Repair instructions

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1. Models described

These instructions describe how to repair the following models:

Model	Order no.
KBM 65 U	7 270 43 00 23 0
JCM 256U	7 270 47 12 36 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 / 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!

Requirements

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 tool

- Torx 15 and 20 screwdrivers
- 2 x cross screwdriver
- Slotted screwdriver
- Socket wrenches: sizes 2.5; 3; 4; 5
- Size 17 ring wrench
- Arbor press
- Plastic hammer
- Punch
- Rubber hammer
- Circlip pliers for inner and outer rings
- Inner bearing puller, 6-10 mm
- Inner bearing puller, 12-16 mm
- Inner bearing puller, 18-22 mm

Special tool		Order number
- Drift key		6 33 05 003 00 3
- Press-on fixture		6 41 01 019 00 8
- Drawing-off socket cap		6 41 04 150 00 8
- Chuck cone	19 mm	6 41 07 019 00 7
	26 mm	6 41 07 026 00 0
- Hook		6 41 22 121 01 0

NOTE
You can only order special tools with an order number from FEIN.

4. Tools required

Standard tool

- Sleeve	Outer diameter	~65 mm
	Inner diameter	55 mm
	Outer diameter	~55 mm
	Inner diameter	40 mm
	Outer diameter	~35 mm
	Inner diameter	25 mm
	Outer diameter	28 mm
	Inner diameter	~21 mm
	Outer diameter	21 mm
	Inner diameter	~10 mm
	Outer diameter	~25 mm
	Inner diameter	15 mm
	Outer diameter	30 mm
	Inner diameter	~15 mm
	Outer diameter	30 mm
	Inner diameter	~26 mm

NOTE

You can only order special tools with an order number from FEIN.

4. Tools required

Standard tool

- Sleeve	Outer diameter	~53 mm
	Inner diameter	45 mm
- Ball bearing support		19 mm
		26 mm
- Base	Height	66 mm
	Width	~20 mm

NOTE
You can only order special tools with an order number from FEIN.

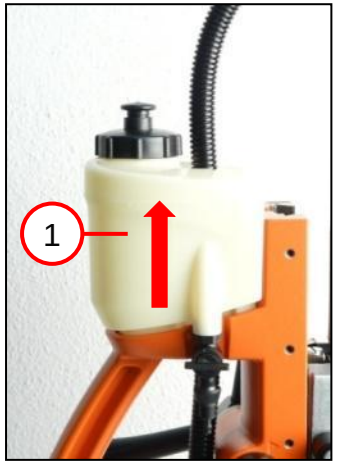
5. Lubricants and auxiliary substances required

Lubricants

Grease	0 40 106 0100 1	5 g	NILOS ring, sealing rings, shaft (spider), guide, mounting shaft (four balls)
Grease	0 40 118 0300 9	120 g	Gearbox

6. Disassembly

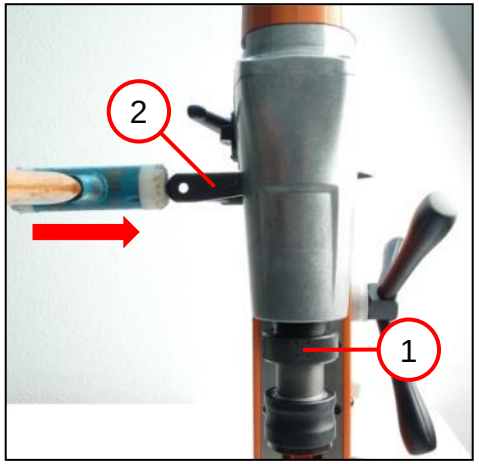
Disassembling container



1. Remove container (1).

6. Disassembly

Disassembling quick-release chuck



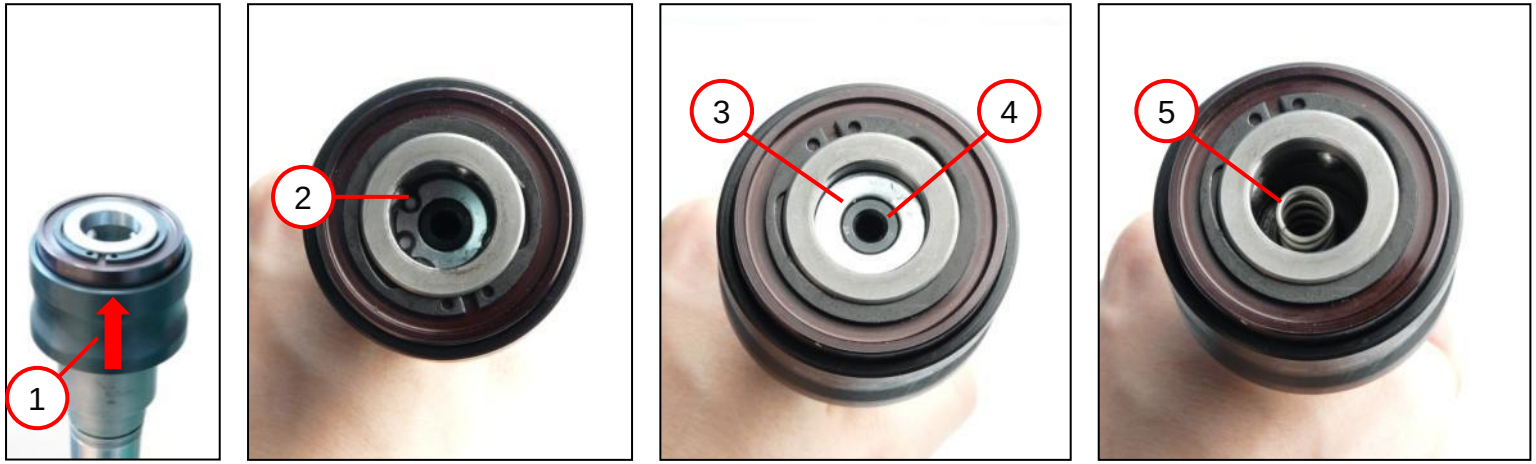
1. Loosen nut (1) [left-handed thread].
2. Remove drill chuck with help of drift key (2).
3. Remove circlip (3).
4. Pull off nut (4).

Tool:

- Circlip pliers
- Plastic hammer
- Drift key

6. Disassembly

Disassembling quick-release chuck



CAUTION! Risk of injury due to tensioned spiral spring.
☞ When loosening circlip, hold disc with hand.

Tool:

- Circlip pliers

1. Push up sleeve (1) and hold.
2. Remove circlip (2).
3. Remove disc (3) and bolt (4).
4. Remove spiral spring (5).

6. Disassembly

Disassembling quick-release chuck

CAUTION! Risk of injury due to tensioned spiral spring.
☞ When loosening circlip, hold cover with hand.

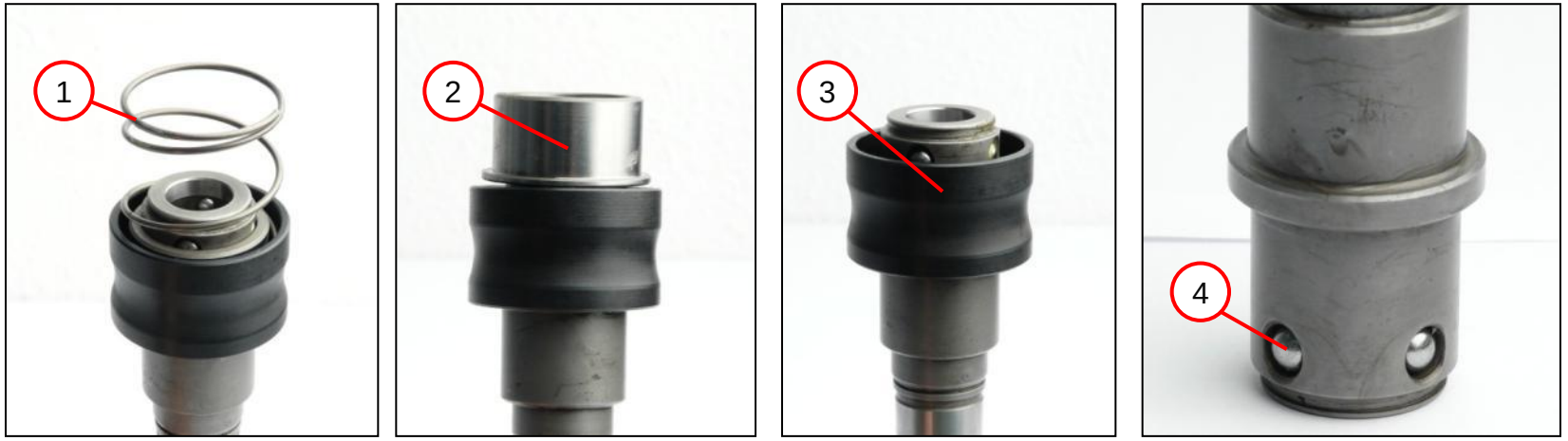
1. Remove circlip (1).
2. Remove cover (2).

Tool:

- Circlip pliers

6. Disassembly

Disassembling quick-release chuck



1. Remove spiral spring (1).
2. Remove inner sleeve (2).
3. Remove outer sleeve (3).
4. Remove four balls (4).

6. Disassembly

Disassembling Weldon mounting shaft (accessory)

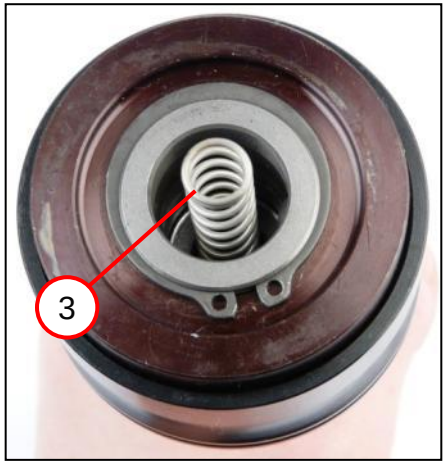
1. Remove circlip (1).
2. Remove nut (2).
3. Push up outer sleeve (3) and hold.

CAUTION! Risk of injury due to tensioned spiral spring.
☞ When loosening circlip, hold disc with hand.

4. Remove circlip (4).

6. Disassembly

Disassembling Weldon mounting shaft (accessory)



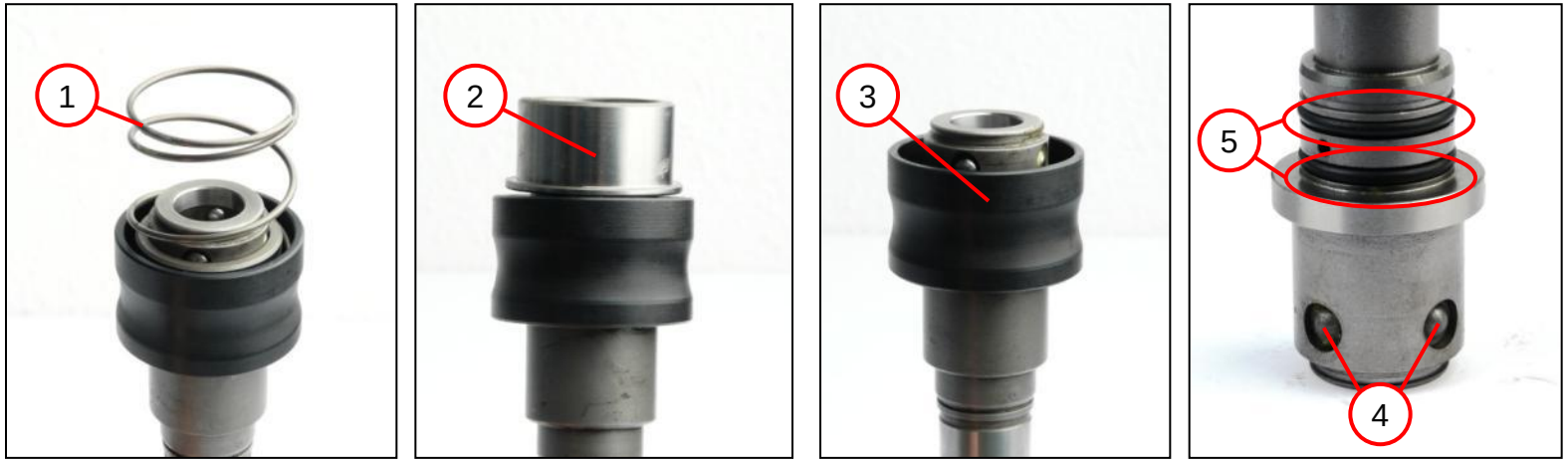
1. Remove disc (1) and sleeve (2).
2. Remove spring (3).
3. Remove circlip (4).

CAUTION! Risk of injury due to tensioned spiral spring.
☞ When loosening circlip, hold sleeve (5) with hand.

4. Remove sleeve (5).

6. Disassembly

Disassembling Weldon mounting shaft (accessory)



1. Remove spiral spring (1).
2. Remove inner sleeve (2).
3. Remove outer sleeve (3).
4. Remove two pins (4).
5. Remove two sealing rings (5).

6. Disassembly

Disassembling switch insert of drill unit

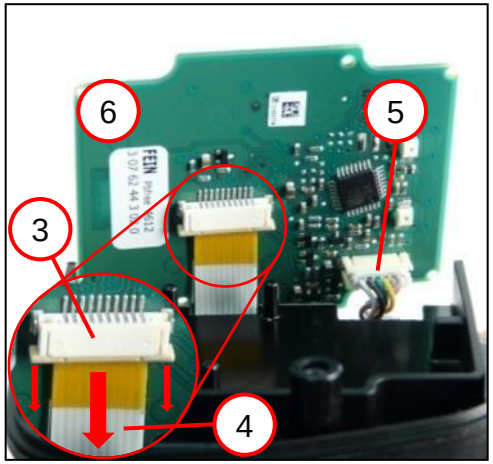
1. Loosen two screws (1) and take off cover (2).
2. Remove switch insert (3).

Tool:

- Torx T20

6. Disassembly

Disassembling PCB of drill unit



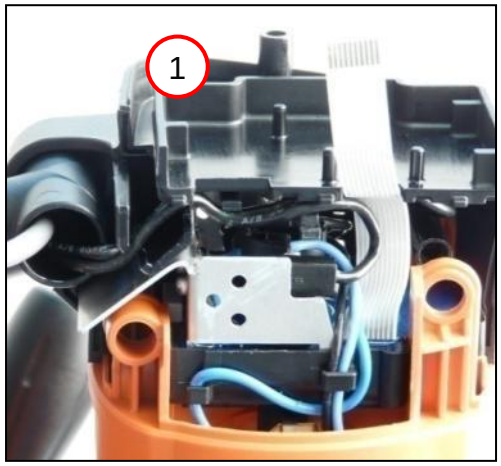
1. Loosen two screws (1) and remove housing half (2).
2. Unlock plug (3) and pull off ribbon cable (4).
3. Pull off plug (5).
4. Remove electronics PCB (6).

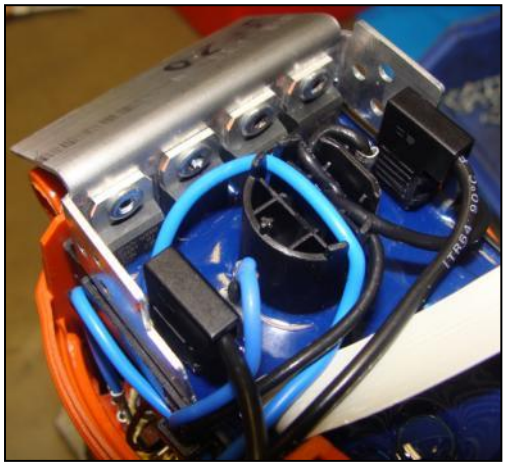
Tool:

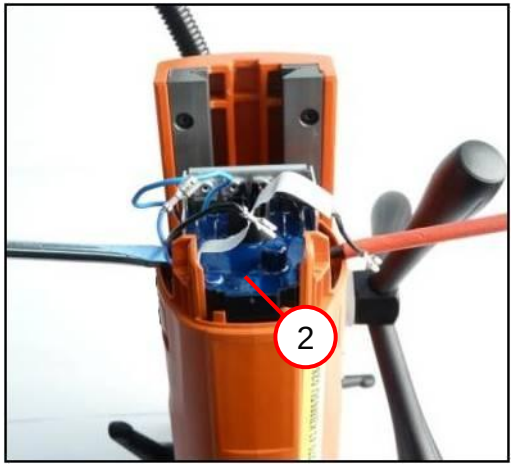
- Torx T20

6. Disassembly

Disassembling PCB of drill unit







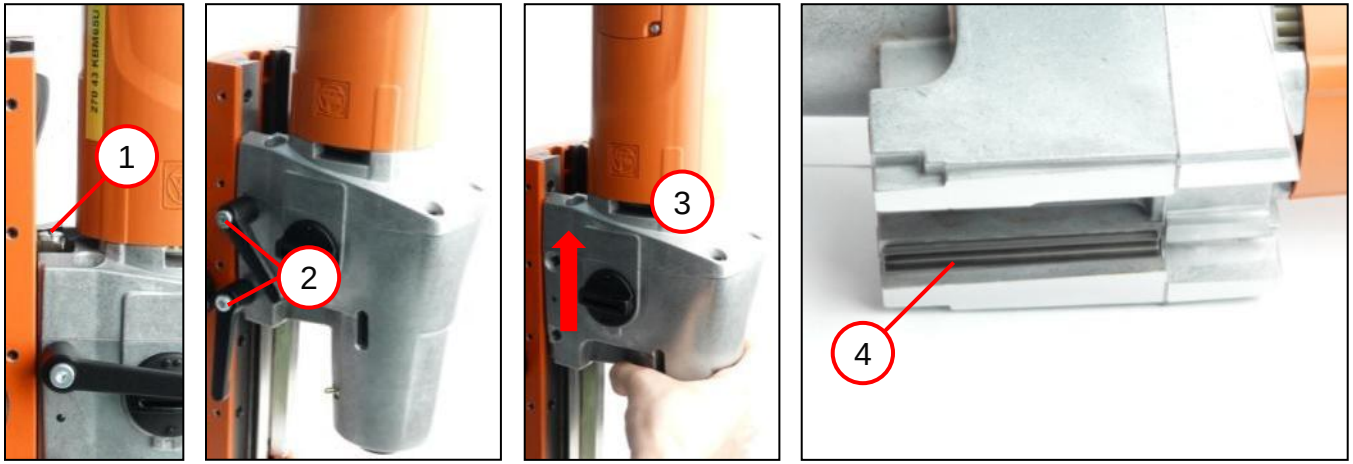
1. Remove second housing half (1).
2. Disconnect and remove all cables which are connected on the PCB (2).
3. Use two screwdrivers to remove the electronics PCB (2).
4. Pull cable shoes off brush holders.

Tool:

- Two screwdrivers

6. Disassembly

Disassembling drill unit



1. Unscrew flat headed screw (1) and loosen drill unit with the two levers (2).

CAUTION! Risk of injury and damage to the tool. Once the levers have been loosened, the drill unit has nothing to stop it from falling out.
This may result in hand injuries and damage to the tool.
☞ Hold drill unit firmly when loosening levers.

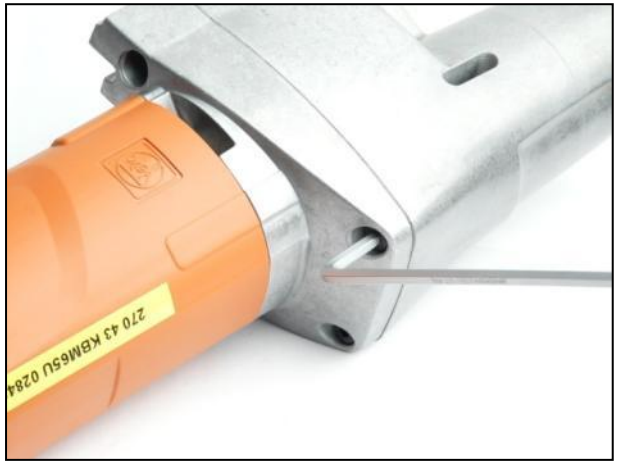
2. Slide up drill unit (3) and remove.
3. Remove pressure piece (4).

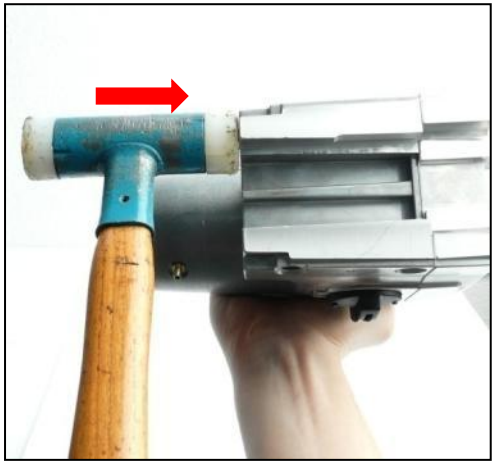
Tool:

- Screwdriver

6. Disassembly

Disconnecting gearbox housing from motor housing





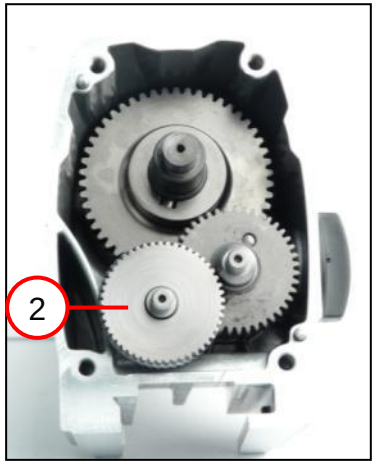
1. Loosen the four socket head screws.
2. Disconnect gearbox housing from motor housing with intermediate bearing.

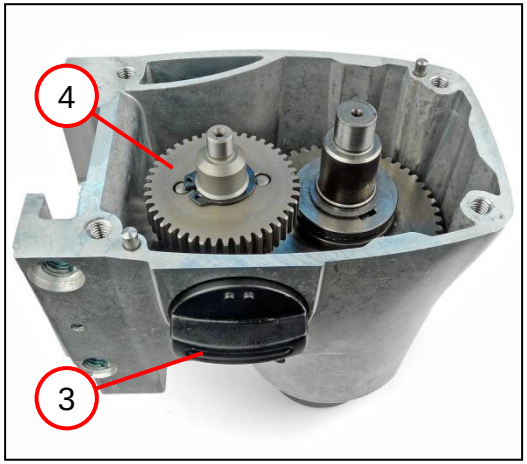
Tool:

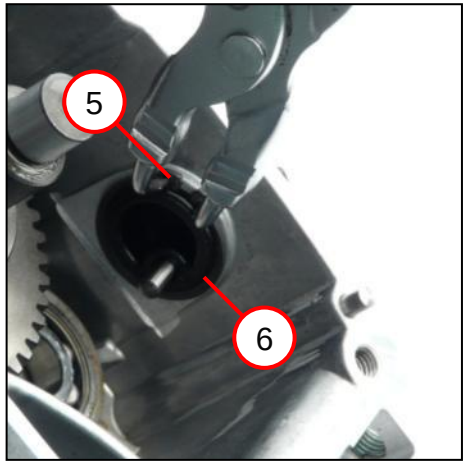
- Size 5 socket wrench
- Plastic hammer

6. Disassembly

Disassembling gearbox housing







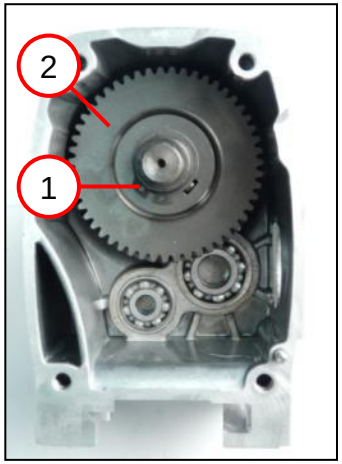
1. Remove seal (1).
2. Pull off spur gear shaft (2) by hand.
3. turn the switch pushbutton (3) in position two
4. Pull off second gear-wheel (4) by hand.
5. Remove circlip (5).
6. Remove rotary switch (6).

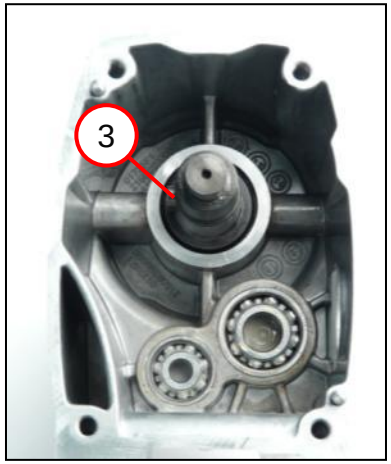
Tool:

- Circlip pliers

6. Disassembly

Disassembling gearbox housing





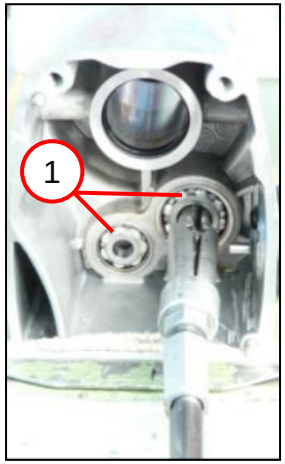
1. Loosen circlip (1) and remove gear-wheel (2).
2. Remove feather key (3).
3. Remove circlip (4).
4. Press out shaft (5) with grooved ball bearing.

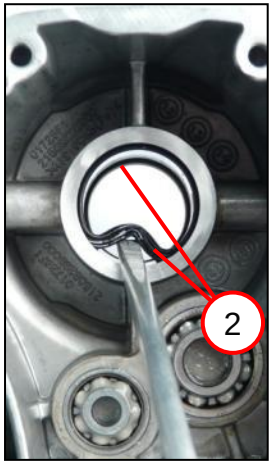
Tool:

- Circlip pliers
- Sleeve ∅ outer: 65 mm
  ∅ inner: 55 mm

6. Disassembly

Disassembling gearbox housing





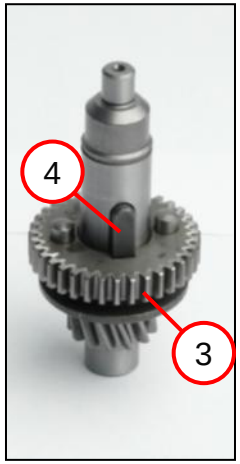
1. Remove grooved ball bearings (1).
2. Remove the three sealing rings (2) with hook.
3. Remove circlip (3).
4. Press grooved ball bearing (4) off shaft.

Tool:

- Inner bearing puller, 6-10 mm
- Inner bearing puller, 12-16 mm
- Hook
- Circlip pliers
- Sleeve ∅ outer: 55 mm
  ∅ inner: 40 mm

6. Disassembly

Disassembling gearbox housing



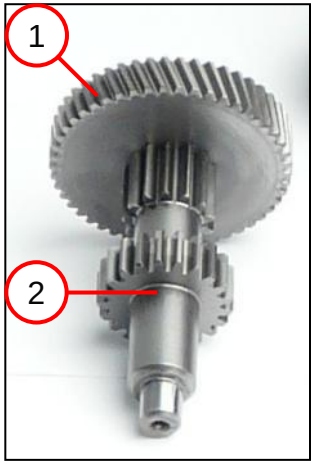
1. Remove circlip (1).
2. Remove gear-wheel (2).
3. Remove second gear-wheel (3) and feather key (4).

Tool:

- Circlip pliers

6. Disassembly

Disassembling gearbox housing



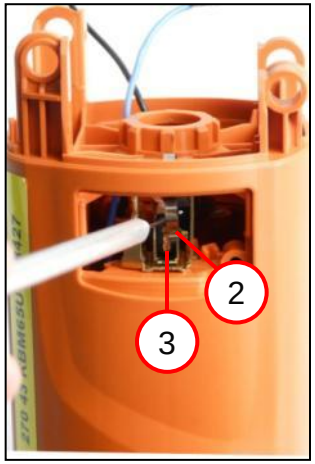
1. Press gear-wheel (1) off shaft (2).

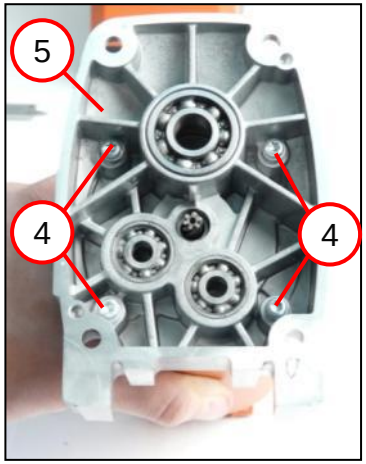
Tool:

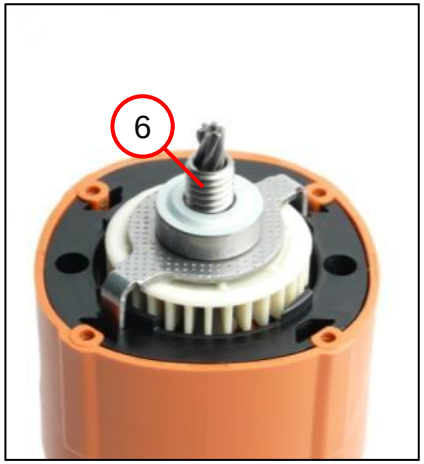
- Arbor press
- Sleeve ∅ outer: 35 mm
  ∅ inner: 25 mm

6. Disassembly

Disassembling motor







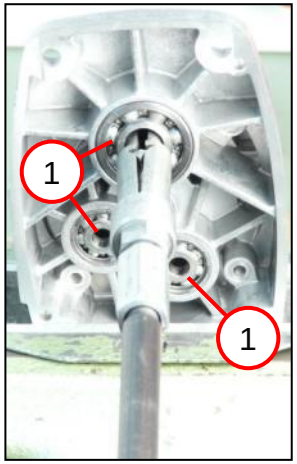
1. Remove cover (1) and take out spring (2).
2. Pull out carbon brushes (3) with hook.
   ☞ Only pull carbon brush out to point where it no longer scrapes the armature.
3. Loosen four screws (4).
4. Take off intermediate bearing (5).
5. Remove armature (6).

Tool:

- Torx T15
- Hook

6. Disassembly

Disassembling gearbox housing



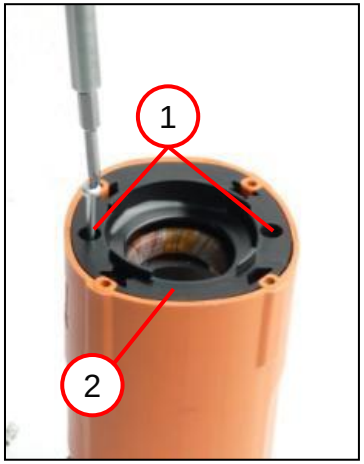
1. Remove bearings (1).

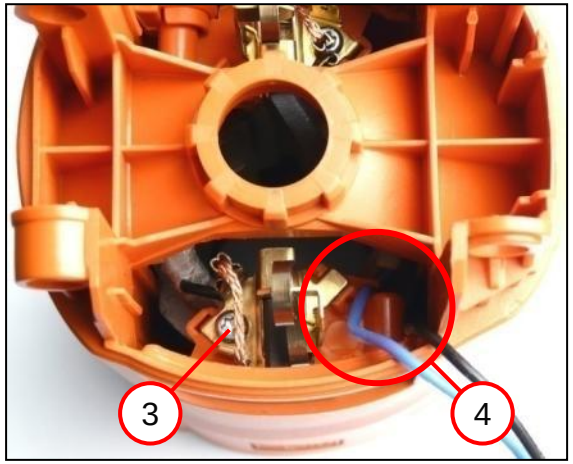
Tool:

- Inner bearing puller, 6-10 mm
- Inner bearing puller, 12-16 mm

6. Disassembly

Disassembling stator





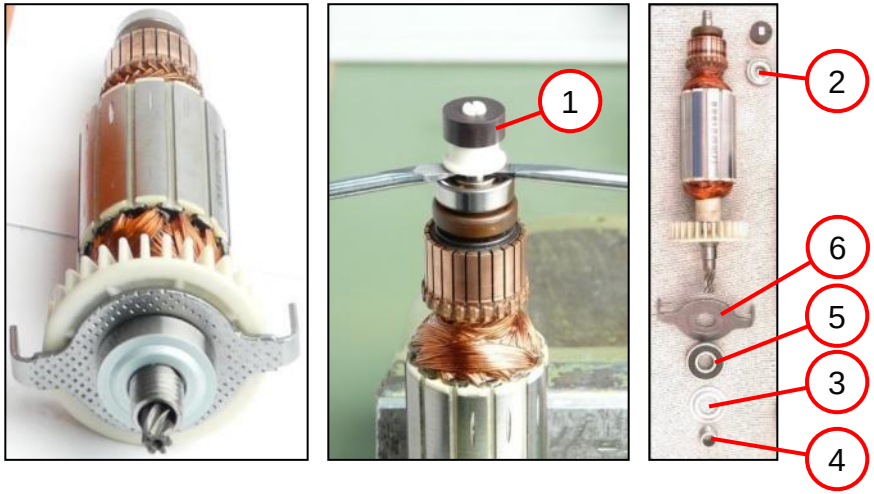
1. Unscrew two screws (1) and take off air guide ring (2).
2. On both sides, loosen screw (3) and take off carbon brush holder.
3. Remove supply cable (4) to stator.
4. Remove stator.

Tool:

- Torx T15
- Torx T20
- Plastic hammer

6. Disassembly

Disassembling armature



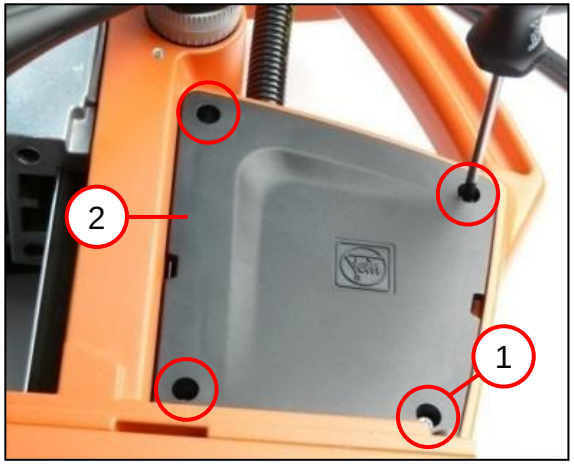
1. Pull off insulating sleeve and magnet ring (1).
2. Pull off grooved ball bearing (2).
3. Remove sealing ring (3).
4. Remove NILOS ring (4).
5. Pull off grooved ball bearing (5).
6. Remove plate (6).

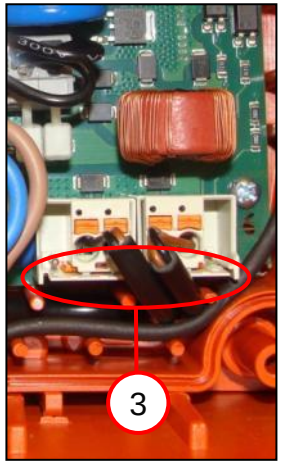
Tool:

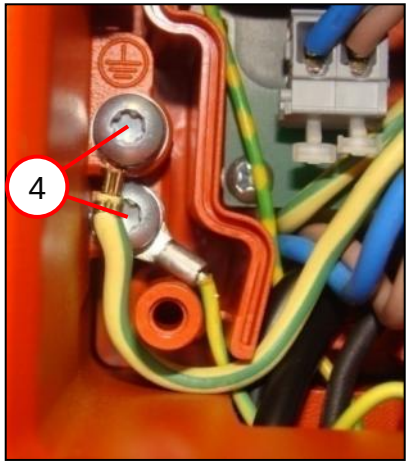
- 2 x screwdriver
- Drawing-off socket cap
- Chuck cone 19 mm
  26 mm

6. Disassembly

Disassembling the electronics







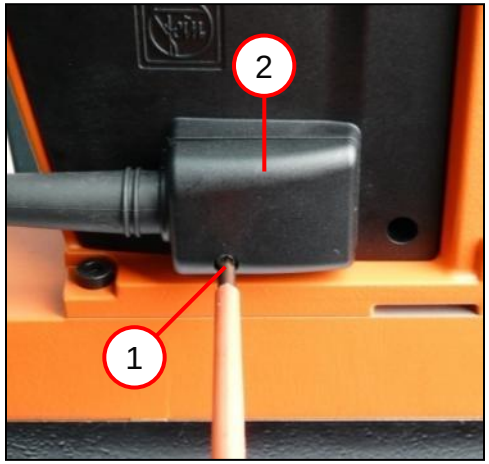
1. Loosen the four socket head screws (1) and take off cover (2).
2. Disconnect all connecting cables (mains and magnet cables).
   ☞ To loosen the plugs, press down clip (3) and hold.
3. Remove earthing conductors (4).

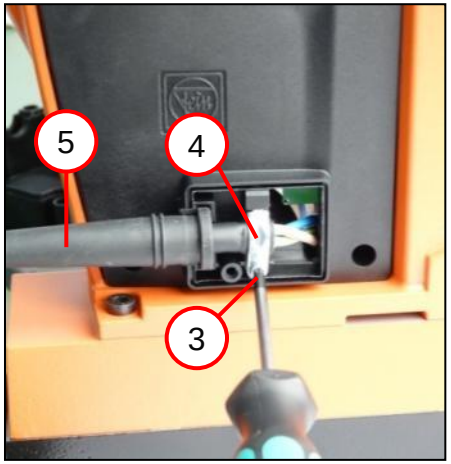
Tool:

- Torx T20

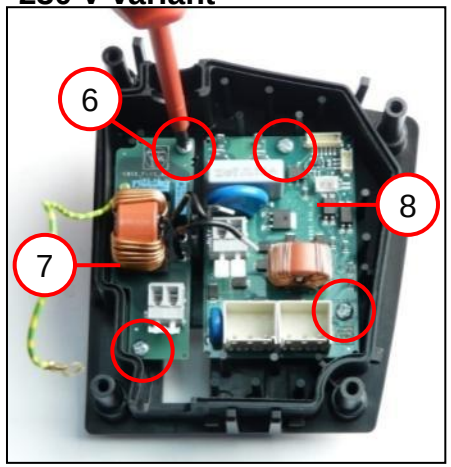
6. Disassembly

Disassembling the electronics





230 V variant



110 V/120 V variant

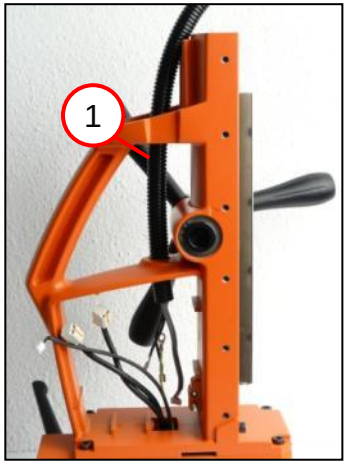
1. Loosen screw (1) and remove cover (2).
2. Loosen screw (3) and remove strain relief (4).
3. Remove supply cable (5).
4. Loosen four screws (6) and remove PCBs (7 and 8).
   ☞Just one PCB (8) is fitted in the 110 V/120 V variant of the tool.

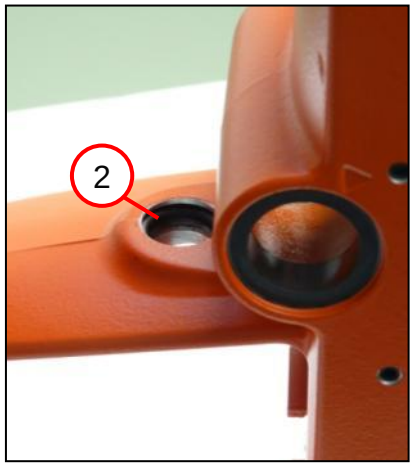
Tool:

- Torx T15

6. Disassembly

Disassembling protective hose





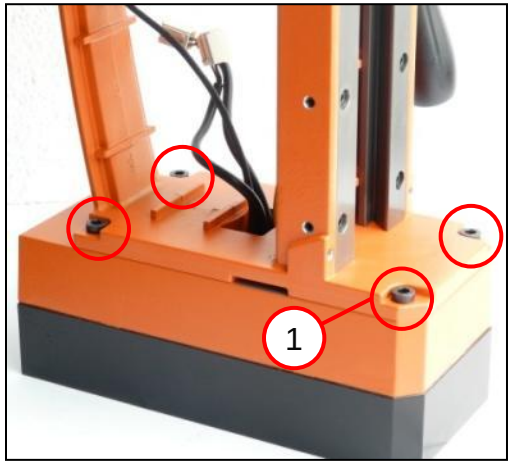
1. Pull protective hose (1) up and out.
2. Remove sealing ring (2).

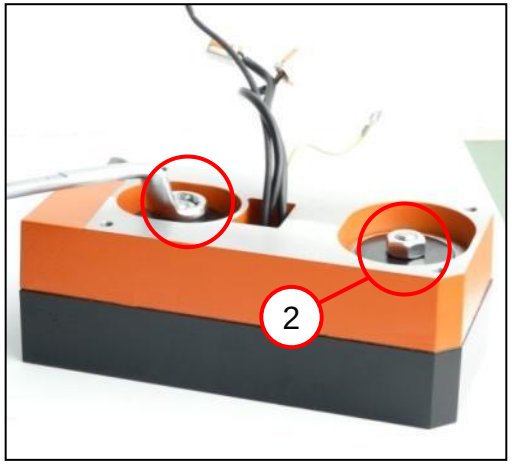
Tool:

- Torx T15
- Cross screwdriver

6. Disassembly

Disassembling magnetic foot





1. Unscrew the four socket head screws (1).
2. Unscrew the two nuts (2) and remove together with discs.

Tool:

- Ring wrench 17 mm
- Size 5 socket wrench

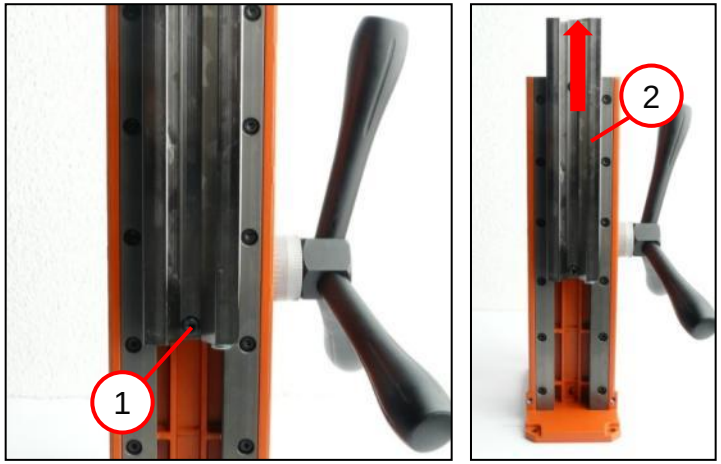
6. Disassembly

Disassembling magnetic foot

1. Take intermediate plate off magnetic foot and remove contact bolts (1).
2. Pull out lever (2).

6. Disassembly

Disassembling guide



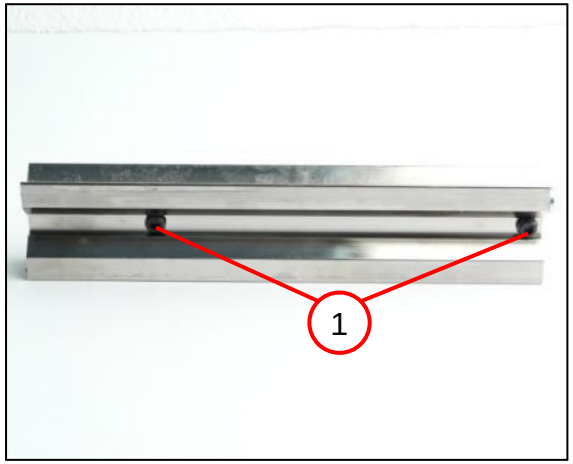
1. Move guide up to stop with help of spider.
2. Unscrew socket head screw (1) until spider can be turned one more revolution.
3. Remove guide (2).

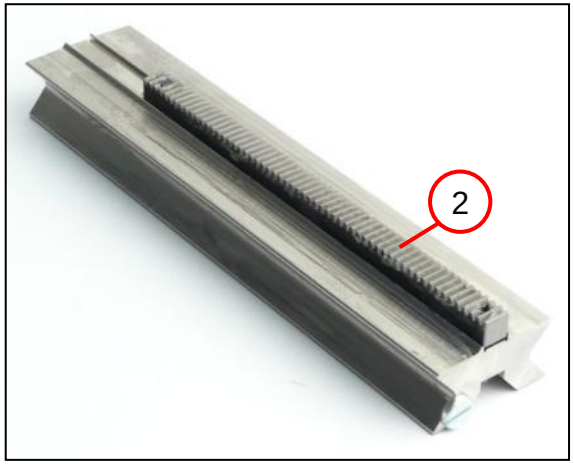
Tool:

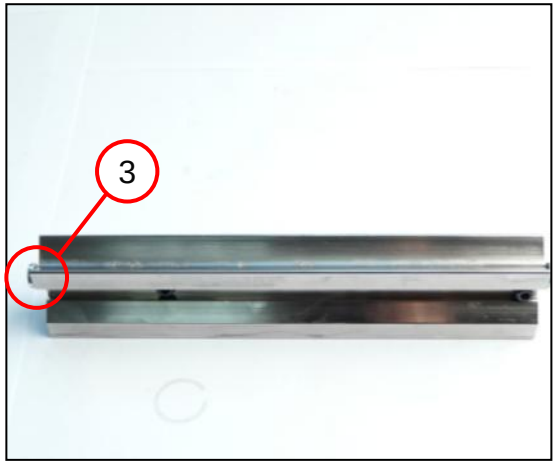
- Size 4 socket wrench

6. Disassembly

Disassembling guide







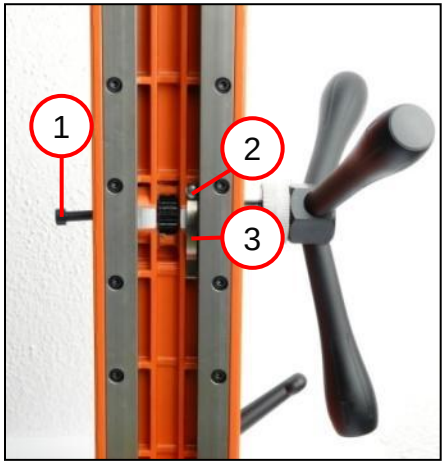
1. Unscrew socket head screws (1).
2. Remove gear rack (2).
3. Unscrew flat headed screw (3).

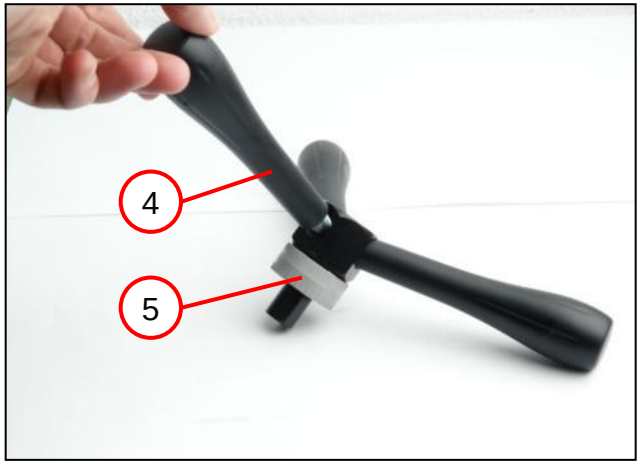
Tool:

- Size 4 socket wrench
- Screwdriver

6. Disassembly

Disassembling spider





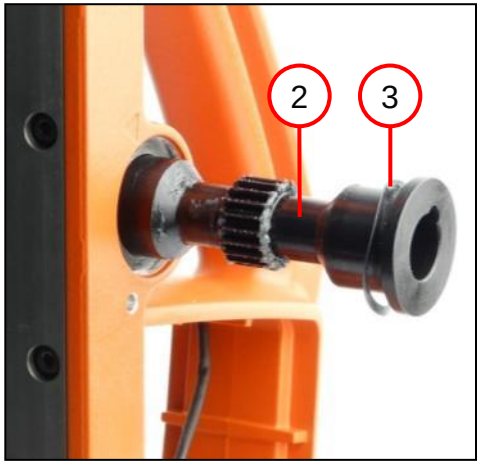
1. Unscrew screw (1) and remove together with spider.
2. Loosen screw (2) and remove leaf spring (3).
3. Unscrew handles (4) from connecting piece.
4. Remove scale (5).

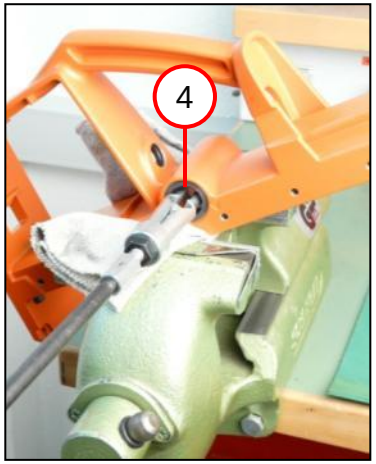
Tool:

- Cross screwdriver
- Circlip pliers

6. Disassembly

Disassembling spider





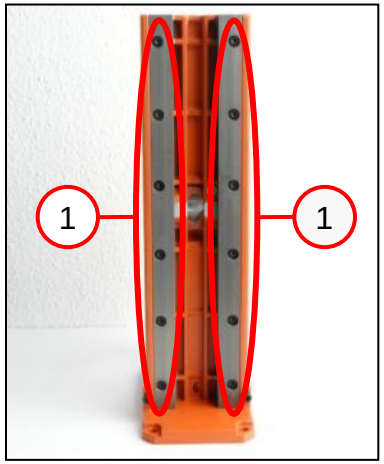
1. Remove circlip (1).
2. Slide out shaft (2).
3. Remove spring washer (3).
4. Remove two bushes (4).

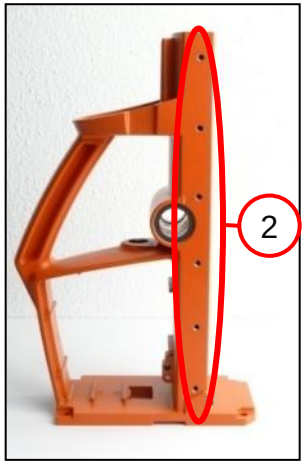
Tool:

- Circlip pliers
- Inner bearing puller, 18-22 mm

6. Disassembly

Disassembling guide rails





1. Unscrew six socket head screws (1) on each of the guide rails.
2. Remove pressure piece and guide rails.
3. Unscrew the six thread bolts (2).

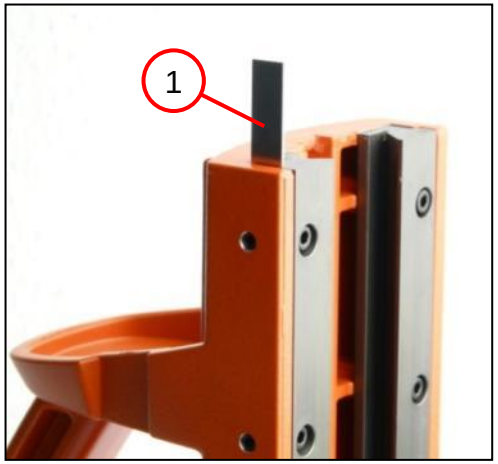
Tool:

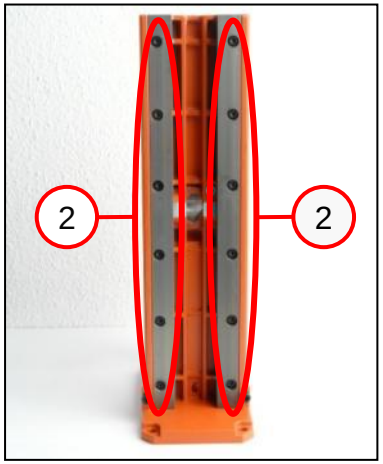
- Size 2.5 socket wrench

7. Assembly

7. Assembly

Assembling guide rails





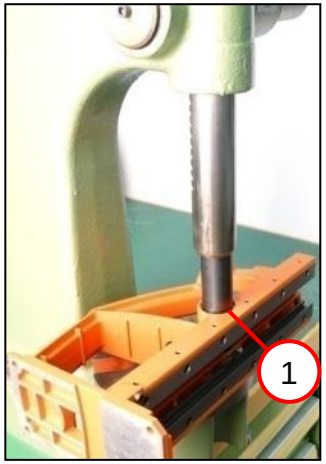
1. Slide pressure piece (1) behind guide rail.
2. Secure each guide rail with six socket head screws (2).
   ☞ Tighten socket head screws to torque of 2.0 Nm.

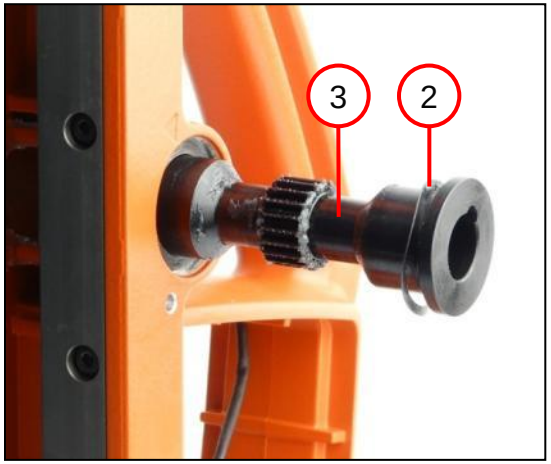
Tool:

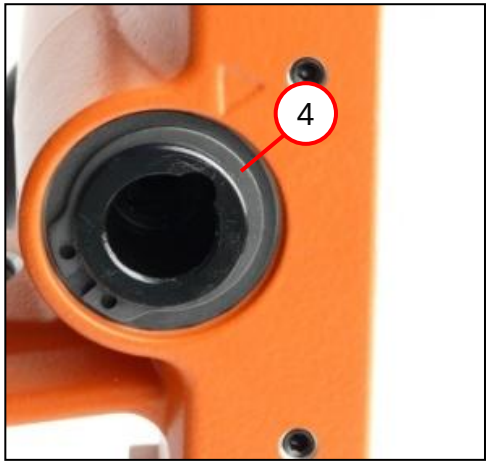
- Size 3 socket wrench

7. Assembly

Assembling spider







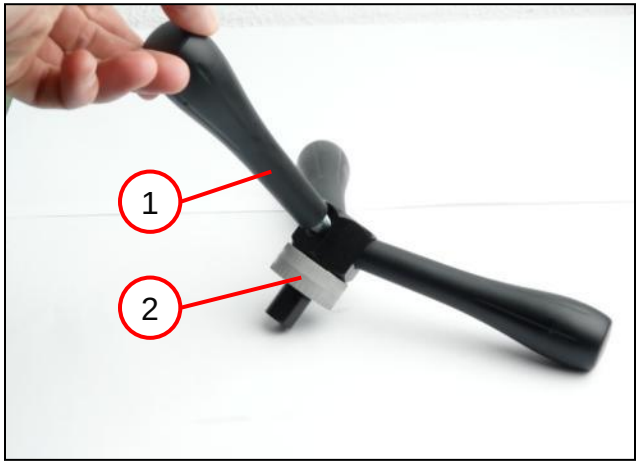
1. Press in both plastic bushes (1).
2. Slide spring washer (2) over shaft (3).
3. Coat shaft (3) with thin layer of grease and slide through bushes.
4. Secure shaft on opposite side with a circlip (4).

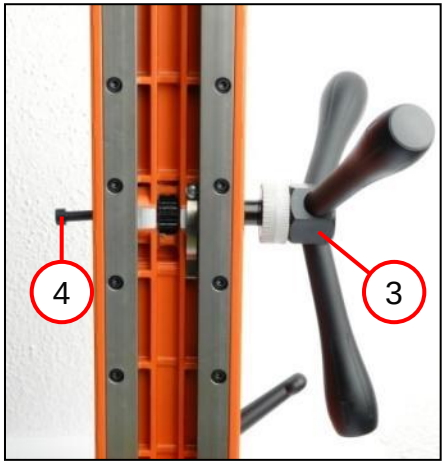
Tool:

- Sleeve ∅ outer: 30 mm
  ∅ inner: ~26 mm
- Circlip pliers
- Grease (0 40 106 0100 1)

7. Assembly

Assembling spider





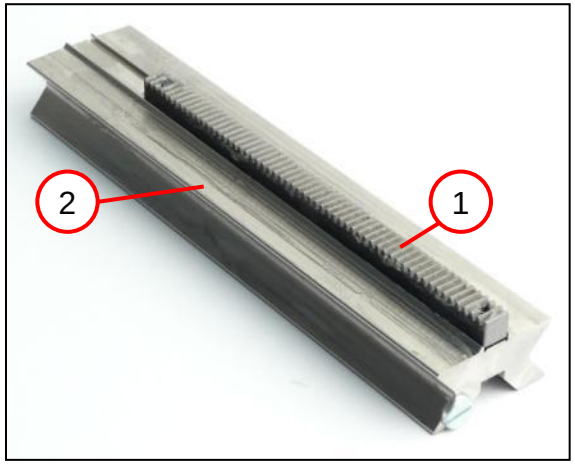
1. Screw handles (1) on to connecting piece.
2. Slide scale (2) on to connecting piece.
3. Screw down spider (3) with screw (4).
   ☞ Spider can be assembled on the left or right.

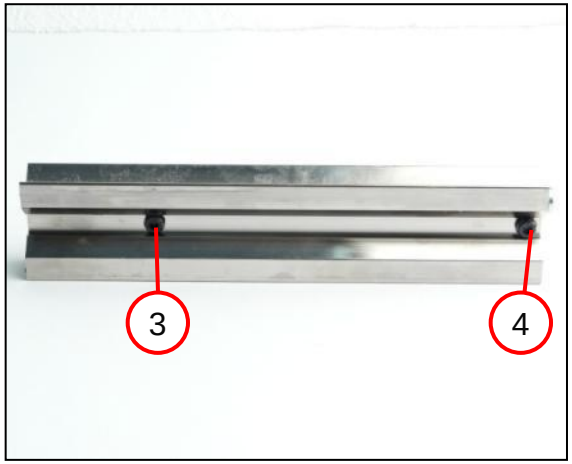
Tool:

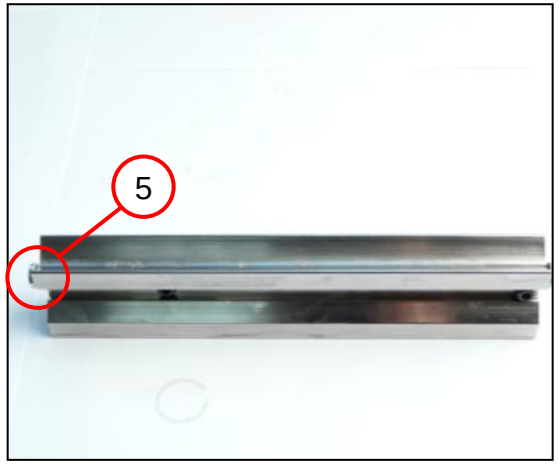
-Circlip pliers
-Size 5 socket wrench

7. Assembly

Assembling guide







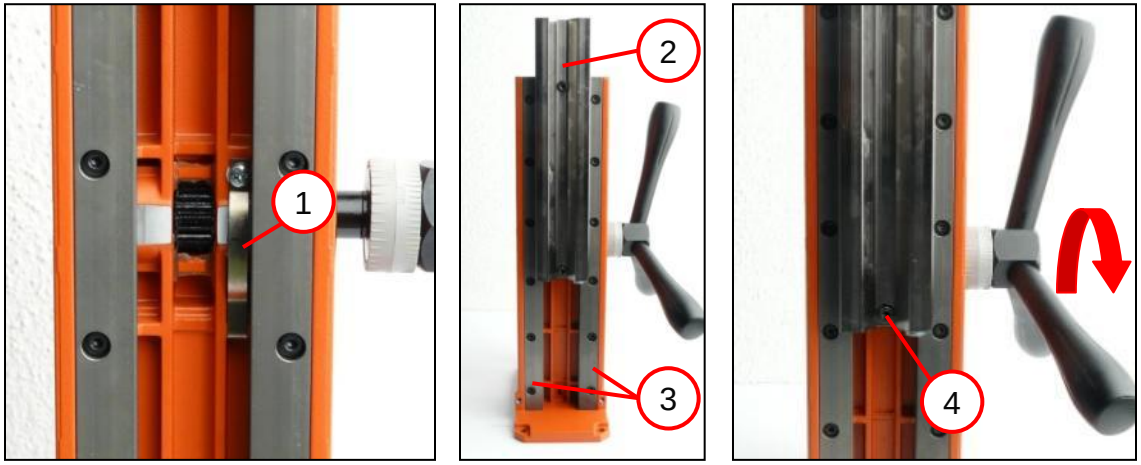
1. Fit gear rack (1) on guide (2).
2. Support screw (3) with circlip so that gear rack runs over shaft's gear-wheel.
3. Screw down screw (4) with a circlip.
   ☞ Tighten screw to torque of 3 Nm.
4. Screw on flat headed screw (5).
   ☞ Tighten screw to torque of 1.2 Nm.

Tool:

- Size 4 socket wrench
- Screwdriver

7. Assembly

Assembling guide



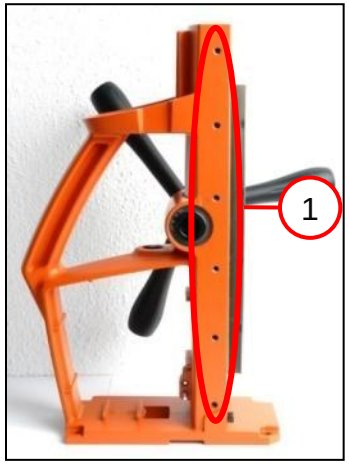
1. Screw leaf spring (1) to housing.
2. Apply thin layer of grease to guide (2) and thread in to guide strips (3).
3. Turn spider to move guide down a little.
4. Tighten socket head screw (4).
   - ☞ Tighten screw to torque of 3 Nm.
   - ☞ Socket head screw serves as stop.

Tool:

- Cross screwdriver
- Size 4 socket wrench
- Grease (0 40 106 0100 1)

7. Assembly

Assembling guide



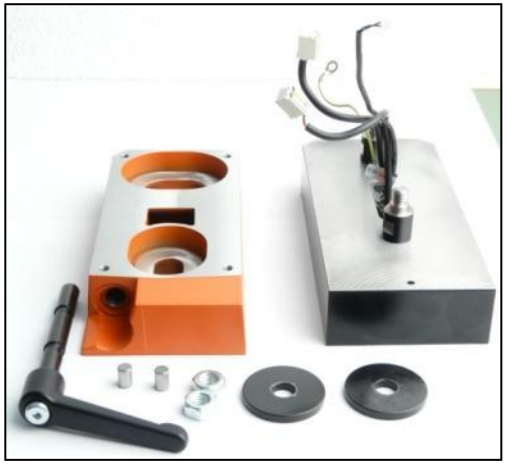
1. Install the six set screws (1).
   ☞The guide is adjusted after the drill motor is assembled.

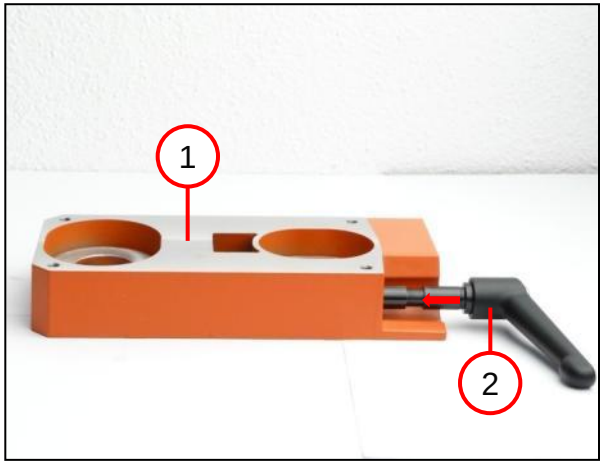
Tool:

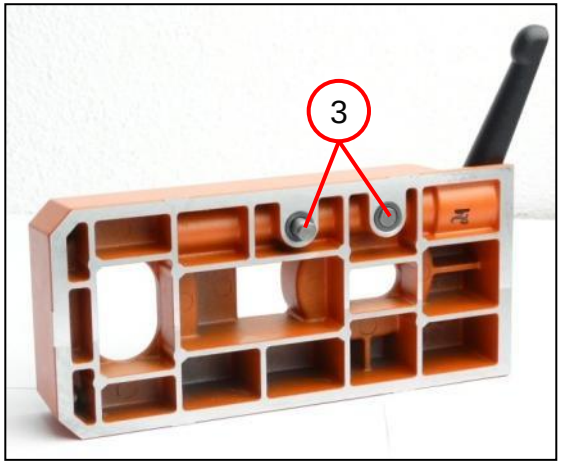
- Size 2.5 socket wrench

7. Assembly

Assembling magnetic foot



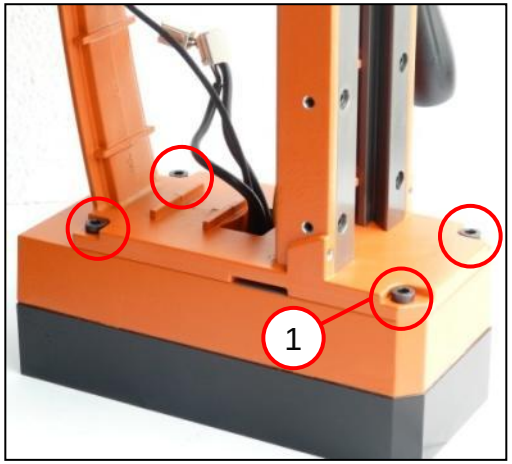




1. Slide clamping lever (2) in to intermediate plate (1).
2. Slide both bolts (3) in to bushes.

7. Assembly

Assembling magnetic foot



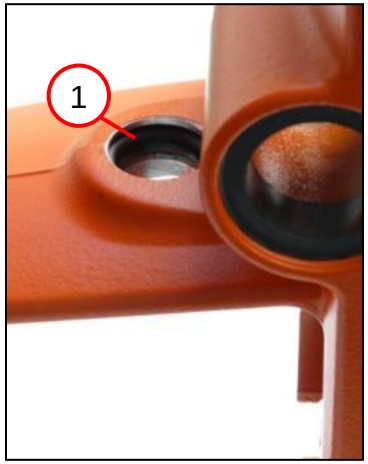
1. Fit intermediate plate with discs and screw-nuts on magnetic foot.
   ☞ Tighten socket head screws to torque of 15 Nm.
2. Screw magnetic foot down to housing with four socket head screws (1).
   ☞Tighten socket head screws to torque of 8 Nm.

Tool:

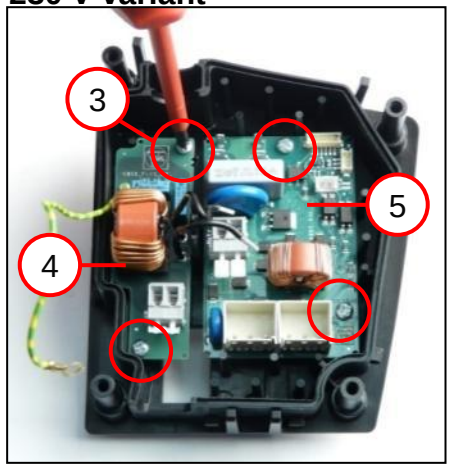
- Ring wrench 17 mm
- Size 5 socket wrench

7. Assembly

Assembling the electronics



230 V variant



110 V/120 V variant

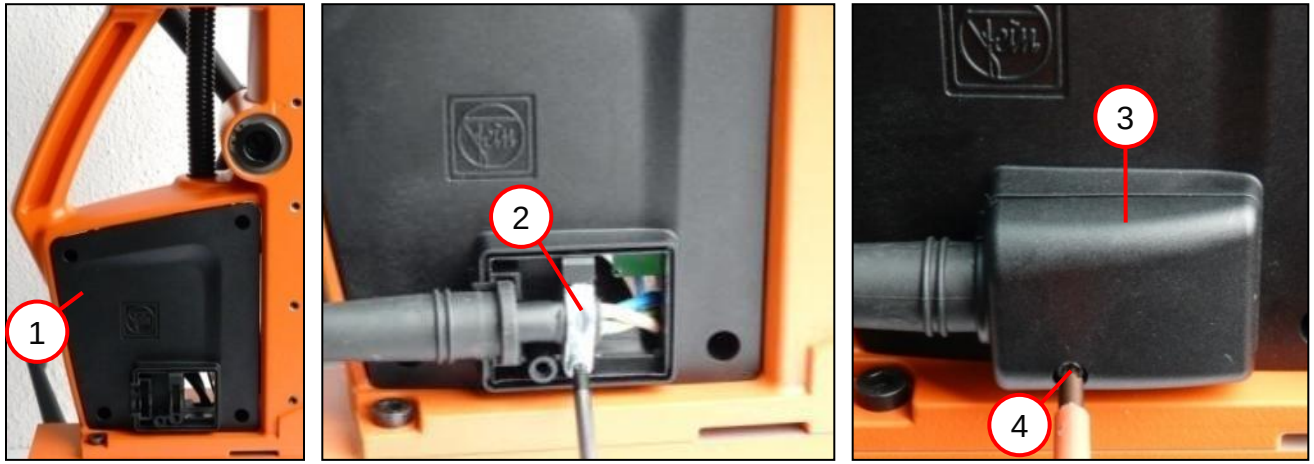
1. Insert sealing ring (1).
   ☞ For better assembly, coat sealing ring with thin layer of grease.
2. Install protective hose (2).
3. Secure the two PCBs (4 and 5) with four screws (3).
   ☞ Just one PCB (5) is fitted in the 110 V/120 V variant of the tool.

Tool:

- Torx T15
- Grease (0 40 106 0100 1)

7. Assembly

Assembling the electronics



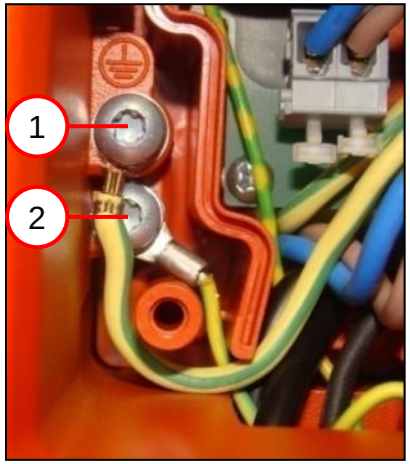
1. Insert cover half (1) in housing.
2. Install feed cable and fit strain relief (2).
   ☞ Tighten screw to torque of 0.9 Nm.
3. Attach cover (3) and secure with screw (4).
   ☞ Tighten screw to torque of 0.9 Nm.

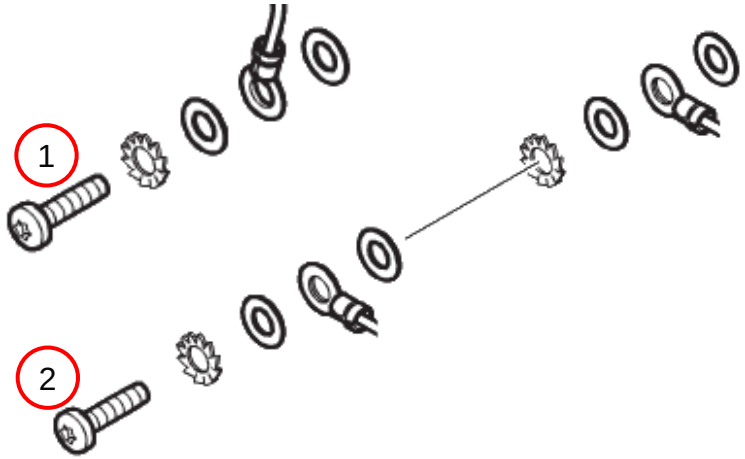
Tool:

- Torx T15
- Cross screwdriver

7. Assembly

Assembling the electronics





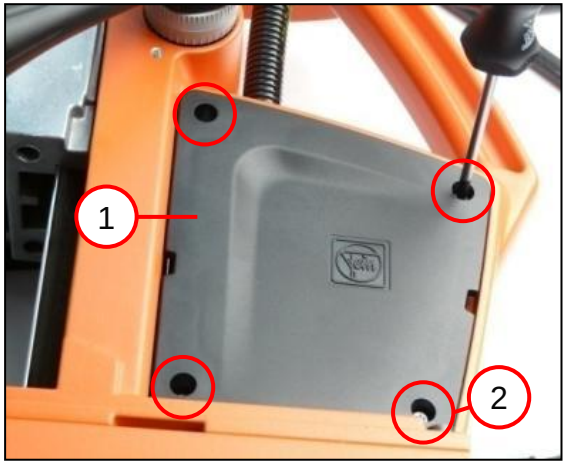
1. Wire all connecting cables in accordance with connection diagram.
   ☞ When installing the electronics, ensure that the protective hose lies in the recess as shown.
2. Connect earthing conductors (1 & 2) as shown.
   ☞ Comply with order shown when connecting earthing conductor (see photo on right).

Tool:

- Torx T15

7. Assembly

Assembling the electronics



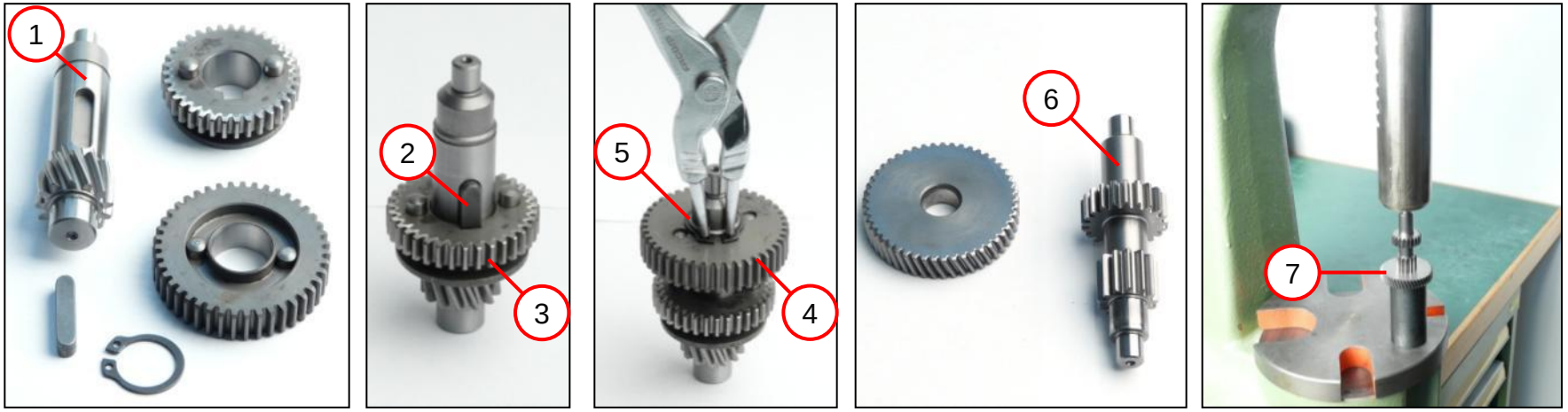
1. Attach second cover half (1).
2. Use the four socket head screws (2) to screw down the first and second cover halves.

Tool:

- Torx T20

7. Assembly

Assembling gearbox housing



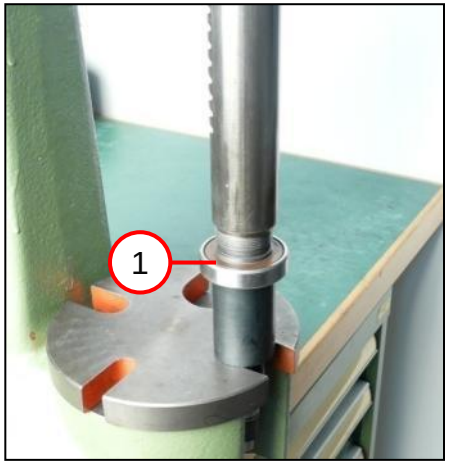
1. Insert feather key (2) in shaft (1).
2. Slide gear-wheel (3) on to shaft (1).
3. Slide second gear-wheel (4) on to shaft and secure with a circlip (5).
4. Press gear-wheel (7) on to shaft (6).

Tool:

- Circlip pliers
- Arbor press
- Sleeve ∅ outer: ~25 mm
  ∅ inner: 15 mm

7. Assembly

Assembling gearbox housing



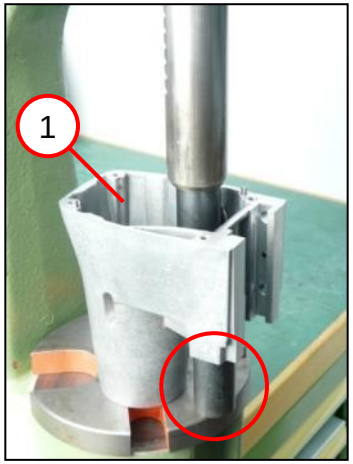
1. Press grooved ball bearing (1) on to shaft.
2. Slide circlip (2) on to shaft.

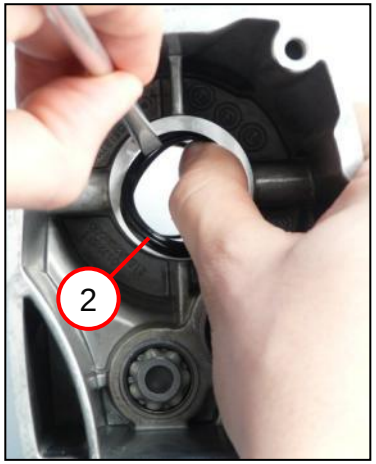
Tool:

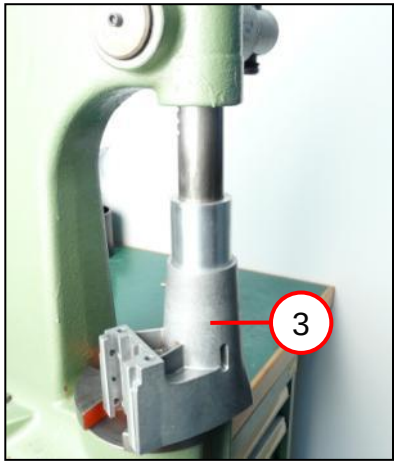
- Circlip pliers
- Arbor press
- Sleeve ∅ outer: 55 mm
  ∅ inner: 40 mm

7. Assembly

Assembling gearbox housing







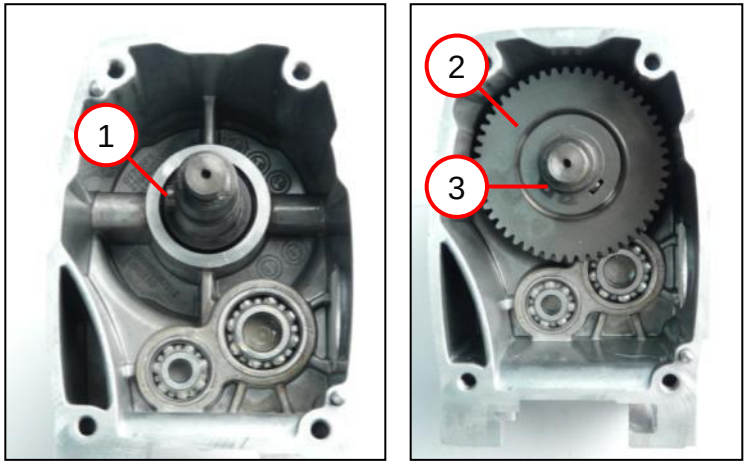
1. Press both grooved ball bearings in to housing (1).
   ☞ Place something underneath housing otherwise it will tip when the grooved ball bearings are pressed in.
2. Apply thin layer of grease to the three sealing rings (2) and insert.
   ☞ Do not assemble sealing rings with a sharp tool as this could damage them.
3. Press shaft and grooved ball bearings in to housing (3).
4. Secure shaft with a circlip (4).

Tool:

- Circlip pliers
- Arbor press
- Sleeve ∅ outer: 21 mm
  ∅ inner: ~10 mm
- Sleeve ∅ outer: 28 mm
  ∅ inner: ~21 mm
- Sleeve ∅ outer: 53 mm
  ∅ inner: 45 mm
- Base: Height: 66 mm
  Width: ~20 mm
- Hook
- Grease (0 40 106 0100 1)

7. Assembly

Assembling gearbox housing



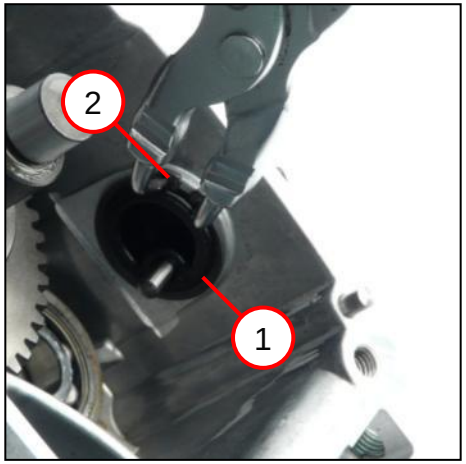
1. Insert feather key (1) in shaft.
2. Press gear-wheel (2) on to shaft and secure with circlip (3).

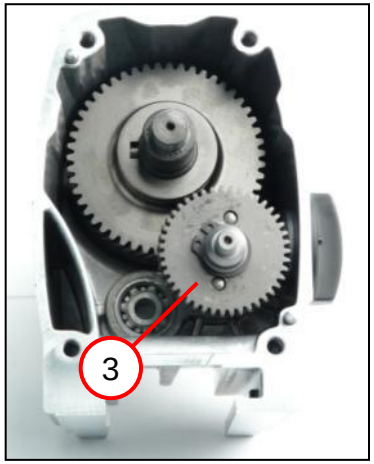
Tool:

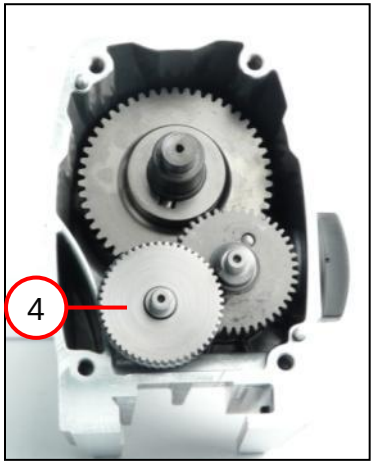
- Circlip pliers

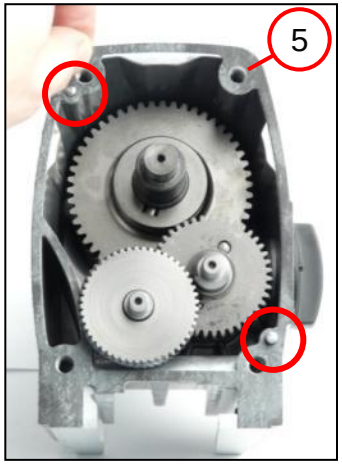
7. Assembly

Assembling gearbox housing









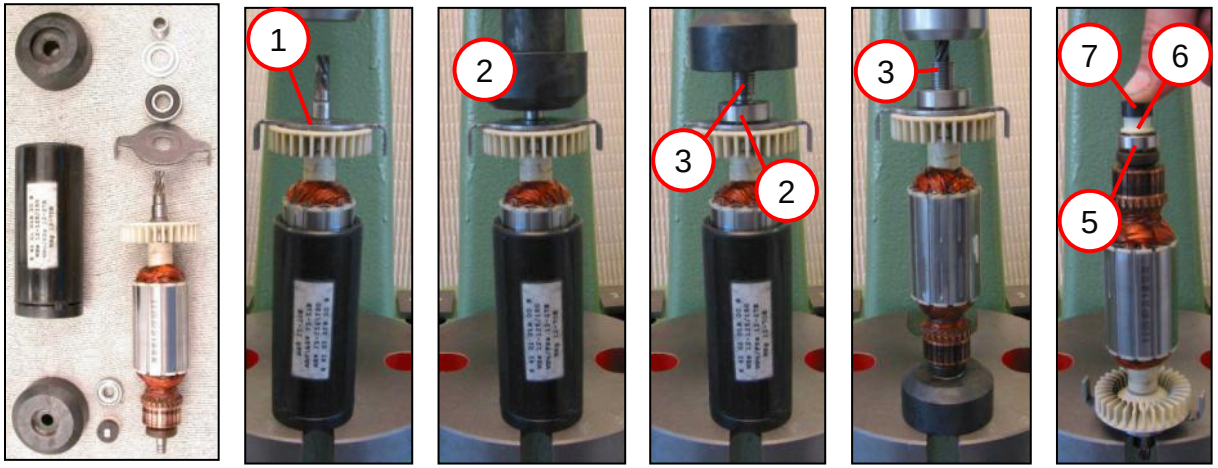
1. Apply thin layer of grease to switch pushbutton (1), insert in gearbox housing and secure with circlip (2).
2. Insert first shaft with gear-wheel (3).
   ☞ Insert gear-wheel such that dowel pin of switch pushbutton sits in gear-wheel's guide.
3. Insert spur gear shaft (4).
4. Insert seal (5) in the correct position.
   ☞ The seal is inserted such that it is fixed by the dowels.

Tool:

- Circlip pliers
- Grease (0 40 106 0100 1)

7. Assembly

Assembling armature



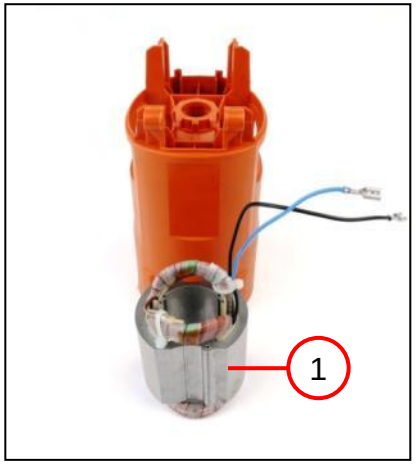
1. Fit end plate (1).
2. Press on grooved ball bearing (2).
3. Press on sealing ring (3) and attach NILOS ring (4).
4. Press on grooved ball bearing (5).
5. Press in insulating sleeve (6) until stop is reached.
6. Press on magnet ring (7) by hand.

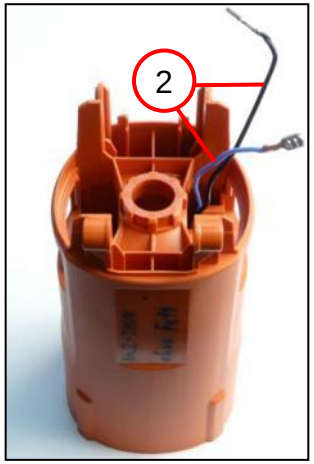
Tool:

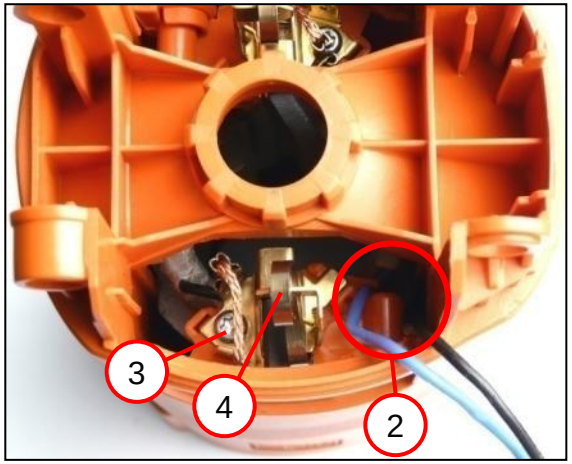
- Arbor press
- Pressing fixture
- Ball bearing support
  D = 26
- Ball bearing support
  D = 19

7. Assembly

Assembling stator







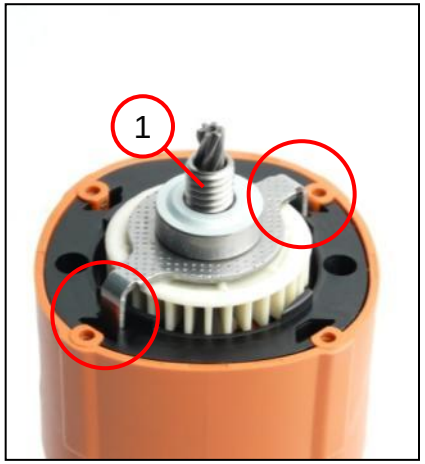
1. Insert stator (1) in motor housing.
   ☞ Insert stator such that the two connecting cables (2) are on the right as shown.
   ☞ Press stator in to motor housing until stop is reached.
2. Lead stator's connecting cables on the right upwards (when looking at type plate).
3. Thread blue connecting cable in to recess (2).
4. Use screw (3) to fit one brush holder (4) on each side.
5. Insert air guide ring (5) and screw down.

Tool:

- Torx T20

7. Assembly

Assembling stator



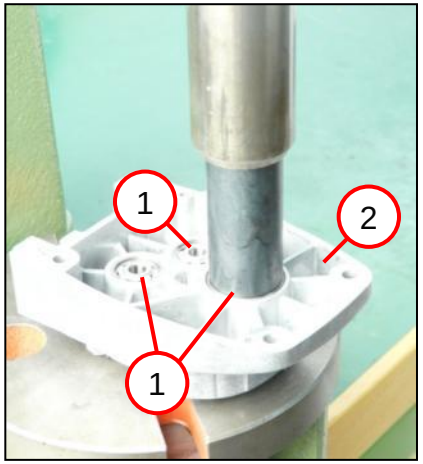
1. Insert armature (1).
   - ☞ Insert armature such that the connection plate is fitted as shown.
   - ☞ Ensure that carbon brushes are pulled to the rear.
2. Insert carbon brushes (2) and fit springs on both sides.
3. Insert cover (3) and screw down.

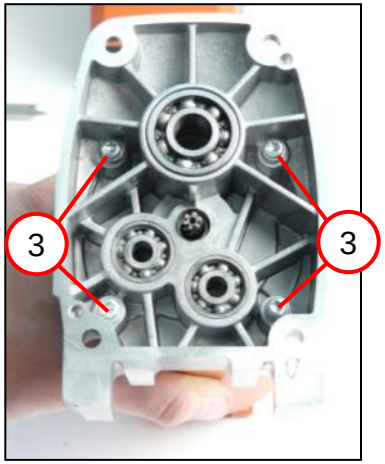
Tool:

- Torx T20

7. Assembly

Assembling motor housing





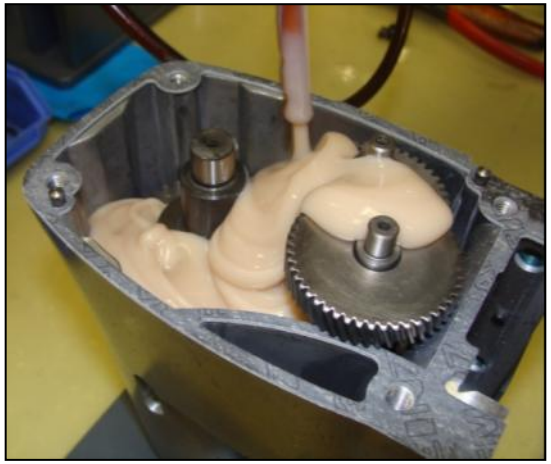
1. Press grooved ball bearings (1) in to intermediate bearing (2).
2. Fit intermediate bearing on motor housing.
3. Use four screws (3) and sealing rings to screw intermediate bearing down on motor housing.
   ☞ Sealing rings must be replaced during each assembly.

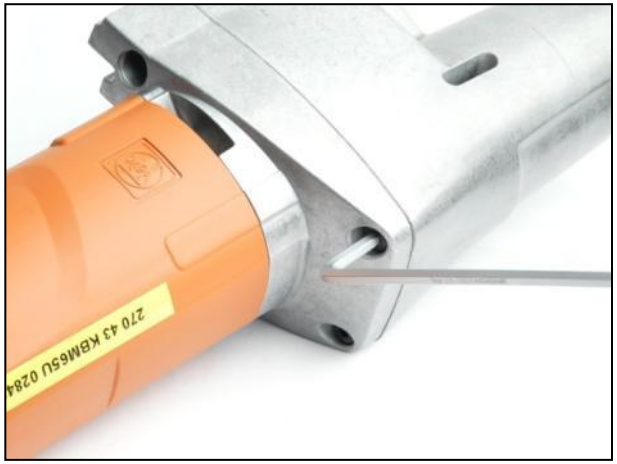
Tool:

- Torx T20
- Arbor press
- Sleeve ∅ outer: 30 mm
  ∅ inner: ~15 mm
- Sleeve ∅ outer: 21 mm
  ∅ inner: ~10 mm

7. Assembly

Assembling gearbox housing on motor housing





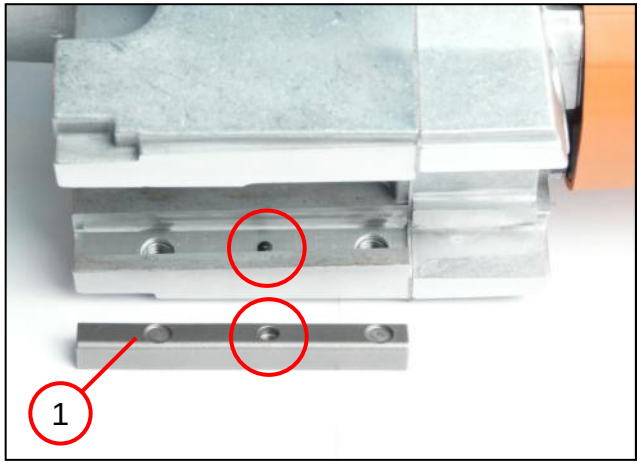
1. Fill gearbox housing with 120g of grease.
2. Assemble motor housing with intermediate bearing (1) on gearbox housing (2).
3. Use socket head screws to connect two assemblies together.
   ☞Tighten socket head screws to torque of 7.5 Nm.

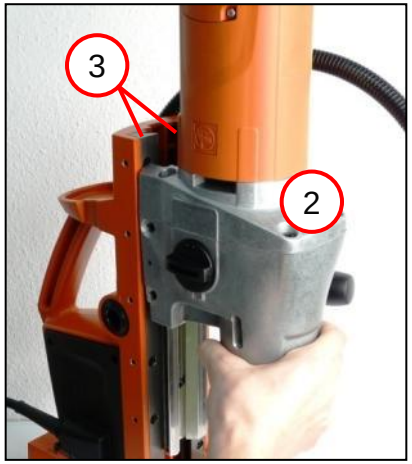
Tool:

- Grease (0 40 118 0300 9)
- Size 5 socket wrench

7. Assembly

Assembling drill unit





1. Insert pressure piece (1).
2. Slide drill unit (2) on to guide rails (3).
3. Use two levers (4) to fix drill unit.

7. Assembly

Assembling drill unit

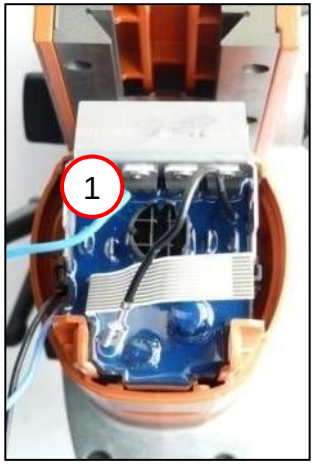
1. Screw down flat headed screw (1).
   ☞ Tighten screw to torque of 1.2 Nm.

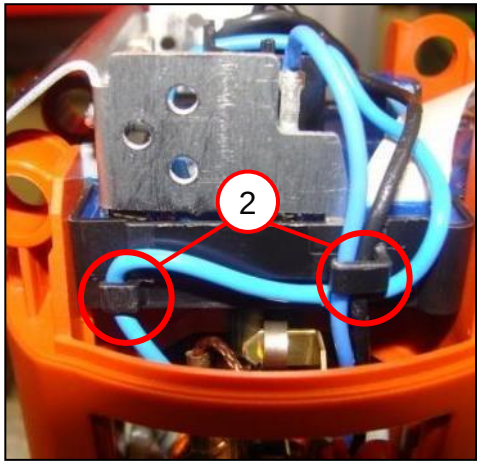
Tool:

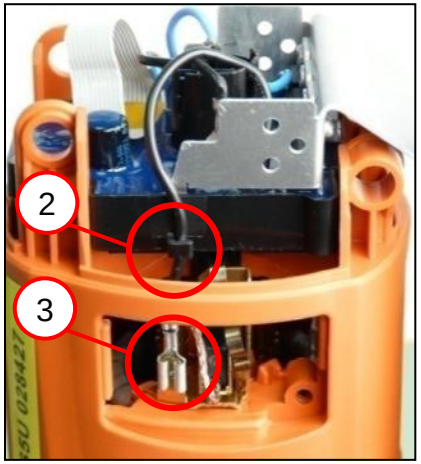
- Slotted screwdriver

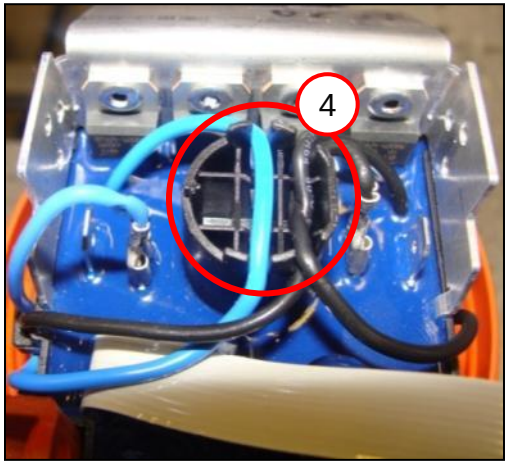
7. Assembly

Assembling PCB of drill unit





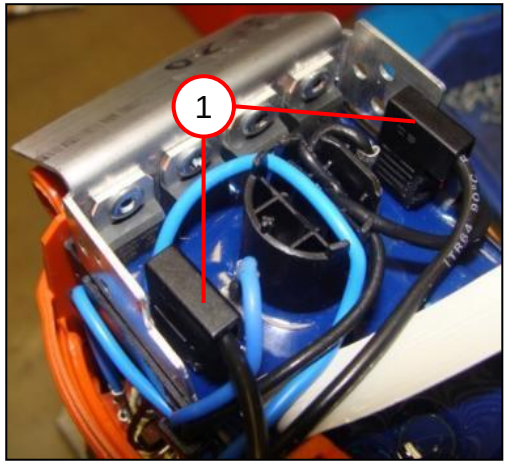


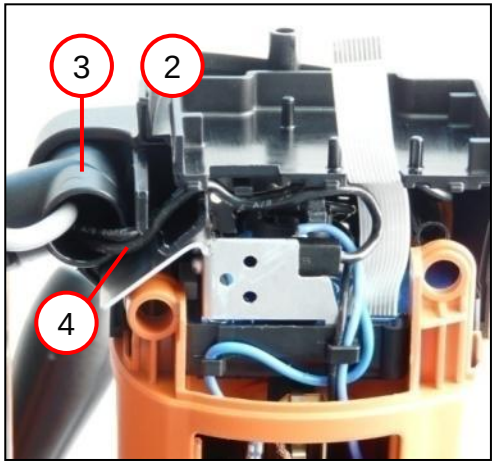


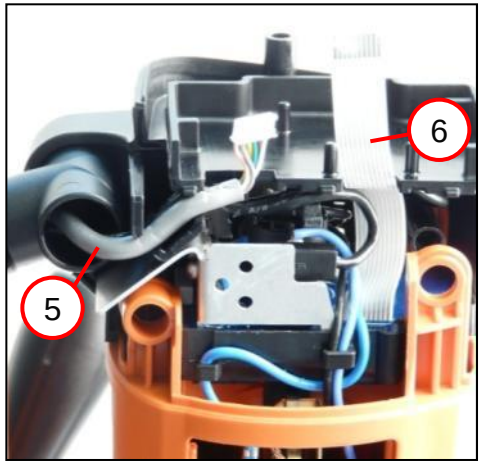
1. Insert electronics PCB (1) in correct position.
2. Press connecting cables in to the intended holders (2).
3. Connect connecting cables (3) to carbon brush holders.
   ☞ For correct connection of connecting cables, see connection diagram.
4. Install connecting cables correctly (4).

7. Assembly

Assembling PCB of drill unit



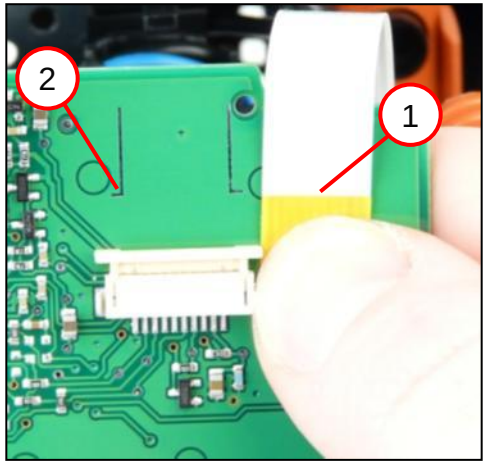


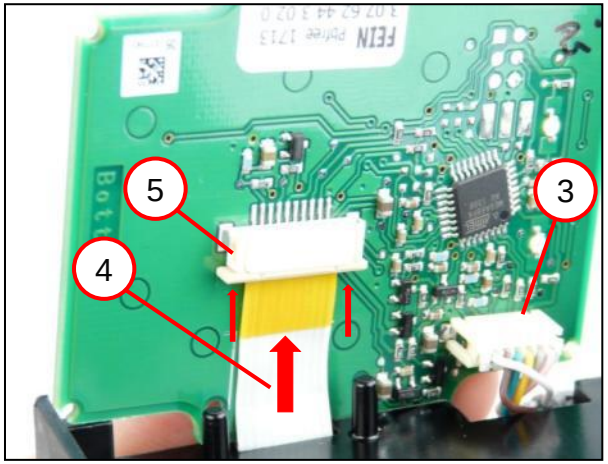


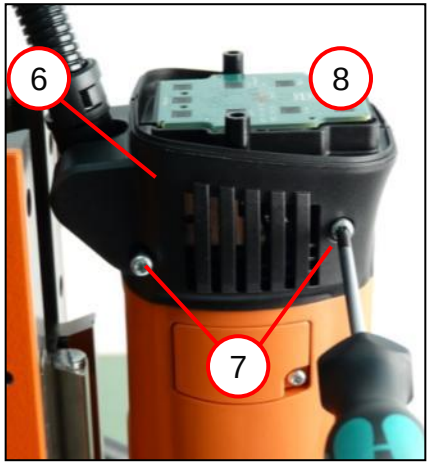
1. Connect connecting cables (1).
2. Attach first housing half (2).
3. Position protective hose (3) and install connecting cables (4 and 5) as shown.
4. Position ribbon cable (6).

7. Assembly

Assembling PCB of drill unit







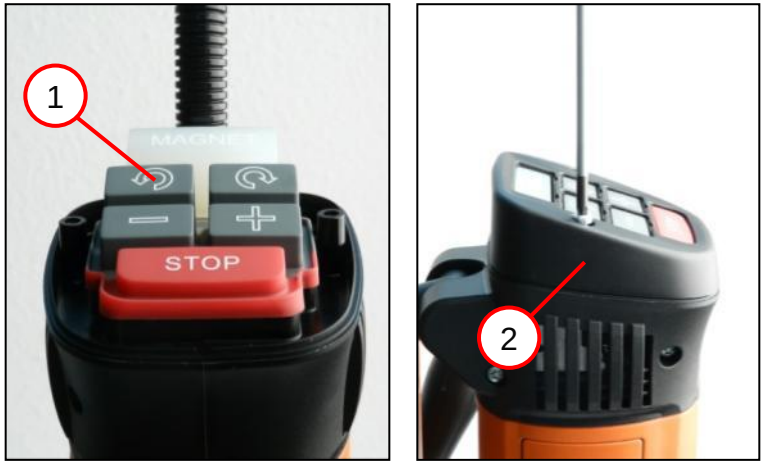
1. Ensure that end of yellow mark (1) is in correct position on mark (2).
2. Connect plug (3) to electronics PCB.
3. Slide ribbon cable (4) in to connection (5) and seal connection.
4. Attach second housing half (6).
5. Screw the two housing halves together (7).
6. Place electronics PCB (8) on housing.

Tool:

- Torx T20

7. Assembly

Assembling switch insert of drill unit



1. Place switch insert (1) on electronics PCB.
2. Place cover (2) on housing and switch insert and screw down.

Tool:

- Torx T20

7. Assembly

Assembling quick-release chuck

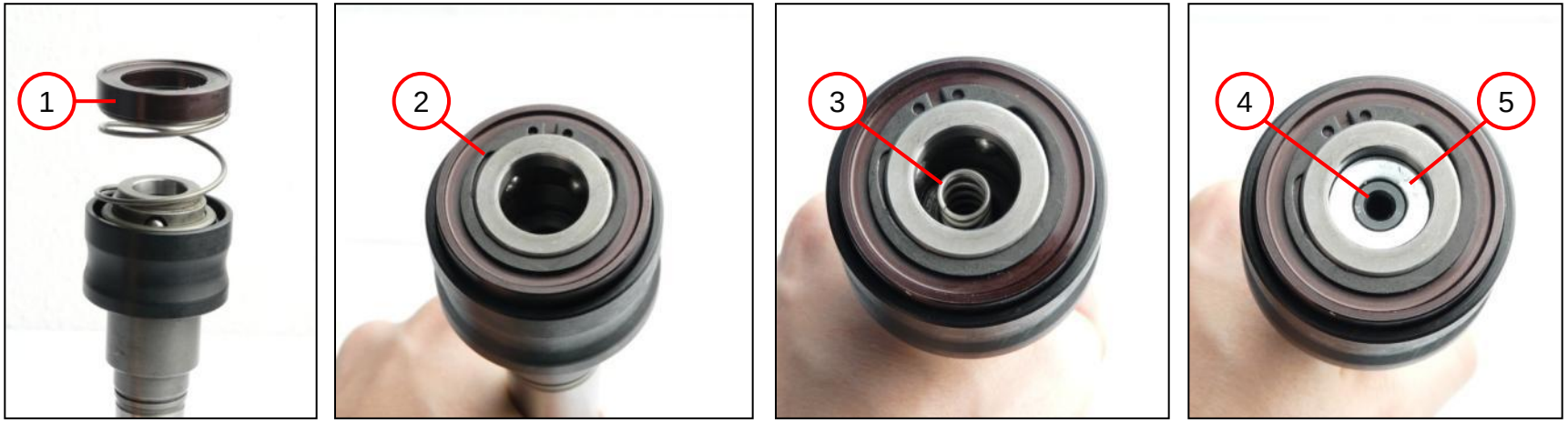
1. Insert the four balls (1) in shaft.
   ☞ Fix balls with a drop of grease.
2. Place outer sleeve (2) on shaft.
3. Place inner sleeve (3) on shaft.
4. Insert spiral spring (4) between inner and outer sleeve.

Tool:

- Circlip pliers
- Grease (0 40 106 0100 1)

7. Assembly

Assembling quick-release chuck



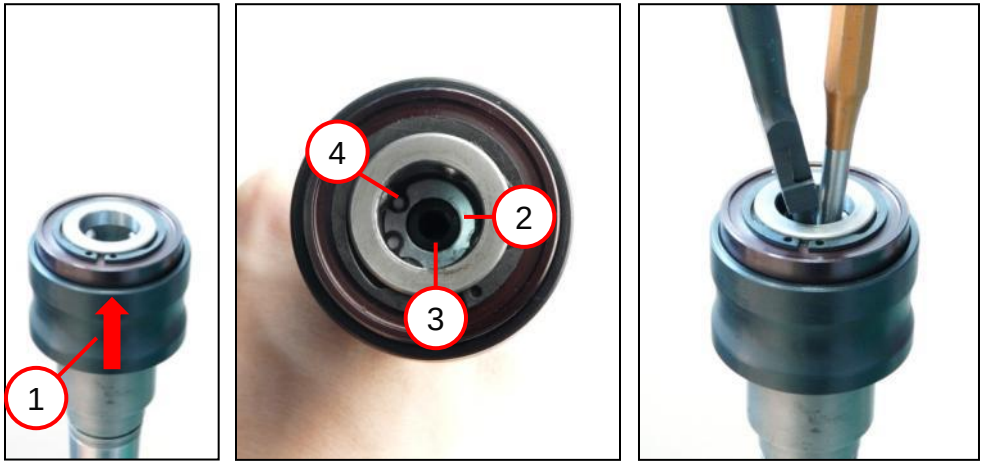
1. Place cover (1) on spring and press down.
2. Use circlip (2) to secure cover.
3. Insert spiral spring (3).
4. Insert sleeve (4) and disc (5).

Tool:

- Circlip pliers

7. Assembly

Assembling quick-release chuck



1. Push up outer sleeve (1) and hold.
   ☞ The outer sleeve must be held at the top, otherwise the circlip cannot be assembled.
2. Press disc (2) and sleeve (3) down at the same time.
3. Insert circlip (4) and press all the way down together with disc and sleeve.

Tool:

- Circlip pliers
- Size 6 punch

7. Assembly

Assembling quick-release chuck

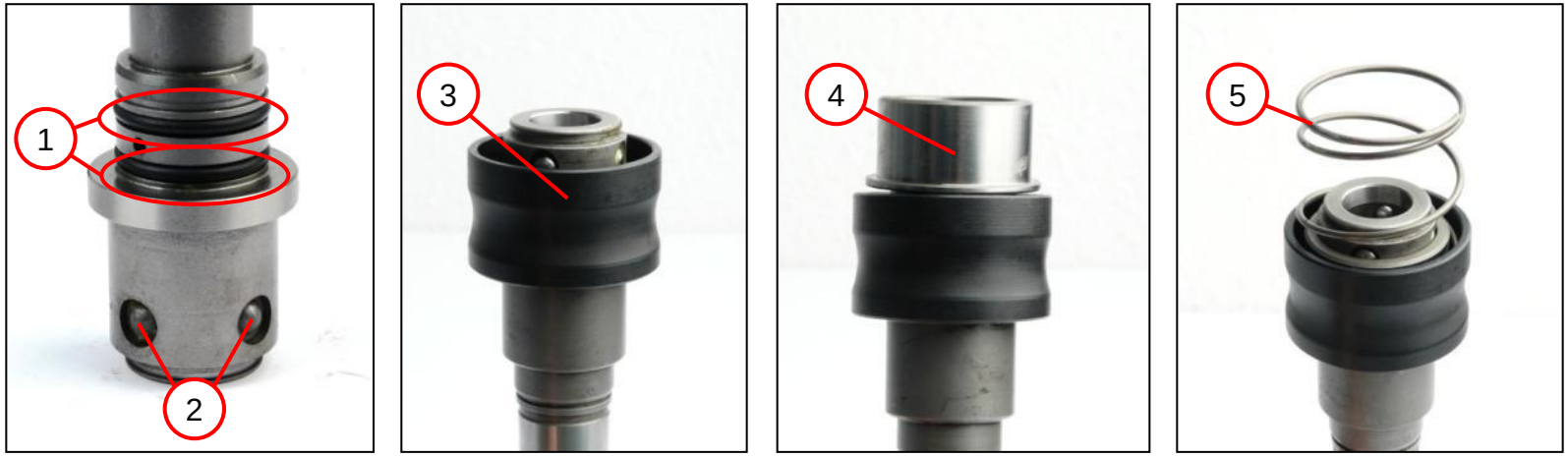
1. Slide nut (1) over shaft.
2. Secure circlip (2) on shaft.

Tool:

- Circlip pliers

7. Assembly

Assembling Weldon mounting shaft (accessory)



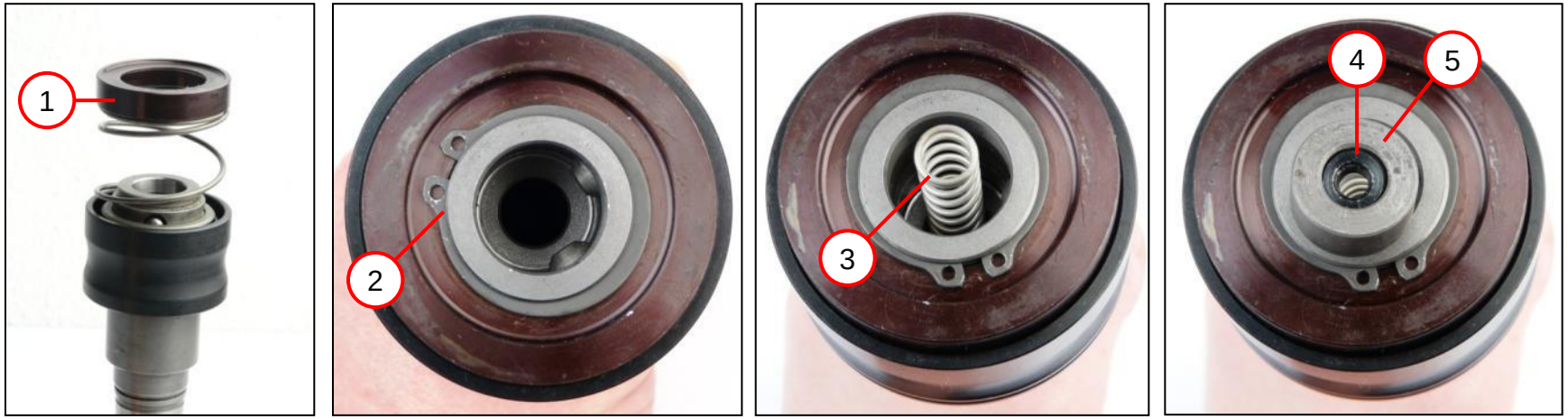
1. Position two sealing rings (1) on shaft.
   ☞ Replace the two sealing rings each time housing is assembled.
2. Insert two pins (2) in shaft.
   ☞Insert the two pins such that the flattened end faces the interior of the shaft.
   ☞ Fix pins with a drop of grease.
3. Place outer sleeve (3) on shaft.
4. Place inner sleeve (4) on shaft.
5. Insert spiral spring (5) between inner and outer sleeve.

Tool:

-Grease (0 40 106 0100 1)

7. Assembly

Assembling Weldon mounting shaft (accessory)



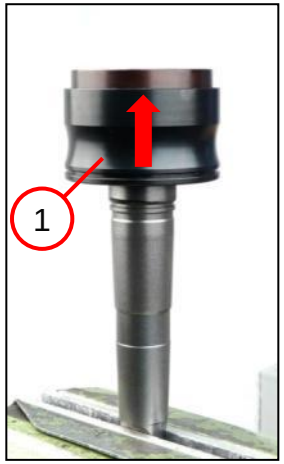
1. Place cover (1) on spring and press down.
2. Use circlip (2) to secure cover.
3. Insert spiral spring (3).
4. Insert sleeve (4) and disc (5).

Tool:

- Circlip pliers

7. Assembly

Assembling Weldon mounting shaft (accessory)



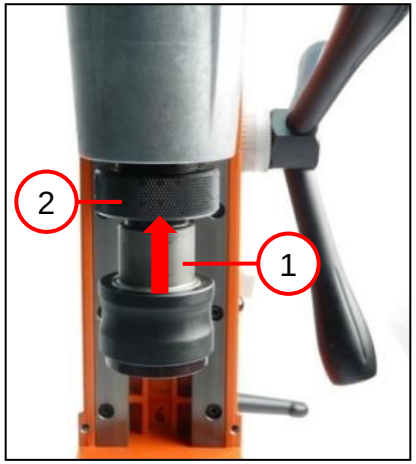
Tool:

- Circlip pliers
- Size 6 punch

1. Push up outer sleeve (1) and hold.
   ☞ The outer sleeve must be held at the top, otherwise the circlip cannot be assembled.
2. Press disc (2) and sleeve (3) down at the same time.
3. Insert circlip (4) and press all the way down together with disc and sleeve.
4. Place nut (3) on shaft.
5. Assemble circlip (4).

7. Assembly

Assembling drill chuck



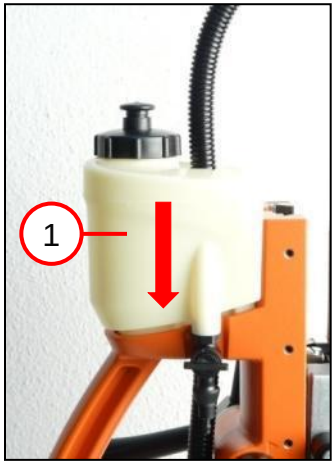
1. Slide drill chuck (1) up in to fitting.
2. Screw down drill chuck with nut (2).

Tool:

- Torx T20

7. Assembly

Assembling container



1. Assemble container (1).

7. Assembly

Assembling drill unit

1. Use six stud bolts (1) to set zero backlash on the guide.
   - ☞ To check the drill unit, move it up and down with the spider.
   - ☞ At the places where the drill unit moves too fast or too slowly, screw the stud bolts in or out.

Tool:

- Size 2.5 socket wrench

8. Troubleshooting

See separate file on Extranet or retail partner portal.

9. Connection diagram