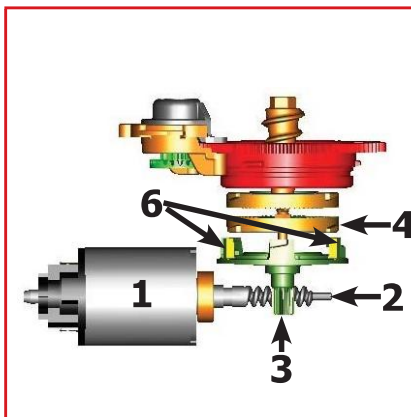


## 4.8. Coffee grinder

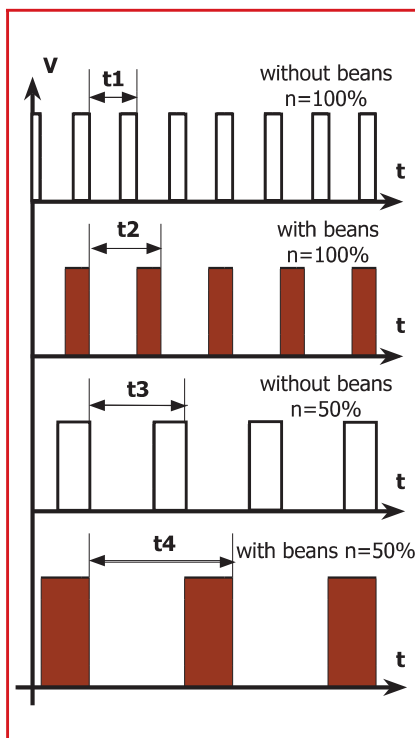
**Ceramic coffee grinder**

The coffee grinder is driven by a direct current motor (1) using a worm gear (2).

The worm (2) drives a plastic gear wheel (3) where the lower ceramic disc (4) and the copper pre-draw worm (5) is driven at the bottom.

Two magnets (6) are built into the drive gear. A Hall sensor is mounted on the bottom side of the housing that sends 2 pulses to the electronics using two magnets per rotation.

## 4.9. Dosing quantity control, coffee grinder blockage when machine is low on beans

**Low bean quantity**

If the machine is low on beans, it is detected from the speed difference (frequency Hall sensor pulses) of the grinder between its idle state and the bean grinding process.

If no beans are found in the grinder (idle state), the speed and therefore the frequency of the pulses is higher - small

**t1 = "Beans low" message.**

If beans are in the grinder, this results in a reduced grinding speed due to the resistance that is generated by the beans in the grinding process and therefore, a greater

**t2 = no message displayed.**

**t3 and t4 = This measurement is carried out when the grinding process slows down at the end.**

**Dosing quantity control**

The dosing quantity is controlled using the recorded pulses (number of rotations proportional to the choose of aroma, mild, medium and strong).

**Coffee grinder blockage**

If external objects enter the grinder, the electronics detects the blockage from the missing flow and stops the grinder.