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PRESENTATION

Implant Microdent System S.L. is a company that, from its creation in 1983, has specialized in developing, manufacturing and marketing components for odontological treatments, and, specially, oral implantology.

Always striving for customer satisfaction, Microdent offers all the guarantee, both of quality and service, backed up by its long and ascending professional history in the field of oral implantology.

The periodical offer of formation courses for professionals of the implantology field and the existence of a collaboration and assessment team allows Microdent to have products that verify the most strict quality parameters established, as well as to satisfy the needs of its clients.

Microdent has modern facilities equipped with the most cutting-edge technology, thus making Microdent into one of the pioneer companies in the research and manufacture of solutions for oral implantology. The patents obtained by Microdent products demonstrate the continued dedication of the company to the research work.
INTRODUCTION

PROSTHESIS MANUAL

This manual informs dental practitioners and prosthetists of the different Microdent Implant System abutments available to make a dental prosthesis.

This prosthesis manual suggests which Microdent Ektos abutment should be used depending on the situation and/or requirements of the patient.

The use of the strict protocols described in this manual guarantees the efficacy of the Microdent products.

WARNINGS

MICRODENT EKTOS MULTIFUNCTION (STRAIGHT) ABUTMENT

- A retention screw is provided in the container with the abutment.
- Do not exceed a torque of 30 Ncm for the final fixation of the abutment. Through laboratory trials, a screwed torque of 10 / 15 Ncm was found to be recommended.
- The abutment cut cannot be larger than 4.5 mm measured from the upper part of the abutment.
- While the abutment width must not be modified, its height can be customized. A minimum length of 4.50 mm is required in order to cement the prosthesis.
- The multifunction abutment is characterized by its multiple functionality: implant holder, transfer and provisional abutment.
- The multifunction abutment is supplied with the implant and cover screw in their own packaging in a sterile state.
- The multifunction abutment is connected to the implant through the employment of a prosthetic screw, which is also presented in a sterile state.
- The upper part of the abutment has a hexagonal socket to accommodate a tool for:
  - Implant and abutment extraction from the container.
  - Implant transport from the container to the insertion point.

MICRODENT EKTOS CONICAL (STRAIGHT) ABUTMENT WITH FLAP

- A retention screw is provided in the container with the abutment.
- Do not exceed a torque of 30 Ncm for the final fixation of the abutment. Through laboratory trials, a screwed torque of 10 / 15 Ncm was found to be recommended.
- The abutment cut cannot be larger than 4.5 mm measured from the upper part of the abutment.
- While the abutment width must not be modified, its height can be customized. A minimum length of 4.50 mm is required in order to cement the prosthesis.
MICRODENT EKTOS CONICAL (STRAIGHT) ABUTMENT WITHOUT FLAP

• A retention screw is provided in the container with the abutment.
• Do not exceed a torque of 30 Ncm for the final fixation of the abutment. Through laboratory trials, a screwed torque of 10 / 15 Ncm was found to be recommended.
• The abutment cut cannot be larger than 4.5 mm measured from the upper part of the abutment.
• While the abutment width must not be modified, its height can be customized. A minimum length of 4.50 mm is required in order to cement the prosthesis.

MICRODENT EKTOS IMMEDIATE LOADING CONICAL (STRAIGHT) ABUTMENT

• A retention screw is provided in the container with the abutment.
• Do not exceed a torque of 30 Ncm for the final fixation of the abutment. Through laboratory trials, a screwed torque of 10 / 15 Ncm was found to be recommended.
• The abutment cut cannot be larger than 4.5 mm measured from the upper part of the abutment.
• While the abutment width must not be modified, its height can be customized. A minimum length of 4.50 mm is required in order to cement the prosthesis.

MICRODENT EKTOS ANGLED ABUTMENT

• A retention screw is provided in the container with the abutment.
• Do not exceed a torque of 30 Ncm for the final fixation of the abutment. Through laboratory trials, a screwed torque of 10 / 15 Ncm was found to be recommended.
• The abutment cannot be modified.
• Angled abutments are not recommended for the posterior region of the mouth.

MICRODENT EKTOS MINI CAPITEL ABUTMENT

• Use the UTSNLEC / UTSNLEC51 keys to screw the abutment and the implant together.
• Do not exceed a torque of 30 Ncm for the final fixation of the abutment. Through laboratory trials, a screwed torque of 10 / 15 Ncm was found to be recommended.

MICRODENT EKTOS ANGLED MINI CAPITEL ABUTMENT

• The UTSNATR18 retention screw and the PACN carrier are provided in the container with the angled Mini Capitel abutment.
• Use the PACN carrier to fix angled Mini Capitel abutment to its desired position.
• Do not exceed a torque of 30 Ncm for the final fixation of the abutment. Through laboratory trials, a screwed torque of 10 / 15 Ncm was found to be recommended.

MICRODENT EKTOS OSSCILIA RETENTION ABUTMENT

• The use of the hex. 1.20 screwdriver is required to join the product and the implant together.
• Do not exceed a torque of 30 Ncm for the final fixation of the abutment.
• Do not exceed a disparallelism of 17º between implants.
• The exchange of retainers is facilitated through the use of the MC220PB screwdriver.
• The retainers are identified by color. The different colors denote different retentive strengths.
  - Black retainer = soft retention strength 2Kg. For use in laboratory trials.
  - White retainer = middle retention strength 3Kg. To keep stable for a long period of time.
  - Red retainer = strong retention strength 4Kg. Only to be used in special cases where an extreme fixation is required.
IMPRESSION TAKING

CLOSED TRAY IMPRESSION TAKING WITH MULTIFUNCTION ABUTMENT

A multifunction abutment can be used for taking impressions with a closed tray.

After testing the fitting, set the material for impressions in the tray (silicone or polyester) and take the impression.

Unscrew the closed tray screw using the MH120 screwdriver and place the implant copies into the impression in the same position as they are in the mouth.

Cast the model with type IV clay (ISO 6873) and use silicone if needed.

Necessary material

Ektos

Hex. Multifunction Abutment
Transfer Ball Screw
Implant Analog
Analog
Screwdriver
(MH120)

OPEN TRAY IMPRESSION TAKING

Remove the healing abutment with the MH120 screwdriver and clean the implant emergence area.

Set the transfer on the base of the implant ensuring that it is perfectly settled. Screw it to the implant with a long or short open tray screw using the MH120 screwdriver.

Place the drilled transfer area tray (circular or hexagonal) to test the fit. Make sure the screw heads stand out 1 mm and ensure they are easy to reach after taking the impression.

After testing the fitting, set the material for impressions in the tray (silicone or polyester) and take the impression.

Unscrew the emerging screws when removing the impression using the MH120 screwdriver.

Remove the tray and fix the implant copies very carefully into the impression, then cast the model with type IV clay (ISO 6873).

Silicone is recommended when simulating soft tissues.

Long transfers (14mm H) will be used when the adjacent teeth have high crown length and when the patient’s mouth opening is broad. Short transfers (10mm H) will be used for short crown lengths and small mouth openings.

Necessary material

Ektos

Hex. Short Transfer
Hex. Long Transfer
Circular Short Transfer
Circular Long Transfer
Open Tray Transfer Long Screw
Open Tray Transfer Short Screw
Implant Analog
Screwdriver
(MH120)
CLOSED TRAY IMPRESSION TAKING

Remove the healing abutment with the MH120 screwdriver and clean the implant emergence area. Set the transfer on the base of the implant ensuring that it is perfectly settled. Screw it to the implant with a closed tray screw using the MH120 screwdriver and cover the screw with the plastic cap to avoid any silicone from entering. After testing the fitting, set the material for impressions in the tray (silicone or polyester) and take the impression. Unscrew the closed tray screw using the MH120 screwdriver and place the implant copies into the impression in the same position as they are in the mouth. Cast the model with type IV clay (ISO 6873) and use silicone if needed.

**Necessary material**

- HEXAGONAL TRANSFER
- TRANSFER SCREW
- PROTECTIVE CAP
- IMPLANT ANALOG
- SCREWDRIVER (MH120)
- OPEN TRAY
- CIRCULAR TRANSFER
- TRANSFER BALL SCREW
- LONG SCREW
- RETENTION SCREW
- SCREWDRIVER (DL120)

PROVISIONAL ABUTMENT

**Necessary material**

- Multifunction abutment and/or Immediate loading abutment
  - Multifunction abutments can be used for both single and multiple prosthesis.
  - Use Immediate loading hexagonal abutments for single restorations (they can also be used for multiple prosthesis) and Immediate loading circular abutments for multiple prosthesis.
CEMENTED PROSTHESIS

SINGLE CEMENTED PROSTHESIS: NECESSARY MATERIAL

Conical abutment hexagonal with and without flap
- Recommended for single prosthesis.
- The conical abutment can be either with or without flap. In the conical abutment with flap, the prosthetic crown has to end with a shoulder joint. In the conical abutment without flap, the prosthetic crown has to end at 0 mm, in order to lean on the implant platform (like a knife cutting edge). The conical abutment with flap is recommended when there are more than 2 mm of keratineized gum, and an optimal emergency profile can be created. The conical abutment without flap is recommended when there are less than 2 mm of keratineized gum. This is a situation that can cause a difficult aesthetic situation but it is rectifiable with this kind of abutment.

Angled abutment
- The angled abutment is recommended to compensate insertions caused by implant inclinations up to 25°.
- Available in three different angles (15°, 20° and 25°).
- To maintain the exact position of the implant connection, a hexagonal connection is used.

Cement the prosthesis with the cement suggested for this kind of restorations.
Cement the prosthesis with the cement suggested for this kind of restorations.

**MULTIPLE CEMENTED PROSTHESIS: NECESSARY MATERIAL**

Conical abutment circular with and without flap
- Recommended for multiple prosthesis.
- The conical abutment can be either with flap or without flap. In the conical abutment with flap, the prosthetic crown has to end with a shoulder joint. The conical abutment with flap is recommended when there are more than 2 mm of keratineized gum, and an optimal emergency profile can be created.

**Angled abutment**
- The angled abutment is recommended to compensate insertions caused by implant inclinations up to 25°.
- Available in three different angles [15°, 20° and 25°].

![Diagram of conical and angled abutments with retention screws and screwdrivers](https://www.microdentsystem.com)
CEMENT-SCREWED PROSTHESIS

IMPRESSON TAKING: NECESSARY MATERIAL

Mini Capitel abutment transfer and Mini Capitel analog
• Place the transfer on the Mini Capitel abutment. Proceed to take impressions with an open or closed tray. Once the impression is done, remove the transfer and drag the impression along with the carrier. Place the Mini Capitel analog in the impression.

PROSTHESIS: NECESSARY MATERIAL

Mini Capitel abutment
• Recommended for screwed multiple prosthesis. Mini Capitel abutments allow the complete prosthesis to be placed and removed even when the implants are not parallel. It is fixed on the platform of the implant, forming a single compact body without the possibility of rotational motion. It allows a compensation of up to 35° between implants [with no greater than 17.5° compensation for either of the two implants] to remedy disparallelism as well as providing a perfect adjustment and a vertical removal of the prosthesis.
• Available in different heights: from 1 mm to 4 mm, depending on the platform.
• For prosthetic restorations with either the Mini Capitel abutment or the angled Mini Capitel abutment, the same prosthetic accessories are used.
• The angled Mini Capitel abutment has an angle between 17° and 30° and a height of 0 mm and 1 mm.

Mini Capitel abutment or angled Mini Capitel abutment
• Cementable abutment.

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Cementable abutment is common for both Mini Capitel and angled Mini Capitel abutments
REMOVABLE PROSTHESIS. OVERDENTURES

IMPRESSION TAKING: NECESSARY MATERIAL

Osscilia transfer and Osscilia analog
- Place the transfer on the Osscilia abutment, which is held by an elastic washer. Proceed to take impressions with an open tray. Once the impression is done, remove the tray and drag the impression along with the carrier. Place the Osscilia analog in the impression.

PROSTHESIS: NECESSARY MATERIAL

Osscilia abutment
- The retainer of the abutments for overdenture retention can be easily exchanged by a practitioner. An Osscilia abutment has a reduced prosthetic height and an emergence diameter of only 3.50 mm.

The complete ensemble is formed by a metallic cap and three different types of interchangeable retainers that are housed inside the metallic cap. Through the employment of a simple key and the screw, the retainers are fixed. Different colors denote different strengths of retention.

- **Black retainer** = soft retention 2 Kg. For use in laboratory trials.
- **White retainer** = middle retention 3 Kg. To keep stable for a long period of time.
- **Red retainer** = strong retention 4 Kg. Only to be used in special cases when an extreme fixation is required.
LABELING CODE SYMBOLOGY

**ABUTMENTS**

- **Images 1:** Image of primary packaging of a Microdent Ektos abutment
- **Images 2:** Image of secondary packaging of a Microdent Ektos abutment
- **Image 3:** Images of primary packaging (right) and secondary packaging (left) for a Microdent Ektos implant

**IMPLANTS**

- **Image 3:** Images of primary packaging (right) and secondary packaging (left) for a Microdent Ektos implant

> Two similar labels are included as guidance for practitioners, inside the implant package.
INSTRUCTIONS FOR USE

In accordance and compliance with legal requirements, all implants manufactured by Implant Microdent System have instructions for use. These instructions are available at www.microdentsystem.com

MRI SAFETY INFORMATION

Implants and abutments have not been evaluated for safety and compatibility in the MR environment. Implants and abutments have not been tested for heating, migration, or image artifact in the MR environment. The safety of implants and abutments in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

SURGICAL INSTRUMENTS

For a proper use and cleaning of surgical instruments, consult their instructions for use.

GUARANTEE PROGRAM

Implant Microdent System provides guarantees for the products it distributes. The terms and conditions of these guarantees are indicated in the Microdent Implant System “Guarantee Program”, consult their instructions for use: www.microdentsystem.com
MICRODENT EKTOS ABUTMENTS

All prosthetic abutments are made in titanium grade 5

MICRODENT EKTOS COVER SCREW

- Sterilized cover screw supplied in the implant package.
- Use of a 1.20mm hexagonal screwdriver required.
- Do not cement the cover screw to the implant.
- Do not exceed a torque of 5Ncm.

MICRODENT EKTOS RETENTION SCREW

- Screw can be used with different types of prosthesis.
- Use of a 1.20mm hexagonal screwdriver required.
- Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
- It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.

MICRODENT EKTOS HEALING ABUTMENT

- This abutment is intended for further use of Osscilia abutments and conical abutments without flap.
- Abutment supplied in sterile state.
- Use of a 1.20mm hexagonal screwdriver required.
- Do not cement the cover screw to the implant.
- Do not exceed a torque of 25Ncm.
- Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15 Ncm.
- It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.
- Abutment can be cut, accepting minor changes in its design.

**MICRODENT EKTOS MULTIFUNCTION (STRAIGHT) ABUTMENT**

- Aesthetic Healing abutment
- Multifunction abutment

**Abutment supplied in sterile state.**
- Use of a 1.20mm hexagonal screwdriver required.
- Do not cement the cover screw to the implant.
- Do not exceed a torque of 25Ncm.

**MICRODENT EKTOS PROSTHESIS MANUAL**

- www.microdentsystem.com
• Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
• It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.
• Abutment can be cut, accepting minor changes in its design.

**Circular**

- Conical abutment circular with flap
  - EKPCCP3501R Ø 3.50 height 1mm
  - EKPCCP3503R Ø 3.50 height 3mm
  - EKPCCP3505R Ø 3.50 height 5mm
  - EKPCCP4501R Ø 4.50 height 1mm
  - EKPCCP4503R Ø 4.50 height 3mm
  - EKPCCP4505R Ø 4.50 height 5mm
  - EKPCCP5701R Ø 5.70 height 1mm

**Hexagonal**

- Conical abutment hexagonal with flap
  - EKPCCP3501H Ø 3.50 height 1mm
  - EKPCCP3503H Ø 3.50 height 3mm
  - EKPCCP3505H Ø 3.50 height 5mm
  - EKPCCP4501H Ø 4.50 height 1mm
  - EKPCCP4503H Ø 4.50 height 3mm
  - EKPCCP4505H Ø 4.50 height 5mm
  - EKPCCP5701H Ø 5.70 height 1mm
MICRODENT EKTOS CONICAL (STRAIGHT) ABUTMENT WITHOUT FLAP

Hexagonal

- The screw can be used with all the different types of abutments.
- Use of a 1.20mm hexagonal screwdriver required.
- Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
- It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.
Circular abutment circular without flap

- Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
- It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.
- Abutment can be cut, accepting minor changes in its design.

MICRODENT EKTOS IMMEDIATE LOADING CONICAL (STRAIGHT) ABUTMENT

- Abutment supplied with a retention screw.
- Use the EKTUCI screw for impression taking when using immediate loading abutments.
- Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
- It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.
- Abutment can be cut, accepting minor changes in its design.
MICRODENT EKTOS ANGLED ABUTMENT

- Abutment supplied with the corresponding screw.
- Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
- It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.

MICRODENT EKTOS MINI CAPITEL ABUTMENT

- Screw in the abutment using the UTSNLEC key.
- Do not exceed a torque of 30 Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
• Abutment supplied with UTSNATR18 retention screw and PACN positioner.
• Use the PACN positioner to facilitate the desired fixation of the abutment.
• Do not exceed a torque of 30Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
• It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.
• Do not exceed a torque of 15Ncm for prosthetic retention screws.
Microdent Ektos Mini Capitel and Angled Mini Capitel abutment components

- **MICRODENT EKTOS MINI CAPITEL ABUTMENT FIXING KEY**
  - UTSNLEC
    - Standard platform
    - Material: Stainless steel
  - UTSNLEC1
    - Wide platform
    - Material: Stainless steel

- **MICRODENT EKTOS MINI CAPITEL AND ANGLED MINI CAPITEL CEMENTABLE ABUTMENT**
  - UTSNPC4X
    - Standard platform
    - Material: Titanium grade 5
  - UTSNPC51
    - Wide platform
    - Material: Titanium grade 5

  - Mini Capitel cementable copings cannot be milled.

- **MICRODENT EKTOS MINI CAPITEL AND ANGLED MINI CAPITEL PROTECTIVE CAP**
  - UTSNPCAX
    - Standard platform
    - Material: Titanium grade 5
  - UTSNPCS1
    - Wide platform
    - Material: Titanium grade 5

- **MICRODENT EKTOS MINI CAPITEL AND ANGLED MINI CAPITEL PROSTHETIC RETENTION SCREW**
  - UTSNTR
    - Standard platform
    - Material: Titanium grade 5 + DLC
  - UTSNTR1
    - Wide platform
    - Material: Titanium grade 5 + DLC

  - Do not exceed a torque of 15Ncm for prosthetic retention screws.
  - It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.

- **PACN**
  - Angled Mini Capitel abutment carrier
  - Material: Stainless steel

- **UTSNATR18**
  - Angled Mini Capitel retention screw
  - Material: Titanium grade 5 + DLC

- These two components are supplied together in the same set with the angled Mini Capitel abutment.
- Use of a 1.20mm hexagonal screwdriver required.
- Do not exceed a torque of 30 Ncm for the fixation of the abutment. For laboratory tests, the torque recommended is 10/15Ncm.
- It is recommended to not use the same screws as in the laboratory tests to fix the abutment but to use new ones.
MICRODENT EKTOS OSSCILIA RETENTION ABUTMENT

- Use of a 1.20mm hexagonal screwdriver required to fix the implant.
- Do not exceed a torque of 30Ncm.
- Do not exceed a maximum non-parallelization of 15° from the vertical.

- Available with three different retention levels, identified by a colored plastic cap:
  - Black plastic cap: supplied with an embedded metal sheath, it has a soft retention for clinical or laboratory tests.
  - White plastic cap: it has a medium retention very appropriate to keep stable during a long time period.
  - Red plastic cap: used in specific cases where extreme fixation is required.
- The key for the Osscilia retainers is a MC220PB.