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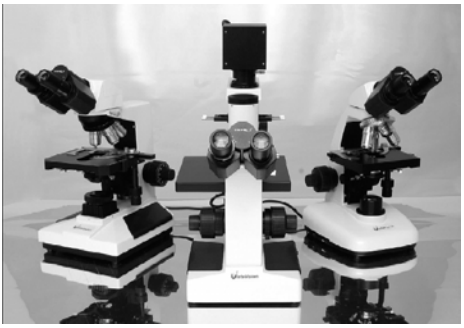
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VWR™ VistaVision™ User Guide



Upright Compound Microscope

Models

82026-614 & 82026-622

VistaVision

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Congratulations and Thank You for your purchase of a

VWR VistaVision Microscope

This precision instrument has been designed to require a minimum of optical and mechanical maintenance. Its excellent design assures years of high quality, reliable service. We recommend that you read this entire manual carefully before beginning to use the instrument.

WARNING

PLEASE DISCONNECT PLUG FROM THE MAIN SOCKET BEFORE REMOVING THE BOTTOM PLATE, OPENING THE LAMP REPLACEMENT DOOR, OR REMOVING THE LAMP HOUSING.

WARNING

THE POWER CORD PROVIDED WITH THE EQUIPMENT HAS A GROUNDED PLUG. ALWAYS USE THE POWER CORD WITH A PROPERLY GROUNDED WALL OUTLET.

DO NOT EXPOSE THE INSTRUMENT TO HIGH TEMPERATURE OR HUMIDITY. AVOID USING THE INSTRUMENT IN EXTREMELY DUSTY CONDITIONS

OPERATING TEMPERATURE: 5 DEGREE C. TO 35 DEGREE C.
OPERATING HUMIDITY: 20% TO 80% @ 25 DEGREE C.

CAUTION: NEVER IMMERSE THE INSTRUMENT IN WATER OR SOLVENT

CAUTION: DO NOT PUT ANY FOREIGN OBJECTS IN THE FRAME OR INTO ANY MOVING MECHANICAL PARTS

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List of Contents

Frame	Abbe Condenser
Binocular Body or Monocular Body	Two Filters: Blue and Frosted
10X Eyepieces(2)	Immersion Oil
4X Semi-Planachromatic Objective	Spare Halogen Bulb
10X Semi-Planachromatic Objective	Spare Fuse
40X Semi-Planachromatic Objective	Dustcover
100X Semi-Planachromatic Objective	Manual

Getting Started

This user guide is written on the assumption that it will be used by advanced students and experienced microscopists. It covers the essential adjustments and controls of VWR VistaVision microscopes. No attempt has been made to include fundamentals of microscopy. Read this user guide prior to unpacking the microscope. After assembling the instrument, re-read the manual and become familiar with all adjustments and functions before using your new microscope.

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Component

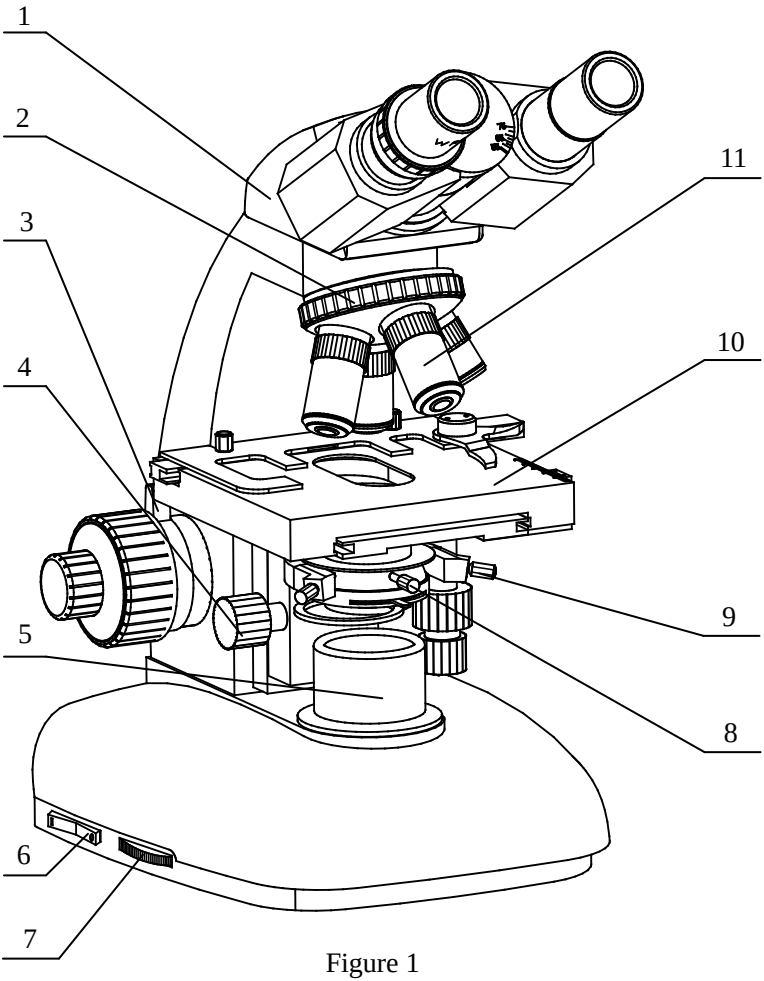


Figure 1

1. Binocular Body 2. Nosepiece 3. Up Stop 4. Condenser Adjustment 5. Lamp Housing 6. Power Switch 7. Brightness Control 8. Condenser Lock Screw 9. Condenser Centering Screw 10. Stage 11. Objective

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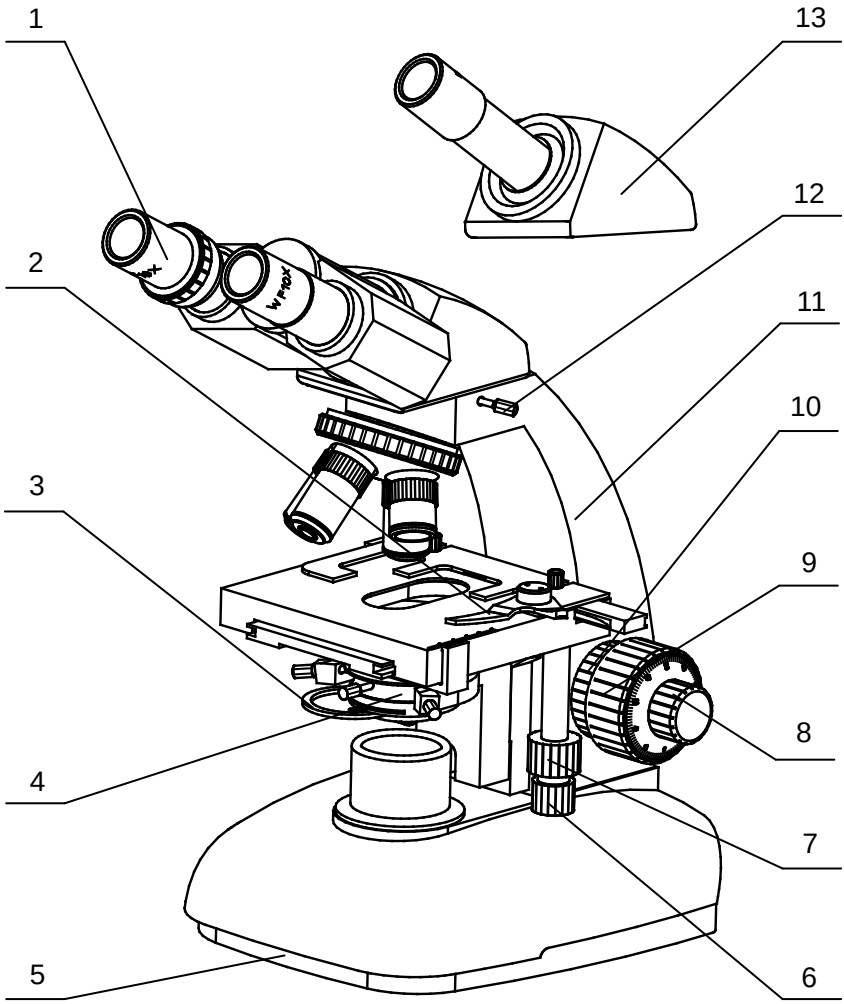


Figure 2

1. Eyepiece 2. Slide Holder 3. Filter Holding Tray 4. Iris Diaphragm 5. Base 6. Transverse Adjustment 7. Longitudinal Adjustment 8. Fine Focus Control Knob 9. Coarse Focus Control Knob 10. Focus Tensional Adjustment 11. Frame 12. Thumbscrew 13. Monocular Body

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Technical Specifications

Body: Inclined 30°, able to rotate a full 360°, 53mm to 75mm interpupillary adjustment. Left Eye diopter adjustment of -5 to +5.(Binocular only)

Nosepiece: Quintuple ball-bearing reversed nosepiece with positive click stops and smooth operation.

Eyepieces: 10X Plan wide field, Focal Length 25mm, Field Φ18mm.

Stage: 135mm X 125mm, range of motion 75mm X 34mm. Integrated mechanical stage with vernier, Low-position Coaxial Control Knobs. Removable spring clip slide holder.

Focus Mechanism:

Adjustable Tension Control to prohibit drift and Adjustable Up-Stop to protect slides, specimen and objective lenses; Coaxial coarse and fine adjustments with dial markings at 2μm increments.

Condenser: 1.25 N.A. Abbe Condenser with iris diaphragm. Rack and pinion focusing

Illumination: 20 watt, 6 volt Halogen bulb with electronic dimmer.

Semi-plan Achromatic Objective Specifications

Magnification	Numerical Aperture	Working Distance (mm)
4X	0.10	23.1
10X	0.25	4.1
40X	0.65	0.6
100X（oil）	1.25	0.38

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Setup Instructions

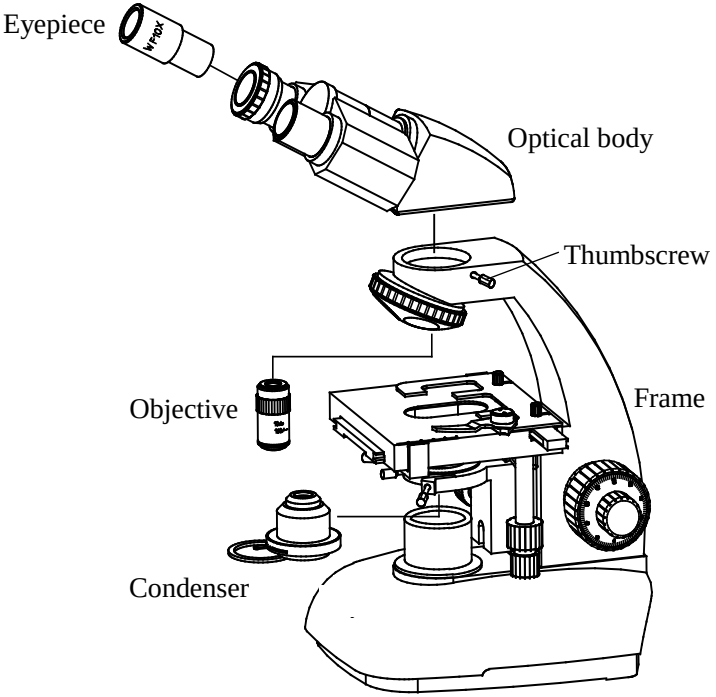


Figure 3

1. Remove all parts from their packing materials.
2. Loosen the thumbscrew and install the optical body to the frame by removing its dust cap and inserting the dovetailed flange on the underside of the optical body into the frame. Secure optical body with thumbscrew. DO NOT RELEASE THE OPTICAL BODY FROM YOUR GRASP UNTIL IT IS FIRMLY SECURED TO THE FRAME.
3. Install the objectives into the nosepiece.
4. Remove the dust caps from the eyetubes in the Optical Body and insert eyepiece into the Optical Body.
5. Connect the power cord to a suitable power supply.

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Basic Operation

1. Illumination Controls

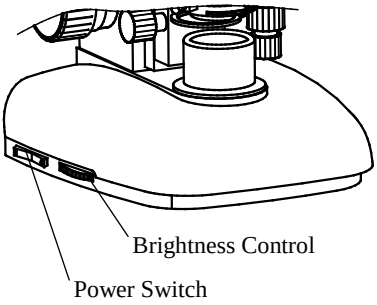
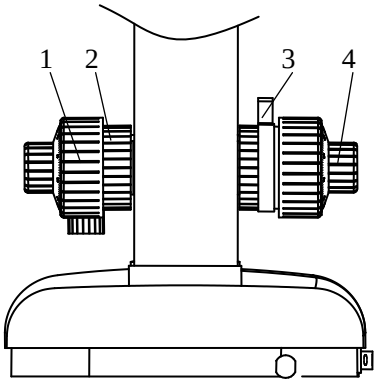


Figure 4

1) The power switch to the illuminator and the brightness control are located on the base. The electrical system is fuse protected and the fuse holder located on the bottom of frame.

2) Turn on the light with the power switch, see Figure 4. If the light does not appear to be ON, check the brightness control to see if it's on a sufficiently low setting.

2. Focusing Controls



1 Coarse Adjustment

2 Focus Tension

3 Up Stop

4 Fine Adjustment

Figure 5

1) **Focusing adjustment** is accomplished by using the large coarse adjustment knobs located comfortably on each side of the frame. Fine adjustment is accomplished by using the smaller knobs located on the same focus shaft. This coaxial arrangement allows for easy, precise adjustment without drift or discomfort.

2) **Focus Control** Turning either of the coarse focus control knobs will raise or lower the stage. The smallest graduation on the fine adjust knob index scale is 2μm of vertical.

3) **Focus Tension Adjustment** The tension of the coarse focus is adjustable and preset at the factory for ease of use. If you wish to adjust the coarse focus tension, turning the ring toward the rear of the

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microscope increases the tension, and toward the front of the microscope loosens it. Tension is too high if you experience physical discomfort

4) **Pre-focusing or Focus Stop Control** Use of this feature will insure that the longer objectives don't contact the stage or specimen when using the microscope. Its use also simplifies focusing. After focusing on the specimen with the coarse adjustment, rotation of the lever toward the front of the microscope will set an upper limit on the coarse adjustment movement. After changing specimens or objectives, focusing is easily accomplished by rotating the coarse adjustment knob to reach the pre-focused position, then making fine adjustments with the fine adjustment knob. Focusing movement with the fine adjustment knob isn't affected by using the pre-focusing lever

3. Interpupillary and Diopter Adjustments

1) **Diopter Adjustment** Proper correction for individual vision is accomplished via the diopter adjustment located at the left eyepiece, see Figure 6. Using the 40X objective, close your left eye and bring an image into focus with your right eye only. Once the image is well focused, make fine adjustments with the diopter adjustment ring to correct for your vision.

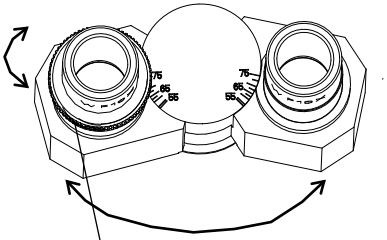


Figure 6

2) **Proper interpupillary distance,** or the distance between eyepieces, is crucial to the comfort of the user. Adjusting the interpupillary distance is accomplished through a "folding" action of the optical head, at Figure 6, allowing for quick and easy adjustment

4. **Mechanical Stage Controls** – The mechanical stage, see Figure 7, with Ultra-Low position control knobs for ease of use, consists of three parts:

1) The smaller knob for transverse adjustment

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2) The larger knob for longitudinal adjustment

3) The slide holder. When using the slide holder, first lower the stage, then push the spring loaded chrome handle towards the rear and push the slide into position, then gently release the handle, securing the slide into position.

Note: the slide holder can be easily removed by loosening the two thumbscrews, then sliding the holder toward the front to disengage.

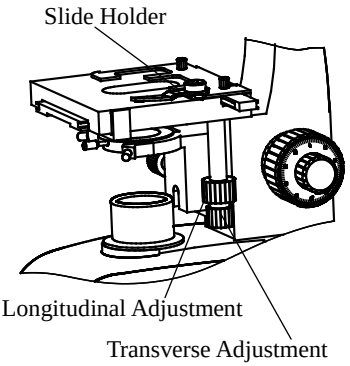


Figure 7

5. **Condenser Components** – are located below the stage as follows, see Figure 8: Abbe condenser; its Mounting Ring with lock screw and two large centering screws at either side for adjusting condenser/iris assembly in the optical center of the light path; the adjustment knob for raising and lowering the condenser. Below the Abbe Condenser is a circular filter tray to hold the filters.

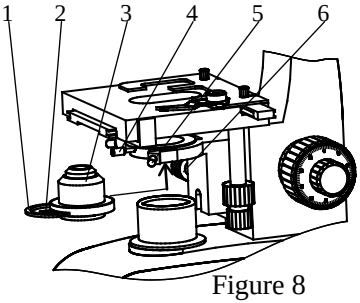


Figure 8

1 Filter Tray

2 Iris Diaphragm Control Lever

3 Condenser

4 Condenser Set Screw

5 Condenser Centering Screw

6 Condenser Adjustment

6. **Condenser Alignment** – to center the Abbe Condenser in the optical light path, see Figure 8:

1) Close the Condenser Iris Diaphragm

2) Observe the image using the 4X objective and you will see an image similar to Figure 9 A. The image may be out of focus and out of center

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3) To center the iris opening in the field of view, use the two centering screws at each side of the Abbe Condenser mounting ring, see Figure 9 B.

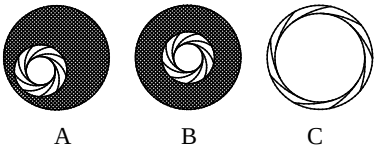


Figure 9

4) To focus the iris opening, adjust the coarse focus and the Abbe Adjustment Knob until the image is as crisp as possible against the darker field of view.

5) Once the image is in focus and centered in the field of view, open the Condenser Iris Diaphragm until the image is almost as large as the field of view, see Figure 9 C.

Changing The Light Bulb

1. Disconnect the power plug and **wait to be sure the bulb is cool.** On the bottom of the frame there is a hinged door for replacing the lamp bulb. The lamp door retaining screw is to the front of the frame, and the lamp centering screw is located in the middle of the lamp door. Open the lamp door using the lamp door retaining screw as shown in Figure 10.

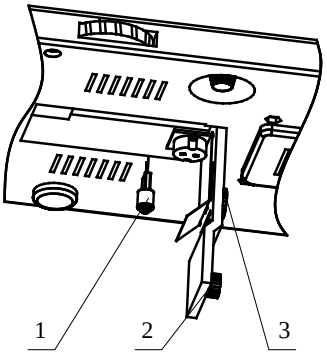


Figure 10

1. Lamp
2. Lamp Door Retaining Screw
3. Lamp Centering Screw

2. Pull the old lamp straight out of the socket. Always use a clean cloth or lens tissue to prevent grease or oil getting on the glass of the new bulb. Insert the lamp pins straight into the socket. Close the lamp door and center the lamp in the field of view using the lamp centering screw at the center of the lamp door, see Figure 10.

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Preventative Maintenance

1. **Cleaning frame and stage**

   Disconnect the plug from mains socket before cleaning. Clean the frame and stage with a soft cloth moistened with a mild detergent solution. Be sure the instrument is dry before using.

2. **Cleaning optical parts**

   Microscope eyepieces and objectives are coated.

   They should not be wiped while dry as dirt or dust may scratch the coating. It is best to remove parts from the frame prior to cleaning. Always blow loose dust away first. Use cotton swabs or lens tissue moistened with a lens cleaner or a small amount of alcohol, then wipe the surface clean with a good quality lens tissue. Solvents such as Xylene should NOT be used as cleaner.

3. **Cleaning 100X oil immersion lens**

   The immersion oil should be removed from the lens at the end of each workday using cotton swabs or lens tissue moistened with a lens cleaner or a small amount of alcohol.

DO NOT DISASSEMBLE OBJECTIVE LENSES.

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