Ultima Dental Systems

ULTIMA 250 SERIES

Owners Manual

www.UltimaDentalSystems.com
(888) 900-8584

Ultima 250 Table-Top

Inside the units' removable top are two male quick disconnect fittings one with shut-off and one without, along with Suction feet for the table-top unit. Un-screw the sliver thumb screw located at the top of the unit. The two suction feet provided are to ensure more stability for the unit on a table top surface, even if the water bottles are empty. To make a more permanent installation in a location, simply screw in the unit to a flat surface.

Male Quick Disconnect w/o Shut off Valve Part # UD0277

Male Quick Disconnect w/ Shut Off Valve Part # UD0276

Suction Feet

Air Source Female Quick Disconnect Part # UD0148

Ultima 250 Arm Wall/Pole Mount

WALL MOUNT

When installing the wall mount for the Ultima 250 Arm unit, it is best if the wall mount is screwed into and secured to a wall beam. Use a stud finder, which can be found in most hardware stores, to locate a beam in the area the Ultima 250 will be installed. However, if this is not possible a second option is to use Drywall mollies to secure the wall mount, preferably the butterfly type that spring open behind the drywall for extra holding power.

Wall Mount Part # UD0103

Stud Finder

Drywall Anchor

Butterfly Drywall Anchor

POLE MOUNT

Pole mount attachments are available for U250 Series Arm units so they can be securely attached to anesthesia poles. When installing the pole mount be sure you have the right size pole mount for the pole you are connecting it to. The pole mounts are available in two sizes 1 ¾" and 2". On the pole mount there are two allen (Hex) screws, one on either side of the mount. Simply, un-screw the allen (Hex) screws to open the pole mount. Place the mount around the pole and re-attach the other half, tighten the screws on the pole mount until tight and secure.

Ultima 250 Arm unit mounted on Anesthesia pole

1 ¾" Pole Clamp Part # UD0101

2" Pole Clamp Part # UD0102

Both Table-Top and Arm units include a standard 12" arm attachment. Additional 6", 8", 12" and 16" arm attachments are also available. The Ultima 250 Arm units make it possible to connect to as many arm attachments as needed to achieve the correct length necessary for any practice environment. To order additional arm attachments contact the local distributor in your area or call The UDS Support team directly at (888) 900-8584.

Description	Part #
6" Folding Arm	UD0104
8" Folding Arm	UD0105
12" Folding Arm	UD0106
16" Folding Arm	UD0107

Set-Up and Installation

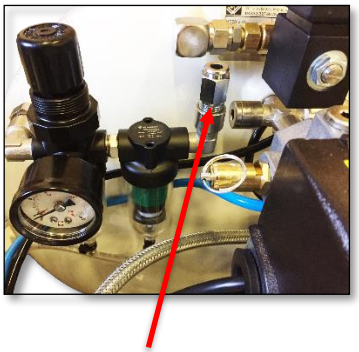
Air Source

Compressed Air

To begin working with the Ultima 250 dental unit using an air compressor, you will need ¼ outside diameter tubing. Cut the ¼" tubing to the length needed between the compressor and where the unit will be used. Connect the male quick disconnect fittings provided with the unit to the ¼" tubing, connect the male quick disconnect without shut-off to the compressor. Run the tubing to the unit from the compressor and connect the male quick disconnect fitting with shut off valve to the female quick disconnect fitting on the side of the unit labeled *Filtered Air In*. Set the air pressure from the compressor to 70 Psi. **NEVER EXCEED 80 Psi GOING INTO THE UNIT!**

If you are using a compressor that is not an Ultima Silent-Surge compressor then additional parts and fittings may be required. For additional parts contact your local distributor or UDS Technical Support: (888) 900-8584

Place the tubing through the collar on the male quick disconnect fitting provided. Slide the tubing onto the metal barb on the back of the male quick disconnect fitting. Screw on the collar to the back of the male quick disconnect and tighten.



Compressor Regulator In-Line female quick disconnect fitting

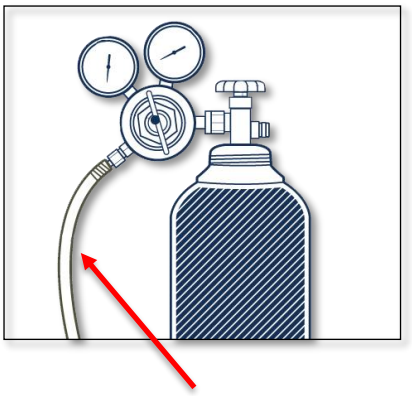
Filtered Air in female quick disconnect fitting on Table-Top model

NITROGEN

To begin working with the Ultima 250 dental unit using nitrogen, you will need ¼ outside diameter tubing. Cut the ¼" tubing to the length needed between the nitrogen source and the location the unit will be used. Connect the male quick disconnect fittings provided with the unit to the ¼" tubing, connect the male quick disconnect without the shut-off valve to the nitrogen source. Run the tubing to the unit from the nitrogen source and connect the male quick disconnect fitting with the shut off valve to the female disconnect fitting on the side of the unit labeled *Filtered Air In*. Set the air pressure from the nitrogen source to 70 Psi. **NEVER EXCEED 80 Psi GOING INTO THE UNIT!**

If you are using a nitrogen regulator not provided by Ultima Dental Systems then additional hardware may be required to install the unit. Contact your local gas company for Nitrogen E-tank and H-tank refills. Ultima Dental Systems only sells H-tank regulators. Your local gas company will be able to provide you with an E-tank regulator if you choose to use a smaller nitrogen tank.

Nitrogen Regulator Part # UD0278

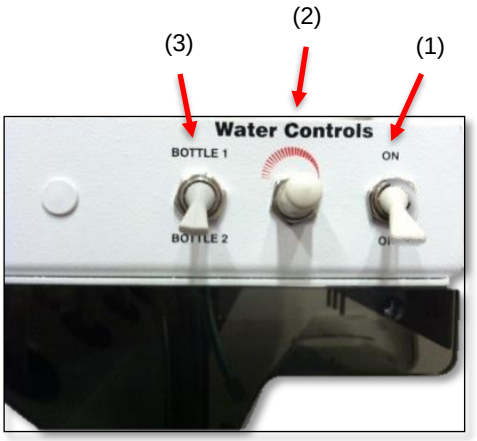


Nitrogen Regulator In-Line pressure

Operation

Potentiometer Faceplate

If the unit has a Piezo electric scaler there will be a numbered color power dial



Located on the side of the Ultima 250 Units are the controls

From right to left;

1. The On/Off Toggle Switch – turn the water on/off to the units hand piece lines.
2. The Volume knob – Allows you to increase/decrease and adjust the water to the hand pieces.
3. The bottle Selector Switch – Allows you to change the water source to the hand pieces between bottles one and two.* You may fill one bottle with cholhexidine solution and one with distilled water. *(IT IS VERY IMPORTANT TO FLUSH THE HAND PIECE TUBING LINES WITH DISTILLED WATER AFTER USE FOR THIRTY SECONDS TO A MINUTE TO NOT ALLOW THE CHOLHEXIDINE TO AND FORM PARTICLES INSIDE THE TUBING LINES, WHICH CAN CAUSE CLOGS AND BLOCKAGE WITHIN THE UNIT).*
4. The white cap next to the bottle selector switch is a pre-drilled hole available if you decide to upgrade to a Piezo Scaler.

You will also find the Ultima 250 units to be extremely user/repair friendly. On the top of the unit there is an easy to remove lid secured by a silver thumb screw. To gain access to the U250 components simply un-do the silver thumb screw.

Operation

On the Ultima 250 units only one hand piece can be run at a time. They are activated by an automatic holder when removed from its place. The hand piece must be placed in the same holder to de-activate the hand piece in order to allow another hand piece to function. The holders and hand piece tubing has been color coded for your convenience. Red is the low speed hand piece (Polisher), White is the accessories line or Piezo line if the unit is equipped with one, and Blue is for the high speed drill. The hand piece pressures have been preset at the factory. To run the hand piece simply step on the foot control pedal. Hand piece Pressures: HP 1. Red line (Polisher) should be set to 40 – 50 Psi, HP 2. White line is an accessories line and is not set, HP 3. Blue line (High speed drill) should be set to 32 Psi. To change individual hand piece pressures look on the back of the unit under the captions HP 1, HP 2, HP 3, inside the holes are small adjustment screws. To decrease individual air line pressure turn adjustment screw clockwise. To increase individual air line pressure turn counter clockwise.

To install hand pieces simply mate the rear end of the hand piece with the hand piece tubing connector.

1. The UDS low speed hand piece (Polisher) is a 4:1 E-style hand piece with a 20,000 Rpm motor. Meaning the motor is powerful enough for a 1:1 nose cone or contra angle, making it useful on procedures for small animals such as rabbits, and more advanced method such as modeling of teeth.
2. If your unit is equipped with a Piezo Scaler built into the middle white accessories line do not worry about the pressure setting for this, as it is an electric Scaler and only uses air to turn a switch on and off.
3. If your unit is equipped with a fiber optic high speed drill note that it has an eighteen second delay. This is a great feature; the eighteen second time delay on the hand piece allows you to use the drill as a light wand.
4. The 3 Way syringe is used by depressing the right button for a burst of air, the left button for a stream of water, both buttons depressed will produce a mist.

Operation

To refill water bottles it is not necessary to disconnect the Ultima 250 unit from the air source. To refill the water bottles, simply un-screw the bottles slowly until air begins to escape, wait two seconds and un-screw the bottle the rest of the way off the pressure head, refill and then re-attach.

Basic Maintenance

The Ultima 250 Series dental units require very little maintenance.

1. Always keep handpieces oiled with liquid handpiece oil.
2. Disconnect air source going into the unit each night to allow the unit to vent.
3. Always remember to flush out the tubing lines with distilled water when using an antiseptic solution such as chlorhexidine.
4. Always use distilled water in the unit.
5. Wipe down unit with any disinfectant after use.

The Ultima 250 units are guaranteed for five years against any manufacturing defects.

If you have any questions or require any additional assistance, please do not hesitate to contact the UDS Technical Support Team: (888) 900-8584

Piezo Scaler Quick Reference Guide

Magnetostrictive vs Piezo Electric Scalers

What's the difference?

Developed In the 1950's, Magnetostrictive units (cavitron style) vibrate a tip (insert) at either 25k or 35k (cps). The handpiece of a magnetostrictive ultrasonic is hard wired into the ultrasonic unit, therefore it is not detachable nor autoclavable.

The tip is attached to several long metallic stacks. These stacks are inserted into the handpiece. Under the handpiece and surrounding the metal stacks are several coiled wires which when excited by electricity give a vibration to the insert's stacked metal plates caused by a "magnetic field" which is produced. The tip of the insert vibrates in an elliptical motion.

The handpiece generates a tremendous amount of heat, which requires a high volume of water to constantly run through the hand piece to keep it cool. This excessive amount of water causes the practitioner poor visibility. IT BASICALLY WORKS LIKE A JACK-HAMMER.

Piezo was first developed in 1972 by SATELEC. The handpieces are detachable and autoclavable. Inside the hand piece is the "transducer". The transducer consists of ceramic disks stacked next to one another. These ceramic disks have high quartz content and when excited with electricity they compress and decompress causing a controlled vibration, the result is an ultrasonic vibration in a linear motion (forward and backward) on the same plane as the handpiece.

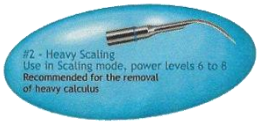
There is very little to no heat generated in the handpiece requiring a minimal amount of water, which means better visibility for the practitioner and a dryer patient. The water from the tip flushes removed deposits and is required for "the cavitation effect" to de-bride bio-film.

The linear tip motion is also more efficient and more comfortable. When the magnetostrictive tip vibrates, it bangs on the surface of the tooth to knock calculus off in chunks, where as a piezo tip vibrates linearly so the tip works along the tooth surface, shaving calculus off in sheets. Satelec piezo ultrasonic scalers also leave the tooth surface smoother than other ultrasonic scalers, sonic scaler, and hand instrumentation.

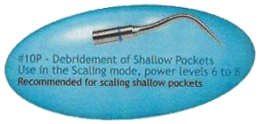
Visit www.UltimaDentalSystems.com for helpful videos and tips on how to get the most out for your Ultima!

For technical assist or questions, simply call (888) 900-8584 and one of our knowledgeable customer support members will help you with what you need Monday through Friday 9am to 5pm Est.

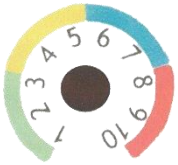
#1 Universal – Part 54121



#2 Heavy Scaling – Part # 54122



10P Perio – Part # 54130



Potentiometer Faceplate

Ultima dental units with built in Satelec piezo scaler come standard with 3 scaling tips. The #1 Universal tip is recommended for simple cases and gross debridement. The #2 tip is recommended for the removal of heavy calculus and the 10P tip is recommended for scaling shallow pockets. Satelec offers over 70 different tips that require different levels of power. This is why the Potentiometer (Power Dial Knob) is numbered 1-10 and is color coded. The scaling tips that come standard with your Ultima unit are color coded blue and should be operated in the blue zone between 6 and 8.

Most likely, you are coming from years of working with a cavitron or similar magnetorestrictive type unit. If that is the case you are in for a very pleasant surprise.

Water Flow

Cavitron user are accustomed to heavy water spray. With piezo technology, the handpiece doesn't heat up so only the tip requires cooling reducing the amount of water used tremendously.

Adjusted the Water Flow

1. Screw on the #1 tip (Universal) onto the handpiece until it is hand tight. Then use the scaler tip wrench provided and give it an extra half turn to securely tighten the tip. ***When screwing the tip onto the handpiece ensure that it is screwing on smoothly, if the tip is not screwing on smoothly do not force it, otherwise you will end up cross threading the handpiece and tip. Use care when tightening the tips, excessive torque may cause damage to the tip and/or handpiece.***
2. Turn the power control dial down to its lowest setting.
3. Flip the water control switch to the ON position. Using the water flow knob, start to "inch" it up slowly until you get a drop rate of about 2-3 drops of water per second.
4. Turn the power control dial up to its intended operating range, which in this case would be the Blue zone. You'll be pleasantly surprised to find that 2-3 drops of water is all that you need. This small amount of water creates a very fine mist which produces a "halo" effect around the tip providing improved visibility for the techinician.

Technique

Cavitron users are accustomed to utilizing magnetorestrictive tip differently from the way a Satelec tip should be used. With the elliptical motion a cavitron provides, the technican is accustomed to using the front, side or back of the tip to bang the tooth to remove calculus. With piezo the process is different because the tip vibrates on the same plane as the handpiece. The tip moves forward and back, making the laterl side of the tip extremely efficient for shaving calculus. This stroke is a mirror image of hand instrumentation, with extraordinary results achieved, requiring only very little pressure resulting in no hand fatigue.

Maintenance and Preventive Care

Tips

Only Satelec tips should be used. Use of other manufactures tips will result in poor performance and/or damage to the scaler handpiece. Care should be excercised when tightening tips on the handpiece. Excessive torque may cause damage to the tip and/or handpiece.

Tips without water ports

Use of tips without water ports can cause water to leak into the handpiece damaging it. User must turn off water when using a tip without a water port.

Handpiece and tubing

If using irrigating fluids other than water, the cord and handpiece should be flushed out with distilled water for at least one minute. The handpiece should be disconnected from the cord after use. Dry the connector end of the handpiece and the handpiece tubing with air using the 3 way syringe on th dental unit. This will avoid moisture and dirt from accumulating which may cause problem with the connectors.

Handpiece tubing

During normal use the handpiece tubing should not require any maintenace. Care should be excercised to avoid stepping on or rolling over the cord with the dental unit, as this can cause damage to the wires and hoses inside.The handpiece tubing may be cleaned with a cloth moistened with alcohol only.

Handpiece cleaning

Remove tips from handpiece. Wipe the casing with a cloth moistened with alcohol. Place the handpiece in an autoclave pouch. Autoclave cycles will vary and it is recommended to consult your autoclave manufacture for sterilization cycle recommendations.

The Satelec handpiece can withstand the following tempertures and pressures:

134 degrees celcius, 2 bar for 20 minutes

121 degrees celcius, 1 bar for 40 minutes

Chemclaving of the handpiece is not recommended and may shorten the life of the handpiece.

The handpiece should not be cold sterilized or submerged in any liquid as it will damage the handpiece.

Handpiece maintenace

The small o-ring on the handpiece should be inspected on a regular basis. If the o-ring is damaged it should be replaced. The small o-ring should be replace every six month, or every two to three months if the handpiece is regularly autoclaved. An installation tool and three extra o-rings are provided in the handpiece box. Additional o-rings may be ordered using Part # 54138. The large o-ring should not require replacement during normal service. If the large o-ring should become damaged a replacement may be obtained using Part # 54136.

Warranty

Satelec piezo scaler are covered under warranty for 1 year following the date of purchase against defects in material or worksmanship. A copy of an invoice is required as proof of date of purchase. Warranty is void if it is determined that the product has sustained malicious or delberate damage. Tips have a 90 day limited warranty.

Standard Satelec Handpiece – Part # 54086

LED Satelec Handpiece – Part # 54082

Piezo Scaler Quick Reference Guide

Fault Detected	Possible Causes	Solution
Handpiece does not vibrate	1. Faulty handpiece cord & connector 2. Scaler cord wire cut 3. Handpiece damaged 4. Electrical contacts on cord are loose 5. Tip worn or distorted	1. Unplug the scaler unit and wait 30 seconds to reset the scaler module 2. Replace tip, worn tips will not allow the scaler to function properly 3. Visit www.UltimaDentalSystems.com to watch the instructional video on how to remove the scaler you're your Ultima 500 series dental unit. Contact the UDS Technical support team for further instructions on where to send the scaler in for repair (888) 900-8584
Weak Vibration	1. Tip worn or distorted 2. Tip over tighten 3. Incorrect use 4. Fluid in the cord connector	1. Replace the tip/Check tip chart to see if worn 2. Tighten the tip using the tip wrench 3. Dry electrical contacts
Fluid leakage between hand piece and cord	1. Worn small water o-ring 2. Worn large handpiece o-ring	1. Check the small water o-ring on the bottom of the handpiece near the connector for damage. Replace if needed using Part # 54138 2. Check the large handpiece o-ring on the bottom of the handpiece on the outer perimeter. Replace the o-ring if needed using Part # 54136
No light (L.E.D model only)	1. Faulty L.E.D ring 2. Faulty handpiece/cord connector contacts	1. Clean the L.E.D ring contacts/ Replace L.E.D ring 2. Clean the hand piece / cord connector contacts 3. For further assistance call the UDS Technical support team: (888) 900-8584

Basic Trouble Shooting Guide

No water - *Scaler/High-speed Drill*

1. Check the water on/off toggle switch and make sure it is in the on position.
2. Check the water increase/decrease knob and make sure it is turned up.
3. Grab the 3-way syringe and check to see if you get water from the handpiece.
4. Inspect the water bottles. Check for air leaks around the water bottles and make sure their secured tightly to the pressure head.
5. Squeeze the bottles to make sure they pressurized; the bottles should be rock hard.

If no water continues to be the issue, the problem may be more involved and may require a professional dental equipment technician. Other causes of no water issues could involve the blockage, failure, or damage of the water relay, control block, control block diaphragm, or the distribution block.

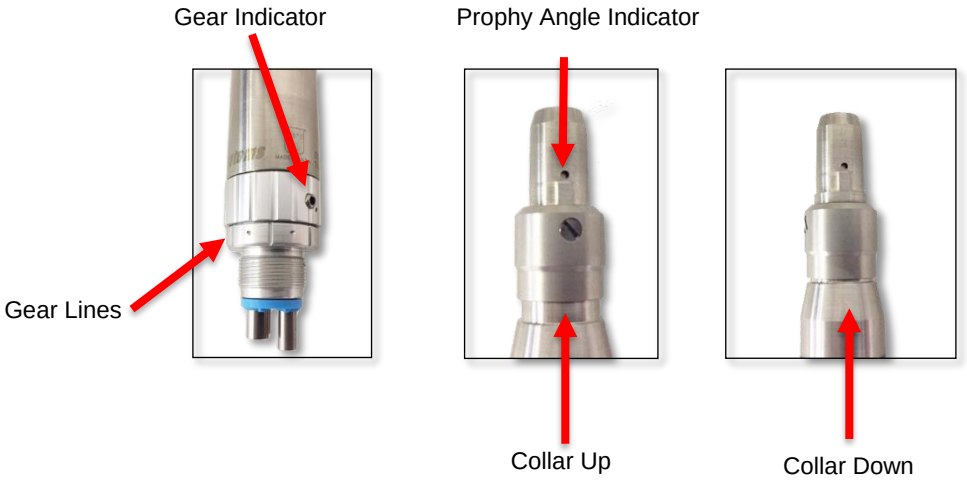
To determine the exact cause of the issue and to schedule an in-office visit by a certified technician Call Pro Repair Service: 1-800-645-6594. For all other general questions contact the UDS Technical Support team: (888) 900-8584.

Please check with the local dental Repair Service or equipment distributor in your area if you wish to schedule an in-office visit outside of the U.S.A.

Basic Trouble Shooting Guide

Polisher

Fault Detected	Possible Causes	Solution
The prophy angle does not spin	1. The prophy is faulty or damged 2. The gear dial is set to the incorrect position 3. The polisher motor is ceased	1. Replace the prophy angle. The bearings on metal prophy angles often go bad and need to be replaced. We recommend using Crosstex disposable prophy angles to prevent costly repairs (Part # UD0311). 2. Make sure the polisher motor is set to the correct gear. If the motor is set to the neutral position, the prophy angle will not spin. (See Picture Below) 3. Try oiling the polisher to break free the ceased motor. Watch the instruction video at www.UltimaDentalSystems.com.
The prophy angle will not seat properly onto the polisher nose cone	1. Faulty or damaged nose cone chuck 2. Prophy angle stem has broken inside of the nose	1. The nose cone chuck will need to be repaired or replaced. Contact Ultima Dental Systems to send in your handpiece in for repair and receive a loaner handpiece while you wait, call (888) 900-8584. 2. The prophy angle stem needs to be removed from the nose cone chuck, this requires disassembling the polisher nose cone. Contact Ultima Dental Systems to send in your handpiece in for repair and receive a loaner handpiece while you wait, call (888) 900-8584.
The polisher seems weak and lacks power	1. The pressure is not set correctly for the polisher handpiece	1. Polisher pressure should be between 40-50 Psi. Adjust gold screw that reads HP 1 on the front panel if needed. When adjusting, the pressure turn the screw slowly to avoid damaging the control block diaphragm.



Polisher

Oil the polisher to ensure the inside components are lubricated. To oil the polisher disconnect the handpiece from the tubing, you will notice four metal barbs on the bottom of the polisher. Two small barbs and two big barbs, place two to three drops of handpiece oil into the smaller of the two larger barbs. Re-connect the handpiece and run it upside down for thirty seconds to allow the oil to travel through the polisher. It is important that the polisher be run upside to avoid the thin handpiece oil from sliding back down the handpiece tubing.

Crosstex Disposable Prophy Angles 100 Ct Part # UD0311

Handpiece Oil Pen Part # UD0300

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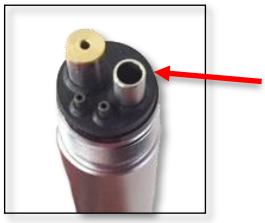
Basic Trouble Shooting Guide

High-speed Drill

Fault Detected	Possible Causes	Solution
The drill will not spin	1. Blockage in the air line (Handpiece tubing) 2. Pressure is not set correctly 3. Damaged turbine	1. Disconnect the handpiece from the tubing. Step on the foot pedal to ensure air is flowing through the tubing. If air is flowing through the tubing it is likely that the turbine is damaged. If no air is flowing through the tubing, there is a blockage somewhere in the dental unit. A further in depth inspection is necessary, contact the UDS technical support team at (888) 900-8584 or Henry Schein Pro Repair service to schedule an in-office visit at (800) 645-6594. 2. Make sure the pressure from the regulator is set properly (65-70 psi). Next ensure the pressure is set correctly on the control panel, adjust HP 3 to 32 psi. 3. Spin the drill bur with your fingers, it should spin freely. If this is not the case, oil the handpiece to ensure the turbine is properly lubricated. If this does not solve the issue of the drill not spinning, a new turbine may be required. For a push button drill use part # UD0301. For a standard non-push button drill use part # UD0302. If you have any questions, please call (888) 900-8584 to speak with a knowledgeable Ultima dental technician.
The drill bur is stuck and will not come out	1. The turbine inside the drill is most likely damaged and needs to be replaced.	1. Remove the end cap located on the back of the drill. Check for debris, this is a sign that parts inside the turbine, such as the bearings, may have come loose causing the turbine not to function properly. Remove the turbine and try to manual remove the bur, if the bur is lodged in there and can't be removed replace the turbine. For a push button drill use part # UD0301. For a standard non-push button drill use part # UD0302. If you have any questions, please call (888) 900-8584 to speak with a knowledgeable Ultima dental technician.
The drill keeps spitting out the bur	1. The turbine inside the drill is most likely damaged and needs to be replaced.	1. Remove the end cap located on the back of the drill. Check for debris inside of the drill head, this is a sign that parts inside the turbine, such as the bearings, may have come loose causing the turbine not to function properly. If you have any questions, please call (888) 900-8584 to speak with a knowledgeable Ultima dental technician.
Air is coming from the bottom of the handpiece, where it connects to the tubing	1. Damaged handpiece gasket 2. Hole or tear in the handpiece tubing	1. Remove the handpiece from the tubing and inspect the gasket on the bottom of the handpiece for any damage. If the gasket is damaged replace it using Part # UD0310 for a 5 hole handpiece gasket, commonly used on fiber optic handpieces. Use Part # UD0315 to order a 4 hole handpiece gasket. If you have any questions, please call (888) 900-8584 to speak with a knowledgeable Ultima dental technician.

Lubricating the High-speed Drill

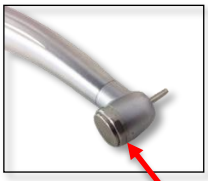
To oil the drill simply turn it upside down. On the bottom of the drill there are four metal barbs, two small barbs and two big ones. Add two to three drops of handpiece oil to the smaller of the two larger barbs located on the bottom of the drill. Re-attach the hand piece and run the drill upside down for thirty second to a minute to allow the oil to circulate through the drill. Turning the handpiece upright will cause the oil to run down the tubing and will not lubricate the drill correctly.



Place 2-3 drops of handpiece oil in the smaller of the two larger metal barbs

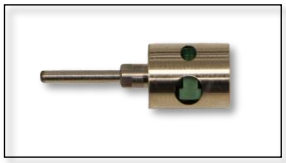
Push Button Drill Part # 54150

Push Button Handpiece Gasket

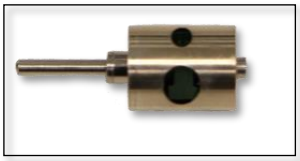


Drill End Cap

High-speed Drill Turbines

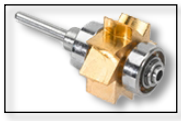


Standard Turbine Part # UD0302



Push Button Turbine Part # UD0301

TEK USA T64 LED Drill



T64 Turbine Part # UD0303

The TEK USA LED high-speed drill is a discontinued item and is no longer available for purchase. Replacement spare parts for T64 highspeed drills are still available for purchase. If you have any questions or need assistance ordering parts for T64 highspeed drills contact Ultima Dental Systems at (888) 900-8584.

TEK USA T65 LED Drill Part # 54162

T65 Turbine Part # UD0304

Warranty

- 5 year defective parts and technical support warranty. All parts on the unit are covered for 5 years if defective.
- The Fiber Glass and Aluminum shells for the dental units are only covered under warranty if defective out of the box and damaged during shipping.
- All parts on Ultima compressors are covered for 5 years if defective.
- The Lowspeed Polisher is covered under warranty for 1 year if defective.
- The Highspeed drill is covered under warranty for 1 year if defective - The turbine is covered under warranty for 6 months if defective.
- The Piezo scaler is covered under warranty for 1 year if defective.
- Labor and shipping is not included.