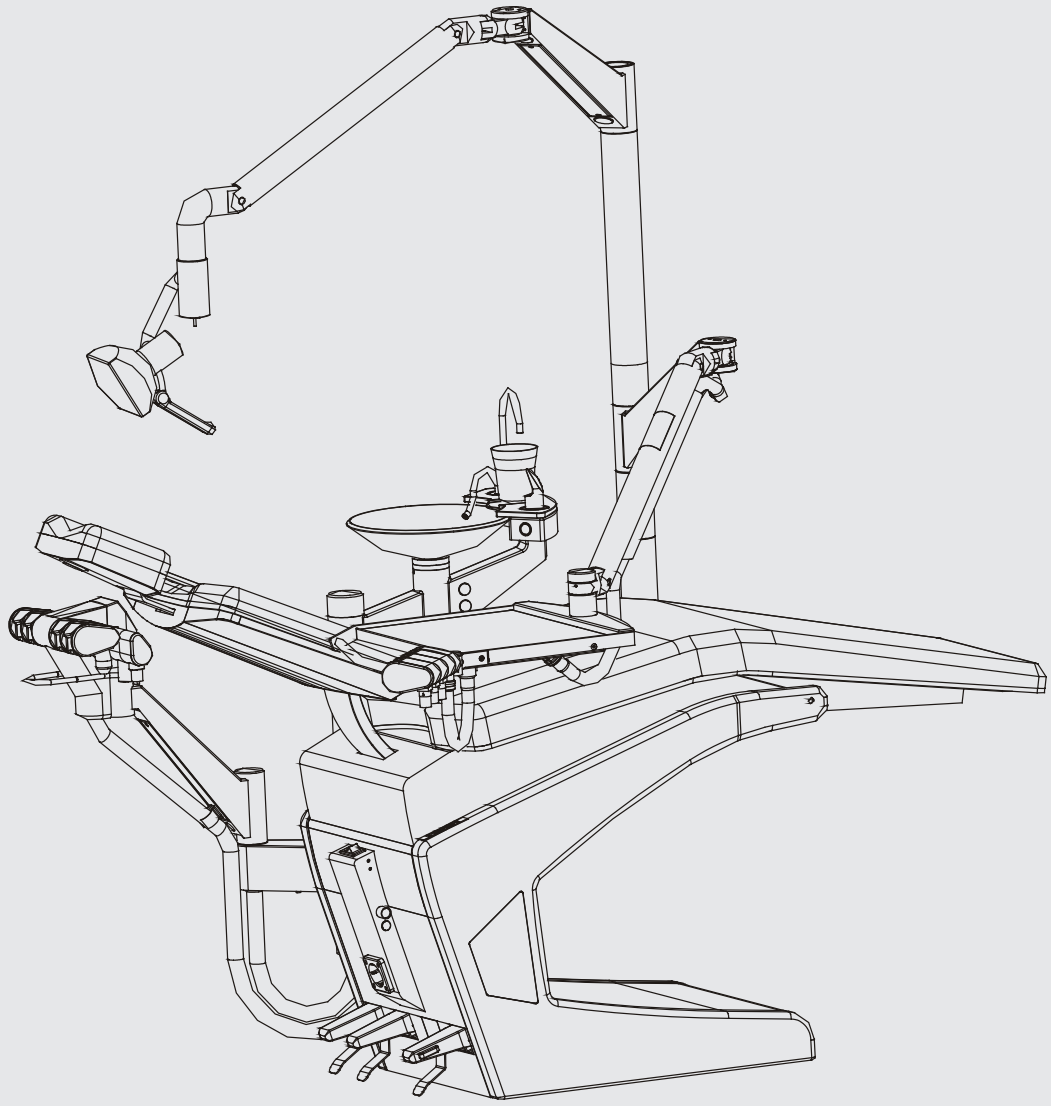
ORTHORA 200

INSTRUCTION MANUAL **2504**



320.8710.02 / 2504

MIKRONA

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1. Notes

1.1 Warranty / Liability

The warranty and liability for defects shall be governed by the General Terms and Conditions of MIKRONA GROUP AG as of January 2016 (GTC). The GTC can be downloaded on the website of MIKRONA GROUP AG (www.mikrona.com).

It is essential that this instruction manual be read by every user / operator before initially operating the device in order to prevent faulty operation and other damages.

The warranty claims are governed by the GTC. Furthermore, it is recommended to pay attention to the recommendations and warnings within the operating and maintenance instructions.

The consignment comes with a completion certificate. If the completion certificate is missing, please demand it immediately from your specialized dealer. You must return the completion certificate within 10 days after commissioning the device to the following address.

MIKRONA GROUP AG	Tel.	+41 (0)56 418 45 45
Wiesenstrasse 36	Fax	+41 (0)56 418 45 00
CH-8952 Schlieren	E-Mail	swiss@mikrona.com

The completion certificate enables MIKRONA GROUP AG to record the device for possibly necessary traceability or amendments.

The completion certificate is the basis for possible warranty claims. Any complaints have to be reported to MIKRONA GROUP AG with the completion certificate within 10 days after the delivery of the treatment unit.

1.2 Conformity assessment

The product ORTHORA 200 has undergone a conformity assessment in accordance with the regulation (EU) 2017 / 745 of the European Parliament and the Council on Medical Devises and meets the essential requirements of these regulation.

The assessment procedure to which this statement refers complies with the standards or normative documents EN ISO 6875 / EN ISO 7494-1 / EN ISO 7494-2 / IEC 601-1 / EN 60 601-1.

The treatment unit of the company Mikrona Technology AG is subject to continuous technical enhancement. Technical properties are therefore subject to change and may not correspond with the instruction manual.

1.3 General information

The medical device Orthora is a inherent part of the procedure pack Orthora 200. The Orthora 200 procedure pack also optionally includes other medical devices according to the declaration of compatibility OT200.200110.31.

This instruction manual is an integral part of the device. Always keep it easily accessible in close range of the device. Compliance with the operating instructions is condition to intended use and correct operation of the device. Instruct new employees appropriately and forward the operation manual to successors.

User / operator safety and failure-free operation of the device is only provided when using original components. Only use accessories that are listed in the operation manual or authorized by MIKRONA GROUP AG for this particular purpose (see 10.1. / 10.2. / 10.3.). The company MIKRONA GROUP AG does not warrant secure operation and function if other accessories are used. Related damages may not be claimed under this warranty.
In terms of safety, reliability and function of this product, the company MIKRONA GROUP AG is only liable if mounting, readjustment and repairs are performed by MIKRONA GROUP AG or an entity authorized for this purpose by MIKRONA GROUP AG and if the product is used in accordance with the mounting and operating instructions.
If return delivery is required during the warranty period, MIKRONA GROUP AG does not assume liability for transport damages caused by faulty packaging!

1.4 General safety instructions

The product has been developed and constructed by the company MIKRONA GROUP AG in a way that danger is eliminated to the greatest possible extent if used for its intended purpose. Nevertheless, you should take the following safety measures to eliminate remaining danger.

Mikrona's products are constructed in compliance with the corresponding safety-related regulations and meet the legal stipulations for medical devices. EMC protection requirements have been verified and are met.

Applicable laws and regulations at the site of use are to be observed! You may not adapt, adjust or alter the device. For product safety reasons, you may only update the device with adaptable original components. The user bears the risk when using unapproved components.

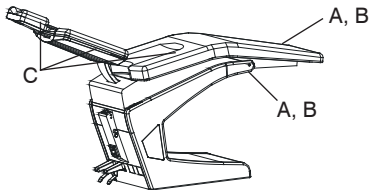
Components influencing device safety may be replaced only by original components when failing. In the interest of safe use and operation of the device, the operator as well as the user are responsible for adherence to laws and regulations.

The company MIKRONA GROUP AG assumes no liability for any adaptation or adjustment to, or alteration of this device.

Before each use the operator / user must ensure function safety and proper order and condition of the device.

The operator / user must be familiarized with the operation of the device.

1.5 Rating plate

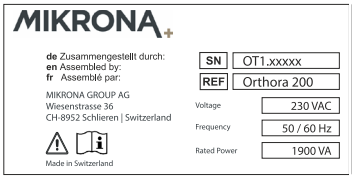


The rating plate of all ORTHORA 200 devices is placed at the indicated positions.

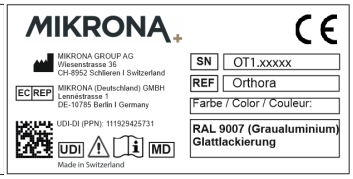
(A) Rating plate treatment unit ORTHORA 200:
- Underneath the bed in the middle of the chair socket
- On the rear side of the bed's upholstery with the supply components (circuit board)

(B) Rating plate chair ORTHORA with details of coating:
- Underneath the bed in the middle of the chair socket
- On the rear side of the bed's upholstery with the supply components (circuit board)

(C) Upholstery color:
- Specifications for the upholstery color are on the rear side of head and back rest and bed upholstery.



(A) Rating plate treatment unit ORTHORA 200



(B) Rating plate chair ORTHORA

You may always state the serial number stated when reporting defects or complaints.

1.6 Notes on medical devices

The product is a medical device and may only be operated and commissioned by individuals who can afford the guarantee for intended usage due to their training and knowledge.

1.7 Labeling of warning and risk phrases

In order to ensure correct, safe and professional operation of the device it is necessary to know and follow the relevant safety regulations and recommendations. It is imperative to observe the following warnings and recommendations.

1.7.1 Warning notices and symbols

Important information in the operating instructions concerning the safety of individuals and the device are highlighted with the following terms and symbols:

The symbol "caution" labels information and sections which you must imperatively follow to prevent danger for device and/or user. It marks information and/or requirements and interdictions which prevent personal injury and extensive property damages.

The symbol "information" labels information and sections which are highly important in order to prevent defects of operating procedures.

The symbol "special attention" labels information and sections which require special attention in order to improve operating procedures.

The symbol "protection against infection" labels information and sections which help protect members of staff. Fluid-resistant gloves should be worn at all time during work.

The symbol "sterilization" labels information and sections which provide specific rules for the sterilization of devices and products.

The symbol "high voltage" labels information and sections referring to danger to life and health of the user or other individuals.

The symbol "maintenance" labels information and sections referring to repair work which is beyond normal maintenance and is to be carried out by qualified specialists or by Mikrona's customer service.

The symbol "instruction manual" refers to information in the product-specific operating manual.

1.8 Notes on the instruction manual

Read through the operating instructions and maintenance recommendations before using the treatment unit. All safety recommendations should be observed. These operating instructions contain important information for the operation of the device. They help to prevent risks and minimize costs of repair and downtime. The reliability of operation and durability of the device is therefore improved.

1.9 Technical customer service

Technical support for the treatment unit is provided by qualified service entities / specialized dealers. Service technicians instructed by Mikrona are continuously trained and are familiar with Mikrona's whole range of products. You should regularly perform the recommended maintenance measures in order to preserve the long-time value of the device.

Please direct any inquiries to:

MIKRONA GROUP AG	Tel.	+41 (0)56 418 45 45
Wiesenstrasse 36	Fax	+41 (0)56 418 45 00
CH-8952 Schlieren	E-Mail	swiss@mikrona.com
Mikrona (Deutschland) GmbH	Phone	+49 (0)331 740 38 28
Lennéstrasse 1	Fax	+49 (0)331 740 38 24
DE-10785 Berlin	E-Mail	germany@mikrona.com

2. Product information

2.1 Intended use

The device is intended for the customary use in orthodontic practices. Any use beyond this is considered unintended. Intended use also includes adherence to the operating instructions.

2.2 Unintended use

The device, its components and instruments are intended for orthodontic treatment. Another use beyond that is considered unintended. MIKRONA GROUP AG assumes no liability for damages caused by unintended use. The operator himself bears the risk.

2.3 Safety advice

If there are any indications that a risk for the user / operator could arise from abrasion of components or from a technical error, the device is to be inspected immediately by an authorized customer service or Mikrona's customer service and/or the fault is to be cleared.

The maximal chair load is designed for a maximal patient weight of 135 kg.
Bed load: maximal 135 kg
Backrest load: maximal 45 kg
Headrest load: maximal 10 kg

The loading capacity of the suspended table depends on the prestressed spring package and the instrument tray. The maximal loading capacity of the suspended table is 2,7 kg and must not be exceeded.

Due to stagnation, water and/or air bearing lines of the treatment unit should be flushed or blown through before initial use or after downtime (idle periods, weekends, holidays, vacations etc.). Remove each hand piece / motor (without instrument attached) from the holder and use it alternately with water and air.
Remove rotating instruments from turbines, hand and angle pieces, and tips after finishing the treatment.

Never deposit scaling instruments without protective cap: danger of injury and infection.

Always turn off the main control switch before leaving the practice.

2.4 Disposal

Adhering to national regulations, accruing waste can be recycled or disposed without risk to health and environment. In order to prevent environmental or personal damage you are requested to contact Mikrona when definitively disposing the device after decommission.

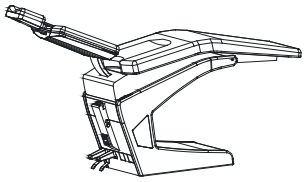
MIKRONA GROUP AG
Wiesenstrasse 36
CH-8952 Schlieren

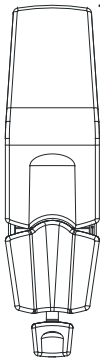
Tel. +41 (0)56 418 45 45
Fax +41 (0)56 418 45 00
E-Mail swiss@mikrona.com

3. Package contents

These operating instructions describe the device and its operation with the maximum of accessories possible. Any particular delivery of the device does not necessarily come with the maximal equipment possible. It depends on the package you specified.

3.1 Summary ORTHORA 200





Description of orthodontic workspace – ORTHORA 200
Made in Switzerland, the ORTHORA 200 is a compact and comfortable orthodontic workspace. Space-saving as it is, it can be used even in smallest premises. Multiple positioning possibilities for orthodontist and assistant components support independent and team work.

Connection technology is designed for work from the right and the left side. This means that treatments are equally comfortable from the 9 to 12 o'clock position. Access to the patient's head is optimized and creates space for perfect treatment. All functions are easily operated and short reaching distances enable relaxed work processes. Variable positioning of tray and orthodontist component guarantee unrestricted treatment comfort in all treatment positions, independent of the patient's size, in sitting or lying position.

First-class materials distinguish the ORTHORA 200 treatment unit and guarantee low maintenance and durability. Surfaces are smooth and easy to clean and disinfect. Optionally, a DVGW certified autonomous water system can be integrated.

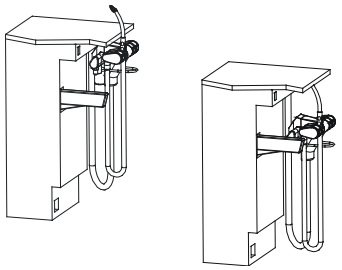
The ergonomic shape of the backrest with optional armrests offers maximal comfort to the patient and supports a correct working posture thanks to best possible legroom. Combining the movement of bed and backrest, a compression or stretching of the patient is avoided. The extendable headrest and the medical upholstery can be replaced with one touch.

Equipment
All components and instruments (8 instruments, 2 suction hoses) can be combined freely and adapted for right and left hander. The spittoon flushing unit and the glass filler work semiautomatically. (Fur further optional equipment see chapter 10. Additional equipment.)

Drive ORTHORA 200
The ORTHORA 200 has a 24V electromechanical spindle drive for lifting and lowering and backrest reclining with integrated safety shutdown. The two arbitrary automatic treatment positions as well as the automatic return to the starting position are set by an integrated function pedal.

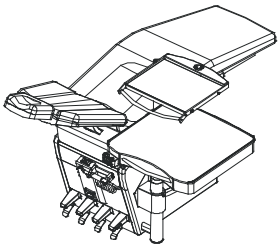
Colors
For upholstery, a range of 40 colors in all hues is available. For casing, there is a RAL palette of more than 180 colors as well as a color panel with 29 attractive metallic colors.

3.2 Summary ORTHORACK



The intelligent back-of-head solution as standard or countersunk
The ORTHORACK is a compact unit with either wet or dry aspiration, or without any aspiration system at all, and a freely selectable instrumentation (4 instruments, 2 suction hoses) that is integrated into furnishing or mounted as stand-alone underneath a working surface. Optionally, there is the possibility to countersink the instrument rack under the working surface. The back-of-head solution of ORTHORACK in combination with the ORTHORA 200 treatment unit is the perfect system and the casing shape simplifies the integration into furnishing, enabling a mounting in furnishing gaps or underneath working surfaces. The extendable and swiveling arm with the rotatable instrument unit ensures maximal maneuverability and provides for an ergonomically excellent working posture during every single process. As with the treatment unit, the colors for the ORTHORACK can be selected from 180 RAL colors and 29 attractive metallic colors.

3.3 Summary ORTHODESK



The integrated workbench for greater flexibility
The ORTHODESK is a workspace system integrated into the treatment unit. The workbench can be adapted to the right or the left of the treatment unit. It can be moved lengthways in order to provide for a optimal working posture at all time. Thanks to this movement, the workbench can also be pushed aside for the patient to enter/exit without obstruction. The stable workbench with precision guides enables working right next to the patient. An integrated drawer keeps the most important instruments and materials ready at hand, thus making all instruments and materials accessible at close range. An instrument rack with or without media supply can be mounted on the ORTHODESK as well as an arm for an instrument rack for up to 6 selectable instruments. The working surface is made of scratchproof and easy-to-clean material available in 4 work surface colors.

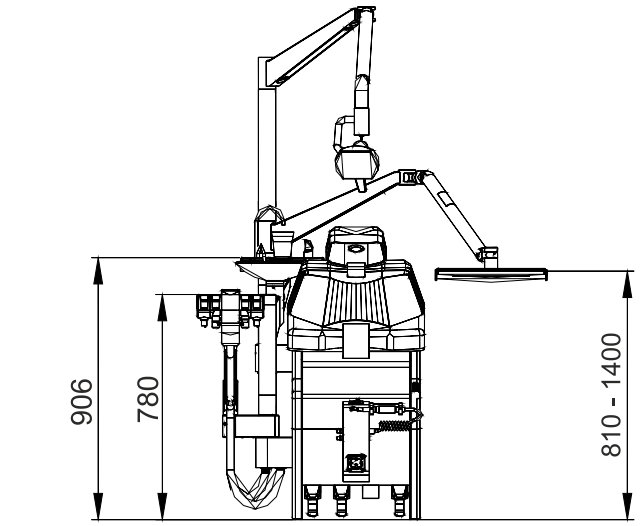
Two standard trays can be placed on the optional swiveling table. The vertical position of this swiveling table can be adjusted individually. The swiveling table rotates by 360° and makes instruments and materials in the best possible way accessible to the attending orthodontist.

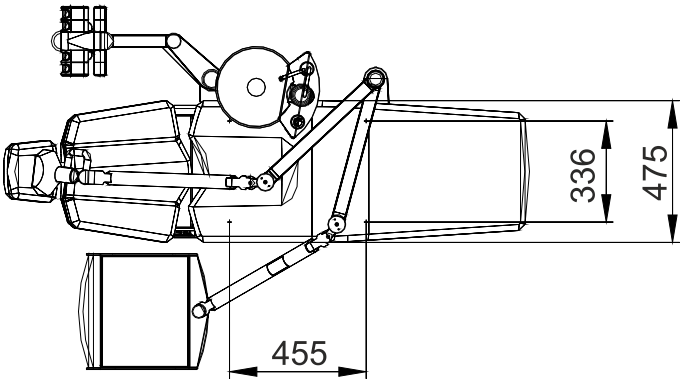
4. Technical data

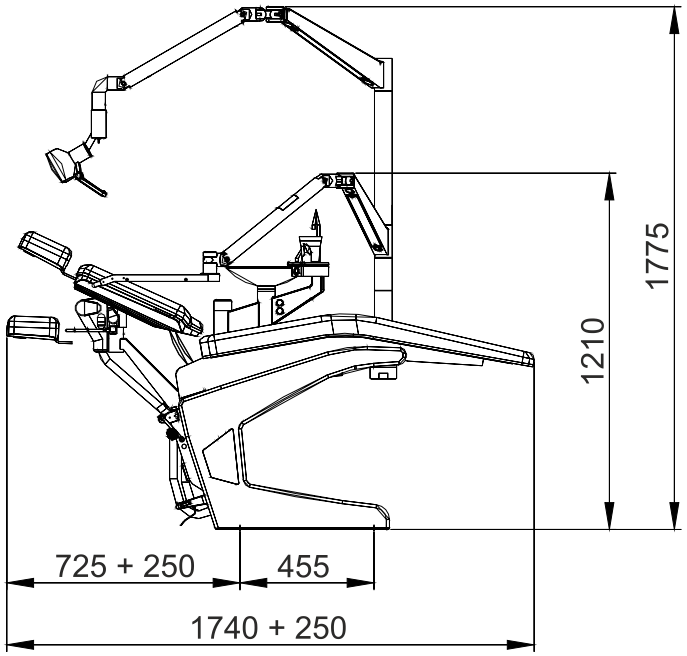
4.1 Device description ORTHORA 200

1a. Assembler	MIKRONA GROUP AG
Treatment unit Orthora 200	Wiesenstrasse 36
1b. Manufacturer chair Orthora	CH-8952 Schlieren
2. Distribution	Specialized dealers
3. Product name	ORTHORA 200
4. Especially for orthodontics	Yes
5. Modular system	Yes
6. Modules	Chair, assistant's chair, spittoon, instrument supply, equipment tray, swiveling table, ORTHODESK workbench, ORTHORACK back-of-head solution, aspiration, examination lamp, ceiling lamp
7. Multimedia system integrable	Yes
8. Instrument rack position	
- treatment chair socket	Yes
- Swiveling table	Yes
- ORTHORACK, back-of-head solution	Yes (see 3.2.)
- Rack with/without aspiration	Yes
- ORTHODESK, integr. workbench	Yes (see 3.3.)
9. Instrumentation	
- Turbines	Yes, max. 2
- Air motor	Yes, max. 2
- electronic micromotor	Yes, max. 2
- pre-selectable drive	Yes, 4-stage, adjustable
10. Supplementary equipment	
- Piezoceramic scaler	Yes, 4-stage, adjustable intensity
- Abrasive hand piece	Yes
- Polymerization lamp	Yes
- Storage possibilities	Yes, equipment tray, ORTHODESK, swiveling table
- Air syringe	Yes
11. Multifunction syringe	
- Cold water	Yes
- Warmed water	Yes
12. Assistant's components	
- Aspiration	Yes
- Spittoon	Yes, semiautomatic flushing and glass filling
- Multifunction syringe	Yes
13. Multimedia	
- Intra- and extraoral camera	Yes
- Flat screen monitor	Yes
- PC connection	Yes
- Connection for digital radiography	Yes
- Video	Yes, TV tuner, loudspeakers
14. Patient chair	
- Narrow backrest for child treatment	Yes
- Special headrest	Yes
15. Device available left-handed	Yes
16. Quick patient progression possible	Yes
17. Other manufacturer specifications	Partial modernization of existing workspaces, casing available in 180 RAL colors, 28 metallic colors, 26 upholstery colors, 4 work surface colors, swiveling back-of-head solution,
Max. instrumentation	4 on rack, 3 on tray, 1 at socket, 2 suction hoses
18. Date of market launch	IDS 2001, Colon, Germany

4.2 Dimensions







max. working height:	750 mm
min. working height:	580 mm
Treatment positions:	2 freely programmable positions
Weight:	110 – 150 kg (depending on equipment)
Footprint:	2600 cm^2
Floor loading :	1.88 N/cm^2 (0.19 kg/cm^2) without patient

5. Installation at customer

5.1 Chair installation

Practice installation must be carried out in accordance with the requirements stated in the installation manual.
Plan prints in scale 1:1 (320.8002.01)

6. Connections

6.1 Electrical connection

Electrical supply line:	3x1.5 mm²
Free end above ground:	500 mm
Input voltage:	100 V AC / 120 V AC / 230 V AC country-specific
Apparent power:	1900 VA
Power input unit:	300 VA (power socket 1'400 VA)
Frequency:	50 / 60 Hz
Fuse:	6.3 A

6.2 Aspiration connection

Aspiration control line:	3x1.5 mm²
Aspiration connection:	Ø 36 mm (inner diameter) (HDPE pipe according to DIN 8074 T2)
Above ground:	10 mm
Aspiration air rate:	300-350 l/min (main aspiration hose)
Depression:	ca. 180 mbar (hPa)

6.3 Air connection

Air connection ground:	R 3/8 (external thread)
Air connection device:	G 1/4 (external thread)
Above ground:	10 mm
Air input:	min. 5 bar
Air passage:	max. 75 l/min

The scope of delivery includes the low-pressure line 906.0137.01 with R 3/8 (internal thread) and G 1/4 (internal thread).

6.4 Water connection

Water connection ground:	R 3/8 (external thread)
Water connection device:	G 1/4 (external thread)
Above ground:	10 mm
Water input:	Domestic water pressure, min. 2.5 bar
Water passage:	max. 1.5. l/min
Water quality:	Drinking-water
Drain connection:	Ø 36 mm (inner diameter) (HDPE pipe according to DIN 8074 T2)
Above ground:	10 mm
Outflow rate:	max. 6.5 l/min with free outflow
Outflow rate:	max. 3.5 l/min with wet aspiration
Inclination drain pipe:	1 % (10 mm per meter)
Water filtration on device:	80 µm
Ph-value:	7.2-7.8
Water hardness:	7-11°dH / 13-19°fH

If the water is harder than indicated, it is necessary to install a water softening device. If the water is softer than indicated, this may lead to growth of algae.

The scope of delivery includes the low-pressure line 906.0137.01 with R 3/8 (internal thread) and G 1/4 (internal thread).

6.5 Transport and storage conditions

Temperature:	-20°C up to +60°C (-4°F up to 140°F)
Relative humidity:	10% up to 75%
Air pressure:	500hPa up to 1060hPa

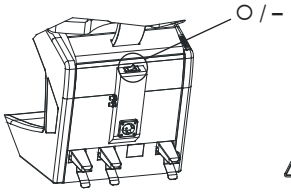
6.6 Operating conditions

Ambient temperature:	15°C up to +35°C (59°F up to 95°F)
Relative humidity:	30% up to 75% (no condensation)
Air pressure:	860hPa up to 1060hPa

7. Operation

For safety reasons the device must be switched off at the main control switch on the power terminal when leaving the practice. All power outlets of the supply unit become dead. Water supply of the instruments is interrupted by a corresponding magnet valve within the chair socket. As a consequence, it is impossible for water to leak from the device.

7.1 Main switch

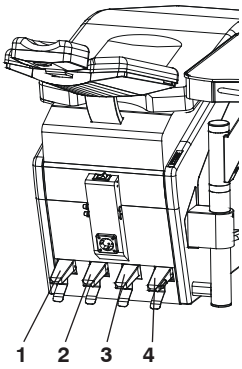


"Device on" is signaled by a shining red device protect switch on the power terminal.

O = Off
– = On

Before leaving the practice: Switch off the main switch to avoid water damages.

7.2 Pedal functions



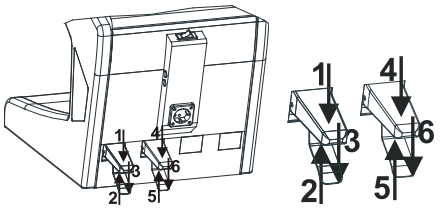
The device can be operated using the following function pedals:

1 Function pedal for automatic and manual chair control "bed"
2 Function pedal for automatic and manual chair control "backrest"
3 Function pedal for special functions (optional)
4 Function pedal for instrument operation (optional)

For instrument operation there are optional the following pedals available that can be connected in parallel with the built-in instrument pedal.

- stand-alone 2-function pedal or stand-alone 5-funtion pedal (7.2.4)
- stand-alone 1-function pedal or stand-alone 4-function pedal DYN (7.2.3)

7.2.1 Chair control



Chair movement is controlled by two 3-function pedals.

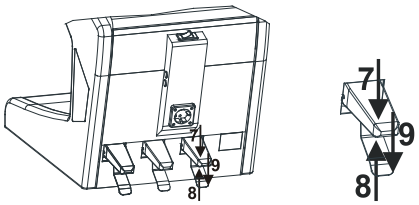
Pedal 1, function 1: automatic treatment position 1
By tapping the function pedal once, the chair moves automatically to a freely programmable treatment position 1.

Pedal 1, function 1: automatic treatment position 2
By tapping the function pedal twice, the chair moves automatically to a freely programmable treatment position 2.

Pedal 1, function 2: bed up (manually)
Pedal 1, function 3: bed down (manually)

Pedal 2, function 4: entry/exit position (automatically)
Pedal 2, function 5: backrest up (manually)
Pedal 2, function 6: backrest down (manually)

7.2.2 Special functions



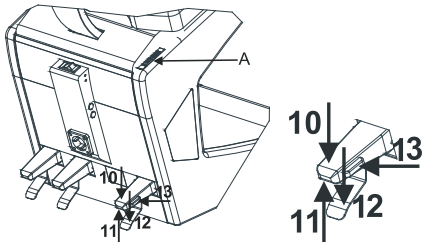
Operation of ORHTOLUX 200 and/or special functions

7 ORHTOLUX 200 on/off or external lamp on/off
Double-tapping changes between ORHTOLUX 200 and foreign functions. Foreign functions are shown by a special function LED (S) on the display (7.2.3 or 7.2.4).
8 Swivel ORHTOLUX 200 forward
9 Swivel ORHTOLUX 200 back
or switch external device on (as long as pedal is pressed)

7.2.3 Operation 4-function pedal DYN (dynamic)

With the operation over the 4-function pedal DYN the speed/intensity is emitted dynamically within the 4 selectable levels. The setting of the speed/intensity within the levels is adjusted in the programming mode (ST09).

Instrument operation 4-F DYN

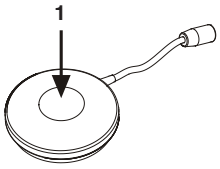


Micromotor, turbine and ultrasonic devices are controlled by the 4-function pedal DYN and shown on the display A.

10 Speed level down or intensity level down
11 Speed level up or intensity level up
12 Device on (dynamic), selectable basic settings per level in mode IS
13 **1 x click** Activation of spray or chip blower (airspray)
Display (G) LED on: Spray is activated
Display (G) LED blinking: Chip blower is active
2 x click Back and forth switching between spray and chip blower
13 **1 x click** Deactivation of spray or chip blower
(last setting is saved by the device)
Display (G) LED is off / no blinking
1 x click Activation of the last used setting
(spray of chip blower)
When the instrument is deactivated (switch on instrument rack) the last setting is saved. By taking the instrument from the rack the last setting is activated again. Display (G) LED is on, is blinking or off.
13 Micromotor changes direction of rotation when pressing button for more than 1.5 seconds.

The basic settings can be programmed under the instruments data IN (7.2.6).

Stand-alone 1-function pedal DYN (dynamic)



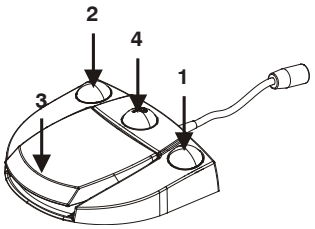
Micromotor, turbine and ultrasonic devices are optionally controlled by the stand-alone 1-function pedal DYN and shown on the display.
The stand-alone 1-function pedal DYN can only be used in parallel connection with the built-in 4-function pedal DYN.

Instrument operation

1 Device on (dynamic), selectable basic settings per level in mode IS

Speed/intensity of instruments is adjusted by the built-in 4-function pedal DYN.

Stand-alone 4-function pedal DYN (dynamic)



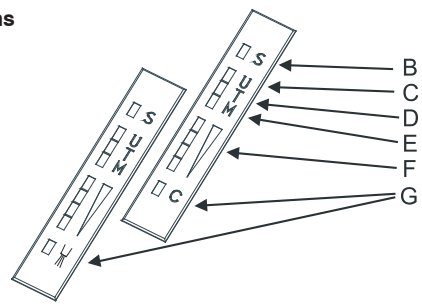
Micromotor, turbine and ultrasonic devices are optionally controlled by the stand-alone 4-function pedal DYN and shown on the display.
The stand-alone 1-function pedal DYN can be used autonomous or in parallel connection with the built-in 4-function pedal DYN.

Instrument operation

1 Speed level down or intensity down
2 Speed level up or intensity up
3 Device on (dynamic), selectable basic settings per level in mode IS
4 Spray on/off (**1 x click**) → detailed information see above
4 Chip blower on/of (**2 x click**) → detailed information see above
Water supply spray suppressed
4 Micromotor changes direction of rotation when pressing button for more than 1.5 seconds.

The basic settings can be programmed under the instruments data IN (7.2.6).

Display functions



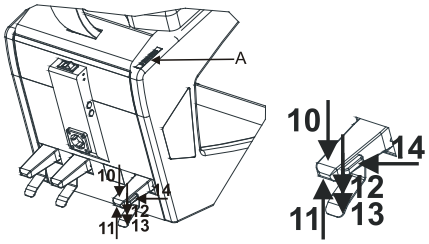
Active instruments and their functions are shown on the display.

B Display of special functions
C Ultrasonic device
D Turbine (T)
E Micromotor (M)
F Speed level
Speed and intensity can be selected from 4 levels.
Each level per instrument can be adjusted by a service technician to the individual needs of the user.
Direction of rotation of micromotor:
Clockwise rotation LED shines
Counter-clockwise rotation LED blinks
G Spray on (C) or , LED shines
Chip blower (C) or , LED blinks

7.2.4 Instrument operation 5-F

With the operation over the 5-function pedal the speed/intensity is emitted constantly within the 4 selectable levels. The setting of the speed/intensity within the levels is adjusted in the electronics (ST01) or in the programming mode (ST09)

Instrument operation 5-F

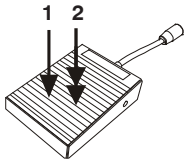


Micromotor, turbine and ultrasonic devices are controlled by the 5-function pedal and shown on the display A.

10 Speed level down or intensity level down
11 Speed level up or intensity level up
12 Device on
13 Spray on
14 Chip blower on/off
Water supply spray suppressed
LED on the display shines
14 Micromotor changes direction of rotation when pressing button for more than 1.5 seconds.

The basic settings can be programmed under the instruments data IN (7.2.6).

Stand-alone 2-function pedal



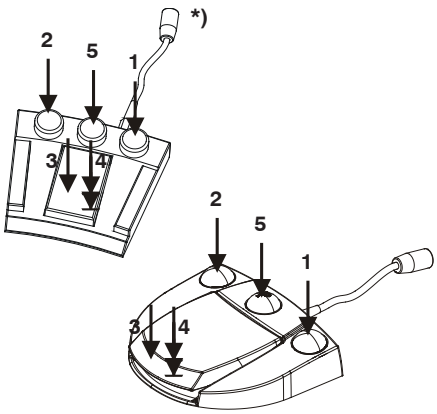
Micromotor, turbine and ultrasonic devices are optionally controlled by the stand-alone 2-function pedal and shown on the display A.

The stand-alone 2-function pedal can only be used in parallel connection with the built-in 5-function pedal.

Instrument operation:
1 Device on
2 Device on, spray on

Speed / intensity of instruments is adjusted by the built-in 5-function pedal.

Stand-alone 5-function pedal



Micromotor, turbine and ultrasonic devices are controlled by the stand-alone 5-function pedal and shown on the display A.

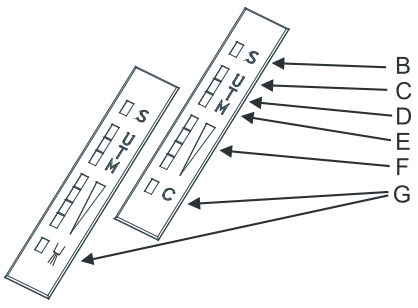
The stand-alone 5-function pedal can be used autonomously or in parallel connection with the built-in 5-function pedal.

Instrument operation:
1 Speed level down or intensity down
2 Speed level up or intensity up
3 Device on
4 Device on, spray on
5 Chip blower on/off
Water supply spray suppressed
LED on the display shines
5 Micromotor change direction of rotation when pressing button for more than 1.5 seconds.

The basic settings can be programmed under the instruments data IN (7.2.6).

*) Production stopped

Display functions

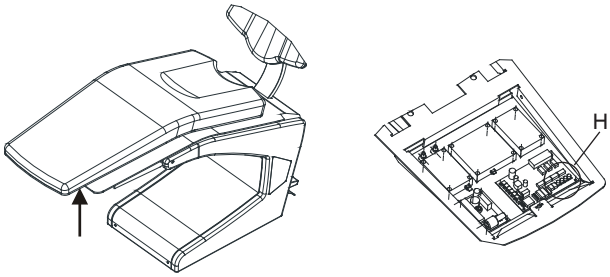


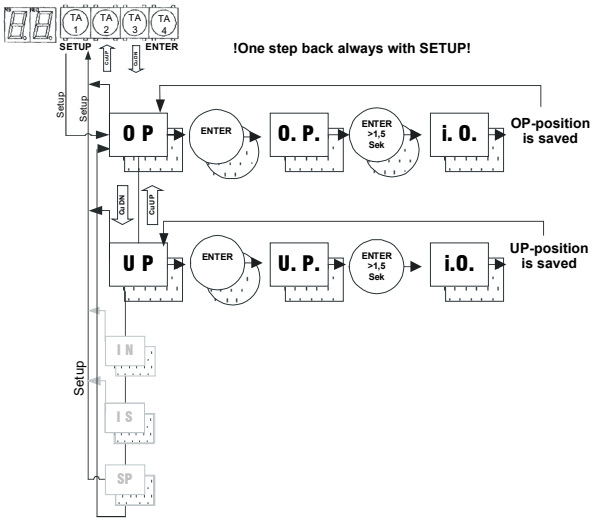
Active instruments and their functions are shown on the display.

B Display of special functions

Instrument display
Active instrument is displayed.
C Ultrasonic device
D Turbine (T)
E Micromotor (M)
F Speed level
Speed and intensity can be selected from 4 levels.
Each level per instrument can be adjusted by a service technician to the individual needs of the user.
Direction of rotation of micromotor:
Clockwise rotation LED shines
Counter-clockwise rotation LED blinks
G Chip blower (C) or , blower air (LED shines)

7.2.5 Setting the treatment positions





Enlarged programming instructions see page 22 & 23

Pull up and remove the bed upholstery.

The bed's setting can be adjusted by the buttons on the main computer (H) in the foot end.

Treatment position 1
- Move backrest and bed manually into the desired position
- Press SETUP, OP is displayed
- Confirm with ENTER, O.P. is displayed
- Press ENTER for at least 1.5 seconds, message i.O. is displayed.

Position has been saved. Leave the programming modus with SETUP.

The position will be automatically reached when tapping the function pedal (1) once.

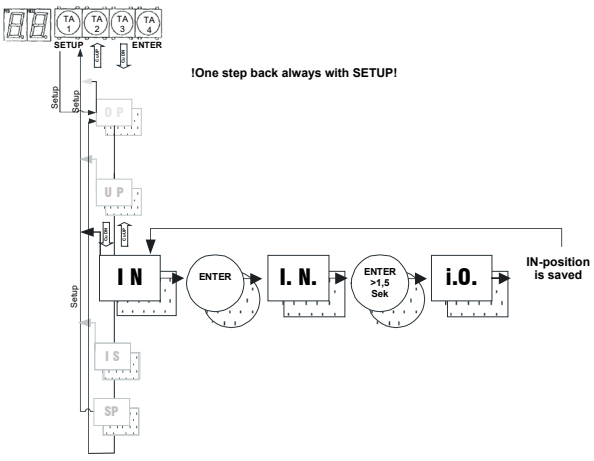
Treatment position 2
- Move backrest and bed manually into the desired position
- Press SETUP, OP is displayed
- Select UP with arrow key
- Confirm with ENTER, U.P. is displayed
- Press ENTER for at least 1.5 seconds, message i.O. is displayed.

Position has been saved. Leave programming modus with SETUP.

The position will be automatically reached when tapping the function pedal (1) twice.

Caution!
The functions „CF", „CI", „Cd", „FS", „FC" and „CL" are service functions. They may only be changed by trained staff.

7.2.6 Changing the default setting of instruments



Enlarged programming instructions see page 22 & 23

The default and factory setting of instrument data is programmed to the maximum. The default setting can be individually adjusted and saved by the user.

Activate all instruments controlled by the 5-function pedal one after another and set them at the desired parameters. Then transfer the instrument data as follows:
- Press SETUP, OP is displayed
- Select IN with arrow key
- Confirm with ENTER, I.N. is displayed
- Press ENTER for at least 1.5 seconds, message i.O. is displayed

The individual data has been saved for all instruments. Leave programming modus with SETUP

Hint:
If you only want to change the setting of one instrument, we recommend that you first switch the unit on and off at the main switch. Default settings of the instrument will be activated by this. Activate the instrument to be changed, adjust it and save the data (as explained above).

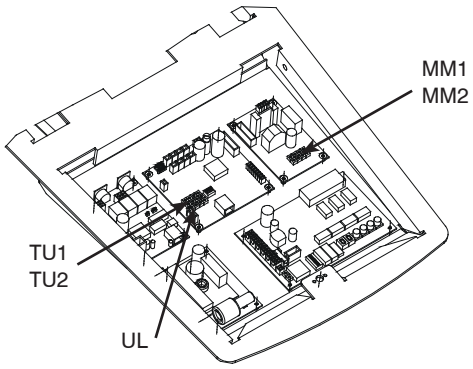
Caution!
The functions „CF", „CI", „Cd", „FS", „FC" and „CL" are service functions. They may only be changed by trained staff.

The function "instrument data programming (IN)" is integrated by default from OT1.00251 (upgrade available from OT1.00100 with version MC-CPU-1.9 or higher).

7.2.7 Setting of the instrument parameters

The instrument parameters can be set individually per instrument within the 4 levels.

Electronic Setting of the instrument parameters



With the control 01 (ST01) the four speed/intensity levels are adjusted with the potentiometers on the electronic boards.

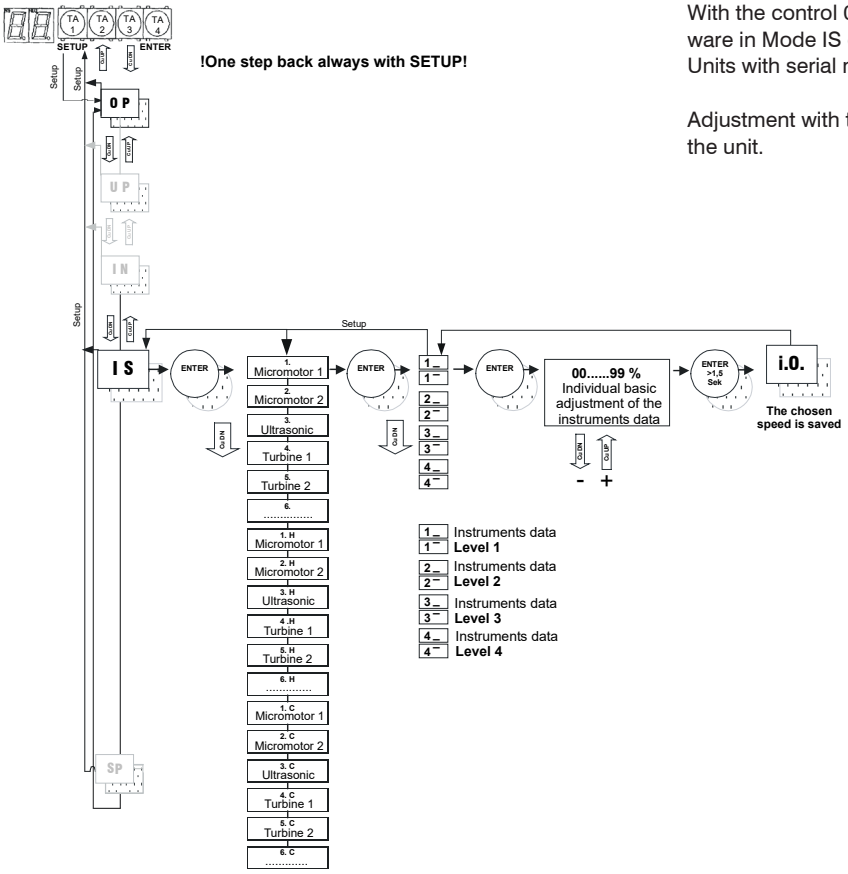
Units with serial numbers <OT1.01999

MM1 ➔ Micromotor 1
MM2 ➔ Micromotor 2
TU1 ➔ Turbine 1
TU2 ➔ Turbine 2
UL ➔ Ultrasonic device

Rotating direction ↻ increase of the speed- / intensity level
Rotating direction ↺ decrease of the speed- / intensity level

For the factory settings see instrument descriptions 7.7 to 7.11

Setting of the instrument parameters with the user program



With the control 09 (ST09) the parameters are assigned over the software in Mode IS of the "user program part"
Units with serial numbers >OT1.02000 or retrofitted units

Adjustment with the keys on the main CPU located under foot part of the unit.

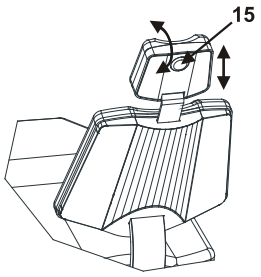
- press „Set Up“
- with „⇩“ click on Modus IS
- Press „Enter“
- Press „⇩“ to the number of the instrument to be changed
- press „Enter“
- chose the level with „⇩ or ⇧“
  X_ ➔ lower instrument parameter in level X
  X¯ ➔ upper instrument parameter in level X
  Caution:
  With the 5-function pedal control only the X¯ instrument parameter is used.

- press "Enter"
- with „⇩ or ⇧“ individually click the required …% parameters
  For the factory settings see instrument descriptions 7.7 to 7.11
- press "Enter" for 1.5 seconds
- "i.O." is displayed ➔ parameter is saved
- press "Setup" to return to the level selection
  Next level can be chosen
- After correction/setting of all the required levels the user program can be left by pressing 3 x "Setup".

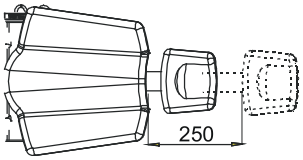
Enlarged programming instructions see page 22 & 23

Caution!
The functions „CF“, „CI“, „Cd“, „FS“, „FC“ and „CL“ are service functions. They may only be changed by trained staff.

7.3 Headrest

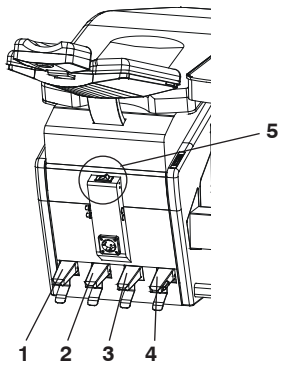


Press the membrane (15) to swivel the headrest. The headrest can gradually be moved for- and backward by 7 x 10°.



The headrest can be extended and retracted continuously. Height adjustments are made by pulling or pushing the headrest. It is secured by a self-locking brake.

7.4 Safety shutdown



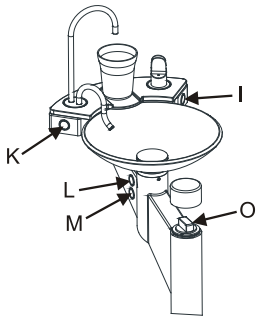
The safety shutdown is thought to protect individuals from injury and the device from damage.

Any chair movements (up and down movement) are immediately stopped by safety shutdown when tapping any pedal. It is not possible to move the chair while operating special function and/or instrument if safety shutdown is activated (interconnected locking mechanism).

The device can be shut down for safety reasons from the following pedals:

1 Function pedal for chair control “bed”
2 Function pedal for chair control “backrest”
3 Function pedal for special functions (optional)
4 Function pedal for instrument operation (optional)
5 Main switch

7.5 Spittoon

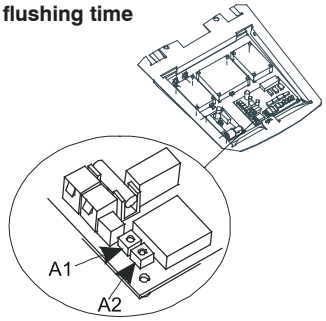


I Bubbler on
K Glass filler on /off
The filling process can be interrupted at all time by slightly pressing the on/off button.
Filling time can be adjusted individually.
L Flushing on/off
The flushing process can be interrupted at all time by slightly pressing the on/off button
Flushing time can be adjusted individually.
M Cleaning of spittoon valve (see 8.1.3)
(Available only with wet aspiration)
O Drain filter

Technical data

Glass filler	max. 1.5 l/min
Spittoon flush	max. 1.5 l/min
Bubbler	max. 0.6 l/min
Cup height	max. 90 mm

7.5.1 Setting the filling and flushing time



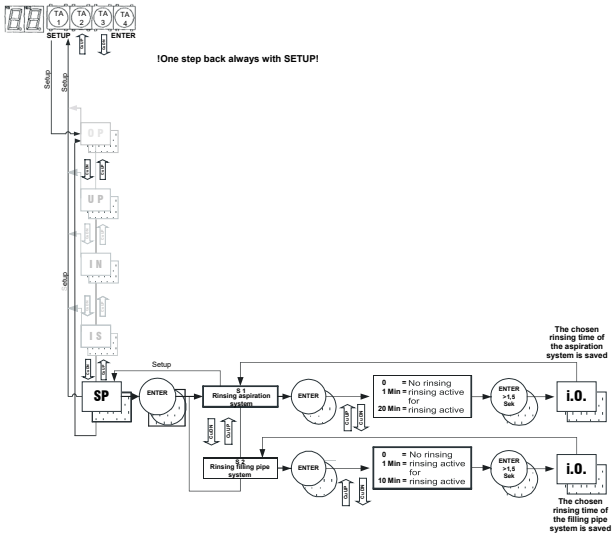
The filling function of the spittoon flush and glass filler is automatically cut when the adjusted time is up.

The filling or flushing time of the glass filler and the spittoon flush can be adjusted individually by the rotary switches A1 and A2.

A1 = Timer for glass filler (1.5 - 14 seconds)
A2 = Timer for flush (0 - 25 seconds)

Besides of the time, the filling quantity can be changed / adjusted by the service technician at the corresponding magnetic valves on the base plate.

7.5.2 Automatic rinsing time



Enlarged programming instructions see page 22 & 23

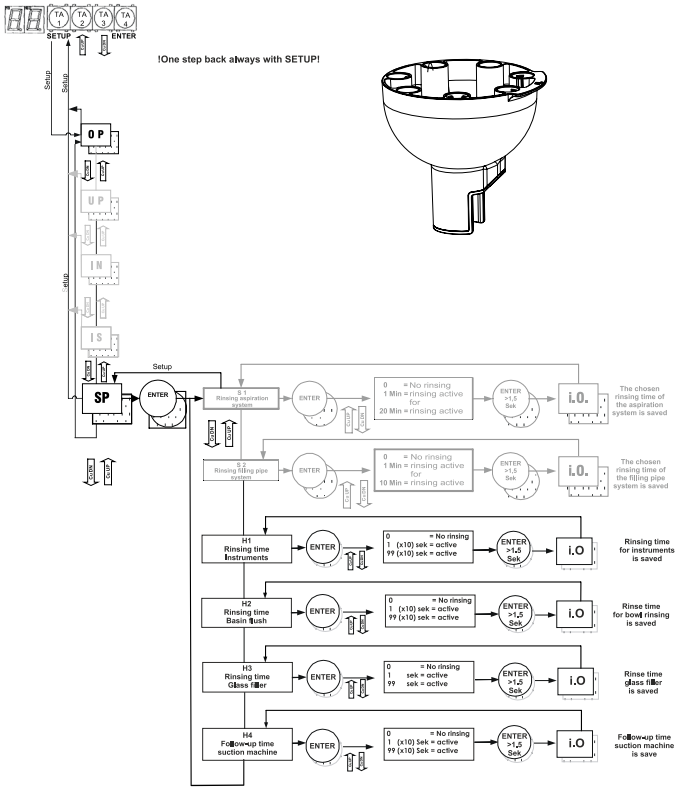
The default rinsing settings of the aspiration system is set to 3 minutes for dry aspiration and to 0 minutes for wet aspiration (no aspiration activated). Latter is only activated if the unit is equipped with an aspiration component. The default rinsing setting of the filling pipe is set to 0 minutes.

The default rinsing setting of the aspiration system “S1” can be reset individually to between 0 minutes (no aspiration activated) and 20 minutes. Program the aspiration system according to the scheme. The aspiration cycle can be interrupted at anytime by pulling the small or large aspiration hose. Default settings S1 = 3 minutes.

The default rinsing setting of the spittoon “S2” can be reset individually to between 0 minutes (no aspiration activated) and 10 minutes. Program the aspiration system according to the scheme. The aspiration cycle can be interrupted at anytime by slightly pressing the on/off rinsing button (at filling pipe). Default settings S2 = 1 minutes.

The function “rinsing of aspiration system and filling pipe programming (SP)” is integrated by default from OT1.01000 (upgrade available from OT1.00468 (peripheral print with integrated timing relay) with version MC-CPU-3.1 or higher and MC-P-3.1 or higher).

7.5.3 The «CleanHub» function on Orthora 200



Enlarged programming instructions see page 22 & 23

With the «CleanHub» function on Orthora 200, it is possible to automatically rinse all water-bearing instruments. The individual instruments are removed from their trays beforehand and positioned in the CleanHub for rinsing. The surgical aspirator or the saliva ejector can also be placed in the CleanHub to remove residual water. The function is integrated by default from OT1.05000 (upgrade available).

Programming the automatic rinsing length for:
- **Instruments (H1)**
- **Rinsing length of basin rinsing (H2)**
- **Rinsing length of glass filler (H3)**
- **Follow-up time of suction machine (H4)**

H1 The basic setting for the flushing automation of the instruments (H1) can be set by the operator from 0 sec (no flushing active) to 990 sec. The flushing length for the instruments is to be programmed according to the diagram (page 22 & 23).

Factory setting for rinsing the instruments (H1)
a) with existing bottle system 30 sec.
(Attention: the syringe is rinsed as soon as the bottle is pressurised or under pressure)
b) if connected to the mains water supply 120 sec.

H2 The basic setting for the length of basin rinsing (H2) can be set by the operator from 0 sec (no rinsing active) to 990 sec. The flushing length for the spittoon is to be programmed according to the diagram (page 22 & 23). It is recommended to programme the flushing cycle for the spittoon to S1 and S2 to 0 min.

Factory setting for the rinsing length of the basin rinsing (H2)
a) with existing bottle system 120 sec.
b) if connected to the domestic water supply 180 sec.

H3 The basic setting for the rinsing length of the glass filler (H3) can be set by the operator from 0 sec (no rinsing active) to 99 sec. The rinsing length for the spittoon must be programmed according to the diagram (page 22 & 23).

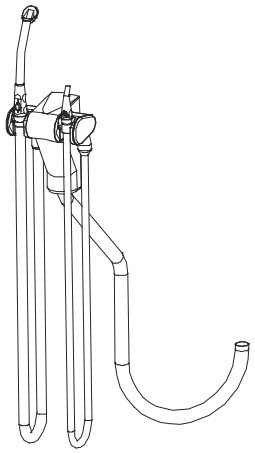
Factory setting for the rinsing length glass filler (H3)
a) with existing bottle system 60 sec.
b) if connected to the domestic water supply 60 sec.

H4 The basic setting for the suction machine run-on time (H4) can be individually adjusted by the operator from 0 sec (no run-on time active) to 990 sec. The run-on time for the spittoon must be programmed according to the diagram (page 22 & 23).

Factory setting for the suction machine run-on time (H4)
a) with existing bottle system 90 sec.
b) with direct connection to the domestic water supply 30 sec.

Operation CleanHub see document 320.8500.02

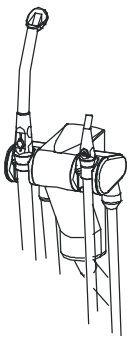
7.6 Hose holder



The Dürr hose holder is a state-of-the-art hose holder that distinguishes itself by its comfort and design. The particular hoses are connected to the built-in holder by flexible joints. This means that the attending orthodontist requires less effort and relieves his wrists. In addition, the hand pieces can be tilted forward within the holder for the orthodontist to adjust their position the best individual and ergonomic way. The aspiration hand pieces can be sterilized separately in an autoclave at 134°C. Due to the hose arrangement within the holder, the exhausted fluids are directed straight to the filter without flowing through other hose holder modules. Thanks to the accessible position of the filter, it can be changed easily (8.2.1). By default, the comfort hose holder comes with a selective opening and closing mechanism. This means that there is always only aspiration at the particular hose in use and that there is no negative pressure on the other hoses. As a consequence the full aspiration capacity is used for treatment and disturbing side noises are eliminated.

For operation guidelines please consult Dürr Dental's separate instruction manual that accompanies the device.

7.6.1 Ergonomic recommendations



There are turning elements integrated in the modules of the hose holder which, depending on the working method, remain in the 0° position or can gradually be turned forward to 15° or 30°.

A ball joint can be adapted to the main aspiration hand piece. It can be turned in steps of 15° and leads to a more comfortable hose handling.

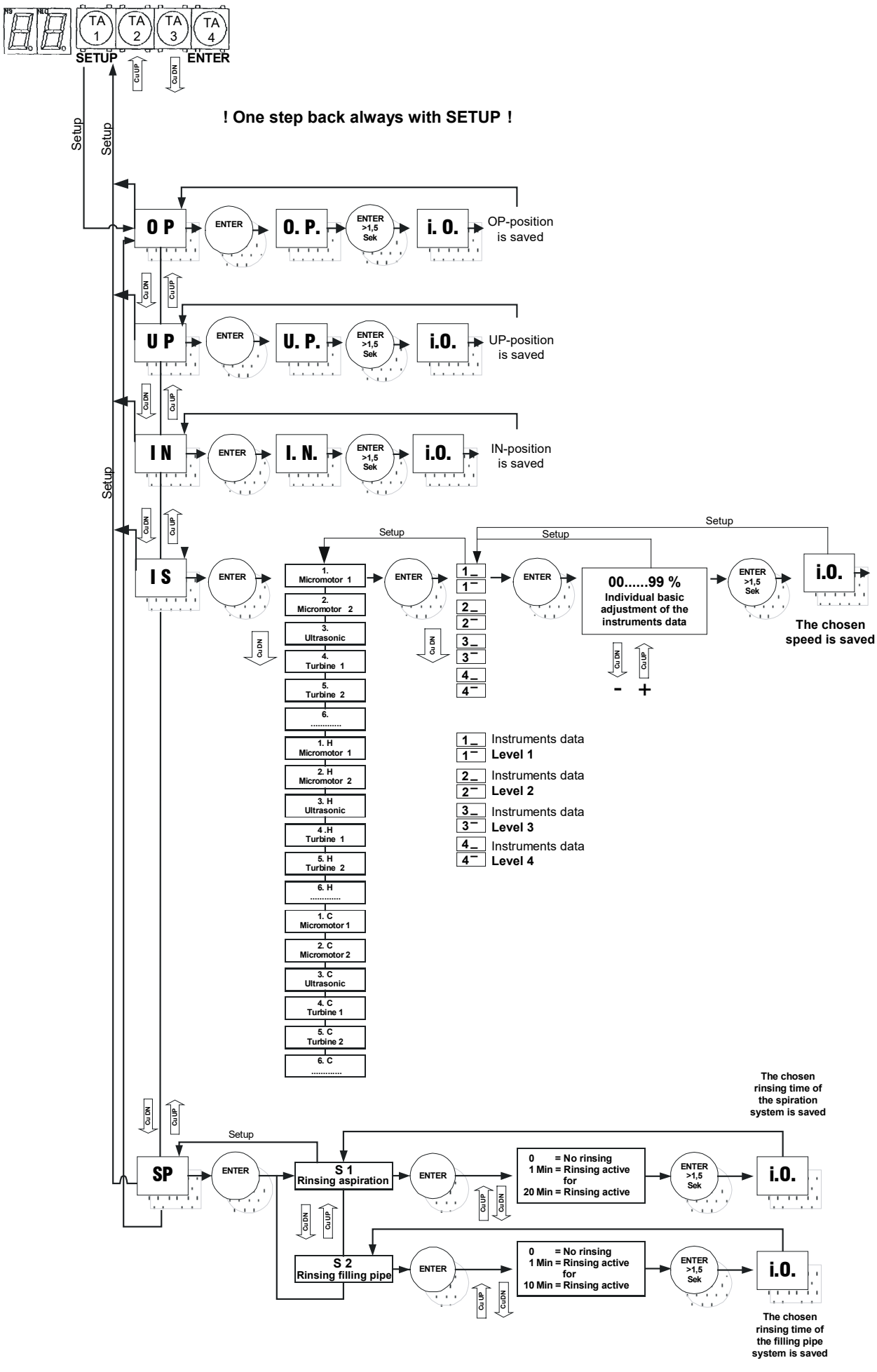
There is a switch to regulate and switch off the aspiration during work at both main and small hose holder.

7.6.2 Intended use

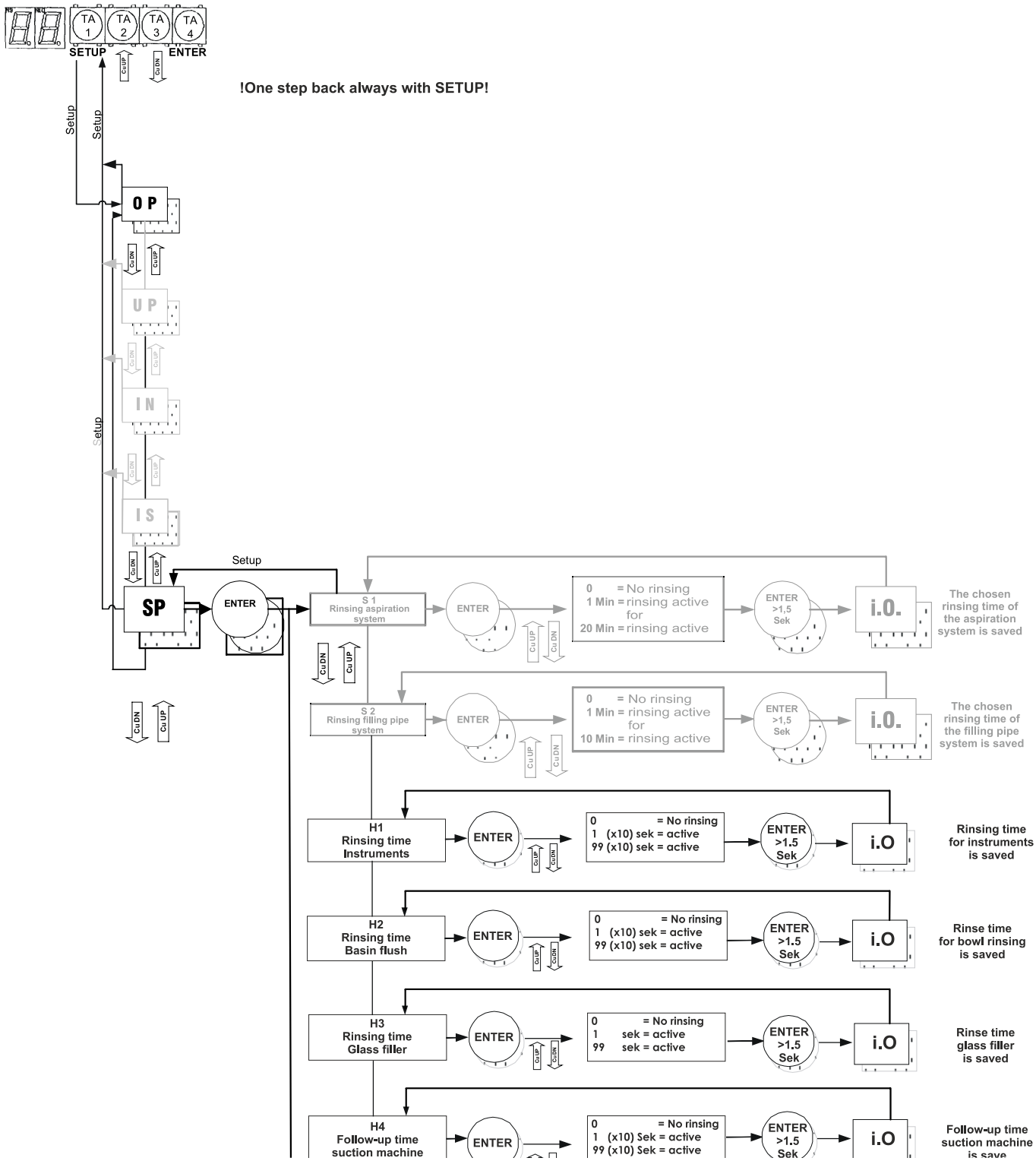
The hose holder serves to store aspiration hoses with inserted canulae when not in use. After hanging up the aspiration hoses, the aspiration system will be shut down by an electrical signal. After removing a aspiration hose, the aspiration system will be started by an electrical signal. The hose holder with its aspiration hoses and hand pieces works with dry and wet aspiration systems.

7.6.3 Unintended use

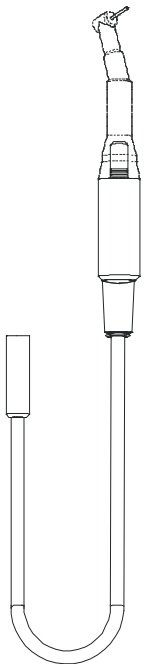
Any other use beyond the above mentioned is considered unintended. The manufacturer as well as the assembler assumes no liability for damages caused by unintended use.


TA 1
TA 2
TA 3
TA 4
SETUP
ENTER
Cu UP
Cu DN
! One step back always with SETUP !
Setup
O P
ENTER
O. P.
ENTER >1,5 Sek
i. O.
OP-position is saved
U P
U. P.
i.O.
UP-position is saved
I N
I. N.
IN-position is saved
I S
1. Micromotor 1
2. Micromotor 2
3. Ultrasonic
4. Turbine 1
5. Turbine 2
6. .....
1. H Micromotor 1
2. H Micromotor 2
3. H Ultrasonic
4 .H Turbine 1
5. H Turbine 2
6. H .....
1. C Micromotor 1
2. C Micromotor 2
3. C Ultrasonic
4. C Turbine 1
5. C Turbine 2
6. C .....
1_ 1¯
2_ 2¯
3_ 3¯
4_ 4¯
00.....99 %
Individual basic adjustment of the instruments data
- +
The chosen speed is saved
1_ 1¯ Instruments data Level 1
2_ 2¯ Instruments data Level 2
3_ 3¯ Instruments data Level 3
4_ 4¯ Instruments data Level 4
SP
S 1 Rinsing aspiration
0 = No rinsing
1 Min = Rinsing active for
20 Min = Rinsing active
The chosen rinsing time of the spiration system is saved
S 2 Rinsing filling pipe
0 = No rinsing
1 Min = Rinsing active for
10 Min = Rinsing active
The chosen rinsing time of the filling pipe system is saved

SP
Instrument flushing with CleanHub
CPU Software > 6.0



7.7 Micromotor MC3 LED, LK, IR Bien Air



General information
For information on technical features as well as on operation and application of the micromotor please consider the specific instruction manuals which come enclosed in the instrument and motor pakkaging. Please service and handle the hand pieces as specified in the maintenance instructions of the specific manufacturer.

Description
Electric micromotor 4'000 to 40'000 rpm with brush for dental application with integrated spray, MC3 LED, MC3 LK with light, MC3 IR without light. Motor not suitable for sterilization. Removable case suitable for sterilization. Exchangeable brushes.

Commissioning
Never attach an instrument while the micromotor hand piece is running.

Only use instruments in perfect operating condition. Immediately stop any work if intermittences, extensive vibrations, abnormal heating or other signs of instrument failure occur.

For use, remove the instrument from the rack (micro switch will be activated with a rack circuit installed). The display shows the specific instrument as well as the speed level. Start the instrument by pressing the function pedal. Change speed and the rotating direction and switch on the spray by using the function pedal (7.2.3. or 7.2.4).

Sterilizing the micromotor hand piece
The micromotor hand piece (which is not included in the scope of delivery of MIKRONA GROUP AG) should be serviced and handled according to the manufacturer's maintenance instructions. For information on technical features please consider the specific instruction manuals which come enclosed in the instrument and motor packaging.

Disinfection
For disinfection use a clean damp cloth and disinfect the instrument tube including the case. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

Default settings

Cooling air	10 l/min
Spray air	2 bar
Water	ca. 50 ml/min

4-function pedal control 09 (ST09) units with serial numbers > OT1.02000

				$\underline{X}$		$\overline{X}$
Level 1	5'000	to	16'000 min^{-1}	5	to	35%
Level 2	16'000	to	28'000 min^{-1}	35	to	65%
Level 3	28'000	to	40'000 min^{-1}	65	to	99%
Level 4	5'000	to	40'000 min^{-1}	5	to	99%

5-function pedal control 09 (ST09) units with serial numbers > OT1.02000

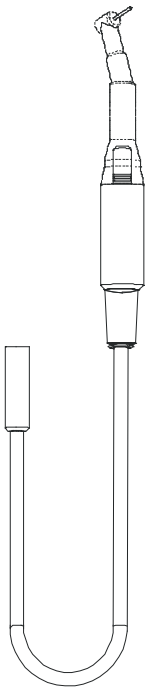
		$\overline{X}$
Level 1	ca. 5'000 min^{-1}	5 %
Level 2	ca. 16'000 min^{-1}	35 %
Level 3	ca. 28'000 min^{-1}	65 %
Level 4	ca. 40'000 min^{-1}	99 %

5-function pedal control 01 (ST01) units with serial numbers < OT1.01999

Level 1	ca. 5'000 min^{-1}	2,8 V
Level 2	ca. 16'000 min^{-1}	9,6 V
Level 3	ca. 28'000 min^{-1}	16,4 V
Level 4	ca. 40'000 min^{-1}	24,0 V

Product-specific operating instructions see 320.8620.02 LED

7.8 Micromotor MX & MX2 Bien Air



General information
For information on technical features as well as on operation and application of the micromotor please consider the specific instruction manuals which come enclosed in the instrument and motor packaging. Please service and handle the hand pieces as specified in the maintenance instructions of the specific manufacturer.

Description
Carbon-free electric micromotor 100 to 40,000 rpm for dental application with integrated spray and light. Motor suitable for sterilization, nickel-plated brass body and stainless steel head.

Commissioning
Never attach an instrument while the micromotor hand piece is running.

Only use instruments in perfect operating condition. Immediately stop any work if intermittences, extensive vibrations, abnormal heating or other signs of instrument failure occur.

For use, remove the instrument from the rack (micro switch will be activated with a rack circuit installed). The display shows the specific instrument as well as the speed level. Start the instrument by pressing the function pedal. Change speed and the rotating direction and switch on the spray by using the function pedal (7.2.3. or 7.2.4).

Sterilizing the micromotor hand piece
The micromotor hand piece (which is not included in the scope of delivery of MIKRONA GROUP AG) should be serviced and handled according to the manufacturer's maintenance instructions. For information on technical features please consider the specific instruction manuals which come enclosed in the instrument and motor packaging.

Disinfection
For disinfection use a clean damp cloth and disinfect the instrument tube including the case. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

Default settings

Cooling air	10 l/min
Spray air	2 bar
Water	ca. 50 ml/min

4-function pedal control 09 (ST09) units with serial numbers > OT1.02000

				$\underline{X}$		$\bar{X}$
Level 1	100	to	2'600 min^{-1}	0	to	7%
Level 2	2'600	to	9'600 min^{-1}	7	to	25%
Level 3	11'500	to	23'100 min^{-1}	30	to	60%
Level 4	100	to	40'000 min^{-1}	0	to	99%

5-function pedal control 09 (ST09)) units with serial numbers > OT1.02000

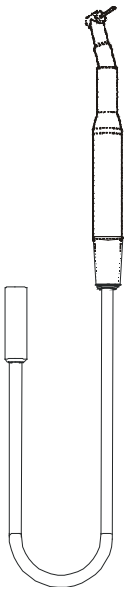
		$\bar{X}$
Level 1	ca. 2'500 min^{-1}	7 %
Level 2	ca. 8'000 min^{-1}	22 %
Level 3	ca. 16'000 min^{-1}	42 %
Level 4	ca. 40'000 min^{-1}	99 %

5-function pedal control 01 (ST01) units with serial numbers < OT1.01999

Level 1	ca. 1'000 min^{-1}	1,0 V
Level 2	ca. 8'000 min^{-1}	1,6 V
Level 3	ca. 16'000 min^{-1}	2,4 V
Level 4	ca. 40'000 min^{-1}	4,9 V

Product-specific operating instructions see 320.8621.02

7.9 Turbine connection



General information
For information on technical features as well as on operation and application of the turbine please consider the specific instruction manuals which come enclosed in the instrument and motor packaging. Please service and handle the turbine hand pieces as specified in the maintenance instructions of the specific manufacturer.

Description
Turbine device with 4VML LUX standard connection 1.5 to 3.0 bar for dental application with integrated spray and light.

Commissioning
Never attach an instrument while the turbine hand piece is running.

Only use instruments in perfect operating condition. Immediately stop any work if intermittences, extensive vibrations, abnormal heating or other signs of instrument failure occur.

For use, remove the instrument from the rack (micro switch will be activated with a rack circuit installed). The display shows the specific instrument as well as the speed level. Start the instrument by pressing the function pedal. Change speed and switch on the spray by using the function pedal (7.2.3. or 7.2.4).

Sterilizing the turbine hand piece
The turbine hand piece (which is not included in the scope of delivery of MIKRONA GROUP AG) should be serviced and handled according to the manufacturer's maintenance instructions. For information on technical features please consider the specific instruction manuals which come enclosed in the instrument and motor packaging.

Disinfection
For disinfection use a clean damp cloth and disinfect the instrument tube. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

Default settings

Drive air	max. 2.5 bar
Spray air	2 bar
Water	ca. 50 ml/min

4-function pedal control 09 (ST09) units with serial numbers > OT1.02000

		$\underline{X}$	$\overline{X}$
Level 1	1,5 to 2,0 bar	10 to	25%
Level 2	2,0 to 2,5 bar	25 to	40%
Level 3	2,5 to 3,0 bar	40 to	99%
Level 4	1,5 to 3,0 bar	10 to	99%

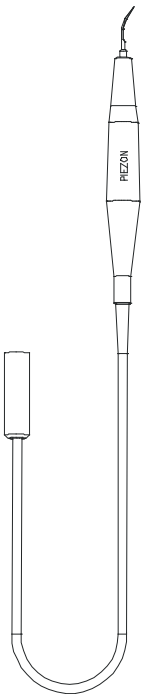
5-function pedal control 09 (ST09) units with serial numbers > OT1.02000

		$\overline{X}$
Level 1	1,5 bar	10%
Level 2	2,0 bar	25%
Level 3	2,5 bar	40%
Level 4	3,0 bar	99%

5-function pedal control 01 (ST01) units with serial numbers < OT1.01999

		Bien Air	Kavo
Level 1	1,5 bar	10,8 V	15 V
Level 2	2,0 bar	13 V	18 V
Level 3	2,5 bar	15 V	20 V
Level 4	3,0 bar	19 V	25 V

7.10 Ultrasound Piezon EMS



General information
For information on technical features as well as on operation and application of this ultrasound system please consider the specific instruction manual which comes enclosed in the instrument packaging. Please service and handle the hand pieces and inserts as specified in the maintenance instructions of the specific manufacturer.

Description
This ultrasound system is equipped with integrated spray and optimal light for dental application.

Commissioning
Never attach any inserts or a working tips while the ultrasound system is running.
Heart pacemakers may be disrupted by high-frequency ultrasonic oscillations. Therefore we recommend not to use this product with patients requiring a pacemaker.
Only use instruments in perfect operating condition. Immediately stop any work if intermittences, extensive vibrations, abnormal heating or other signs of instrument failure occur.
For use, remove the instrument from the rack. The display shows the specific instrument as well as the selected intensity level. Start the instrument by using the function pedal. Change the intensity by using the function pedal (7.2.3. or 7.2.4).

Sterilizing the ultrasound device
Clean and sterilize the ultrasound device before using it on the next patient. Remove the working tip before sterilizing the device and separate the hand piece from the hose. After each sterilization cycle, immediately remove the device from the sterilizer to prevent corrosion.

Sterilization occurs in an autoclave at 134°C.

Disinfection
For disinfection use a clean damp cloth and disinfect the case surface. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to the ultrasound device.

Default settings
Water ca. 40 ml/min

4-function pedal control 09 (ST09) units with serial numbers > OT1.02000

		$\underline{X}$	$\overline{X}$
Level 1	0 to 0,5 V	0 to	35%
Level 2	0,5 to 1,0 V	35 to	75%
Level 3	1,0 to 1,4 V	75 to	99%
Level 4	0 to 1,4 V	0 to	99%

5-function pedal control 09 (ST09) units with serial numbers > OT1.02000

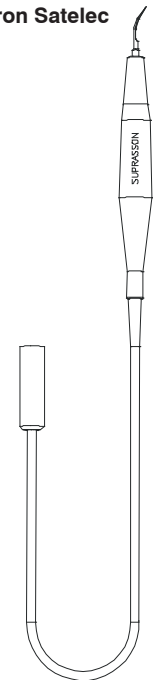
		$\overline{X}$
Level 1	0 V	0%
Level 2	0,5 V	35%
Level 3	1,0 V	75%
Level 4	1,4 V	99%

5-function pedal control 01 (ST01) units with serial numbers < OT1.01999

Level 1	0 V
Level 2	0,5 V
Level 3	1,0 V
Level 4	1,4 V

Product-specific operating instructions see 320.8662.10 (D/E/F)

7.11 Ultrasound Suprasson / Newtron Satelec



General information
For information on technical features as well as on operation and application of this ultrasound system please consider the specific instruction manual which comes enclosed in the instrument packaging. Please service and handle the hand piece and inserts as specified in the maintenance instructions of the specific manufacturer.

Description
This ultrasound system is equipped with integrated spray and optimal light for dental application.

Commissioning
Never attach any inserts or a working tips while the ultrasound system is running.

Heart pacemakers may be disrupted by high-frequency ultrasonic oscillations. Therefore we recommend not to use this product with patients requiring a pacemaker.

Only use instruments in perfect operating condition. Immediately stop any work if intermittences, extensive vibrations, abnormal heating or other signs of instrument failure occur.

For use, remove the instrument from the rack. The display shows the specific instrument as well as the selected intensity level. Start the instrument by using the function pedal. Change the intensity by using the function pedal (7.2.3. or 7.2.4).

Sterilizing the ultrasound device
Clean and sterilize the ultrasound device before using it on the next patient. Remove the working tip before sterilizing the device and separate the hand piece from the hose. After each sterilization cycle, immediately remove the device from the sterilizer to prevent corrosion.

Sterilization occurs in an autoclave at 134°C.

Disinfection
For disinfection use a clean damp cloth and disinfect the case surface. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to the ultrasound.

Default settings
Water ca. 40 ml/min

4-function pedal control 09 (ST09) units with serial numbers > OT1.02000

		$\underline{X}$
Level 1	0 to 2,0 V	0 to 35%
Level 2	2,0 to 3,5 V	35 to 75%
Level 3	3,5 to 5,0 V	75 to 99%
Level 4	0 to 5,0 V	0 to 99%

5-function pedal control 09 (ST09) units with serial numbers > OT1.02000

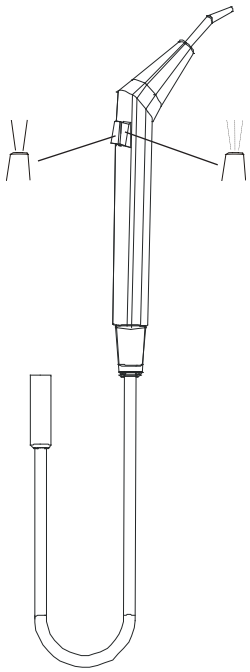
		$\overline{X}$
Level 1	0 V	0%
Level 2	2,0 V	35%
Level 3	3,5 V	75%
Level 4	5,0 V	99%

5-function pedal control 01 (ST01) units with serial numbers < OT1.01999

Level 1	0 V
Level 2	2,0 V
Level 3	3,5 V
Level 4	5,0 V

Product-specific operating instructions see 320.8632.10 (D/E/F)

7.12 3-function syringe Luzzani



General information
For information on technical features as well as on operation and application of this syringe please consider the specific instruction manual which comes with the instrument. Please handle the hand piece as specified in the maintenance instructions of the specific manufacturer.

Description
This syringe has been design exclusively for dental application. It serves to inject air and water, separated or as spray.

Commissioning and use
Only use instruments in perfect operating condition. Immediately stop any work if intermittences, abnormal heating or other signs of instrument failure occur.

Injecting water: press left button on the handhold.

Injecting air: press right button on the handhold.

Injecting water-air-mixture (spray): simultaneously press both buttons on the handhold.

Cleaning and sterilizing
Clean and sterilize the case jacket and the cannula before using it on the next patient. Remove the cannula by loosening the screw sleeve and/or remove the entire case by pressing the button at the bottom of the handhold and pulling it off.

Sterilization occurs in an autoclave at 134°C.

Disinfection
For disinfection use a clean damp cloth and disinfect the case surface. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

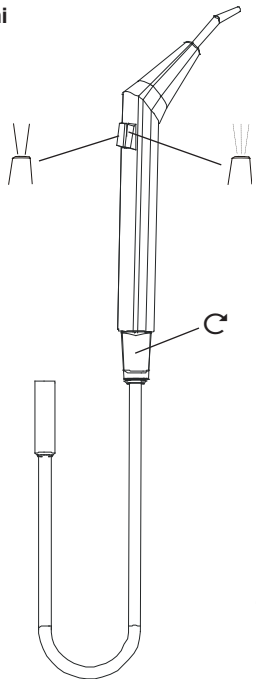
Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to syringe.

Default settings

Air	3 bar (10-12 l/min)
Water	ca. 80 ml/min

Product-specific operating instructions see 320.8609.10 (D/E/F) or 320.8609.02 (E)

7.13 6-function syringe Luzzani



General information
For information on technical features as well as on operation and application of this syringe please consider the specific instruction manual which comes with the instrument. Please handle the hand piece as specified in the maintenance instructions of the specific manufacturer.

Description
This syringe has been design exclusively for dental application. It serves to inject air and water, separated or as spray with connectable heating.

Commissioning and use
Only use instruments in perfect operating condition. Immediately stop any work if signs of instrument failure occur.

Injecting water: press left button on the handhold.

Injecting air: press right button on the handhold.

Injecting water-air-mixture (spray): simultaneously press both buttons on the handhold.

Injecting warm water: Turn the switch on the bottom of the handhold to the right. When the green LED diode shines, press the left button on the handhold.

Injecting warm air: Turn the switch on the bottom of the handhold to the right. When the green LED diode shines, press the right button on the handhold.

Injecting warm water-air-mixture (spray): Turn the switch on the bottom of the handhold to the right. When the green LED diode shines, simultaneously press both buttons on the handhold.

Cleaning and sterilizing
Clean and sterilize the case jacket and the cannula before using it on the next patient. Remove the cannula by loosening the screw sleeve and/or remove the entire case by pressing the button at the bottom of the handhold and pulling it off.

Sterilization occurs in an autoclave at 134°C.

Disinfection
For disinfection use a clean damp cloth and disinfect the case surface. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

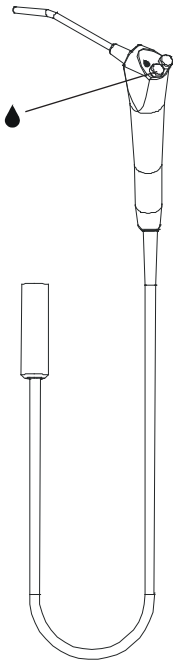
Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to syringe.

Default settings

Air	3 bar (10-12 l/min)
Water	ca. 80 ml/min

Product-specific operating instructions see 320.8609.10 (D/E/F) or 320.8609.02 (E)

7.14 3-function syringe MC3 FP



General information
For information on technical features as well as on operation and application of this syringe please consider the specific instruction manual which comes with the instrument. Please handle the hand piece as specified in the maintenance instructions of the specific manufacturer.

Description
This syringe has been design exclusively for dental application. It serves to inject air and water, separated or as spray at room temperature.

Commissioning and use
Only use instruments in perfect operating condition. Immediately stop any work if intermittences or other signs of instrument failure occur.

Injecting cold water: press left button on the handhold.

Injecting cold air: press right button on the handhold.

Injecting cold water-air-mixture (spray): simultaneously press both buttons at the syringe head.

Cleaning and sterilizing the canula
Clean and sterilise the metal needle before using it on the next patient. Remove the needle by pulling it out of the syringe head.

Sterilization occurs in an autoclave at 134°C.

Optionally, disposable cannulas can be used.

Disinfection syringe head and instrument tube
For disinfection use a clean damp cloth and disinfect the case surface. Only use disinfectants recommended by the manufacturer (for ex. Dürr FD300, FD312, D366, Alpron Minuten Spray classic).

The syringe head is not suitable for reprocessing in thermal disinfection or autoclaves.
Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.
Cleaning agents containing acetone or chlorine should be avoided.

Maintenance
No specific maintenance procedures are intended for this devise.
Under any circumstances avoid using any lubricants as this my cause irreparable damage to syringe.

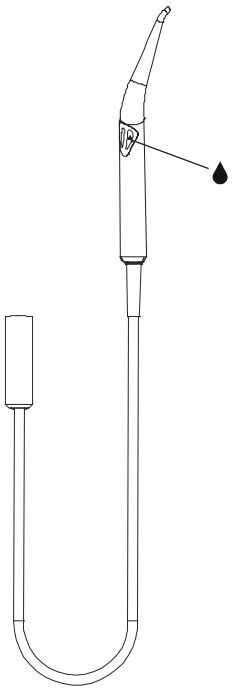
Default settings

Air	3.5 bar (12-15 l/min)
Water	ca. 100 ml/min

Product-specific operating instructions see OT200.210428.31 (D)

3-function syringe M1600
The 3-function syringe M1600 has been replaced by the 3-function syringe MC3 FP listed above.
Instruction manual and information: see 320.8664.10.

7.15 3-function syringe Faro



General information
For information on technical features as well as on operation and application of this syringe please consider the specific instruction manual which comes with the instrument. Please handle the hand piece as specified in the maintenance instructions of the specific manufacturer.

Description
This syringe has been design exclusively for dental application. It serves to inject air and water, separated or as spray at room temperature.

Commissioning and use
Only use instruments which are in perfect operating condition. Immediately stop any work if there occur intermittences or other signs of instrument failure.

Injecting air: press left button on the handhold.

Injecting water: press right button on the handhold.

Injecting water-air-mixture (spray): simultaneously press both buttons on the handhold.

Cleaning and sterilizing
Clean and sterilize the case and the cannula before using it on the next patient. Remove the cannula by pressing the corresponding button and/or remove the case from the syringe part by pressing the corresponding button.

Sterilization occurs in an autoclave at 134°C.

Disinfection
For disinfection use a clean damp cloth and disinfect the case surface. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

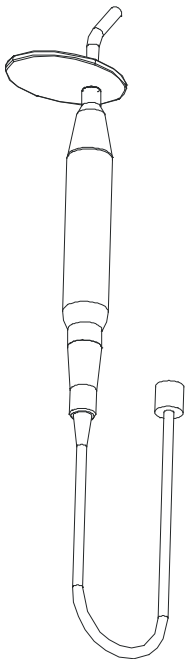
Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to syringe.

Default settings

Air	3 bar (10-12 l/min)
Water	ca. 100 ml/min

Product-specific operating instructions see 320.8619.10 (D/E/F)

7.16 Polymerization lamp MINI LED ORTHO



General information
For information on technical features as well as on operation and application of this polymerization lamp please consider the specific instruction manual which comes with the instrument. Please handle the hand piece as specified in the maintenance instructions of the specific manufacturer.

The light rays radiating from this device can be dangerous and should never be directed towards the eyes, not even when wearing protective goggles. Only direct the light towards that part of the oral cavity which requires treatment. Please follow the safety measures recommended by the manufacturer.

Description
This polymerization lamp has been designed exclusively for dental application. It radiates a visible blue light with a wavelength of 420 to 480 nm for the photopolymerization of dental material.

Commissioning and use
Only use instruments in perfect operating condition. Immediately stop any work if intermittences, abnormal heating or other signs of instrument failure occur.

To start the polymerization cycle briefly press the ON/OFF button. A first beep sounds.

The end of the cycle is indicated by a second beep.

The cycle can be interrupted at any time by slightly pressing the ON/OFF button.

Cleaning and sterilizing the light conductor
Remove the light conductor and clean and sterilize it before using it on the next patient.

Sterilization occurs in an autoclave at 134°C.

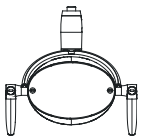
Disinfection
For disinfection of hand piece and hose use a clean damp cloth and disinfect the case surface. Only use disinfectants recommended by the manufacturer.

Never submerge the device in a disinfectant solution.
Do not insert the device into an ultrasonic bath.

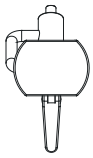
Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to polymerization lamp.

Product-specific operating instructions see 320.8628.10 (D/E/F)

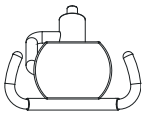
7.17 Examination lamp



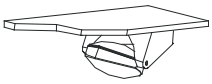
Examination lamp LED Mikrona
Polaris
Lateral handles
On/Off switch on lamp head
Lamp head RAL 9006
Color temperature 4200°K - 6000°K
Light field 70 x 140 mm
Light intensity
8'000 – 35'000 Lux
Product-specific operating instructions see 320.8616.11 (D/E/F) and 320.8646.10 (D/E/F)



Examination lamp 1 Mikrona
Vision
Central handle
On/Off switch on lamp head
Two intensity levels
Color temperature > 4500°K
Light field 100 x 200 mm
Light intensity 15'000 – 25'000 Lux (± 10%)
Swivel range at treatment unit 155°



Examination lamp 2 Mikrona
Vision
Lateral handles
On/Off switch on lamp head
One intensity level
Color temperature > 4500°K
Light field 100 x 200 mm
Light intensity 15'000 – 25'000 Lux (± 10%)
Swivel range at treatment unit 155°



Ortholux 200 LED ceiling lamp
Ceiling model
On/Off switch and swivel control on treatment unit
One intensity level
Color temperature > 4800°K
Light field 150 x 320 mm
Light intensity > 8'000 Lux (± 10%)

Replacing the halogen lamp
Please follow the corresponding operating and maintenance instructions which come with the lamp. Do not replace the halogen lamp while it is activated (Main switch at treatment unit in OFF position, see 7.1 Main switch) and let the halogen lamp and the reflector cool down sufficiently before replacing it.

Adjusting the focus
Please follow the corresponding operating and maintenance instructions which come with the lamp.

Operation the halogen lamp

low light intensity

high light intensity

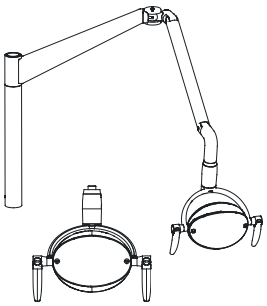
Operation LED

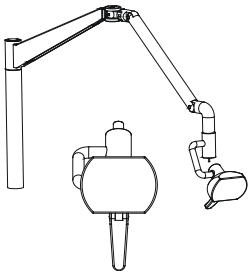
ON/OFF turn on the lamp

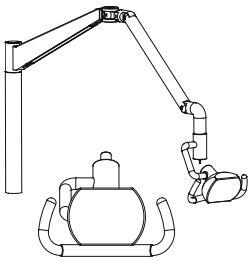
L control light intensity (LUX)

K color temperature (°K)

7.17.1 Built-in model







General information
For information on technical features as well as on operation and application of this examination lamp please consider the specific instruction and maintenance manual which comes with the lamp.

Description
The built-in Mikrona examination lamp is activated by an On/Off switch integrated into lamp head or by a sensor. The lamp head can be rotated by 300° and its height is adjustable by a spring mounted arm. The lamp is fed from the treatment unit. Optionally, the lamp with switch can also be activated by a 3-function pedal at the treatment unit (see 7.2.2 Special functions).

Commissioning and use
Only use instruments in perfect operating condition. Immediately stop any work if intermittences or other signs of product failure occur.

Cleaning
Do not clean the protective cover while the lamp is activated and let the halogen lamp and the reflector cool down sufficiently before removing the protective cover.

Unscrew the central attachment bolts of the protective cover (counterclockwise) and remove the protective cover.

The protective cover is made of acrylic glass and easy to clean. Clean stained surfaces by using warm water with a non-abrasive household cleaner and a soft tissue or cloth (cotton). Avoid under any circumstances to use a dry or dirty cloth as this may lead to scratches on the acrylic glass. Never use solvent-containing products or cleaning agents (e.g. benzene, alcohol etc.). These agents can damage and cloud the surface.

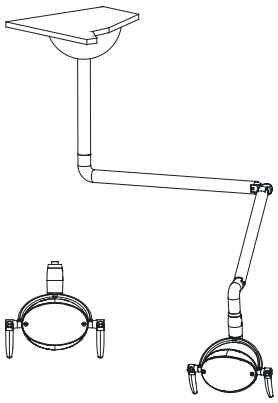
Possible scratches can be removed using Acrylic glass polish.

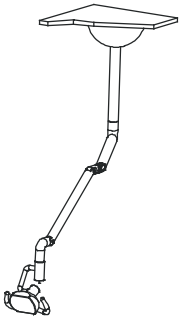
Disinfection
Use a moist cloth to disinfect the case surface.

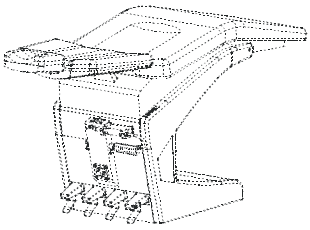
Do not spray any disinfectant solution on the device.
Do not insert the device into an ultrasonic bath.

Maintenance
No specific maintenance procedures are intended for this devise.
Under any circumstances avoid using any lubricants as this my cause irreparable damage to examination lamp.

7.17.2 Ceiling model







General information
For information on technical features as well as on operation and application of this examination lamp please consider the specific instruction and maintenance manual which comes with the lamp.

Description
The ceiling-mounted Mikrona examination lamp is activated by an On/Off switch integrated into lamp head or by a sensor. The lamp head can be rotated by 300° and its height is adjustable by a spring mounted arm. The lamp is fed from the main power supply. Optionally, the ceiling lamp with switch can also be activated by a 3-function pedal at the treatment unit (see 7.2.2 Special functions).

Commissioning and use
Only use instruments in perfect operating condition. Immediately stop any work if intermittences or other signs of product failure occur.

Cleaning
Do not clean the protective cover while the lamp is activated and let the halogen lamp and the reflector cool down sufficiently before removing the protective cover.

Unscrew the central attachment bolts of the protective cover (counterclockwise) and remove the protective cover.

The protective cover is made of acrylic glass and easy to clean. Clean stained surfaces by using warm water with a non-abrasive household cleaner and a soft tissue or cloth (cotton). Avoid under any circumstances to use a dry or dirty cloth as this may lead to scratches on the acrylic glass. Never use solvent-containing products or cleaning agents (e.g. benzene, alcohol etc.). These agents can damage and cloud the surface.

Possible scratches can be removed using Acrylic glass polish.

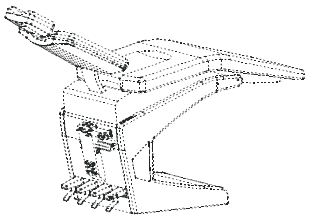
Disinfection
Use a moist cloth to disinfect the case surface.

Do not spray any disinfectant solution on the device.
Do not insert the device into an ultrasonic bath.

Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to ceiling lamp.

Product-specific operating instructions see 320.8606.01 (D)

7.17.3 ORTHOLUX 200



General information
For information on technical features as well as on operation and application of this examination lamp please consider the specific instruction and maintenance manual which comes with the lamp.

Description
The ceiling-mounted ORTHOLUX 200 lamp head is activated by a 3-function pedal in the treatment unit (see 7.2.2 Special functions). Besides of switching the lamp on and off, the lamp head can also be swiveled by 30° (adjustment of light field position). The lamp is fed and controlled from the treatment unit.

Commissioning and use
Only use instruments in perfect operating condition. Immediately stop any work if intermittences or other signs of product failure occur.

Cleaning
Do not clean the protective cover while the lamp is activated and let the halogen lamp and the reflector cool down sufficiently before removing the protective cover.

Unscrew the central attachment bolts of the protective cover (counterclockwise) and remove the protective cover.

The protective cover is made of acrylic glass and easy to clean. Clean stained surfaces by using warm water with a non-abrasive household cleaner and a soft tissue or cloth (cotton). Avoid under any circumstances to use a dry or dirty cloth as this may lead to scratches on the acrylic glass. Never use solvent-containing products or cleaning agents (e.g. benzene, alcohol etc.). These agents can damage and cloud the surface.

Possible scratches can be removed using Acrylic glass polish.

Disinfection
Use a moist cloth to disinfect the case surface.

Do not spray any disinfectant solution on the device.

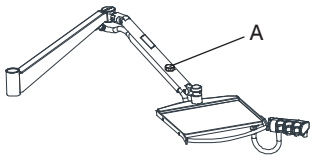
Replacing the halogen lamp
Please follow the corresponding operating and maintenance instructions which come with the lamp. Do not replace the halogen lamp while it is activated (Main switch at treatment unit in OFF position, see 7.1 Main switch) and let the halogen lamp and the reflector cool down sufficiently before replacing it.

Adjusting the focus
Please follow the corresponding operating and maintenance instructions which come with the lamp.

Maintenance
No specific maintenance procedures are intended for this devise. Under any circumstances avoid using any lubricants as this my cause irreparable damage to the ORTHOLUX 200 ceiling lamp.

Product-specific operating instructions see 320.8693.11 (D/E)

7.18 Suspended table



General Information
The suspended table (optionally with instrument rack) offers space for 2 standard trays. The dimensions of the chrome steel surface are 375 x 295 mm (WxD)

Description
This construction with adaptable suspended table is mounted at the treatment unit and can be swiveled by 135°. The suspended table itself has a swivel range of 100° and its height can be adjusted by a spring mounted arm. If there is media supply on the suspended table, it is fed and controlled from the treatment unit.

Commissioning and use
The loading capacity of the suspended table depends on the pre-stressed spring package and the instrument rack mounted. Maximal loading capacity of the suspended table must not exceed 2.7 kg. A break (A) keeps the suspended table in position. The brake should not be applied during dynamic movement! Only use products in perfect operating condition. Immediately stop any work if intermittences or other signs of product failure occur.

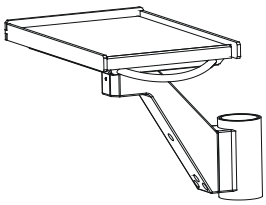
Cleaning the surface board
The surface board can be lifted upwards and removed from the support plate.

The chrome steel surface board is easy to clean. For cleaning use warm water with a non-abrasive household cleaner or a cleaning solution. Rinse it with clean, lukewarm water and dry it with a soft cloth. Remove scratches with a soft steel wool or Scotch (Scotch-Brite Hand Pad Nr. 7447), rubbing in direction of the surface's grain.

Disinfection
Use a moist cloth and disinfect the surface with a standard disinfectant (e.g. Dürr Surface Disinfection FD 322 / FD 350).

Maintenance
No specific maintenance procedures are intended for the suspended table. Any repairs such as making adjustments or changing settings are only to be carried out by qualified technicians or Mikrona's custo-

7.19 Instrument tray



General information
The dimensions of the instrument tray's chrome steel surface are 191 x 284 mm (WxD)

Description
This construction with the adaptable instrument tray has a rotating range of 120°. The suspended table itself has a swivel range of 240°. If there is media supply on the instrument tray, it is fed and controlled from the treatment unit. If water supply is required for any instruments, these must be approved by the DVGW or a separation system must be installed.

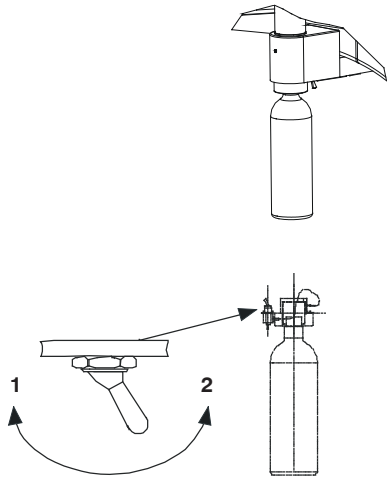
Commissioning and use
The maximal loading capacity of the suspended table must not exceed 5.0 kg. Only use products in perfect operating condition. Immediately stop any work if intermittences or other signs of product failure occur.

Cleaning the surface board
The surface board can be lifted upwards and removed from the support plate.
The chrome steel surface board is easy to clean. For cleaning use warm water with a non-abrasive household cleaner or a cleaning solution. Rinse it with clean, lukewarm water and dry it with a soft cloth. Remove scratches with a soft steel wool or Scotch (Scotch-Brite Hand Pad Nr. 7447), rubbing in direction of the surface's grain.

Disinfection
Use a moist cloth and disinfect the surface with a standard disinfectant (e.g. Dürr Surface Disinfection FD 322 / FD 350).

Maintenance
No specific maintenance procedures are intended for the suspended table. Any repairs such as making adjustments or changing settings are only to be carried out by qualified technicians or Mikrona's customer service.

7.20 Autonomous water supply



General Information
Optionally, instruments can be supplied with water from an autonomous water container. Fresh water must be changed on a daily basis. Fresh water can also be treated with disinfection additives (e.g. Alpron) for process water.

Description
The water container is supplied with compressed air from the treatment unit.
The container (water bottle) comes in the size of 0.8 L and 1.2 L.

Commissioning and use
1 = Bottle system ON (the bottle is pressurized)
2 = Bottle system OFF (the bottle is depressurized)

A Depressurize the water bottle (toggle switch on 2 / OFF).
B Unscrew the water bottle (clockwise).
C Fill the water bottle with tap/drinking water (if need be for an optimal hygiene of the process water e.g. Alpron can be added).
D Attach the water bottle with about 1 turn to the mounting head (counter-clockwise).
E Pressurize the water bottle (toggle valve on 1 / ON).
Tighten the water bottle until no more leakage noise can be heard.
F Start the instrument.
G Always depressurize the system when refilling tap/drinking water (toggle switch on 2 / OFF).

Only use products in perfect operating condition. Immediately stop any work if intermittences or other signs of product failure occur.

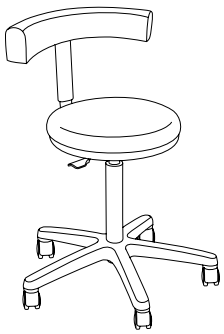
Disinfection
In idle periods or over night, rinse and sterilize the autonomous water supply and the water-bearing instrument tubes with a disinfectant solution (e.g. Bilpron)

A Depressurize the water bottle (toggle switch on 2 / OFF).
B Unscrew the water bottle (clockwise).
C Empty the water bottle from tap/drinking water.
D Fill the water bottle with a disinfectant solution.
(Basic liquid approx. 50ml, additionally approx. 50ml per instrument.)
E Attach the water bottle with about 1 turn to the mounting head (counter-clockwise).
F Pressurize the water bottle (toggle valve on 1 / ON).
Tighten the water bottle until no more leakage noise can be heard.
G Start the instrument and rinse the tubes.
H Let the disinfectant solution remain in the water-bearing tubes during the idle period.
I Before the next use on a patient the disinfectant has to be drained and all the water-bearing tubes to the instruments have to be thoroughly rinsed with tap resp. drinking water (approx. 50ml per instrument).

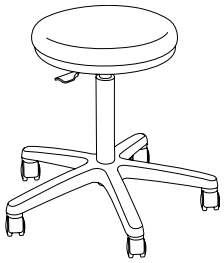
Maintenance
No specific maintenance procedures are intended for the autonomous water supply. Any repairs such as making adjustments or changing settings are only to be carried out by qualified technicians or Mikrona's customer service.

It is recommended to replace the water bottle yearly!

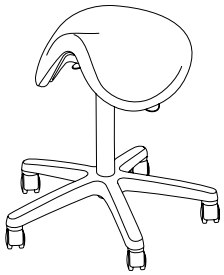
7.21 Re.Formance Line working chair



Re.Forma
The Re.Forma working chair offers a wide circular seat adjustable in height and an ambidextrous backrest. This characteristic makes it suitable for a medical assistant.



Re.Forma Lite.
The Re.Forma Lite is the simplest version among the three available. It offers a wide circular seat adjustable in height.



Re.Forma Hi.
The Re.Forma Hi working chair was designed for all the practitioners that need a correct posture of the vertebral column even without a backrest supporting them. Seat tilt position adjustment allows to find a suitable working position, and relax the vertebral column by transmitting the weight directly to the legs instead of the lower back.

Upholstery care See 8.2.5 Cleaning the upholstery
See 8.2.6 Disinfecting the upholstery

Under any circumstance do not use disinfectant solutions or other solvent-containing instruments to clean the upholstery! Their cleaning effect is not sufficient and they should only be used for disinfection purposes. Some contained substances remove plasticizers from the upholstery which may lead to embrittlement, discoloration and crack formation.

Maintenance
No specific maintenance procedures are intended for the work chair. Any repairs such as making adjustments or changing settings are only to be carried out by qualified technicians or Mikrona's customer service.

Instruction manual
Product-specific Instruction manual see 320.8779.02 (E)

8. Maintenance

Operational safety and utilizability of the device are directly connected to the recommended care and maintenance measures. Regular maintenance and care are therefore indispensable. If there are any indications that a risk for the patient or operator could arise from abrasion of components or from a technical error, the device is to be inspected immediately by an authorized customer service or Mikrona's customer service and/or the fault is to be cleared.

8.1 Daily maintenance

Check the function of the magnetic main water valve every day. If the magnetic valve for main water supply is working, only little water should run from the multifunction syringe when pressing the specific button after switching off the main switch (7.1 Main switch).

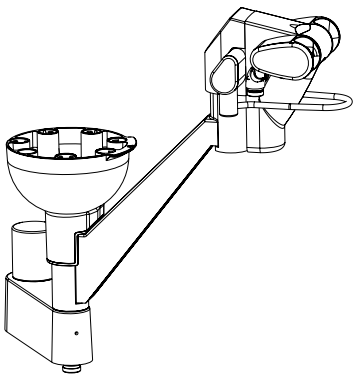
Take care that no water enters the device when cleaning as this may cause errors.

Clean and disinfect the surface of the device regularly, e.g. with Dürr Surface Disinfection FD 322 / FD 350.

8.1.1 Hygiene recommendations for water-bearing systems / CleanHub

Before starting a new day of treatment, rinse all extraction points, such as glass filler, turbine, micromotor, tartar remover and multi-function syringe (without instruments attached) for two minutes with water. *This significantly helps to reduce micro-bacterial accumulations caused by stagnation.*

It is further recommended to rinse used extraction points for 20 seconds with water after each patient and at the end of the day.



Microorganisms can multiply in the water lines to the treatment unit. To reduce germs, it is recommended to flush the water lines of water-carrying instruments for 3 minutes according to SSO and for 2 minutes according to RKI before starting work.

The use of CleanHub is intended to avoid the risk of germs and stagnant service water pipes by flushing of all water lines instruments.

With Clean function on Orthora 200, it is possible to rinse automatically all water-bearing instruments . The individual instruments are removed from their trays and positioned in CleanHub for rinsing. The surgical aspirator or the saliva aspirator can be attached in the CleanHub to remove residual water.

The CleanHub can hold up to seven instruments, which can be rinsed via a Clean mode.

Shape and design provide simple visual identification for instinctive setting instruments so that the user can easily place them without or with a short explanation.

Simple reprocessing by rinsing and drying. The selected material even allows reprocessing in thermal disinfection or with commercially available disinfectants.

The programming of the automatic rinsing length for instruments, glass filler and basin rinsing can be individually adjusted at any time.

The CleanHub does not have any device for permanent or intensive disinfection! There is no disinfection of water!

8.1.2 Daily maintenance of the spittoon

The spittoon is tightly connected to the unit by adapter.

Clean and disinfect the surface of the spittoon regularly, e.g. with Dürr Surface Disinfection FD 322 / FD 350.

It is recommended to regularly rinse the spittoon with tap water throughout the day, for example to aspirate a glass of water through the drain and the spittoon after each patient

It is recommended to disinfect and clean the spittoon at least once a day with Orotol ultra. Application once a day: In the evening after the last patient. Application twice a day: Before the lunch break and in the evening.

After carrying out the disinfection, it is very important to observe the residence time (DGHM: 1 h) before continuing to work on the corresponding unit. The same applies to flushing.

In order to create an efficient solution with Orotol ultra (10g/liter) dissolve it entirely in lukewarm water right before use. It is not possible to keep the solution in stock as it is only durable for a short period of time.

Never clean the spittoon incl. the rinsing basin with a household cleaner. Due to potentially appearing foaming, neutralizing tensides and insoluble abrasives the aspiration system may become disabled. For in-between-cleanings of the drain, spittoon and rinsing basin use Orotol MD 550 or Orotol MD 555.

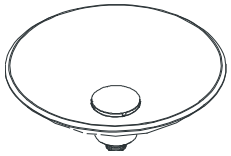
Avoid under any circumstances to uncontrollably mix any products – incl. disinfectants – by means of the spittoon (This may result in damage of the aspiration system).

8.1.3 Cleaning and Disinfecting the spittoon valve unit

Press button for spittoon rinse.
Pour an amount of disinfectant into the spittoon, e.g. Orotol Plus.
Keep pressing button for spittoon valve until the disinfecting agent has been completely sucked up.

Do not use foaming or aggressive cleaning agents.

8.1.4 Daily maintenance of the rinsing basin



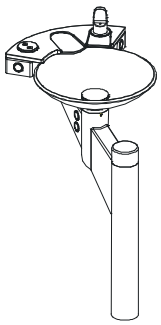
Dry this premium material (glass or ceramic) using a soft lint-free tissue. Use a wash-leather for cleaning. Remove limestone with a warm vinegar-water mixture. Dry it with a clean and soft lint-free tissue.

In order to facilitate the removal and reattachment of the basin, we recommend to regularly lubricate the O-rings with 320.3981.01 (see 8.2.2 Weekly maintenance of the spittoon).

Never use scratching sponges, abrasives, scrubbing cleaning agents nor nitro thinners or synthetic resin thinners. The glass is not suitable for thermo-disinfection.

Use a standard surface disinfectant to disinfect the rinsing basin. Regularly clean and disinfect the surface of the basin, e.g. with Dürr Surface Disinfection FD 322 / FD 350.

8.1.5 Daily maintenance of the cup holder



The cup holder is made of Corian or ceramic. Clean the cup holder with a soft tissue. Clean limestone with a warm vinegar-water mixture or Orotol ultra and dry it with a clean and soft tissue.

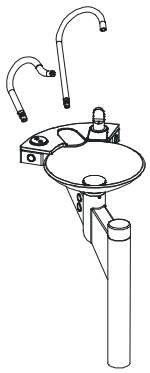
Heavy soiling can be cleaned using Scotch (Scotch-Brite Hand Pad Nr. 97) or a standard liquid cleaner under running warm water. The cup holder needs to be removed for this purpose.

In order to facilitate the removal and reattachment of the cup holder, we recommend to regularly lubricate the O-rings with 320.3981.01 (see 8.2.2 Weekly maintenance of the spittoon).

Never use scratching sponges, abrasives, scrubbing cleaning agents nor nitro thinners or synthetic resin thinners.

Use a standard surface disinfectant to disinfect the cup holder. Regularly clean and disinfect the surface of the cup holder, e.g. with Dürr Surface Disinfection FD 322 / FD 350.

8.1.6 Daily maintenance of the bubbler, filling pipe, flushing pipe and drain cover



These components have an electro-chemical coating. For cleaning use warm water or Orotol ultra. Clean them with a soft tissue and a cleaning solution, then rinse them with clear water and dry them with a soft tissue. In occasion of scratches, remove them with soft steel wool or Scotch (Scotch-Brite Hand Pad Nr. 7447), rubbing in direction of the surface's grain.

In occasion of limestone, clean it with a warm vinegar-water mixture.

In order to facilitate the removal and reattachment of the components, we recommend to regularly lubricate the O-rings with 320.3981.01 (see 8.2.2 Weekly maintenance of the spittoon).

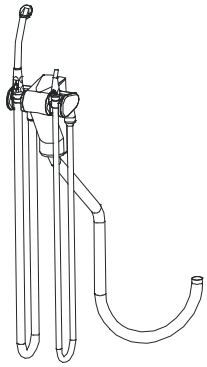
Use a standard surface disinfectant to disinfect the components. Regularly clean and disinfect the surface of the components, e.g. with Dürr Surface Disinfection FD 322 / FD 350.

8.1.7 Daily maintenance of the instruments

Disinfect used instruments after each patient and autoclave them if required to protect the dentist and the patient. For information on technical features as well as on operation and application of the instruments please consider the specific instruction manuals which come with the instruments. Please service and handle the instruments as specified in the maintenance instructions of the specific manufacturer.

Never spray the instruments with a disinfectant solution.
Do not insert the device into an ultrasonic bath.

8.1.8 Daily maintenance of the hose holder system



After each treatment aspirate one glass of cold water.

For the cleaning and disinfection of the entire aspiration system, you are instructed to us a material-compatible, non-foaming disinfectant especially for aspiration systems (e.g. Orotol Plus).

It is recommended to disinfect and clean the aspiration system with water twice a day.

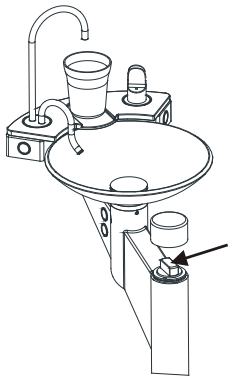
Use a standard surface disinfectant to disinfect the hose holder. Regularly clean and disinfect the surface of the components, e.g. with Dürr Surface Disinfection FD 322 / FD 350 / FD 366.

Disinfect any used aspiration hand pieces after each patient and autoclave them if required to protect the dentist and the patient.

Please see the operating instructions of Dürr Dental which come with the device for maintenance instructions.

8.2 Weekly maintenance

8.2.1 Spittoon – Changing the disposable filter



In order to minimize the danger of infection, it is essential to wear impermeable gloves when performing maintenance.

Change the filter once a week.
Remove the filter cover and extract the yellow disposable filter. Rinse it under warm water or change and replace it. The filter has been designed for disposable use and is not suitable for autoclavation. It is heat-resistant up to approx. 60°C.

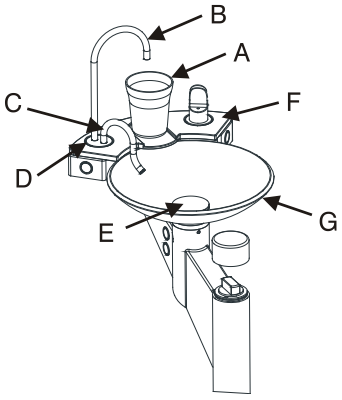
Never work without filter, otherwise solid particles may get stuck at unsuitable places in the drain and affect its function. Do not rinse the filter in the spittoon as this may cause the drain to clog up. Always reinsert the spittoon's filter after cleaning or changing, in order to avoid clogging caused by incrustation.

Re-order disposable filter 320.6508.01 (set of 12 pieces)

In order to facilitate the removal and insertion of the filter cover, we recommend to regularly lubricate the O-rings with 320.3981.01.

Re-order O-ring 902.0100.01

8.2.2 Weekly maintenance of the spittoon



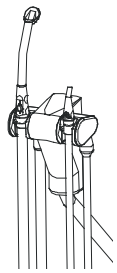
Remove the mounted components:

A Remove the glass/cup.
B Remove the attached filling pipe. Close the outlet with your finger to prevent any uncontrolled spilling of remaining water.
C Remove the attached flushing pipe. Close the outlet with your finger to prevent any uncontrolled spilling of remaining water.
D Remove the stop ring.
E Remove the drain cover.
F Remove the cup holder.
G Remove the spittoon

For cleaning and disinfection instructions for the mounted components see 8.1.2 / 8.1.4 / 8.1.5

In order to facilitate the insertion of the components, we recommend to regularly lubricate the O-rings with 320.3981.01.

8.2.3 Weekly maintenance of the hose holder system



In order to minimize the danger of infection, it is essential to wear impermeable gloves when performing maintenance at the hose holder system.

Change the disposable filter once a week.
Open the cover of the central hose holder module and remove the yellow disposable filter. Rinse it under warm water or change and replace it. (Do not rinse the filter in the spittoon as this may cause the drain to clog up!)The filter has been designed for disposable use and is not suitable for autoclavation. It is heat-resistant up to approx. 60°C.

Never work without filter, otherwise solid particles may get stuck at unsuitable places in the drain and affect its function. Do not rinse the filter in the spittoon as this may cause the drain to clog up. Always reinsert the spittoon's filter after cleaning or changing, in order to avoid clogging caused by incrustation.

Re-order disposable filter 320.6508.01 (Set of 21 pieces)

Never work without filter, otherwise solid particles may get stuck at unsuitable places in the drain and affect its function.

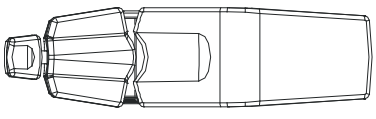
Inspecting and cleaning the hoses
The aspiration hoses are subject to a certain degree of abrasion and should regularly be inspected for breaks and changed if necessary. Use a standard surface disinfectant to disinfect the hoses. Regularly clean and disinfect the surface of the hose holder, e.g. with Dürr Surface Disinfection FD 322 / FD 350 / FD 360.

Lubricating the O-rings
In order to facilitate the removal and insertion of angles, hoses and aspiration hand pieces, we recommend to regularly lubricate the O-rings with 320.3981.01.

8.2.4 Weekly disinfection of the hose holder system

For the cleaning and disinfection of the entire aspiration system, you are instructed to use a material-compatible, non-foaming disinfectant especially for aspiration system (e.g. MD 555 Special cleaner 5%). Action period 1-2 hours, before the lunch break

8.2.5 Cleaning the upholstery



Cleaning the upholstery
Cleaning and care of vinyl upholstery FD 360 from Dürr Dental AG, DE-74302 Bietigheim
Order number: 320.3150.01

Application
Once a week or as required.
Spray the Odourless, undiluted cleaning fluid onto the be cleaned surfaces and then immediately wipe off with a cloth (Fuselfrei). For intensive cleaning rub FD 360 on with the special sponge. Subsequently wipe off the excess FD 360 with a dry cloth.

Do not use any solvent-containing cleaning agents or disinfectants. Their cleaning effect is not sufficient and they should only be used for disinfection purposes. Some contained substances remove plasticizers from the upholstery which may lead to embrittlement, discoloration and crack formation.

8.2.6 Disinfecting the upholstery

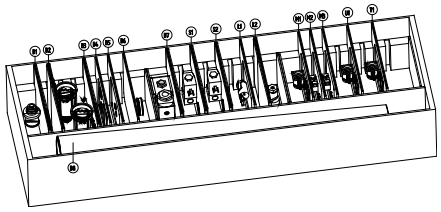
Following disinfectants have only slight adverse effects on the upholstery provided that the indicated dosing is observed and that it is applied appropriately. The listed products are a recommended selection. A complete list of suitable disinfectants (320.8724.02 Upholstery Maintenance) can be requested at Mikrona.com / Downloads / Instruction.

Denotation	max. Concentration	Manufacturer
PlastiSept*	pure	Alpro, DE-St. Georgen
PlastiSept-wipes*	pure	Alpro, DE-St. Georgen
Acrylan	pure	Anticeptica, DE-Pulheim
Bacillol 25	pure	Bode Chemie, DE-Hamburg
Meliseptol Foam fresh	pure	Braun Medical, DE-Melsungen
Sprayln	pure	Deppe, DE-Kempen
SprayOff	pure	Deppe, DE-Kempen
FD 312*	1,0%	Dürr Dental, DE-Bietigheim
FD 312 wet wipes*	pure	Dürr Dental, DE-Bietigheim
FD 366 sensitive	pure	Dürr Dental, DE-Bietigheim
FD 366 sensitive wipes	pure	Dürr Dental, DE-Bietigheim
Kanitop-AF*	pure	Kaniedenta, DE-Herford
Köhler Sprühdesinfektion	pure	Köhler, DE-Neckarsulm
Medichem Desinfektionschaum	pure	Medichem, DE-Rendsburg
Biosanitizer-S wipes*	pure	Saniswiss, CH-Genève
Cleanisept wipes	pure	Schumacher, DE-Melsungen
Mikrozid sensitive Liquid*	pure	Schülke&Mayr, DE-Norderstedt
Mikrozid sensitive- wipes*	pure	Schülke&Mayr, DE-Norderstedt
Unisepta Foam- wipes*	pure	Unident, CH-Genève

*alcohol-free disinfectant

Dry the upholstery after disinfecting it, in order to prevent the liquid from penetrating the upholstery.

8.3 Annual maintenance by the service technician



The device must be regularly inspected by the operator or a third party. It is recommended that the annual maintenance work is carried out by an entity authorized for this purpose by Mikrona or Mikrona's own customer service. Worn or defective parts relevant to security must be repaired with original parts or replaced.

The work steps to be performed as well as the parts which must be replaced are specified in the document Care 320.8791.02

Additional Information at Mikrona.com / Service

8.3.1 Safety checks

Medical equipment is designed in such a way that the firs occurence of a fault does not create a hazard to the safety of patients, users or other persons.

For that reason it is essential to perform safety tests every 2 years which aim particulary at detecting electrical faults. This is done by an authorized service technician from your dental depot, most pracically together with the work to be performed according to maintenance.

Safety test must also be performed and documented during initial startup, after extensions and after repair work which might affect the electrical safety of the system.

The dental treatment unit must not be operated if it has failed to pass the safety tests!

As a user, please observe country-specific requirements.

9. Trouble shooting

This part of the instruction is to provide assistance to technicians of specialized dealers in particular. If you cannot localize an error by troubleshooting, you need to commission a technician authorized by Mikrona or Mikrona's customer service for resolution.

9.1 Syringe	Possible causes	Trouble shooting
Water drips from syringe	Loose screw coupling	Retighten screw coupling hand-tight
	Defective syringe module	Replace syringe module
	Soiled valve unit within syringe module	Clean valve unit or replace syringe module if necessary
Air / water mixing	Loose screw coupling	Retighten screw coupling hand-tight
	Defective cannula	Replace cannula
Water leaks from couplings	Loose screw coupling	Retighten screw coupling hand-tight
	Defective syringe hose	Replace syringe hose
No water from syringe	Clogged cannula	Replace cannula
	Soiled valve unit within syringe module	Clean valve unit or replace syringe module if necessary

9.2 Turbine	Possible causes	Trouble shooting	
Water drips vom turbine	Loose screw coupling	Retighten screw coupling hand-tight	
	Soiled water	Check water quality and replace water filter if necessary	
	Inappropriately installed seal face	Replace water valve and tappet	(320.3069.01)
	Hard water Lime residues on seal face	Replace water valve and tappet	(320.3069.01)
	Soft water Pitting corrosion on seal face	Replace water valve and tappet	(320.3069.01)
	Insufficient bleeding of control valve	Open bleed screw	
	Insufficient pressure difference air/water	Adjust pressure values A1 / A2	
	Defective tappet gasket (macerated?)	Replace tappet to water valve	(320.3016.01)
	Incorrect magnetic valve on control valve	Check NC or NO valve	
	Defective control valve	Replace control valve 1	(320.7010.01)
	Defective magnetic valve	Replace magnetic valve	(320.7056.01)

	Possible causes	Trouble shootimg
No spray from turbine	Insufficiently pushed pedal 5-F	Push pedal to maximum (operation)
(Check with/without angle)	Cable break at pedal 5-F Pedal in F4	Check cables (blue/red)
	Defective magnetic valve for spray air	Replace magnetic valve (320.7056.01)
	Clogged / defective water throttle	Open to maximum/replace throttle (320.3036.01)
	Activated chip blower	Deactivate chip blower
	Excessive pressure at pressure regulator A1 / A2	Pressure regulator A1 = 4.3 - 4.8 bar Pressure regulator A2 = 3.0 - 3.5 bar
	Clogged tappet in water valve	Clean or replace tappet (320.3016.01)
Insufficient power output of turbine	Insufficient voltage on level in question	Check/Adjust voltage on valve print
	Incorrectly set pressure regulator A1	Set pressure regulator A1 to 4,3 – 4,8 bar

9.3 Micromotor	Possible causes	Trouble shootimg
Water drips from micromotor	Loose screw coupling	Retighten screw coupling hand-tight
	Soiled water	Check water quality and replace water filter if necessary
	Inappropriately installed seal face	Replace water valve and tappet (320.3069.01)
	Hard water Lime residues on seal face	Replace water valve and tappet (320.3069.01)
	Soft water Pitting corrosion on seal face	Replace water valve and tappet (320.3069.01)
	Insufficient bleeding of control valve	Open bleed screw
	Insufficient pressure difference air/water	Adjust pressure values A1 / A2
	Defective tappet gasket (macerated?)	Replace tappet to water valve (320.3016.01)
	Incorrect magnetic valve on control valve	Check NC or NO valve
	Defective control valve	Replace control valve (320.7010.01)
	Defective magnetic valve	Replace magnetic valve (320.7056.01)
No spray from micromotor	Air within the water system	Retighten coupling at connector plug
(Check with/without angle)	Insufficiently pushed pedal 5-F	Push pedal to maximum (operation)
	Cable break at pedal 5-F in F4	Check cables (blue/red)
	Defective magnetic valve for spray air	Replace magnetic valve (320.7056.01)
	Clogged / defective water throttle	Open to maximum/replace throttle (320.3036.01)
	Excessive pressure at pressure regulator A1 / A2	Pressure regulator A1 = 4.3 - 4.8 bar Pressure regulator A2 = 3.0 - 3.5 bar
	Activated chip blower	Deactivate chip blower
Insufficient micromotor performance	Insufficient voltage on level in question	Check/Adjust voltage on micromotor circuit board
Excessive warming of hand piece	Insufficient amount of cooling air	Adjust cooling air at control valve
	Defective pressure regulator A1	Replace pressure regulator (320.7007.01)

9.4 Ultrasound	Possible causes	Trouble shooting
Water drips from instruments	Loose screw coupling	Retighten screw coupling hand-tight
	Soiled water	Check water quality and replace water filter if necessary
	Inappropriately installed seal face	Replace water valve and tappet (320.3069.01)
	Hard water Lime residues on seal face	Replace water valve and tappet (320.3069.01)
	Soft water Pitting corrosion on seal face	Replace water valve and tappet (320.3069.01)
	Insufficient bleeding of control valve	Open bleed screw
	Insufficient pressure difference air/water	Adjust pressure values A1 / A2
	Defective tappet gasket (macerated?)	Replace tappet to water valve (320.3016.01)
	Incorrect magnetic valve on control valve	Check NC or NO valve
	Defective control valve	Replace control valve (320.7092.01)
	Defective magnetic valve	Replace magnetic valve (320.7056.01)
No spray at ultrasound	Insufficiently pushed pedal 5-F	Push pedal to maximum (operation)
	Cable break at pedal 5-F in F4	Check cables (blue/red)
	Defective magnetic valve for spray air	Replace magnetic valve (320.7056.01)
	Clogged / defective water throttle	Open to maximum/replace throttle (320.3036.01)
	Excessive pressure at pressure regulator A1 / A2	Pressure regulator A1 = 4.3 - 4.8 bar Pressure regulator A2 = 3.0 - 3.5 bar
Insufficient ultrasound performance	Insufficient voltage on level in question	Check/Adjust voltage on valve print

9.5 Polimerization lamp Mini LED	Possible causes	Trouble shooting
LED is red	On-/Off button pressed before battery is fully charged	Recharge battery Replace with a fully charged battery
Status indicator flashed red	Intensive use of the lamp	Leave the device for a few minutes to cool down

9.6 Control electronics	Possible causes	Trouble shooting
Automatic return of bed to initial position disabled	Defective micro switch / soldered joint on pedal 3/F1	Replace micro switch, check soldered joint (904.0046.00)
	Defective end switch for backrest drive	Replace cable and end switch (3er: 320.4013.01) (2er: 320.4012.01)
Manual lifting of bed disabled	Defective micro switch / soldered joint on pedal 4/F2	Replace micro switch, check soldered joint (904.0046.00)
Manual lowering of bed disabled	Defective micro switch / soldered joint on pedal 4/F3	Replace micro switch, check soldered joint (904.0046.00)
Manual raising of backrest disabled	Defective micro switch / soldered joint on pedal 3/F2	Replace micro switch, check soldered joint (904.0046.00)
	Defective top end switch for backrest drive	Replace cable and end switch (320.4012.01)
Manual reclining of backrest disabled	Defective micro switch / soldered joint on pedal 3/F3	Replace micro switch, check soldered joint (904.0046.00)
	Defective bottom end switch for backrest drive	Replace cable and end switch (320.4013.01)
Total electronic failure	Defective main fuse	Check main fuse (6,3 A) or replace it (904.4001.12)
	Short-circuit on circuit board	Replace defective circuit board
	Check plug connection RJ 45 between circuit board and CPU	Replace defective cable connection (Cable drive 320.4017.01) (Cable peripherals 320.4018.01) (Cable valve 320.4017.01) (Cable Orthorack 320.4018.01)

9.7 Lamps	Possible causes	Trouble shooting
Examination lamp - loose connection , cut-outs	Loose plug connection at lamp head	Disassemble lamp head, check plug connection
	Defective ON-/OFF-switch	Replace ON-/OFF-switch (320.3034.01)
	Cable break	Replace cable (320.3067.01)
Defective examination lamp	Thermo-protection of transformer responds	Check transformer and replace it if necessary (320.7032.01)
	Check halogen lamp	Replace lamp (320.3000.01)
Over loud ventilator	Accumulation of dust in the ventilator	Clean dust with a humidity-free air jet
	Defective blower	Replace blower (320.3011.01)
Defective Ortholux lamp	Check halogen lamp	Replace lamp (ORTHOLUX 101 904.0051.00) (ORTHOLUX 200 320.3000.01)
	Defective lead fuse 2AT	Check fuse (2 AT) (904.0001.08)
	Defective step-on step-off relay	Replace relay (904.0374.01)
	Defective micro switch / soldered joint on pedal 2/F1	Replace micro switch, check soldered joint (904.0046.00)
	Check transformer	Replace transformer (ORTHOLUX 101 320.7032.00) (ORTHOLUX 200 320.7123.01)

	Possible causes	Trouble shooting	
Ortholux does not move forward	Defective micro switch / soldered joint on pedal 2/F2	Replace micro switch, check soldered joint	(904.0046.00)
Ortholux does not move back	Defective micro switch / soldered joint on pedal 2/F3	Replace micro switch, check soldered joint	(904.0046.00)

9.8 Selective hose holder	**Possible causes**	**Trouble shooting**	
Falling suction performance of cannula	Soiled filter in the separation system and/or within the selective holder	Clean filter	
	Soiled replacement filter within the selective holder and/or corner filter	Insert new filter	(320.6508.01)
Intermittant suction performance (shut-down separation systems)	Defective drain of separation system . Clogged exterior hose	Check drain and clean it if necessary	
	Outsized tube cross-section between selective holder and separation system	Follow the planning advises	
	Separation system assembled to high	Follow the planning advises	
No suction at cannulas (vacuum abuts against filter)	Clogged vacuum supply line within filter unit	Pull off connection hose and clean line	
No suction from large suction hose	Leaking distributor valve	Attach new suction hose	(320.3032.01)
	Loose connection between distributor hose and tube	Attach distributor hose	
Soughing sound	Soiled filter on E-valve	Replace filter	
	Soiled borehole in overflow line	Clean borehole	
	Improperly attached cannula	Clean cannula at suction hose and push it in entirely	
Suction hose has suction in suspended position	Soiling within bellows system	Unscrew lateral tappet und clean transversal line / bellows system	
	Clogged valve within selective holder	Unscrew valve core and clean it (special tool within cover of filter unit)	
Full suction even though regulator valve is in top position	Snapped off regulator hose within large suction hose	Shorten regulator hose and reattach it	
Interrupted suction of any suction hose	Clogged injector within selective holder	Clean injector from top with needle. For this purpose remove suction hose from holder for negative pressure to result. (Needle within cover of filter unit) If necessary, disassemble selective holder and clean injector, or replace entire suction unit.	
No suction	Activated motor protection switch	Check power consumption	
	Defective micro switch within selective holder	Replace micro switch, disassemble unit or replace it entirely	
	Heavily soiled separation system	Remove cover of suction engine, clean side lines and turbine. Insert new absorption filter.	

9.9 Comfort hose holder	Possible causes	Trouble shooting
Declining suction	Full filter within hose	Clean / replace filter (320.6508.01)
	Clogging within hose or hand piece	Check location of clogging. Separate hose and hand piece form hose holder, disassemble and clean them
	Broken hose	Replace hose (small 320.3031.01) (big 320.3030.01)
	Clogged selective membrane	Remove filter cover and/or hose from filter unit, remove dirt particles with appropriate tool (e.g. blunt tweezers) . Caution! Do not damage selective membrane!
No suction	Slide feed of hand piece is closed	Open slide feed
	Suction system out of order	Turn on suction engine and check it if necessary
	Selective membrane does not open or does not open entirely	Clean area of negative pressure within filter unit, remove filter unit and clean remove dirt particles with appropriate tool, e.g. tweezers or water jet. Check regulator hose within hose holder for breaks Check 3/2-way valve
Hand piece slide is out of order or has signs of leaking water	Dirt or encrustation within hand piece	Disinfect hand piece , disassemble, clean and autoclave it

9.10 Spittoon	Possible causes	Trouble shooting
Air within water system	Reassembly / air residue	Bleed system via spittoon
	Insufficient pressure within building	Check pressure / adjust to min. 2.5 bar
No water in bubbler	Defective magnetic valve	Replace magnetic valve (906.0203.01)
	Defective pressure caliper	Replace pressure caliper (320.6036.01)
	Blocked core within magnetic valve	Disassemble magnetic valve / clean or replace it if necessary (320.3025.01)
	Excessive pressure at magnetic valve <5,5bar	Adjust pressure on pressure regulator to 5 bar
No or dripping waster from filling pipe	Defective magnetic valve	Replace magnetic valve (906.0203.01)
	Defective pressure caliper	Replace pressure caliper (320.6036.01)
	Blocked core within magnetic valve	Disassemble magnetic valve / clean or replace it if necessary (320.3025.01)
	Excessive pressure at magnetic valve <5,5bar	Adjust pressure on pressure regulator to 5 bar
	Leaking pipe adapter and/or O-rings	Reseal pipe adapter and cup filling pipe and/ or replace O-rings (902.0080.01)

	Possible causes	Trouble shooting	
No or dripping water from flush pipe	Defective magnetic valve	Replace magnetic valve	(906.0203.01)
	Defective pressure caliper	Replace pressure caliper	(320.6036.01)
	Blocked core within magnetic valve	Disassemble magnetic valve / clean or replace it if necessary	(320.3025.01)
	Excessive pressure at magnetic valve <5,5bar	Adjust pressure on pressure regulator to 5 bar	
	Leaking pipe adapter and/or O-rings	Reseal pipe adapter and flush pipe and/or replace O-rings	(902.0080.01)
Water does not drain	Filter for particulate material is clogged	Clean or replace filter	(320.6508.01)
	Spittoon valve out of order	Check function of spittoon valve	
	Alginate within drain	Remove alginate	
	Vacuum caused by “old” version of drain cover (without bridge)	Insert modified version of drain cover	(320.0533.10)

9.11 Drives / Other	Possible causes	Trouble shooting	
Squeaking backrest drive	Spindle nut runs dry	Lubricate nut	
Manual raising of backrest disabled	Defective micro switch / soldered joint on pedal 3 / F2	Replace micro switch, ckeck soldered joint	(904.0046.00)
Manual reclining of backrest disabled	Defective micro switch / soldered joint on pedal 3 / F3	Replace micro switch, ckeck soldered joint	(904.0046.00)
Squeaking bed drive	Spindle nut runs dry	Lubricate nut	
Manual lifting of bed disabled	Defective micro switch / soldered joint on pedal 4 / F2	Replace micro switch, ckeck soldered joint	(904.0046.00)
Manual lowering of bed disabled	Defective micro switch / soldered joint on pedal 4 / F3	Replace micro switch, ckeck soldered joint	(904.0046.00)
OP/UP cannot be started	Defective circuit board for drives	Replace circuit board, reprogram OP/UP position	(320.4001.01)
	Cable break	Gauge and check cable	

9.12 Dürr spittoon valve	Posible causes	Trouble shooting
Spittoon valve out of order	No voltage supply	Check and reestablish voltage supply
	Defective plug connection	Check plug connection to magnetic valve, caliper, reed switch
	Relay out of order	Check switching function of relay
	Compressed air does not abut	Check compressed-air supply to spittoon valve
	Defective reed switch	Check function of reed switch by pressing caliper
Liquids do not drain	Clogged drain	Check whether filter is inserted or clogged and clean / replace it if necessary (320.6508.01) Clean drain pipe
	Compressed air does not abut	Check compressed-air supply to spittoon valve

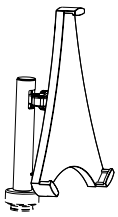
9.13 Dürr separation system	Posible causes	Trouble shooting
Declining suction from cannula	Soiled filter at secretion outflow connection	Remove secretion hose from outflow connection, clean or replace filter
Intermittent suction process, separation system switches to overflow position	Clogged drain	Check and clean drain if necessary
No suction at hose holder even though suction engine is running	Place selection valve did not open	Check voltage
Place selection valve does not open	No voltage at input lead to Sepamatik (24V)	Check voltage
	Defective place selection valve	Replace place selection valve (320.7050.01)

10. Additional equipment

A wide range of accessories and attachment parts is available for this unit. They can be upgraded and updated optionally. Please consider that operator/user safety and failure-free operation of the device is only provided when using original components. In addition, you may only use components which are listed in the instruction manual or components which have been stated for a specific purpose by MIKRONA GROUP AG. Safety, reliability and function are only provided if mounting, readjustment and repairs are performed by MIKRONA GROUP AG or an entity authorized for this purpose by MIKRONA GROUP AG and if the product is used in accordance with the mounting and operating instructions.

10.1 ORTHORA 200

iPad-holder on floating table
☐ iPad mini 1 / 2 / 3 / 4
☐ iPad Air2 & Pro9,7 & 9,7"
☐ iPad Pro 10,5" & Pro 11" (2018) & 10,2"



Multimedia
☐ Yes
☐ No

Adaptation
☐ LCD-Screen 22"
on mounting rod
☐ Intraoral camera

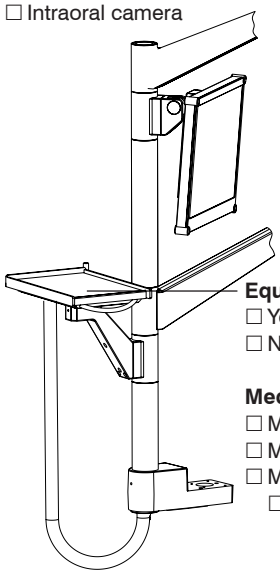
OP lamp
☐ Yes
☐ No

Lamp
☐ OP lamp LED MIKRONA
☐ sensor ☐ switch
☐ OP lamp arm extension
☐ Ceiling OP lamp LED MIKRONA (Polaris)
☐ RAL 9002 ☐ RAL 9010 ☐ RAL 9016
☐ customer specific finish
☐ sensor ☐ switch
☐ ORTHOLUX 200 LED (ceiling model)

Floating table
☐ Yes
☐ No

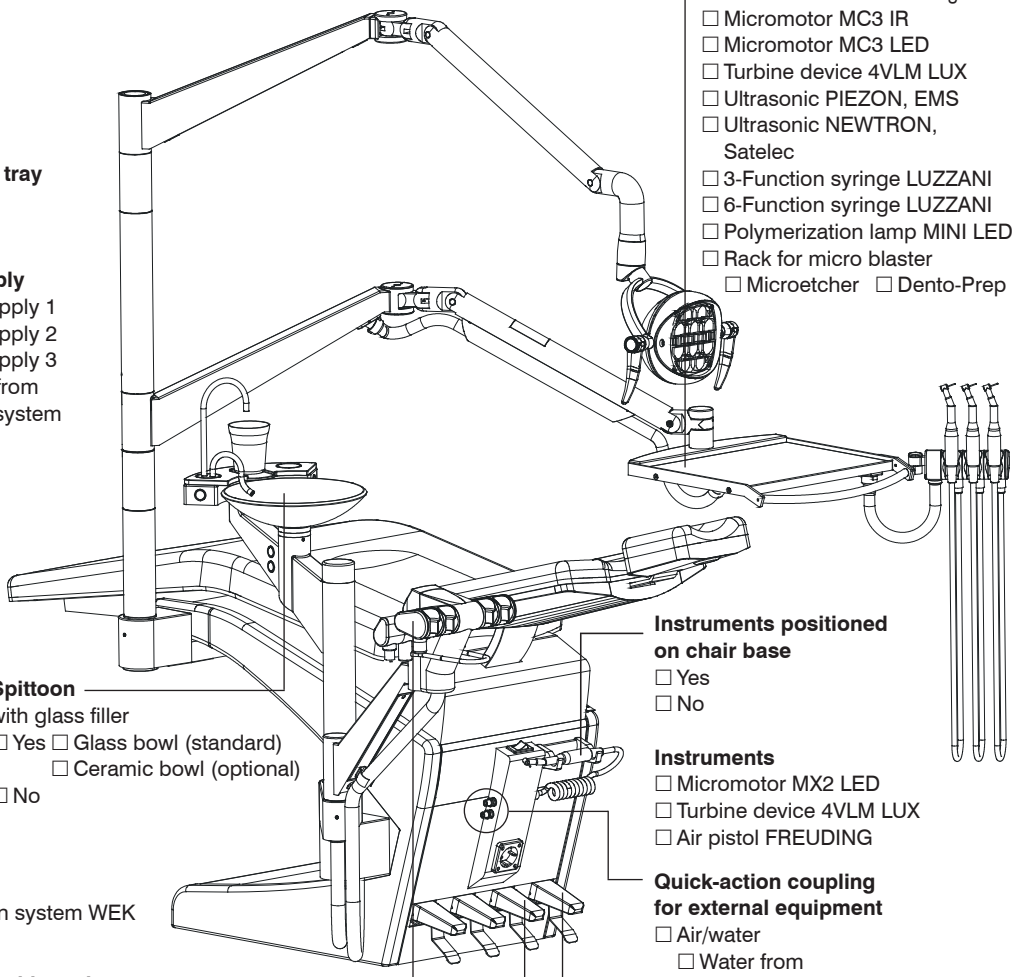
Floating table
☐ without instrument bracket
☐ with instrument bracket VARIO

Instrument bracket
(max. 3 instruments)
☐ Micromotor MX2 LED
☐ Instr. hose with water regulation
☐ Micromotor MC3 IR
☐ Micromotor MC3 LED
☐ Turbine device 4VLM LUX
☐ Ultrasonic PIEZON, EMS
☐ Ultrasonic NEWTRON,
Satelec
☐ 3-Function syringe LUZZANI
☐ 6-Function syringe LUZZANI
☐ Polymerization lamp MINI LED
☐ Rack for micro blaster
☐ Microetcher ☐ Dento-Prep

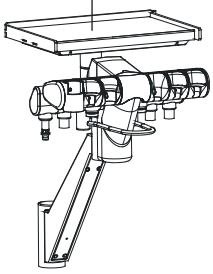


Equipment tray
☐ Yes
☐ No

Media supply
☐ Media supply 1
☐ Media supply 2
☐ Media supply 3
☐ Water from
bottle system



Tray on comfort rack
☐ Yes
☐ No

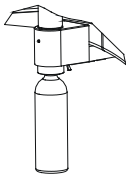


Spittoon
with glass filler
☐ Yes ☐ Glass bowl (standard)
☐ Ceramic bowl (optional)
☐ No

Instruments positioned
on chair base
☐ Yes
☐ No

Instruments
☐ Micromotor MX2 LED
☐ Turbine device 4VLM LUX
☐ Air pistol FREUDING

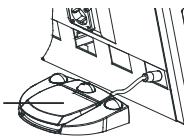
Water separation system
☐ Autonomous water supply
☐ Metasys water aseptic & separation system WEK
(apparatus beside the chair)



Quick-action coupling
for external equipment
☐ Air/water
☐ Water from
bottle system
☐ Air

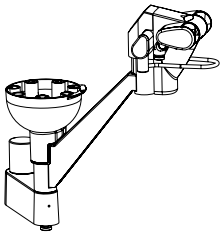
Rack with aspirator
☐ Yes ☒ OP-suction
☒ Saliva suction
☐ No

Instrument operation
☐ 4-Function pedal DYN
☐ 5-Function pedal
Pedal
☐ built in (standard)
☐ free standing (optional)



Instrument rack (max. 4 instruments)
☐ Micromotor MX2 LED
☐ Instr. hose with water regulation
☐ Micromotor MC3 IR
☐ Micromotor MC3 LED
☐ Turbine device 4VLM LUX
☐ Ultrasonic PIEZON, EMS
☐ Ultrasonic NEWTRON, Satelec
☐ 3-Function syringe LUZZANI
☐ 6-Function syringe LUZZANI
☐ Polymerization lamp MINI LED ORTHO, Satelec
☐ Rack for micro blaster
☐ with air connection ☐ Microetcher
☐ without air connection ☐ Dento-Prep

Instrument flushing
☐ CleanHub



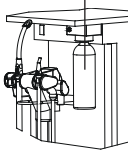
3-Function pedal for operating
special functions
☐ Yes
☐ No

Operating functions
☐ ORTHOLUX 200
☐ OP lamp ON/OFF
☐ special functions

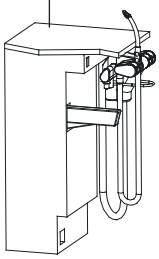
10.2 ORTHORACK

ORTHORACK Back-of-head instrument (BOH)
☐ BOH connected with OT200 unit
☐ Air/water supply from OT200 unit
☐ Air/water supply from BOH

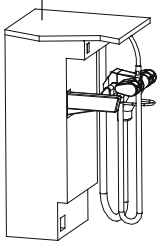
Autonomous water supply
☐ Yes
☐ No

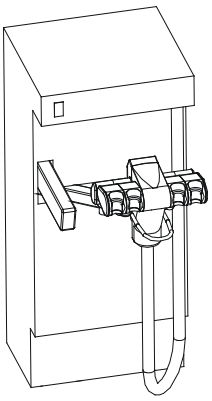


BOH
☐ standard
(470mm deep)



BOH
☐ countersunk
(570mm deep)





Rack with aspirator
☐ Yes ☒ OP-suction
☒ Saliva suction
☐ No

Instrument rack (max. 4 instr.)
☐ Micromotor MX2 LED
☐ Instr. hose with water regulation
☐ Micromotor MC3 IR
☐ Micromotor MC3 LED
☐ Turbine device 4VLM LUX
☐ Ultrasonic PIEZON, EMS
☐ Ultrasonic NEWTRON, Satelec
☐ 3-Function syringe LUZZANI
☐ 6-Function syringe LUZZANI
☐ Polymerization lamp MINI LED ORTHO

10.3 ORTHODESK

Swivel table for ORTHODESK
☐ Yes
☐ No

ORTHODESK
☐ Yes
☐ No

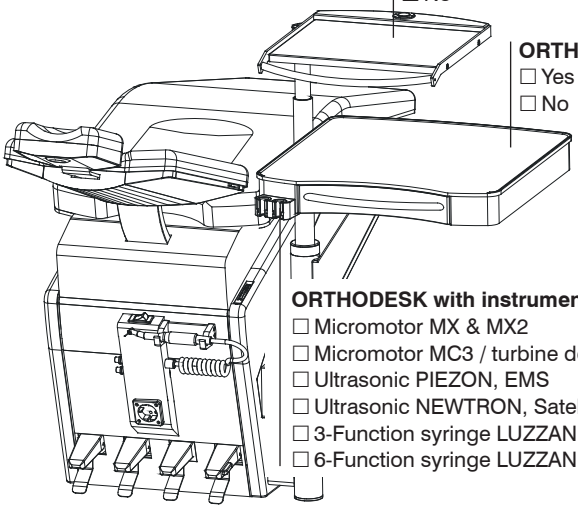
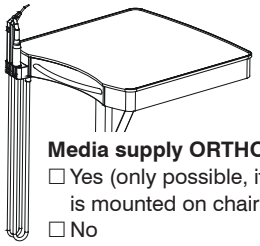


Table top
☐ Dallas (black marbled)
☐ Madrid (grey marbled)
☐ Manhattan (grey)
☐ Harlem (light grey)

ORTHODESK with instrument bracket (max. 2 instr.)
☐ Micromotor MX & MX2
☐ Micromotor MC3 / turbine device 4VLM LUX
☐ Ultrasonic PIEZON, EMS
☐ Ultrasonic NEWTRON, Satelec
☐ 3-Function syringe LUZZANI
☐ 6-Function syringe LUZZANI



Media supply ORTHODESK
☐ Yes (only possible, if no instrument is mounted on chair base)
☐ No

Media supply (2 instruments)
☐ Micromotor MX & MX2
☐ Micromotor MC3 IR
☐ Micromotor MC3 LED
☐ Turbine device 4VLM LUX
☐ 3-Function syringe LUZZANI
☐ 6-Function syringe LUZZANI

max. 1 instr.