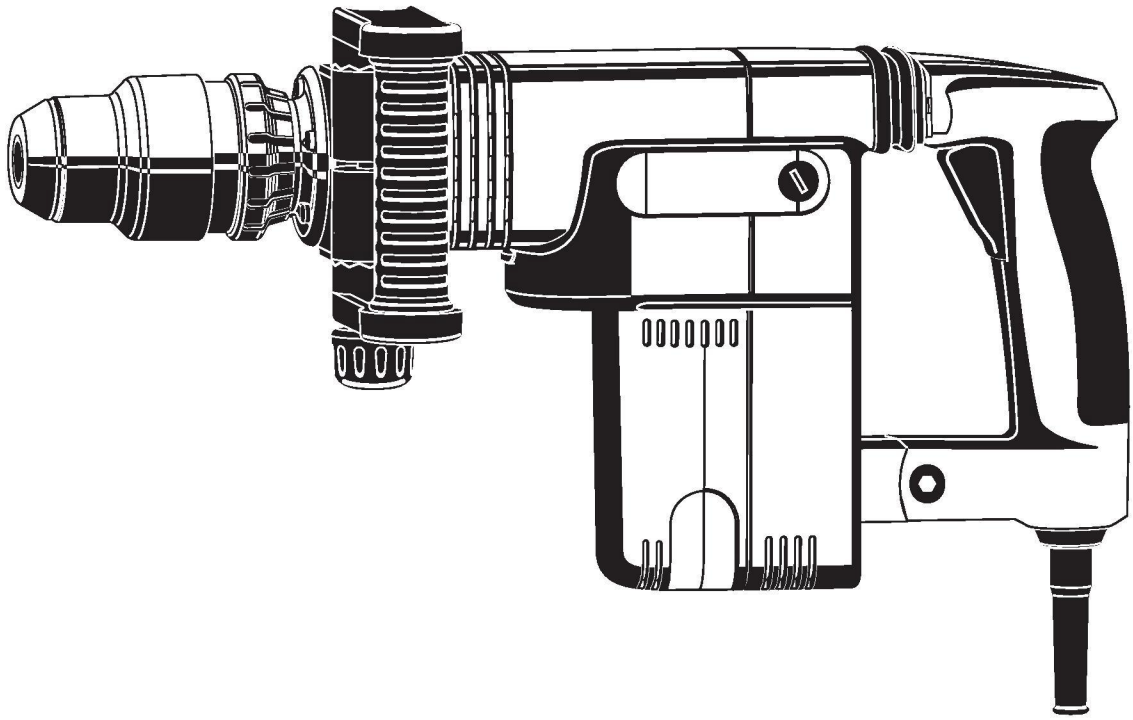
Atlas Copco
Electric Power Tools Ltd.

Repair Instructions No.182.03/98
PBE 6 S



4939 5567 01 (03/98)

PBE 6 S

Special Tools Required

■ Torx screwdriver TX 30	4932 319 998
■ Forcing disks	4931 599 018
■ Pulling-off device	9170 314 440
■ Adjustment tool for carbon brushes	9170 302 270

Important!

- Before beginning the maintenance work, perform an initial check with a high voltage test according to VDE (see chapter Electrical and Mechanical Test Instructions).
- Before all repair work, pull the power plug from the socket!
- Vor der Demontage ist das Gerät an den RTR-READER (Wartungsmeßgerät) anzuschließen, um einen evtl. Wartungsintervall abzufragen.

Disassembly

Removing the auxiliary handle

1 Unscrew the nut (2) and remove the washer (3).

2 Pull out the screw (6).

3

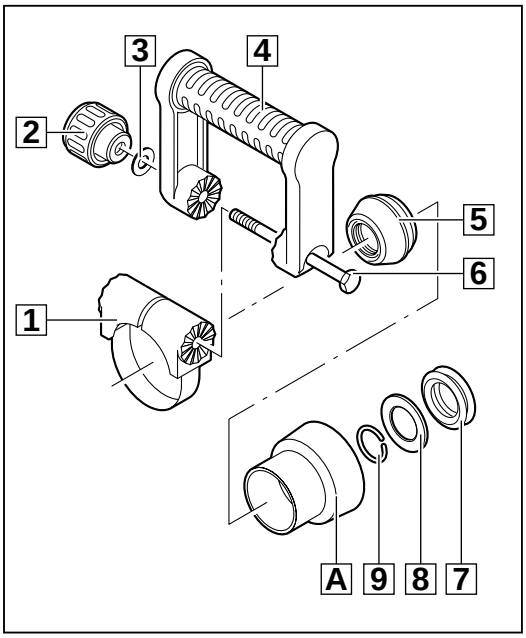
☞ Press the clamping ring (1) and remove the auxiliary handle (4). Release the tension and remove the clamping ring (1).

4 Push back the rubber sleeve (A) and lever off the rubber bushing (5).

5 Remove the rubber sleeve (A).

6 Remove the locking ring (9) with aid of cut special pliers. If necessary, use a screwdriver for support.

7 Remove the damping element (8) and the damper (7).



1

Disassembling the ball holding device

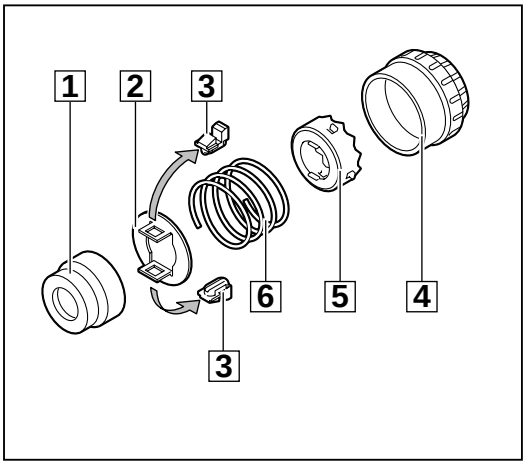
1 Remove all four balls (1) with aid of a magnet.

2 Loosen the five screws (B) of the adapter sleeve (2) and remove the adapter sleeve (2) as well as the O-ring (3). If necessary, hit it lightly with a plastic hammer.

3 Remove the tool acceptance (4) completely with the snap die (A), the spacer (5) and the gasket (6).

4 Remove the snap die (A) from the tool acceptance (4).

5 Remove the O-ring (9), the spacer (8), as well as the recoil ring (7).



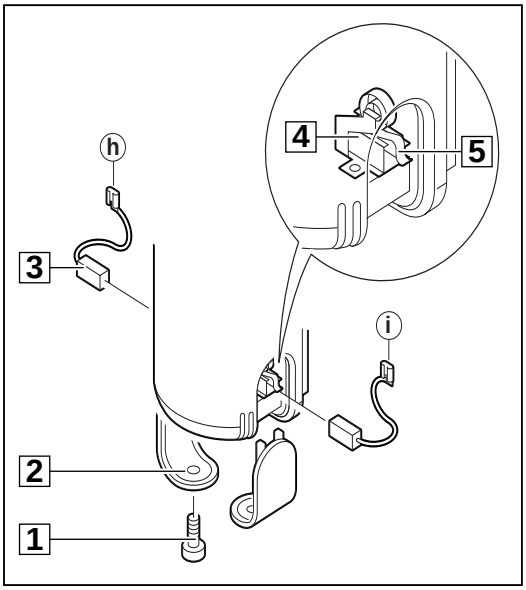
2

Detaching the carbon brushes

1 Loosen the screws (1) and remove the brush covers (2).

2 Lift the brush springs (5) off the respective carbon brushes (3) and place them on the upper edge of the brush holders (4).

3 Pull both cable lugs (h and i) off the carbon brushes (3) and remove them.



3

Dismantling the handgrip

1 Loosen the two screws (G) of the housing (F).

2 Remove the handle screw (E) by steadying the knurled nut (5) at the same time. Remove the knurled nut (5).

3 Loosen the screw (B) and lever off the handle cover (A) from below (it is not possible to lever off the handle cover from above without destroying it!).

4 Unscrew the four screws (6) from the right half of the handle (7).

5 Unscrew both Torx screws (8) TX 30 of the handgrip holder (4) and remove them.

6 Pull off the handle shells completely with the housing (F).

7 Remove the damping element (2).

☞ Attention: Do under no circumstances further dismantle the damping element!

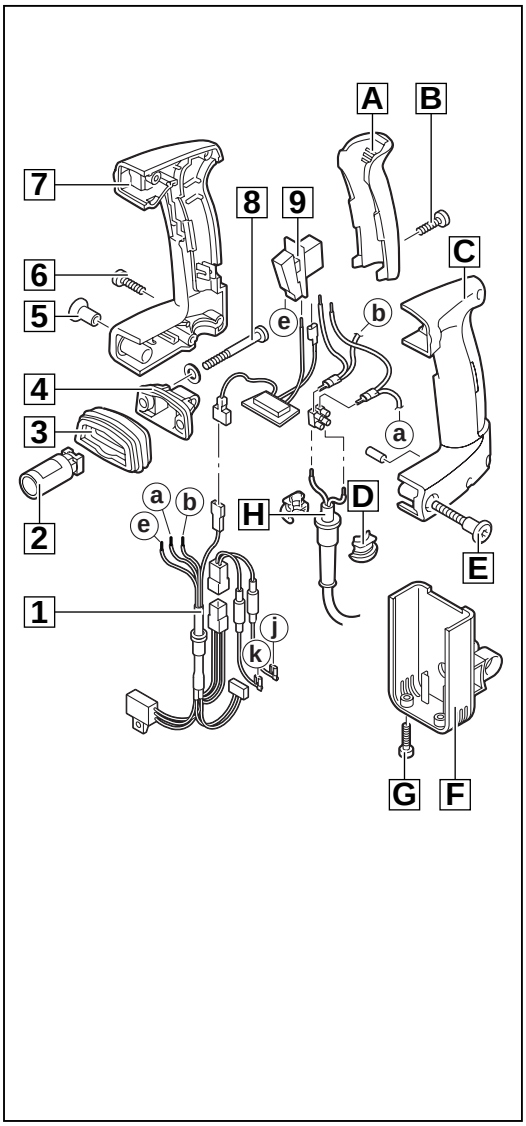
8 Disconnect the plug-in connection (1) between the motor and the pair of handle shells.

9 Remove the handgrip holder (4) and the rubber collar (3) from the handle shells.

10 Remove the left handle shell (C) with the holding-down device.

11 Loosen the cable clamps (D) and lay bare the connecting cable (H) with the cable entry sleeve.

12 Remove the switch (9) with the capacitor from the handle shell.



4

Detaching the armature

1 Loosen the two short (A) and the two long (D) screws.

2 Remove the motor housing (9) with the field (1) and the air deflector ring (2).

3 Remove the air deflector ring (2) from the motor housing (9) and expel the field (1) from the motor housing (9).

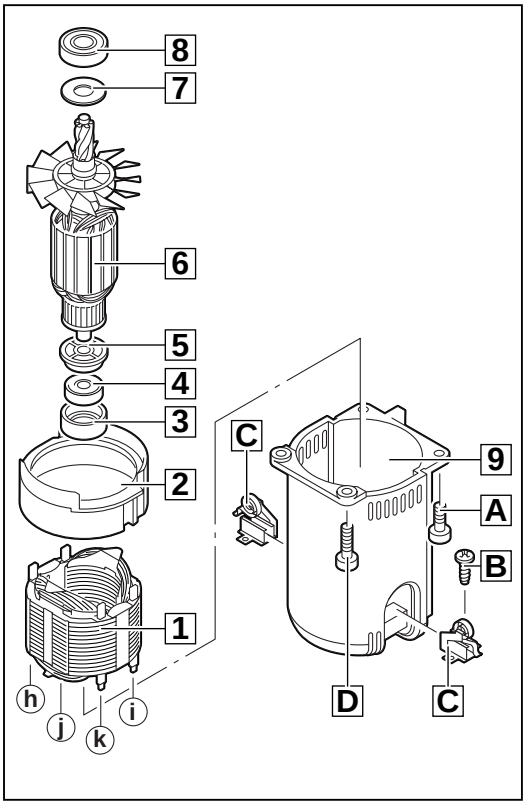
4 Loosen the screws (B). Remove the brush holders (C) from the motor housing (9).

5 Pull out the complete armature by turning it. If necessary, hit the motor housing lightly with a plastic hammer for support.

6 Remove the bearing sleeve (3) from the armature bearing (4).

7 Press off the armature bearings (4) and (8) with aid of the forcing disks (service tool).

8 Remove the insulating disk (5) and the ring (7).



5

Dismantling the spindle

1 Peel off the ring (4) and remove the plastic housing (5).

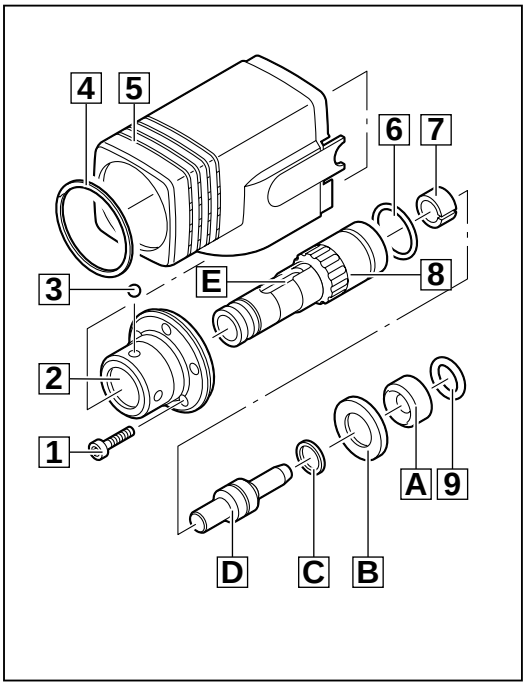
2 Remove the four balls (3) with aid of a magnet.

3 Loosen the five screws (1) of the adapter sleeve (2) and remove the adapter sleeve (2). If necessary, use a plastic hammer for support.

4 Remove the tool reception (8) completely with the snap die (D), the spacer (7) and the O-ring (6). Knock out the spacer (7) through the grooves (E) with aid of a mandrel.

5 Remove the snap die (D) from the tool reception (8).

6 Remove the following parts:
grease seal (C),
spacer (B),
recoil ring (A) and
rubber ring (9).



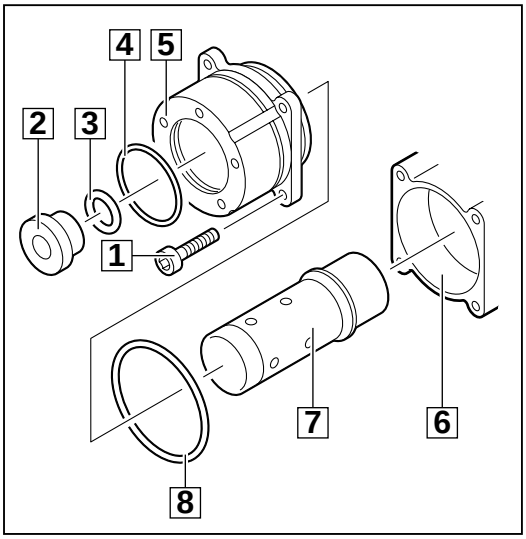
6

Detaching the flange

1 Remove the sleeve (2), and the O-rings (3) and 4).

2 Loosen the screws (1) and remove the flange (5) with the ring (8).

3 Remove the spindle sleeve (7) from the housing (6).



7

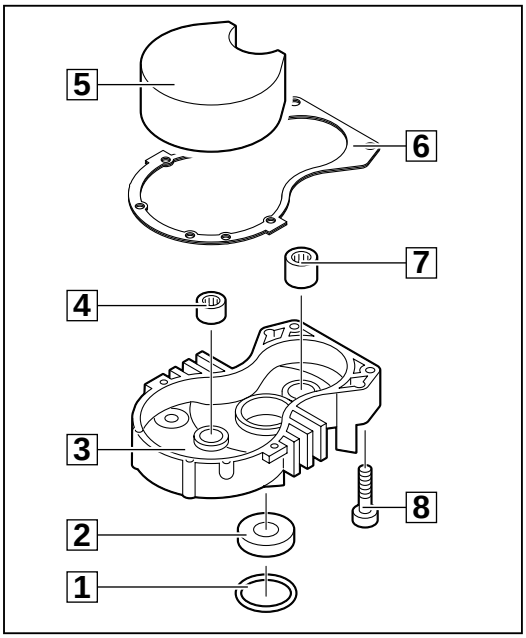
Detaching the gear box cover

1 Lever off the O-ring (1) and the grease seal (2) from the gear box cover (3).

2 Unscrew the screws (8) and loosen the gear box cover (3) by hitting the gear box lightly with a plastic hammer. Remove the cover.

3 Remove the gasket (6) and the insert (5).

4 Pull out the needle bearings (4 and 7) with aid of an interior extractor.



8

Detaching the crankshaft

1 Loosen the two screws (A) and remove the service cover (8) with the gasket (B) and the valve (9).

2 Remove damaged welch plug (7).

3 Remove the spring ring (1).

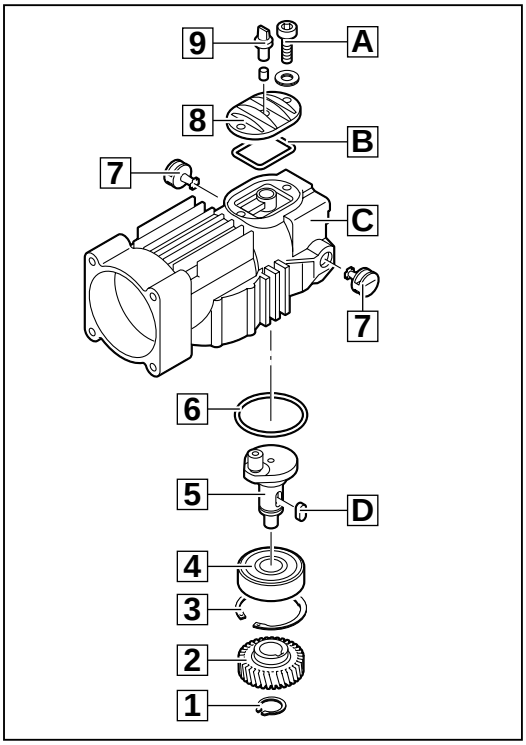
4 Pull off the crank wheel (2) with aid of a pulling-off device (service tool). Steady the crank wheel for support.

5 Remove the key (D) from the crankshaft (5).

6 Remove the spring ring (3) and pull out the crankshaft; if necessary, press out the crankshaft through the opening in the cover with aid of a suitable mandrel.

7 Press the ball bearing (4) off the crankshaft.

8 Remove the O-ring (6) from the gear housing (C).



9

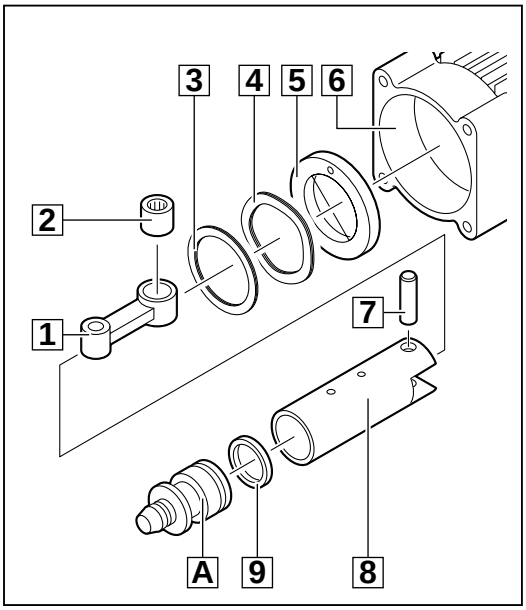
Detaching the cylinder and the connecting rod

1 Pull the cylinder (8), the washers (3) and 4), and the holder (5) from the gear housing (6).

2 Push the cylindrical bolt (7) from the cylinder (8) and pull out the connecting rod (1).

3 Press the needle bearing (2) from the connecting rod (1).

4 Pull the percussion body (A) with the gasket (9) from the cylinder (8).



10

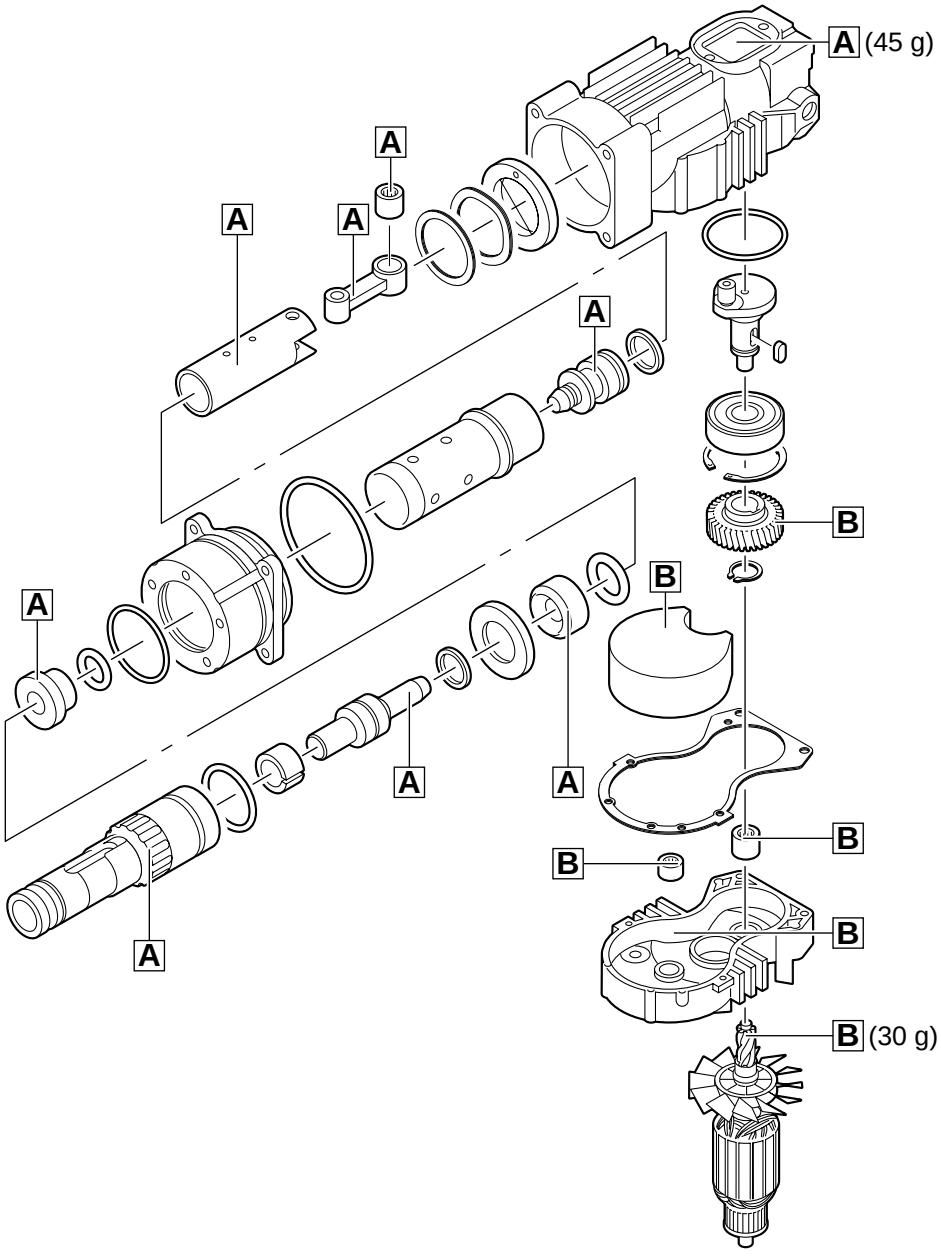
Maintenance

General	It is recommended to submit the machine to maintenance after the carbon brushes have switched off.
Cleaning	Clean all parts – with the exception of the electrical parts – with cold cleaning agent. **Caution!** No cleaning agent should penetrate into the bearing. Clean the electrical parts with a dry brush.
Check for wear	Check the disassembled parts for wear (visual inspection) and replace worn parts.
Electrical tests	Before reassembling, perform an electrical test on all relevant parts (see chapter Electrical and Mechanical Test Instructions).
Lubrication	Each time maintenance is performed, the machine is to be lubricates as stated in the lubrication plan. After the machine is fully disassembled, completely remove the old grease and replace with new grease. The grease must be applied to the machine as indicated in the lubrication plan.

Legend

A Cover with red grease (60 g)

B Cover with blue grease (40 g)



Torques	Screws in plastic	2,5 Nm
	Screws in metall	4,0 Nm

Assembly

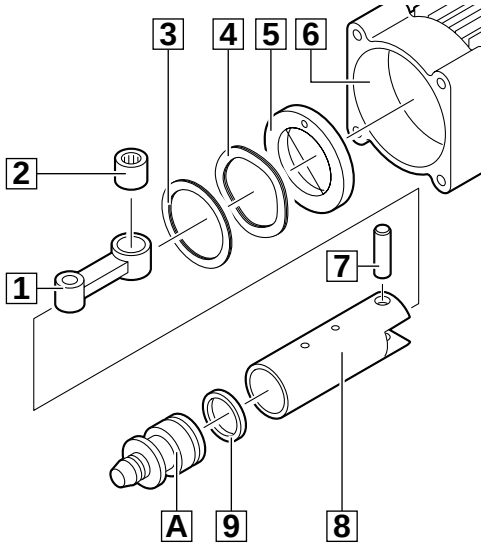
Mounting the cylinder and the connecting rod

1 Press the needle bearing (2) into the connecting rod (1).

2 Push the percussion body (A) and the gasket (9) into the cylinder (8).

3 Put together the cylinder (8) and the connecting rod (1) and push the cylindrical bolt (7) through both borings.

4 Insert the cylinder (8), the washers (3 and 4) and the holder (5) into the gear housing (6).



1

Mounting the crankshaft

1 Insert the O-ring (6) into the gear housing (C).

2 Press the ball bearing (4) onto the crankshaft (5).

3 Insert the crankshaft (5) into the gear housing from below (C) and fit it to the connecting rod bearing.

4 Mount the spring ring (3).

5 Insert the key (D) into the crankshaft (5).

6 Fit the crank wheel (2) with the collar facing the eccentric and press it on.

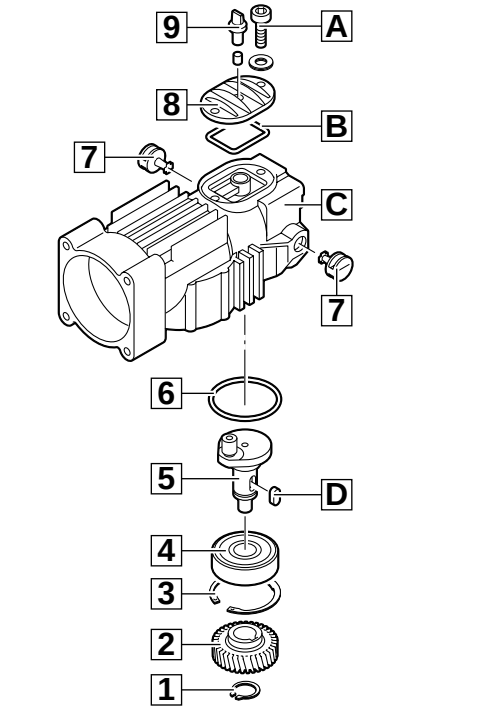
☞ Steady the crankshaft with a suitable mandrel which is pushed through the opening in the cover (otherwise the crankshaft is pushed in too far).

7 Secure the crank wheel (2) with the spring ring (1).

8 If necessary, mount the welch plug (7).

9 Fill the gear housing (C) through the service opening with grease according to the lubrication chart.

10 Fit the service cover (8) with gasket (B) and valve (9) and fasten it with the screws (A).



2

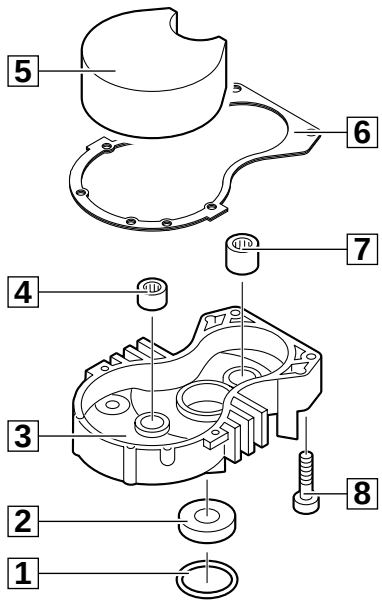
Mounting the gear box cover

1 Press the needle bearings (4 and 7) into the gear box cover (3).

2 Place the insert (5) into the gear box cover (3) (mind the right position!) and fit the gasket (6).

3 Fit the gear box cover (3) and fasten it with the screws (8).

4 Insert the grease seal (2) and the O-ring (1) into the gear box cover (3).



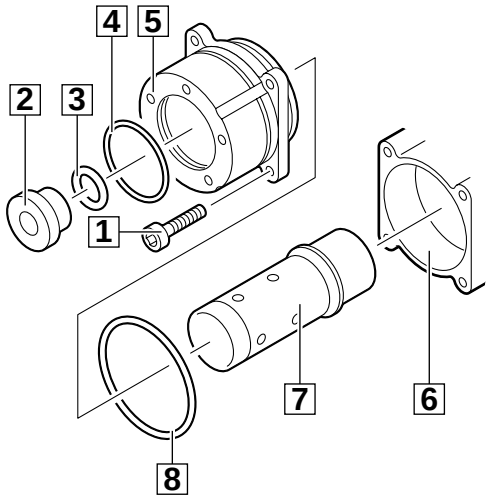
3

Mounting the flange

1 Insert the spindle sleeve (7) into the housing (6).

2 Fit the flange (5) with the ring (8) to the housing (6) and fasten them with the secured screws (1).

3 Mount the O-rings (3 and 4) and the sleeve (2).



4

Assembling the spindle

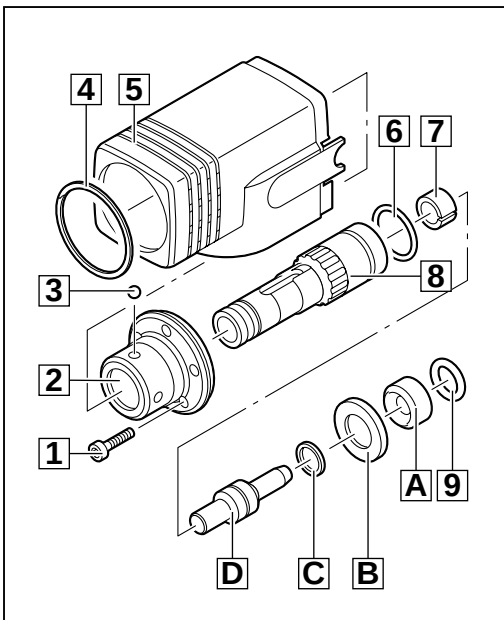
1 Insert the rubber ring (9), the recoil ring (A), the spacer (B), and the grease seal (C) into the flange (see assembly step 4).

2 Insert the snap die (D) into the tool reception (8).

3 Insert the tool reception (8) completely with the snap die (D), the spacer (7) and the O-ring (6) into the gear box.

4 Fit the adapter sleeve (2) and fasten it with the secured screws (1).

5 Insert the four balls (3) into the adapter sleeve (2).



5

Mounting the armature

1 Push the insulating disk (5) and the ring (7) over the armature shaft and press on the armature bearings (4) and (8).

2 Push the bearing sleeve (3) over the armature bearing (4).

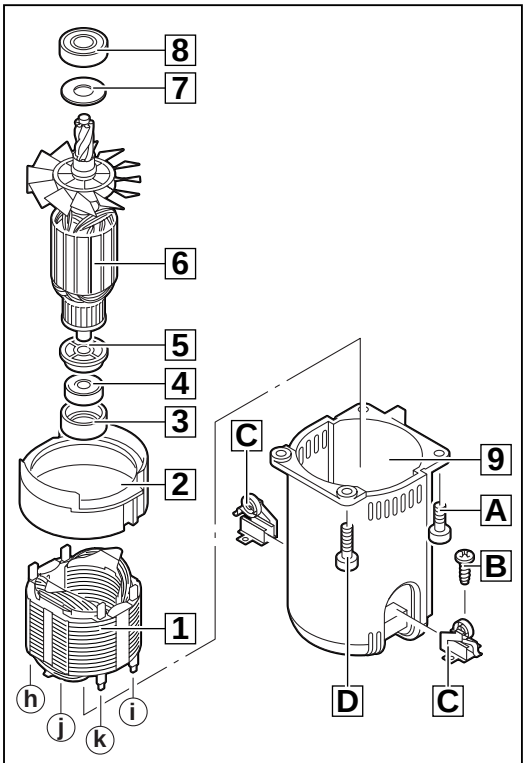
3 Lightly grease the armature bearing (8) and insert the complete armature into the machine by turning it.

4 Insert the brush holders (C) into the motor housing (9). Align them with the adjustment tool (service tool) and fix them with the screws (B).

5 Push the field (1) into the motor housing (9) and insert the air deflector ring (2). Mind the right position!

6 Push the motor housing (9) with the field (1) and the air deflector ring (2) over the armature.

7 Fasten the motor housing with two short screws (A) and two long screws (D).



6

Assembling the handgrip

1 Insert the switch (9) with the capacitor into the handle shell (7).

2 Insert the connecting cable (H) with the cable entry sleeve as well as the cable clamps (D) into the handle shell (7).

3 Fit the handle shell (C) with the holding-down device to the other handle shell and fasten them with the four screws (6).

☞ Take care that no cables are jammed or squeezed.

4 Insert the handgrip holder (4) and the rubber collar (3) into the handle shell (7).

5 Connect according to wiring diagram.

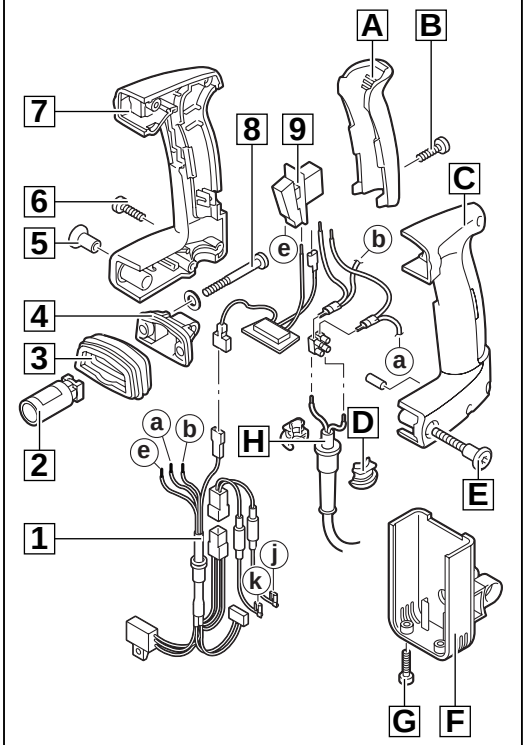
6 Insert the damping element (2) into the housing.

7 Push the completed pair of handle shells over the housing (F) and fasten it with the screws (G).

8 Fasten both Torx screws (8) TX 30 of the handgrip holder (4) together with the disks.

9 Insert the handle cover (A) from above and fasten it with the screw (B).

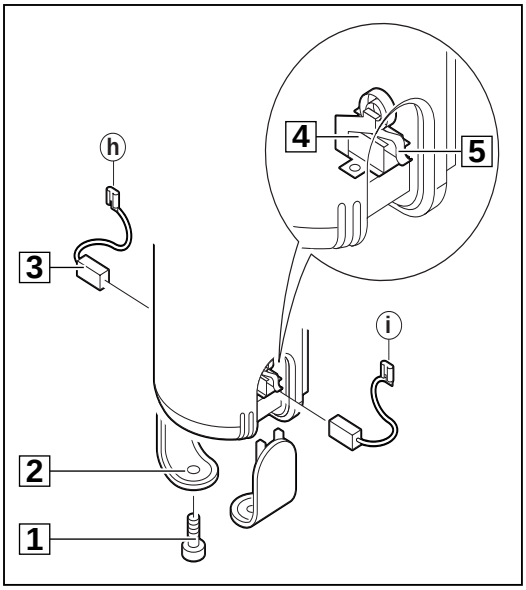
10 Screw down the handle screw (E),steadying the knurled nut (5) at the same time.



7

Mounting the carbon brushes

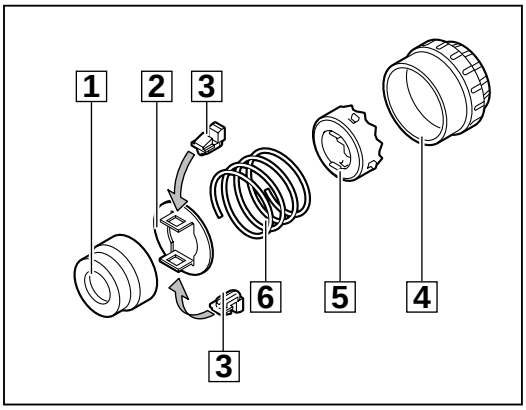
1. Mount the carbon brushes (3) and mount the cable lugs (h) and (i) on the field.
2. Insert the carbon brushes (3) into the brush holders (4).
3. Pull up the brush springs (5) of the brush holders (4) and push them over the carbon brushes (3).
4. Fasten the carbon brush covers (2) with the screws (1).



8

Mounting the ball holding device

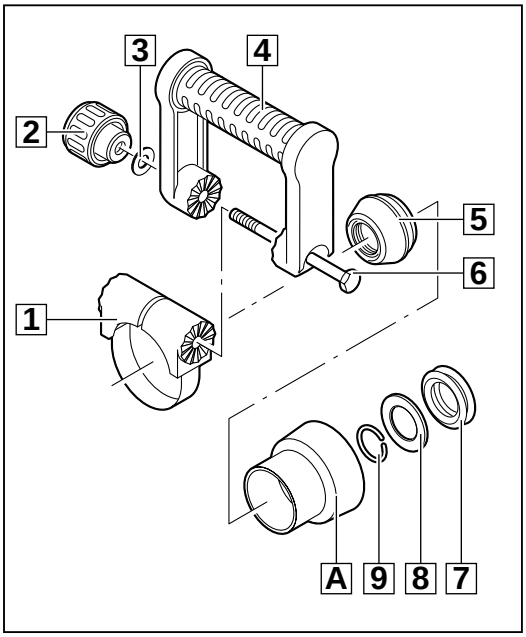
1. Fit the locking bolt (4) together with the ball holding device (5).
2. Fit the pressure spring (6) and the retaining plate (2), depress them and insert the locking levers (3).
3. Mount the locking sleeve (1).



9

Mounting the auxiliary handle

1. Mount the damper (7) and the damping element (8) and secure them with the locking ring (9).
2. Fit the rubber sleeve (A).
3. Push back the rubber sleeve (A) and mount the rubber bushing (5).
4. Press the clamping ring (1) and place the auxiliary handle (4) on the clamping ring (1).
5. Insert the screw (6) through the clamping ring (1) and the auxiliary handle (4).
6. Push the washer (3) over the screw (6).
7. Secure the screw (6) with the nut (2).



10

Test Run Test run the machine and pay attention to noises.
Let the machine run-in.

Electrical Test Perform an electrical test on the machine (see chapter Electrical and Mechanical Test Instructions).