

StarDental® Instrument Solutions

430 High-Speed Handpieces
Includes Lubricated and LubeFree Standard and Satin Finish

Caution: Federal law restricts this device to sale by or on the order of a dentist.

DentaleZ
INTEGRATED SOLUTIONS™

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DO NOT USE FOR ORAL SURGERY

BEFORE OPERATING THE HANDPIECE, CAREFULLY READ AND FOLLOW ALL OF THESE INSTRUCTIONS. SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE AND OBSERVE ALL WARNINGS AND CAUTIONS.

Indications For Use

The 430 High-Speed Dental Handpieces are pneumatically driven, hand-held devices intended for use by trained dental professionals for drilling in the oral cavity. Procedures include, but are not limited to, caries removal, restorative work and crown preparations.

Contents

- Specifications
- Handpiece Installation
- Handpiece Operation
- Safety Instructions
- Lubrication - For Lubricated Handpieces ONLY
- Cleaning & Sterilization
- Troubleshooting
- Turbine Replacement
- Replacement Part Numbers
- Warranty

Specifications

430 SWL® and **430 SW™** High-Speed Handpieces are designed to fit a **StarDental®** 360° quick disconnect swivel. The **430 K®** handpiece is a conventional non-swivel high speed handpiece. The 430 SWL connects to both StarDental and standard 4/6-Line ISO fiber optic (F.O.) tubing. The 430 SW and 430 K connect to standard 4 hole tubing.

430 SWL: Type: High speed fiber optic with a swivel and replaceable autochuck turbine (Swivel sold separately.)
Operating Air Pressure: 34 to 42 psi
Air Consumption: 1.9 SCFM @ 34 psi
No Load Speed: 430,000 rpm
Connection: 360° quick-disconnect swivel with 4-Line and 6-Pin ISO configuration and fiber optics
Power: 14 watts
Weight: 49g

430 SW: Type: High speed with a swivel and replaceable autochuck turbine (Swivel sold separately.)
Operating Air Pressure: 30 to 32 psi
Air Consumption: 1.9 SCFM @ 30 psi
No Load Speed: 430,000 rpm
Connection: 360° quick-disconnect swivel with 4-Line ISO configuration or 2/3-Line ISO configuration
Power: 14 watts
Weight: 47g

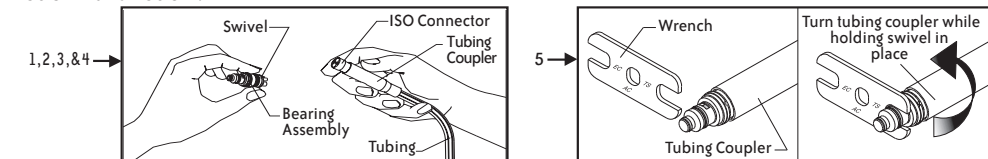
430 K: Type: High speed with a replaceable autochuck turbine
Operating Air Pressure: 30 to 32 psi
Air Consumption: 1.9 SCFM @ 30 psi
No Load Speed: 430,000 rpm
Connection: 4-line fixed ISO configuration
Power: 14 watts
Weight: 47g



Handpiece Installation

Note: Filter air and water supplies, recommended filtration: 25 microns. Soften and deionize water. Be sure filters operate efficiently.

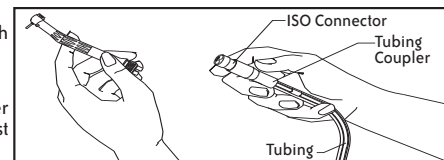
430 SWL and 430 SW:



- Grasp the swivel in front of the bearing assembly between the thumb and index finger as shown.
- Slide tubing coupler until the end of the tubing connector is exposed; hold in hand as shown with fingers securing the tubing.
- Align and insert swivel tubes into the tubing connector holes.
- While applying slight pressure to hold fittings in the connector holes, slide coupler forward and engage threads. Continue threading coupler clockwise until hand tight against the swivel.
- Using the wrench as shown, tighten the swivel to the tubing coupler until snug. Be sure to turn the tubing coupler, not the swivel. **DO NOT OVER TIGHTEN.**
- Connect handpiece to swivel until it clicks.

Note: This joint loosens over time, resulting in a loss of power. Check for tightness periodically.

- 430 K:**
- Slide tubing coupler until the end of the ISO connector is exposed; hold in hand as shown with smaller fingers securing the tubing.
 - Align handpiece tubes into the ISO connector holes.
 - While applying slight pressure to hold handpiece tubes in the connector holes, slide coupler forward and engage threads. Continue threading coupler clockwise until hand tight against the handpiece.



Handpiece Operation

Air and Water Adjustment

- Air Pressure – **NOTICE** To prevent premature damage to the turbine, do not exceed 34 psi when using a HiFlo swivel. Use an air pressure gauge, **StarDental** Part #262591 for 4/6-Line: set pressure to:

34-42 psi - 430 SWL
30-32 psi - 430 SW
30-32 psi - 430 K.

If a gauge is not available, set pressure at delivery head allowing 1 psi pressure loss for every foot of tubing. (See Specifications for recommended operational pressure.)

For example, if you are using the **430 K** that you want to operate at 32 psi and you are using either 5 feet or 12 feet of tubing, then the pressure should be set at the delivery head to compensate for the air pressure losses.

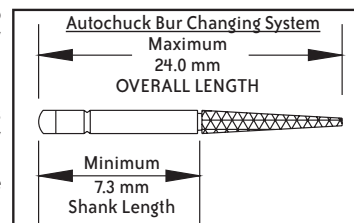
| | |
|-------------------|--------------------------|
| 5 feet tubing | 32 psi + 5 psi = 37 psi |
| or 12 feet tubing | 32 psi + 12 psi = 44 psi |

- Water Pressure – Adjust water volume at the delivery head to obtain a satisfactory spray mist.
- Non-Star 6-pin Fiber Optic System:
If the handpiece is connected to a non-StarDental 6-pin fiber optic (F.O.) system, consult your operator's manual of F.O. system for correct voltage. Non-StarDental F.O. systems must have a rated amperage output between 1.5 Amps dc and greater than .73 Amps dc at 3.1 Vdc. Use StarDental Part # 262962 bulb for non-StarDental F.O. systems that meet these requirements. Adjust the voltage per instructions with the 3.1 Vdc bulb. If the non-StarDental 6-pin F.O. system has a rated amperage output of at least 1.5 Amps dc at 3.3 VDC, then the StarDental Part #262522 bulb may be used. Adjust the voltage per instructions with the 3.3 VDC bulb.

Use standard length concentric diamond and carbide burs with .0628" nominal diameter friction grip shanks designed for high speed handpieces. Every **StarDental** Diamond Bur meets specifications below for recommended lengths. Contact your dealer for a complete list of **StarDental** Diamond Burs. **StarDental** autochuck turbines have the following bur requirements:

Use only burs with hardened, tempered steel shanks or carbide shanks. Every **StarDental** Bur maintains required hardness. Before use, verify concentric rotation by operating handpiece outside the oral cavity in a safe place.

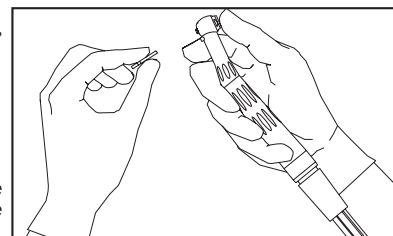
Note: Do not use burs that produce excessive noise or do not run concentrically. Do not use burs that are modified, eccentrically designed, or have bent or 'soft' (non-heat treated) shanks.



Autochuck Bur Changing System

- Insert bur into autochuck until resistance is felt.
- Depress autochuck end cap button and continue to feed-in bur until it clicks and stops.
- Release end cap button. Now, apply light inward force to the dental bur. This will help set the chucking mechanism for initial start up. (Always tug on bur after it has been installed to confirm that it is secured).

- To remove,** grasp handpiece firmly so your thumb touches the end cap and push until a slight 'click' is noticed.
- Pull bur straight out.
- Release end cap.



CAUTION Never depress the autochuck end cap button or rest the end cap against any part of the oral anatomy during handpiece operation. Depressing the end cap while a bur is rotating can activate the chuck mechanism and result in end cap heat-up and/or loss of bur retention.

SAFETY INSTRUCTIONS

To minimize risk of serious injury:

- Always insert bur the full length of the chuck. If you attempt to extend it from the chuck, the bur may dislodge during use and possibly injure you or your patient.

To minimize risk of injury or damage to handpiece or auto chuck:

- Replace turbine when handpiece does not run at full speed or runs noisily.
- Use only recommended burs. An improperly clamped or bent bur, usually indicated by sudden high-pitched sound or increased vibration during use, may dislodge injuring you or your patient.
- Follow these safety instructions:
 - Confirm bur is secure by tugging on it after it is loaded
 - Verify concentric rotation by operating handpiece outside oral cavity. Do not use if it does not run concentrically or runs with excessive noise.
 - Do not operate handpiece without an installed bur.
 - Always use burs with overall length of less than 24mm. Shank length must be at least 7.3 mm. This includes most short shank burs. (see Handpiece Operation)
 - When using autochuck, never depress end cap while bur is rotating.

Lubrication - For Lubricated Handpieces ONLY

LUBRICATED Ceramic Bearing Turbine:

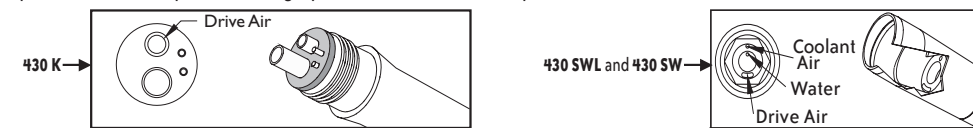
For maximum turbine life do not exceed recommended pressure.

Note: Lubricate handpiece daily with **DentaLube II**, **StarDental** Part #262539, and **prior** to each sterilization procedure.

- Disconnect handpiece.
- Assemble the conical red tip applicator, **StarDental** Part #202954, into the DentaLube II bottle cap.
- Find drive air tube at rear of handpiece and place three drops of DentaLube II. (See illustrations for more detail).

Note: Never operate handpiece without bur in place.

- With bur in place connect handpiece to tubing, operate for 20 seconds to expel excess lubricant.



NOTICE LubeFree Handpieces Contain A LubeFree Ceramic Bearing Turbine - This turbine uses a sophisticated ceramic bearing design and, therefore, requires no lubrication. To ensure the life of, and to prevent damage to, this turbine - do not lubricate it. If it gets lubricated even once, it MUST then continue to be lubricated for the rest of its life.

Cleaning & Sterilization

| | |
|-------------------------------|--|
| CAUTION | Do not exceed 135°C To prevent damage to the bur, use an autoclavable bur block. Do not use: • dry heat sterilizer • chemical disinfectors • surface wipes • sterilizer bags containing disinfectants |
| Limits On Reprocessing | Repeated processing has minimal effect on this handpiece. End of life is normally determined by wear and damage due to use. |

INSTRUCTIONS

| | |
|---|--|
| WARNING | Clean and sterilize handpieces and burs as soon as practical before first use and after each patient. |
| Containment and transportation: | It is recommended that handpieces are reprocessed as soon as is reasonably practical following use. |
| Preparation for cleaning: | Remove handpiece from swivel. No further disassembly is required. |
| Cleaning - Automated: | Washer-disinfectors are not recommended. |
| Cleaning - Manual: | <p>Cleaning Handpieces:</p> <p>Remove debris from external surfaces using a small brush and isopropyl alcohol. Clean internal surfaces of the handpiece at the swivel connection location using a small brush and isopropyl alcohol. Optical surfaces can be cleaned with a cotton swab soaked in isopropyl alcohol. Dry thoroughly. Repeat after each patient.</p> <p>Cleaning Diamond Burs:</p> <ul style="list-style-type: none"> After each use, clean the diamond bur by running it against a wet diamond cleaning stone. To mechanically clean, the diamond bur should be held in a solution of either enzymatic presoak, Sparkl Dental Instrument Cleaner StarDental Part# 205472, or water. Rinse the bur thoroughly and allow it to dry, then Sterilize – See Sterilization. |
| Lubrication: | Lubricate - For Lubricated Handpieces ONLY - See 'Lubrication' instruction section |
| Disinfection: | Use steam sterilization exclusively for complete sterility as outlined below. |
| Drying: | Dry the handpiece for 30 minutes minimum using the sterilization dry cycle and allow the handpiece to cool to room temperature in bag prior to use. If moisture is present, increase your sterilizer dry cycle appropriately. |
| Maintenance: | Use Junk-Out High Speed Chuck Cleaner Kit (263790) once a week prior to sterilization to ensure optimum working condition of the chuck. Instructions for cleaning the chuck are included in the Junk-Out kit. See Turbine Replacement section of this manual for additional information. |
| Inspection & function testing: | See Handpiece Operation or Troubleshooting sections of this manual. |
| Packaging: | Single: A standard sterilization packaging material must be used. Ensure that the pack is large enough to contain the handpiece without stressing the seals. In sets: Handpieces may be loaded into dedicated instrument trays or general purpose sterilization trays. Ensure that cutting edges are protected and do not exceed the tray manufacturer's limit per tray. Wrap the trays using appropriate packaging materials and methods. |
| Wrapped Instrument Sterilization: | Gravity Type Autoclave: • Minimum of 15 minutes at 132° C • Minimum of 30 minutes at 121° C Pre-Vacuum Autoclave: • Minimum of 4 minutes at 132° C Do not exceed 135° C |
| Storage: | Store in bag after sterilization until ready to use. |
| Additional information: | Do not exceed the sterilizer manufacturer's guidelines for load capacity. |
| Manufacturer contact: | See front or back panels of this manual. |

Troubleshooting

- Problem:** **NO LIGHT OR INTERMITTENT LIGHT**
Cause: Electrical connections
Correction: Verify connections: wall outlet-power pack, power pack-lamp control, and lamp control-tubing connector.
- Cause:** Crimped signal air line to lamp control
Correction: Straighten signal air line to allow air flow.
- Cause:** Corrosion on lamp contact pins
Correction: If 6-pin swivel, remove lamp from swivel. Clean lamp contact pins with isopropyl alcohol.
- Cause:** Swivel lamp burned out
Correction: Replace Xenon-Halogen lamp with **StarDental®** Part #262522, or, when operating with a non-StarDental 6-pin F.O. system, use **StarDental** Part #262962. (Consult your Operator's Manual for correct voltage.)
 Note: See Handpiece Installation, Non-Star 6-pin F.O. System.

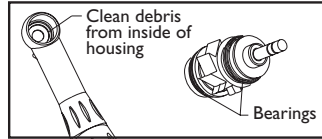
- Problem:** **YELLOWISH LIGHT**
Cause: Debris on optical surfaces
Correction: Clean all exposed optical surfaces. (Refer to Cleaning.)

- Problem:** **REDUCED LIGHT**
Cause: Low voltage
Correction: Refer to **StarBright® Fiber Optic Electrical System & Handpiece Tubing Instruction Manual** or contact **StarDental** Customer Service at 1-866-DTE-INFO.

- Cause:** Swivel lamp burned out
Correction: Replace Xenon-Halogen lamp with **StarDental** Part #262522, or, when operating with a non-StarDental 6-pin F.O. system, use **StarDental** Part #262962. (Consult your Operator's Manual for correct voltage.)
 Note: See Handpiece Installation, Non-Star 6-pin F.O. System.

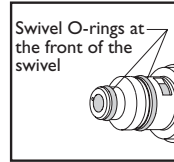
- Problem:** **LACK OF POWER**
Cause: Air pressure too low
Correction: Verify proper handpiece air pressure. (Refer to Handpiece Installation.)

- Cause:** Crimped tubing
Correction: Straighten tubing inside and outside delivery head.
- Cause:** Debris buildup
Correction: Clean inside of housing and end cap with swab and alcohol.



- Cause:** Worn out turbine
Correction: Refer to Turbine Replacement.
- Cause:** Swivel/Handpiece not threaded fully onto tubing
Correction: Refer to Handpiece Installation.

- Problem:** **WATER LEAKAGE**
Cause: Brittle handpiece and/or swivel rear seal
Correction: Replace rear seal for 4-line, "Green" **StarDental** Part #202897, and for 6-line, "Green" **StarDental** Part #262520. For 4-line HiFlo swivel, replace "Black" **StarDental** Part #263734 and for 6-pin HiFlo swivel, "Black" **StarDental** Part #263770.



- Cause:** Swivel O-rings worn
Correction: Replace both O-rings at the front of swivel using **StarDental** Swivel O-ring Kit. See Replacement Part Numbers.

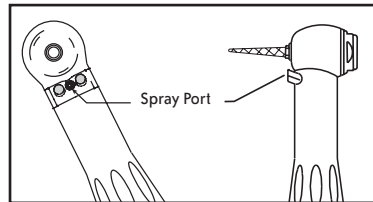
- Problem:** **SWIVEL WILL NOT DISENGAGE FROM HANDPIECE**
Cause: Buildup of debris
Correction: Place two drops of **DentaLube II** into swivel/tubing connector area. Rotate swivel to circulate lube. Disengage handpiece. Contact dealer if unable to disengage swivel. To prevent recurrence, refer to Cleaning

- Problem:** **IMPROPER SPRAY**
Cause: Clogged filters, tubes or water ports
Correction: Inspect and clean water filter in delivery head. Disconnect handpiece. Depress foot control; verify water exits the swivel. (If water does not come from swivel, refer to the swivel's instruction manual.)

- Cause:** Brittle handpiece/swivel rear seal
Correction: Replace rear seal

- Cause:** Swivel O-rings worn
Correction: Replace both O-rings at the front of swivel using **StarDental** Swivel O-ring Kit. See Replacement Part Numbers.

- Cause:** Clogged spray ports
Correction: Use clean-out wire to unclog ports.



- Problem:** **BUR LOCKS IN AUTOCHUCK**
Cause: Debris build-up in chucking mechanism
Correction: Clean with Junk-Out Chuck Cleaner P/N 263790

- Cause:** Use of non-ISO burs
Correction: Always use ISO burs.

- Problem:** **BUR SLIPS IN AUTOCHUCK**
Cause: Debris build-up in chucking mechanism
Correction: Clean with Junk-Out Chuck Cleaner P/N 263790

- Cause:** Use of non-ISO burs
Correction: Always use ISO burs.

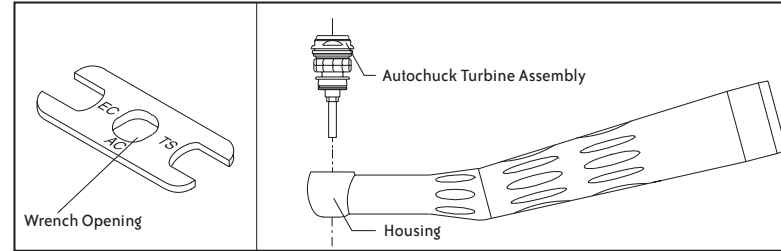
Note: Always use ISO burs to prevent locking and slipping of burs in autochuck. If problems of locking and slipping continue, replace worn autochuck turbine immediately with the appropriate **StarDental** Autochuck Turbine Replacement Kit for the handpiece type (LubeFree or Lubricated) - See Replacement Part Numbers.

If any problem persists, contact dealer for further assistance; or, contact **StarDental** Technical Service at 1-866-DTE-INFO.

Turbine Replacement

Note: Replace the turbine when the handpiece fails to achieve full speed and/or increases sharply in noise level. The replacement cartridge is available from your dealer and is easily replaced in the office. When ordering a replacement, be sure to order the appropriate **StarDental** Autochuck Turbine Replacement Kit for the handpiece type (LubeFree or Lubricated) - See Replacement Part Numbers.

- Remove old end cap and turbine assembly.
- Inspect housing before cleaning. Remove any obvious debris to prevent damage and to insure performance of turbine.
- Connect handpiece and run air through turbine housing without turbine installed for 5 seconds.
- Clean housing thoroughly with cotton swab and isopropyl alcohol. Dry with syringe air.
- Place turbine assembly into housing and gently insert as shown.



- Position and engage threads of end cap into the housing by hand until snug.
- Tighten end cap with the combination end cap wrench employing the wrench opening marked AC as shown above. Position wrench with marked side facing end cap for best wrench control.

Replacement Part Numbers

Always insist on StarDental Parts for best performance.

Note: Swivel assemblies sold separately.

| Description | Item Number |
|---|-------------|
| Note: Swivel assemblies sold separately. | |
| 430 SWL Satin LubeFree Handpiece..... | 268840 |
| 430 SWL Satin Lubricated Handpiece..... | 268860 |
| 430 SWL™ Fiber Optic LubeFree™ Handpiece with Autochuck Turbine..... | 264450 |
| 430 SWL™ Fiber Optic Lubricated Handpiece with Autochuck Turbine..... | 264451 |
| HiFlo Swivel Assembly: 4-line Fiber Optic..... | 263758 |
| HiFlo Swivel Assembly: ISO/C (6-pin 3.3 Vdc) StarBright™ | 263772 |
| HiFlo Swivel Assembly: ISO/C (6-pin 3.1 Vdc) (for non-StarDental F.O. System)..... | 263773 |
| StarBright™ Plug n' Play™ LED Swivel Assembly..... | 265646 |
| 430 SW Satin LubeFree Hanpiece..... | 268841 |
| 430 SW Satin Lubricated Handpiece..... | 268861 |
| 430 SW™ LubeFree Handpiece with Autochuck Turbine..... | 262057 |
| 430 SW™ Lubricated Handpiece with Autochuck Turbine..... | 264951 |
| Swivel Assembly 430 SW, ISO 2/3-line..... | 261550 |
| Swivel Assembly 430 SW, ISO 4-line..... | 261547 |
| 430 K™ LubeFree Handpiece with ISO 4-line Fixed Connection and Autochuck Turbine..... | 262052 |
| 430 K™ Lubricated Handpiece with ISO 4-line Fixed Connection and Autochuck Turbine..... | 264952 |
| Ceramic Bearing Autochuck Turbine Replacement Kit for LubeFree High-Speed Handpieces..... | 263739 |
| E6 LubeFree Ceramic Bearing Autochuck Turbine Replacement Kit for LubeFree High-Speed Handpieces..... | 265807 |
| Ceramic Bearing Autochuck Turbine Replacement Kit for Lubricated High-Speed Handpieces..... | 263968 |
| End Cap Replacement for Autochuck Turbine..... | 261294 |
| Replacement Lamp, 6-pin 3.3 VDC for swivel connected to StarBright F.O. System (Package of 2)..... | 262522 |
| Replacement Lamp, 3.1 VDC 6-pin for swivel connected to non-StarDental F.O. System (Package of 2)..... | 262962 |
| Rear Seal, 2/3-line (Package of 3)..... | 203103 |
| Rear Seal, 4-line (Package of 3)..... | 202897 |
| Rear Seal, 6-line (Package of 3)..... | 262520 |
| Rear Seal, HiFlo 6-Pin, Fiber Optic Swivel (Package of 3)..... | 263770 |
| Rear Seal, HiFlo 4-Line, Fiber Optic Swivel (Package of 3)..... | 263734 |
| End Cap Wrench..... | 203048 |
| Swivel O-Ring Kit for All StarDental Swivels (2 Large, 2 Small)..... | 259884 |
| Air Pressure Gauge (ISO 4/6-line)..... | 262591 |
| Cleaning Wire (Gauge: 0.008, Package of 2)..... | 256719 |
| DentaLube II..... | 262539 |
| ISO Tubing Set Screw (Package of 2)..... | 261355 |
| Allen Wrench .035..... | 280830 |
| Junk-Out High-Speed Chuck Cleaner..... | 263790 |
| Sparkl™ Dental Instrument Cleaner..... | 205472 |



Important Notice About Returning Product To The DentalEZ Inc.

Anyone wishing to return any DentalEZ Inc. product to a DentalEZ facility MUST obtain the proper RETURN AUTHORIZATION NUMBER from the Customer Service Department. The RA Number must appear clearly marked on both the outside and inside of the returned product carton. When calling for a return authorization number you will be asked to provide the following information:

To Obtain A
Return Authorization
Number Call
1-866-DTE-INFO

- Product Name, Model Number or Part Number
- Serial Number of Product
- Dealer Return Purchase Order Number
- Reason For Return
- Copy of Invoice Showing Purchase

Items will be evaluated. Return Authorization Number is not a guarantee for credit. Your cooperation with this procedure will help us expedite processing of any returns.

For new products, manuals and technical information, call 1-866-DTE-INFO or visit our web site @ www.dentalez.com

Limited Warranty

O-Rings and Seals are specifically excluded from this warranty.

DentalEZ® warrants the **430 SWL®**, **430 SW™** and **430 K®** Handpieces for 1 year from the date of purchase* with the exception of the fiber optic glass which carries a warranty for 5 years from date of handpiece purchase*.

Please note the following additional terms of our warranty policy:

- Warranties cover manufacturing defects only and do not cover defects resulting from abuse, improper handling, cleaning, care or maintenance, normal wear and tear or non-observance of operating, maintenance or installation instructions. **Failure to use authorized parts or an authorized repair facility voids this warranty.**
- **Liability is limited to repair or replacement of the defective product at our sole discretion. All other liabilities, in particular liability for damages, including, without limitation, consequential or incidental damages are excluded.**
- THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO EMPLOYEE, REPRESENTATIVE OR DEALER IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR TO GRANT ANY OTHER WARRANTY.

*Provided conditions in warranty are met.

WARRANTY REGISTRATION

PLEASE VISIT ONE OF THE WEBSITES BELOW TO REGISTER YOUR STARDENTAL PRODUCT. THIS WILL ENSURE PROPER REGISTRATION AND PROMPT AND ACCURATE SERVICE SHOULD ANY OF YOUR PURCHASES NEED EVALUATION OR REPAIR DURING THE WARRANTY PERIOD.

For Identafi® Oral Cancer Screening System products: www.identafi.net/warranty

For all Other StarDental® Products: www.dentalez.com/warranty