



# MOTRANSER

## User Guide

- M1 Bright (LED Dental Mirror)**
- M2 Rainbow (Dental Mirror with Endo Gauge)**
- M3 Breeze (AirClean Dental Mirror)**
- M5 Mini (AirClean Micro Mirror)**
- M6 Lumi (AirClean Photography Mirror)**
- M7 Eva (3D HVE Suction Mirror)**

# Directions for Use

**M1 Bright** (LED Dental Mirror)

**M2 Rainbow** (Dental Mirror with Endo Gauge)

**M3 Breeze** (AirClean Dental Mirror)

**M5 Mini** (AirClean Micro Mirror)

**M6 Lumi** (AirClean Photography Mirror)

**M7 Eva** (3D HVE Suction Mirror).

## Disclaimer

ACME TOOLING TECHNOLOGY CO., LTD. assumes no responsibility or liability for any injury or damage to anyone, for any illegal or improper use of the product that might arise out of or in connection with failure to use this product in accordance with the instructions, cautions, warnings, or statement of intended use published in this manual.

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All Products Manufactured in Taiwan R.O.C.

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# Table of Contents

Introduction .....	3
Intended Use.....	3
Contraindications.....	3
Model Number.....	3
Specifications .....	5
Warnings and Cautions .....	9
Device Setup and Installation .....	9
M1: Installation and Removal of Light Source Module.....	9
M1: Battery Replacement of Light Source Module.....	10
M3, M5 & M6: How to Connect to 3-Way Syringe .....	11
M3, M5 & M6: How to Install Air Pressure Regulator .....	11
M5: Replacement Procedure of Mirror Head .....	13
M6: Procedure of Mirror Replacement .....	13
How to install the M7 to your HVE suction.....	15
To an U.S. Standard 11mm HVE .....	15
To a Europe Standard 16mm HVE .....	15
3D Rotation .....	16
How to disassemble 3-Axis Free Rotation Connector.....	16
Mirror Protective Cover .....	17
Mirror Replacement Procedure for M1, M2, M3 & M7.....	17
Remove the old mirror.....	17
Install a new mirror.....	18
Maintenance .....	19
User Guideline.....	19
Cleaning & Sterilization.....	20
Disposal.....	21
Trouble Shooting.....	22
Warranty .....	22
Warranty Exceptions.....	23
Questions & Information .....	23

# Introduction

This manual describes the installation and use of **M1 Bright** REF **MBLM01**, **M2 Rainbow** REF **MBLM02**, **M3 Breeze** REF **MBLM03**, **M5 Mini** REF **MBLM05**, **M6 Lumi** REF **MBLM06**, and **M7 Eva** REF **MBLM07**.

## Intended Use

1. M1 is intended to provide **additional illumination** in a dental cavity in the process of dental examinations.
2. M2 is intended to provide a light-weight handy and reusable mirror for dentists.
3. M3, M5, and M6 are intended to provide additional self-cleaning air blow function to improve diagnosis or treatment efficiency of dentistry.
4. M7 is intended to provide additional high-power suction function with a lightweight handy experience of dentistry.
5. The described devices are intended to be used by trained clinical professionals in dentistry.
6. Professional qualification including degree in medicine with dentistry specialization, degree in dentistry, or degree in dental nursery.

## Contraindications

The **M1 Bright** LED light output is in a range that may contribute to the premature polymerization of composite materials. In addition, do not point the light directly into eyes.

## Model Number

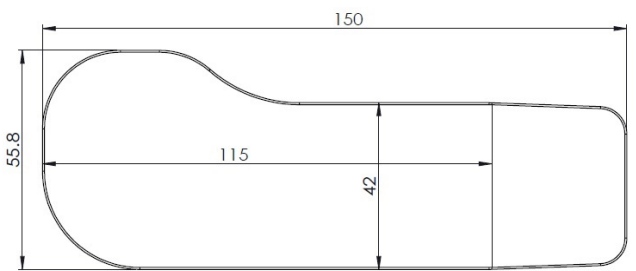
MBLM01	M1 Bright (LED Dental Mirror)
MBLM01P01	M1 Dental Mirror Housing
MBLM01P21	White Light Source Module
MBLM01P06	M1 Tail Cap
MBLM02	M2 Rainbow (Dental Mirror with Endo Gauge)
MBLM03	M3 Breeze (AirClean Dental Mirror)
MBLM03P05	AirClean Accessory Pack for 3 Way Syringe (3-Way Adapter with 1.8m tube, Air

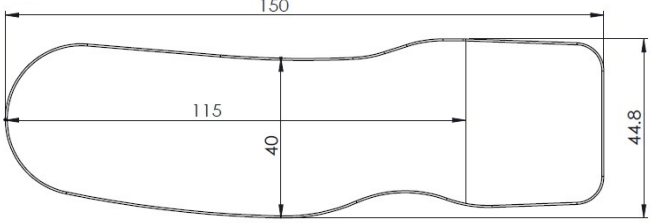
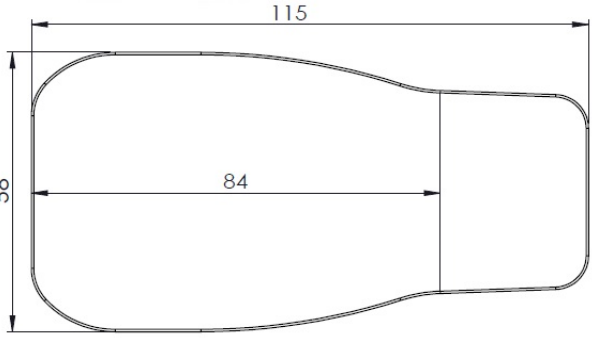
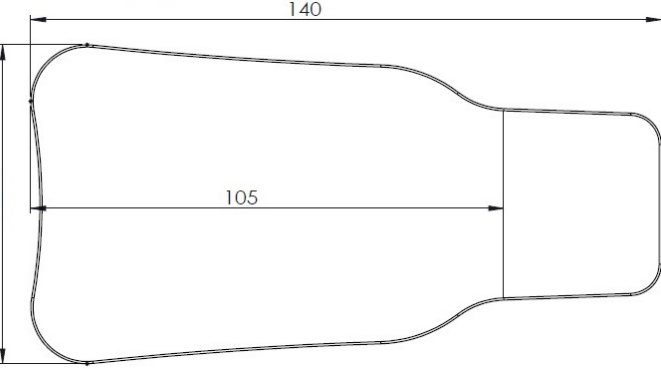
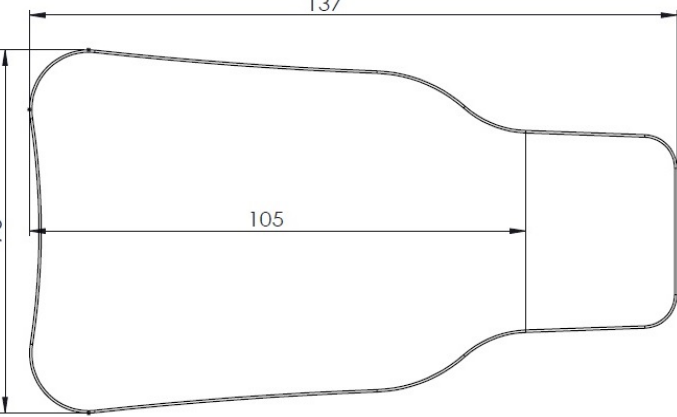
	Pressure Regulator, Holder, and Double-sided Tape)
MBLM03P01	3-Way Adapter
MBLM03P03	Air Pressure Regulator for 3-Way
MBLM03P04	Holder
ACM-15	Double-sided Tape 2cm x 5cm
MBLM03P06	Dental Unit Adapter
MBLM03P07	AirClean Accessory Pack for Dental Unit (Dental Unit Adapter with 2.5m tube, Holder, and Double-sided Tape)
MBLM01P30	R75 Anti-Fog Mirror
MBLM01P31	R75 Hydrophobic Mirror
MBLM01P25	R98 Anti-Fog Mirror
MBLM01P26	R98 Hydrophobic Mirror
MBLM02P05	No. 4 Mirror Replacement Key
MBLM05P15	M5 Mini 15mm
MBLM05P10	M5 Mini 10mm
MBLM05P05	M5 Mini 5mm
MBLM05P03	M5 Mini 3mm
MBLM05P20	Head Mirror Replacement Key
MBLM06P01-R98A-BC	R98A Photo Mirror for Buccal Side
MBLM06P01-R75A-BC	R75A Photo Mirror for Buccal Side
MBLM06P01-R98A-LG	R98A Photo Mirror for Lingual Side
MBLM06P01-R75A-LG	R75A Photo Mirror for Lingual Side
MBLM06P01-R98A-S	R98A Photo Mirror for Occlusal Side (Small)
MBLM06P01-R75A-S	R75A Photo Mirror for Occlusal Side (Small)
MBLM06P01-R98A-M	R98A Photo Mirror for Occlusal Side (Medium)
MBLM06P01-R75A-M	R75A Photo Mirror for Occlusal Side (Medium)
MBLM06P01-R98A-L	R98A Photo Mirror for Occlusal Side (Large)
MBLM06P01-R75A-L	R75A Photo Mirror for Occlusal Side (Large)
MBLM06P04	Photo Mirror Holder
MBLM07P	M7 Eva (3D HVE Suction Mirror)
MBLM07P11	Suction Tube Set
MBLM07P12	No. 7 Mirror Replacement Key
STM-09	Mirror Protective Cover


The above parts can be purchased separately.

## Specifications




Take care to leave free space or operation room in order to avoid any interference with fixed obstacles. The free space or operation room can be determined by the following sizes and dimensions:

<b>M1 Size</b>	Dental mirror handle (with tail cap): 184 mm x 25 mm Light source module: 146 mm x 13 mm
<b>M1 Diameter</b>	Handle: 15.5 mm Light source module: 12.7 mm
<b>M1 Weight</b>	Dental mirror handle (with tail cap): 11 g Light source module: 27 g
<b>M2 Length</b>	180 mm
<b>M2 Diameter</b>	12 mm
<b>M2 Weight</b>	12.40 g
<b>M3 Length</b>	162 mm
<b>M3 Diameter</b>	12 mm
<b>M3 Weight</b>	12 g
<b>M5 Length</b>	164 mm
<b>M5 Weight</b>	10 g
<b>M5 Mirror Length</b>	3 mm, 5 mm, 10 mm, and 15 mm
<b>M5 Thickness for 3 mm and 5 mm mirror head</b>	1.6 mm
<b>M5 Thickness for 10 mm and 15 mm mirror head</b>	3.15 mm
<b>M6 Buccal Side Mirror</b>	

<b>M6 Lingual Side Mirror</b>	
<b>M6 Occlusal Side Mirror (S)</b>	
<b>M6 Occlusal Side Mirror (M)</b>	
<b>M6 Occlusal Side Mirror (L)</b>	
<b>M6 Buccal Side Mirror Weight</b>	45.53 g
<b>M6 Lingual Side Mirror Weight</b>	38.1 g
<b>M6 Occlusal Side Mirror (S) Weight</b>	38.22 g
<b>M6 Occlusal Side Mirror (M) Weight</b>	53.59 g

<b>M6 Occlusal Side Mirror (L) Weight</b>	54.83 g
<b>Air Pressure</b>	0.4 MPa
<b>M7 Mirror Length</b>	172 mm
<b>M7 Mirror Width</b>	27 mm
<b>M7 Mirror Weight</b>	10.9 g
<b>M7 Suction Tube Length</b>	180 cm
<b>M7 Tube Width</b>	12 mm
<b>M7 Tube Weight</b>	87.2 g
<b>M7 3-Axis Free Rotation Connector</b>	10.4 g
<b>M7 Suction Mirror Holder Length</b>	82 mm
<b>M7 Suction Mirror Holder Width</b>	62 mm
<b>M7 Suction Mirror Holder Weight</b>	13.7 g
<b>M7 Suction Mirror Holder Connector for U.S.A. Type</b>	11 mm
<b>M7 Suction Mirror Holder Connector for Europe Type</b>	16 mm
<b>M7 U Spring</b>	SUS 316 
<b>Mirror Protective Cover Length</b>	28.55 mm
<b>Mirror</b>	31 mm



<b>Protective Cover Width</b>	
<b>Mirror Protective Cover Thickness</b>	8.5 mm
<b>Mirror Protective Cover Weight</b>	2.5 g
<b>Material</b>	Glass Fiber/Polymer 
<b>Mirror Material</b>	Glass 
<b>Lifespan</b>	Up to 500 cycles by class B autoclave
<b>Reflectivity</b>	R75: 70-75% reflectance R94: 94% reflectance R98: 98% reflectance
<b>White Light Source Module</b>	Brightness: 65,000 LUX Color Temperature: 5000K, CRI ≥90
<b>M1, M2, M3, M7 Mirror Length</b>	23 mm
<b>Operating Temperature Conditions</b>	50° F to 104° F (10° C to 40° C)
<b>Storage Conditions</b>	-4°F at 50% RH to 122°F at 95% RH -20°C at 50% RH to 50°C at 95% RH
<b>Performance</b>	White light: 6 hours continuously
<b>Battery</b>	Two 1.5V AAA batteries
	The CE mark on this product indicates that it has been tested to and conforms to the provisions noted within the 93/42/EEC Medical Device Directive.

## Warnings and Cautions

All operating personnel must read and understand the general safety information in this summary. Specific warnings and cautions are also found throughout this manual. A caution or warning statement in this manual identifies a condition or practice which if not corrected or discontinued immediately, could lead to patient injury, illness, death equipment failure, equipment damage, or data loss.



**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION** Do not use alkaline batteries; leaking of battery fluid may cause corrosion of electronic component.

**CAUTION** Do not look directly at an illuminated Light Source Module. Temporary blindness or vision loss may result.

**CAUTION** Do not immerse or soak the Light Source Module in any liquid.

**CAUTION** Do not autoclave the batteries or Light Source Module to avoid the risk of damage to the batteries and Light Source Module or to operate without hazard to the user.

**CAUTION** Before use, check if any cracks or chips on the mirror.

**CAUTION** Stop using if the mirror is broken or damaged and replace with a new dental mirror. Do not attempt to take out the damaged mirror.

**CAUTION** Before use, check if the mirror is fully pressed against the frame edge.

**CAUTION** Do not proceed to a rapid cooling after high temperature sterilization.

**CAUTION** Please clean, steam sterilization and dry the new mirrors before first use.

**CAUTION** Follow the exact mirror replacement procedure. Please visit our website <http://www.motranser.com> for related product information and video demonstrations.

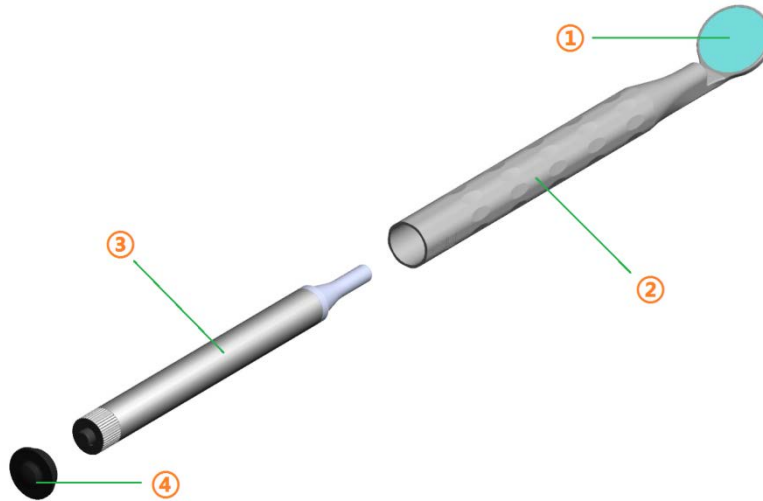
## Device Setup and Installation

### M1: Installation and Removal of Light Source Module

Please refer to the figure below, and the **M1 Bright** REF **MBLM01** is mainly comprised

of:

- ①: HD mirror
- ②: Dental mirror handle
- ③: Light source module
- ④: Tail cap

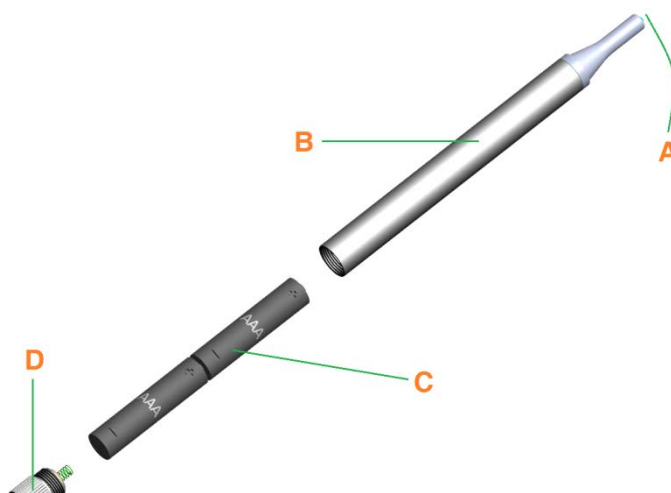


1. Insert ③ “light source module” into ② “dental mirror handle”.
2. Plug ④ “tail cap” into ② “dental mirror handle”.
3. Press ④ “tail cap” to turn on the light and press again to turn off.
4. **Please use cotton swab with alcohol to clean ① “HD mirror” in order to prevent possible scratch.**
5. Or, visit <http://www.motranser.com> for related product information and video demonstration.

## M1: Battery Replacement of Light Source Module

Please refer to the figure as below, and

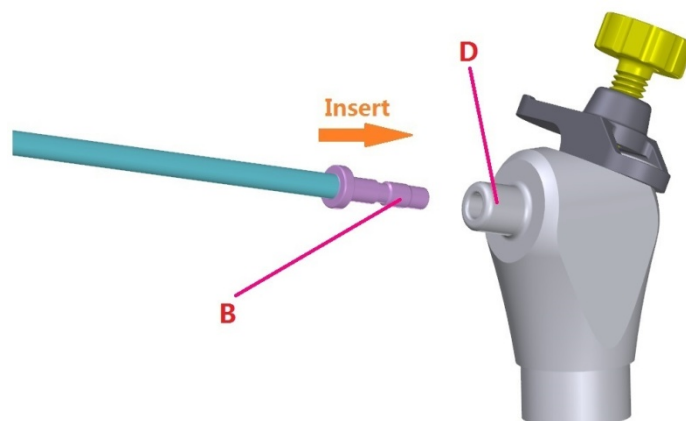
- A: LED light bulb
- B: Battery cartridge
- C: Standard AAA battery
- D: Battery cap



1. Insert two standard AAA batteries "C" in "B" (battery cartridge) in opposite orientation by the positive terminal (+ pole) facing upward/inward.
2. Tighten "D" (battery cap) screw onto "B" (battery cartridge).
3. Beware of the risk of fragile "A" (LED light bulb).
4. Or, visit <http://www.motranser.com> for related product information and video demonstration.

### M3, M5 & M6: How to Connect to 3-Way Syringe

Please refer to the figure and configuration as below:

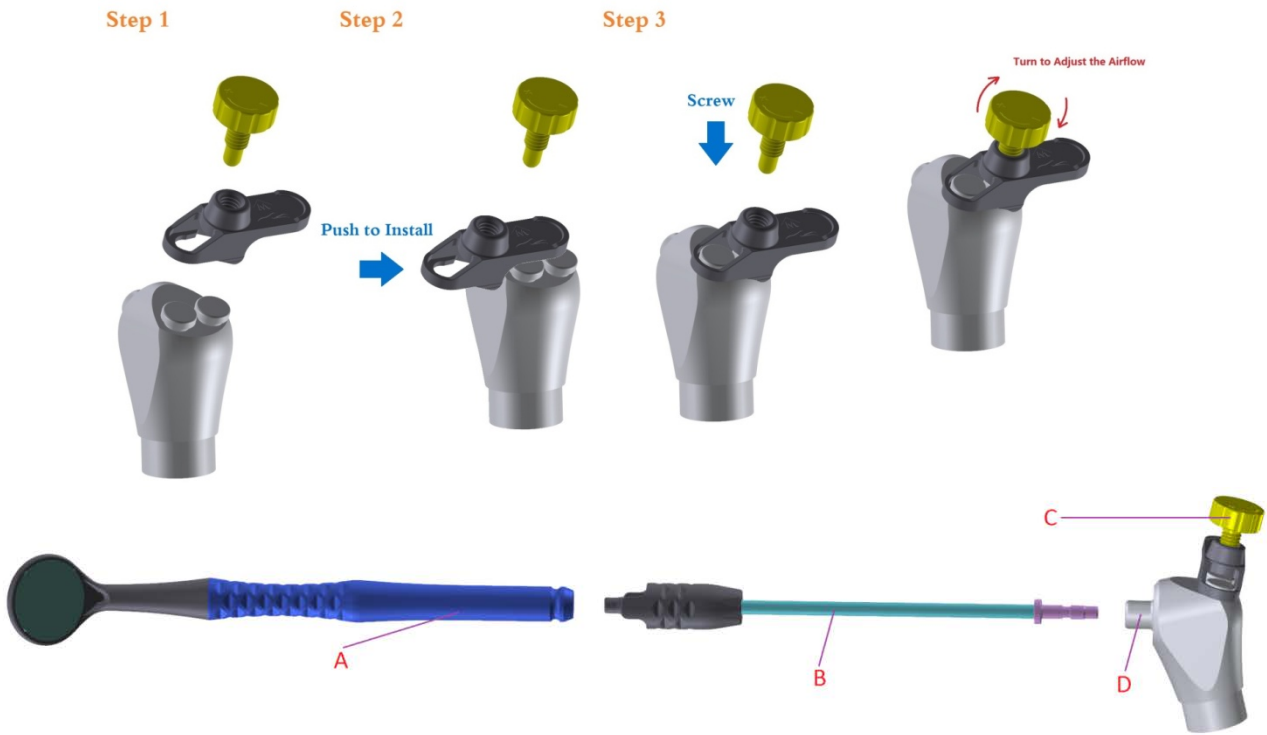


Simply insert "B" (3-Way Adapter) to "D" (3-Way Syringe) all the way in and ensure its good fixation.

### M3, M5 & M6: How to Install Air Pressure Regulator

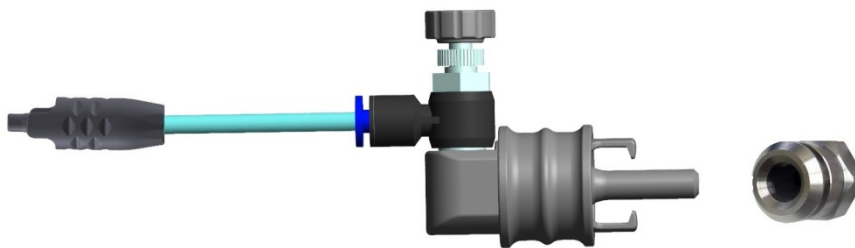
Please refer to the figures as below and the **M3 Breeze** REF **MBLM03** is comprised of four main components:

- A: AirClean Dental Mirror Handle
- B: 3-Way Adapter
- C: Air Pressure Regulator
- D: Your 3-Way Syringe (Motranser does not provide).

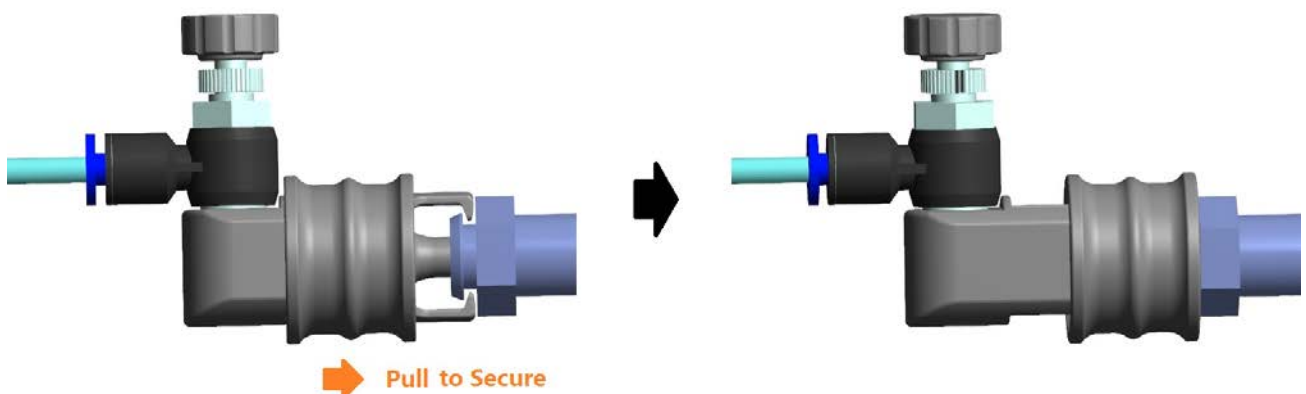


1. Screw (without locking) Air Pressure Regulator “C” in Your 3-Way Syringe (referring to “D”), referring to Step-1 to Step-3.
2. Air flow rate can be adjusted by rotating Air Pressure Regulator “C”, referring to Step4.
3. Insert AirClean Dental Mirror Handle “A” into the receiving end of 3-Way Adapter “B”.

**In addition, optional choices of ¼” and 3/8” QD Dental Unit Adapter are available.**

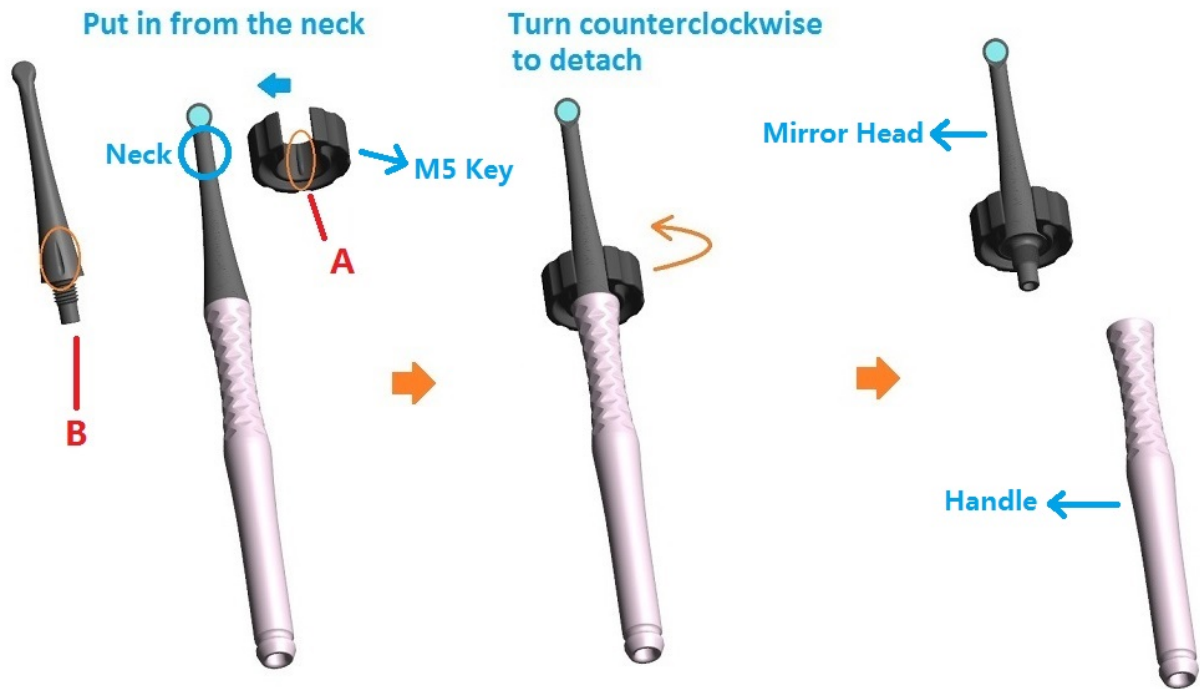


Please refer to the figures as below, and simply insert into dental unit socket and pull the cover to secure.



## M5: Replacement Procedure of Mirror Head

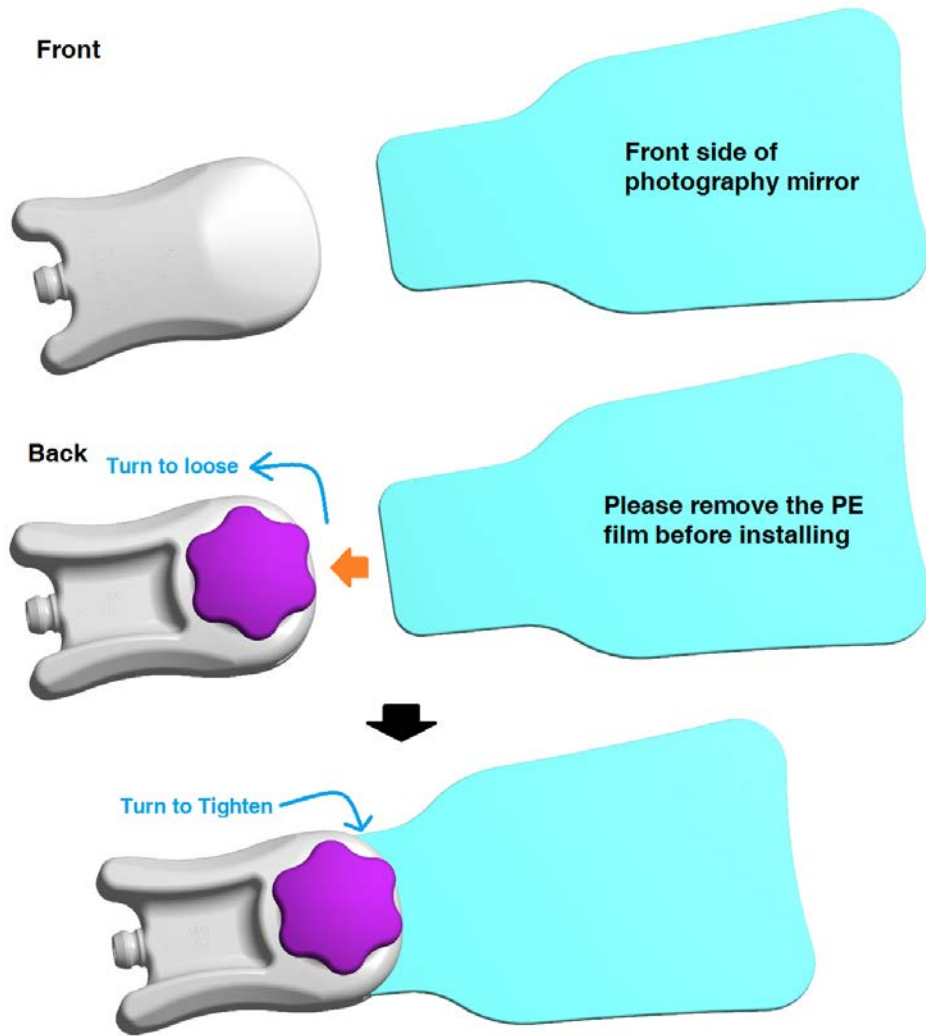
Please refer to the figures as below and follow steps 1 to 3:



1. Configure "Mirror Head" into "M5 Key" from the "Neck" position, and place M5 Key to the position where "A" in respect to "B".
2. Turn counterclockwise to separate the Mirror head from the Handle.
3. Screw New Mirror Head on the Handle and apply M5 Key to tighten.

## M6: Procedure of Mirror Replacement

Please refer to the figures as below and follow steps 1 to 3:

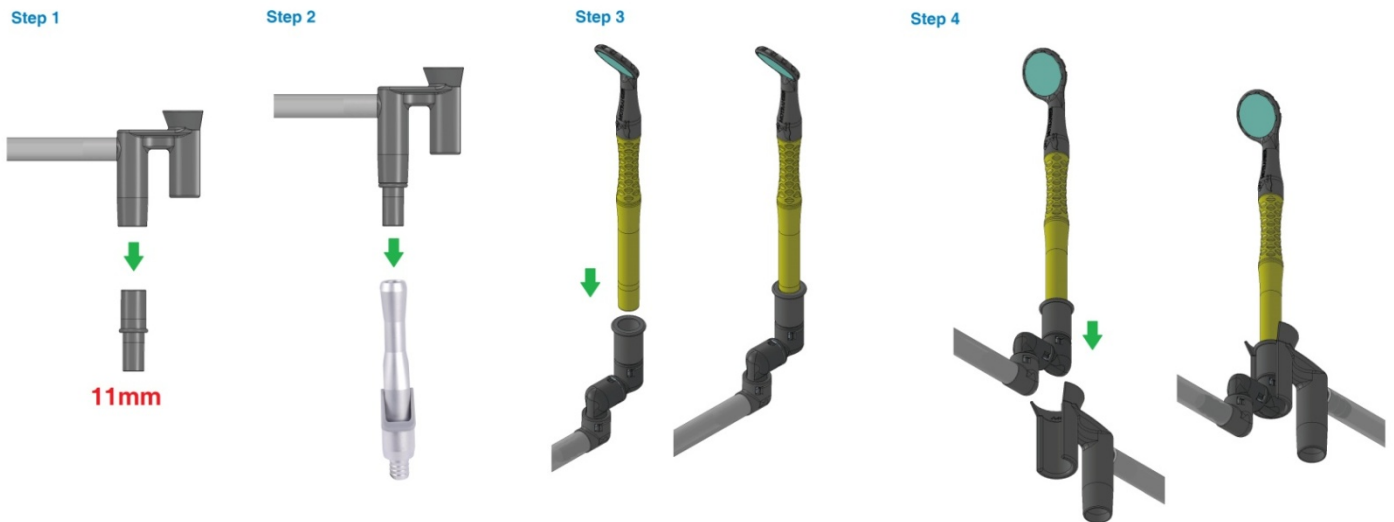


1. Remove the PE film prior to new mirror installation.
2. Rotate the screw counterclockwise to loose and then insert the mirror.
3. Rotate the screw clockwise to tighten and secure the mirror.

## How to install the M7 to your HVE suction

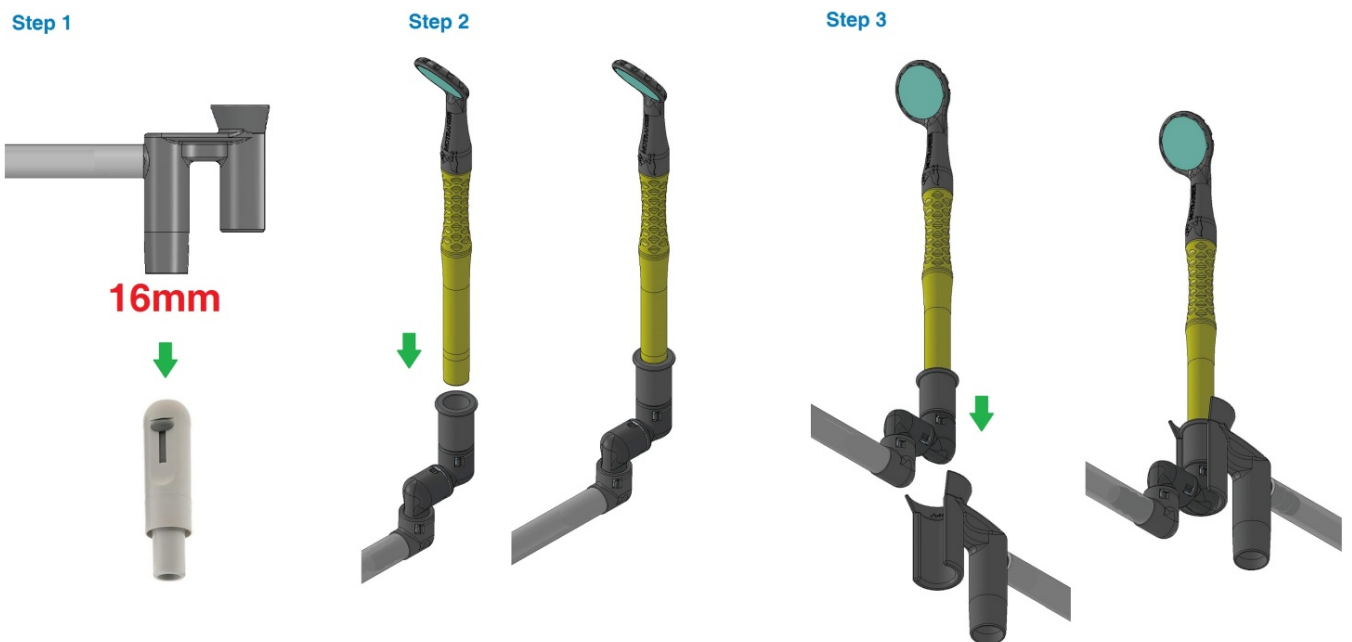
### To an U.S. Standard 11mm HVE

Please refer to the steps as below:



### To a Europe Standard 16mm HVE

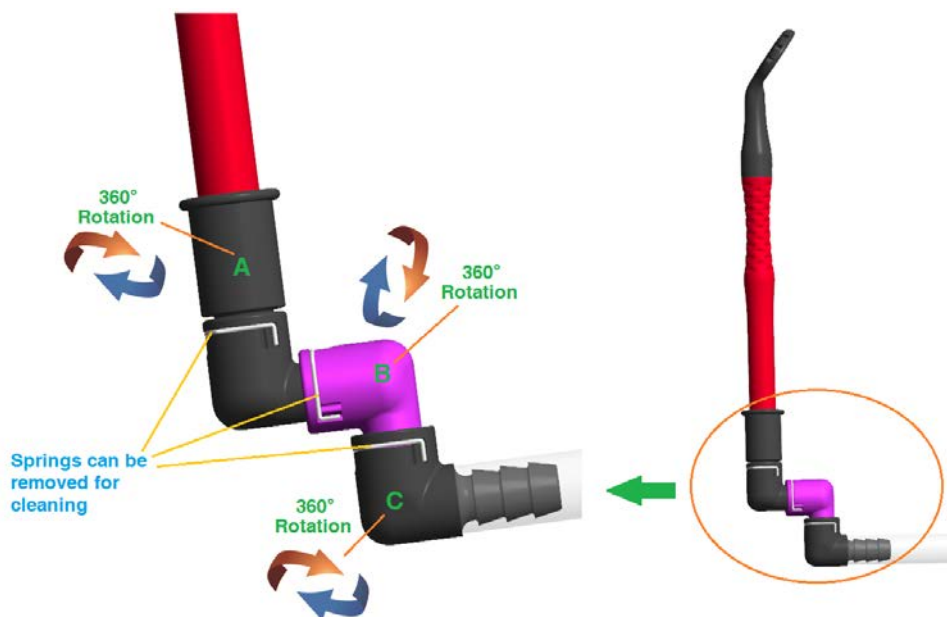
Please refer to the steps as below:





## 3D Rotation

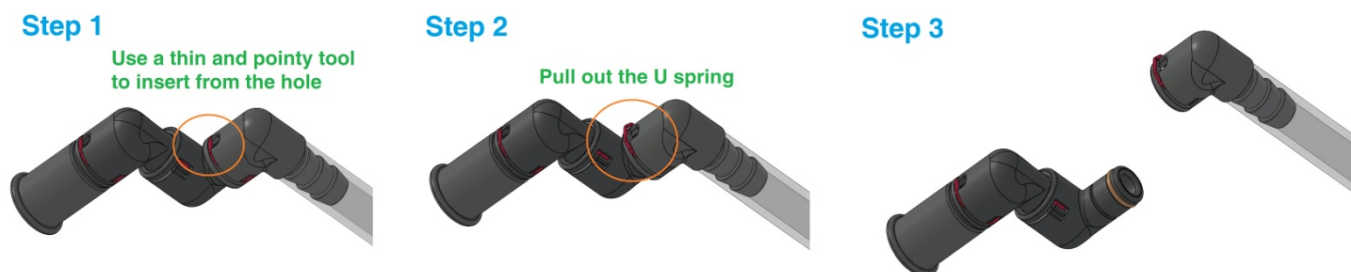
Please refer to the figures as below and follow steps 4 to 5:



4. All of “A”, “B”, and “C” are **designed** for 360 degrees free rotation. **The 3-axis joint design helps to reduce the drag on dentists’ hands.**
5. The springs in connection to “A”, “B”, and “C” are disassembled for cleaning, or applying silicone lubricant to the parts.

## How to disassemble 3-Axis Free Rotation Connector

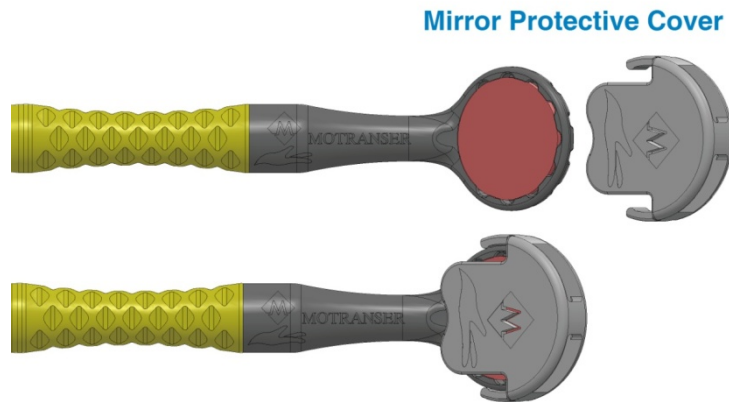
Please refer to the figures as below and follow steps 1 to 3:



1. **Use a thin and pointy tool** (ex: the other side of a bur of slow speed  $\Phi 2.35\text{mm}$ ) to insert from the hole.
2. Pull out the U spring.
3. The joints can be disassembled.

## Mirror Protective Cover

Please refer to the figure as below:



- Please put on the mirror protective cap for maximum mirror protection after use.

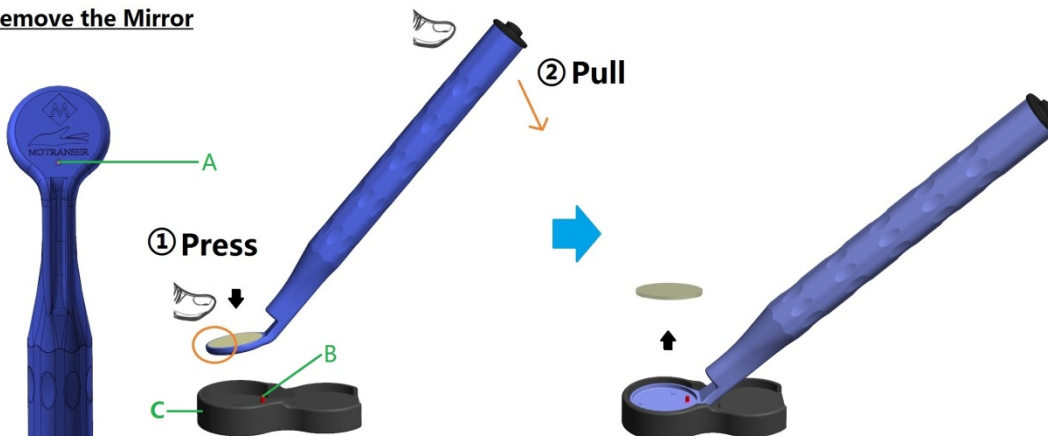
## Mirror Replacement Procedure for M1, M2, M3 & M7

Please refer to the figure and follow the steps as below:

A: pin hole

B: pin

### Remove the Mirror



### Remove the old mirror

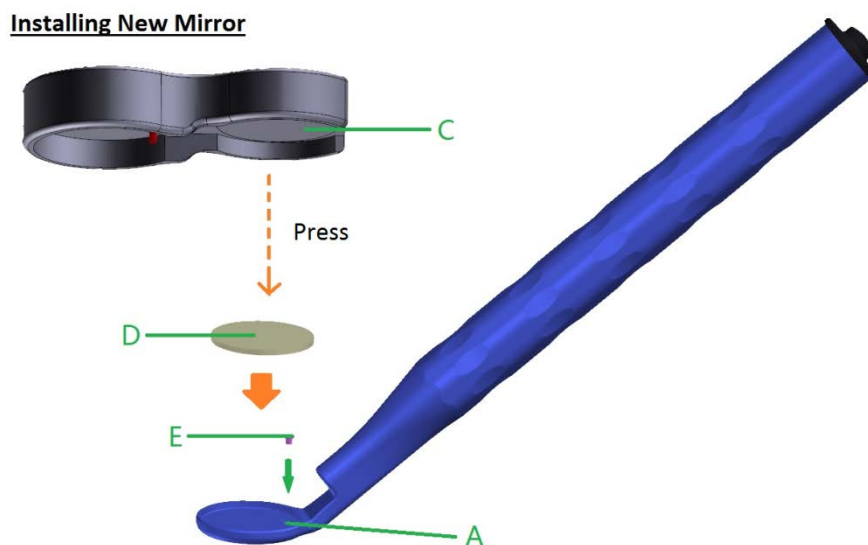
1. First, take away the **blue PE film** from new mirror and put it on the surface of the used mirror for safety precaution.
2. Align the hole "A" with the thimble "B" and press down in the direction of the C to push the mirror and the silicone plug out.

3. Tip: Use your thumb to softly press the part where the orange circle is while “A hole” meets “B thimble”, then softly pull the handle like step ② above.
4. Or, visit <http://www.motranser.com> for related product information and video demonstration.

### Install a new mirror

Please refer to the figure and follow the steps as below:

- A: pin hole
- C: thimble
- D: new mirror
- E: new plug



1. Please be sure of putting the Front Surface side of the new mirror facing upward.
2. Place “E” new plug and “D” new mirror in the desired position and press “C” toward “A”.
3. Press firmly to ensure the mirror is fully pressed into the socket and remove the **transparent film**.
4. Or, visit <http://www.motranser.com> for related product information and video demonstration.




# Maintenance

## User Guideline





<b>Dental Mirror (M1, M2, M3, M7)</b>	<ol style="list-style-type: none"> <li>1. Before any use, examine the mirror handle for cracks and/or other imperfections &amp; flaws.</li> <li>2. Be sure that the mirror has been fully pressed against the edge.</li> </ol>
<b>Light Source Module</b>	<ol style="list-style-type: none"> <li>1. Insert the light source module into the dental mirror handle and plug with the tail cap.</li> <li>2. After the insertion, use the dental mirror to observe in the mouth.</li> <li>3. The light source module is for direct/reflective illumination.</li> <li>4. If the light source module fails to illuminate, and ensures the batteries have been replaced, discontinue use and replace the Light Source Module.</li> <li>5. Please refer to P.10 and reassemble Light Source module.</li> </ol>
<b>Batteries</b>	<ol style="list-style-type: none"> <li>1. Use 2 standard AAA batteries.</li> <li>2. In considering of environmental protection, using rechargeable batteries is recommended.</li> <li>3. If the lamp does not illuminate or is dim, please replace the batteries.</li> <li>4. Refer to P.11 for the battery replacement.</li> </ol>
<b>3-Way Adapter</b>	<ol style="list-style-type: none"> <li>1. 3-Way Adapter is not suitable for autoclave.</li> <li>2. Please do not exceed 5kg/cm<sup>2</sup> air pressure.</li> </ol>
<b>M6 Handle</b>	Please make sure the screw is tightened.
<b>Mirror</b>	Please stop using the mirror if there were any cracks, and replace a new mirror immediately.
<b>Anti-fog Mirror</b>	Please immerse/soak the mirror in clean water for few seconds before use for better anti-fog effect.
<b>M7 Mirror Handle</b>	Please make sure the suction mirror handle and the suction tube are fully attached and tightened.

Or, visit <http://www.motranser.com> for related product information and video demonstration.

## Cleaning & Sterilization

<p><b>M1-M7 Dental Mirrors</b></p>	<p><b>Cleaning</b></p> <ol style="list-style-type: none"> <li>1. Please use a neutral detergent solution for washing and cleaning before sterilization.</li> <li>2. This product is suitable for ultrasonic cleaning.</li> <li>3. M3, M5, M6: Please use surface disinfectant wipes to clean <b>3 way adapter</b>. This PU tube is not suitable for high temperature sterilization.</li> </ol> <p><b>Sterilization</b></p> <ol style="list-style-type: none"> <li>1. <b>Important!</b> Please Steam Sterilize Only.</li> <li>2. Recommended Sterilization Parameters are as follows:</li> </ol> <table border="1" data-bbox="541 837 1281 1178"> <thead> <tr> <th></th> <th>Class N</th> <th>Class S</th> <th>Class B</th> </tr> </thead> <tbody> <tr> <td>Temp</td> <td>121°C (250°F)</td> <td>134°C (273°F)</td> <td>134°C (273°F)</td> </tr> <tr> <td>Sterilization Time</td> <td>≥15 mins</td> <td>≥3 mins</td> <td>≥3 mins</td> </tr> <tr> <td>Drying Time</td> <td>Optional</td> <td>Optional</td> <td>Optional</td> </tr> </tbody> </table>		Class N	Class S	Class B	Temp	121°C (250°F)	134°C (273°F)	134°C (273°F)	Sterilization Time	≥15 mins	≥3 mins	≥3 mins	Drying Time	Optional	Optional	Optional
	Class N	Class S	Class B														
Temp	121°C (250°F)	134°C (273°F)	134°C (273°F)														
Sterilization Time	≥15 mins	≥3 mins	≥3 mins														
Drying Time	Optional	Optional	Optional														
<p><b>Light Source Module</b></p>	<p><b>Please wipe the light source with dry soft cloth.</b></p> <p> <b>CAUTION</b> Do not sterilize the Light Source Module or batteries.</p> <p> <b>CAUTION</b> Do not immerse or soak the Light Source Module in any liquid.</p> <p> <b>CAUTION</b> Do not use wet cloth to clean the Light Source Module, to prevent possible electric leakage.</p>																

## Disposal

<b>Dental Mirror Handle</b>	Apply a final sterilization and recycle the plastic handle and mirror separately. 
<b>Mirror</b>	
<b>U Spring (M7)</b>	 SUS 316
<b>Light Source Module</b>	Light source module contains electronic components, and waste. Its disposal method complies with in accordance with applicable local, state and federal regulations.
<b>Batteries</b>	<p>In Taiwan (R.O.C), please call 0800-085717 or look up (<a href="http://recycle.epa.gov.tw">http://recycle.epa.gov.tw</a>) for instructions on how to recycle batteries.</p> <p>For users outside Taiwan (ROC), contact your local authorities on recycling procedures or go to <a href="http://www.rbr.org/">http://www.rbr.org/</a> for recycling information.</p>  Dispose of Properly

## Trouble Shooting

Parts	Problem	Solution
<b>Dental Mirror Handle (M1, M2, M3, M7)</b>	Mirror blur vision	<ol style="list-style-type: none"><li>1. Wash and clean mirror</li><li>2. Wipe the mirror surface with a new cotton pad</li><li>3. If the problem persist, please replace a new mirror</li></ol>
<b>Light Source Module</b>	No Light	<ol style="list-style-type: none"><li>1. Make sure the switch cap is screw on tightly</li><li>2. Install 2 new AAA batteries.</li><li>3. If no light illuminates, please contact your local distributor.</li></ol>
<b>3-Axis Free Rotation Connector</b>	Not Lubricate	Refer to P.16 to see direction of detach procedure and apply Silicone Grease.

## Warranty

All Motranser mirrors are guaranteed to be free from defects in material and workmanship when used for their intended dental purpose. All Motranser mirrors have a limited 1-year warranty, which only applies to the system components: air control system/valve, suction connection parts, supplied tubing, mirror holders, and LED light source. Consumables such as mirror handles, mirror heads, mirror lens, mirror cap covers are not covered by the warranty.

Motranser offers a warranty on all of its products based on the useful lifetime of the product. If you purchase a product that is determined to have a manufacturing defect, it will be exchanged if the product is within the stated warranty period for the product from the invoice date. Please your local dealer if you believe that any product you purchased has a manufacturing defect within the stated warranty period from the date of purchase. Any warranty is void if the product has been subject to misuse or abuse, or the proper sterilization instructions, or instructions for use, have not been followed.

## Warranty Exceptions

This warranty is void for Motranser instruments and products serviced by any person or facility other than the Motranser Instrument Repair Services. Any custom made, custom etched or neutralized products are not returnable. Warranties are not valid for Motranser instruments and products that prove defective as a result of improper care and cleaning or misuse such as improper installing of new mirrors to cause possible mirrors detached. Instruments or products that are damaged in fire, flood or other acts or disasters are also excluded from warranty.

Except as set forth in these Terms and Conditions, Motranser makes no other representations and warranties regarding its instruments or products, either expressed or implied. In addition, in no event will Motranser be liable for any incidental, special or exemplary damages or loss of profits in connection with the use of Motranser instruments and products.

## Questions & Information

For additional information, please contact your local MOTRANSER representative



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