



**Applies to:**

WSG 11-125R (C); WSG 11-125RT (C); WSG 11-150R (C);  
WSG 11-150RT (C); WSG 15-125PR (C); WSG 15-125PRT (C);  
WSG 17-125PR (C); WSG 17-125PRT (C); WSG 17-150PR (C);  
WSG 17-150PRT (C); WSG 17-70INOX R (C); WSG 17-70INOX RT (C)



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## 1 Models described

These repair instructions describe how to repair the following models:

<b>Model</b>	<b>Material number</b>
<b>WSG 11-125R (C)</b>	7 222 44 .. . .
<b>WSG 11-125RT (C)</b>	7 222 45 .. . .
<b>WSG 11-150R (C)</b>	7 222 46 .. . .
<b>WSG 11-150RT (C)</b>	7 222 47 .. . .
<b>WSG 15-125PR (C)</b>	7 222 48 .. . .
<b>WSG 15-125PRT (C)</b>	7 222 49 .. . .
<b>WSG 17-125PR (C)</b>	7 222 50 .. . .
<b>WSG 17-125PRT (C)</b>	7 222 51 .. . .
<b>WSG 17-150PR (C)</b>	7 222 52 .. . .
<b>WSG 17-150PRT (C)</b>	7 222 53 .. . .
<b>WSG 17-70INOX R (C)</b>	7 222 54 .. . .
<b>WSG 17-70INOX RT (C)</b>	7 222 55 .. . .





## 2 Technical data

### Technical data

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

### Troubleshooting

Troubleshooting for all devices can be found in the FEIN electronic information system.

### Specific test specifications and measured values

Up-to-date test data for all devices can be found in the FEIN electronic information system.

### Special tools, lubricants and auxiliary substances

The special tools catalogue and the lubricants and container sizes available from FEIN can be found in the FEIN electronic information system.

### Lists of spare parts

Lists of spare parts and exploded views are available online in our spare parts catalogue, which can be accessed via the FEIN website.

### Connection diagram

The connection diagram can be found in the FEIN electronic information system.





### 3 Symbols used

	Refers to measures for avoiding the risk of injuries.
	Refers to information or instructions that should be followed. Non-observance can result in damage or malfunctions.
	Read the operating instructions.
	Indicates notes that provide information or instructions that may provide a better understanding and contribute to the more effective use of the product.
	Part of the navigation interface.





## 4 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!**



### INFORMATION

Read the operating instructions for the product before carrying out any repair work.

### 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.

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

The provisions set out in **DIN VDE 0701-0702** should be observed after repairs.

The relevant accident prevention regulations are to be observed during commissioning.

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

### Disclaimer

The content of this documentation has been carefully reviewed and produced to the best of our knowledge. C. & E. Fein GmbH assumes no responsibility for the completeness, relevance, quality or correctness of the information provided.

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## 5 Safety instructions

### 5.1 Structure

 <b>SIGNAL WORD FOR THE DANGER CLASSIFICATION.</b>
Type and source of the danger.
Possible consequences.
Measure that must be taken in order to avoid this danger.

### 5.2 Danger classification

#### Warning

This warning refers to a dangerous situation. If the situation is not avoided, this may result in severe injuries or death.

 <b>WARNING!</b>
Type and source of the danger.
Possible consequences.
Measure that must be taken in order to avoid this danger.

#### Caution

This warning refers to a potentially dangerous situation. If the situation is not avoided, this may result in slight or minor injuries. This may also be used as a warning against material damage.

 <b>CAUTION!</b>
Type and source of the danger.
Possible consequences.
Measure that must be taken in order to avoid this danger.

#### Please note

Indicates a potentially harmful situation. If this situation is not avoided, the product or an object in its environment could be damaged.

 <b>PLEASE NOTE:</b>
Type and source of the danger.
Damage to the product or its environment.
Measure that must be taken in order to avoid this danger.



### 5.3 Information

Indicates notes that provide information or instructions that may provide a better understanding and contribute to the more effective use of the product.

 <b>INFORMATION</b>
Tip





## 6 Tools, lubricants and auxiliary substances required

### 6.1 Standard tools

Cross-head screwdriver	PH2
Slotted screwdriver	small
Plastic hammer	
Torx	T15 T20
Punch	6 mm diameter
Arbor press	
Ball bearing support	19 mm; 26 mm
Sleeve	35 mm inner diameter 19 mm outer diameter 14 mm inner diameter 42 mm outer diameter 30 mm inner diameter 20 mm outer diameter 15 mm inner diameter 27 mm outer diameter 15 mm inner diameter 40 mm outer diameter 26 mm inner diameter
4x round material	20 mm in diameter Length 60 mm

### 6.2 Special tools

Drawing-off socket cap		64104150008
Chuck cone	19 mm diameter	64107019007
	26 mm diameter	64107026000
Drawing-off plate		64102069007
Pipe		64101002004
Assembly aid		64122121010
Pressure piece		64122003000





### 6.3 Lubricants and auxiliary substances required

**WSG 11-125R (C); WSG 11-125RT (C); WSG 15-125PR (C); WSG 15-125PRT (C); WSG 17-125PR (C); WSG 17-125PRT (C);**

Grease	04010101004	21 g	Gearbox
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**WSG 11-150R (C); WSG 11-150RT (C); WSG 17-150PR (C); WSG 17-70PRT (C); WSG 17-70INOX R (C); WSG 17-70INOX RT (C)**

Grease	04010101004	29 g	Gearbox
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## 7 Test and diagnostics options

Currently unavailable.

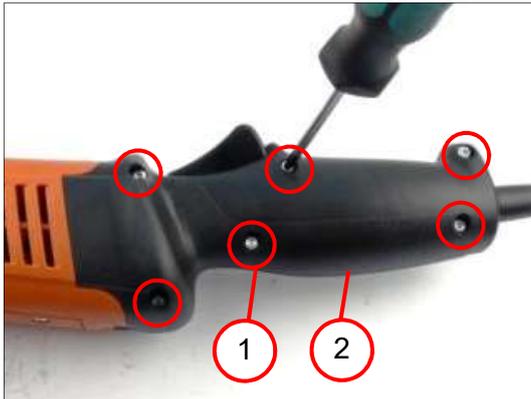


## 8 Disassembly

### 8.1 Removing the handle

**Tools:**

- Torx T15
- PH2 cross-head screwdriver



1. Unscrew the six screws (1).
2. Remove the handle half shell (2).

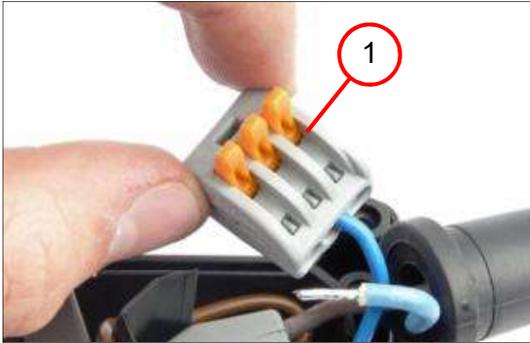


3. Unscrew the screw (3).
4. Remove the cable clamp (4).

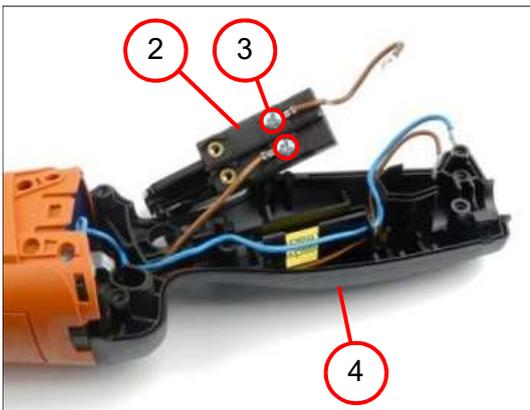


5. Remove the terminals (5).

### 8.1 Removing the handle



6. Open the terminals (1) and remove the cables.



7. Remove the switch (2).
8. Unscrew the two screws (3) and remove the electronics.
9. Remove the handle half shell (4).

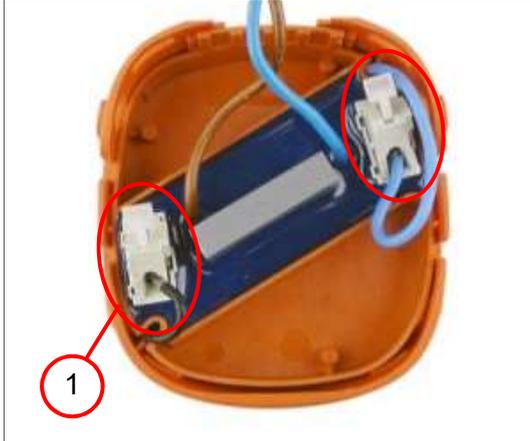
## 8.2 Removing the housing

### 8.2.1 Removing the electronics

**Tools:**

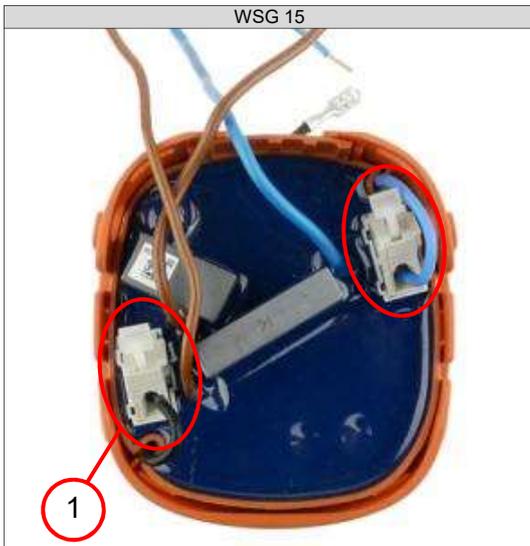
- Torx T15
- PH2 cross-head screwdriver

WSG 11

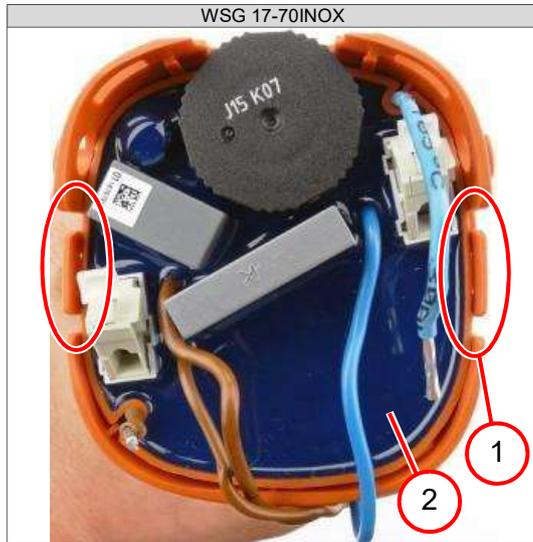


1. Open the two terminals (1) and remove the cables.

WSG 15



### 8.2.1 Removing the electronics



2. Simultaneously press the lugs (1).
3. Remove the electronics (2).

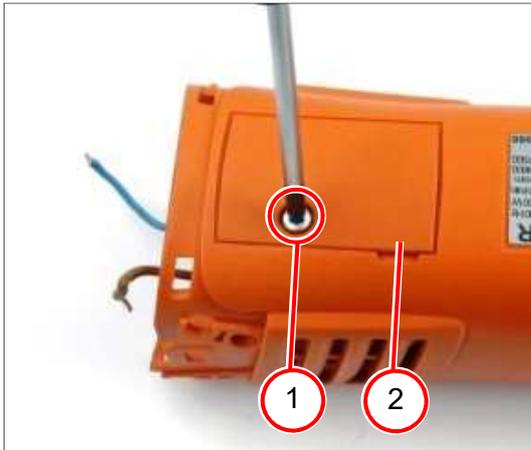
## 8.2.2 Removing the carbon brushes

### Steps that must be completed:

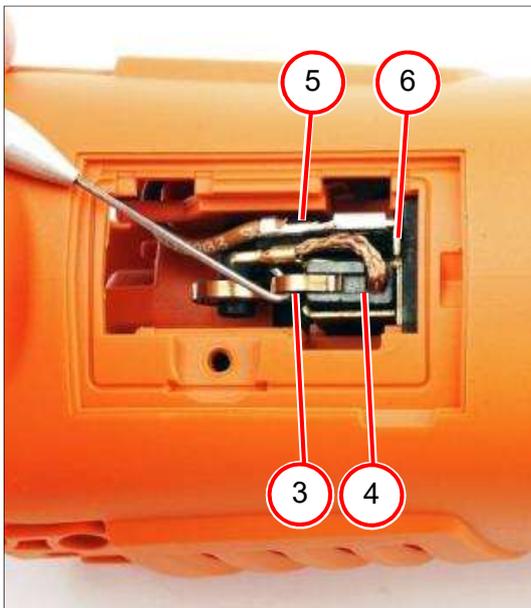
- Removing the cover

### Tools:

- Torx T15
- Long-nosed pliers
- Assembly aid



1. Unscrew the screw (1).
2. Remove the cover (2).



3. Lift up the spring (3).
4. Remove the carbon brush (4).
5. Remove the cable (5).
6. Remove the carbon brush holder (6).
7. Repeat steps 1 to 6 on the opposite side of the machine.

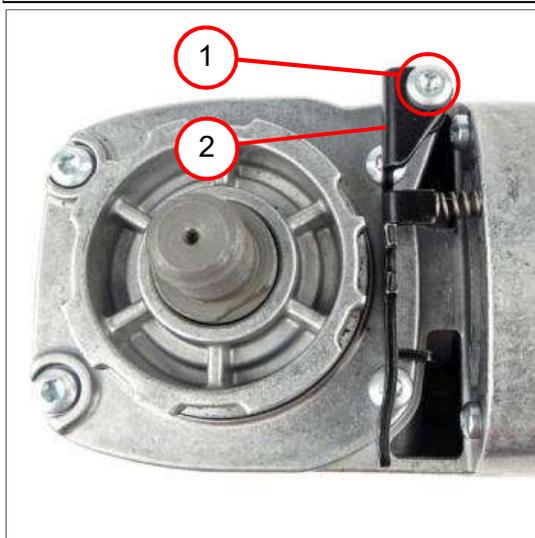
### 8.2.3 Removing the gearbox housing

**Steps that must be completed:**

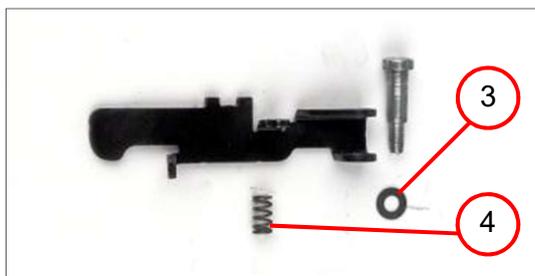
- Removing the cover
- Removing the switch
- Removing the carbon brushes

**Tools:**

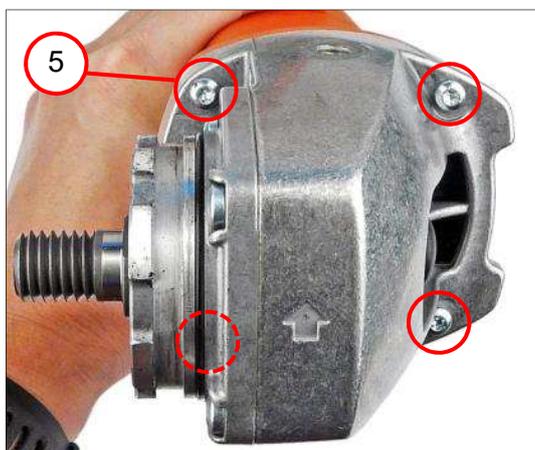
- Torx T20
- Torx T15



1. Unscrew the screw (1).
2. Remove the lever (2).



3. Remove the disc (3).
4. Remove the spring (4).



5. Unscrew the four screws (5).

### 8.2.3 Removing the gearbox housing



6. Remove the gearbox housing (1).

## 8.3 Removing the motor

### 8.3.1 Removing the stator

**Steps that must be completed:**

- Removing the cover
- Removing the switch
- Removing the carbon brushes
- Removing the gearbox housing

**Tools:**

- Torx T20
- Torx T15
- Plastic hammer



1. Remove the air guide ring (1).



2. Remove the stator.

### 8.3.1 Removing the stator



### 8.3.2 Removing the armature

**Steps that must be completed:**

- Removing the cover
- Removing the switch
- Removing the carbon brushes
- Removing the gearbox housing

**Tools:**

- Plastic hammer



1. Remove the armature (1).

### 8.3.3 Disassembling the armature

**Steps that must be completed:**

- Removing the cover
- Removing the switch
- Removing the carbon brushes
- Removing the gearbox housing
- Removing the armature

**Tools:**

- Punch, 6 mm diameter
- Arbor press
- Drawing-off plate 641002069007
- Pipe 64101002004
- Drawing-off socket cap 64104150008
- Chuck cone  
26 mm 64107026000  
19 mm 64107019007

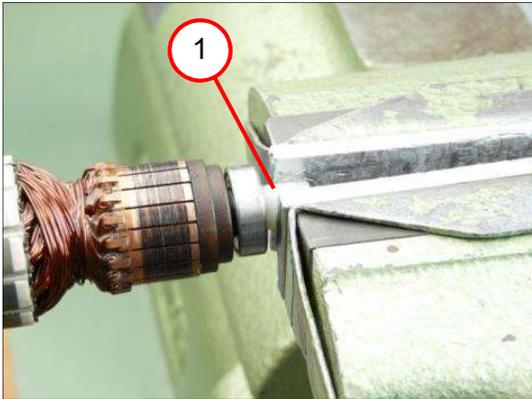


1. Remove the bearing bush (1).



2. Remove the bevel pinion (2).

### 8.3.3 Disassembling the armature



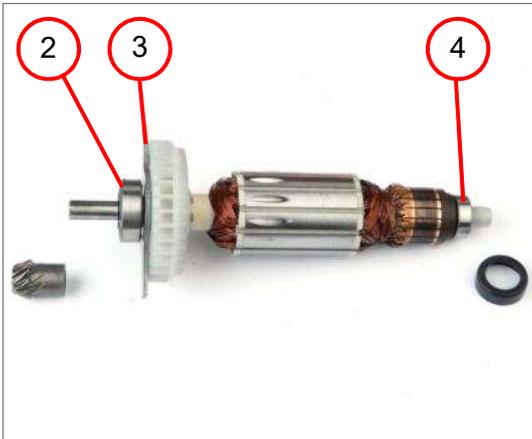
3. Remove the magnet (1).

#### **i** INFORMATION

The plastic sleeve is included in the following machine types:  
WSG 12; WSG 17

#### **i** INFORMATION

The magnet is destroyed during removal and must be replaced.



4. Remove the deep groove ball bearing (2).
5. Remove the plate (3).
6. Remove the deep groove ball bearing (4).

## 8.4 Removing the gearbox

### 8.4.1 Removing the bearing plate

**Tools:**

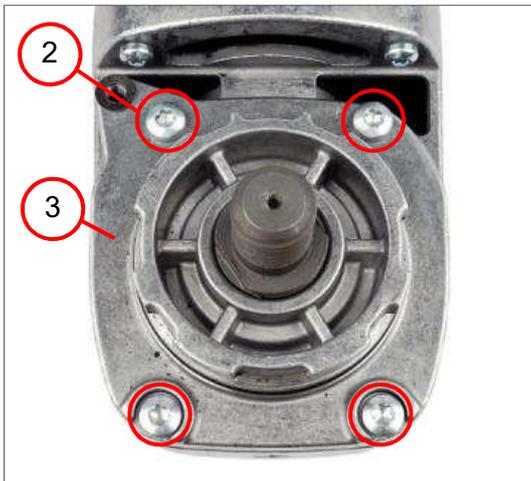
- Torx T20



1. Remove the sealing ring (1).

** INFORMATION**

The sealing ring (1) is destroyed during removal and must be replaced.



2. Unscrew the four screws (2).
3. Remove the bearing plate (3).



4. Remove the washer(s) (4).

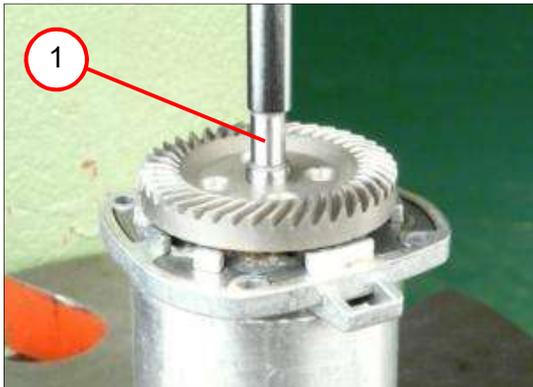
### 8.4.2 Disassembling the bearing plate

**Steps that must be completed:**

- Removing the bearing plate

**Tools:**

- Punch, 12 mm diameter
- Torx T15
- Arbor press
- Sleeve  
35 mm inner diameter  
14 mm inner diameter  
19 mm outer diameter
- 30 mm inner diameter  
42 mm outer diameter



1. Press out the shaft (1).



2. Remove the disc (2).
3. Unscrew the three screws (3).
4. Remove the plate (4).

### 8.4.2 Disassembling the bearing plate



5. Press out the deep grooved ball bearing (1).

### 8.4.3 Disassembling the gearbox housing

**Steps that must be completed:**

- Removing the cover
- Removing the switch
- Removing the carbon brushes
- Removing the gearbox housing
- Removing the bearing plate

**Tools:**

- Slotted screwdriver



1. Remove the air guide ring (1).

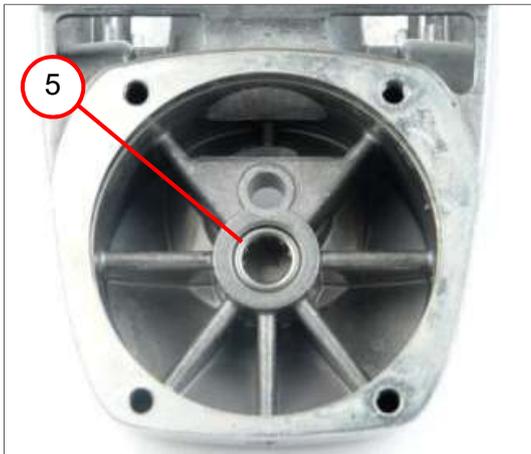


2. Remove the pushbutton (2).

## 8.4.3 Disassembling the gearbox housing



3. Remove the spiral spring (1).
4. Remove the sealing ring (2).
5. Remove the bolt (3).

** INFORMATION**

Only remove the needle sleeve (4) if necessary.

6. Remove the needle sleeve (4).

## 9 Assembly

### 9.1 Fitting the gearbox

#### 9.1.1 Assembling the gearbox housing



1. Insert the spiral spring (1) and the bolt (2) with sealing ring (3).



2. Fit the pushbutton (4).



3. Position the air guide ring (5).

### 9.1.2 Assembling the bearing plate

**Tools:**

- Arbor press
- Sleeve  
15 mm inner diameter  
27 mm outer diameter
- 15 mm inner diameter  
20 mm outer diameter
- Torx T15

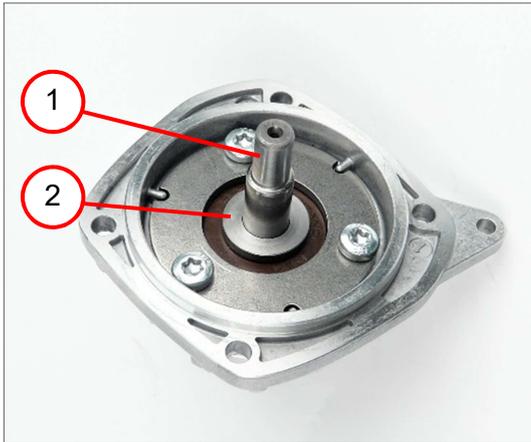


1. Press in the deep grooved ball bearing (1).



2. Position the plate (2).
3. Screw in the three screws (3) [2.4 N].

## 9.1.2 Assembling the bearing plate



4. Press in the shaft (1).
5. Position the disc (2).



6. Press in the gearwheel (3).
7. Coat the sealing ring (4) with oil.
8. Position the sealing ring (4).

** INFORMATION**

Use a new sealing ring for each fitting.

9. Position the washer(s) (5).

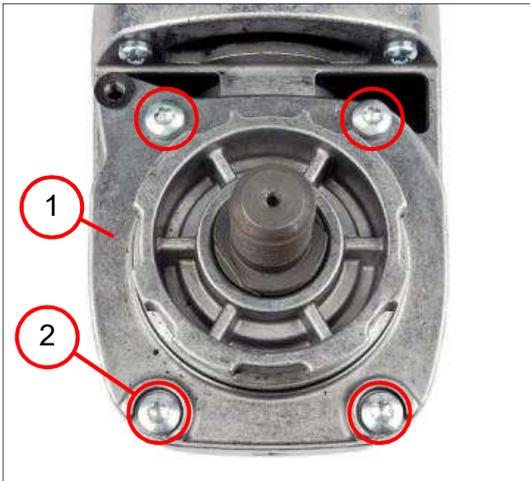
### 9.1.3 Positioning the bearing plate

**Steps that must be completed:**

- Fitting the gearbox housing
- Assembling the bearing plate

**Tools:**

- Torx T20



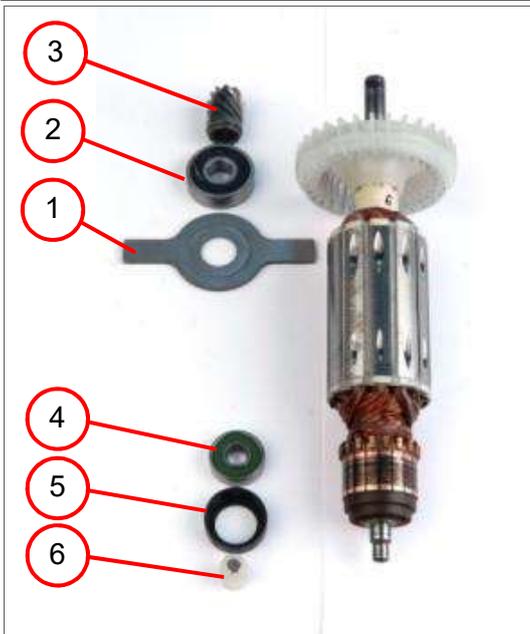
1. Position the bearing plate (1).
2. Screw in the four screws (2) [2.4 Nm].

## 9.2 Fitting the motor

### 9.2.1 Assembling the armature

**Tools:**

- Torx T20



1. Position the plate (1).
2. Press on the grooved ball bearing (2).
3. Press on the bevel pinion (3).
4. Press on the grooved ball bearing (4).

** INFORMATION**

Use a new magnet for each fitting.

** NOTE!**

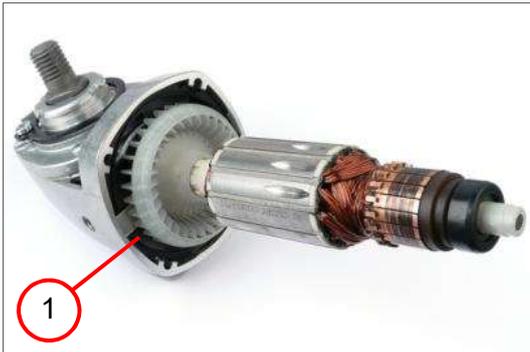
Damage to the magnet.  
The magnet can be damaged by excessive force.  
Carefully press on the magnet.

5. Press on the magnet (5).
6. Position the bearing bush (6).

## 9.2.2 Fitting the armature

### Steps that must be completed:

- Fitting the gearbox housing
- Assembling the bearing plate
- Positioning the bearing plate
- Assembling the armature



### INFORMATION

The plate must lie in the recess of the air guide ring.

1. Press in the armature (1).

### NOTE!

Damage to the gearbox and/or the motor.

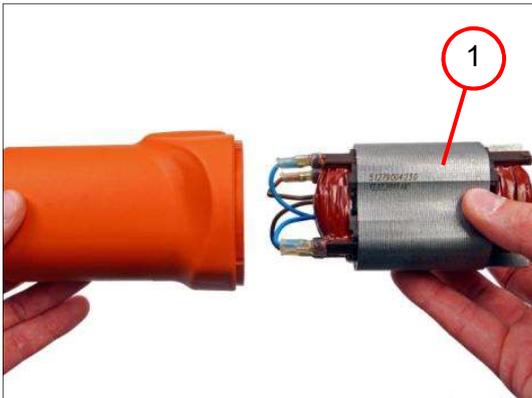
The axial displacement of the armature leads to damage to the gearbox and/or the motor.

If the armature can be pulled out of the gearbox head by hand, the gearbox housing must be replaced.

### 9.2.3 Fitting the stator

#### Tools:

- Arbor press
- Pressure piece
- Sleeve  
26 mm inner diameter  
40 mm outer diameter



1. Position the stator (1).

#### INFORMATION

Ensure that the stator (1) is in the correct position.



#### INFORMATION

Ensure that the cables are in the correct position.

### 9.2.3 Fitting the stator



2. Position the sleeve (1).

#### INFORMATION

Ensure that the sleeve lies between the studs (2).





### 9.2.3 Fitting the stator



3. Press in the stator (1).



Position the air guide ring (2).



## 9.3 Fitting the housing

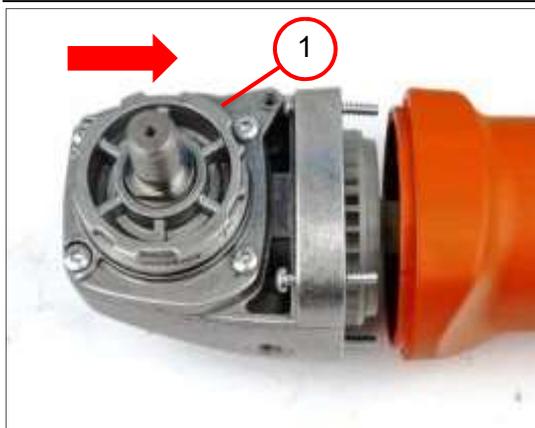
### 9.3.1 Fitting the gearbox housing

**Steps that must be completed:**

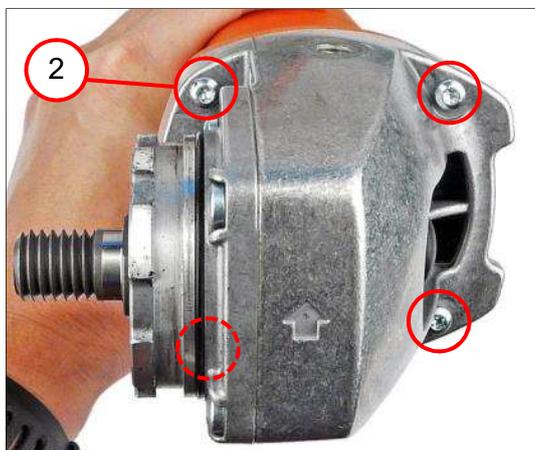
- Fitting the gearbox housing
- Assembling the bearing plate

**Tools:**

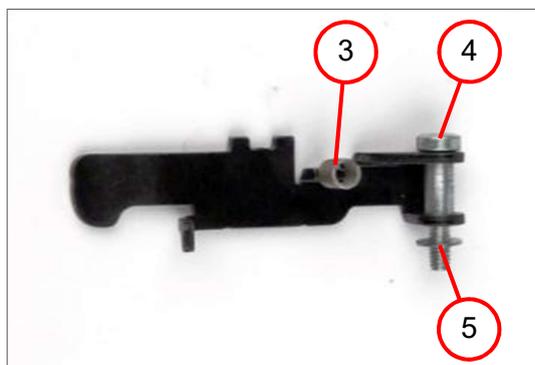
- Torx T20



1. Position the gearbox housing (1).

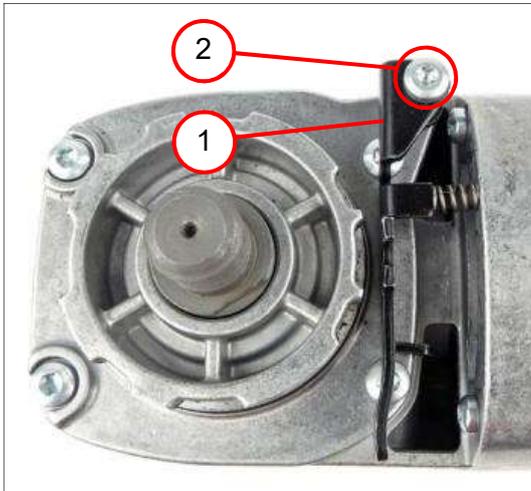


2. Screw in the four screws (2) [2.7 Nm].



3. Position the spring (3).
4. Position the screw (4).
5. Position the disc (5).

## 9.2.3 Fitting the stator



6. Position the lever (1).

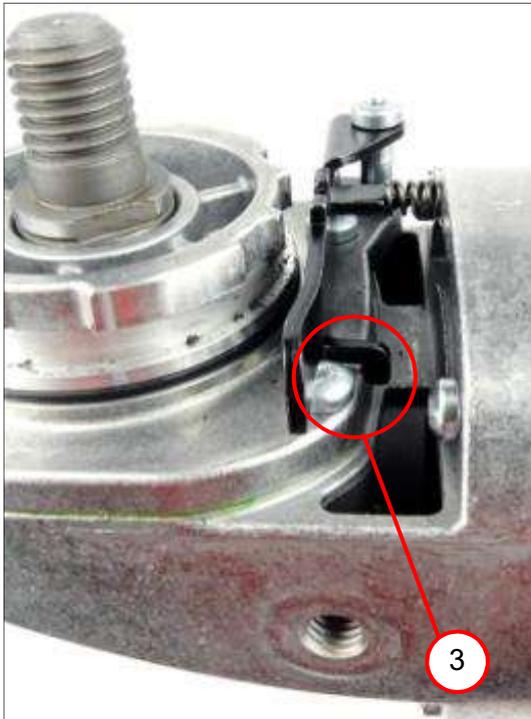
**i** INFORMATION

The screw (2) is a self-tapping screw.  
Screw in the screw perpendicular to the bearing plate.

**i** INFORMATION

Position the stop (3) as shown.

7. Screw in the screw (2) [2.15 Nm].



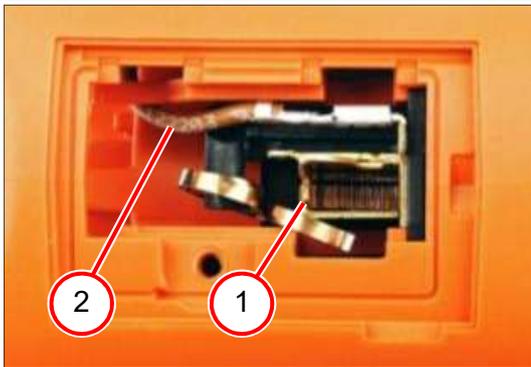
### 9.3.2 Positioning the carbon brushes

**Steps that must be completed:**

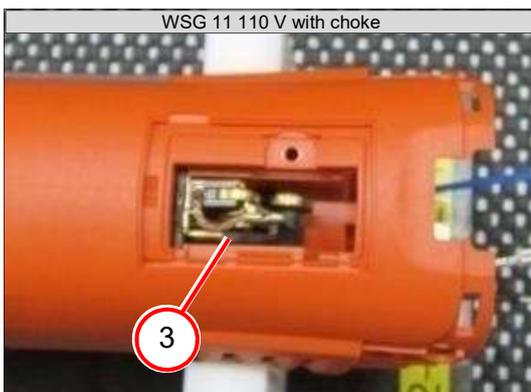
- Fitting the gearbox housing
- Assembling the bearing plate
- Positioning the bearing plate
- Assembling the armature
- Fitting the armature
- Fitting the stator
- Fitting the gearbox housing

**Tools:**

- Assembly aid
- Torx T15



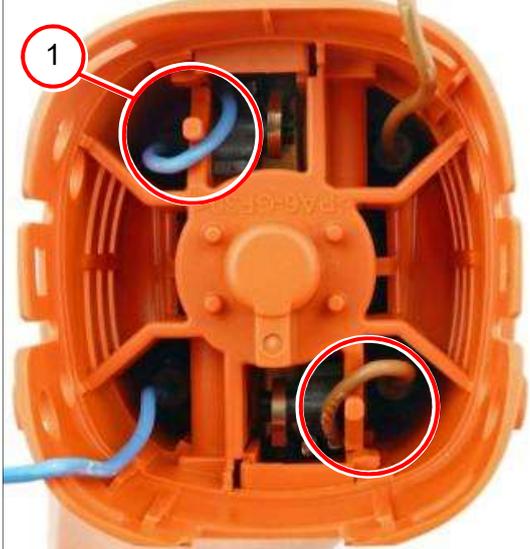
1. Position the carbon brush holders (1).
2. Connect the cable (2).
3. Repeat steps 1 and 2 on the opposite side of the machine.



4. Connect the choke (3).

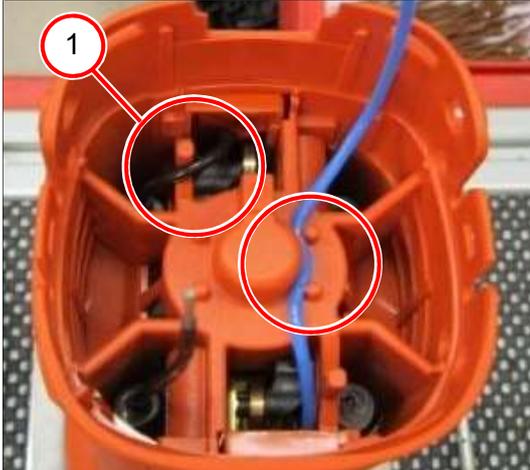
### 9.3.2 Positioning the carbon brushes

WSG 11 230 V; WSG 15 230 V; WSG 17 230

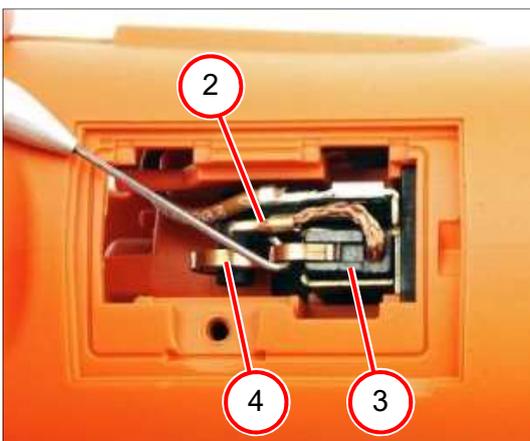


5. Position the cables (1).

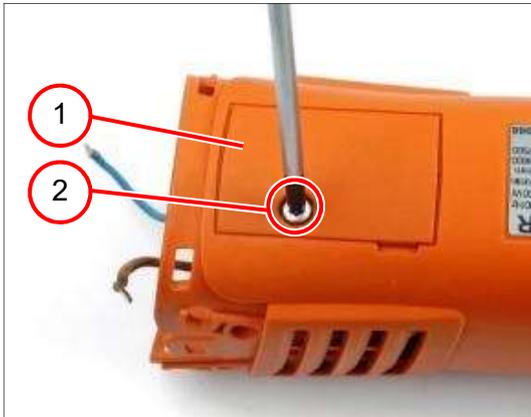
WSG 11 120 V; WSG 15 120 V; WSG 17 120 V



- 6. Connect the cable (2).
- 7. Position the carbon brush (3).
- 8. Position the spring (4).



### 9.3.2 Positioning the carbon brushes



9. Position the cover (1).
10. Screw in the screw (2) [1.5 Nm].
11. Repeat steps 6 to 10 on the opposite side of the machine.

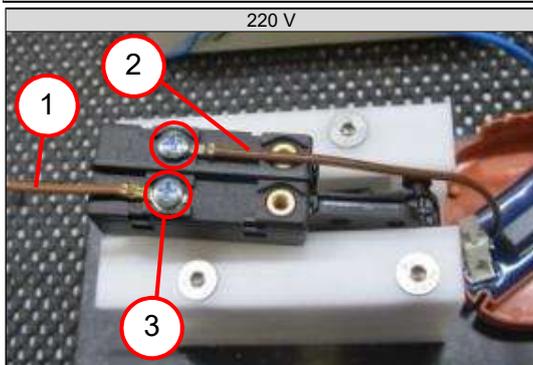
### 9.3.3 Fitting the switch

**Steps that must be completed:**

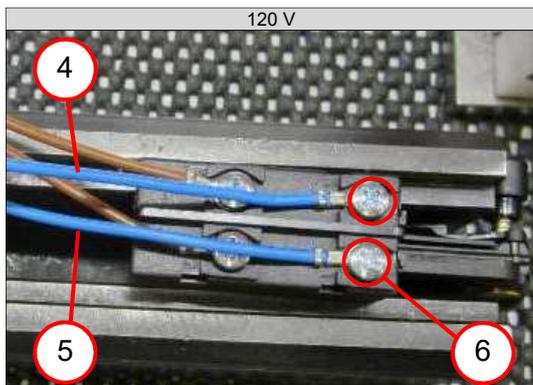
- Fitting the gearbox housing
- Assembling the bearing plate
- Positioning the bearing plate
- Assembling the armature
- Fitting the armature
- Fitting the stator
- Fitting the gearbox housing

**Tools:**

- PH2 cross-head screwdriver



1. Position the cable (1).
2. Position the cable (2).
3. Screw in the screw (3) [0.8 Nm  $\pm 0.2$  Nm].

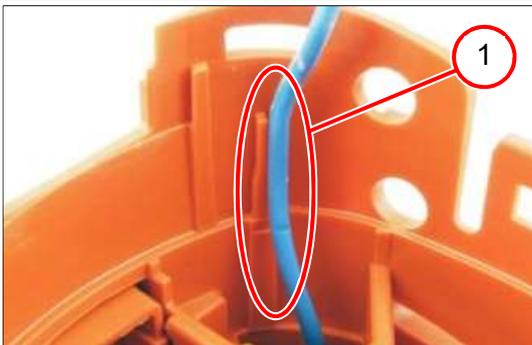


4. Position the cable (4).
5. Position the cable (5).
6. Screw in the screw (6) [0.8 Nm  $\pm 0.2$  Nm].

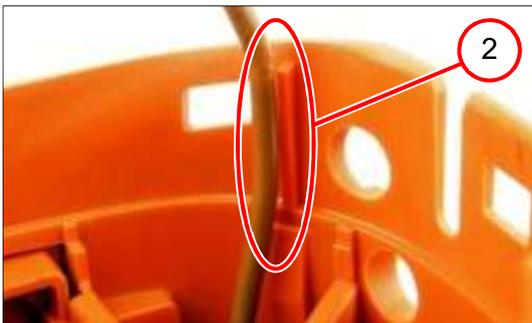
### 9.3.4 Positioning the electronics

**Steps that must be completed:**

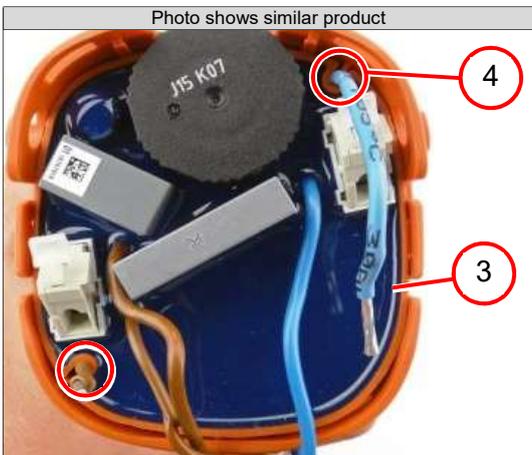
- Fitting the gearbox housing
- Assembling the bearing plate
- Positioning the bearing plate
- Assembling the armature
- Fitting the armature
- Fitting the stator
- Fitting the gearbox housing



1. Position the cable (1).



2. Position the cable (2).

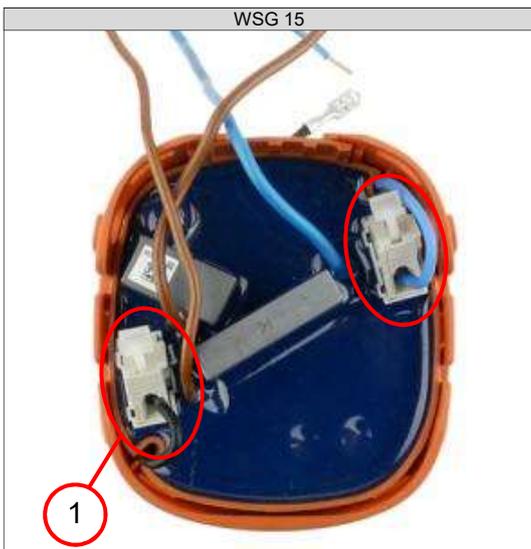
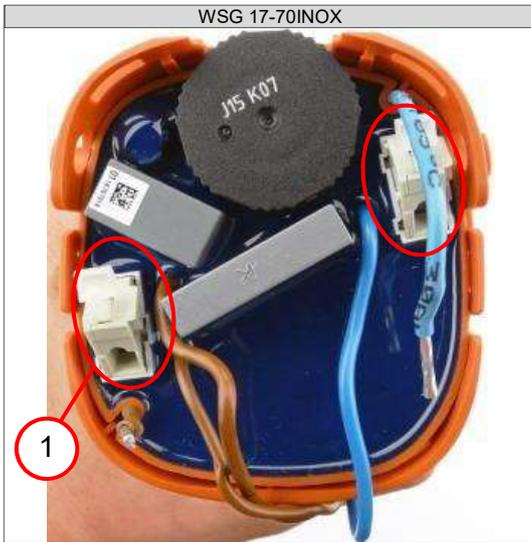


3. Position the electronics (3).

** INFORMATION**

Ensure that the cables (4) are in the correct position.

### 9.3.4 Positioning the electronics



4. Open the two terminals (1) and connect the cables.

#### INFORMATION

Route the cables so that they do not cover the opening (2).



## 9.4 Fitting the handle

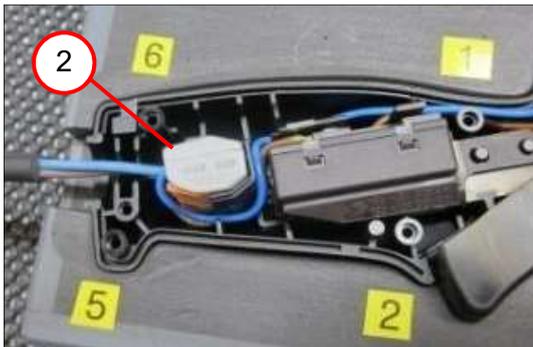
### 9.4.1 WSG 11 110 V/230 V; WSG 15 120 V/230 V; WSG 17 120 V/230 V

#### Tools:

- Torx T15
- Assembly aid



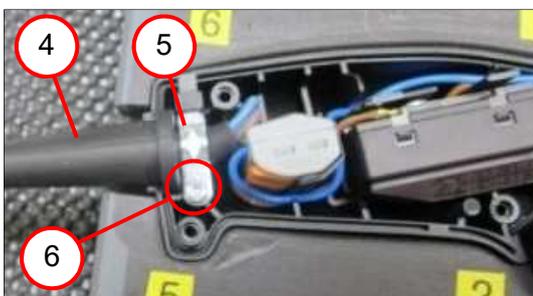
1. Connect the cables (1).



2. Position the terminal (2).

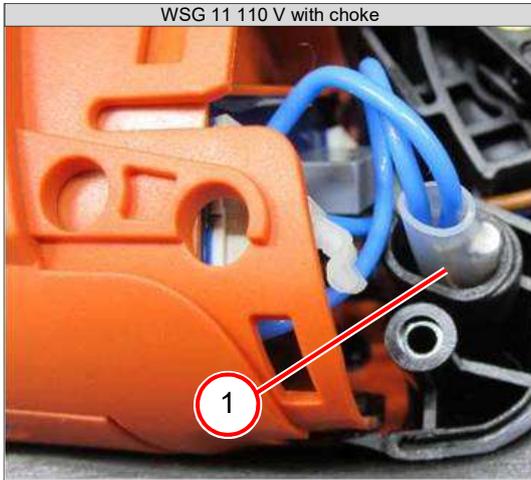


3. Position the cables (3).

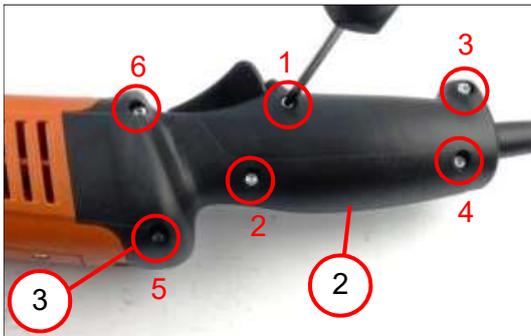


4. Position the cable with the plug (4).
5. Position the cable clamp (5).
6. Screw in the screw (6) [1.5 Nm].

## 9.4.1 WSG 11 110 V/230 V; WSG 15 120 V/230 V; WSG 17 120 V/230 V



7. Position the choke (1).



8. Position the handle half shell (2).

9. Screw in the six screws (3) [1.5 Nm].

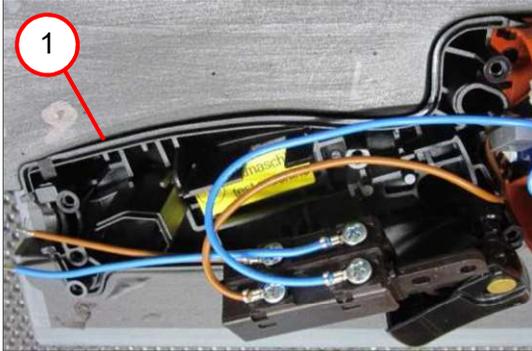
**INFORMATION**

Observe the screwdriving sequence.

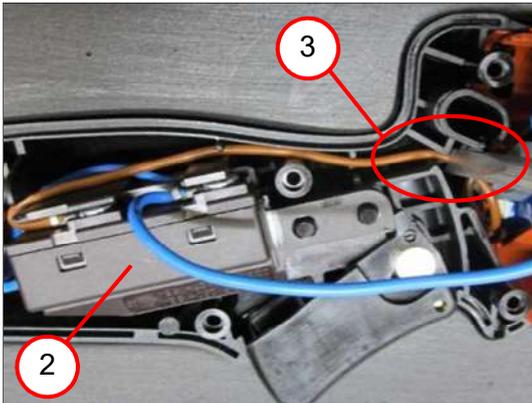
## 9.4.2 WSG 11 120 V

## Tools:

- Torx T15
- Assembly aid



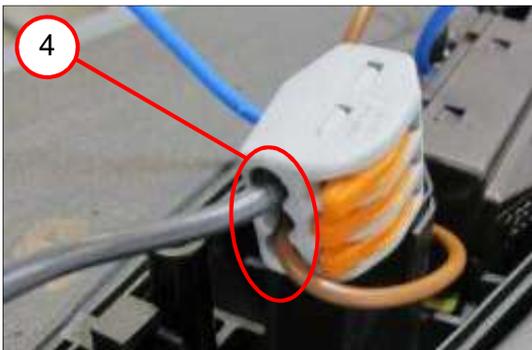
1. Position the handle half shell (1).



2. Position the switch (2).
3. Position the cables (3).

** INFORMATION**

Press the cables as deep as possible into the recess.

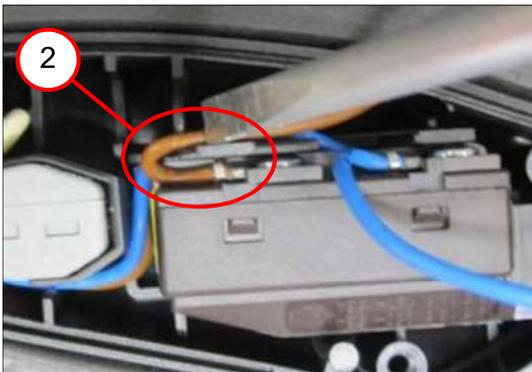


4. Connect the cables (4).

## 9.4.2 WSG 11 120 V



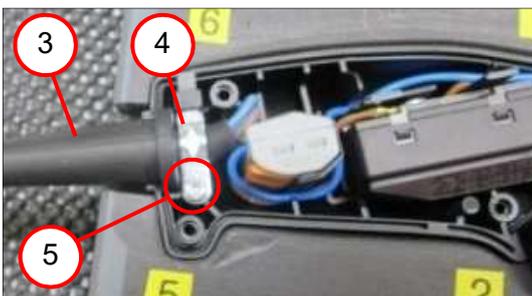
5. Position the terminal (1).



6. Position the cables (2).



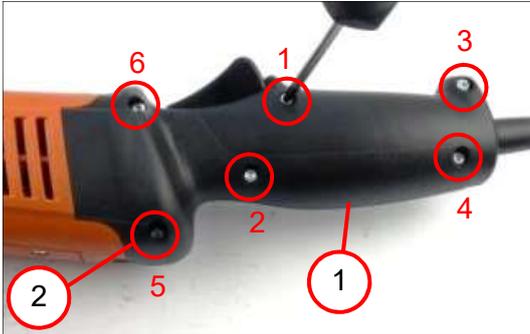
7. Position the cable with the plug (3).



8. Position the cable clamping piece (4).

9. Screw in the screw (5) [1.5 Nm].

### 9.4.2 WSG 11 120 V



10. Position the handle half shell (1).
11. Screw in the six screws (2) [1.5 Nm].

#### INFORMATION

Observe the screwdriving sequence.

## 9.5 Setting gearbox clearance



1. Perform a test run.
2. Check gearbox clearance by turning the shaft (1).
3. If there is no gearbox clearance, a second disc must be placed between the bearing plate and the gearbox housing.



### 10 Inspection following repairs

Always: Visual inspection  
Speed check  
Insert tool  
Testing  
(e. g., demo material 1 87 20 198 00 0)

Mains-operated machines: Electrical safety test

If restart lock present: Check restart lock

Brake function available: Brake function check

HF angle or die grinder: Running direction check

