



# Microscopes



Operation Manual

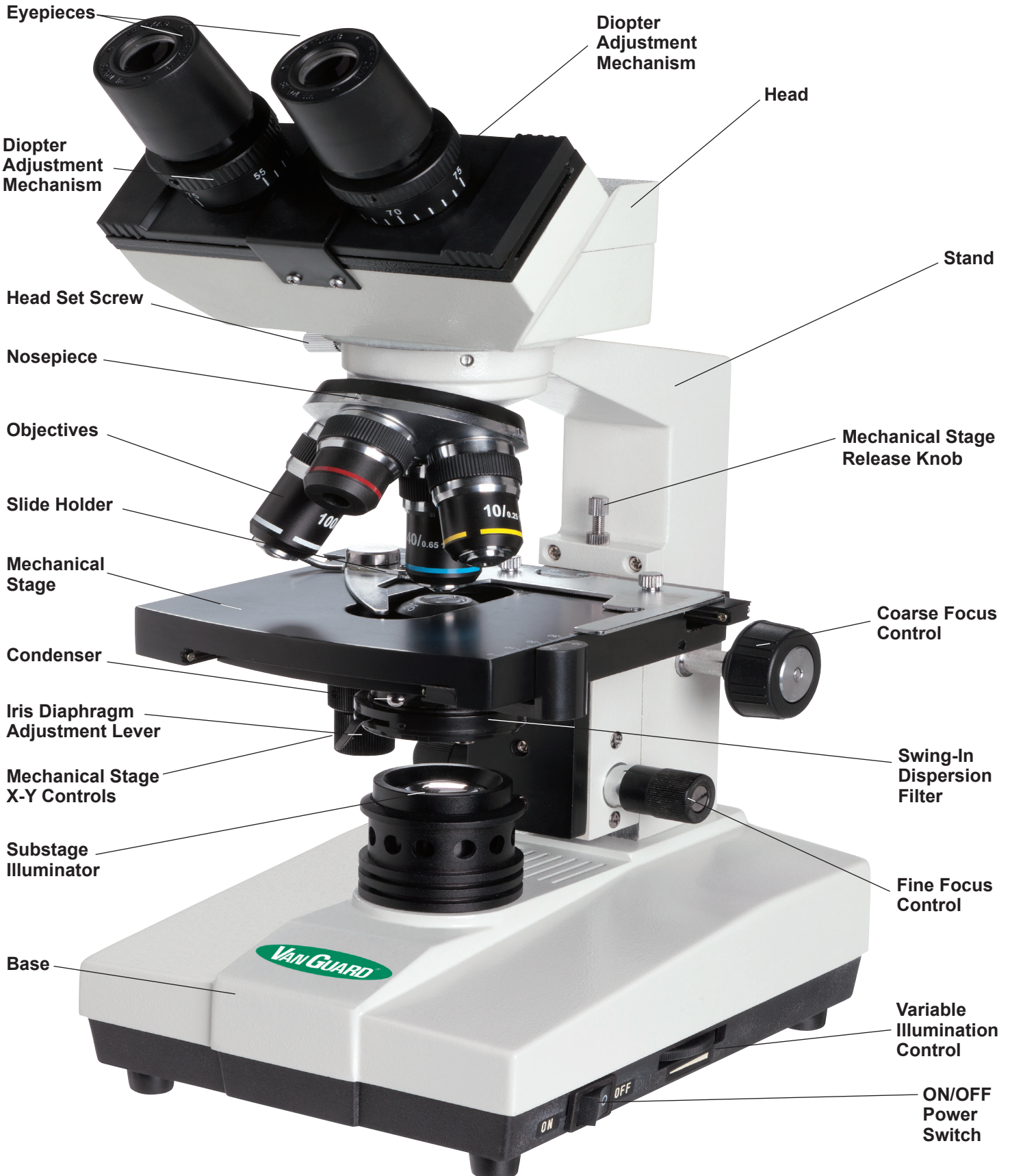
1100AML Series

Covering Models:

1111AML, 1112AML,  
1113AML & 1115AML



# 1100AML Series Parts





# General Operation

Thank you for purchasing a VanGuard Microscope. With the user in mind, VanGuard Microscopes are built from modern designs and should provide a lifetime of reliable performance. We recommend you read this entire manual carefully before beginning to use the instrument.

Warranty information and a registration card can be found at the following web address. We encourage you to fill this out and send in so that we have a record in case you should need to receive technical support in the future.

[www.veege.com/pages/technical-support-service](http://www.veege.com/pages/technical-support-service)

## Assembly

- 1 After removing the microscope parts from the protective foam packaging and checking it over for all components and accessories, you can begin assembly.
- 2 Place the stand on a stable surface.
- 3 Place the head on top of the stand so that the dovetail flange slides into place. Secure with the knurled head set screw. NOTE: Do not release the head until it is firmly secured with the head set screw.
- 4 Slide the eyepieces into the eyetubes.
- 5 After removing the objectives from their storage containers, individually install each one into the nosepiece by twisting them clockwise into the threaded holes of the nosepiece.

## Lighting and Power

- 1 Connect the power plug to a suitable power supply; turn on substage illuminator with the ON/OFF switch located on the right side of the base.
- 2 The VanGuard 1100AML Series microscopes incorporate an internal LED light source for long life and low power consumption. The LED illuminator is designed to last the life of the instrument therefore replacement of the lamp is unnecessary.

## Focusing and Mechanical Stage Mechanisms

- 1 Focusing adjustment is achieved by turning the coarse and fine focus control knobs. The large knob is used for coarse adjustment, while the smaller knob is used for fine adjustment. Focusing tension can be adjusted by turning the focus tension adjustment ring located just inside of the left coarse focus control knob.
- 2 To ensure long life, always turn the focusing knobs slowly and uniformly.
- 3 The mechanical stage X-Y controls provide easy and accurate positioning of the sample.

## Interpupillary and Diopter Adjustment

- 1 Interpupillary adjustment (the distance between eyepieces) is made through a “sliding” action. Slide the eyepieces until they are the proper distance apart for comfortable use.
- 2 Diopter adjustment allows for proper optical correction based on each individual’s eyesight. This adjustment is easily made and is recommended prior to use.
- 3 Using the 40X objective and a sample slide (i.e. one which produces an easily focused image), close your left eye and bring the image into focus in your right eye with the coarse and fine focus controls. Once the image is well-focused using only your right eye, close your right eye and check the focus with your left. If the image is not perfectly focused, make fine adjustments with the diopter adjustment mechanism located on the left eyetube. Once complete, the microscope is corrected for your vision.



# General Operation

## Substage Adjustments

Adjustments to the substage condenser are crucial for proper illumination and performance. There are three basic adjustments which need to be made: Centering, Vertical Focusing, and Aperture Adjustment. Also, the condenser features a swing-in dispersion filter to cut down on excessive lamp glare should it be necessary.

**1 Centering:**

The condenser is factory-centered and fixed and therefore does not require any centering adjustments.

**2 Vertical Focusing:**

The condenser can be raised and lowered with the condenser adjustment lever to focus the light for optimal illumination.

**3 Aperture Adjustment:**

The light path can be adjusted with the iris diaphragm adjustment lever located just below the condenser. Aperture adjustments are made to induce contrast into a specimen, not to adjust light intensity.

## Note on Oil Immersion Objectives

The 100X objective which comes with this microscope must be used with immersion oil in order to maintain image quality. After use, the objective tip needs to be wiped clean so that no oil residue remains. Under no circumstances should an oil immersion objective be left sitting in oil for an extended period of time. Exceptionally long immersion periods can cause oil to penetrate the objective's sealant and obscure the optics, which is not covered under warranty.

## Maintenance

The eyepiece and objective lenses on VanGuard Microscopes contain a special optical surface coating and therefore should never be wiped while dry as any dirt or dust will scratch the coating.

The surfaces should either be blown off with an air canister, or blown and cleaned with an air-bulb and camel-hair brush. It is recommended to then use a lens cleaner. Apply with a cotton swab for a minimum of wetting, then wipe the surface clean with a quality lens tissue. Xylene, since it breaks down the bonding material holding the lenses, should never be used as a cleaner.

Periodically your VanGuard Microscope should be fully serviced by a qualified service technician.

Model 1111AML	Model 1112AML	Model 1113AML	Model 1115AML
Monocular Head (1 ea.)	Dual Monocular Head (1 ea.)	Binocular Head (1 ea.)	Trinocular Head (1 ea.)
Stand (1 ea.)	Stand (1 ea.)	Stand (1 ea.)	Stand (1 ea.)
Brightfield Condenser (1 ea.)	Brightfield Condenser (1 ea.)	Brightfield Condenser (1 ea.)	Brightfield Condenser (1 ea.)
10X Eyepiece (1 ea.)	10X Eyepiece (2 ea.)	10X Eyepiece (2 ea.)	10X Eyepiece (2 ea.)
4X Achromatic Objective (1 ea.)	4X Achromatic Objective (1 ea.)	4X Achromatic Objective (1 ea.)	4X Achromatic Objective (1 ea.)
10X Achromatic Objective (1 ea.)	10X Achromatic Objective (1 ea.)	10X Achromatic Objective (1 ea.)	10X Achromatic Objective (1 ea.)
40X Achromatic Objective (1 ea.)	40X Achromatic Objective (1 ea.)	40X Achromatic Objective (1 ea.)	40X Achromatic Objective (1 ea.)
100X Achromatic Objective (1 ea.)	100X Achromatic Objective (1 ea.)	100X Achromatic Objective (1 ea.)	100X Achromatic Objective (1 ea.)

For information about parts, accessories, or service -- contact your dealer directly or contact VanGuard Microscopes at 1-800-423-8842.