

High Speed Air Turbine Handpiece
TWINPOWER TURBINE 4H



PAR-4HEX-O-45 <with light>
PAR-4HEX-O-KV-45 <with light>

Operation Instructions

Manufactured by **J.MORITA MFG.CORP.**

This manual covers the TWINPOWER TURBINE 4H series handpieces which can be connected to Morita couplings CP4-O, CP4-WO, CP4-LD, CP4-W-LD, or CP5-O and other manufacturer's couplings.

PAR-4HEX-O ^{*1}-45

PAR-4HEX-O-KV ^{*2}-45

^{*1} Morita CP4-O, CP4-WO, CP4-LD, CP4-W-LD and CP5-O coupling

^{*2} KaVo MULTIflex and MULTIflex LUX coupling: KaVo, MULTIflex, and MULTIflex LUX are registered trademarks for Kaltenbach & Voigt GmbH.

Notice Of Protect Intellectual Property							
CN PAT.	03123631.6	DE PAT.	10060152	US PAT.	5902108	JP PAT.	3897953
CN PAT.	03123632.4	DE PAT.	10320902	JP PAT.	3208345	JP PAT.	4088475
DE PAT.	19807566	US PAT.	6676374	JP PAT.	3672781	JP PAT.	4122174
DE PAT.	19860953	US PAT.	7048540	JP PAT.	3795722	JP PAT.	4160319

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Prevent Accidents

Introduction

Thank you for purchasing a TWINPOWER TURBINE 4H handpiece.

This instrument is designed for dental treatment such as grinding, drilling and polishing teeth.

For optimum safety and performance, read this manual thoroughly before using the unit and pay close attention to the warnings and notes.

Keep this manual at hand for ready reference.

Safety Precautions

The instrument must be used in accordance with the instructions in this manual.

Read this manual thoroughly prior to operating or maintaining the instrument.

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

⚠ WARNING This warns the user of the possibility of extremely serious injury or complete destruction of the instrument as well as other property damage including the possibility of fire.

⚠ NOTE This warns the user of the possibility of mild injury or damage to the instrument.

ⓘ (Usage Note) This alerts the user of important points concerning operation or the risk of equipment damage.

The user (i.e., clinic, hospital etc.) is responsible for the management, maintenance and use of medical devices.
This instrument must not be used by anyone except legally qualified dentists and oral surgeons / practitioners.
This instrument must not be used for any other than the intended purpose as specified in this manual.

Disclaimer

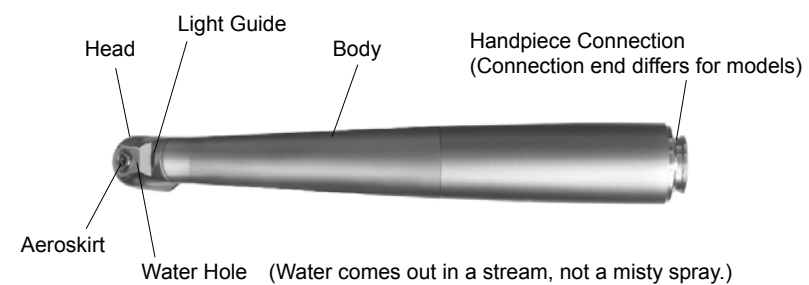
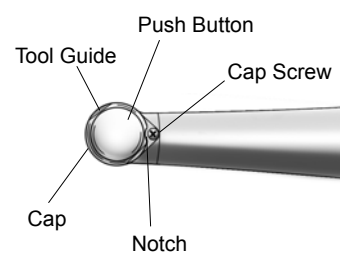
- The J. Morita Mfg. Corp. will not be responsible for accidents, equipment damage, or bodily injury resulting from:
 1. repairs made by personnel not authorized by the J. Morita Mfg. Corp.
 2. any changes, modifications, or alterations of its products
 3. the use of products or equipment made by other manufacturers, except for those procured by the J. Morita Mfg. Corp.
 4. maintenance or repairs using parts or components other than those specified by the J. Morita Mfg. Corp. and other than in their original condition
 5. operating the equipment in ways other than the operating procedures described in this manual or resulting from the safety precautions and warnings in this manual not being observed
 6. workplace conditions and environment or installation conditions which do not conform to those stated in this manual such as improper electrical power supply
 7. fires, earthquakes, floods, lightning, natural disasters, or acts of God

Prevent Accidents

- The J. Morita Mfg. Corp. will supply replacement parts and be able to repair the product for a period of 10 years after the manufacture of the product has been discontinued.
- Warranty is honored only when a claim is accompanied by the warranty agreement with purchase date, product name and model, serial number (inscribed on the body of the product) and name of the distributor.

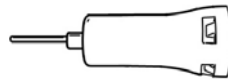
Parts Identification and Accessories

Parts Identification



Accessories

Chuck Grip Tester
No.5010695



(Ethanol disinfectable)

Water Hole Wire
No.5250940



(Autoclavable)

Screwdriver
No.5011440



(Ethanol disinfectable)

Cap Tool
No.5011328
(also used to change lamp and LED)



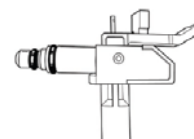
(Ethanol disinfectable)

AR Spray
No.5010212 or No.5010216



(Ethanol disinfectable)

4H Spray Nozzle
No.5010307
(PAR-4HEX-O)



(Ethanol disinfectable)

4H Spray Nozzle
No.5010293
(PAR-4HEX-O-KV)



(Ethanol disinfectable)

Usage

Operating Conditions:

Temperature: 10° C (50° F) ~ 40° C (104° F), Relative Humidity: 30 ~ 75 % , Atmospheric pressure: 700 ~ 1,060 hPa.

Inspecting and Sterilizing Before Use

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

Make sure that the cap and cap screw are tightened properly and that there is no gap between the head and the cap.
If you discover any problem with the above items, do not use the handpiece, but have it repaired instead.

<Handpiece Attachment >

For Morita CP4-O, CP4-WO, CP4-LD, CP4-W-LD and CP5-O couplings (PAR-4HEX-O-45).

* Refer to the user's manual for PAR-4HEX-O-KV. (KaVo MULTIflex and MULTIflex LUX couplings)

< Connect >



Hold the tube and slide the handpiece on until it clicks securely into place.

< Disconnect >



Pull the coupling slightly towards the tube and then pull the handpiece off.

⚠ WARNING

- Before attaching the handpiece make sure that the coupling is in good condition (not worn, damaged, cracked or loose), that the tube O-ring is in place and not pushed in too far, and that the lamp cover on the tube is tightened securely. Then give it a light tug to make sure it is securely attached and check its operation outside the patient's oral cavity.
Otherwise, air pressure might force the handpiece off its tube connection, resulting in serious injury.
- Never exert any force that could cause the handpiece to come off while it is running.

For information on assembling the CP4-O/ WO, CP4-LD/ W-LD and CP5-O Coupling refer to the page 60.

Inserting and Removing Burrs

<Insert>



Carefully insert the burr as far as it will go.

Push Button



Hold down the push button firmly and push the burr all the way in; then release the push button.

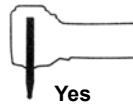
<Removal>



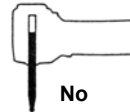
Hold the push button down and pull the burr straight out.

⚠ WARNING

- Use only the burs and points specified on page 55, Burrs and Points. Otherwise, this could result in a burr coming out inside the oral cavity and being swallowed or in the patient being injured.
- Insert burrs and points as far as they will go into the chuck. Never operate the handpiece with a partially inserted burr or point. A burr or point which comes out inside the oral cavity could seriously injure the patient or be swallowed.



Yes



No

⚠ WARNING

- After inserting a bur, always operate the handpiece outside of the oral cavity to make sure it runs smoothly.
- If a bur comes out during use, stop operating the handpiece immediately.
- Always use water and a soft, intermittent touch to avoid injury to the pulp.
- Wear protective glasses.
- Always take the bur out of a handpiece before putting it back into its holder. Leaving a bur in the handpiece could result in injury or damage to clothing or other objects.
- Never push the button while the handpiece is running. This could cause the button to heat up, resulting in burns to the patient or your fingers.
- Take care that the push button does not press up against the teeth opposite to the working area (especially molars); this could cause the button to heat up and damage the tooth pulp. It could also cause the button to wear out, making it difficult to insert and remove burs.

⚠ NOTE

- Crown removal and other similar operations produce considerable vibration and can cause the bur to get stuck in the handpiece. Avoid this by frequently removing and reinserting the bur.
- In case of abnormal noise or vibration during use, replace the bur. If this eliminates the problem, the bur was defective. If this does not solve the problem, the handpiece needs to be repaired.
- After long usage, wear on bearings results in greater noise.

After Use

Disconnect the handpiece from the tube, and remove the point or burr.

Burrs and points may get stuck in the handpiece if they are left in for too long.
Always remove the burr or point after finishing treatment.

Sterilization

<Cleaning>



Water Hole Wire



Syringe Nozzle

Clean debris off the attachment with a brush and running water.

Clean the water holes with the wire provided if they get plugged up with cutting debris or impurities in the water. After cleaning, dry it off with air from the threeway syringe or some other method, and then wipe it with a piece of gauze dampened with Ethanol for Disinfection (Ethanol 70~80 vol%).

<Disinfection>



Use a piece of clean gauze and brush to disinfect the whole surface of handpiece with Ethanol for Disinfection (Ethanol 70~80 vol%).

Thermal washer-disinfector



Handpieces with this symbol may be cleaned and disinfected with a thermal washer-disinfector. To use a thermal washer-disinfector, first read the operation instructions for the unit. Strictly follow the instructions attached for cleaning mode and solution.

- ⓘ Improper cleaning modes and solutions will damage the instrument.
- ⓘ Follow the disinfector manufacturer's recommendations for cleaning solutions and methods for dental instruments. Do not use strong acidic or alkaline solutions. Thoroughly rinse off all cleaning solution.

<Lubrication>

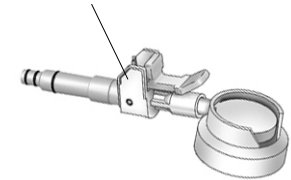
Before autoclaving, do not fail to lubricate and clean with AR spray.

There are different spray nozzles for each type of coupling.
Look at the side of the nozzle to check this.
Make sure you use the right one.

No Mark : Morita couplings CP4-O/ WO, CP4-LD/ W-LD
and CP5-O (PAR-4HEX-O)

KV : KaVo coupling (PAR-4HEX-O-KV)

Look here coupling mark.

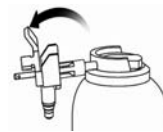


⚠ WARNING

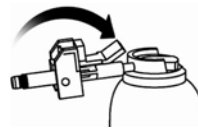
- Do not point the spray nozzle at anyone and do not use the spray near an open flame.

⚠ NOTE

- The handpiece will malfunction without regular AR spray maintenance.
- Never use any type of spray other than AR spray. Other lubricants will cause the coupling O-ring to swell and make it difficult to connect and disconnect. Also it could make it take longer to stop in an emergency.



Shake AR spray can 2 or 3 times before using it. Raise the lever on the nozzle assembly and swivel the chuck nozzle down into position. Cover the head with gauze, insert the nozzle and spray for 2 or 3 seconds.



Push the nozzle lever down. Insert the nozzle into the handpiece connection end and spray for 2 or 3 seconds.

⚠ WARNING

- Lower or raise the nozzle all the way. Otherwise oil could spray out and get in your eyes.
- Make sure the lever clicks and locks into place.
- Always cover the head with gauze before spraying inside the chuck. If spray accidentally gets into your eyes, wash them out with plenty of water and see a doctor. Use soap and water to wash off any spray on your skin.

<Connect>



Connect the handpiece to its tube.

<Operate>



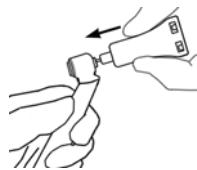
Operate the handpiece for about 15 seconds to blow out excess lubricant.

<Disconnect>

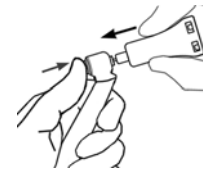


Disconnect the handpiece.

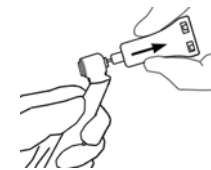
<Check Chuck's Gripping Power>



Carefully insert the chuck tester as far as it will go.

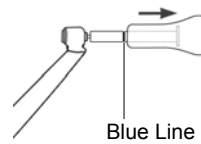


Firmly hold down the push button and push the tester all the way in; then release the button.



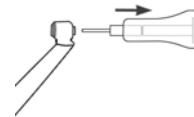
Carefully pull on the tester until the blue line appears.

If the blue line appears, the chuck is OK.



Stop pulling if the blue line appears and let the tester slowly go back to its original position.
Hold the push button down firmly and take the tester out of the chuck.

If the Blue Line Does NOT Appear,
Chuck has lost gripping power.



Clean the chuck with AR spray and test it again.
If the chuck still fails the test, replace the capsule cartridge.

⚠ WARNING

- **Test the chuck at least once a day or if the chuck's grip seems to be weak.**
- **Never use a chuck which does not have enough grip; a burr could come out in the patient's mouth and be swallowed or cause an injury. Stop using the handpiece and have it repaired.**
- **The yellow-green chuck tester is designed specifically for the TWINPOWER TURBINE 4H and cannot be used for any other handpieces. Do not autoclave the tester; disinfect it by wiping it with Ethanol for Disinfection (Ethanol 70~80 vol%).**

<Packaging and Sterilization>

Wipe the handpiece with a piece of gauze dampened with Ethanol for Disinfection (Ethanol 70~80 vol%) and put it in a sterilization pouch.

Recommended Autoclaving Conditions: In a sterilization pouch, at least 5 minutes at 134°C (273.2°F)

Minimum drying time after sterilization: 10 minutes.

- ⓘ Do not sterilize in any way except autoclave. Do not fail to clean and lubricate the instrument before autoclaving it. Autoclaving and drying temperatures must not exceed 135°C (275°F). After autoclaving, take the instrument out of the autoclave as soon as it cools off.

⚠ WARNING

- To prevent the spread of serious, life-threatening infections such as HIV and hepatitis B, the handpiece must be autoclaved after the completion of each patient.

⚠ NOTE

- Remove the bur or point before autoclaving.
- Do not touch the push button when operating the handpiece to remove excess spray. This could damage the cap or the capsule cartridge.
- Instruments are extremely hot after autoclaving; do not touch them until they cool off.

Replacement Parts, and Storage

Replacement Parts

Replace the parts as necessary depending on degree of wear and length of use.
Order parts from your local dealer or the J.Morita Corp.

Capsule Cartridge with O-ring and screw
(No. 5011010)

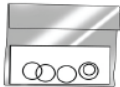


Cap with O-ring and screw
(No. 5011387)

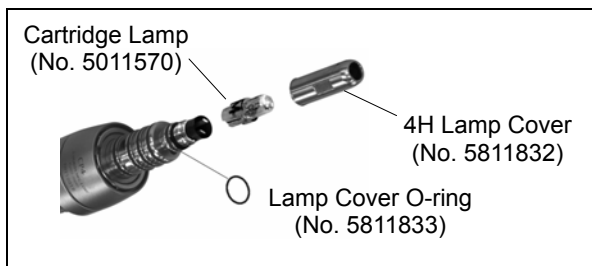


Replacement Parts, and Storage

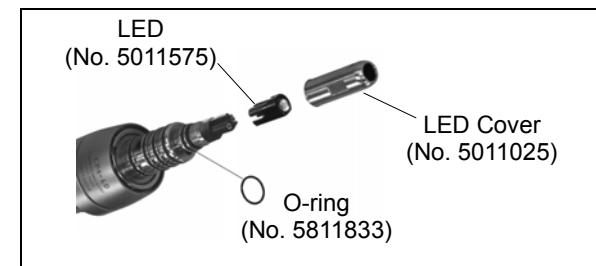
For Morita CP4-O/ WO, CP4-LD/ W-LD and CP5-O Coupling

One-way Water Valve (No.5811837) Coupling Gasket (CP4: No.5811838) (CP5: No.7911823)  A photograph showing a one-way water valve and a coupling gasket. The valve is a brass-colored metal fitting with a black handle. The gasket is a small, dark, circular ring.	Coupling Wrench for 4H and 5H (No.5011831)  A photograph of a coupling wrench, which is a metal tool with a U-shaped handle and a flat, rectangular head.	O-ring Set for 4H and 5H (No.5811835)  A photograph of an O-ring set, which is a small, rectangular metal case containing several O-rings of different sizes.
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For Morita CP4-O/ WO Coupling



For Morita CP4-LD/ W-LD Coupling



Capsule Cartridge Replacement

Replace the capsule cartridge if worn ball bearings result in poor or irregular rotation, if burrs are difficult to insert or remove, or if the chuck loses its gripping power.

The capsule cartridge and its O-ring wear out and must be replaced periodically.

The bearings and other parts wear out and make more noise after a certain period of time.

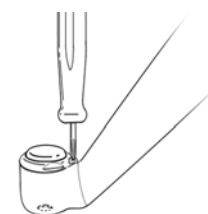
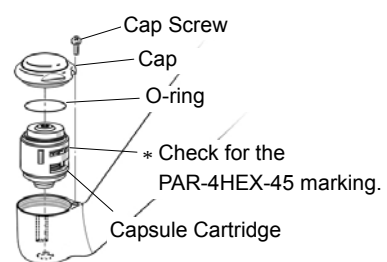
⚠ WARNING

- If used in this condition a burr or point could come out inside the oral cavity and injure the patient or be swallowed.

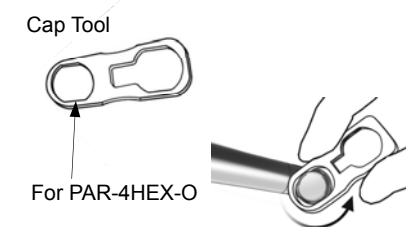
⚠ NOTE

- Do not fail to use the capsule cartridge for the PAR-4HEX.

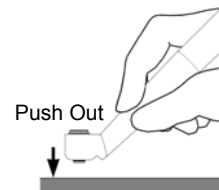
<Remove old capsule cartridge>



Take the cap screw out with the screwdriver.



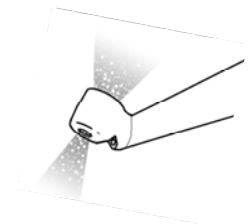
Fit the cap tool securely onto the cap guide and take the cap.



Push the old cartridge out by pressing the aero-skirt around the chuck opening firmly down on a hard, flat surface.



Screw the nozzle assembly onto the spray can with the nozzle for the handpiece connection sticking straight out. Insert the nozzle into the handpiece connection end and spray for 2 or 3 seconds.

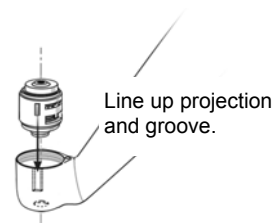


Connect the handpiece to its tube. Operate the handpiece for 2 or 3 seconds to blow out excess lubricant and clean the head. Clean the cap with AR spray.

<Insert new cartridge>



Spray a little AR spray inside the head.

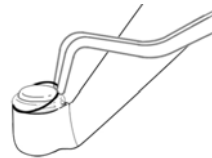


Make sure all 3 O-rings are on the cartridge. Line up the projection on the cartridge with the groove in the head and push it all the way in.



Screw the cap on a little but leave a gap large enough for a new O-ring. Use tweezers to put the O-ring (provided with cartridge) between the cap and head.

Replacement Parts, and Storage



Replace the cap if the projection on the inside is worn away.



Screw the cap down manually until it is seated on the head. Do not use the cap tool to screw down the cap from the beginning; this could damage the threads.

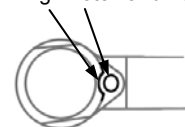
⚠ WARNING

- The O-ring for the cap must be replaced with the new one provided. Otherwise, the cap could come off inside the patient's mouth and be swallowed or cause an injury.

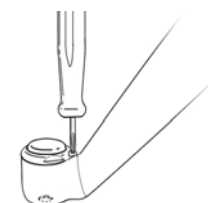


Fit the cap tool securely onto the cap and tighten up the cap. Line up the notch on the cap with the hole for the cap screw.

Align notch and hole



Do not tighten the cap too much. This could damage the threads so that the hole and notch no longer line up.



Tighten up the cap screw with the screwdriver.

⚠ WARNING

- **Make sure the notch on the cap is lined up with the hole for the screw.**
- **If the notch goes beyond the hole, the threads are worn; contact your local dealer or the J. Morita Office to have the instrument repaired.**
- **Make sure the cap screw is tight enough. If the cap screw or cap comes out in a patient's mouth, it could be swallowed or cause an injury.**
- **Make sure there is no gap between the cap and the head. If there is, do not use the handpiece; have it repaired.**



Insert the nozzle into the handpiece connection end and spray for 2 or 3 seconds.



Connect the handpiece and operate it for at least 15 seconds to blow the excess lubricant out of the head. Then wipe the handpiece with a piece of gauze. Always use AR spray after replacing the cartridge.

* Order capsule cartridges from your local dealer or the J. Morita Office. When ordering, always specify the model: PAR-4HEX-45.

Cartridge Lamp or LED Replacement

* For KaVo (PAR-4HEX-O-KV) lamp replacement, refer to the user's manual for the couplings of its maker.

⚠ WARNING

- Turn off the power switch to avoid the risk of burns and electrical shock.
- The lamp and its cover are quite hot immediately after the lamp has burned out. Avoid burning yourself; do not touch these parts.

⚠ NOTE

- Do not leave fingerprints or any foreign substances on the new lamp. These could cause the lamp to break as soon as it is turned on, which could cause an injury. If necessary use Ethanol for Disinfection (Ethanol 70~80 vol%) to clean the lamp.

Storage

Storage Conditions:

Temperature: -10° C (14° F) ~ 70° C (158° F), Relative Humidity: 10 ~ 85 % RH (without condensation),
Atmospheric pressure: 700 ~ 1,060 hPa.

- * Do not expose to direct sunlight frequently or for long times.
- * Store the handpiece in a clean, dry place after autoclaving it.

Maintenance and Inspection

Regular Inspection

- * Maintenance and inspection are generally consider to be the duty and obligation of the user, but if, for some reason, the user is unable to carry out these duties, he may rely on a qualified medical device serviceman. Contact your local dealer or the J. Morita Corp. for details.
- * Replace the parts listed in the Parts Lists as necessary depending on degree of wear and length of use.
- * This instrument should be inspected every 3 months in accordance with the following maintenance and inspection items.

Inspection Items

- Chuck Gripping Strength : Use the Chuck Tester to check the chuck's gripping strength. Replace the capsule cartridge if the chuck has lost its gripping strength.
- Cap Tightness : Make sure that the cap and the cap screw are tightened properly.
- Rotation and Water : Make sure the handpiece operates smoothly and emits a stream of water.

* For repairs contact your local dealer or the J. Morita Corp.

Parts List

- Capsule Cartridge (PAR-4HEX-45) (Regularly Required Replacement Parts)
- Cap

Disposal of Medical Devices

Any medical devices which could possibly be contaminated must be first decontaminated by the responsible doctor or medical institution and then be disposed of by an agent licensed and qualified to handle medical and industrial waste.

Service and Other Contacts

For repair or other types of service contact your local dealer or the J. Morita Office.

Troubleshooting

If the instrument does not seem to be working properly, the user should first try to inspect and adjust it himself.

* If the user is unable to inspect the instrument himself or if the instrument fails to work properly after being adjusted or after parts are replaced, contact your local dealer or the J. Morita Corp.

Poor Rotation

Lubricate with AR spray.

And then, disconnect handpiece and step on foot pedal. Does air come out of the end of the tube with enough force?



No: Defective tube. Contact serviceman.

Yes: If other handpieces work OK, replace the capsule cartridge.
Make sure the capsule is the correct one.

Poor Water Delivery

Disconnect handpiece. Check coupling connection. Step on foot pedal. Does air comes out of the end of the tube with enough force?



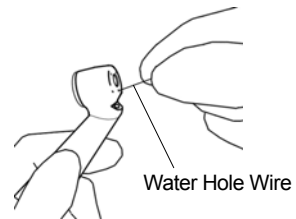
No: Defective tube or water lines inside chair.

Yes: Replace the coupling's o-ring.
Or, clean water hole (refer to next page for cleaning).

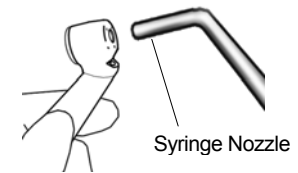


Make sure the O-rings on the capsule cartridge are properly installed.
If this does not solve the problem, contact your local dealer or the J.
Morita Corp.

How to clean water hole



Use the wire provided to clean out the water hole.



After cleaning, blow the hole out with a syringe and wipe the handpiece with gauze dampened with Ethanol for Disinfection (Ethanol 70~80 vol%).

Cannot insert burrs or points

Check that burrs and points are OK.



No: Use only burrs and points that are suitable and in good shape.

Yes: Lubricate with AR spray (refer to next page for lubrication).



If this does not solve the problem, replace the capsule cartridge and cap.
And make sure the cartridge is the correct one.

Troubleshooting



Cover the head with a piece of gauze, insert the nozzle into the chuck and spray for 2 or 3 seconds.



Connect the handpiece and run it for 15 seconds to blow out excess spray. Then wipe it clean with a piece of gauze.

Light doesn't work

Lamp or LED may be burned out.



No: Check tube and chair.

Yes: Replace lamp or LED.

Technical Description

Name :	TWINPOWER TURBINE 4H
Model :	with light
Handpiece :	PAR-4HEX-O-45, PAR-4HEX-O-KV-45
Bearing Type :	Ball Bearing
Chuck Type :	Push chuck
Rotor :	Autoclavable Capsule Cartridge
Air pressure :	Recommended : 0.23 ~ 0.25 MPa
(at handpiece connection)	Usable Range.: 0.2 ~ 0.29 MPa
Water Supply Pressure :	Recommended : 0.1 ~ 0.2 MPa
(at handpiece connection)	Usable Range.: 0.05 ~ 0.2 MPa

Exhaust air pressure : (at handpiece connection)	0.03 MPa, max.
Speed :	370,000 ± 30,000 rpm (at 0.2 MPa)
Air flow Volume :	30 ± 5 NL / min (at 0.2 MPa)
Weight :	53 g (PAR-4HEX-O-45), 59 g (PAR-4HEX-O-KV-45)
Head Height :	13.2 mm
Head Diameter :	10.5 mm
Length :	107 mm (PAR-4HEX-O-45), 115 mm (PAR-4HEX-O-KV-45)

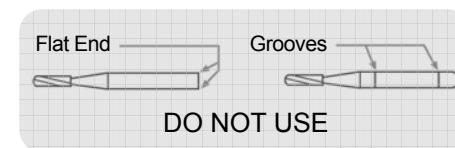
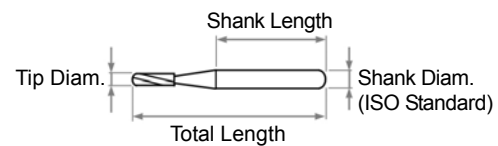
⚠ WARNING

- The PAR-4HEX-O needs special precaution regarding EMC. Portable and mobile RF communications equipment can affect the PAR-4HEX-O

⚠ NOTE

- The handpiece will lose both speed and torque in direct proportion to the amount to which the exhaust air pressure exceeds 0.03 MPa.

Usable Burr and Point : Shank Diameter (ISO standard) : $\phi 1.59 \sim 1.60$ mm
 Tip Diameter : $\phi 2.0$ mm (max.)
 Total Length : 20~25 mm (max.)
 (The stream of water reaches the tips of burrs 20 to 25 mm long.)
 Shank Length : 10 mm (min.)



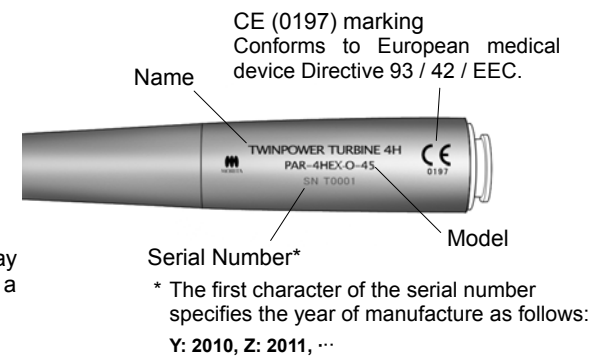
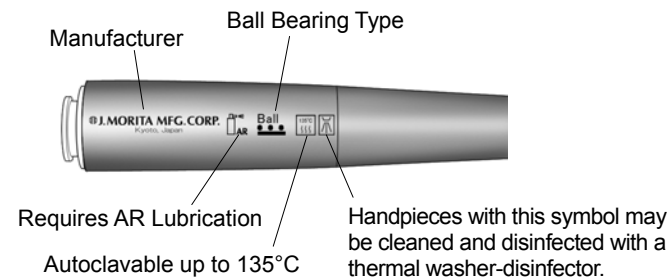
⚠ WARNING

- **Never use the following types of burs and points; they could come out and injury the patient or be swallowed:**
Those which do not conform to ISO standards. Those with scratched or damaged heads or shanks. Those which are bent, twisted, rusty, chipped or broken. Do not use modified burs, miniature burs, or short-shanked burs.
- **Sub-standard or damaged burs and points are very dangerous to use; they can come out and injure the patient or be swallowed.**

⚠ NOTE

- Always use burs and points with clean shanks; dirty shanks cause the chuck to wear out more quickly and lose its gripping power.
- Always carefully remove all cleaning fluids before inserting a burr into the chuck; some cleaning fluids are corrosive, and if a burr or point with cleaning fluid on it is inserted, the chuck could be ruined.
- If a dirty burr or one with cleaning fluid on it has been inserted by mistake, contact your local dealer or the J. Morita Office to have the instrument inspected.
- Carefully read the instruction manual of the burr maker.
- Use only burs made of a single piece of metal; do not use burs whose head is welded to the shank.
- Welded joints break easily.

Terminology and Symbols



Operation Instructions



Manufacturer



Authorized representative in the European Community

CP4-O/ WO, CP4-LD/ W-LD, CP5-O Coupling

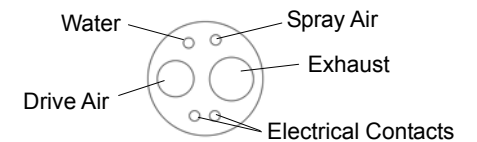
**CP4-O <with light>, CP4-WO <with light and spray control>,
CP4-LD <with LED light>, CP4-W-LD <with LED light and spray control> Coupling**

Before use check the following items:

Does the connection end of the tube match the coupling?

Lamp voltage is correct.

This coupling cannot be connected to a tube that does not have light capability.



⚠ NOTE

- The CP4 light will burn out more quickly if voltage is greater than the value specified, if it uses a long fade out time, or if the chair applies and cuts off the voltage suddenly.

CP4-O, CP4-WO	
Model	CP4-O <with halogen lamp light> CP4-WO <with halogen lamp light and Spray Control> ISO 9168 Type 3 (C) Coupling
Weight	27 ± 10 g
Lamp Voltage	Max. 3.3 V ± 0.05 V D.C. (for coupling contacts)
Lamp Power	Max. 2.4 W

CP4-LD, CP4-W-LD	
Model	CP4-LD <with LED light> CP4-W-LD <with LED light and Spray Control> ISO 9168 Type 3 (C) Coupling
Weight	27 ± 10 g
Input Voltage	AC/ DC 3.3 V ± 0.05 V (Recommended) AC 2.5-10 V/ DC 2.5-15 V (for coupling contacts)
Input Current	Max. 0.30 A (0.2 A at 3.3 V DC)

* Lamp power supply must conform to IEC60601-1 and voltage is SELV (special safe low voltage).

* Input power supply must conform to IEC60601-1 (Reinforced insulation / Double insulation).

CP5-O <with Fiber Optic> Coupling

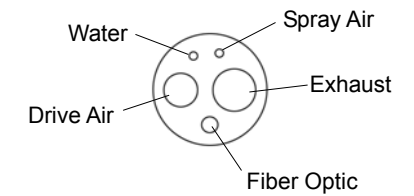
Before use check the following items:

Does the connection end of the tube match the coupling?

This coupling cannot be connected to a tube that does not have light capability.

This coupling cannot be connected to a 4-hole tube.

CP5-O	
Model	CP5-O <with Fiber Optic> ISO 9168 Type 2 (B) Coupling
Weight	27 ± 10 g



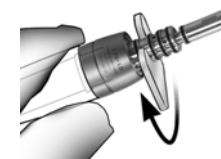
* Lamp power supply must conform to IEC60601-1 and voltage is SELV (special safe low voltage).

Connect Coupling

* Before first using the coupling or if the handpiece-coupling connection gets stiff, take the nozzle off the AR spray can and lightly spray the coupling's o-rings.



Line up the projections on the coupling with the indentations in the tube and then tighten up the cover nut.



Tighten securely with the wrench provided.

⚠ NOTE

- Before connection, make sure the tube connector is clean and free of debris.
- The light will lose its brightness if the end of the fiber optic cable is scratched or otherwise damaged by being dropped for instance.
- Air or water may leak if the coupling is not tightened up enough.

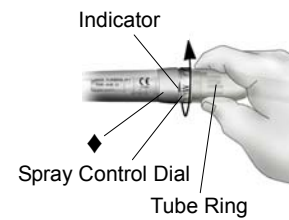
Cleaning

Wipe the outside cover with Ethanol for Disinfection (Ethanol 70~80 vol%).

△ NOTE

- Coupling must **NOT** be autoclaved or cleaned ultrasonically.
- The coupling could be damaged if it is soaked in Ethanol for Disinfection (Ethanol 70~80 vol%) or cleaned with a strong, corrosive solution.
- Clean both ends of the light guide if the light seems to have lost its brightness.

Spray Adjustment (CP4-WO, CP4-W-LD)



Turning the dial in the direction indicated by the arrow in the illustration will gradually reduce the amount of spray and then reach 0. For maximum spray, turn the dial until the “W” matches up with the indicator. (See illustration.)

⚠ WARNING

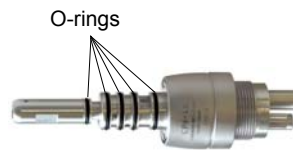
- Hold the tube ring to adjust the amount of water. The handpiece could come off its connection and injure someone if it is held by the part indicated by the mark (♦).

⚠ NOTE

- If the coupling is not securely tightened up with the wrench, water or air could leak.

Replacement

<Coupling O-ring Replacement>



Replace the o-rings if air or water starts leaking from the connection.
After replacement, take the nozzle off the AR spray can and lightly apply a little oil on the new o-rings.

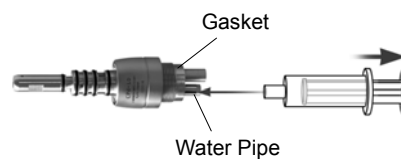
⚠ WARNING

- Do not fail to replace all the o-rings, otherwise, air pressure could cause the tube to suddenly disconnect, and this could injure the patient.

<One-way Water Valve Replacement>

Inspecting One-way Valve

Cutting debris and other foreign matter could be sucked into the water tube if the one-way valve is not working properly. Inspect it once a month.



1. Remove the needle from a plastic syringe and fit the end over the water pipe.
2. Check that there are no gaps between it and the gasket.
3. Pull the plunger out a little and then release it. If the plunger moves back in, the valve is OK.
4. Replace the valve if the plunger does not go back in at all.

Replacement



1. Use a needle or similar object to remove the gasket.
2. Remove the old valve and replace it with a new one.
3. Replace the gasket in its original position.

⚠ NOTE

- Do not damage the part of the gasket that bunches up against the water pipe as it is required to make an effective seal.

EU Authorized Representative under the European Directive 93/42/EEC



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