1. User and Intended Use

User: Qualified Professionals

Indications for Use: This medical device is intended for converting compressed air supplied from a dental unit, etc. to rotational motion, thereby running the instrument such as a dental bur to cut and polish natural or artificial teeth during dental treatment.

2. Precautions for handling and operation

Please read these precautions carefully and use only as intended or instructed.

Safety instructions are intended to avoid potential hazards that could result in personal injury or damage to the device. Safety instructions are classified as follows in accordance with the seriousness of the risk.

<table>
<thead>
<tr>
<th>Class</th>
<th>Degree of Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>WARN</td>
<td>Hazard that could result in serious injury or damage to the device if the safety instructions are not correctly followed.</td>
</tr>
<tr>
<td>ATTENTION</td>
<td>Hazard that could result in light or moderate injury or damage to the device if the safety instructions are not correctly followed.</td>
</tr>
<tr>
<td>NOTICE</td>
<td>General product specification information highlighted to avoid product malfunction and performance reduction.</td>
</tr>
<tr>
<td>CAUTION</td>
<td></td>
</tr>
</tbody>
</table>

WARNING

ATTENTION

NOTICE

CAUTION

3. Accessory List

<table>
<thead>
<tr>
<th>No.</th>
<th>Port Name</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Head Cap Wrench</td>
<td>1</td>
<td>Included in the package for PAF-SU QD/PAF-TU QD</td>
</tr>
<tr>
<td>2</td>
<td>QD Spray Nozzle</td>
<td>1</td>
<td>Included in the package for PAF-S M4/PAF-S B2/PAF-T M4/PAF-T B2</td>
</tr>
<tr>
<td>3</td>
<td>Chuck Wrench</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

4. Setting of Air & Water Supply Pressure

Measure the supply pressure at the handpiece/hose connection point and set the pressure to the value specified on the specification table (Fig. 1).

For NSK Multi Gauge information refer to Option Parts List.

5. Connection & Disconnection of the Handpiece

Refer to Operation Manuals of coupling and hose before connecting the handpiece.

5-1 Connection

1) Insert the handpiece correctly into the hose connector and tighten the hose nut (Fig. 2).
2) Make sure the handpiece is connected firmly to the hose.

5-2 Disconnection

1) Loosen the Hose Nut and remove from the Hose (Fig. 3).

6-1 Connection

1) Insert the coupling into the hose connector and tighten the hose nut (Fig. 4).
2) Insert the handpiece to the coupling while pulling back the retention lock ring of the coupling. Release the retention lock ring.
3) Make sure the handpiece is firmly connected to the coupling.

6-2 Disconnection

1) Pull back the Retention Lock Ring and remove the handpiece from the Coupling (Fig. 5).

CAUTION

- Do not exceed the optimum pressure specified on the specification table.

- Do not use air contaminated by dust, moisture or oil.

- Do not allow any impact on to the product. Do not drop the product.

- Operators and all others in the area must wear eye protection and a mask when operating this handpiece.

- Should the product function abnormally, cease operation immediately and contact your Authorized NSK Dealer.

- Do not use high acid water or sterilizing solutions to wipe, immerse or clean the product.

- The products are delivered in a non-sterile condition and must be autoclaved prior to use.

- Perform regular function and maintenance checks.

- If the product is not used for a long period check it is functioning correctly before using on a patient.

- To avoid clinical downtime it is recommended that a spare be kept on hand in case of a breakdown during surgery.
6. Insertion & Removal of the Bur

**6-1 To Insert the Bur**

1) Insert the bur into the handpiece (Fig. 7).
2) Push the bur until the head (the bur end) is about 3/4 of the way into the chuck.
3) Tighten the bur clockwise until it is secure.

**6-2 To Remove the Bur**

1) Pull back the knurled knob then insert the bur until the bur head is at the same height as the thread on the bur (Fig. 7).
2) Push the knob into the head then turn the knob about 3/4 turn counter clockwise.
3) Insert the bur into the chuck and turn the bur clockwise until it stops.
4) Remove the bur from the handpiece.

- **NOTICE**
  - Do not use the bur without bur head.

**6-1 To Insert the Bur**

1) To insert the bur, follow the procedure 1) to 3) in “6-2-1 To Insert the Bur” stated above.

- **CAUTION**
  - Always use the bur head all the way up to the end.
  - Remove the bur only after the handpiece has completely stopped rotating.
  - Always keep the bur head clean. Entry of debris into the bur may cause bur breakage.
  - Do not exceed the bur speed recommended by the bur manufacturer.
  - Do not exceed the bur length recommended by the handpiece manufacturer.
  - Do not apply excess pressure to the bur as it may break or bend or become difficult to remove.
  - Do not exceed the bur speed recommended by the bur manufacturer.
  - Always keep the bur shank clean. Entry of debris into the chuck, via the bur shank, could cause bur rotation slip and also prevent the bur from securely locating in the chuck.
  - Do not use the following fluids to wipe, immerse or clean the product; strong/super acid water, strong alkali water, chlorine-containing solutions, corrosive, organic solvents, acidic or basic solvent.
  - Do not apply excess pressure to the bur as it may break, seize up or disengage from the chuck.
  - Do not use the bur shank if the bur is split or broken.
  - Do not use excessive pressure to remove the bur.
  - Do not exceed the bur speed recommended by the bur manufacturer.

**6-2 To Remove the Bur**

1) To remove the bur, follow the procedure 1) to 4) in “6-1 To Insert the Bur” stated above.

**7. Check before treatment**

Check that the Head Cap is firmly tightened. Also check for handpiece vibration, noise and overheating. If any abnormalities are found do not use the handpiece and contact your Authorized NSK Dealer.

**8. Maintenance**

After each patient, maintain the product as follows. Lack of maintenance could cause premature failure or overheating of the handpiece.

- **CAUTION**
  - Do not use the following fluids to wipe, immerse or clean the product; strong/super acid water, strong alkali water, chlorine-containing solutions, corrosive, organic solvents, acidic or basic solvent.

- **8.1 Preparation**
  - Wear eye protection, a mask and gloves to avoid infection.
  - Use a thermo-disinfector in accordance with ISO 15883 (EN ISO 15883). Refer to the thermo-disinfector manual.
  - Wipe the surface with cloth soaked in disinfectant solution such as alcohol.

- **8.2 Cleaning**
  - Manual Cleaning (External Surface)
    - Remove debris on the handpiece surface using a brush under running water (at 38°C or less). DO NOT use a wire brush.
  - Wipe off moisture on the surface using an absorbent cloth.

- **8.3 Disinfection**
  - Manual Disinfection (External Surface)
    - Use a thermo-disinfector in accordance with ISO 15863 (EN ISO 15863). Refer to the thermo-disinfector manual.
  - Use a thermo-disinfector in accordance with ISO 15883 (EN ISO 15883). Refer to the thermo-disinfector manual.
  - Wipe the surface with cloth soaked in disinfectant solution such as alcohol.

**9. Troubleshooting**

- **Automatic Disinfection (External and Internal Surfaces)**
  - Use a thermo-disinfector in accordance with ISO 15863 (EN ISO 15863). Refer to the thermo-disinfector manual.

- **9.1 Lubrication**
  - Manual Lubrication (External and Internal Surfaces)
    - Apply NSK PANA SPRAY Plus/NSK SPRAY every time after each use and/or before autoclaving.

- **9.2 Maintenance**
  - Never use any lubrication after each use and/or before autoclaving.
  - Use a thermo-disinfector in accordance with ISO 15883 (EN ISO 15883). Refer to the thermo-disinfector manual.
  - Apply lubricant until it expels from the handpiece head for at least 2 seconds.
9. Replacing the Cartridge

1) Insert a test bur.
2) Locate the correct wrench tool on the head cap then turn the wrench counter clockwise to loosen the cap. Remove the cap.
3) Insert the new Non-Retraction Valve securely and remount the water tube.
4) Insert the new Non-Retraction Valve (Fig. 16).

10. Replacing the 8-6 Sterilization (ID Coupling)

Replace the O-rings if water is present in the exhaust air line. This is an indication of possible water leakage within the coupling. ALWAYS change the complete set of O-rings.

Replace the O-rings if water is beginning to leak from the handpiece, or from the spray pressure.

11. Replacing the Non-Retraction Valve (QD Coupling)

A water Non-Retraction Valve is integrated in the Coupling Joint, which shuts off the water retraction directly at the flow. This helps to prevent fluids infiltrating the water line. If water is beginning to leak from the handpiece head to prevent fluids infiltrating the water line. If water is beginning to leak from the handpiece, or from the spray pressure.

CAUTION

If the chuck is not correctly aligned, the chuck grip may be weakened and the bur may be accidentally released while in operation.

CAUTION

NSK automatic handpiece cleaning and lubrication system

When using NSK automatic handpiece cleaning and lubrication system, refer to the system instructions.

Cautions

• Hold the spray can upright.
• When applying spray be sure to hold the handpiece firmly to prevent the handpiece from slipping out of the chuck.
• If the chuck is not regularly cleaned the chuck grip may be weakened and the bur may be accidentally released while in operation.
• NSK recommends Class B sterilizers as stated in EN13060.
• Do not touch the product immediately after autoclaving as it will be very hot and must remain in a sterile condition.
• Autoclave sterilization is recommended for the product. The validity of other sterilization methods is not confirmed.
• To avoid product failure, do not use a sterilizer that exceeds a cycle temperature of 138°C, including the dry cycle. In some sterilizers, the chamber temperature may exceed 138°C, including the dry cycle. In some sterilizers, the chamber temperature may exceed 138°C. Contact the sterilizer manufacturer for detailed information about cycle temperatures.
• Damage, failure or accidents are outside of our guarantee.
• NSK never recommends the disassembly and repair of any NSK cartridge. There is NO EXCEPTION. In such a case a handpiece may perform abnormally (abnormal noise or abnormal vibration). Damage, failure or accidents are outside of our guarantee.

NOTICE

• NSK recommends Class B sterilization as stated in EN13060.
• NSK recommends Class B sterilization as stated in EN13060.
• Do not autoclave the product with other instruments even when it is in a pouch. This is to prevent possible damage to the instruments and damage to the product from chemical reagents on other instruments.
• NSK never recommends the disassembly and repair of any NSK cartridge. There is NO EXCEPTION. In such a case a handpiece may perform abnormally (abnormal noise or abnormal vibration). Damage, failure or accidents are outside of our guarantee.

9. Replacing the Cartridge

1) Insert the test bur.
2) Locate the correct wrench tool on the head cap then turn the wrench counter clockwise to loosen the cap. Remove the cap.
3) Insert the new O-rings in the correct grooves.
4) Insert the Spray Nozzle in rear of the handpiece. Hold the spray can.

10. Replacing the Non-Retraction Valve (QD Coupling)

A water Non-Retraction Valve is integrated in the Coupling Joint, which shuts off the water retraction directly at the flow. This helps to prevent fluids infiltrating the water line. If water is beginning to leak from the handpiece, or from the spray pressure.

CAUTION

When applying spray be sure to hold the handpiece firmly to prevent the handpiece from slipping out of the chuck.

CAUTION

If the chuck is not correctly aligned, the chuck grip may be weakened and the bur may be accidentally released while in operation.

Cautions

• Hold the spray can upright.
• When applying spray be sure to hold the handpiece firmly to prevent the handpiece from slipping out of the chuck.
• If the chuck is not regularly cleaned the chuck grip may be weakened and the bur may be accidentally released while in operation.
• NSK recommends Class B sterilizers as stated in EN13060.
• Do not touch the product immediately after autoclaving as it will be very hot and must remain in a sterile condition.
• Autoclave sterilization is recommended for the product. The validity of other sterilization methods is not confirmed.
• To avoid product failure, do not use a sterilizer that exceeds a cycle temperature of 138°C, including the dry cycle. In some sterilizers, the chamber temperature may exceed 138°C. Contact the sterilizer manufacturer for detailed information about cycle temperatures.
• Damage, failure or accidents are outside of our guarantee.

NOTICE

• NSK recommends Class B sterilization as stated in EN13060.
• NSK recommends Class B sterilization as stated in EN13060.
• Do not autoclave the product with other instruments even when it is in a pouch. This is to prevent possible damage to the instruments and damage to the product from chemical reagents on other instruments.
• NSK never recommends the disassembly and repair of any NSK cartridge. There is NO EXCEPTION. In such a case a handpiece may perform abnormally (abnormal noise or abnormal vibration). Damage, failure or accidents are outside of our guarantee.

9. Replacing the Cartridge

1) Insert the test bur.
2) Locate the correct wrench tool on the head cap then turn the wrench counter clockwise to loosen the cap. Remove the cap.
3) Insert the new O-rings in the correct grooves.
4) Insert the Spray Nozzle in rear of the handpiece. Hold the spray can.

10. Replacing the 8-6 Sterilization (ID Coupling)

Replace the O-rings if water is beginning to leak from the handpiece, or from the spray pressure.

11. Replacing the Non-Retraction Valve (QD Coupling)

A water Non-Retraction Valve is integrated in the Coupling Joint, which shuts off the water retraction directly at the handpiece head to prevent fluids infiltrating the water line. If water is beginning to leak from the handpiece, or from the spray pressure.

CAUTION

When applying spray be sure to hold the handpiece firmly to prevent the handpiece from slipping out of the chuck.

CAUTION

If the chuck is not correctly aligned, the chuck grip may be weakened and the bur may be accidentally released while in operation.

Cautions

• Hold the spray can upright.
• When applying spray be sure to hold the handpiece firmly to prevent the handpiece from slipping out of the chuck.
• If the chuck is not regularly cleaned the chuck grip may be weakened and the bur may be accidentally released while in operation.
• NSK recommends Class B sterilizers as stated in EN13060.
• Do not touch the product immediately after autoclaving as it will be very hot and must remain in a sterile condition.
• Autoclave sterilization is recommended for the product. The validity of other sterilization methods is not confirmed.
• To avoid product failure, do not use a sterilizer that exceeds a cycle temperature of 138°C, including the dry cycle. In some sterilizers, the chamber temperature may exceed 138°C. Contact the sterilizer manufacturer for detailed information about cycle temperatures.
• Damage, failure or accidents are outside of our guarantee.

NOTICE

• NSK recommends Class B sterilization as stated in EN13060.
• NSK recommends Class B sterilization as stated in EN13060.
• Do not autoclave the product with other instruments even when it is in a pouch. This is to prevent possible damage to the instruments and damage to the product from chemical reagents on other instruments.
• NSK never recommends the disassembly and repair of any NSK cartridge. There is NO EXCEPTION. In such a case a handpiece may perform abnormally (abnormal noise or abnormal vibration). Damage, failure or accidents are outside of our guarantee.

9. Replacing the Cartridge

1) Insert the test bur.
2) Locate the correct wrench tool on the head cap then turn the wrench counter clockwise to loosen the cap. Remove the cap.
3) Insert the new O-rings in the correct grooves.
4) Insert the Spray Nozzle in rear of the handpiece. Hold the spray can.

10. Replacing the 8-6 Sterilization (ID Coupling)

Replace the O-rings if water is beginning to leak from the handpiece, or from the spray pressure.

11. Replacing the Non-Retraction Valve (QD Coupling)

A water Non-Retraction Valve is integrated in the Coupling Joint, which shuts off the water retraction directly at the handpiece head to prevent fluids infiltrating the water line. If water is beginning to leak from the handpiece, or from the spray pressure.
13. Specifications

<table>
<thead>
<tr>
<th>Environment</th>
<th>Transportation and Store</th>
<th>Use Environment</th>
<th>Chip Air Pressure</th>
<th>Water Pressure</th>
<th>Air Consumption</th>
<th>Pressure Regulating Valve</th>
<th>Drive Air Pressure</th>
<th>Max. Working Part Diameter</th>
<th>Max. Bur Length</th>
<th>Chuck Type</th>
<th>Bur Type</th>
<th>Rotation Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. Symbol

- This product is Autoclavable up to Max.135ºC.
- This product can be washed via Thermo Disinfector.
- This product is Autoclavable up to Max.135ºC.
- This product can be washed via Thermo Disinfector.
- This product is Autoclavable up to Max.135ºC.

15. Warranty

NSK products are warranted against manufacturing errors and defects in materials. NSK reserves the right to analyze and determine the cause of any problem. Warranty is voided should the product be not used correctly or have not been installed for the intended purpose or has been tampered with by unqualified personnel or has had non NSK parts installed. Replacement parts are available for seven years beyond discontinuation of the model.

16. Option Parts List

<table>
<thead>
<tr>
<th>Model</th>
<th>Order Code</th>
<th>Compatible Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Spare Parts List

<table>
<thead>
<tr>
<th>Model</th>
<th>Order Code</th>
<th>Compatible Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. Disposing product

In order to avoid health risks of operators handling the disposal of medical equipment, as well as the risk of environmental contamination caused thereof, a surgeon or a dentist is required to confirm the equipment is sterile. Ask specialist firms who are licensed to dispose of specially controlled industrial wastes, to dispose the environmental contamination caused thereof, a surgeon or a dentist is required to confirm the equipment is sterile. Ask specialist firms who are licensed to dispose of specially controlled industrial wastes, to dispose the environmental contamination caused thereof, a surgeon or a dentist is required to confirm the equipment is sterile. Ask specialist firms who are licensed to dispose of specially controlled industrial wastes, to dispose the environmental contamination caused thereof, a surgeon or a dentist is required to confirm the equipment is sterile.

---

**Table**: Periodical Maintenance Checks

<table>
<thead>
<tr>
<th>Model</th>
<th>Parts to Check</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table**: Specifications

<table>
<thead>
<tr>
<th>Environment</th>
<th>Transportation and Store</th>
<th>Use Environment</th>
<th>Chip Air Pressure</th>
<th>Water Pressure</th>
<th>Air Consumption</th>
<th>Pressure Regulating Valve</th>
<th>Drive Air Pressure</th>
<th>Max. Working Part Diameter</th>
<th>Max. Bur Length</th>
<th>Chuck Type</th>
<th>Bur Type</th>
<th>Rotation Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table**: Option Parts List

<table>
<thead>
<tr>
<th>Model</th>
<th>Order Code</th>
<th>Compatible Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table**: Spare Parts List

<table>
<thead>
<tr>
<th>Model</th>
<th>Order Code</th>
<th>Compatible Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table**: Disposing product

- This product is Autoclavable up to Max.135ºC.
- This product can be washed via Thermo Disinfector.
- This product is Autoclavable up to Max.135ºC.
- This product can be washed via Thermo Disinfector.
- This product is Autoclavable up to Max.135ºC.