

ASM 14-2; 14-2 PC

Repair instructions





Contents

- 1. Models described**
- 2. Technical data**
- 3. Notes / regulations**
- 4. Tools required**
- 5. Lubricants and auxiliary materials required**
- 6. Disassembly**
- 7. Assembly**
- 8. Troubleshooting**
- 9. Wiring diagram**



1. Models described

These repair instructions describe how to repair the following models:

Model	Order no.
ASM 14-2	7 112 60 ...
ASM 14-2 PC	7 112 61 ...



2. Technical data

Technical data

All the technical data can be found in the operating instructions for the model.

Test data

Up-to-date test data for all models can be found on the FEIN Extranet (Customer Service → Repair Guides).

Lubricants

The lubricants and container sizes available from FEIN can be found on the FEIN Extranet (Customer Service → Repair aids).

Lists of spare parts

Lists of spare parts and exploded views are available online at www.fein.com



3. Notes / requirements

Please note

These instructions are only intended for persons with suitable technical training. It is assumed that the reader has mechanical and electrical training.

Only use original FEIN spare parts.

Provisions

Please note that power tools may only be repaired, maintained and checked by a trained electrician, as improper repair can result in serious risks to the user.

The provisions set out in *DIN VDE 0701-0702* should be observed after repairs.

The relevant accident prevention regulations of the employer's liability insurance associations are to be observed when commissioning.

The German Equipment and Product Safety Act [ProdSG] applies for correct use.

Outside Germany, the regulations applicable in the relevant country must be observed.



4. Tools required

Standard tool

- Vice
- Torx 10 screwdriver
- Slotted screwdriver: 0.6x3.5
- Slotted screwdriver: 7.0x100
- Circlip pliers: External circlip pliers/cranked, 18-60 mm
- Circlip pliers: External circlip pliers/cranked, 3-10 mm
- Allen key: WAF 2.5 mm
- Snap ring pliers
- Bar magnet
- Forceps
- Feeler gauge
- Side-cutting pliers
- Soldering station
- Long-nosed pliers

Special tools

- Torque wrench 3 21 23 002 00 6

NOTE

Only special tools with an ordering code can be ordered from FEIN.



5. Lubricants and auxiliary substances required

Lubricants

Grease	0 40 123 0100 0	0.6 g	Fill taper of tool holder with grease Apply grease to ball seats Apply approx. 1g to needle bearing bush
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Auxiliary substances

Loctite 270	0 90 006 0010 9	50 ml	Secure screws
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6. Disassembly

Removing the motor housing



1. Remove the coded sleeve (1).
2. Unscrew the nine screws (2) from the motor housing.
3. Spread open the motor housing (3) and remove the housing cover.
4. Remove pressure piece (4).

Tools:

- Slotted screwdriver 0.6x3.5
- Circlip pliers
- Torx 10 screwdriver



6. Disassembly

Removing the motor housing

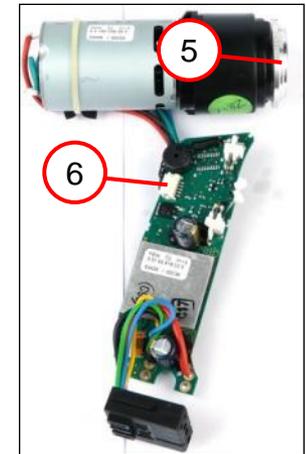
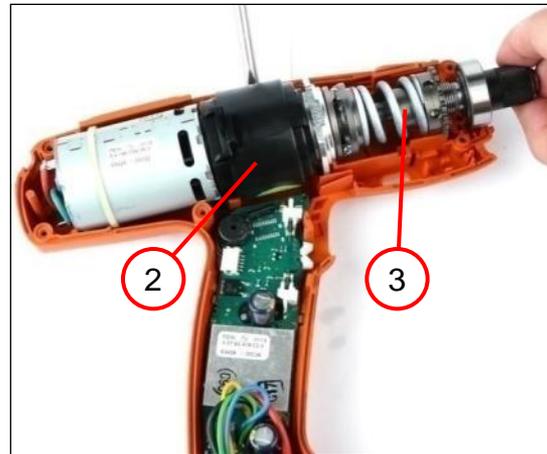


1. Remove the slide switch with pressure spring (1) and the pushbutton with pressure spring (2).
2. Carefully pull out the foil conductor (3) and carefully remove from the motor housing.



6. Disassembly

Removing the motor housing



1. Remove the two springs (1).
2. At the same time, lift the gearbox (2) and the tool holder (3).
3. Pull the tool holder (3) off from the planetary gear.
4. Remove the motor with the electronics (4) from the motor housing.
5. Pull the bush (5) off the planetary gear.
6. Pull off the plug (6).

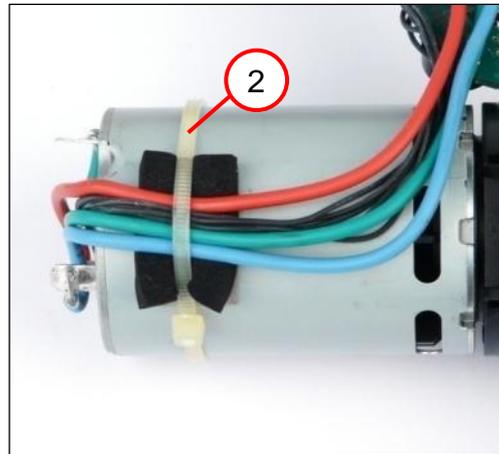
Tools:

- Long-nosed pliers
- Slotted screwdriver
7.0x125



6. Disassembly

Removing the motor housing



1. With a soldering rod, remove the connection cable from the motor connections (1).
2. With side-cutting pliers, remove the cable tie (2).

Tools:

- Soldering rod
- Side-cutting pliers



6. Disassembly

Removing the motor



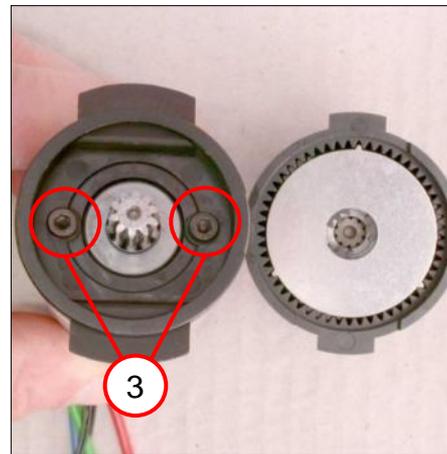
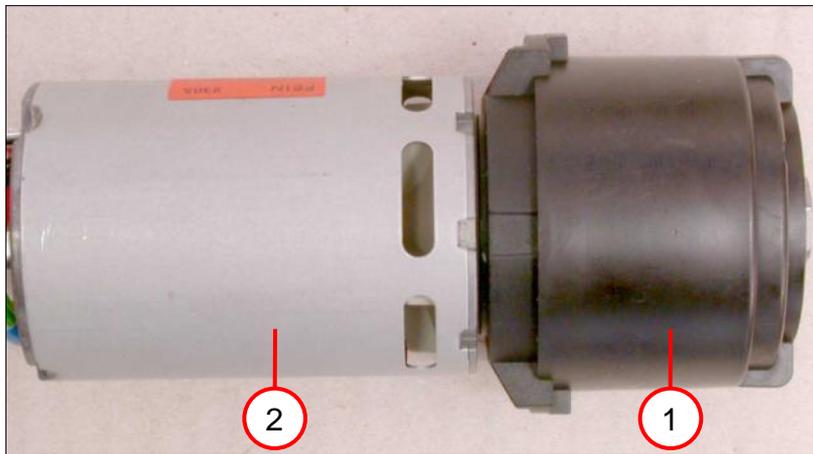
NOTE

There is a risk that parts may fall out of the planetary gear when it is pulled out. The photo shows the construction of the planetary gear.



6. Disassembly

Removing the motor



1. Pull the gearbox (1) off the EC motor (2).
☞ N.B.: Check the information on page 12.
2. Unscrew the screws (3) and remove the motor flange (4).

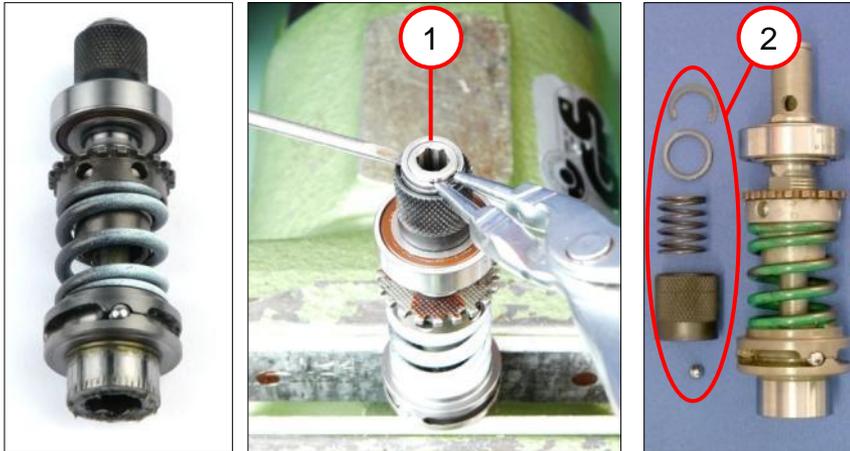
Tools:

- Socket head wrench:
WAF 2.5mm



6. Disassembly

Removing the tool holder



1. Press the circlip (1) off the tool holder.
2. Remove parts (2) of the tool locking device.
 - ☞ Circlip, ring, pressure spring, sleeve, ball > D=4 mm.

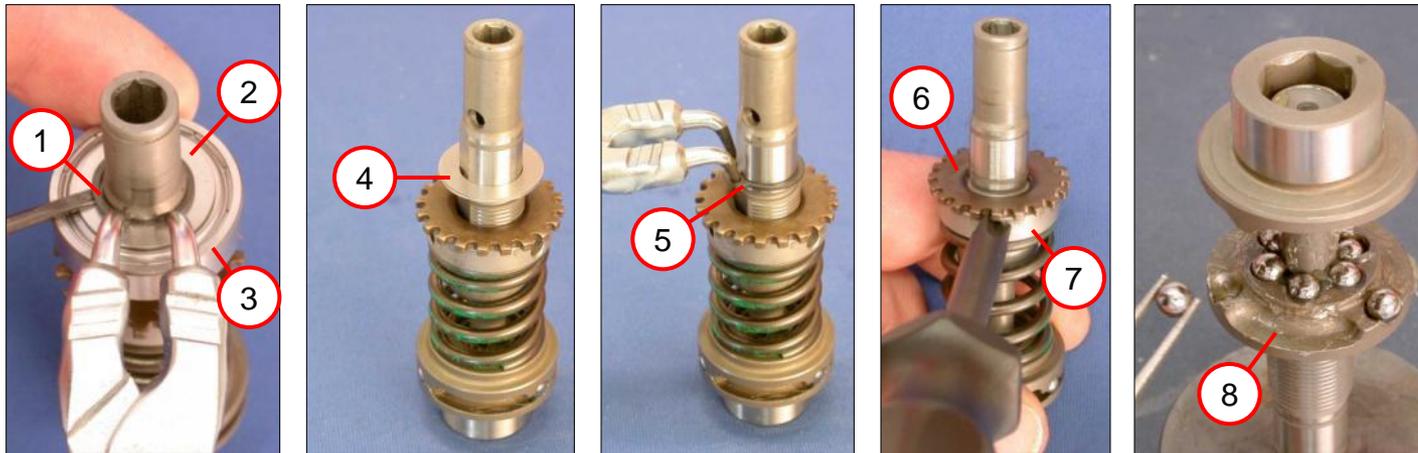
Tools:

- Circlip pliers:
opener / stepped 3-10mm
- Slotted screwdriver



6. Disassembly

Disassembling the clutch



1. Remove the circlip (1).
2. Remove the discs (2) and the grooved ball bearing (3).
3. Remove the discs (4) and the circlip (5).
4. Unscrew the adjusting ring (6).
 ☞ The adjusting ring has a left-handed thread.
5. Remove the ring (7).
6. Remove the three balls from the ring (8).

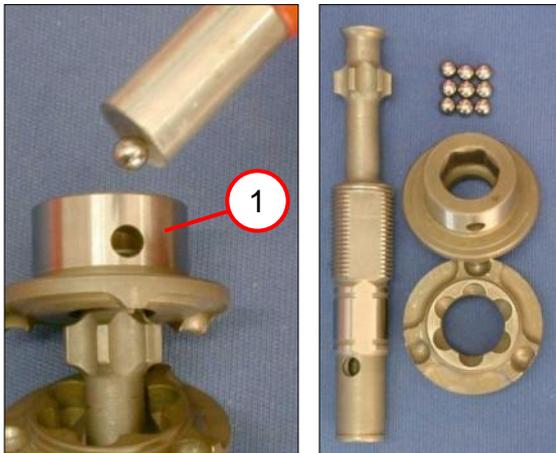
Tools:

- Circlip pliers
 opener / stepped, 3-10 mm
- Torque wrench
- Bar magnet



6. Disassembly

Disassembling the cover



1. Remove the nine balls from the clutch ring (1) and tool holder.

NOTE

The balls are easier to take out if the clutch ring is degreased before disassembly.

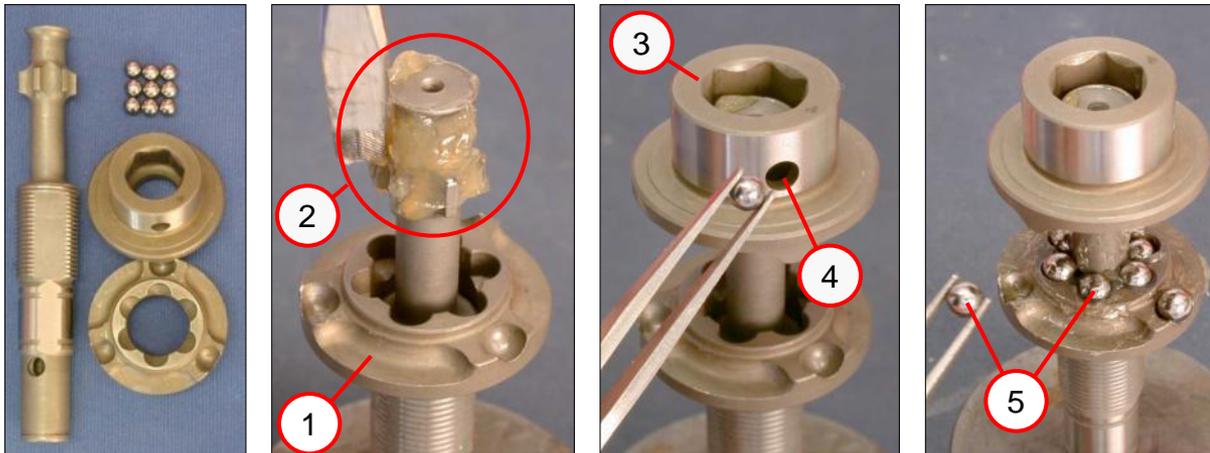
Tools:

- Bar magnet



7. Assembly

Assembling the clutch



1. Insert the lower clutch ring (1) in the correct position.
2. Apply grease (0 40 12 301 00 0) generously to the end of the tool holder (2).
3. Position the top clutch ring (3).
4. Insert the nine balls D=4mm through the hole (4).
5. Insert nine balls D=5mm (5) into the lower clutch ring.

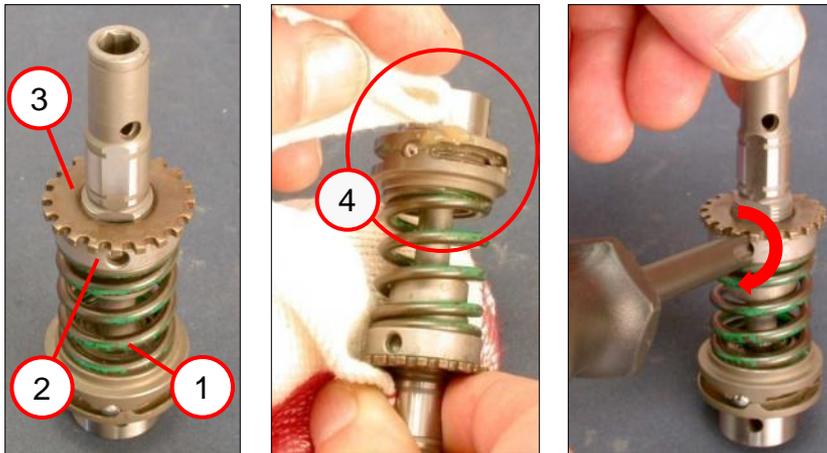
Tools:

- Slotted screwdriver:
7.0x125
- Grease (0 40 12 301 00 0)
- Forceps



7. Assembly

Assembling the clutch



1. Fit the pressure spring (1), ring (2) and adjusting ring (3) onto the pre-assembled tool holder.
2. Remove excess grease (4).
3. Screw in the adjusting ring by approx. 10 mm.
☞ The adjusting ring has a left-handed thread.

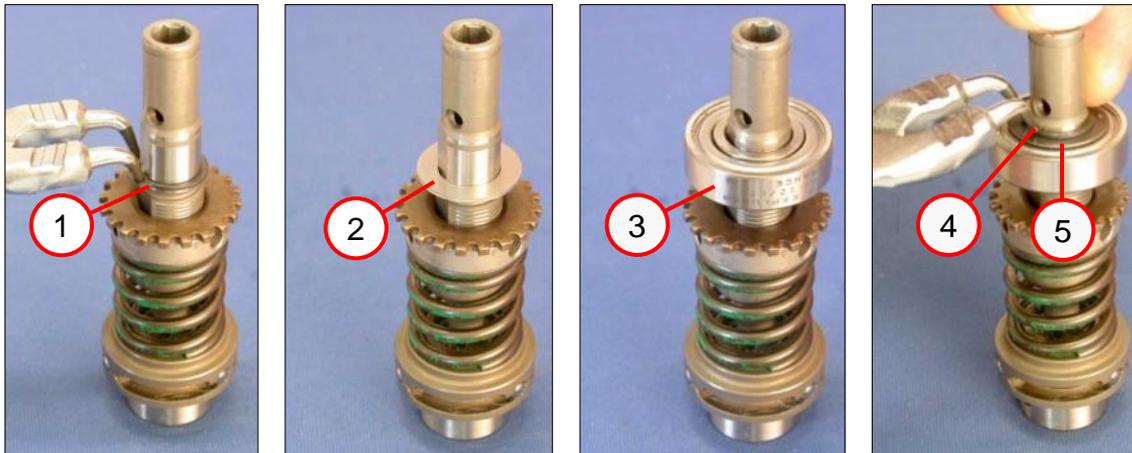
Tools:

- Torque wrench



7. Assembly

Fitting the tool holder



1. Fit the circlip (1) on the tool holder.
2. Fit the discs (2) on the tool holder.
☞ Basic setting = 0.8 mm
3. Fit the grooved ball bearing (3) onto the tool holder.
4. Fit the discs (4) and the circlip (5).

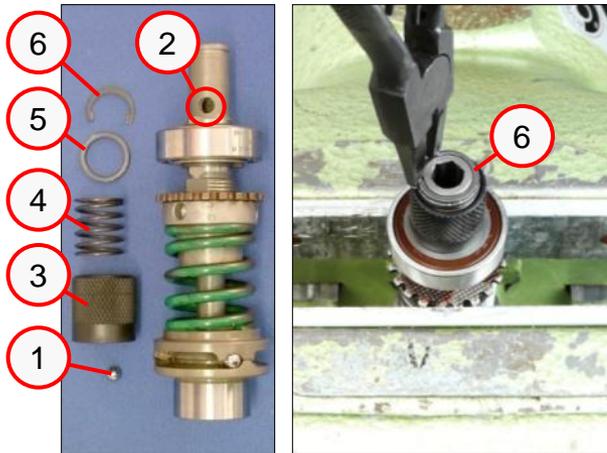
Tools:

- Circlip pliers:
opener / stepped 3-10mm



7. Assembly

Fitting the tool holder



1. Insert the ball (1) in the hole (2).
2. Slide the sleeve (3) over the tool holder.
3. Insert the spring (4) in the sleeve.
4. Place the ring (5) on the sleeve and press down.
5. Fit the snap ring (6).

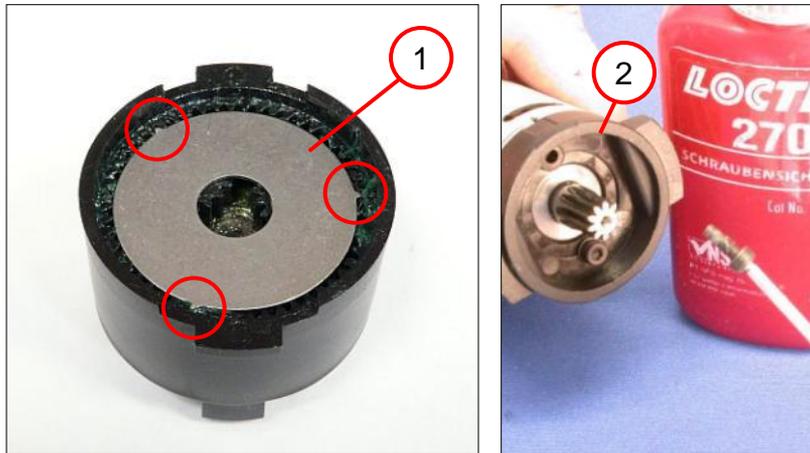
Tools:

- Vice
- Snap ring pliers



7. Assembly

Fitting the planetary gear



1. Lay the disc (1) into the gearbox so that it lies flush.
 - ☞ Ensure that disc does not slip out of position during assembly.
 - ☞ The three prongs around the edge of the disc must lie cleanly with no interference in the gear toothing.
2. Screw on the motor flange (2).
 - ☞ Tighten the cylinder head screw to $1 \text{ Nm} \pm 0.1 \text{ Nm}$ and secure with Loctite.

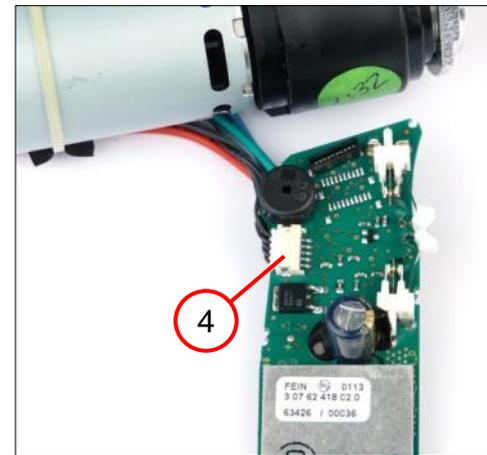
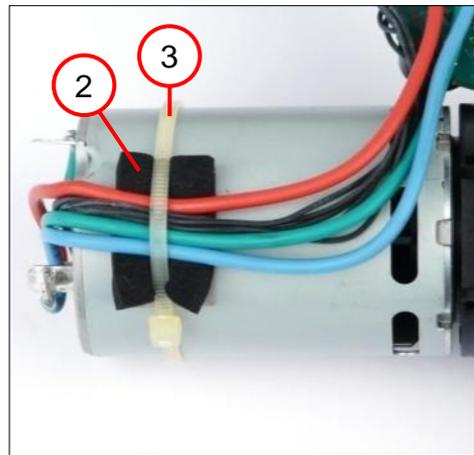
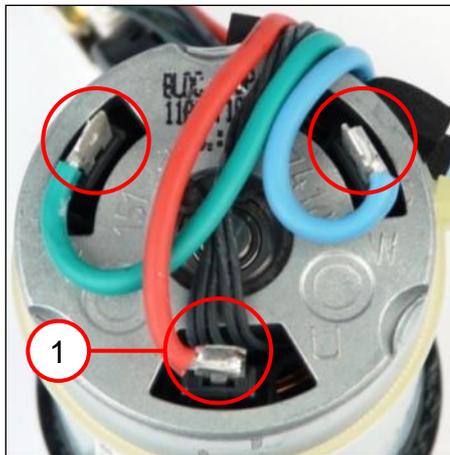
Tools:

- Loctite 270
- Allen key: WAF 2.5



7. Assembly

Fitting the electronics



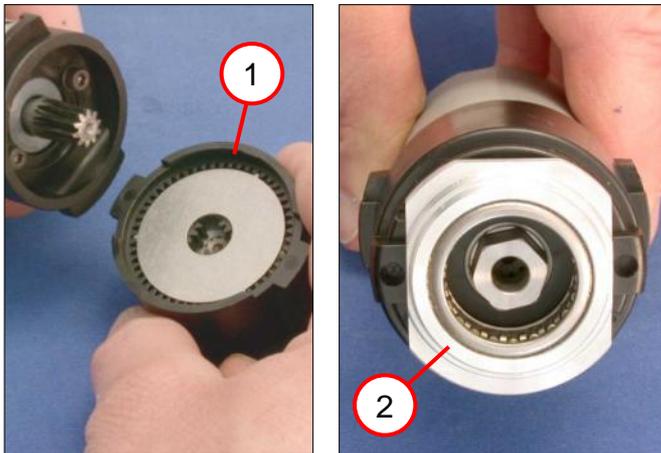
1. Securely solder the wires (1) to the motor as shown.
 - ☞ Refer to the electronics circuit diagram to establish the correct points of connection.
2. Fix the cables with the padding (2) and a cable tie (3).
 - ☞ This step in the operation is not absolutely necessary, but it does make the rest of the assembly process easier.
3. Connect the plug (4) from the motor to the electronics.

Tools:
- Soldering station



7. Assembly

Fitting the planetary gear



1. Attach the planetary gear (1) to the motor.
 - ☞ The thrust disc must be fixed in position in the tothing of the gearbox housing.
 - ☞ If the thrust washer changes position, a scratching noise will be heard during operation.
2. Grease the bush (2) [grease 0 40 12 301 00 0] and place it in position on the planetary gear.
 - ☞ Check the installation position. The curve of the bush should face the switch.

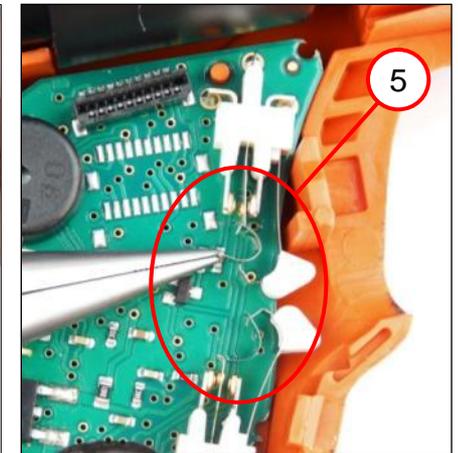
Tools:

- Grease (0 40 12 301 00 0)



7. Assembly

Fitting the motor and clutch



1. Insert the electronics with the motor (1) into the motor housing.
☞ Insert the flange such that the curved side faces down towards the operator side.
2. Insert the clutch (2).
3. Fit the cover (3).
4. Fit the housing insert (4).
5. Hook the two springs (5) in place.

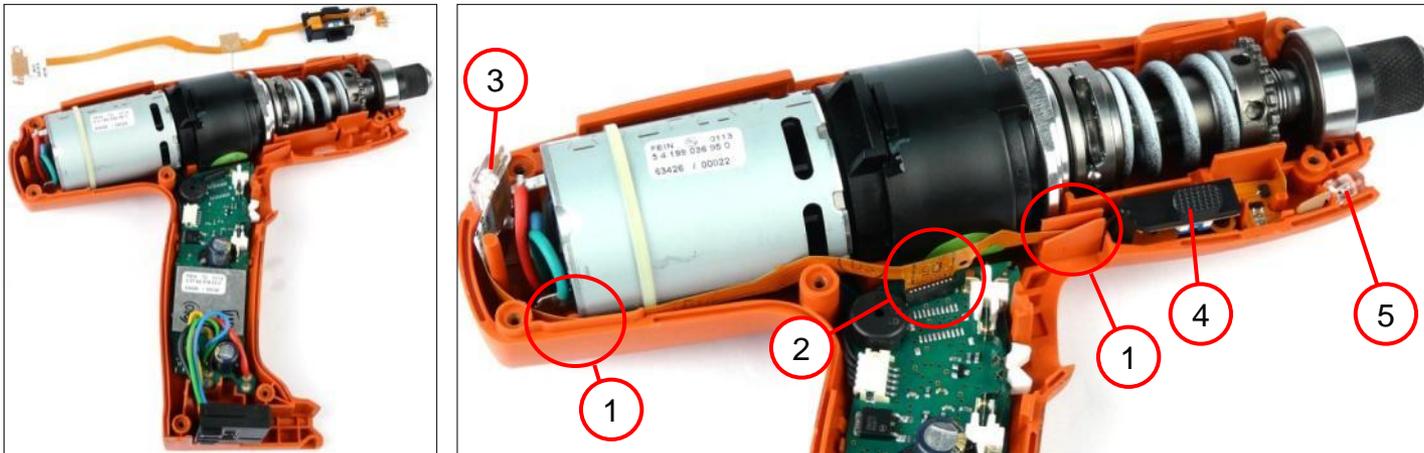
Tools:

- Long-nosed pliers



7. Assembly

Fitting the foil conductor

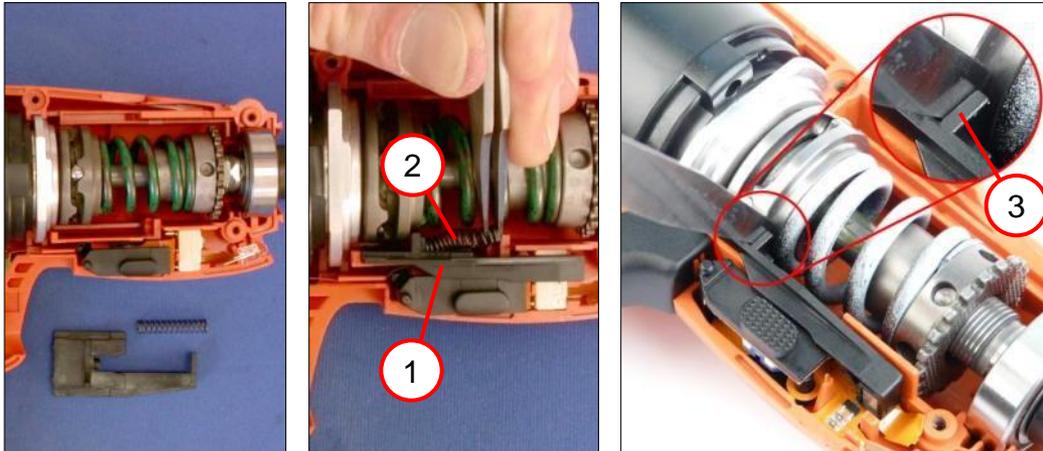


1. Route the foil conductor as shown in the photo.
 - ☞ Insert the foil conductor into the guide (1).
2. Connect the foil conductor to the electronics (2).
3. Insert the LED indicator (3) into the cut-out provided.
4. Insert the switch trigger (4).
5. Lay the LED (5) in place.



7. Assembly

Assembling the slide switch



1. Insert the slide switch (1) in the housing.
2. Insert the spiral spring (2).
3. Check the play (3) between the slide switch and switch ring.
 - ☞ The installation dimension is 0.7 ± 0.3 mm.
 - ☞ The installation dimension can be corrected by moving the discs in front of and behind the grooved ball bearing on the tool holder.

Tools:

- Forceps
- Feeler gauge



7. Assembly

Fitting the cover



1. Insert the pressure spring (2) and the pushbutton (1).
2. Insert the pressure piece (3).
3. Fit the housing cover on the machine.
 - ☞ When placing the housing cover in position, make sure the electronics film is not damaged.



7. Assembly

Fitting the cover



1. Screw down the housing cover.
 - ☞ Tighten the screws to 1.2 Nm ^{-0.1 Nm}.
2. Press the coded sleeve (1) down into position by hand.

Tools:
- Torx 10 screwdriver



8. Troubleshooting

See separate file on Extranet or retail partner portal.



9. Connection diagram