



# STEINDORFF®

## NYMC38000

# Polarizing Microscope

In order to exert performance of this microscope and to ensure the safety, please read the operating instruction carefully before use.

**NEW YORK MICROSCOPE COMPANY INC.**  
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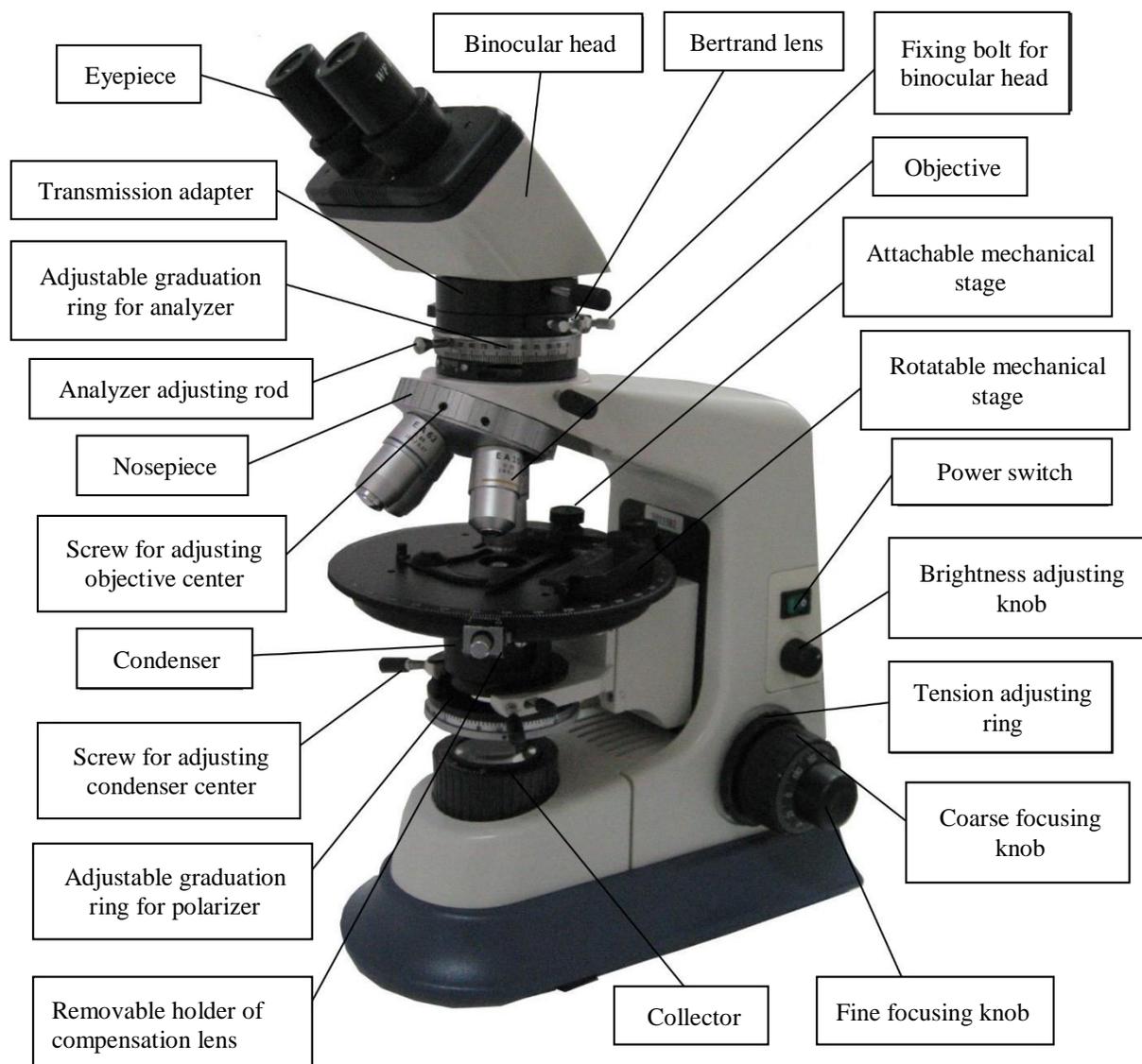
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## I. APPLICATION:

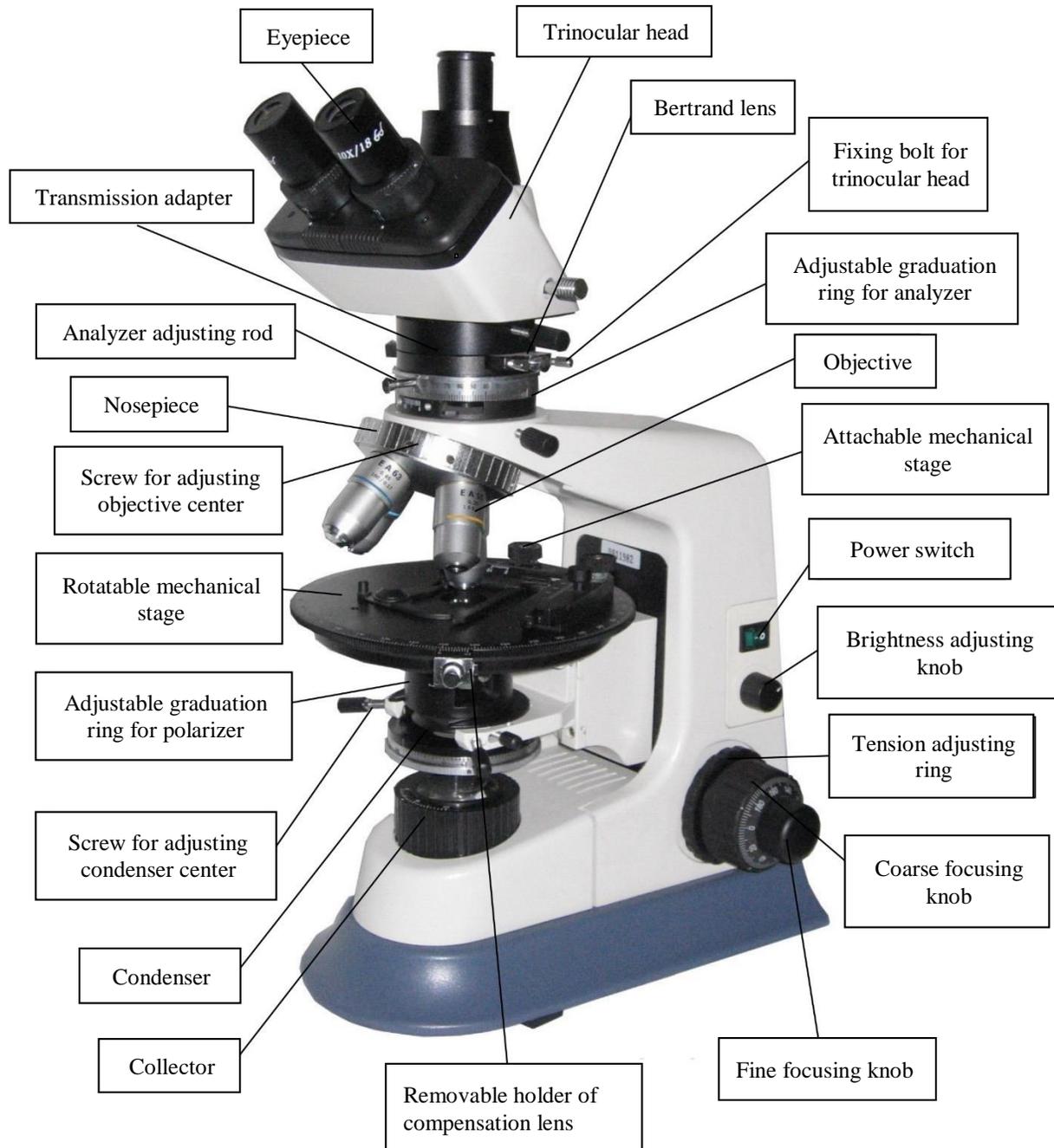
NYMC38000 series polarizing microscope is one of the most widely used special experiment instruments by geology, mineral, metallurgy, institution, university and so on correlative department. In recent year, along with the development of optical technique, polarizing microscope ,as optical instrument, whose the range of application is also broad more and more.

The NYMC38000 series polarizing microscope is the extra suitable product, for the user to make the single polarized light observation, the orthogonal polarized light and cone light observation and micrography. It is collocated gypsum ( $\lambda$ ), mica ( $1/4\lambda$ ) sample, quartz wedge, attachable mechanical stage and other attachment. It is a set of new product that has maturity function and good quality.

## II. CONFIGURATION:



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## III. SPECIFICATION:

1. Mechanical tube length: 160mm
2. Objective

Strain free achromatic objective

Magnification	Numerical aperture (N.A.)	Thickness of the cover slip (mm)
4×	0.10	0.17
10×	0.25	0.17
25×	0.40	0.17
40×(S)	0.65	0.17
63×(S)	0.85	0.17

3. Eyepiece

Type	Magnification	Vision field's diameter (mm)
Wide field eyepiece	10×	18
Gridding eyepiece	10×	18
Cross eyepiece	10×	18
Graduation eyepiece	10×	18

4. Total magnification

Total magnification	Objective	4×	10×	25×	40×	63×
Eyepiece	10×	40×	100×	250×	400×	630×

5. Adjustable center quadruple nosepiece.
6. Rotatable mechanical stage, diameter 160mm, 360°part scale and cursor precision 6'.
7. Focusing: Coaxial coarse & fine focusing adjustment with rack and pinion mechanism, fine focusing scale value is 0.002mm.
8. Illumination: Halogen bulb 12V/30W AC 85V-230V adjustable brightness.
9. Viewing head: Sliding binocular or trinocular head, inclined at 45°.
10. Blue filter
11. Complementary color equipment: gypsum ( $\lambda$ ), mica ( $1/4\lambda$ ) sample, quartz wedge.
12. Attachable mechanical stage: moving range is 30mm×40mm.
13. Condenser: Swing type N.A 1.30 Abbe condenser with iris diaphragm.

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## 14. Optional accessory:

- (1) Eyepiece: WF16×, WF20×, P16× and 1.3 or 3.0 mega pixels CMOS electronic eyepiece.
- (2) Strain free achromatic objective: 100× (S) Oil.
- (3) Strain free semi-plan achromatic objective: 4×, 10×, 25× (S), 40×, 63× (S), 100× (S) Oil.
- (4) Strain free plan achromatic objective: 4×, 10×, 25× (S), 40×, 63× (S), 100× (S) Oil.
- (5) Photo and CCD attachment.

## IV. THE COMPLETE SET OF THE INSTRUMENT:

Number	Content	Quantity	Remark
1	NYMC38000 polarizing microscope	1pc	
2	Strain free achromatic objective		
	4×/0.10	1each	
	10×/0.25	1each	
	25×/0.40	1each	
	40×(S) /0.65	1each	
	63×(S) /0.85	1each	
3	Eyepiece		
	10× Wide field eyepiece	2 each	
	10×Cross eyepiece	1each	
	10× Graduation eyepiece	1each	
	10× Gridding eyepiece	1each	
4	Gypsum 1λsample	1each	
5	Mica 1/4λsample	1each	
6	Quartz wedge sample	1each	
7	0.01 Micrometer	1 pc	
8	Blue filter	1each	
9	Attachable mechanical stage	1pc	
10	Binocular or trinocular head	1pc	
11	Adjusting rod	2 pc	
12	Transmission adapter	1 pc	
13	Spare bulb	2 pc	
14	Operating instruction	1book	
15	Certificate of quality	1sheet	
16	Dust cover	1each	

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## V. INSTALLATION:

### 1. Working environment:

- 1) Indoor temperature: 0°C~40°C, the maximum relative humidity: 85%.
- 2) The microscope will be mildewed or damaged in the environment of high temperature and damp surrounding.
- 3) Don't put microscope in the dusty environment. Please cover it with ethene plastic bag, when it is not in use.
- 4) Please put microscope in the plate place.

### 2. Transmission adapter:

Put the transmission adapter on microscope, when screw is connect with orientation slot of the adapter, tighten the fixing screw with finger.

### 3. Binocular or trinocular head:

Put the binocular or trinocular head onto the transmission adapter and tighten with the fixing screw with finger.

### 4. Eyepiece:

Insert eyepiece into the viewing tube.

### 5. Objective:

Make the mechanical stage down in order to install the objectives into the nosepiece from the lowest magnification to the highest in the clockwise direction, please must be install them tightly in place.

### 6. Condenser:

Make sure the oriented screw of the condenser holder is in the proper place.

### 7. Complementary color equipment:

Insert complementary color equipment into the proper place in need.

### 8. Filter:

It must be put on illuminator according to the user's needs.

### 9. Attachable mechanical stage:

Put attachable mechanical stage on the rotatable mechanical stage.

### 10. Adjusting rod:

It is used to adjust center of the objective.

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## VI. OPERATION:

### 1. Illumination:

Turn on the power switch; adjust the brightness adjusting knob slowly to the desired level. In commonly instance, don't let it reach the lightest state, otherwise, that shorten the life of the bulb.

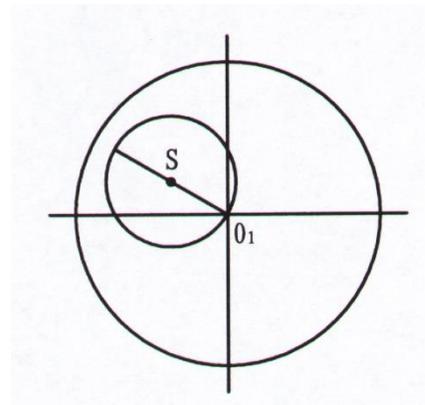
### 2. Focusing:

Begin observation of your specimen with the 4× Objective. Turn the coarse focusing knob until a clear image is obtained, then use the fine focusing knob to enhance the observation of the specimen to its clearest image. When the desired view is obtained under the lowest power (4×), rotate the nosepiece to the next higher magnification (10×). The nosepiece should “click” into position. You can obtain clear image with a little fine adjustment.

It is important to remember when adjusting the focus that the objective should never touch the specimen. When increasing to 100× magnification, the objective will appear to be very close to the slide. Because the 100× is an oil immersion objective, a drop of cedar-wood oil or other immersion oil should be applied in the gap between the objective and the specimen. (Note: All slides should be prepared with cover slips over the specimen for observation under the 100× objective.) The 100 × oil immersion objectives should be wiped off with a piece of soft clean cloth or lens tissue to remove the immersion oil immediately after using.

### 3. The center of objective superposition with the rotatable mechanical stage:

When the sample is clear enough, find a clear object and let it coincide with the point of cross. Turning mechanical stage, if axes of objective don't coincide with the center of mechanical stage, the point of object will circumrotate around “S”. The track is circle, and adjust center of objective to let “O1” move to “S” to see if they coincide or not. If not, please adjust them.



### 4. Adjusting Abbe condenser:

- 1) The Abbe condenser can be moved up or down by turning condenser focusing knob. When using high power objectives, better to making the condenser up and whereas making the condenser down. Iris diaphragm should be adjusted according to objective's numerical aperture, in order to obtain better effect.
- 2) Take off the eyepiece to observe the center of aperture diaphragm on the condenser overlay with center of objective's aperture. If both is away, may be adjusted the condenser center adjusting screw until both is superposition.

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## 5. Orthogonal polarized observation:

Because the polarizer is located in the light path, this time is single polarized light state after focusing. Slide the analyzer into the light path, to adjust the analyzer adjusting knob on the "0" position, also the polarizer is located on the "0" position, this time is orthogonal polarized light state (polarized direction of the polarizer is at west-east, polarized direction of the analyzer is at north-south).

When using 10× objective or lower. Please remove compensation lens, and adjust condenser to proper place; when using 20 × objectives or higher, please push compensation lens to the previous position and lift the condenser to the highest position.

Insert gypsum ( $\lambda$ ), mica ( $1/4\lambda$ ) sample, quartz wedge into complementary inlet according to your need in order to test pixel.

## 6. Observation of cone light:

Observation of cone light is use 20× or higher objectives, push the Bertrand lens and compensation lens into the light path, adjusting center of the Bertrand lens, to observe the cone light characteristic of the sample.

## VII. MAINTENANCE:

1. If there is any dirt settled on the lens, wipe it off gently with some lens paper. If alcohol is used, be careful not to let it penetrate through the lenses and dissolve the gumming. Any dust settled on the lenses can be blown away with an air blower or wiped off with a clean soft camel hair brush.
2. In cleaning mechanical parts and applying non-corrosive lubricant, take special care not to touch the optical elements, especially the objective lenses.
3. Avoid high temperature.
4. Put objectives and eyepieces into box after using, and keep them in a cool, shady and dry place, free from dust, fumes and moisture. If not stored in its box, cover with a hood to protect from dust.
5. Like other optical instruments, the microscope should be kept out of direct sunlight in a cool, dry place, free from dust, fumes and moisture. It should be stored in a case or covered with a hood to protect it from dust.
6. The microscope has been carefully tested and inspected.

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