

*SE300 Series*



*User's Manual*

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## Introduction

Congratulations on the purchase of your new AmScope microscope!

This manual is designed for the SE300 series microscopes.

Please take a few minutes to familiarize yourself with the features and functions of your new microscope.

If you'd like more information on microscopes, parts, or accessories, please visit our website at:

**[www.iScopeCorp.com](http://www.iScopeCorp.com)**

We highly recommend you study this manual thoroughly before operating the microscope and that you keep it on hand for future reference.

If you have additional questions or need assistance, please send us an email at:

**[info@amscope.com](mailto:info@amscope.com)**

## Safety Precautions

1. As the microscope is a precision instrument, always handle it with care, avoiding impact or abrupt movement during transportation. Do not shake the package.
2. Do not place the microscope in direct sunlight or in high heat. Keep it indoors in a dry and clean place with temperatures between 32-100 degrees F (0-40 degrees C), and in maximum relative humidity of 85%.
3. Avoid touching the lenses on the objectives and the eyepieces so that oil and dirt from your fingerprints do not obstruct your view.
4. Before turning the power on, make sure that the power supply voltage is consistent with the voltage of your microscope (for units with built in illumination).

SE303-P & SE304-P

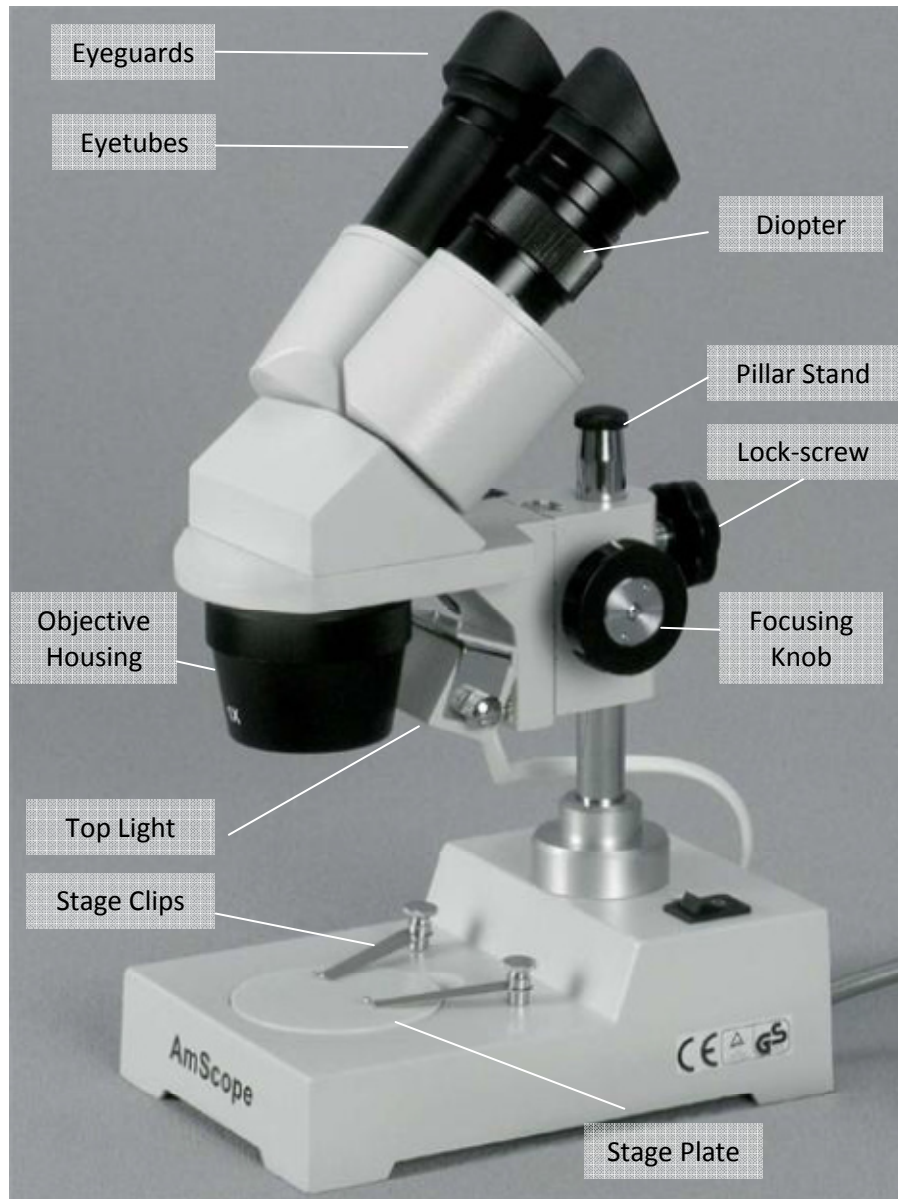


Fig 1: SE303-P & SE304-P

SE305-P & SE306-P

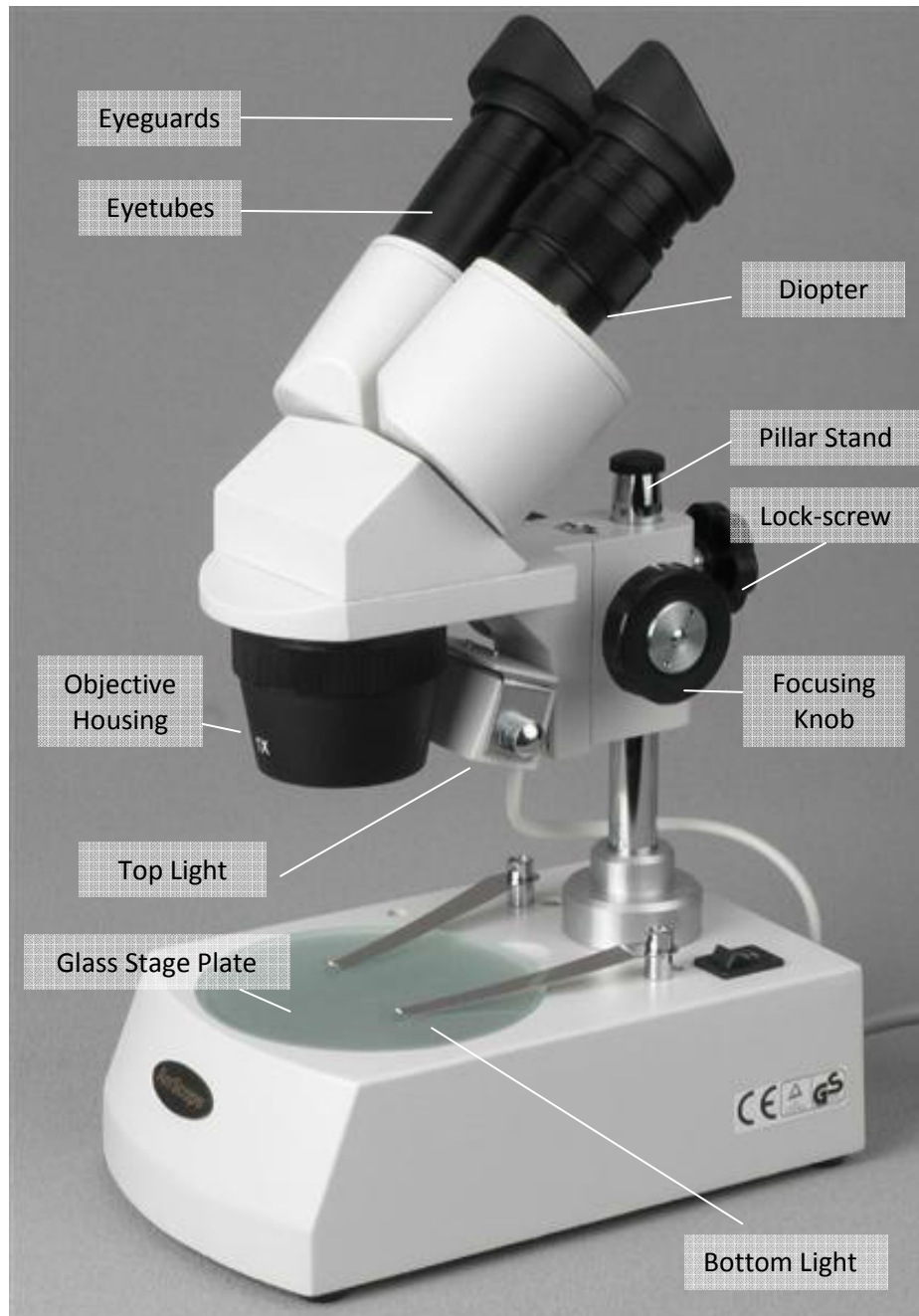


Fig 2: SE305-P & SE306-P

SE305R-P & SE306R-P

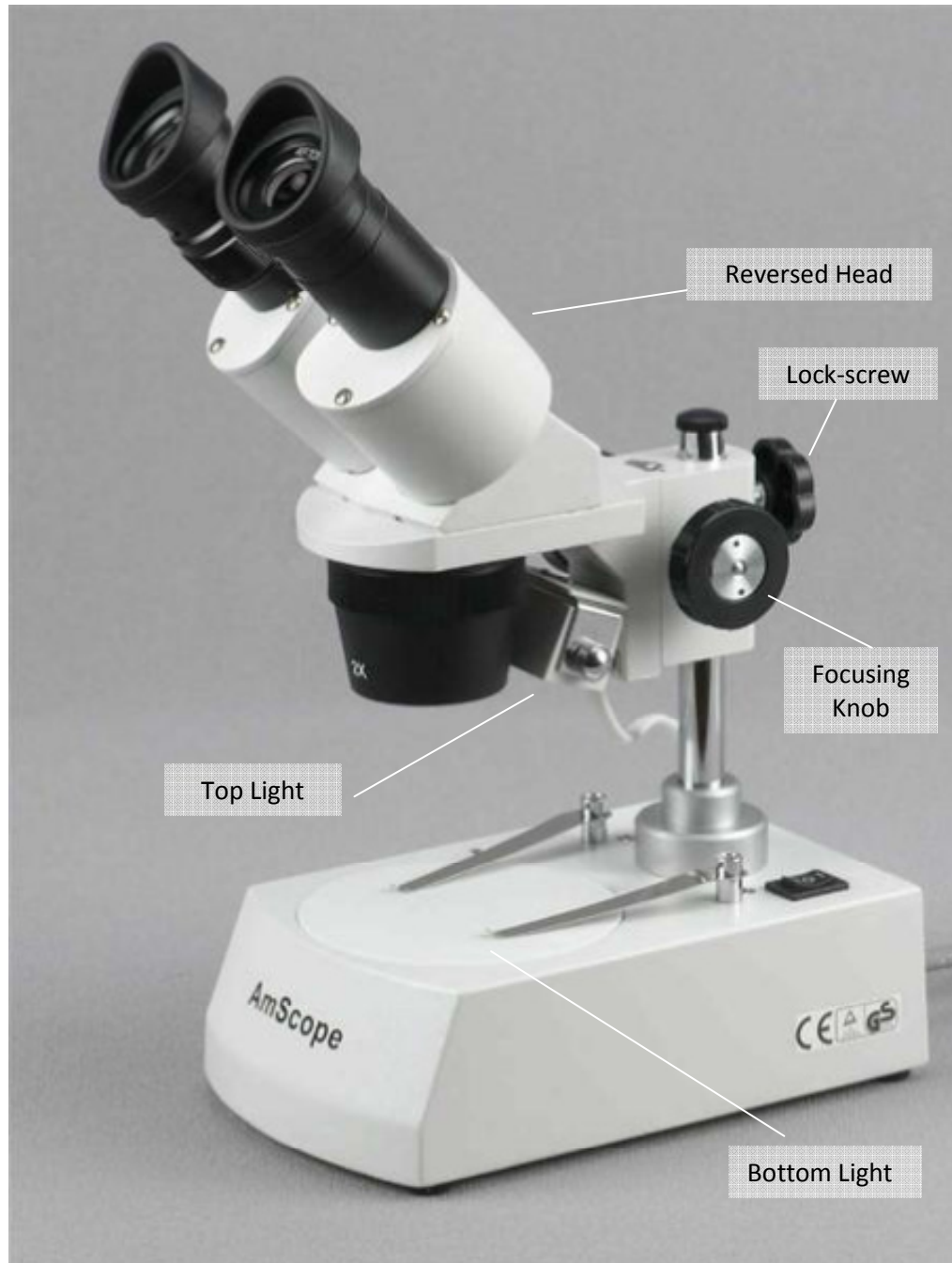


Fig 3: SE305R-P & SE306R-P

SE307-P & SE308-P

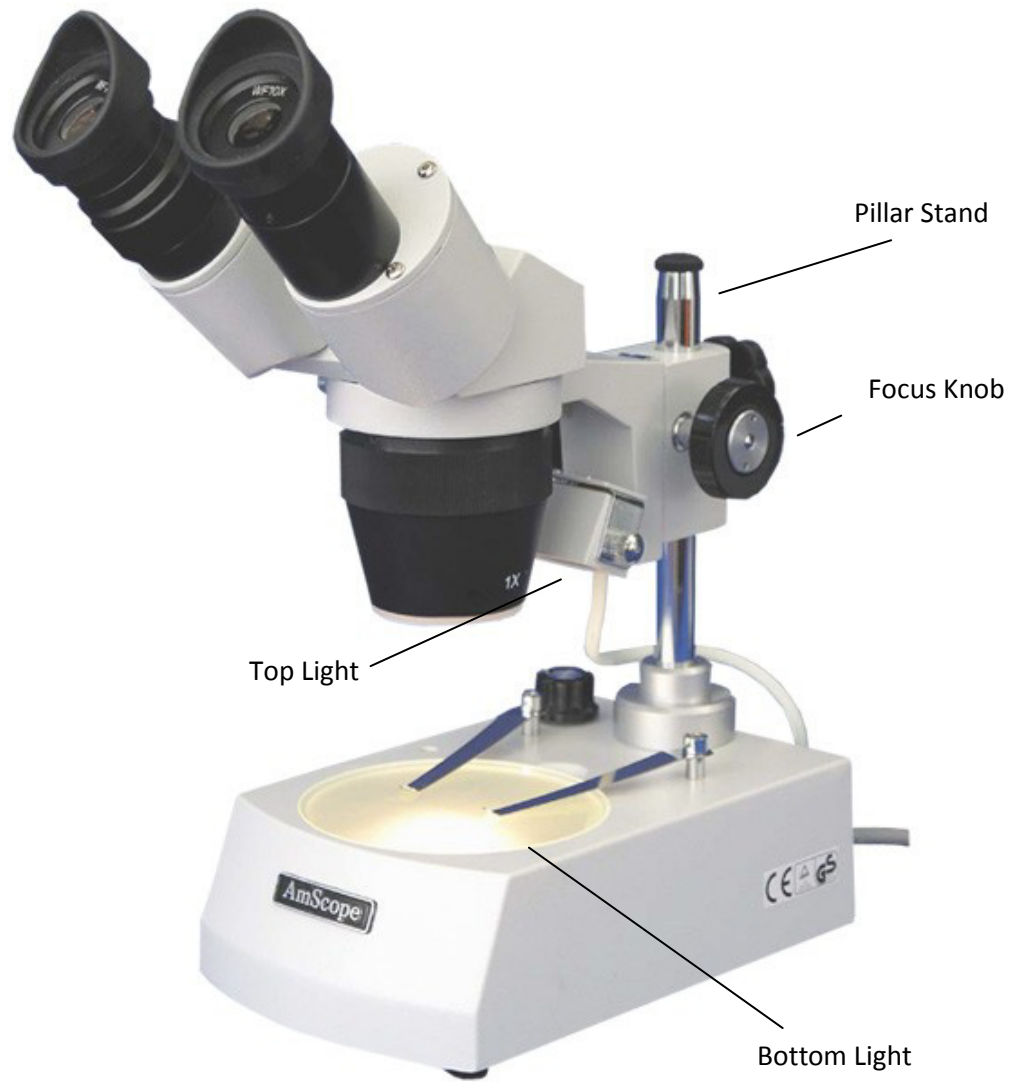


Fig 4: SE307-P & SE308-P



SE305-A & SE306-A

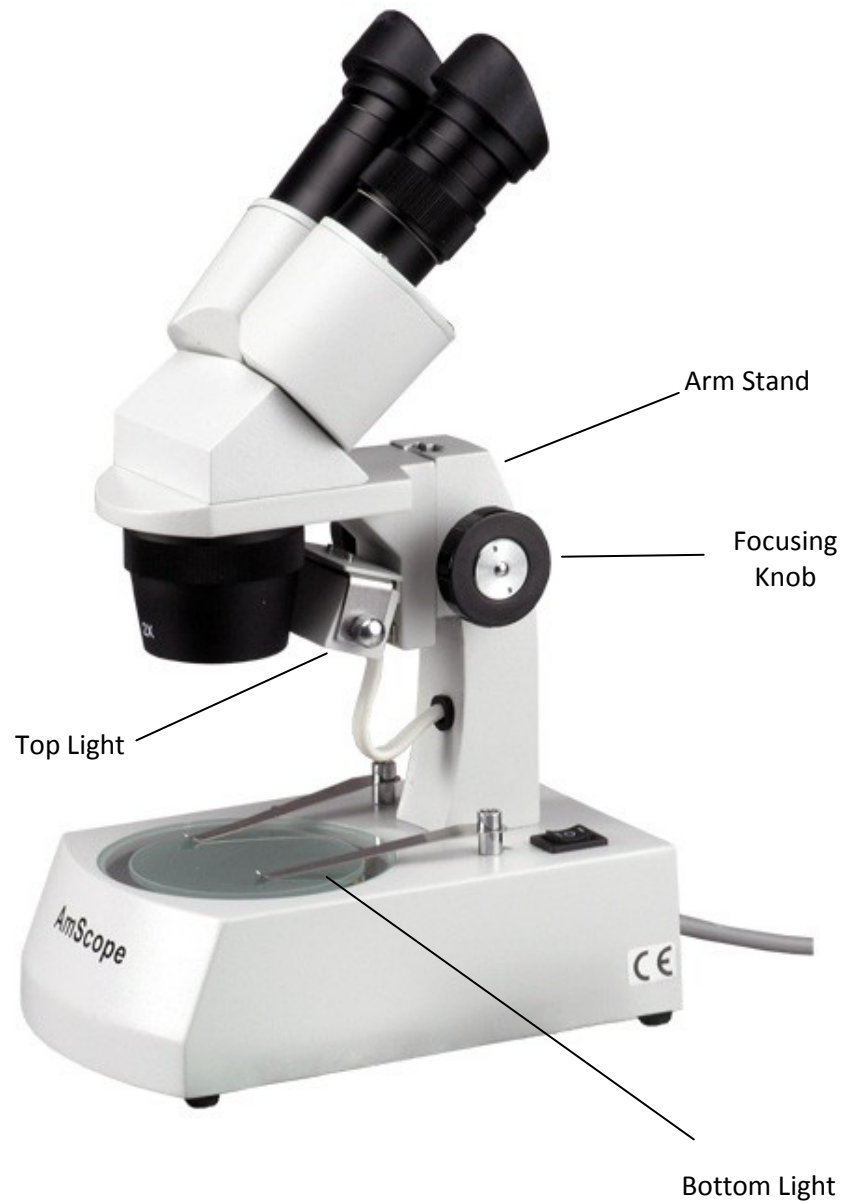


Fig 5: SE305-A & SE306-A

## Definition of Parts

### **Continuous Zoom**

*A microscope head with a knob to change magnification through a range*

### **Dimmer**

*Controls the amount of light that escapes from the illumination source*

### **Diopter**

*Allows the focus to be perfected for both eyes, independent of each other*

### **Fixed Power**

*Microscope head whose objectives are pre-set at certain levels and changed by rotating the objective*

### **Focusing Knob**

*Used to move the microscope head vertically to bring the sample into focus*

### **Magnification Knob**

*Changes the magnification of the lenses on a continuous zoom microscope*

### **Microscope Head**

*Contains the objective lens, eyepiece ocular tubes, and prisms used to magnify*

### **Ocular Tube**

*Tube designed to hold the eyepieces or camera in place*

### **Table Stand**

*A stand which sits on the table and holds the head directly above the sample without moving*

## Assembly

1. First, take the styrofoam container out of the cardboard carton and lay it on its side, paying attention to which side is labeled up. Remove the tape and open the container carefully so as to avoid dropping and damaging the optical items. Check carefully to ensure that all parts and accessories are intact.
2. Check the packing list to ensure that you've received all items. Please note that this can vary depending on which model you've purchased, and is generally listed on [www.amscope.com](http://www.amscope.com) at the items' details page for your specific model.
3. Remove the microscope body from the box and remove the plastic protective covering.
4. Ensure that the item is fully intact, and that the eyepieces are attached on top. They are the black tubes that you look through the microscope to see your sample.
5. Remove the cap from the objective lens, if one is present.
6. Plug in the microscope and turn it on. If no light emerges from the light source, adjust the dimmer knob near the power switch.
7. The top light is used to view opaque samples since it illuminates the top of the sample, reflecting light back up to the objective.

## Setting Up

1. Once you have placed your sample on the table or base below the objective, center the sample as best as possible. A slide is neither needed nor required for a stereo microscope, although they can be used if desired. If using a slide, use the stage clips to hold it in place.
2. With both eyes open, look into the eyepieces. Adjust the interpupillary distance by holding the eyepiece tubes and rotating the eyepiece tubes either towards or away from each other until only one circle of light is seen by both eyes.
3. Center the specimen to be studied under the objective lenses. Use stage clips if necessary.
4. Choose the appropriate lightings for your application: Top lighting shines down and reflects off opaque or solid specimens, while bottom lighting shines up through translucent objects. Model SE305 through SE308 are equipped with bottom lighting.
5. If you are using a darkfield condenser or look at jewels or gems, you should first remove the stage plate and place the darkfield condenser in the round opening. Attached gem clip to the stage and use it to center the gem under the objective lenses. Only models with –DK come with these accessories.

## Focusing

1. Adjust the focusing rack by loosening the lock-screw located behind the pillar stand. Move the entire focusing rack so that the image is roughly in focus, then re-tighten the lock-screw. If your model does not have a lock-screw, simply move on to the next step.
2. Begin focusing by first looking with one eye through the eyetube without the diopter. Close your other eye. Bring the image into focus using the focusing knob.
3. Once the image is focused through the first eye, look only through the other eyepiece, turning the diopter until the image is as clear as through the other side. Open both eyes and adjust the interpupillary distance until one clear image is seen.
4. As you switch magnification levels, you may also need to re-center the specimen, and/or refocus the image.

## Adjusting the Magnification

1. To change the magnification setting of the objectives, turn the cylindrical objective housing 180 degrees until it clicks into place.
2. To achieve additional magnification levels, switch out the eyepieces. Use a small Phillips head screw driver to remove the screws on the underside of the eyetubes. Then slide the eyepieces out of the eyetubes, being careful not to touch the lenses. Replace with other eyepieces and replace the screws.

## Attaching a Camera

If you have an AmScope MD series camera, you only need the 30.5mm adapter that comes with it to attach it to SE300 series microscope. However, you may need an adapter if you have a non-AmScope brand camera.

1. Remove one of the eyepieces from the eyetube.
2. Insert the 30.5mm adapter that comes with all AmScope MD cameras into the eyetube.
3. Drop the camera into the eyetube through the adapter.

Note: C-mount cameras are not compatible with the SE300.

## Changing the Light Bulb

1. Turn off the power and unplug the microscope. Wait until the bulb cools down.
2. If change the top light's bulb, loosen the lock-screw on the lamp housing. Take off the lamp cover, remove the old bulb, and replace with a new one. Replace the lamp cover and re-tighten its lock-screw.
3. If changing the bottom light's bulb, press down on one side of the plastic stage so that the other side lifts up. Remove stage. Carefully remove the old bulb from the socket and replace with a new one. Replace the stage. This applies to models SE305 through SE308 only.

## Maintenance/Precautions

- All glass surfaces must be kept clean. Fine dust on the optical surface should be blown off using a hand blower or gently wiped off with a soft lens paper tissue/nonabrasive lint free cloth.
- Carefully wipe off oil or fingerprints on the lens surfaces using tissue moistened with a small amount of lens cleaner (we recommend Sparkle brand optical cleaner).
- Do not use Sparkle to clean other elements of the microscope. Use a neutral detergent on any plastic or painted surfaces.
- Do not assemble or disassemble the microscope's electrical components yourself without advisement from one of our technicians. Doing so will void your warranty unless by advisement of one of our technicians to do so.
- After use, cover the microscope with the provided dust cover.
- Keep your AmScope microscope in a dry, clean location in order to prevent rust or other damages.

SE300 Series Specifications

Configuration		SE-Model #									
PARTS	SPECIFICATIONS	303-P	304-P	305-A	305-P	305P-R	306-A	306-P	306R-P	307-P	308-P
Objective Lenses	1X / 3X	★		★	★	★				★	
	2X / 4X		★				★	★	★		★
Microscope Head	45° Binocular	★	★	★	★		★	★			
	45° Binocular 360° Rotating									★	★
	45° Reverse Binocular					★			★		
Illumination	Top Light	★	★	★	★	★	★	★	★	★	★
	Bottom Light			★	★	★	★	★	★	★	★
Stand	Pillar Stand	★	★		★	★		★	★	★	★
	Arm Stand			★			★				
	Stage Clips	★	★	★	★	★	★	★	★	★	★
General Accessories	B/W Stage Plate (60mm)	★	★								
	B/W Stage Plate (95mm)			★	★	★	★	★	★	★	★
	Glass Plate (95mm)			★	★	★	★	★	★	★	★
	Eye Guards	★	★	★	★	★	★	★	★	★	★
	Dust Cover	★	★	★	★	★	★	★	★	★	★

## SE300 Series Specifications continued

Model #		Included item
BODY STYLE	ACCESSORY SUFFIX	SPECIFICATIONS
SE303-P	-X	WF5X / 18mm
	-Y	WF15X / 13mm
	-Z	WF20X / 10mm
SE304-P	-X	WF5X / 18mm
	-Y	WF15X / 13mm
	-Z	WF20X / 10mm
SE305-A SE305-P & SE305R-P	-X	WF5X / 18mm
	-Y	WF15X / 13mm
	-Z	WF20X / 10mm
	-DK	Darkfield condensor & Gem clip
SE306-A SE306-P & SE306R-P	-X	WF5X / 18mm
	-Y	WF15X / 13mm
	-Z	WF20X / 10mm
	-DK	Darkfield condensor & Gem clip
SE307-P	-X	WF5X / 18mm
	-Y	WF15X / 13mm
	-Z	WF20X / 10mm
SE308-P	-X	WF5X / 18mm
	-Y	WF15X / 13mm
	-Z	WF20X / 10mm



## Electrical System

There are two options for electrical systems for this series of microscope. Both equipped with 12V/10W lamps.

1. 220V~240V power supply: 220V~240V  $\pm 10\%$ , 50Hz

This electrical system is CE and GS certified

2. 100V~120V power supply: 100V~120V  $\pm 10\%$ , 60Hz

This electrical system is UL certified.

All units come standard as 110V units unless an upgrade to a 220V system is requested. Upgrade fee is dependent on which unit is purchased.

## Objective Lens Parameters

Magnification	Field of View (mm)	Working Distance (mm)
1x	20	53
2x	10	53
3x	6.7	53
4x	5.0	53

## Common Issues (Optical)

Symptom	Cause	Solution
<b>OPTICAL ISSUES</b>		
<b>Obstructions are observed in the field of view</b>	Stains, dust, or dirt has accumulated on the specimen	Clean the slide or use a new specimen if sample is destroyed
	Stains, dust, or dirt have accumulated on the lenses	Clean the objective and eyepiece lenses
<b>Unclear Image</b>	Stain or dust has accumulated on the lens in the inlet of the head	Clean the lens with lens cleaner or a nonabrasive lint free cloth, as well as spray with compressed air
	The microscope head is not in the right position to be focused	Adjust the height of the microscope with the focusing knob on the focusing rack until image appears in focus. <b>Note:</b> Higher magnification will require the head to move closer, while lower will require more distance between the sample and the lens.
<b>One side of the field of view is dark or the image moves while focusing</b>	The specimen is not fixed	Secure the slide to the stage with clips or another manner so that the sample does not move
<b>The field of view is not bright enough</b>	The light source is not present	A light source must be used with this model microscope to view a sample (ring light, built in illuminator, or gooseneck illuminator)
	The light source is too dim	The light source used is not bright enough, or is set to too low of an intensity setting. Adjust setting to a higher or change light sources
	Stains, dust, or dirt has accumulated on the condenser, objective, eyepieces, or base lens	Thoroughly clean all lenses with lens cleaner or a lint free nonabrasive cloth

## Common Issues (Mechanical)

Symptom	Cause	Solution
<b>MECHANICAL ISSUES</b>		
Unable to move the specimen smoothly	The slide is not secured correctly	Adjust the slide and utilize the stage clips
	No gem clip used	Try using the gem clip for small items
The objective touches the specimen	Specimen is too large	Get a smaller specimen
	Focusing rack too low	Raise the focusing rack
Head declines by itself	The lock-screw is too loose	Tighten it firmly
Focus-knob does not turn	Fine-focusing limit reached	Adjust the focusing rack's position w/lock-screw