**MAINTENANCE&MALFUNCTIONS**

**Possible malfunctions and methods of their eliminations**

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| **Malfunction** | **Probable causes** | **Actions** |
| When the machine is turned on, the electric motor does not work. | ● Switch failure  ●The power cord or wiring is broken, power cord plug malfunction;  ● No brush contact with the collector;  ● Wear/damage of brushes | Disconnect the machine from the mains and contact a qualified specialist. |
| Formation of a circular fire on the collector | ● Brush wear/damage of the brush holder;  ● Malfunction in the armature coil | Disconnect the machine from the mains and contact a qualified specialist. Please don’t repair the machine by your own. |
| When working, smoke or the smell of burning insulation appears from the ventilation openings. | ● Malfunction in the electric motor coil;  ● Malfunction of the electrical part of the tool. |
| Increased noise in the gearbox | ● Wear/breakage of gears or bearings |
| When the machine is turned on, the spindle does not rotate | ● Gearbox failure. |

**Critical state criteria**

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| **Critical state criteria** | **Probable causes** | **Actions** |
| Cracks on the surfaces of bearing and housing parts | Fatigue deformation of metal | Disconnect the machine from the mains and contact a qualified specialist. Please don’t repair the machine by your own. |
| The power cord or plug is damaged | Overload or breakage |
| Excessive wear or damage to the motor or reductor mechanism, or a combination of signs | Fatigue deformation of metal |

**Critical state criteria**

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| **List of critical failures** | **Actions** |
| Electric motor sparking | It is necessary to contact a qualified specialist |
| The appearance of extraneous noise | It is necessary to contact a qualified specialist |
| If the above malfunctions are detected, it is necessary to disconnect the machine from the mains and contact a qualified specialist | |