

**1. Technical facts MK-dent Contra Angle Handpiece LE15, LE15L, LP15L**

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|-------------------------------------|--|
| Drive speed                         | max. 40.000 U/Min.   |
| Rotation speed                      | max. 200.000 U/Min.  |
| Transmission                        | 1:5  |
| Fitting burs                        | FG-Burs with a diameter of 1,6 mm  |
| Water cooling                       | >50 ml/min. in accordance with DIN EN ISO 14457                                    |
| The handpiece can be mounted on all | INTRAmatic® motors and motors with a connection in accordance with DIN EN ISO 3964 |
| Light                               | Fibreoptic Glassrod with up to 25.000 LUX (LE15L/LP15L)                            |

**2 Meaning of symbols**


|     |   |
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|     | See chapter <b>3. Safety</b>  |
|     | Important information for the user  |
|     | Sterilizable in an autoclave up to max. 135°C / 275°F                               |
|     | Suitable for spray- and wipe disinfection   |
|     | CE-mark – Confirms that this product fulfills all requirements for medical products |
| REF | Item No.  |
| SN  | Serial No.  |

**3 Safety**


**3.1 Description of danger levels**

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|  | <b>CAUTION</b>   |
|  | <b>CAUTION</b> is used if a deficiency in adequate care may result in an endangering of the patient, the user or others. |
|  | <b>WARNING</b>   |
|  | <b>WARNING</b> is used if improper use may result in serious injuries.   |


### 3.2 Safety notes

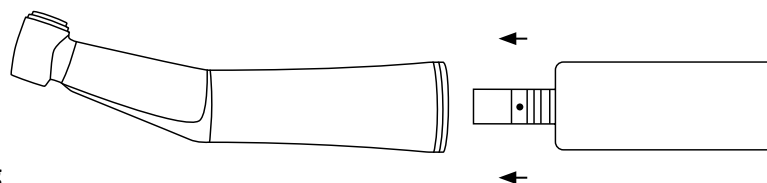
|   |  |
|---|--|
|  | <b>WARNING</b>   |
|   | <ul style="list-style-type: none"> <li>- When operating the handpiece always consider the safety of the patient.</li> <li>- The handpiece is designed only for dental clinical use.</li> <li>- Check the vibration, noise and overheating outside the patient's oral cavity before use. If any abnormalities are found, stop using and contact dealer.</li> <li>- If any abnormalities are found in use, stop using immediately and contact your dealer.</li> <li>- Do not allow any impact on the shank. Do not drop the handpiece.</li> <li>- Do not attempt to disassemble the handpiece nor temper with the mechanism.</li> <li>- Do not connect or disconnect the handpiece until the drive motor has completely stopped.</li> <li>- Use short shank bur for miniature head speed increasing handpiece. Using long burs could result in bur spin-out while using, or premature bearing failure.</li> <li>- Do not exceed a speed of 200.000 U/Min. at the head.</li> <li>- Do not use eccentric, worn or damaged burs.</li> <li>- Do not use a long surgical bur on speed increasing handpiece, which runs to 200.000 U/Min. Such long bur as 25mm in length shall not be used. It's shank may warp under load at a high speed and spin out of the handpiece when the load is released.</li> <li>- Before use, always confirm that the bur is correctly seated and locked into place.</li> <li>- Do not exceed the motor speed recommended by the bur manufacturers.</li> <li>- Depressing the push button while handpiece bur is in rotation will result OVERHEATING of the handpiece head. Special caution must be exercised during use to keep cheek tissue AWAY from the push button of the handpiece. Contact with cheek tissue may cause the push button to depress and injury to the patient may occur.</li> <li>- Always operate with spray. Without cooling spray, the handpiece may built up heat.</li> <li>- Supply MK-dent PREMIUM SERVICE OIL after each use.</li> <li>- Do not wipe with or clean or immerse in high acid water or sterilizing solutions.</li> <li>- Do not apply excessive load to the handpiece when operating it.</li> </ul> |

### 4 Connection of the motor coupling: Attaching / Removing


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| <br>CAUTION | <b>CAUTION</b>  |
|   | <p>Before first use and after each use, sterilize the contra angle handpiece.</p> |

Place the handpiece on the motor coupling until it audible locks in place. See below figure. Carefully pull before each treatment to ensure that the handpiece is securely locked on the motor coupling. To remove the handpiece from the motor coupling, pull the two parts strongly apart.

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| <br>WARNING | <b>WARNING</b>  |
|  | <p>The handpiece has to come to a complete standstill before separating in order to avoid damage to the driver.</p> |



### 5 Burs: Inserting/Removing

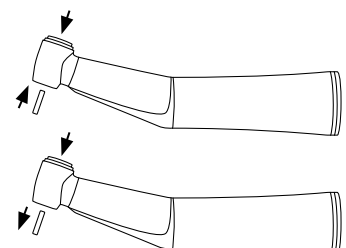
|  |  |
|--|--|
| <br>CAUTION | <b>CAUTION</b>   |
|  | <p>Only use burs which shafts comply with DIN EN ISO 1797-1 standard. Never use burs with worn shafts.<br/>Wear gloves to protect from danger of injury and infection.<br/>Shaft diameter: 1.591 - 1.599 mm<br/>Overall length: max. 25 mm</p> |

#### Inserting:


Press the push button and at the same time insert the bur in the chuck all the way until the stop. Check the holding force by pulling the bur.

#### Removing:

Press the push button and remove the bur from the chuck.



## 6 Cleaning and Care


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| <br>CAUTION | <b>CAUTION</b>  |
|  | Please notice, that you have purchased a high quality product with the MK-dent handpiece. Premature wear and malfunctions from improperly care and service shorten the lifetime of the product.<br><br>We recommend fully synthetic MK-dent Service Oil for care. |

### 6.1 Go through the following cleaning steps after each treatment

1. Removing of the bur
2. External cleaning
3. Internal cleaning
4. Disinfection
5. Lubrication with oil
6. Sterilization

### 6.2 External Cleaning


The MK-dent handpiece can be brushed off under flowing water or cleaned by an alcohol solution. In case of need to keep clean the spray channels use the included wires. Disinfect the wire after using.

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| <br>CAUTION | <b>CAUTION</b>   |
|  | It is absolutely forbidden to place the handpiece in an ultrasonic unit. Results are malfunctions. |

### 6.2 Disinfection




The MK-dent handpiece can be disinfected externally.  
Only use DGHM listed chemical disinfectant for spray and wipe disinfection.

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| <br>CAUTION | <b>CAUTION</b>   |
|  | Don't place the handpiece in disinfectant baths. Results are malfunctions. |

### 6.3 Lubrication with Oil

Use "MK-dent Premium Service Oil" for lubrication. Screw the enclosed MK-dent oil adapter on the oil can. Place the handpiece with the motorside on the adapter and press the spray button for 1-2 seconds. For the chuck use also the enclosed MK-dent oil adapter.


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| <br>CAUTION | <b>CAUTION</b>  |
|  | Lubricate the handpiece and the chuck after each treatment. This process significantly increases the economic lifetime. |

### 6.4 Sterilization




Sterilize the MK-dent handpiece in an autoclave up to max. 135°C (2 bar) / 275°F (29 psi).  
Autoclave three times with an initial vacuum for at least 4 minutes at 134°C / 273°F +/- 1  
Autoclave using the gravitation method for at least 10 minutes at 134°C / 273°F +/- 1  
Autoclave using the gravitation method for at least 60 minutes at 121°C / 250°F +/- 1  
Follow the manufacturer's instructions for use.

The prepared instrument must be stored protected germ-free from dust in a dry, dark and cool room.

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| <br>CAUTION | <b>CAUTION</b>  |
|  | Observe the expiration date of the sterilized item.<br>No chlorine-based products and no chemical solvents or cleaning materials must be used.<br>Do not use dryer (post-heat). Do not sterilize the packing box. |

## 7 Advice

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|  | <b>ADVICE</b>   |
|   | Stop working with the handpiece by higher and irregular running noise, significant vibrations, overheating, insufficient grip and optical damaging. Please contact in these cases an authorized by the manufacturer repair center or your dental depot. |

## 8 Warranty

MK-dent provides the end user a warranty for proper function, immaculate material and workmanship. Relevant for this is the invoice date.

In case of justified complaints MK-dent carries out a free repair or a possible free replacement. This will be decided by MK-dent. Other claims of any kind, in particular damage compensation are excluded. In the event of default, gross negligence or intent, this shall only apply unless there are compelling legal regulations.

MK-dent is not liable for defects and their consequences that have arisen whose arising may be due to natural wear, improper handling, improper cleaning, or maintenance, non-compliance with operating or manual instructions, calcination or corrosion, contaminated air and water supply or chemical or electrical influences that are unusual or not permitted according to MK-dent's instruction for use or to other manufacturer's instructions.

The warranty does usually not cover lamps, light conductors made of glass fibers, glassware, rubber parts and the color fastness of plastic parts. All liability is excluded if defects or their consequences arise because of interventions or modifications on the product by the end user or by a third party not authorized by MK-dent.

Warranty claims will only be accepted if the product is submitted with a proof of purchase in the form of an invoice or a copy of the delivery note. Dealer, purchase date, model and serial number must be clearly visible.



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