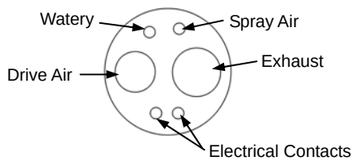
Operation Instructions for
CP4-LD <with LED light> Coupling,
CP4-W-LD <with LED light and Spray Control> Coupling

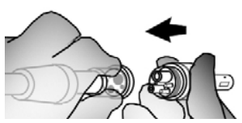
Intended Use/ Function

This is a coupling for connecting the Twin Power Turbine 4H handpiece to an ISO9168 Type 3 tube.

* Before use check the following items:
  Does the connection end of the tube match the coupling?
  Lamp voltage is correct (see 7. Specifications).
  This coupling cannot be connected to a tube that does not have light capability.

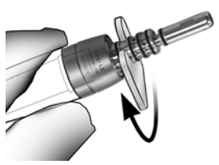


1. Connect Coupling



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.



Tighten securely with the wrench provided.

⚠NOTE
Air or water may leak if the coupling is not tightened up enough with the wrench.

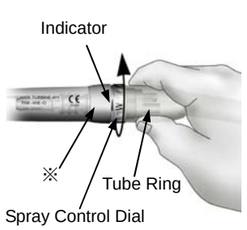
* Before first using the coupling or if the handpiece-coupling connection gets stiff, take the nozzle off the AR Spray can and lightly spray the coupling's o-rings.

2. Cleaning

Wipe the outside cover with ethanol.

⚠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.*
- *(For USA) Do not use the isopropyl alcohol.*

3. Spray Adjustment (CP4-W-LD)

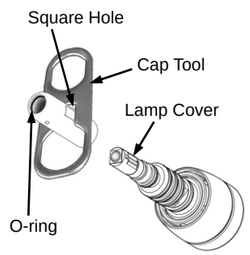


Turning the dial in the direction indicated by the arrow in the illustration will gradually reduce the amount of spray and then reach 0. For maximum spray, continue the turning the dial until the "W" matches up with the indicator. (See illustration.)

⚠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 (※).

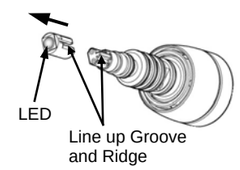
4. LED Replacement

Take the handpiece off its tube.



Turn the chair's main switch off. Make sure the lamp cover has cooled off and then remove it using the square hole in the Cap Tool.

⚠NOTE
Do not lose the o-ring in the end of the lamp cover.



Take the LED out of its socket.
Line up the groove in the lamp with the ridge in the socket and push the lamp straight in all the way.

Screw the lamp cover back on with your fingers and then tighten it up with the square hole in the Cap Tool.

⚠NOTE
If the o-ring in the end of the lamp cover is lost or damaged, the light may not be bright enough or it may malfunction.

Put the handpiece back on its tube, step on the pedal and make sure the LED lights up.

⚠WARNING
- *Do not let the light strike anyone directly in the eye; this might impair one's vision.*
- *Make sure the lamp cover is properly tightened up. If it is loose, air pressure cold cause the tube to suddenly disconnect, and this could injure the patient.*

⚠NOTE
Use the LED cartridge that is specially designed for this coupling.

* For new LED cartridges, contact your local dealer or the J. Morita Corp.

5. 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.

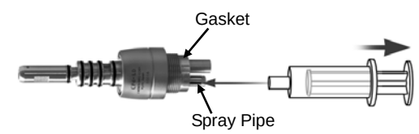
⚠WARNING
Do not fail to replace all the o-rings, otherwise, air pressure cold cause the tube to suddenly disconnect, and this could injure the patient.

⚠NOTE
Using any kind of lubricant other than AR spray could cause the o-rings to swell up and make it hard to put the handpiece on and take it off.

6. Replace One-way Spray Valve

Inspect One-way Valve

* If the one-way valve is defective, cutting debris and contaminated matter could get inside the tube. Inspect the one-way valve at least once a month.



Cover the spray pipe with the end of a plastic disposable syringe with the needle removed. Press the end of the syringe flush against the gasket on the coupling so that it is air tight.
Pull the plunger out slightly and see if it sucked back towards its original position. If it does not move back at all, the one-way valve must be replaced.

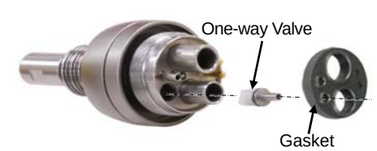
⚠NOTE
The end of the syringe must be pressed firmly against the gasket so that air cannot leak into the syringe. Otherwise the plunger will not go back even if the one-way valve is working normally.

Cover the spray pipe with the end of a plastic disposable syringe with the needle removed. Press the end of the syringe flush against the gasket on the coupling so that it is air tight. Pull the plunger out slightly and see if it sucked back towards its original position. If it does not move back at all, the one-way valve must be replaced.

⚠NOTE
The end of the syringe must be pressed firmly against the gasket so that air cannot leak into the syringe. Otherwise the plunger will not go back even if the one-way valve is working normally.

Replacement

* Take off the gasket with a needle. Take out the one-way valve. Slide a new valve into place. Put the gasket back on in its original position.



⚠NOTE
- *Do not damage the part of the gasket that bunches up against the spray pipe as it is required to make an effective seal.*
- *If the gasket is not put on right, the coupling could malfunction.*

See back

7. Specifications

Model : CP4-LD <with LED light>
CP4-W-LD <with LED light and Spray Control>
ISO 9168 Type 3(C) Coupling

Operating Condition: Temp.: 10~40 °C,
Humidity: 30 ~ 75 % RH

Storage Condition: Temp.: -10~70 °C,
Humidity: 10 ~ 85 % RH (without condensation),

Recommended input voltage : AC/ DC 3.3 V ± 0.05 V

Input voltage range : 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)

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

⚠NOTE

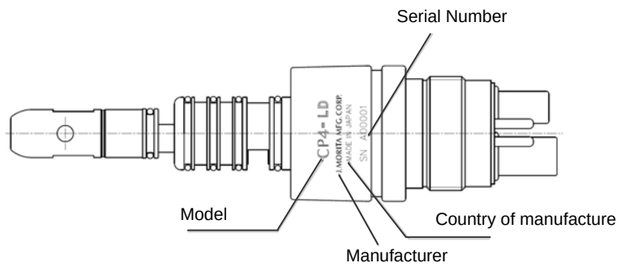
- *If the voltage for the LED light is even slightly more than specified, the LED or the coupling could be damaged.*
- *In some cases, the brightness and fade functions on the chair unit will not work. Also, depending on the chair, the light could flicker when it is turned on and off.*

Disclaimer

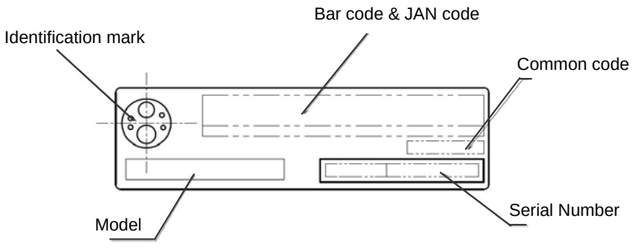
- *The J. Morita Mfg. Corp. will not be responsible for accidents, equipment damage, or bodily injury resulting from any changes, modifications, or alterations of its products.*

8. Terminology and Symbols

Marking



Labeling



9. Appendix-Electromagnetic declaration

Guidance and manufacturer's declaration – electromagnetic emissions

The CP4-LD is intended for use in the electromagnetic environment specified below. The customer or the user of the CP4-LD should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1 Class B	The CP4-LD uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.

Guidance and manufacturer's declaration – electromagnetic immunity

The CP4-LD is intended for use in the electromagnetic environment specified below. The customer or the user of the CP4-LD should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact	±6 kV contact	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
	±8 kV air	±8 kV air	
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic field should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Guidance and manufacturer's declaration – electromagnetic immunity

The CP4-LD is intended for use in the electromagnetic environment specified below. The customer or the user of the CP4-LD should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the CP4-LD, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	**Recommended separation distance** $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80 MHz to 800MHz $d = 2.3\sqrt{P}$ 800MHz to 2.5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected be absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for ratio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicated theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the CP4-LD is used exceeds the applicable RF compliance level above, the CP4-LD should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting of relocating the CP4-LD.

[b] Over the frequency range 150 kHz to 80MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the CP4-LD.

The CP4-LD is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CP4-LD can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CP4-LD as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

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