


StarDental® Instruments

430 SWL® Flex 430 SWL® Torque Flex High-Speed Handpiece Instruction Manual

Includes Lubricated and LubeFree

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 **430 SWL® Flex** 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.

NOTICE 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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Specifications

430 SWL® Flex High-Speed Handpiece is designed to fit a 6-pin Flex *Multiflex Lux® swivel. The swivel connects to standard ISO Type C (6-pin Tubing) fiber optic tubing.

430 SWL Flex Type: High speed fiber optic with a Flex Swivel and replaceable autochuck turbine. (Swivel sold separately.)

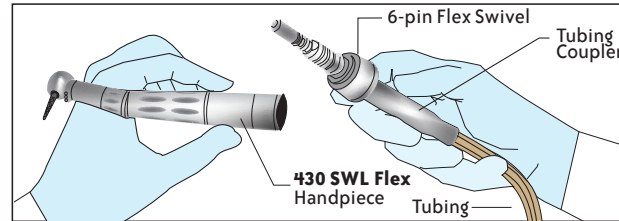
Operating Air Pressure: 40 to 42 psi
 Air Consumption: 1.9 SCFM @ 40 psi
 No Load Speed: 385,000 rpm Flex
 340,000 rpm Torque Flex
 Connection: 360° 6-pin Flex Swivel with ISO Type C (6 pin Tubing) configuration and fiber optics.
 Power: 26 watts @ 42 PSI Flex
 31 watts @ 42 PSI Torque Flex
 Weight: 60g

135°C SSS	Sterilizable up to 135°C
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*Multiflex Lux® is a registered trademark of Kavo corporation.

Handpiece Installation

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



Snap **430 SWL® Flex** handpiece onto 6-pin Flex Swivel.

Air and Water Adjustment

1. Air Pressure –

NOTICE To prevent premature damage to the turbine, do not exceed recommended pressure (see Specifications) when using a Flex Swivel.

Using an air pressure gauge, **StarDental®** Part #262591 for 4/6-Line, set pressure to 40-42 psi.

If more torque is desired, increase air pressure to a **maximum of 42 psi**.

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 40 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	40 psi + 5 psi = 45 psi
12 feet tubing	40 psi + 12 psi = 52 psi

2. Water Pressure –

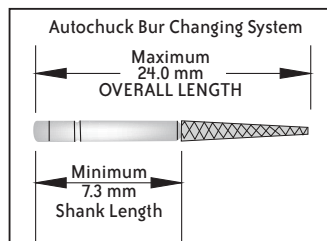
Adjust water volume and coolant air pressure at the delivery head to obtain a satisfactory spray mist.

3. Chip Air Pressure–

Adjust to 40 PSI to obtain a satisfactory spray mist.

Handpiece Operation

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 the specifications at right for recommended lengths. Contact your dealer for a complete list of **StarDental** Diamond Burs. **StarDental** autochuck turbines have the following bur requirements:

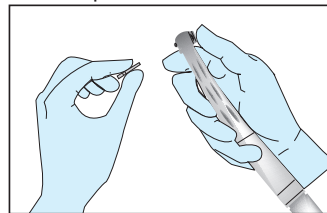


Use only burs with hardened, tempered steel shanks or carbide shanks. Every **StarDental** Diamond Bur maintains required hardness. Before use, verify concentric rotation by operating handpiece outside the oral cavity in a safe place.

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 secured).



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

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:

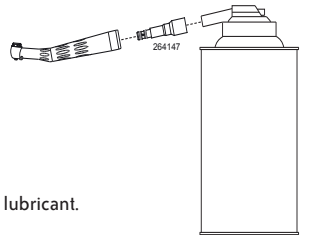
- Replace turbine when handpiece does not run at full speed or runs noisily.
- Use only recommended burs. An improperly clamped or bent bur, usually indicated by sudden high-pitched sound or increased vibration during use, may dislodge injuring you or your patient.
- Follow these safety instructions:
 - 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**

For maximum turbine life do not exceed recommended pressure.

Note: Lubricate handpiece daily with **Handpiece Lubricant, StarDental** Part #264183, and prior to each sterilization procedure.

1. Disconnect handpiece.
2. Shake lubricant can well before using.
3. Thread **430 SWL Flex Lubricated** Lubricant Tip onto can nozzle.
4. Press handpiece onto **430 SWL Flex Lubricated** Lubricant Tip until handpiece stops.
5. Place rag around handpiece.
6. Holding firmly, press spray button on can for one second.
7. Remove handpiece from **430 SWL Flex Lubricated** Lubricant Tip.
Note: Never operate handpiece without bur in place.
8. With bur in place connect handpiece to tubing, operate for 20 seconds to expel excess lubricant.
9. Wipe off excess lubricant from handpiece.



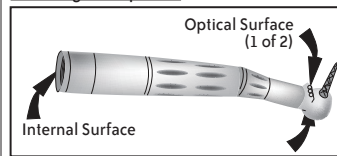
NOTICE

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	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	Do not exceed 135°C To prevent damage to the bur, use an autoclavable bur block. Do not use: <ul style="list-style-type: none"> • dry heat sterilizer • chemical disinfectors • surface wipes • sterilizer bags containing disinfectants • cold sterilizers • immersion techniques • hand soaps • surface sprays • ultrasonic cleaners • surgical milk • detergents
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.
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. Handpiece should be routinely maintained, checked for corrosion, worn parts, etc. and should be replaced on an as needed basis.
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: <ul style="list-style-type: none"> • Minimum of 15 minutes at 132°C. • Minimum of 30 minutes at 121°C Pre-Vacuum Autoclave: <ul style="list-style-type: none"> • Minimum of 4 minutes at 132°C Do not exceed 135°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.

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 swivel contact pins
Correction: Clean contact pins on Flex Swivel with isopropyl alcohol
- Cause:** Lamp burned out
Correction: Replace lamp in Flex Swivel - refer to the swivel's instruction manual.

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 vendor's instruction manual of electrical system
- Cause:** Lamp
Correction: Replace lamp in Flex Swivel - refer to the swivel's instruction manual.

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 not threaded fully onto tubing
Correction: Refer to Handpiece Installation.

Problem: WATER LEAKAGE

- Cause:** Flex Swivel O-rings worn
Correction: Replace o-rings on Flex Swivel with **StarDental**® part #264195
- Cause:** Flex Swivel faulty rear seal
Correction: Replace rear seal on Flex Swivel with **StarDental** part #264217

Problem: SWIVEL WILL NOT DISENGAGE FROM HANDPIECE

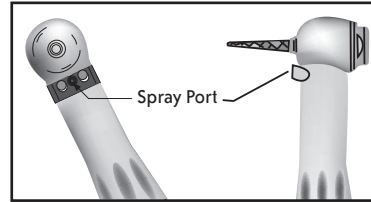
- Cause:** Buildup of debris
Correction: Place 2 drops of **DentaLube II** into swivel/tubing connector area. Rotate swivel to circulate lube. Disengage handpiece. Contact dealer if unable to disengage swivel. To prevent recurrence, refer to Cleaning.

Problem: IMPROPER SPRAY

- Cause:** Coolant air line not working
Correction: Setup delivery unit to supply coolant air to handpiece
- 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 swivel's instruction manual)
- Cause:** Flex Swivel O-rings worn
Correction: Replace o-rings
- Cause:** Brittle swivel rear seal
Correction: Replace rear seal

Problem: IMPROPER SPRAY, continued

- 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 Part Number 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 Part Number 263790

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

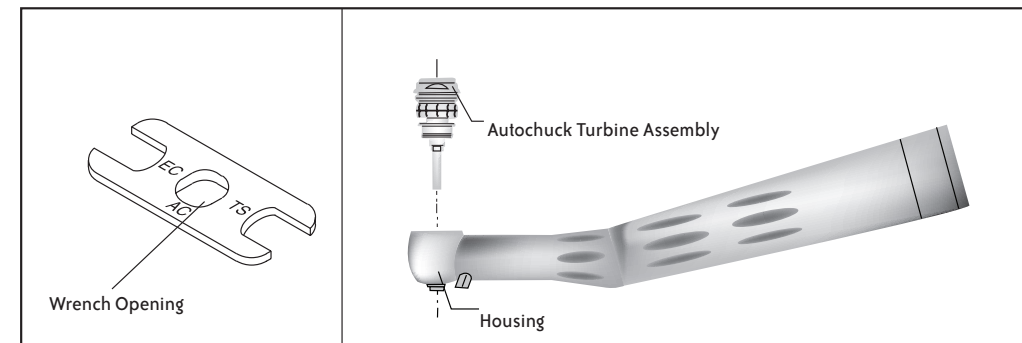
Note: Always use ISO burs to prevent locking and slipping of burs in autochuck. If problems of locking and slipping continue, replace worn autochuck turbine immediately with the appropriate **StarDental** Autochuck Turbine Replacement Kit for the handpiece type (LubeFree or Lubricated) - See Replacement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

1. Remove old end cap and turbine assembly.
2. Inspect housing before cleaning. Remove any obvious debris to prevent damage and to insure 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 end cap into the housing by hand until snug.
7. 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
430 SWL® Flex Lubricated Fiber Optic Handpiece with Lubricated Autochuck Turbine.....	266154
Autochuck Turbine Replacement Kit for Lubricated High-Speed Handpieces.....	263968
430 SWL® Flex LubeFree Fiber Optic Handpiece with LubeFree Autochuck Turbine.....	266153
Autochuck Turbine Replacement Kit for LubeFree High-Speed Handpieces.....	263739
430 SWL® Torque Flex Lubricated Fiber Optic Handpiece with Lubricated Autochuck Turbine.....	266212
Autochuck Torque Turbine Replacement Kit for Lubricated High-Speed Handpieces.....	265885
430 SWL® Torque Flex LubeFree Fiber Optic Handpiece with Lubricated Autochuck Turbine.....	266213
Autochuck Torque Turbine Replacement Kit for LubeFree High-Speed Handpieces.....	265877
Autochuck Turbine End Cap.....	261294
Autochuck Torque Turbine End Cap.....	265880
End Cap Wrench.....	203048
Air Pressure Gauge (ISO 4/6-Line).....	262591
Cleaning Wire (Gauge: 0.008, Package of 2).....	256719
Junk-Out High-Speed Chuck Cleaner.....	263790
Handpiece Lubricant.....	264183
Flex Swivel O-Ring Set.....	264195
6-Pin Swivel Rear Seal.....	263770
SPARKL® Dental Instrument Cleaner.....	205472
DentaLube II.....	262539



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® Flex LubeFree** and **430 SWL® Torque Flex LubeFree 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*.

DentalEZ® warrants the **430 SWL® Flex Lubricated** and the **430 SWL® Torque Flex Lubricated Handpieces** for 2 years 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.

