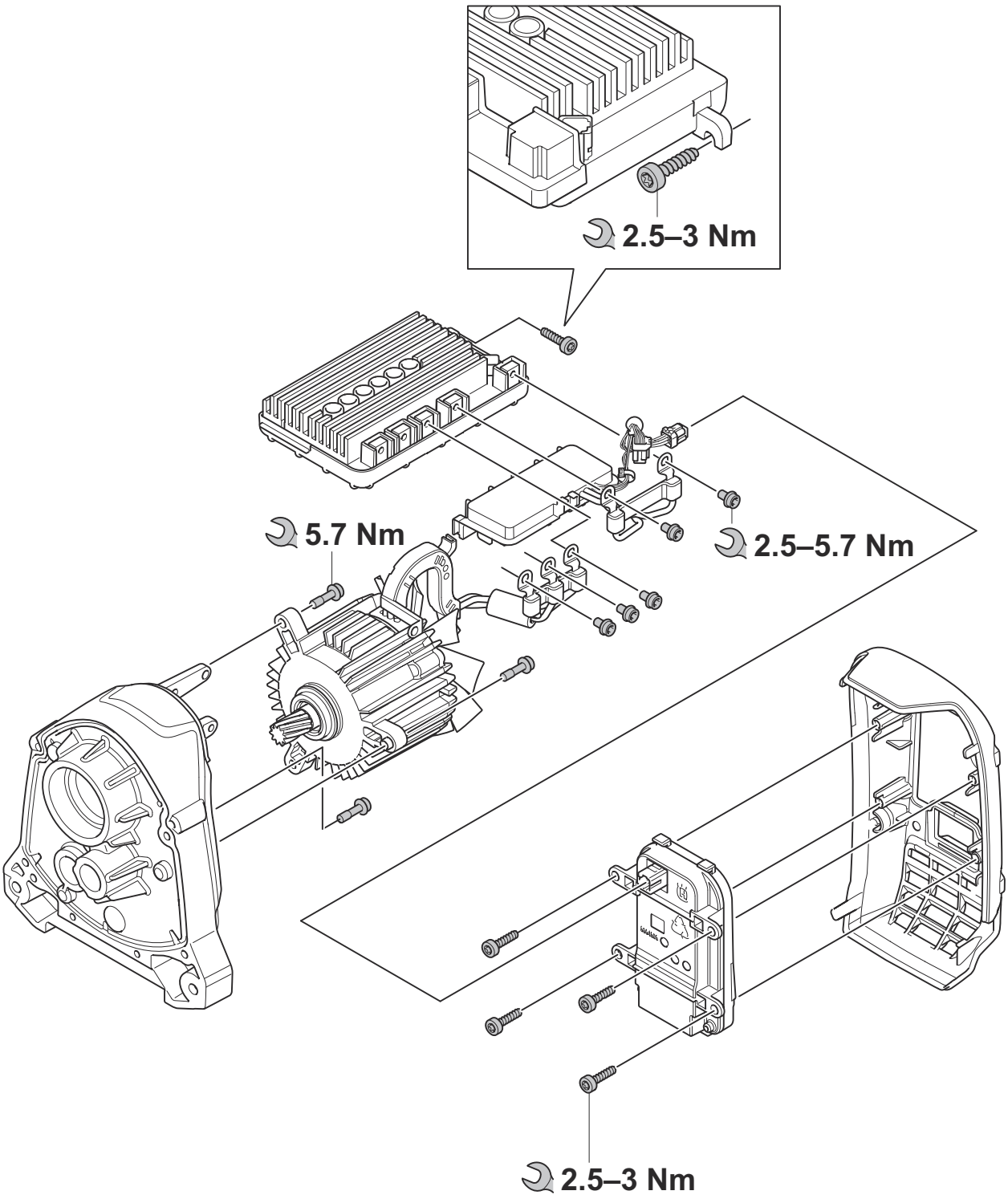
Make sure that water cannot leak into the product when you drill in the ceiling. Use an applicable water collector.

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

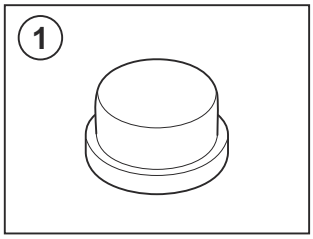
3 Tightening torques

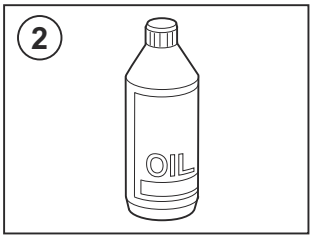


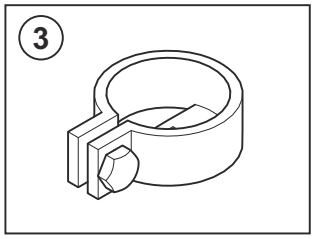

2.5 Nm
2.5–3 Nm
2.5–3 Nm
2.5–3 Nm
24 Nm
9.8 Nm
24 Nm
5.7 Nm

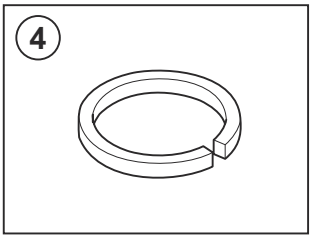

2.5–3 Nm
5.7 Nm
2.5–5.7 Nm
2.5–3 Nm

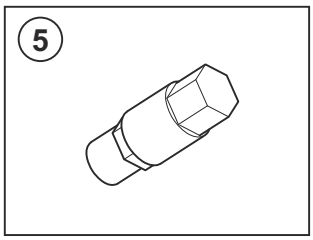
4 Servicing tools

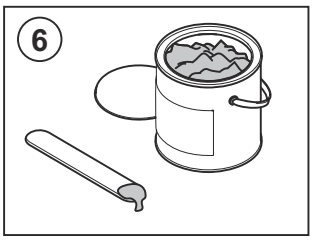


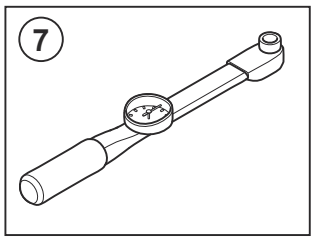


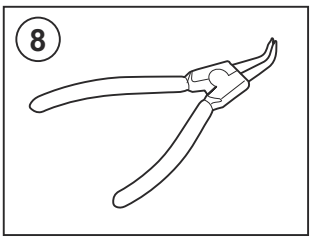


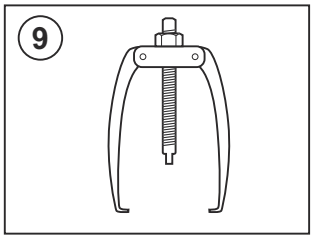


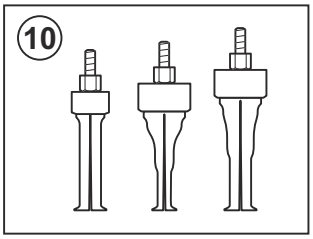


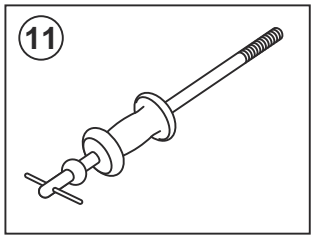


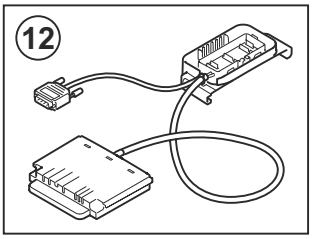


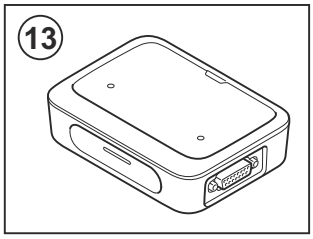


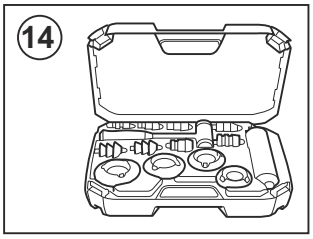


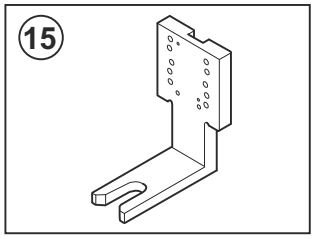


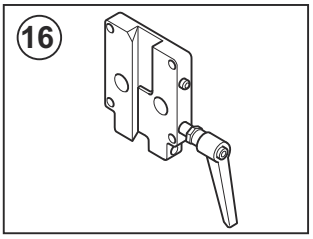








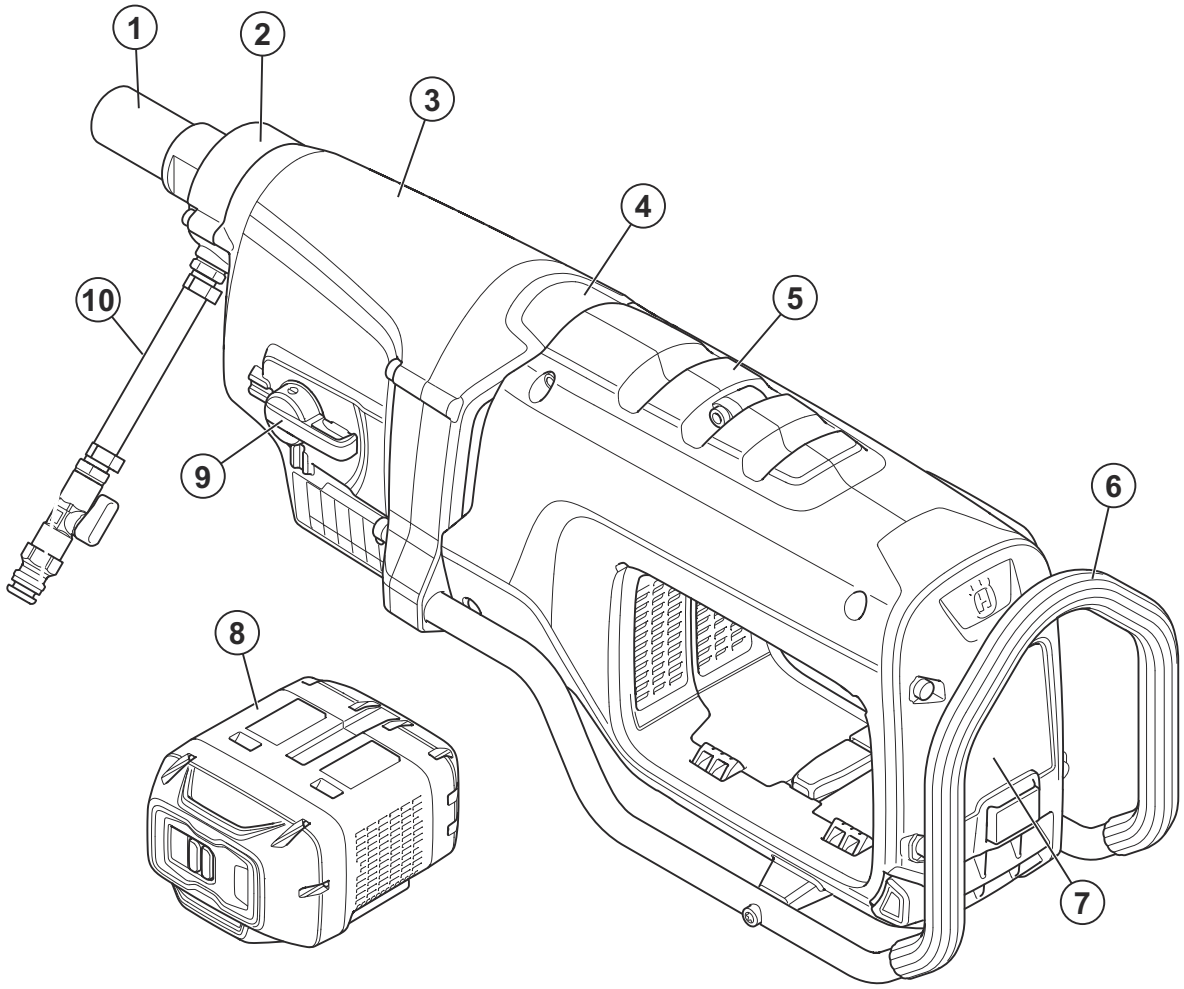




Item	Description	Use	Article No.
1	Service tool for seals	To install the bearings.	546 36 80-01
2	Oil	0,5 l of oil to lubricate the gearbox.	Q8 T 65 SAE 75W-90
3	Clamp ring	To set the torque of the clutch.	531 12 31-22
4	Adapter for the clamp ring	To set the torque of the clutch.	581 92 82-01
5	Turning bar for 17 mm socket	To set the torque of the clutch.	522 91 40-02
6	Grease	To press the radial seals.	Shell GADUS S2 V100 3 or GHY 133N
7	Torque wrench	To set the torque of the clutch.	N/A
8	Snap ring pliers	Remove snap rings	N/A
9	Puller	Remove the shaft and bearings.	N/A
10	Inner bearing extractor	To remove the bearings.	SKF TMIC 7-28
11	Slide hammer	To remove the bearings.	N/A
12	Adapter cable for Husqvarna Service Hub	Together with Interface Box to connect the product to Husqvarna Service Hub	529 47 15-01
13	Service Interface box	Together with adapter cable to connect the product to Husqvarna Service Hub.	598 07 28-01

Item	Description	Use	Article No.
14	SKF tool set	To install the bearings and radial seals.	SKF tool set TMFT 36
15	Machine tool holder	To hold the gearbox.	598 95 56-02
16	Bracket	To hold the gearbox.	577 95 06-01

5 Product overview



1. Drill spindle
2. Water system
3. Gearbox housing
4. Gearbox cover
5. Cover system
6. Transportation handle and safety frame
7. Human Machine Interface (HMI)
8. Battery (not included)
9. Gear knob
10. Water inlet

6 Troubleshooting

1. Do the steps that follow and make a note of all the faults you find:
   a) Do a visual inspection of the product, refer to *To do a visual inspection of the product on page 13*.
   b) Do a function test of the product, refer to *To do a function test of the product on page 13*.
   c) Connect the product to Husqvarna Service Hub, refer to *To connect the Husqvarna Service Hub on page 13*.
2. Refer to *Troubleshooting on page 14* and *LED indicators on the control panel on page 15* to correct the faults you find.
3. Do a function test again to make sure that the product operates correctly. Refer to *To do a function test of the product on page 13*.

7.1 To do a visual inspection of the product

1. Do a check of the plastic covers. Replace the plastic covers if they are damaged, refer to *To remove and install the left cover on page 18* and *To remove and install the motor on page 20*.
2. Do a check of the transportation handle. Replace the transportation handle if it is bent or damaged, refer to *To remove and install the transportation handle on page 17*.
3. Do a check of the gear box. If it is damaged or if there is an oil leakage, refer to *To remove and install the gearbox on page 21* and *To disassemble the gearbox cover on page 31* and *To assemble the gearbox cover on page 32*.
4. Make sure that all screws are installed. Tighten all screws to the correct torque, refer to *Tightening torques on page 6*.

7.2 To do a function test of the product

- Make sure that the battery fits in the product. If the battery does not fit, make sure that the battery is not damaged.
- Do a check of the water supply from the drill spindle. Make sure that there is no blockage.
- Push the On/Off-button and make sure that the battery indicator comes on. If the battery indicator does not come on, refer to *Troubleshooting on page 14*.
- Make sure that no warning indicators comes on or start to flash when you push the On/Off-button. If a warning indicator comes on or starts to flash, refer to *LED indicators on the control panel on page 15*.
- Make sure that the drill spindle rotates when you pull the power trigger. If the drill spindle does not rotate, refer to *Troubleshooting on page 14*.
- Start the product and keep it on for 15 seconds. Make sure that no vibrations or unusual noises come from the product and that the warning indicators stay off. If unusual vibrations or noises come from the product or if a warning indicator comes on, refer to *Troubleshooting on page 14*.

7.3 To troubleshoot the product with the Husqvarna Service Hub

The Husqvarna Service Hub is used with a computer (not included) to troubleshoot the product and to update the software in the product.

You must always connect the product to the Husqvarna Service Hub when you troubleshoot the product, also when the problem is a visual damage on the product.

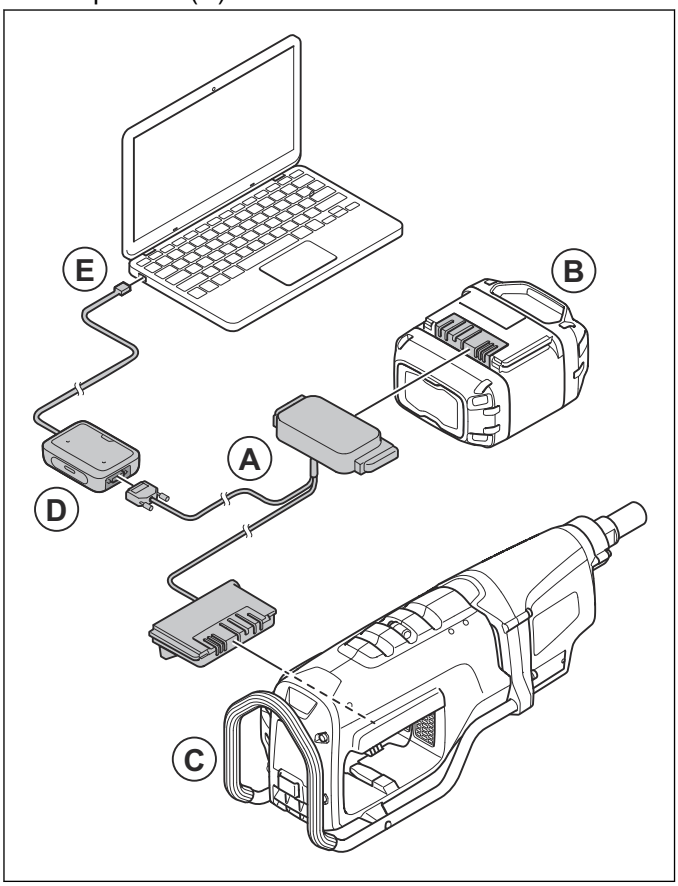
1. Connect the product to the Husqvarna Service Hub. Refer to *To connect the Husqvarna Service Hub on page 13*.
2. Read the error codes in the Husqvarna Service Hub.
3. Use the Husqvarna Service Hub to update the software of the product.
4. Do a diagnostic test in Husqvarna Service Hub.

7.4 To connect the Husqvarna Service Hub

WARNING: The product can start when it is connected to the Husqvarna Service Hub.

Always remove the drill bit before you connect the product to the Husqvarna Service Hub.

1. Connect the adapter cable (A) to the battery (B) and the product (C).



2. Connect the adapter cable to the service interface box (D).
3. Connect the service interface box to the computer (E) that runs the Husqvarna Service Hub.

Note: Refer to the manual of the Husqvarna Service Hub for instructions and obey the instructions.

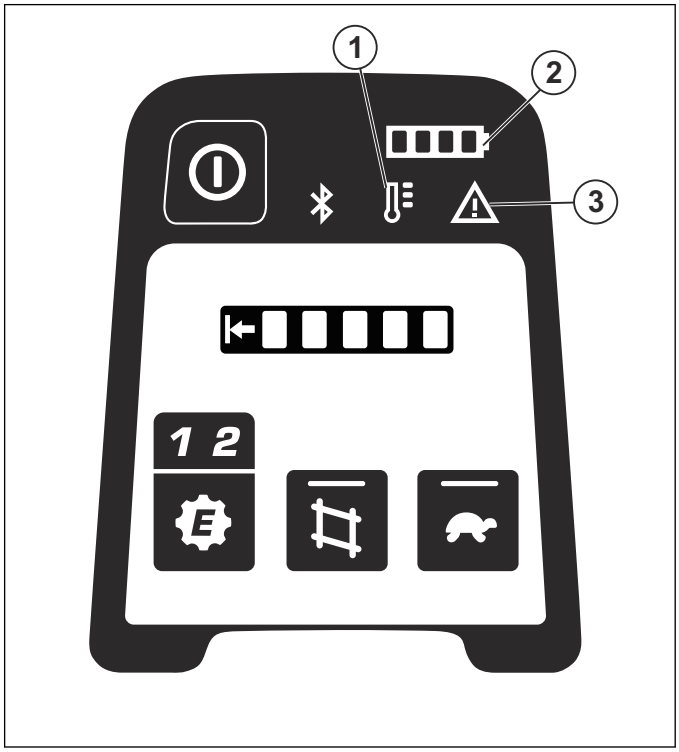
7.5 Troubleshooting

Problem	Cause	Solution
The LED indicators do not come on when you push the On/Off button on the product.	The battery is damaged.	Do a test with a different battery.
	The cable harness is damaged.	Do a check of the wire harness between the HMI and the control unit.
		Do a check of the wire harness between the battery connection and the control unit.
	The HMI is damaged.	Do a check of the HMI. Replace it if it is necessary, refer to *To disassemble and assemble the HMI holder on page 18*.
The motor does not start when the start switch is in the ON position.	The product is off.	Push the On/Off-button to start the product.
	The battery is damaged.	Do a test with a different battery.
	A cable is damaged.	Do a check of all the cables.
	The Start/Stop-switch is damaged.	Replace the HMI.

Problem	Cause	Solution
The product stops unexpectedly.	The drill bit is blocked.	Turn the drill bit back and forth with a wrench until the drill bit is not blocked.
	The load is too high because of motor overload.	Make sure that the drill bit is not blocked.
The drill bit rotates slower and slower until it stops.	The diamond segments are blunt.	Sharpen the diamond segments with a grind stone.
	The clutch is worn.	Do a check of the clutch. Adjust the clutch torque if it is necessary, refer to *To adjust the clutch torque on page 32*.
There is buildup around the hole during operation.	The water flow is too low.	Increase the water pressure.
		Do a check of the water hose.
The diamond segments on the drill bit are pulled out of the bond.	There is too much vibration in the product.	Use the correct load when you operate the product.
The gear oil leaks.	The seals in the gearbox are worn.	Replace the seals in the gearbox.
The product does not operate smoothly.	The load is too high because of motor overload.	Use the correct load when you operate the product.
The spindle shaft breaks.	The drill setup is not correctly aligned.	Align the drill setup. Do a check of the extension pieces and make sure that they are not bent.
It is not possible to change gears.	The primary shaft and the intermediate shaft are damaged.	Do a check of the primary shaft and the intermediate shaft.
	The gear wheel on the intermediate shaft is damaged.	Do a check of the gear wheel on the intermediate shaft.

7.6 LED indicators on the control panel

The LED indicators on the control panel show the state of charge of the battery and if there are problems with the product.



LED indicator	Indication	Cause	Solution
1 and 3	Indicator no. 1 is on and indicator no. 3 flashes.	Temperature deviation.	The product is too hot or too cold.
2	All 4 indicators flash.	The software is not loaded on the control unit.	Connect the product to Husqvarna Service Hub and load the software on the control unit.
		The software is not loaded on the control panel.	Connect the product to Husqvarna Service Hub and load the software on the control panel.
		The product does a Firmware Over-the-Air (FOTA) update.	Let the FOTA update finish.
3	The indicator is on.	The start switch is in Start position when you start the product.	Set the start switch to the Off position before you start the product.
		The battery is damaged	Do a test with a different battery.
		The battery is installed but there is no connection.	Do a check of the cables and connectors between the CU and the battery.
			Do a test with a different battery.
		The control unit is damaged.	Replace the control unit, refer to *To remove and install the control unit on page 18*. Connect the product to Husqvarna Service Hub and refer to the spare part change flow.
		The HMI is damaged.	Replace the HMI, refer to *To disassemble and assemble the HMI holder on page 18*. Connect the product to Husqvarna Service Hub and refer to the spare part change flow.
2 and 3	Indicator no 3 and the first LED on indicator no. 2 flash.	The battery level is low.	Charge the battery.

7.7 Troubleshooting of the Husqvarna Service Hub

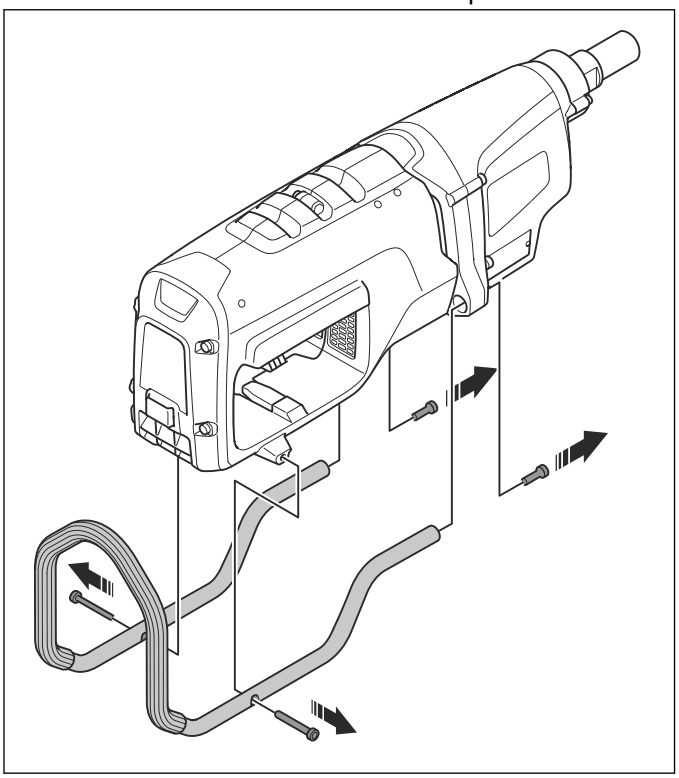
If there is no signal to the Husqvarna Service Hub when it is connected to the product, do the procedure that follows.

1. Make sure that the connectors on the battery and on the product are clean and not damaged. Replace the battery or control unit on the product if there is damage.
2. Make sure that the cable connected to the computer that runs the Husqvarna Service Hub is clean and not damaged. Replace the cable if it is damaged.
3. Restart the computer.
4. Install the software again.

8.1 Handle

8.1.1 To remove and install the transportation handle

1. Remove the 4 screws and the transportation handle.

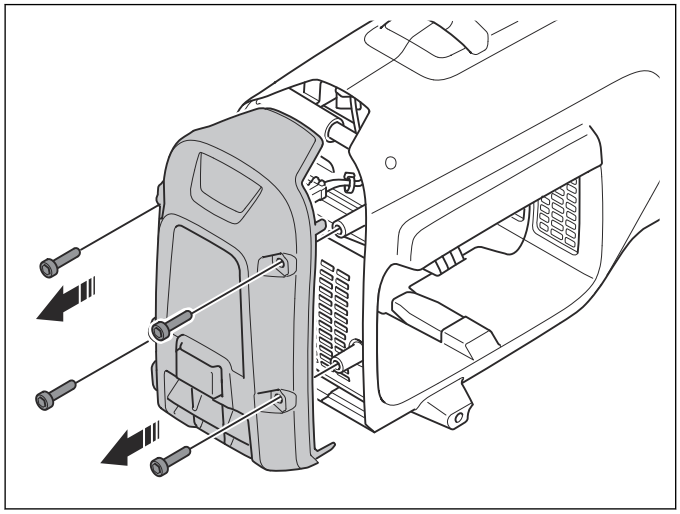


2. Install in the opposite sequence.

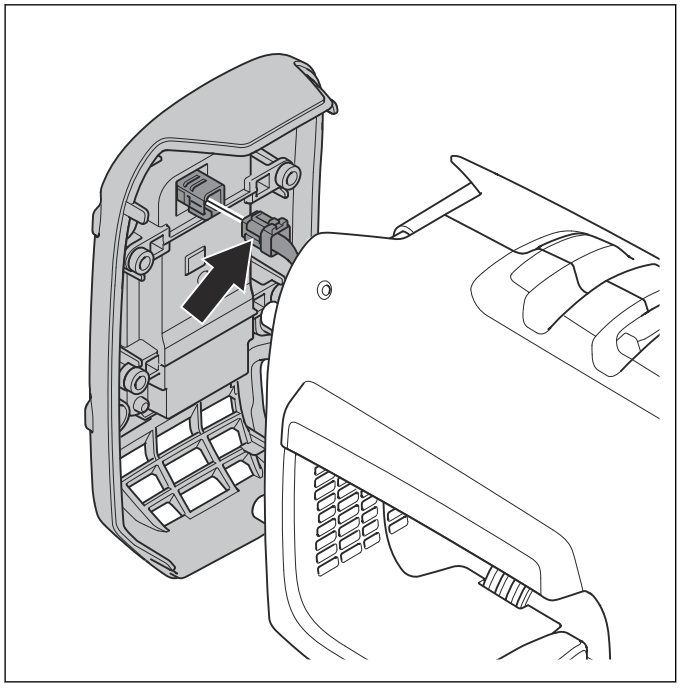
8.2 Human Machine Interface (HMI)

8.2.1 To remove and install the HMI holder

1. Remove the 4 screws and loosen the HMI holder from the cover system.



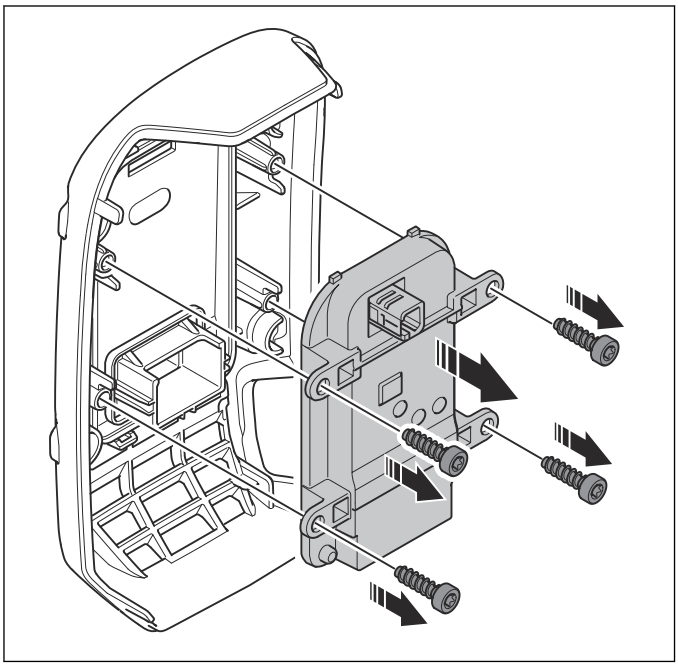
2. Push the locking pin to disconnect the cable connector and remove the HMI holder.



3. Install in the opposite sequence.

8.2.2 To disassemble and assemble the HMI holder

1. Remove the HMI holder. Refer to *To remove and install the HMI holder on page 17*.
2. Remove the 4 screws and the HMI.



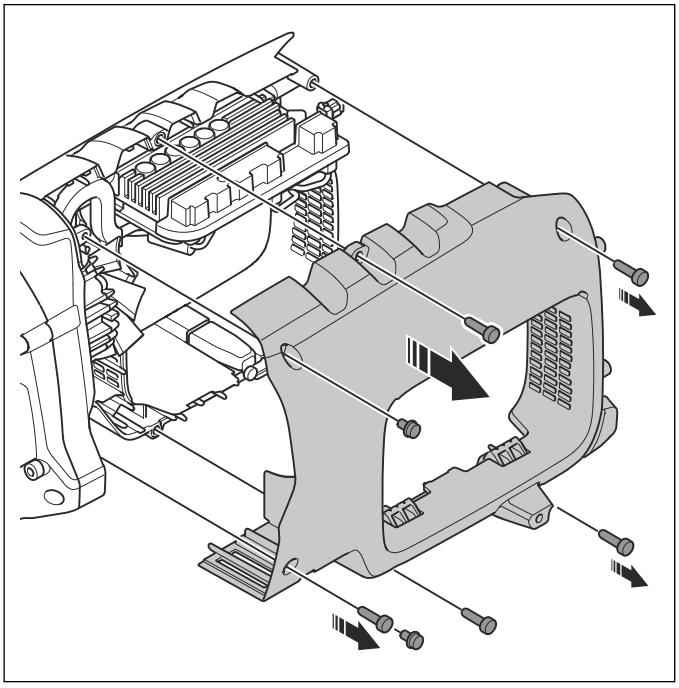
3. Assemble in the opposite sequence.

Note: When you install a new HMI, you must use the Husqvarna Service Hub to update the digital twin with the new HID for the HMI and update the software.

8.3 Motor

8.3.1 To remove and install the left cover

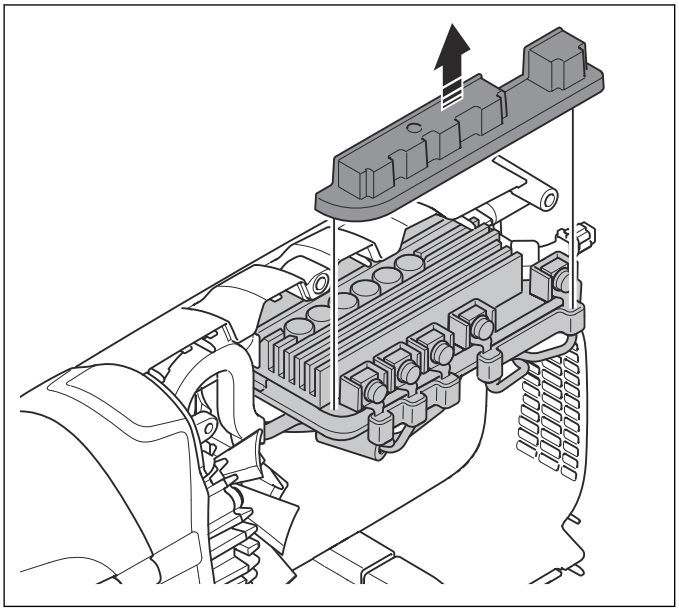
1. Remove the transportation handle. Refer to *To remove and install the transportation handle on page 17*.
2. Remove the HMI. Refer to *To remove and install the HMI holder on page 17*.
3. Remove the 7 screws and the left cover.



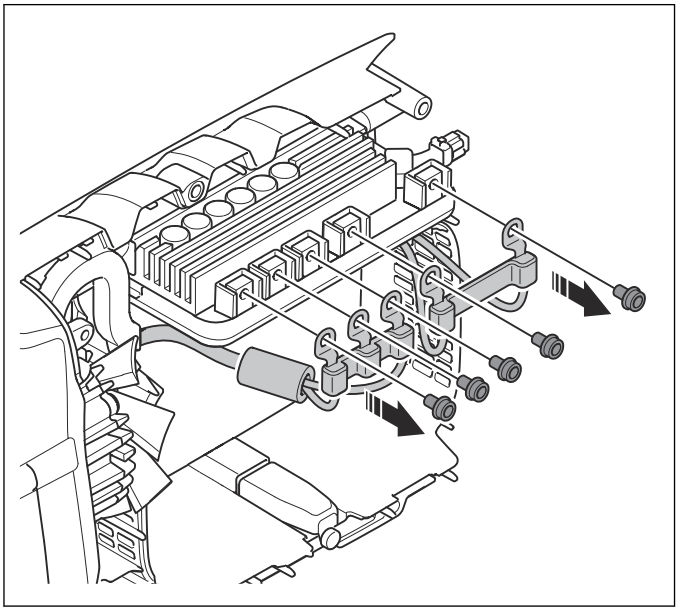
4. Install in the opposite sequence.

8.3.2 To remove and install the control unit

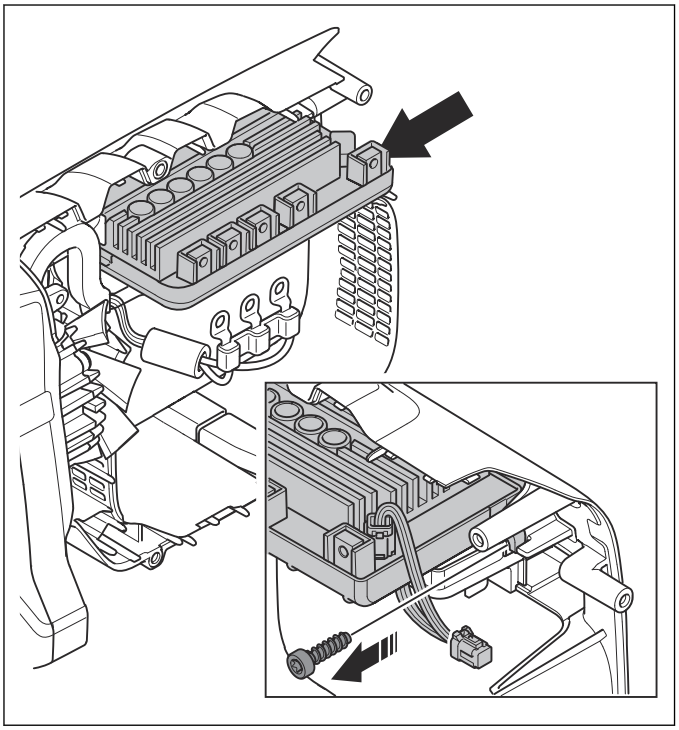
1. Remove the transportation handle. Refer to *To remove and install the transportation handle on page 17*.
2. Remove the left cover. Refer to *To remove and install the left cover on page 18*.
3. Remove the rubber cover.



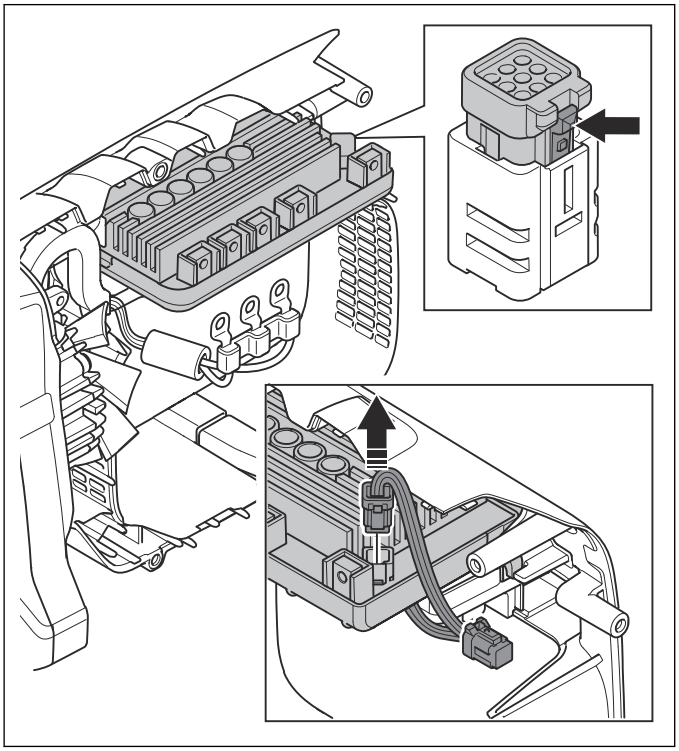
4. Remove the 5 screws and the 2 cable connectors.



5. Remove the screw.

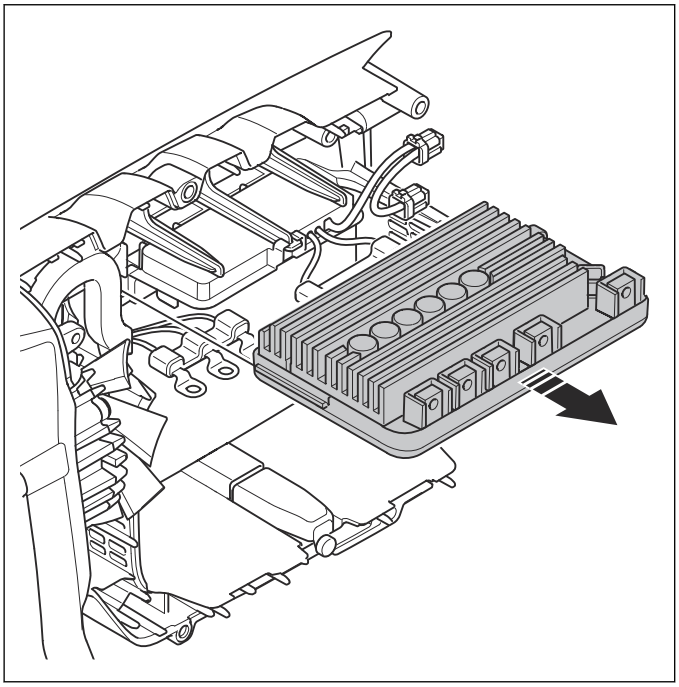


6. Push the clip to disconnect the cable connector.



Note: The connectors to the control unit and the HMI are of the same type. The one with the shorter cables goes to the control unit and the one with longer cables to the HMI.

7. Remove the control unit.

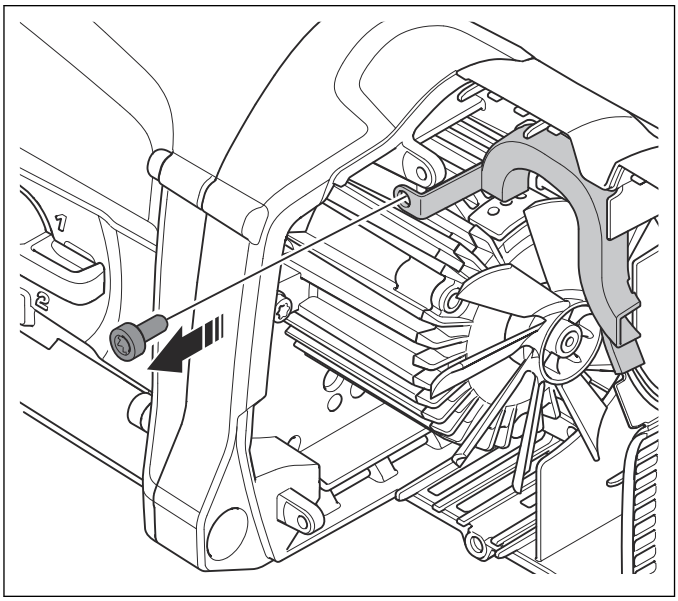


8. Install in the opposite sequence.

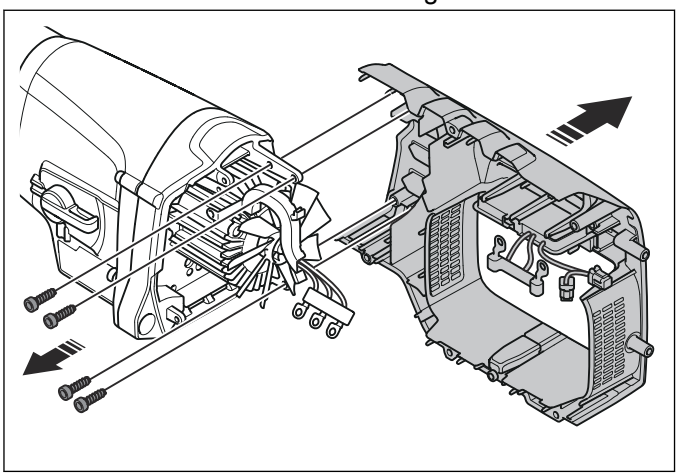
Note: When you install a new control unit, you must use the Husqvarna Service Hub to update the digital twin with the new HID and update the software.

8.3.3 To remove and install the motor

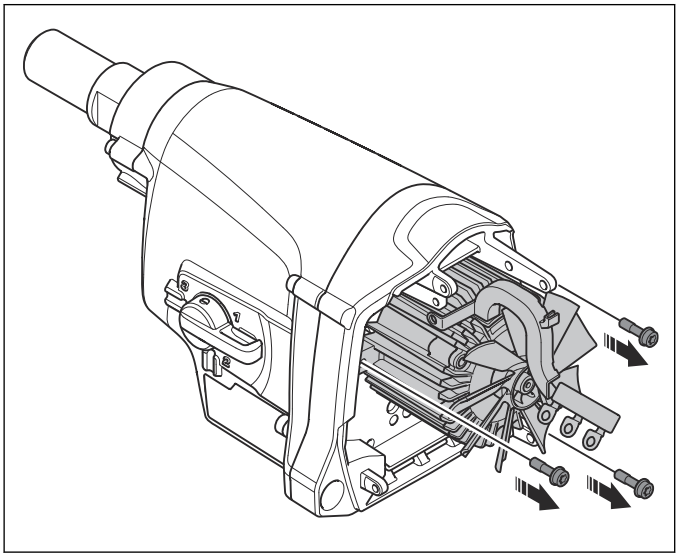
1. Remove the transportation handle. Refer to *To remove and install the transportation handle on page 17*.
2. Remove the left cover. Refer to *To remove and install the left cover on page 18*.
3. Remove the control unit. Refer to *To remove and install the control unit on page 18*.
4. Remove the screw.



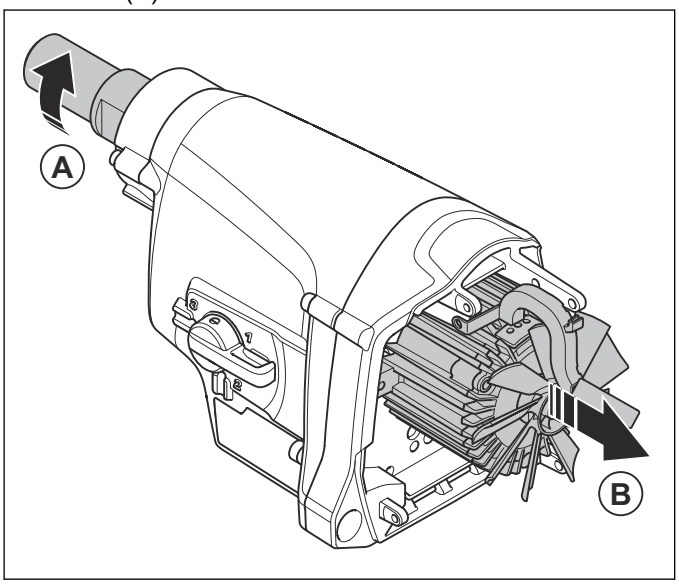
5. Remove the 4 screws and the right cover.



6. Remove the 3 screws and the motor.



7. If you cannot remove the motor, turn the drill spindle (A) with your hand back and forth while you pull the motor (B).

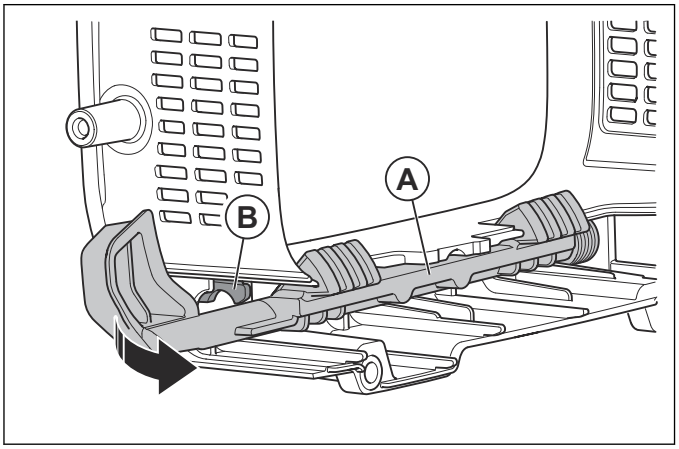


8. Install in the opposite sequence.

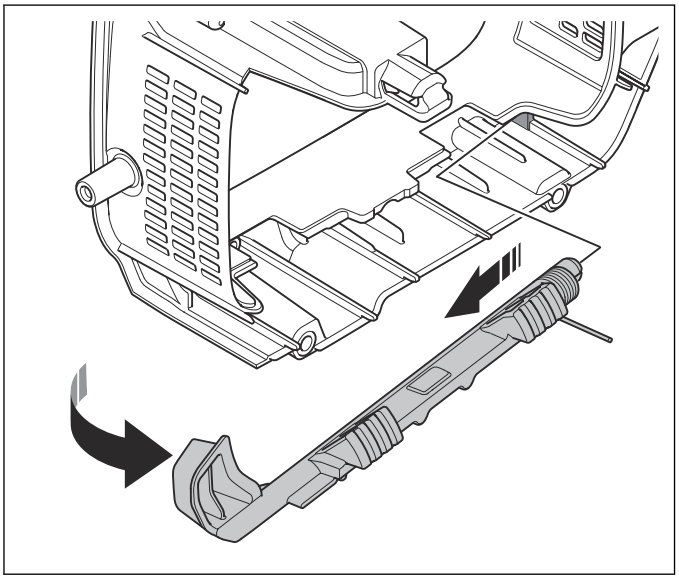
8.3.4 To disassemble and assemble the left cover

1. Remove the transportation handle. Refer to *To remove and install the transportation handle on page 17*.
2. Remove the HMI. Refer to *To remove and install the HMI holder on page 17*.
3. Remove the left cover. Refer to *To remove and install the left cover on page 18*.

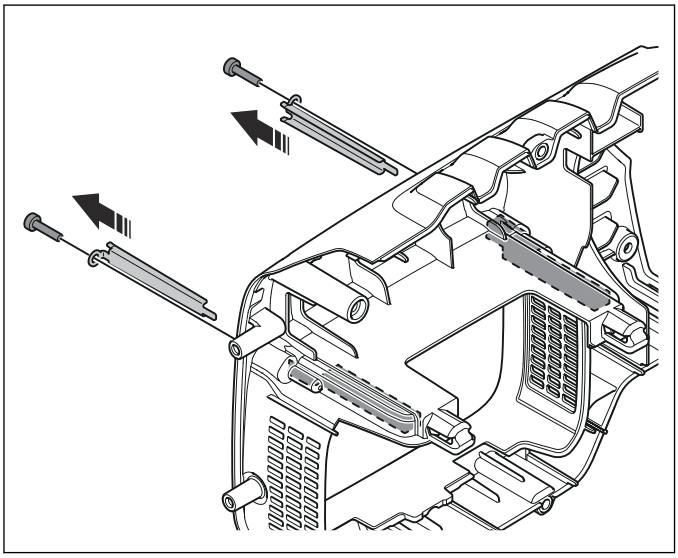
4. Remove the battery release button (A) from the clip (B).



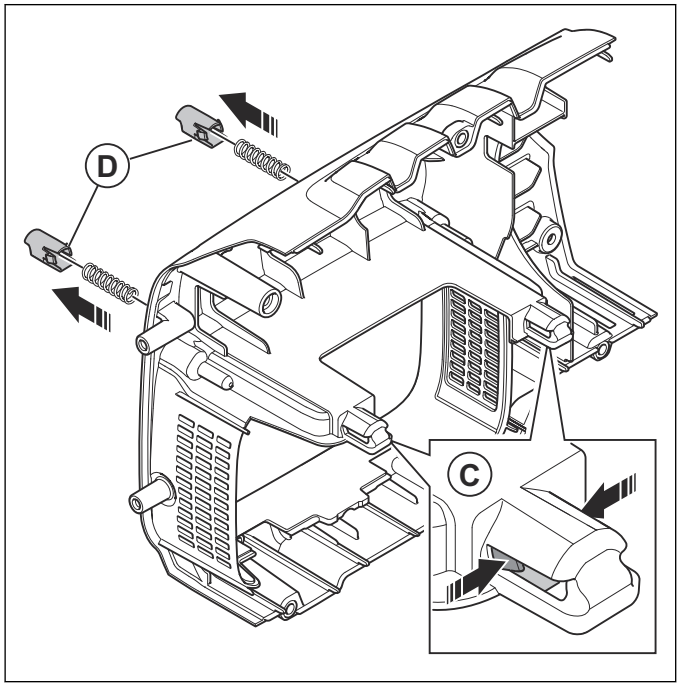
5. Remove the battery release button.



6. Remove the 2 screws and the 2 battery rails.



7. Push the clips (C) of the 2 battery ejectors and remove the 2 battery ejectors (D) and the 2 springs.

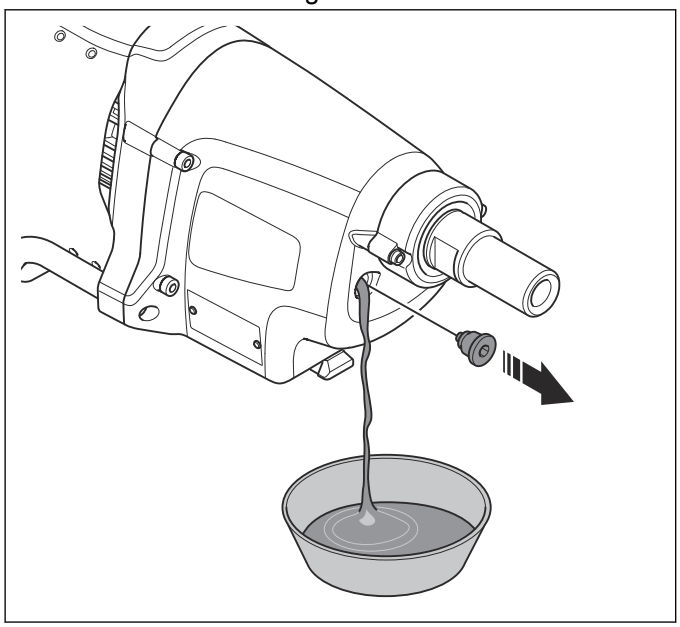


8. Assemble in the opposite sequence.

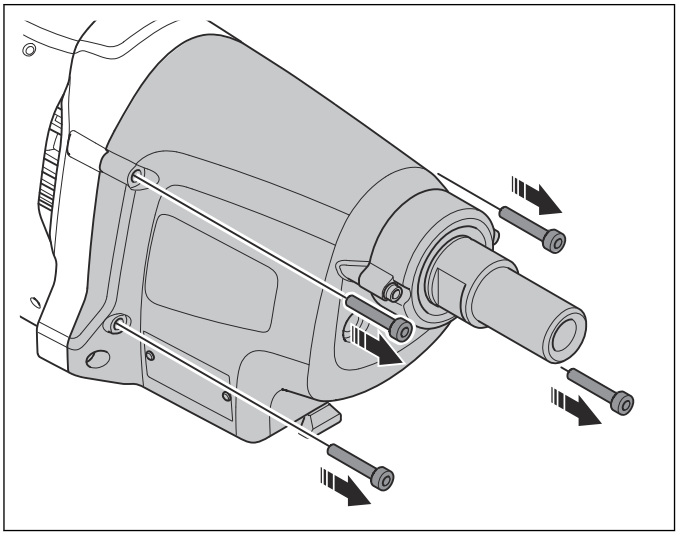
8.4 Gearbox

8.4.1 To remove and install the gearbox

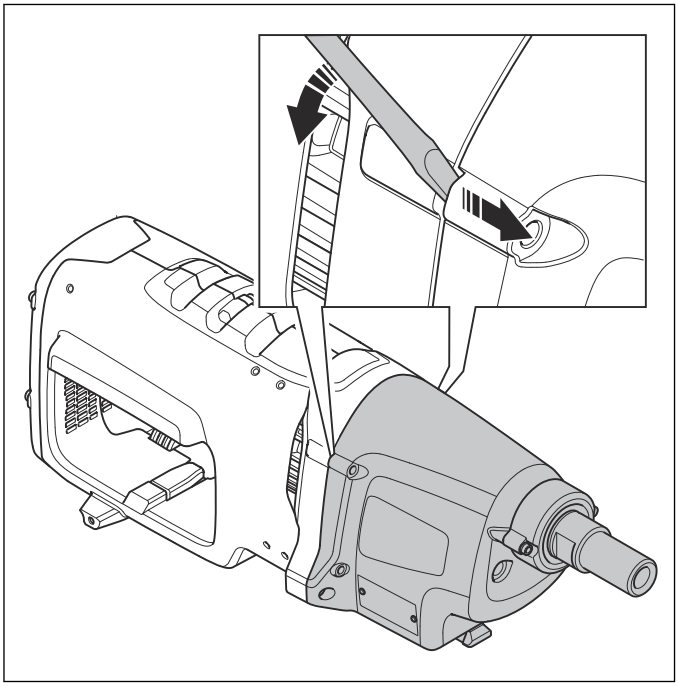
1. Remove the transportation handle. Refer to *To remove and install the transportation handle on page 17*.
2. Drain the oil from the gearbox.



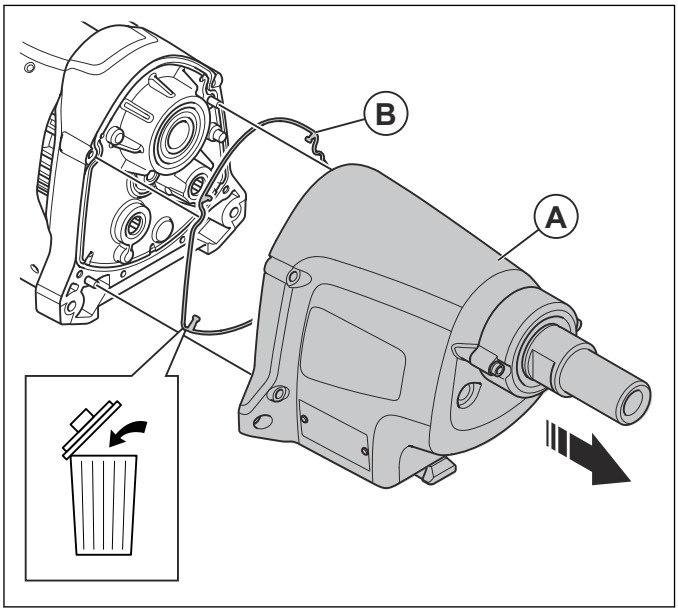
3. Remove the 4 screws.



4. Push lightly with 2 screwdrivers on both sides of the gearbox at the same time to loosen the gearbox.



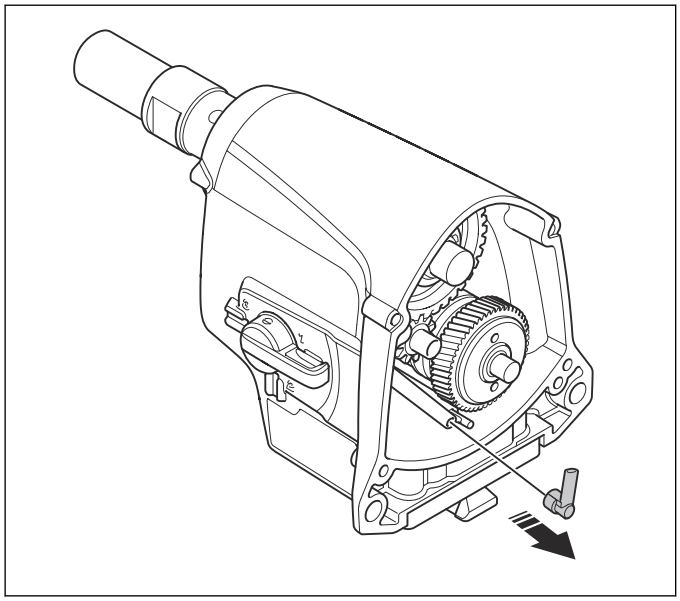
5. Remove the gearbox (A).



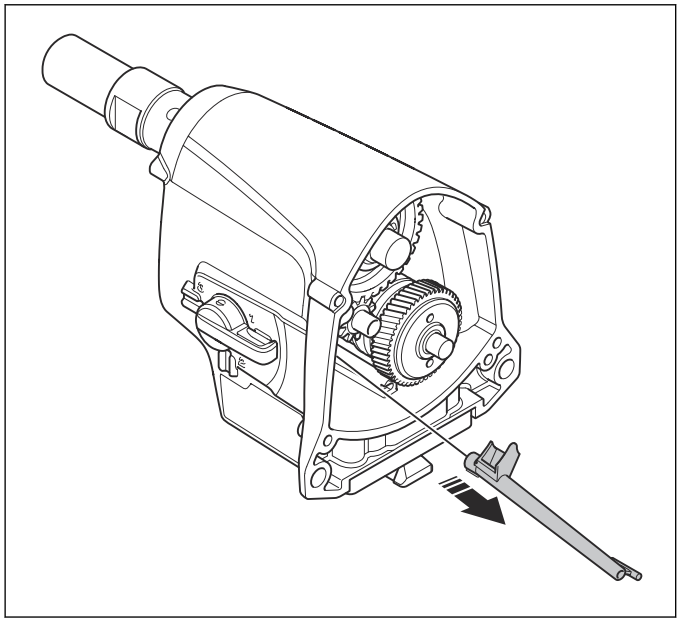
6. Remove the gasket (B) and discard it.
7. Assemble in the opposite sequence. Install a new gasket when you assemble the gearbox.

8.4.2 To remove the primary and the intermediate shaft

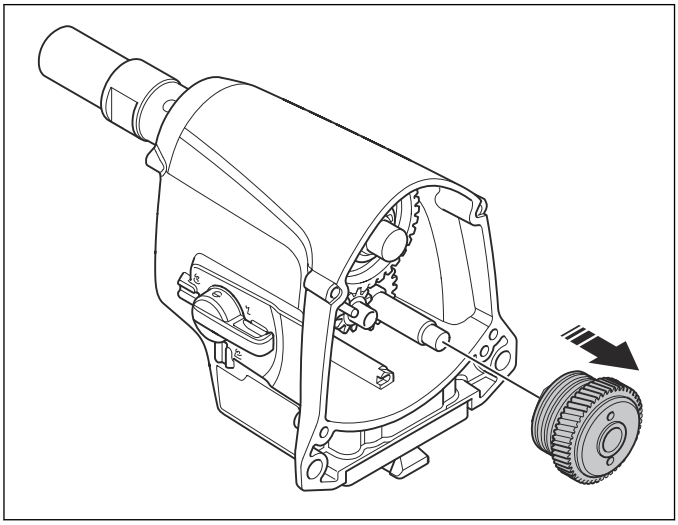
1. Remove the gearbox. Refer to *To remove and install the gearbox on page 21*.
2. Remove the oil pipe extension from the oil pipe.



3. Remove the oil pipe.

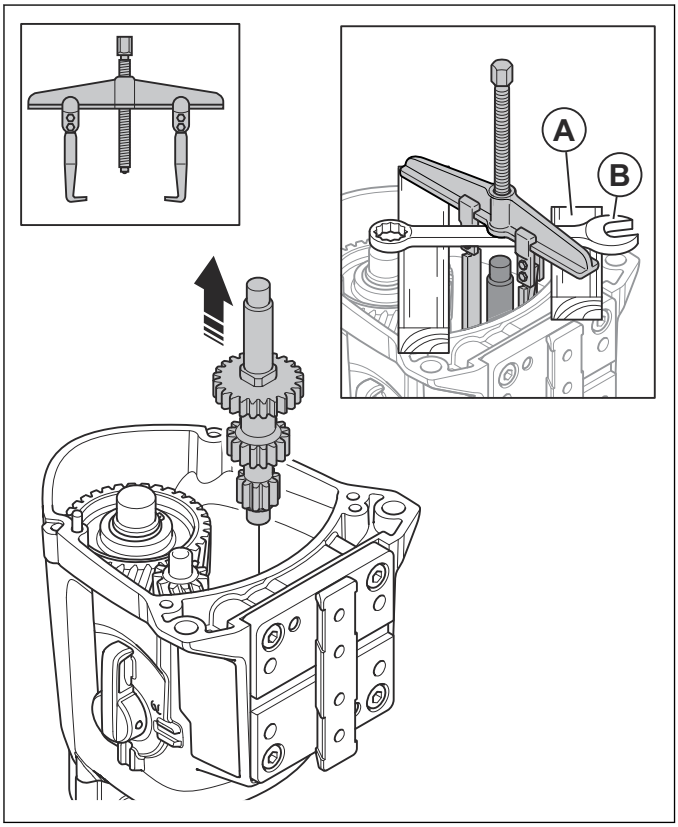


4. Remove the clutch.

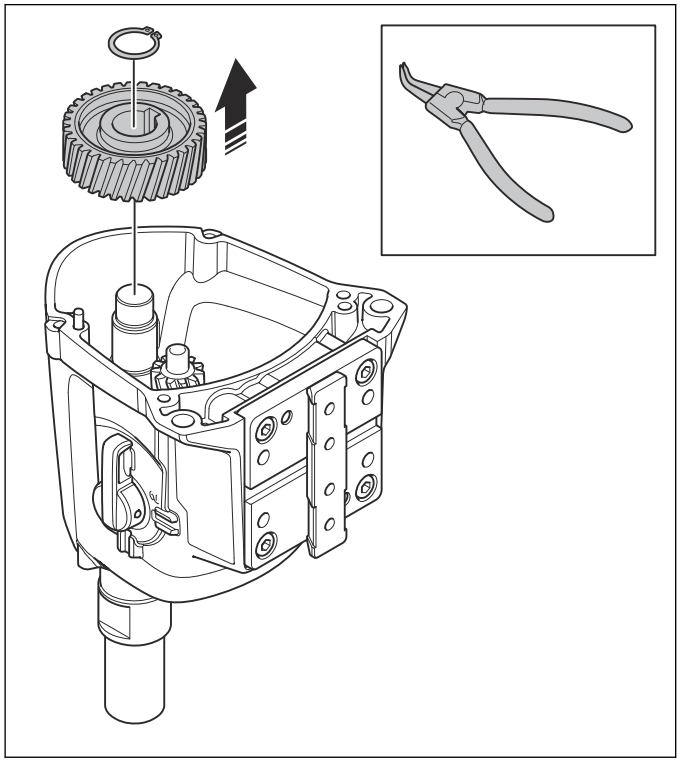


Note: Refer to *To adjust the clutch torque on page 32* for information about how to adjust the clutch.

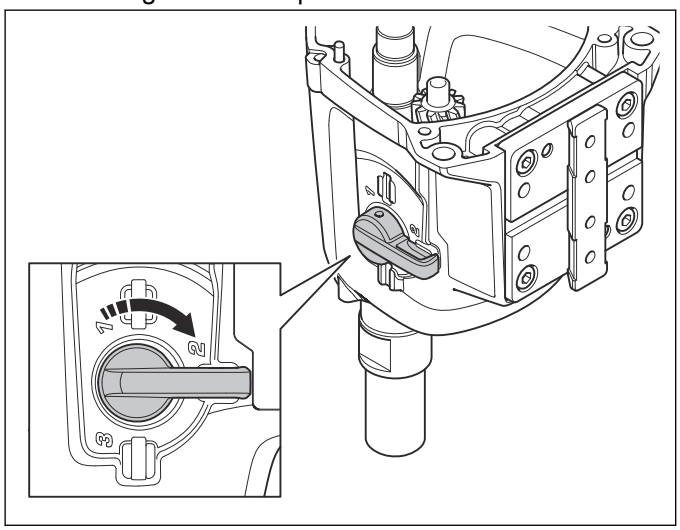
5. Remove the primary shaft with a puller. Use 2 pieces of wood (A) and a wrench (B) to make a counterhold for the puller.



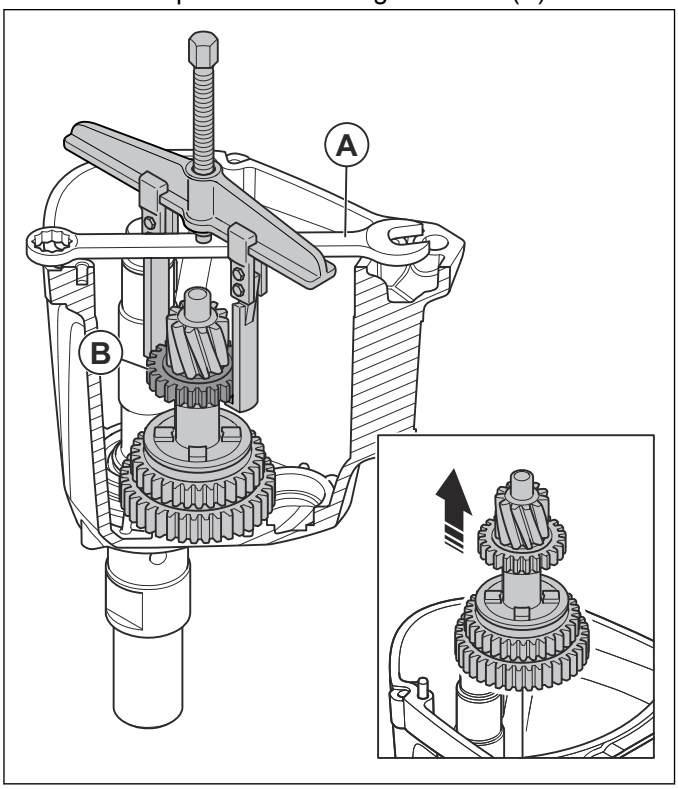
6. Remove the snap ring and the gear from the spindle shaft.



7. Set the gear knob to position "2".

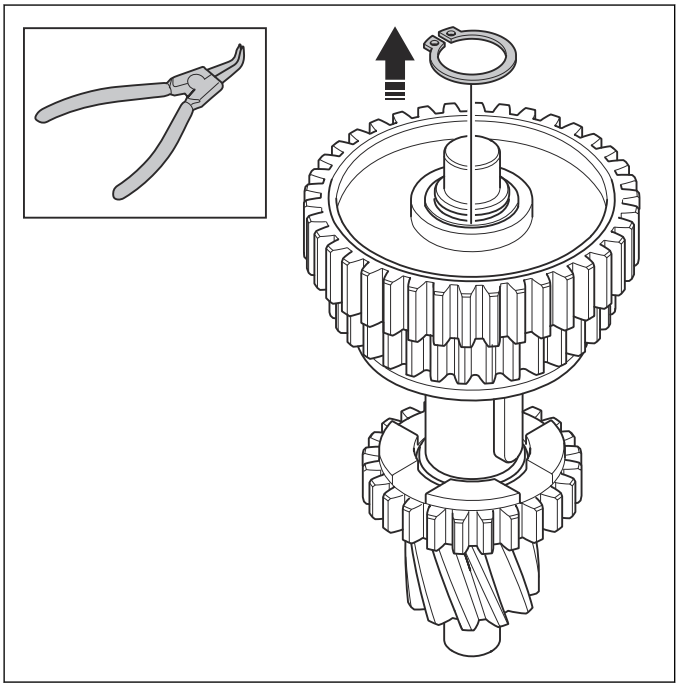


8. Use a puller to remove the intermediate shaft. Use a wrench (A) to make a counterhold for the puller. Attach the puller to the first gear wheel (B).

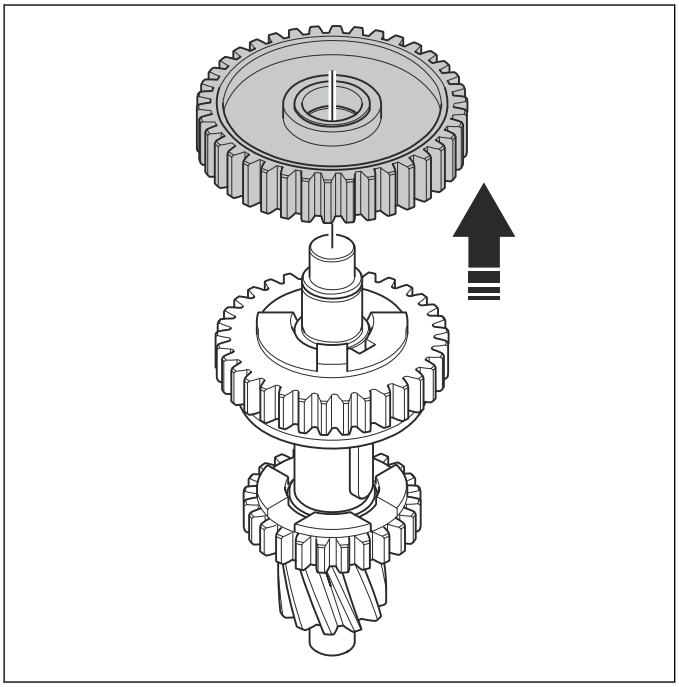


8.4.3 To disassemble and assemble the intermediate shaft

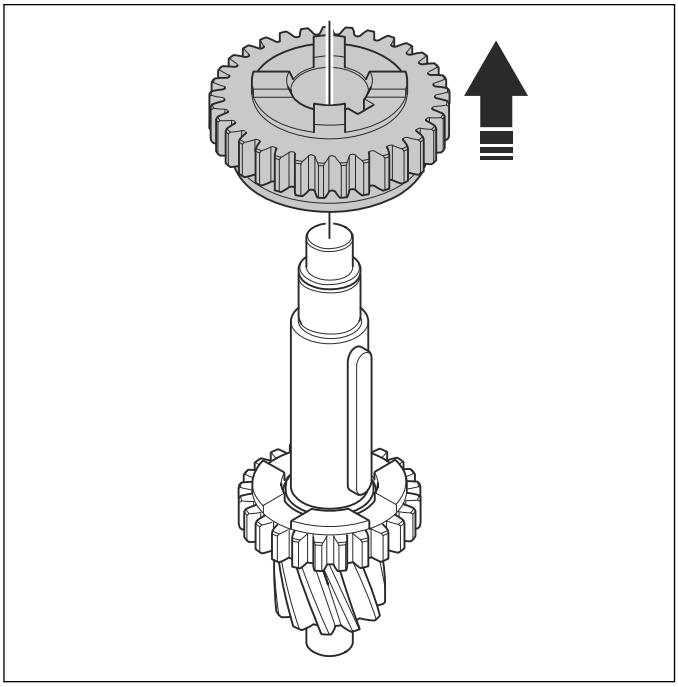
1. Remove the snap ring.



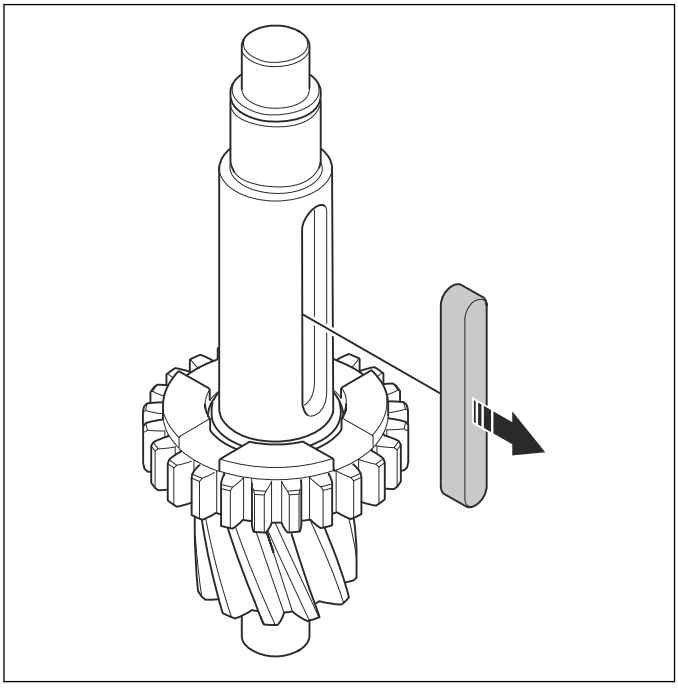
2. Remove the gear wheel.



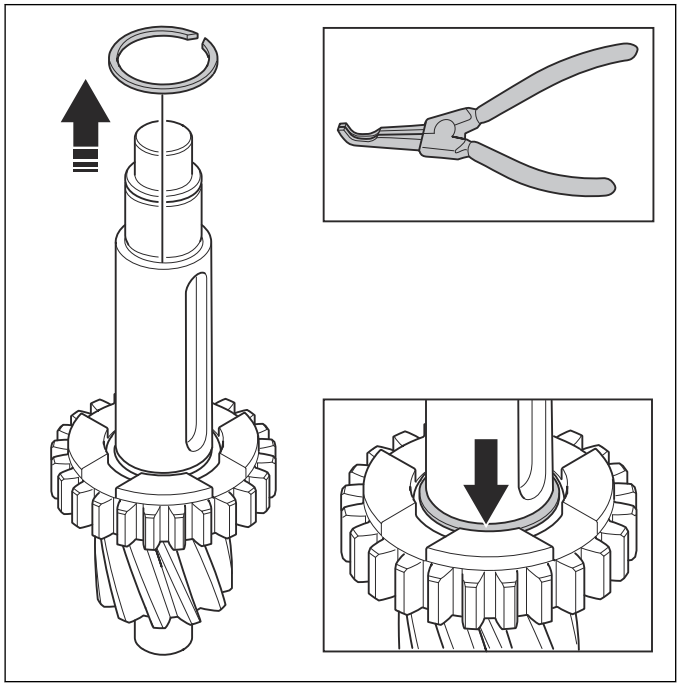
3. Remove the gear drive.



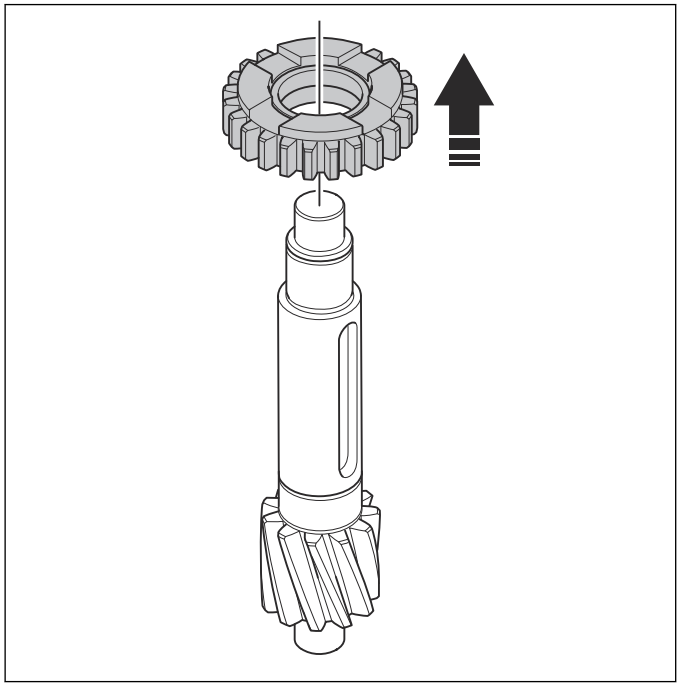
4. Remove the key.



5. Remove the snap ring.



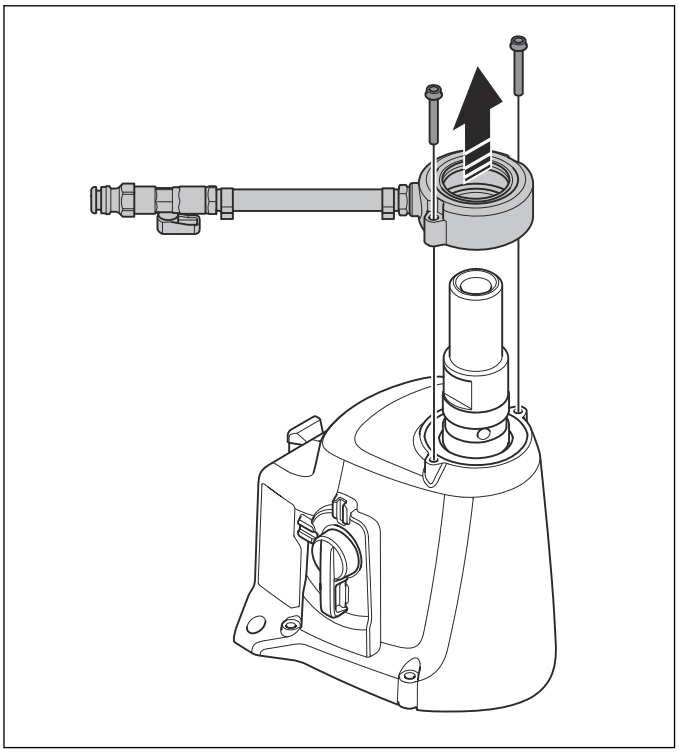
6. Remove the gear wheel.



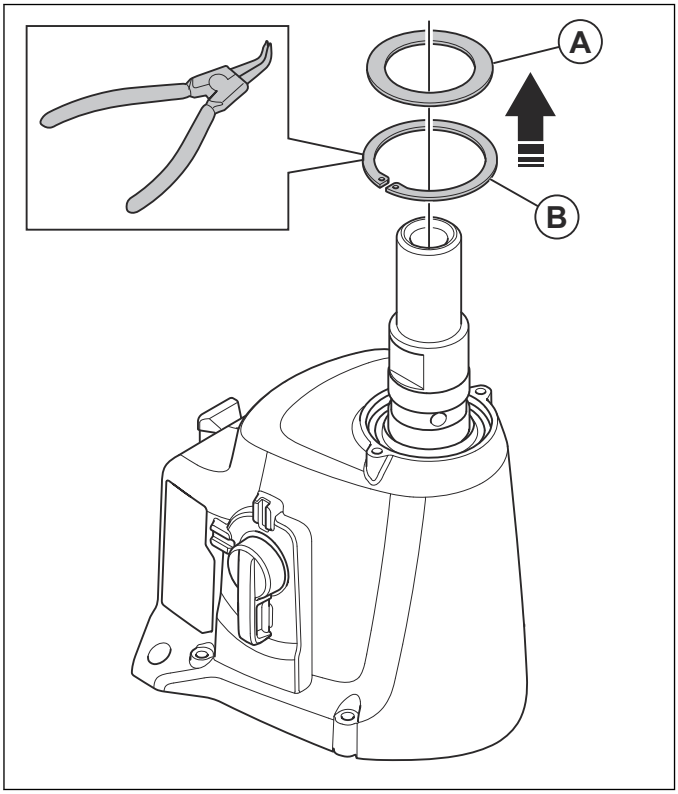
7. Assemble in the opposite sequence.

8.4.4 To remove the drill spindle

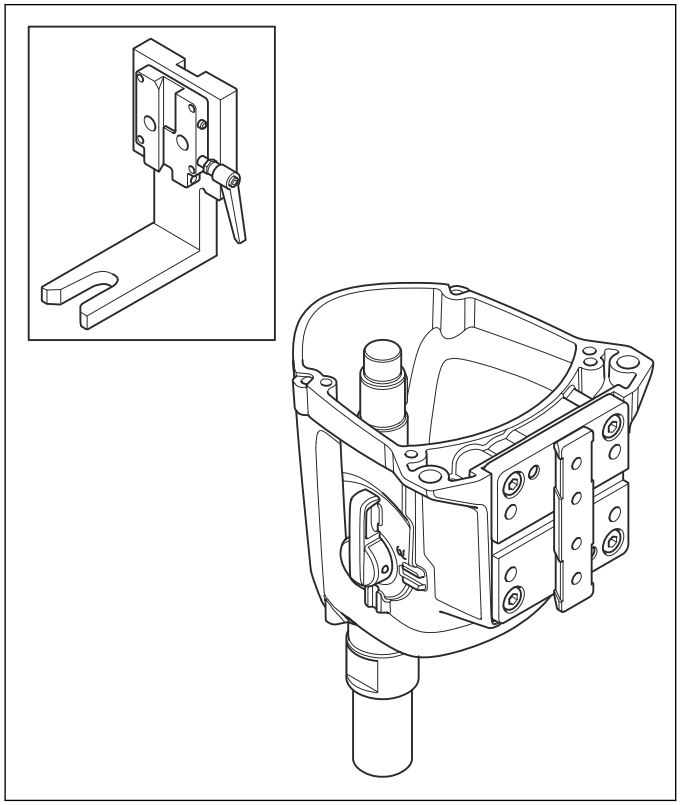
1. Remove the primary and the intermediate shaft. Refer to *To remove the primary and the intermediate shaft on page 22*.
2. Remove the 2 screws and the water unit.



3. Remove the nylon washer (A) and the snap ring (B).



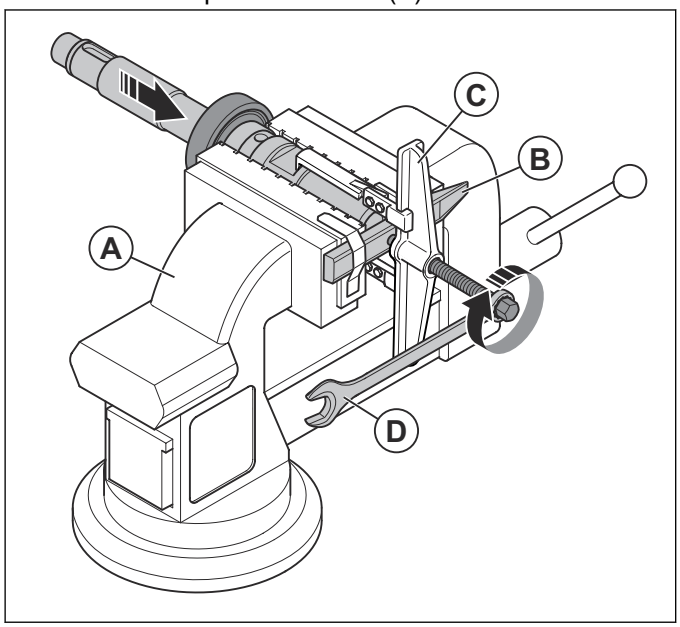
4. Assemble the machine tool holder and the bracket.
5. Put the gearbox cover on a workbench in the special tool assembly.



6. Use a press tool to remove the drill spindle.

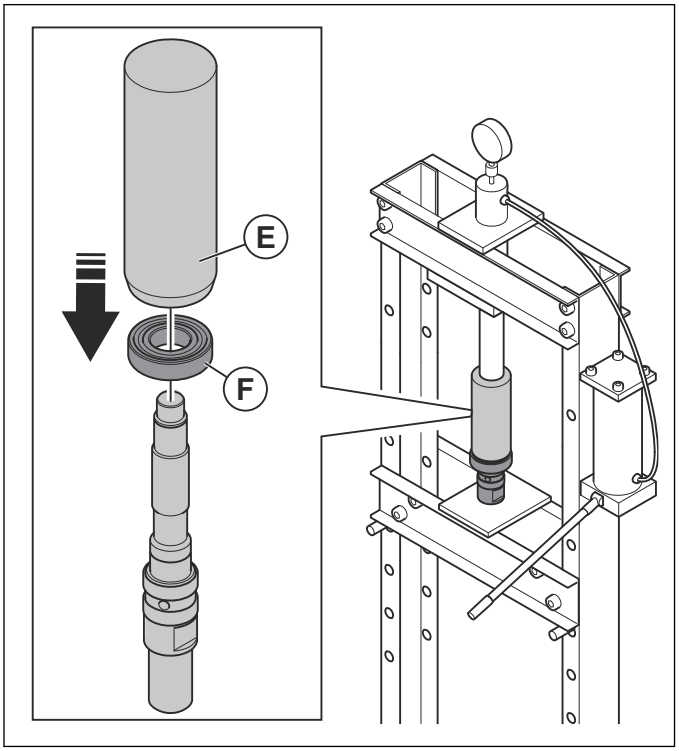
8.4.5 To disassemble and assemble the drill spindle

1. Remove the drill spindle. Refer to *To remove the drill spindle on page 26*.
2. Put the drill spindle in a vise (A).



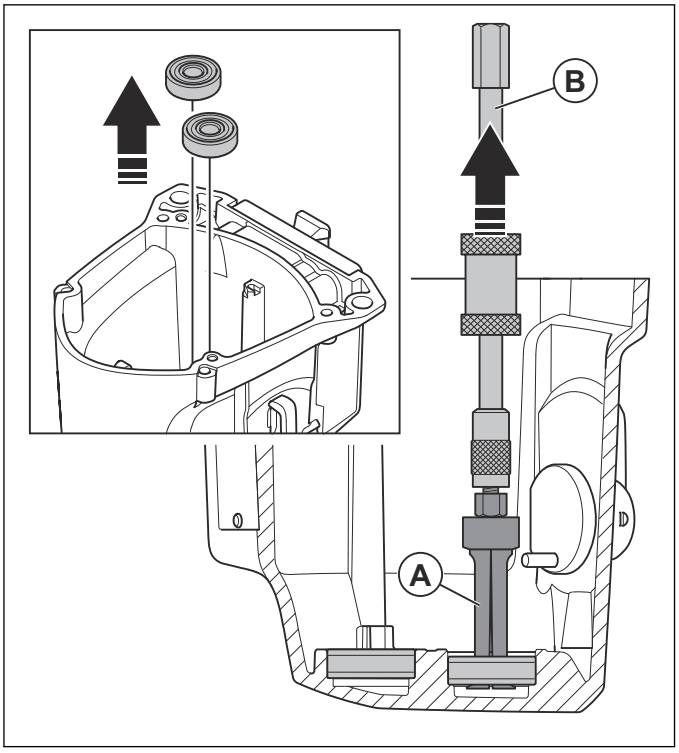
3. Put a piece of metal (B) between the jaws of the vise to make a counterhold for the puller tool (C).
4. Use a wrench (D) and the puller tool to pull the shaft out of the bearing.

5. Use a press and the SKF tool set (E) to install the bearing (F). Refer to *Servicing tools on page 9*.

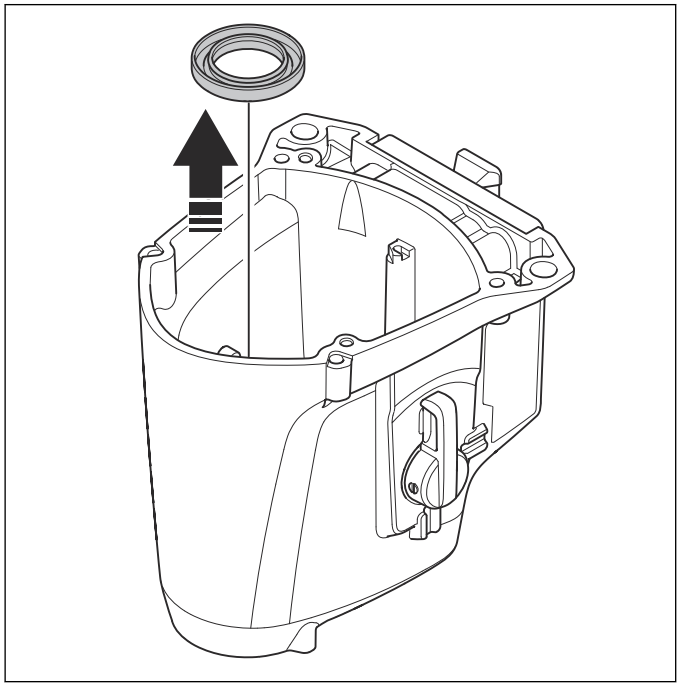


8.4.6 To disassemble the gearbox housing

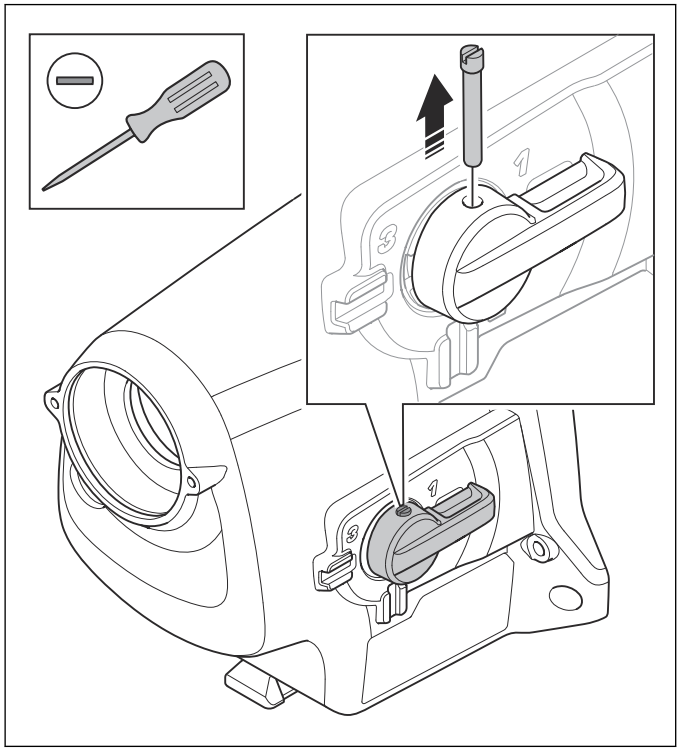
1. Remove the primary shaft and the intermediate shaft. Refer to *To remove the primary and the intermediate shaft on page 22*.
2. Remove the spindle shaft. Refer to *To remove the drill spindle on page 26*.
3. Use an internal bearing puller (A) for inner diameter 12 mm and a sliding hammer (B) to remove the bearings for the primary shaft and the intermediate shaft. Refer to *Servicing tools on page 9*.



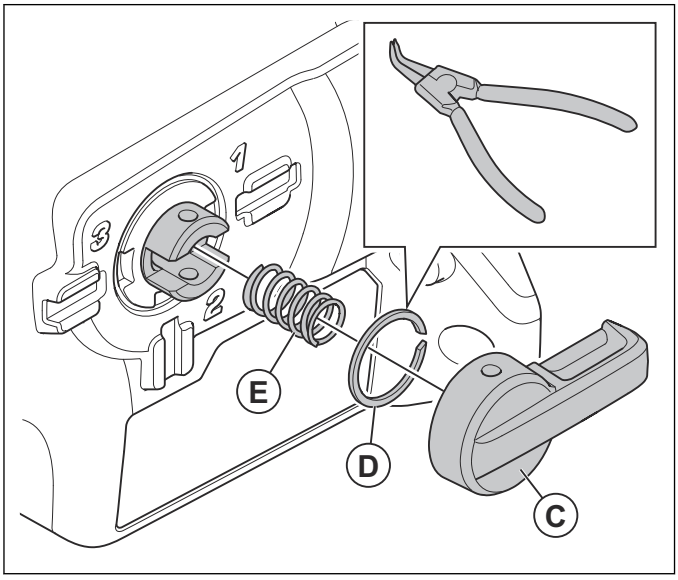
4. Remove the radial seal.



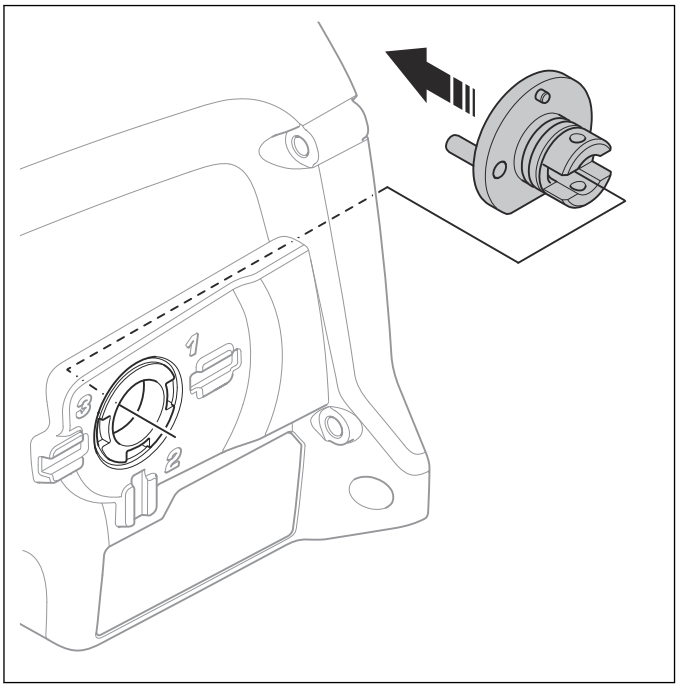
5. Use a screwdriver to remove the pin.



6. Remove the gear knob (C).

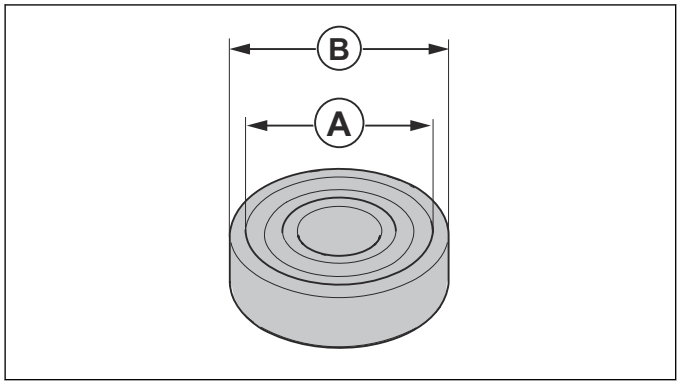


7. Remove the snap ring (D) and the spring (E).
8. Remove the gear selector.

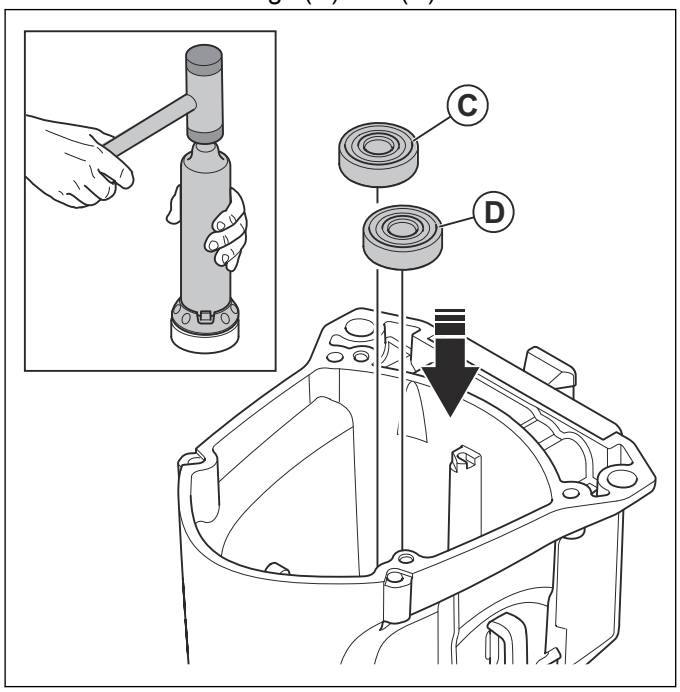


8.4.7 To assemble the gearbox housing

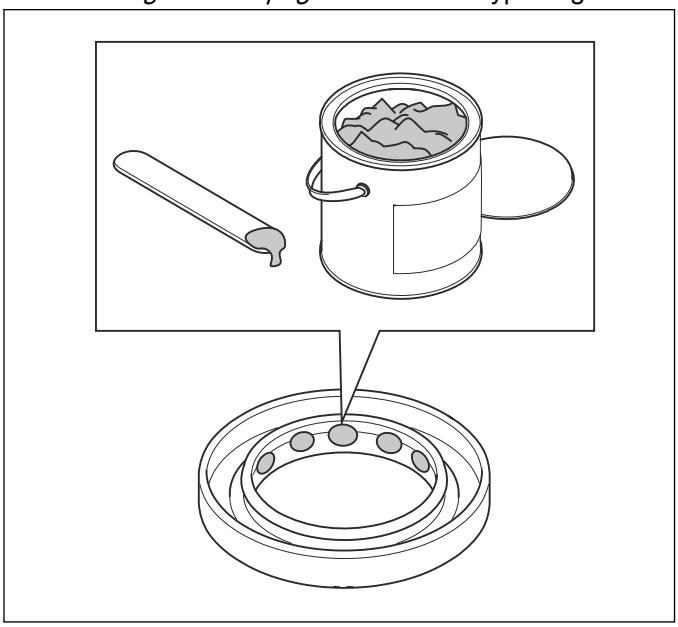
1. Use the SKF tool set to install the bearings. Refer to *Servicing tools on page 9*. The width and thickness of the mandrel must agree with the width and thickness of the outer ring of the bearings: A=27.4 mm, B=32 mm.



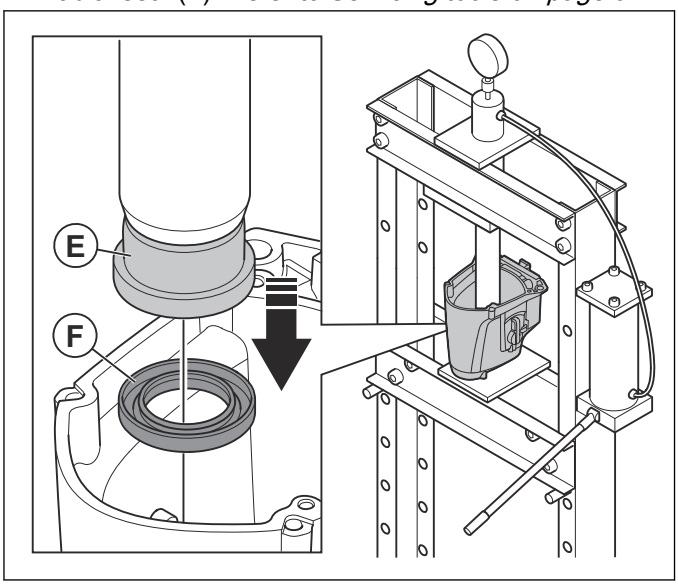
2. Install the 2 bearings (C) and (D).



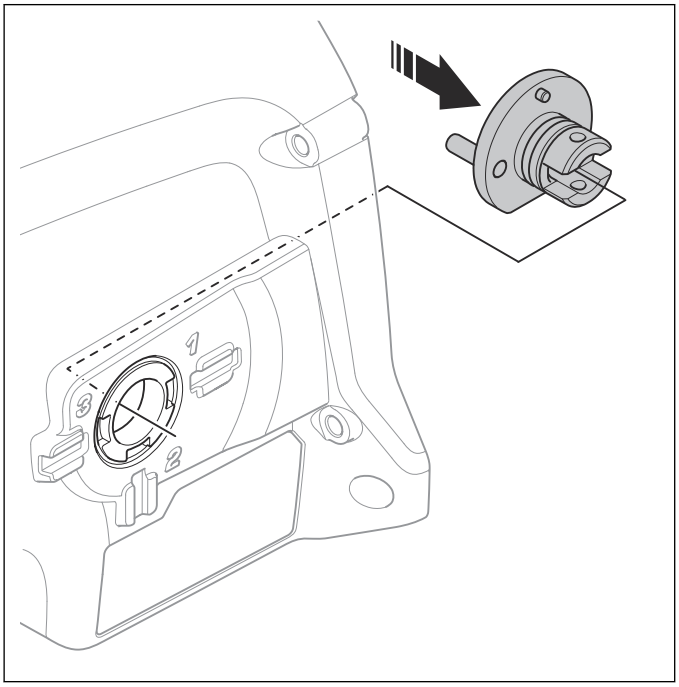
3. Apply grease in small quantities in a regular pattern across the inner edge of the radial seal. Refer to *Servicing tools on page 9* for correct type of grease.



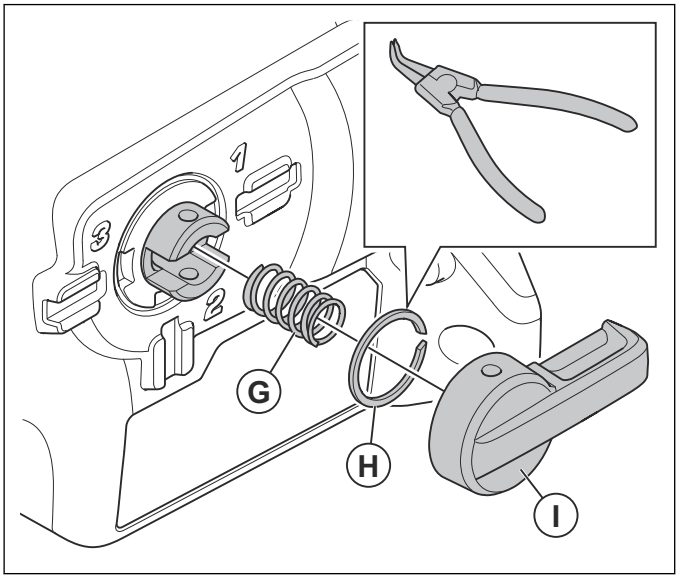
4. Use a press tool and special tool (E) to install the radial seal (F). Refer to *Servicing tools on page 9*.



5. Install the gear selector.

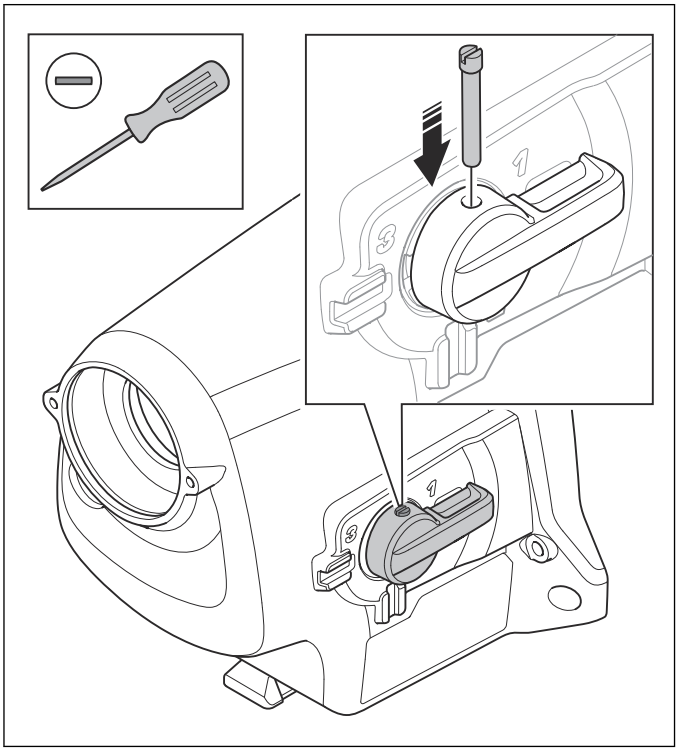


6. Install the spring (G) and the snap ring (H).



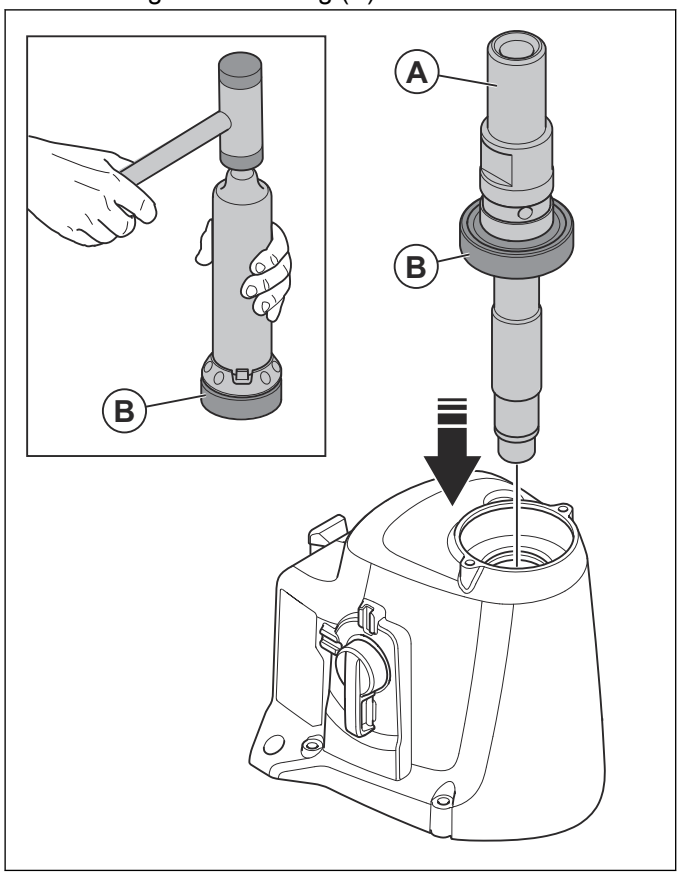
7. Install the gear knob (I). Make sure that you put the knob in the correct position in relation to the gear selector.

8. Use a screwdriver to install the pin.

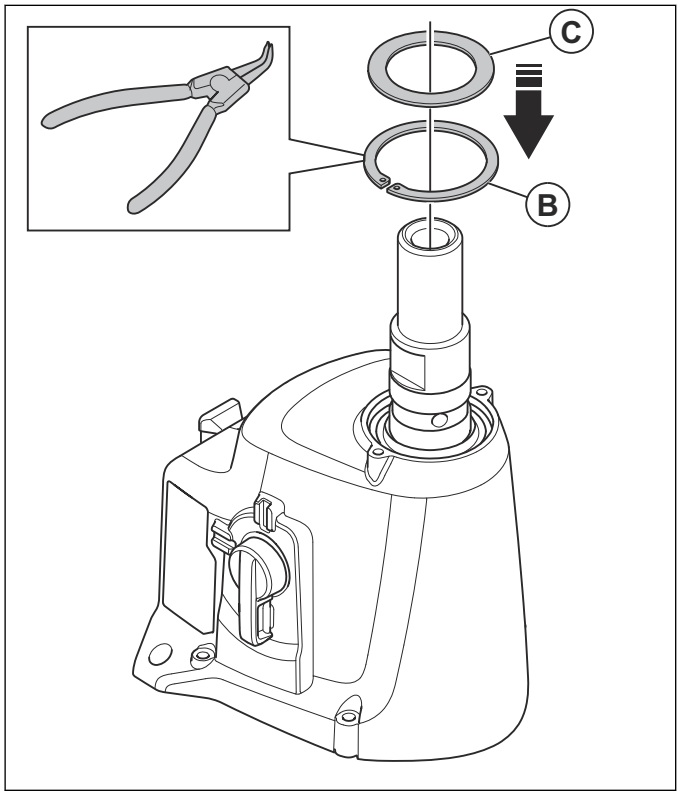


8.4.8 To install the drill spindle

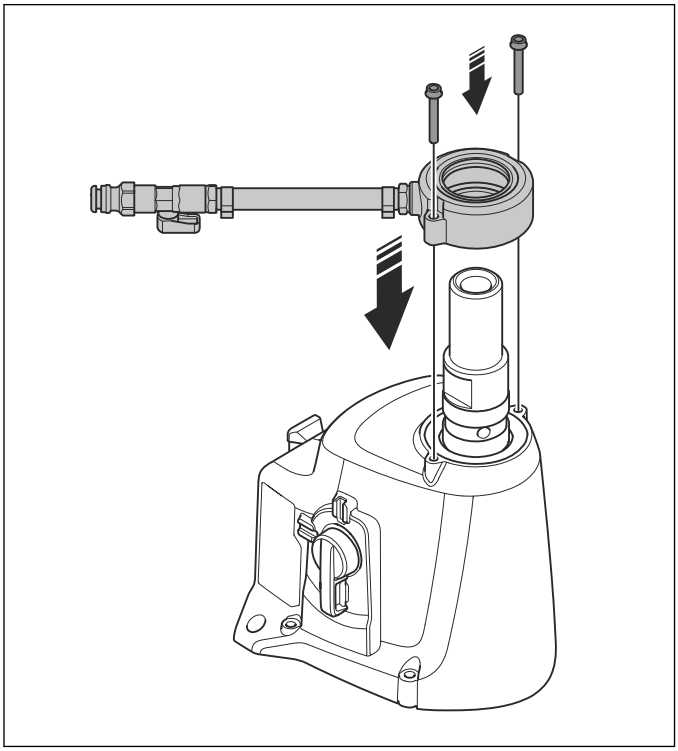
1. Use the SKF tool set to install the drill spindle (A). Refer to *Servicing tools on page 9*. Only push the outer ring of the bearing (B).



2. Install the snap ring (B) and the nylon washer (C).

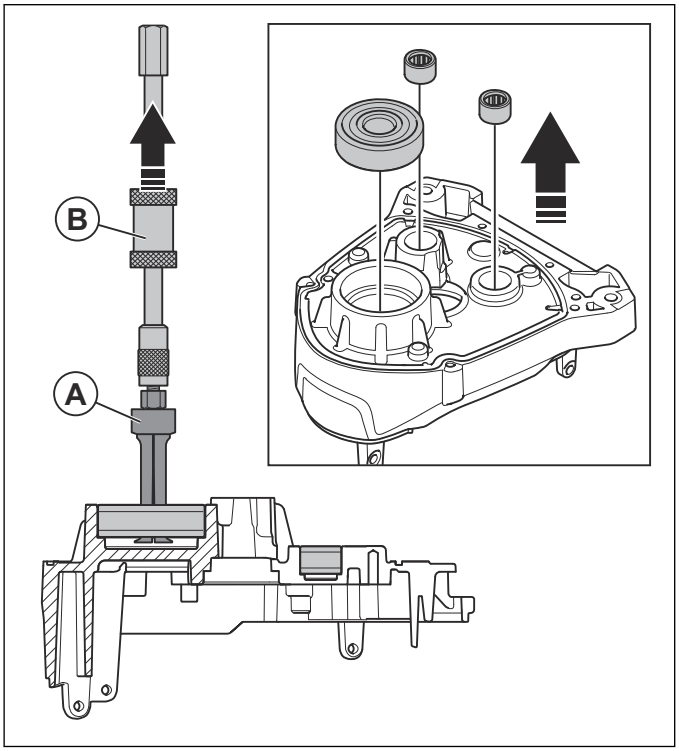


3. Install the cooling system and the 2 screws.



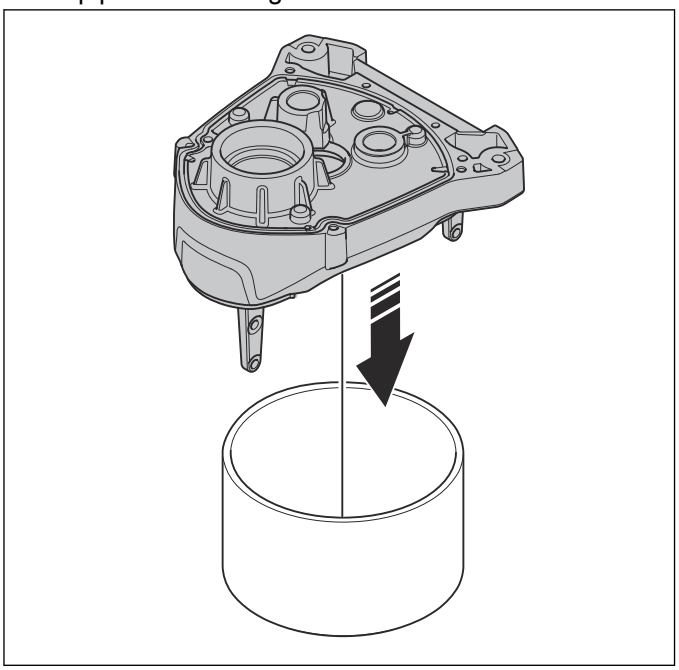
8.4.9 To disassemble the gearbox cover

1. Remove the gearbox. Refer to *To remove and install the gearbox on page 21*.
2. Remove the left motor cover. Refer to *To remove and install the left cover on page 18*.
3. Remove the motor. Refer to *To remove and install the motor on page 20*.
4. Use internal pullers (A) and a slide hammer (B) to remove the bearings from the gearbox cover. Use internal pullers for inner diameter 13 mm to remove the small bearings. Use internal pullers for inner diameter 20 mm to remove the large bearing.

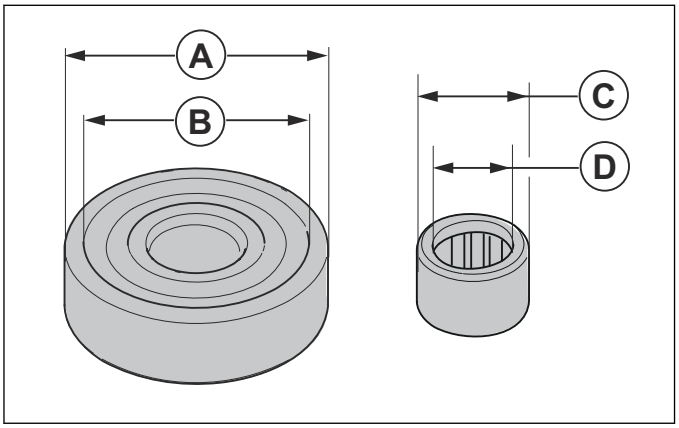


8.4.10 To assemble the gearbox cover

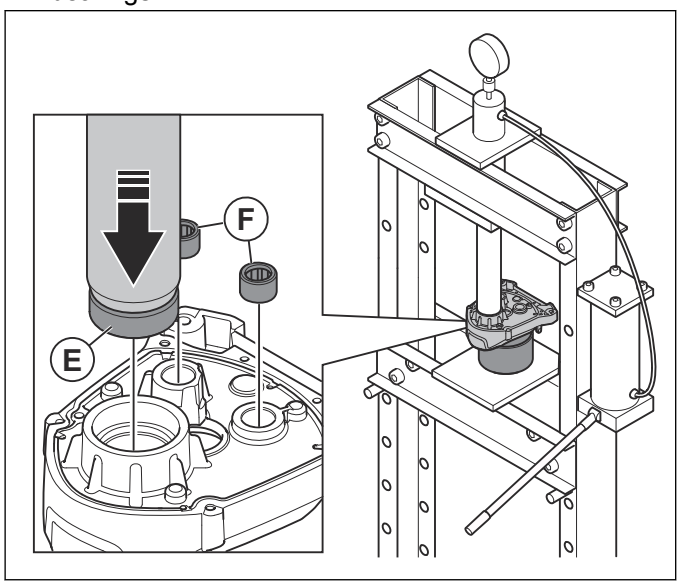
1. Put the gearbox cover on a workbench. Use a piece of pipe to hold the gearbox cover.



2. Use a press tool and 2 mandrels to install the bearings to the gearbox cover. Use a mandrel with the outer diameter (A) 47 mm and inner diameter (B) 38 mm to install the large bearing. Use a mandrel with the outer diameter (C) 18 mm and inner diameter (D) 13 mm to install the small bearings.

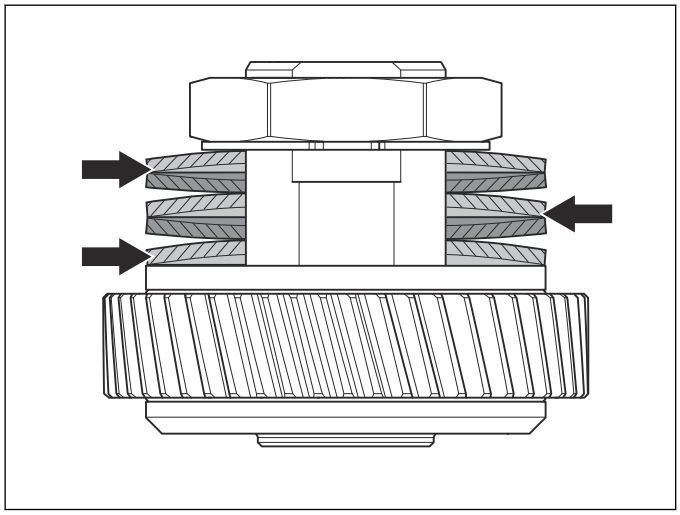


3. Use the wider mandrel to install the large bearing (E). Use the smaller mandrel to install the smaller bearings (F). Only push the outer ring of the bearings.

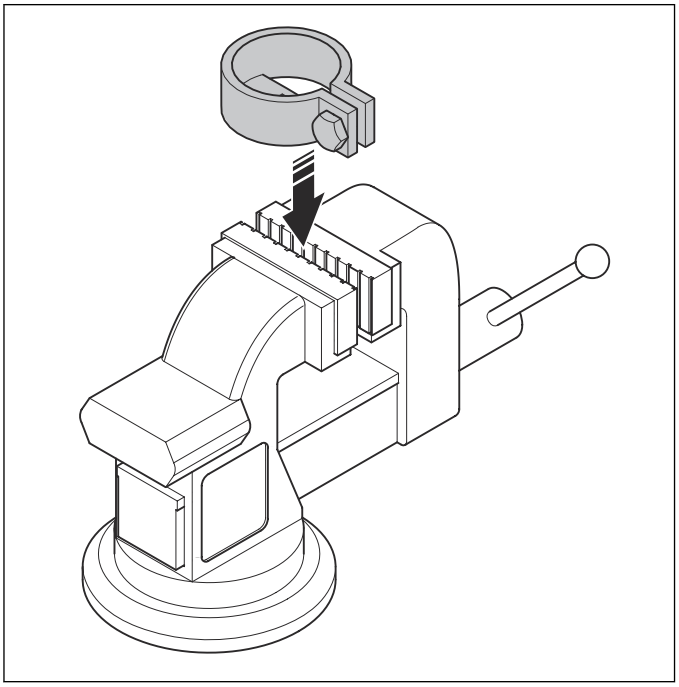


8.4.11 To adjust the clutch torque

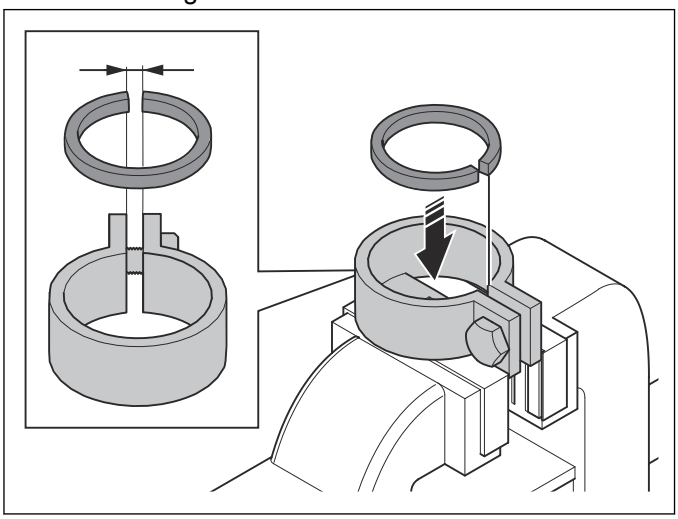
1. Remove the gearbox. Refer to *To remove and install the gearbox on page 21*.
2. Make sure that the cup springs are aligned correctly during assembly of the clutch if you disassemble the clutch.



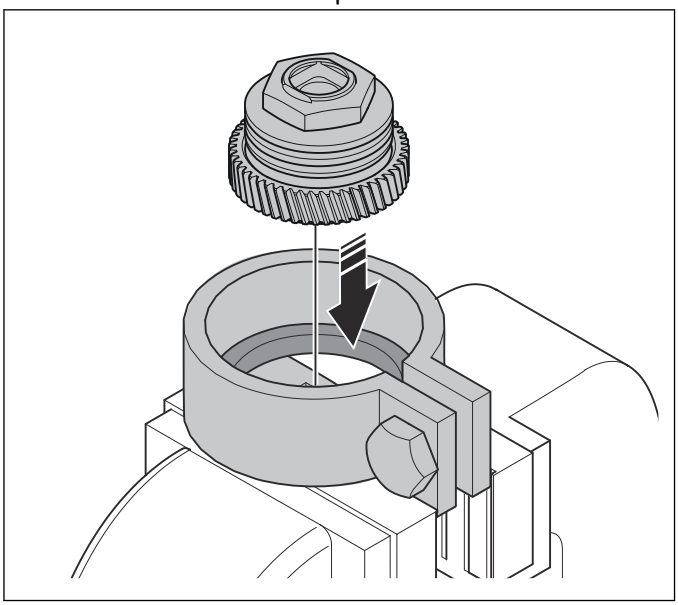
3. Put the clamp ring in a vice. Refer to *Servicing tools on page 9*.



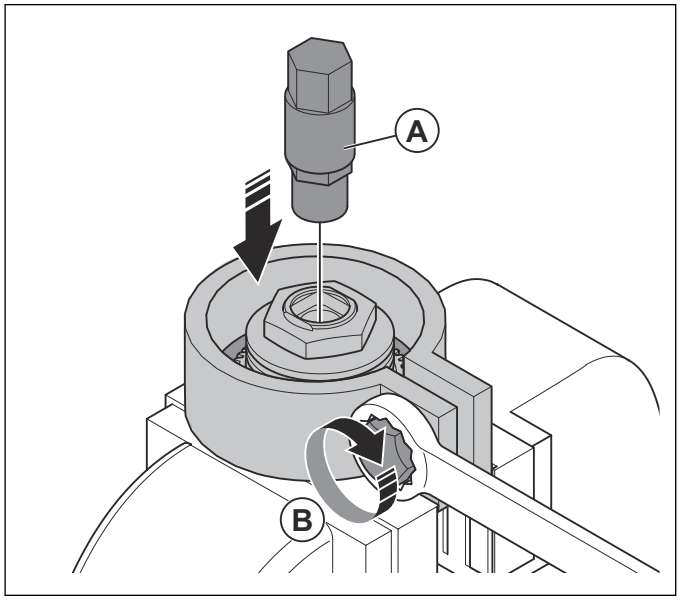
4. Put the adapter in the clamp ring. Make sure that the slots are aligned.



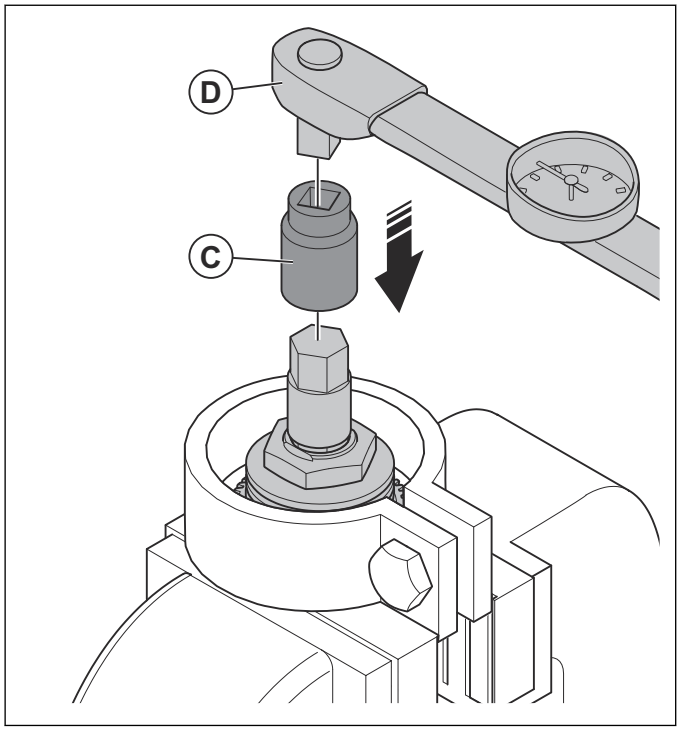
5. Put the clutch in the adapter.



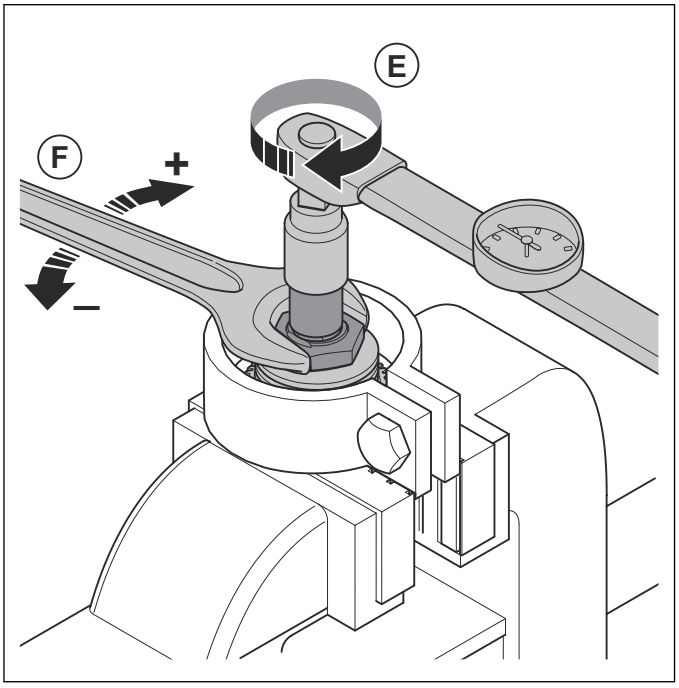
6. Put the turn bar (A) in the clutch and tighten the nut (B) on the clamp ring.



7. Put the socket (C) on the turn bar and attach the torque wrench (D) to the socket.

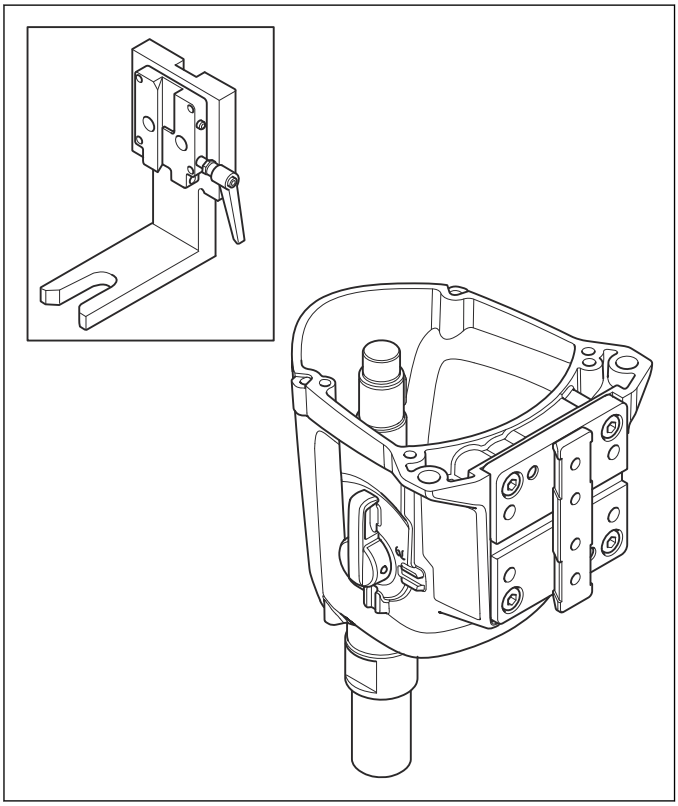


8. Turn the torque wrench (E) slowly while you read the torque value. Use a wrench (F) to adjust the torque. It is the lower torque value that shows when you move the torque wrench that you must adjust. The torque value must be 37–39 Nm.

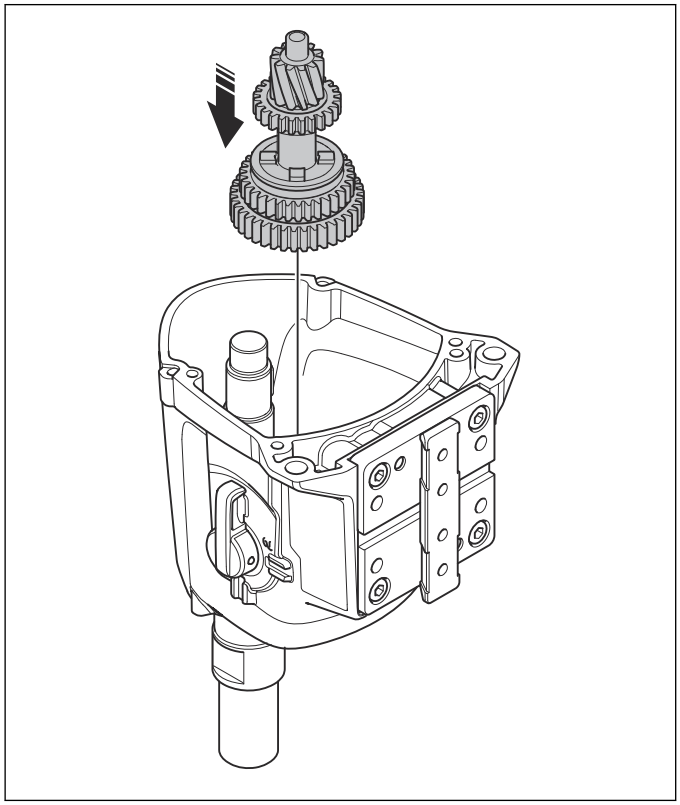


8.4.12 To install the primary and intermediate shaft

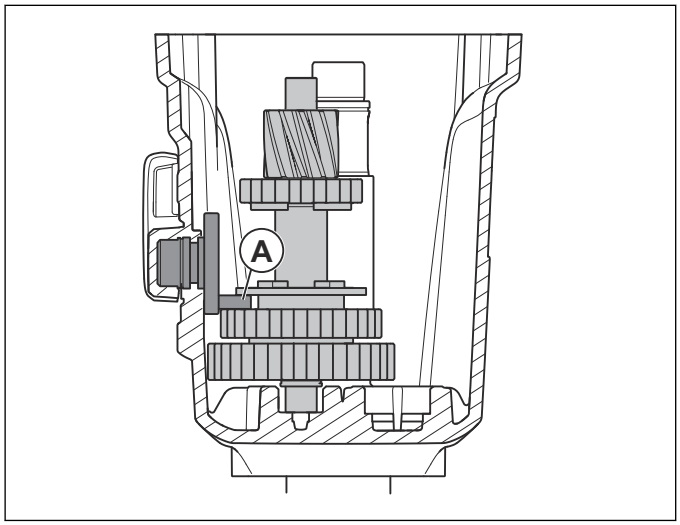
1. Assemble the machine tool holder and the bracket.
2. Put the gearbox cover on a workbench in the special tool assembly.



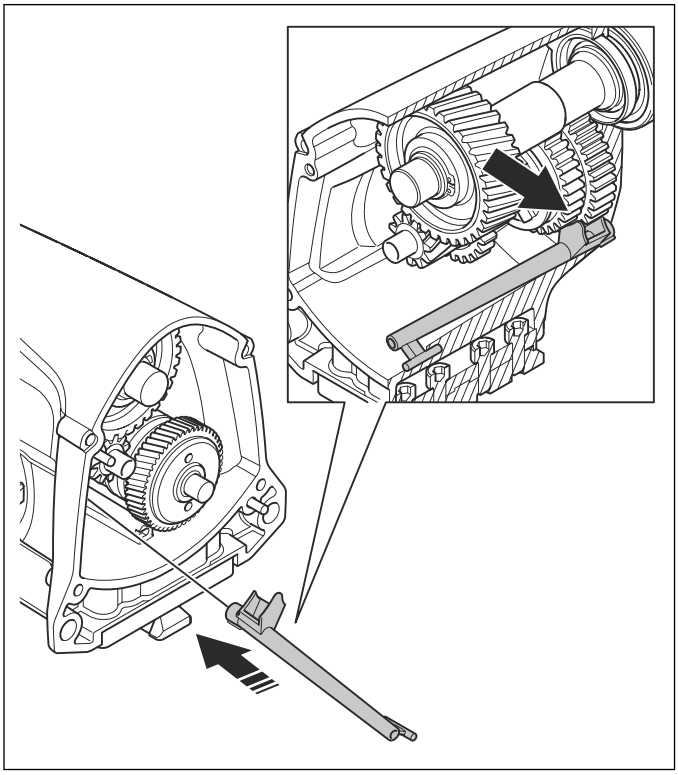
3. Install the intermediate shaft.



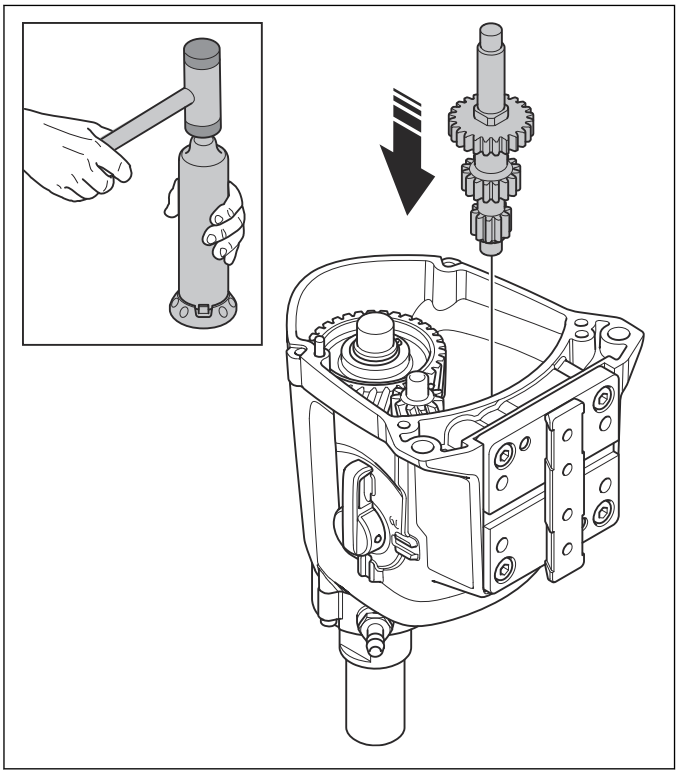
4. Make sure that the pin on the gear selector (A) is in the correct position at the gear drive.



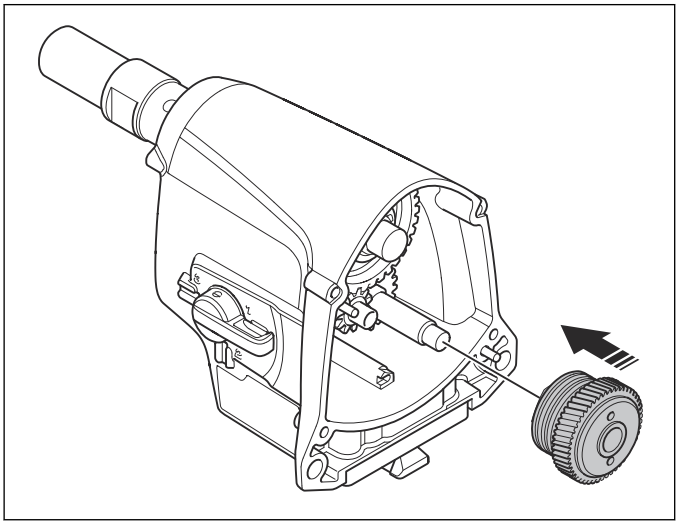
5. Install the oil pipe.



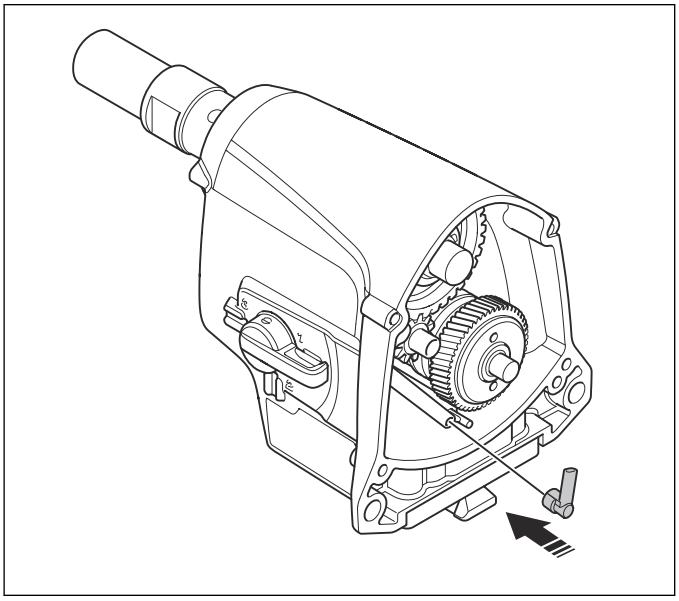
6. Use the SKF tool set to install the shaft. Refer to *Servicing tools on page 9*.



7. Install the clutch.



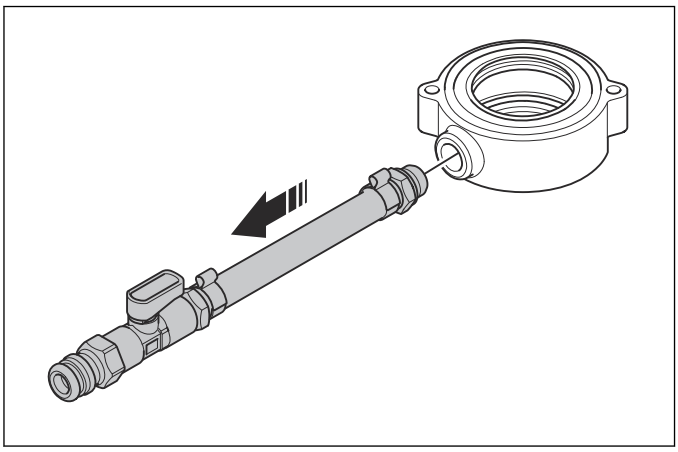
8. Install the oil pipe extension on the oil pipe.



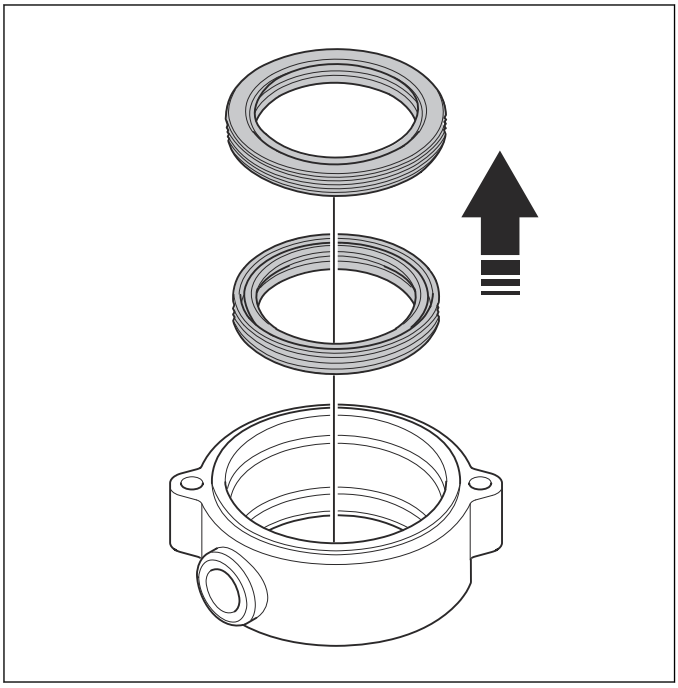
8.5 Water system

8.5.1 To disassemble the water system

1. Remove the water inlet.

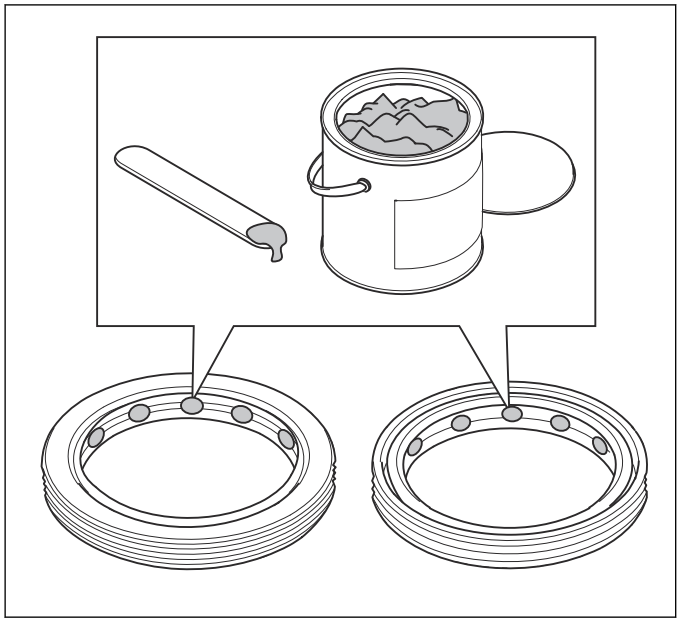


2. Remove the radial seals.

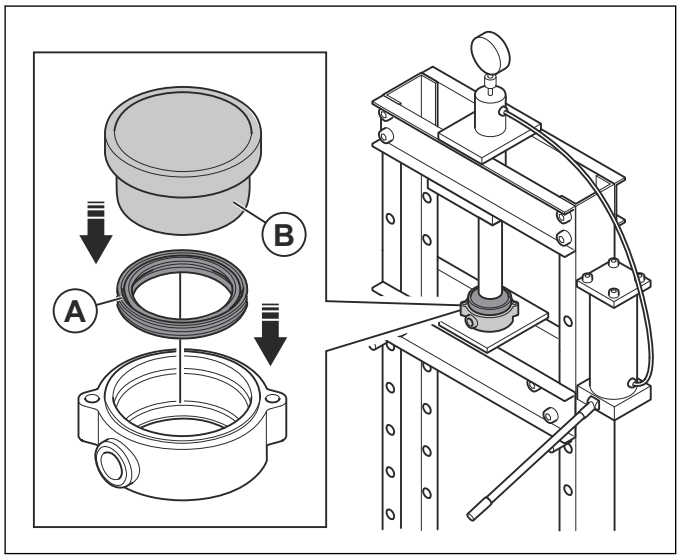


8.5.2 To assemble the water system

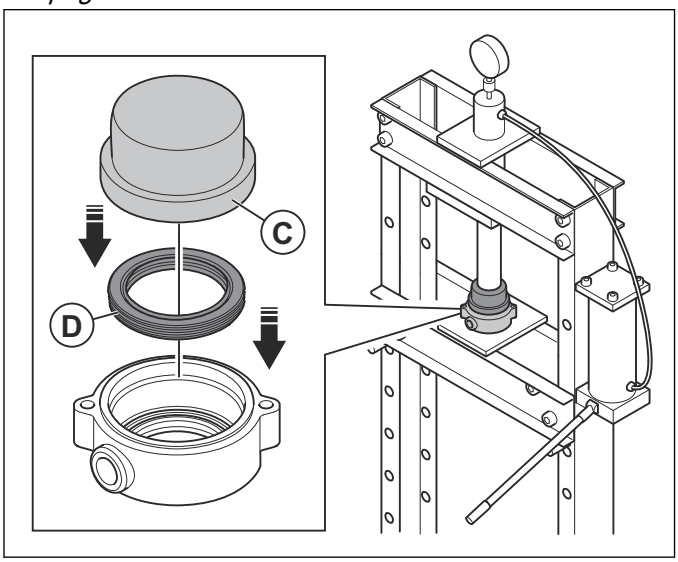
1. Apply grease in small quantities in a regular pattern across the inner edge of the radial seal. Refer to *Servicing tools on page 9* for correct type of grease.



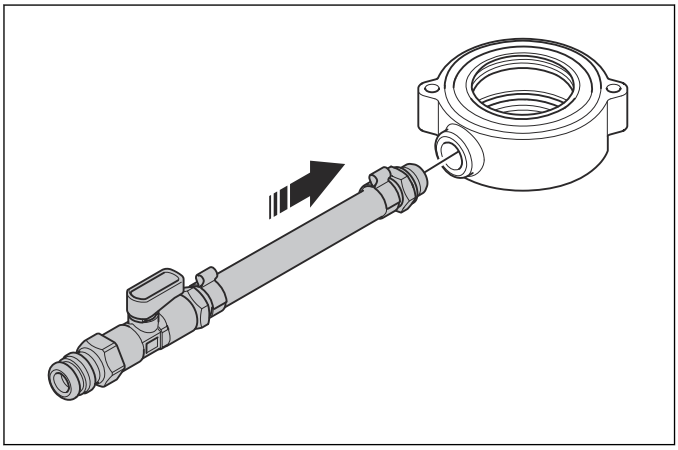
2. Use a press tool and special tool (B) to install the first radial seal (A). Refer to *Servicing tools on page 9*.



3. Use a press tool and special tool (C) to install the second radial seal (D). Refer to *Servicing tools on page 9*.



4. Install the water inlet.



9 Technical data

Motor			
Type	BLDC (brushless) 36V		
Number of E-gears	2		
Drill bit			
Max. drill diameter in concrete, mm/in.	400/15.7		
Min. drill diameter in concrete, mm/in.	50/2		
Weight, without battery, kg/lb	12.3/27.1		
Water cooling			
Water coupling			
Maximum water pressure, bar	3		
Tool connection			
Spindle thread, JP/SE/RoW	A-Rod/CR1-28/1 1/4" G		
Operating data	Mech gear 1	Mech gear 2	Mech gear 3
Speed spindle, no load E-gear 1, rpm	167	308	634
Speed spindle, no load E-gear 2, rpm	234	431	888
Drill diameter in concrete, mm/in.	230–400/9.1–15.7[1]	115–205/4.5–8.1	50–110/1.9–4.3
Dust and slurry			
Drill bit diameter to use a slurry ring, mm/in.	25–100/1–4		
Clutch			
Tightening torque, Nm	37–39		

[1] Recommended to max. Ø250 mm/9.8 in. with battery.

Husqvarna®

www.husqvarna.com

114320426

2023-08-29