1.   Range of Application

- The machine is applied in dental research to test dental filling/inlay material.

- Abrasion of commercialised composites by mechanical chewing stress in the occlusal area of contact.

- Abrasiveness of composites towards antagonists.

- Influence of the size of the filling element as well as its material on the abrasion resistance.

2.   Specification Chewing Simulator

2.1   Functional Principle

- In the chewing simulator, up to 4 samples are abrased simultaneously. The samples may vary in form and material (abrasiveness). Furthermore, different weights may be applied.

- The sample chambers are separate in order to assure that each sample can be tested with a different emulsion.

- All samples are moved simultaneously by a central engine.

- The number of cycles and the current state of counting are adjusted via keypad and double spaced display.

- The test is started manually and ends after execution of the adjusted number of cycles. The operation may be stopped or interrupted ahead of time via keypad and emergency stop switch.

2.2   Sample Chamber

- 4 sample chambers are locked into position separately for easy handling (removal and filling)

2.3   Samples / Sample Form

- There are standardized sample supports for the samples and antagonists.

- The sample chambers are big enough to insert e.g. bridges.

- The samples will be abrased by 70 – 80 %, so there will be a reference height.

2.4   Movement Type (Chewing Simulation)

- The weights are put on the samples vertically with one antagonist per chamber. Subsequently, the sample is moved horizontally under weight. As soon as the weights are uplifted, the sample is reversed into the starting position.

- The machine has a pneumatic drive in order to guarantee a long lifespan.

- Total movement 1 Hz

- Horizontal amplitude manually adjustable (0 – 10 mm), presetting 1,0 mm

2.5   Emulsion

The operator regulates the viscosity, which should not exceed the viscosity of a customary toothpaste

2.6   Counting Function

1 to 999 999 with automatic stop function after reaching the pre-adjusted number of revolutions.

2.7   Weights

- 50 N per sample chamber, to be put on or exchanged

- Other weights upon agreement

2.8   Acoustic Level

- The machine works at an acoustic level of 60 dB.

-

3.   Technical Data

Voltage feed	230 V≈/ 50 Hz (115V≈/ 60 Hz)
Storage temperature	0 °C bis 50 °C
Operation temperature	10 °C bis 40 °C
Required air pressure	5 to 10 bar, 10 l/min
Air humidity	30% bis 80%
Dimensions Base area Height	700 mm x 500 mm 300 mm
Weight	50 kg
Interface not designed	