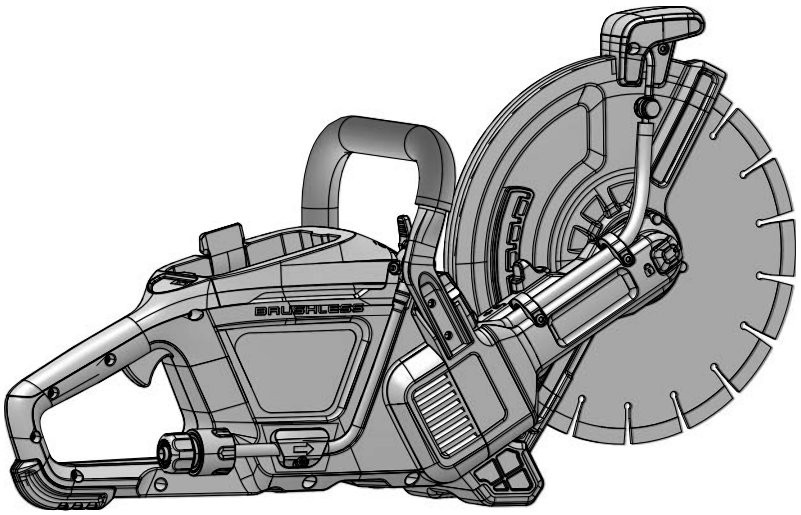
GLOBE GROUP
LEADING IN BATTERY POWERED EQUIPMENT

Power Cutter
82PC300
Service and repair information



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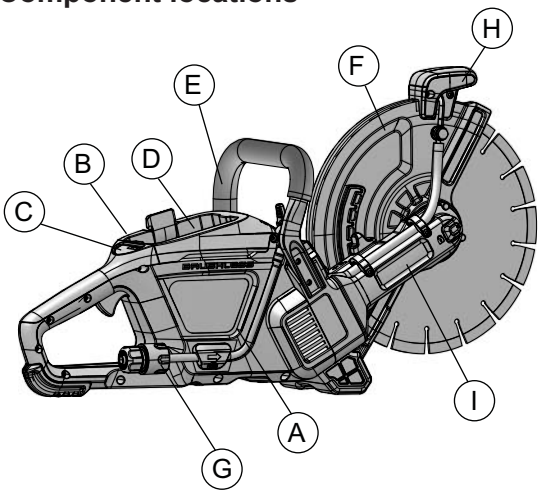
1 Component location

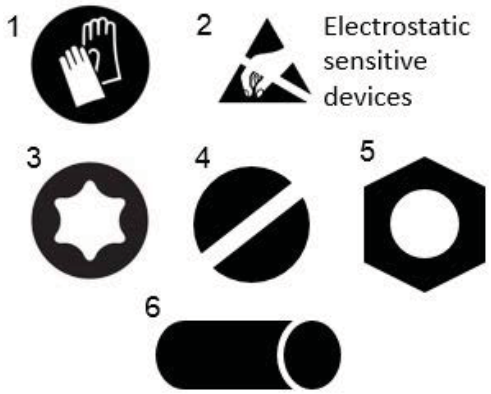
Component locations



A) Cover right
B) Cover left
C) HMI panel
D) Battery box
E) Front handle
F) Guard
G) Water connection system
H) LED lamp
I) Gearbox

2 Preparations

Tools



1) Protective gloves

2) ESD bracelet

3) Torx wrench T20 and T25

4) Screw driver

5) Socket wrench 13mm

6) Shrink tubes for connectors

Function test

After service and repair always conduct the following function tests:

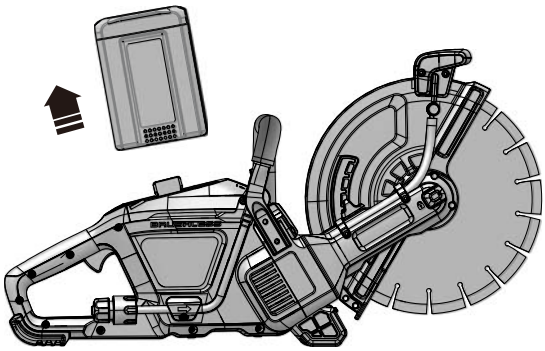
- Check for error messages

- Check that cutting disc is running freely

- Check LED lamp function

- Check waterflow function

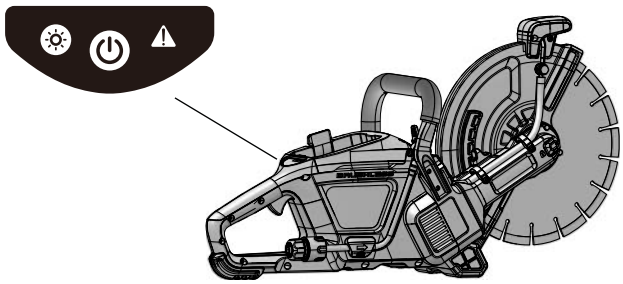
Remove the battery



⚠ Always remove the battery before working on the power cutter.

3 Trouble shooting

Error codes by flashing light on HMI



Flashes	Error name	Description	Diagnosis	Action
1	**Low speed protection**	If the low speed function is enabled in the tool software, the motor will stop and report an error when the speed of the motor is less than the set minimum.	The low speed error is normally caused by putting too much load on the motor. The tool allows for low speeds for limited periods of time. * When battery is almost out of charge this can occur. * With the 3Ah battery, this can occure more easily.	1. Restart the tool. If necessary replace the discharged battery with a charged one.
2	**Self check failure**	The main controller PCBA does not pass the self-test and will therefore not start the motor.	When the tool is powered up it does a selftest to check its basic functions. If any of these fail then this failure will be indicated.	1. Remove the battery, check that the motor will turn freely. 2. Check the connectors in the tool are fully inserted to their mating halves. 3. Check for wire damage. Check the ribbon cables, interconnection wires, and coloured high current wires. 4.Replace the main controller PCBA.
3	**Unusual battery communi-cation**	The communication between the battery pack and the main controller PCBA is malfunctioning.	The communication between the battery and the main controller PCBA relies on the COM wire. If this is broken, or suffers intermittency, then this error will be shown. Failure of the battery communications may cause this issue therefore always try another battery.	1. Try another battery 2. Remove the battery and check the connectors in the tool are fully inserted to their mating halves. 3. Check for wire damage. Check the ribbon cables, interconnection wires, and coloured high current wires. 4.Replace the main controller PCBA.
4	**Overcurrent protection**	Peak current has been reached.	This may be due to a stalled motor during normal use, or failure of an internal component. The current limit for the tool is set in software. This error is shown if the peak current has been reached for more than a given time, dependent on RPM and trigger switch position.	* Less then 100% trigger and too much load in more then 10 sec. this will accour. 1. Check the switch function so 100% trigger can be reached. 2. When cutting with heavy load make sure 100% trigger is used. 3. Check Hall sensor cables or connectors if broken. 4.Replace the motor or main controller PCBA.

3 Trouble shooting

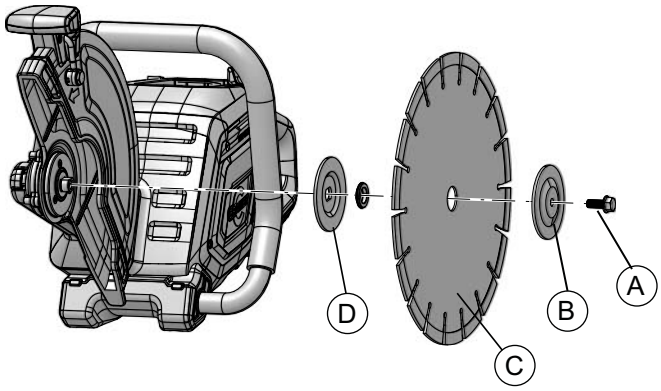
Flashes	Error name	Description	Diagnosis	Action
5	**Low Input voltage**	The battery voltage detected is below the minimum requirement for tool operation.	The low limit for a Li-Ion battery voltage depends on the nominal voltage of the battery. The 82V battery is only 82V when fully charged. The battery should not be discharged below 55V. The tool will indicate an error if the measured voltage is too low. The tool will respond normally when a charged battery is fitted.	1. Replace the battery 2. Remove the battery and check the connectors in the tool are fully inserted to their mating halves. 3. Check for wire damage. Check the ribbon cables, interconnection wires, and coloured high current wires. 4. Replace the main controller PCBA.
6	**Over temperature main controller PCBA**	The operating temperature of the main controller PCBA exceeds the set protection value.	The main controller PCBA includes the MOSFET power drivers. When in use these devices get hot. Under normal environmental conditions this operational temperature is considered normal. This error indicates that the main controller PCBA has become too hot, usually meaning the MOSFETs are too hot.	1. Clean cooling vents inlet and outlet side. 2. Clean the machine. 3. Check motor fan is ok. 4. Check cooling channel plastic part if ok. 5.Replace the main controller PCBA. 6. Remove the battery and check the connectors in the tool are fully inserted to their mating halves. 7. Check for wire damage. Check the ribbon cables, interconnection wires, and coloured high current wires. 8. Replace the main controller PCBA.
7	**Motor blocking or hall sensor abnormality**	When the motor starts or is already running, if it encounters rotational resistance such that the motor stops then this error code is shown. If the communication is broken or intermittent when the motor is running, then the motor will stop and this error will be shown. If the motor uses hall sensors, and the signals from them is abnormal, this error message will be shown.	If something is preventing the motor from turning, this error will be shown.When hall sensors are used, breakages or intermittencies in the connecting wires can cause this error.	1. Clean the motor and check it will turn freely and that the drive line and gearbox run smoothly. 2. Remove the battery and check the connectors in the tool are fully inserted to their mating halves. 3. Check for wire damage. Check the ribbon cables, interconnection wires, and coloured high current wires. 4.Replace the main controller PCBA.
8	**Switch logic abnormality**	The operating switch sequence for the tool has not been followed.	An error will be shown if the correct operating sequence is not followed. This includes pressing the trigger without pushing the safety button, or pulling the safety arm, depending on the tool.	1. Check the trigger so it is not stuck, and clean it. 2. Check trigger switch and spring function is normal. 3. Check wires and connectors are ok. 4.Replace the main controller PCBA.

3 Trouble shooting

Flashes	Error name	Description	Diagnosis	Action
9	**Software certification abnormality**	Software failure detected.	An internal error may be generated when the software checks its own integrity. The failure may occur due to environmental factors such as the ambient temperature being higher than the maximum allowed for the tool.	1. If the tool is being operated in an environment where the ambient temperature exceeds that recommended for the tool, allow the tool to cool down and check its operation again. 2. Replace the main controller PCBA.
10	**Over temperature Motor**	The operating temperature of the motor exceeds the set protection value.	The temperature of the motor is monitored constantly. In order to prevent melting of the coils' enamel insulation, the motor will be stopped when this temperature threshold is reached. Allow the tool to cool down before using again. Check that the ventilation slots and holes are clear.	1. Ensure the tool is used in an environemnt where the ambient temperature is below the recommended maximum. 2. Remove battery and clean the motor. Check that the fan not broken 3. Remove the battery and check the connectors in the tool are fully inserted to their mating halves. 4. Check for wire damage. Check the ribbon cables, interconnection wires, and coloured high current wires. 5. Replace main controller PCBA. 6. Replace motor.
11	**Over temperature Battery**	The operating temperature of the battery exceeds the set protection value.	The battery has its own built in temperature measurement. When this temperature reaches its maximum threshold, the battery informs the tool that it is too hot. The tool then stops the motor and shows this error.	1. If the battery is hot to the touch then replace it with a cool battery. Let the hot battery cool down ready for use again. 2. Check that a recommended battery is being used. See operators manual. 3. Clean air vent of battery and battery holder. Do not use water. 4. If the battery is cool, but the tool still showing this error message, it may need the main controller PCBA to be changed.

4 First step disassembly

Cutting disc disassembly



⚠ CAUTION!: SHARP OBJECTS. GLOVES REQUIRED.

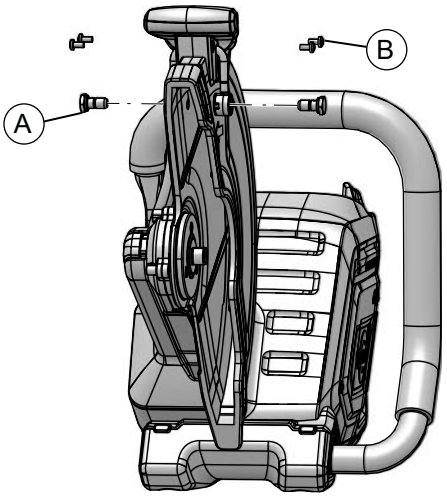
1) Push the button to stop the disc to rotate.

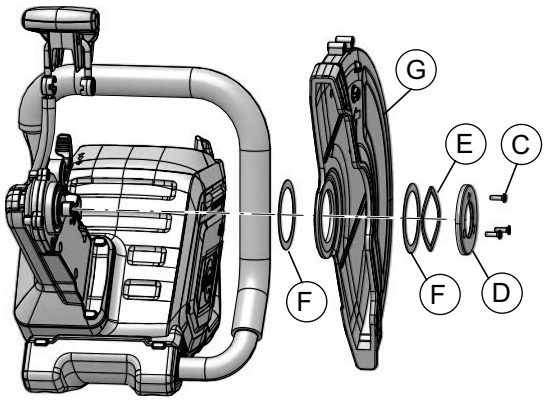
2) Loosen the screw (A) and washer (B).

3) Remove the cutting disc (C) and inner clamp washer (D).

Guard disassembly

1) Remove the 2 nuts (A) and 4 screws (B).





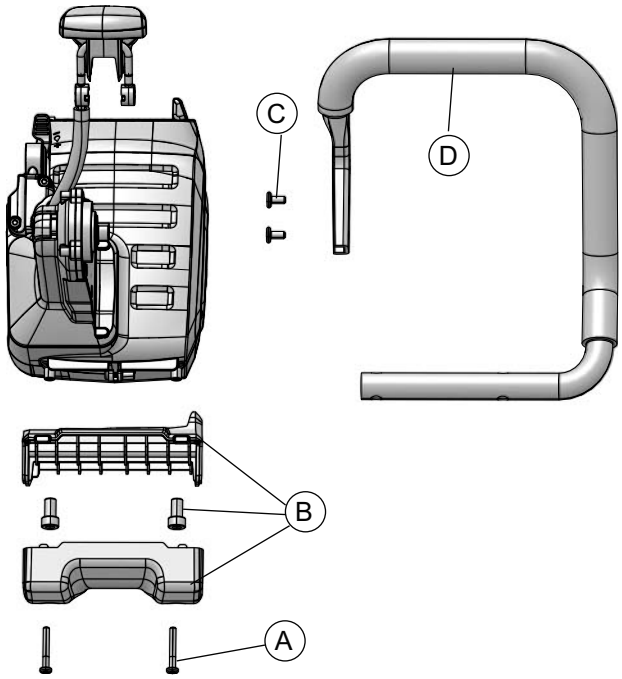
2) Remove the 3 screws (C) and plate (D).

3) Remove the spring washer (E) and washer (F).

4) Remove the guard (G).

4 First step disassembly

Foot and front handle



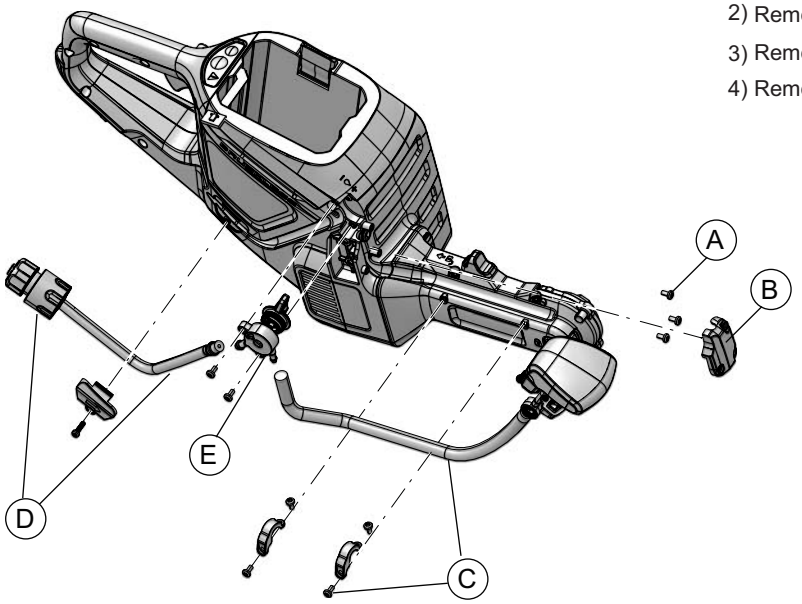
1) Remove the 2 screws (A).

2) Remove the foot (B).

3) Remove the 2 screws (C).

4) Remove the front handle (D).

Water hose



1) Remove the 3 screws (A) and cover (B).

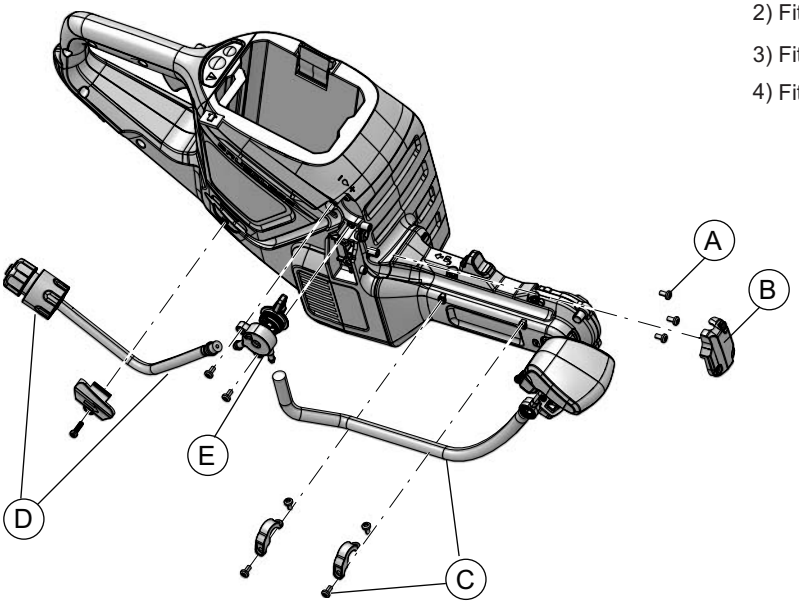
2) Remove the water outlet hose assy.(C).

3) Remove the water inlet hose assy.(D).

4) Remove the water adjuster (E).

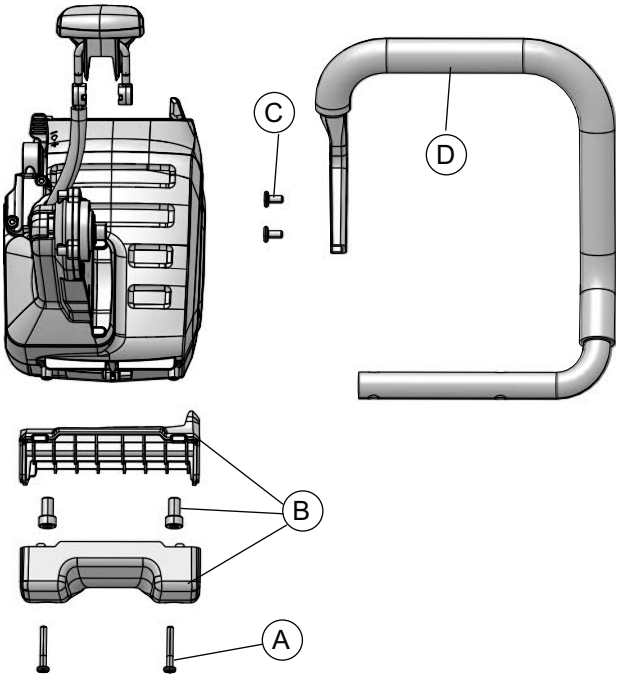
5 First step assembly

Water hose



1) Fit the water adjuster (E).
2) Fit the water inlet hose assy.(D).
3) Fit the water outlet hose assy.(C).
4) Fit the cover (B) and 3 screws (A).

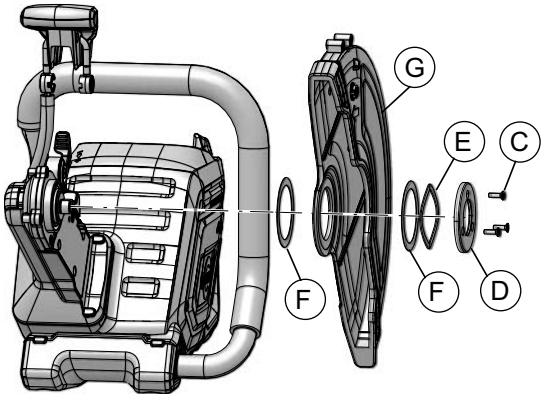
Foot and front handle



1) Fit the front handle (D).
2) Fit the foot (B).
3) Fit the screws (A).

5 First step assembly

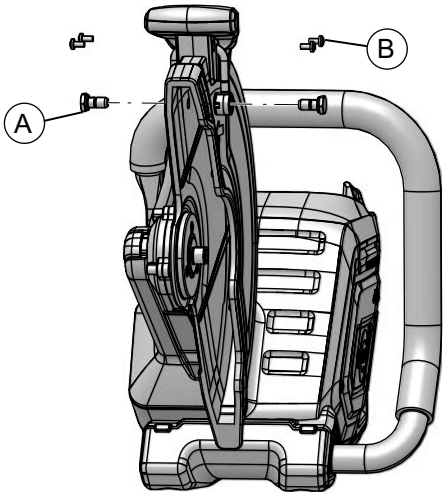
Guard assembly



1) Fit the guard (G).

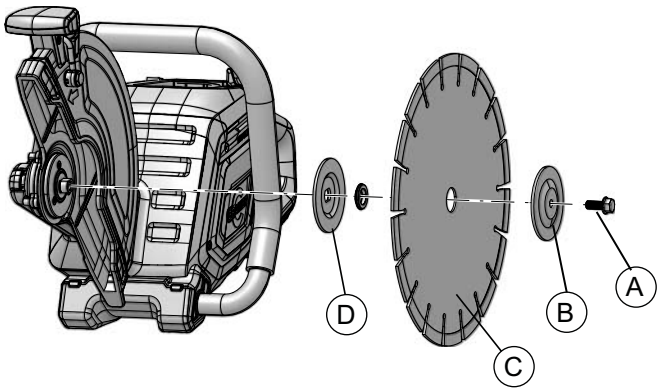
2) Fit the washer (F) and spring washer (E).

3) Fit the plate (D) and 3 screws (C).



4) Fit the 2 nuts (A) and 4 screws (B).

Cutting disc assembly



⚠ CAUTION!: SHARP OBJECTS. GLOVES REQUIRED.

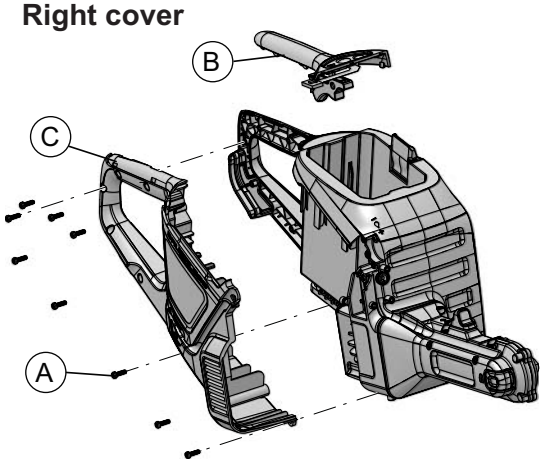
1) Fit the inner clamp washer (D) and cutting disc (C).

2) Fit the washer (B) and screw (A).

3) Tighten the screw (A): 25 Nm

6 Battery box

Right cover

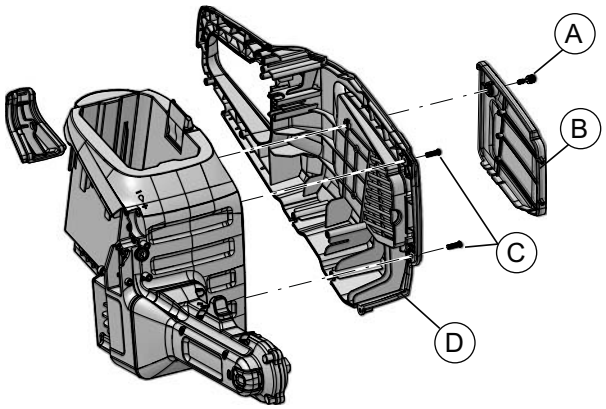


Remove the Cutting disc assembly according to

Chapter: "First step disassembly"

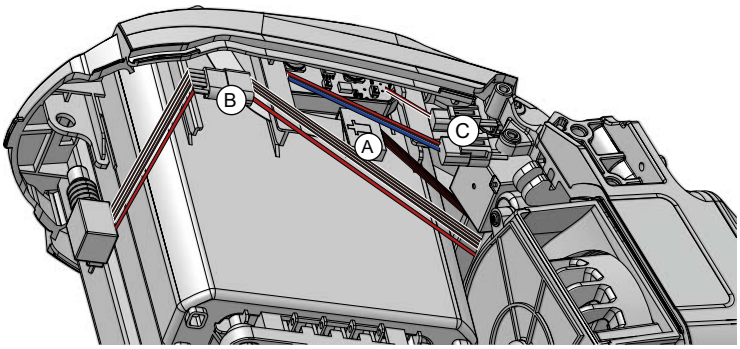
1) Remove the 9 screws (A).
2) Remove the handle insert (B).
3) Remove the right cover (C).

Left cover



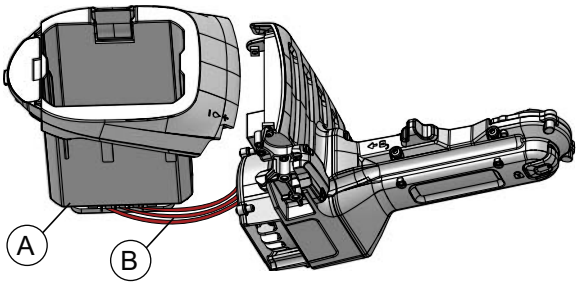
1) Remove the screw (A).
2) Remove the filter cover (B).
3) Remove the 2 screws (C) and left cover (D).

Cable connections



1) Cut off the tape and disconnect HMI connector (A).
2) Disconnect Switch for trigger (B).
3) Remove the LED controller PCBA or disconnect the 2 switches (C) for LED controller PCBA.
4) When connect the HMI connector put a new tape with water proof specification around to protect for water.

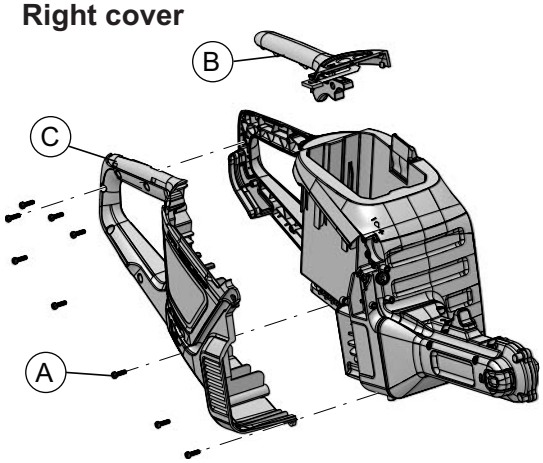
Replace the battery box



1) Move the battery box (A) to uncover connectors.
2) Disconnect the cables (B).
3) Replace the battery box (A).
4) Connect the cables (B).
5) Fit the battery box (A).

7 HMI

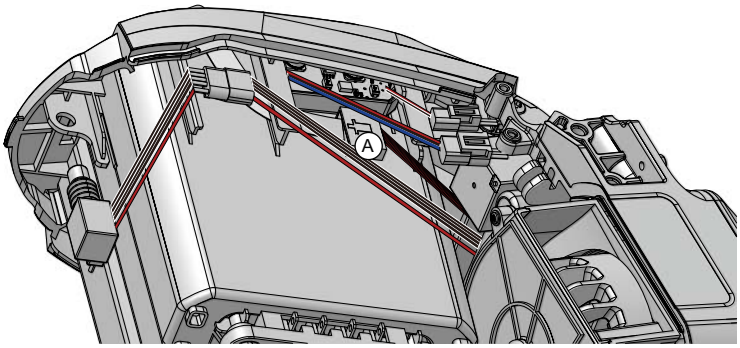
Right cover



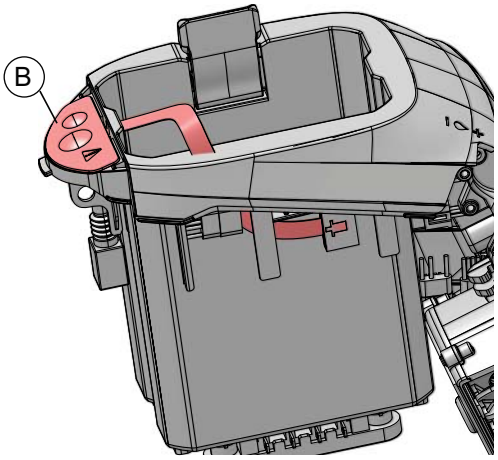
Remove the Cutting disc assembly according to

Chapter: "First step disassembly"

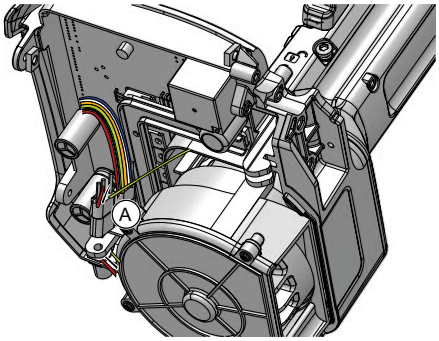
1) Remove the 9 screws (A).
2) Remove the handle insert. (B).
3) Remove the right cover (C).



1) Cut off the tape and disconnect HMI connector (A).
2) Replace the HMI panel (B).



8 Motor disassembly

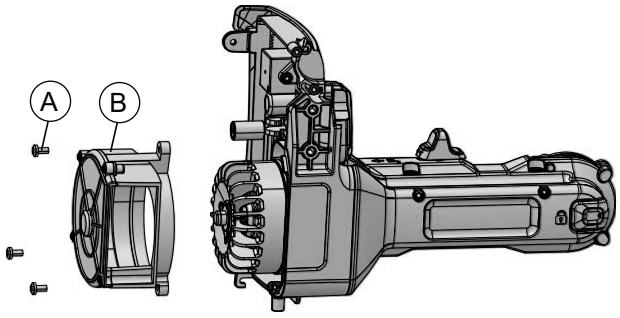


Remove the cutting disc assembly and battery box according to

Chapter: "First step disassembly" "Battery box"

1) Disconnect the motor and hall sensor connectors (A).

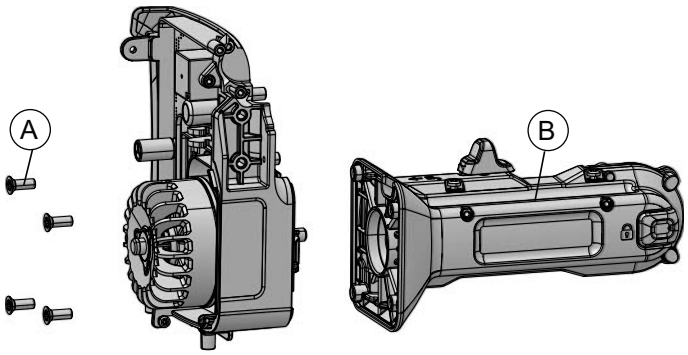
Motor cover



1) Remove the 3 screws (A).

2) Remove the air concentrator (B).

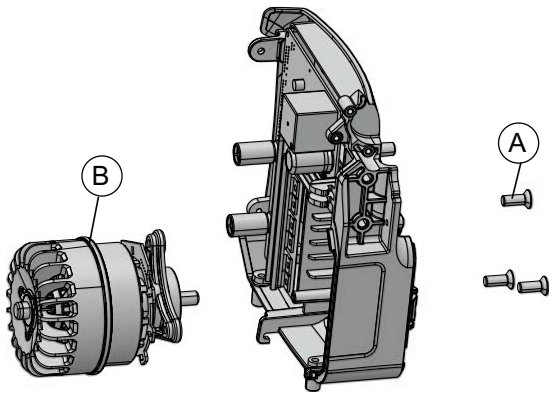
Gear box



1) Remove the 4 screws (A).

2) Remove the gear box assy.(B).

Motor

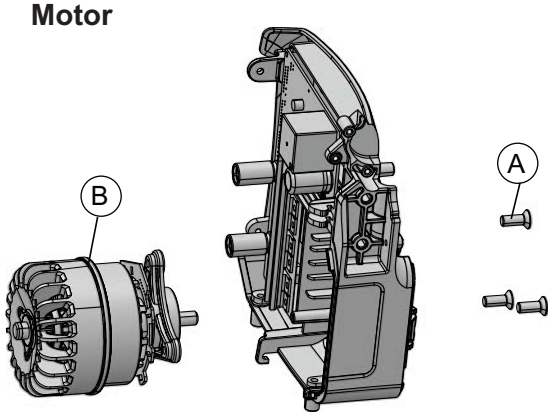


1) Remove the 3 screws (A).

2) Remove the motor (B).

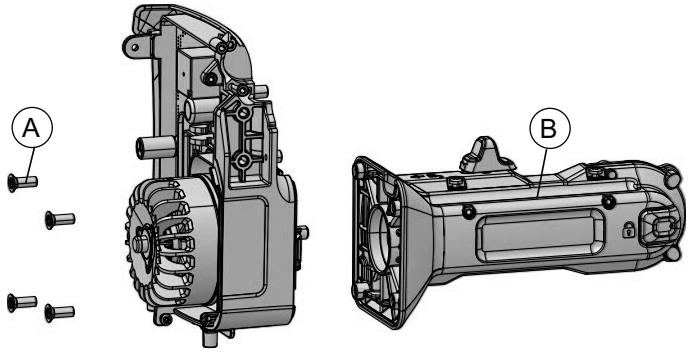
9 Motor assembly

Motor



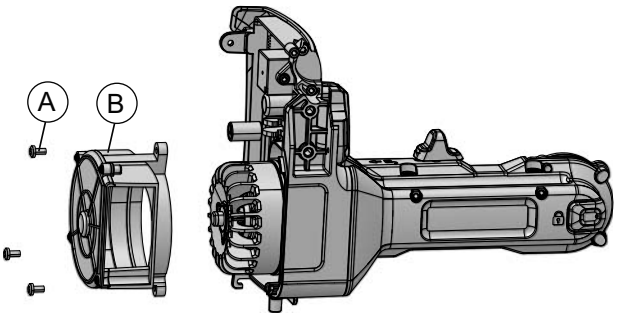
1) Fit the motor (B).
2) Fit the 3 screws (A).

Gear box

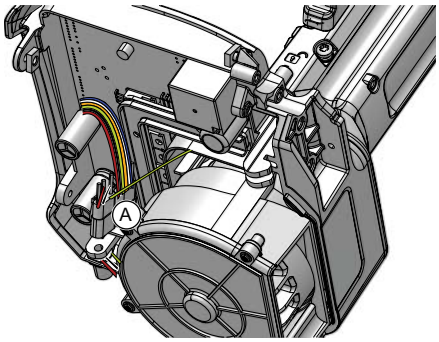


1) Fit the gear box assy.(B).
2) Fit the 4 screws (A).

Motor cover



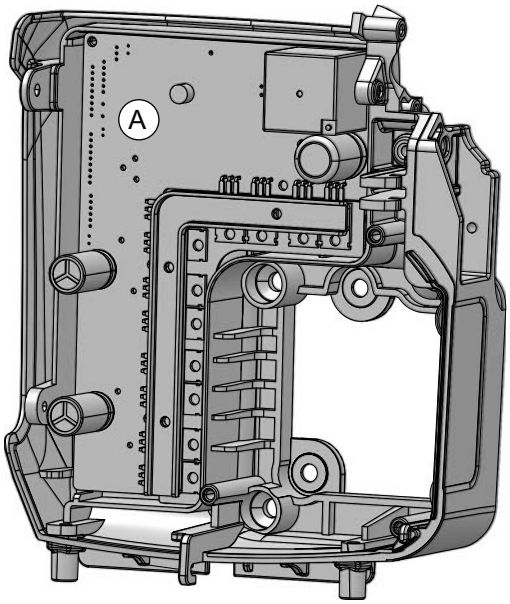
1) Fit the air concentrator (B).
2) Fit the 3 screws (A).



1) Connect the motor and hall sensor connectors (A).

Fit the cutting disc assembly and battery box according to Chapter "First step assembly" "Battery box"

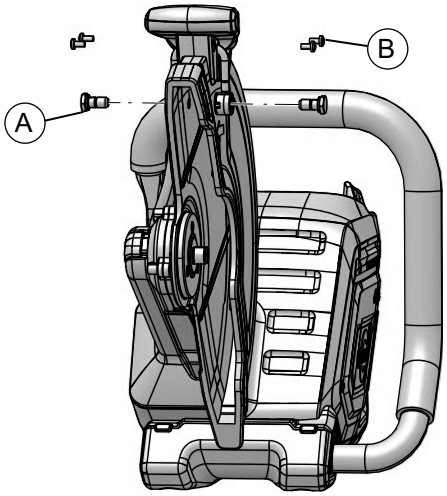
10 Main controller PCBA



Remove motor according to Chapter: "Motor disassembly"

1. Replace the main controller PCBA (A).

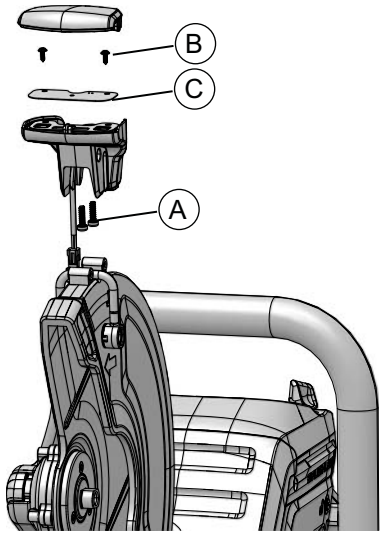
11 LED Lamp



Remove the Cutting disc assembly according to

Chapter: "First step disassembly"

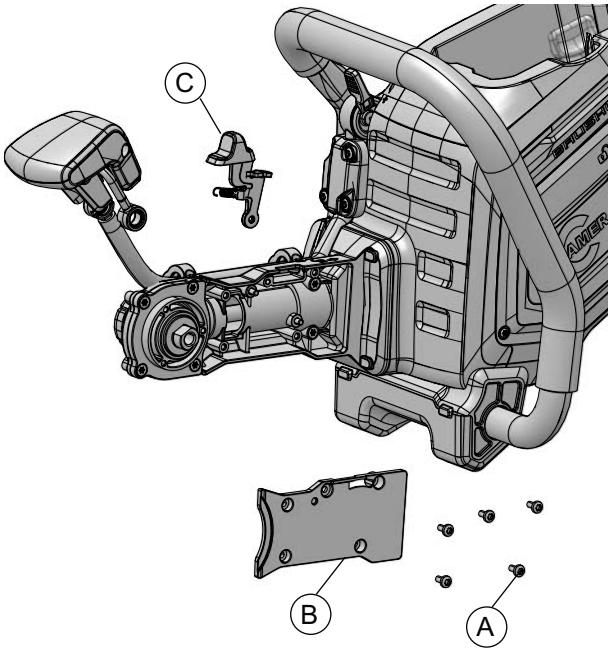
1) Remove the 2 nuts (A) and 4 screws (B).



1) Remove the 2 nuts (A) and 2 screws (B).

2) Disconnect the cables and replace the LED PCBA (C).

12 Guard adjustment lever



Remove the Cutting disc assembly and guard according to Chapter: ""First step disassembly"

1. Remove the 5 screws (A) and dust cover (B).
2. Replace the guard adjustment lever (C).

Wiring diagram