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High Speed Air Turbine Handpiece

TWINPOWER TURBINE 4H

<with light>

PAR-4HEX-O	PAR-4HEX-O-KV / WH / SR / NK
PAR-4HX-O	PAR-4HX-O-KV / WH / SR / NK
PAR-4HMX-O	PAR-4HMX-O-KV / WH / SR / NK

CE 0197

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Operation Instructions

US PAT.	5902108	JP PAT.	3208345
US PAT.	6676374	JP PAT.	3672781
US PAT.	7048540	JP PAT.	3795722
DE PAT.	19807566	JP PAT.	3897953
DE PAT.	19860953		

Manufactured by J. MORITA MFG. CORP.

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

PAR-4HEX-O[*1], PAR-4HEX-O-KV[*2] / WH[*3] / SR[*4] / NK[*5]
PAR-4HX-O[*1], PAR-4HX-O-KV[*2] / WH[*3] / SR[*4] / NK[*5]
PAR-4HMX-O[*1], PAR-4HMX-O-KV[*2] / WH[*3] / SR[*4] / NK[*5]

*1 Morita CP4-O and CP4-WO coupling
*2 KaVo MULTIflex and MULTIflex LUX coupling: KaVo, MULTIflex, and MULTIflex LUX are registered trademarks for Kaltenbach & Voigt GmbH.
*3 W&H Roto Quick coupling: W&H and Roto Quick are registered trademarks for W&H Dentalwerk Bürmoos GmbH.
*4 SIRONA R/F coupling: Sirona is a registered trademark for Sirona Dental Systems GmbH.
*5 NSK Mach/ Phatelus/ FlexiQuick coupling: Mach, Phatelus and FlexiQuick are registered trademark for NSK NAKANISHI INC.

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Operation 2008-4-21

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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.

Caution: Federal law restricts this device to sale by or on the order of a dentist (for U.S.A.).

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.

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Note the meaning of the following symbols and expressions:

⚠WARNING
This warns the user of the possibility of extremely serious or irreversible injury or a fatal accident.

⚠NOTE
This alerts the user to important points concerning usage.

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.

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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

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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.

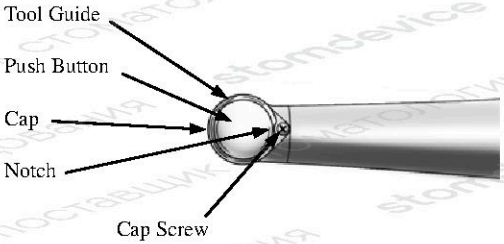
* The user (i.e., clinic, hospital etc.) must perform the inspection procedures specified in the Regular Inspection Check List every three months.

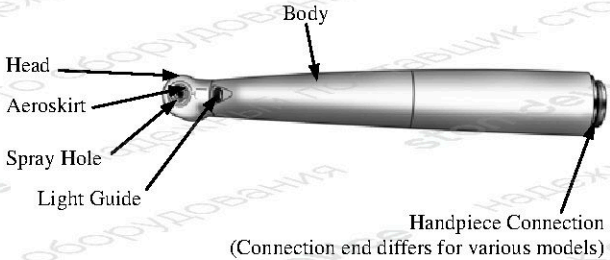
* Parts must be replaced periodically as necessary.
The Regular Inspection Check List includes a replacement parts list.

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Parts Identification and Accessories

Parts Identification



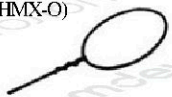


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Accessories

For Inspection and Parts Replacement

Chuck Grip Tester No.5010695	Spray Hole Wire No.5250940 (PAR-4HEX-O, PAR-4HX-O) No.5010840 (PAR-4HMX-O)
	
(Ethanol disinfectable)	(Autoclavable)

For Capsule Cartridge Replacement

Screwdriver No.5011440	Cap Tool (also used to change lamp) No.5011328
	
(Ethanol disinfectable)	(Ethanol disinfectable)

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For Spray: AR Spray, 4H Spray Nozzle (Ethanol disinfectable)

AR Spray	4H Spray Nozzle				
No.5010212 or No.5010216	No.5010307 PAR-4HEX-O PAR-4HX-O PAR-4HMX-O	No.5010293 PAR-4HEX-O-KV PAR-4HX-O-KV PAR-4HMX-O-KV	No.5010295 PAR-4HEX-O-WH PAR-4HX-O-WH PAR-4HMX-O-WH	No.5010297 PAR-4HEX-O-SR PAR-4HX-O-SR PAR-4HMX-O-SR	No.5010299 PAR-4HEX-O-NK PAR-4HX-O-NK PAR-4HMX-O-NK
					

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Operation

Handpiece Attachment

For Morita CP4-O and CP4-WO coupling (PAR-4HEX-O, PAR-4HX-O, PAR-4HMX-O).

< Connect >



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

< Disconnect >



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

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Except for Morita CP4-O/WO coupling, refer to the user's manual for the model you have.

PAR-4HEX-O-KV, PAR-4HX-O-KV, PAR-4HMX-O-KV (KaVo MULTIflex and MULTIflex LUX coupling)
PAR-4HEX-O-WH, PAR-4HX-O-WH, PAR-4HMX-O-WH (W&H Roto Quick coupling)
PAR-4HEX-O-SR, PAR-4HX-O-SR, PAR-4HMX-O-SR (SIRONA R/F coupling)
PAR-4HEX-O-NK, PAR-4HX-O-NK, PAR-4HMX-O-NK (NSK MachLite/Phatelus coupling)

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⚠WARNING

Before attaching the handpiece make sure that the coupling is in good condition (not worn, damaged, cracked or lose), 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 fixed 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 its running.

For information on assembling the CP4-O/WO Coupling refer to the page 77.

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Inspecting and Sterilizing before Use

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

<Inspection>

Before using the handpiece, 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.

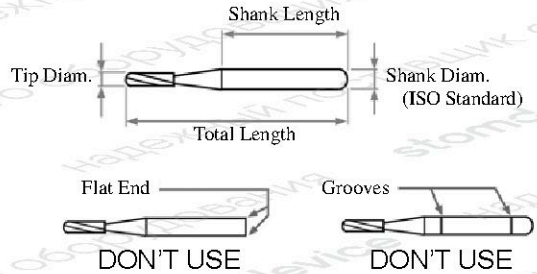
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Burrs and Points

Burr and Point Specifications

	PAR-4HEX-O PAR-4HX-O	PAR-4HMX-O
Shank Diameter (ISO standard)	φ1.59 ~ φ1.60 mm	
Tip Diameter	φ2.0 mm (max.)	
Total Length	22 mm (max.)	18.5 mm (max.)
Shank Length	10 mm (min.)	7.5 mm (min.)



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⚠WARNING

Do not use burrs and points:
- which do not conform to ISO standard,
- with scratched or damaged heads or shanks,
- which are bent, twisted, rusty or chipped,
- which have been modified in any way.

Sub-standard or damaged burrs and points are very dangerous to use; they can come out and injure the patient or be swallowed.

Use only short shanked burrs with the PAR-4HMX-O.

Never use short-shanked burrs and points with the PAR-4HEX-O / PAR-4HX-O; shanks will not reach all the way to the back of the chuck.

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⚠NOTE

Always use burrs 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 burrs made of a single piece of metal; do not use burrs whose head is welded to the shank. Welded joints break easily.

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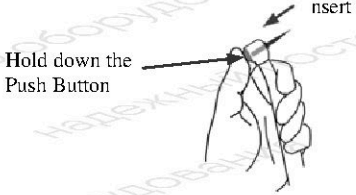
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Inserting and Removing Burrs

<Insert>



Carefully insert the burr as far as it will go.



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

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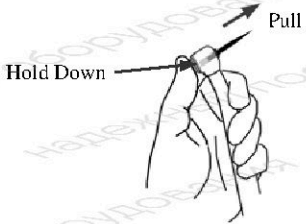
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⚠WARNING

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.



<Removal>



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

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⚠WARNING

After inserting a burr, always operate the handpiece outside of the oral cavity to make sure it runs smoothly.

If a burr comes out during use, stop operating the handpiece immediately.

Always use spray and a soft, intermittent touch to avoid injury to the pulp.

Wear protective glasses.

Always take the burr out of a handpiece before putting it back into its holder. Leaving a burr in the handpiece could result in injury or damage to clothing or other objects.

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⚠WARNING

Use only the burrs and points specified on page 12, 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.

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 burrs.

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⚠NOTE

Crown removal and other similar operations produce considerable vibration and can cause the burr to get stuck in the handpiece. Avoid this by frequently removing and reinserting the burr.

In case of abnormal noise or vibration during use, replace the burr. If this eliminates the problem, the burr 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.

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Maintenance

After Use

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.

<Disconnect>

Disconnect the handpiece from the tube.
(Remove the point or burr.)

<Cleaning>



Use the brush and running water to clean the handpiece.

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* Clean Spray Hole

If a spray hole gets clogged with impurities in the water, clean it in the following way



Use the wire provided to clean out the spray hole.



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

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<Disinfection>



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

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* 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.

⚠NOTE
Improper cleaning modes and solutions will damage the handpiece.

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<Lubrication>

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

⚠WARNING

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

⚠NOTE

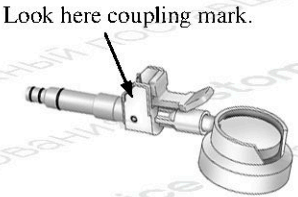
The handpiece will malfunction without regular AR spray maintenance.

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.

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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 (PAR-4HEX-O, PAR-4HX-O, PAR-4HMX-O)
KV : KaVo coupling (PAR-4HEX-O-KV, PAR-4HX-O-KV, PAR-4HMX-O-KV)
WH : W&H coupling (PAR-4HEX-O-WH, PAR-4HX-O-WH, PAR-4HMX-O-WH)
SR : SIRONA coupling (PAR-4HEX-O-SR, PAR-4HX-O-SR, PAR-4HMX-O-SR)
NK : NSK coupling (PAR-4HEX-O-NK, PAR-4HX-O-NK, PAR-4HMX-O-NK)



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Chuck spray Nozzle

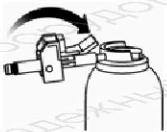




Insert all the way.

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.

For Handpiece Connection





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

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⚠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.

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<Connect>



Connect the handpiece to its tube.

<Operate>



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

<Disconnect>

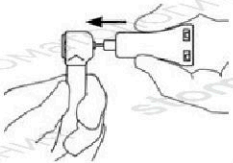


Disconnect the handpiece.

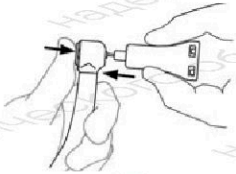
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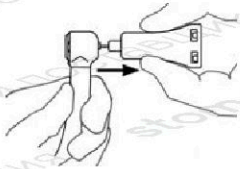
<Check Chuck's Gripping Power>



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.



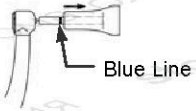
Carefully pull on the tester until the blue line appears.

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If the Blue Line Appears

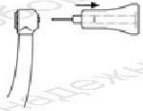
Chuck is OK.



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.

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⚠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 80 vol%).

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Packaging

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

Sterilization

<Autoclaving the Handpiece>

Recommended temperature and time: minimum of 5 minutes at 134°C in a sterilization pouch.
Minimum drying time after sterilization: 10 minutes.

⚠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.

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⚠NOTE

Do not sterilize in any way except autoclave.

Remove the burr or point before autoclaving.

Autoclave and drying temperatures must not exceed 135°C.

Instruments are extremely hot after autoclaving; do not touch them for at least ten minutes.

The handpiece could be damaged if it is not properly cleaned and lubricated 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.

Do not leave the handpiece in the autoclave over night.

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Service

Parts Replacement

The Regular Inspection Check List has a list of replacement parts. Replace these parts periodically or whenever they wear out.

Order parts from your local dealer or the J. Morita Office.

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Capsule Cartridge with O-ring and screw	Cap with O-ring and screw
No.5010862 PAR-4HEX-O, PAR-4HEX-O-KV/WH/SR/NK No.5010863 PAR-4HX-O, PAR-4HX-O-KV/WH/SR/NK No.5010872 PAR-4HMX-O, PAR-4HMX-O-KV/WH/SR/NK	No.5011387 PAR-4HEX-O, PAR-4HEX-O-KV/WH/SR/NK PAR-4HMX-O, PAR-4HMX-O-KV/WH/SR/NK No.5011386 PAR-4HX-O, PAR-4HX-O-KV/WH/SR/NK,





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Cartridge lamp	O-ring (exhaust seal)
No.5020550 PAR-4HEX-O-WH, PAR-4HX-O-WH, PAR-4HMX-O-WH 	No.5012320 PAR-4HEX-O-WH, PAR-4HX-O-WH, PAR-4HMX-O-WH 
O-ring (prevents loosening of body)	**O-ring set**
No.5012320 PAR-4HEX-O-WH/NK, PAR-4HX-O-WH/NK, PAR-4HMX-O-WH/NK 	No.5811500 PAR-4HEX-O-NK, PAR-4HX-O-NK, PAR-4HMX-O-NK 

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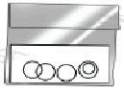
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For Morita CP4-O and CP4-WO Coupling

Cartridge Lamp	Lamp Cover O-ring	4H Lamp Cover
No.5011570	No.5811833	No.5811832



O-ring Set for 4H Coupling
No.5811835



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For Morita CP4-O and CP4-WO Coupling

One-way Spray Valve	Coupling Gasket
No.5811837	No.5811838



4H Coupling Wrench
No.5011831



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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 it gripping power.

The capsule cartridge and its O-ring wears 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.

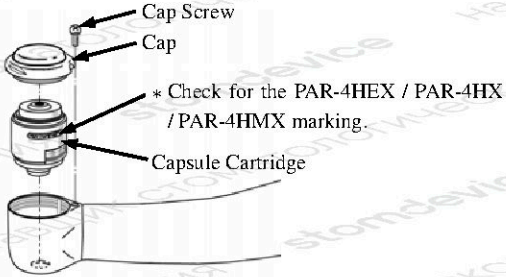
⚠NOTE

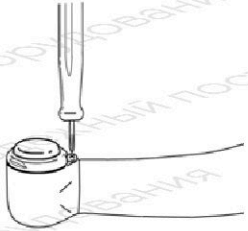
Do not fail to use the capsule cartridge for the PAR-4HEX, PAR-4HX and the PAR-4HMX.

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Remove old capsule cartridge

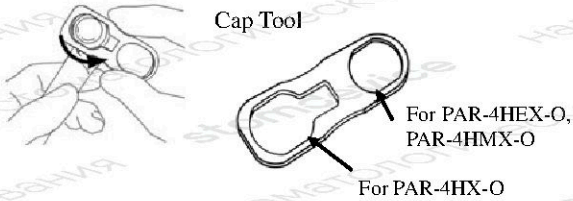




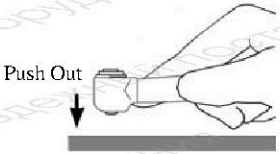
Take the cap screw out with the screwdriver.

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



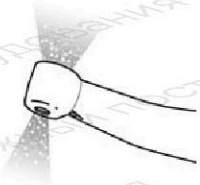
Push the old cartridge out by pressing the aero-skirt around the chuck opening firmly down on a hard, flat surface.

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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.

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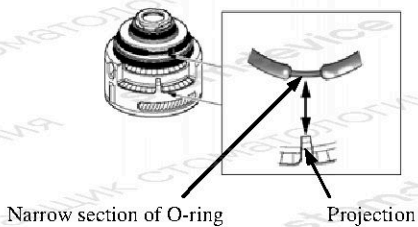
Insert new cartridge



Spray a little AR spray inside the head.

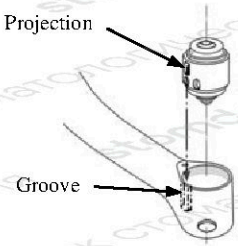
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(PAR-4HEX-O, PAR-4HX-O)

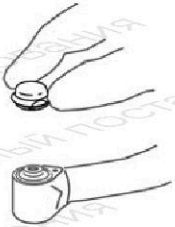


If the O-ring has come off, line up the narrow section of the O-ring and projection as shown in the illustration and reattach it. If the narrow section of the O-ring is not properly lined up, the spray will not work properly.

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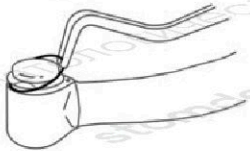
Make sure all 3 O-rings are on the cartridge. Line up the projection on the cartridge with the groove in the head and push it all the way in.



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.

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⚠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.

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

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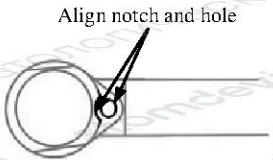
Screw the cap down manually until it is seated on the head. Do not use the cap tool to screw down the cap from the beginning; this could damage the threads.



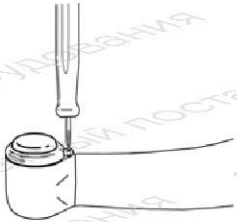
Fit the cap tool securely onto the cap and tighten up the cap. Line up the notch on the cap with the hole for the cap screw.

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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.

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⚠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.

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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.

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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, PAR-4HX or PAR-4HMX.

Replacing the cartridge lamp

For CP4-O/WO (PAR-4HEX-O, PAR-4HX-O, PAR-4HMX-O) and for W&H (PAR-4HEX-O-WH, PAR-4HX-O-WH, PAR-4HMX-O-WH), only

For KaVo (PAR-4HEX-O-KV, PAR-4HX-O-KV, PAR-4HMX-O-KV), SIRONA (PAR-4HEX-O-SR, PAR-4HX-O-SR, PAR-4HMX-O-SR) and NSK (PAR-4HEX-O-NK, PAR-4HX-O-NK, PAR-4HMX-O-NK) lamp replacement, refer to the user's manual for the couplings of various makers.

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⚠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

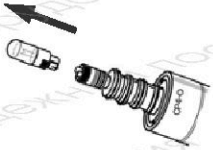
Do not leave fingerprints or any foreign substances on the new lamp. These could cause the lamp to break as soon as it is turned on, which could cause an injury. If necessary use Ethanol for Disinfection (Ethanol 80 vol%) to clean the lamp.

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For PAR-4HEX-O, PAR-4HX-O, PAR-4HMX-O

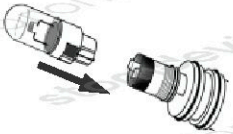


Disconnect the handpiece from the main tube.
Turn off the power switch on the chair, and take the tube's lamp cover off using the square hole on the cap tool.



Take the lamp out of its socket.

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Line up the grooves on the new lamp with the leads inside the socket and push it all the way into place.



Screw the lamp cover on manually and then tighten it up using the square hole on the cap tool.

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Reconnect the handpiece and operate it to make sure the lamp lights up.

⚠WARNING

Make sure the lamp cover is screwed all the way down. If the handpiece is not properly connected to the tube, air pressure could cause the tube to blow off, which could cause an injury.

⚠NOTE

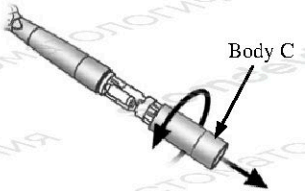
Use only cartridge lamps made specifically for this model.

* Order lamp cartridges from your local dealer or the J. Morita office.

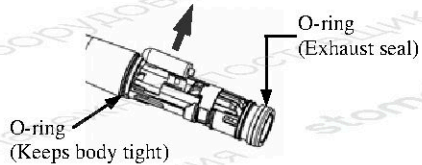
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For PAR-4HEX-O-WH, PAR-4HX-O-WH, PAR-4HMX-O-WH



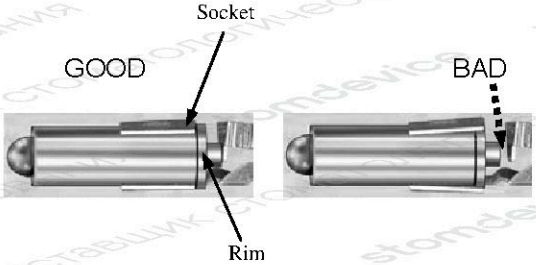
Disconnect the handpiece from the main tube.
Turn off the lamp and rotate body C in the direction shown in the illustration.



Take out the old lamp with tweezers.

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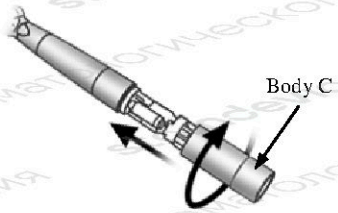
Install the lamp so that the rim does not go in too far.

⚠NOTE

If the rim goes into the socket, the connection could be defective, or the lamp could come out.

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Screw body C back into its original place. Reconnect the handpiece and operate it to make sure the lamp lights up.

⚠WARNING

Make sure Body C is screwed all the way down. If the handpiece is not properly connected to the tube, air pressure could cause the tube to blow off, which could cause an injury.

⚠NOTE

Use only cartridge lamps made specifically for this model.

* Order lamp cartridges from your local dealer or the J. Morita office.

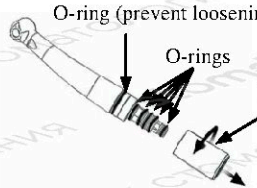
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Replacing the O-rings.

PAR-4HEX-O-NK, PAR-4HX-O-NK, PAR-4HMX-O-NK, only



1. Take the handpiece off its main tube.
2. Turn Body C in the illustration in the direction shown by the arrow and take it off.
3. Take off the O-rings with tweezers or some other suitable tool.
4. Put on the new O-rings.
5. Spray the O-rings with AR Spray.
6. Replace Body C.

⚠WARNING

Tighten Body C securely all the way. Otherwise air could leak out and prevent a proper connection with the coupling.

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Storage

Storage conditions

Temperature -10 ~ 70 ℃
Humidity 10 ~ 85 % RH (without condensation)
Atmospheric pressure 700 ~ 1,060 hPa

* Avoid frequent exposure to direct sunlight.
* Store the handpiece in a clean, dry place after autoclaving it.

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Inspection

Regular Inspection

* Use the Inspection Check List provided to inspect the instrument every 3 months.
* It is assumed that the user will perform regular maintenance and inspection procedures. However, if necessary or desired, these may be performed by a trained professional qualified to repair medical devices. Contact your local dealer or the J. Morita Office.

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Regular Inspection Check List

Item	Procedure
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 Spray	Make sure the handpiece operates smoothly and emits a fine, misty spray.

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Regularly Required Replacement Parts

Capsule Cartridge
(PAR-4HEX-O, PAR-4HX-O, PAR-4HMX-O)

Other Replacement Parts

Cap

Repairs

Contact your local dealer or the J. Morita Office for handpiece and coupling repairs etc.

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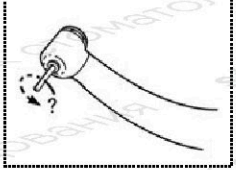
Troubleshooting

The user should check the following pages if he thinks the instrument is not operating normally.

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Poor Rotation



Lubricate with AR Spray.

Disconnect handpiece and step on foot pedal.
Does air comes out of the end of the tube with enough force?

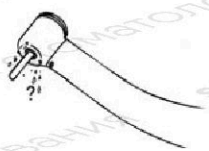
NO Defective tube. Contact serviceman.

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

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Poor Spray



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

N O Defective tube or water lines inside chair.

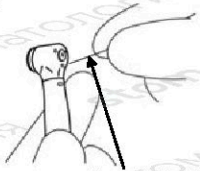
YES Replace the coupling's O-ring.

O R

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Clean spray hole.



Use the wire provided to clean out the spray hole.



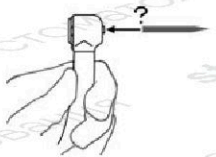
After cleaning, blow the hole out with a syringe and wipe the handpiece with gauze dampened with Ethanol for Disinfection (Ethanol 80 vol%).

Make sure the O-rings on the capsule cartridge are properly installed.

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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

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Spray into chuck.



Screw the nozzle assembly onto the spray can with nozzle for the chuck sticking straight out. Cover the head with gauze, insert the nozzle and spray into the chuck for 2 or 3 seconds.

Insert all the way.



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

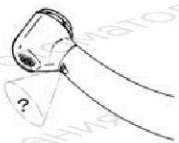
Still cannot insert burrs and points.

Replace the capsule cartridge. Make sure the capsule cartridge is the correct one.

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Light doesn't work



Lamp may be burned out.

- **N O** Check tube and chair.
- **YES** Replace lamp.

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Technical Information

Specifications

Name : TWINPOWER TURBINE 4H

Model : with light

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		PAR-4HEX-O					PAR-4HX-O					PAR-4HMX-O				
		CP4-O	KV	WH	SR	NK	CP4-O	KV	WH	SR	NK	CP4-O	KV	WH	SR	NK
Bearing		Ball Bearing														
Chuck		Push Chuck														
Rotor		Autoclavable Capsule Cartridge														
Air Pressure (at handpiece connection)	Recommended Air Pressure	0.23~0.25 (MPa)														
	Air Pressure Range	0.2~0.29 (MPa)														
	Water Supply Pressure	0.05~0.2 (MPa)														
	Tip Air Pressure	0.2 minimum (MPa)														
	Exhaust Air Pressure	0.03 maximum (MPa)														

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		PAR-4HEX-O					PAR-4HX-O					PAR-4HMX-O				
		CP4-O	KV	WH	SR	NK	CP4-O	KV	WH	SR	NK	CP4-O	KV	WH	SR	NK
Speed (rpm)		370,000±30,000					350,000±30,000					370,000±30,000				
Air Flow (NL/min)		37±3														
Weight (g)		51	57	51	50	48	51	57	51	50	48	51	57	51	50	48
Size	Head Diameter (mm)	Φ10.5					Φ12.0					Φ10.5				
	Head Height (mm)	13.2										10.6				
	Length (mm)	120	115	110	103	98	120	115	110	103	98	120	115	110	103	98
Number of water spray nozzle		3										1				

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Operating Conditions	Temp.: 10 ~ 40° C Humidity: 30 ~ 75 % RH Atmosph. Pressure: 700 ~ 1,060 hPa
Lamp Voltage	Max. 3.3 V ± 0.05 V D.C. (for coupling contacts)
Lamp Power	Max. 2.4 W

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

⚠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.

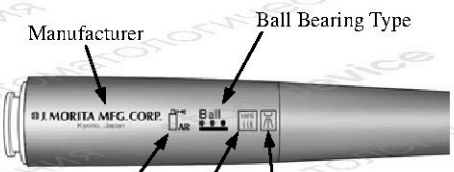
⚠WARNING

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

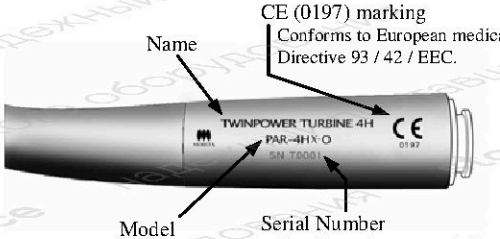
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Terminology and Symbols



Handpieces with this symbol may be cleaned and disinfected with a thermal washer-disinfector.



The first character of the serial number specifies the year of manufacture as follows:

U: 2006 V: 2007 W: 2008

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Operation Instructions

 Manufacturer



Authorised representative in the European Community

Service and Other Contacts

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

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.

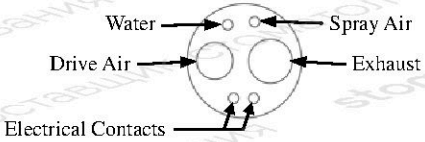
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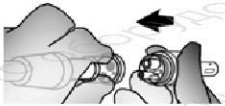
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CP4-O <with light> Coupling
CP4-WO <with light and Spray Control> Coupling

* Before use check the following items: Does the connection end of the tube match the coupling? Lamp voltage is correct (see page 83, Specifications). This coupling cannot be connected to a tube that does not have light capability.



1. Connect Coupling



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

⚠NOTE
Before connection, make sure the tube connector is clean and free of debris.

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Tighten securely with the wrench provided.

⚠NOTE

Air or water may leak if the coupling is not tightened up enough.

* 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.

2. Cleaning

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

⚠NOTE

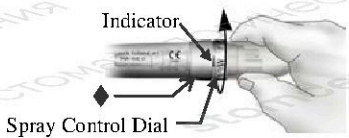
Coupling must NOT be autoclaved or cleaned ultrasonically.

The coupling could be damaged if it is soaked in Ethanol for Disinfection (Ethanol 80 vol%) or cleaned with a strong, corrosive solution.

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3. Spray Adjustment (CP4-WO)



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, continue the turning the dial until the "W" matches up with the indicator. (See illustration.)

⚠WARNING
Hold the tube ring to adjust the amount of spray. 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.

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4. Coupling O-ring Replacement



Replace the five O-rings if air or water starts to leak. After replacement, remove the 4H Spray Nozzle from the AR Spray can and lightly coat the O-rings with AR Spray.

⚠WARNING

Remove and replace all the old O-rings; otherwise air pressure could cause the tube to blow off, resulting in an injury.

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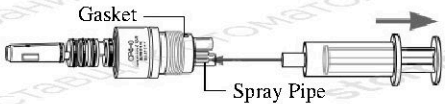
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5. Replacing One-way Spray Valve

Inspecting One-way Valve

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



1. Remove the needle from a plastic syringe and fit the end over the spray 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.

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6. 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

Make sure not to damage the part of the gasket that presses up against the water pipe as this creates a crucial seal.

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7. Specifications

Model :	CP4-O <with light>
	CP4-WO <with light and Spray Control>
	ISO 9168 Type 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

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

⚠NOTE

The lamp will burn out more quickly if voltage is greater than the value specified.

The lamp may burn out more quickly if the chair is set for a long fade out time.

The lamp may burn out more quickly if the chair applies and cuts off the voltage suddenly.

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