

**MD** Air Driven High Speed Handpieces

**TWINPOWER TURBINE 4H**

**4H**

**INSTRUCTIONS FOR USE**

Thank you for purchasing the TWINPOWER TURBINE 4H handpiece. 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
4H	• PAR-4HEX-O(-45) • PAR-4HX-O • PAR-4HUEX-O • PAR-4HUMX-O	MORITA 4H Coupling
KV	• PAR-4HEX-O-KV(-45) • PAR-4HX-O-KV • PAR-4HUEX-O-KV • PAR-4HUMX-O-KV	KaVo MULTIflex/MULTIflex LUX Coupling
NK	• PAR-4HEX-O-NK • PAR-4HX-O-NK • PAR-4HUEX-O-NK • PAR-4HUMX-O-NK	NSK Mach/Phatelus Coupling
WH	• PAR-4HEX-O-WH • PAR-4HX-O-WH • PAR-4HUEX-O-WH • PAR-4HUMX-O-WH	W&H Roto Quick Coupling
SR	• PAR-4HEX-O-SR • PAR-4HX-O-SR • PAR-4HUEX-O-SR • PAR-4HUMX-O-SR	Dentsply Sirona Quick Coupling(Sirona R/F)

**Trademarks and Registered Trademarks:**

Parts of the names of companies, products, services, etc. used in this manual may contain 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.

**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.

To access the warranty information for this product, scan the following QR code and visit our website.



**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.



**Instructions for Use in Electronic Format (eIFU)**

The electronic data (PDF document) of the Instructions for Use is available. Scan the following QR code and visit our website.



In order to view PDF documents, you will need the free Adobe Acrobat Reader distributed by Adobe Inc. Download the latest version via the Adobe website. PDF documents may not be displayed correctly using previous versions.

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**Intended Use**

■ **Purpose**

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.

■ **User Profile**

- a) Qualification : Dentist, doctor, or legally licensed professional
- b) Education and Knowledge : User needs dentistry education.
- c) Language : English or local language
- d) Experience : User needs dentistry experience.

■ **Patient Population**

Age, weight, nationality, and sex are not relevant.

■ **Body Part or Tissue Type**

Teeth or artificial dentures

■ **Environment**

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.

■ **Medical Indications**

Cut and polish the tooth or artificial dentures

■ **Supposed Useful Life**

The useful life of this device is 4 years from the date of installation provided it is regularly and properly inspected and maintained.

**Symbols**

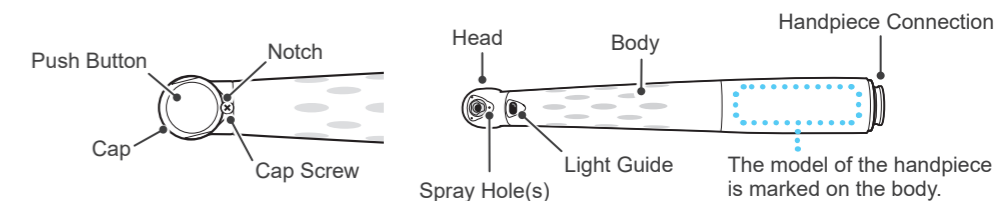
\* Some symbols may not be used.

	CE(0197) marking Conforms with the European Directive, 93/42/EEC.		Authorized representative in the European Community
	Serial number		Unique device identifier
	Medical device		GS1 DataMatrix
	Autoclavable up to +135°C (+275°F)		Supports Washer-Disinfectors
	Temperature limitation		Humidity limitation
	Manufacturer		Date of manufacture
	Importer		Country of manufacture *1
	Distributor		Refer to instructions for use
	Consult instructions for use		Authorized representative in Switzerland
	Packaging unit		Model and/or type number
	Country or region *1 (Examples)		Prescription Device CAUTION: Federal law restricts this device to sale by or on the order of a dentist. (Valid only for U.S.A.)

12-3-4-5-6789012 Registration number of medical device in Thailand (The 12-digit sample number shown is for demonstration purposes only.)

\*1 Country names: Conforming to the ISO 3166-1 alpha-3 codes and EU for European union.

**Parts Identification**



**Accompanying Items**

**Spray Hole Wire**  
Code No.: 5250940



**Sold Separately**

**Phillips-Head Screwdriver**

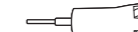
Code No.: 5011440



(Alcohol Disinfectable)

**Chuck Grip Tester (light green)**

Code No.: 5010695



(Alcohol Disinfectable)

**Cap Tool**  
for PAR-4HEX-O and PAR-4HX-O

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**.

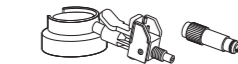
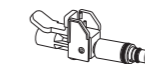
**MORITA 4H Coupling (CP4-LD)**

Code No.: 1808111 or 5354978



(Alcohol Disinfectable)

**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



**Service and Disposal**

This device 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.

# 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 noise or vibration
  - 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
- The push button may overheat due to damaged ball bearings or foreign object contamination inside the handpiece, as well as detached internal parts. Stop using the handpiece immediately if you notice that the handpiece is hot, the rotation speed reduces, or it makes an abnormal noise or vibration. Cartridges are consumables.
- 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, abnormal 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.
- Do not directly look into the handpiece light.
- Be sure to use a rubber dam appropriately.

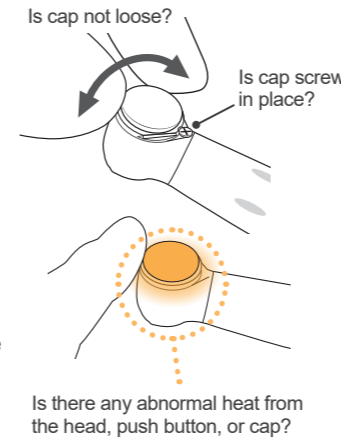
- ⚠️ Crown removal and similar operations produce considerable vibration, which may result in the bur coming out during use or the bur getting stuck in the handpiece after use. To avoid these problems, stop using the handpiece at regular intervals and take the bur out and reinsert it occasionally, rather 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.
- There are no cracks, chips, protrusions or dents on the light guide.
- 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 noise, or abnormal vibration.
- 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-O-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, and the light comes to the head through the light guide.
- Bur is inserted all the way, securely chucked, and does not wobble.
- Run the handpiece with a bur inserted and check that there is no abnormal noise or vibration.
- Make sure air is not emitted in the direction of the bur. (PAR-4HEX-O-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

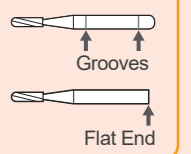
\* Use burs or points with shanks that conform to ISO 1797-1.

**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).

### DO NOT USE



### ⚠️ CAUTION

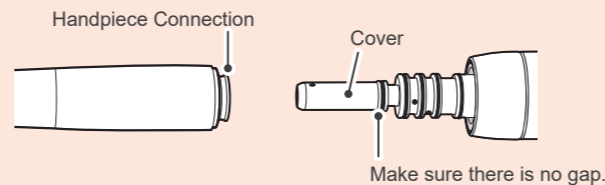
- When using welded or blazed burs, ensure that the bur tip does not wobble.
- Be sure to follow the requirements regarding the usable bur length and the shank length. Using non-supported burs is dangerous as they may become detached and cause a malfunction.
- ⚠️ Some bur detergents contain ingredients 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.
- ⚠️ Do not use burs with a flat end at the shank, nor with any grooves or contaminants on the shank. Using these burs will cause the handpiece to malfunction: the chuck will 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 is not loose, worn, or damaged.

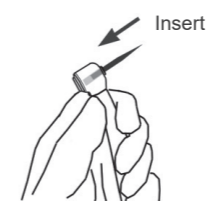


- Before use, give the tube a light tug to check if the handpiece is securely connected and run the handpiece outside the patient's oral cavity. If the connection is loose, the handpiece could be dismantled and cause a hazardous situation.
- Wait for the handpiece to stop rotating before connecting or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

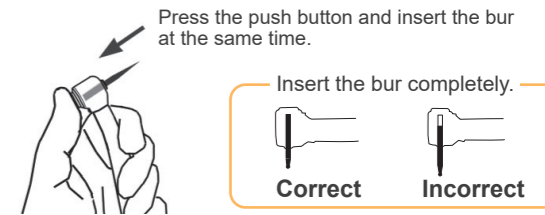
- ⚠️ Be sure the handpiece connection and coupling are free of dust such as cotton fibers or debris of O-ring, etc. Failure to do so could damage the instrument.

## 3 Installing/Removing Bur

### Installing

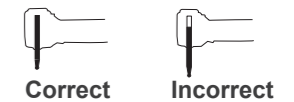


Be sure to insert the bur straight all the way in.

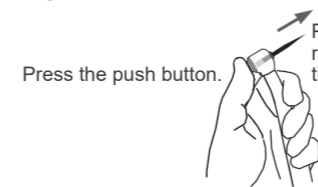


Press the push button firmly and insert the bur all the way in at the same time.

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

\* Be sure to perform the handpiece reprocessing procedures promptly after use with each patient by following procedures 1 through 7.

## Hygiene Plan Guidebook

A reference guidebook of hygiene information about our products is available. Scan the following QR code and visit our website.



In order to view PDF documents, you will need the free Adobe Acrobat Reader distributed by Adobe Inc. Download the latest version via the Adobe website. PDF documents may not be displayed correctly using previous versions.

### WARNING

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

## 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 connection end to the head with a piece of gauze that has been dampened with tap water or protein anticoagulant solution to remove visible contaminants. Disconnect the handpiece from the treatment unit, and clean the handpiece.

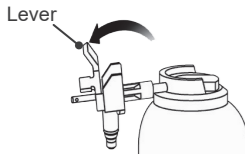
\* If you cannot clean the handpiece immediately, spray protein anti-coagulant agent over the handpiece and clean it within 2 hours.

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

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

## 4 Lubrication

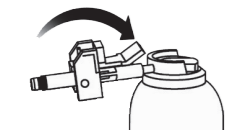
\* Be sure to lubricate the handpiece with the MORITA MULTI SPRAY after use with each patient. Be sure to lubricate the handpiece after the cleaning and disinfection steps or before autoclaving.



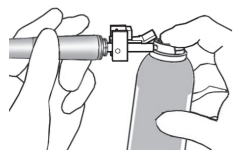
Push the lever on the spray nozzle up in the direction of the arrow.



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

- Lack of lubrication will result in ball bearing breakage. Damaged ball bearings will overheat the push button and may result in burns to the patient.
- 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.

- 1 Do not use any type of maintenance spray other than the MORITA MULTI SPRAY.
- 1 Make sure to use the spray nozzle designed for the handpiece connection.
- 1 Always keep the maintenance spray can in an upright position when using and storing.
- 1 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.
- 1 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.
- 1 To maintain optimum performance, be sure to spray both the bur insertion hole and handpiece connection end.
- 1 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. When using a silicone adapter (e.g., Miele ADS2), pre-clean the handpiece; remove cutting and other debris with a soft brush under running water. 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.)

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

- 1 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.
- 1 Inappropriate cleaning methods and medical agents will damage the handpiece.
- 1 Do not use strong acidic or alkaline chemicals that could cause the metal to corrode.
- 1 Do not start drying when the handpiece is filled with water. Otherwise, this could cause corrosion due to condensation of the rinsing solution.
- 1 Do not leave a handpiece inside the washer-disinfector.

### CAUTION

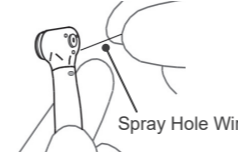
- Be sure to autoclave the handpiece; the reprocessing procedures must continue beyond the disinfection step.
- Be sure to dry and lubricate the handpiece promptly after cleaning.

### Manual Cleaning and Disinfection



Clean the parts in running water with a toothbrush.

Clean the spray hole(s) with the spray hole wire, 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.

- 1 Do not clean the handpiece with ultrasonic cleaning or immersion cleaning devices.
- 1 Do not use disinfectants other than those designated by J. MORITA MFG. CORP.
- 1 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.

## 3 Drying (Automated process only)

Use one of the following methods to expel the remaining moisture from inside the handpiece.

- Attach the handpiece to the dental treatment unit and run the handpiece for approximately 1 second.



- Blow air into the handpiece using an air blow gun.



After expelling the moisture from inside the handpiece, wipe the handpiece with a piece of gauze and allow it to dry.

### WARNING

- Any moisture left inside the handpiece after the cleaning could cause corrosion, or poor lubrication and sterilization.

- 1 Moisture left inside the handpiece after cleaning could result in the remaining water coming out during use.



Removal of remaining moisture inside the handpiece can be performed prior to lubrication by J. MORITA's dental handpiece maintenance device, Lubrina 2.

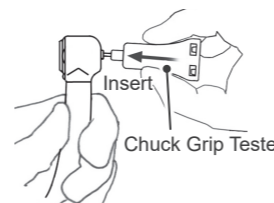
## 5 Inspection

### Test Chuck's Gripping Strength

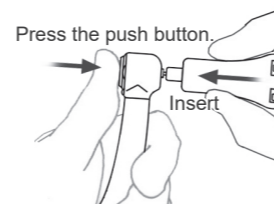
\* Test the chuck's gripping strength when you sense it is weakened or at least once a day.

### WARNING

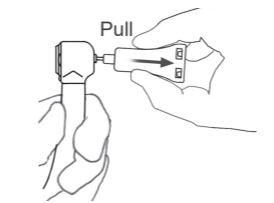
- Weakening of the chuck's gripping strength could result in detaching a bur causing injury to the patient's oral cavity or in a bur being swallowed by the patient.
- The chuck grip tester is specifically designed for the TWINPOWER TURBINE 4H handpiece series. Do not use the chuck grip tester with any other handpieces.



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

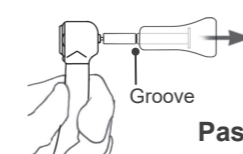


Press the push button firmly and insert the chuck grip tester straight at the same time.



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

### If you see a groove

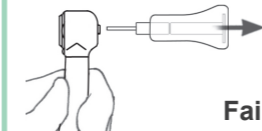


Pass

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.

## 6 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.

- 1 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.

## 7 Sterilization

Place the handpiece horizontally in the autoclave sterilizer and perform 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.
- 1 Do not sterilize the handpieces by any method other than autoclaving.
- 1 Remove a bur from the handpiece before autoclaving.
- 1 Failure to clean and lubricate the handpiece before autoclaving will result in a malfunction.
- 1 Do not set sterilization and drying temperatures in excess of +135°C (+275°F). In particular, if the drying temperature exceeds +137°C (+278.6°F), the handpiece may become discolored or malfunction.
- 1 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.
- 1 When autoclaving the handpiece in an upright position, make sure that it is placed in the autoclave with its head at the top.
- 1 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, abnormal noise, abnormal vibration, and that 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.
5 Light Guide	Check that there are no cracks, chips, protrusions or dents on the light guide.

- \* 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.
- \* Consumable parts can be replaced by the user. Replace the parts as necessary depending on the degree of wear and length of use.
- \* Order consumables and replacement parts from your local dealer or J. MORITA OFFICE.
- \* Ensure you use only genuine parts manufactured by J. MORITA MFG. CORP.

## Cartridges

### Consumables

#### Capsule Cartridge

for PAR-4HEX-O Code No.: 5010862  
for PAR-4HX-O Code No.: 5010863  
for PAR-4HEX-O-45 Code No.: 5011010



#### Rotor Cartridge (with a replacement tool set)

for PAR-4HUEX-O Code No.: 5011147  
for PAR-4HUMX-O Code No.: 5011148



### Replacement Parts

#### Cap (with an O-ring and a screw)

for PAR-4HEX-O and PAR-4HEX-O-45 Code No.: 5011387  
for PAR-4HX-O Code No.: 5011386  
for PAR-4HUEX-O and PAR-4HUMX-O Code No.: 5011161



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

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

#### O-ring

Code No.: 5012320



#### O-ring Set

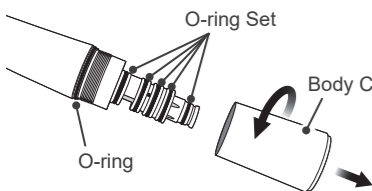
Code No.: 5811500  
(Large × 4, Small × 1)



### 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.

## Cartridge Lamp (only for the WH series)

### Consumables

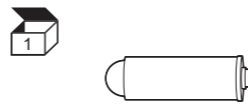
#### O-ring

Code No.: 5012320



#### Cartridge Lamp

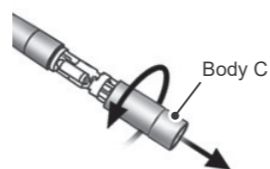
Code No.: 5020550



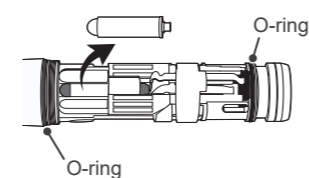
### WARNING

- \* The lamp is extremely hot right after burning out; do not touch it until it cools off.
- \* Securely tighten the body C. Failure to do so may result in the tube becoming detached by air pressure, which could cause physical injury.

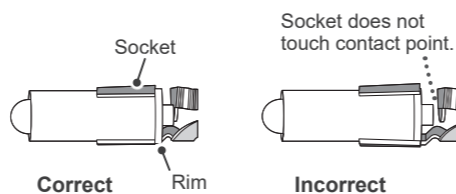
- Use only the specified cartridge lamp.



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



Remove the old lamp with a pair of tweezers.



Install the lamp so that the rim is on the outside of the socket. If the rim is inside the socket, contact could be poor or the lamp might easily come out. Re-attach the body C in its original position. Connect the handpiece to its tube and check that the light works properly.

## 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-O					PAR-4HX-O					PAR-4HUEX-O					PAR-4HUMX-O					PAR-4HEX-O-45					
	4H	KV	NK	WH	SR	4H	KV	NK	WH	SR	4H	KV	NK	WH	SR	4H	KV	NK	WH	SR	4H	KV				
Length [mm]	110	115	100	120	100	110	115	100	120	100	110	115	100	120	100	110	115	100	120	100	110	115				
Weight [g]	50	57	50	50	50	50	57	50	50	50	50	57	50	50	50	50	57	50	50	50	50	57				
Light Capability	Yes																									
Air Pressure [MPa] (at handpiece end)	0.20 to 0.29																									
Air Flow NL/min (for 0.29 MPa handpiece end pressure)	60 or less																									
Recommended Air Pressure [MPa] (at handpiece end)	0.23 to 0.25																									
Water Pressure [MPa] (at handpiece end)	0.05 to 0.20																									
Consumption of Water [ml/min] (for 0.2 MPa handpiece end pressure)	50 or more																									
Recommended Water Pressure [MPa] (at handpiece end)	—																				0.10 to 0.20					
Spray Air Pressure [MPa] (at handpiece end)	0.20 or more																									
Exhaust Pressure [MPa] (at handpiece end)	0.03 or less																									
Maximum Power [W]*1 (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															
Number of Spray Holes	3										1					3										
Head Diameter [mm]	10.5					12					9					10.6					10.5					
Head Height [mm]	13.2										12.7					10.6							13.2			
Usable Bur Configuration: Type 3 Shank (FG)	Shank Diameter [mm]																									
	Shank Length [mm]*2																									
	Total Length [mm]*2																									
	Tip Diameter [mm]																									
1.59 to 1.60										10 or more					7.5 or more					10 or more						
22 or less										20 or less					20 to 25											
2.0 or less																										

Only for the TWINPOWER TURBINE 4H WH Series

Applied Part	Type B
Lamp Voltage [V]	3.3 ±0.05 (at coupling connector)

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

## 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 lubricating the handpiece connection, 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. 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-O-45 models where it is more stream-like. Have the handpiece professionally repaired.

### Handpiece light does not work

#### Only for the WH series:

Remove the body C from the handpiece, then check if the cartridge lamp is touching properly with the contact point. If the cartridge lamp is installed correctly but it is dim or does not light up, replace it with a new one. If this does not resolve the problem, have the handpiece professionally repaired.

#### Other than the WH series:

Disconnect the handpiece from the coupling or the tube and operate the foot control. If the lamp on the coupling or the tube is dim or it does not light up, replace the lamp with a new one. If the lamp lights up properly, clean the handpiece light guide. If this does not resolve the problem or there is any abnormality in the light guide, have the handpiece professionally repaired.

### Spray for PAR-4HEX-O-45

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

