

REPAIR GUIDELINE

CHAIN SAW_CS1600E



Version: 1

Issue Date: 2016/01/05

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Troubleshooting

Problem	Possible Cause	Fault Position	Test & Solution
Fail to start/stop in running	Weak connection of the white cable	Battery connection terminals (base)	Open the housing, check if the white cable that connects to the battery connection terminal was insufficiently soldered (weak connection), re-solder the cable and check the function.
	Electric assembly is broken	Electric assembly	Open the housing, replace PCBA
	Big deviation of the speed sensor	Motor assembly	Open the housing, replace the motor assembly
No oil lubrication when cutting	Oiling hole in housing was blocked by debris	Oil hole in housing	Open the housing, clear the oil hole in housing.
	Oil pumper was blocked by oil residue	Oil tank assembly	Open the housing, replace the oil tank assembly
	Plastic gear was worn out	Plastic gear	Open the housing, replace the plastic gear; check and clear the oil hole in the housing.
Saw chain cannot or hard to move in guide bar	Guide bar was worn out	Guide bar	Replace the guide bar

Troubleshooting

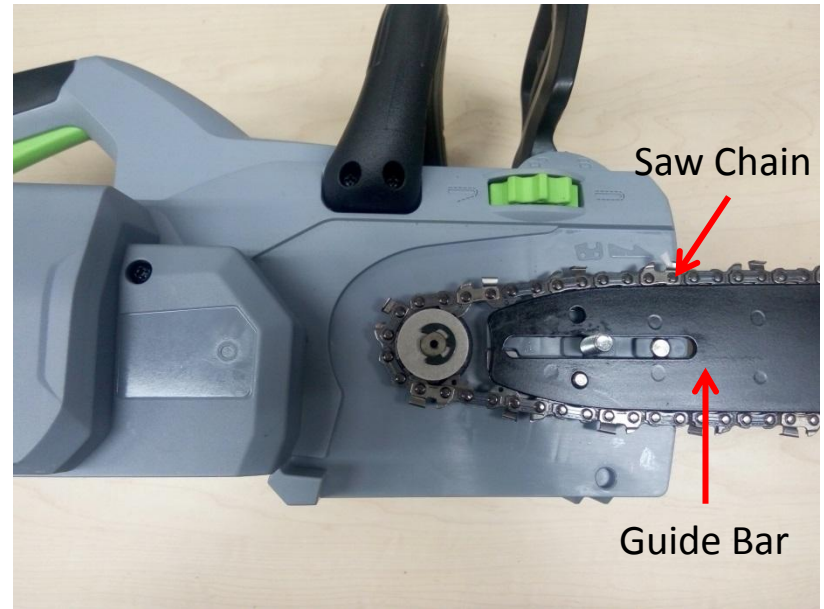
Problem	Possible Cause	Fault Position	Test & Solution
Saw chains slides on the sprocket/big noise	The sprocket was worn out	Sprocket	Replace the sprocket
Noise	Motor bearing was worn out	Motor	Open the housing, replace the motor assembly

Tool List For Repair

NO.	Tool List	SPEC	Remark
1	Magnetic bits		
2	Electric soldering iron		
3	Heat gun		
4	Heat shrinkable sleeves		
5	Silicon glue		Assist fixing the plug
6	Scissors		To remove the shrinkable sleeve
7	Snap ring pliers		To remove the E-ring

Disassemble the Product

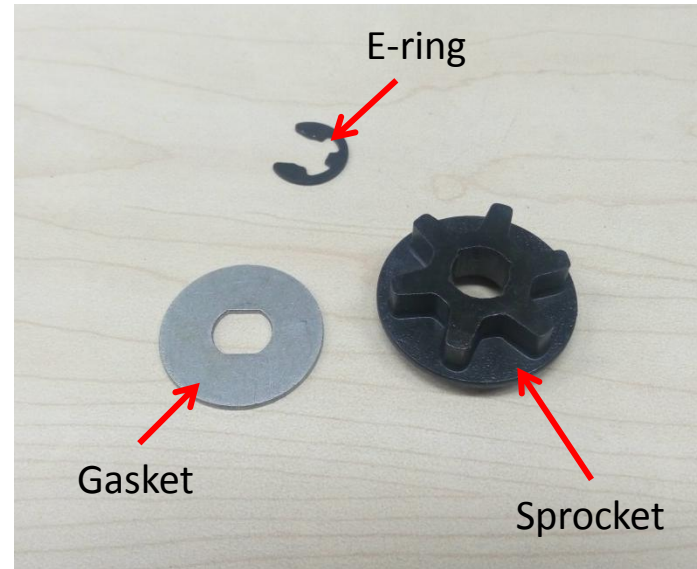
1. Remove the side cover, saw chain and guide bar from the chain saw;



Description	Part Number	SPEC
Side Cover Assembly	2823860001	---
Saw Chain	3810671001	90PX056X(Oregon)
Guide Bar	3705964001	164MLEA041 (Oregon) 400mm (16")

Disassemble the Product

2. Remove the E-ring, Gasket and Sprocket from the motor shaft.



Description	Part Number	Qty.
E-Ring	5660028001	1
Gasket	5660208001	1
Sprocket	3421564001	1

Disassemble the Product

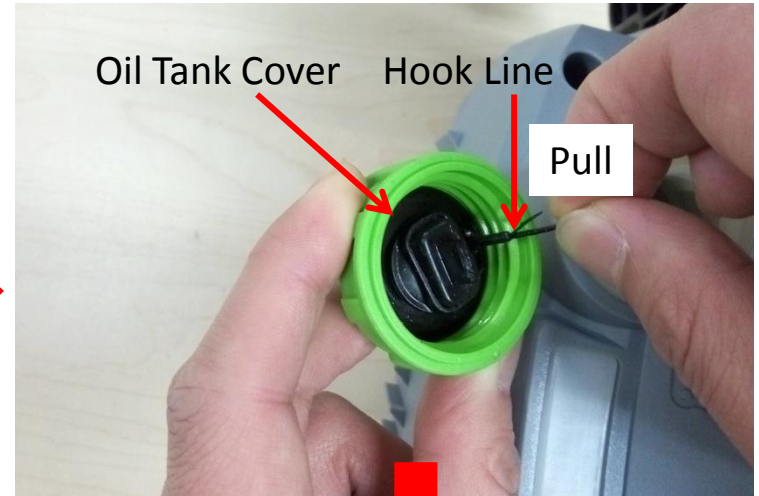
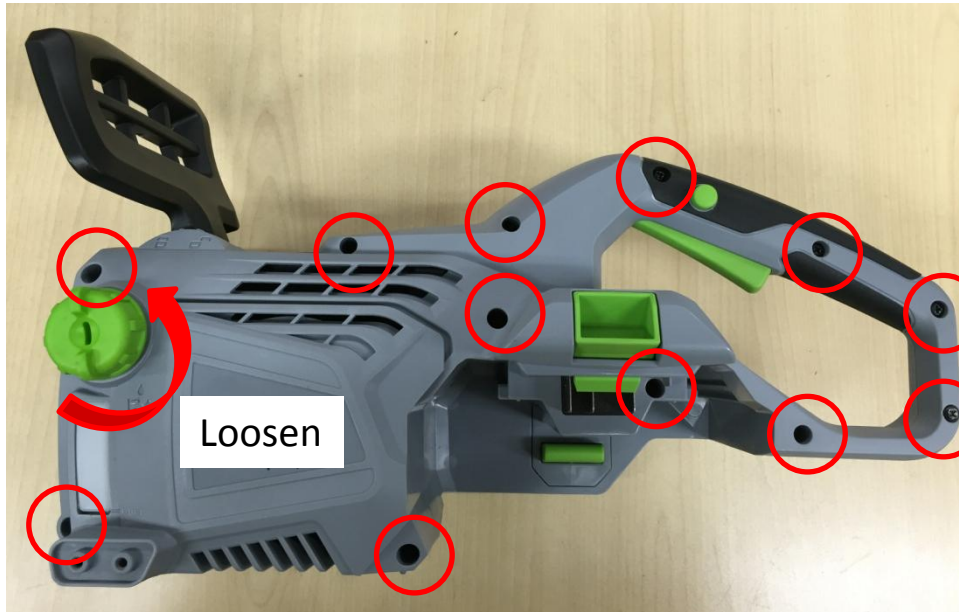
3. Loose the 4 screws to remove the front handle from the housing.



Description	Part Number	Quantity
Tapping Screw	5610042014	4
Front Handle	3127504002	1

Disassemble the Product

- Loosen the oil tank and disconnect the hook line with the oil tank cover.
- Loosen the 12 screws in housing to open the housing.



Description	Part Number	Quantity
Tapping Screw	5610042014	12

Replace PCBA

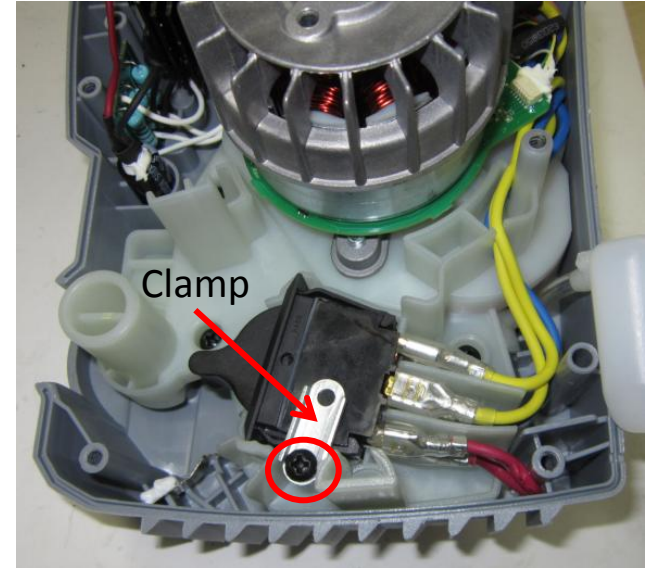
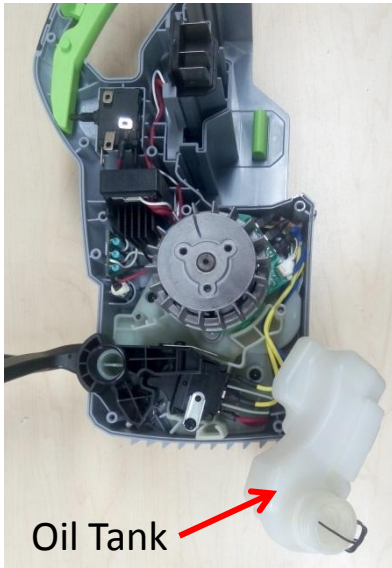
1. Loosen the 4 screws in fan baffle and remove the fan baffle from the motor.



Description	Part Number	Quantity
Tapping Screw	5610042014	4
Fan Baffle	3127502001	1

Replace PCBA

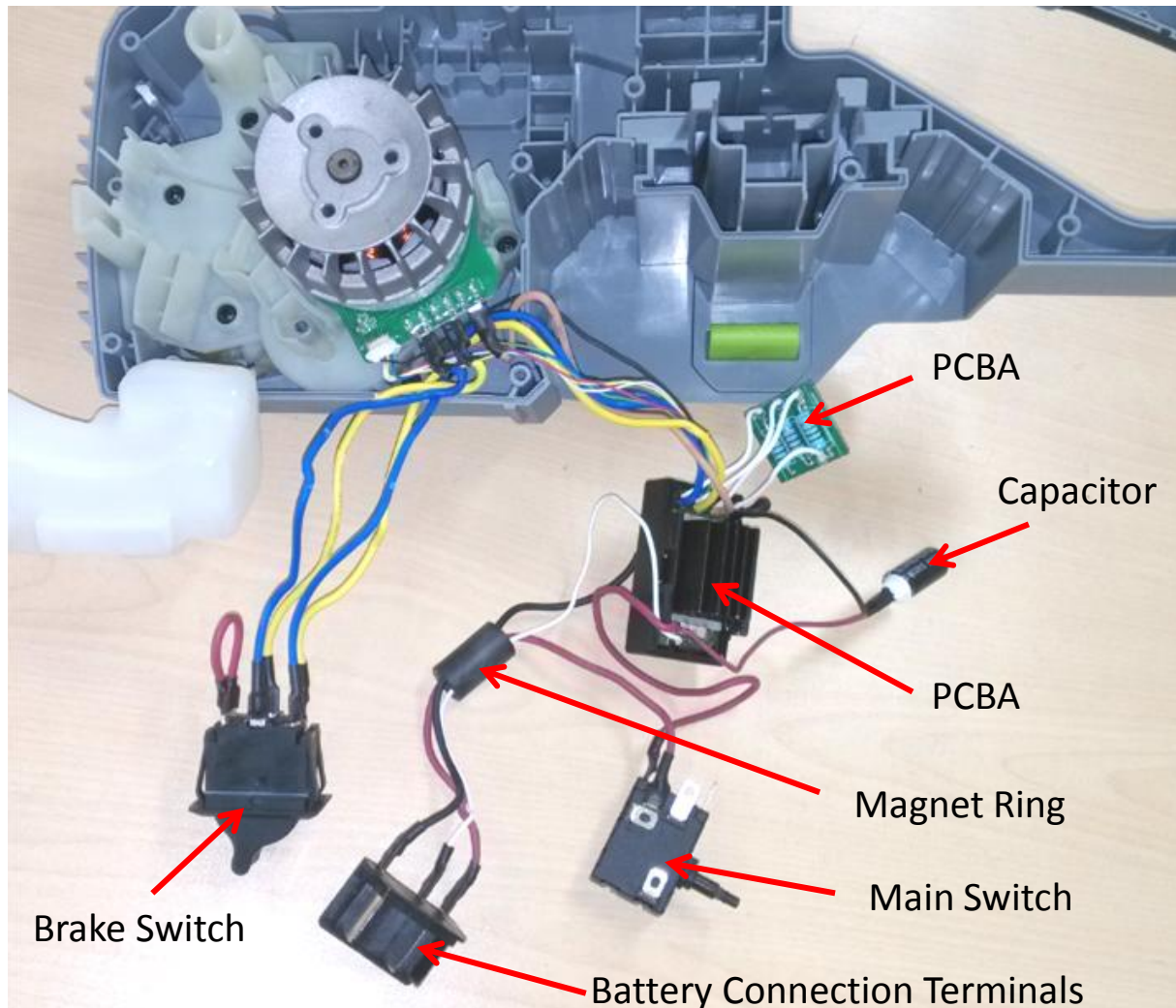
2. Move the oil tank aside; remove the brake handle assembly.
3. Loosen the screw in the clamp and remove the clamp away from the switch.



Description	Part Number	Qty.
Brake Handle	3402731001	1
Brake Piece	3705658001	1
Clamp	3700367001	1
Tapping Screw	5610042014	1

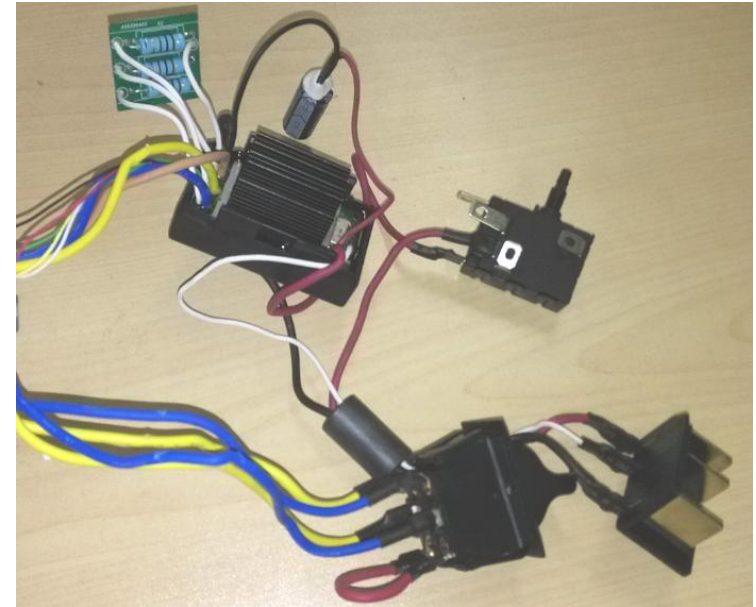
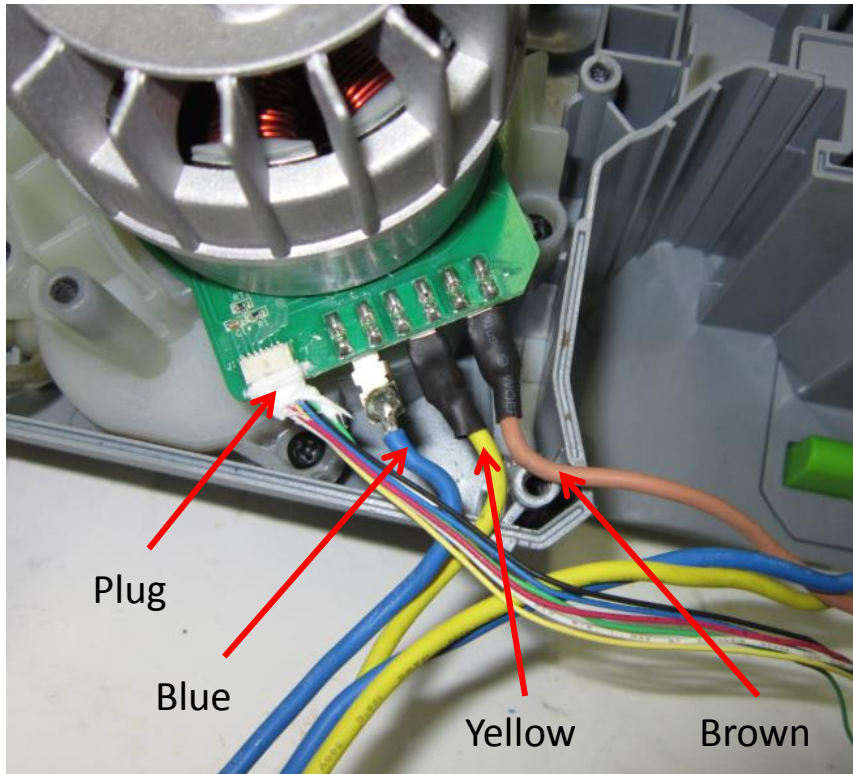
Replace PCBA

- Carefully remove PCBA (including main switch, brake switch, battery connection terminals, PCBs, capacitor and cables) from the housing.



Replace PCBA

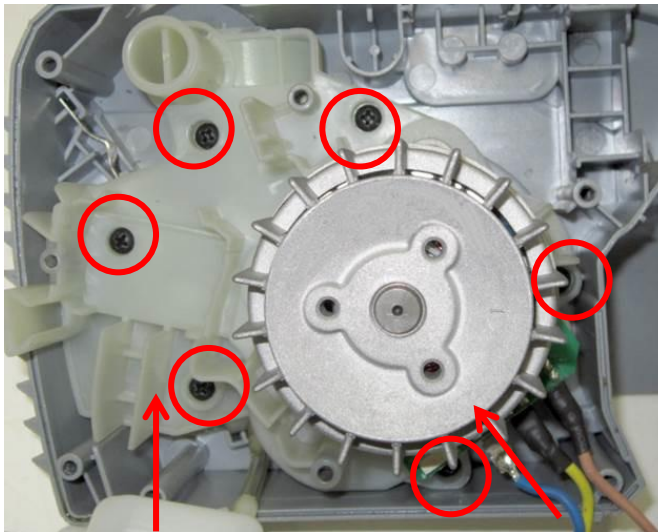
5. Remove the heat-shrinkable sleeves from the Motor PCBA connection terminals.
6. Disconnect the three cable connections with a soldering iron.
7. Remove the glue on the plug surface and disconnect the plug from Motor PCBA.
8. Remove PCBA from Motor, replace it if it is broken.



Description	Part Number
Electric Assembly	2830039003

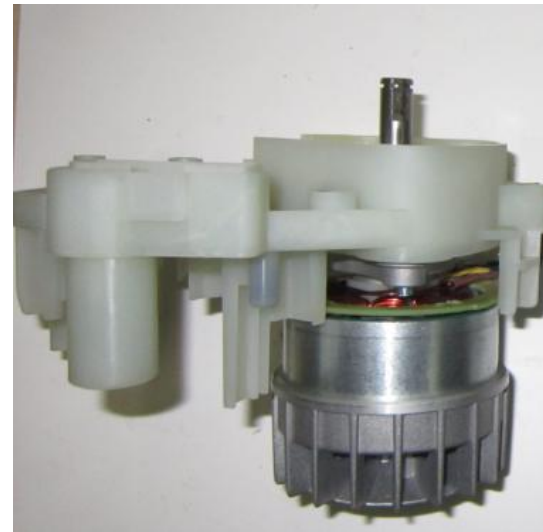
Replace the Motor

1. Remove the E-ring, Gasket and Sprocket from the motor shaft, see Page 7.
2. Disconnect PCBA from motor, see Page 10-13.
3. Loosen the 6 screws in motor support and remove the motor assembly together with motor support from the right housing.



Motor support

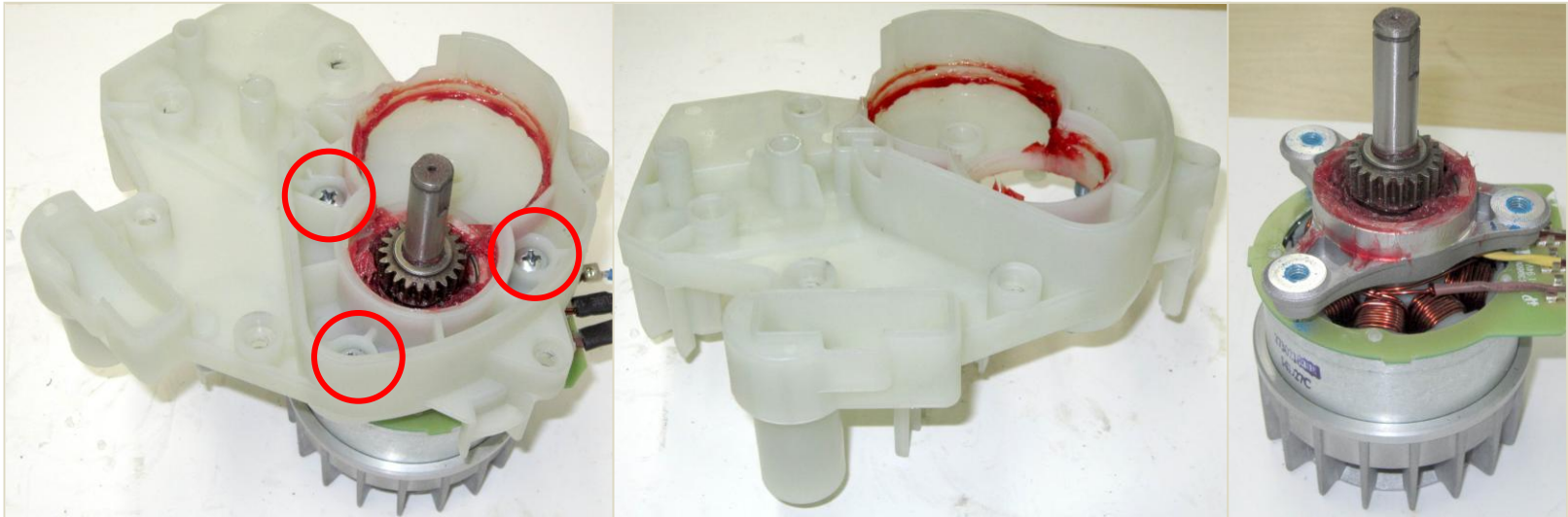
Motor



Description	Part Number	Qty.
Motor Support	3127503001	1
Tamping Screw	5610042014	6

Replace the Motor

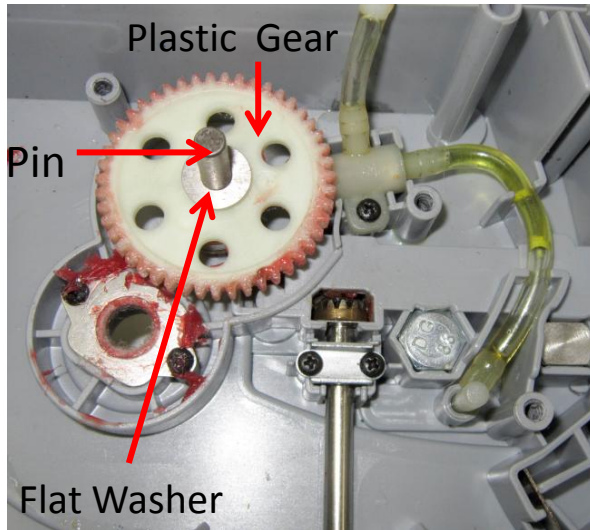
4. Loosen the 3 screws in the motor support and take out the support from the motor.
5. Replace the motor if the it is broken.



Description	Part Number	Quantity
Motor Support	3127503001	1
Motor Assembly	2823855002	1
Screw	5620051010	3

Replace the Oil Tank Assembly

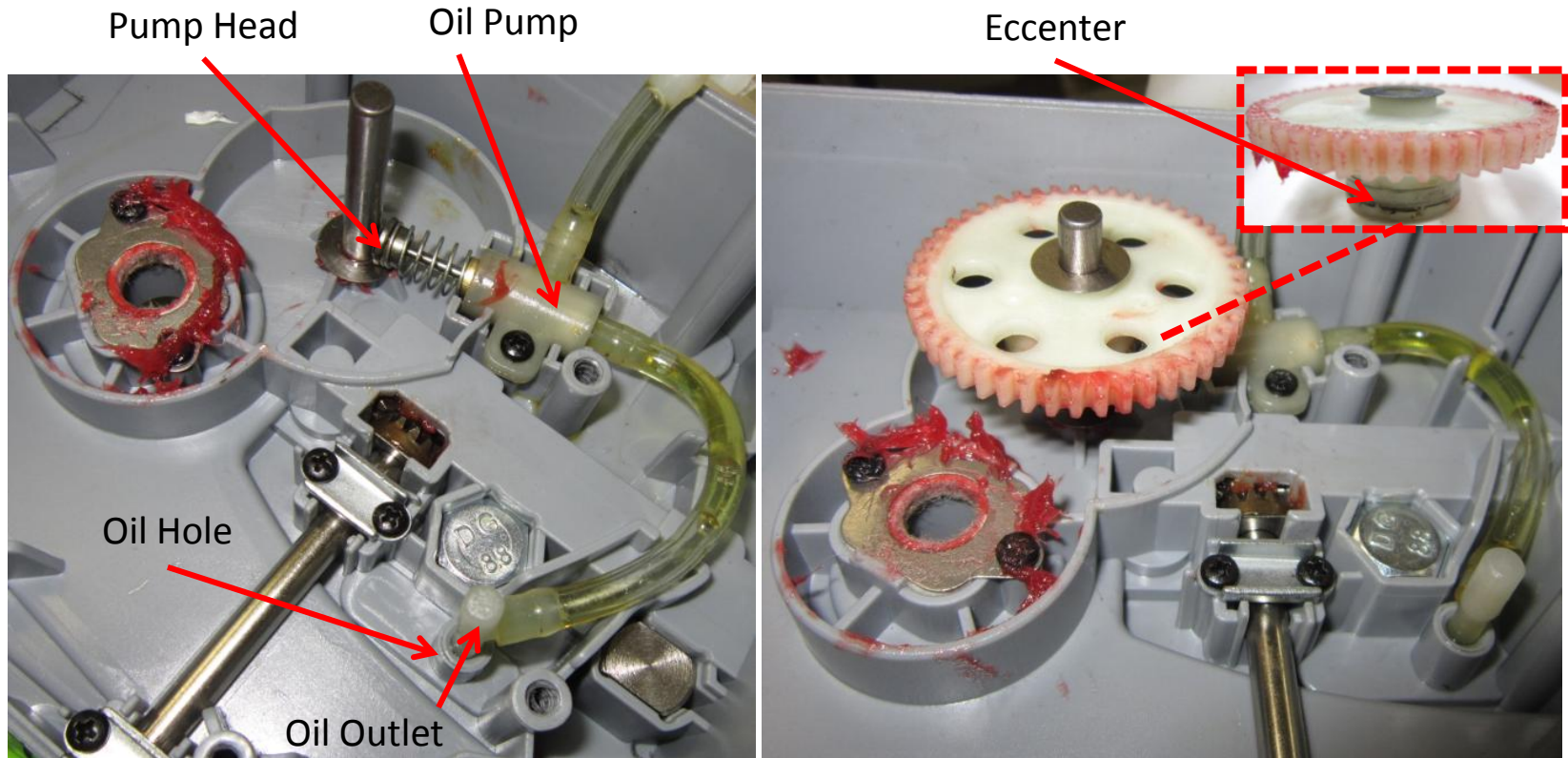
1. Remove the flat washer and plastic gear from the pin.
2. Pull the oil outlet out of the housing.
3. Loosen the locking screw and take out the oil tank assembly.
4. Replace the oil tank assembly if it leaks or the oil is drained out.



Description	Part Number
Oil Tank Assembly	2823933002
Tapping Screw	5610011006

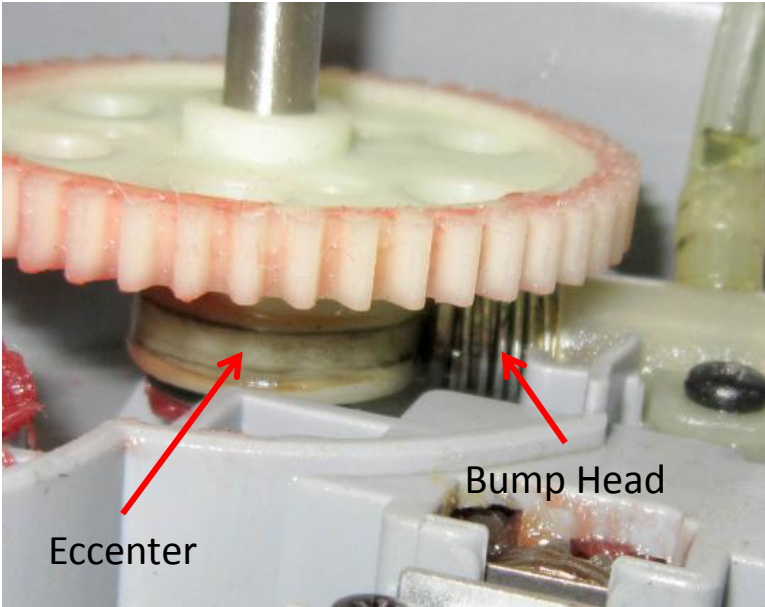
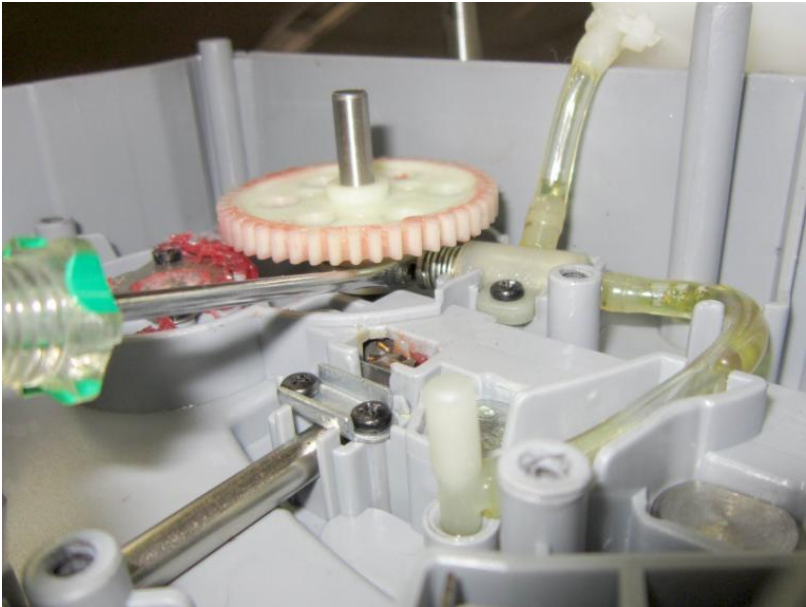
Assemble the Product

1. Insert the oil outlet into the oil hole of the housing.
2. Lock the oil pump in the housing with screw.
3. Mount the plastic gear onto the pin, make sure the eccentric downwards



Assemble the Product

- 4. Use a slotted screwdriver to push the pump head, make sure the pump head rest against the eccentric of the plastic gear.

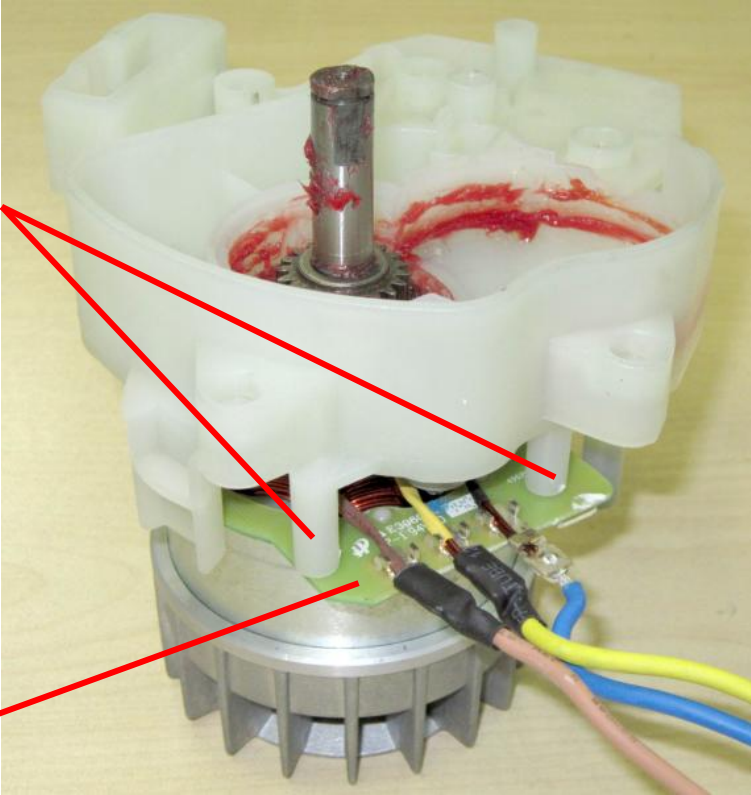


Assemble the Product

- 5. Align the motor support with the motor mounting holes and lock it onto the motor with 3 screws.

Align the two domes towards the top of the PCB

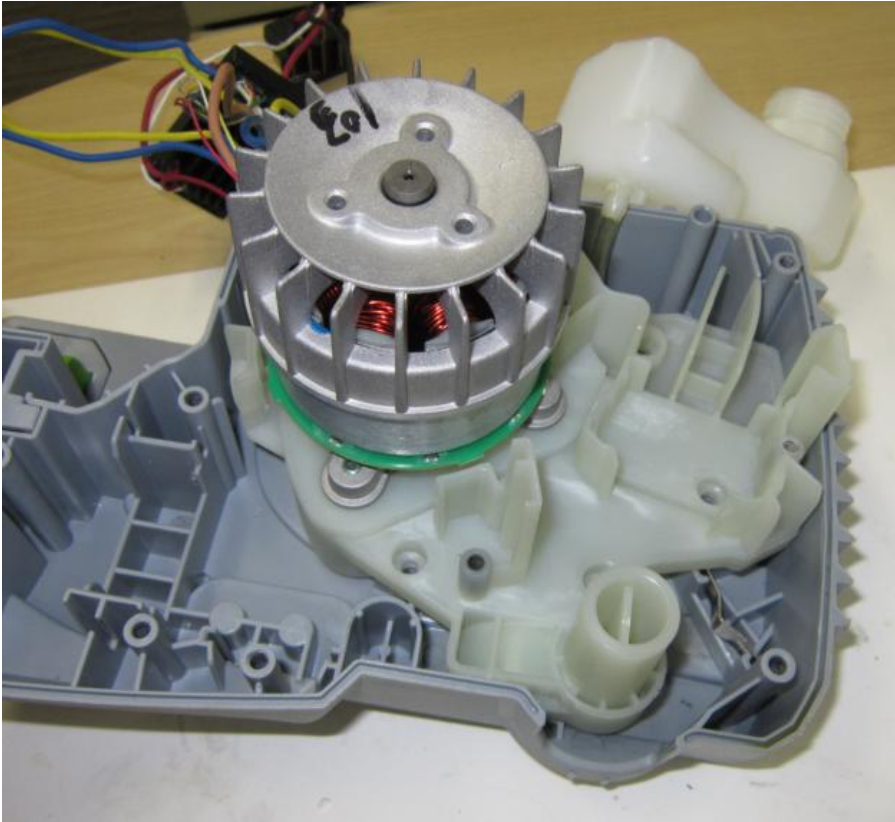
PCB



Description	Part Number	Qty.
Screw	5620051010	3

Assemble the Product

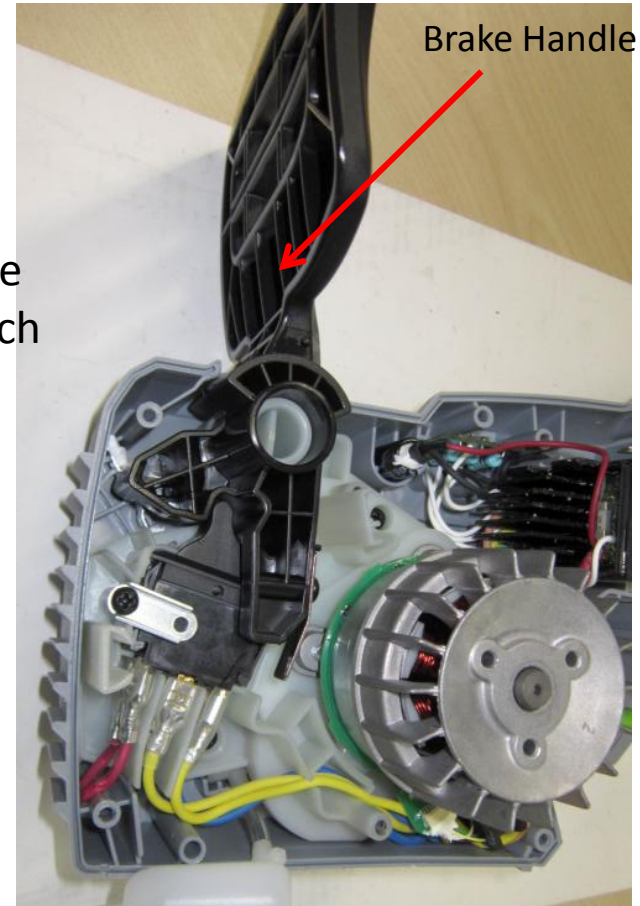
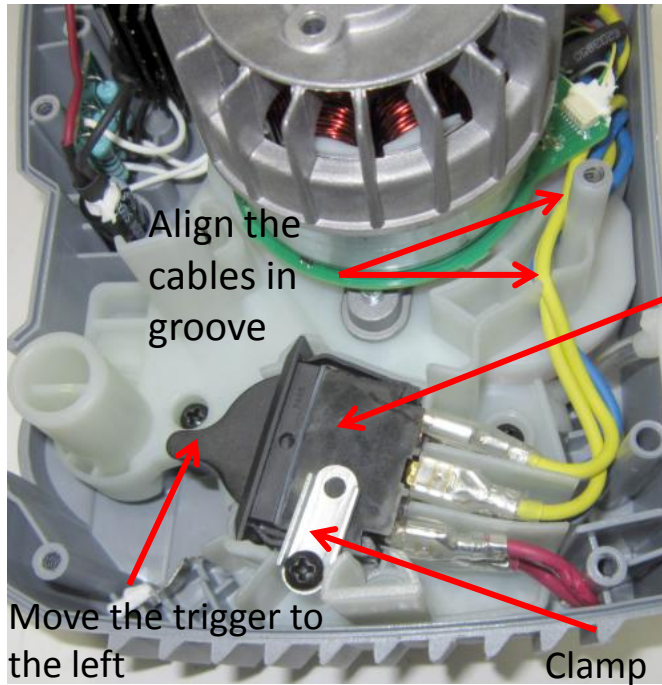
- 6. Align the motor support and motor with the right housing and position it in place. Lock the motor support with 6 screws.



Description	Part Number	Quantity
Tamping screw	5610042014	6

Assemble the Product

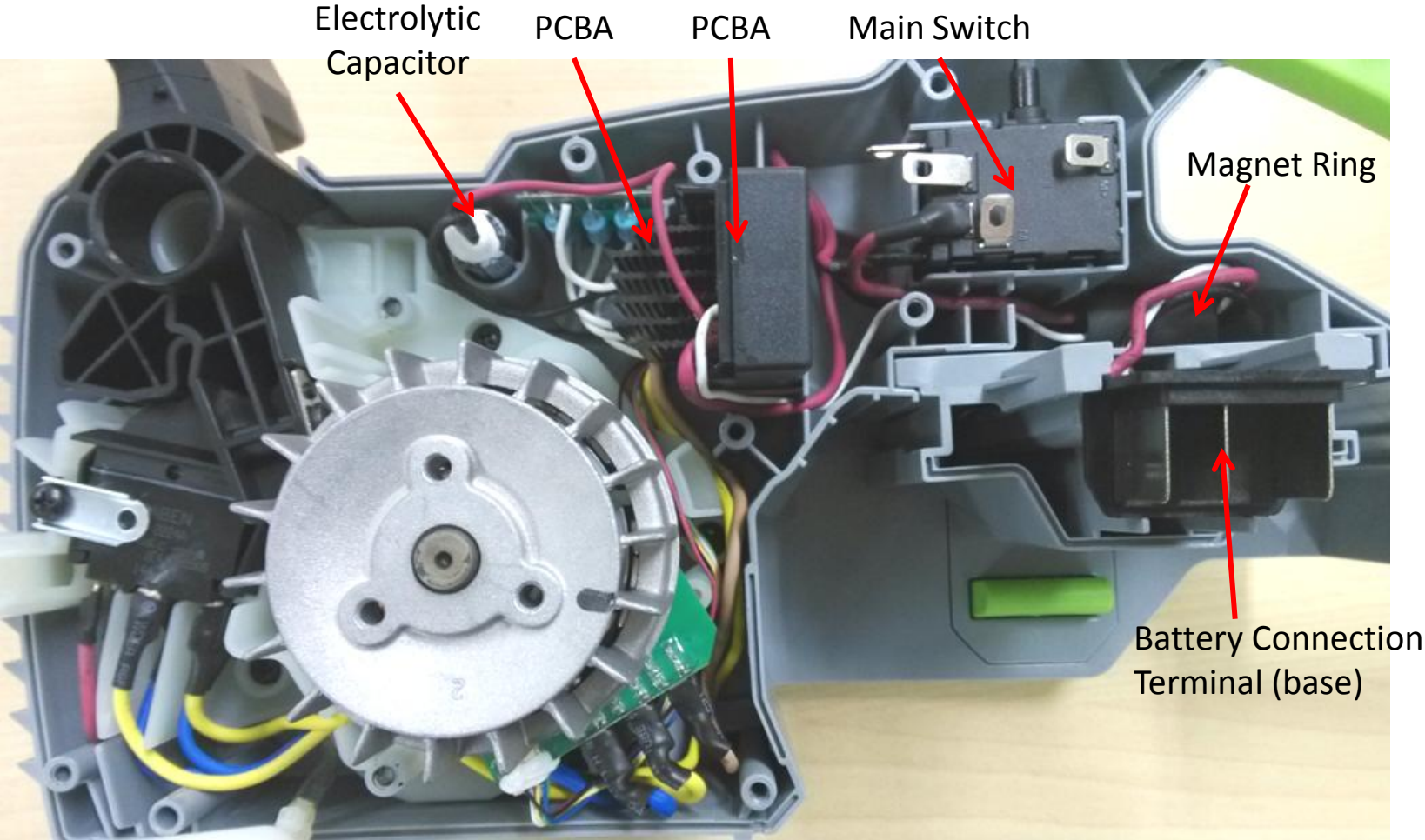
7. Fix the brake switch in housing, lock the switch with the clamp.
8. Move the trigger to the left and mount the brake handle in position.
9. Move the brake handle to test the brake function (mechanical function)



Description	Part Number	Quantity
Clamp	3700367001	1
Tapping screw	5610042014	1

Assemble the Product

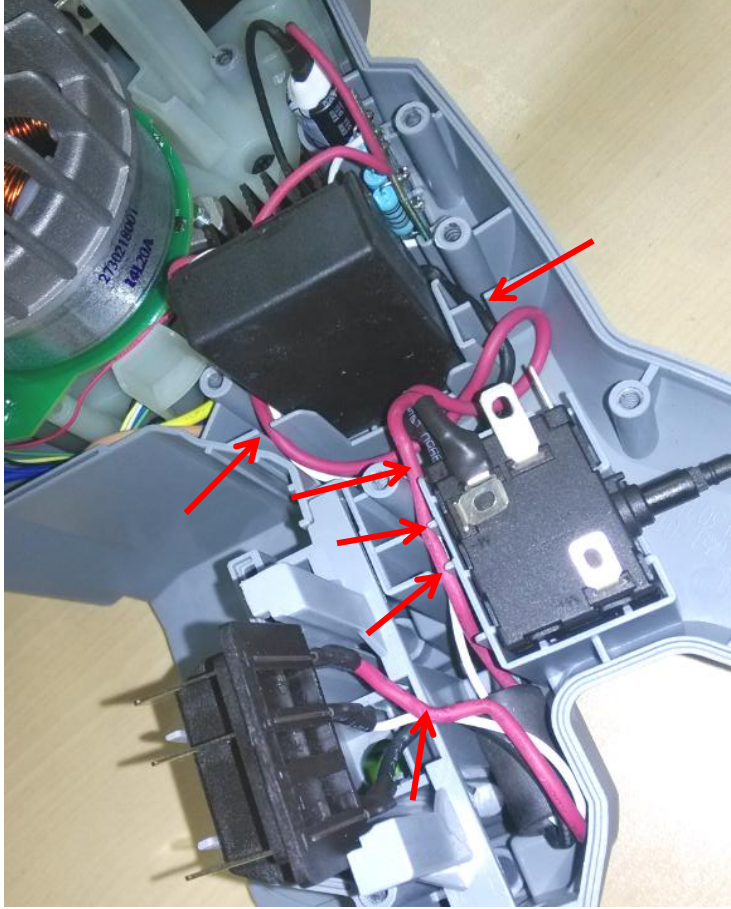
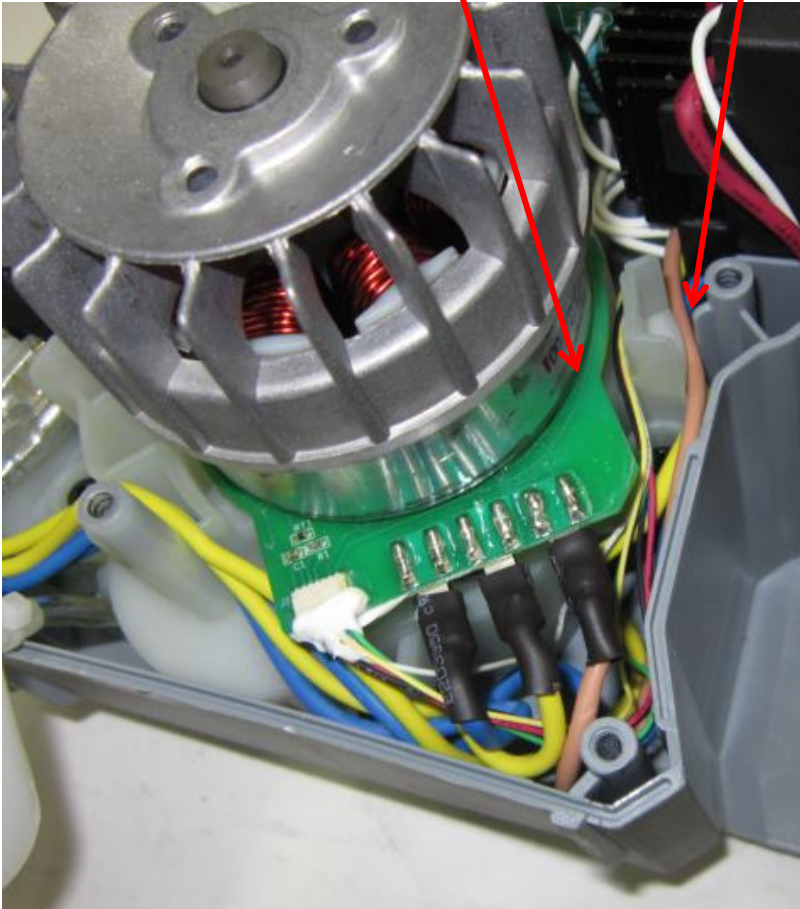
10. Align the cables in the grooves and fix the PCBA, capacitor, main switch, battery connection terminals in the housing.



Assemble the Product

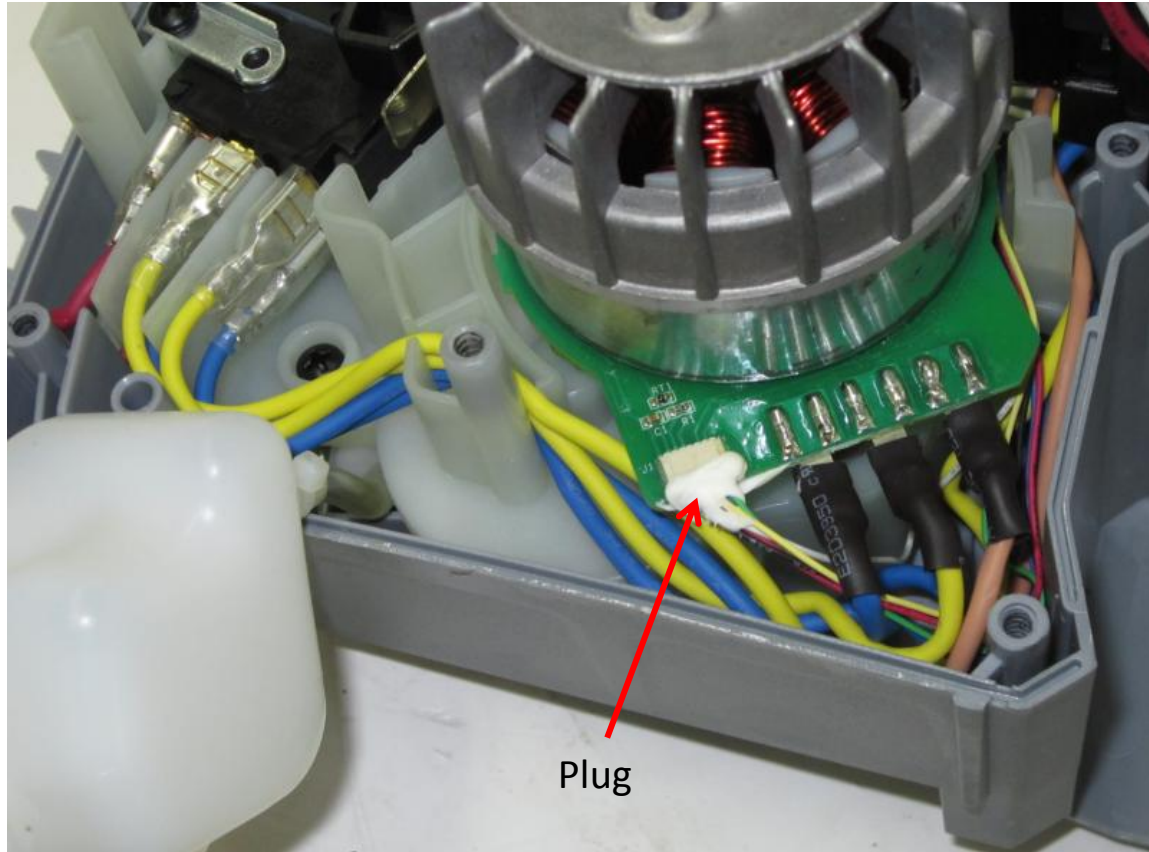
Cable alignment

Thin cables in this groove Thick cables in this groove



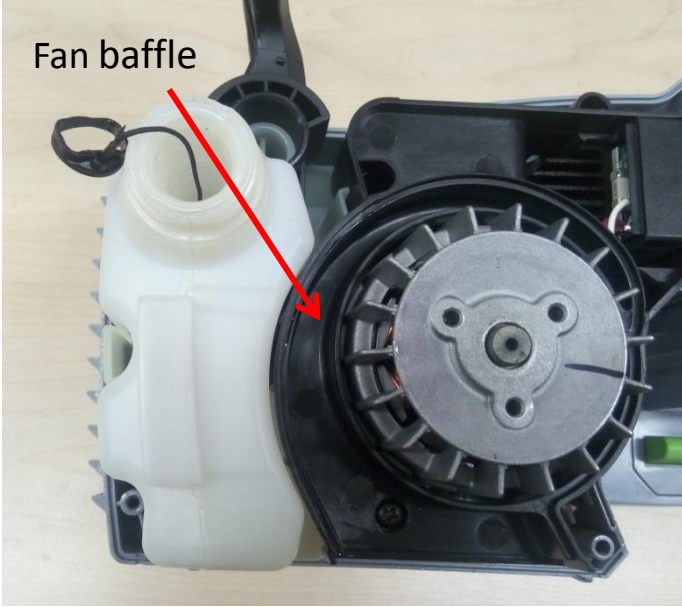
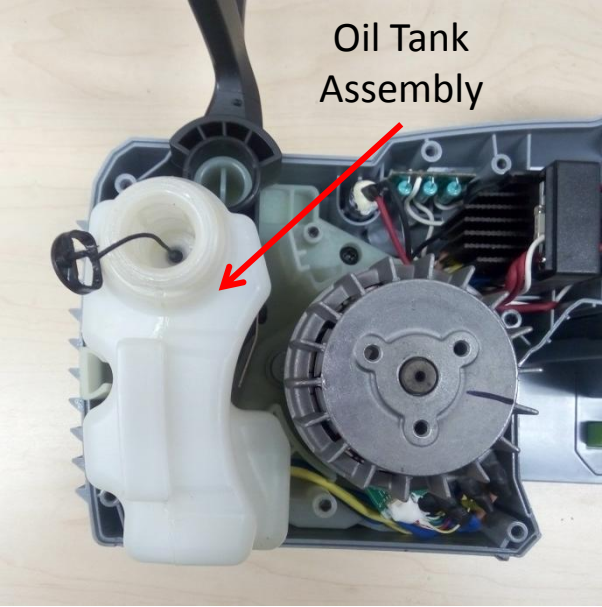
Assemble the Product

11. Connect the plug to the socket on the motor PCBA . Apply some silicon glue around the plug to protect it from loosening in use.



Assemble the Product

- 12. Move the oil tank to the position as the figure shown below.
- 13. Mount the fan baffle to the motor and lock it with 4 screws.

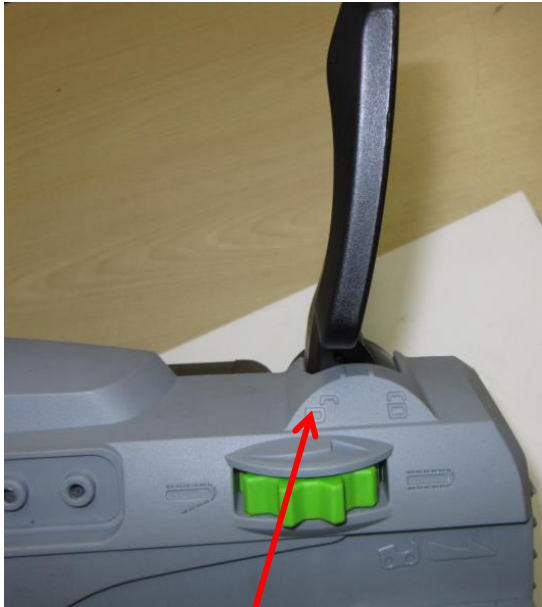


Description	Part Number	Quantity
Tapping Screw	5610042014	4
Fan Baffle	3127502001	1

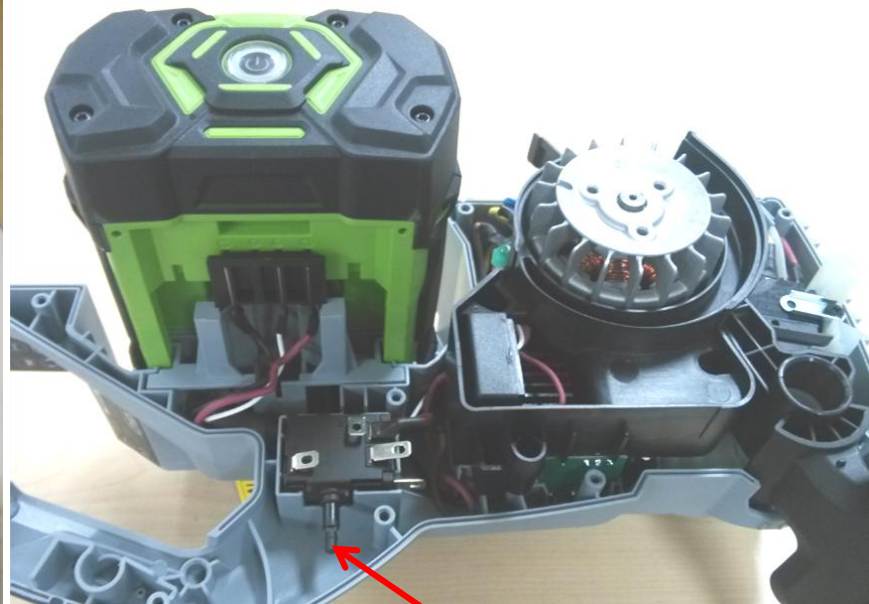
Assemble the Product

14. Test the chain saw before closing the housing.

- (1) Move the brake handle to the unlock position.
- (2) Mount a EGO battery onto the connection base.
- (3) Press the main switch and check whether the motor runs or not.



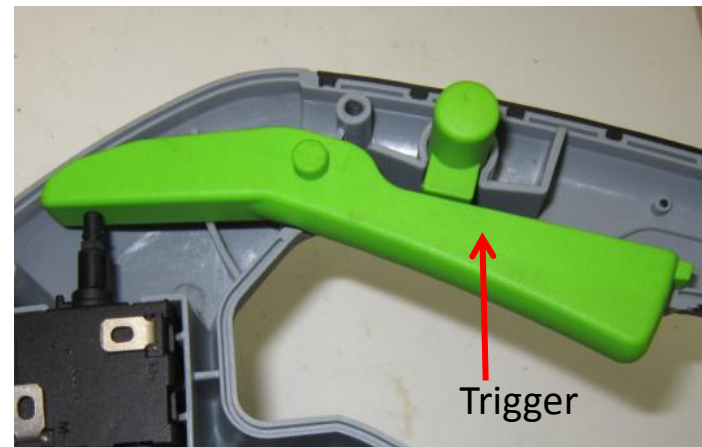
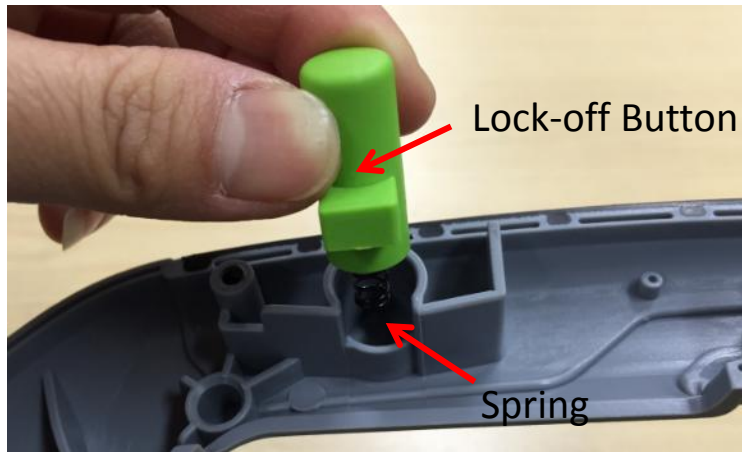
Unlock Position



Press the switch to test

Assemble the Product

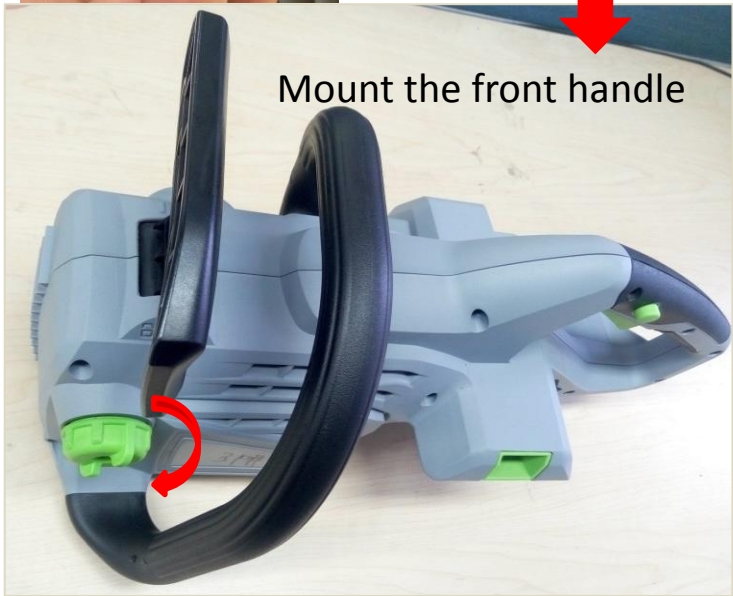
15. Fix the lock-off button into the mounting hole in the handle.
16. Fix the trigger into the handle.



Description	Part Number	Qty.
Switch Trigger	3127496001	1
Lock off Button	3127495001	1
Spring	3660427002	1

Assemble the Product

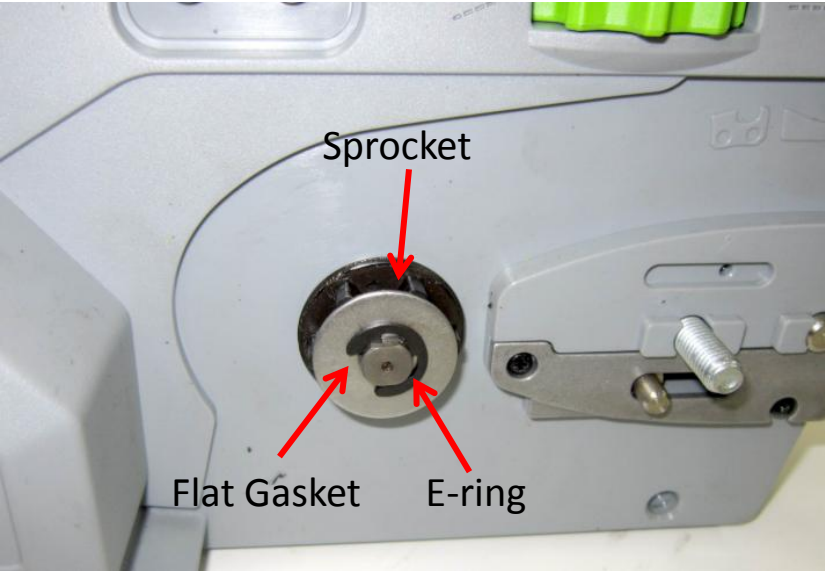
- 17. Close the housing and lock it with 12 tapping screws.
- 18. Mount the front handle to the housings and lock it with 4 tapping screws.
- 19. Connect the oil tank cover with the hook line and tighten it.



Description	Part Number	Qty.
Tapping screw	5610042014	12

Assemble the Product

20. Mount the Sprocket, flat gasket onto the motor shaft and lock with E-ring.

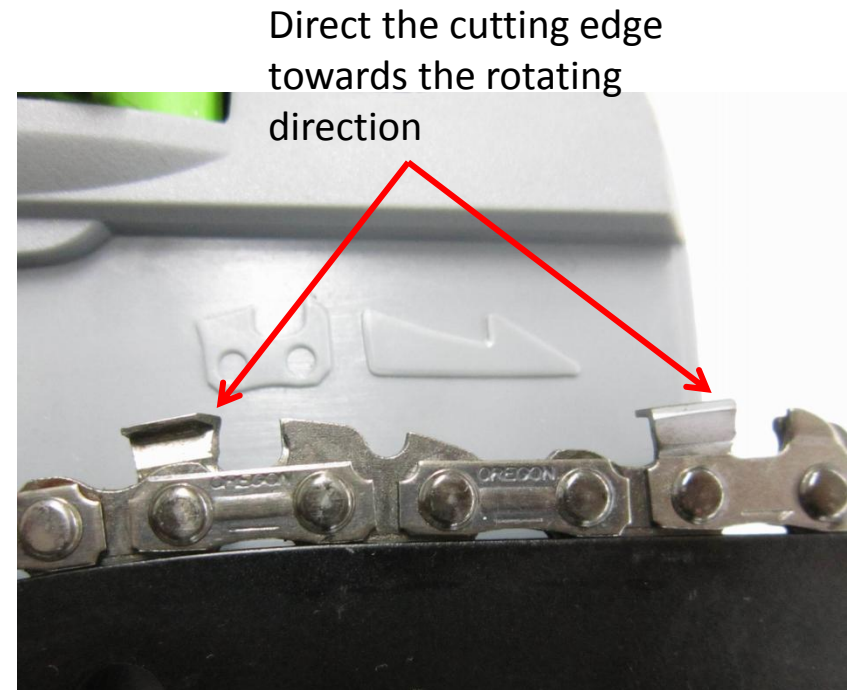
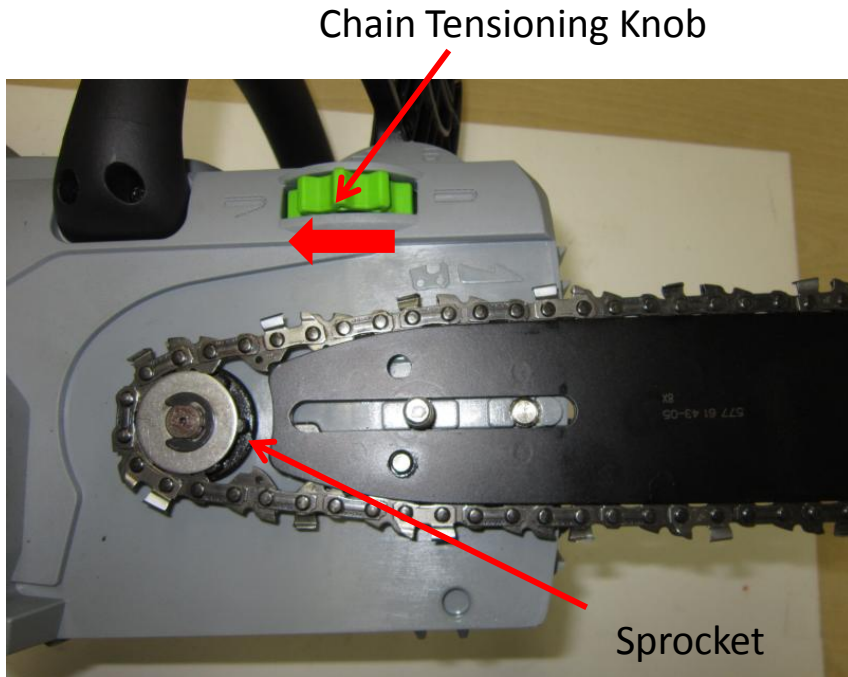


Description	Part Number
E-Ring	5660028001
Gasket	5660208001
Sprocket	3421564001

Assemble the Product

21. Assemble the guide bar and saw chain:

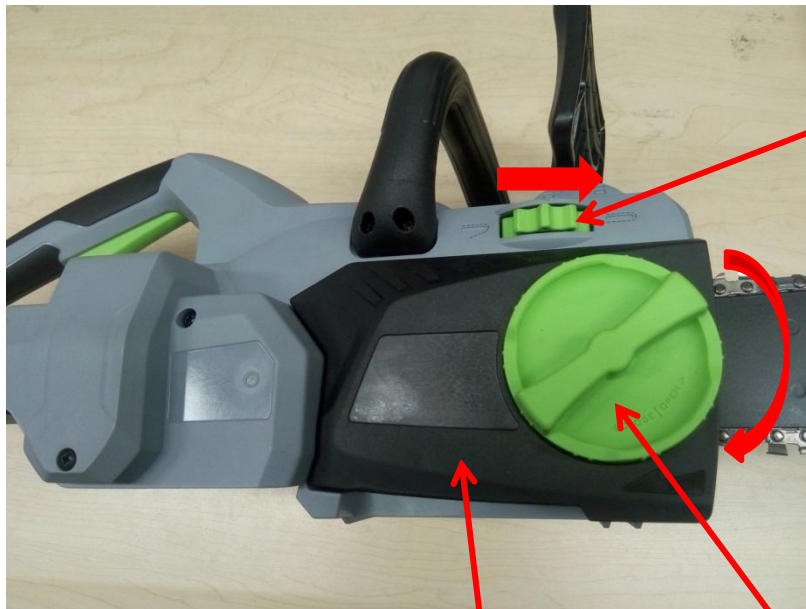
- (1) Turn the chain tensioning knob towards the front handle as far as it will go.
- (2) Place the chain drive links into the guide bar groove.
- (3) Hold the chain in position on the guide bar and place the loop around the sprocket.



Assemble the Product

21. Assemble the guide bar and saw chain:

- (4) Close the side cover and tighten the side cover knob by turning it clockwise.
 - (5) Remove all the sawdust from the chain by turning the chain tensioning knob clockwise until the chain seats snugly against the guide bar with the drive links in the guide bar groove.
 - (6) Tighten the side cover knob securely.
- Follow the instructions in operating manual for detailed assembly and chain tension adjustment procedures.



Chain Tensioning Knob



Side Cover

Side Cover Knob