

FMM350Q; FMM350QSL

Repair instructions





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1. Models described

These instructions describe how to repair the following models:

Model	Order number
FMM 350Q	7 229 42 ...
FMM 350QSL	7 229 52 ...



2. Technical data

Technical data

The complete 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 Guides).

Lists of spare parts

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



3. Notes and requirements

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 employers' liability insurance associations are to be observed when commissioning.

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

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



4. Tools required

Standard tools

Arbor press	
Sleeve	5 mm inner diameter ~16 mm outer diameter
Hot air gun	
Ball bearing support	19 mm; 26 mm
Plastic hammer	
Slotted screwdriver (small)	
Vice	
Circlip pliers	
Torx	T15; T20

Special tools

Drawing-off socket cap	6 41 04 150 00 8
Extractor tool	
• Thread ring	6 41 14 031 03 0
• Chuck cone	6 41 14 031 01 0
• Screw	6 41 07 013 02 1
• Bolt	6 41 07 013 03 7
Press-in fixture	6 41 22 127 00 0
Assembly aid	6 41 22 121 01 0
16mm chuck cone	6 41 07 016 00 1
19mm chuck cone	6 41 07 019 00 7
26mm chuck cone	6 41 07 026 00 0
Assembly aid	6 41 22 122 00 0



5. Lubricants and auxiliary substances required

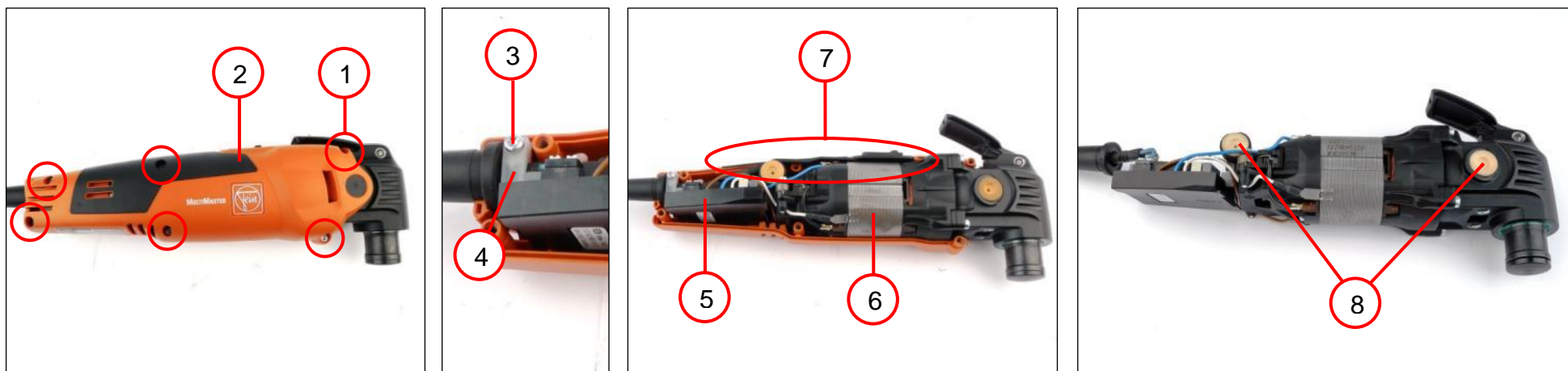
Lubricants

Grease	0 40 10 101 00 4	10 g	Tool head
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6. Disassembly

Disassembling motor housing



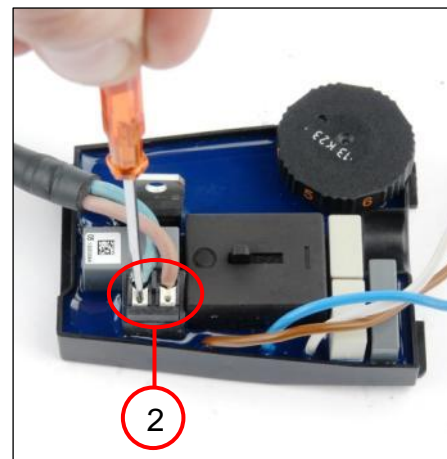
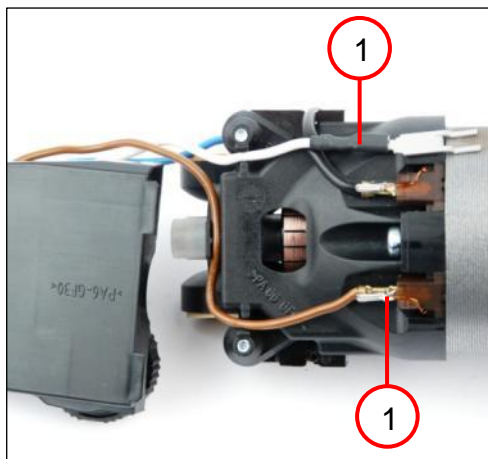
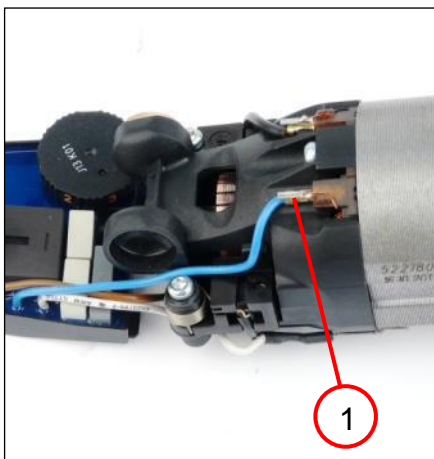
1. Unscrew six screws (1) and take off motor housing (2).
2. Open screw (3) and take out cable clamping piece (4).
3. Take out electronics (5), tool head with field coil (6) and slide switch (7).
4. Take out the four pressure pieces (8) on both sides.

Tools:

- Torx T15

6. Disassembly

Disassembling electronics



1. Disconnect the three electronics cables (1) from the stator.
2. Press cable clamps (2) and pull off supply cables.

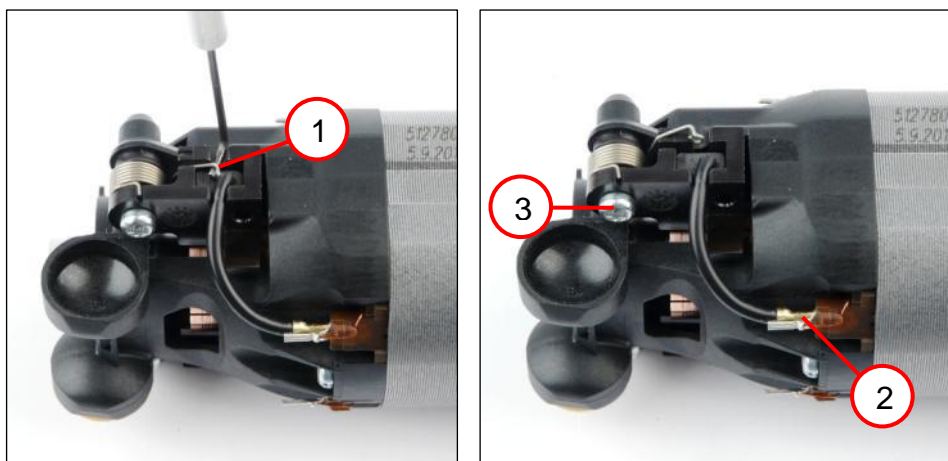
Tools:

- Slotted screwdriver (small)



6. Disassembly

Disassembling carbon brushes and carbon bushes holders (on both sides)



1. Lift spring (1) to one side.
2. Pull cable (2) of carbon brush out of stator.
3. Loosen screw (3) and take off carbon brush holder.

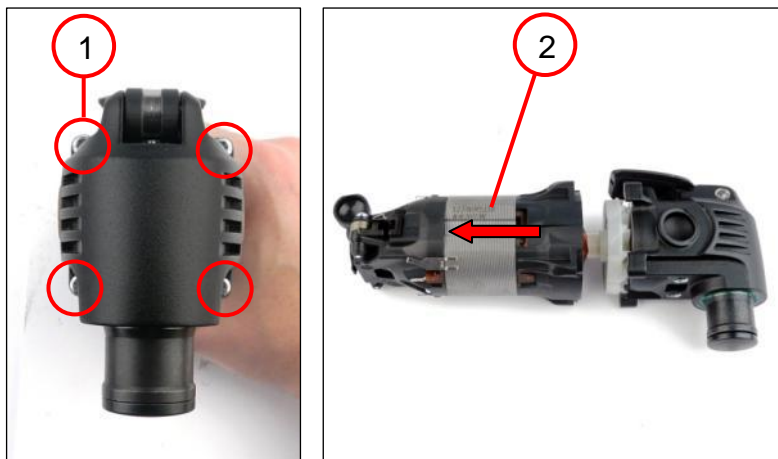
Tools:

- Assembly aid
- Torx T15



6. Disassembly

Disassembling stator



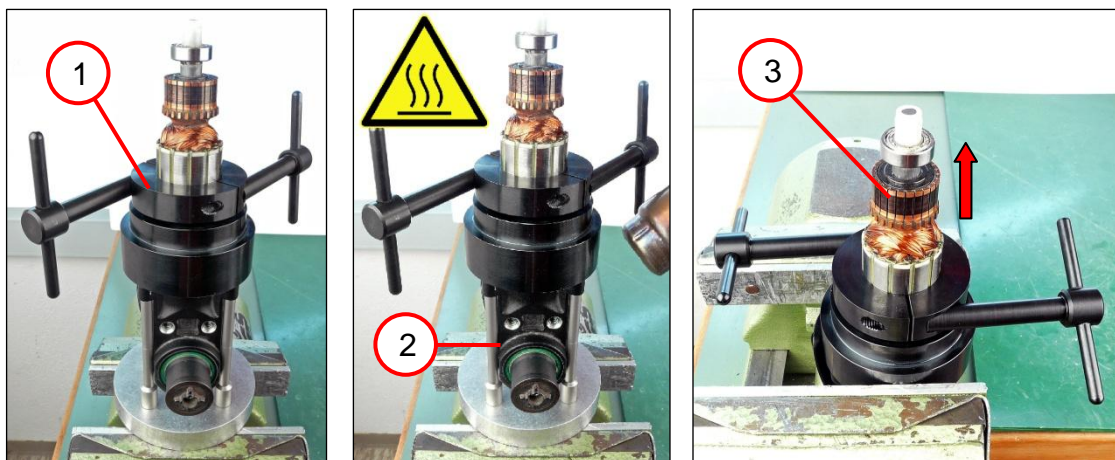
1. Unscrew the four screws (1).
2. Pull stator (2) off tool head.

Tools:

- Torx T20

6. Disassembly

Disassembling tool head



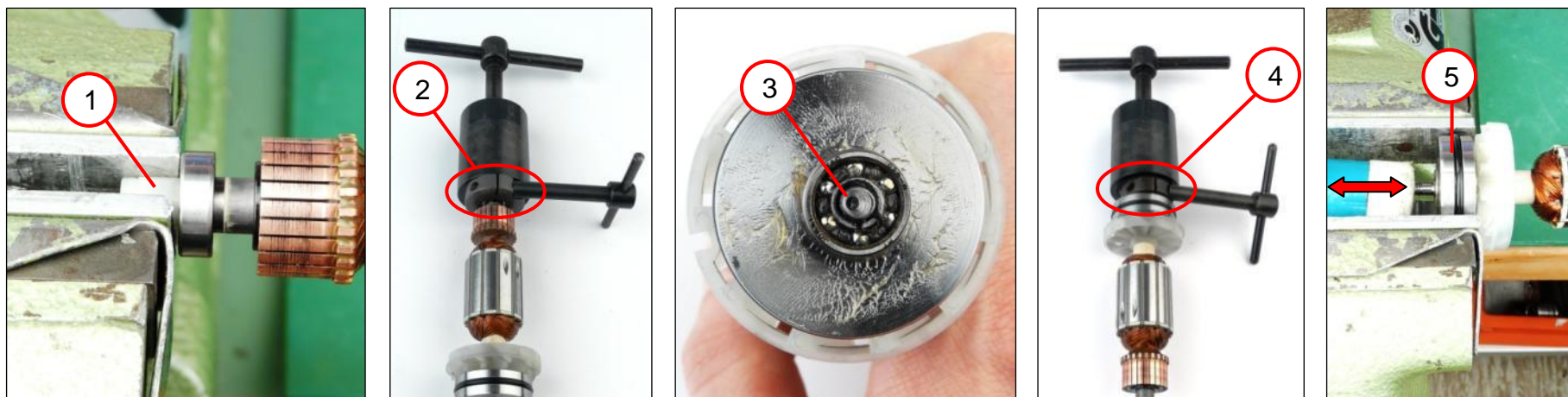
1. Place extractor tool (1) on armature.
2. Heat tool head (2) with hot air gun [600 °C] on right and left sides at an angle of 45 degrees for 10 seconds.
3. Pull armature (3) out of tool head.

Tools:

- Press-in fixture
- Extractor tool
- Hot air gun
- Vice

6. Disassembly

Disassembling armature



NOTE

Magnet, grooved ball bearing, sealing ring and circlip must be replaced after disassembly!

1. Pull off magnet (1).
2. Pull off grooved ball bearing (2).
3. Remove circlip (3).
4. Pull off grooved ball bearing (4).
5. Pull off bush (5).

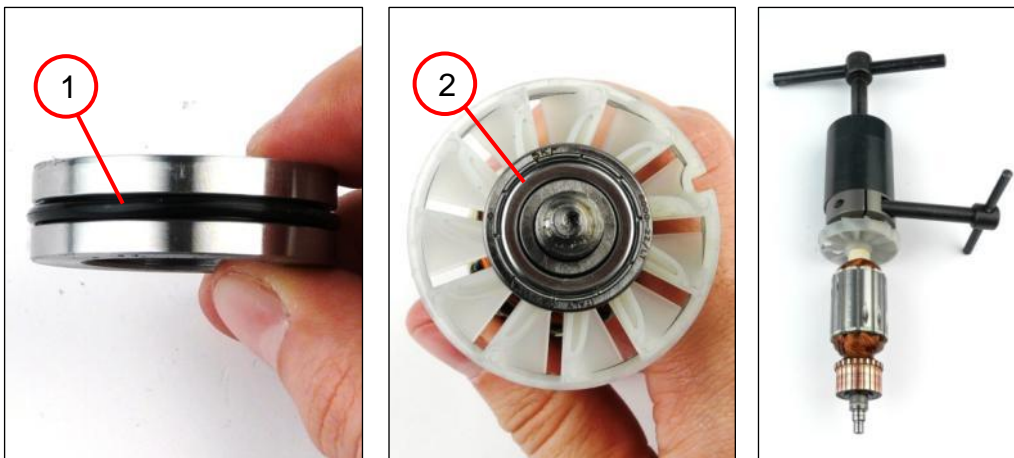
Tools:

- Vice
- Drawing-off socket cap
- 19 mm chuck cone
- 16 mm chuck cone
- Circlip pliers
- Plastic hammer



6. Disassembly

Disassembling armature



NOTE

Sealing ring and grooved ball bearing must be replaced after disassembly!

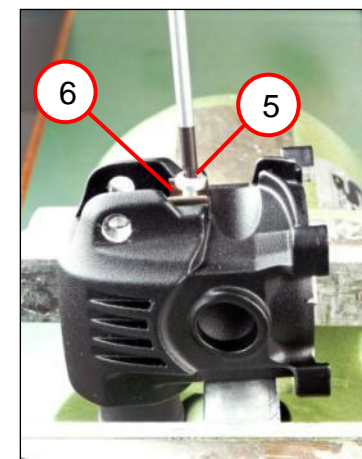
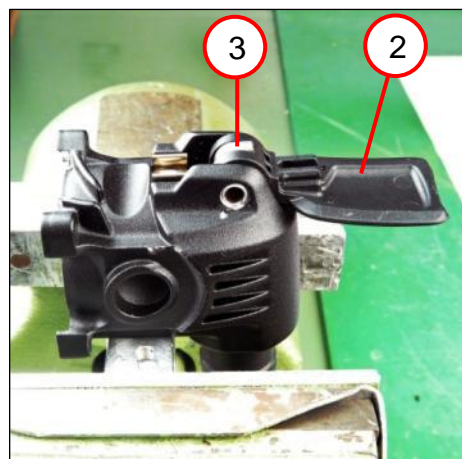
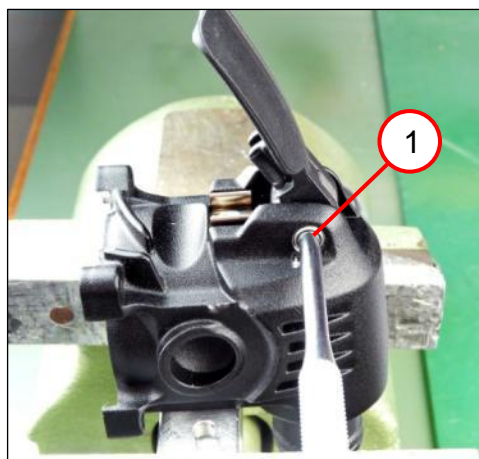
1. Remove sealing ring (1).
2. Pull off grooved ball bearing (2).

Tools:

- Drawing-off socket cap
- 26 mm chuck cone

6. Disassembly

Disassembling tool head



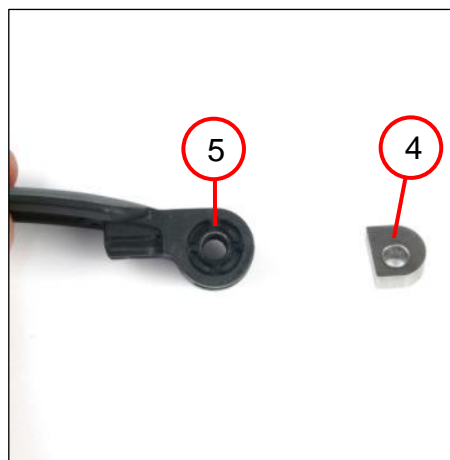
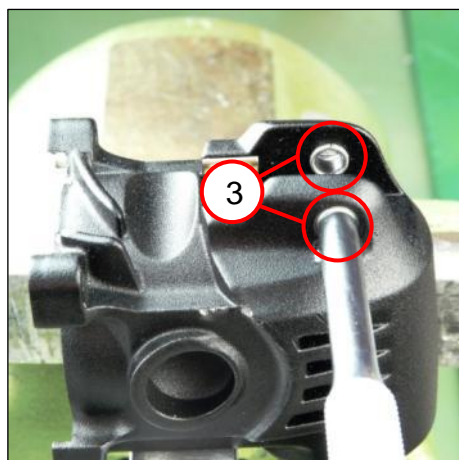
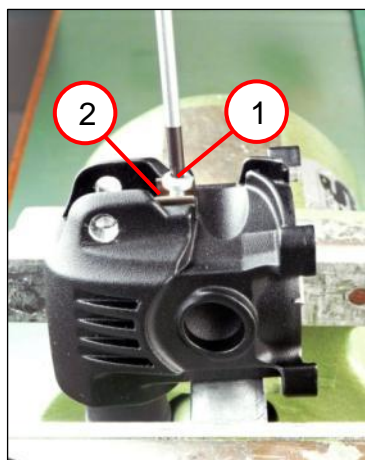
1. Remove straight pin (1).
2. Remove lever (2) and eccentric ring (3).
3. Remove two bushes (4).
4. Unscrew fillister head screw (5).
5. Remove locking spring (6).

Tools:

- Assembly aid
- Vice
- Punch 5 mm
- Punch 6 mm
- Torx T20

7. Assembly

Assembling tool head



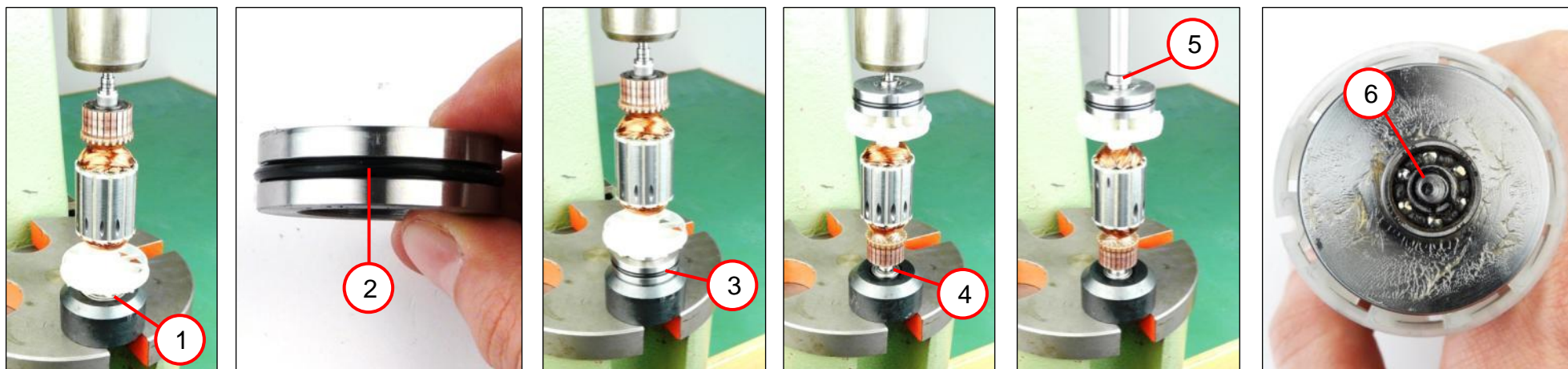
1. Position locking spring (1) and secure with fillister head screw (2).
2. Fit two bushes (3).
☞ Press in bushes until they are flush with the inside.
3. Insert lever (4) and eccentric ring (5).
4. Press in straight pin (6).

Tools:

- Assembly aid
- Vice
- Punch 5 mm
- Punch 6 mm
- Torx T20

7. Assembly

Assembling armature



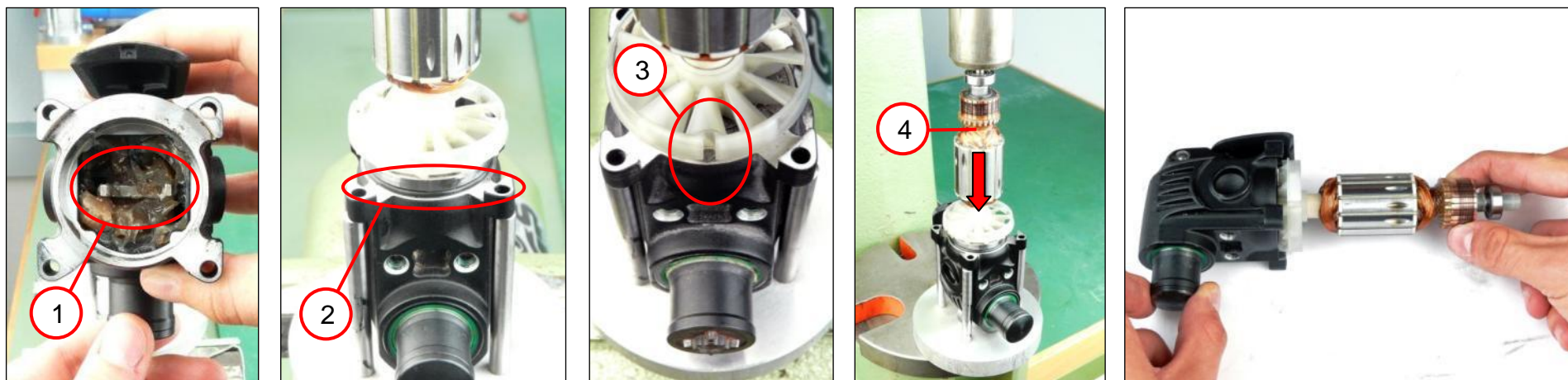
1. Press on grooved ball bearing (1).
2. Fit sealing ring (2) on bush.
3. Press on bush (3).
4. Turn armature and press on grooved ball bearing (4).
5. Press on grooved ball bearing (5).
6. Attach circlip (6).

Tools:

- Arbor press
- Ball bearing support
19 mm; 26 mm
- Circlip pliers
- Sleeve
5 mm inner diameter
~16 mm outer diameter

7. Assembly

Assembling tool head



1. Fill tool head with 10g of grease.
2. Align fork centrally in tool head (1).
3. Position bush (2) and align cut-out (3).
4. Press armature (4) into tool head.
5. Turn on armature and check whether the tool holder is moving correctly.

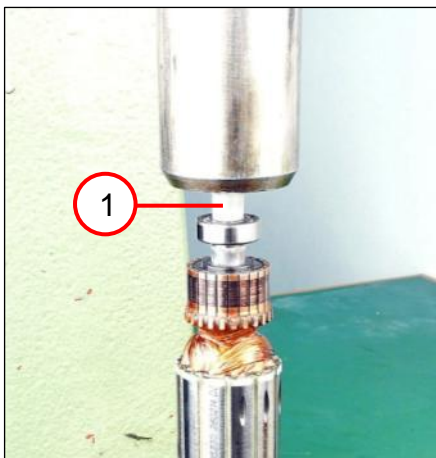
Tools:

- Grease
- Arbor press
- Press-in fixture



7. Assembly

Assembling tool head



1. Press magnet (1) onto armature.

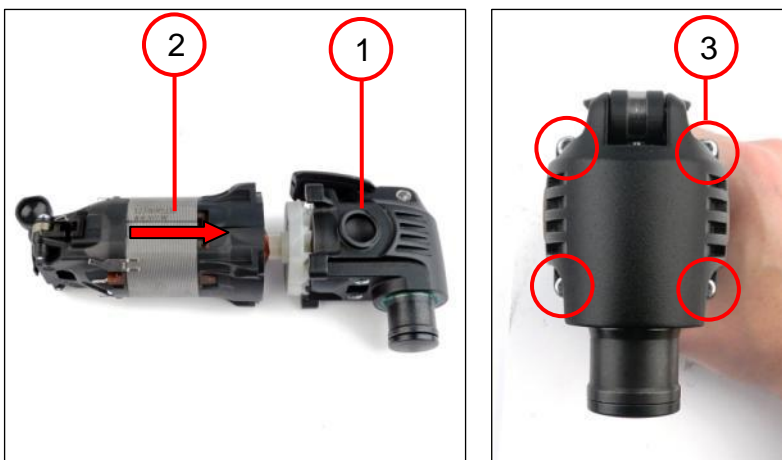
Tools:

- Arbor press
- Press-in fixture



7. Assembly

Assembling stator



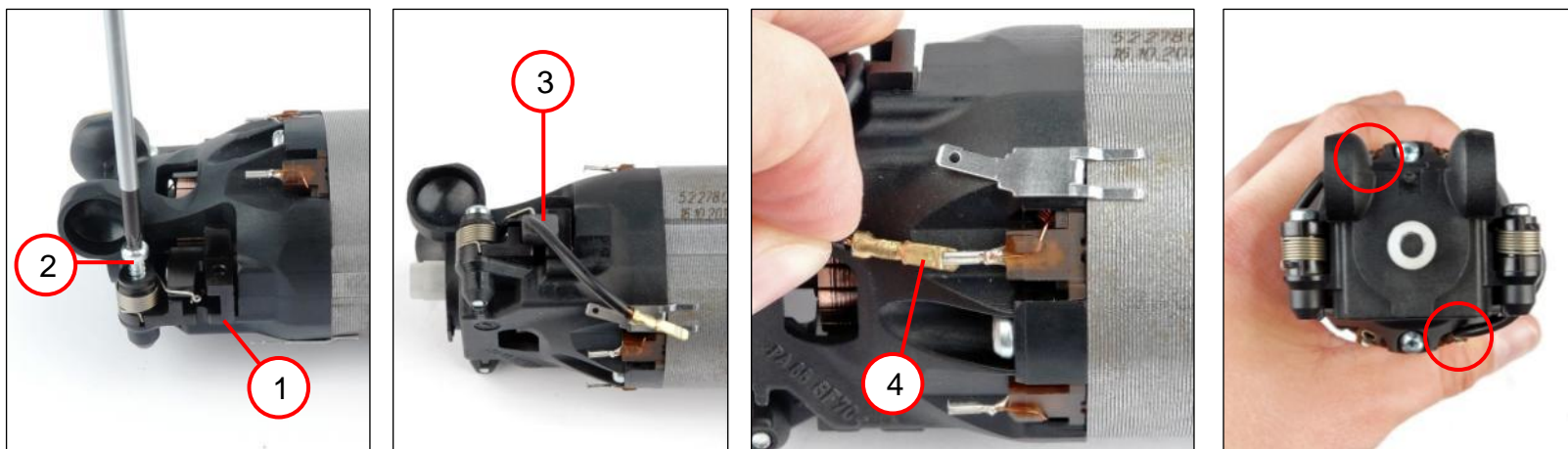
1. Slide tool head with armature (1) into correct position in stator (2).
2. Fasten tool head with the four screws (3) [2.1 ±0.1Nm].

Tools:

- Torx T20

7. Assembly

Assembling carbon brush (on both sides)



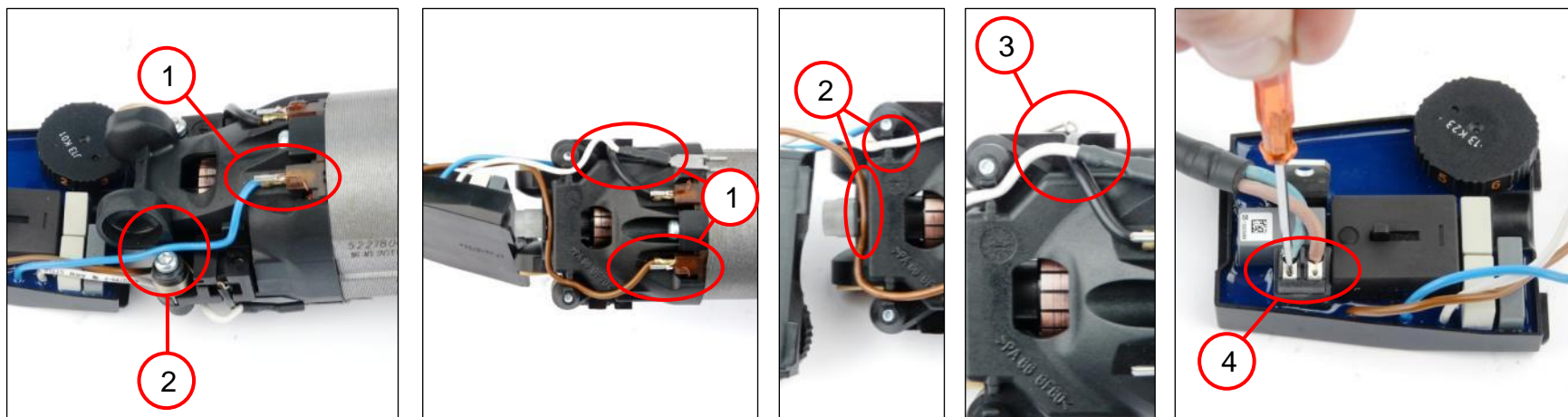
1. Place carbon brush holder (1) on stator and secure with screw (2) [$1.5 \pm 0.1\text{Nm}$].
2. Insert carbon brush (3) in correct position in carbon brush holder and fit spring.
3. Connect carbon brush to stator (4).
4. Connect carbon to stator, as shown in the fourth image.

Tools:

- Torx T15

7. Assembly

Assembling electronics



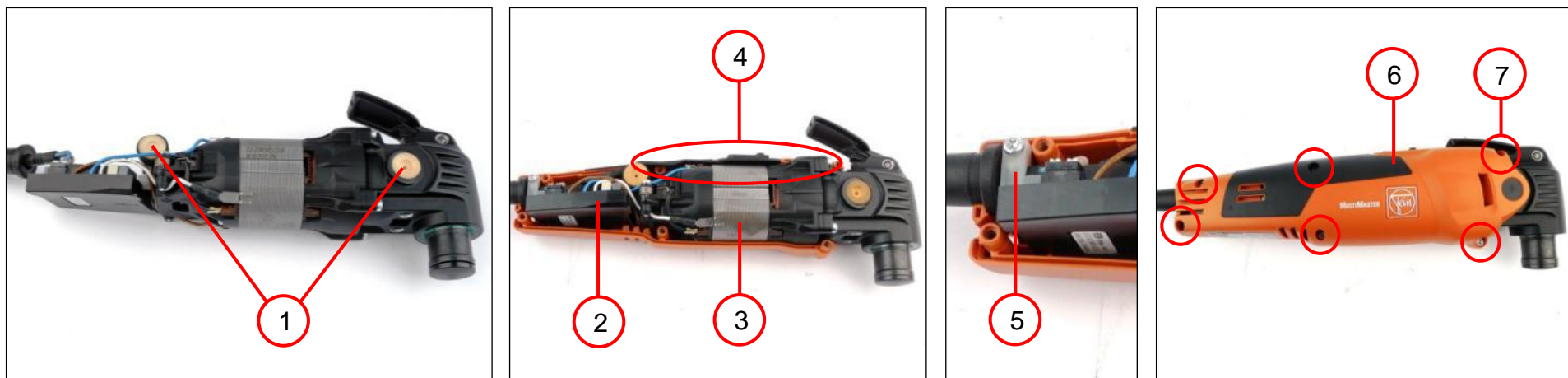
1. Connect three cables (1) to stator.
☞ Refer to chapter 9 Connection diagram.
2. Route cables in the cable guides (2) provided for them.
☞ Ensure that the carbon brush's cable can move (3).
3. Press down cable clamps (4) and connect supply cable.
☞ Refer to chapter 9 Connection diagram.

Tools:

- Screwdriver (small)

7. Assembly

Assembling motor housing



1. Press four pressure pieces (1) into cut-outs.
2. Place electronics (2), tool head with field coil (3) and slide switch (4) in motor housing.
3. Insert grommet and fit cable clamping piece (5) [$1.5 \pm 0.1 \text{ Nm}$].
4. Close motor housing (6) and screw down with six screws (7) [$1.5 \pm 0.1 \text{ Nm}$].

Tools:

- Torx T15



8. Connection diagram

Anschlussplan

Connection diagram

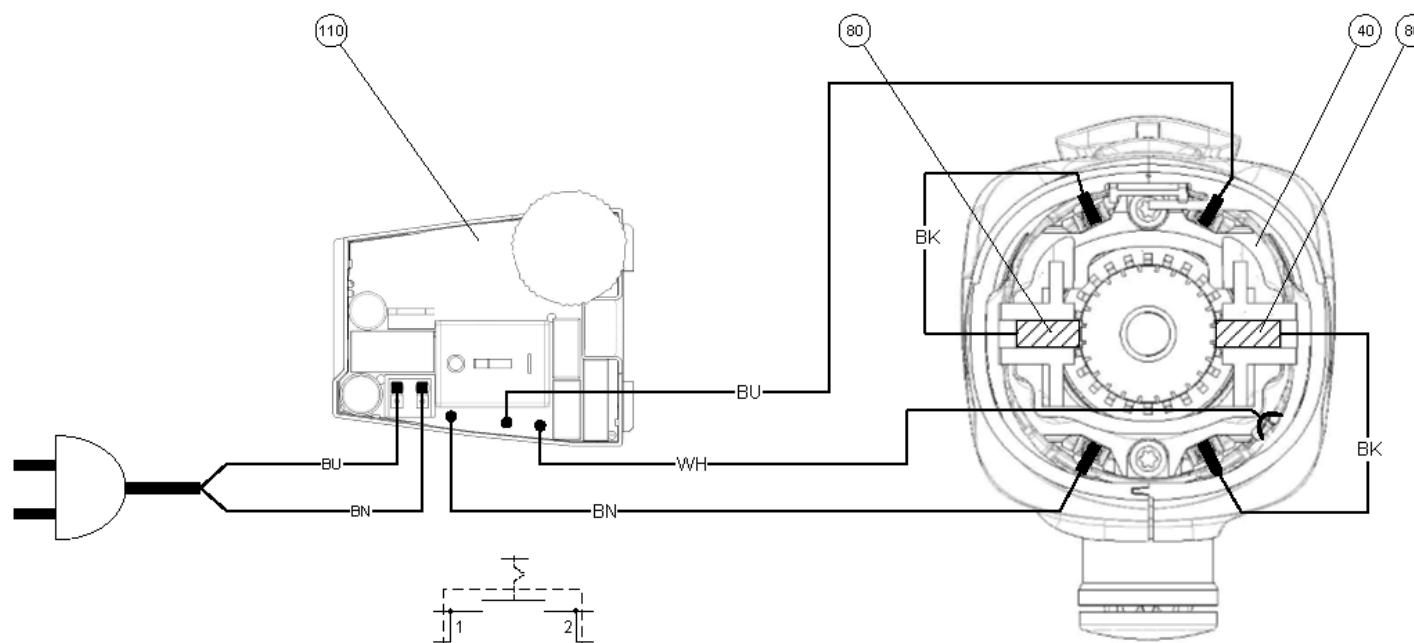
Esquema de conexiones

Schéma de connexion

Схема соединений

接线图

7 229 42 – FMM350 Q	100V - 110V/220V - 230V	50/60Hz
7 229 46 – FSC500 Q	100V - 110V/220V - 230V	50/60Hz
7 229 47 – FSC500	100V - 110V/220V - 230V	50/60Hz
7 229 48 – FSC1.7 Q	100V - 110V/220V - 230V	50/60Hz
7 229 49 – FSC1.7	100V - 110V/220V - 230V	50/60Hz
7 229 50 – FMM350 Q	100V - 110V/220V - 230V	50/60Hz



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