

**StarDental® Instrument Solutions**

**430 SWL® 45 and 430 SW™ 45**  
Lube Free High-Speed Handpieces Instruction manual

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

**Indications For Use**  
430 SWL® 45 and 430 SW™ 45 air-powered high-speed handpieces are used by trained dental professionals for the removal of impacted third molars as well as endodontic and periodontal procedures for which a conventional handpiece would be used.

**Do Not Use For Oral Surgery**

**DentaleZ**  
INTEGRATED SOLUTIONS™

CE 0344

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

**WARNING**

To minimize risk of serious injury when using handpiece:

- Do not position handpiece in patient's mouth so that air is directed into any soft tissue wound or beneath mucosa or dermis. Doing so could result in air emphysema or air embolism.
- Do not use for oral surgery
- Use genuine StarDental® LubeFree™ E6 replacement turbine in the 430 SWL 45 handpiece. The StarDental E6 turbine is critical to the proper exhaust of the drive air. Using a turbine other than the E6 turbine may not ensure the air is properly exhausted away from the oral tissue site and may increase the risk of air emphysema.
- **Failure to use the E6 turbine will void the handpiece and turbine warranty.**
- Before operating handpiece, read all instructions. Save instructions for future reference.

**Contents**

**430 SWL 45** and **430 SW 45** High-Speed Handpieces are designed to fit a 360° quick disconnect swivel. The 430 SWL 45 connects to both 4 hole and 6-pin ISO fiber optic tubing. The 430 SW 45 connects to standard 4 hole tubing.

Below is a list of the instructions contained in this manual.

- Specifications
- Handpiece Installation
- Handpiece Operation
- Safety Instructions
- Cleaning & Sterilization
- Troubleshooting
- Turbine Replacement
- Replacement Part Numbers
- Warranty

**Specifications (Nominal)**

**430 SWL 45:** Type: High speed fiber optic with a swivel & replaceable turbine. (Swivel sold separately.)  
 Operating Air Pressure: 30 to 34 psi with fiber optic tubing  
 Air Consumption: 1.7 SCFM @ 34 psi  
 No Load Speed: 400,000 rpm  
 Connection: 360° quick disconnect swivel with 4-line ISO B configuration or 6-pin F.O. ISO C configuration  
 Power: 12 watts  
 Weight: 52g

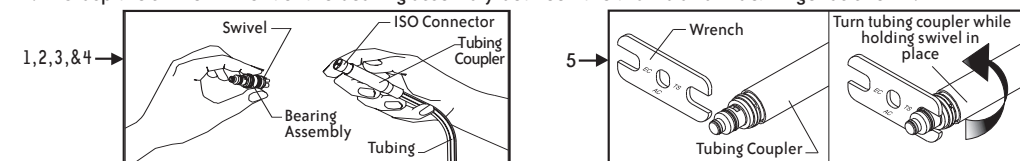
**430 SW 45:** Type: High speed with a swivel & replaceable turbine. (Swivel sold separately.)  
 Operating Air Pressure: 30 to 34 psi  
 Air Consumption: 1.7 SCFM @ 34 psi  
 No Load Speed: 400,000 rpm  
 Connection: 360° quick disconnect swivel with 4-line or 2-line ISO configuration  
 Power: 12 watts  
 Weight: 51g



**Handpiece Installation**

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

1. Grasp the swivel in front of the bearing assembly between the thumb and index finger as shown.



**Handpiece Installation, continued**

2. Slide tubing coupler until the end of the ISO connector is exposed; hold in hand as shown with fingers securing the tubing.
3. Align and insert swivel tubes into the ISO connector holes.
4. 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.
5. Using the wrench as shown, tighten the swivel to tubing coupler until snug. Be sure to turn tubing coupler, not swivel. DO NOT OVER TIGHTEN. Connect handpiece to swivel.

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

**Air and Water Adjustment**

1. 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 30-34 psi for the **430 SWL 45** and **SW 45**.

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 want to operate at 34 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	34 psi + 5 psi = 39 psi
12 feet tubing	34 psi + 12 psi = 46 psi

2. Water Pressure –

Adjust water volume at the delivery head to obtain a satisfactory spray stream, 30 cc/m is recommended.

3. Non-Star 6-pin Fiber Optic System:

If the handpiece is connected to a non-StarDental 6-pin 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.

**Handpiece Operation**

Use 25mm surgical length burs or standard length concentric diamond and carbide burs; all burs to have .0628" nominal diameter friction grip shanks designed for high speed handpieces. Every StarDental Diamond Bur meets the 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 Diamond Bur maintains required hardness. Before use, verify concentric rotation by operating handpiece outside the oral cavity in a safe place.

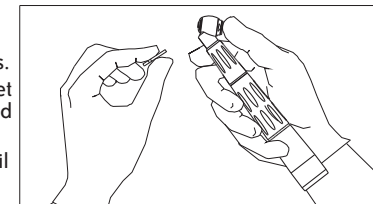
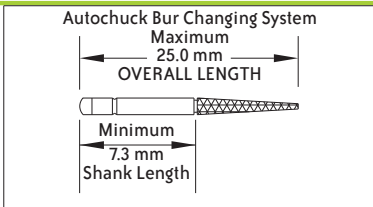
**NOTE:** Do not use burs that produce excessive noise or do not run concentrically. Do not use burs that are modified, eccentrically designed, or are bent or 'soft' (non-heat treated) shanks.

**Autochuck Bur Changing System**

1. Insert bur into autochuck until resistance is felt.
2. Depress autochuck end cap button and continue to feed-in bur until it clicks and stops.
3. 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 secure).

1. To remove, grasp handpiece firmly so your thumb touches the end cap and push until a slight 'click' is noticed.
2. Pull bur straight out.
3. 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**

**WARNING**

To minimize risk of serious injury:

- Use genuine StarDental LubeFree E6 replacement turbine in the handpiece. The StarDental E6 turbine is critical to the proper exhaust of the drive air. Using a turbine other than the E6 turbine may not ensure the air is properly exhausted away from the oral tissue site and may increase the risk of air emphysema. Failure to use the E6 turbine will void the handpiece and turbine warranty.
- 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.

**CAUTION**

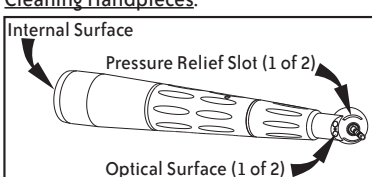
To minimize risk of injury or damage to handpiece or auto chuck:

- 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 25mm. 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.

**Cleaning & Sterilization**

<b>CAUTION</b>	Do not exceed 135°C  To prevent damage to the bur, use an autoclavable bur block.  <b>Do not use:</b> <ul style="list-style-type: none"> <li>• dry heat sterilizer</li> <li>• cold sterilizers</li> <li>• ultrasonic cleaners</li> <li>• chemical disinfectors</li> <li>• immersion techniques</li> <li>• surgical milk</li> <li>• surface wipes</li> <li>• hand soaps</li> <li>• detergents</li> <li>• surface sprays</li> <li>• sterilizer bags containing disinfectants</li> </ul>
<b>Limits On Reprocessing</b>	Repeated processing has minimal effect on this handpiece. End of life is normally determined by wear and damage due to use.

**INSTRUCTIONS**

<b>WARNING</b>	Clean and sterilize handpieces and burs as soon as practical before first use and after each patient.
<b>Containment and transportation:</b>	It is recommended that handpieces are reprocessed as soon as is reasonably practical following use.
<b>Preparation for cleaning:</b>	Remove handpiece from swivel. No further disassembly is required.
<b>Cleaning - Automated:</b>	Washer-disinfectors are not recommended.
<b>Cleaning - Manual:</b>	<p><b>Cleaning Handpieces:</b></p>  <p>Remove debris from external surfaces and housing pressure relief slots 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><b>Cleaning Diamond Burs:</b></p> <ul style="list-style-type: none"> <li>• After each use, clean the diamond bur by running it against a wet diamond cleaning stone.</li> <li>• 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.</li> <li>• Rinse the bur thoroughly and allow it to dry, then Sterilize – See Sterilization.</li> </ul>
<b>Disinfection:</b>	Use steam sterilization exclusively for complete sterility as outlined below.
<b>Drying:</b>	Dry the handpiece for 30 minutes 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.
<b>Maintenance:</b>	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.
<b>Inspection &amp; function testing:</b>	See Handpiece Operation or Troubleshooting sections of this manual.
<b>Packaging:</b>	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.
<b>Wrapped Instrument Sterilization:</b>	Gravity Type Autoclave: <ul style="list-style-type: none"> <li>• Minimum of 15 minutes at 132°C.</li> <li>• Minimum of 30 minutes at 121° C</li> </ul> Pre-Vacuum Autoclave: <ul style="list-style-type: none"> <li>• Minimum of 4 minutes at 132° C</li> </ul> Do not exceed 135° C
<b>Storage:</b>	Store in bag after sterilization until ready to use.
<b>Additional information:</b>	Do not exceed the sterilizer manufacturer's guidelines for load capacity.

<b>Manufacturer contact:</b>	See front or back panels of this manual.
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## Troubleshooting

### Problem: AIR LEAKAGE AROUND BUR INTO WORK AREA

**Cause:** Housing pressure relief slots are clogged

**Correction:** Clean per *Cleaning and Sterilization*

**Cause:** Improper turbine replacement

**Correction:** Replace with **StarDental**® turbine per *Turbine Replacement* instructions.

### 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:** **StarBright**® Tubing, corrosion on lamp contact pins

**Correction:** Remove lamp (located in the **StarBright** swivel connector) and clean contact pins with isopropyl alcohol.

**Cause:** **StarBright Tubing**, 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:** **StarBright System**, lamp

**Correction:** Replace lamp in 6-pin swivel 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

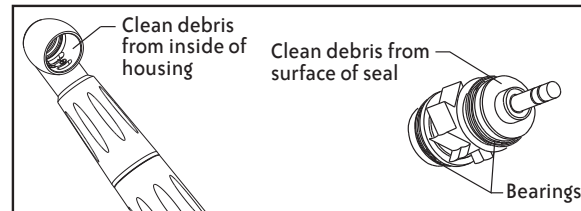
**Correction:** Verify proper handpiece air pressure. (Refer to *Handpiece Installation*.)

**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*.

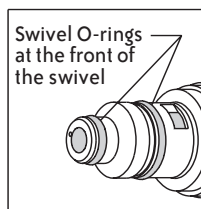
### Problem: WATER LEAKAGE

**Cause:** Brittle handpiece 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

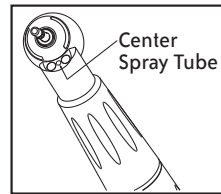
**Cause:** Buildup of debris

**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 WATER STREAM

**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 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**".

### 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 immediately with **StarDental** Autochuck Turbine Replacement Kit. If any problem persists, contact dealer for further assistance; or, contact **StarDental** Technical Service at 1-866-DTE-INFO.

## Turbine Replacement

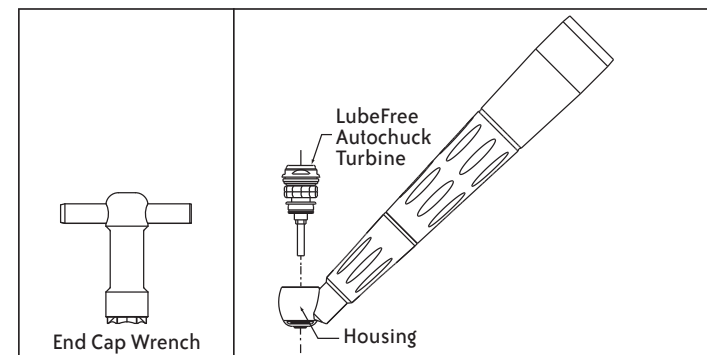


To minimize risk of serious injury, use genuine StarDental LubeFree™ E6 replacement turbine in the 430 SWL 45 handpiece. The StarDental E6 turbine is critical to the proper exhaust of the drive air. Using a turbine other than the E6 turbine may not ensure the air is properly exhausted away from the oral tissue site and may increase the risk of air embolism.

**Failure to use the E6 turbine will void the handpiece and turbine warranty.**

**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 **StarDental** Autochuck Turbine Replacement Kit.

1. Remove old end cap and turbine.
2. Inspect housing before cleaning. Remove any obvious debris to prevent damage and to ensure performance of turbine.
3. Connect handpiece and run air through turbine housing without turbine installed for 5 seconds.
4. Clean housing thoroughly with cotton swab and isopropyl alcohol. Dry with syringe air.
5. Place turbine assembly into housing and gently insert as shown.
6. Position and engage threads of new end cap into the housing by hand until snug.
7. Tighten end cap with the end cap wrench.



## Replacement Part Numbers

**Always insist on StarDental Parts for best performance.**

Description	Item Number
<b>Note:</b> Swivel assemblies sold separately.	
<b>430 SWL 45</b> Fiber Optic LubeFree, Handpiece with Autochuck Turbine	265821
HiFlo Swivel Assembly: 4-line Fiber Optic	263758
HiFlo Swivel Assembly: ISO/C (6-pin 3.3 Vdc) <b>StarBright</b>	263772
HiFlo Swivel Assembly: ISO/C (6-pin 3.1 Vdc) (for non-Star F.O. System)	263773
<b>430 SW 45</b> LubeFree Handpiece with Autochuck Turbine	265822
Swivel Assembly 430 SW, ISO 2/3-line	261550
Swivel Assembly 430 SW, ISO 4-line	261547
E6 LubeFree Ceramic Bearing Autochuck Replacement Turbine	265807
Autochuck End Cap	261294
Replacement Lamp, 6-pin 3.3 Vdc for swivel connected to <b>StarBright</b> F.O. System (Package of 2)	262522
Replacement Lamp, 3.1 Vdc 6-pin for swivel connected to non-Star F.O. System (Package of 2)	262962
HiFlo 6-pin Swivel, 3.3 volts	263772
HiFlo 6-pin Swivel, 3.1 volts	263773
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	265556
Wrench	203048
Swivel O-Ring Kit - Non HiFlo (2 Large, 2 Small)	259884
Air Pressure Gauge (ISO 4/6-line)	262591
Cleaning Wire (Gauge: 0.008, Package of 2)	256719
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 Group

Anyone wishing to return any DentalEZ Group 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](http://www.dentalez.com)**

### Limited Warranty

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

DentalEZ® warrants the 430 SWL® 45 and 430 SW™ 45 Handpieces for 1 year from the date of purchase\* with the exception of the E6 LubeFree Ceramic Bearing Autochuck Turbine which is warranted for 6 months from date of handpiece purchase\* and 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.**
- **Failure to use the E6 turbine shall void 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 STAR DENTAL 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](http://www.identafi.net/warranty)

For all Other StarDental® Products: [www.dentalez.com/warranty](http://www.dentalez.com/warranty)