

Air-Turbine Handpiece

TWINPOWER TURBINE 4H

without light

4H

CE 0197

MORITA

INSTRUCTIONS FOR USE

Thank you for purchasing the TWINPOWER TURBINE 4H handpiece.

This device transduces compressed air into rotational power and transfers it to a bur, which is attached onto the head of the instrument to cut and polish teeth or artificial dentures. For optimum safety and performance as well as to avoid causing harm to people, read this manual thoroughly before using the instrument and pay close attention to warnings and cautions. Keep this manual in a readily accessible place for quick and easy reference.

This manual corresponds to the following models of the TWINPOWER TURBINE 4H series, which capable to attach directly to couplings manufactured by J. MORITA MFG. CORP. or other companies.

Model/Type				Connection
• PAR-4HEX(-45)	• PAR-4HX	• PAR-4HUEX	• PAR-4HUMX	MORITA 4H Coupling
• PAR-4HEX-KV(-45)	• PAR-4HX-KV	• PAR-4HUEX-KV	• PAR-4HUMX-KV	KaVo MULTIflex or MULTIflex LUX Coupling
• PAR-4HEX-NK	• PAR-4HX-NK	• PAR-4HUEX-NK	• PAR-4HUMX-NK	NSK Mach or Phatelus Coupling
• PAR-4HEX-ND	• PAR-4HX-ND	• PAR-4HUEX-ND	• PAR-4HUMX-ND	NSK QD Couplings
• PAR-4HEX-WH	• PAR-4HX-WH	• PAR-4HUEX-WH	• PAR-4HUMX-WH	W&H Roto Quick Coupling
• PAR-4HEX-SR	• PAR-4HX-SR	• PAR-4HUEX-SR	• PAR-4HUMX-SR	Dentsply Sirona quick Coupling(Sirona R/F)

**Trademarks and Registered Trademarks:**

The names of companies, products, services, etc. used in this manual are either trademarks or registered trademarks owned by each company.

The user (e.g., healthcare facility, clinic, hospital, etc.) is responsible for the management, maintenance, and use of medical devices.

This instrument must not be used by anyone other than dentists, doctors, or other legally licensed professional.

**Do not use the TWINPOWER TURBINE 4H for purposes other than its specified dental treatment purpose.**

The following symbols and expressions indicate the degree of danger and harm that could result from ignoring the corresponding instructions:

- ⚠

**WARNING**

This alerts the user of possibility of extremely serious injury or complete destruction of the device as well as other property damage including the possibility of fire.
- ⚠

**CAUTION**

This alerts the user of the possibility of minor or moderate injury to the patient.
- !

This informs the user of important points concerning operation or the risk of device damage.

**Disclaimers**

- J. MORITA MFG. CORP. will not be responsible for accidents, product damage, or bodily injury resulting from:
  - Repairs made by personnel not authorized by J. MORITA MFG. CORP.
  - Any changes, modifications, or alterations of its products.
  - The use of products made by other manufacturers, except for those procured by J. MORITA MFG. CORP.
  - Maintenance or repairs using parts or components other than those specified by J. MORITA MFG. CORP. or other than in their original condition.
  - Operating the device in a manner other than described in the operating procedures in this manual or in a manner inconsistent with the safety precautions and warnings in this manual.
  - Workplace, environmental, or installation conditions that do not conform to those stated in this manual, such as an improper electrical power supply.
  - Fires, earthquakes, floods, lightning, natural disasters, or forces majeures.
- The useful life of the TWINPOWER TURBINE 4H is 4 years from the date of installation provided it is regularly and properly inspected and maintained.

**In Case of Accident**

If an accident occurs, this device must not be used until repairs have been completed by a qualified and trained technician authorized by the manufacturer.

For customers who use this device in the EU:

If any serious incident occurs in relation to the device, report it to a competent authority of your country, as well as the manufacturer through your regional distributor. Observe relevant national regulations for detailed procedures.

TERMS AND CONDITIONS

J. MORITA MFG. CORP. warrants the Product as follows:

- Warranty Term.**  
J. MORITA MFG. CORP. warrants that the Product will be free from defects in materials and workmanship for 18 months.
- Items Not Covered by Warranty.**  
This Warranty will not cover parts of the Product or consumables which normally need to be replaced such as glass or rubber components, lamps, cartridge, ball bearings and the like. Further, this warranty will not cover defects or damage caused by:
  - Failure to operate or use the Product in accordance with the Operation Instructions or warning/cautionary labels.
  - Modifications of the Product, connecting the Product to other products, or using components or replacement parts not specified or approved by J. MORITA MFG. CORP.
  - Repairs performed by parties not designated by J. MORITA MFG. CORP.
  - Accidents or forces outside of J. MORITA MFG. CORP.'s control, such as dropping the Product or collision of the Product with other objects, fire, flood, natural disaster, etc.
  - Use or operation of the Product in settings or under conditions not specified by J. MORITA MFG. CORP. or set forth in the Operation Instructions including, without limitation, unauthorized changes in equipment settings, connection to unauthorized devices.
- Remedies of Customer.**  
Customer must present this Warranty when claiming coverage or application thereof, and either ship or deliver the Product to an authorized location of J. MORITA MFG. CORP. or its subsidiaries or authorized dealers. Upon receipt and verification of this Warranty, inspection of the Product, and determination of coverage by this Warranty, J. MORITA MFG. CORP. will, at its sole option, supply the parts or components either replaced or repaired free of charge to the Customer. Delivery and shipping charges are the responsibility of the Customer.
- LIMITATIONS AND EXCLUSIONS FROM WARRANTY.**  
The remedy set forth in paragraph 3 is the sole and exclusive remedy of Customer. J. MORITA MFG. CORP. MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES AND SPECIFICALLY EXCLUDES ALL OTHER WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL J. MORITA MFG. CORP. BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL, DIRECT OR INDIRECT, OR SPECIAL DAMAGES OF ANY KIND INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF REVENUE, LOSS OF BUSINESS OR BUSINESS OPPORTUNITY, OR OTHER SIMILAR FINANCIAL LOSS ARISING OUT OF THE PERFORMANCE, USE OR INTERRUPTED USE OF THE PRODUCT.
- Repairs Not Covered by Warranty.**  
With respect to repairs not within the period of this Warranty or otherwise not covered by this Warranty, J. MORITA MFG. CORP. will perform the same, timely, efficiently, and for an appropriate cost.

## Operating, Transport and Storage Environments

**Operating Environments**  
Temperature: +10°C to +40°C (+50°F to +104°F), Humidity: 30% to 75% (without condensation), Atmospheric Pressure: 70 kPa to 106 kPa

**Transport and Storage Environments**  
Temperature: -10°C to +70°C (+14°F to +158°F), Humidity: 10% to 85% (without condensation), Atmospheric Pressure: 70 kPa to 106 kPa

\* Do not expose the device to direct sunlight for an extended period of time.  
\* If the device will not be used for an extended period of time, store it in a clean, dry place after autoclaving it.

## Symbols

\* Some symbols may not be used.

CE 0197

CE(0197) marking  
Conforms with the European Directive, 93/42/EEC.  
CE marking  
Conforms with the European Directive, 2011/65/EU.

EC REP

Authorized representative in the European Community

SN

Serial number

UDI

Unique device identificatifier

MD

Medical device

135°C

Autoclavable up to +135°C (+275°F)

⚡

Supports Washer-Disinfectors

QR

GS1 DataMatrix

🌡

Temperature limitation

💧

Humidity limitation

🌬

Atmospheric pressure limitation

🏭

Manufacturer

📅

Date of manufacture

📖

Refer to instructions for use

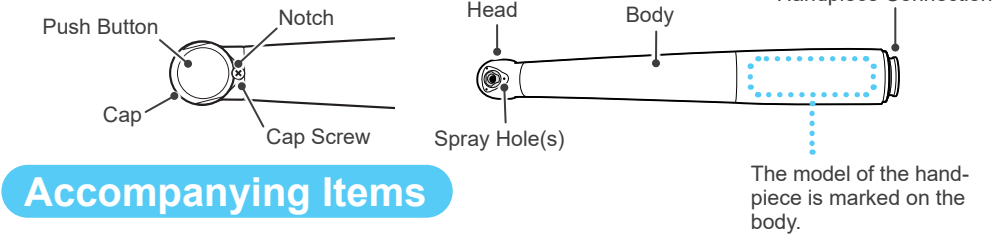
CH REP

Authorized representative in Switzerland

Rx Only

Prescription Device  
CAUTION: Federal law restricts this device to sale by or on the order of a dentist. (Valid only for U.S.A.)

## Parts Identification



## Accompanying Items

Spray Hole Wire

Code No.: 5250940

(Autoclavable)

## Technical Specifications

\* Use this device with dental treatment units that conform to IEC 60601-1.  
\* Specifications may be changed without notice due to improvements.

Model/Type		PAR-4HEX						PAR-4HX						PAR-4HUEX						PAR-4HUMX						PAR-4HEX-45									
		4H	KV	NK	ND	WH	SR	4H	KV	NK	ND	WH	SR	4H	KV	NK	ND	WH	SR	4H	KV	NK	ND	WH	SR	4H	KV								
Length [mm]		110	115	100	103	120	100	110	115	100	103	120	100	110	115	100	103	120	100	110	115	100	103	120	100	110	115								
Weight [g]		50	57	50	43	50	50	50	57	50	43	50	50	50	57	50	43	50	50	50	57	50	43	50	50	50	57								
Bearing Type		Ball bearing																																	
Chuck Type		Push chuck																																	
Cartridge Type		Capsule cartridge												Rotor cartridge										Capsule cartridge											
Air Pressure [MPa] (at handpiece end)		0.20 to 0.29																																	
Recommended Air Pressure [MPa] (at handpiece end)		0.23 to 0.25																																	
Water Pressure [MPa] (at handpiece end)		0.05 to 0.20																																	
Recommended Water Pressure [MPa](at handpiece end)		—																								0.1 to 0.2									
Spray Air Pressure [MPa] (at handpiece end)		0.20 or more																								—									
Exhaust Pressure [MPa] (at handpiece end)		0.03 or less																																	
Maximum Power [W] <sup>1</sup> (for 0.29 MPa handpiece end pressure)		22						25						20						18						20									
Rotation Speed [rpm] (for 0.2 MPa drive air pressure)		370,000 ±30,000						350,000 ±30,000						370,000 ±30,000																					
Air Flow NL/min (for 0.29 MPa handpiece end pressure)		60 or less																																	
Number of Spray Holes		3												1														3							
Head Diameter [mm]		10.5						12						9														10.5							
Head Height [mm]		13.2												12.7														10.6						13.2	
Usable Bur Configuration: Type 3 Shank (FG)	Shank Diameter [mm]	1.59 to 1.60																																	
	Shank Length [mm] <sup>2</sup>	10 or more																		7.5 or more								10 or more							
	Total Length [mm] <sup>2</sup>	22 or less																		20 or less								20 to 25							
	Tip Diameter [mm]	2.0 or less																																	

<sup>1</sup> The measurement method of the power is based on “Output power of high-speed turbine handpiece” in ISO 14457 Dentistry – Handpieces and motors.  
<sup>2</sup> Do not use miniature burs or short-shank burs except for PAR-4HUMX models.

## Sold Separately

Phillips-Head Screwdriver

Code No.: 5011440

(Alcohol Disinfectable)

Chuck Grip Tester (light green)

Code No.: 5010695

(Alcohol Disinfectable)

Cap Tool

for PAR-4HEX and PAR-4HX

Code No.: 5011328

(Alcohol Disinfectable)

Maintenance Oil Spray

MORITA MULTI SPRAY

Code No.: 7914113 or 5010201

(Alcohol Disinfectable)

4H Spray Nozzle Set

Nozzle shape depends on each coupling. For details, see the following 4H Spray Nozzle Set List.

4H Spray Nozzle Set List

(Alcohol Disinfectable)

for 4H Code No.: 5010307

for WH Code No.: 5010295

for KV Code No.: 5010293

for SR Code No.: 5010297

for NK Code No.: 5010299

for ND Code No.: 5010303


Spray for PAR-4HEX-45

Of the 3 spray holes, one is aimed at the end of a 25 mm bur.


# Usage

## Precautions

### ⚠ WARNING

- To prevent infection, be sure to perform the handpiece reprocessing procedures after use with each patient.  **Reprocessing**
- Always wear personal protective equipment (PPE), such as safety glasses, gloves, a mask, etc. when using this handpiece.
- In cases of tooth extractions, split teeth, endodontic treatment etc. or incision or open wounds in soft tissue, care must be taken to avoid causing a subcutaneous emphysema due to emitted air from the handpiece.
- Before use, run the handpiece outside the patient's oral cavity to make sure of the following points:
  - Bur does not wobble
  - No abnormal vibration or sound
  - No backlash movement at the head, push button, or cap
  - No heat is generated at the head, push button, or cap
  - Rotation speed and direction are correct
- Stop using the handpiece immediately if the handpiece is hot, the rotation speed reduces, or makes an abnormal vibration or noise. Ball bearings inside the head are consumable parts.
- Stop using the handpiece immediately if the handpiece gets damaged; the head could overheat and result in burns to the user or patient.
- Wait until rotation stops completely before inserting or removing burs. Holding down the push button while the handpiece is in operation could result in burns to the user.
- Do not operate the handpiece with the cap is contacting soft tissue such as buccal mucosa inside the oral cavity, or the push button is pressing against the antagonistic teeth. This could result in damage to the dental pulp or burns to the patient.
- Stop using the handpiece immediately if the bur becomes detached while you are drilling a tooth.
- Do not apply force in a direction that could result in the bur becoming detached (scooping up). Otherwise, burs may become detached and cause injury to the patient's oral cavity or be swallowed by the patient.
- Always spray water and use the soft touch (feather touch) techniques while using the handpiece to avoid injury to the dental pulp.
- Wait for a bur to come to a complete stop before putting it into or taking it out of the patient's oral cavity.

### ⚠ CAUTION

- Always perform pre-use inspection before using the handpiece.  **1 Before Use**
- If you notice any abnormal noise, vibration, heat generation, or wobbling of the bur during use, replace the bur with a new one and then try operating the handpiece to check if the problem has been resolved. If this does not resolve the problem, stop using the handpiece immediately and have it professionally repaired.
- Be sure to remove the bur when storing the handpiece in the dental chair unit. Failure to do so could injure another person or damage property.
- If the bur gets stuck in the handpiece, do not forcibly remove it using pliers or other tools; have it professionally repaired instead. If excessive force is applied, the chuck mechanism may become damaged and the bur may become detached during use.
- Follow the bur manufacturer's recommendations for rotation speed and direction.
- Handle the handpiece carefully; do not drop it or let it swing and bang against the dental treatment unit.
- Be sure to use a rubber dam appropriately.

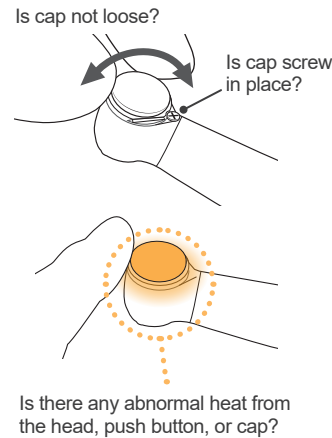
- ❗ Crown removal and similar operations produce considerable vibration, which may result in the bur coming out during use or the bur getting stuck in the handpiece after use. To avoid these problems, stop using the handpiece at regular intervals and take the bur out and reinsert it occasionally, rather than operating the handpiece continuously.
- ❗ During the treatment, if the push button is pressed against the teeth opposite the one being treated, it will result in wear to the inner surface of the push button, making insertion and removal of the bur difficult.

## 1 Before Use

\* The handpiece is not sterilized before shipping. It must be autoclaved before it is used for the first time.

Before using the handpiece, always check the following points outside the oral cavity.

- The cap and cap screw have been tightened properly.
- No gaps or backlash at the connection of the cap, head, and body.
- No scratches, deformation, rust, or dirt on the handpiece.
- Connect the handpiece to a coupling, and give it a light tug to check that the handpiece is securely connected.
- Run the handpiece for approximately 10 seconds and check that there is no speed reduction, abnormal vibration, or noise.
- Immediately after the above test, touch the head, push button, and cap with your hand and check that there is no heat.
- The spray has a fine, misty quality except for PAR-4HEX-45 models where it is more stream-like.
- The spray is emitted from all of the spray holes.
- Check the handpiece and coupling connection; it is not loose, there is no air or water leakage from the connection.
- Bur is inserted all the way and securely chucked.
- Run the handpiece with a bur inserted and check that there is no abnormal vibration or noise.
- Make sure air is not emitted in the direction of the bur. (PAR-4HEX-45 models)



If any abnormality is found, do not use the handpiece and have it professionally repaired.

### ⚠ WARNING

- If the cap or the cap screw are loose or if they are damaged or worn, the cap or the cartridge could fly off inside the oral cavity and cause an injury.

- ❗ Use compressed dry air that does not contain debris or oil. Failure to do so could cause a malfunction.
- ❗ Set the air and water pressure for the dental treatment unit to within its recommended range.

 **Technical Specifications**

## Burs

\* Use burs or points with shanks that conform to ISO 1797-1.

 **Technical Specifications**

### ⚠ WARNING

- Never use the types of burs described below. Using such burs is extremely dangerous as they may become detached and cause injury to the patient's oral cavity or be swallowed by the patient.
  - Does not conform to ISO standards.
  - Has any grooves, scratched or damaged blades or shanks.
  - Deformed, bent, rusty, chipped or broken
  - It has been modified (such as short-shank burs).

### ⚠ CAUTION

- When using welded or blazed burs, ensure that the bur tip does not wobble.
- Be sure to follow the requirements regarding the usable bur length and the shank length. Using non-supported burs is dangerous as they may become detached and cause a malfunction.

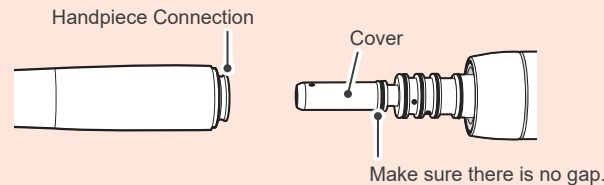
- ❗ Some bur detergents contain ingredients that cause metals to rust. Be sure to clean up the bur detergent before inserting the bur into the chuck.
- ❗ Even if it is an unused bur, it may not be balanced well due to a deformity. In this case, there is a risk of chuck or bearing damage due to bur wobble. Stop using the handpiece immediately if you notice that the rotation noise is significantly loud.
- ❗ Using dirty shanks will cause the chuck to lose its gripping strength and it may be difficult to take the bur out.
- ❗ If any detergent, dust, or other foreign matter enters the chuck, contact your local dealer or J. MORITA OFFICE to request an inspection.

## 2 Handpiece Connection

\* Refer to the accompanying user manual for the couplings or turbine tubes.

### ⚠ WARNING

- Before connecting the handpiece, make sure that neither the cover nor the handpiece connection are not loose, worn, or damaged.

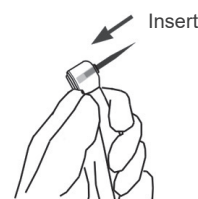


- Before use, give the tube a light tug to check if the handpiece is securely connected and run the handpiece outside the patient's oral cavity. If the connection is loose, the handpiece could be dismantled and cause a hazardous situation.
- Wait for the handpiece to stop rotating before connecting or dismantling the handpiece.

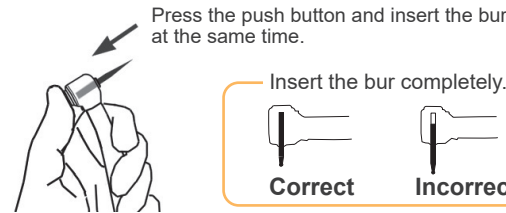
- ❗ Be sure the handpiece connection and coupling are free of dust such as cotton fibers or debris of O-ring, etc. Failure to do so could damage the instrument.

## 3 Installing/Removing Bur

### Installing



Be sure to insert the bur straight all the way in.

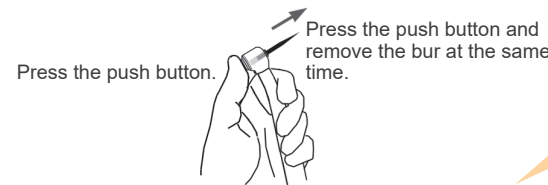


Press the push button firmly and insert the bur all the way in at the same time.

Insert the bur completely.



### Removing



Hold down the push button firmly and pull the bur out straight.

It is easier to press the push button if you support the body of the handpiece with your index finger positioned at a point between the head and the body.

### ⚠ WARNING

- Insert the bur firmly as far as it will go into the chuck, and give it a light tug to make sure it is held securely.
- Using the handpiece with a bur that is improperly inserted could result in a bur coming out and injuring the oral cavity or being swallowed by the patient.

### ⚠ CAUTION

- Wear gloves and take extra care not to injure your fingers when inserting or removing the bur.

- ❗ When inserting or removing a bur, make sure that the rotation is stopped completely. Failure to do so will result in wear to the inner surface of the push button, making insertion and removal of the bur difficult.
- ❗ Do not insert or take a bur out without pressing the push button.



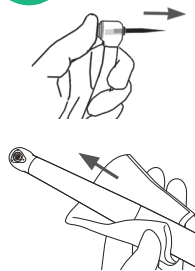
## Reprocessing

### ⚠ WARNING

- Always wear personal protective equipment (PPE), such as safety glasses, gloves, a mask, etc. when performing the handpiece reprocessing procedures.

\* Be sure to perform the handpiece reprocessing procedures promptly after use with each patient by following procedures **1** through **6**.

### 1 After Use



Remove the bur from the handpiece, turn on the water supply switch of the dental treatment unit, and run the handpiece for 20 seconds.

Wipe the whole handpiece from the coupling to the head with a piece of gauze that has been dampened with tap water or protein anticoagulant agent to remove visible contaminants. Disconnect the handpiece from the treatment unit, and clean the handpiece.

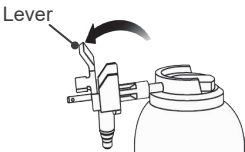
- \* If you cannot clean the handpiece immediately, spray protein anticoagulant agent over the handpiece and clean it within 2 hours.

Usable Protein Anticoagulant: Neutral and foamless agent applicable to aluminum and brass materials.

- ❗ Be sure to remove the bur from the handpiece after use. If the bur is left in the handpiece, it may get stuck.
- ❗ Perform handpiece maintenance promptly after use. If the parts are left contaminated with blood, it will be difficult to remove.
- ❗ Do not use any chemicals that may coagulate proteins before cleaning.
- ❗ If a medical or adhesive agent being used for treatment has adhered to the component, immediately wash it off under tap water.
- ❗ Do not immerse the handpiece in protein anticoagulant agent.
- ❗ If dust or other impurities enter the handpiece, they may cause poor rotation or poor spray delivery.

### 3 Lubrication

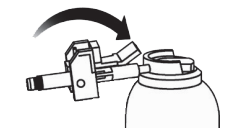
- \* Be sure to lubricate the handpiece with the MORITA MULTI SPRAY after use with each patient. Be sure to lubricate the handpiece after the cleaning and disinfection steps or before autoclaving.



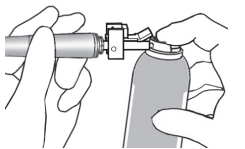
Push the lever on the spray nozzle up in the direction of the arrow.



Cover the head of the handpiece with gauze, insert the chuck spray nozzle tip into the bur insertion hole, and then spray for 2 seconds.



Push the lever on the spray nozzle down in the direction of the arrow.



Insert the spray nozzle into the handpiece connection end, hold it firmly, and then spray for 2 seconds.



Connect the handpiece to its tube. Operate the handpiece for at least 15 seconds to expel excess oil from the head, and then wipe it off with a piece of gauze. Disconnect the handpiece from the tube.

- \* When friction-produced debris comes out from the head, re-lubricate both the bur insertion hole and handpiece connection end again.



Lubrication and excess oil removal can be performed by J. MORITA's dental handpiece maintenance device.

### ⚠ WARNING

- Never direct the spray towards a person.
- Do not use the spray in a closed space without proper ventilation. Open windows or turn on exhaust fans to make sure the room is well ventilated.
- Do not get the spray in your eyes. If you accidentally get it in your eyes, wash your eyes with plenty of water and see a doctor.
- Do not get the spray on your skin. If it gets on your skin, wash it off with soap and water.
- If used in a sink or other enclosed space, a flammable propellant could permeate the air; keep the area free of open flames or other ignition sources.

- ❗ Do not use any type of maintenance spray other than the MORITA MULTI SPRAY.
- ❗ Make sure to use the spray nozzle designed for the handpiece connection.
- ❗ Always keep the maintenance spray can in an upright position when using and storing.
- ❗ Failure to lubricate the handpiece will result in a malfunction.
- ❗ If spraying continues for more than 5 seconds, the moisture inside the handpiece may freeze up. Operating the handpiece under this condition could damage the ball bearings.
- ❗ Insert the spray nozzle tip straight into the bur insertion hole and pull it straight out. Failure to do so may damage the nozzle tip.
- ❗ To maintain optimum performance, be sure to spray both the bur insertion hole and handpiece connection end.
- ❗ When wiping off excess oil from the head, make sure that you do not touch the push button while the handpiece is running. Otherwise, it will result in wear to the cap and cartridge, making insertion and removal of the bur difficult.



## 2 Cleaning & Disinfection

### Automated Cleaning and Disinfection



- \* Be sure to use washer-disinfectors that conform to ISO15883-1 for cleaning and disinfection.
- \* If your region is susceptible to hard water scale buildup, use deionized water (ion-exchanged water) for the final rinse process.

### Recommended Conditions

Unit Name	Mode	Detergent (concentration)	Rinse (concentration)
Miele G7881	Vario TD	neodisher MediClean (0.3% to 0.5%)	neodisher MediKlar (0.03% to 0.05%)

Put the handpiece in a handpiece holder.

Select the washer-disinfector's mode as shown in the chart above and start the process. (For thermal disinfection, setting the operation mode to A<sub>0</sub> = 3000 is recommended.)

After completion of the process, expel remaining moisture inside the handpiece with compressed air.

- For details on handling medical agents, adjusting their concentration, and about water quality, refer to the accompanying user manual for the washer-disinfector.
- Be sure to lubricate the handpiece after washing.

### ⚠ WARNING

- Any moisture left inside the handpiece after the cleaning could cause corrosion, or poor lubrication and sterilization.
- ❗ If the handpiece is cleaned without using the handpiece holder, it could result in corrosion or clog in the air or water line and damage the handpiece due to impurities or remaining medical agents.
- ❗ Inappropriate cleaning methods and medical agents will damage the handpiece.
- ❗ Do not use strong acidic or alkaline chemicals that could cause the metal to corrode.
- ❗ Moisture left inside the handpiece after cleaning could result in the remaining water coming out during use.
- ❗ Do not start drying when the handpiece is filled with water. Otherwise, this could cause corrosion due to condensation of the rinsing solution.
- ❗ Do not leave a handpiece inside the washer-disinfector.

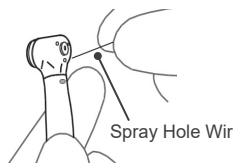
### ⚠ CAUTION

- Be sure to autoclave the handpiece; the reprocessing procedures must continue beyond the disinfection step.

### Manual Cleaning and Disinfection

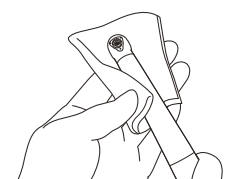


Clean the parts in running water with a toothbrush.



Clean the spray hole(s) with the spray hole wire provided, and rinse off the handpiece in running water.

Attach a suitable adapter to the WL-clean can. Insert the adapter into the handpiece connection end. Spray 3 times for 2 seconds each. Remove the handpiece from the adapter and place it aside. Wait for at least 1 minute for the cleaning agent to work effectively.



Attach a suitable adapter to the WL-cid can. Insert the adapter into the handpiece connection end. Spray for approximately 3 to 5 seconds. Remove the handpiece from the adapter and place it aside. Wait for approximately 1 to 2 minutes for the disinfectant to work effectively.

Attach a suitable adapter to the WL-dry can or WL-Blow. Connect the WL-Blow to the compressed air line properly. Insert the adapter into the handpiece connection end. Blow compressed air for approximately 3 seconds.

Wipe the whole handpiece with a piece of microfiber cloth (e.g., Toraysee for CE) that has been dampened with mikrozid AF liquid, FD322, or Rubbing alcohol.

- ❗ Do not clean the handpiece with ultrasonic cleaning or immersion cleaning devices.
- ❗ Do not use disinfectants other than those designated by J. MORITA MFG. CORP.
- ❗ Do not immerse the handpiece in or wipe it with any of the following: functional water (acidic electrolyzed water, strong alkaline solution, and ozone water), medical agents (glutaral, chloride-containing, etc.), or any other special types of water or commercial cleaning liquids. Such liquids may result in metal corrosion or adhesion of the residual medical agent to the handpiece.

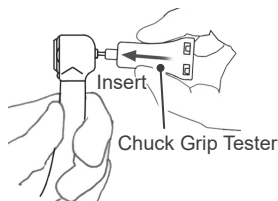
### 4 Inspection

#### Test Chuck's Gripping Strength

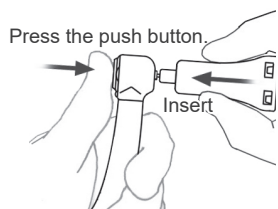
- \* Test the chuck's gripping strength when you sense it is weakened or at least once a day.

### ⚠ WARNING

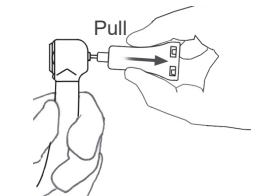
- Weakening of the chuck's gripping strength could result in detaching a bur causing injury to the patient's oral cavity or in a bur being swallowed by the patient.



Insert the chuck tester straight in until it lightly touches the chuck mechanism.

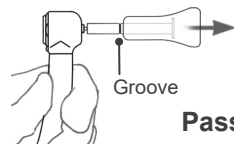


Press the push button firmly and insert the chuck grip tester straight at the same time.



Pull the chuck grip tester slowly until the groove is visible.

#### If you see a groove

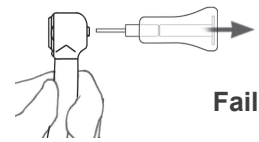


Pass

Chuck's gripping strength is normal.

Stop pulling as soon as you see the groove, and slowly return the chuck grip tester to its original position. Press the push button firmly and pull the chuck grip tester out straight.

#### If you do not see a groove and the tester comes out



Fail

Chuck's gripping strength is weakened.

Lubricate the chuck, and then recheck the gripping test. If the gripping strength is not regained and it fails the test, replace the cartridge.

### 5 Packaging



Make sure that the handpieces are not wet, and then put them in individual sterilization pouches. Use only sterilization pouches that conform to ISO 11607.

- ❗ Do not use any sterilization pouches that contain hydrosoluble adhesive ingredients such as PVA (polyvinyl alcohol). Otherwise, its adhesive ingredient may seep into the handpiece during sterilization, resulting in a solid residue that may cause a failure to rotate properly or poor water delivery. Note that even ISO 11607 conformable sterilization pouches may contain PVA.

### 6 Sterilization

Autoclave the handpieces. After autoclaving, store them in a dry environment.

#### Recommended Temperature and Time

Sterilizer Type	Temperature	Time	Drying Time after Sterilization
Pre-vacuum Type (Dynamic Air Removal, class B)	+134 °C (+273.2 °F)	3 minutes or more	10 minutes
Gravity Type (except class B)	+134 °C (+273.2 °F)	5 minutes or more	10 minutes or more

### ⚠ WARNING

- To prevent the spread of infections, the handpiece must be autoclaved after each patient's treatment has been completed.

### ⚠ CAUTION

- Handpieces are extremely hot after autoclaving; wait for them to cool off before touching.

- ❗ Do not sterilize the handpieces by any method other than autoclaving.
- ❗ Remove a bur from the handpiece before autoclaving.
- ❗ Failure to clean and lubricate the handpiece before autoclaving will result in a malfunction.
- ❗ The sterilization and drying temperatures must not exceed +135°C (+275°F). If they exceed +137°C (+278.6°F), it will result in discoloration of the handpiece or a malfunction.
- ❗ Do not let the handpiece come into contact with the heat source or chamber wall inside of the autoclave to avoid damage of the O-rings or other parts due to the high temperature.
- ❗ When autoclaving the handpiece in an upright position, make sure that it is placed in the autoclave with its head at the top.
- ❗ Do not leave the handpiece in the autoclave.

# Maintenance and Inspection, and Replacement Parts

- \* The TWINPOWER TURBINE 4H should be inspected every 3 months in accordance with the Regular Inspection List.
- \* Maintenance and inspection are generally considered to be the duty and obligation of the user, but if, for some reason, the user is unable to carry out these duties, they may rely on a qualified medical device provider. Contact your local dealer or J. MORITA OFFICE for details.
- \* For repairs, contact your local dealer or J. MORITA OFFICE.




### Regular Inspection List

	Item	Procedure
1	Chuck's Gripping Strength	Check the gripping strength with the chuck grip tester. If the gripping strength is weakened, replace the capsule cartridge.
2	Cap	Check if the cap of the head or its screw is loose.
3	Rotation and Spray	Run the handpiece for approximately 10 seconds and check that there is no reduction in speed or abnormal vibration or noise, and the spray is a fine mist.
4	Heat Generation	Immediately after the test 3 above, touch the head, push button, and cap with your hand and check that there is no heat.

- \* J. MORITA MFG. CORP. will offer replacement parts and service for the product for a period of 10 years after the manufacturing of the product has been discontinued. Replacement parts and service will continue to be available during that period.
- \* Replace the parts as necessary depending on degree of wear and length of use.
- \* Order parts from your local dealer or J. MORITA OFFICE.

## Cartridges

### Consumables



Capsule Cartridge		
for PAR-4HEX Code No.: 5010862	for PAR-4HX Code No.: 5010863	for PAR-4HEX-45 Code No.: 5011010
		
Rotor Cartridge (with a replacement tool set)		
for PAR-4HUEX Code No.: 5011147	for PAR-4HUMX Code No.: 5011148	
		
Cap (with an O-ring and a screw)		
for PAR-4HEX and PAR-4HEX-45 Code No.: 5011389	for PAR-4HX Code No.:5011130	for PAR-4HUEX and PAR-4HUMX Code No.: 5011165
		

If you notice any of the following circumstances, replace the cartridge or have it professionally repaired: problems with regard to insertion, removal, or retention of the bur; poor rotation; bur wobbling; heat generation; or noise.


- \* For details on replacing the cartridge, refer to the accompanying user manual for the replacement cartridge.

## O-rings (only for the NK series)


### Consumables

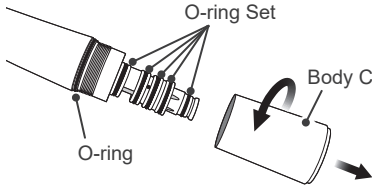
O-ring	O-ring Set
Code No.: 5012320 	Code No.: 5811500 

Replace the O-rings if there is a poor connection between the handpiece and the coupling or if water or air leakage occurs.

**WARNING**

- Securely tighten the body C. Failure to do so may result in the tube becoming detached by air pressure, which could cause physical injury.

 Use only the specified O-rings.



Remove the body C by turning it in the direction of the arrow.

Remove the O-rings with tweezers or another such tool and install the replacements.

Spray the O-rings with the MORITA MULTI SPRAY and then replace the body C.

# Troubleshooting

If the TWINPOWER TURBINE 4H does not seem to be working properly, first inspect the points described below. Before inspection and adjustment, check to see if the main switch of the device, such as a dental treatment unit that the handpiece is connected to, is turned on and if the main air and water valves are open.

- \* For repair or other types of service, contact your local dealer or J. MORITA OFFICE.

### ◆Cannot insert burs/Chuck's gripping strength is weakened

Lubricate the chuck and then reinsert an unused bur to check if the problem has been resolved. If this does not resolve the problem, replace the cartridge (as well as the cap if necessary).

### ◆Poor rotation

#### If air is coming out of the head

After cleaning the handpiece with the MORITA MULTI SPRAY, attach an unused bur and check again to see if the problem has been resolved. If abnormal rotation is still observed, replace the cartridge.

#### If air is not coming out of the head

Disconnect the handpiece from the coupling or the tube and operate the foot control. If air comes out of the tube, have the handpiece professionally repaired.

### ◆Handpiece does not rotate after autoclaving

Manually rotate the bur inserted into the handpiece. If the bur rotates, the cause of the problem may be a caked adhesive ingredient inside the handpiece, which seeped from sterilization pouches during sterilization. Clean the inside of the handpiece with a washer-disinfector. If this does not resolve the problem, have the handpiece professionally repaired.

### ◆Poor water delivery

#### If no water is coming out of the spray hole(s)

Disconnect the handpiece from the coupling or the tube and operate the foot control. If water comes out of the tube, have the handpiece professionally repaired.

#### If any of the spray holes does not emit water

Clean the spray hole with the spray hole wire provided. If the spray hole still does not emit water, check the O-rings on the coupling or the tube. In addition, check the water volume control for the coupling or the dental treatment unit.

#### If water is not emitted as a misty spray except for PAR-4HEX-45 models where it is more stream-like.

Have the handpiece professionally repaired.

# Service and Disposal

TWINPOWER TURBINE may be repaired and serviced by:

- The technicians of J. MORITA's subsidiaries worldwide.
- Technicians employed by authorized J. MORITA dealers and specially trained by J. MORITA.
- Independent technicians specially trained and authorized by J. MORITA.
- For repairs or other types of service, contact your local dealer or J. MORITA OFFICE.

### Standards and Procedures for the Disposal of Medical Devices

When disposing of this device, it should fall into the category of infectious waste. The dentist or doctor must confirm that the device is uncontaminated, and must then have it disposed of by a healthcare facility or an agent licensed and qualified to handle standard industrial waste and industrial waste requiring special treatment.

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