

# CORDLESS SCREWDRIVER DFT087F, DFT129F

## REPAIR MANUAL



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## 2 CAUTION

Repair the machine in accordance with "Instruction manual" or "Safety instructions".

Follow the instructions described below in advance before repairing:

- Wear gloves.
- In order to avoid wrong reassembly, draw or write down where and how the parts are assembled, and what the parts are. It is also recommended to have boxes ready to keep disassembled parts by group.
- Handle the disassembled parts carefully. Clean and wash them properly.
- Remove Battery, except when it is necessary to check the operation of the machine.

## 3 NECESSARY REPAIRING TOOLS

| Code No. | Description                 | Use for   |
|----------|-----------------------------|---|
| 1R003    | Retaining ring pliers ST-2N | removing/assembling Ring spring 9 and Retaining ring S-10 |
| 1R212-A  | Plier tip for 1R004 small   | using with 1R003  |
| 1R212-B  | Plate set with screws       |   |
| 1R288    | Screwdriver magnetizer      | magnetizing screwdriver                                   |
| 1R411    | Push bar for lead wires     | fixing Lead wires   |
| 1R479    | Shockless hammer (Small)    | press-fitting Hex nut M3 (a component of Housing R)       |

## 4 LUBRICANT AND ADHESIVE APPLICATION



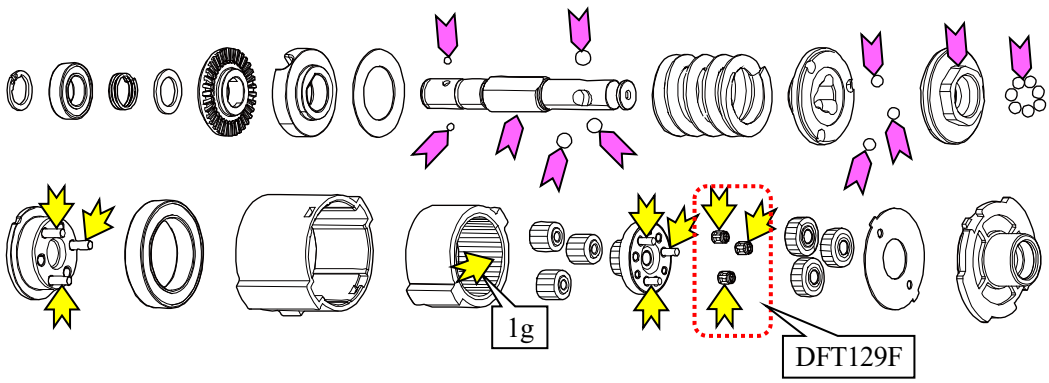
| Description   | Amount   |
|---|--|
|  Makita grease GA No.2 | Apply a little unless specified in the figure. |
|  Lubricant No.101      | a little                                       |

Fig. 1

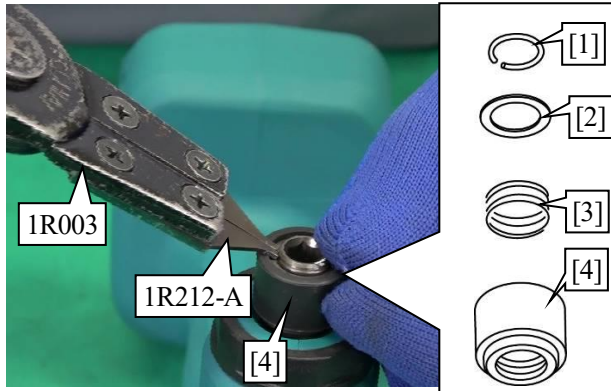


## 5 TIGHTENING TORQUE SPECIFICATIONS

| Parts to fasten       | Fastener             | Tightening torque (N·m) |
|-----------------------|----------------------|-------------------------|
| Housing L ↔ Housing R | Lock nut M28 black   | 2.0 - 3.0               |
| Housing L ↔ Housing R | Pan head screw M3x20 | 0.4 - 0.6               |
| Housing L ↔ Cover     | Pan head screw M3x10 |                         |

**6 REPAIR**  
**6-1 Bit sleeve section**  
**6-1-1 Disassembling**

Fig. 2



- 1 Remove Ring spring 9 [1] with 1R003, 1R212-A and 1R212-B.
- 2 Remove Flat washer 10 [2], Compression spring 10 [3] and Bit sleeve [4].

Fig. 3



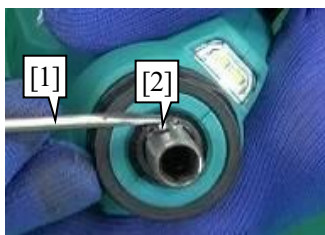
- 3 Remove Steel balls 2.4 [2] (2 pcs) with a thin slotted screwdriver [1].

**Tips**

Remove Steel balls 2.4 [2] (2 pcs) by picking them out with a screwdriver or the like magnetized with 1R288.

**6-1-2 Assembling**

Fig. 4

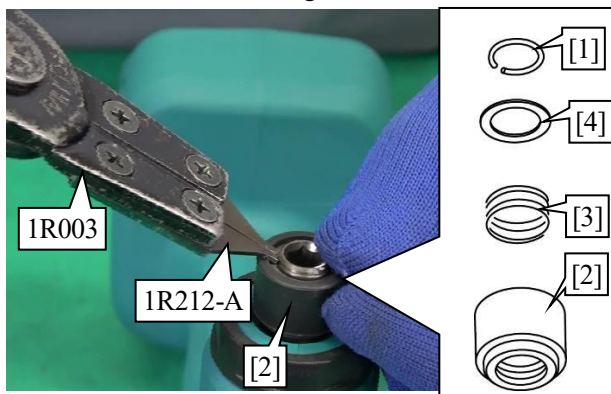


- 1 Assemble Steel balls 2.4 [2] (2 pcs) with a thin slotted screwdriver [1].

**Tips**

Apply some grease to Steel balls 2.4 [2] (2 pcs.) so as not to fall off them.

Fig. 5



- 2 Assemble the following parts, then assemble Ring spring 9 [1] with 1R003, 1R212-A and 1R212-B.
  - Bit sleeve [2]
  - Compression spring 10A [3]
  - Flat washer 10 [4]

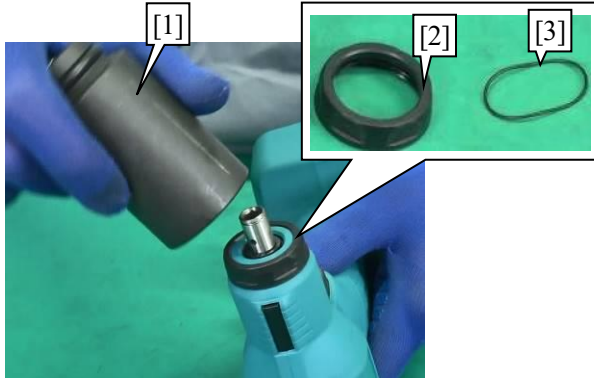
**Note**

Insert a bit and check that the bit can be attached or detached properly.

**6-2 Electrical parts section**  
**6-2-1 Disassembling**

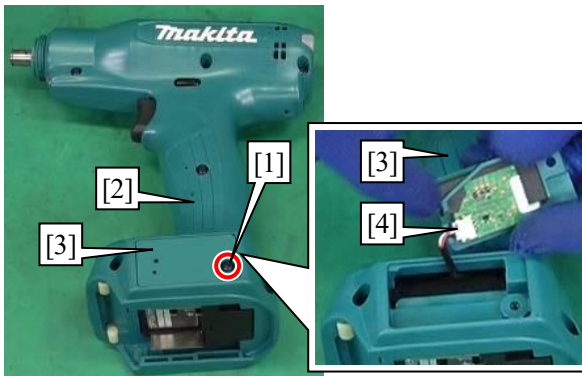
**1** Disassemble Bit sleeve section. (6-1-1)

Fig. 6



- 2** Remove Lock nut M28 black [2] with a 30mm socket [1] by turning it counterclockwise, then remove O-ring 22 [3].

Fig. 7



- 3** Remove Pan head screw M3x10 [1], then remove Cover [3] from Housing L [2].
- 4** Disconnect Connector when Unit (Herutu's module) [4] is used.

Fig. 8

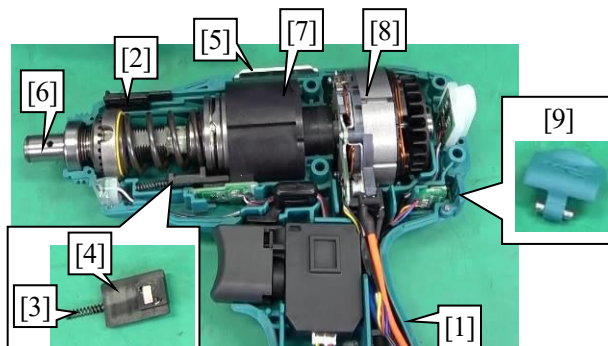


- 5** Remove Pan head screws M3x20 [1] (8 pcs), then remove Housing L [2].

**Note**

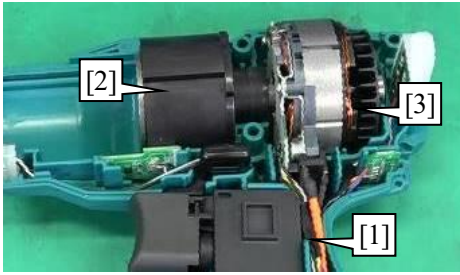
Be careful not to fall off Hex nuts M3 (8 pcs) from Housing R.

Fig. 9



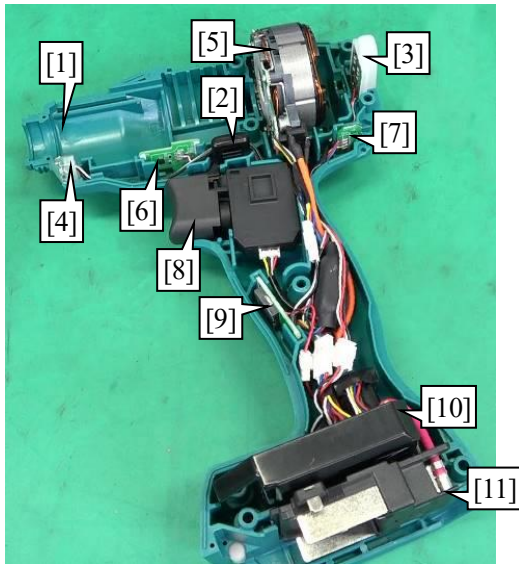
- 6** Remove the following parts from Housing R [1]:
- Change plate [2]
  - Compression spring 2 [3]
  - Switch lever [4]
  - Plate H (DFT087F)/Plate I (DFT129F) [5]
  - Clutch assembly 8M (DFT087F)/Clutch assembly 12M (DFT129F) [6] (Clutch assemblies can be removed by lifting up Gear assembly [7] and Motor section [8] slightly.)
  - USB cover [9]

Fig. 10



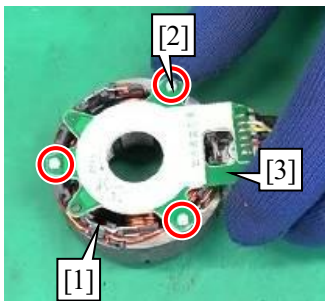
- 7 Remove Gear assembly [2] and Rotor [3] from Housing R [1].

Fig. 11



- 8 Remove the following parts from Housing R [1]:
- F/R change lever [2]
  - Lens, LED circuit [3]
  - LED circuit [4]
  - Stator [5]
  - Sensor circuit [6]
  - USB circuit [7]
  - Switch [8]
  - Buzzer circuit [9]
  - Controller [10]
  - Terminal [11]
- 9 Disconnect Connectors and Receptacles.

Fig. 12

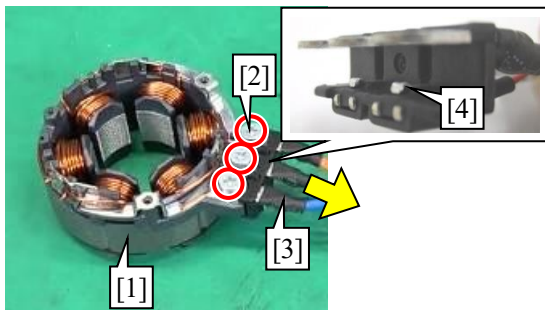


- 10 Remove Tapping screws PT 2x6 [2] (3 pcs) from Stator [1] with a No.1 Phillips screwdriver, then remove Circuit board [3].

**Note**

Be careful not to strip the head of Tapping screw PT 2x6 [2].

Fig. 13



- 11 Remove Flat head screws M3x6 [2] (3 pcs) from Stator [1] with a No.1 Phillips screwdriver, then remove Terminal unit [3].

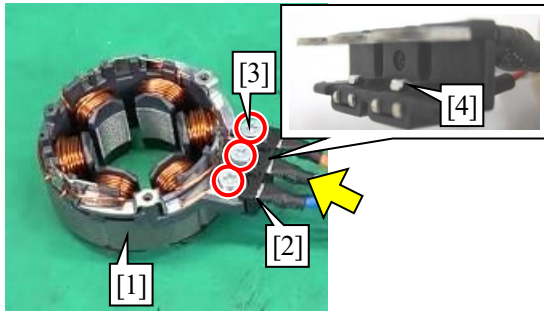
**Note**

- Be careful not to strip the head of Flat head screws M3x6 [2] (3 pcs).
- Remove Terminal unit [3] straight while being careful not to deform Thermistor connection terminals [4].

## 6-2-2 Assembling

### 1 Assemble Clutch assembly and Gear assembly. (6-3-2, 6-4-2)

Fig. 14

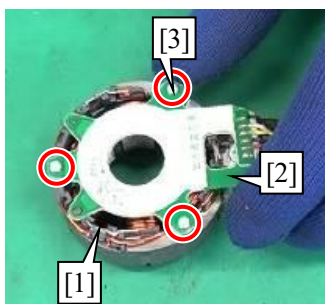


- 2 Assemble Terminal unit [2] to Stator [1], then tighten Flat head screws M3x6 [3] (3 pcs) with a No.1 Phillips screwdriver.

#### Note

- Be careful not to strip the head of Flat head screws M3x6 [3] (3 pcs).
- Connect Terminal unit [2] straight with care not to deform the terminals [4] of Thermistor connection.

Fig. 15



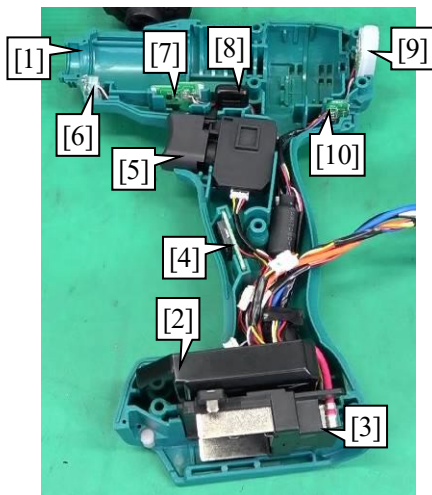
- 3 Assemble Circuit board [2] to Stator [1], then tighten Tapping screws PT 2x6 [3] (3 pcs) with a No.1 Phillips screwdriver.

- 4 Assemble the electrical parts in accordance with Circuit diagram and Wiring diagram.

#### Note

- Be careful not to strip the head of Tapping screw PT 2x6 [3].

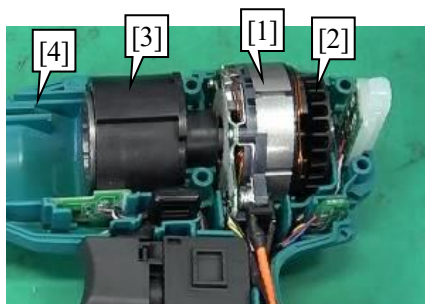
Fig. 16



- 5 Assemble the following parts to Housing R [1], then fix Lead wires with 1R411.

- Controller [2]
- Terminal [3]
- Buzzer circuit [4]
- Switch [5]
- LED circuit [6]
- Sensor circuit [7]
- F/R change lever [8]
- Lens, LED circuit [9]
- USB circuit [10]

Fig. 17

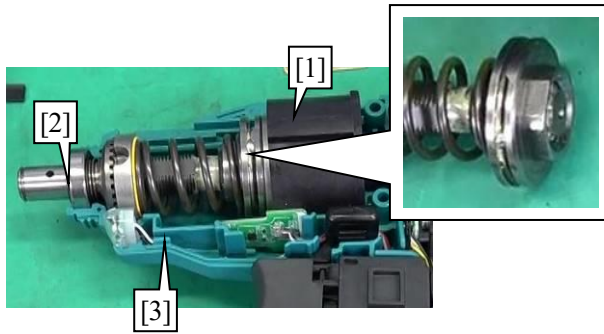


- 6 Assemble Rotor [2] and Gear assembly [3] to Stator [1], then assemble them to Housing R [4].

#### Note

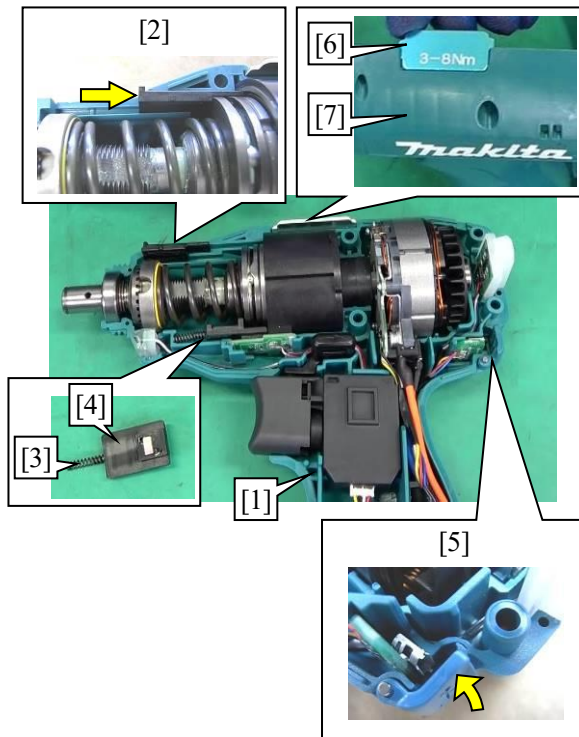
- Assemble Rotor [2] to Stator [1] while putting Stator [1] on a workbench, because the excessive pushing Rotor [2] to Stator [1] may cause the break of Printed circuit board.

Fig. 18



- 7 Assemble Clutch assembly 8M (DFT087F)/Clutch assembly 12M (DFT129F) [2] while lifting up Gear assembly [1] slightly, then assemble them to Housing [3].

Fig. 19



- 8 Assemble the following parts to Housing R [1]:

- Change plate [2]

**Note**

Move Change plate [2] to Motor side.

- Compression spring 2 [3]
- Switch lever [4]
- USB cover [5]

**Note**

Stay USB cover [5] close.

- Plate [6]

**Note**

Assemble Plate [6] so that its surface with numerical value faces Housing L [7].

Fig. 20



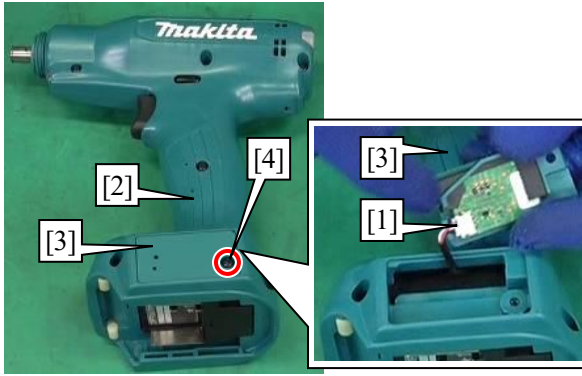
- 9 Assemble Housing L [1] with Pan head screws M3x20 [2] (8 pcs).

**Note**

- If Hex nuts M3 fall off from Housing R, tighten Pan head screw M3x20 [2] approximately 2 times, then press-fit Hex nuts M3 by tapping them with 1R479.
- Pass Connector through Housing L [1] if Unit (Herutu module) is used.

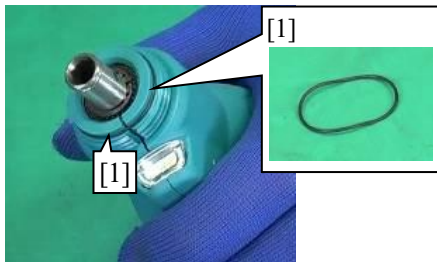


Fig. 21



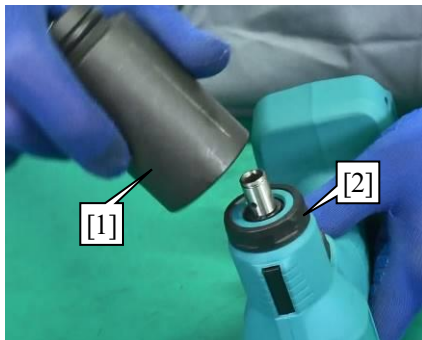
- 10 Connect Connector if Unit (Herutu's module) [1] is used.
- 11 Assemble Cover [3] to Housing L [2] with Pan head screw M3x10 [4].

Fig. 22



- 12 Assemble O-ring 22 [1].

Fig. 23

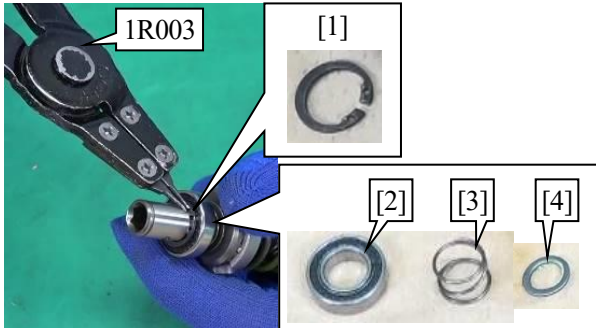


- 13 Tighten Lock nut M28 black [2] to the specified torque by turning a 30mm socket [1] clockwise.

**6-3 Clutch assembly section**  
**6-3-1 Disassembling**

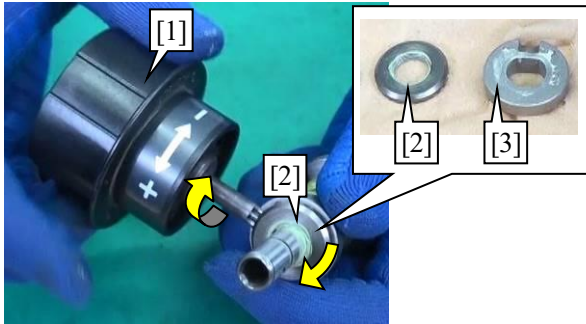
**1** Disassemble the electrical parts. (6-2-1)

Fig. 24



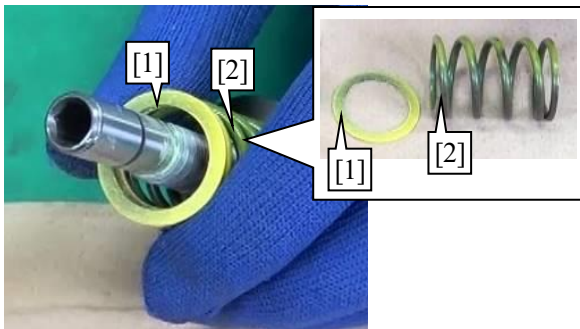
**2** Remove Retaining ring S-10 [1] with 1R003, then remove Ball bearing 6800LLB [2], Compression spring 10B [3] and Flat washer 10 [4].

Fig. 25



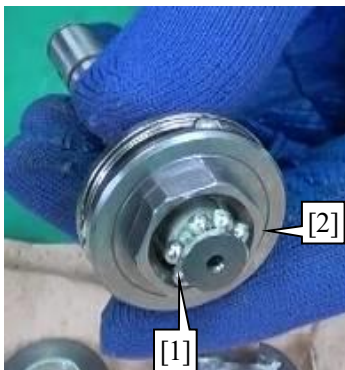
**3** Loosen Lock nut M12 [2] by using Adjust grip [1] until it gets loose.  
**4** Remove Adjust spring [3] by turning Lock nut M12 [2] (Left-handed) clockwise.

Fig. 26



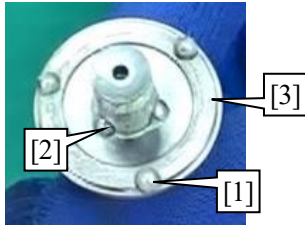
**5** Remove Flat washer 18 [1] and Compression spring 19E (DFT087F)/Compression spring 19C (DFT129F) [2].

Fig. 27



**6** Remove Steel balls 4 [1] (7 pcs), then remove Cam F [2].

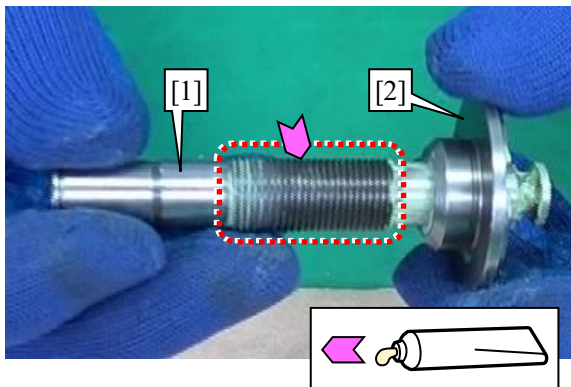
Fig. 28



- 7 Remove Steel balls 4 [1] (3 pcs) and Steel balls 5.0 [2] (3 pcs), then remove Cam D [3].

## 6-3-2 Assembling

Fig. 29

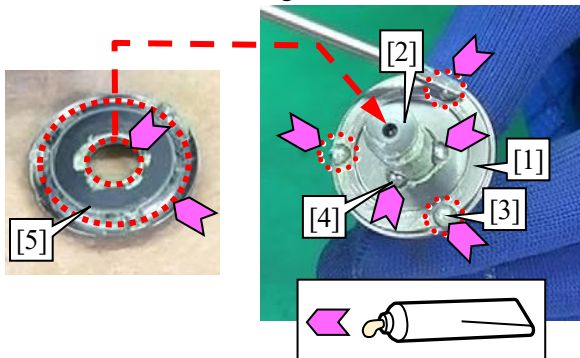


- 1 Assemble Cam D [2] to Spindle [1].

### Note

Apply the specified grease to the threads of Spindle [1].

Fig. 30



- 2 Assemble the following parts to Cam D [1] and Spindle [2]:

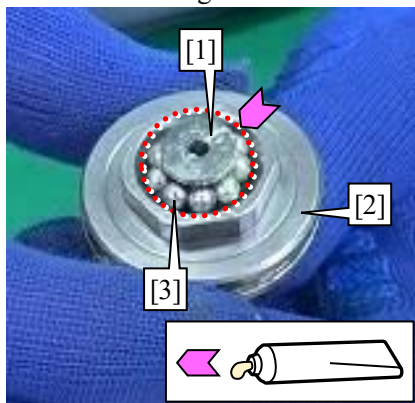
- Steel balls 4 [3] (3 pcs)
- Steel balls 5.0 [4] (3 pcs)
- Cam F [5]

### Note

Apply the specified grease to the following parts:

- Steel ball 4 [3]
- Steel ball 5 [4] (for fall-off prevention)
- The cam portion of Cam F [5]

Fig. 31

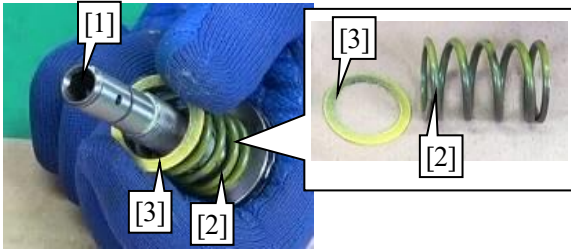


- 3 Assemble Steel balls 4 [3] (7 pcs) between the groove of Spindle [1] and the depression of Cam F [2].

### Note

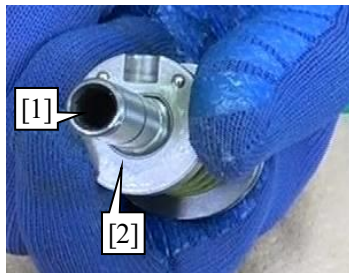
Apply the specified grease to Cam F [2] and Steel balls 4 [3] (7 pcs).

Fig. 32



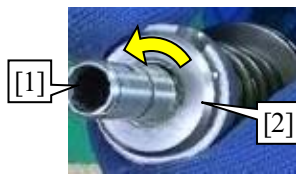
- 4 Assemble Compression spring 19E (DFT087F)/Compression spring 19C (DFT129F) [2] and Flat washer 18 [3] to Spindle [1].

Fig. 33



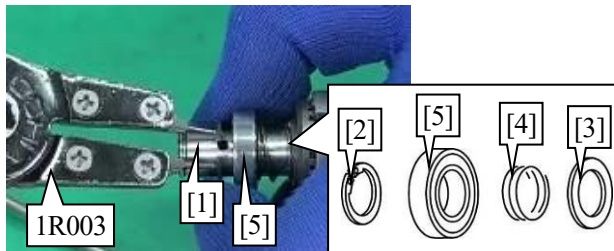
- 5 Assemble Adjust ring [2] to Spindle [1].

Fig. 34



- 6 Screw Lock nut M12 [2] (Left-handed) to Spindle [1] by turning it counterclockwise.

Fig. 35

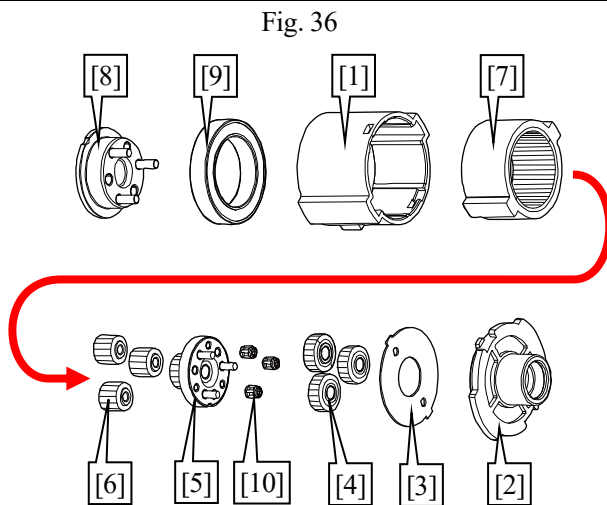


- 7 Assemble the following parts to Spindle [1], then assemble Retaining ring S-10 [2] with 1R003.
- Flat washer 10 [3]
  - Compression spring 10B [4]
  - Ball bearing 6800LLB [5]

## 6-4 Gear assembly section

### 6-4-1 Disassembling

#### 1 Disassemble the electrical parts. (6-2-1)



- 2 Remove Motor bracket [2] from Gear case [1] by turning it counterclockwise, then remove the following parts:
- Lock washer [3] (Lock washer can be removed by inserting a thin screwdriver or the like into the hole of it and turn it counterclockwise.)
  - Spur gears 18 (DFT087F)/Spur gears 14 (DFT129F) [4] (3 pcs)
  - Spur gear 20 complete A (DFT087F)/Spur gear 17 complete B (DFT129F) [5]
  - Spur gears 13 (DFT087F)/Spur gears 19 (DFT129F) [6] (3 pcs)
  - Internal gear 47 [7]
  - Carrier A (DFT087F)/Carrier C (DFT129F) [8]
  - Ball bearing 6805LLB [9]
  - Needle cages 205 [10] (3 pcs, DFT129F only)

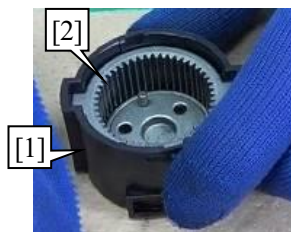
### 6-4-2 Assembling

Fig. 37



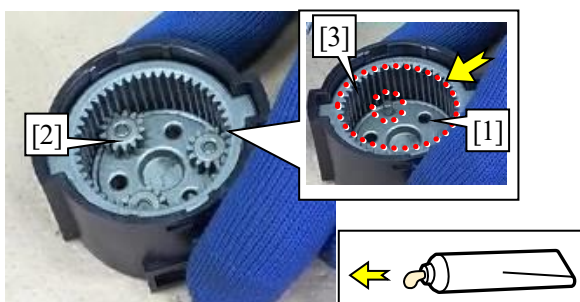
- 1 Assemble Ball bearing 6805LLB [2] to Carrier A (DFT087F)/Carrier C (DFT129F) [1].

Fig. 38



- 2 Assemble Gear case [1] and Internal gear 47 [2]. (Fig. 37)

Fig. 39

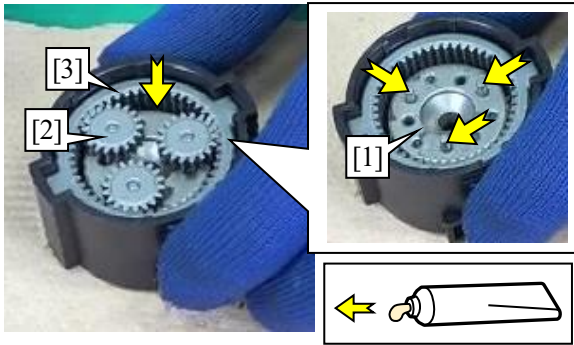


- 3 Assemble Spur gears 13 (DFT087F)/Spur gears 19 (DFT129F) [2] (3 pcs) to the pins of Carrier A (DFT087F)/Carrier C [1] (DFT129F) [1].

#### Note

Apply the specified grease to the pins of Carrier A (DFT087F)/Carrier C (DFT129F) [1] (3 pcs) and the inner teeth of Internal gear 47 [3].

Fig. 40



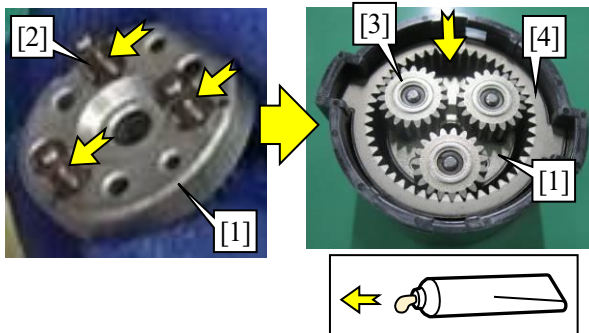
(DFT087F)

- 4 Assemble Spur gear 20 complete A [1], then assemble Spur gears 18 [2] (3 pcs).

Note

Apply the specified grease to the pins (3 pcs) of Spur gear 20 complete A [1] and the inner teeth of Internal gear 47 [3].

Fig. 41



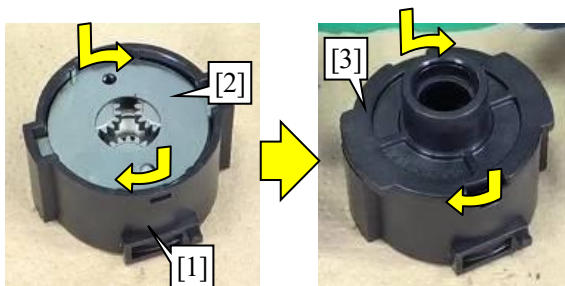
(DFT129F)

- 5 Assemble Needle cages 205 [2] (3 pcs) and Spur gears 19 [3] (3 pcs) to the pins (3 pcs) of Spur gear 17 complete B [1].

Note

Apply the specified grease to Needle cages 205 [2] (3 pcs) and the inner teeth of Internal gear 47 [4].

Fig. 42



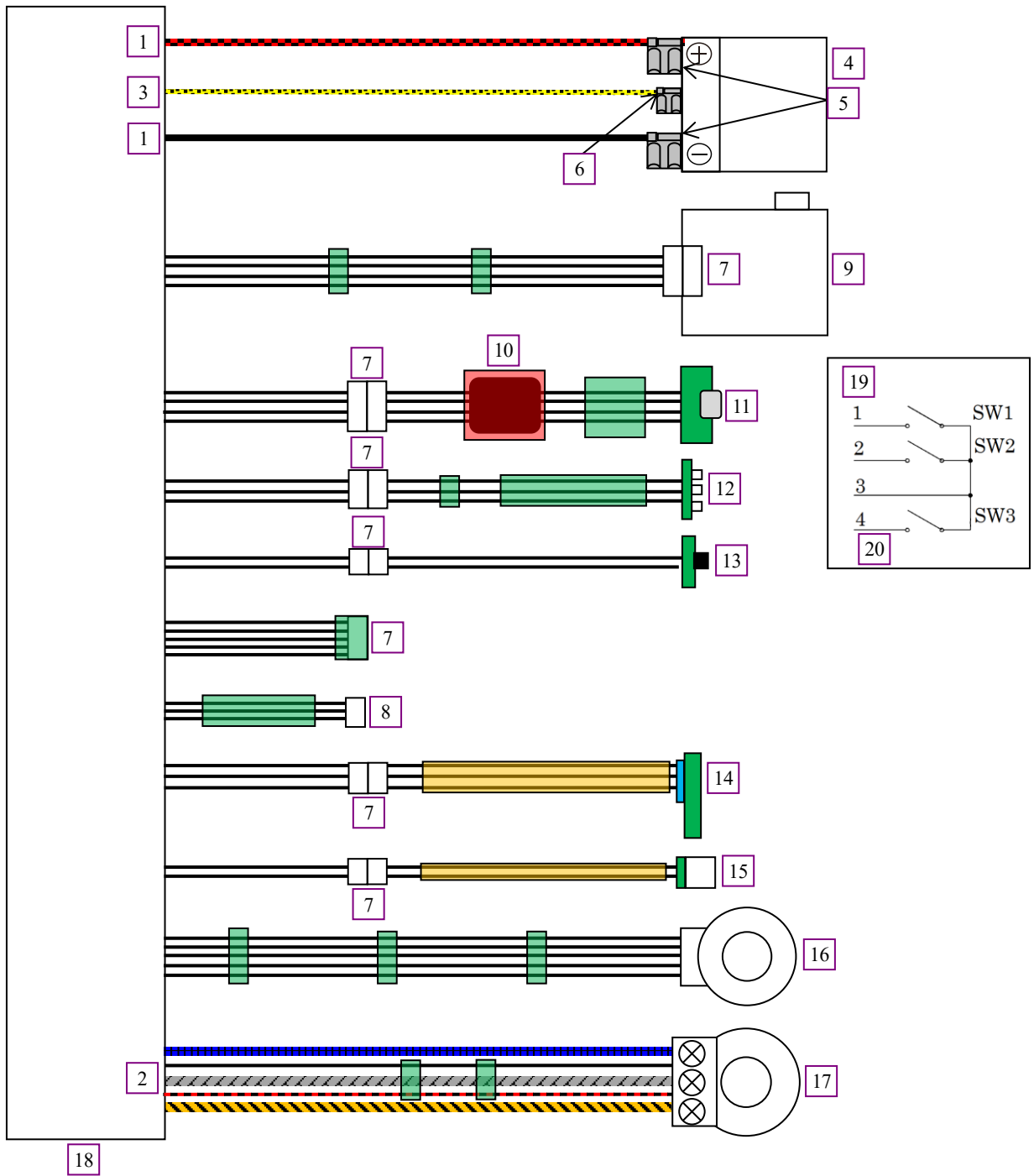
- 6 Assemble Lock washer [2] to Gear case by aligning it with the groove of Gear case [1], then assemble them by turning Lock washer [2] clockwise.
- 7 Similarly, assemble Motor bracket [3] by turning it clockwise.

Tips

Insert Lock washer [2] and Motor bracket [3] into the smaller notch of Gear case [1].

# 7 CIRCUIT DIAGRAM

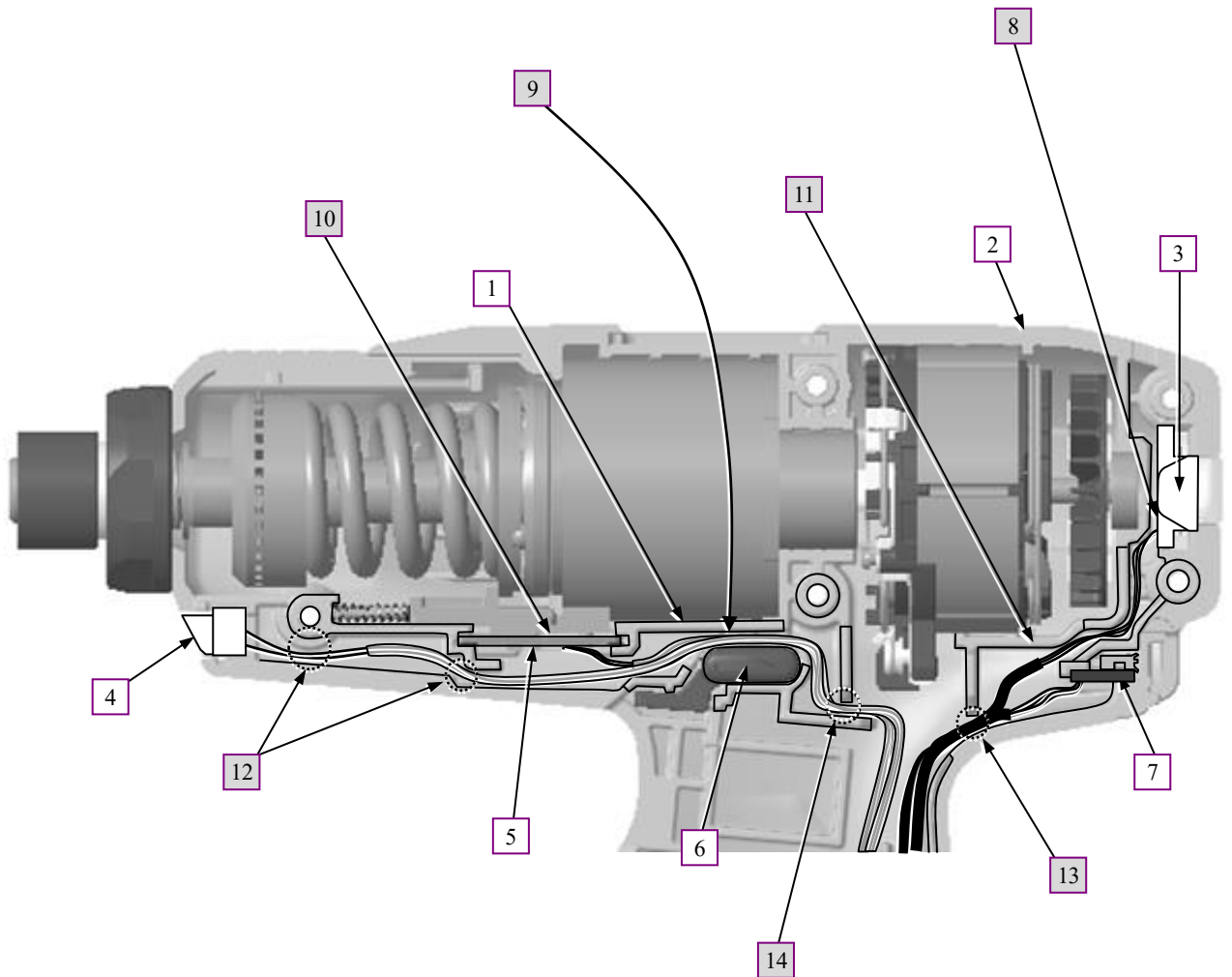
Fig. 43



|    |   |    |                           |
|----|---|----|---------------------------|
| 1  | AWG14                                   | 11 | USB circuit               |
| 2  | AWG16                                   | 12 | LED circuit B             |
| 3  | AWG22                                   | 13 | Buzzer circuit            |
| 4  | Terminal                                | 14 | Sensor circuit            |
| 5  | Flag receptacle with lock (#250, t=0.8) | 15 | LED circuit A             |
| 6  | Flag receptacle with lock (#187, t=0.8) | 16 | Sensor board              |
| 7  | Connector                               | 17 | Terminal unit             |
| 8  | Connector for Herutu's module           | 18 | Controller                |
| 9  | Switch                                  | 19 | Circuit diagram of Switch |
| 10 | Line filter                             | 20 | Reversing switch          |

**8 WIRING DIAGRAM**  
**8-1 LED circuit section**

Fig.44

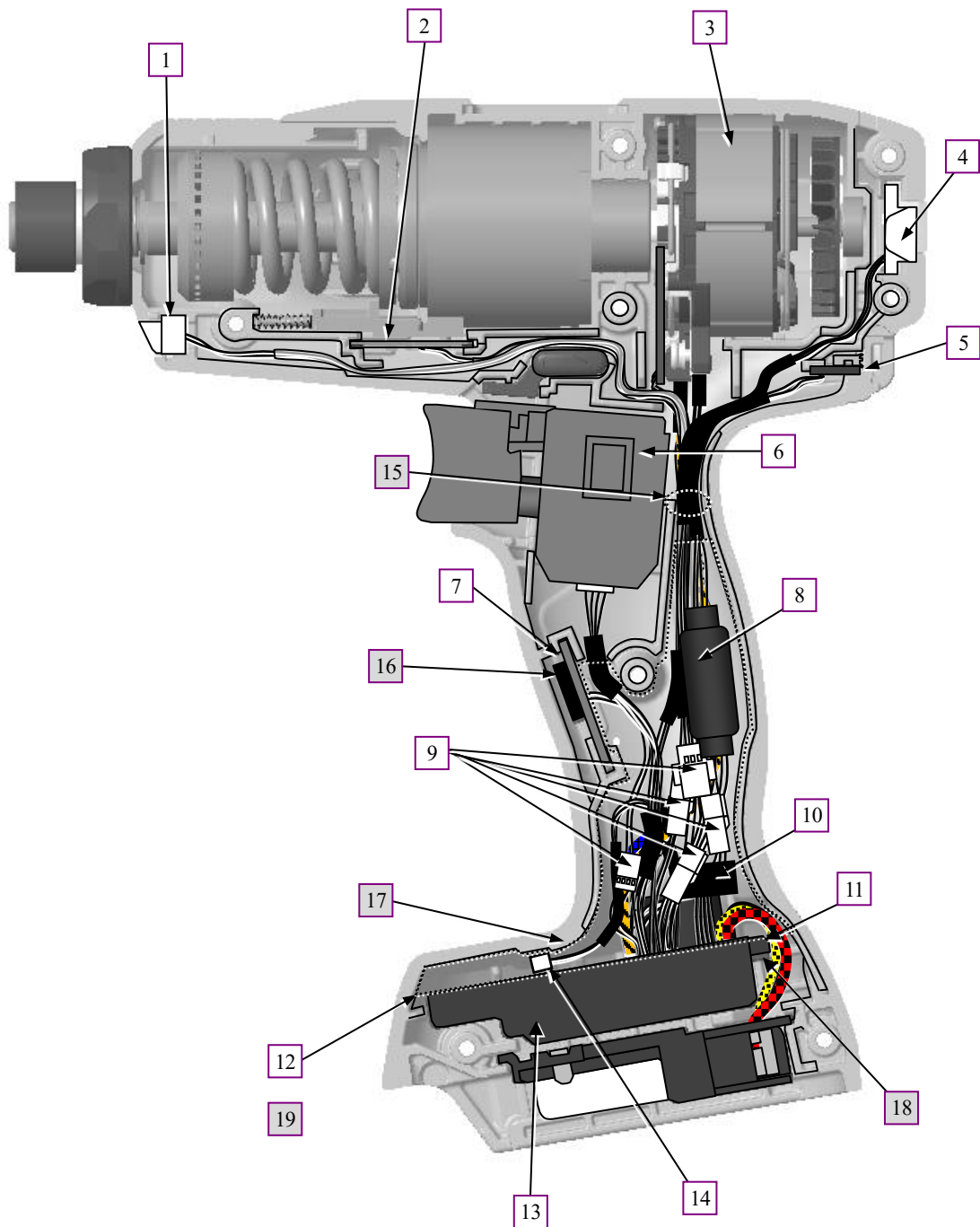


|    |  |   |                  |
|----|--|---|------------------|
| 1  | Rib A  | 5 | Sensor circuit   |
| 2  | Housing R  | 6 | F/R change lever |
| 3  | LED circuit B  | 7 | USB circuit      |
| 4  | LED circuit A  |   |                  |
| 8  | Place LED circuit B so that its lead wires come out from the bottom of Housing R.            |   |                  |
| 9  | Route LED circuit A lead wires/Sensor circuit lead wires between Rib A and F/R change lever. |   |                  |
| 10 | Be careful not to put Lead wires on/under Sensor circuit.                                    |   |                  |
| 11 | Be careful not to put LED circuit B lead wires on this rib.                                  |   |                  |
| 12 | Fix LED circuit A lead wires in these grooves.   |   |                  |
| 13 | Fix USB circuit lead wires and LED circuit B lead wires in this groove.                      |   |                  |
| 14 | Fix LED circuit A lead wires and Sensor circuit lead wires in this groove.                   |   |                  |



## 8-2 Electrical parts section

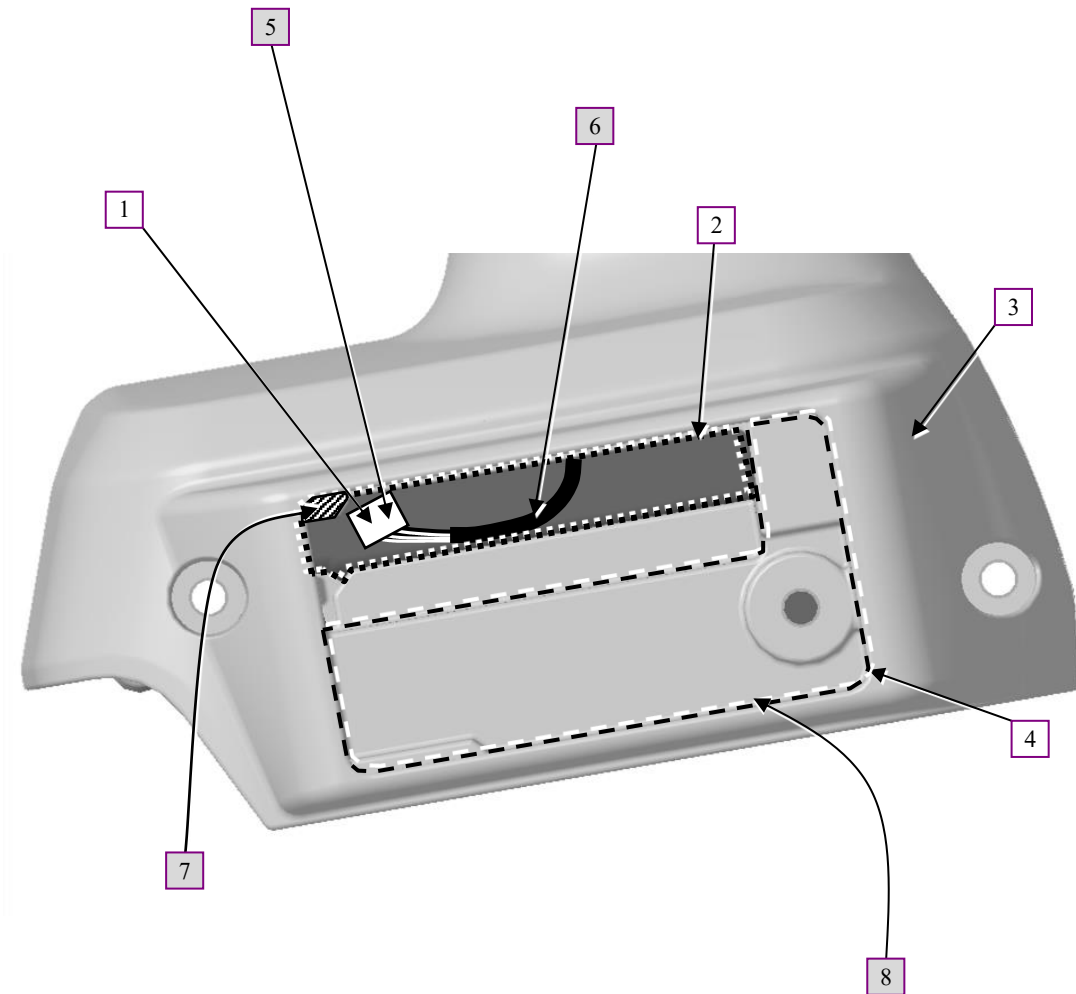
Fig.45



|    |  |    |  |
|----|--|----|--|
| 1  | LED circuit A  | 8  | Line filter  |
| 2  | Sensor circuit   | 9  | Connector (for LED circuit A, LED circuit B, Sensor circuit, USB circuit and Buzzer circuit) |
| 3  | Stator   | 10 | Connector with Tape  |
| 4  | LED circuit B  | 11 | Protrusion of Controller   |
| 5  | USB circuit  | 12 | Space A  |
| 6  | Switch   | 13 | Controller   |
| 7  | Buzzer circuit   | 14 | Connector (3-pin/No connection)  |
| 15 | Fix the following Lead wires in this groove:<br><ul style="list-style-type: none"> <li>• LED circuit A lead wires/LED circuit B lead wires/Sensor circuit lead wires/USB circuit lead wires/Lead wires for Stator</li> </ul> |    |  |
| 16 | Be careful not to put Lead wires on/under Buzzer circuit.  |    |  |
| 17 | Place Line filter, Connector (for LED circuit A, LED circuit B, Sensor circuit, USB circuit and Buzzer circuit) and Connector with Tape in Space A.  |    |  |
| 18 | Be careful not to put Lead wires under the protrusion of Controller.   |    |  |
| 19 | Place Connector (3-pin/No connection) in Space A if there is no opening A in Housing L (See next page.).   |    |  |

9-1 Models those Housing L with Opening A

Fig.46



|   |   |   |           |
|---|---|---|-----------|
| 1 | Connector (3-pin/No connection)   | 3 | Housing L |
| 2 | Opening A   | 4 | Space B   |
| 5 | Place Connector (3-pin/No connection) in Opening A.   |   |           |
| 6 | Pass Connector (3-pin/No connection) lead wires through Opening A.                                  |   |           |
| 7 | Be careful not to put Connector (3-pin/No connection) and Lead wires on this rib (hatched portion). |   |           |
| 8 | Be careful not to put the slack of Connector (3-pin/No connection) lead wires on Space B.           |   |           |

## 10 TROUBLESHOOTING

Whenever you find any trouble in your machine, first, see this list to check the machine for solution.

### 10-1 Note for Repairing

The content may vary depending on the model.

- 1 Use a full charged battery which has a star mark.
- 2 When Housing is disassembled, check the conditions of the electrical parts (Connectors, Lead wires, Switches, etc.), Rotor, Stator, Gear section, etc.
- 3 Be sure to test the machine 10 times to correctly diagnose functions such as F/R control etc.
- 4 Use the following Repairing tools for diagnosing LED and Switch.

| Repairing tools | Purpose   |
|-----------------|---|
| 1R402           | For checking variable resistance value or electrical continuity at contact points |
| 1R402-B         |   |
| 1R412           | For checking whether LED lights up  |
| 1R413           | For checking variable resistance value or electrical continuity at contact points |

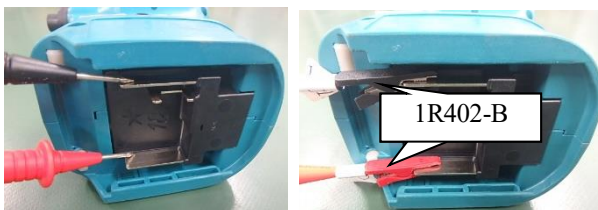
### 10-2 Test for checking the short-circuit in FET (Field Effect Transistor) of controller

Fig. 47



- 1 Set Digital tester (1R402) to Diode mode.

Fig. 48



- 2 Connect Black probe to the plus pole of Terminal, and Red probe to the minus pole.

#### Tips

By attaching 1R402-B to each probe of 1R402, you can make your hands free for easier check.

#### Note

Be careful not to reverse them. The reversed contacts could spoil the test.

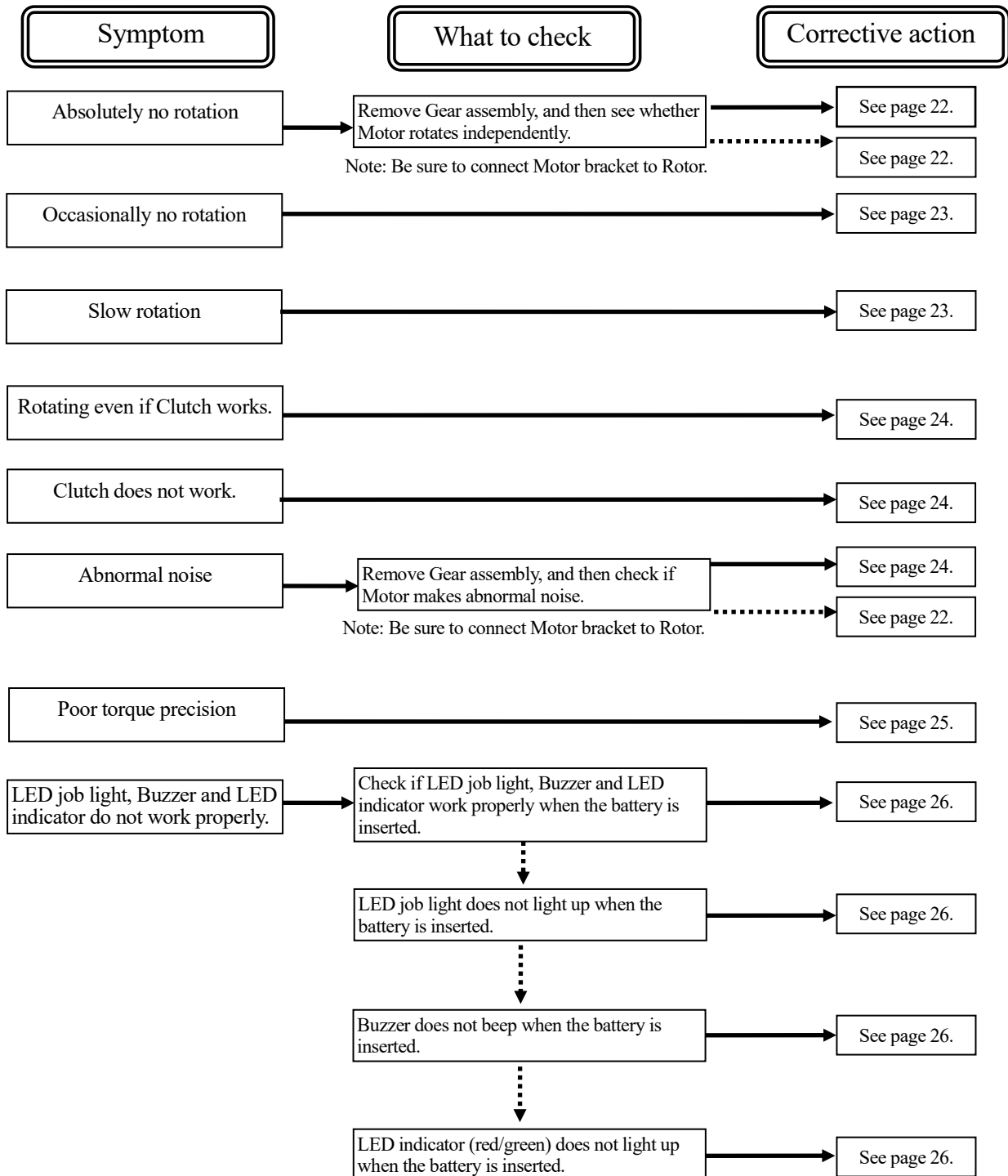
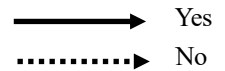
- 3 Wait until the figure on Tester gets stable. Controller is in order if Tester indicates  $1.1 \pm 0.2V$ . If Tester indicates any other voltage, Controller is broken. Replace it with a new one.

## 12 CHECK LIST FOR TROUBLESHOOTING

Check the items in the following flowchart in order from the top to bottom. Description of each item is referred to CIRCUIT DIAGRAM.

- After corrective action, return to the start of Troubleshooting and re-check again.
- The machine settings using App. should be checked with factory manufactured condition. If the machine is used App and cannot change the settings, replace "Controller" or "USB Circuit".

How to follow arrows



| Symptom  | What to check  | Corrective action   |
|--|--|---|
| Auto battery shut-off system does not work properly.   |  | See page 27.  |
| <ul style="list-style-type: none"> <li>• Rotation cannot be reversed.</li> <li>• Rotation is in one direction only.</li> </ul> |  | See page 27.  |
| Remarkable decrease in work volume from a single charge.   |  | See page 27.  |
| Battery cannot be charged.   | <p>The charging lamps on the charger do not light up.</p> <p>Although Battery is set in place on Charger, the green lamp on Charger still keeps on blinking.</p> <p>When Battery is set in place on Charger, the red charging lamp on Charger lights up but immediately the green charging lamp starts blinking.</p> <p>The red charging lamp and the green charging lamp on Charger are blinking alternately.</p> | <p>See page 28.</p> <p>See page 28.</p> <p>See page 29.</p> <p>See page 29.</p> |
| The yellow charging lamp on Charger is blinking.   |  | See page 29.  |
| USB communication does not work.   |  | See page 30.  |

Symptom

Probable Cause

Corrective Action

Motor shaft rotates without abnormal noise when Gear assembly is removed.

Gear assembly is broken.

Replace broken gear(s) or Gear assembly.

Spur gear of Rotor is broken.

Replace Rotor.

Motor shaft does not rotate even though the gear section is removed.

The remaining battery capacity is too low.

Charge Battery.

The contacts of Battery and the machine have dust.

Remove the dust.

The connector of Switch is not connected.

Connect it securely.

Switch is broken.  
(Broken Switch body, Connector or Lead wires.)

Replace Switch.

Rotor is broken.

Replace Rotor.

Battery is inactive, broken or its service life has expired.

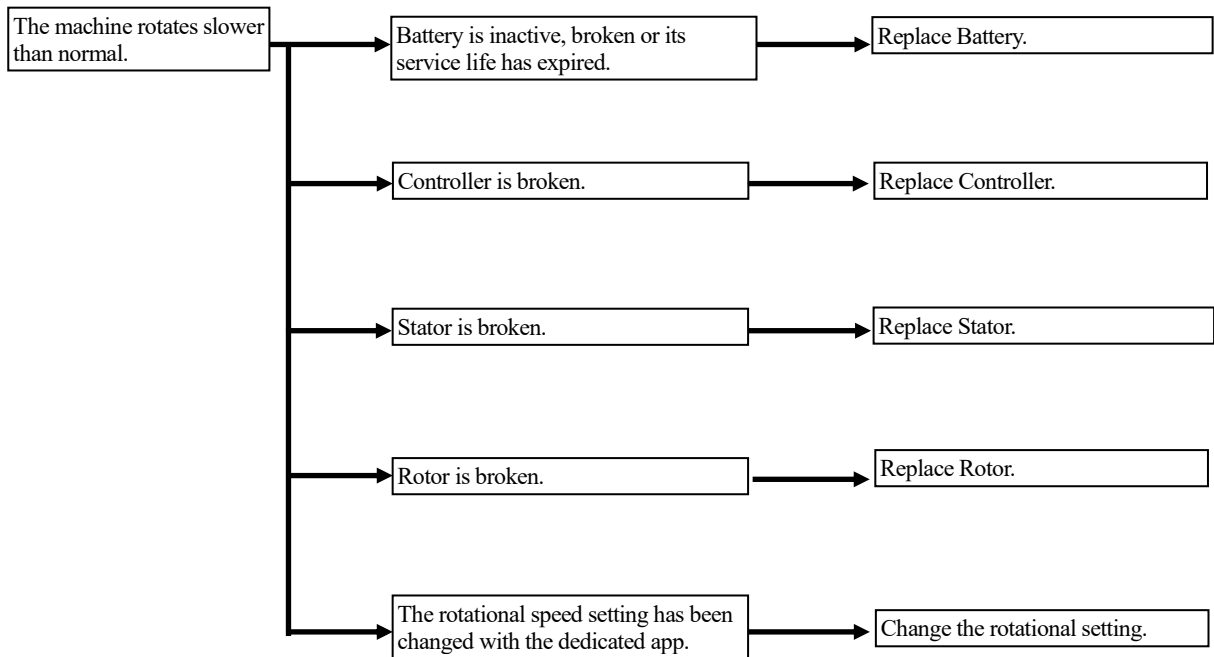
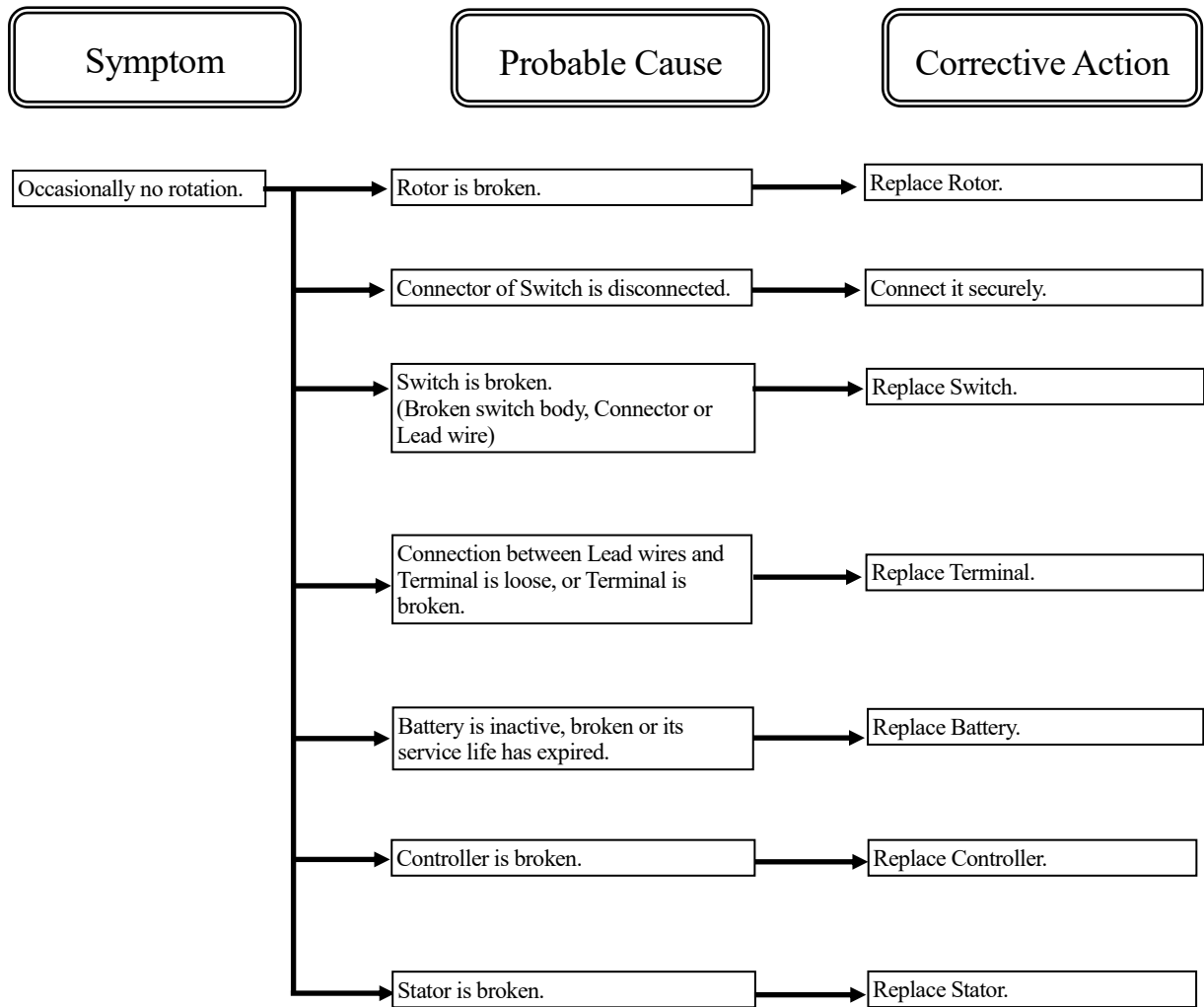
Replace Battery.

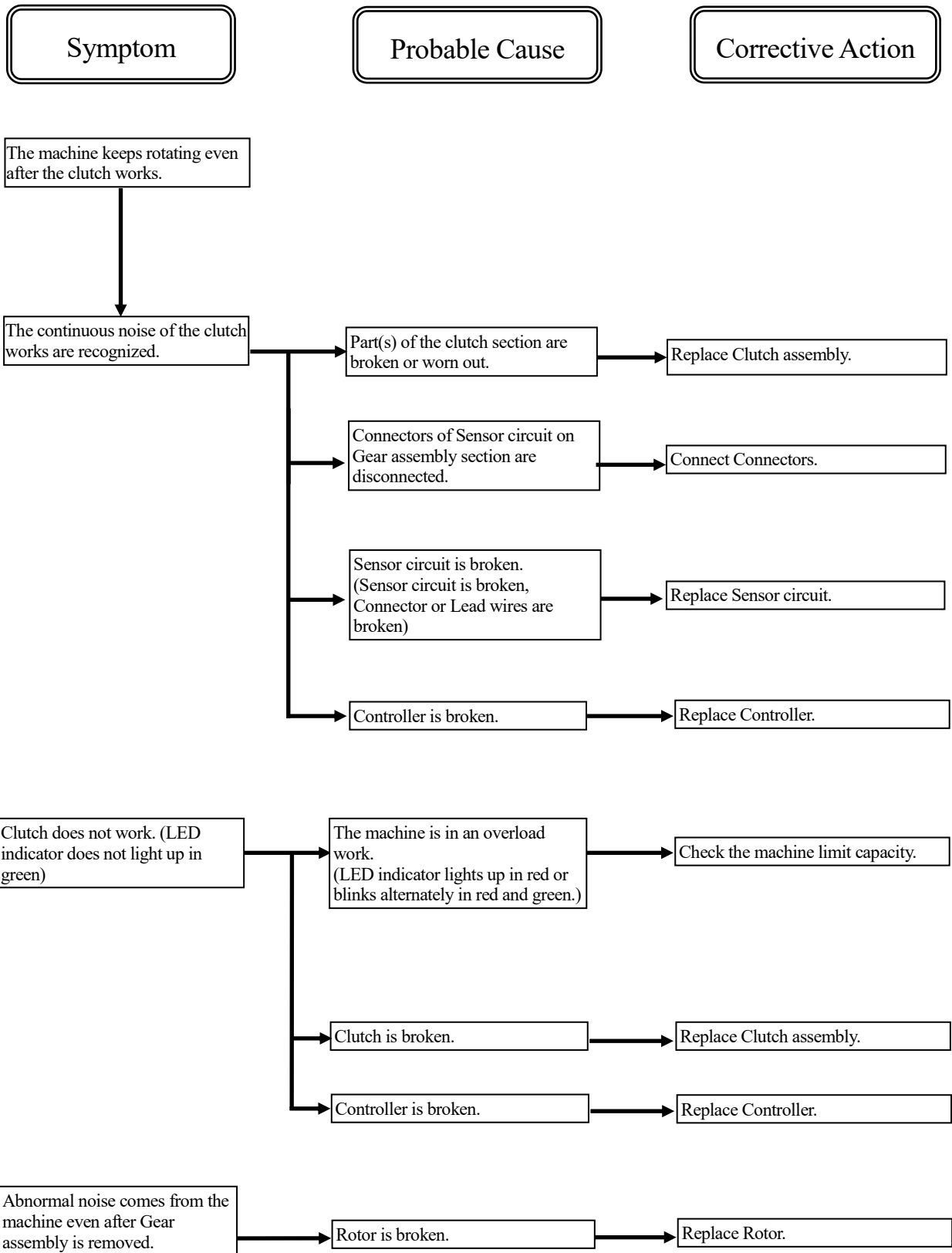
Controller is broken.

Replace Controller.

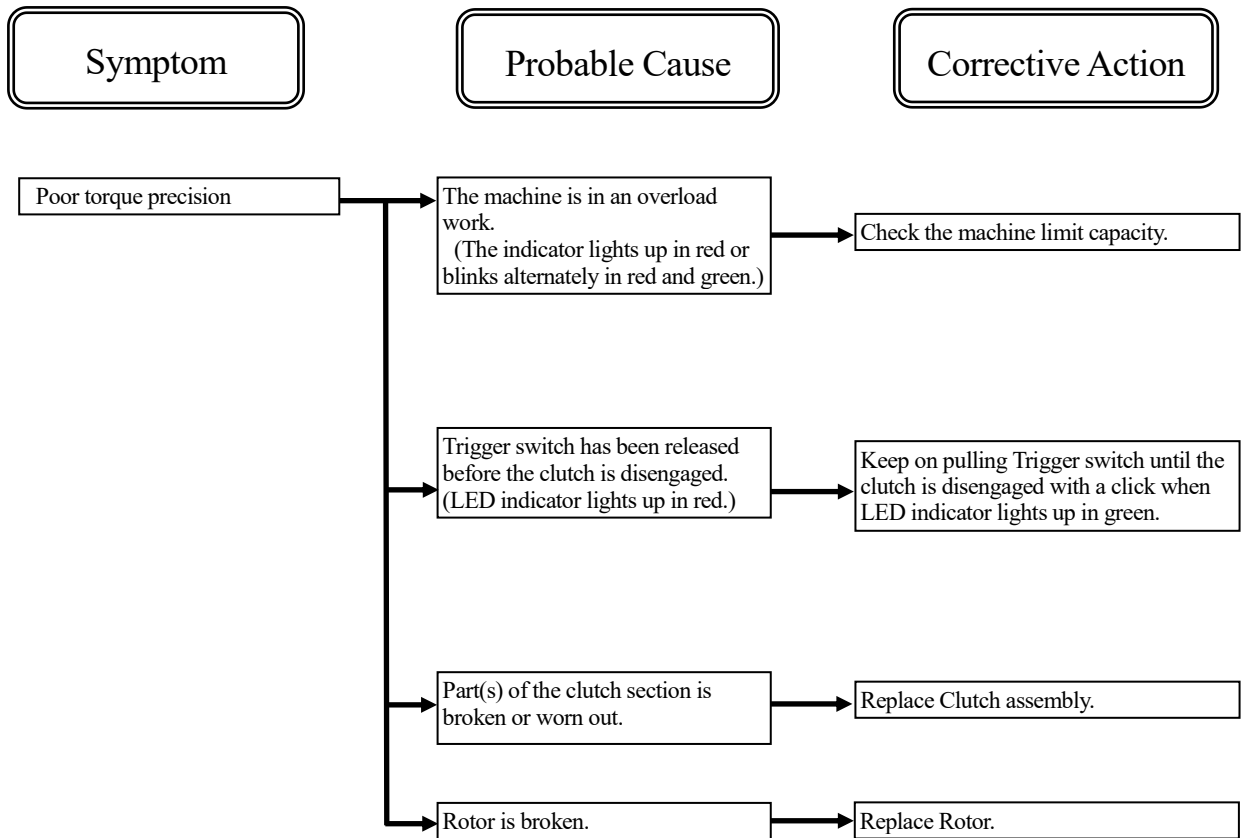
Stator is broken.

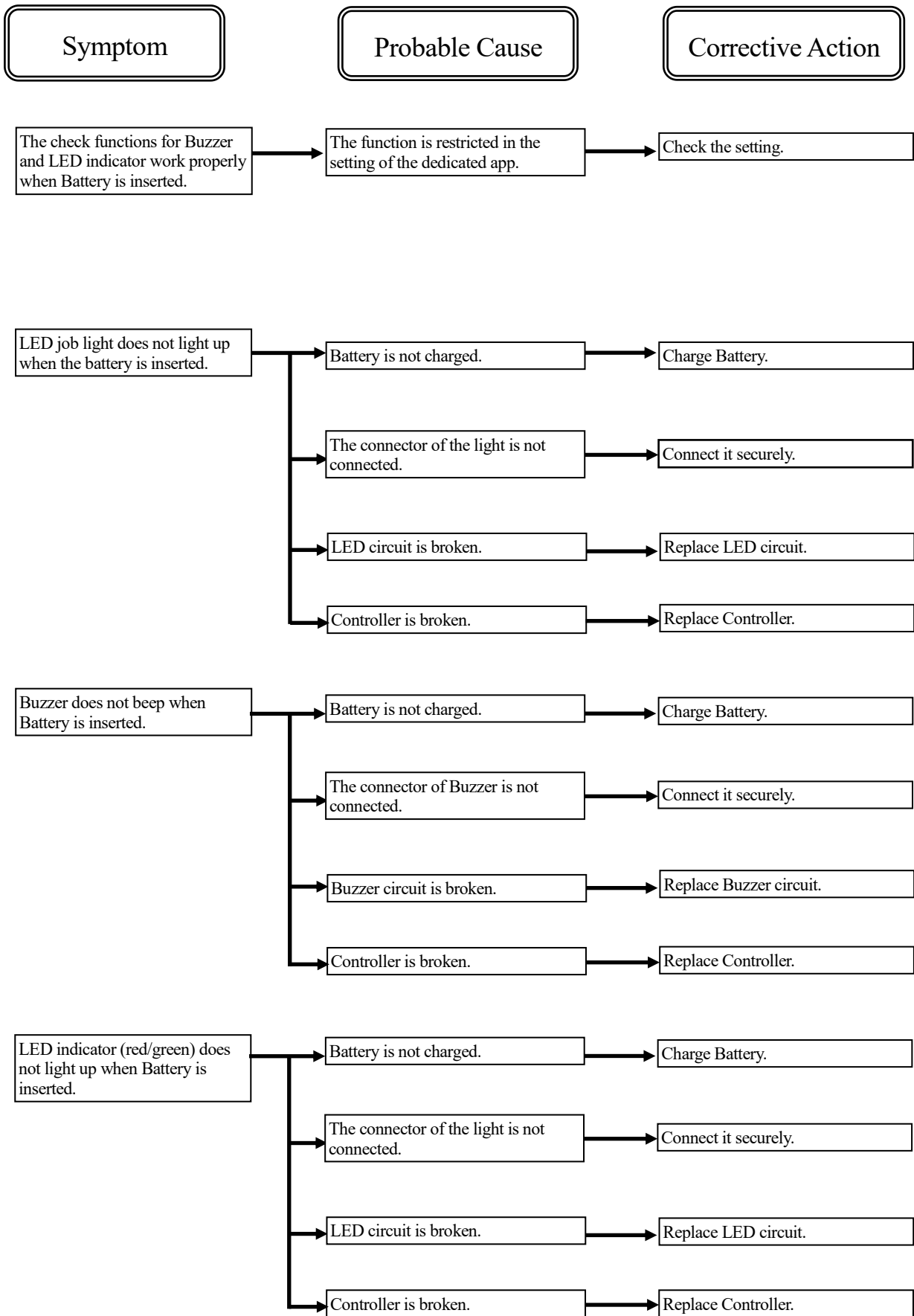
Replace Stator.

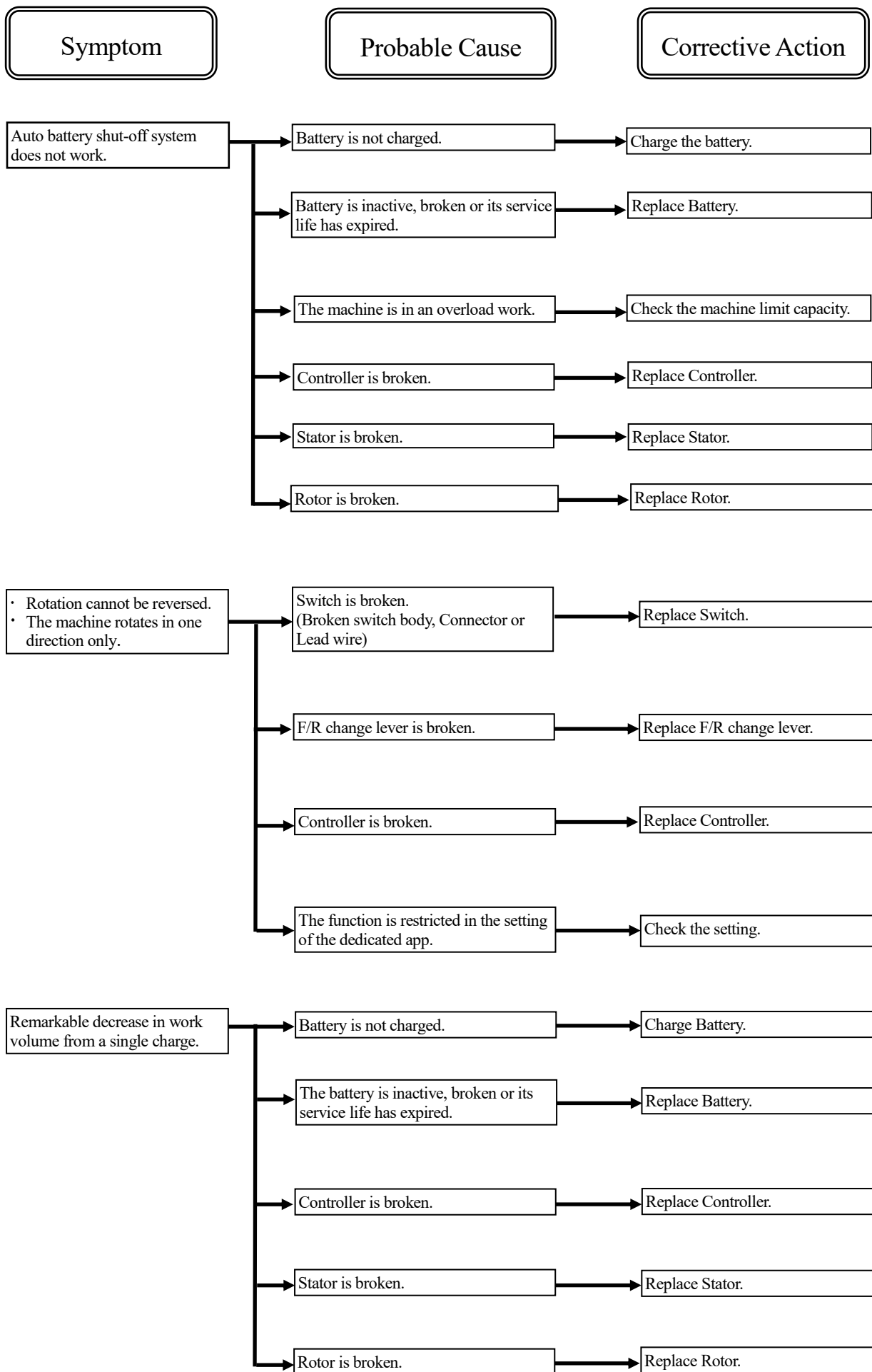




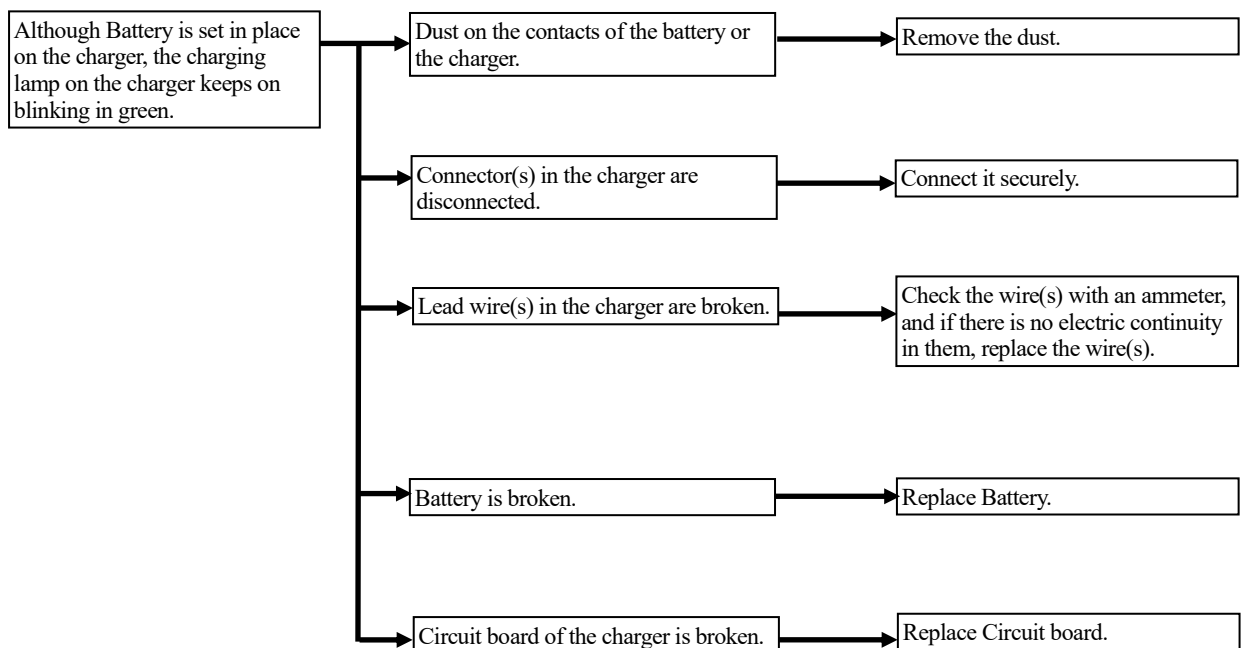
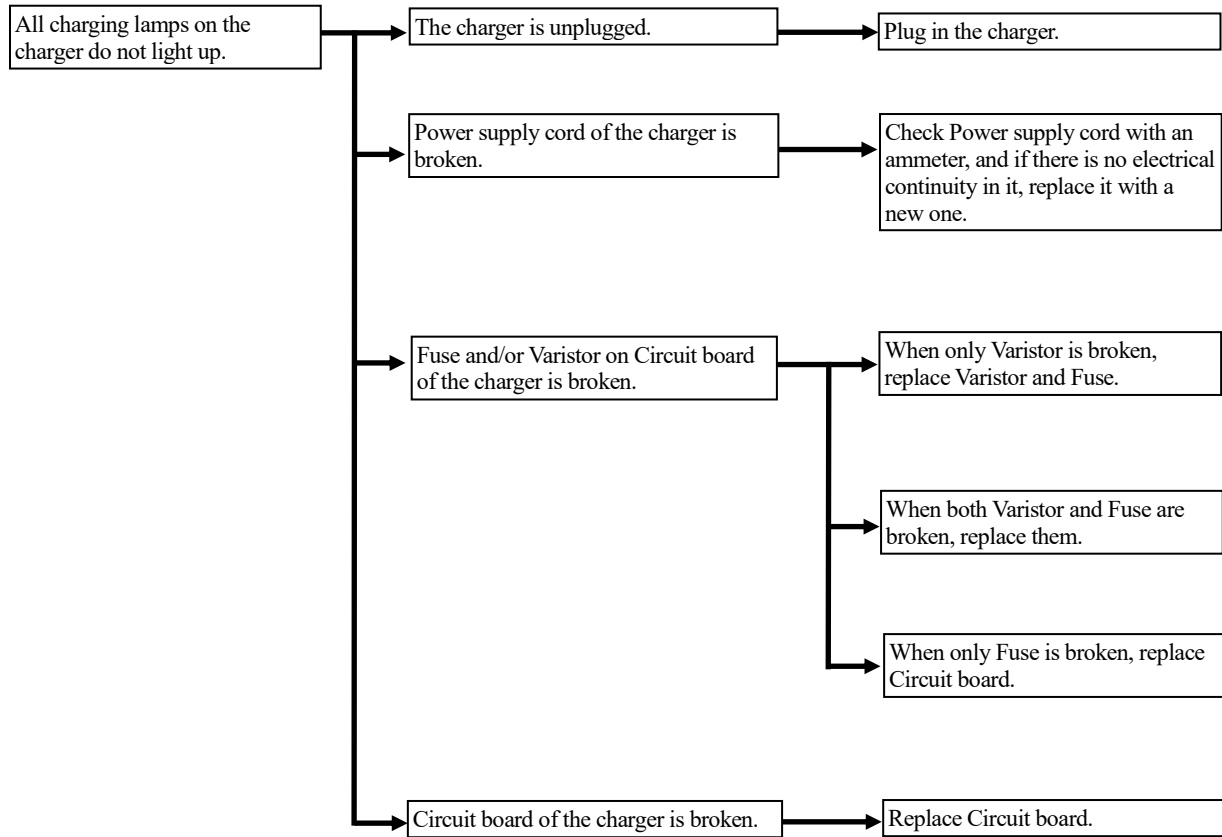


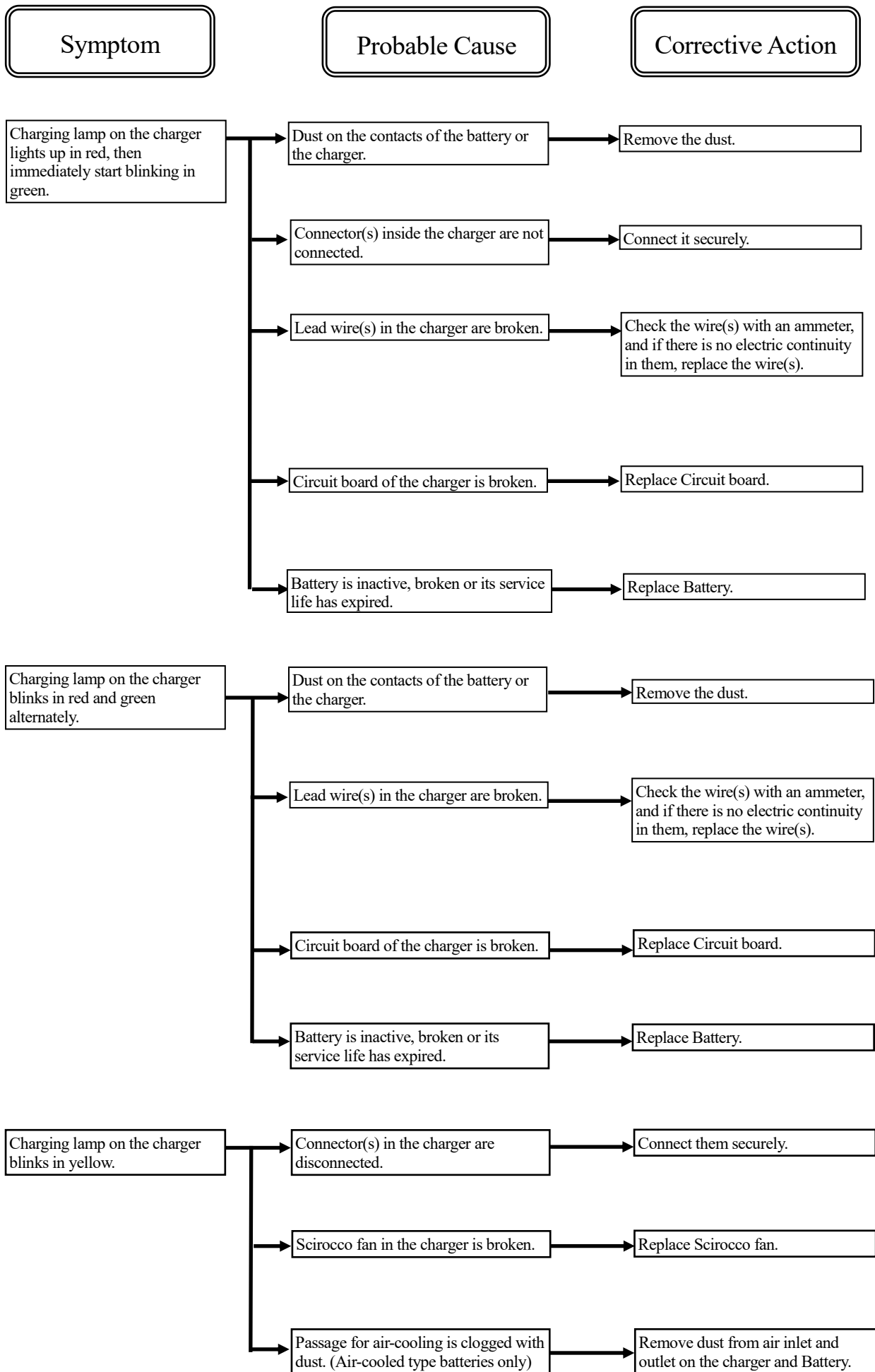


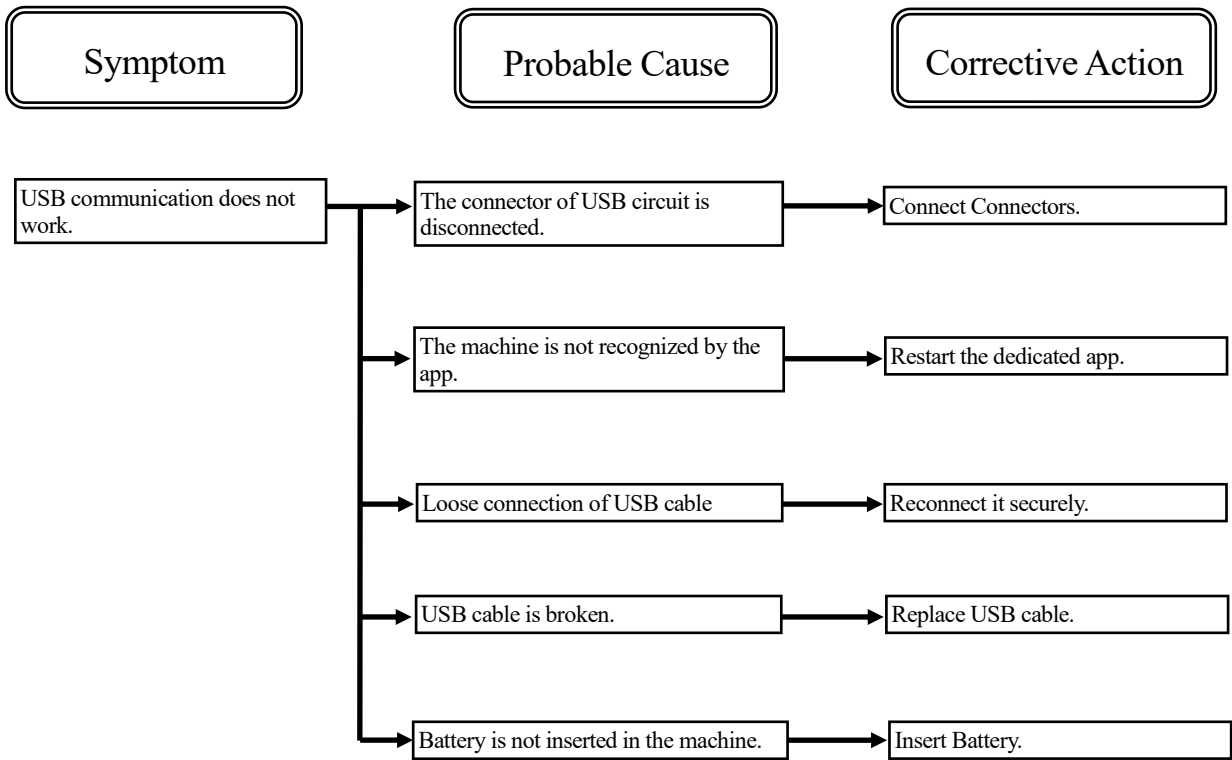




| Symptom | Probable Cause | Corrective Action |
|---------|----------------|-------------------|
|---------|----------------|-------------------|







### 13 APPROXIMATE ENDURANCE TIME OF EACH PART

| Part description | The time for replacing the parts                          |
|------------------|---|
|                  | DFT087F/DFT129F<br>Torque 8N·m/12N·m<br>Turning angle 90° |
| Clutch assembly  | About 250,000 times                                       |
| Gear assembly    |   |
| Motor            |   |
| Switch           |   |
| Terminal         |   |
| Other parts      |   |

NOTE: The above values are approximate and may vary depending on the usage conditions.  
Regularly checking of tightening torque is recommended.

Durability test conditions are as follows:

No load (2 seconds) - Load - Stop 10 seconds/cycle

Turning angle shows the angle of the screw (bolt) from the point where the target torque reaches 50% to the point where the target torque reaches 100%.

## 14 MAIN FEATURES OF THE MACHINE

|   |   |
|---|---|
| Motor   | Brushless DC motor  |
| Grip  | Anti-slip   |
| Screws for fastening Motor housing                | Machine screws for easy disassembly/reassembly  |
| Job light   | <ul style="list-style-type: none"> <li>· White LED lights up by pulling the trigger switch. (Max – Mid - OFF)</li> <li>· Improved operability with lighting up before rotation</li> <li>· White LED turns off 10 seconds after the trigger switch is released.</li> </ul> |
| Battery capacity reminder                         | When the battery capacity decreases to a certain level, LED indicator starts blinking in red, and Beeper starts beeping to remind the user.   |
| Auto Battery shut-off system                      | The machine will stop automatically to avoid incomplete tightening when the battery capacity is almost exhausted. At this time, LED indicator lights up in red and Beeper starts beeping.   |
| Electronic functions and Electronic reminders     | Various warning will be indicated with Green and Red LED lamp. (See <a href="#">16 LISTS OF THE ELECTRONIC FUNCTIONS AND REMAINDERS</a> )   |
| Presetting function for variable rotational speed | Using the dedicated app Makita Industry Tool Settings, rotational speed can be preset for various conditions.   |

## 15 SPECIFICATIONS OD BATTERY

| Compatible battery              | BL1815N  | BL1820(B) | BL1830(B) | BL1840(B) | BL1850(B) | BL1860B |
|---------------------------------|----------|-----------|-----------|-----------|-----------|---------|
| Voltage (V)                     | DC18     |           |           |           |           |         |
| Capacity (Ah)                   | 1.5      | 2.0       | 3.0       | 4.0       | 5.0       | 6.0     |
| Energy capacity (Wh)            | 27       | 36        | 54        | 72        | 90        | 108     |
| The kind of cell                | Li-Ion   |           |           |           |           |         |
| Charging time with DC18RC (min) | 15       | 24        | 22        | 36        | 45        | 55      |
| Battery type                    | Slide-on |           |           |           |           |         |



## 16 LISTS OF THE ELECTRONIC FUNCTIONS AND REMAINDERS

### 16-1 When a screw is tightened completely or when there is no trouble with the machine:

| Function   | Indication  |                        | Status  | Contents   |
|--|---|------------------------|---|--|
|  | LED indicator   | Beeper                 |   |  |
| Checking LED indicator and Beeper.                     | Lights up first in green, then in red and then in white.  | Continuous short beeps | When Battery is installed.  | Checking the followings:<br>· Indication lamp lights up in green and red.<br>· Light lights up.<br>· Buzzer works properly.  |
| Completed tightening Auto stop and Delayed restart(*1) | Lights up in green for one second.                        | No beep                | When a screw is tightened completely.                                   | · Indication of completed tightening<br>· Avoiding unexpected overtightening<br>· Motor does not start during these settings even if the trigger switch is pulled. |
| Indication of waiting on Phase switching               | Lights up or blinks (*2) in green.                        | No beep                | Under the conditions to switch the next Phase                           | Indication of waiting on Phase switching   |
| Torque check mode                                      | Lights up first in green, then in yellow and then in red. | No beep                | When the machine is in Torque check mode.                               | This mode can be activated only when the machine is in “Tight Phase” loaded in the machine.  |
| Maintenance alarm                                      | Blinks in yellow.   | No beep                | When the number of tightened screws has reached the one preset by user. | Reset the setting of Maintenance alarm using the dedicated app.  |

(\*1) Delayed restart can be set with the dedicated app. (\*2) Lighting up/Blinking can be set with the dedicated app.

### 16-2 When a screw is tightened incompletely or when there is some trouble with the machine:

| Function                              | Indication                              |                            | Cause  | Corrective action   |
|---------------------------------------|---|----------------------------|--|---|
|                                       | LED indicator                           | Beeper                     |  |   |
| Warning against incomplete tightening | Lights up in red.                       | A long beep                | Incomplete tightening has been done.   | Tighten the screw once again until indicator lights up in green.  |
| Battery capacity reminder             | Blinks in red slowly.                   | Continuous very long beeps | Battery capacity is low.   | · Motor starts by pulling the trigger switch.<br>· Replacing to the full charged Battery is recommended.<br>· Cancellation with recovering Voltage. |
| Auto Battery Shut-off                 | Lights up in red.                       | A long beep                | Battery capacity is low.   | Replace Battery with a full charged one. The reminders turn off when Battery is removed.  |
| Anti-resetting of Controller          | Lights up alternately in red and green. | Continuous long beeps      | Abnormal drop in Battery voltage has been caused. Motor does not start even if the trigger switch is pulled. | Replace Battery with a full charged one. The reminders turn off when Battery is removed.  |
| Overheat                              | Blinks in red quickly.                  | Continuous long beeps      | Controller or Motor is overheated. Motor does not start even if the trigger switch is pulled.                | Remove Battery immediately, then cool down the machine. The reminders turn off when the machine temperature gets low.                               |

(Continued to the next page)

| Function                                  | Indication                              |                       | Cause  | Corrective action   |
|---|---|-----------------------|--|---|
|   | LED indicator                           | Beeper                |  |   |
| Failure of detection on Motor temperature | Blinks in red quickly.                  | Continuous long beeps | The detection of Motor temperature does not work properly due to the reason of breaking of Lead wires etc. | Remove Battery immediately, then cool down the machine. If the machine does not work properly, ask Makita service center. |
| Trigger error when Battery is installed   | Lights up alternately in red and green. | Continuous long beeps | Battery is installed with pulling the trigger switch.  | Install Battery after releasing the trigger switch. The reminders turn off when the trigger switch is released.           |
| Warning against Malfunction of Motor      | Lights up alternately in red and green. | Continuous long beeps | Motor rotates abnormally. Motor does not start even if the trigger switch is pulled.                       | Ask Makita service center.  |

### 16-3 When tightening the tightened screw again:

| Function                | Indication        |             | Cause   | Corrective action  |
|-------------------------|-------------------|-------------|---|--|
|                         | LED indicator     | Beeper      |   |  |
| Double hit detection(*) | Lights up in red. | A long beep | When the clutch is disengaged before a preset turning angle is reached, with the function on. | The electronic reminders warn that the screw has been double hit unexpectedly. |

(\*) Double hit function can be set with the dedicated app.

### 16-4 During USB communication

| Function   | Indication        |         | Cause   | Corrective action                                   |
|--|-------------------|---------|---|---|
|  | LED indicator     | Beeper  |   |   |
| Not communicated/<br>Communication is impossible<br>(Connecting to PC) | Blinks in yellow. | No beep | Although the machine is connected with PC, communication is not available | Restart the dedicated app, and reconnect USB cable. |
| Communication is possible<br>(Connecting to PC)                        | Blinks in green.  | No beep | The machine is connected with PC, and communication is available.         | No  |

## 17 TORQUE CHECK MODE

The Machine can be used in “Torque check mode” with the predetermined operations. “Torque check mode” is the mode that the machine operates with “Tight Phase” only. The machine will switch to “Tight Phase” only, even if the machine is set in the multiple settings of “Rotation Phase”.

### 17-1 How to use “Torque check mode”.

When inserting Battery into the machine, operate Trigger switch and F/R change lever by following the steps below:

- (1) With Trigger switch on, insert Battery into the machine. At this time, “Battery insertion error” will be indicated.
- (2) After confirming that “Battery insertion error” is indicated, release Trigger switch and leave it in OFF position for more than five seconds until LED indicator is off.
- (3) Push F/R change lever toward the opposite direction and LED indicator will light up first in green, then in yellow and then in red. If you do not operate F/R change lever in this step, the machine will be in the normal mode.
- (4) Pull Trigger switch to ON position and the machine will start up with only “Tight Phase”.

## 17-2 How to cancel “Torque check mode”.

“Torque check mode” can be canceled by removing Battery from the machine.

## 18 USING THE DEDICATED APP (MAKITA INDUSTRY TOOL SETTINGS)

Additional functions such as "Presetting function for variable rotational speed" can be used with the dedicated app (Makita Industry Tool Settings). When setting up and using the dedicated app, follow the instructions in the instruction manual for the app.

[Compatible OS]

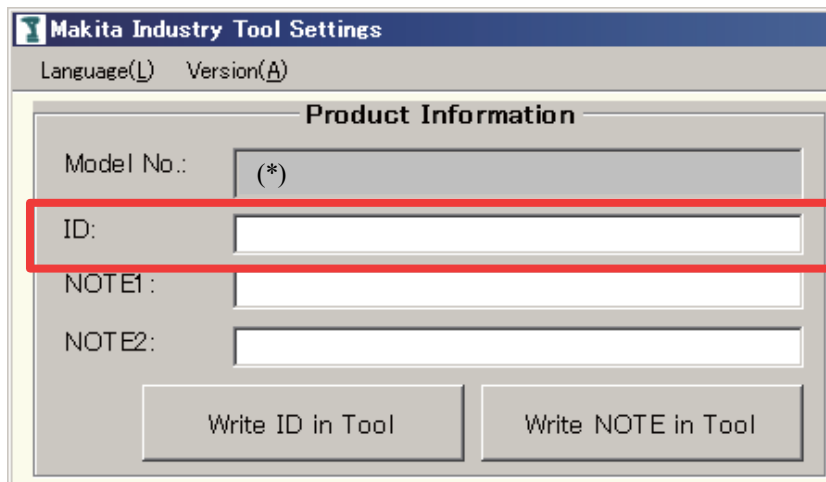
Windows 7, 8, 8.1, 10

[Installing the dedicated app]

Follow the instructions in the instruction manual for the app.

[Note on Controller for repair]

ID has not been registered for the controller for repair , yet. (The ID box is blank as shown below.)



(\*) The model number of connected machine is shown in the Model No. box.)