

StarDental® Instruments

Star® Simplicity FX and SW High-Speed Handpieces Instruction Manual

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

Non-Sterile Medical Device



CE 0344

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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 **Star® Simplicity FX** and **SW High-Speed Handpieces** are used by trained dental professionals for a variety of procedures including but not limited to caries and amalgam removal, restorative work and crown preparations.

NOTE Any serious incident occurring from the use of this device should be reported to StarDental immediately. If incident occurred in a EU Member State the Competent Authority must be notified.

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- Handpiece Operation
- Safety Rules
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- Sterilization
- Troubleshooting
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Specifications

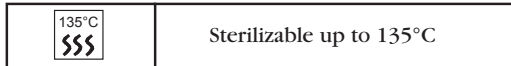
Star® Simplicity FX is a conventional non-swivel High-Speed handpiece. **Star® Simplicity SW** High-Speed Handpiece is designed to fit a **StarDental®** 360° quick disconnect swivel. The **Star® Simplicity SW** connects to both **StarDental 2/3** Line or standard 4-Line ISO fiber optic (F.O.) tubing.

Star® Simplicity FX

- 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: 400,000 rpm
- Connection: 4-line fixed ISO configuration
- Power: 10 watts
- Weight: 43g

Star® Simplicity 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: 400,000 rpm
- Connection: 360° quick-disconnect non fiber optic swivel with 2/3 line or 4-Line ISO configuration
- Power: 12 watts
- Weight: 47g



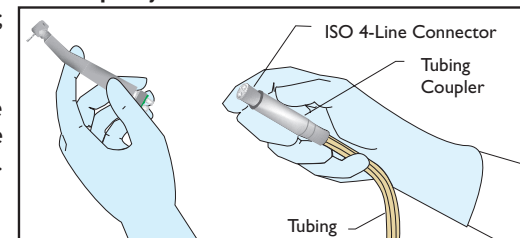
Handpiece Installation

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

Star® Simplicity FX

- 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.

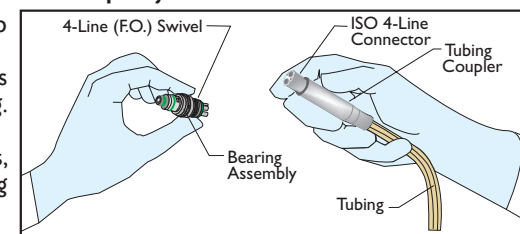
Star® Simplicity FX



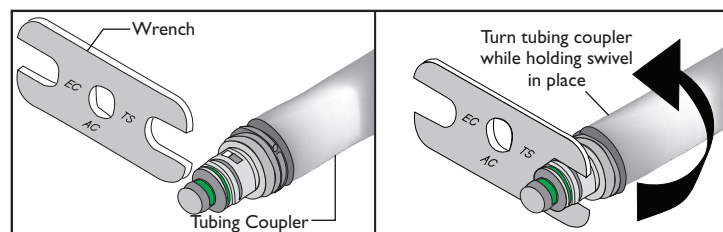
Star® Simplicity SW

- 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.

Star® Simplicity SW



- 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.

Handpiece Operation

Air and Water Adjustment

- Air Pressure –

Note: To prevent premature damage to the turbine, do not exceed 34 psi when using a HiFlo swivel.

Using air pressure gauge **StarDental** Part #262591, for 4-Line tubing and handpieces, if a gauge is available, set pressure to:

- 30-32 psi – for the **Star® Simplicity FX**
- 30-32 psi – for the **Star® Simplicity SW**

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 **Star® Simplicity FX** 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

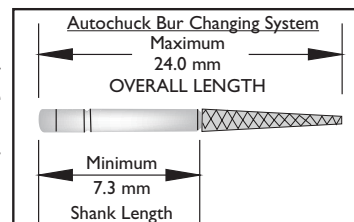
- Water Pressure – Adjust water volume at the delivery head to obtain a satisfactory spray mist.

Autochuck Turbine - Star® Simplicity FX and Star® Simplicity SW:

CAUTION Use burs with an overall length of less than 24mm and a shank length of at least 7.3mm.

Use standard length concentric diamond and carbide burs with .0628" (1.6mm) 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.

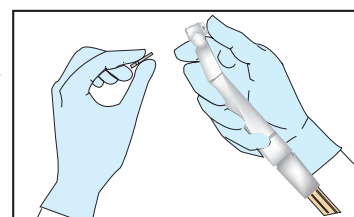


Note: Do not use burs that produce excessive noise or do not run concentrically. Do not use burs that are modified, eccentrically designed, or have bent or 'soft' (non-heat treated) shanks.

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

WARNING

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

CAUTION

Replace the turbine when the handpiece fails to achieve full speed and/or increases sharply in noise level. This is an indication of a failing turbine. A failing turbine will reduce the efficiency of the handpiece and may result in end cap heat up. See "Turbine Replacement".

- Always tug on bur after chuck is loaded to confirm that the bur is secured.
- Before use, verify concentric rotation by operating the handpiece outside the oral cavity in a safe place. Do not use burs that do not run concentrically or produce excessive noise.
- Never operate handpiece without a bur installed.
- Always use burs with an overall length of less than 24 mm. The shank length must be at least 7.3 mm. This includes most short shank burs.
- When using handpieces with autochuck turbine - never depress end cap while bur is rotating.
- Use only recommended burs to prevent damage to handpiece turbine and/or chuck and in some cases to prevent burs from improper or incorrect placement. An improperly clamped bur may dislodge during use, causing injury to you or your patient. A sudden high-pitched sound or increased vibration while handpiece is operating alerts the operator to the possibility that the chuck is not clamped sufficiently to retain the bur or a bent bur is inserted.

Lubricating

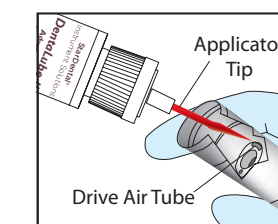
The **Star® Simplicity FX and SW Handpieces** contain a turbine with ceramic bearings that are lubricated and sealed to keep the dirt out, therefore, never clean ultrasonically or immerse in solvent that would dilute the lubricant. Lubrication of the turbine is required daily and prior to sterilization. DentaLube II is required to ensure extended life of the **Star® Simplicity Handpieces**.

For maximum turbine life do not exceed recommended pressure.

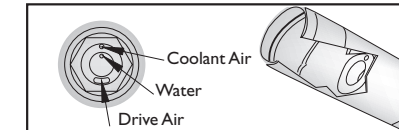
Note: Lubricate handpiece daily. Use only DentaLube II, **StarDental** Part #262539.

- 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 two drops of DentaLube II. (See illustrations for more detail).
- With bur in place connect handpiece to tubing, operate for 20 seconds to expel excess lubricant.

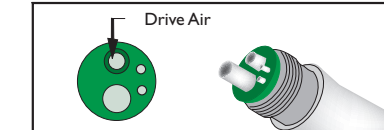
Note: Never operate handpiece without bur in place.



Star® Simplicity SW



Star® Simplicity FX



Cleaning, Sterilization and Lubricating

CAUTION	It is the responsibility of the user to use only FDA compliant sterilizing equipment and accessories that are capable of meeting the manufacturers recommendations below.
CAUTION	Use steam sterilization exclusively for complete sterility. Do not exceed 135°C To prevent damage to the bur, use an autoclavable bur block. Do not use: • dry heat sterilizer • cold sterilizers • ultrasonic cleaners • chemical disinfectors • immersion techniques • surgical milk • surface wipes • hand soaps • detergents • surface sprays • 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:

Cleaning the Autochuck (Star® Simplicity FX and SW):

PLEASE NOTE: to ensure that your High-Speed chuck continues to be in optimum working condition, clean once a week with Junk-Out High-Speed Chuck Cleaner Kit P/N 263790: Shake well before use

- Install brush to handle. See diagram at right.
- Use one new brush per cleaning application.
- Do not reuse brushes.
- Remove bur from chuck.
- Dip brush into bottle.
- Remove excess cleaner from the brush.
- Insert brush into bur end of turbine.
- Clean gently by rotating and inserting the brush in and out of the turbine.
- Repeat process if necessary.

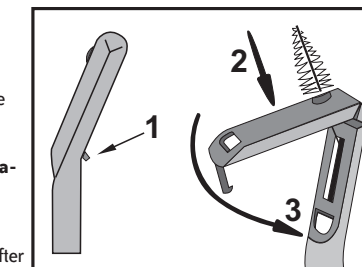
Reseal cap on bottle immediately after use to reduce evaporation.

Cleaning Burs

NOTE: Burs **Must** Be Cleaned and Sterilized Before First Use and After Each Patient.

Cleaning Diamond Burs:

- 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 or water.
- Rinse the bur thoroughly and allow it to dry.
- Sterilize – See Sterilization

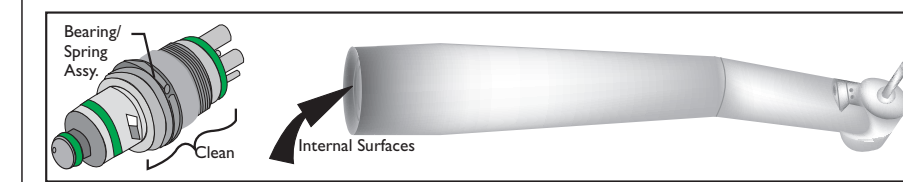
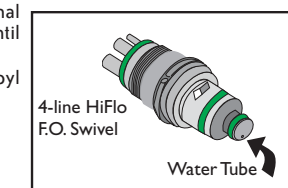


Cleaning the Swivel

- Disconnect handpiece from swivel; disconnect swivel from tubing by rotating coupler in the opposite direction as shown in Handpiece Installation. Depress foot control; verify water exits tubing.
- Connect swivel to tubing by following steps in Handpiece Installation. Depress foot control; if almost no water exits front of swivel, clean as follows.
- Remove swivel and find water tube on front face of swivel. See illustration.
- Insert cleaning wire, **StarDental®** Part #256719, into water tube. Move wire back and forth to loosen debris at blockage.
- Remove wire and apply a blast of air into water tube with syringe air.

Cleaning the Mating Parts of the Swivel

To optimize operation of the swivel disconnect mechanism, swab all internal surfaces of handpiece with a cotton swab soaked in isopropyl alcohol until clean. Dry using syringe air. Clean area from bearing/spring assembly at rear of swivel using isopropyl alcohol and a toothbrush. Dry using syringe air.



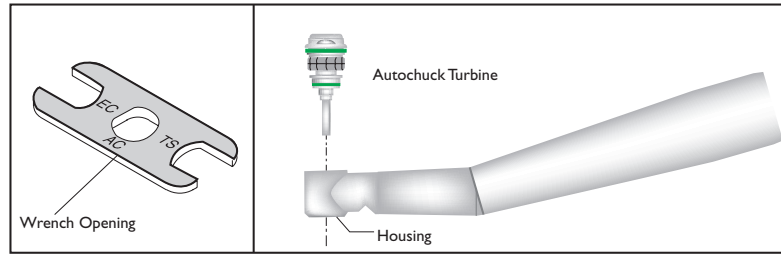
Lubrication:	Lubricate - See 'Lubrication' instruction section	
Disinfection:	Use steam sterilization exclusively for complete sterility as outlined below.	
Maintenance:	Use Junk-Out High Speed Chuck Cleaner Kit (263790) once a week prior to sterilization to ensure optimum working condition of the chuck. 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 Do not exceed 135° C	Pre-Vacuum Autoclave: • Minimum of 4 minutes at 132° C
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.	
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.	

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 an Autochuck Turbine replacement, be sure to order **StarDental** Autochuck Turbine Replacement Kit, **StarDental** Part #260296. When ordering a Manual Chuck Turbine replacement, be sure to order **StarDental** Manual Chuck Turbine Replacement Kit, **StarDental** Part #258661.

Autochuck Turbine - Star® Simplicity FX, and Star® Simplicity SW:

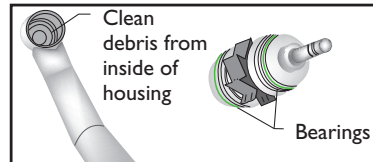
- Remove old end cap and turbine assembly, use end cap wrench shown.
- Inspect housing before cleaning. Remove any obvious debris to prevent damage and to insure performance of turbine.
- Connect handpiece and run air through turbine housing without turbine installed for 5 seconds.
- Clean housing thoroughly 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.



Troubleshooting

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 build-up
Correction: Clean inside of housing and end cap with swab and alcohol. Lubricate with DentalLube II after reassembly.
Note: Before cleaning, check for and remove any debris from turbine housing to prevent damage and to ensure turbine performance.



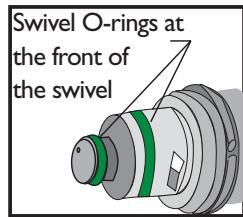
- Cause:** Worn out turbine
Correction: Refer to Turbine Replacement.
Cause: Handpiece or swivel not threaded fully onto tubing
Correction: Refer to Handpiece Installation.

Problem: WATER LEAKAGE

- Cause:** Brittle handpiece or swivel silicone rubber seal
Correction: Replace silicone rubber seal:
For 4-line fixed back end handpieces and 4-line non HiFlo, non LED swivels - **StarDental** Part #202897 (Green)
For 4-line HiFlo fiber optic swivel - **StarDental** Part #263734 (Black)
Cause: Swivel O-rings worn
Correction: Replace both O-rings on all non HiFlo swivels with **StarDental** Part #259884; or, for HiFlo and LED swivels, use **StarDental** Part #263771. Refer to O-ring and Rear Seal Replacement section in applicable swivel instruction manual.

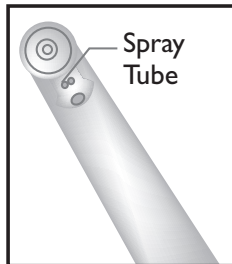
Problem: SWIVEL WILL NOT DISENGAGE FROM HANDPIECE

- Cause:** Build-up of debris
Correction: Place two drops of DentalLube II into swivel/tubing connector area. Rotate swivel to circulate lube. Disengage handpiece. Contact dealer if unable to disengage swivel. To prevent reoccurrence, refer to Cleaning.



Problem: IMPROPER SPRAY

- Cause:** Clogged filters, tubes, or water ports
Correction: Inspect and clean water filter in delivery head. Disconnect handpiece and depress foot control. Verify water exits the swivel. If water does not come from swivel, refer to Cleaning.
Cause: Brittle handpiece or swivel silicone rubber seal
Correction: Replace silicone rubber seal
Cause: Swivel O-rings worn
Correction: Replace O-rings. (See replacement O-rings.)
Problem: BUR LOCKS OR SLIPS IN AUTOCHUCK
Cause: Debris build-up in chucking mechanism
Correction: Clean Chuck, see 'CLEANING The Chuck' under 'Cleaning and Lubricating'.
Cause: Use of non-ISO burs
Correction: Always use ISO burs.



Note: Always use ISO burs to prevent locking and slipping of burs in turbine chuck. If problems of locking and/or slipping continues, replace worn Turbine immediately. Replace Autochuck Turbine with **StarDental** Part #260296, Autochuck Turbine Replacement Kit.

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

Replacement Part Numbers

Always insist on StarDental Parts for best performance.

Note: Swivel assemblies sold separately.

Description	Item Number
Star® Simplicity FX Handpiece with ISO 4-Line Fixed Connection and Autochuck Turbine.....	265634
Star® Simplicity SW Handpiece with Autochuck Turbine.....	265633
HiFlo Swivel Assembly: 4-Line Fiber Optic	263758
Autochuck Ceramic Bearing Turbine Replacement Kit for Lubricated High-Speed Handpieces	260296
End Cap Wrench, Autochuck Turbine.....	203048
Rear Seal, HiFlo 4-Line Fiber Optic Swivel (Package of 3)	263734
Rear Seal, 4-Line for fixed back end handpieces and non HiFlo, non LED swivels (Package of 3)	202897
Swivel O-Ring Kit for all non HiFlo Swivels (2 Large, 2 Small)	259884
Air Pressure Gauge (ISO 4/6-Line)	262591
Cleaning Wire (Gauge: 0.008, Package of 2)	256719
DentalLube II	262539
Junk-Out High-Speed Chuck Cleaner.....	263790



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 Star® Simplicity Handpiece to be free of defects in material and workmanship, under normal usage, under the following terms:

StarDental® Products:	Warranty Period:
Handpieces:	
Star® Simplicity FX	1 Year from date of purchase*
Star® Simplicity SW	1 Year from date of purchase*
Handpiece Parts:	
Ceramic Bearing Autochuck Turbine	1 Year from date of purchase*

Please note the following additional terms of our warranty and return 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.**

WARRANTY REPAIRS: Parts repaired or replaced on a product that is in warranty will be warranted for the duration of that product's original warranty.

NON-WARRANTY REPAIRS: The warranty on parts either repaired or replaced on an out-of-warranty product will cover the repaired part only and will be for the time frame of a new parts warranty period.

PRODUCT RETURN: Opened products or product returns more than a year old cannot be returned for credit. There will be a 15% (\$25.00 minimum) restocking charge on all items authorized for return.

*Provided conditions defined in the Instruction Manual are met.

WARRANTY REGISTRATION

PLEASE VISIT THE WEBSITE 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.

StarDental® Products: www.dentalez.com/warranty