GSZ4-90EL (7 223 25 ...)

Technical data

Technical data

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

Tests

Up-to-date test data and test instructions after repair can be found on the FEIN Extranet (Customer Service → Repair Guides).

Lubricants / Auxiliary substances

The lubricants or auxiliary substances and their 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

Notes and 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.

GSZ4-90EL

Lubricants and auxiliary substances required

Lubricants

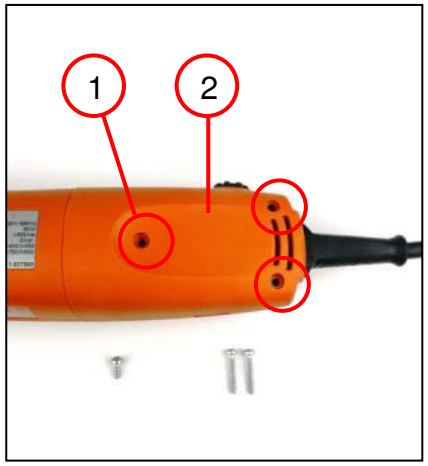
Grease	0 40 101 0100 4	15 g	Housing

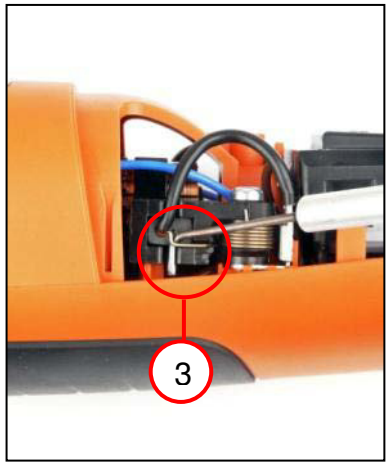
Troubleshooting

Not yet available.

Removal

Removing the motor housing





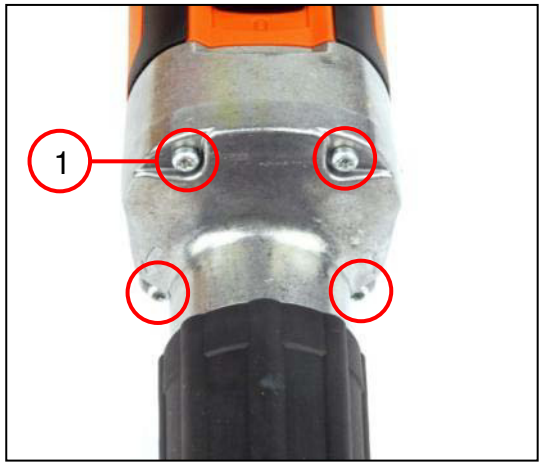
1. Unscrew the three screws (1).
2. Remove the cover (2).
3. Lift up the tension spring from the carbon brush (3) [on both sides].

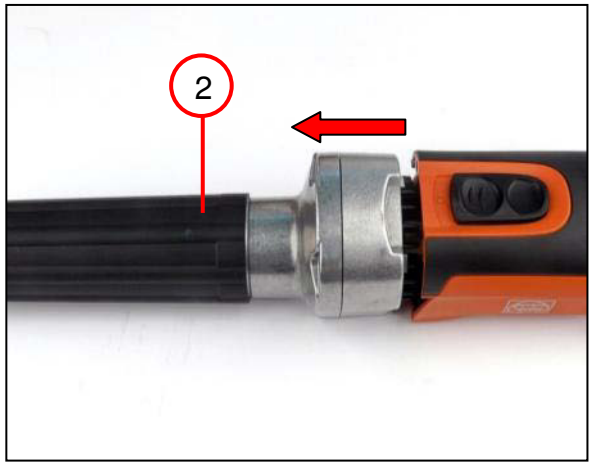
Tools:

- Torx T15
- Assembly aid

Removal

Removing the motor housing





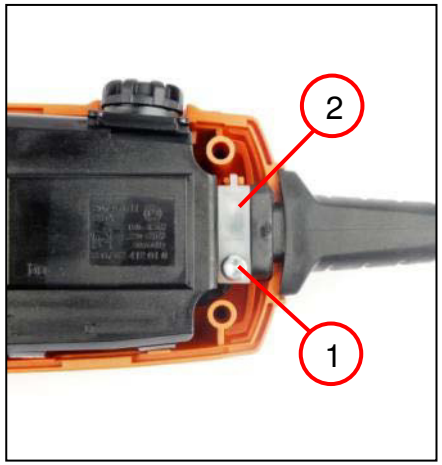
1. Unscrew the four screws (1).
2. Pull the collar bearing (2) with intermediate gearbox out of the housing.

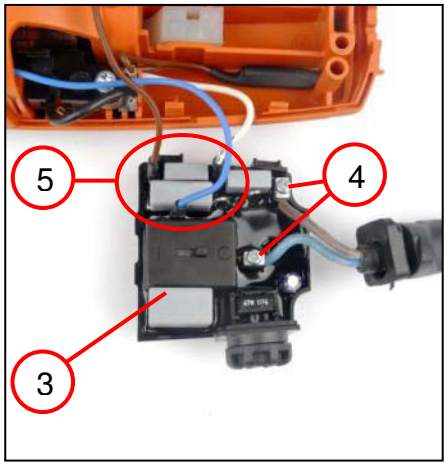
Tools:

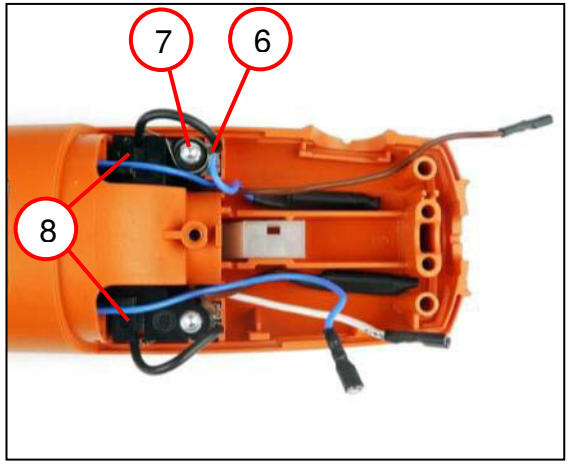
- Torx T15

Removal

Removing the electronics







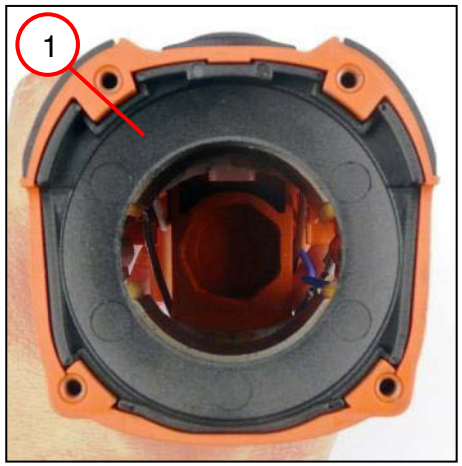
1. Unscrew the screw (1).
2. Remove the cable clamping piece (2).
3. Take out the electronics (3).
4. Loosen the two screws (4) and remove the two cables.
5. Pull off the cables (5).
6. Pull the cables (6) off the connector [on both sides].
7. Unscrew the screw (7) on the brush holder [on both sides].
8. Remove the brush holder (8) and the connector [on both sides].

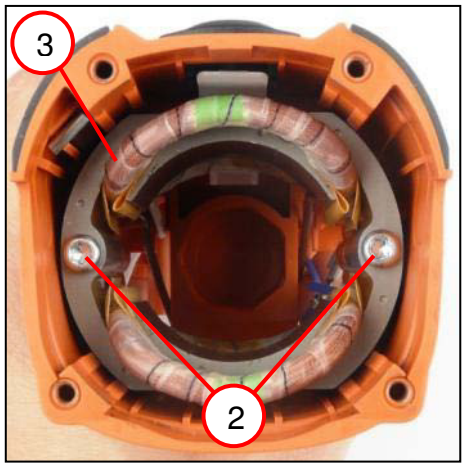
Tools:

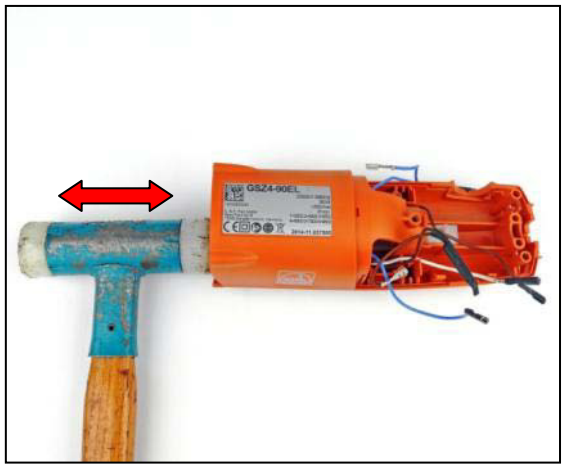
- Torx T15
- PH1 cross-tip screwdriver

Removal

Removing the stator







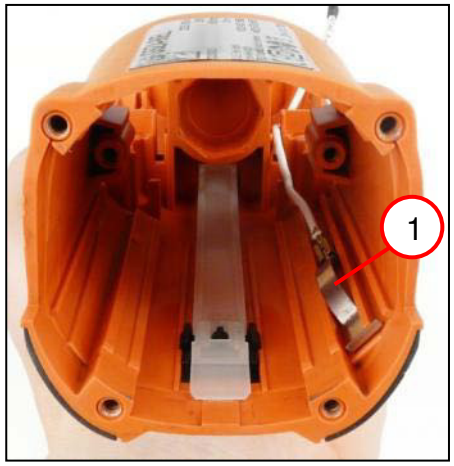
1. Remove the air guide ring (1).
2. Unscrew the two screws (2).
3. Remove the stator (3) from the housing.

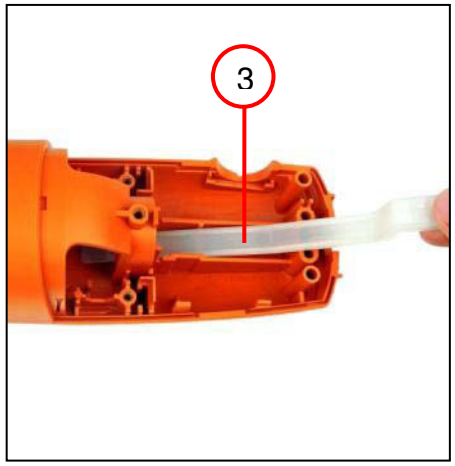
Tools:

- Torx T15
- Plastic hammer

Removal

Removing the slide switch

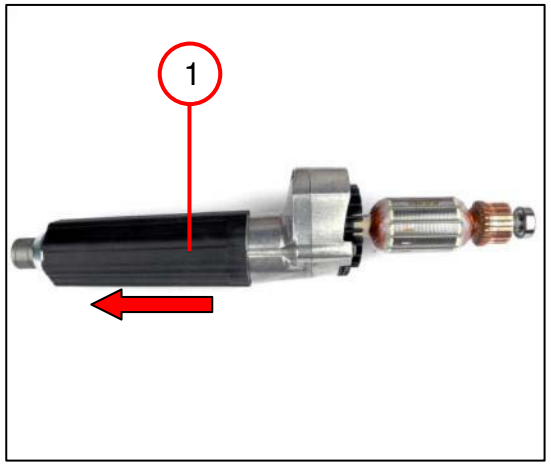




1. Remove the contact spring (1).
2. Remove the slide switch (2).
3. Remove the control rod (3).

Removal

Removing the intermediate gearbox



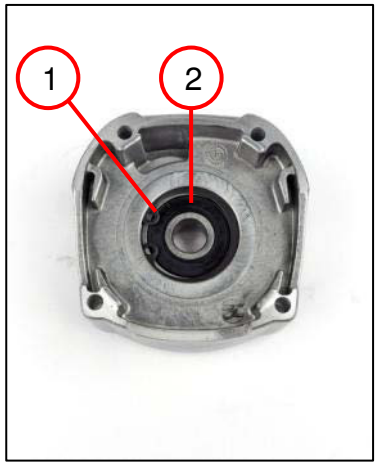
1. Pull the collar bearing (1) off the intermediate gearbox.
2. Remove the protective grille (2).
3. Press the armature out of the intermediate gearbox (3).
4. Remove the sealing ring (4).
   ☞ The sealing ring is destroyed during removal and must be replaced.

Tools:

- Arbor press
- Sleeve
  55 mm inner diameter
  65 mm outer diameter

Removal

Removing the intermediate gearbox



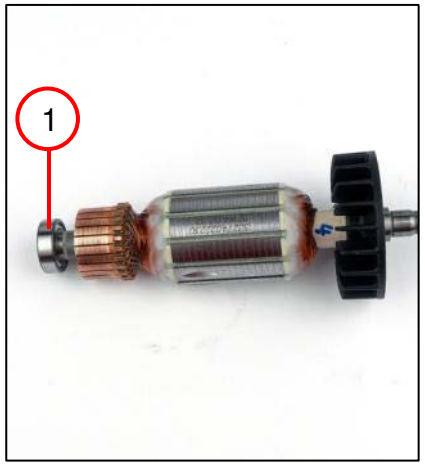
1. Remove the circlip (1).
2. Press out the grooved ball bearing (2).
3. Remove the sealing ring (3).
   ☞ The sealing ring is destroyed during removal and must be replaced.

Tools:

- Circlip pliers
- Punch 12 mm

Removal

Removing the armature

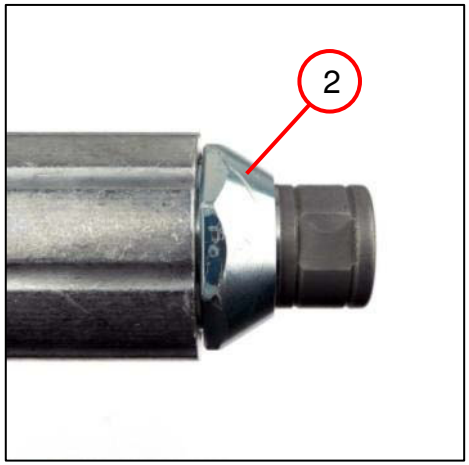


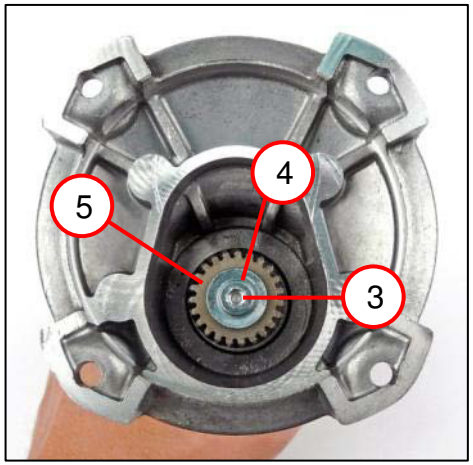
1. Pull the grooved ball bearing (1) off the armature.

Tools:

- Drawing-off socket cap
- Chuck cone 19 mm

Removing the collar bearing



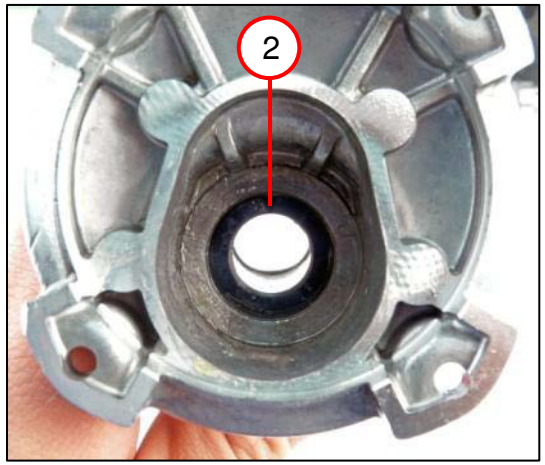


1. Pull off the protective hose (1).
2. Unscrew the sleeve (2) [left-handed thread].
3. Unscrew the screw (3).
4. Remove the disc (4).
5. Remove the gear-wheel (5).
6. Press the shaft (6) out of the collar bearing.

Tools:

- Open-ended spanner 30 mm
- Socket head wrench 3 mm
- Open-ended spanner 17 mm
- Arbor press
- Punch 5 mm

Removing the collar bearing



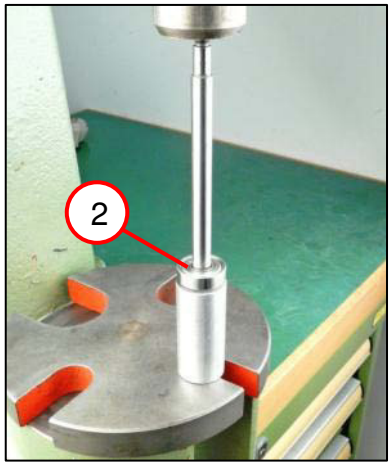
1. Remove the grooved ball bearing (1).
2. Remove the disc (2).

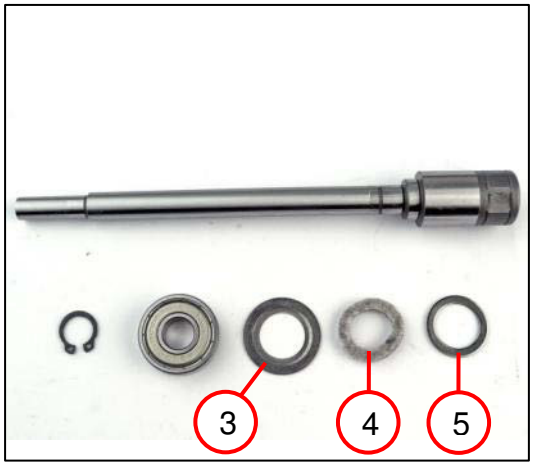
Tools:

- Inner puller
- Slide hammer

Removal

Removing the shaft



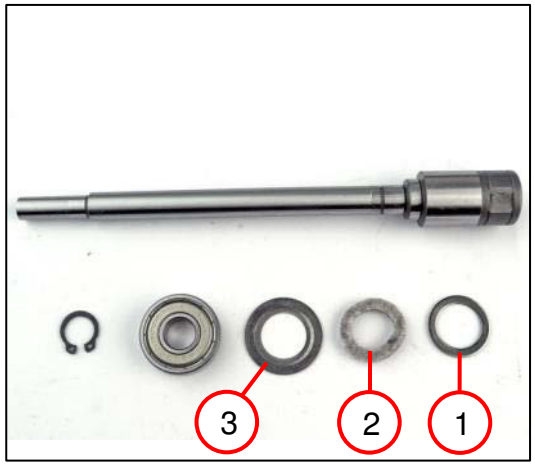


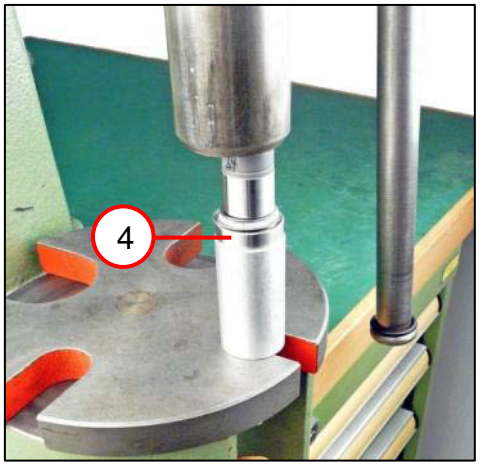
1. Remove the circlip (1).
2. Press off the grooved ball bearing (2).
3. Remove the disc (3).
4. Remove the felt ring (4).
5. Remove the disc (5).

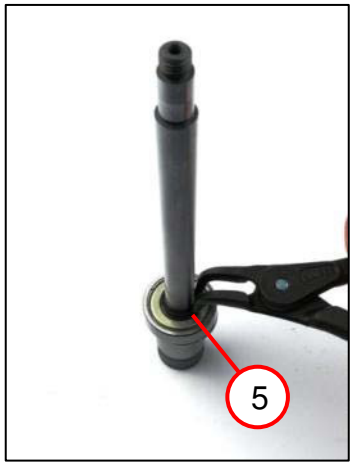
Tools:

- Arbor press
- Sleeve
  21 mm inner diameter
  26 mm outer diameter
- Circlip pliers

Fitting the shaft





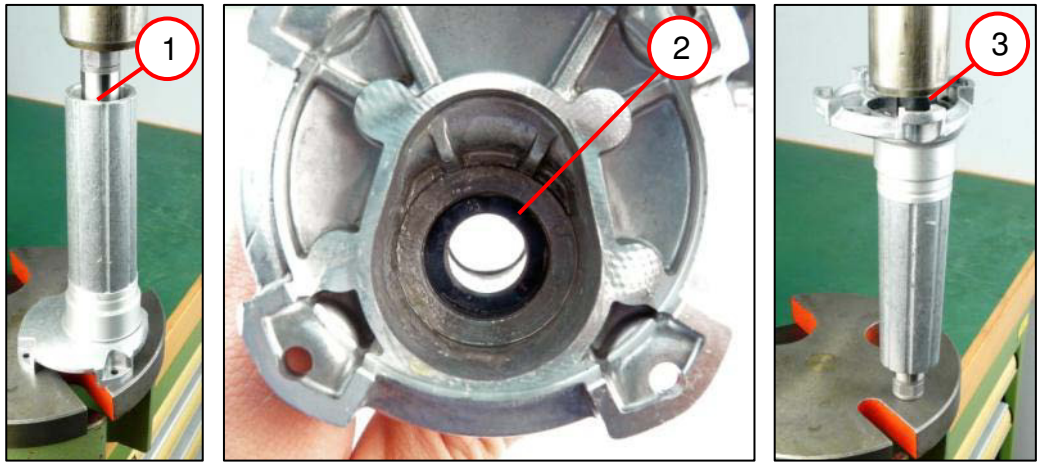


1. Slide the disc (1) onto the shaft.
2. Soak the felt ring (2) in oil.
3. Slide the felt ring (2) onto the shaft.
4. Slide the disc (3) onto the shaft.
5. Press the grooved ball bearing (4) onto the shaft.
6. Fit the circlip (5).

Tools:

- Arbor press
- Sleeve
  11 mm inner diameter
  26 mm outer diameter
- Circlip pliers

Fitting the collar bearing

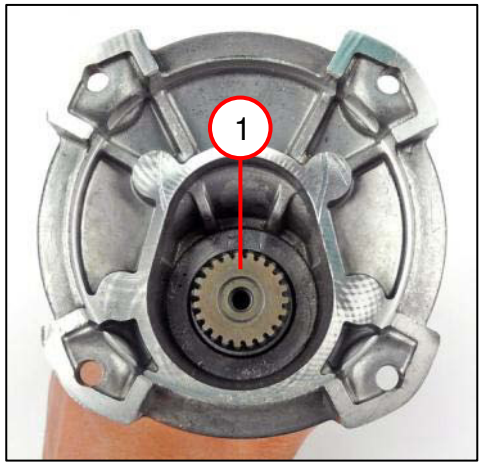


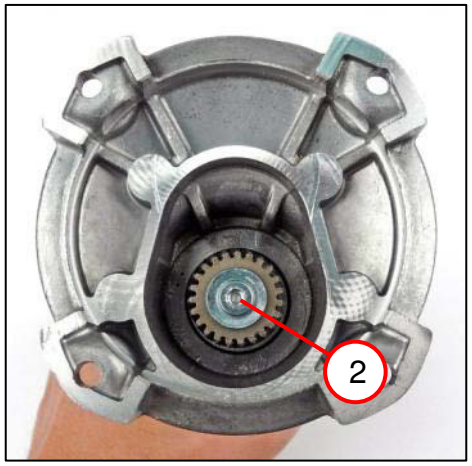
1. Press the shaft (1) into the collar bearing.
2. Insert the disc (2).
3. Press the grooved ball bearing (3) into the collar bearing.

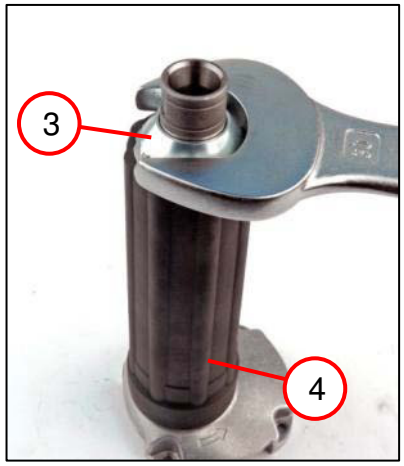
Tools:

- Arbor press
- Sleeve
  9 mm inner diameter
  21 mm outer diameter

Fitting the collar bearing







1. Attach the gear-wheel (1).
2. Fit the disc and screw in the cylinder head screw (2) [$1.2^{+0.2}$Nm].
3. Screw down the sleeve (3) [left-handed thread] [$12^{+1.0}$Nm].
4. Slide the protective hose (4) onto the collar bearing.
5. Fill the collar bearing with 15 g of grease.

Tools:

- Socket head wrench 3 mm
- Open-ended spanner 17 mm
- Open-ended spanner 30 mm

Fitting the armature

1. Press the grooved ball bearing (1) onto the armature.

Tools:

- Arbor press
- Sleeve
  8 mm inner diameter
  19 mm outer diameter

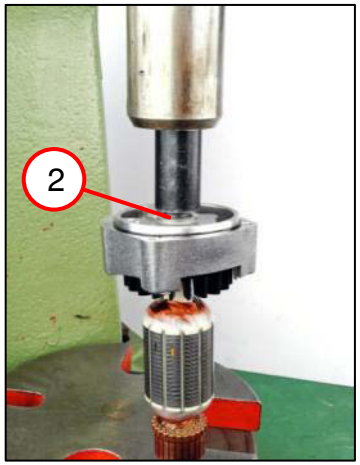
Fitting the intermediate gearbox

1. Coat the sealing ring (1) with oil.
2. Place the sealing ring (1) in the recess.
   ☞ Use a new sealing ring during each fitting.
3. Press the grooved ball bearing (2) into the intermediate gearbox.
4. Fit the circlip (3).

Tools:

- Arbor press
- Sleeve
  10 mm inner diameter
  25 mm outer diameter
- Sleeve
  55 mm inner diameter
  65 mm outer diameter
- Circlip pliers

Fitting the armature



1. Press the armature into the intermediate gearbox (1).
2. Press the sealing ring (2) onto the armature.
3. Place the sealing ring (3) on the intermediate gearbox.
   ☞ Use a new sealing ring during each fitting.
4. Insert the protective grille (4) into the intermediate gearbox.

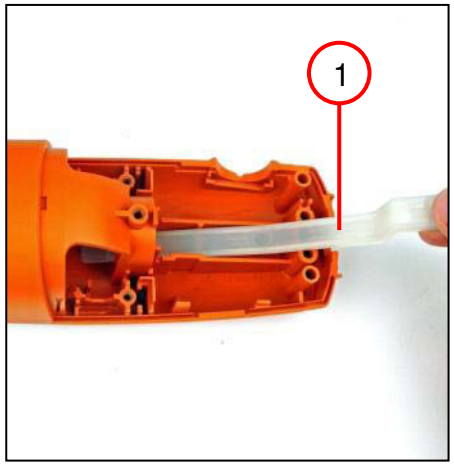
Tools:

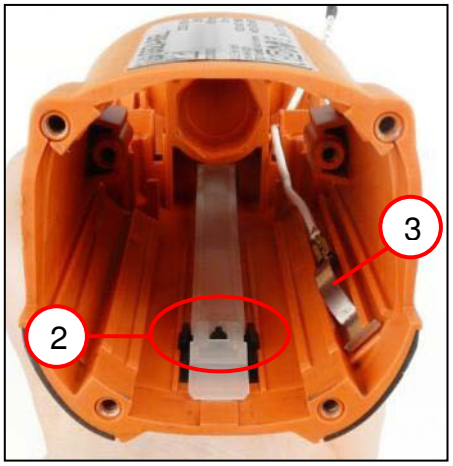
- Arbor press
- Sleeve
  55 mm inner diameter
  65 mm outer diameter
- Sleeve
  8 mm inner diameter
  13 mm outer diameter

Fitting the collar bearing

1. Fit the collar bearing on the intermediate gearbox.

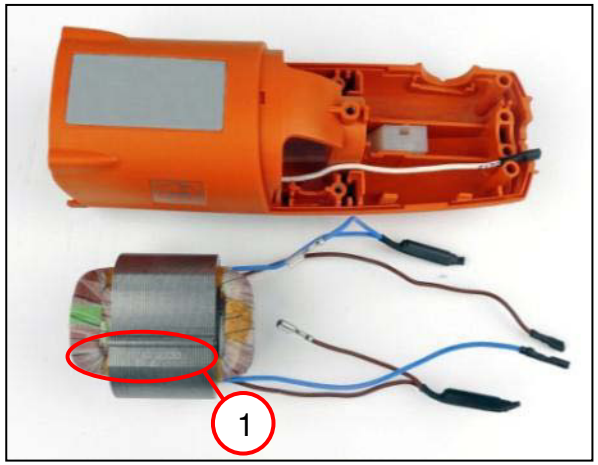
Fitting the slide switch

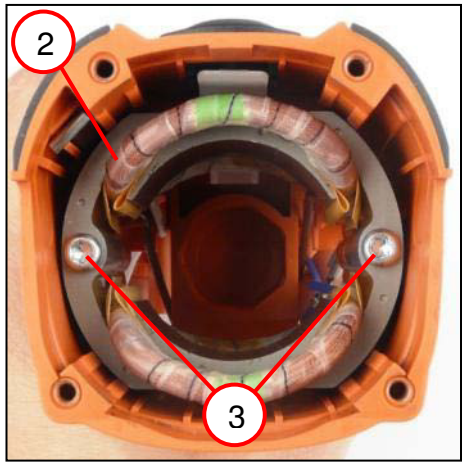


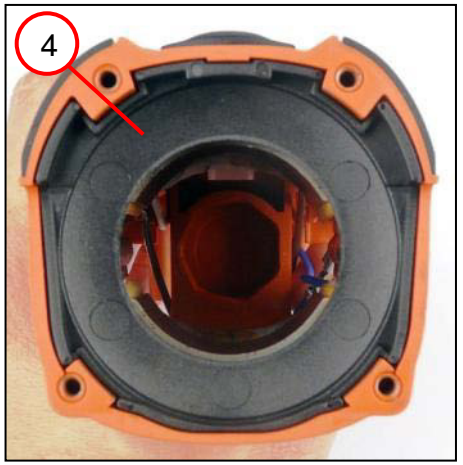


1. Slide the control rod (1) into the motor housing.
2. Clip the slide switch (2) into the control rod.
3. Insert the contact spring (3).

Removing the motor





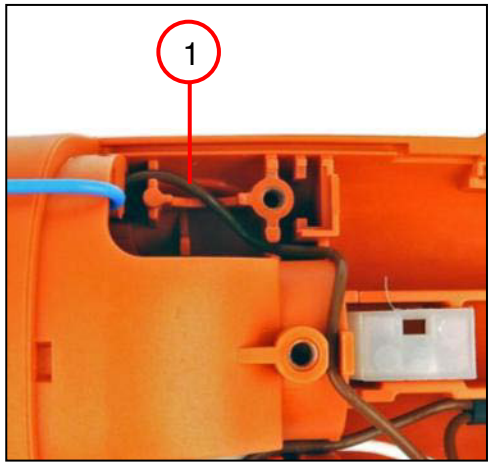


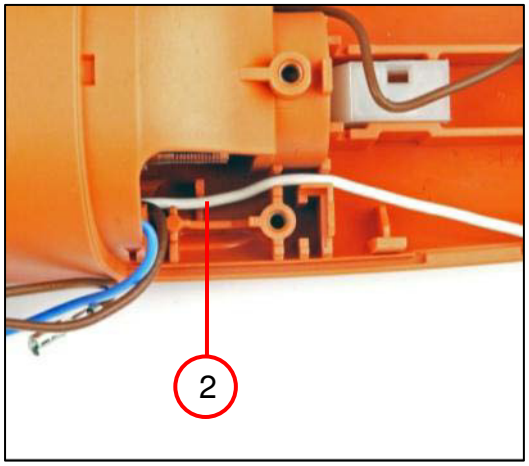
1. Insert the stator (2) into the motor housing in the correct position.
   - ☞ Use the ID number (1) to align the stator.
   - ☞ The ID number (1) is located on the side of the type plate.
2. Secure the two screws (3) [$1.8^{\pm 0.1}$ Nm].
3. Insert the air guide ring (4) in the correct position.

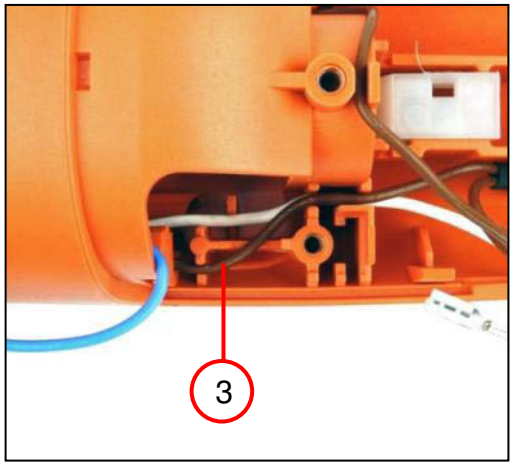
Tools:

- Torx T15

Routing the cables

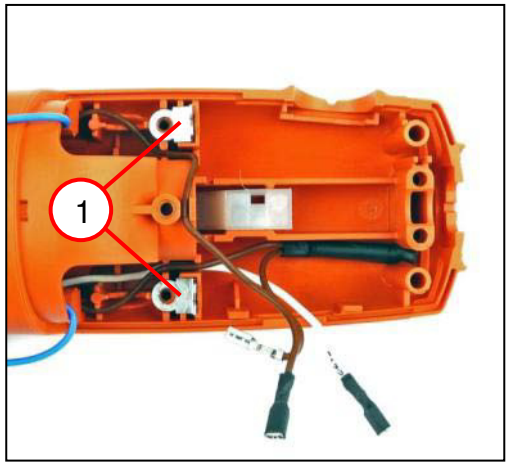


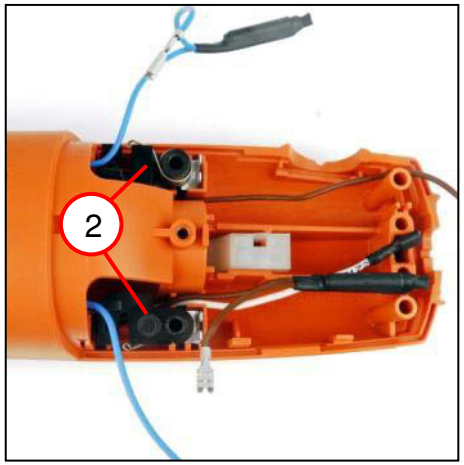


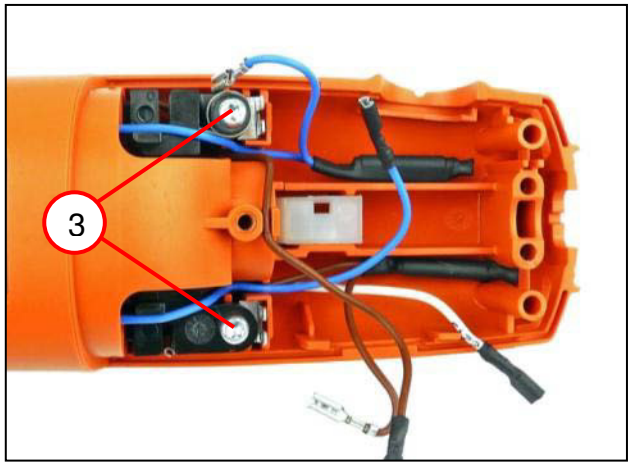


1. Route the cable (1).
2. Route the cable (2).
3. Route the cable (3).

Fitting the brush holder







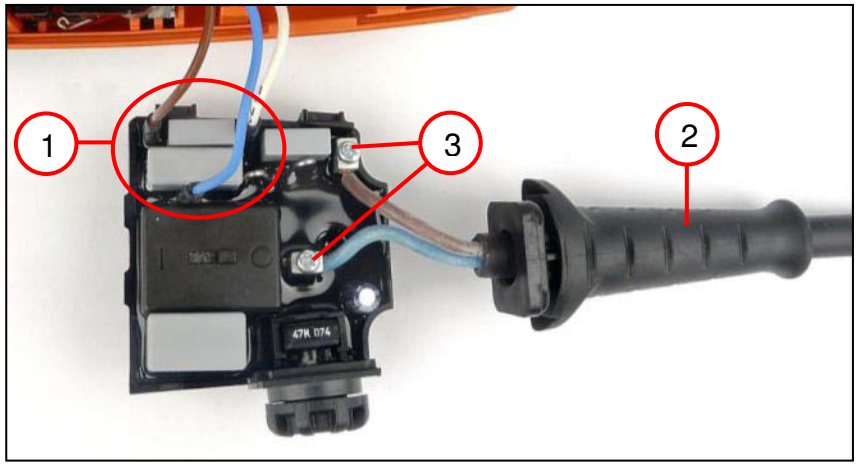
1. Insert the two connectors (1).
2. Insert the two brush holders (2).
3. Screw in the two screws (3) [$1.5^{+0.2}$ Nm].
4. Connect the cables with chokes to the connectors as shown in the connection diagram.
5. Route the cables with chokes.

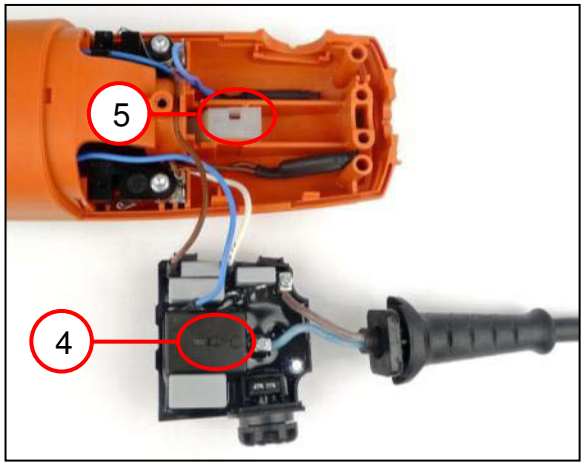
Tools:

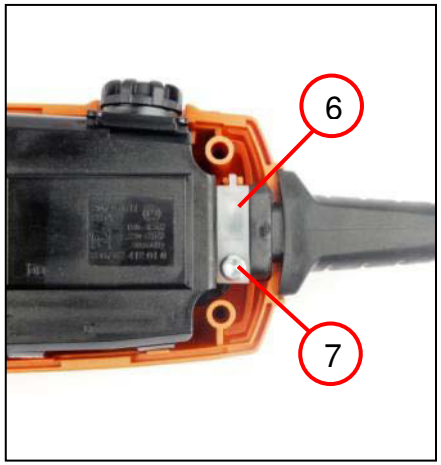
- Torx T15

Fitting

Fitting the electronics





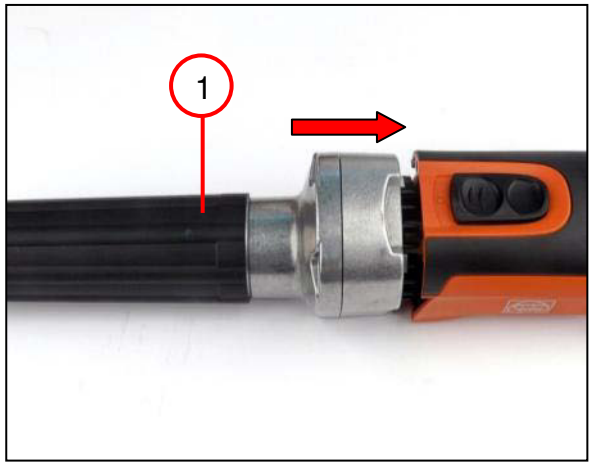


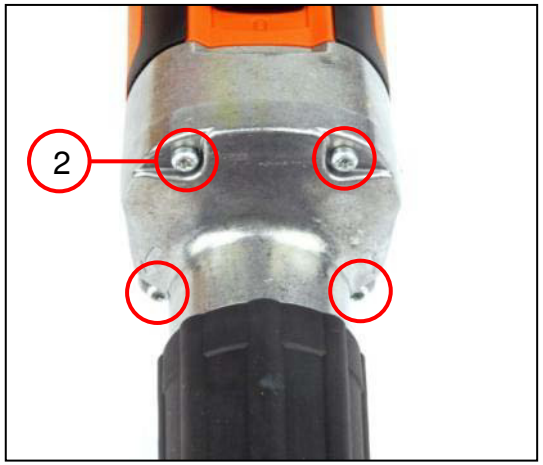
1. Connect the three cables (1) as shown in the connection diagram.
2. Slide the protective hose (2) over the cable.
3. Connect the cable with plug (3) to the electronics as shown in the connection diagram.
4. Insert the electronics into the motor housing.
   ☞ Insert the switch (4) into the recess (5).
5. Fit the cable clamping piece (6).
6. Screw in the screw (7) [$1.5^{+0.2}$ Nm].

Tools:

- PH2 cross-tip screwdriver
- Torx T15

Fitting the collar bearing





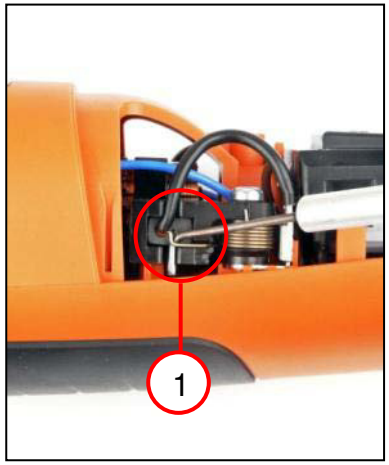
1. Attach the collar bearing (1) with the intermediate gearbox to the motor housing.
2. Screw in the four screws (2) [$1.8^{\pm 0.1}$ Nm].

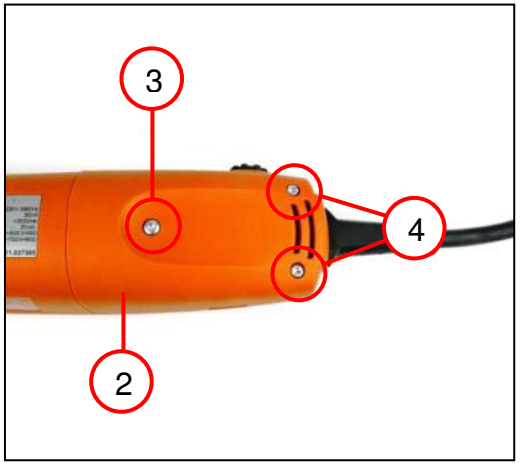
Tools:

- Torx T15

Fitting

Fitting the cover





1. Insert the carbon brush (1) [on both sides].
2. Connect the carbon brush to the connector as shown in the connection diagram [on both sides].
3. Put the tension spring (1) on the brush holder onto the carbon brush [on both sides].

PLEASE NOTE:
Make sure that the cables are not crushed when attaching the cover.

4. Attach the cover (2).
5. Screw in the screw [40x8] (3) [$1.5^{+0.1}$ Nm].
6. Screw in the screw [35x20] (4) [$1.5^{+0.1}$ Nm].

Tools:

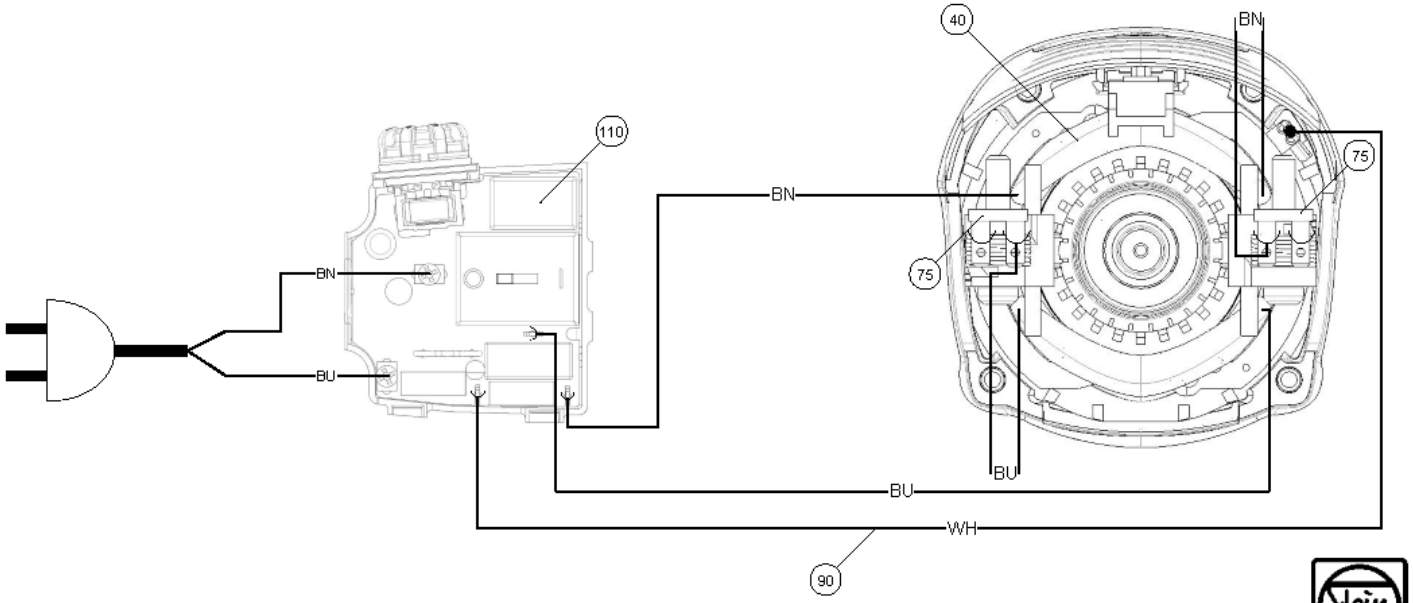
- Assembly aid
- Torx T15

GSZ4-280EL; GSZ4-90EL

Connection diagram

Anschlussplan
Connection diagram
Esquema de conexiones
Schéma de connexion
Схéма соединéний
接线图

7 223 24 – GSZ4-280EL 100V - 110V/ 220V - 230V 50/60Hz
7 223 25 – GSZ4-90EL 100V - 110V/ 220V - 230V 50/60Hz



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25.09.2014