



Applies to:

KBE 50-2M (A), KBE 50-2M (B), KBE 50-2M (C), KBE 65-2M, KBE 65-2M (A)



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1 Models described

These repair instructions describe how to repair the following models:

Model	Material number
KBE 50-2 M (A)	7 270 64
KBE 50-2 M (B)	7 270 68
KBE 50-2 M (C)	7 270 82
KBE 65-2 M	7 270 61
KBE 65-2 M (A)	7 270 83





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

Lists of spare parts and exploded views can be found in the FEIN electronic information system.





3 Symbols used

	Refers to measures for avoiding the risk of injuries.
	Caution: Crushing hazard
	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!



PLEASE NOTE:

Read the operating instructions for the product before carrying out the 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

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5 Safety instructions

5.1 Structure

 SIGNAL WORD FOR THE DANGER CLASSIFICATION.
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.

 WARNING!
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.

 CAUTION!
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.

 PLEASE NOTE:
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.

 INFORMATION
Tip





6 Tools, lubricants and auxiliary substances required

6.1 Standard tools

Cross-head screwdriver	PH2
Torx	T20
Slotted screwdriver	125x7
Socket head wrench set	
Circlip pliers	
Plastic hammer	
Arbor press	
Drift key	
Long-nosed pliers	
Combination pliers	
Socket wrench	7 mm
Bolt	18 mm
Sleeve	5 mm inner diameter 16 mm outer diameter 13 mm inner diameter 26 mm outer diameter 7 mm inner diameter 18 mm outer diameter 7 mm inner diameter 13 mm outer diameter 10 mm inner diameter 23 mm outer diameter 26 mm inner diameter 30 mm outer diameter 17 mm inner diameter 25 mm outer diameter 5 mm inner diameter 15 mm outer diameter 16 mm inner diameter 25 mm outer diameter 10 mm inner diameter 24 mm outer diameter 26 mm inner diameter 42 mm outer diameter
Torque wrench with hexagon socket fixture	2.5 mm





6.2 Special tools

Assembly aid		64122121010
Drawing-off socket cap		64104150000
Chuck cone	19 mm diameter	64107019007
	26 mm diameter	64107026000

6.3 Lubricants and auxiliary substances required

Grease	04013203000	130 g	Gearbox
Grease	04012803000		Guide, gear rack





7 Test and diagnostics options

Currently unavailable.



8 Disassembly

8.1 Removing the container



INFORMATION

The container may contain liquid.

Always drain the container (1) before disassembly.

1. Remove the container (1).
2. Remove the hose (2) from the hose socket.

8.2 Removing the motor housing

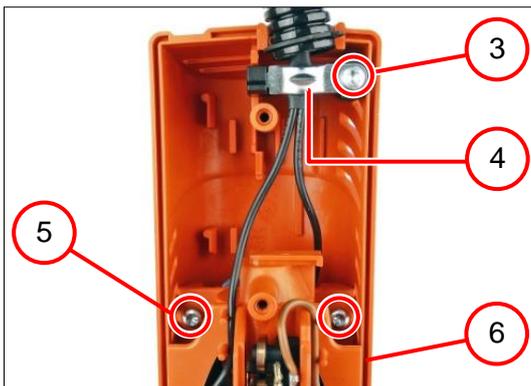
8.2.1 Removing the connecting cable

Tool(s):

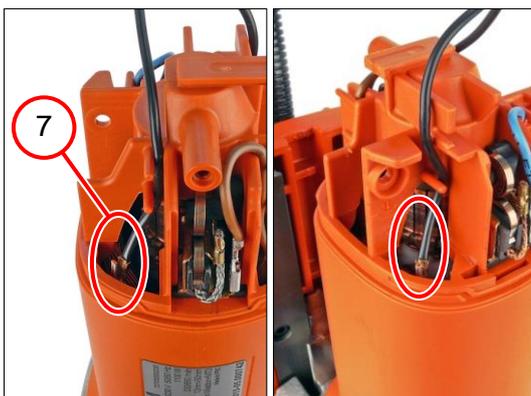
- Torx T15



1. Unscrew the two screws (1).
2. Remove the cover (2).



3. Unscrew the screw (3).
4. Remove the cable clamp (4).
5. Unscrew the two screws (5).
6. Remove the cover (6).



7. Remove the two strands (7).

8.2.2 Removing the drill motor

Steps that must be completed:

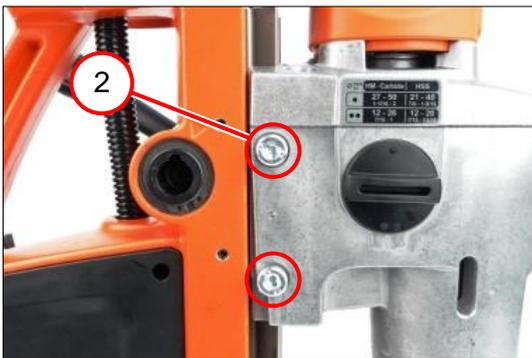
- Removing the container
- Removing the connecting cable

Tool(s):

- Slotted screwdriver
- Socket head wrench, 6 mm



1. Unscrew the flat-head screw (1).



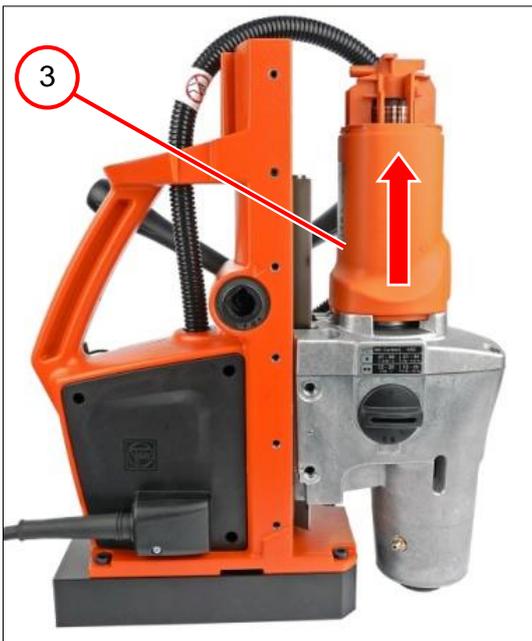
CAUTION!

Crushing hazard around the drill motor

Crushing can occur.

Move the drill motor down using the spider before unscrewing the two screws (2).

2. Unscrew the two screws (2).



3. Slide the drill motor (3) out of the guide.

8.2.3 Removing the carbon brushes

Steps that must be completed:

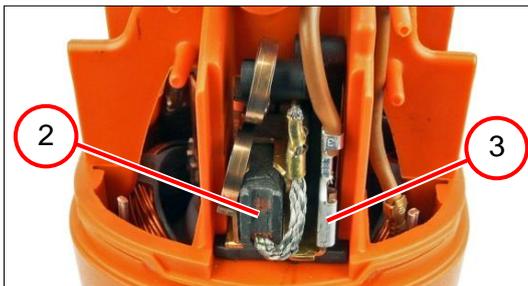
- Removing the connecting cable

Tool(s):

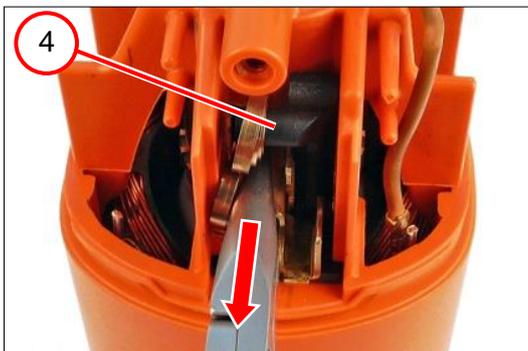
- Assembly aid
- Long-nosed pliers



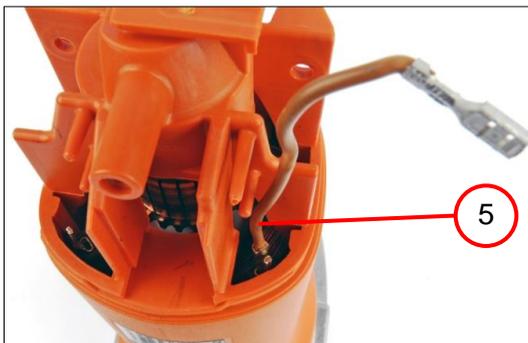
1. Lift up the spring (1).



2. Remove the carbon brush (2).
3. Pull off the plug (3).



4. Remove the carbon brush holder (4).



5. Disconnect the cable (5).
6. Repeat steps 1 to 5 on the opposite side of the machine.

8.2.4 Removing the motor housing

Steps that must be completed:

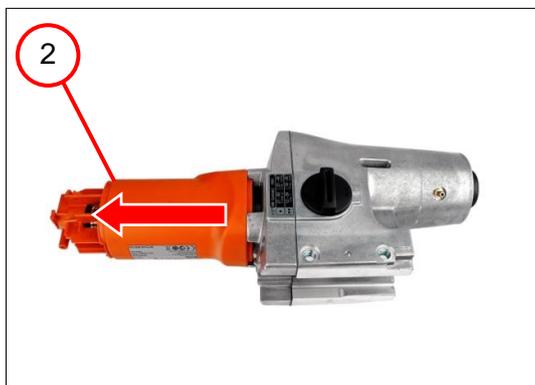
- Removing the connecting cable
- Removing the drill motor

Tool(s):

- Socket head wrench, 5 mm



1. Unscrew the four screws (1).



2. Remove the motor (2).

8.2.5 Removing the intermediate gear box

Steps that must be completed:

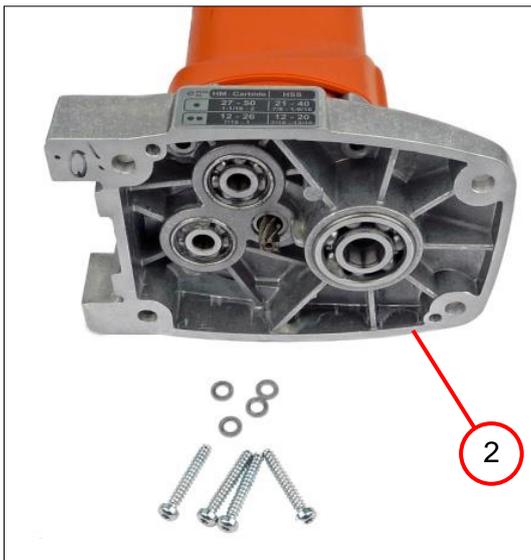
- Removing the connecting cable
- Removing the drill motor
- Removing the carbon brushes
- Removing the drill motor

Tool(s):

- Torx T20



1. Unscrew the four screws (1).



2. Remove the intermediate gear box (2).

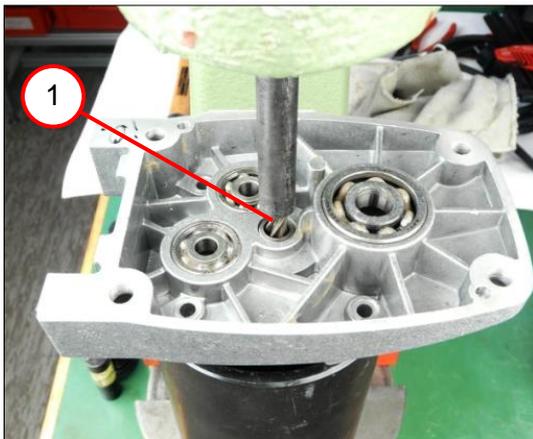
8.2.6 Disassembling the intermediate gear box

Steps that must be completed:

- Removing the connecting cable
- Removing the drill motor
- Removing the carbon brushes
- Removing the drill motor
- Removing the intermediate gear box

Tool(s):

- Arbor press
- Inner puller
- Sleeve
60 mm inner diameter, 85 mm outer diameter
- Punch, 7 mm diameter
- Assembly aid



1. Press out the armature (1).



2. Remove the three deep groove ball bearings (2).

8.2.7 Disassembling the armature

Steps that must be completed:

- Removing the connecting cable
- Removing the drill motor
- Removing the carbon brushes
- Removing the drill motor
- Removing the intermediate gear box
- Disassembling the intermediate gear box

Tool(s):

- Drawing-off socket cap
- Chuck cone, 26 mm, 19 mm



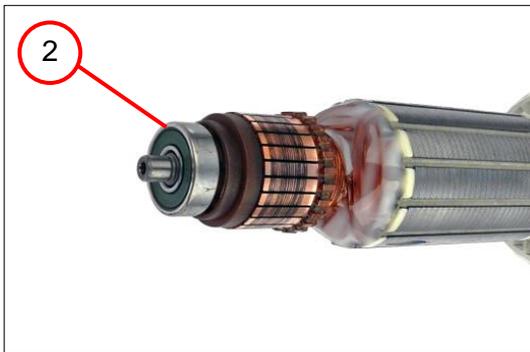
1. Remove the deep groove ball bearing (1).



8.2.7 Disassembling the armature



1. Remove the bearing bush (1).



2. Remove the deep groove ball bearing (2).

8.2.8 Removing the motor housing

Steps that must be completed:

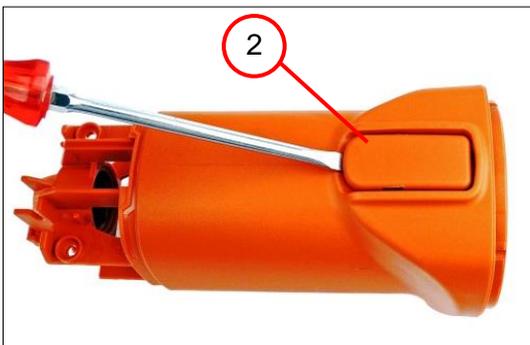
- Removing the connecting cable
- Removing the drill motor
- Removing the carbon brushes
- Removing the drill motor
- Removing the intermediate gear box

Tool(s):

- Slotted screwdriver
- Plastic hammer



1. Remove the air guide ring (1).



2. Remove the cover (2).



3. Remove the stator (3).

8.3 Disassembling the gearbox housing

8.3.1 Removing the gearbox parts

Steps that must be completed:

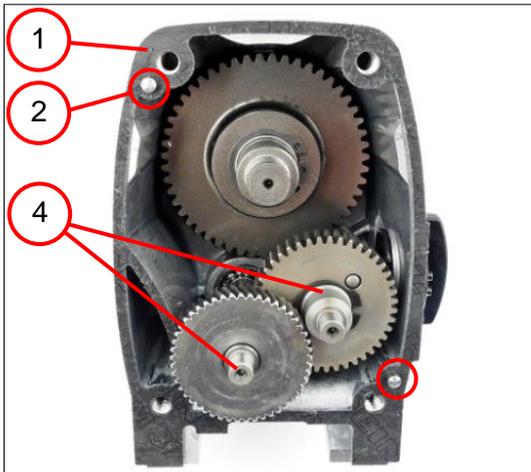
- Removing the connecting cable
- Removing the drill motor
- Removing the motor housing

Tool(s):

- Combination pliers
- Circlip pliers

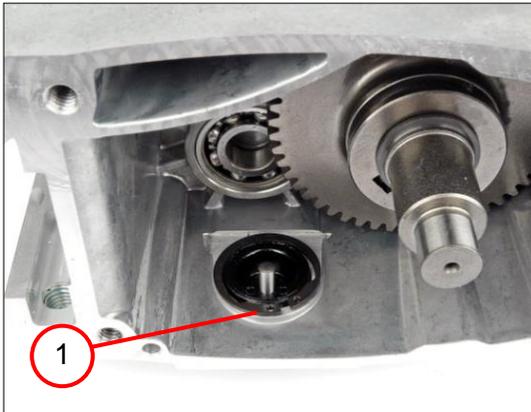


1. Turn the rotary knob (1) to the '•' position.

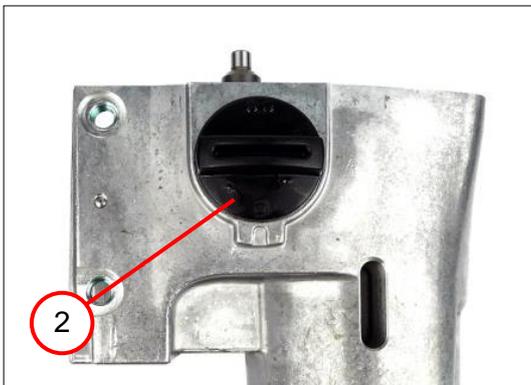


2. Remove the seal (2).
3. Remove the two straight pins (3).
4. Remove the two gearwheels (4).

8.3.1 Removing the gearbox parts



1. Remove the circlip (1).

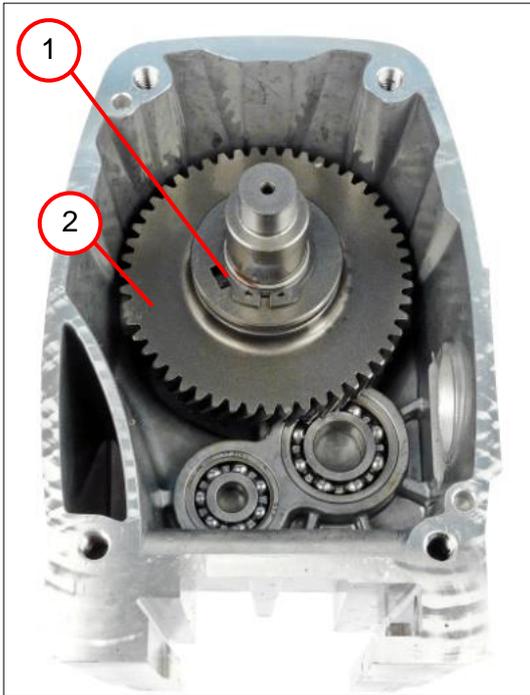


2. Remove the rotary knob (2).



3. Remove the sealing ring (3).

8.3.1 Removing the gearbox parts



4. Remove the circlip (1).
5. Remove the gearwheel (2).

8.3.2 Removing the shaft

Steps that must be completed:

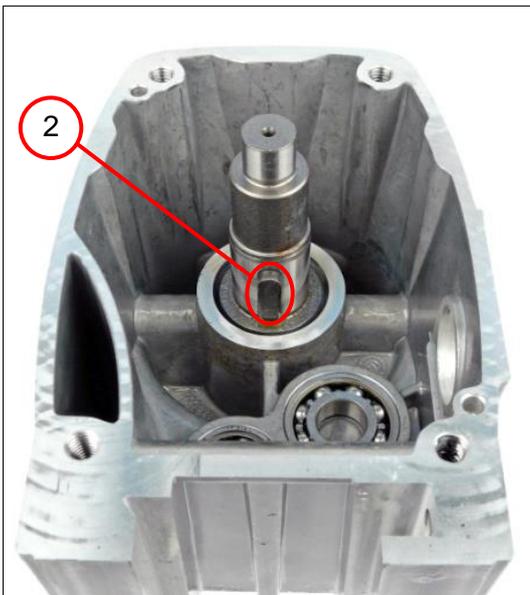
- Removing the connecting cable
- Removing the drill motor
- Removing the motor housing
- Removing the gearbox parts

Tool(s):

- Circlip pliers
- Combination pliers
- Arbor press
- Sleeve
56 mm inner diameter, 60 mm outer diameter



1. Remove the circlip (1).



2. Remove the feather key (2).

8.3.2 Removing the shaft



3. Press out the shaft (1).

8.3.3 Disassembling the shaft

Steps that must be completed:

- Removing the connecting cable
- Removing the drill motor
- Removing the motor housing
- Removing the gearbox parts

Tool(s):

- Circlip pliers
- Arbor press
- Sleeve
36 mm inner diameter, 55 mm outer diameter



1. Remove the circlip (1).



2. Press the deep groove ball bearing (2) off the shaft.

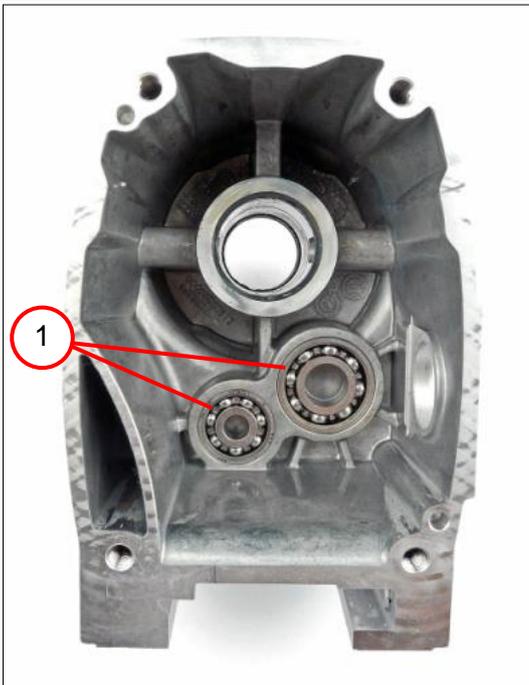
8.3.4 Disassembling the gearbox parts

Steps that must be completed:

- Removing the connecting cable
- Removing the drill motor
- Removing the motor housing
- Removing the gearbox parts
- Removing the shaft

Tool(s):

- Circlip pliers
- Combination pliers
- Arbor press
- Sleeve
36 mm inner diameter, 55 mm outer diameter
24 mm inner diameter, 42 mm outer diameter
- Socket wrench
- Socket wrench insert, 7 mm
- Slide hammer
- Inner puller
- Slotted screwdriver
- Punch, 7 mm



1. Remove the two deep groove ball bearings (1).

8.3.4 Disassembling the gearbox parts

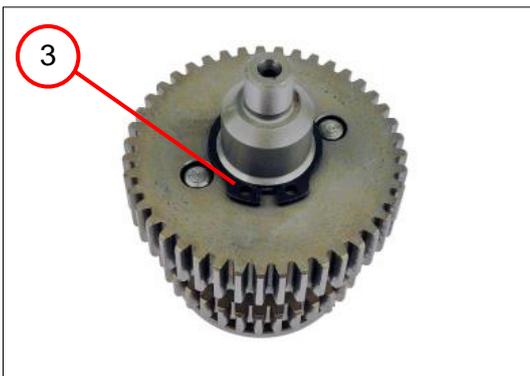


2. Remove the hose socket (1).

**i** INFORMATION

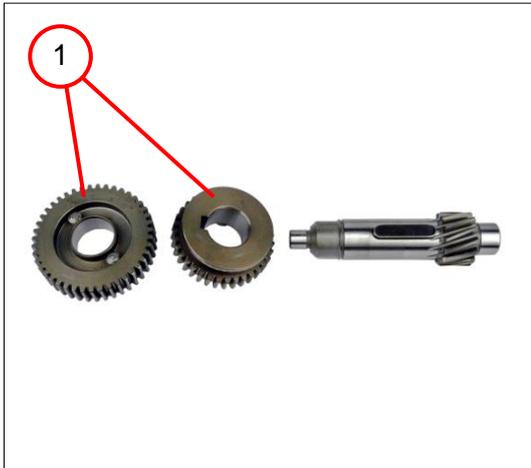
During disassembly, the sealing rings (2) are destroyed and must be replaced.

3. Remove the three sealing rings (2).



4. Remove the circlip (3).

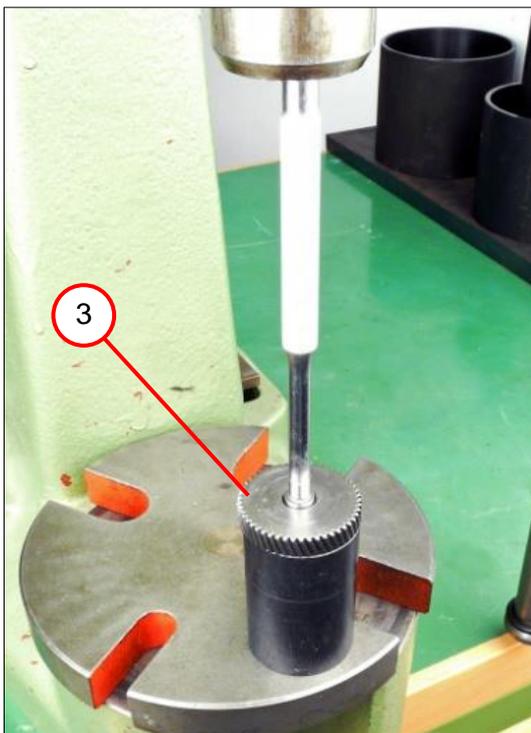
8.3.4 Disassembling the gearbox parts



5. Remove the two gearwheels (1).



6. Remove the feather key (2).



7. Press the gearwheel (3) off the shaft.

8.4 Disassembling the drill chuck

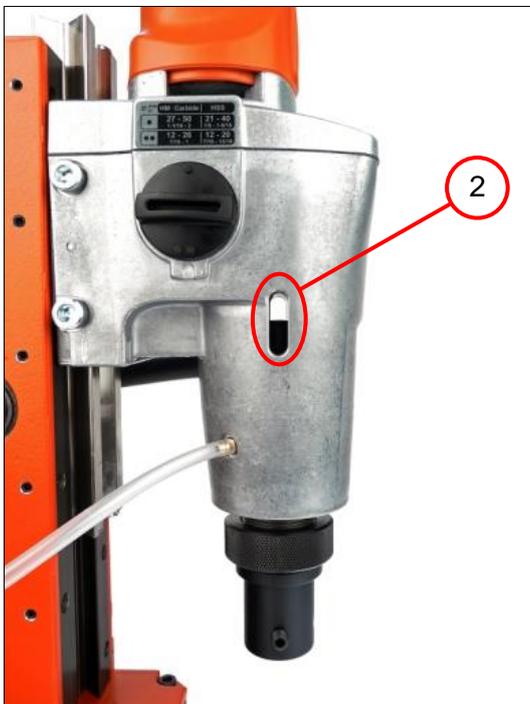
8.4.1 Disassembling the mounting shaft

Tool(s):

- Plastic hammer
- Drift key



1. Unscrew the nut (1) [left-hand thread].



2. Turn the shaft into position (2).

8.4.1 Disassembling the mounting shaft



3. Remove the shaft (1).

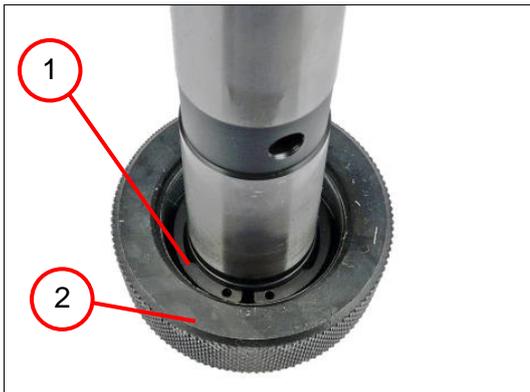
8.4.2 Disassembling the shaft

Steps that must be completed:

- Disassembling the mounting shaft

Tool(s):

- Circlip pliers
- Slotted screwdriver



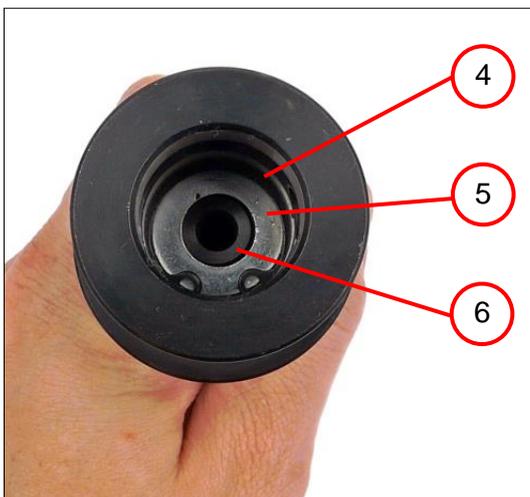
1. Remove the circlip (1).
2. Remove the nut (2).



i INFORMATION

During disassembly, the sealing ring (3) is destroyed and needs to be replaced.

3. Remove the sealing ring (3).



! CAUTION!

Energised spring

Injuries can occur.

When loosening the circlip (4), hold the disc (5) with one hand.

4. Remove the circlip (4).
5. Remove the disc (5).
6. Remove the spiral spring with sleeve (6).

8.4.2 Disassembling the shaft



7. Remove the spiral spring (1).



8.5 Disassembling the drill jig

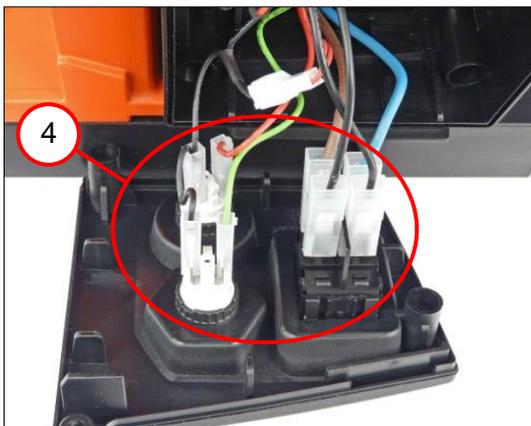
8.5.1 Removing the control panel

Tool(s):

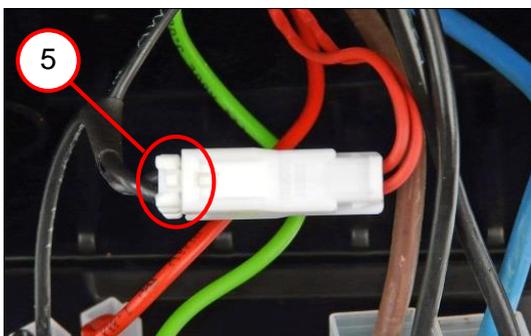
- Torx T20



1. Unscrew the six screws (1).
2. Remove the holder (2).
3. Remove the cover (3).



4. Disconnect all the plug connections (4).



5. Press and hold the lock (5) on the plug.
6. Pull off the plug.



8.5.2 Disassembling the control panel

Steps that must be completed:

- Removing the control panel



1. Remove the two buttons (1).
2. Remove the switch (2).

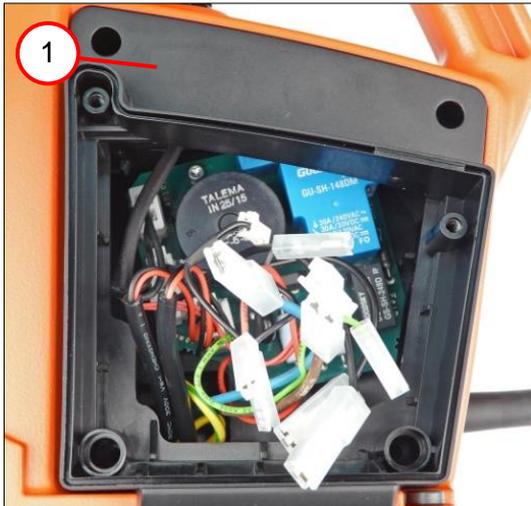
8.5.3 Removing the electronics

Steps that must be completed:

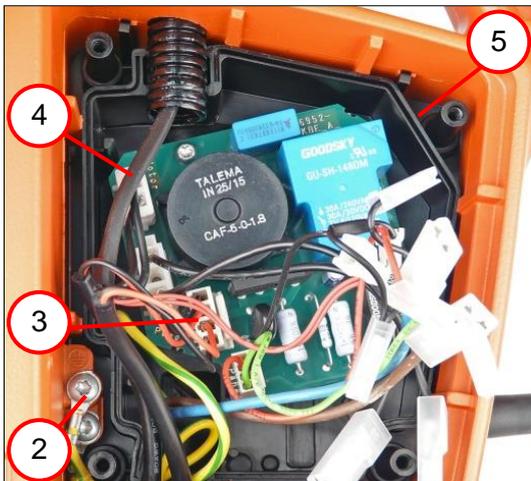
- Removing the control panel

Tool(s):

- Torx T20



1. Remove the cover (1).



2. Unscrew the screw (2).
3. Disconnect the cable (3).
4. Disconnect the cable (4).
5. Remove the cover (5) with the electronics.

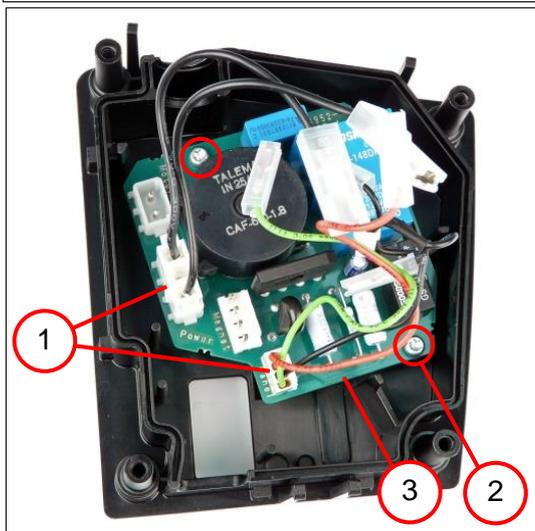
8.5.4 Disassembling the electronics

Steps that must be completed:

- Removing the control panel
- Removing the electronics

Tool(s):

- Torx T20



1. Disconnect the two cables (1).
2. Unscrew the two screws (2).
3. Remove the electronics (3).

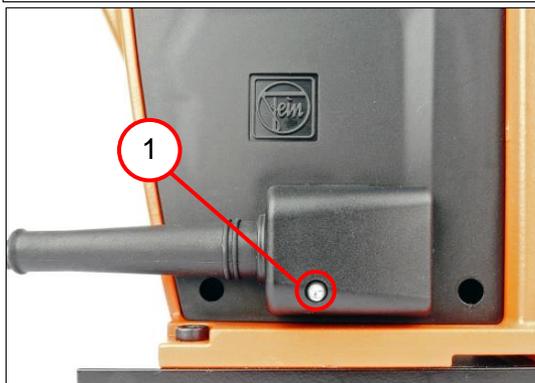
8.5.5 Disassembling the mains cable

Steps that must be completed:

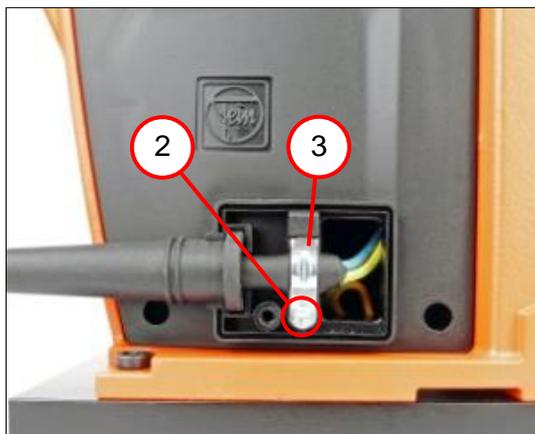
- Removing the control panel
- Removing the electronics

Tool(s):

- Torx T15



1. Unscrew the screw (1).



1. Unscrew the screw (2).
2. Remove the cable clamp (3).

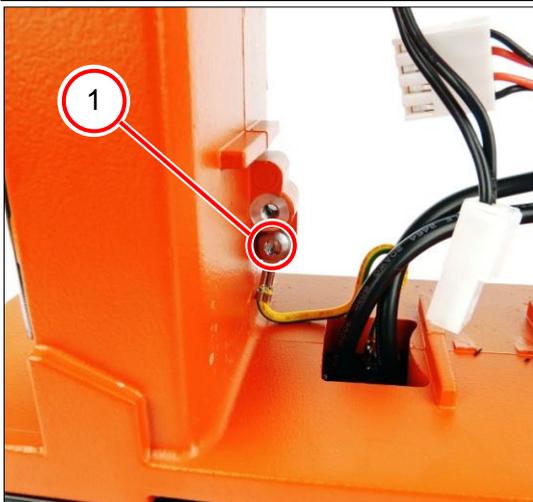
8.5.6 Removing the magnetic base

Steps that must be completed:

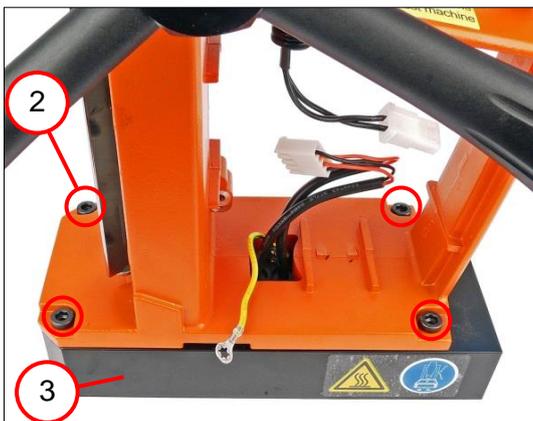
- Removing the control panel
- Removing the electronics

Tool(s):

- Torx T20
- Socket head wrench, 5 mm
- PH2 cross-head screwdriver



1. Unscrew the screw (1).



2. Unscrew the four screws (2).
3. Remove the magnetic base (3).

Photo shows similar product

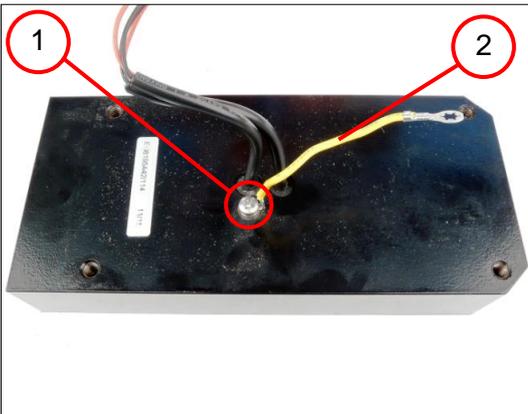
8.5.7 Disassembling the magnetic base

Steps that must be completed:

- Removing the control panel
- Removing the electronics
- Removing the magnetic base

Tool(s):

- PH2 cross-head screwdriver



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

8.5.8 Removing the protective hose

Steps that must be completed:

- Removing the control panel
- Removing the electronics



Photo shows similar product

1. Remove the protective hose (1).



2. Remove the sealing ring (2).

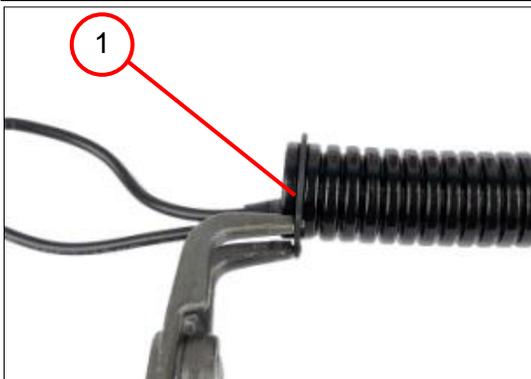
8.5.9 Disassembling the protective hose

Steps that must be completed:

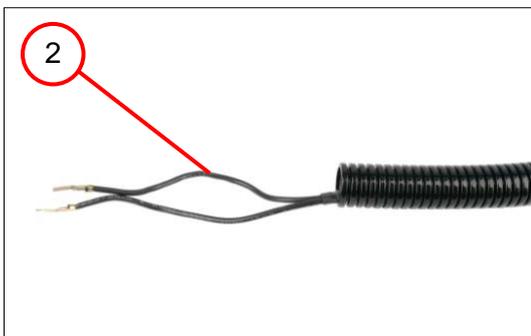
- Removing the control panel
- Removing the electronics
- Removing the magnetic base
- Removing the protective hose

Tool(s):

- Circlip pliers



1. Remove the circlip (1).



2. Remove the connecting cable (2).

Photo shows similar product

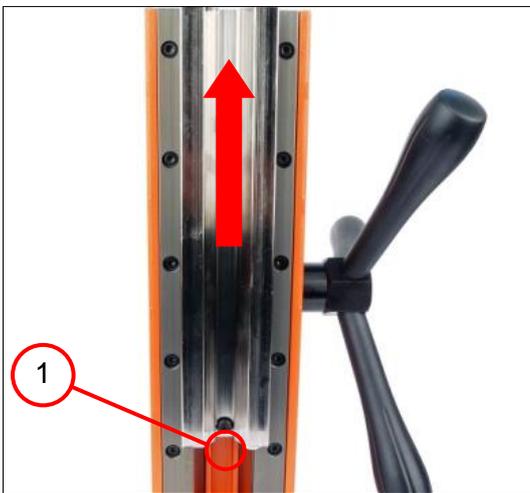
8.5.10 Removing the guide

Steps that must be completed:

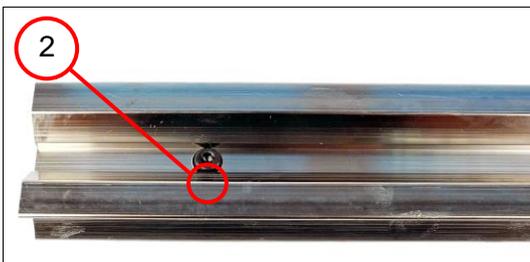
- Removing the container
- Removing the connecting cable
- Removing the drill motor

Tool(s):

- Socket head wrench, 2.5 mm, 3 mm, 4 mm
- Slotted screwdriver
- PH2 cross-head screwdriver



1. Unscrew the screw (1).
2. Move the guide upwards using the spider.
3. Remove the guide.

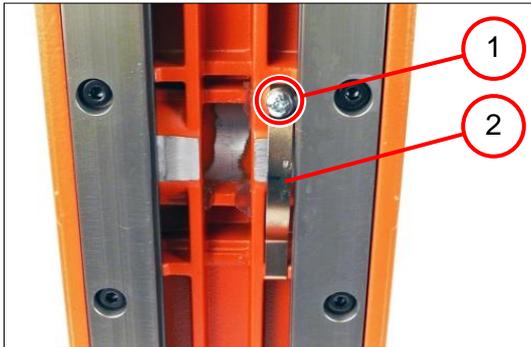


4. Unscrew the screw (2).



5. Unscrew the flat-head screw (3).

8.5.10 Removing the guide

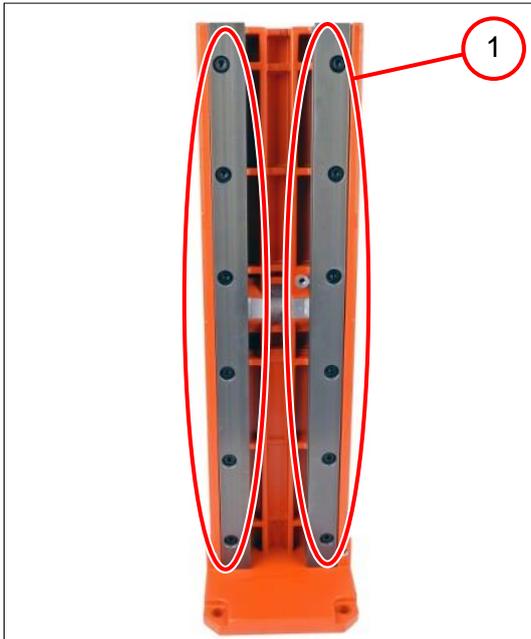


6. Unscrew the screw (1).
7. Remove the leaf spring (2).

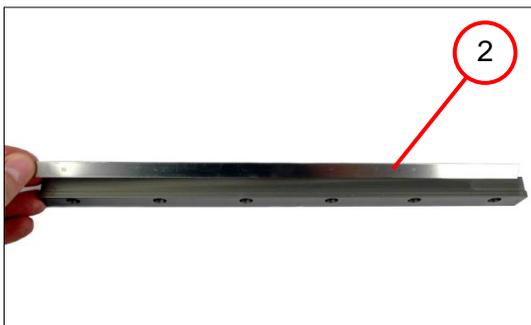


8. Unscrew the six set screws (3).

8.5.10 Removing the guide



9. Unscrew the twelve screws (1).
10. Remove the two guide rails.



11. Remove the pressure piece (2).

8.5.11 Removing the spider

Steps that must be completed:

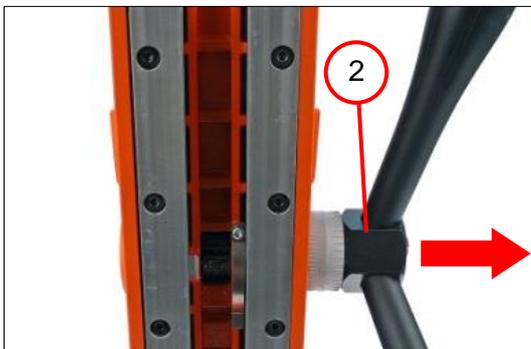
- Removing the electronics
- Removing the drill motor
- Removing the guide

Tool(s):

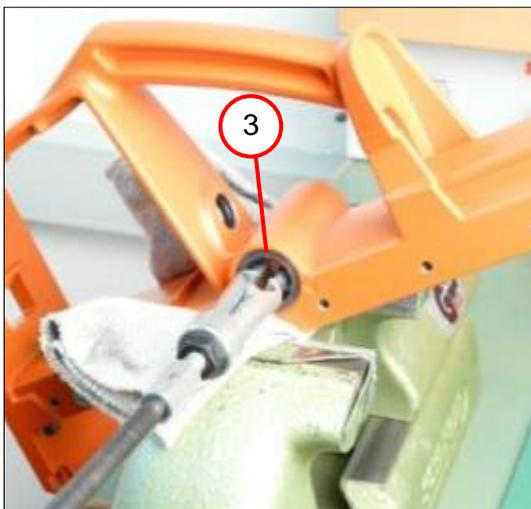
- Circlip pliers
- Inner bearing puller, 18–22 mm
- Slide hammer



1. Remove the circlip (1).



2. Pull out the spider (2).



3. Remove the bushing (3).
4. Repeat step 3 on the opposite side of the machine.

8.5.12 Disassembling the spider

Steps that must be completed:

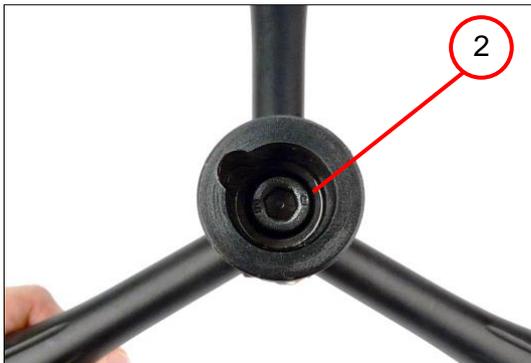
- Removing the electronics
- Removing the drill motor
- Removing the guide
- Removing the spider

Tool(s):

- Socket head wrench, 5 mm



1. Remove the disc (1).



2. Unscrew the screw (2).
3. Remove the shaft.



4. Remove the scale (3).
5. Unscrew the three handles (4).

9 Assembly

9.1 Assembling the drill jig

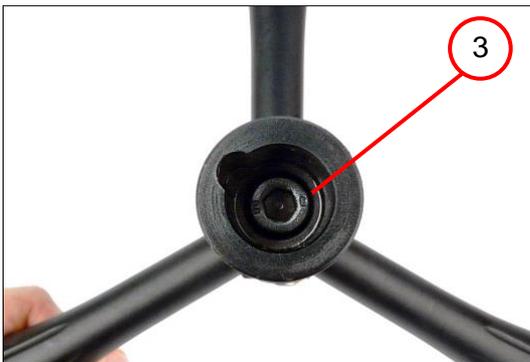
9.1.1 Assembling the spider

Tool(s):

- Socket head wrench, 5 mm



1. Screw in the three handles (1).
2. Position the scale (2).



3. Position the shaft.
4. Screw in the screw (3) [8.0 Nm \pm 0.5 Nm].



5. Position the disc (4).
6. Coat the shaft with grease.

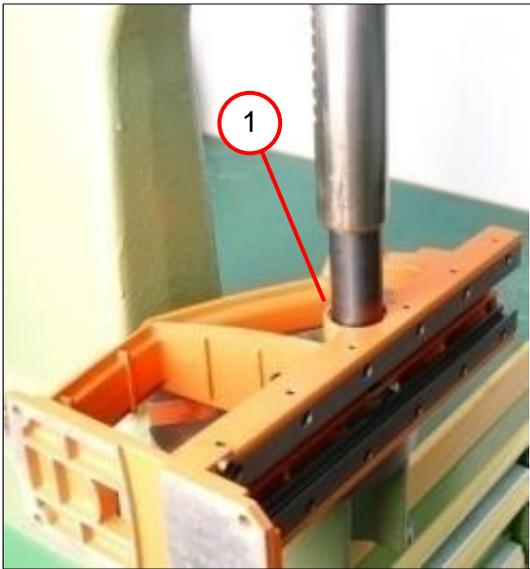
9.1.2 Positioning the spider

Steps that must be completed:

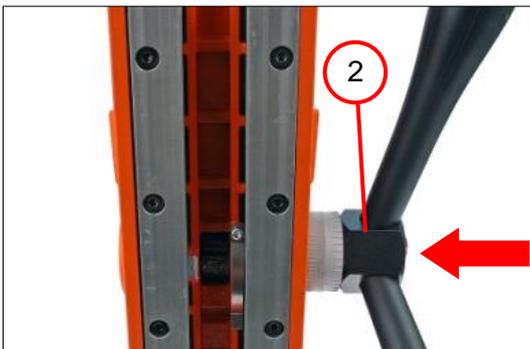
- Assembling the spider

Tool(s):

- Arbor press
- Sleeve
26 mm inner diameter, 30 mm outer diameter
- Circlip pliers



1. Press in the bushing (1).
2. Repeat step 1 on the opposite side of the machine.



3. Position the spider (2).



4. Position the circlip (3).

9.1.3 Positioning the guide

Steps that must be completed:

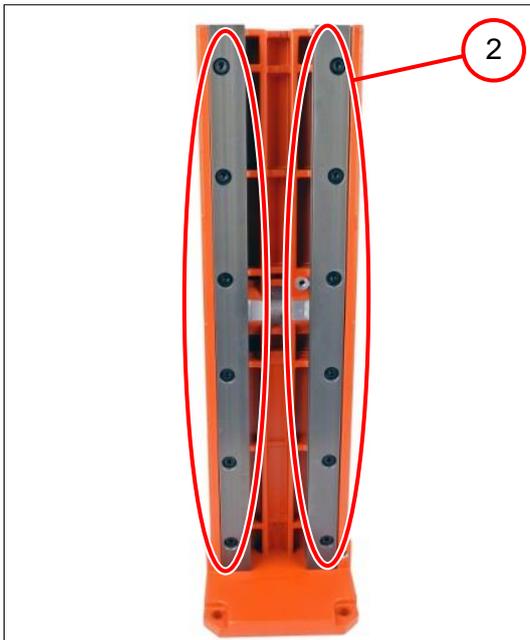
- Assembling the spider
- Positioning the spider

Tool(s):

- PH2 cross-head screwdriver
- Slotted screwdriver
- Socket head wrench, 2.5 mm, 3 mm, 4 mm



1. Position the pressure piece (1).



2. Unscrew the twelve screws (2).
3. Remove the two guide rails.

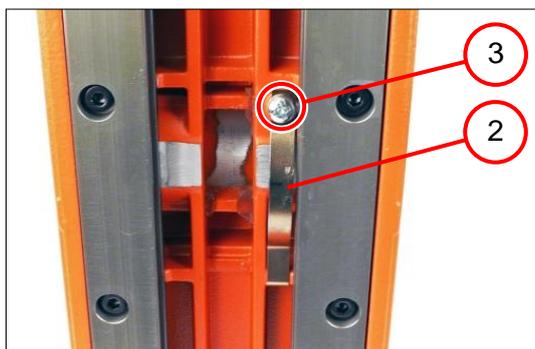
9.1.3 Positioning the guide



4. Unscrew the six set screws (1).

**INFORMATION**

The thread lash is adjusted after installation of the drill motor.

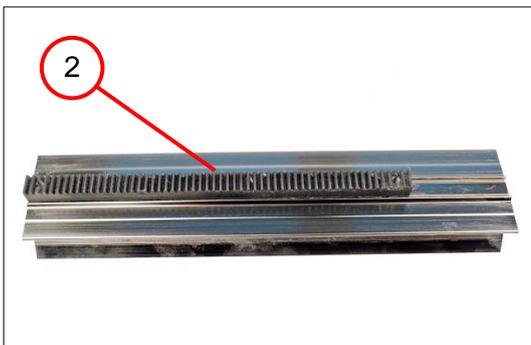


5. Position the leaf spring (2).
6. Screw in the screw (3) [1.1 Nm \pm 0.15 Nm].

9.1.3 Positioning the guide

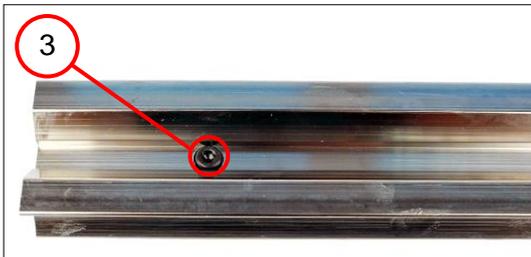


7. Screw in the flat-head screw (1) [1.2 Nm \pm 0.15 Nm].

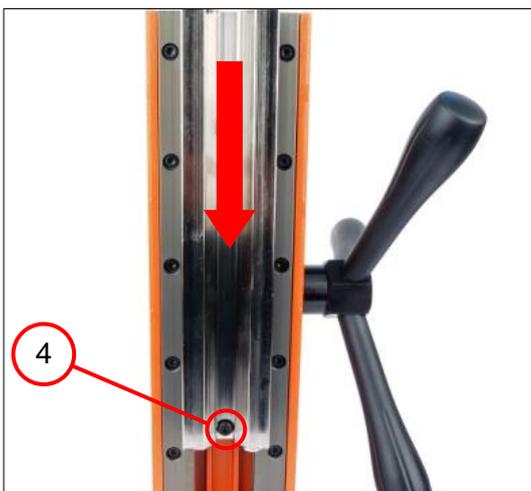


8. Position the gear rack (2).

9. Coat the gear rack (2) and guide with grease.



10. Screw in the screw (3) [3.0 Nm \pm 0.3 Nm].



11. Position the guide.

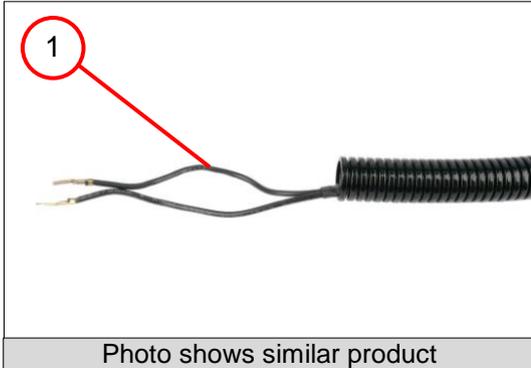
12. Move the guide downwards using the spider.

13. Screw in the screw (4) [3.0 Nm \pm 0.3 Nm].

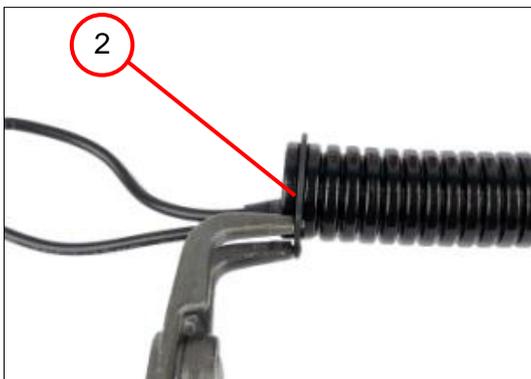
9.1.4 Assembling the protective hose

Tool(s):

- Circlip pliers



1. Position the connecting cable (1).

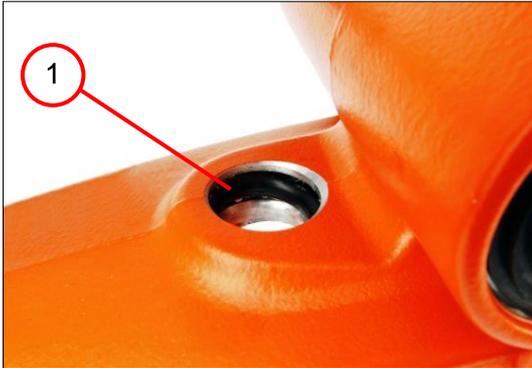


2. Position the circlip (2).

9.1.5 Positioning the protective hose

Steps that must be completed:

- Assembling the protective hose



1. Position the sealing ring (1).



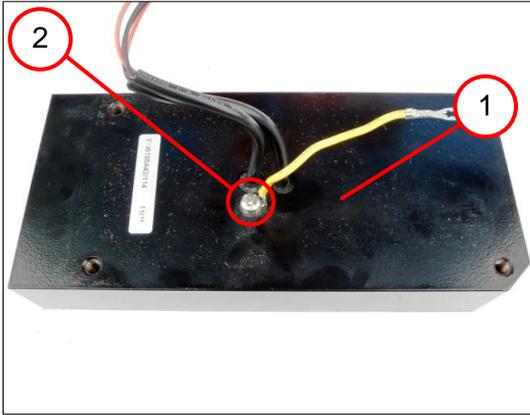
2. Position the protective hose (2).

Photo shows similar product

9.1.6 Assembling the magnetic base

Tool(s):

- PH2 cross-head screwdriver



1. Position the cable (1).
2. Screw in the screw (2) [1.5 Nm \pm 0.2 Nm].

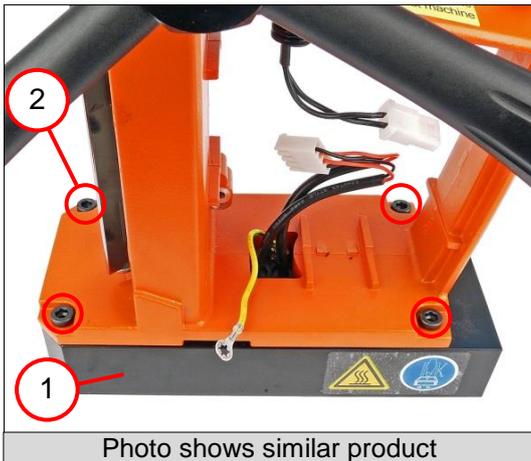
9.1.7 Positioning the magnetic base

Steps that must be completed:

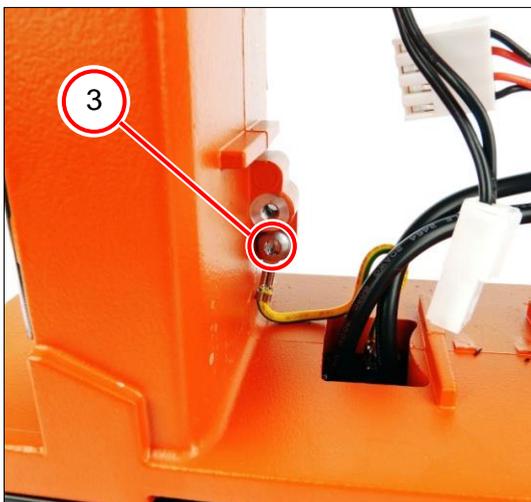
- Assembling the magnetic base

Tool(s):

- Socket head wrench, 5 mm
- Torx T20



1. Position the magnetic base (1).
2. Screw in the four screws (2) [8.0 Nm \pm 0.5 Nm].

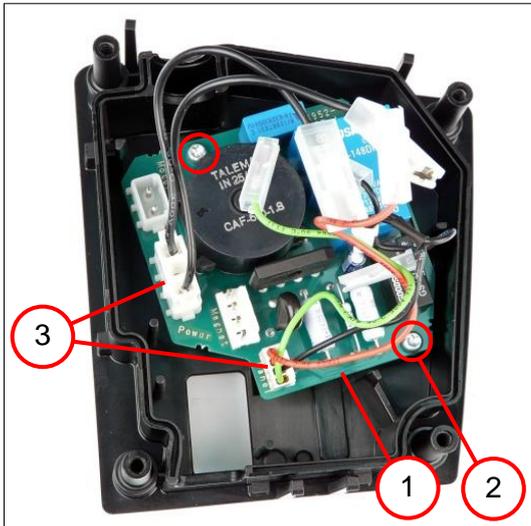


3. Position the connecting cable.
4. Screw in the screw (3) [1.5 Nm \pm 0.2 Nm].

9.1.8 Assembling the electronics

Tool(s):

- Torx T20



1. Position the electronics (1).
2. Screw in the two screws (2).
3. Connect the two cables (3) as shown in the connection diagram.

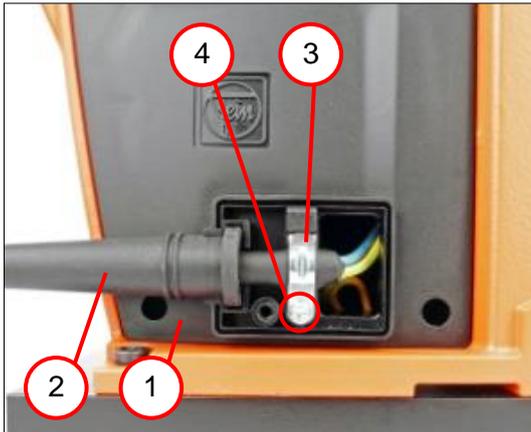
9.1.9 Positioning the electronics

Steps that must be completed:

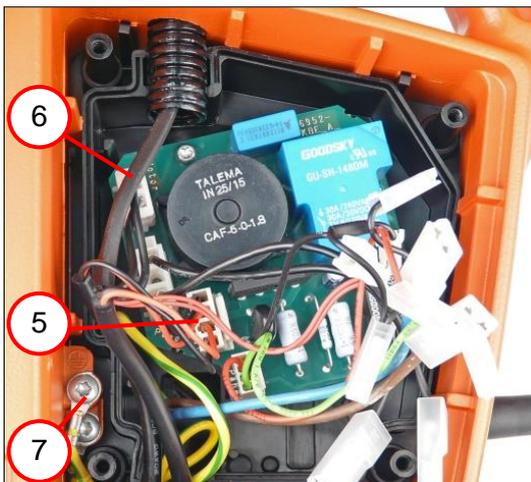
- Assembling the electronics

Tool(s):

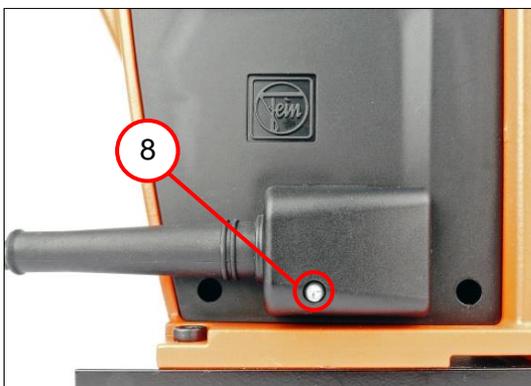
- Torx T15, T20



1. Position the cover (1) with the electronics.
2. Position the mains cable (2).
3. Position the cable clamp (3).
4. Screw in the screw (4) [0.9 Nm \pm 0.1 Nm].

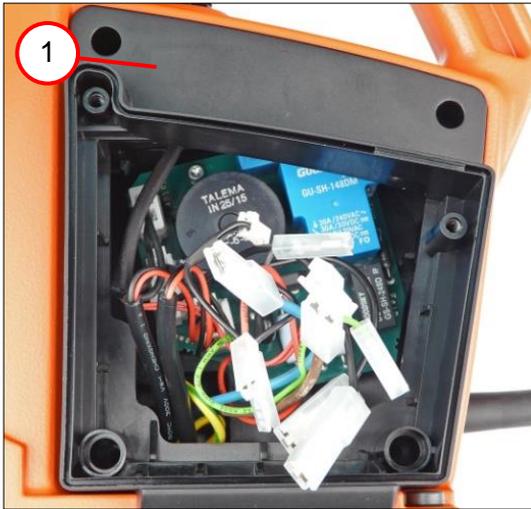


5. Connect the cable (5) as shown in the connection diagram.
6. Connect the cable (6) as shown in the connection diagram.
7. Screw in the screw (7) [1.5 Nm \pm 0.2 Nm].



8. Screw in the screw (8) [1.8 Nm \pm 0.1 Nm].

9.1.9 Positioning the electronics



9. Position the cover (1).

9.1.10 Assembling the control panel



1. Position the two buttons (1).
2. Position the switch (2).

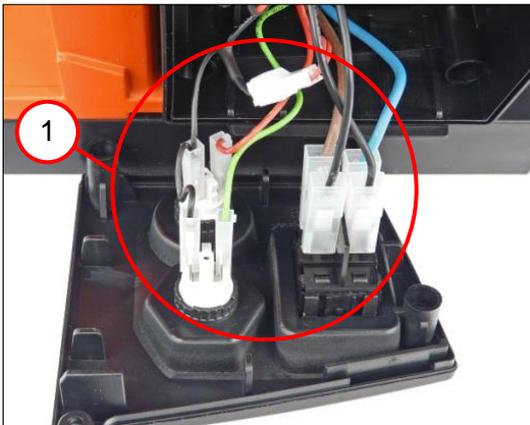
9.1.11 Positioning the control panel

Steps that must be completed:

- Assembling the electronics
- Positioning the electronics
- Assembling the control panel

Tool(s):

- Torx T20



1. Connect all plug connections (1) as shown in the connection diagram.



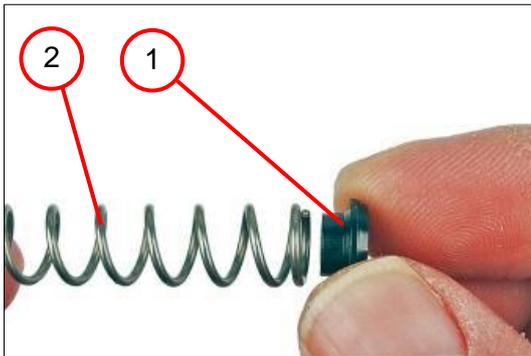
2. Position the cover (2).
3. Position the holder (3).
4. Screw in the screw [4x48] (4) [2.0±0.3 Nm].
5. Screw in the screw [4x35] (5) [2.0±0.3 Nm].
6. Screw in the two screws [4x18] (6) [2.0±0.3 Nm].
7. Screw in the two screws [4x48] (7) [2.0±0.3 Nm].

9.2 Assembling the drill chuck

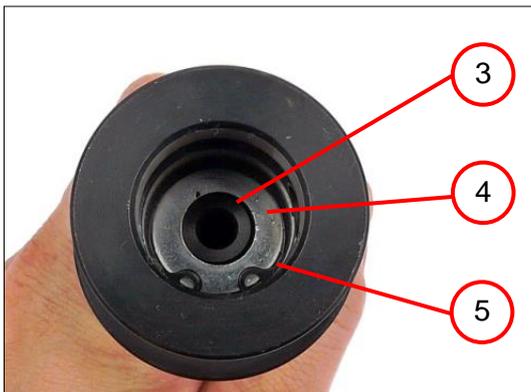
9.2.1 Assembling the shaft

Tool(s):

- Circlip pliers
- Arbor press
- Bolt, 18 mm



1. Position the sleeve (1) in the spiral spring (2).



1. Position the spiral spring with sleeve (3).
2. Position the disc (4).
3. Position the circlip (5).

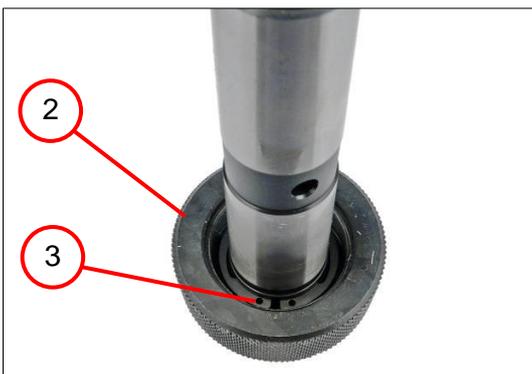


4. Press in the circlip (5).

 INFORMATION

The circlip (5) clicks audibly into place.

9.2.1 Assembling the shaft



i INFORMATION

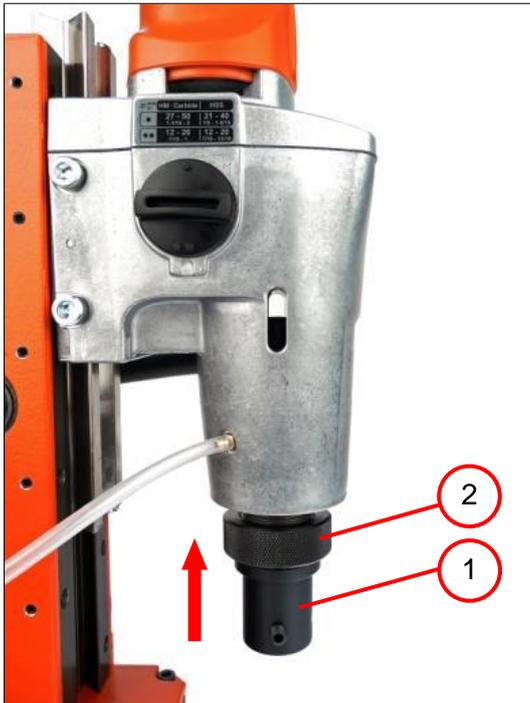
Use a new sealing ring during each fitting.

1. Coat the sealing ring (1) with grease.
2. Position the sealing ring (1).
3. Position the nut (2) on the shaft.
4. Position the circlip (3).

9.2.2 Assembling the mounting shaft

Steps that must be completed:

- Assembling the shaft



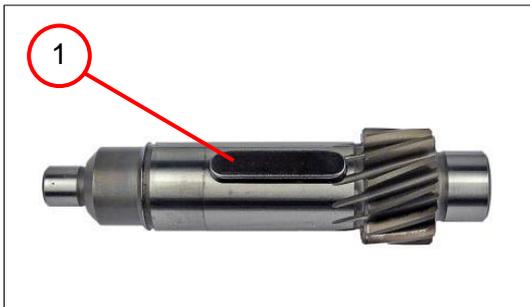
1. Position the shaft (1).
2. Screw in the nut (2) [left-hand thread].

9.3 Assembling the gearbox housing

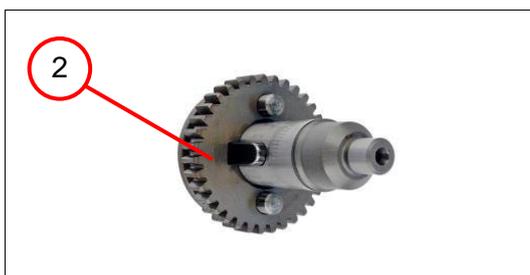
9.3.1 Assembling the gearbox parts

Tool(s):

- Circlip pliers
- Combination pliers
- Arbor press
- Sleeve
24 mm inner diameter, 42 mm outer diameter
8 mm inner diameter, 21 mm outer diameter
12 mm inner diameter, 27 mm outer diameter
- Socket wrench
- Socket wrench insert, 7 mm
- Slide hammer
- Inner puller
- Slotted screwdriver
- Punch, 7 mm

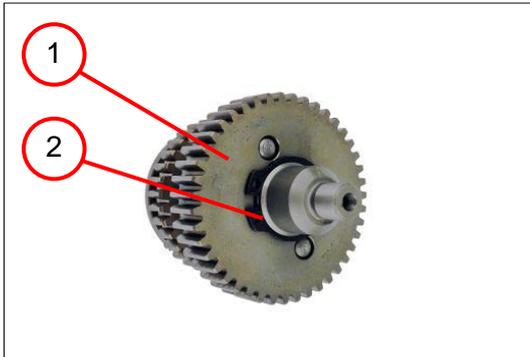


1. Position the feather key (1).

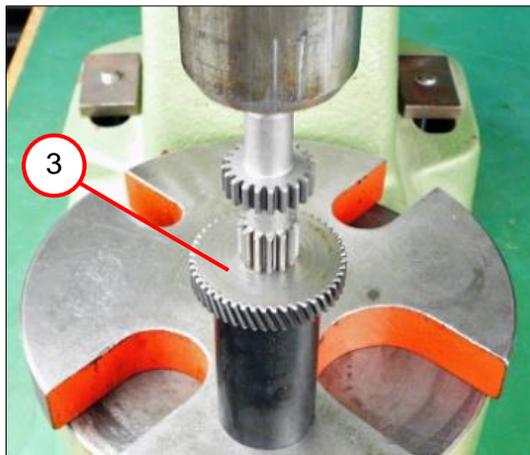


2. Position the gearwheel (2).

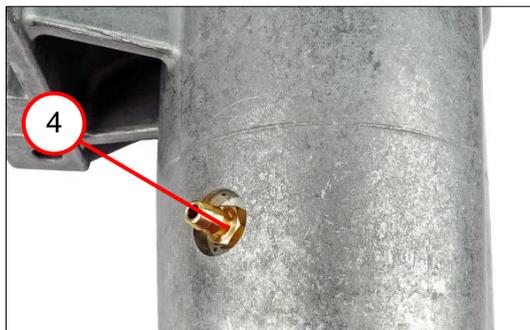
9.3.1 Assembling the gearbox parts



3. Position the gearwheel (1).
4. Position the circlip (2).



5. Press on the gearwheel (3).



6. Screw in the hose socket (4) [1.8±0.1 Nm].



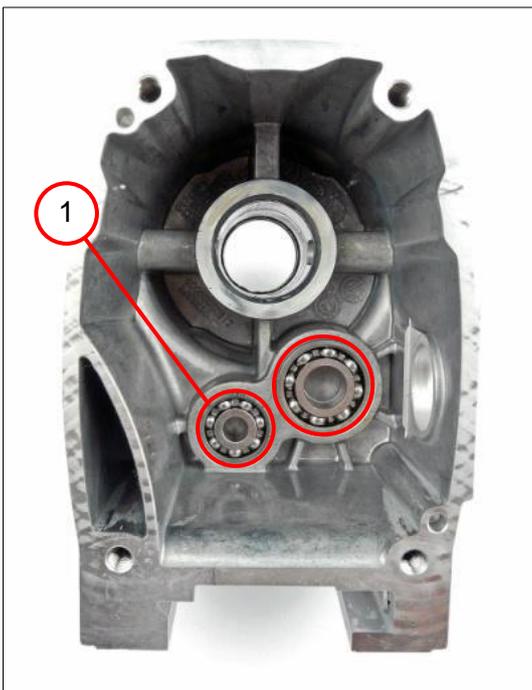
i	INFORMATION
Use new sealing rings for each new fitting.	

7. Coat the three sealing rings (5) with oil.
8. Position the three sealing rings (5).

9.3.1 Assembling the gearbox parts



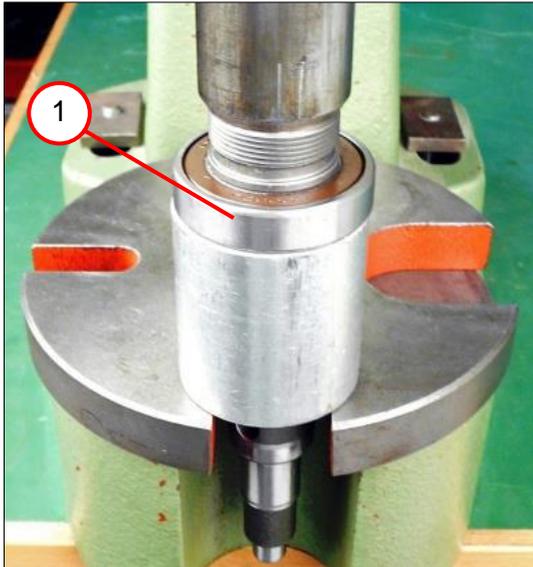
9. Press in the two deep groove ball bearings (1).



9.3.2 Assembling the shaft

Tool(s):

- Arbor press
- Sleeve
36 mm inner diameter, 55 mm outer diameter
- Circlip pliers



1. Press on the deep groove ball bearing (1).



2. Position the circlip (2).

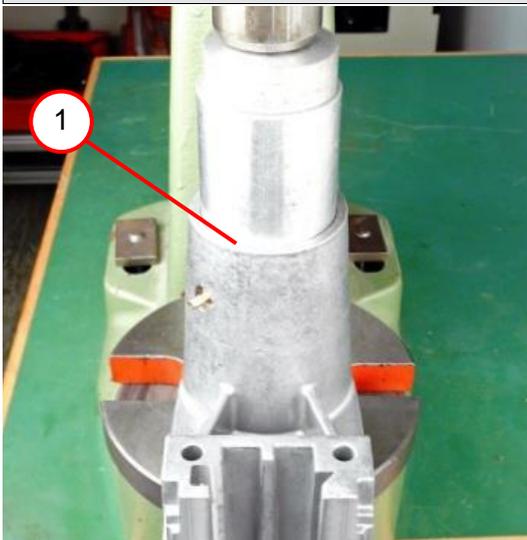
9.3.3 Positioning the shaft

Steps that must be completed:

- Assembling the shaft

Tool(s):

- Arbor press
- Sleeve
40 mm inner diameter, 54 mm outer diameter
- Circlip pliers
- Combination pliers



1. Coat the shaft (1) with grease.
2. Press on the shaft (1).



3. Position the circlip (2).



4. Position the feather key (3).

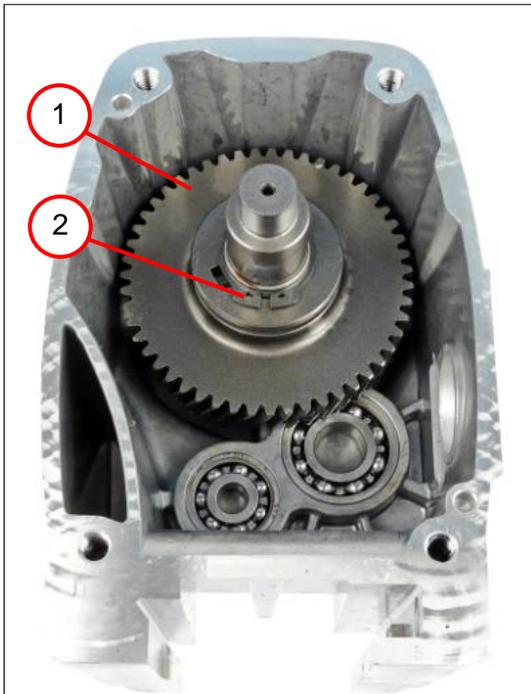
9.3.4 Positioning the gearbox parts

Steps that must be completed:

- Assembling the gearbox parts
- Assembling the shaft
- Positioning the shaft

Tool(s):

- Circlip pliers



1. Position the gearwheel (1).
2. Position the circlip (2).

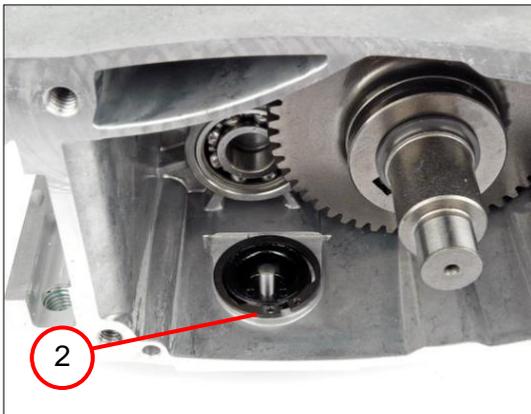


3. Coat the sealing ring (3) with oil.
4. Position the sealing ring (3).

9.3.4 Positioning the gearbox parts



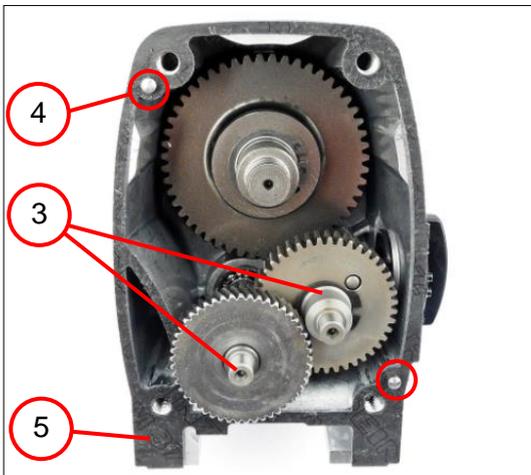
5. Position the rotary knob (1).



6. Position the circlip (2).



7. Turn the rotary knob to the '•' position.



8. Position the two gearwheels (3).

9. Position the two straight pins (4).

i INFORMATION

Use a new seal for each new fitting.

10. Position the seal (5).

11. Fill the gearbox with 130 g of grease.

9.4 Assembling the motor housing

9.4.1 Assembling the motor housing

Tool(s):

- Arbor press
- Pressure piece
- 4x round material
20 mm in diameter
Length 60 mm



1. Press in the stator (1).



2. Position the cover (2).

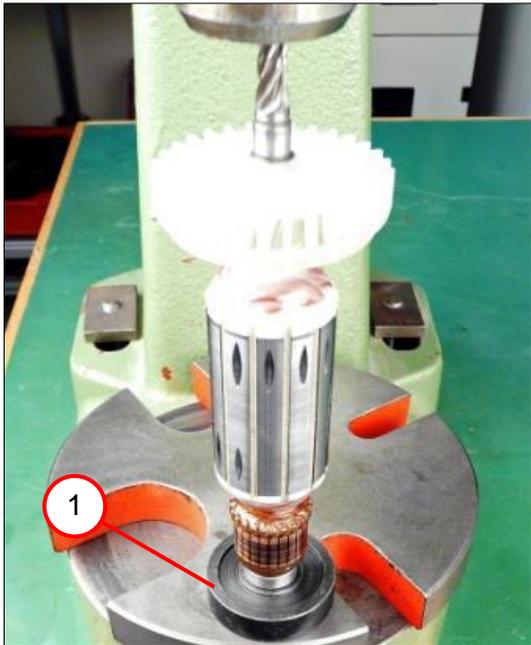


3. Position the air guide ring (3).

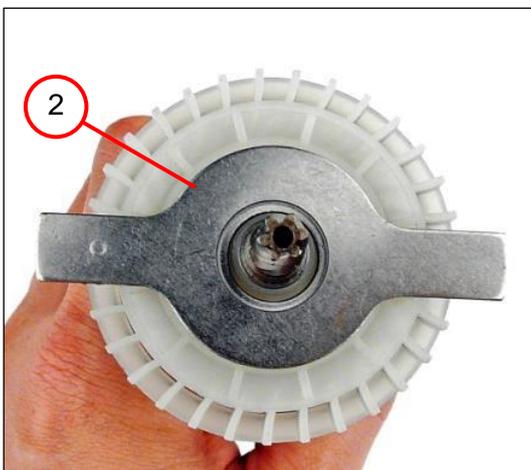
9.4.2 Assembling the armature

Tool(s):

- Arbor presses
- Sleeve
8 mm inner diameter, 20 mm outer diameter
7 mm inner diameter, 26 mm outer diameter



1. Press on the deep groove ball bearing (1).

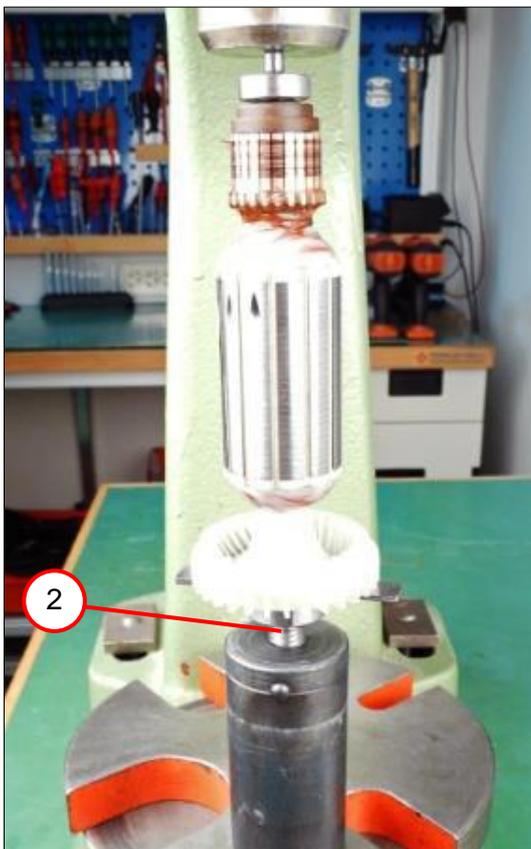


2. Position the plate (2).

9.4.2 Assembling the armature

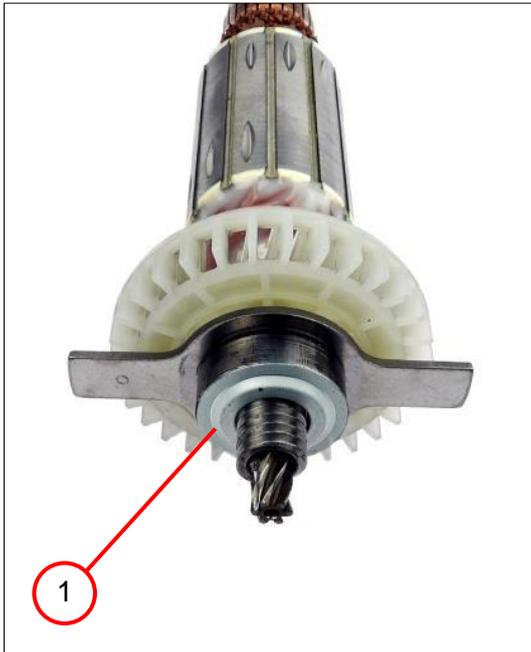


3. Press on the deep groove ball bearing (1).



4. Press on the sealing ring (2).

9.4.2 Assembling the armature



5. Position the sealing ring (1).



6. Position the bearing bush (2).

9.4.3 Assembling the intermediate gear box

Steps that must be completed:

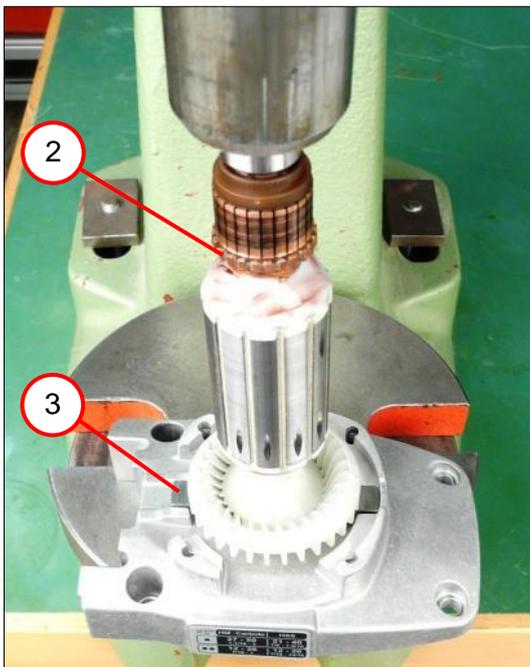
- Assembling the armature

Tool(s):

- Arbor press
- Sleeve
10 mm inner diameter, 21 mm outer diameter
15 mm inner diameter, 30 mm outer diameter



1. Press in the deep groove ball bearings (1).



! PLEASE NOTE:

Damage to the armature.

The armature (2) can be damaged by the plate (3) being positioned incorrectly.

Note the position of the plate (3).

2. Press in the armature (2).

9.4.4 Positioning the intermediate gear box

Steps that must be completed:

- Assembling the armature
- Assembling the intermediate gear box

Tool(s):

- Torx T20



1. Position the motor housing (1).

** INFORMATION**

Use new sealing rings for each new fitting.

2. Screw in the four screws with sealing rings (2).
[1.8±0.1 Nm].

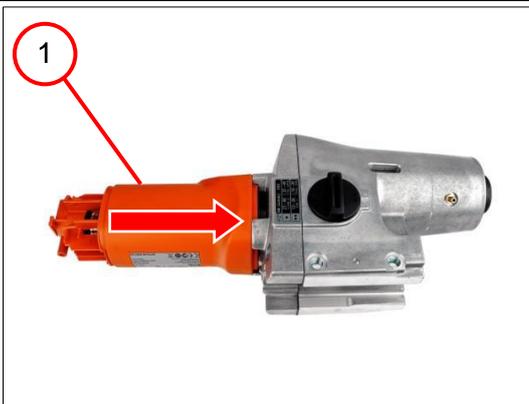
9.4.5 Positioning the motor housing

Steps that must be completed:

- Assembling the gearbox parts
- Positioning the shaft
- Assembling the armature
- Assembling the intermediate gear box

Tool(s):

- Socket head wrench, 5 mm



1. Position the motor housing (1).



2. Screw in the four screws (2) [8.0 Nm \pm 0.3 Nm].

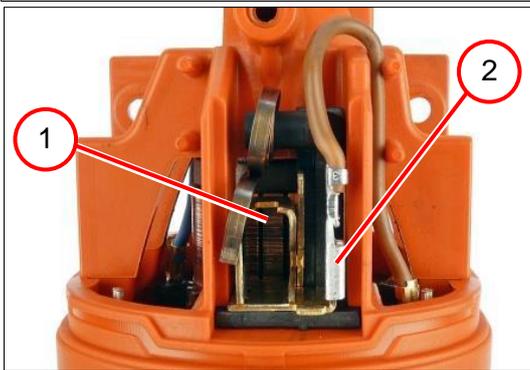
9.4.6 Positioning the carbon brushes

Steps that must be completed:

- Assembling the gearbox parts
- Positioning the shaft
- Assembling the motor housing
- Assembling the armature
- Assembling the intermediate gear box
- Positioning the intermediate gear box
- Positioning the motor housing

Tool(s):

- Long-nosed pliers
- Assembly aid



1. Position the carbon brush holder (1).
2. Connect the cable (2) as shown in the connection diagram.



3. Position the carbon brush (2).
4. Connect the carbon brush (2) as shown in the connection diagram.



5. Position the spring (4).
6. Repeat steps 1 to 5 on the opposite side of the machine.

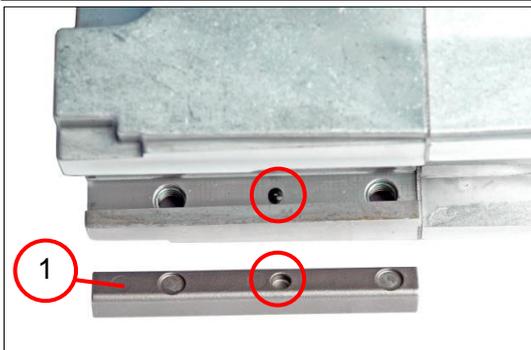
9.4.7 Positioning the drill motor

Steps that must be completed:

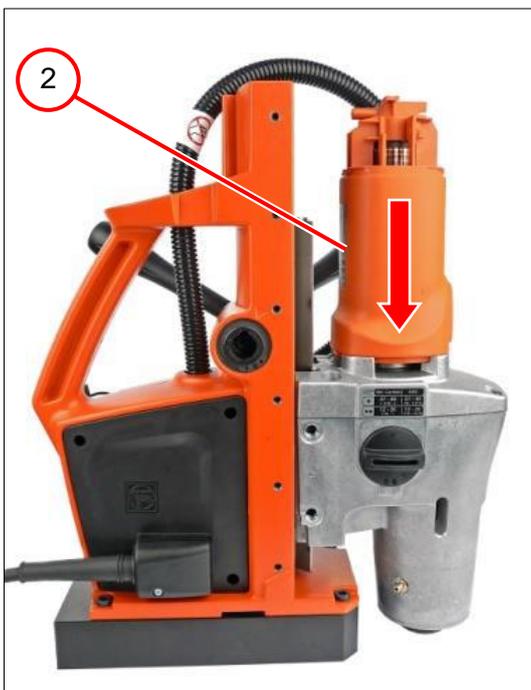
- Assembling the gearbox parts
- Positioning the shaft
- Assembling the motor housing
- Assembling the armature
- Assembling the intermediate gear box
- Positioning the intermediate gear box
- Positioning the motor housing
- Positioning the carbon brushes

Tool(s):

- Socket head wrench, 6 mm
- Slotted screwdriver



1. Position the pressure piece (1).

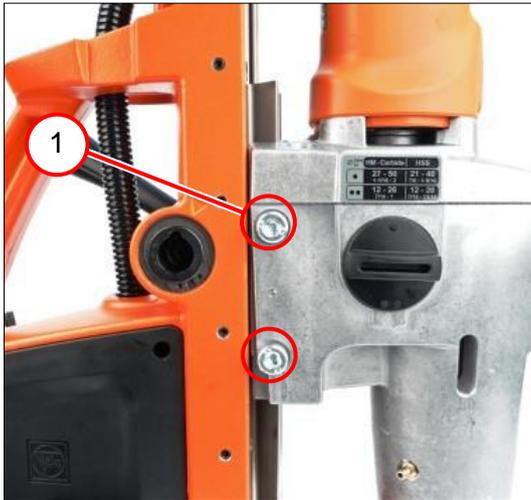


CAUTION!

Crushing hazard around the drill motor
Crushing can occur.
Do not place hands under the drill motor (2).

2. Slide the drill motor (2) into the guide.

9.4.7 Positioning the drill motor



3. Screw in the two screws (1).



4. Screw in the flat-head screw (2) [1.2 Nm \pm 0.15 Nm].

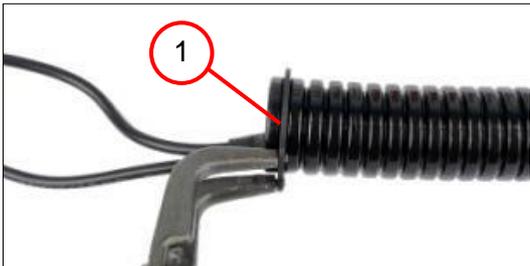
9.4.8 Positioning the connecting cable

Steps that must be completed:

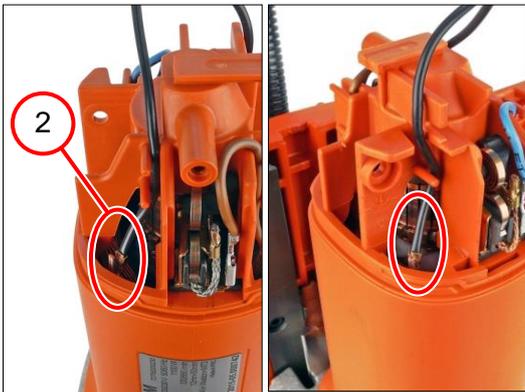
- Assembling the gearbox parts
- Positioning the shaft
- Assembling the motor housing
- Assembling the armature
- Assembling the intermediate gear box
- Positioning the intermediate gear box
- Positioning the motor housing
- Positioning the carbon brushes
- Positioning the drill motor

Tool(s):

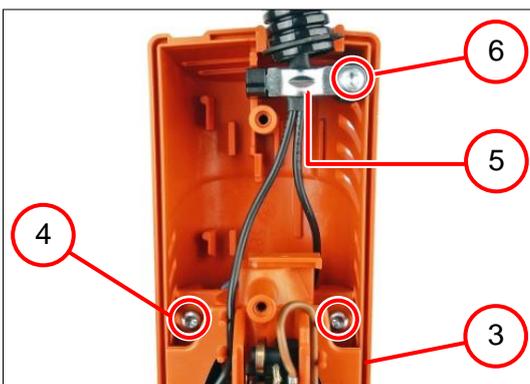
- Torx T15



1. Position the circlip (1).



2. Connect the two strands (2) as shown in the connection diagram.



3. Position the cover (3).
4. Screw in the two screws (4) [1.6 Nm ±0.25 Nm].
5. Position the cable clamp (5).
6. Screw in the screw (6) [1.6 Nm ±0.25 Nm].

9.4.8 Positioning the connecting cable



7. Position the cover (1).
8. Screw in the two screws (2) [1.6 Nm \pm 0.25 Nm].

9.5 Setting the guide

Tool(s):

- Socket head wrench, 2.5 mm



1. Use the six set screws (1) to set zero backlash on the guide.

 INFORMATION

To check the setting, move the drill motor up and down using the spider.

At the places where the drill unit moves too fast or too slowly, screw the stud bolts in or out a little further.

9.6 Positioning the container



2. Position the container (1).
3. Place the hose on the hose socket (2).



10 Inspection following repairs

Always: Visual inspection
Speed check
Check coolant function
Perform drilling test in metal

Mains operated machines: Electrical safety test

Machine with magnet: Check magnetic holding force

If restart lock present: Check restart lock

