

CE 0086

PALISADES DENTAL



HIGH SPEED HANDPIECE

*Care and Use
of the Impact Air 45
Push Button (Model 9)
High Speed Handpiece*

www.palisadesdental-llc.com

WARNING:

UNDER NORMAL OPERATING CONDITIONS, AIR IS RELEASED FROM THE BACK OF THE HEAD OF THIS HANDPIECE. IF THIS AIR IS DIRECTED INTO AN OPEN SOFT TISSUE WOUND OR BENEATH THE MUCOSA OR DERMIS, INJURY TO THE PATIENT COULD RESULT FROM AIR EMPHYSEMA OR AIR EMBOLISM.

When using this handpiece, do not turn it so that the back of the head is directed toward a tissue flap.

The Impact Air 45® is designed to prevent the release of air from the front of the device head (i.e., onto the bur). Prior to each use, the handpiece should be evaluated to ensure that it is operating correctly. The instructions in this booklet should be followed carefully.

CAUTION:

This handpiece must be sterilized prior to initial use. Please follow instructions listed in **Section 4 – Sterilization** of this booklet. The Food and Drug Administration (FDA) strongly recommends that handpieces be re-sterilized after each patient use.

PLEASE READ THESE INSTRUCTIONS THOROUGHLY BEFORE USING THIS HANDPIECE!

Your new handpiece is a high-precision, ultra-high-speed instrument, and in order to obtain the fine service it can deliver, some specific procedures must be followed.

System Requirements

1. Air/Water Requirements

The Impact Air 45[®] handpiece should always have dry filtered air or nitrogen and filtered water supplies. Periodically check and maintain your air filter and dryer to ensure a steady supply of clean, moisture-free air. This may prolong the life of the bearings.

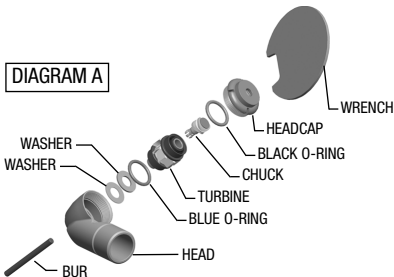
2. Pressure

The recommended drive air pressure for the Impact Air 45[®] handpiece is between 32 p.s.i. and 40 p.s.i. Proper drive air pressure is essential for optimal handpiece performance. NEVER OPERATE this handpiece at HIGHER PRESSURE than the maximum 40 p.s.i. recommended. Doing so may shorten the life of the bearings.

3. Cleaning

NEVER immerse or soak handpiece and/or turbine in water-based cleaner, chemical disinfectant, ultrasonic cleaner, or cold sterilization solution.

Failure to follow these cleaning procedures may lead to premature turbine failure.



After each use, the handpiece should be cleaned as follows:

a. *To clean the Exterior of the Handpiece:*

- Wipe with damp sponge or brush to remove debris.

b. *To disassemble and clean the Interior of the Head:*

- Make sure a bur is in place prior to disassembly.
- Fit the head cap wrench, provided with the handpiece, into the slots of the head cap. Turn the wrench counter-clockwise to loosen and unscrew the head cap.
- Remove turbine from head. If turbine stays with head cap, separate these two parts with a gentle pull.
- If turbine does not come out with head cap removal, push turbine out through the rear, using the bur.
- INSPECT interior of head carefully to ensure that all turbine components, such as the two washers and the front, blue O-ring, have been removed. Clean interior of the head with Isopropyl Alcohol (I.P.A.) using a bristle brush and/or swab. DISCARD AND REPLACE any O-rings that are hardened, no longer supple, or that allow loose movement of the turbine in the head or head cap, or vibration during running. DISCARD AND REPLACE any washers that are worn. After cleaning, ensure that the interior of the head is dry, clean and free of debris.

c. *To clean the Head Cap:*

- Prior to cleaning, inspect the head cap to ensure that the turbine's rear, black O-ring has been removed. If it is present, carefully remove the O-ring. Using I.P.A. with a bristle brush and/or swab, clean the head cap. Ensure that the head cap is clean and dry.

d. *To clean the Turbine:*

- Hold the turbine by the bur.
- Gently clean all exterior surfaces of the turbine using I.P.A. and a bristle brush.

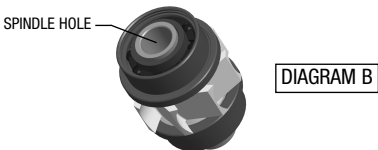
e. *To clean the Chuck:*

- Place turbine – chuck side down – against a hard flat surface. Grip the turbine and push down against the surface, then remove the bur.
- Grasp the back of the chuck in front of the stack of small, curved spring washers and remove the chuck from the turbine (refer to

Diagram B). Gently clean the exterior of the chuck with I.P.A. and a small bristle brush. Gently clean the interior of the chuck with I.P.A. and a pipe cleaner.

f. *To clean the Spindle:*

- Insert a pipe cleaner dampened with I.P.A. into the spindle hole as far as possible (refer to Diagram B).
- Remove pipe cleaner from spindle and wipe debris from pipe cleaner. Repeat until pipe cleaner comes out clean.



Reassembly after Cleaning (refer to Diagram A):

- Re-install the chuck into the spindle.
- Insert the bur back into turbine by placing the turbine – chuck side down – against a hard, flat surface. Insert a bur into the spindle hole as far as it will go. Grip turbine, push down against the surface, and slide the bur in completely.
- Apply one drop of Impact Air 45® Autoclavable Lubricant to each of the bearings.
- Slide the rear, black O-ring onto the rear bearing.
- Slide the front, blue O-ring onto the front bearing (bur end).
- Slide the two washers, in either order, onto the bur end of the turbine, flush against the front bearing.
- Lubricate the head cavity with Impact Air 45® Autoclavable Lubricant.
- While holding the turbine with the bur end facing upward, carefully insert the turbine assembly completely into the head with gentle pressure.
- Push turbine into the interior of the head using the bur to guide it into the center of the hole. As the turbine begins to seat, apply firm pressure with a wobbling motion to seat the front, blue O-ring. The end of the rear bearing should be flush with the open end of the head chamber.
- Using your fingers, carefully screw the head cap back onto the rear

of the head and tighten with the head cap wrench. Do not force the head cap. If resistance is experienced, refer to the troubleshooting section of this booklet.

WARNING:

BE SURE TO TIGHTEN HEAD CAP SECURELY WITH HEAD CAP WRENCH SO IT DOES NOT LOOSEN DURING OPERATION. OPERATING HANDPIECE WITH LOOSE HEAD CAP COULD CAUSE PERSONAL INJURY.

4. Sterilization

Use a steam autoclave and cycle at 275°F for 20 minutes. Remove handpiece from sterilizer promptly after completion of sterilization cycle and **vent the pouch**. Store the handpiece in a dry environment to reduce micro-corrosion and bearing damage.

- DO NOT AUTOCLAVE with bur in chuck.
- Do not use a chemical or cold sterilization process.

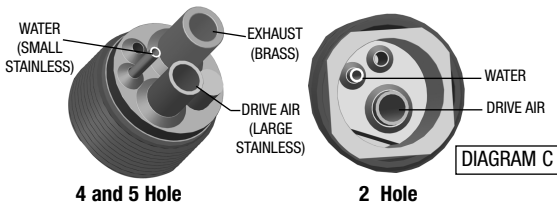
5. Lubrication

The Impact Air 45® handpiece should be properly lubricated BEFORE and AFTER each standard autoclaving cycle with Impact Air 45® Autoclavable Lubricant. Proper lubrication is the most critical factor in handpiece bearing life. For maximum bearing life, use only Impact Air 45® Autoclavable Lubricant.

NOTE: Use of other brands of lubricant may gum or damage turbine and void warranty.

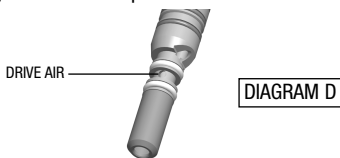
To Lubricate a 2 Hole, 4 Hole, or 5 Hole Fiberoptic Handpiece:

- Remove handpiece from hose coupling and insert tip of Impact Air 45® Autoclavable Lubricant into drive air hole. (refer to Diagram C). Inject 2 drops of lubricant and reconnect with hose coupling. Run handpiece approximately 5 seconds to disperse lubricant.



To Lubricate an Optic and Non-Optic Quick Disconnect Handpiece:

- Remove handpiece from hose coupling and insert tip of Impact Air 45® Autoclavable Lubricant into drive air hole of the coupler (refer to Diagram D). Inject 2 drops of lubricant into the drive air hole of the coupler and connect Quick Disconnect handpiece and coupler. Run handpiece approximately 5 seconds to disperse lubricant.



All Impact Air 45® handpieces should be lubricated BEFORE and AFTER autoclaving for maximum turbine life.

6. Burs

Burs may break or dislodge from the handpiece with great velocity. Operator eye protection is strongly recommended. Never attempt to extend the bur from the chuck. Do not use burs that produce excessive noise or increased vibration. This may indicate that the bur is not securely in place or that the bur is bent. Never force a bent, rusted or oversized bur into the chuck or damage may occur, voiding warranty. Always tug on the bur, after the chuck is loaded, to confirm that the bur is securely in place. Be sure to remove the bur after each use. **DO NOT AUTOCLAVE** with bur in chuck.

USE OF INCOMPATIBLE BURS may damage push-button chuck or other parts, and result in bur slippage. The following burs are incompatible with an Impact Air 45® handpiece:

- Burs not made to (or worn beyond) I.S.O. and A.D.A. shank standards (.0625 - .0630 in.)
- Burs with carbide shanks
- #8 or larger round burs
- Burs with identifying grooves located from 4mm to 6mm from non-cutting end of bur

7. Operation

When attaching a standard handpiece to the coupling, be sure that all tubes are fully inserted with the gasket flush to the connector and maintained in position prior to tightening the coupler sleeve/nut onto the handpiece.

A Quick Disconnect handpiece is designed to connect to one of our Quick Disconnect Couplers, Item #627, #628, and #629. The Quick Disconnect handpiece is designed to also fit the KaVo Multiflex coupler (*KaVo is a registered trademark of KaVo Dental GmbH, Biberach, Germany*). Insert the Quick Disconnect handpiece onto the appropriate Quick Disconnect Coupler until it snaps securely into place.

- NEVER force a handpiece onto an incompatible coupler.
- Never depress the head cap button (the chuck release) while the handpiece is running.
- Do not use the handpiece if an air leak is detected from the front (bur end) of the head.
- NEVER operate the handpiece without an adequate water or saline supply at the cutting site as cutting and cooling efficiency will be reduced.

TO CHANGE BUR:

- To remove a bur: Press the head cap button (the chuck release) firmly and withdraw bur from spindle.
- To insert a bur: Slide bur in as far as it will go (approximately halfway), then press the head cap button (the chuck release) firmly and slide bur in the rest of the way.
- Test the bur for security by tugging the bur with your fingers.

8. To Change the Turbine (refer to Diagram A):

- Make sure a bur is in place prior to disassembly.
- Fit the head cap wrench, provided with the handpiece, into the slots of the head cap. Turn the wrench counter-clockwise to loosen and unscrew the head cap.
- Remove turbine from head. If turbine stays with head cap, separate these two parts with a gentle pull.
- If turbine does not come out with head cap removal, push turbine out through the rear, using the bur.

- INSPECT interior of head carefully to ensure that all turbine components, such as the two washers and the front, blue O-ring, have been removed. Clean interior of the head with Isopropyl Alcohol (I.P.A.) using a bristle brush and/or swab. After cleaning, ensure that the interior of the head is dry, clean and free of debris.
- Clean the Head Cap:* Prior to cleaning, inspect the head cap to ensure that the turbine's rear, black O-ring has been removed. If it is present, carefully remove the O-ring. Using I.P.A. with a bristle brush and/or swab, clean the head cap. Ensure that the head cap is clean and dry.
- Remove the turbine, the two washers, and the two O-rings from the Turbine Kit bag.
- Apply one drop of Impact Air 45®Autoclavable Lubricant to each of the bearings of the new turbine.
- Slide the rear, black O-ring onto the rear bearing.
- Slide the front, blue O-ring onto the front bearing (bur end).
- Slide the two washers, in either order, onto the bur end of the turbine, flush against the front bearing.
- Lubricate the head cavity with Impact Air 45®Autoclavable Lubricant.
- While holding the turbine with the bur end facing upward, carefully insert the turbine assembly completely into the head with gentle pressure.
- Push turbine into the interior of the head using the bur to guide it into the center of the hole. As the turbine begins to seat, apply firm pressure with a wobbling motion to seat the front, blue O-ring. The end of the rear bearing should be flush with the open end of the head chamber.
- Using your fingers, carefully screw the head cap back onto the rear of the head and tighten with the head cap wrench. Do not force the head cap. If resistance is experienced, refer to the troubleshooting section of this booklet.

WARNING:

BE SURE TO TIGHTEN HEAD CAP SECURELY WITH HEAD CAP WRENCH SO IT DOES NOT LOOSEN DURING OPERATION. OPERATING HANDPIECE WITH LOOSE HEAD CAP COULD CAUSE PERSONAL INJURY.

9. To Replace the Chuck (refer to Diagrams A & B):

- Make sure a bur is in place prior to disassembly.
- Fit the head cap wrench, provided with the handpiece, into the slots of the head cap. Turn the wrench counter-clockwise to loosen and unscrew the head cap.
- Remove turbine from head. If turbine stays with head cap, separate these two parts with a gentle pull.
- If turbine does not come out with head cap removal, push turbine out through the rear, using the bur.
- INSPECT interior of head carefully to ensure that all turbine components, such as the two washers and the front, blue O-ring, have been removed. Clean interior of the head with Isopropyl Alcohol (I.P.A.) using a bristle brush and/or swab. After cleaning, ensure that the interior of the head is dry, clean and free of debris.
- *Clean the Head Cap:* Prior to cleaning, inspect the head cap to ensure that the turbine's rear, black O-ring has been removed. If it is present, carefully remove the O-ring. Using I.P.A. with a bristle brush and/or swab, clean the head cap. Ensure that the head cap is clean and dry.
- Place turbine – chuck side down – against a hard flat surface. Grip the turbine and push down against the surface, then remove the bur.
- Grasp the back of the chuck in front of the stack of small, curved spring washers and remove the chuck from the turbine (refer to Diagram A).
- *Clean the Spindle:* Insert a pipe cleaner dampened with I.P.A. into the spindle hole as far as possible (refer to Diagram B).
- Remove pipe cleaner from spindle and wipe debris from pipe cleaner. Repeat until pipe cleaner comes out clean.
- Remove new chuck from package, being careful not to remove or reposition curved spring washers. Insert end of new chuck into turbine cartridge and push with finger until fully inserted.
- Insert the bur back into turbine by placing the turbine – chuck side down – against a hard, flat surface. Insert a bur into the spindle hole as far as it will go. Grip turbine, push down against the surface, and slide the bur in completely.

- Apply one drop of Impact Air 45® Autoclavable Lubricant to each of the bearings.
- Slide the rear, black O-ring onto the rear bearing.
- Slide the front, blue O-ring onto the front bearing (bur end).
- Slide the two washers, in either order, onto the bur end of the turbine, flush against the front bearing.
- Lubricate the head cavity with Impact Air 45® Autoclavable Lubricant.
- While holding the turbine with the bur end facing upward, carefully insert the turbine assembly completely into the head with gentle pressure.
- Push turbine into the interior of the head using the bur to guide it into the center of the hole. As the turbine begins to seat, apply firm pressure with a wobbling motion to seat the front, blue O-ring. The end of the rear bearing should be flush with the open end of the head chamber.
- Using your fingers, carefully screw the head cap back onto the rear of the head and tighten with the head cap wrench. Do not force the head cap. If resistance is experienced, refer to the troubleshooting section.

WARNING:

BE SURE TO TIGHTEN HEAD CAP SECURELY WITH HEAD CAP WRENCH SO IT DOES NOT LOOSEN DURING OPERATION. OPERATING HANDPIECE WITH LOOSE HEAD CAP COULD CAUSE PERSONAL INJURY.

10. Servicing

Do not attempt to repair a handpiece yourself except to replace the turbine, chuck, washers, or O-rings as described in these instructions. If your handpiece requires service, return it directly to Palisades Dental for evaluation at the address listed on the back of this booklet. DO NOT SEND TO OTHER CENTERS. Please complete the repair card enclosed with these instructions (additional copies can be downloaded from our website at: www.palisadesdental-llc.com).

Troubleshooting

<i>Problem</i>	<i>Possible Reason/Solution</i>
Chuck does not hold bur	<ul style="list-style-type: none">•Chuck and/or Spindle may be dirty. Follow cleaning instructions listed in Section 3 – Cleaning of this booklet.•Chuck may be worn or broken. Replace chuck.•Spindle may be damaged. Send handpiece to Palisades Dental for service.
Bur/Turbine does not spin	<ul style="list-style-type: none">•Bur may not be engaged. Engage bur (refer to the instructions listed in Section 7 - Operation of this booklet).•Handpiece may not be properly connected. Ensure proper connection.•If bur is fully engaged and the bur/turbine still does not spin, return the handpiece to Palisades Dental for service.
Handpiece runs too slow	<ul style="list-style-type: none">•Air pressure may be too low. Increase air pressure, not to exceed 40 p.s.i.•Pinched O-ring. Replace the pinched O-ring.•Bearings may be worn. Replace turbine.•If the handpiece continues to run slow, send to Palisades Dental for service.
Head Cap will not tighten	<ul style="list-style-type: none">•There may be an extra O-ring in head cap. Remove the extra O-ring.•There may be extra washers or an extra blue (front) O-ring in the head cavity. Remove extra washer(s) and/or extra O-ring(s).•Turbine may not be properly seated in head. Reposition turbine per the instructions listed in Section 8 – To Change the Turbine of this booklet.•Head Cap threads may be cross-threaded. Realign threads and tighten head cap.•If head cap will not tighten, send your handpiece to Palisades Dental for service.
Air Leak Detected	<ul style="list-style-type: none">•Hose connection may not be tightened completely. Tighten hose connection.•Rear gasket may be worn or missing. Replace gasket (refer to Diagram A for proper location).•Head cap may be loose. Use cap wrench to tighten head cap completely.•Washers may be worn. Replace washers (refer to <i>Cont'd. on next page</i>)

<p>Air Leak Detected (cont'd.)</p>	<p>Diagram A for proper location).</p> <ul style="list-style-type: none"> •O-rings may be worn. Replace O-rings (refer to Diagram A for proper location). •Bearings may be worn or blown. Replace Turbine or return the handpiece to Palisades Dental for service. •If the air leak persists after replacing the above listed parts and tightening the connections, return the handpiece to Palisades Dental for service.
<p>Water Stream is weak or absent</p>	<ul style="list-style-type: none"> •Waterline may be obstructed. Carefully clear blockage using an endofile or a ligature wire. •Water reservoir pressure may be set too low. Increase water reservoir pressure. •Waterline is crimped or broken. Send handpiece to Palisades Dental for service.
<p>Water stream is not directed at tip of bur</p> <p><i>CAUTION: Attempting to re-aim the water stream yourself could result in permanent damage to the waterline.</i></p>	<ul style="list-style-type: none"> •Waterline is partially obstructed. Carefully clear blockage using an endofile or a ligature wire. •Waterline is bent or broken. Send handpiece to Palisades Dental for service. •Bur length is incorrect. Use only surgical length burs. •Incompatible Bur. Refer to Section 6 - Burs for a listing of incompatible burs.
<p>Turbine does not run after cleaning/re-installation</p>	<ul style="list-style-type: none"> •There may be an extra O-ring in head cap. Remove the extra O-ring. •There may be extra washers or an extra blue (front) O-ring in the head cavity. Remove extra washer(s) and/or extra O-ring(s). •Turbine may not be properly seated in head. Reposition turbine per the instructions listed in Section 8 – To Change the Turbine of this booklet. •Head Cap threads may be cross-threaded. Realign threads and tighten head cap. <p><i>Connect handpiece to your air source. Thread the head cap on approximately half way. Feed air through the handpiece, being careful to maintain a grip on the cap. Tighten the cap while handpiece is running. If the turbine slows, manipulate the cap back and forth to increase the speed.</i></p> <p style="text-align: right;"><i>Cont'd. on next page</i></p>

<p>Turbine does not run after cleaning/re-installation (cont'd.)</p>	<p><i>Continue this process until head cap is snug and tighten completely with head cap wrench.</i></p> <p>WARNING:</p> <p>BE SURE TO TIGHTEN HEAD CAP SECURELY WITH HEAD CAP WRENCH SO IT DOES NOT LOOSEN DURING OPERATION. OPERATING HANDPIECE WITH LOOSE HEAD CAP COULD CAUSE PERSONAL INJURY.</p>
<p><i>For Fiberoptic Models:</i> No light output</p>	<ul style="list-style-type: none"> •Ensure handpiece is connected to a compatible fiberoptic coupler. •Check to make sure power source at the base of the hose is “on”. •Bulb or light module may need to be replaced. •Light ferrules may be damaged. Send handpiece to Palisades Dental for service.
<p>Water leak at coupler</p> <p><i>a. For 2 Hole, 4 Hole, and Fiberoptic Models:</i></p> <p><i>b. For 407 and 408 Quick Disconnect Models:</i></p>	<ul style="list-style-type: none"> •Gasket may be worn. Replace gasket. •Coupler connection may not be tightened completely. Tighten connection. •Handpiece and Hose may not be threaded tightly enough. Align and tighten connections. •Coupler O-rings may be worn. Replace O-rings. •Coupler may not be completely inserted into the handpiece. Make sure the coupler is fully inserted. •Coupler and Hose may not be threaded tightly enough. Align and tighten connections.

If your problem cannot be resolved using the Troubleshooting tips, send your handpiece to Palisades Dental for service.

**Instructions for shipping your Impact Air 45® handpiece
for service:**

Palisades Dental will gladly accept repairs of Impact Air 45® highspeed handpieces for service. We will provide you with a free estimate after inspection.

- Autoclave your handpiece prior to shipping.
- Send it to be serviced via your most convenient carrier directly to Palisades Dental at the address listed on the back of this booklet. Make sure that you insure it. Always pack the product in a box, never in an envelope.
- Please complete the repair card enclosed with these instructions (additional copies can be downloaded from our website at: www.palisadesdental-llc.com), or a note, with a brief description of the problem you are having, as well as your return address and phone number.

11. Parts and Accessories

To reduce downtime in your office, WE RECOMMEND having a bottle of the Impact Air 45® Autoclavable Lubricant, as well as replacement turbine parts on hand.

Replacement Parts:

- 603 Turbine
- 608 Chuck
- 614 Head Cap
- 619 Gasket for a 2 (3) Hole
- 620 Gasket for a 4 Hole Handpiece or 628 Coupler
- 621 Gasket for a Fiberoptic/5 Hole Handpiece or
629 Coupler
- 622 O-Rings
- 623 Washers

Maintenance Parts:

- 618 Autoclavable Lubricant
- 638 Cleaning Kit

Accessories:

- 625 ISO-B/ISO-C Adapter Module 5-Hole HP to ISO-C Tubing
- 626 Lamp Module for Adapter
- 627 Quick Disconnect Coupler – 6 Pin
- 628 Quick Disconnect Coupler – 4 Hole
- 629 Quick Disconnect Coupler – 5 Hole
- 630 Replacement Coupler O-Rings
- 631 Replacement Coupler Bulb for Fiberoptic Model
- 632 Replacement 6 Pin Coupler Gasket

LIMITED WARRANTY

Your Impact Air 45® handpiece is warranted against defects in materials and workmanship for a period of one year from date of purchase. The autochuck turbine that comes in your handpiece is warranted for 90 days from the date of purchase.

All warranties are subject to the following conditions:

The handpiece must not be subjected to abuse or neglect and must be maintained in accordance with procedures outlined in this instruction booklet. Failure to follow the maintenance guidelines in the booklet will void the warranty.

**FOR REPAIRS AND SERVICE CALL:
1-800-664-8000**



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