OFFICIAL USE
For ASC

# DIAMOND CORE DRILL

# DBM080

# REPAIR MANUAL

# Repair instructions for the diamond core drill DBM 080

## I. General

(a) The diamond core drill should only be repaired by authorized service centre. The following explanations are in accordance with the spare parts list DBM 080.

(b) **To avoid electric shock, unplug the drill from the power supply before attempting service!**

## II. Dismantling the diamond core drill

### *1. Motor Section*

- At first disconnect the plug from the mains so that the diamond core drill is in dead condition. Remove the additional handle *(53)*. Then loose the four self-tapping screws 4,8x45 *(10)* and put away the gearbox. Remove the gearbox seal *(11)* and the grease from gear bearing holder *(44)*. Now dismantling of motor part can start.

- Release the three self-tapping screws 4,2x22 *(7)* which fasten pair of handle halves *(4)* together. Loose the two self-tapping screws 4,8x45 *(10)* which fix the upper half of handhold on motor housing *(18)*. After taking off the upper half, switch *(6)*, anti interference capacitor *(3)*, line cord *(1)* and cable grommet *(5)* can be dismantled.

- In the next step disconnect the electronic card *(47)* from switch *(6)*. Remove the lower handle cap. Now exchange of the electronic card is possible. To do this disconnect the electronic card from stator and cold-conductor and release the two self-tapping screws 2,9x13 *(48)*.

- Take out the carbon brushes *(15)*. Subsequently, lift the gear bearing shield *(44)* and the rotor *(45)* together out of motor housing using two mounting levers. Press the rotor out of the gear bearing shield with pressing out facility. Thereby you remove the screw sealing *(23)*.

- Now the rotor *(45)* can be checked and exchanged if it is necessary. Take care of the bearing *(12)* and the rubber round ring *(13)*. The removal of bearing from the rotor shaft requires a pulling off facility.

- To exchange the motor housing *(18)* do the following. Disconnect the stator *(46)* from brushes. Unscrew the brush holders *(14)* from motor housing and put them away. Take the air-guiding ring *(20)* out of the motor housing, loose the two self-tapping screws 3,9x70 *(19)* fixing the stator and press out the stator.

### *2. Gearing Section*

- Before dismantling gear, remove grease and take out the clutch (complete) *(42)*. The torque of safety clutch must be set at 10 Nm till 13 Nm. A special fixture is used to determine the torque setting. Don't built in if not catching these quantities.

- Continue dismantling with pressing out the spindle *(29)* in the drilling direction. Take away spindle wheel *(24)* and locating disc *(25)*. Now press ball bearing 6003 2RS *(26)* out of gearbox housing *(27)*. Remove the ball bearing 6203 2RS from the work spindle *(29)*.

## III. Assembling the diamond core drill

### *1. Motor Section*

- Assembly starts with the motor housing *(18)*. Press in the stator *(46)* without squeezing any wires and fix the stator in its position with two self-tapping screws 3,9x70 *(19)*. After that, connect the brush holders *(14)* with stator and screw them in the motor housing with ZM4x12 self-tapping screws *(16)*.
- Now insert the air-guiding ring *(20)*.
- In the next step press the rotor (complete) *(45)* in the gear bearing shield *(44)* and the screw seal *(23)* on the rotor shaft. Put the rubber round ring 22x2,5 *(13)* in bearing ground of motor housing. This ring must be positioned with greatest care because it works as bearing for armature. Press the prepared arrangement in motor housing exactly. Do not forget the rubber round rings 4,9x1,9 *(52)* between gear bearing shield and motor housing. The rotor should be movable easily. No wires must touch the rotor! Then put in the brushes *(15)*.
- Continue assembly with attaching the electronic card *(47)* to the motor housing. Check the back side of electronic card of full covering with black protection layer. Connect the electronic card with field and cold-conductor.
- After fasten the lower half of handle cap *(4)* put in switch *(6)* with anti interference capacitor *(3)* and line cord *(1)* with cable grommet *(5)*. Do all electric connections - switch/electronic card, switch/line cord (*see VI. Wiring Diagram*). Attention, all wires must be laying exactly!
- Finish the assembly of motor part with installation of upper half of handle cap and press the sealing plug *(49)* in the hole between the two halves of handle.

### *2. Gearing Section*

- Start with gearbox housing *(27)*.
- At first insert the ball bearings 6003 2RS *(26)* and 6203 2RS *(28)* into the gearbox housing. Press in the work spindle *(29)*.
- Set the locating disc *(25)* on spindle and press on the spindle wheel *(24)*. For an easier assembling the spindle wheel should be made warm.
- Take great care of the clutch *(42)*! Only use clutches matching the required torque setting values! Furthermore the loose clutch parts have to slide smooth on the clutch shaft to guarantee the full functionality of the safety clutch. After checking the clutch put them in the gearbox housing and fill it with grease Rhenus MSN 1 (90g).
- Now put the gearbox seal *(11)* on the gear bearing shield *(44)* and fasten motor with gear using four self-tapping screws 4,8x45 *(10)* with Nyltite plastic ring M5 *(51)*. At last assemble additional handle *(53)*.

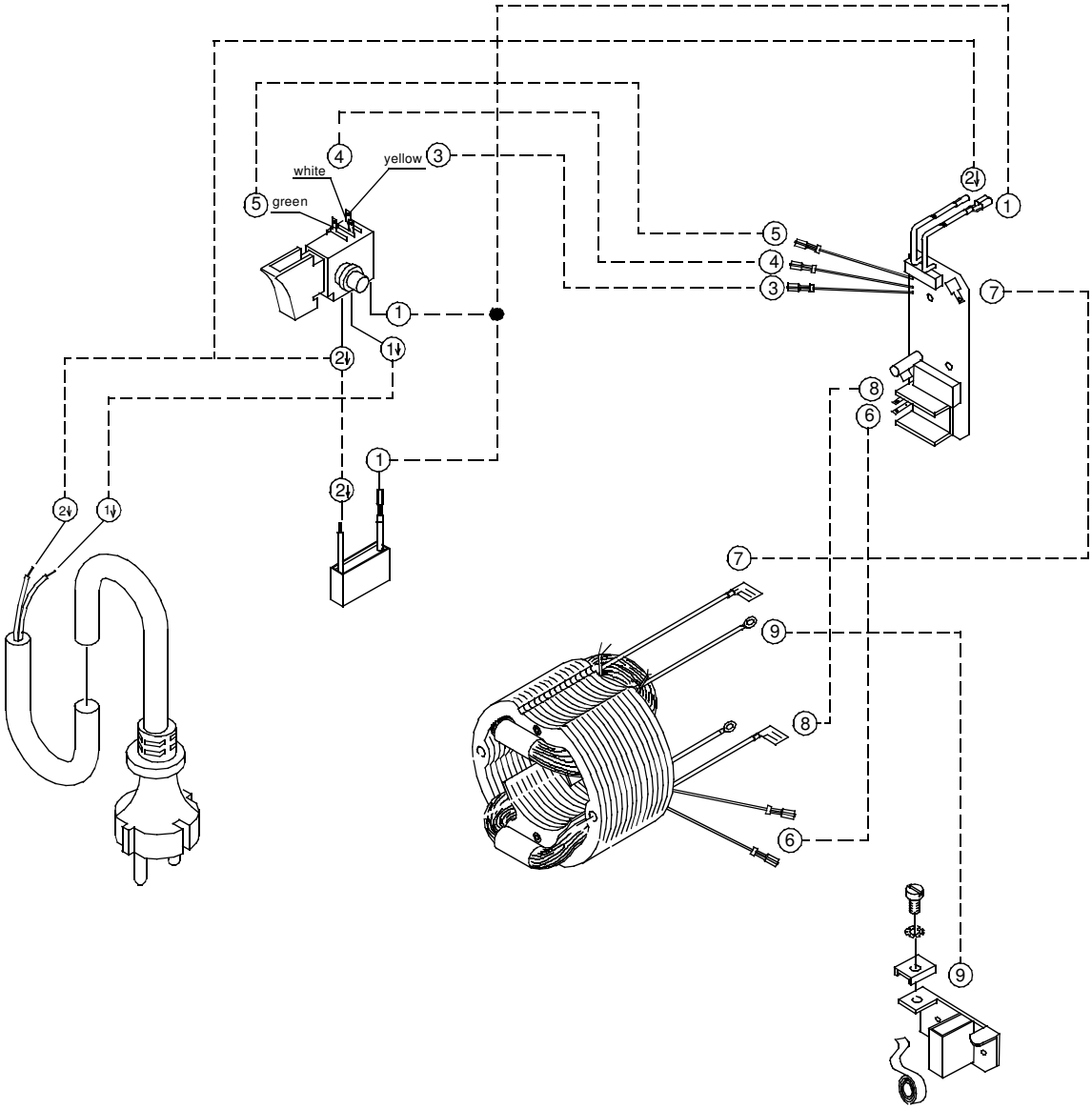
## IV. Checklist for testing the machine

- Check for correct assembly!
- Check the functionality of the machine!
- Test speed-control in different switch positions!
- Test overload cutoff!
- Check isolation of machine with high voltage!

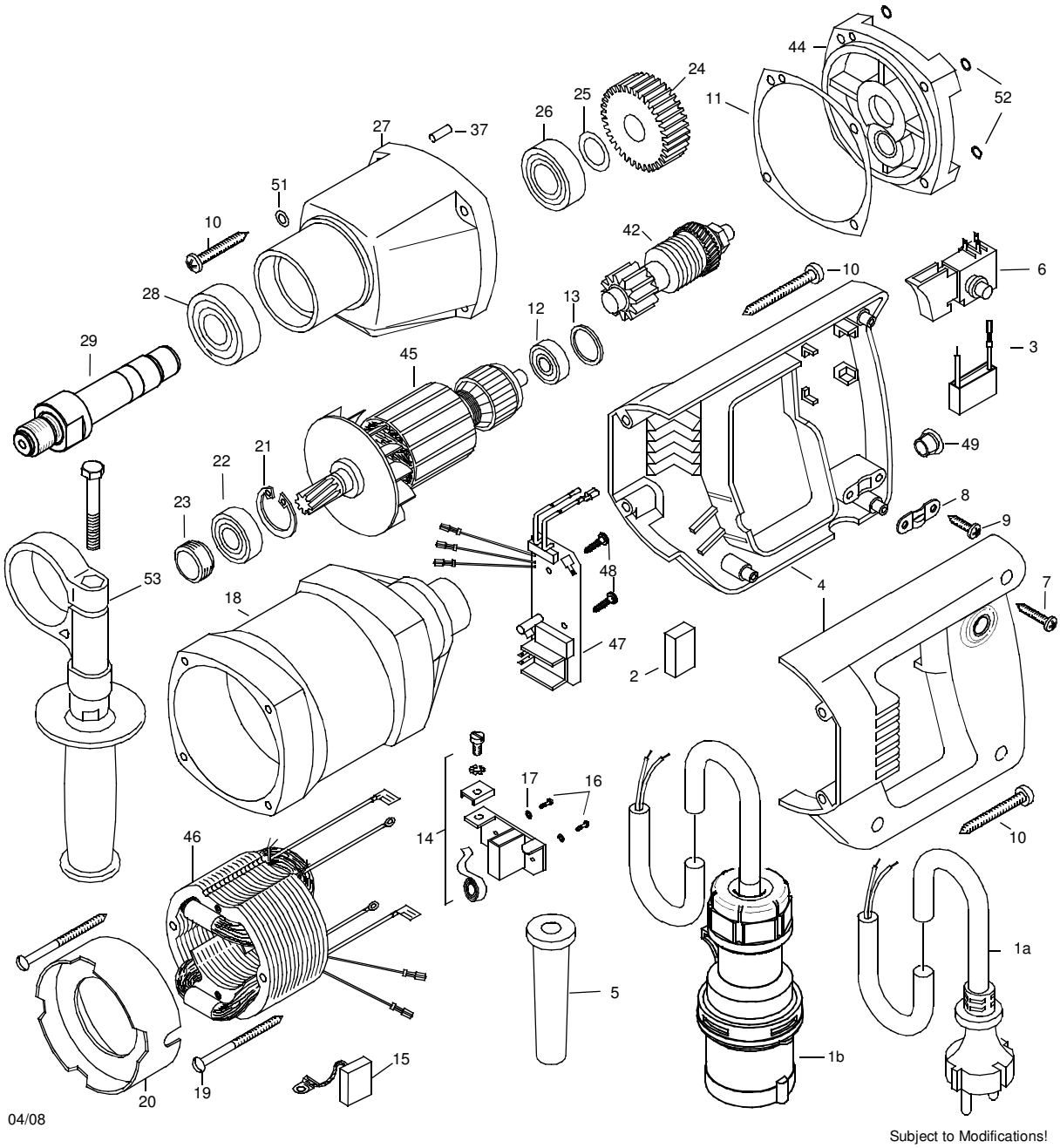
## V. Grease and Glue

| | Product: | Where used: |
|---|---|---|
| 1. **Gearbox Grease** | Rhenus MSN 1 | 90g (3,2oz) inside gearbox housing *(27)* |

## VI. Wiring Diagram



## VII. Parts List




Subject to Modifications!