Instructions for Use

EN

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TurboSensor® 360°

ULTRASONIC SCALER

REF D760, D760-101, D760-102, D760-103

Questions?

Call Parkell Technical Support Service at +1-800-243-7446
Monday — Friday from 8:30 a.m. to 5:00 p.m. EST

MADE IN USA

MD	Rx Only	This manual, in whole or in part, should not be considered a substitute for formal training in ultrasonic scaling. Appropriate dental professional education is strongly recommended prior to using this device clinically.

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MADE IN USA

Product Overview

The TurboSensor®+360 (“Turbo+”) is designed, built, and serviced in the U.S.A., where Parkell has proudly operated for nearly 80 years. The Turbo+ delivers proven reliability and workhorse performance, supported by Parkell’s dedicated Service Team. Its open platform design ensures compatibility with all 30K magnetostrictive inserts from market-leading manufacturers, and with 25K inserts when used with Parkell’s 25/30K autoclavable handpiece accessory (REF D763).

Safety and compliance are integral to the design. The Turbo+ includes a detachable, autoclavable 30 kHz handpiece, one-touch preprogrammed waterline purge modes aligned with CDC recommendations, and patent-pending biofilm protection. The integrated PureClarity™ waterline purification filter provides continuous system protection.

With the Turbo+, clinicians gain optimum scaling performance along with advanced safeguards for waterline and aerosol safety.

Technical Support

When service needs happen, or for technical support, call Parkell’s Service Team at 1-800-243-7446, Monday through Friday, 8:30 a.m. to 4:30 p.m., or email anytime at service@parkell.com. Please also visit the Service Team website for further information: www.parkell.com/equipment-service.

Supplies, Accessories & Replacement Parts

To order supplies, accessories, or replacement parts, contact your local Parkell Distributor or contact Parkell’s Customer Service team Parkell’s Service Team at 1-800-243-7446, Monday through Friday, 8:30 a.m. to 4:30 p.m., or email anytime at info@parkell.com.

[1] Indications for Use

For removal of calculus, plaque, and oral debris from teeth during dental prophylaxis/scaling.

What’s Included:

- (1) TurboSensor+360 Scaler Control Unit
  - ~ REF D760 Pearl
  - ~ REF D760-101 Lilac
  - ~ REF D760-102 Ocean
  - ~ REF D760-103 Slate
- (1) PureClarity™ Anti-Biofilm Waterline Protection System
- (1) Detachable, autoclavable 30 kHz Handpiece (REF D762)
- (1) Detachable handpiece cable (REF D764)
- (1) Detachable foot controller (REF D761)
- (1) Universal Power Adapter with attached cable (REF D723)
- (1) Power Adapter Line Cord (REF D664)
- (1) Water line with standard chrome male quick-connect coupler (REF D406)
- (2) Inline sediment water filters (REF D419)
- (1) Accessory Package (REF AKA135)

Specifications

Power:	**Input:** 100-240 VAC, 1.0-2.0 A, 50/60 Hz; **Output:** 24 VDC, 3.0 A,
Weight:	0.73 Kg / 1.60 lbs.
Size:	1 ¾" H x 5 ½" W x 8 ¼" D
Weight of Transformer:	0.6 lbs. (270 g)
Length of Handpiece Cable:	8 ft (244 cm)
Length of Foot Pedal Cable:	7 ½' (228 cm)
Length of Water Hose:	7' (215 cm)
Length of Power Cord and Adapter combined:	**110V:** 10 ft (305 cm); **220/230V:** 12.2 ft (372 cm)
Handpiece Operating Frequency:	30 kHz (REF D762) or 25 kHz/30 kHz (REF D763)
Protection Against Electric Shock:	Class 1 ME Equipment, Type B applied part
Protection Against Ingress of Liquids:	**Foot Pedal & Scaler:** IPX1 (drip proof); **Power Supply:** IPX0 (Ordinary)
Mode of Operation of Equipment:	Intermittent — 10 minutes ON, 5 minutes OFF
Operating Conditions:	15°– 30°C, 20 – 70% RH (non-condensing)
Transport and Storage Conditions:	-17°– 40°C, 20 – 70% RH (non-condensing)

[2] Contraindications

- Because of the potential for electromagnetic interference, this device should not be used on patients or by clinicians with cardiac pacemakers, internal defibrillators, intracorporeal fluid pumps or any other implantable electronic devices, or in close proximity to sensitive patient monitoring devices such as pulse oximeters.
- If the patient or operator is pregnant or has any medical condition which might be affected by this device during treatment, consult a physician prior to use.
- In case of any adverse event, discontinue the scaling procedure immediately.
- Not for use on children under the age of 3.

[3] Warnings & Precautions

Warnings

⚠	For use only by trained, licensed dental professionals.
⚠	The Turbo+ scaler must only be powered via the power supply assembly that is supplied with the device by Parkell. Power supply provided by Parkell is a Medical-Grade, IEC 60601 compliant, TUV approved switching power supply adapter with Input being 100-240 VAC, 1.0-2.0 Amp, 50/60 Hz and Output being 24 VDC, 3.0 Amp.
⚠	To avoid risk of electric shock, this equipment must only be connected to a supply main with protective earth.

(Warnings Continued)

⚠	Modifying the Turbo+ unit violates safety codes, endangers patients and operators, and voids the warranty.
⚠	Do not place the Turbo+ on or next to a radiator or other heat source. Excessive heat may damage the electronics or other components of the unit. Place the Turbo+ where air is free to circulate on all sides and beneath. Handle with care when moving the unit. To keep heat generation to minimum, use the lowest scaling power that is effective
⚠	Failure to follow properly validated sterilization processes and approved aseptic techniques for the autoclavable handpiece may result in cross contamination.
⚠	Never operate the Turbo+ without water flowing, as insufficient water flow could result in elevated insert tip and insert stack temperature, which could result in patient discomfort. For patient comfort, use a generous flow of water as a coolant, lubricant, and debris flush. When operated with sufficient water flow, the water and tip temperature should not exceed 50°C (122°F). Failure to follow recommendations could result in injury to patients or users. If temperature is elevated, increase water flow. If temperature remains elevated, discontinue use and contact Parkell.
⚠	The Turbo+ is not suitable for use in the presence of a flammable anesthetic gas mixture (when used along with air or oxygen).
⚠	Do not allow prolonged contact of insert tip with lips, cheek, tongue, or other vulnerable soft tissues. Insert tips are sharp and should be used carefully. Inadvertent contact with Insert tip may cause a slight burn. Do not use the point of the insert on the tooth surface. You may gouge the tooth.
⚠	Do not test a scaler tip on your fingers while operating, as this is not a valid test of how scaling feels to the patient. If the finger touches the scaler tip, user will experience an uncomfortable amount of heat to the finger.
⚠	NON STERILE Inserts and Handpieces must be autoclaved before first use, and before each subsequent use
⚠	Damaged, bent, or fully-worn inserts (wherein, "fully-worn" is as defined by the wear guide or performance guide for the insert) may result in poor clinical performance.
⚠	Detachable foot pedal used with REF D760 is not suitable for use in the Emergency Room or Operating Theatre.
⚠	Use of accessories and cables other than those specified or provided by Parkell as being useful for the Turbo+ could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation. Contact Parkell if the performance or efficacy of the device is degraded due to Electromagnetic disturbances with increased EM emissions or decreased EM immunity.
⚠	This equipment produces electromagnetic energy and may cause interference with other electronic devices. Should this occur, changing the position or location of the unit may be necessary.
⚠	Water pressure to the scaler should be maintained between 25-60 psi (optimum range is 30-50 psi).

Precautions

- Before leaving the office, close manual shut-off valve on the dental office water supply. Turn the scaler power off with the rocker switch on the back. When power is off, the lighted "+" on the front panel will turn off.
- To allow for normal cooling, avoid covering the device and its separate power adapter. The device and its separate power adapter generate a minimal amount of heat.
- Use of this equipment adjacent to or stacked with other equipment should be avoided.
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12") to any part of the TurboSensor+360 unit, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
- Use of appropriate personal protection equipment and high-volume intraoral suction is strongly recommended, to avoid exposure to contaminated aerosols.
- If the patient experiences excessive heat, adjust POWER and WATER controls accordingly, or examine inserts for wear or damage.
- Always keep the scaler insert in motion, using repeated gentle strokes to remove all tenacious deposits. Excess pressure will not improve scaling efficiency and may cause overheating of the tooth and pain to the patient.
- Scratch marks may result when metal insert tips are not used properly on ceramic, zirconia and resin restoration surfaces. Exercise caution near ceramic, zirconia or resin restorations, as they can fracture if stressed.
- The water / fluid supply line to the scaler should always be turned off whenever the device is being connected, disconnected, or when not in use. Keep scaler and power adapter away from sources of fluid that may enter them. Always ensure that the electrical connections on the handpiece cable and the handpiece are clean and dry before assembling. Do not reach for the device if it has fallen into liquid until power is disconnected and do not use the device. Return it to Parkell for servicing.

[4] Infection Control

[4.1] General Infection Control

- Ultrasonic scalers generate aerosols from the combination of water and ultrasonic vibration at the insert tip.
- To protect operators, staff, and patients, infection control procedures should be carefully followed as recommended by the CDC (Centers for Disease Control and Prevention), FDA (Food & Drug Administration), ADA (American Dental Association), ADS (Association for Dental Safety), and relevant state authorities.

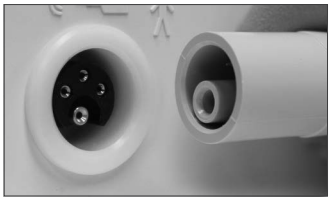
[4.2] Water Supply Recommendations

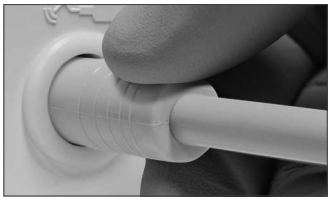
- As a medical device, the Turbo+ must be installed in accordance with applicable local, regional, and national regulations. It must also be operated in a manner that ensures that the procedural water, as well as aerosols produced during dental procedures, meet the EPA (Environmental Protection Agency) definition of potable water (drinking water). This means that the water passing through the handpiece and exiting at the insert tip must contain fewer than 500 CFU/ml (colony-forming units per milliliter).

[5] System Setup, Operation, and Techniques for Use

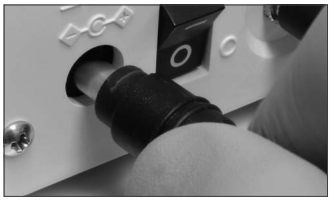
[5.1] Scaler Setup

1. Prior to first clinical use, it is important that the waterlines of the Turbo+ be "shocked" in the manner described in Section 6.4.1 of these instructions-for-use.
2. Place the Turbo+ on a flat, stable surface with clear access to the control panel, foot pedal and rear connections. ⚠
3. Be sure the power switch on the back of the unit is in the OFF position before connecting any accessories.
4. Connect filters as described in Section 5.2 to mitigate biofilm formation to help maintain treatment water that meets or exceeds EPA drinking water standards (≤500 CFU/mL)
5. Plug the foot control pedal connector into the comparable port on the back of the scaler.
6. The handpiece cable has the same connector on both ends, so either side can plug into the back of the scaler. To connect, align the large gold connector pin located in the handpiece cable connection port on the back of the scaler with the round internal water port inside the cable connector and push the cable firmly into the port until it is fully seated. Ensure components are dry before connecting.





7. Connect the Turbo+ autoclavable handpiece to the handpiece cord in the manner described in Section 9.3.
8. Insert the metal plug from the Power Adapter into the back of the scaler. Insert the supplied AC cord female plug into the Power Adapter. Plug the AC power cord into a grounded electrical outlet.



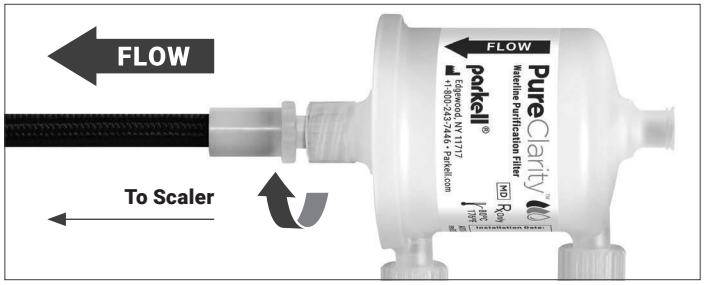
9. If the unit needs to be disconnected from the main power line, user may remove the power cord from the wall plug, remove the power cord from the in-line "power supply adapter" or remove the 2.5 mm metal plug connector from the back of the scaler.

[5.2] Water Filter Connection

Two filters are provided; a Sediment Filter to catch large particulate matter that is present in source water, and a finer 0.2 µm PureClarity bacterial filter. By setting them up in series, the sediment filter will remove larger particles prior to the water entering the bacterial filter.

[5.2.a] PureClarity Antibacterial Installation (replace every 6 months, or sooner if performance or visual inspection indicate.)

Position the PureClarity antibacterial waterline filter so the “FLOW” arrow points toward the Turbo+ scaler. Align the luer lock connector facing the scaler with the luer lock connector on the short pigtail waterline coming off the back of the scaler and twist them tightly together.

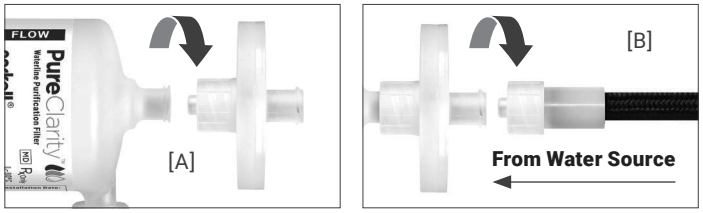


[5.2.b] Sediment Filter Installation (replace every 1-3 months, if performance or visual inspection indicate)

Attach a new Sediment Filter directly to the other end of the PureClarity filter. Twist to ensure the connection is secure without over-tightening [A].

Next, connect the remaining open end of the Sediment filter to the water source line coming from a bottle system or municipal water source [B].

Check all connections for leaks before use and tighten if necessary.

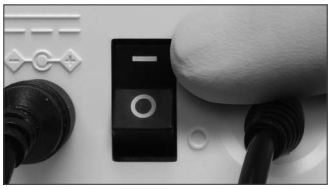


[5.3] Controlling the Water Flow

Turn the water control clockwise to increase the flow, or counterclockwise to decrease water flow. If water does not flow after an extended period of time through the insert when the foot pedal is depressed, the water passage in the scaling insert may be clogged or the filter(s) may need replacement. From the FULL-OFF position to the FULL-ON position, the water control will rotate 3 1/2 times.

[5.4] Turning on the Scaler and Controlling the Power Output

Before using the insert in the oral cavity, adjust the water spray. Good water flow will act as a coolant and aid in flushing out debris to maximize patient comfort.



The unit has a rocker switch on the rear panel for Main Power Control. When the switch is in the UP position, the device turns ON, and the ‘+’ indicator on the front panel lights up to show the device is powered ON. When the switch is in the DOWN position, the device and the ‘+’ front indicator light turn OFF.

[5.5] Scaling Activation

- **Cruise Deactivated:** Scaling activates when the foot pedal is pressed and deactivates when pressure is removed.
- **Cruise Activated:** Scaling remains active even after releasing the foot pedal. (To deactivate, press and release the foot pedal again.)

[5.6] Cruise Control

A manually activated feature that allows the user to continue scaling even when pressure is released from the foot pedal.

How To Use Cruise Control

Cruise mode activates with a quick tap or longer compression of the foot pedal. It deactivates when pressure is released on the follow-up tap.

1. Press the “Cruise” button on the faceplate of the base unit. A blue light will illuminate, indicating Cruise mode is active.
2. Tap the foot pedal to begin scaling.
3. To stop scaling, tap the pedal again.

[5.7] Changing Scaling Power

Power Control Knob: Rotate clockwise to increase power, counterclockwise to decrease.

Process Recommendations

1. Set the Power Control Knob to a mid-range “Medium” setting initially.
2. When the foot pedal is depressed, the insert will begin vibrating at medium power.
3. Occasionally pause during scaling by removing foot from pedal to evaluate deposit removal. (To deactivate when in “Cruise Mode”, the foot pedal must be tapped.)
4. When scaling, keep the long axis of the insert tip parallel to the long axis of the tooth to wipe deposits from the tooth with a light, brushing stroke with the side of the insert. Do not gouge the tooth with the point of the tip.
5. Adjust power as needed during the procedure.

[5.8] Purging

Per the CDC recommendations, waterlines should be purged based on the following schedules:

- Two minutes at the start and end of each day.
- 20 seconds between patients.

[5.8.a] The TurboSensor+360 offers the following exclusive Purge features:

Purging is enabled ONLY with the handpiece detached from the cable to prevent contamination of an autoclaved handpiece.

[5.8.b] How to Purge

1. Confirm the unit is ON and that the "+" on the front panel is illuminated.
2. Disconnect the detachable-autoclavable handpiece from the cable.
3. Adjust the water control to Maximum flow. (Power can be at any setting.)
4. Hold the cable end over a sink or drain.
5. Apply at least 2 seconds of pressure to the foot pedal to activate purge mode.
   a. When initial pressure is applied to the foot pedal, a short burst of water will be expelled from the cable to confirm purge mode is being activated.
   b. After two seconds, a steady stream of water will flow, and the Purge LED will begin to pulse.
   c. Once water flow is continuous, and the Purge indicator LED pulses, foot pedal pressure can be released without interruption of the purge cycle.
6. The Purge light will pulse for the first 20 seconds of the purge cycle after which it will stay constantly on for an additional 1 minute 40 seconds. (2 minutes of total purge time).
7. When the Purge light changes from pulse to constant the 20 second purge cycle for between patient waterline purging is complete. Depress the foot pedal to manually stop purging after 20 seconds.
8. The purge cycle will automatically shut off after 2 minutes.

Safety Feature: Deactivation of the purge cycle can be manually accomplished at any time by tapping the foot pedal.

[5.9] Priming the Handpiece

Priming the handpiece may be accomplished with the Cruise function set in either the Activated or Deactivated position.

1. Confirm the unit is ON and that the "+" LED on the front panel is illuminated.
2. Attach an autoclaved handpiece to the handpiece cable that has already been purged. Do not put an insert into the handpiece at this time.
3. Hold the handpiece in an upright position.
4. Depress the foot pedal.
5. Water will begin to flow and fill the handpiece. Priming of the handpiece should be done with a water flow set no higher than Medium.
6. To stop water flow into the handpiece, remove foot from foot pedal.
7. Moisten the O-ring with water, then, using a twisting motion, place the insert into the handpiece.

[6] System Care: Step-By-Step

[6.1] Daily Start-Up

1. Open dental office water shut-off valve
2. Do not attach a handpiece yet
3. Power ON; set Water to maximum, Power can be at any setting
4. Run 2-minute pre-programmed Purge cycle over sink/drain. (Purge function can be deactivated at any time by tapping the foot pedal.)
5. After purge, when the patient is seated, attach a sterilized handpiece
6. Prime the handpiece: Be sure the water flow rate is set no higher than Medium, then press the foot pedal to fill the handpiece with water.
7. Moisten the insert O-ring, and with a twisting motion place the insert into the handpiece
8. Reset the power and water levels to your preferred settings for ultrasonic scaling.

[6.2] Between Patients

1. Remove used insert and reprocess following the infection control procedures that came with the insert
2. Remove handpiece for sterilization
3. Run 20 second Purge following the process outlined in the Daily Start-Up section for water and power settings described above.
4. Disinfect cabinet, cords, pedal, and all surrounding surfaces (do not spray directly)
5. Verify water supply volume is adequate for the next patient if using closed bottle system.
6. Install newly sterilized handpiece and insert after the patient is seated following the steps outlined above.

[6.3] End of Day Shut-Down

1. Follow "Between Patients" steps, 1 through 4, but run the 2-minute purge cycle instead of 20 second cycle.
2. Close dental office water shut-off valve
3. Turn scaler power to "OFF"

[6.4] Water Quality Maintenance For Scalers

1. Before placing the scaler into service, use the PureClarity Shock syringe to shock the waterlines as per the instructions that come with the shock product used. (Parkell has validated Liquid Ultra, ICX Renew, and Monarch as not presenting biocompatibility issues in Parkell devices. ***(IMPORTANT: Parkell does not test and evaluate these products for efficacy, which can only be verified through regular waterline testing in your office.)***
2. Mark unit "Out of Service – Waterline Disinfection in Progress" when shocking.
3. Install PureClarity waterline filter in combination with a sediment filter (see PureClarity Instructions for setup) and flush thoroughly with clean water for 2 minutes.
4. Test the water monthly for bacterial load. Once the water running through the scaler passed three consecutive months of testing, the testing cycle can be adjusted to quarterly.
5. If water fails a bacterial load test, waterlines must be shocked and the testing cycle resets to monthly until 3 consecutive months pass testing.

6. Evaluate both the PureClarity and Sediment filters as outlined in sections 5.2a and 5.2b for possible replacement. Indications for replacement include discoloration of the filters, or a noticeable decrease in the water flow rate at the insert when used at your preferred setting. ***(IMPORTANT: PureClarity and Sediment Filter life will be dependent on water quality and quantity of water passing through it.)***

[7] Cleaning Instructions

[7.1] Cleaning and Infection Control

- Consult www.CDC.gov for the "Guidelines for Infection Control in Dental Health - Care Settings" and "Statement on Reprocessing Dental Handpieces".
- **DO NOT AUTOCLAVE** the TurboSensor+360 control unit, handpiece cable, foot pedal, or power assembly, as autoclave heat will destroy them. The control unit and handpiece cable should be cleaned and disinfected upon completion of the procedure and dismissal of the patient from the treatment site.

[7.2] Cleaning

- Clean the device using potable water and clean paper towels. Lightly dampen a paper towel and thoroughly wipe the entire cable length for three (3) minutes, spending approximately 30 seconds on each distal end. Use a dry paper towel to remove moisture. Ensure water does not enter device openings and allow complete air drying before disinfecting.

[7.3] Disinfecting

- Unfold an unused Sani-Cloth Plus Germicidal Disposable Wipe and thoroughly wipe the handpiece cable, using 3-4 wipes as needed, focusing on the cable ends for at least 30 seconds each. If any soil remains, repeat this process. Then, using a new wipe, thoroughly wet all surfaces of the entire cable, ensuring it remains wet for 3 minutes. Apply additional wipes as needed to prevent drying. Allow the handpiece cable to air dry completely.

[7.4] Autoclavable Handpiece Reprocessing

- Handpiece supplied along with the unit is not sterile. Handpiece must be cleaned and sterilized in autoclave by the user prior to the first use and before every use.
- Autoclaving does not remove debris that has accumulated on the handpiece.
- Failure to adequately remove debris prior to sterilization will result in inadequate infection control.
- The handpiece must be washed in soap and water manually under warm running water for 30 seconds to remove any external or internal soil or debris. A soft cleaning brush and/or disposable cloth may be used to assist in the cleaning.
  - ~**RINSING:** Rinse the item under warm running water for 30 seconds to remove any residual soap.
  - ~**DRYING:** Dry the handpiece with a dry lint-free disposable towel.
  - ~**BAGGING:** Use a steam sterilization pouch that is compliant with ISO 11140-1 Type 4 and ISO 11607-1 standards. Put the handpiece in a paper/plastic steam sterilization pouch and place it into the autoclave paper side up. 134°C

[7.5] Steam Sterilization Cycles

- **VACUUM:** 132 +/ 2°C for 4 mins.
- **GRAVITY:** 132 +/ 2°C for 15 min.

Maintenance: Inspect the handpiece upon removal from the auto-clave pouch for integrity. If suspicion about the item exists, discard it and order a replacement from Parkell or your dealer.

- **Drying:** Use the drying cycle of the sterilizer. Set to 20-30 minutes.
- **HANDPIECES ARE NOT VALIDATED FOR USE WITH DRY HEAT OR CHEMCLAVE STERILIZATION. USE OF THESE METHODS MAY IRREVERSIBLY DAMAGE THE HANDPIECE AND VOID THE WARRANTY.**
- The handpieces are designed to withstand a maximum of 500 autoclaving cycles when reprocessed.

[8] Storage Instructions and Shelf Life

Handpiece should remain in sealed pouch until ready for use. Adhere to the shelf-life specified by the pouch manufacturer.

[9] Instructions on Accessories

[9.1] Inserts

Magnetostrictive Inserts for the TurboSensor+360 scaler are available separately and are not included with the basic scaler unit. The unit comes with a 30kHz detachable handpiece, which is designed to work with all Parkell and market-leading 30 kHz inserts. For use with market-leading 25kHz inserts, the 25kHz/30kHz handpiece (REF D763), not included with this unit, is required (sold separately).

Brand new inserts may fit very tightly in the handpiece initially and may be inserted and removed more easily by using a slight twisting motion, and by lubricating the insert "O" ring with water. Old, worn, or blunt inserts will perform poorly, generate excess heat, and should be replaced. ⚠

[9.2] Use of Detachable Handpiece

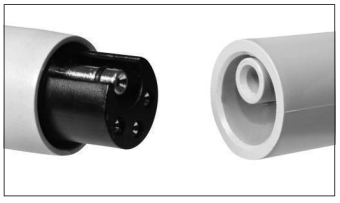
Hold the handpiece in a comfortable pen-grasp. If elevated heat is felt, adjust the power and water settings accordingly. ⚠ Inserts must be removed from the handpiece prior to both connecting and disconnecting the handpiece to and from the cable. ⚠

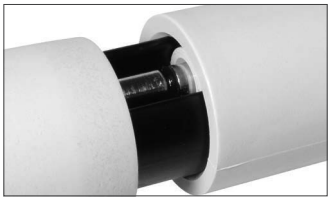
IMPORTANT: Handpieces are available in two configurations:

- 30 kHz (REF D762) for 30 K inserts only
- 25 kHz/30 kHz (REF D763) for both 25 K and 30 K inserts

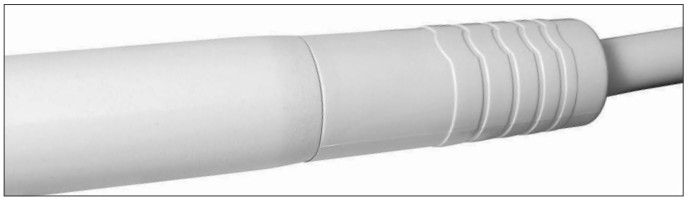
[9.3] Connecting Handpiece to Cable (REF D764)

1. Remove sterilized handpiece from sealed autoclave pouch.
2. Line up the large gold connector pin at the base of the handpiece with the internal water port inside the cable connector.





3. Push firmly to insert the handpiece into the cable until the ends of the cable connector and the handpiece are flush with each other.



[9.4] Disconnecting Handpiece from Cable

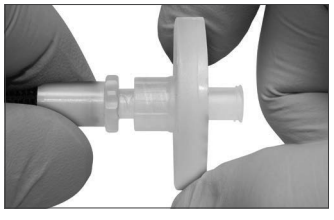
1. Hold the handpiece in one hand and the cable connector in the other.
2. Carefully pull them apart until separated.

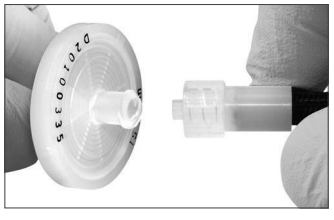
[9.5] How to Replace the Sediment Filter Disk

Depending on the quality and source of the water, the sediment filter disk attached to the endstream side of the PureClarity antibacterial filter (which in turn is attached to the waterline at the back of the Turbo+ unit) should be replaced every 1 to 3 months or sooner if water flow is restricted to the scaler. Failure to change the sediment filter as recommended may result in decreased water flow through the scaler. Filters that are noticeably discolored due to debris should be replaced immediately. ⚠

Replacement Sediment Filters are available from Parkell (REF D419; package of 10 filters).

1. Close water valves and bleed all water lines of residual water pressure.
2. Disconnect the scaler water supply hose from the water supply at the quick-connect.
3. Remove the old filter disk by holding it in one hand and loosening it by twisting it off the hose connectors on either side. They rotate in opposite directions.





4. Install the new filter disk in the same position as the old one and tighten the connectors in reverse.
5. Reconnect the scaler water supply hose to the water supply via the quick-connect and check for leaks.
6. Engage PURGE mode to allow water to flow out the end of the handpiece into a sink.

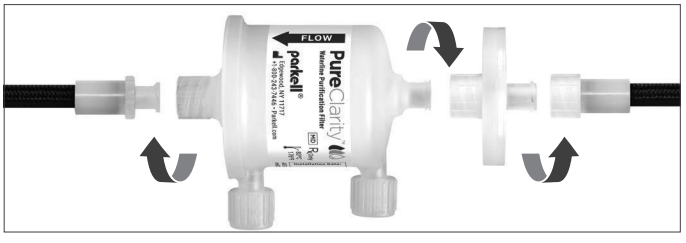
[9.6] How to Replace the PureClarity™ Antibacterial Filter

Depending on the quality and source of the water, the PureClarity filter should be replaced every 6 months or sooner if water flow is restricted to the scaler. It is highly recommended that the Sediment Filter is replaced each time the PureClarity filter is replaced. Both are critical for ensuring mitigation or prevention of bacteria and pathogen entry into internal waterlines of the TurboSensor+360 scaler, and subsequent biofilm contamination.

The PureClarity filter should be replaced earlier than 6 months, and immediately, if water tests from the scaler indicate noncompliance with CDC bacterial standards (<500 CFU/mL of bacteria) and/or there is a noticeable drop in the flow of water coming out of the scaler.

Replacement PureClarity Filters are available from Parkell (REF D719).

1. Close water valves and bleed all water lines of residual water pressure.
2. Disconnect the scaler water supply hose from the water supply at the quick-connect.
3. Remove the old PureClarity and Sediment filters by holding it in one hand and loosening it by twisting them from the hose connectors on either side. They rotate in opposite directions.



4. Install the new PureClarity filter in the same position as the old one and tighten the connectors in reverse.
5. Reconnect the scaler water supply hose to the water supply via the quick-connect and check for leaks.
6. Engage PURGE mode to allow water to flow out the end of the handpiece into a sink.

[10] Troubleshooting

1. Unit does not operate ("power on" indicator does not light)

a. Main ON/OFF switch is not set to on; Check that switch on rear panel is in up position.
b. Power Adapter cable is disconnected from wall outlet or scaler. Reconnect properly.
c. Handpiece cable not completely plugged into connection port. Check connection.
d. Unit won't operate if foot pedal is not connected properly.
e. Unit fuse has failed. Contact Parkell.

2. Insert does not vibrate properly

a. Faulty, damaged, or worn insert should be replaced.
b. Insert not correctly seated in handpiece. Re-insert properly.

3. 'Purge' and 'Cruise' lights flash on faceplate when foot pedal is depressed

a. Handpiece cable connector not completely seated into port on back of scaler. Reconnect.

4. Excess heat at handle or tip of insert

a. Faulty, damaged, or worn insert. Replace.
b. Too little water flow. Insert may be blocked. Inspect and clear blockage, replace sediment and/or PureClarity filter, or replace insert.
c. If Power setting is too high for water, Increase water flow.
d. Excessive hand pressure applied. Correct technique.

5. No water spray when foot pedal is depressed

a. Water line blocked or kinked.
b. Water passage in the scaling insert clogged. Inspect and clear blockage or replace insert.
c. Sediment filter clogged and will require a replacement.
d. No water supply connected.

6. Insert does not go into handpiece

a. Insert stack is bent. Straighten plates carefully by hand and reinsert.
b. Insert O-ring is too tight. Lubricate O-ring with water and use twisting motion to seat insert.
c. Detachable 30K Handpiece (REF D762) can only accept 30K insert. Make sure that it is not a 25 kHz insert, as it will not fit inside the handpiece.

7. Insert falls out of handpiece or water leaks from front of handpiece

a. Insert O-ring damaged or worn. Replace O-ring on the insert is required.

8. Insert comes out of handpiece when pedal is depressed

a. Water pressure is too high. Adjust water pressure to 20-50 psi at dental unit connection or in floor junction box or replace insert O-ring.

9. 'Purge Mode' does not activate

a. Make sure to disconnect detachable handpiece from the cable
b. Activate the unit by pressing the foot pedal. Purge LED should start blinking.
c. Contact Parkell for support if the problem is not resolved.

10. Scaler does not stop when release pressure on the Foot Control

a. Scaler is in Cruise mode. Either deactivate cruise feature by
   ~ Pressing and releasing the foot pedal
   ~ Pressing the Cruise button on the scaler faceplate until light goes out.

11. Scaling Power has reduced to minimum automatically

a. Foot pedal remained pressed continuously for more than 3 minutes. To avoid any accidental damage, scaling power was reduced to minimum after 3 minutes of continuous foot pedal press. Scaling and water flow will be disabled completely after 10 minutes of continuous usage. This is normal. Release foot pedal and press again. Contact Parkell for additional assistance.

[11] Additional Safety Features

- Upon activation, TurboSensor+360 detects if handpiece is detached from the cable / if there is no insert connected into the handpiece. TurboSensor+360 then disables output oscillator reducing power consumption and heat generation.
- To improve safety, TurboSensor+360 disables water flow after 2 minutes of pre-determined purge duration. In the event of accidental, unattended continuous foot pedal activation, this feature prevents water damage in the dental office and prevents handpiece overheating, if external valve is closed.
- Always Awake. Without a "Sleep" mode, TurboSensor+360 always remains ready for activation while powered on. Position the foot pedal to avoid accidental activation.

[12] Warranty and Other Information

Clinical Suggestions on Tooth Scaling

- Hold the handpiece in a comfortable pen-grasp.
- To remove deposits from teeth, always use a light brushing stroke with the side of the insert tip, in contact with and parallel to the root surface.
- Excess pressure will not improve scaling action but may cause discomfort to the patient. ⚠

- Keep the scaler insert in motion, using repeated gentle strokes to remove all deposits.
- Pause scaling occasionally to evaluate deposit removal.
- Exercise caution near ceramic restorations, as they can discolor or fracture if stressed.

Warranty

The Parkell TurboSensor+360 requires very little maintenance for years of trouble-free operation. Because they are detachable, replacements for the handpiece cable and the foot pedal/cable assembly may be ordered and replaced in the office. Opening the case will void all warranties. Authorized Parkell personnel must make all internal repairs. Sediment filters should be regularly monitored and changed every 1 to 3 months when the disk noticeably darkens, or sooner if water flow decreases. PureClarity antibacterial waterline filters should be regularly monitored and changed every 6 months, or sooner, and immediately, if a waterline bacterial testing indicates a lack of compliance with CDC water recommendations (i.e., procedural water not meeting the standard of <500CFU/mL of bacterial) and/or water flow decreases (despite a new Sediment filter being present immediately upstream of the PureClarity filter). The most common reason for service for ultrasonic scalers is failure by the user to periodically change the sediment and/or water filter. This will result in contamination and clogging of the internal water components.

The autoclavable handpiece, handpiece cable, foot pedal/cable assembly, power supply, water filter and water hose are all detachable and may be replaced by the user. Contact Parkell for a list of available replacement parts.

All repairs must be made by Parkell. We maintain a complete service and parts facility in our factory at 300 Executive Drive, Edgewood, NY 11717. Equipment needing service in the US should be returned, freight pre-paid, via approved common carrier (e.g., USPS, UPS, FedEx), and adequately insured. Return all accessories with the unit and include an explanation of the problem. Pack in the original box, add plenty of cushioning material, and over box the unit during shipping. Transit should maintain a dry temperature of -17°– 40°C. You will be contacted for your approval of the repair, along with any associated costs, prior to any work. The unit will be repaired and returned to you. Outside the US, repairs must be made by a Parkell-authorized facility.

For full Warranty and Terms of Use information, please visit our website at 'Terms and Conditions' (parkell.com).

If you have any questions or problems with the installation or use of your TurboSensor+360, call Technical Support Service at +1-800-243-7446, M-F from 8:30 a.m. to 5:00 p.m. EST.

Adverse Events

Reportable incidents should be reported to Parkell and the competent authority in which the user and or patient is established.

Conformance to Standards

The Parkell TurboSensor+360 is TUV listed and conforms to IEC 60601-1, 60601-1-2 (Electromagnetic Compatibility of Medical Devices) and CAN/ CSA C22.2 No. 601.1.

Electromagnetic Environment – Guidance

TurboSensor+360 was tested according to the recommendations of IEC TR 60601-4-2: Medical Electrical Equipment – Part 4-2: Guidance and interpretation – Electromagnetic Immunity: performance of medical electrical equipment and medical electrical systems. TurboSensor+360 is suitable for use in a Professional Healthcare Environment only.

[13] Explanation of Symbols Used

	Prescription Only
	Medical Device
	Unique Device Identifier
	Serial Number
	Batch Code
	Catalogue / stock number
	Refer to Instruction Manual/ Booklet
	Caution
	Non-Sterile
	Sterilizable in a Steam Sterilizer @ 132°C
	Temperature Limit
	Keep dry
	Do Not Use if Package is Damaged
	Collect separately
	Use-by Date (Expiration)
	Applied Part Type BF
	Manufacturer
	Date of Manufacture
	Package Contents

Electromagnetic Emissions: TurboSensor+360 is intended for use in the electromagnetic environment specified below. The end user / operator of the device should be sure that they are used in such an environment.

EMISSIONS TEST	COMPLIANCE LEVEL
RF Emissions (Radiated and Conducted) CISPR 11:2015/A1:2016/A2:2019	Class B
IEC 61000-3 2:2005/A1:2008/A2:2009	Class A
IEC61000-3-3:2013	Per Standard

Electromagnetic Immunity: TurboSensor+360 is intended for use in the electromagnetic environment specified below. The end user / operator of the device should be sure that they are used in such an environment.

IMMUNITY TEST	COMPLIANCE LEVEL
Electrostatic Discharge (ESD) IEC 61000-4-2:2008	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air
Radiated RF IEC 61000-4-3 :2006/A1:2007/A2:2010	**3 V/m (Professional)** 80 MHz – 2,7 GHz 80 % AM at 1 KHz
IEC61000-4-4:2012	AC Mains: ±2 kV 100 kHz repetition frequency Signal input/output parts PORT: ± 1 kV 100 kHz repetition frequency
IEC 61000-4-5:2014/A1:2017	AC Mains: ±0.5 kV, ±1 kV Line-to-line ± 0,5 kV, ± 1 kV, ± 2 kV Line to Ground
IEC61000-4-6:2013	AC Mains : (Professional) 3 V, 0.15 MHz – 80 MHz 6 V in ISM band between 0.15 MHz and 80 MHz 80 % AM at 1 KHz [see table 5 of IEC 60601-1-2] SIP/SOPS: (Professional) 3 V, 0.15 MHz – 80 MHz 6 V in ISM band between 0.15 MHz and 80 MHz 80 % AM at 1 kHz [see table 8 of IEC 60601-1-2]
IEC61000-4-8:2009	30 A/m, 50 Hz or 60 Hz
IEC 60601-1-2:2014 Clause 8.10	Per Table 9
IEC61000-4-39:2017	134.2 kHz, 65 A/m, Pulse Mod 2.1 kHz 13.56 MHz, 7.5 A/m, Pulse Mod 50 kHz
IEC 61000-4-11:2004/A1:2017	0 % UT; 0,5 cycle g) At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0° 0 % UT; 250/300 cycle

Test Frequency	Band a) (MHz)	Service a)	Modulation b)	Maximum Power (W)	Distance (m)	Immunity Test Level (V/m)
385	380 – 390	TETRA 400	Pulse modulation b) 18 Hz	1.8	0.3	27
450	430 – 470	GMRS 460, FRS 460	FM c) ±5 kHz deviation 1 kHz sine	2	0.3	28
710	704 – 787	LTE Band 13, 17	Pulse modulation b) 217 Hz	0.2	0.3	9
745						
780						
810	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation b) 18 Hz	2	0.3	28
870						
930						
1,720	1,700 – 1,990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation b) 217 Hz	2	0.3	28
1,845						
1,970						
2,450	2,400 – 2,570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation b) 217 Hz	2	0.3	28
5,240	5,100 – 5,800	WLAN 802.11 a/n	Pulse modulation b) 217 Hz	2	0.3	9
5,500						
5,785						

NOTE: If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

a. For some services, only the uplink frequencies are included.
b. The carrier shall be modulated using a 50 % duty cycle square wave signal.
c. As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

This precision dental device was designed, manufactured and is serviced in the United States of America by:

parkell®

Parkell, Inc.,
300 Executive Dr., Edgewood, NY 11717 USA

Date of Printing

Parkell, Inc.,
300 Executive Dr., Edgewood, NY 11717 USA

Printed Date: A01249_**revB1125**