Establishment and instrumentation of the dental clinic

Semmelweis University Faculty of Dentistry
General Dental Preclinical Practice

Head of the Department:

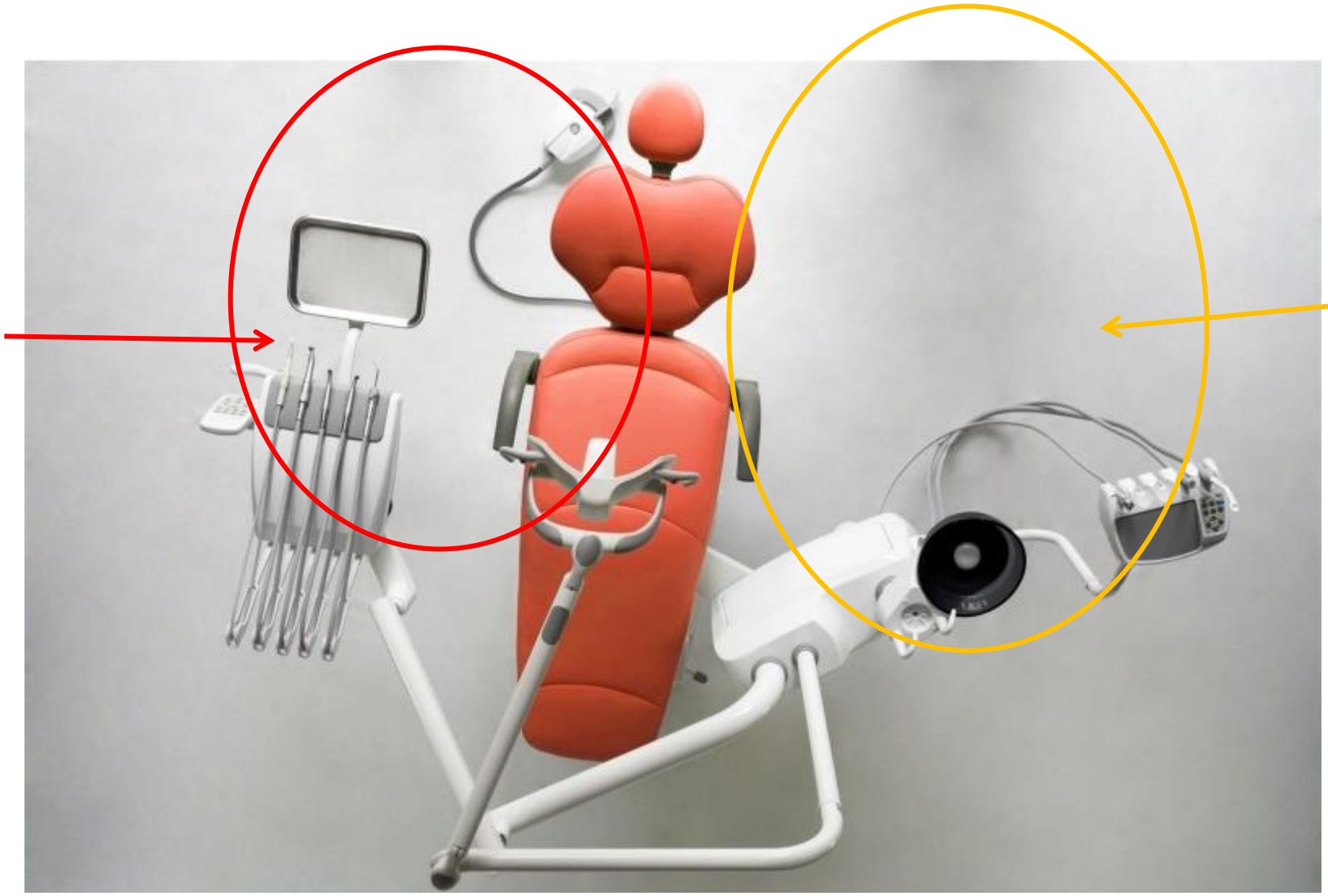
- Prof. Habil Dr Krisztina Márton

Dental Office

- Simple
- Ordered (unclutterd)
- Good ventillated
- Easy to clean
- Curved edges
- 9 m^2 / dental chair
- 2,5 m headroom
- 2,1 m high tiled

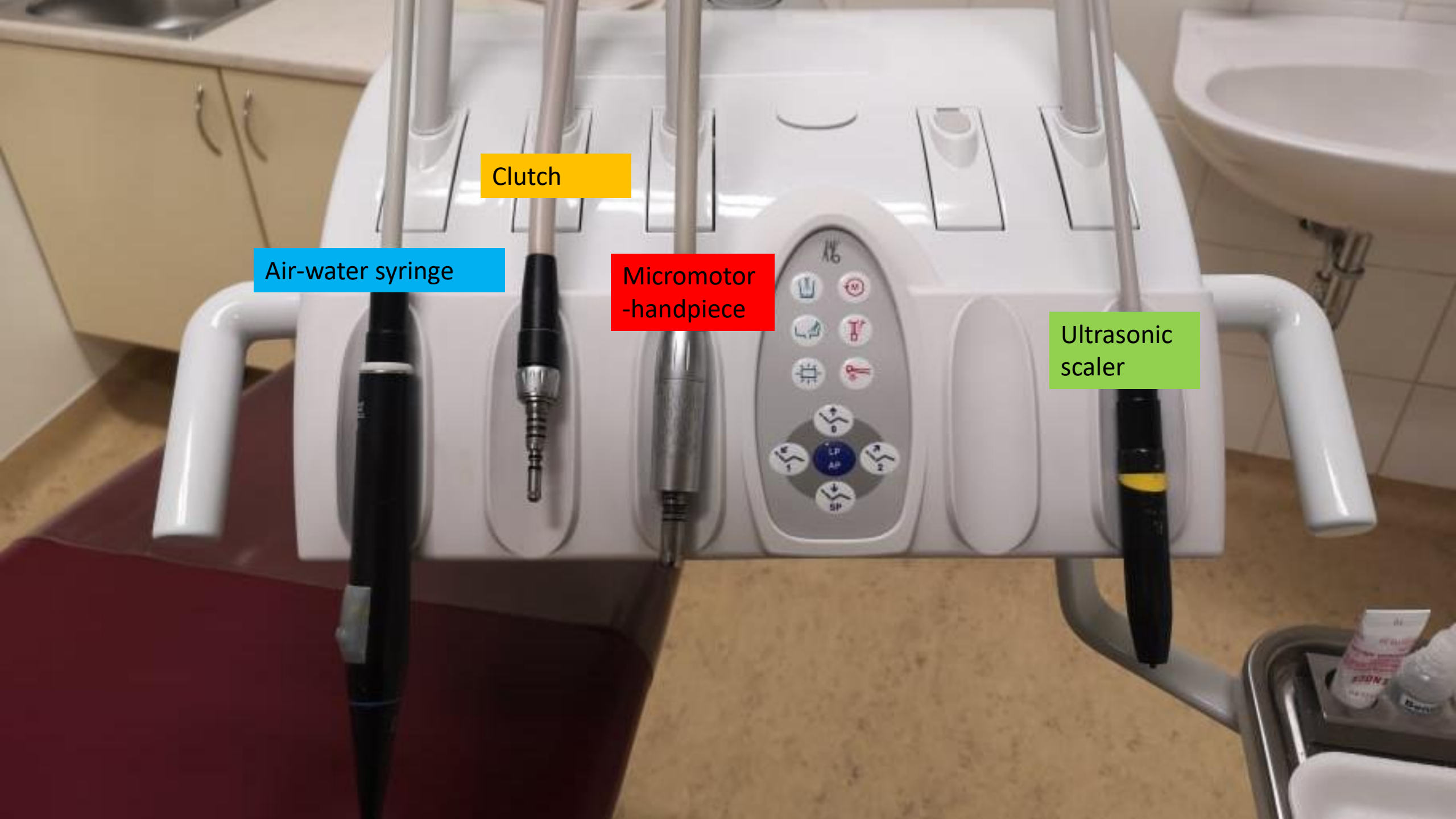
Dental treatment

Dentist

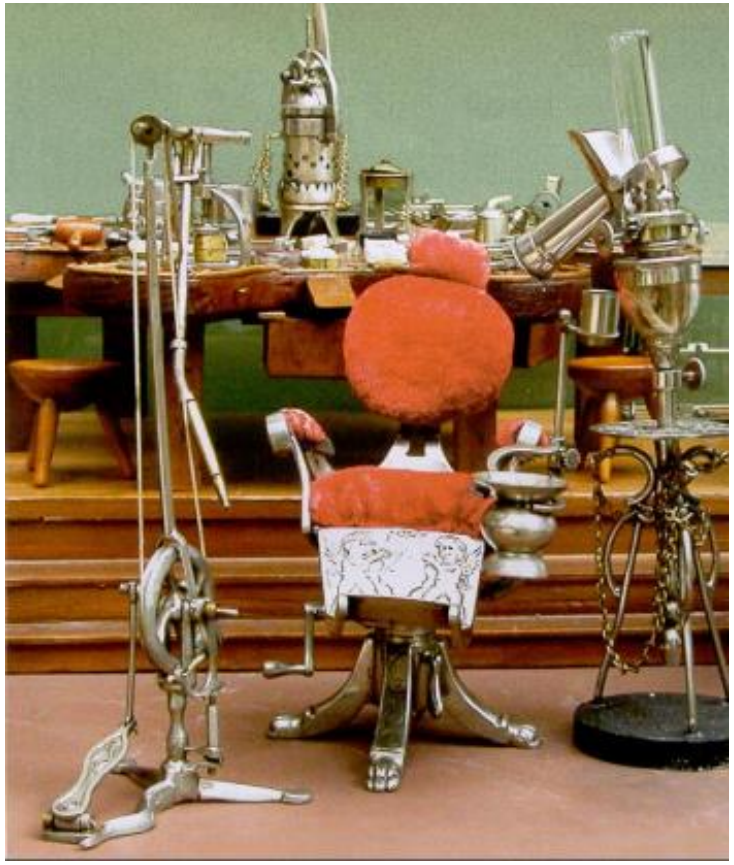


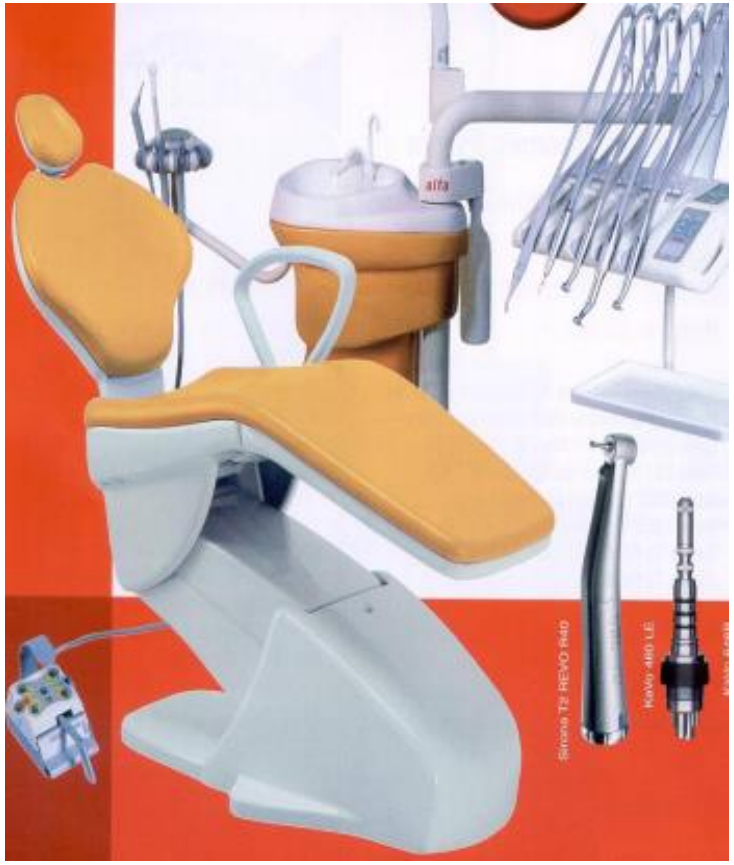
Assistant

THE DENTAL UNIT


Clutch
Air-water syringe
Micromotor
-handpiece
Ultrasonic
scaler

Hand pieces (different driving force: manual, foot, electric, air)



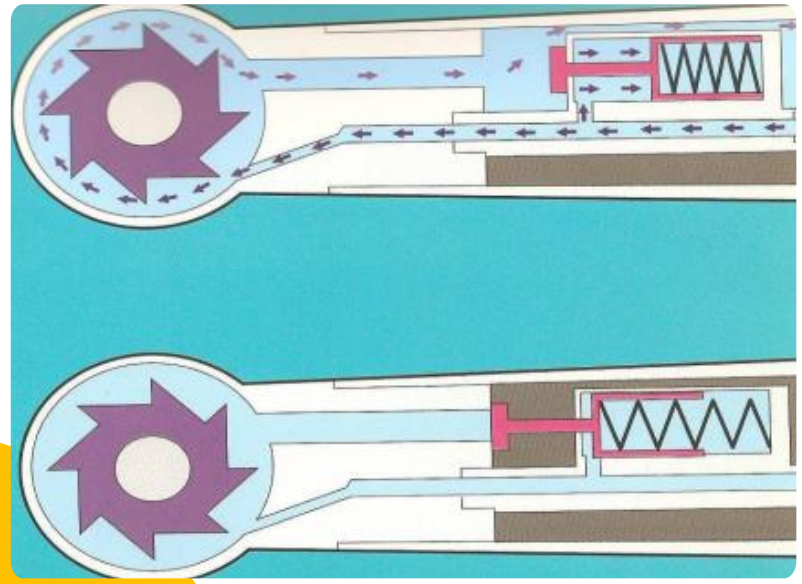


- Driving force:

  manual and foot driving handpieces: 1871 Morrison

- electric driving: micromotor
- air driving: turbine
- Hard tissue preparation (enamel, dentin); caries preparation, preparation for crowns, bridges, inlay, onlay, etc, denture correction, dentolaveolar surgeries

TURBINE: 1956



Handpieces

- **TURBINE**

- There are paddles in it's head
- **AIR** or **BALL BEARINGS** turbine (ceramic balls)
- During the turbine's working, the air goes between the paddles and opens a channel for outgoing.
  If we stops the handpiece, the paddle closes the coming air.
- 450.000-500.000 rpm/min
- Compressed air
- Ball bearings
- Friction grip attachment
- Performance related !
- Connected to the clutch

direction of rotation cant't change

Cooling

- Prevent overheating of the pulp.
- The abraded material is removed

Light

- Become popular over the last 20 years
- Illuminating the treatment site
- Fiber optic system
- LED or halogen lamps

A. *Electric driven*

- 40.000 max rpm/min
- constant power

2.Micromotor handpieces „Groove design”

- **B. *Air driven***

- 20.000 max. rpm/min
- constant power

- direction of rotation can be changed

Micromotor’s speed can be changed by accelerators or reductors

	Electric driven	Air driven
Blue ring 1:1	4.000-40.000	5.000-20.000
Red ring 1:5	20.000-200.000	25.000-120.000
Green ring 5:1	800-8.000	1.000-4.000

Cooling: inner/outer

Straight handpiece

Burrs

Head

Conector

Shank

FG

LT

Metal

Diamond

four different diamond grits

- Extra coarse
- Coarse
- Medium
- Fine
- Extra Fine

COLOR CODE

Burrs
ISO (International Organization for Standardization)

- ISO 806 314 033 526 031
- A B-C D E F

A: material of the head(gyémánt: 806)

B: lenght of the handle

C: lenght of the bur

D: form/shape of the head

E: grit

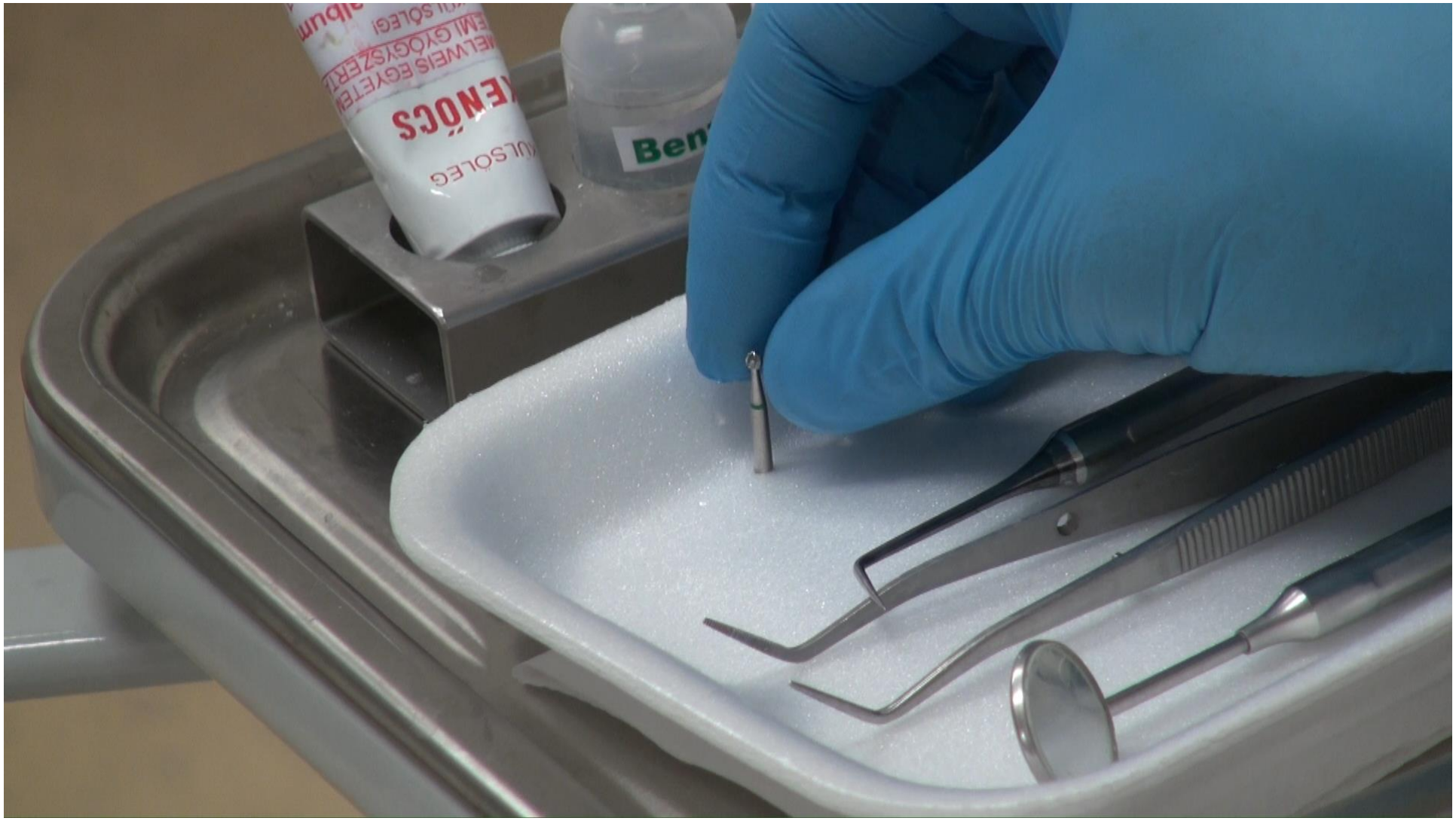
F: diameter of the head

899 (033)
Palatinal
Palatinal
Palatin

Größe/Size/taille ⌀ 1/10 mm				021	027	0
Länge-Length in mm - longueur				6,5	7,0	7
Shank	ISO	REF				
FG		806 314 033 524...	899- ... M- FG	021	027	0
FG	■	806 314 033 544...	899- ... SC-FG	021	027	0
FG	■	806 314 033 534...	899- ... C- FG	021	027	0
FG	■	806 314 033 514...	899- ... F- FG	021	027	0
FG	■	806 314 033 504...	899- ... SF-FG	021		

Attachment: Friction grip (FG)

Attachment: latch type (LT)



Foot controll

Dental operating Light

- regulation of luminous intensity
- 5000 LUX 1 m far from the surgical area

Assistant side

- Curing light
- Oral vacum
- Saliva ejector
- Touch pad
- Cuspidor
- (Air water syringe)

Dental chair

- Ergonomic formation
- Assistant’s chair is 10 cm higher for the beter view
- Footrest
- Armrest

Possibilities

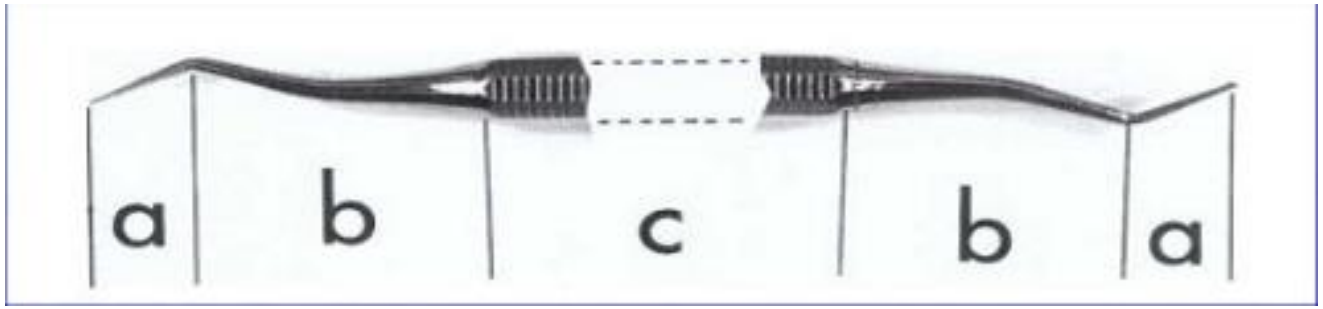
- Monitor
- Oral camera
- Sandblow/Airflow
- Endodontic handpiece

Hand Instruments

- Materials:
  - Stainless steel
    - sharpening
  - Carbon steel
    - corrosion
- Curette, excavate, carving

Hand Instruments Design

- „C” Handle
  - Portion of the instrument where the operator grasps.
- „B” Shank
  - Part of the instrument that attaches the working end to the handle.
- „A” Working end
  - Portion of the instrument with a specific function.



Benzin
Hyperol

Dental Mirror

- Used to *view* areas of oral cavity, *reflect light* on dark surfaces, and *retract* lips, and so forth for better visibility
- Used in every basic tray set up
- Available in various sizes and with plain or magnifying ends

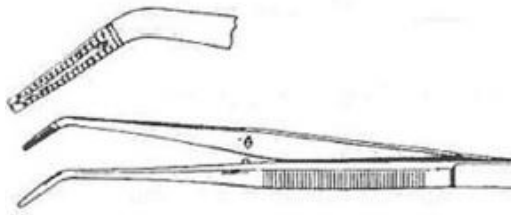
Explorer, probe

- Used to examine the teeth, detect carious lesions, and note other oral conditions
- Available in many shapes and sizes
- May be single or double ended

Cotton pliers

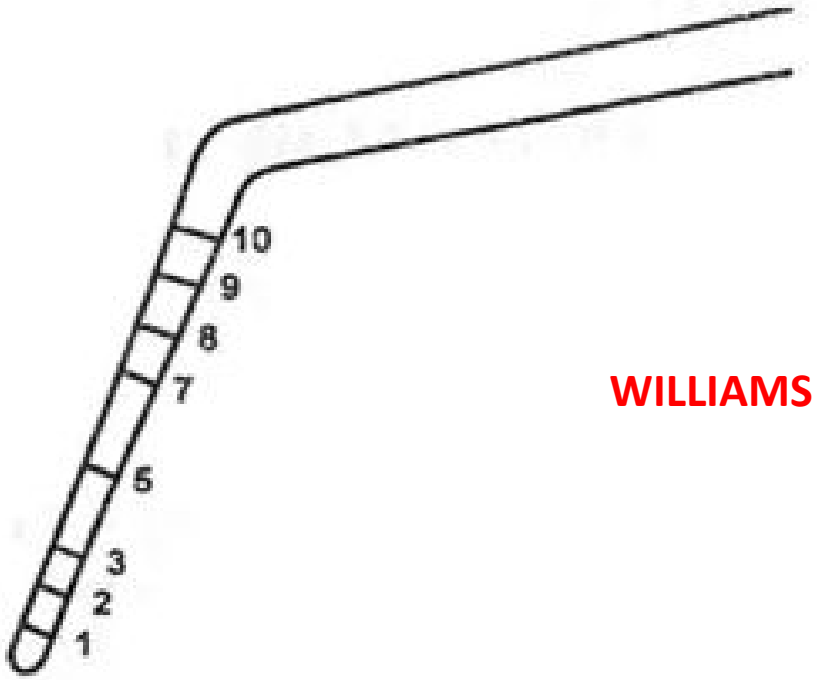
- carry objects such as cotton pellets or rolls to and from the mouth

- Also called operating pliers or college pliers



Periodontal probes

- Used to measure the depth of the gingival sulcus (space between the tooth and free gingiva)
- Has round, tapered blade with a blunt tip marked in millimeters (mm)



WILLIAMS

WHO

Hand instruments for composite fillings

- Double ended
- Use it for compress and shaping the material
- Can use for cement fillings

Single use disposable instruments

Thank you for the attention!