



Establishment and instrumentation of the dental clinic

Semmelweis University Faculty of Dentistry
General Dental Preclinical Practice

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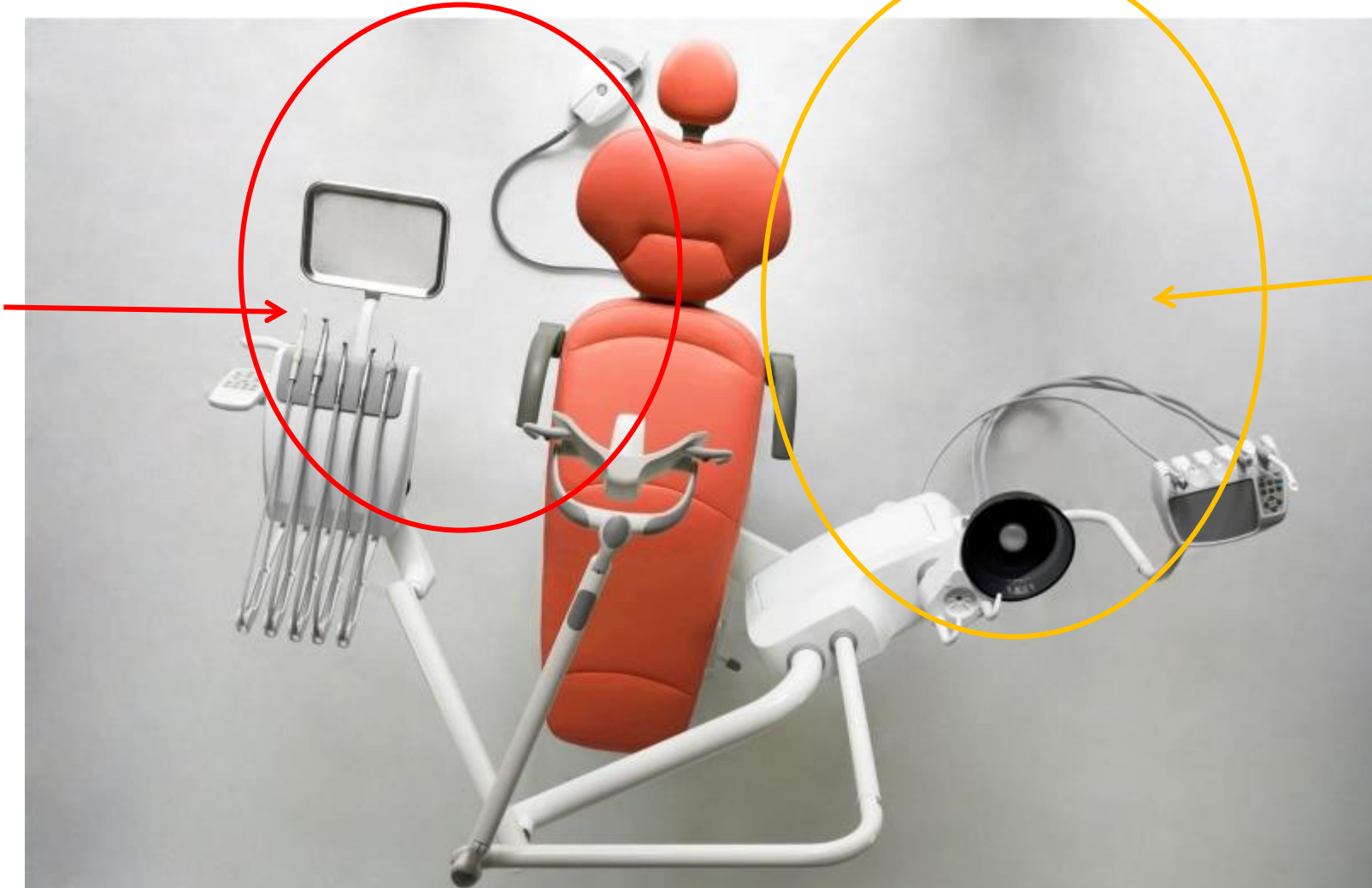


Dental Office

- Simple
- Ordered (uncluttered)
- Good ventilated
- Easy to clean
- Curved edges
- 9 m² / dental chair
- 2,5 m headroom
- 2,1 m high tiled

Dental treatment

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A photograph of a dental unit control panel. The panel is white and features a central control area with several buttons and a dial. To the left of the control area, there are three handpieces (a black one, a silver one, and a black one) connected to the unit. To the right, there is a circular overlay with the text 'THE DENTAL UNIT'.

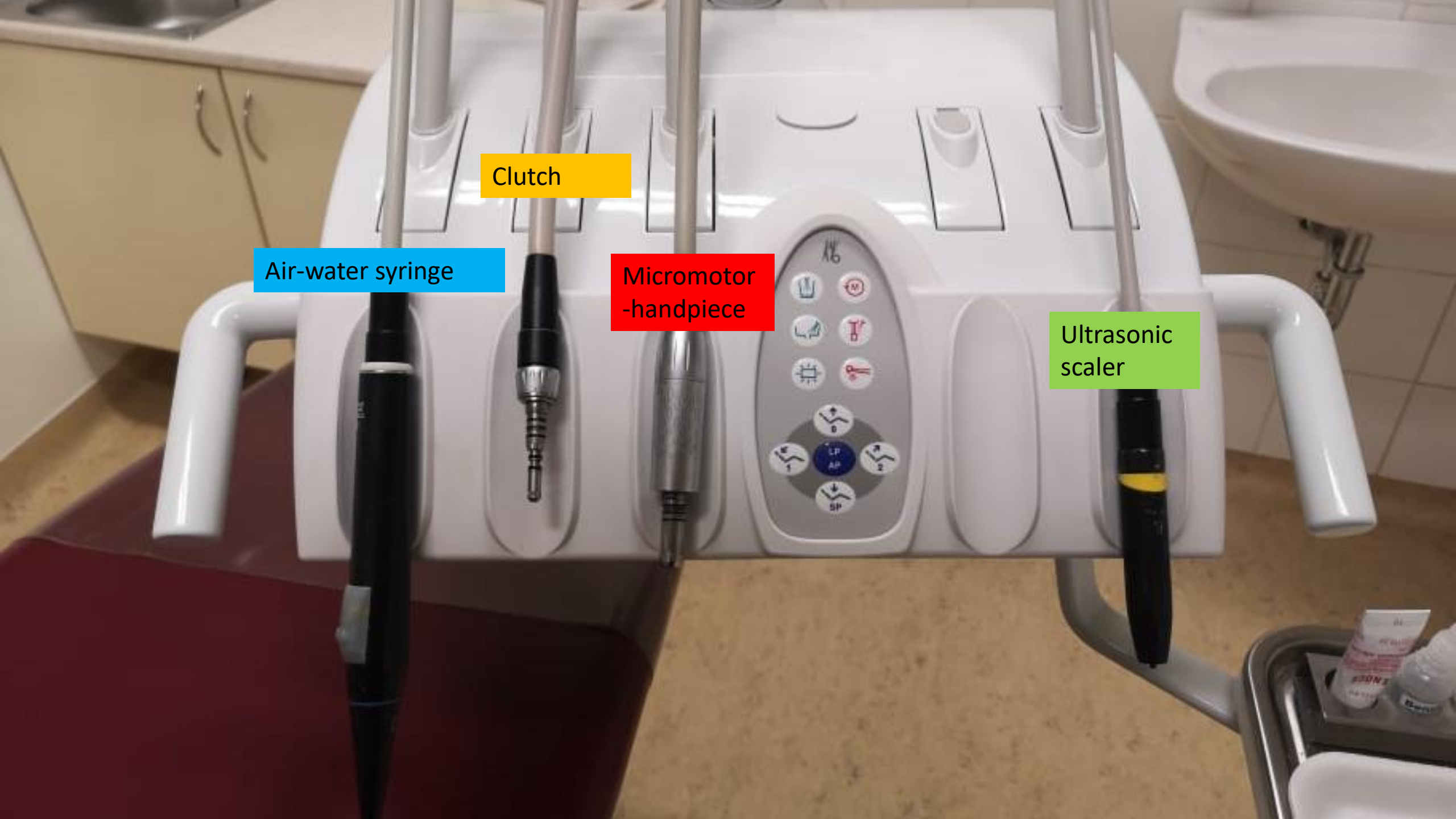
THE DENTAL UNIT

Air-water syringe

Clutch

Micromotor
-handpiece

Ultrasonic
scaler





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



- Driving force:

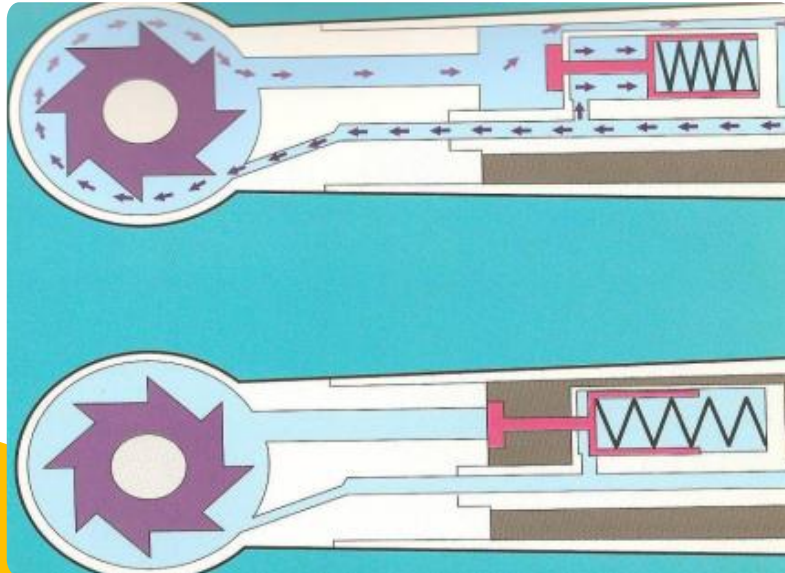
manual and foot driving
handpieces: 1871 Morrison

- 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 can't
change

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

Cooling



Light

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



2. Micromotor handpieces „Groove design”

A. *Electric driven*

- 40.000 max rpm/min
- constant power

• 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 reducers

	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



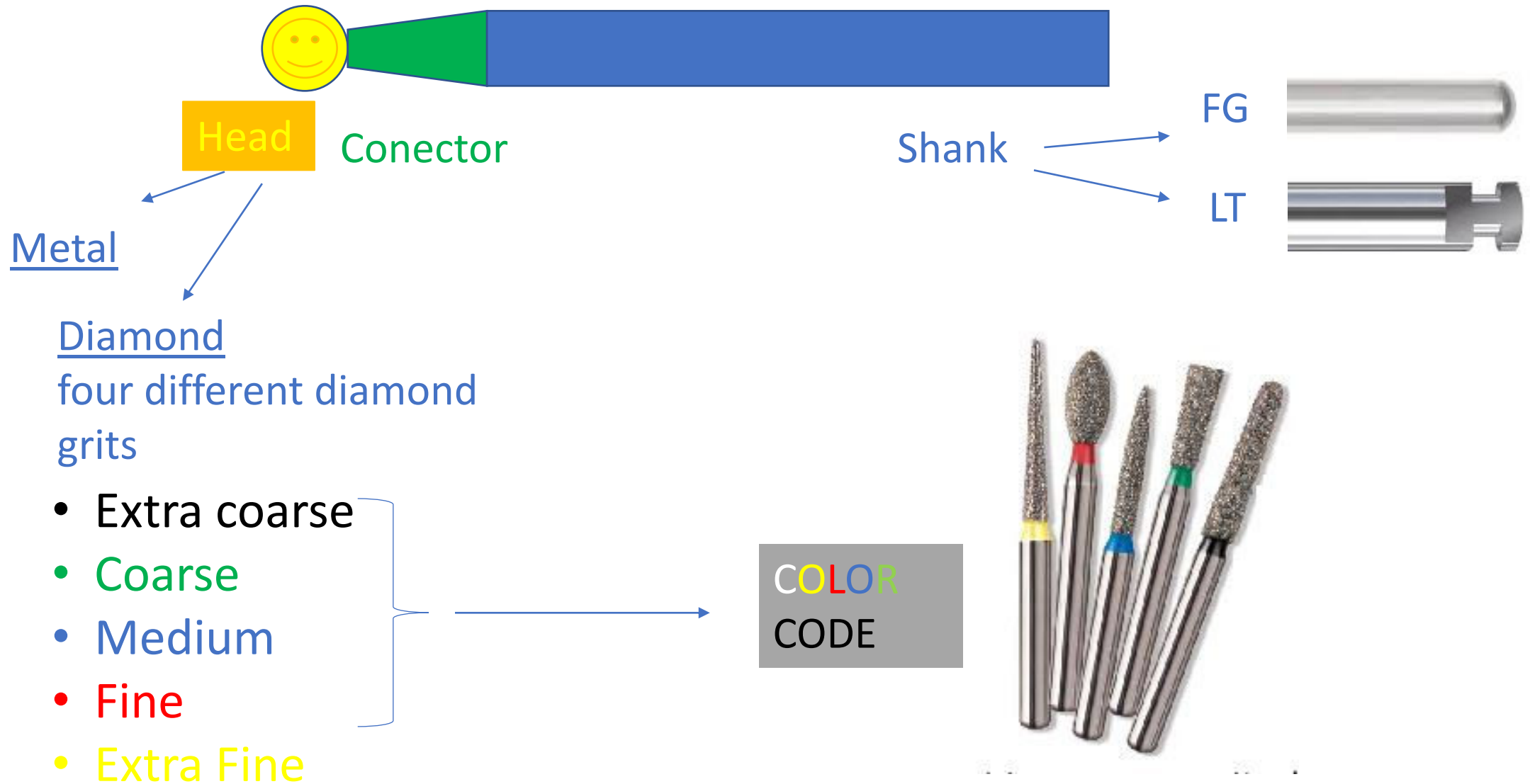
Cooling: inner/outer



Straight handpiece



Burrs



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: length of the handle

C: length of the bur

D: form/shape of the head

E: grit

F: diameter of the head

899
(033)



Palatinal
Palatinal
Palatin



Größe/Size/taille ø 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

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FG ■ 806 314 033 514...

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FG ■ 806 314 033 504...

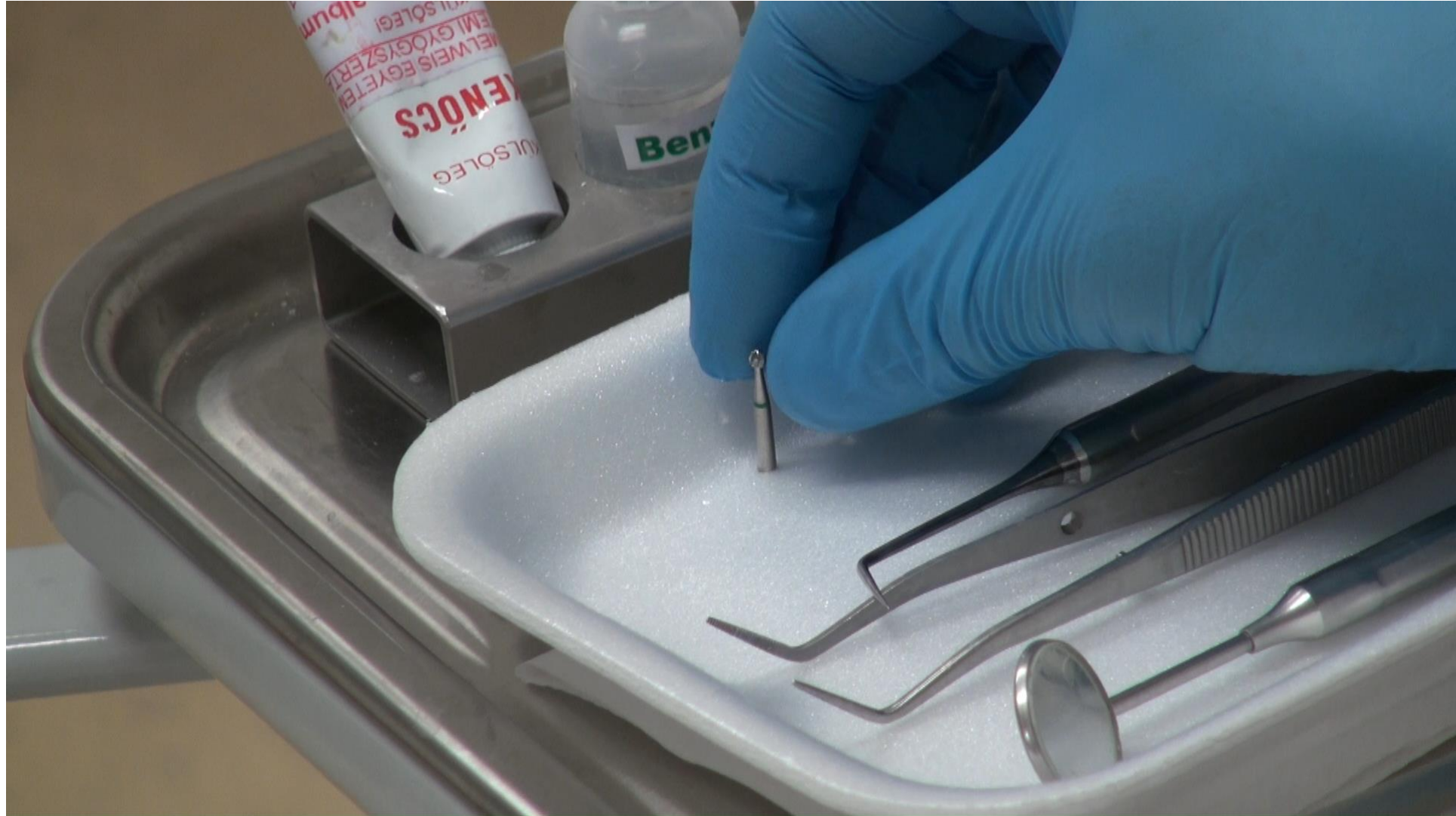
899- ... SF-FG

021

Attachment: Friction grip (FG)



Attachment: latch type (LT)



Foot control







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 better view
- Footrest
- Armrest



Possibilities



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

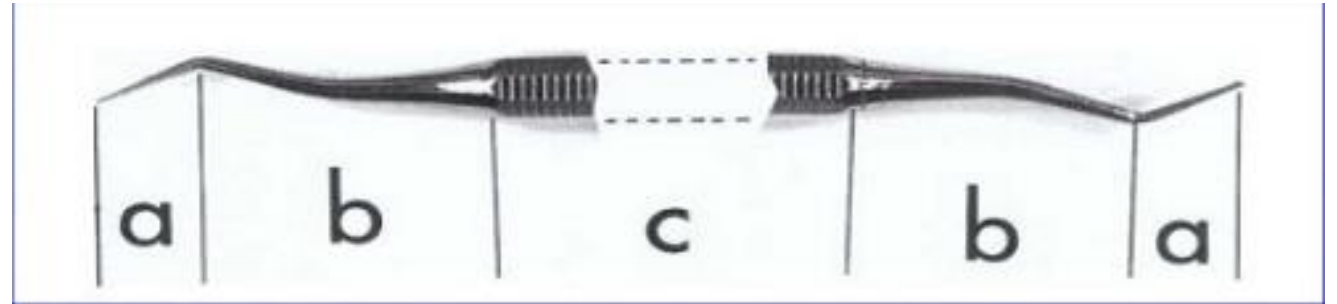
Hand Instruments



- 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.





Dental Mirror

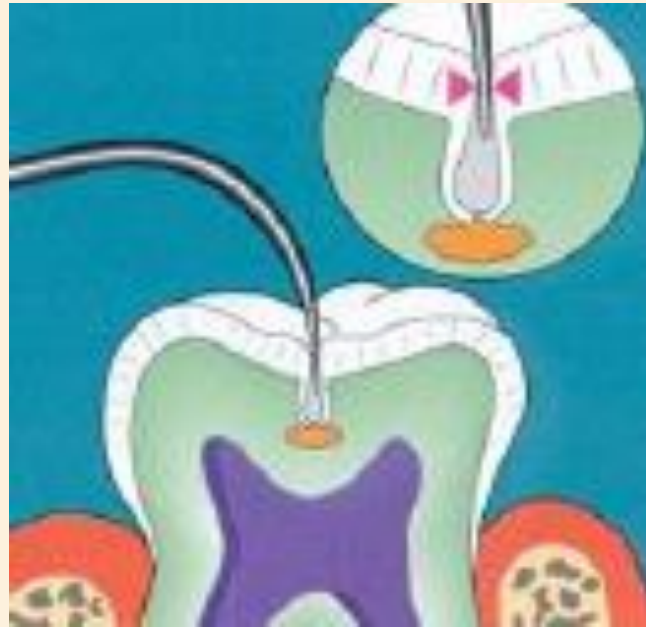


- Used to *view* areas of oral cavity, *reflect light* on dark surfaces, and *retract* lips, and so forth for better visibility
- Used in every basic tray set up
- Available in various sizes and with plain or magnifying ends





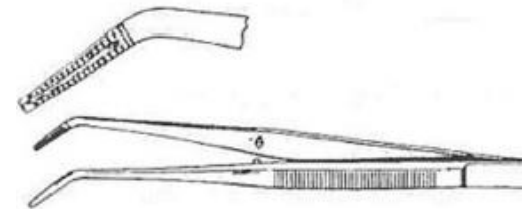
Explorer, probe



- 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

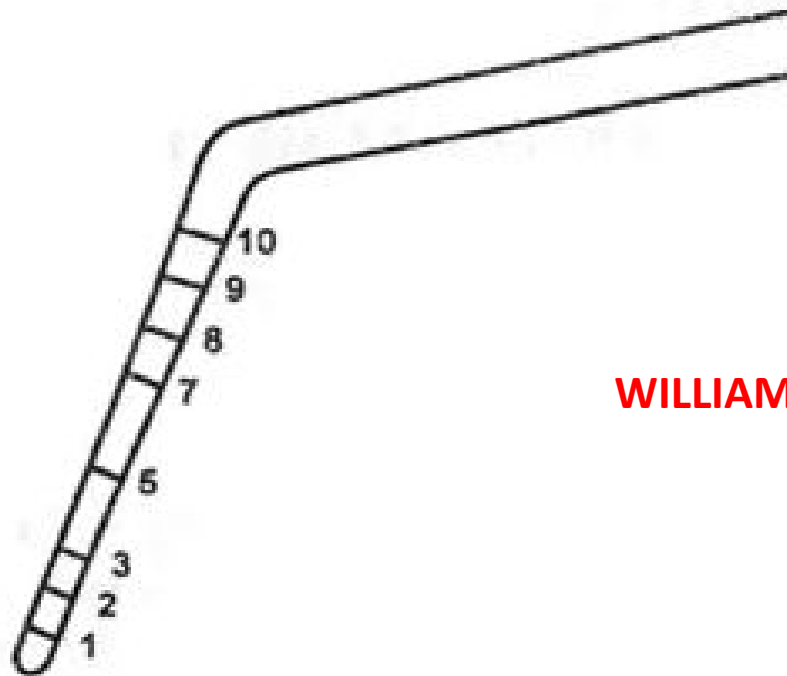
Cotton pliers

- 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!