



## Instructions for use



syneq<sup>VISION</sup>

**Handpiece**

HK-43 LT

**Contra-angle handpieces with light**

WK-99 LT, WK-93 LT, WK-56 LT, WK-66 LT, WK-86 LT

WK-99 LT S, WK-93 LT S, WK-56 LT S, WK-66 LT S

## Contents

---

<b>W&amp;H Symbols</b> .....	3 – 4
<b>1. Introduction</b> .....	5 – 7
<b>2. Safety notes</b> .....	8 – 9
<b>3. Product description</b> .....	10 – 11
<b>4. Operation</b> .....	12 – 17
Assembly/Removal, To change rotary instrument, Test run	
<b>5. Hygiene and maintenance</b> .....	18 – 29
General, Pre-disinfection, Manual cleaning, Manual disinfection, Mechanical cleaning and disinfection, Oil service, Sterilization	
<b>6. W&amp;H Accessories/spare parts</b> .....	30
<b>7. Technical data</b> .....	31 – 35
<b>8. Recycling and disposal</b> .....	36
<b>Explanation of warranty terms</b> .....	37
<b>Authorized W&amp;H service partners</b> .....	39

## W&H Symbols

---

Symbols in the Instructions for use



**WARNING!**  
(risk of injury)



**ATTENTION!**  
(to prevent  
damage occurring)



General explanations,  
without risk to  
persons or objects



**Do not dispose of  
with domestic waste**





UL Component Recognition  
Mark indicates compliance  
with Canadian and U.S.  
requirements


## W&H Symbols


---


### Symbols on the instrument

 CE 0297  
from the manufacturer

 Thermo washer disinfectable

 135°C  
Sterilizable up to the  
stated temperature

 Date of manufacture

 Data Matrix Code for  
product identification, e.g.  
in hygiene / maintenance  
process

**REF** Catalogue number

**SN** Serial number

## **1. Introduction**

---

Customer satisfaction has absolute priority in the W&H quality policy. This W&H product has been developed, manufactured and subjected to final inspection according to legal regulations, quality norms and industry standards.

### **For your safety and the safety of your patients**

Prior to initial use please read the Instructions for use. These explain how to use your W&H product and guarantee a smooth and efficient operation.

### **Intended use**

The dental handpiece/contra-angle is intended for the following applications: Removal of decayed materials, cavities and crown cement, removal of fillings, finishing and polishing of tooth and restoration surfaces.

Misuse may damage the handpiece/contra-angle and hence cause risks and hazards for patients, users and third parties.

## **Qualifications of the user**

We have based our development and design of the dental handpiece and contra-angle on the »dentists, dental hygienists, dental employees (prophylaxis) and dental assistants« target group.



### **Production according to EU directive**

The handpiece/contra-angle is a medical product according to the EU-directive 93/42/EEC.



### **Responsibility of the manufacturer**

The manufacturer can only accept responsibility for the safety, reliability and performance of the handpiece/contra-angle when it is used in compliance with the following directions:

- > The handpiece/contra-angle must be used in accordance with these Instructions for use.
- > The handpiece/contra-angle has no components that can be repaired by the user. Assembly, modifications or repairs must only be undertaken by an authorized W&H service partner (see page 39).

### **Skilled application**

The handpiece/contra-angle is intended only for skilled application in dentistry according to its purpose of use in compliance with the valid health and safety at work regulations, the valid accident prevention regulations as well as in compliance with these Instructions for Use. The handpiece/contra-angle should be prepared for use and maintained by staff who have been trained in procedures for infection control, personal safety and patient safety. Improper use, (e.g. through poor hygienic maintenance), non-compliance with our instructions or the use of accessories and spare parts which are not approved by W&H, invalidates all claims under warranty and any other claims.

### **Service**

In case of service or repair contact an authorized W&H service partner (see page 39).

Service and maintenance work must only be carried out by an authorized W&H service partner.

## 2. Safety notes

---



- > Always ensure the correct operating conditions and cooling function.
- > Always ensure that sufficient and adequate cooling is delivered and ensure adequate suction. In case of coolant supply failure, the handpiece/contra-angle must be stopped immediately.
- > Use only non-contaminated, filtered, oil-free and dry compressed air to operate the handpiece/contra-angle.
- > Check the handpiece/contra-angle for damage and loose parts each time before using (e.g. press-button on the contra-angle).
- > Do not operate the handpiece/contra-angle if it is damaged.
- > Perform a test run prior to each treatment.
- > Avoid contact between the instrument head and soft tissue (danger of burning due to the press-button heating up).
- > Run the rinse function for the dental unit once per day.






- > The operation of the contra-angle with light is permitted only on dental units which correspond to the standards IEC 60601-1 (EN 60601-1) and IEC 60601-1-2 (EN 60601-1-2).

The power supply unit for the dental unit must satisfy the following requirements to be guaranteed by the system assembler:

- > The compliance with the leakage currents of the application section must be guaranteed by the system assembler.
- > The secondary voltage must be non-earthed.
- > The secondary circuits must be protected against short-circuiting and overloading.

### **Hygiene and maintenance prior to initial use**

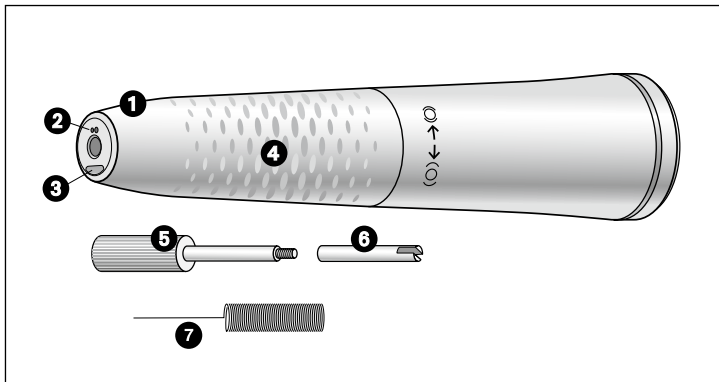
 The handpiece/contra-angle is in a clean condition and sealed in PE-film when delivered.

- > Lubricate the contra-angle prior to initial use.
- > Sterilize handpiece/contra-angle and nozzle cleaner as well as the limit stop and threaded pin of the handpiece.

> Oil service      page 24

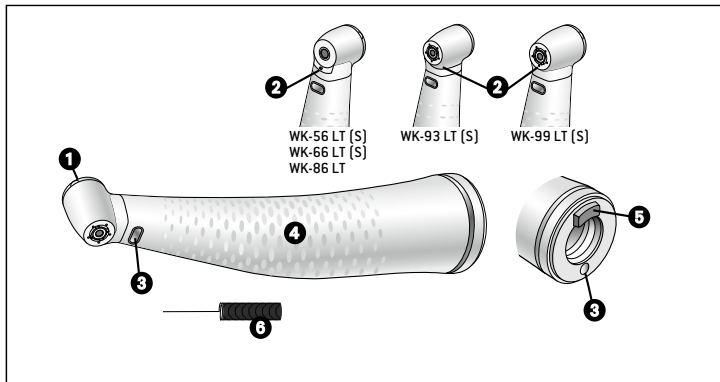
> Sterilization    page 28

### 3. Product description handpiece



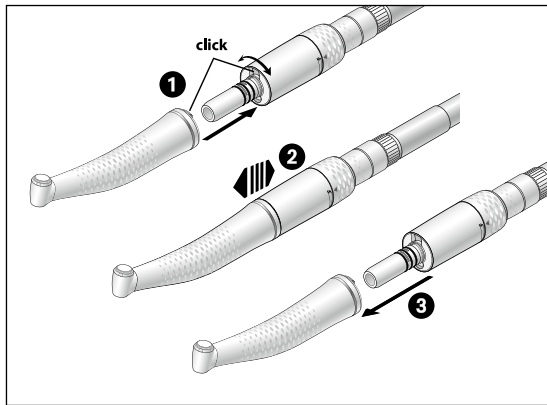
- ❶ Handpiece sleeve with twist chuck
- ❷ Spray nozzles
- ❸ Compact glass rod
- ❹ Grip profile
- ❺ Threaded pin
- ❻ Bur limit stop
- ❼ Nozzle cleaner

## Product description contra-angle



- ❶ Press-button
- ❷ Spray nozzle
- ❸ Compact glass rod
- ❹ Grip profile
- ❺ Retractable lug
- ❻ Nozzle cleaner

## 4. Operation – Assembly/Removal



**Do not assemble/remove during the operation!**

- 1** Push the handpiece/contra-angle onto the motor and turn it until it engages audibly.\*
- 2** Check the connection to the motor is secure.
- 3** Remove the handpiece/contra-angle from the motor by pulling in an axial direction.

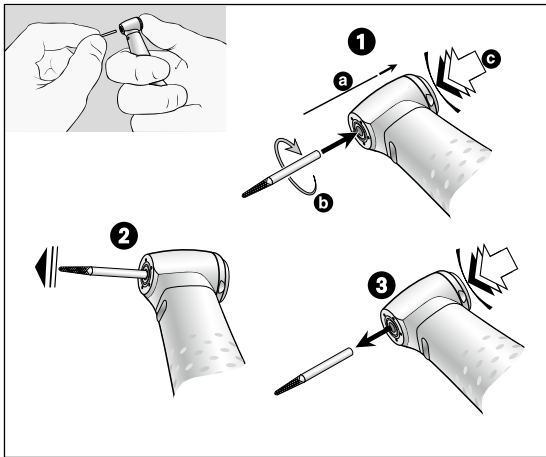


\* WK-99 LT S, WK-93 LT S, WK-56 LT S, WK-66 LT S can only be operated on dental motors with an ISO coupling measuring no longer than 23 mm.



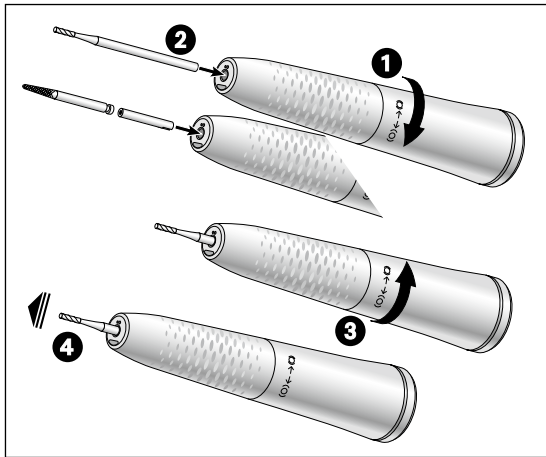
### **Rotary instruments**

- > Use only rotary instruments which are in perfect condition and which have shanks that meet the requirements of the ISO 1797-1 standard. Follow the operating instructions of the manufacturer.
- > Insert rotary instruments only when the handpiece/contra-angle is stationary.
- > Do not interfere with the running or slowing down of rotary instruments.
- > Do not activate the rotary chuck of the handpiece or press-button of the contra-angle during operation or slowing down. This leads to detachment of the rotary instruments, damage to the rotary chuck (handpiece), and/or makes the press-button hot (contra-angle) (risk of injury).



## Contra-angle handpieces To change rotary instrument

- 1** Instrument shaft diameter *1.6 mm*:  
Insert rotary instrument.  
Press the button firmly [c] and at the same time insert the rotary instrument until it reaches the limit stop [a].  
Instrument shaft diameter *2.35 mm*: Press the button [c] and at the same time insert the rotary instrument and turn it until it snaps into place [b].
- 2** Check secure location by applying slight axial tension.
- 3** Remove the rotary instrument by pushing the press-button.



## Straight handpieces

### Inserting the rotary instrument

- 1 Rotate the handpiece sheath in an anticlockwise [ 0 ] direction [ opening ] until it clicks.
- 2 *Handpiece bur:*  
Insert the rotary instrument up to the limit stop.  
*Contra-angle bur:*  
Insert the bur limit stop and then insert the rotary instrument up to the limit stop. The bur limit stop compensates for the difference in length.
- 3 Rotate the handpiece sheath in a clockwise [ 0 ] direction [ closing ] until it clicks.
- 4 Check that the rotary instrument is held securely by pulling on it in an axial direction.

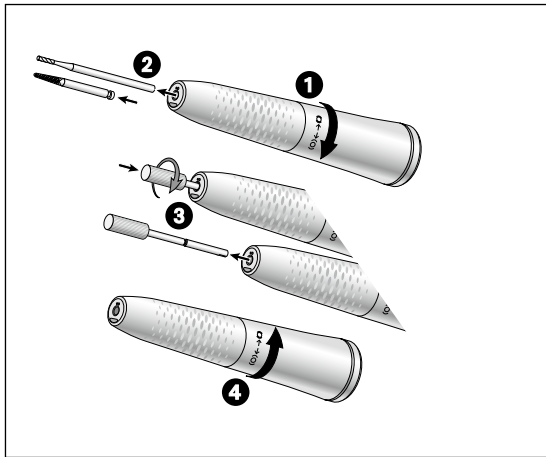
## Test run



Do not hold the handpiece/contra-angle at eye level.

- > Insert rotary instrument.
- > Start the handpiece/contra-angle.
- > If you observe problems (e.g. vibrations, unusual noise, overheating, coolant supply failure or leakage) **stop the handpiece/contra-angle immediately** and contact an authorized W&H service partner organization (see page 39).





## Straight handpiece Removing the rotary instrument

- 1 Rotate the handpiece sheath in an anticlockwise [ O ] direction [ opening ] until it clicks.
- 2 *Handpiece bur*: Remove the rotary instrument.  
*Contra-angle bur*: Remove the rotary instrument.
- 3 Screw the threaded pin clockwise into the bur limit stop and pull the latter out.
- 4 Rotate the handpiece sheath in a clockwise [ O ] direction [ closing ] until it clicks.

## 5. Hygiene and maintenance

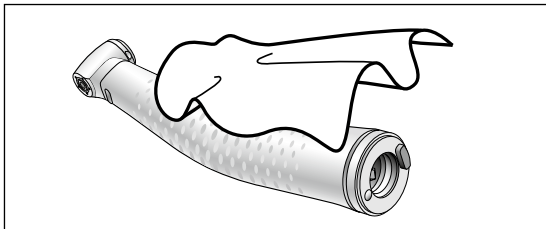
---



- Follow your country-specific directives, standards and guidelines for cleaning, disinfection and sterilization.
- > You can process the handpiece/contra-angle manually or mechanically.



- > Wear protective clothing.
- > Remove the handpiece/contra-angle from the motor.
- > Remove the rotary instrument.
  
- > Clean and disinfect the handpiece/contra-angle **immediately after every treatment**, to flush out any liquid (such as blood, saliva etc.) and to prevent settling on the internal parts.
  
- > Sterilize the handpiece/contra-angle following manual or mechanical cleaning, disinfection and lubrication.
- > Sterilize the nozzle cleaner following cleaning and disinfection.

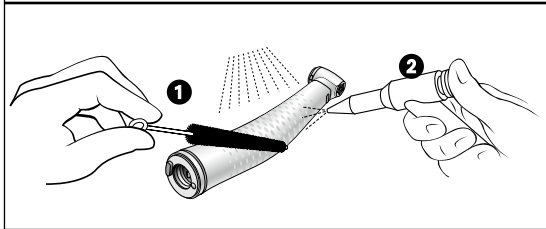


### Pre-disinfection

- > If heavily soiled, clean first with disinfectant cloths.



Only use disinfectants that have no protein-fixing effects.

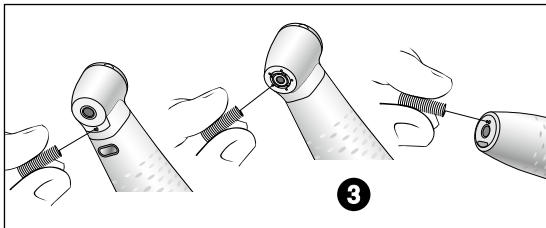


### Manual cleaning internal and external

- ➊ Rinse and brush off under demineralized water (< 38 °C / 100 °F).
- ➋ Remove any liquid residues (absorbent cloth, blow dry with compressed air).




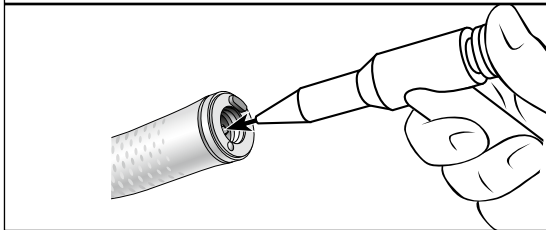
Do not place the handpiece/contra-angle in liquid disinfectant or in an ultrasonic bath.



### **Cleaning of the spray nozzles**


- ③ Clean spray nozzles carefully with the nozzle cleaner from dirt and deposits.

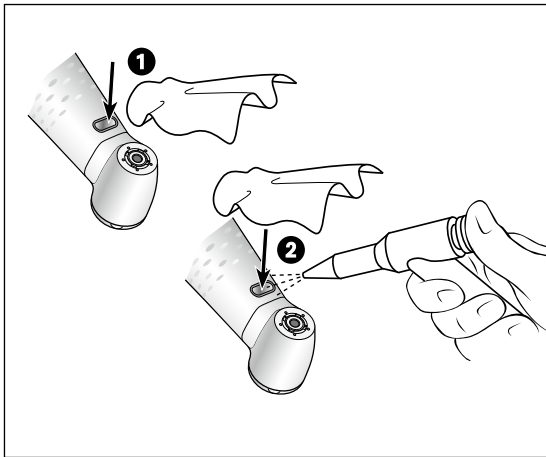
 Clean and disinfect the nozzle cleaner in an ultrasonic bath / disinfection bath.



### **Cleaning of the coolant tubes**

- > Blow through the coolant tube with the air syringe.

 In the case of clogged up spray nozzles or coolant tubes contact an authorized W&H service partner (see page 39).



## Cleaning of the optic outlet

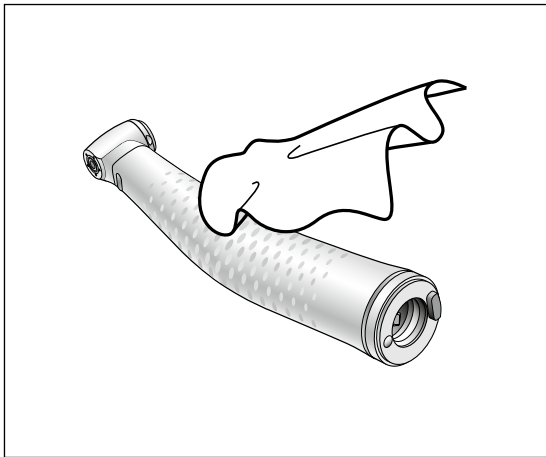


**Avoid scratching of the optic outlet!**

- 1 Wash the optic outlet with cleaning fluid and a soft cloth.
- 2 Blow the optic outlet dry with air syringe or dry it carefully with a soft cloth.



Carry out a visual inspection after each cleaning process. Do not use the handpiece/ contra-angle if the optic outlet is damaged and contact an authorized W&H service partner [see page 39].



## Manual disinfection



W&H recommends wiping down with disinfection.

- > Use only disinfectants which do not contain chlorine and which are certified by officially recognized institutes.
- > Note the manufacturer's specifications for the use of the disinfectants.



After manual cleaning, disinfection and lubrication you must carry out a final thermal disinfection (unwrapped) or sterilization (wrapped) in a class B or S steam sterilizer (according to EN 13060).

## Mechanical cleaning, disinfection and oil service



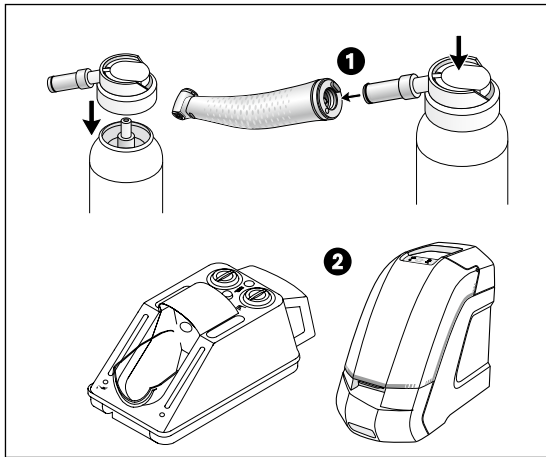
W&H recommends mechanical cleaning and lubrication with W&H Assistina 3x3.  
> Follow the instructions in the Assistina Instructions for use.



The handpiece/contra-angle can be cleaned and disinfected in a thermo washer disinfectant.  
> Note the manufacturer's specifications on equipment, cleaning agents and detergents.



> Make sure, that the handpiece/contra-angle is completely dry internally and externally after thermo washer disinfection. Remove any liquid residues with compressed air.  
> Lubricate the dry handpiece/contra-angle immediately after thermo washer disinfection.



## Oil service

### ❶ With W&H Service Oil F1, MD-400

- > Follow the instructions on the oil spray can and on the packaging.

or

### ❷ With W&H Assistina

- > See Instructions for use of Assistina.

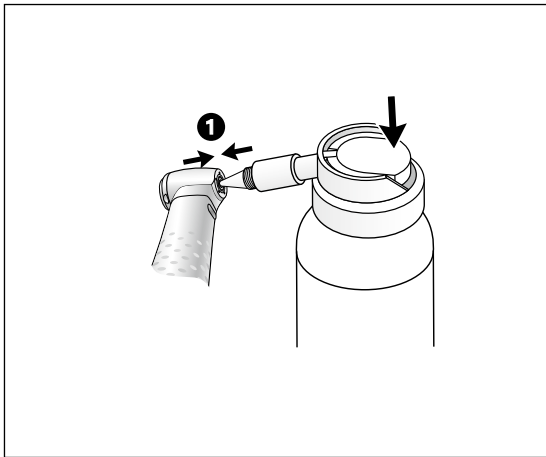
## Recommended lubrication cycles

- > Essential after every internal cleaning
- > Before each sterilization

or

- > After 30 minutes of use or at least twice daily

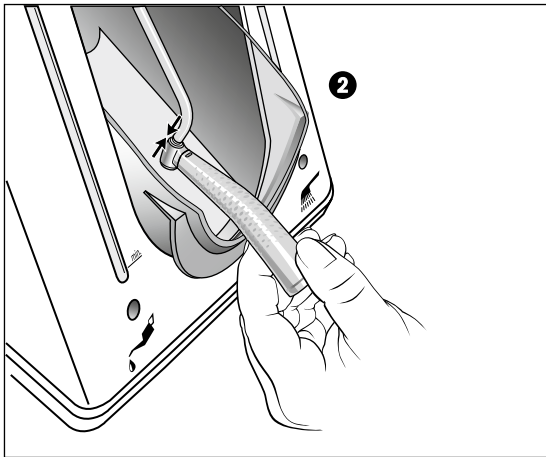




## Weekly oil service of the chucking system

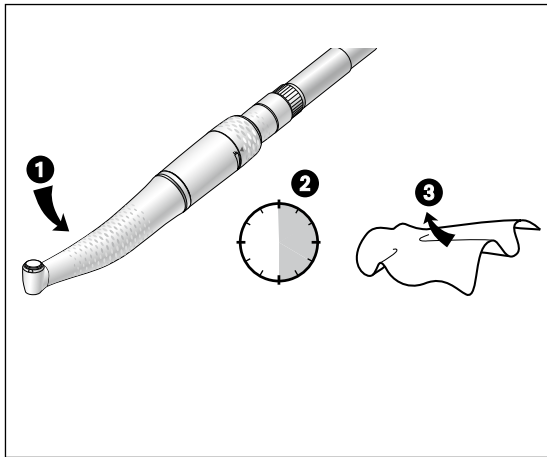
- ➊ With W&H Service Oil F1, MD-400
  - > Fit the spray cap REF 02036100 on the spray can.
  - > Hold the contra-angle firmly.
  - > Press the tip of the spray nozzle firmly into the chucking system.
  - > Spray for approx. 1 second.

or



**2 Only with W&H Assistina 301 plus**

- > Fit the adaptor REF 02693000 onto the maintenance attachment. Direct exit nozzle downwards.
- > Press the bur side of the contra-angle onto the adaptor from below.
- > Start the Assistina.
- > Press the contra-angle onto the adaptor for approx. 10 seconds.
- > Remove the contra-angle handpiece from the adaptor.
- > Close the cover of the Assistina and allow it to run for the remainder of the maintenance cycle [approx. 25 seconds].



### Test run following oil service

- 1 Place the handpiece/contra-angle with the head downwards.
- 2 Start the handpiece/contra-angle for 30 seconds to remove excess oil.
  - > Repeat the complete hygiene and maintenance process at any sign of dirt re-emerging.
- 3 Wipe the handpiece/contra-angle with gauze or soft cloth.

## **Sterilization and storage**



W&H recommends sterilization according to EN 13060, class B

- > Observe the device manufacturer's instructions.
- > Clean, disinfect and lubricate prior to sterilization.
- > Wrap the handpiece/contra-angle and the accessory in sterile goods packing according to EN 868-5.
- > Make sure that you only remove dry sterile goods from the sterilizer.
- > Store sterile goods dust-free and dry.



The standard ISO 7785-2 / ISO 14457 stipulates a durability of at least 250 sterilization cycles. In the case of the handpiece/contra-angle from W&H, we recommend you to have a regular service carried out after 1000 sterilization cycles or one year.

## Approved sterilization procedures



Follow your country-specific directives, standards and guidelines.

- > Steam sterilization class B with sterilizers in accordance with EN 13060.  
Sterilization holding time a minimum of 3 minutes at 134 °C (273.2 °F)

or

- > Steam sterilization class S with sterilizers in accordance with EN 13060.  
The sterilizer manufacturer must give its express approval for the sterilization of handpieces/contra-angles.  
Sterilization holding time a minimum of 3 minutes at 134 °C (273.2 °F)

## 6. W&H Accessories/spare parts

---

Use only original W&H accessories/spare parts or accessories approved by W&H.

**Suppliers:** W&H partners

301	W&H Assistina
19922000	Assistina 3x2 (MB-200)
19923000	Assistina 3x3 (MB-300)
02693000	Assistina adaptor for chucking system
10940021	W&H Service Oil F1, MD-400 (6 pcs)
02038200	spray cap with spray nozzle for handpieces/contra-angles
02036100	spray cap with spray nozzle for chucking system
02015101	nozzle cleaner
01312500	Bur limit stop
01312600	Threaded pin (for dismantling bur limit stop)

## 7. Technical data handpiece

Synea Vision		HK-43 LT	
Transmission ratio		1 : 1	
Colour coding		blue	
Motor coupling	acc. to standard	ISO 3964	
Instrument shaft diameter	ISO 1797-1 (mm)	2.35	
Length in mm approved by W&H *	(mm)	Contra-angle bur 34	Handpiece bur 50 *
Chucking *		Contra-angle shank: with bur limit stop	Handpiece shank: to limit stop*
Min. chuck length *		12	to the limit stop*
Max. motor speed	(min <sup>-1</sup> )	40,000	
Spray flow rate	acc. to ISO 7785-2, ISO 14457 (ml/min)	> 50	
Water setting range (rec. water pressure) **	(bar)	0.5 – 2 (1.5)	
Chip air setting range (rec. chip air pressure) **	(bar)	1.5 – 3 (2)	
Chip air consumption at 2 bar	[NI/min]	> 1.5	

\* see page 34

## Technical data contra-angle handpieces

Synea Vision	WK-99 LT	WK-93 LT	WK-56 LT	WK-66 LT	WK-86 LT
Transmission ratio	1:5	1:4,5	1:1	2:1	8:1
Colour coding	orange	orange	blue	green	green
Motor coupling acc. to standard	ISO 3964	ISO 3964	ISO 3964	ISO 3964	ISO 3964
Instrument shaft diameter ISO 1797-1 (mm)	1.6	1.6	2.35	2.35	2.35
Length in mm approved by W&H * (mm)	25	21	34	34	34
Max. operating part diameter (mm)	2.5	2	–	–	–
Min. chuck length	until back stop	until back stop	engaging	engaging	engaging
Max. motor speed (min <sup>-1</sup> )	40,000	40,000	40,000	40,000	40,000
Spray flow rate acc. to ISO 7785-2, ISO 14457 (ml/min)	> 50	> 50	> 50	> 50	> 50
Water setting range (rec. water pressure) ** (bar)	0.5 – 2 (1.5)	0.5 – 2 (1.5)	0.5 – 2 (1.5)	0.5 – 2 (1.5)	0.5 – 2 (1.5)
Chip air setting range (rec. chip air pressure) ** (bar)	1.5 – 3 (2)	1.5 – 3 (2)	1.5 – 3 (2)	1.5 – 3 (2)	1.5 – 3 (2)
Chip air consumption at 2 bar (l/min)	> 1.5	> 1.5	> 1.5	> 1.5	> 1.5

\* see page 34



## Technical data contra-angle handpieces

Synea Vision Short Edition	WK-99 LT S	WK-93 LT S	WK-56 LT S	WK-66 LT S
Transmission ratio	1:5	1:4,5	1:1	2:1
Colour coding	orange	orange	blue	green
Connect on the motor side with max. length 23 mm	acc. to standard	ISO 3964	ISO 3964	ISO 3964
Instrument shaft diameter	ISO 1797-1 (mm)	1.6	1.6	2.35
Length in mm approved by W&H *	(mm)	25	21	34
Max. operating part diameter	(mm)	2.5	2	–
Min. chuck length	until back stop	until back stop	engaging	engaging
Max. motor speed	(min <sup>-1</sup> )	40,000	40,000	40,000
Spray flow rate	acc. to ISO 7785-2, ISO 14457 (ml/min)	> 50	> 50	> 50
Water setting range (rec. water pressure) **	(bar)	0.5 – 2 (1.5)	0.5 – 2 (1.5)	0.5 – 2 (1.5)
Chip air setting range (rec. chip air pressure) **	(bar)	1.5 – 3 (2)	1.5 – 3 (2)	1.5 – 3 (2)
Chip air consumption at 2 bar	[Nl/min]	> 1.5	> 1.5	> 1.5

\* see page 34



**\* Handpiece:**

If the rotary instrument is not inserted up to the limit stop, the minimum chucking length must be maintained. In this case, or when using longer rotary instruments than 50 mm, the user must ensure by correct selection of the operating conditions that there is no danger to the user, patients or third parties.

**\* Contra-angle:**

When using longer rotary instruments (or if the rotary instrument is not inserted up to the limit stop), the user must ensure by correct selection of the operating conditions, that there is no danger to the user, patient or third parties.

- \*\* The chip air / water pressure must be set at the same time  
The chip air must be higher than the water pressure**

**rpm = min<sup>-1</sup> (Revolutions per minute)**

### **Temperature information**

Temperature of the handpiece/contra-angle at the operator side: max. 55 °C (131 °F)

Temperature of the handpiece/contra-angle at the patient side: max. 50 °C (122 °F)

Temperature of the working part (rotary instrument): max. 41 °C (105.8 °F)

### **Physical characteristics**

Temperature for storage and transport: -40 °C to +70 °C (-40 °F to +158 °F)

Air humidity for storage and transport: 8 % to 80 % (relativ), non-condensing

Ambient temperature during operation: +10 °C to +35 °C (-50 °F to +86 °F)

Air humidity during operation: 15 % to 80 % (relativ), non-condensing

## 8. Recycling and disposal

---

### Recycling

W&H considers that it has a special duty towards the environment. The handpiece/contra-angle along with its packaging has been designed to be as environmentally friendly as possible.



### **Disposal of the handpiece/contra-angle**

Follow your country-specific laws, directives, standards and guidelines.

Ensure that the parts are not contaminated on disposal.

### **Disposal of the packaging material**

Our packaging materials have been selected according to environmentally compatible and disposal aspects and can be recycled. Please send old packaging materials to the relevant collection and reprocessing system. This way, you will contribute to the recycling of raw materials and the avoidance of waste.

# Explanation of warranty terms

This W&H product has been manufactured with great care by highly qualified specialists. A wide variety of tests and controls guarantee faultless operation. Please note that claims under warranty can only be validated when all the directions in the instructions for use have been followed.

**As manufacturer, W&H is liable for material or manufacturing defects within a warranty period of 36 months from the date of purchase.**

We accept no responsibility for damage caused by incorrect handling or by repairs carried out by third parties not authorized to do so by W&H!

Claims under warranty – accompanied by proof of purchase – must be sent to the vendor or to an authorized W&H service partner. The provision of service under warranty extends neither the warranty period nor any other guarantee period.

**36 months warranty**



## Authorized W&H service partners

---

Find you nearest W&H service partner at <http://wh.com>

Simply go to the menu option »Service« for full details. Alternatively please contact:

**W&H (UK) LIMITED**, 6 Stroud Wood Business Centre, Park Street, St Albans, Herts AL2 2NJ, United Kingdom  
t + 44 1727 874990, f + 44 1727 874628, E-Mail: [technical.uk@wh.com](mailto:technical.uk@wh.com)

**W&H Impex Inc.**, 6490 Hawthorne Drive, Windsor, Ontario, N8T 1J9, Canada  
t + 1 800 2656277, + 1 519 9446739, f + 1 519 9746121, E-Mail: [service.ca@wh.com](mailto:service.ca@wh.com)

**W&H Impex Inc.**, 14300 Henn Rd., Dearborn, MI 48126, USA  
t + 1 800 2656277, + 1 519 9446739, f + 1 519 9746121, E-Mail: [service.us@wh.com](mailto:service.us@wh.com)

**W&H Austria GmbH**, Ignaz-Glaser-Straße 53, 5111 Bürmoos, Austria  
t + 43 6274 6236-239, f + 43 6274 6236-890, E-Mail: [office.at@wh.com](mailto:office.at@wh.com)

**A-DEC AUSTRALIA CO. INC.**, Unit 8, 5-9 Ricketty Street, Mascot NWS 2020, Australia  
t + 61 2 83324000, f + 61 2 83324099, E-Mail: [a-dec@a-dec.com.au](mailto:a-dec@a-dec.com.au)

## **Manufacturer**

**W&H Dentalwerk Bürmoos GmbH**

**Ignaz-Glaser-Straße 53, 5111 Bürmoos, Austria**

**t + 43 6274 6236-0,**

**office@wh.com**

**f + 43 6274 6236-55**

**wh.com**

**Form-Nr. 50746 AEN**

**Rev. 003 / 30.03.2015**

**Subject to alterations**