

BSS 1.6E, BSS 1.6CE

Repair instructions



BSS 1.6E



BSS 1.6CE





Contents

- 1. Models described**
- 2. Technical data**
- 3. Notes and requirements**
- 4. Tools required**
- 5. Lubricants and auxiliary substances required**
- 6. Disassembly**
- 7. Assembly**
- 8. Troubleshooting**
- 9. Connection diagram**

Es wurden keine Einträge für das Inhaltsverzeichnis gefunden.

BSS 1.6E, BSS 1.6CE



1. Models described

These instructions describe how to repair the following models:

Model	Order number
BSS 1.6E	7 230 31 00 23 0
BSS1.6CE	7 230 32 00 23 0



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

Hex key	2.5mm; 4mm
Plastic mallet	
Torx screwdriver	T15
Slotted screwdriver	
Slotted screwdriver (small)	
Phillips head screwdriver	
Circlip pliers	
Punch	
Arbor press	
Sleeves	6mm internal Ø 7mm internal Ø
Ball bearing support	19mm; 26mm

Special tool

Drawing-off socket cap	6 41 04 150 00 8
16mm chuck cone	6 41 07 016 00 1
19mm chuck cone	6 41 07 019 00 1
26mm chuck cone	6 41 07 026 00 0
Press-in fixture	6 41 22 108 00 0
Hook	6 41 22 108 00 0



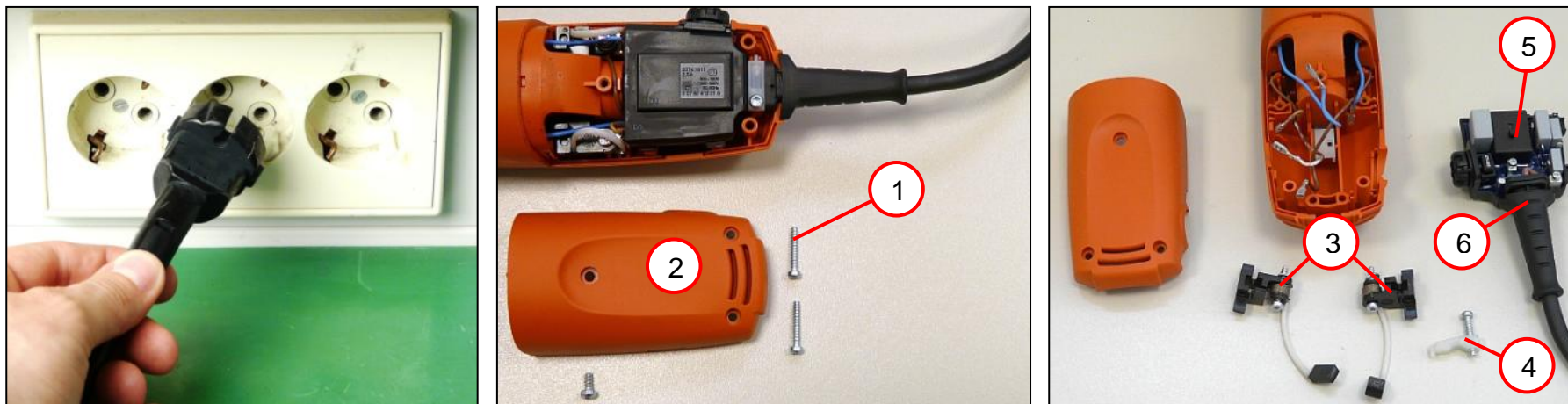
5. Lubricants and auxiliary substances required

Lubricants

Grease	0 40 101 0100 4	12 g	Gearbox
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6. Disassembly

Disassembling the motor



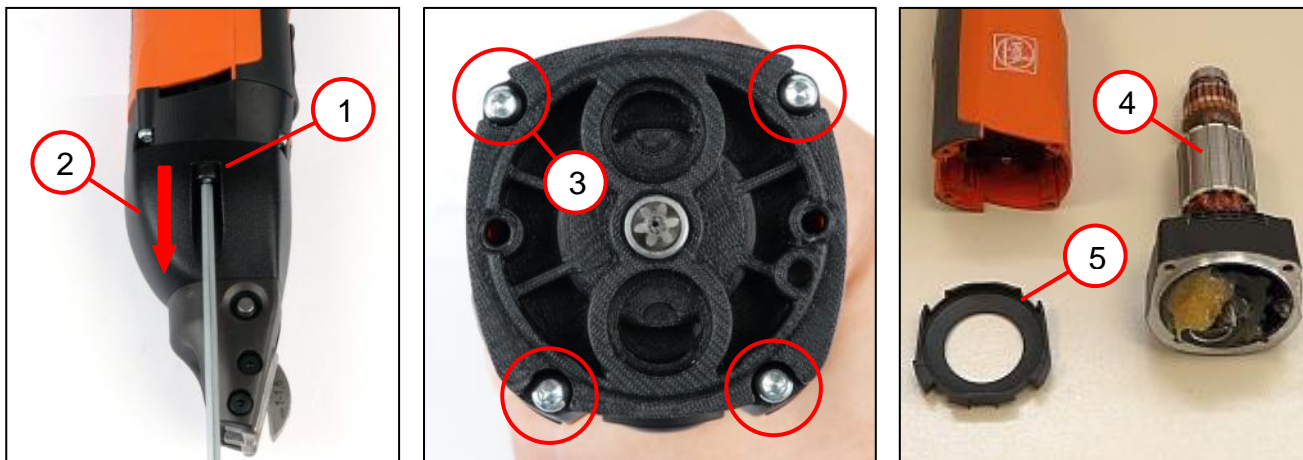
1. Pull the plug.
2. Remove the three screws (1) and take off the cover (2).
3. Unscrew the brush holder (3).
4. Unscrew the cable clamping piece (4).
5. Unplug the screw connections between the motor and electronics.
6. Remove the electronics (5).
7. Disconnect the supply cable (6).

Tool:

- Phillips head screwdriver
- Torx T15

6. Disassembly

Separating the motor and gearbox



1. Unscrew the two cylinder head screws (1).
2. Remove the shear head (2).
3. Unscrew the four screws (3).
4. Remove the intermediate flange with armature (4).
5. Remove the air guide ring (5).

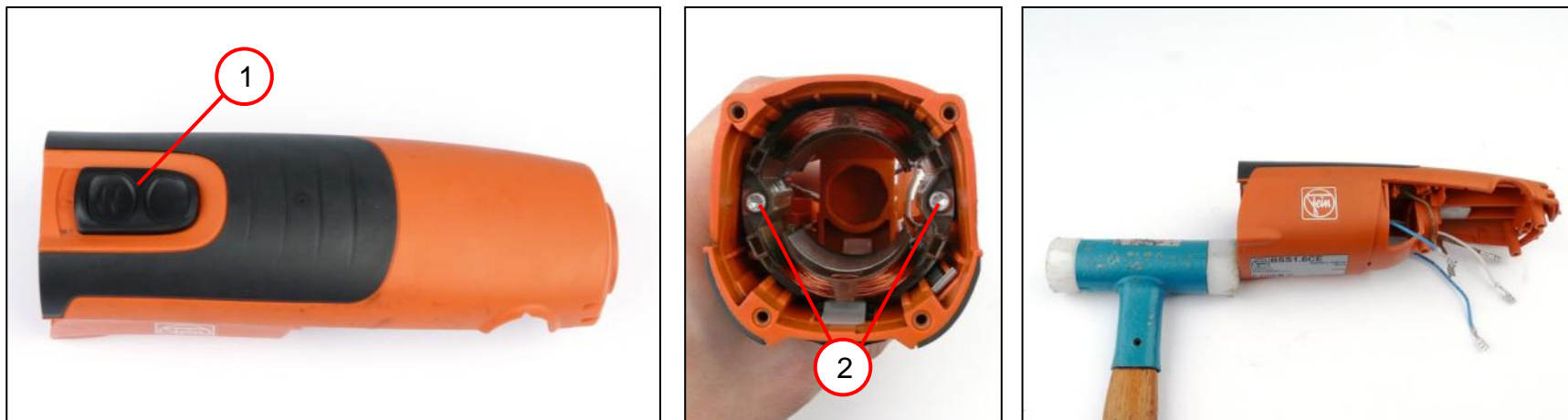
Tool:

- 4mm hex key
- Torx T15



6. Disassembly

Disassembling the stator



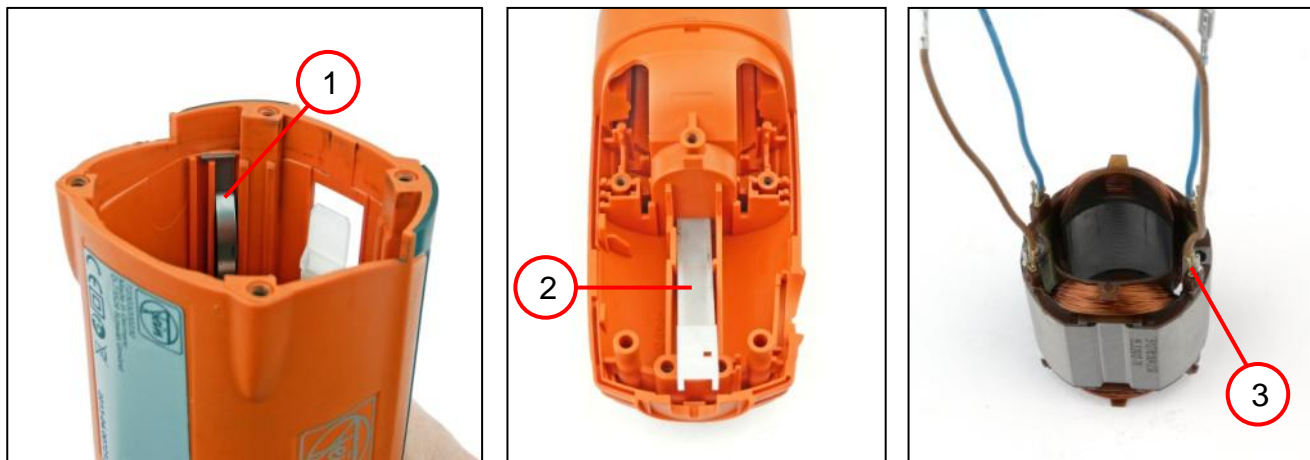
1. Lift up the slide switch (1) with a slotted screwdriver.
2. Unscrew the two screws (2).
3. Drive the field coil out of the motor housing by tapping it gently with the mallet.

Tool:

- Slotted screwdriver
- Torx T15
- Plastic mallet

6. Disassembly

Disassembling the stator

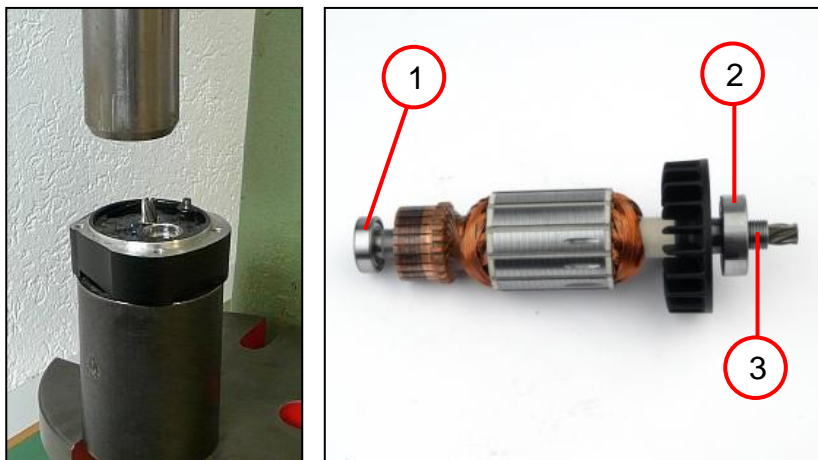


1. Remove the contact spring (1).
2. Remove the control rod (2).
3. Disconnect the four cables (3) from the stator.



6. Disassembly

Disassembling the armature and intermediate bearing



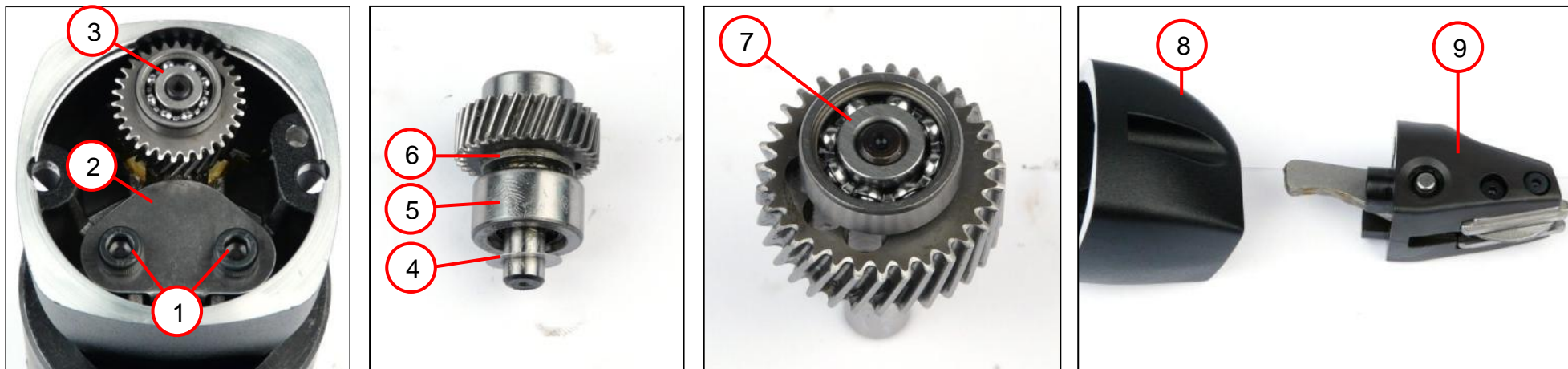
1. Press the armature out of the intermediate bearing.
2. Pull off the grooved ball bearing (1).
3. Remove the grooved ball bearing (2) with the sealing ring (3).

Tool:

- Arbor press
- 26mm, 19mm chuck cone
- Drawing-off socket cap

6. Disassembly

Disassembling the gearbox



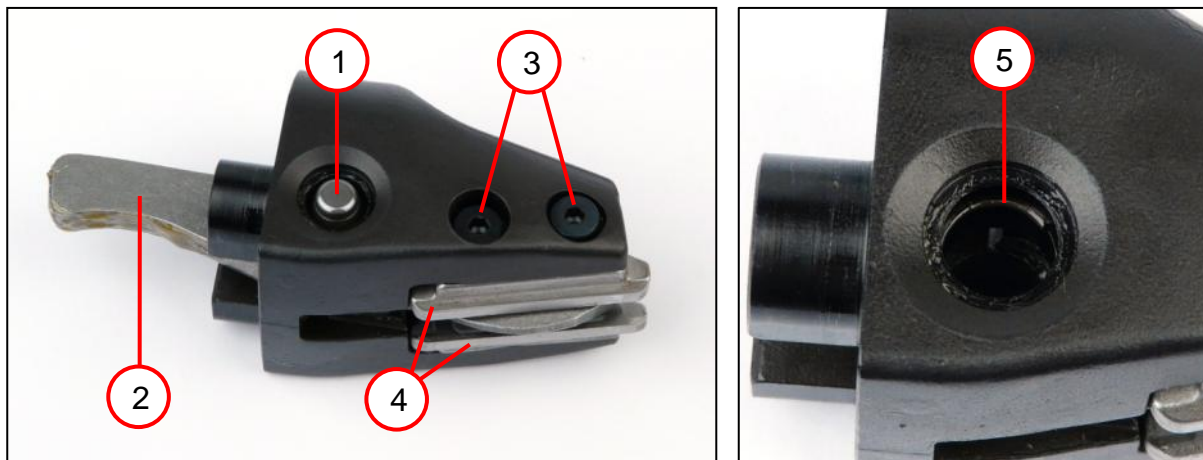
1. Remove the two cylinder head screws (1).
2. Remove the leaf springs (2).
3. Remove the eccentric shaft (3).
4. Remove the two shims (4 and 6) and the roller (5) from the eccentric shaft.
5. Remove the grooved ball bearing (7) with a drawing-off socket cap from the eccentric shaft.
6. Unscrew the tool head (9) from the housing (8).

Tool:

- 4mm hex key
- Drawing-off socket cap
16mm chuck cone

6. Disassembly

Disassembling the tool head (BSS 1.6E)



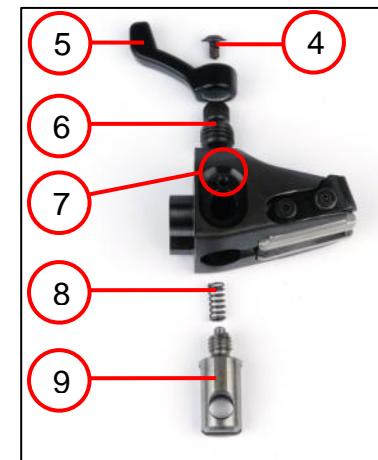
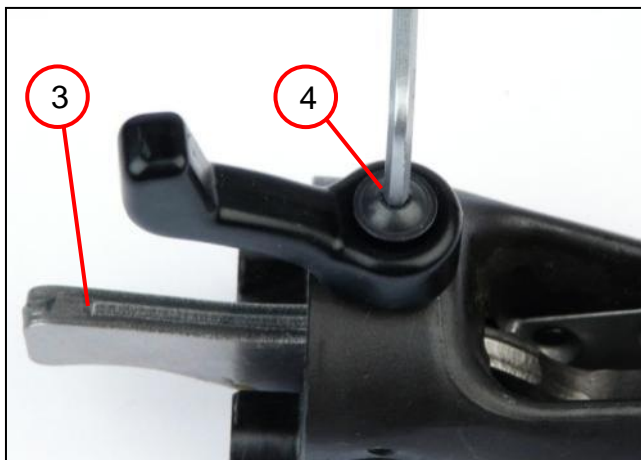
1. Push the bolts (1) out of the gearbox head.
2. Remove the cutter blade (2).
3. Unscrew the four screws (3).
4. Remove the two cutting jaws (4).
5. Remove the two circlips (5) on both sides using a small screwdriver.

Tool:

- Slotted screwdriver (small)
- 2.5mm hex key

6. Disassembly

Disassembling the tool head (BSS 1.6CE)



1. Remove the circlip (1).
2. Remove the bolt (2).
3. Remove the cutter blade (3).
4. Unscrew the fillister head screw (4) and remove the lever (5).
5. Unscrew the screw (6) [left-handed thread].
6. Remove the shift fork (9) and the spring (8).
7. Unscrew the set screw (7).

Tool:

- 2.0mm; 2.5mm hex key
- Circlip pliers



6. Disassembly

Disassembling the tool head (BSS 1.6CE)



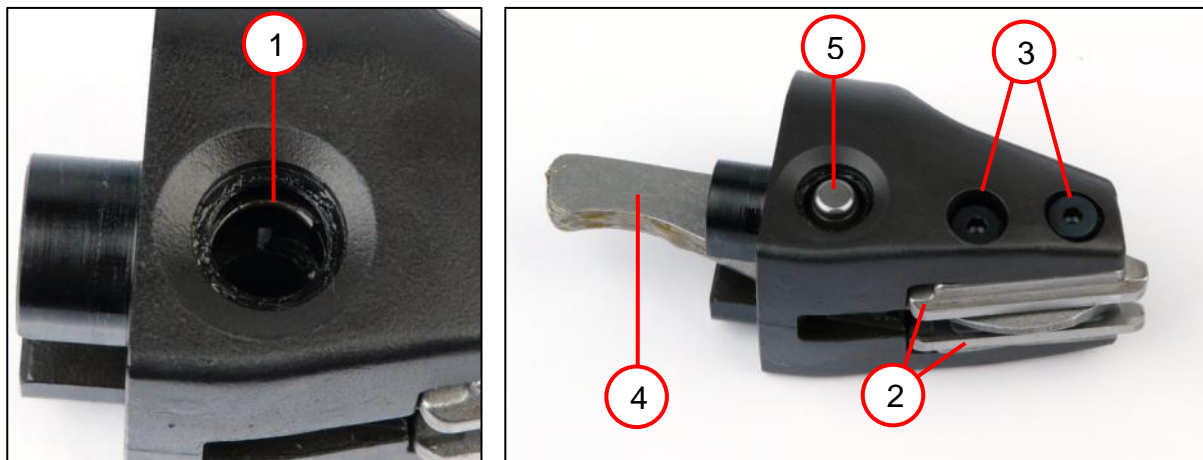
1. Unscrew the four screws (1).
2. Remove the two cutting jaws (2).
3. Remove the chip clipper (3).

Tool:

- 2.5mm hex key

7. Assembly

Assembling the tool head (BSS 1.6E)



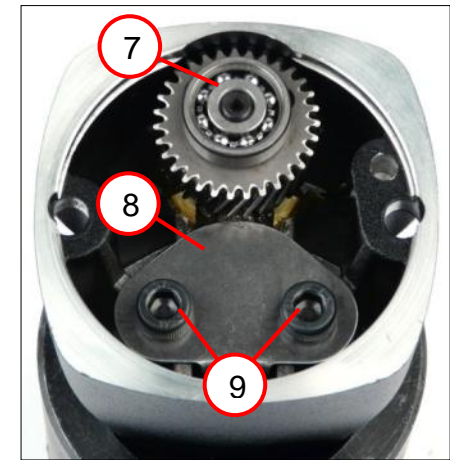
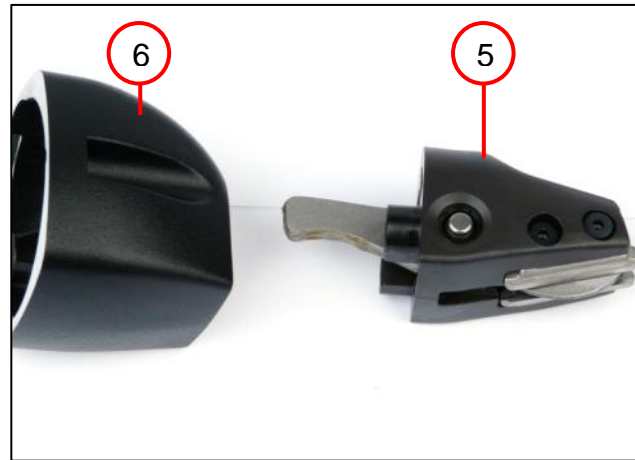
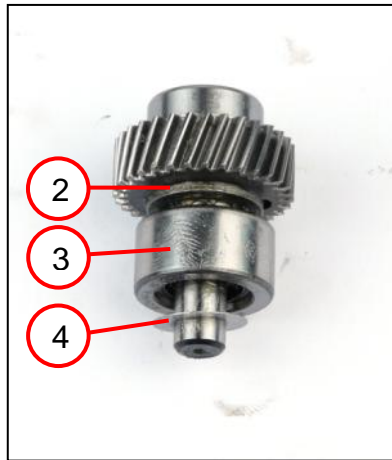
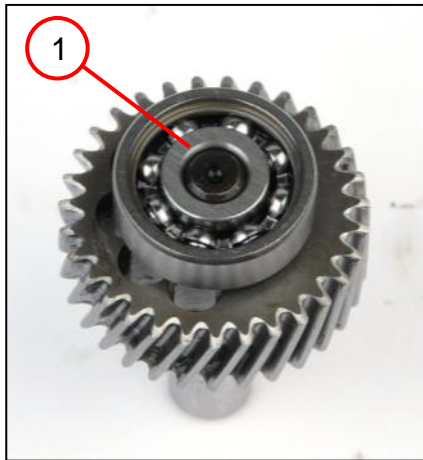
1. Install the two circlips (1) on both sides using a small screwdriver.
2. Attach the two cutting jaws (2) and tighten with two screws (3) each [4.5 Nm].
3. Attach the cutter blade (4).
4. Push the bolts (5) into the gearbox head.

Tool:

- Slotted screwdriver
- 2.5mm hex key

7. Assembly

Assembling the gearbox (BSS 1.6E)



1. Press the grooved ball bearing (1) onto the eccentric shaft.
2. Slide the shim [h = 1.5mm] (2), the needle bearing (3) and the shim [h = 0.15mm] (4) onto the eccentric shaft.
3. Place the tool head (5) onto the housing (6).
4. Insert the eccentric shaft (7) into the housing.
5. Place the leaf spring into the housing and fasten using the two socket head screws (9).
🔧 Tighten socket head screws (9) to a torque of 8 Nm.
6. Fill 12 g of grease into the gearbox housing.

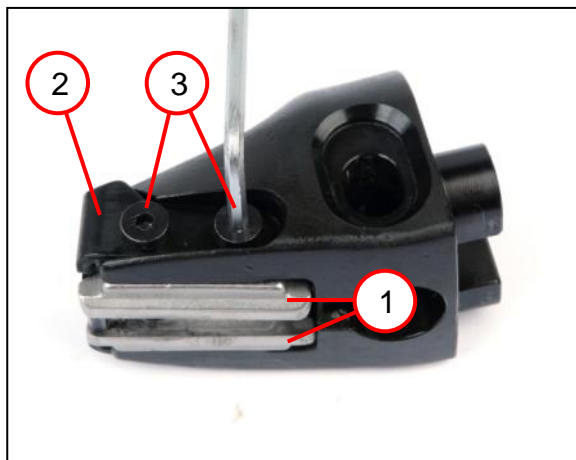
Tool:

- 4mm hex key
- Arbor press
- Sleeve with $\varnothing 6\text{mm}$ interior
- Grease
(0 40 101 0100 4)



7. Assembly

Assembling the tool head (BSS 1.6CE)



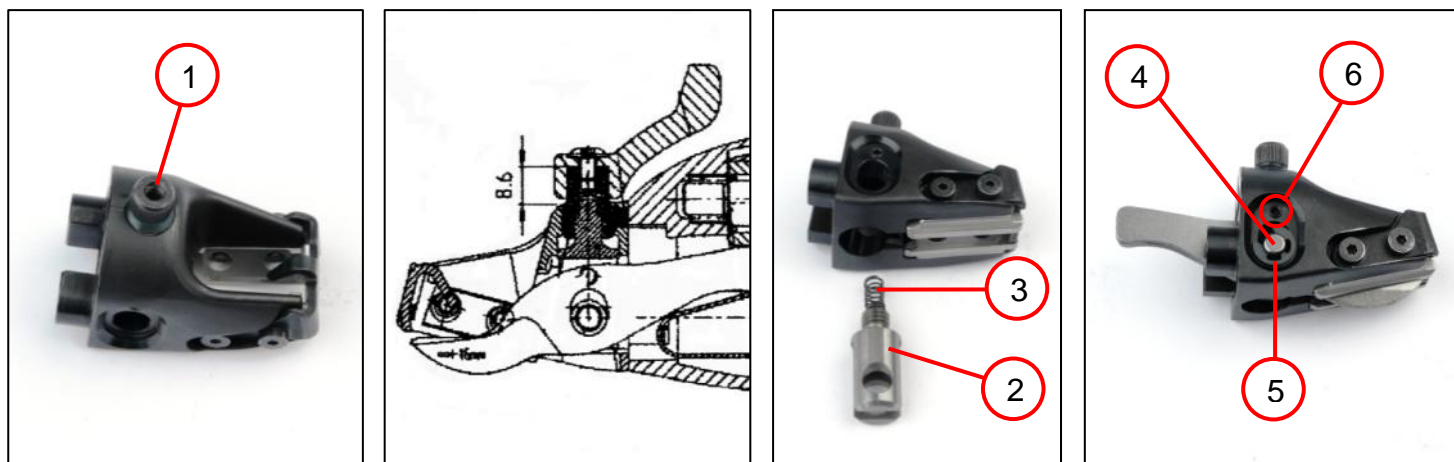
1. Attach the two cutting jaws (1).
2. Install the chip clipper (2).
3. Secure the chip clipper (2) and the cutting jaws (1) with two socket head screws (3) on each of the two sides [4.5 Nm].

Tool:

- 2.5mm hex key

7. Assembly

Assembling the tool head (BSS 1.6CE)



1. Fasten the screw (1) into the tool head from the top [left-handed thread].
 - ☞ Set the knurled screw height to 8.6mm.
2. Place the spiral spring (3) onto the shift fork.
3. Push the two parts into the tool head from below and screw them into the knurled screw.
 - ☞ Only screw in the shift fork far enough so that the bolt (4) can be inserted into the tool head.
4. Insert the bolt (4) into the tool head and secure it on both sides with a circlip (5).
5. Screw the set screw (6) into the tool head.
 - ☞ Only screw it in far enough so that the shift fork can no longer be removed.

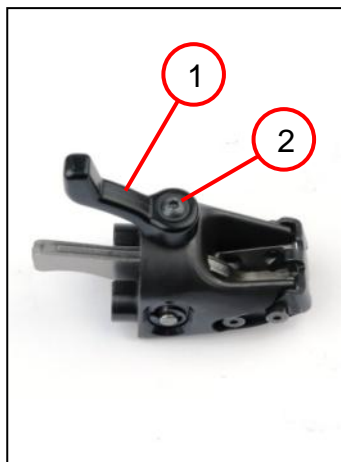
Tool:

- Slotted screwdriver
- 2mm hex key



7. Assembly

Assembling the tool head (BSS 1.6CE)



1. Place the handle (1) on the knurled screw and secure with the fillister head screw (2) [2 Nm] as shown in the image.

Tool:

- 2.5mm hex key

7. Assembly

Assembling the tool head (BSS 1.6CE)



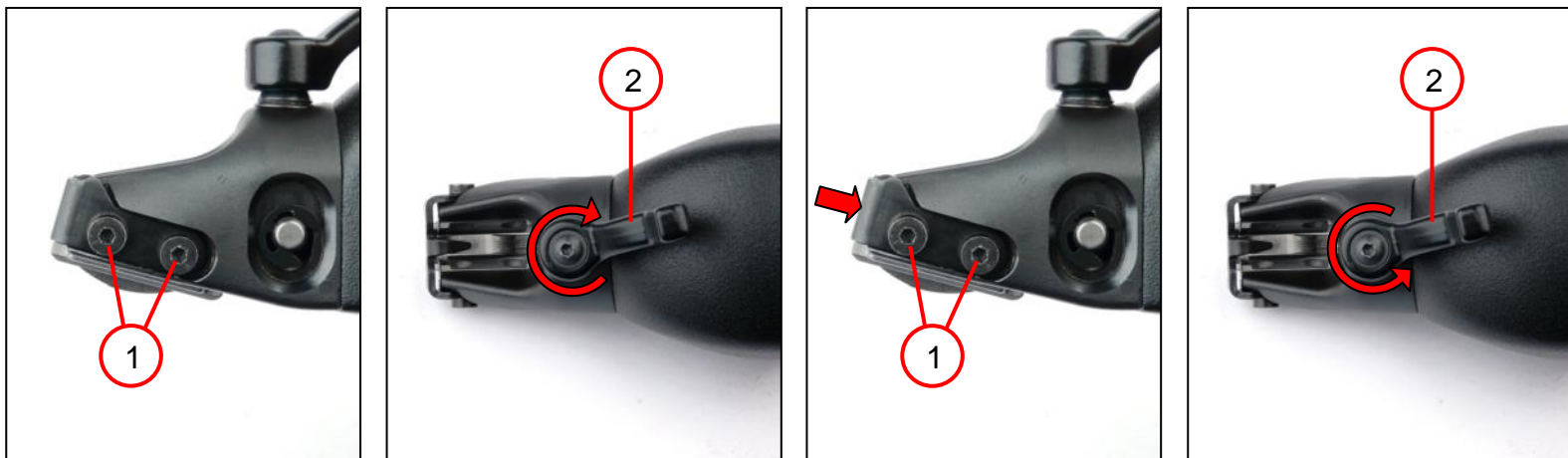
1. Press the grooved ball bearing (1) onto the eccentric shaft.
2. Slide the shim [h = 1.5mm] (2), the needle bearing (3) and the shim [h = 0.15mm] (4) onto the eccentric shaft.
3. Push the tool head (5) into the housing (6).
4. Insert the eccentric shaft (7).
5. Screw the leaf spring (8) with the two cylinder head screws (9) into the housing [8 Nm].
6. Fill 12 g of grease into the gearbox housing.

Tool:

- 4mm hex key
- Arbor press
- Sleeve with $\varnothing 6\text{mm}$ interior
- Grease (0 40 101 0100 4)

7. Assembly

Assembling the gearbox (BSS 1.6CE)



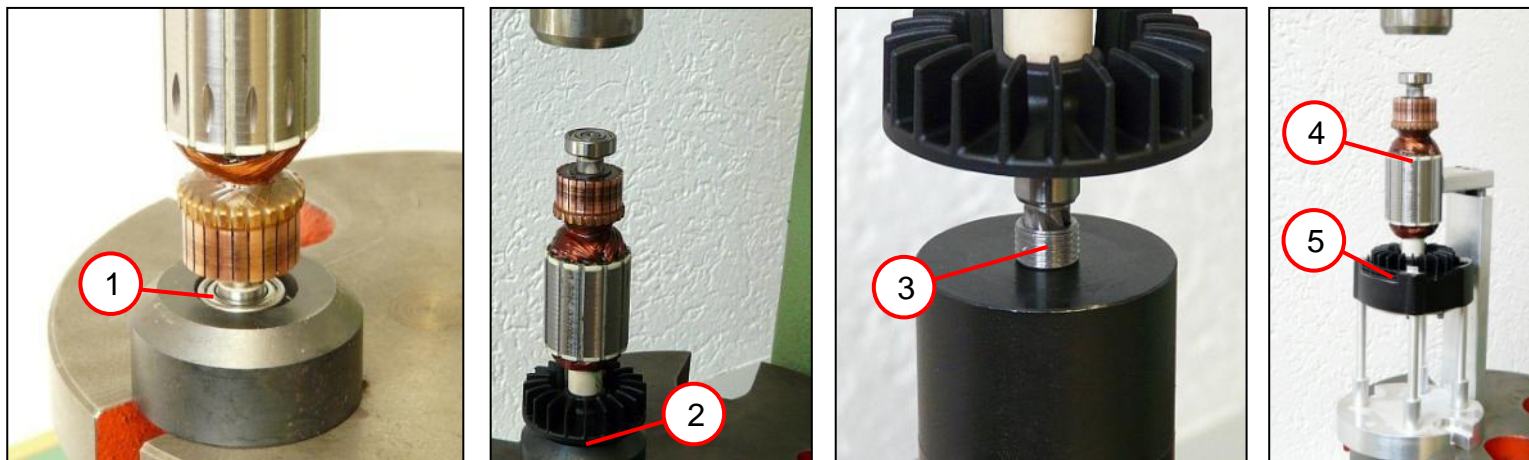
1. Loosen the two socket head screws (1) on both sides of the hand guard.
2. Turn the handle (2) clockwise as far as possible.
3. Slide the hand guard onto the cutter blade.
4. Tighten the two socket head screws (1) on both sides [8 Nm].
5. Turn the handle (2) anti-clockwise as far as possible.

Tool:

- 2.5mm hex key

7. Assembly

Assembling the armature



1. Press the ball bearing (1) onto collector side of the armature.
2. Press the ball bearing (2) onto the side of the fan wheel.
3. Press the sealing ring (3) onto the side of the fan wheel.
4. Press the complete armature (4) into intermediate bearing (5).

Tools:

- Arbor press
- Sleeve: \varnothing Inside 7 mm
- Ball bearing support:
19 mm; 26 mm
- Press-in fixture
6 41 22 108 00 0

7. Assembly

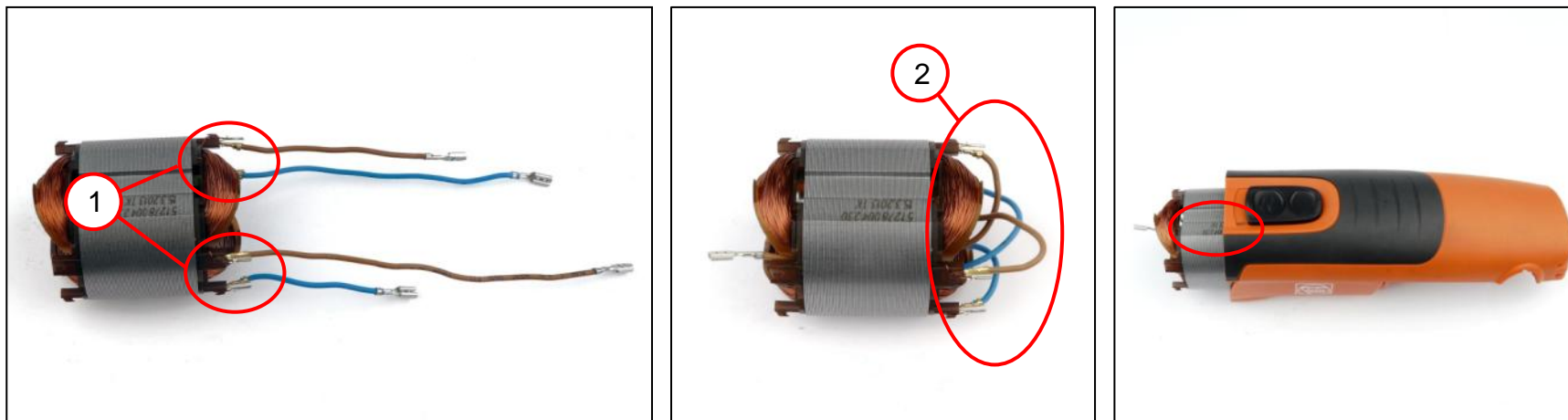
Assembling the stator



1. Slide the control rod (1) into the motor housing from behind.
2. Install the slide switch (2).
3. Position the contact spring (3) in the motor housing.

7. Assembly

Assembling the stator



1. Connect the four cables (1) to the stator, as shown in the first image.
 - ☞ Mind the cable length when connecting.
2. Insert the cables into the inside of the stator (2).
3. Install the stator, as shown in the third image.
 - ☞ Assemble the stator so that the identification number is located on the side of the slide switch.

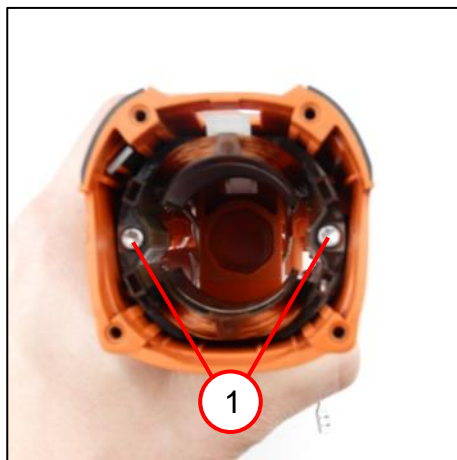
Tool:

- Hook



7. Assembly

Assembling the stator



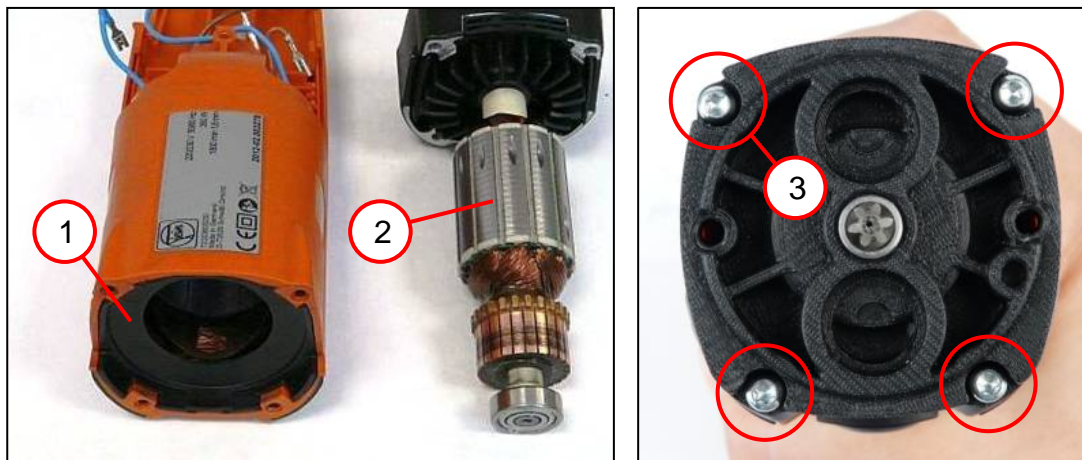
1. Tighten the stator with the two screws (1) [$1.8 \pm 0.1 \text{ Nm}$].

Tool:

- Torx T15

7. Assembly

Assembling the armature



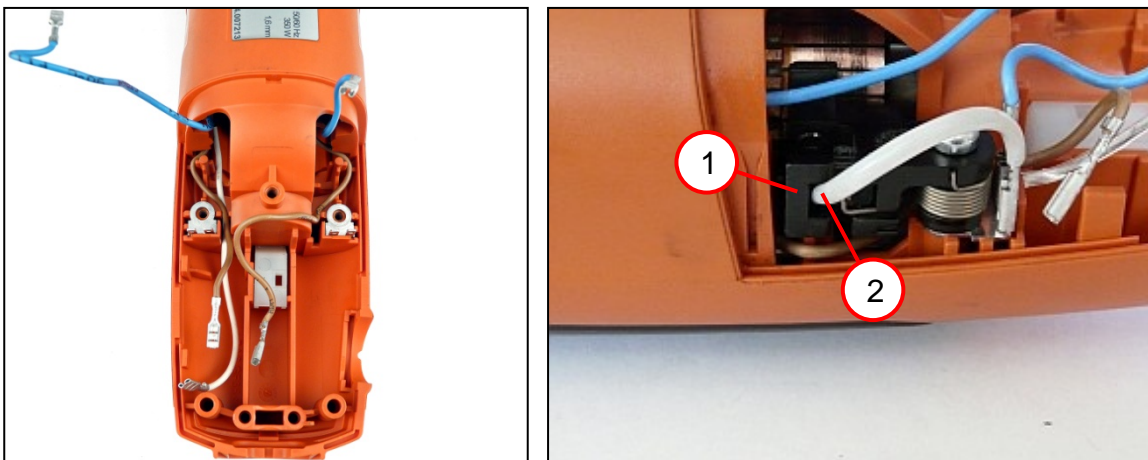
1. Insert the air guide ring (1) into the housing.
2. Insert the armature with intermediate bearing (2) into the motor housing.
3. Fasten the intermediate bearing with the four screws (3) [$1.9 \pm 0.1\text{Nm}$].

Tool:

- Torx T15

7. Assembly

Assembling the stator



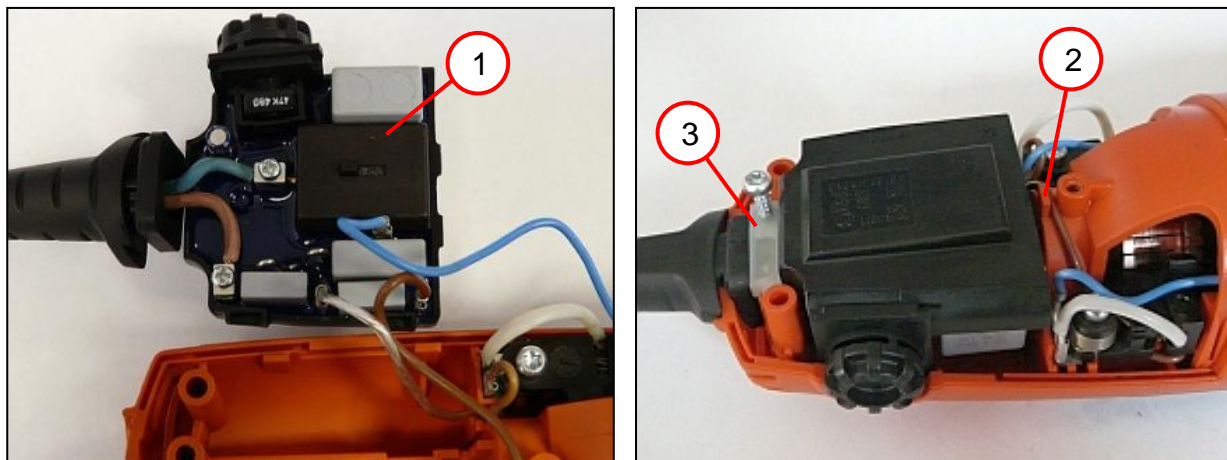
1. Route the cables as shown in the image.
2. Install the brush holder (1) on both sides and insert the carbon brush (2).
 - ☞ Connect the carbon brush and stator according to the connection diagram.

Tool:

- Torx T15

7. Assembly

Assembling the electronics



1. Connect the motor cables and the cable with the plug to the electronics (1).
2. Insert the electronics into the housing (2).
 - ☞ Ensure that the switch engages in the control rod.
3. Fasten the fit strain relief (3) [$0.6 \pm 0.05\text{Nm}$].

Tool:

- Phillips head screwdriver
- Torx T15



7. Assembly

Assembling the electronics



1. Attach and tighten the cover (1) [$1.5 \pm 0.1\text{Nm}$].
2. Make sure the cable is not pinched!

Tool:

- Torx T15



7. Assembly

Assembling the housing with the tool head



1. Attach the housing with the tool head (1) to the intermediate bearing.
2. Fasten the housing with tool head using the two screws (2) [$5 \pm 0.2\text{Nm}$].

Tool:

- 4mm hex key
- Torx T15

BSS 1.6E, BSS 1.6CE



8. Connection diagram

Anschlussplan

Connection diagram

Esquema de conexiones

Schéma connexion

Схема соединений

接线图

7 229 36 – FMM250Q	100V - 110V/ 220V - 230V	50/60Hz	7 230 31 – BSS1.6E	100V - 110V/ 220V - 230V	50/60Hz
7 229 37 – FMM250Q	100V - 110V/ 220V - 230V	50/60Hz	7 230 32 – BSS1.6CE	100V - 110V/ 220V - 230V	50/60Hz
7 229 40 – FMM250	230V	50Hz	7 230 33 – BSS2.0E	100V - 110V/ 220V - 230V	50/60Hz
7 229 43 – FMT250Q	100V - 110V/ 220V - 230V	50/60Hz	7 230 34 – BLS1.6E	100V - 110V/ 220V - 230V	50/60Hz
7 229 44 – FMT250	100V - 110V/ 220V - 230V	50/60Hz	7 230 35 – BLS2.5E	100V - 110V/ 220V - 230V	50/60Hz
			7 232 38 – BLK1.6E	100V - 110V/ 220V - 230V	50/60Hz
			7 232 39 – BLK1.6LE	100V - 110V/ 220V - 230V	50/60Hz
			7 232 40 – BLK2.0E	100V - 110V/ 220V - 230V	50/60Hz
			7 232 41 – BLK1.3TE	100V - 110V/ 220V - 230V	50/60Hz
			7 232 42 – BLK1.3CSE	100V - 110V/ 220V - 230V	50/60Hz

