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## AWBP 10



### 1. Models described

These repair instructions describe how to repair the following models:

| Model   | Order number     |
|---------|------------------|
| AWBP 10 | 7 105 04 00 94 0 |



## **2. Technical data**

### **Technical data**

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

### **Test data**

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

### **Lubricants**

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

### **Lists of spare parts**

Lists of spare parts and exploded views are available online at [www.fein.com](http://www.fein.com)



### 3. 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.**



## 4. Tools required

### Standard tools

Extraction tool

Drill chuck key

Arbor press

Punch

Dia. 4 mm; Dia. 5 mm

Sleeve

Inner dia. 16 mm

Inner dia. ~20 mm

Inner dia. 12 mm

Inner dia. ~16 mm

Inner dia. 10 mm

Inner dia. 26 mm

Inner dia. 11 mm

Inner dia. 26 mm

Inner dia. 9 mm

Inner dia. 22 mm

Inner dia. 12 mm

Inner dia. 15 mm

Inner dia. 16 mm

Inner dia. ~25 mm

### Special tools

Drawing-off socket cap

6 41 04 150 00 8

Chuck cone, dia. 16 mm

6 41 07 016 00 1

Chuck cone, dia. 19 mm

6 41 07 019 00 7

Chuck cone, dia. 22 mm

6 41 07 022 00 0

Chuck cone, dia. 26 mm

6 41 07 026 00 0



## 4. Tools required

### Standard tools

Sleeve

Inner dia. 5 mm  
Inner dia. ~15 mm  
Inner dia. 13 mm  
Inner dia. 25 mm  
Inner dia. 16 mm  
Inner dia. ~20 mm

Hex key

6 mm

Plastic hammer

Circlip pliers

Torx

T15; T20

Cylinder head screw

M8x60



## **5. Lubricants and auxiliary substances required**

### **Lubricants**

|        |                 |      |         |
|--------|-----------------|------|---------|
| Grease | 0 40 101 0100 4 | 25 g | Housing |
|--------|-----------------|------|---------|





### 6. Removal

#### Removing the battery and key-type drill chuck



1. Press the catch (1) and pull the battery off the tool.
2. Remove the key-type drill chuck (2).

#### Tools:

- 6 mm hex key
- M8x60 cylinder head screw
- Drill chuck key

## 6. Removal

### Removing the motor housing



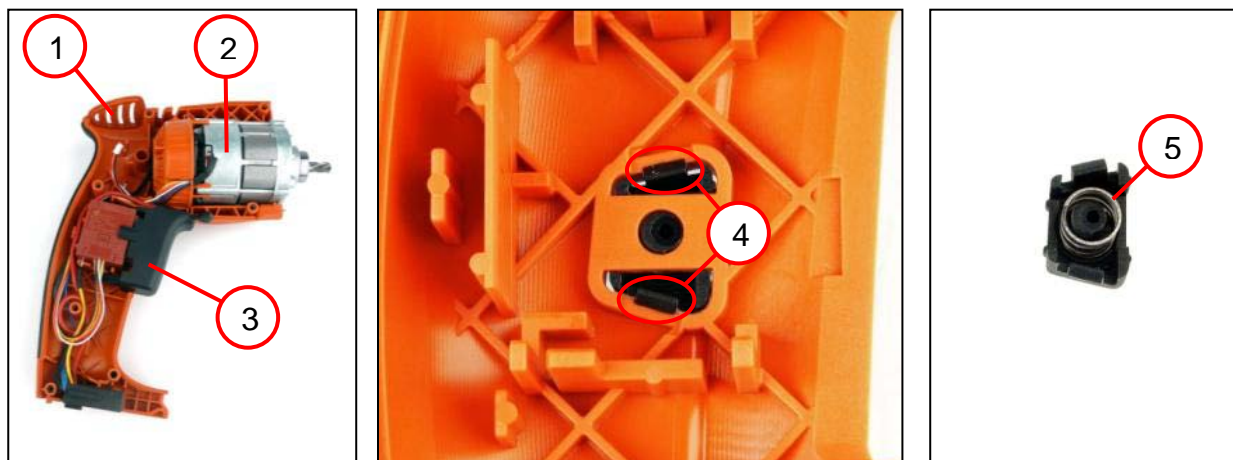
1. Unscrew the three screws (1).
2. Remove the gearbox housing (2).
3. Unscrew the seven screws (3).
4. Open the upper part of the motor housing (4).

**Tools:**

- Torx T20; T15

## 6. Removal

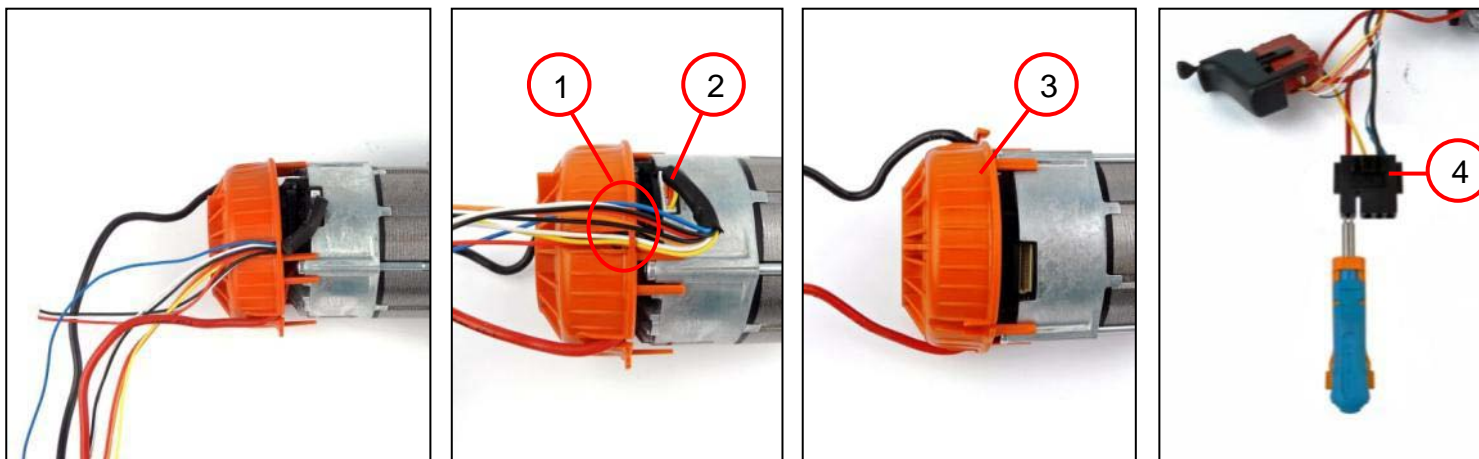
### Removing the motor housing



1. Remove the terminal (1).
2. Remove the motor (2) and the switch (3).
3. Push the two clips (4) towards each other.
4. Push the stop button out of the motor housing.
5. Remove the spiral spring (5).

## 6. Removal

### Removing the motor



1. Pull out the wires (1) one by one.
2. Pull off the plug (2).
3. Remove the air guide ring (3).
4. Remove all the connection cables from the plug (4).

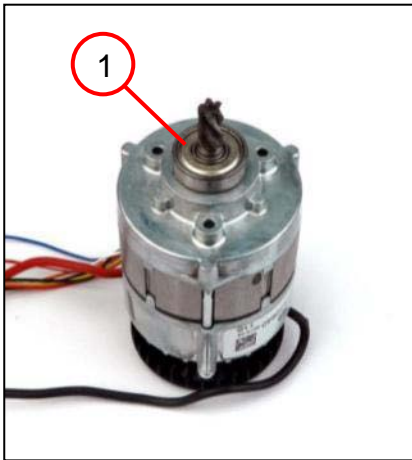
**Tools:**

- Extraction tool



### 6. Removal

#### Removing the motor



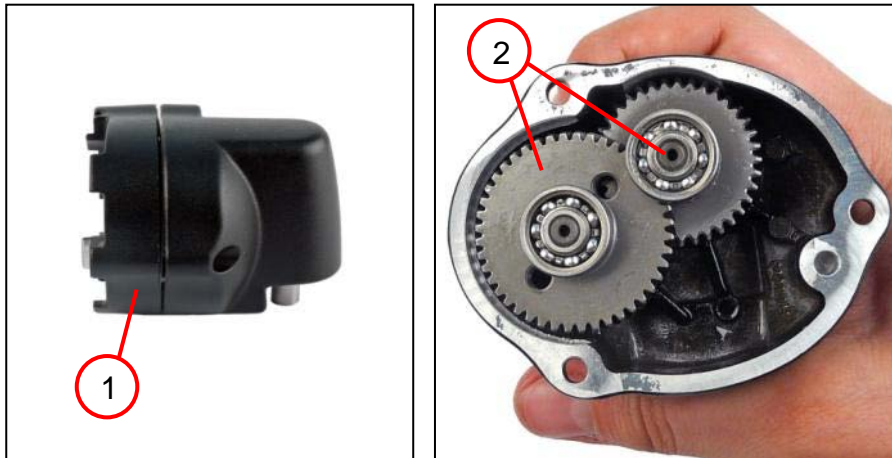
1. Take the grooved ball bearing (1) off the motor.

**Tools:**

- Drawing-off socket cap
- Chuck cone, dia. 19 mm

### 6. Removal

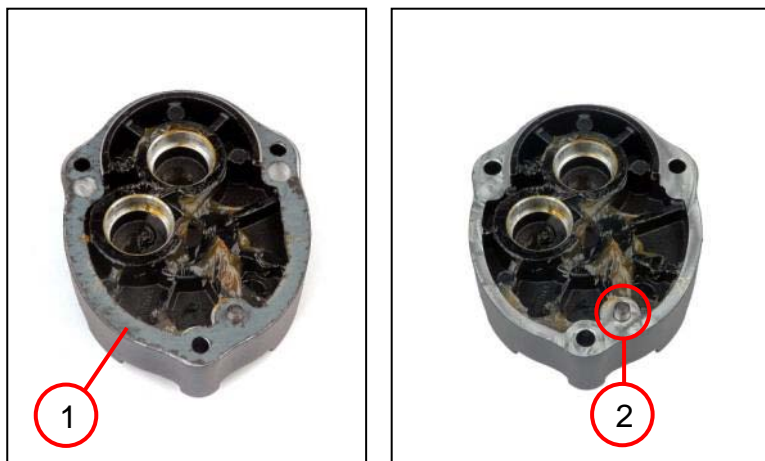
#### Removing the bearing



1. Pull the intermediate gear box (1) off the gearbox housing.
2. Remove the gearbox (2) from the gearbox housing.

## 6. Removal

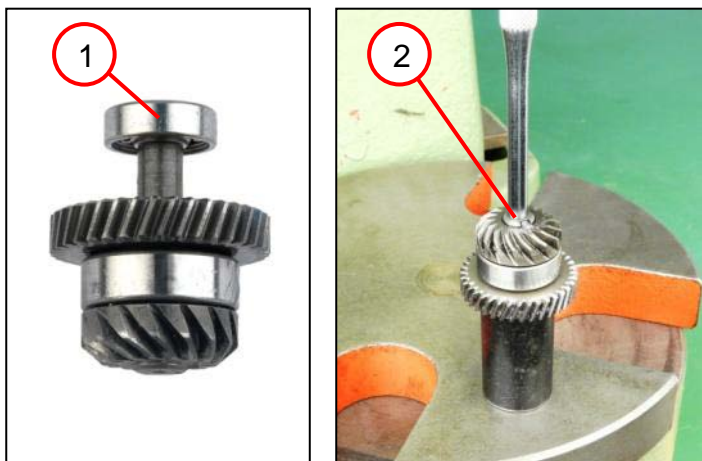
### Removing the gearbox housing



1. Remove the seal (1) from the intermediate gear box.  
☞ Each time you remove the gearbox housing, dispose of the old seal.
2. Pull the dowel pin (2) out of the intermediate gear box.

### 6. Removal

#### Removing the gearbox



1. Pull the grooved ball bearing (1) off the shaft.
2. Push all the individual parts off the shaft (2).

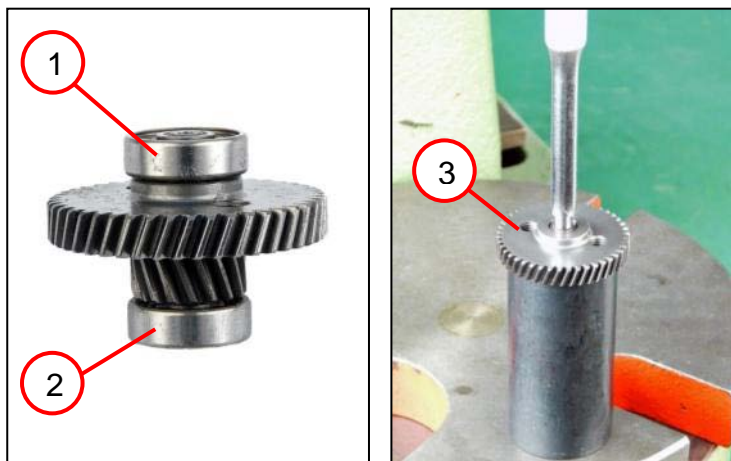
#### Tools:

- Drawing-off socket cap
- Chuck cone, dia. 16 mm
- Arbor press
- Punch, dia. 4 mm
- Sleeve  
Inner dia. 16 mm  
Outer dia. ~20 mm



## 6. Removal

### Removing the gearbox



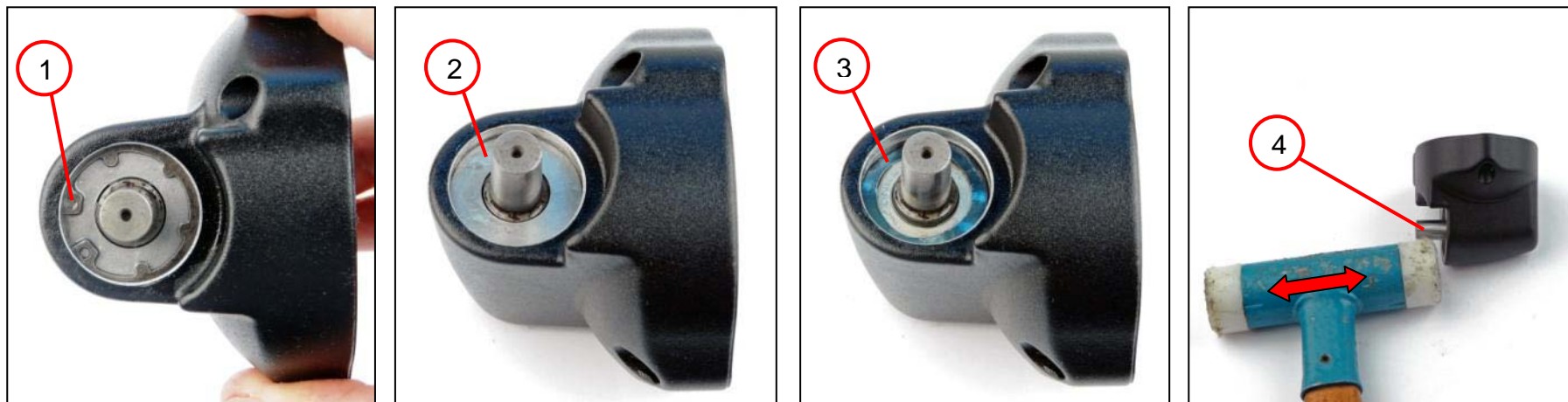
1. Pull the grooved ball bearing (1) off the shaft.
2. Pull the grooved ball bearing (2) off the shaft.
3. Push the gear-wheel [z=44] (3) off the shaft.

**Tools:**

- Drawing-off socket cap
- Chuck cone, dia. 16 mm
- Arbor press
- Punch, dia. 5 mm
- Sleeve  
Inner dia. 12 mm  
Outer dia. ~16 mm

## 6. Removal

### Removing the gearbox housing



1. Remove the circlip (1).  
☞ When refitting the gearbox housing, always use a new circlip.
2. Remove the disc (2).
3. Remove the disc (3).
4. Remove the shaft (4) from the housing.

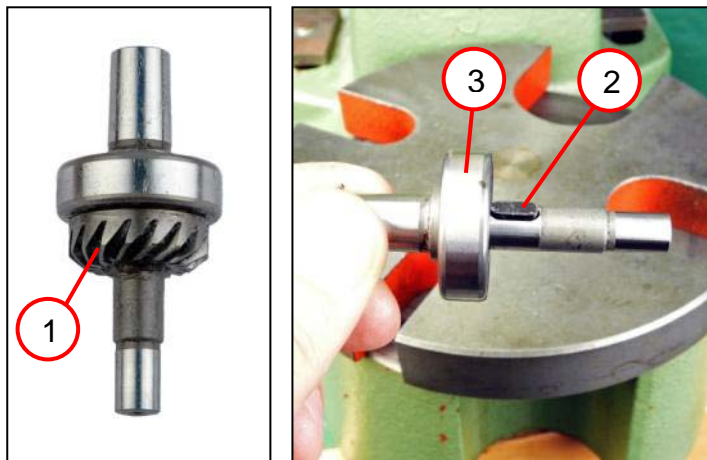
**Tools:**

- Circlip pliers
- Plastic hammer



### 6. Removal

#### Removing the gearbox



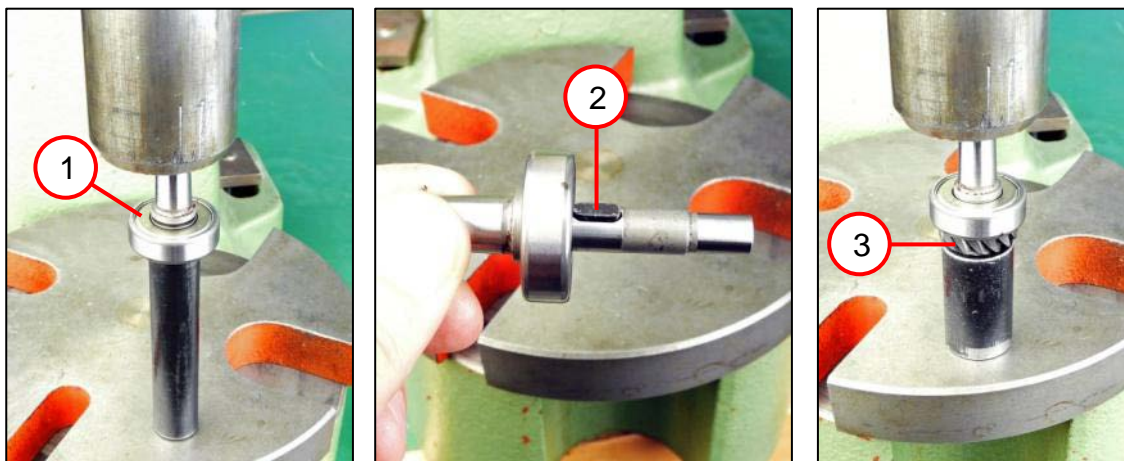
1. Pull the gear-wheel [z=16] (1) off the shaft.
2. Remove the feather key (2).
3. Pull the grooved ball bearing (3) off the shaft.

#### Tools:

- Drawing-off socket cap
- Chuck cone, dia. 22 mm
- Chuck cone, dia. 26 mm

## 7. Fitting

### Fitting the gearbox



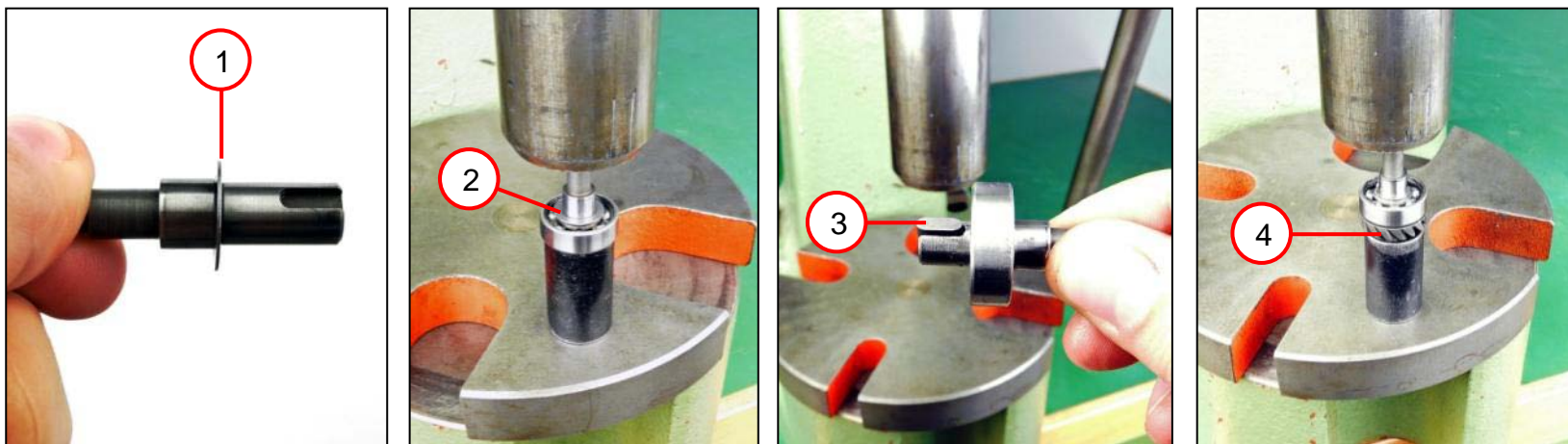
1. Push the grooved ball bearing (1) onto the shaft.
2. Insert the feather key (2) into the recess.
3. Push the gear-wheel [z=17] (3) onto the shaft.

**Tools:**

- Arbor press
- Sleeve  
Inner dia. 10 mm  
Outer dia. 26 mm
- Sleeve  
Inner dia. 11 mm  
Outer dia. 26 mm

## 7. Fitting

### Fitting the gearbox



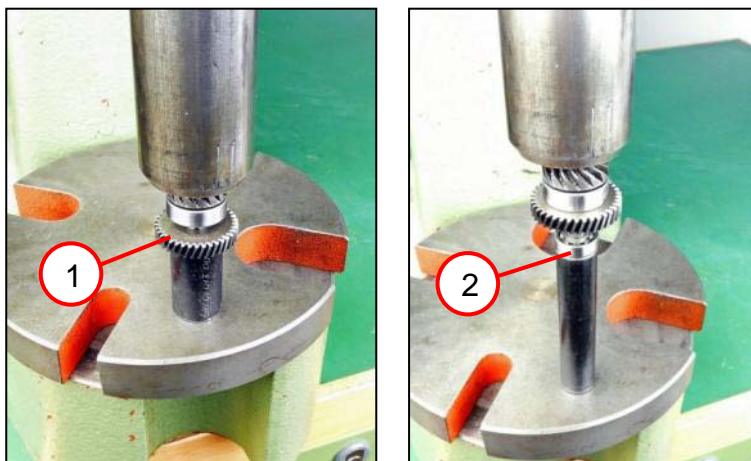
1. Insert the feather key (1) into the recess.
2. Push the grooved ball bearing (2) onto the shaft.
3. Place the feather key (3) into the recess in the shaft.
4. Push the gear-wheel [z=16] (4) onto the shaft.

**Tools:**

- Arbor press
- Sleeve  
Inner dia. 9 mm  
Outer dia. 22 mm
- Sleeve  
Inner dia. 12 mm  
Outer dia. ~15 mm

### 7. Fitting

#### Fitting the gearbox



1. Push the gear-wheel (1) onto the shaft.
2. Push the grooved ball bearing (2) onto the shaft.

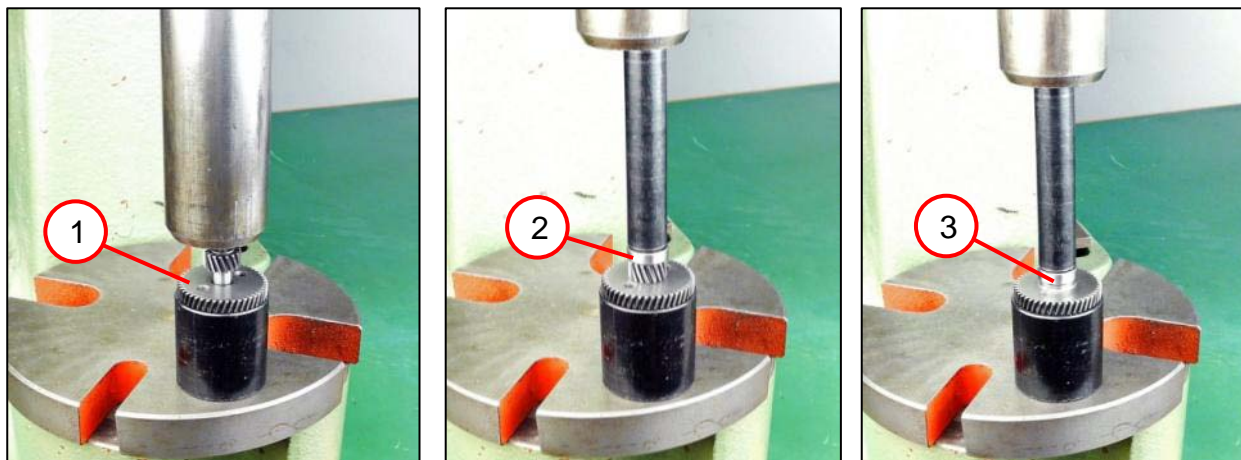
#### Tools:

- Arbor press
- Sleeve  
Inner dia. 16 mm  
Outer dia. ~25 mm
- Sleeve  
Inner dia. 5 mm  
Outer dia. ~15 mm



## 7. Fitting

### Fitting the gearbox



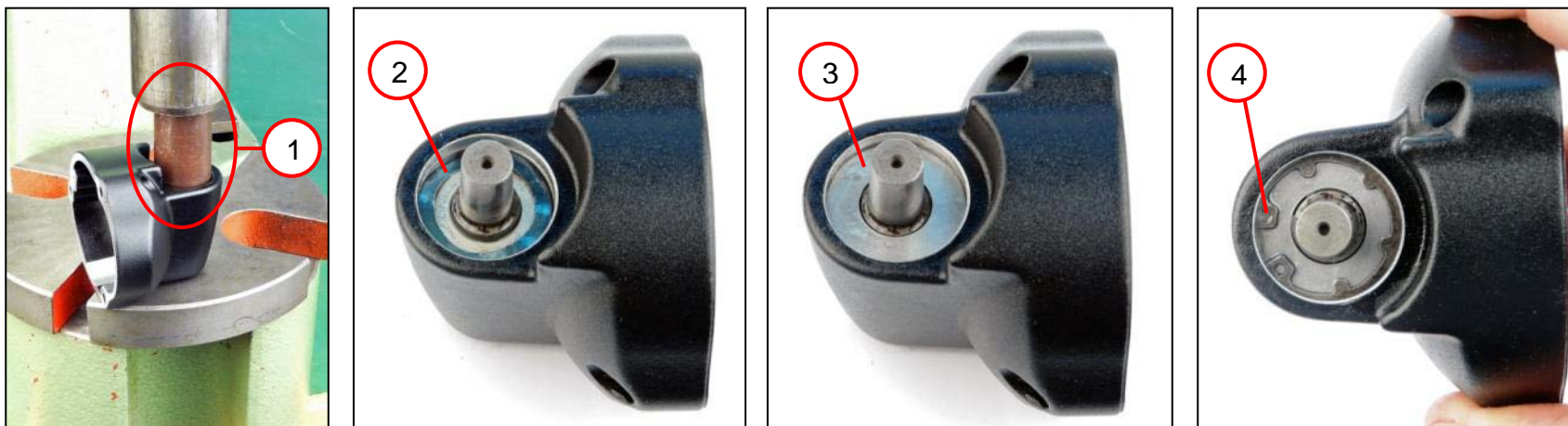
1. Push the gear-wheel (1) into the correct position on the shaft.
2. Push the grooved ball bearing (2) onto the shaft.
3. Push the grooved ball bearing (3) onto the shaft.

#### Tools

- Arbor press
- Sleeve  
Inner dia. 16 mm  
Outer dia. ~25 mm
- Sleeve  
Inner dia. 5 mm  
Outer dia. ~15 mm

## 7. Fitting

### Fitting the gearbox housing



1. Push the shaft (1) into the gearbox housing.
  - ☞ Take care not to damage the needle bearing in the gearbox housing when pushing the shaft in.
2. Insert the disc (2).
3. Insert the disc (3).
4. Fit the circlip (4).
  - ☞ When refitting the gearbox housing, always use a new circlip.

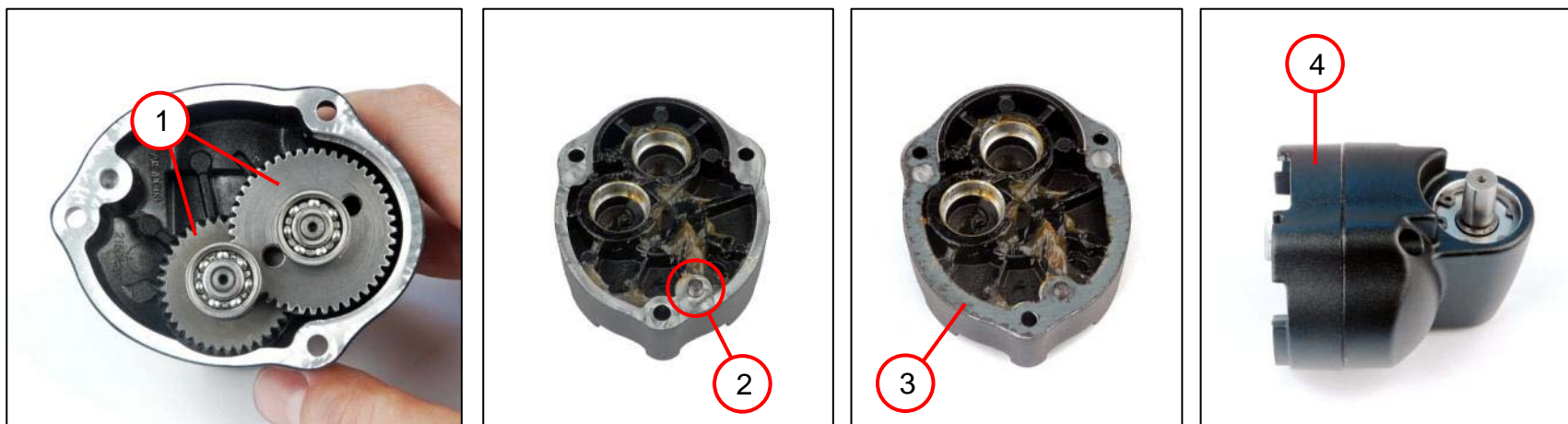
**Tools:**

- Arbor press
- Sleeve
  - Inner dia. 13 mm
  - Outer dia. 25 mm
- Circlip pliers



## 7. Fitting

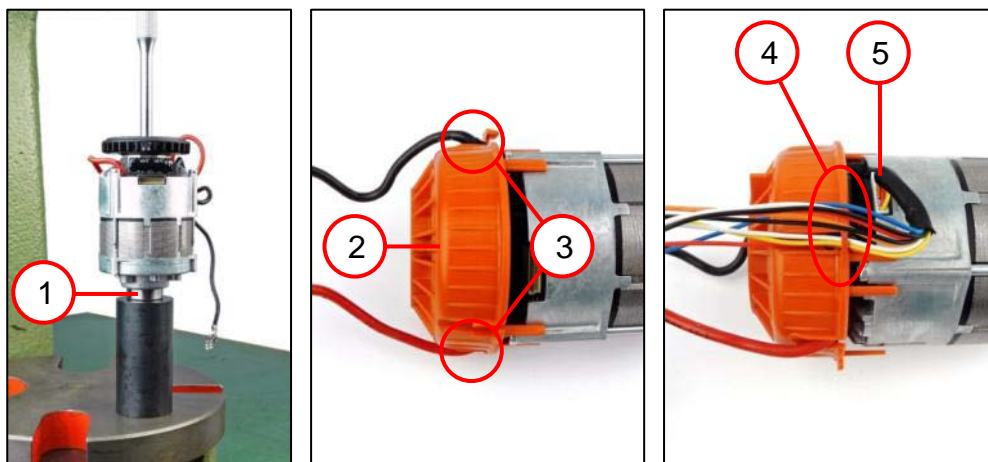
### Fitting the gearbox housing



1. Insert the gearbox parts (1) at the same time.
2. Fill the gearbox housing with 12 g of grease.
3. Insert the dowel pin (2).
4. Place the seal (3) into the correct position on the intermediate gear box.  
☞ When refitting the gearbox housing, always use a new seal.
5. Fit the intermediate gear box (4) to the gearbox housing.

## 7. Fitting

### Fitting the motor



#### PLEASE NOTE:

##### **Incorrect fitting may result in damage**

If you fit the motor incorrectly, you risk damaging it.

☞ Use an arbor to push in the motor's shaft.

1. Push the grooved ball bearing (1) onto the motor.
2. Fit the air guide ring (3) in the right position on the motor.
3. Insert the two cables (2) into the recesses on either side of the air guide ring.
4. Thread the individual wires (4) from the cable into the recess.
5. Connect the plug (5).

#### **Tools:**

- Arbor press
- Arbor

### 7. Fitting

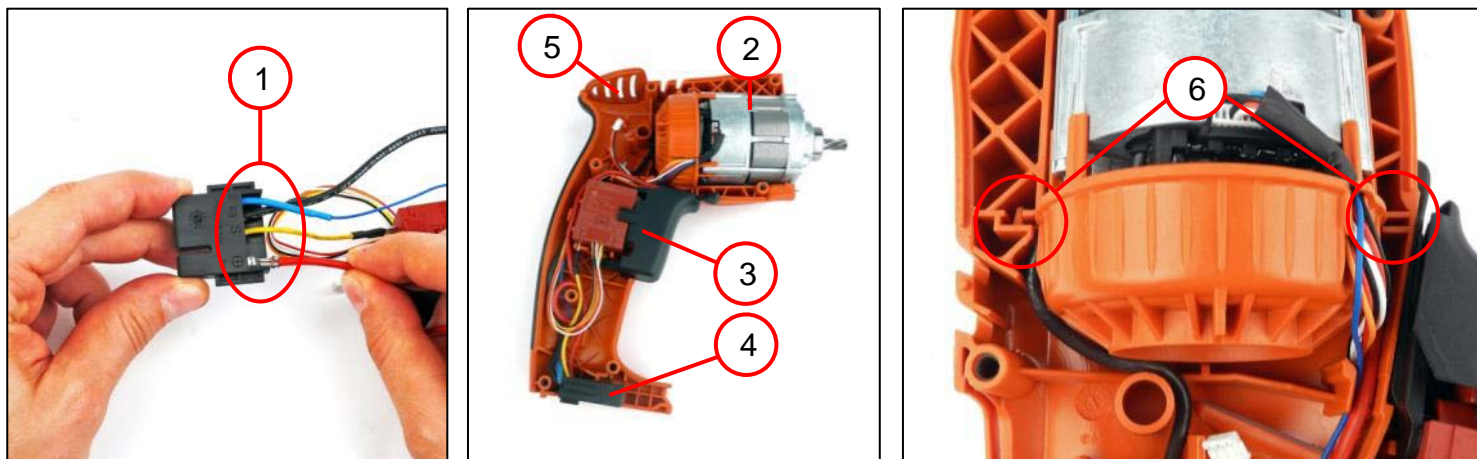
#### Fitting the stop button



1. Insert the spiral spring (1) into the recess.
2. Push the stop button (2) into the recess.

## 7. Fitting

### Fitting the motor housing



1. Connect the cables (1) from the motor and the switch to the plug.  
☞ See "Connection diagram".
2. Place the motor (2), switch (3) and plug (4) into the correct position in the housing.  
☞ Make sure that the air guide ring is sitting in both of the recesses (6).
3. Put the terminal (5) in place.

### 7. Fitting

#### Fitting the motor housing



1. Insert the black motor cable at the bottom.
2. Place the thin cables from the speed setting switch on top of the black motor cable.
3. The red motor cable should be on top.
  - ☞ The red motor cable fixes the thin cables from the speed setting switch in place.

## 7. Fitting

### Fitting the motor housing



#### PLEASE NOTE:

##### Risk of cables being trapped

When you close the cover, there is a risk that individual cables may be trapped, causing them damage.

☞ Route all cables as shown on page 29.

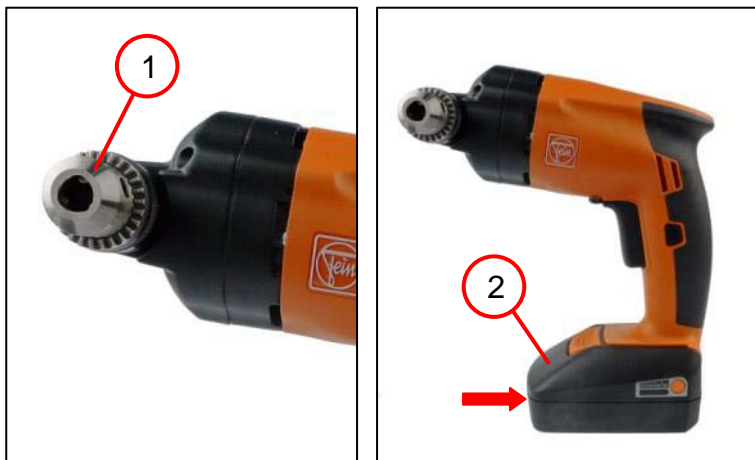
1. Fit the motor housing (1) together.
2. Screw in the seven screws (2).
3. Fit the gearbox housing (3).
4. Screw in the screws (4).

#### Tools:

- Torx T15; T20

## 7. Fitting

### Fitting the motor housing



1. Degrease the shaft and the key-type drill chuck.
2. Connect the key-type drill chuck (1) to the shaft.
3. Tap the key-type drill chuck with a plastic hammer to fix it in place.
4. Slide the battery (2) onto the tool.

**Tools:**

- Plastic hammer





## 8. Troubleshooting

| Fault                                 | Cause   | Remedy                          |
|---------------------------------------|---|---------------------------------|
| Motor will not start                  | Motor/electronics defective                   | Check electrics with test board |
|                                       | Switch is defective                           | Check electrics with test board |
|                                       | Battery plug contacts have come loose         | Check components                |
| Unusual noise from gearbox (rattling) | Gearbox is defective                          | Replace gearbox                 |
| Motor only turning in one direction   | Plug on motor has come loose or is not secure | Check cables                    |

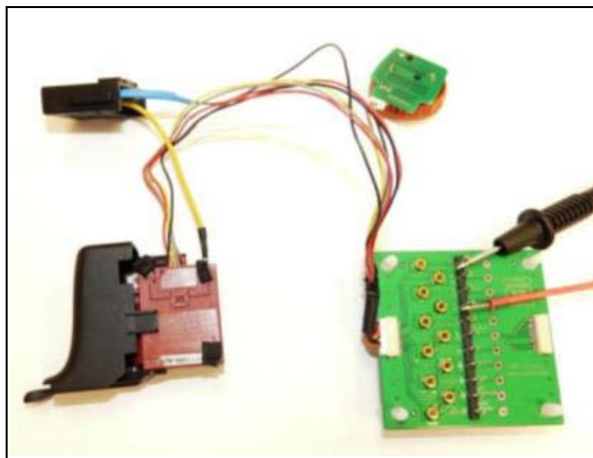


## 8. Troubleshooting

Test board



Test setup



FEIN recommends using the test board (special tool) for electrical troubleshooting.

Since the motor cannot be tested directly, you can use the test board to check the functions of switches and torque potentiometers (if present).

The possible test steps and target values for use with the test board are provided on the next page.

**Tools:**

- Test board  
6 41 34 001 01 0
- Multimeter



## 8. Troubleshooting

| Test object                             | Test method | Target value   | Measurement line +     | Measurement line - |
|---|-------------|--|------------------------|--------------------|
| General tests                           |             |  |                        |                    |
| Battery sense                           | Continuity  | Switch not pressed: $= \infty \Omega$<br>Switch pressed: $< 10 \Omega$   | Battery sense (yellow) | Pin 1              |
| Battery data                            | Continuity  | $< 10 \Omega$  | Battery data (blue)    | Pin 6              |
| Right-left                              | Continuity  | Position 1: $= \infty \Omega$<br>Position 2: $< 10 \Omega$   | Pin 4                  | Pin 5              |
| Speed potentiometer<br>Total resistance | Resistance  | $20 \text{ k}\Omega \pm 4 \text{ k}\Omega$   | Pin 4                  | Pin 2              |
| Speed potentiometer<br>Resistance range | Resistance  | $0 \Omega$ to $20 \text{ k}\Omega \pm 4 \text{ k}\Omega$<br>(proportional to potentiometer travel)<br>Switch not pressed: $0 \Omega$<br>Switch pressed: $20 \text{ k}\Omega \pm 4 \text{ k}\Omega$ | Pin 4                  | Pin 3              |



## 9. Connection diagram

