



BA310/BA400/BA410

Multi Viewing System Instruction Manual

- MVH - 2 Two observers (Side ◀ ▶ Side)
- MVH - 3 Three observers (Side ◀ ▶ Side)
- MVH - 5 Five observers (Side ◀ ▶ Side for BA400/BA410)
- MVH - 2 Two observers (Face ▶ ◀ Face)

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To ensure correct usage, read this manual and the instruction manual specific to the microscope being utilized.



We are constantly endeavouring to improve our instruments and to adapt them to the requirements of modern research techniques and testing methods. This involves modification to the mechanical structure and optical design of our instruments.

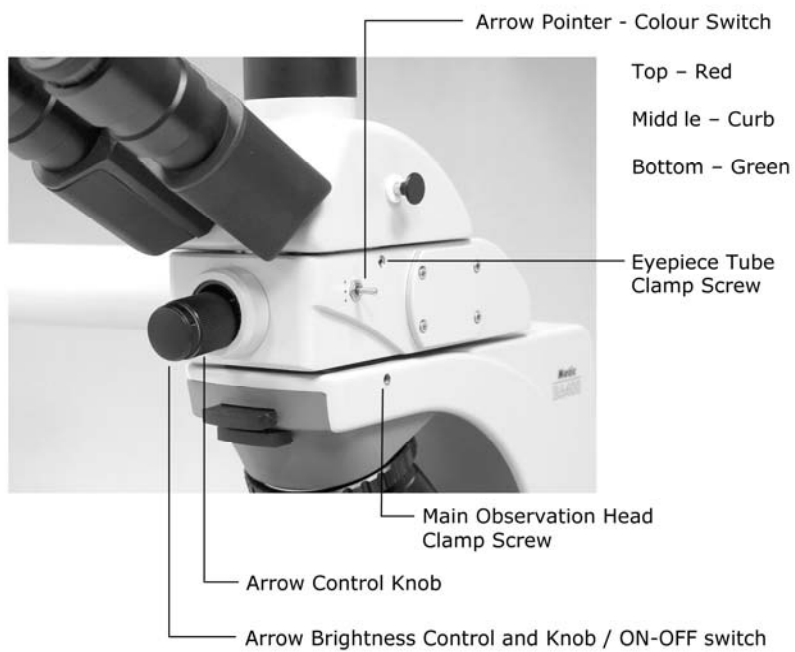
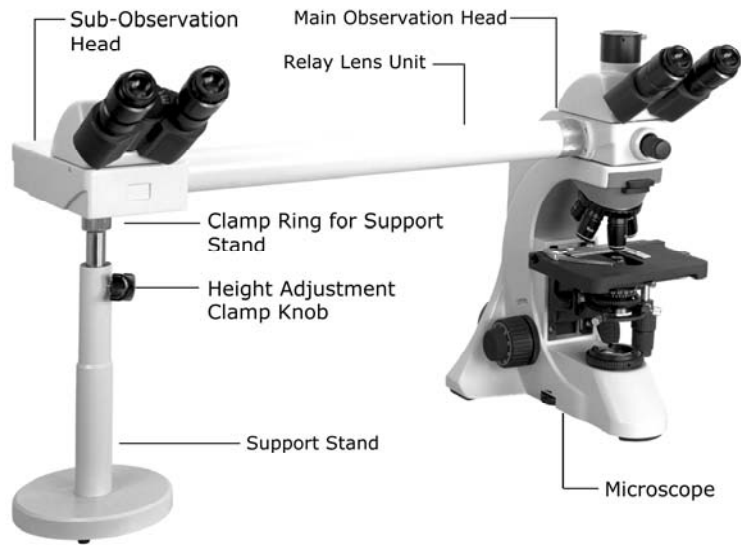
Therefore, all descriptions and illustrations in this instruction manual, including all specifications are subject to change without notice.

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I. Nomenclature

For MVH-2 (Side ◀ ▶ Side)





MVH-2 (Face ▶ ◀ Face)



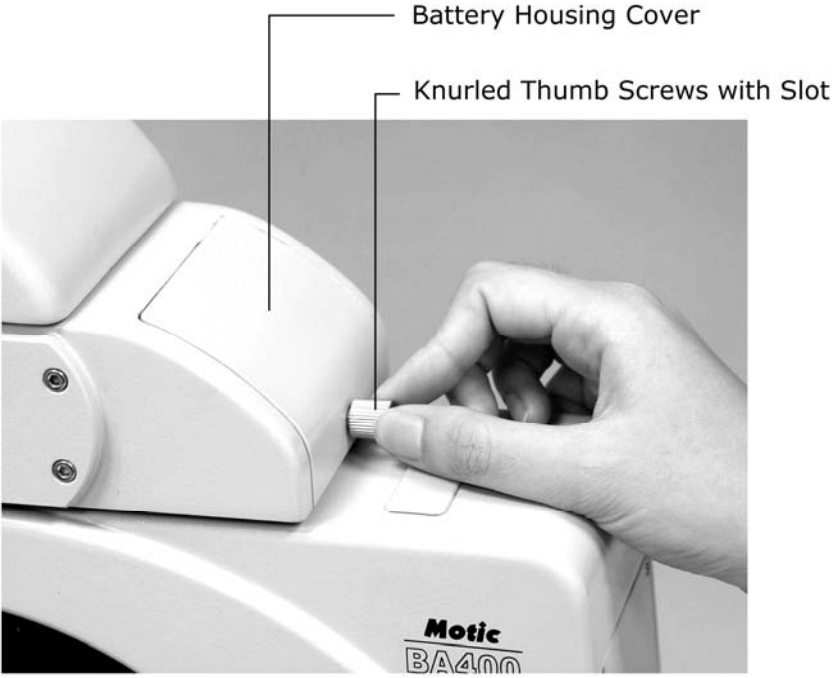
Relay Lens Unit Receptacle



AC Adapter Input Jack Socket



Relay Lens Unit Clamping Ring

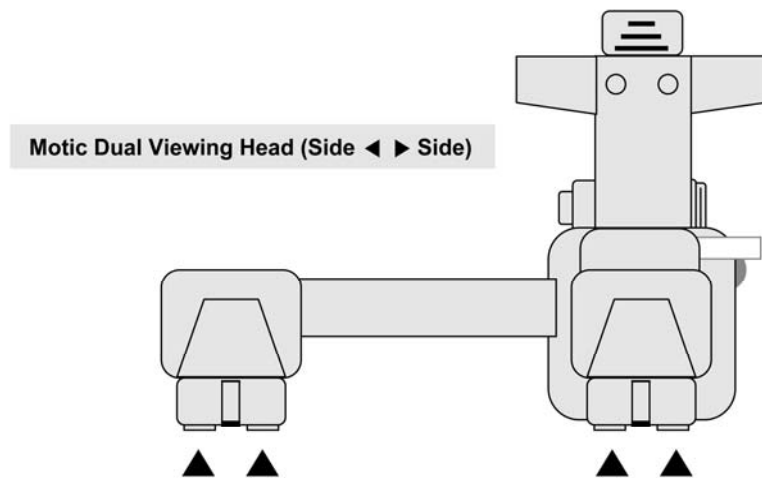


II. Assembly

Assembly for MVH-2 Two observers (Side ◀ ▶ Side)

The following drawing illustrates the configuration of the viewing attachment.

▲ ▲ Convey the image orientation of each field of view.

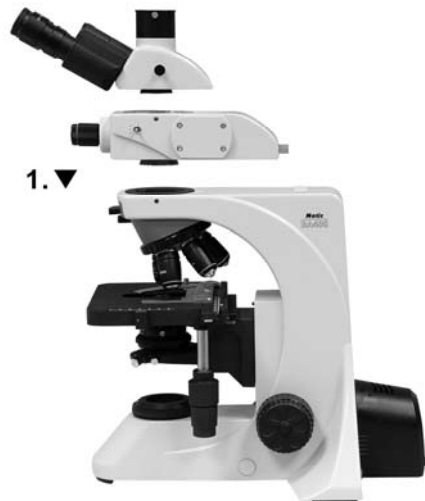


This viewing head configuration does not allow the attachment of additional intermediate parts.

Tools Needed: Allen Hex Wrench provided with the Viewing Head.

Steps in Assembly Process:

- Step 1.** Main Observation Head
- Step 2.** Sub-Observation Head
- Step 3.** Support Stand
- Step 4.** Eyepiece Tube Sub-Observation Head
- Step 5.** Eyepiece Tube Main Observation Head
- Step 6.** Input Plug for the Arrow Illuminator
- Step 7.** AC Adapter



Step 1. Main Observation Head

Install the main observation head with the arrow control knob facing the main user.
Fasten with the clamp screw located on the right hand side of the microscope arm.



Step 2. Sub-Observation Head

Slot in the relay lens unit (with sub-observation head attached) into the relay lens opening on the main head. Secure with the relay lens unit clamping ring.

The relay lens unit can be slot in either side of the main observation head



Step 3. Support Stand

- Adjust the height of the support stand to ensure the **main head** and the **sub-observation head are horizontal** when attached.
- Release the height adjustment clamp knob, and let the centre rod float up with the aid of the built-in spring.
- Adjust the height of the centre rod to bring the spherical surface of the rod in coincidence with the spherical base of the sub-observation head.
- Tighten the height adjustment clamp knob while maintaining the **horizontal alignment of the sub-observation head**.
- Tighten the support stand clamp ring to the spherical base of sub-observation head



Step 4. Binocular Tube Sub-Observation Head

Mount the Binocular tube on the sub-observation head and fasten in position using the eyepiece clamp screw.

Step 5. Trinocular / Binocular Tube Main Observation Head

Mount the Trinocular / Binocular tube on the Main observation head and fasten it in position, using eyepiece clamp screw.

Step 6. Input Plug for the Arrow Illuminator

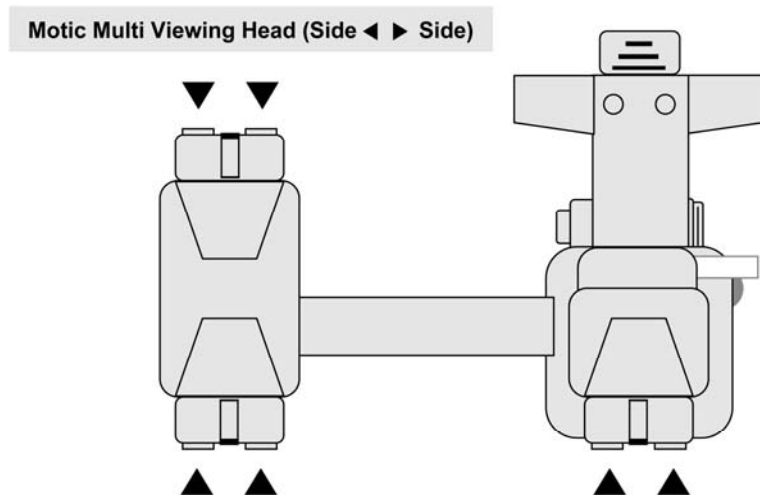
Step 7. AC Adapter

- Connect the AC adapter output jack plug to input jack socket on the left side of the main observation head
- Plug AC adapter into the power source receptacle

Assembly for MVH-3 Three observers (Side ◀ ▶ Side)

The following drawing illustrates the configuration of the viewing attachment.

▲ ▲ Convey the image orientation of each field of view.



This viewing head configuration does not allow the attachment of additional intermediate parts.

Tools Needed: Allen Hex Wrench provided with the Viewing Head.

Steps in Assembly Process: MVH-3 Three observers (Side ◀ ▶ Side)

Step 1. Main Observation Head

Step 2. Sub-Observation Head

Step 3. Support Stand

Step 4. Binocular Tube Sub-Observation Head

Step 5. Trinocular / Binocular Tube Main Observation Head

Step 6. Input Plug for the Arrow Illuminator

Step 7. AC Adapter

Step 1. Main Observation Head

Please refer to Assembly instruction under MVH-2

Step 2. Sub-Observation Head

Please refer to Assembly instruction under MVH-2

Step 3. Support Stand

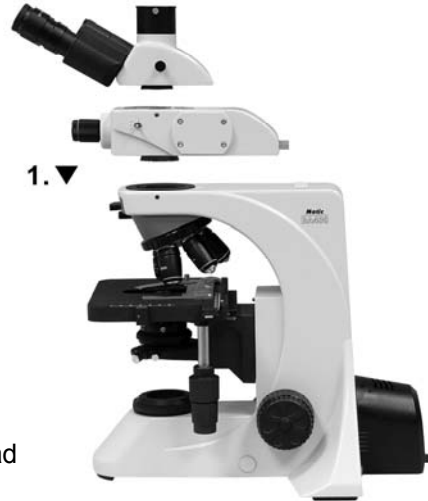
Please refer to Assembly instruction under MVH-2

Step 4. Binocular Tubes Sub-Observation Head

Mount the Binocular tubes on the sub-observation head and fasten in position using the clamp screw.

Step 5. Trinocular / Binocular Tube Main Observation Head

Mount the Trinocular / Binocular eyepiece tube on the Main observation head and fasten it in position using clamp screw.



Step 6. Input Plug for the Arrow Illuminator

Please refer to Assembly instruction under MVH-2

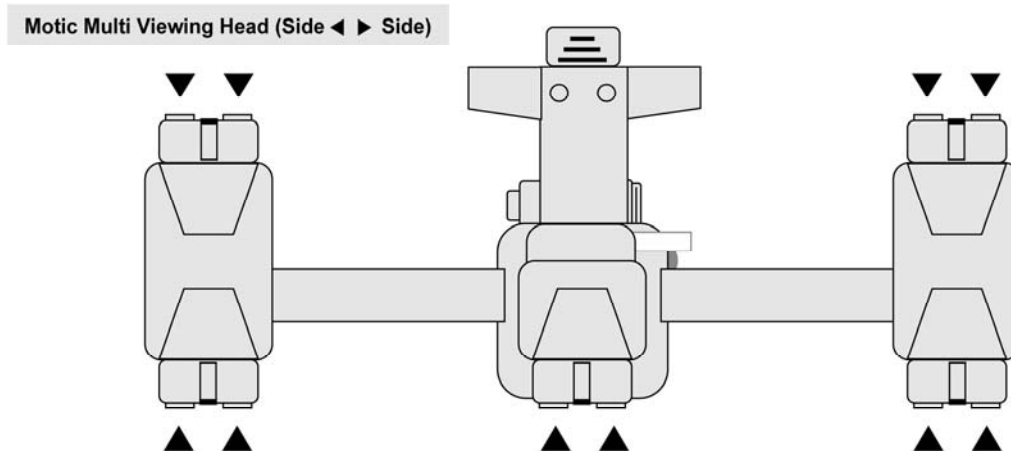
Step 7. AC Adapter

Please refer to Assembly instruction under MVH-2

Assembly for MVH-5 Five observers (Side ◀ ▶ Side)

The following drawing illustrates the configuration of the viewing attachment.

▲ ▲ Convey the image orientation of each field of view.



This viewing head configuration does not allow the attachment of additional intermediate parts.

Tools Needed: Allen Hex Wrench provided with the Viewing Head.

Steps in Assembly Process: MVH-5 Five observers (Side ◀ ▶ Side)

Step 1. Main Observation Head

Step 2. Sub-Observation Head

Step 3. Support Stand

Step 4. Binocular Tubes Sub-Observation Head

Step 5. Trinocular / Binocular Tube Main Observation Head

Step 6. Input Plug for the Arrow Illuminator

Step 7. AC Adapter

Step 1. Main Observation Head

Please refer to Assembly instruction under MVH-2

Step 2. Sub-Observation Head

Slot in the relay lens unit (with sub-observation head attached) into the relay lens opening on either side of the main head. Secure with the relay lens unit clamping ring.

Step 3. Support Stand

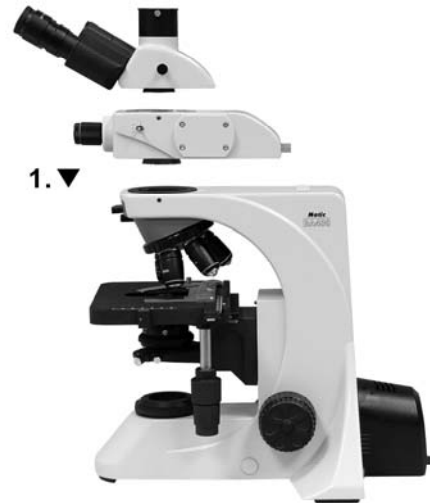
Please refer to Assembly instruction under MVH-2

Step 4. Binocular Tubes Sub-Observation Head

Mount the Binocular tubes on the sub-observation heads and fasten in position using the clamp screw.

Step 5. Trinocular / Binocular Tube Main Observation Head

Mount the Trinocular / Binocular eyepiece tube on the Main observation head and fasten it in position using clamp screw.



Step 6. Input Plug for the Arrow Illuminator

Please refer to Assembly instruction under MVH-2

Step 7. AC Adapter

Please refer to Assembly instruction under MVH-2

Assembly for MVH–2 Two observers (Face ▶ ◀ Face)

Tools Needed: Allen Hex Wrench provided with the Viewing Head.

Steps in Assembly Process:

Step 1. Optical Bridge Unit

Step 2. Support Stand

Step 3. Binocular Tube Sub-Observation Head

Step 4. Trinocular / Binocular Tube Main Observation Head

Step 5. Input Plug for the Arrow Illuminator

Step 6. AC Adapter

Step 1. Optical Bridge Unit

Slot in the optical bridge unit (with sub-observation attached) into the microscope body with the arrow control knob facing the main user. Fasten with the clamp screw located on the right hand side of the microscope arm.



Step 2. Support Stand

Please refer to Assembly instruction under MVH-2

Step 3. Binocular Tubes Sub-Observation Head

Mount the Binocular tubes on the sub-observation heads and fasten in position using the clamp screw.

Step 4. Trinocular / Binocular Tube Main Observation Head

Mount the Trinocular / Binocular eyepiece tube on the Main observation head and fasten it in position using clamp screw.

Step 6. Input Plug for the Arrow Illuminator

Please refer to Assembly instruction under MVH-2

Step 7. AC Adapter

Please refer to Assembly instruction under MVH-2



Rechargeable Batteries - Nickel-Metal Hydride (NiMH)

No memory effect! - NiMH's do not develop a 'memory' like NiCad rechargeable batteries. The memory effect occurs when a rechargeable battery is recharged before it is fully depleted. Over time, the battery will have to be re-charged much sooner than before.

Install new batteries according to the specific instructions and warnings provided.

- **Remove the battery cover by partially unscrewing the knurled thumb screws with a coin or screwdriver.**
- Motic instructions for replacing the new batteries may be slightly different than the instructions provided by the manufacturer of the batteries. When in doubt, contact your local Motic representative for assistance.
- For the first time the battery is charged, charge overnight or for **a minimum of 10 hours**. The viewing head can be used during the charging process.
- Do not remove the viewing head from AC Power until the first charge is complete. This is critical to the overall life of your battery.

CAUTION: All batteries can explode causing injury if shorted or mishandled. Take precautions to protect yourself when installing. Always charge batteries with a charger designed for your battery size. Always consult the manufacturer of your equipment for proper installation, handling, safety, and charging instructions. When in doubt, seek the help of a professional technician for installation and charging.

III. Observation

The sub-head observer will view the same image as the main observer if the main observer has adjusted the diopter settings according to the microscope instruction manual.

Diopter adjustment

- Project the arrow into the field of view.
- The main observer should set the diopter adjustment rings for both the left and right eye to bring the arrow into focus.
- After the main observer has brought the arrow into focus, the secondary observer should bring the image of the arrow into focus.
- This completes the diopter setting.

Selecting the Pointer Colour

- Using the pointer colour switch, select a colour which is visibly distinguishable from the specimen colour.

IV. Troubleshooting

- | | | |
|---|---|---|
| The field of view of the sub-observation head is cut off. | ▶ | Adjust the height of the support stand so that the main head and the sub-observation head are horizontal when attached. |
| Specimen and arrow are not simultaneously focused. | ▶ | Adjust the diopter settings refer to Diopter adjustment. |
| The arrow is not visible when pointer is used. | ▶ | The pointer colour switch is in intermediate position. |
| The arrow is not visible when pointer is used. | ▶ | Allow the battery to charge overnight. |

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Motic[®]

NO.: 1300901106911

Motic Incorporation Ltd. (Hong Kong)

Rm 2907-8, Windsor House, 311 Gloucester Road, Causeway Bay, Hong Kong Tel: 852-2837 0888 Fax: 852-2882 2792

Motic Instruments Inc. (Canada)

130-4611 Viking Way, Richmond, B.C., V6V 2K9, Canada Tel: 1-877-977 4717 Fax: 1-604-303 9043

Motic Deutschland GmbH (Germany)

Christian-Kremp-Strasse 11, D-35578 Wetzlar, Germany Tel: 49-6441-210 010 Fax: 49-6441-210 0122

Motic Spain, S.L. (Spain)

Poligon Industrial Les Corts, Camí del Mig, 112 08349 Cabrera de Mar, Barcelona Spain Tel: 34-93-756 6286 Fax: 34-93-756 6287

Website: <http://www.motic.com>

E-mail: info@speedfair.com

Motic China Group., Ltd. (China)

Motic Building, Torch Hi-Tech Industrial, Development Zone, Xiamen P.R.C. Tel: 86-0592-562 7866 Fax: 86-0592-562 7855

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