

STUDY NAME: STUDY ON COMPOUND MICROSCOPE

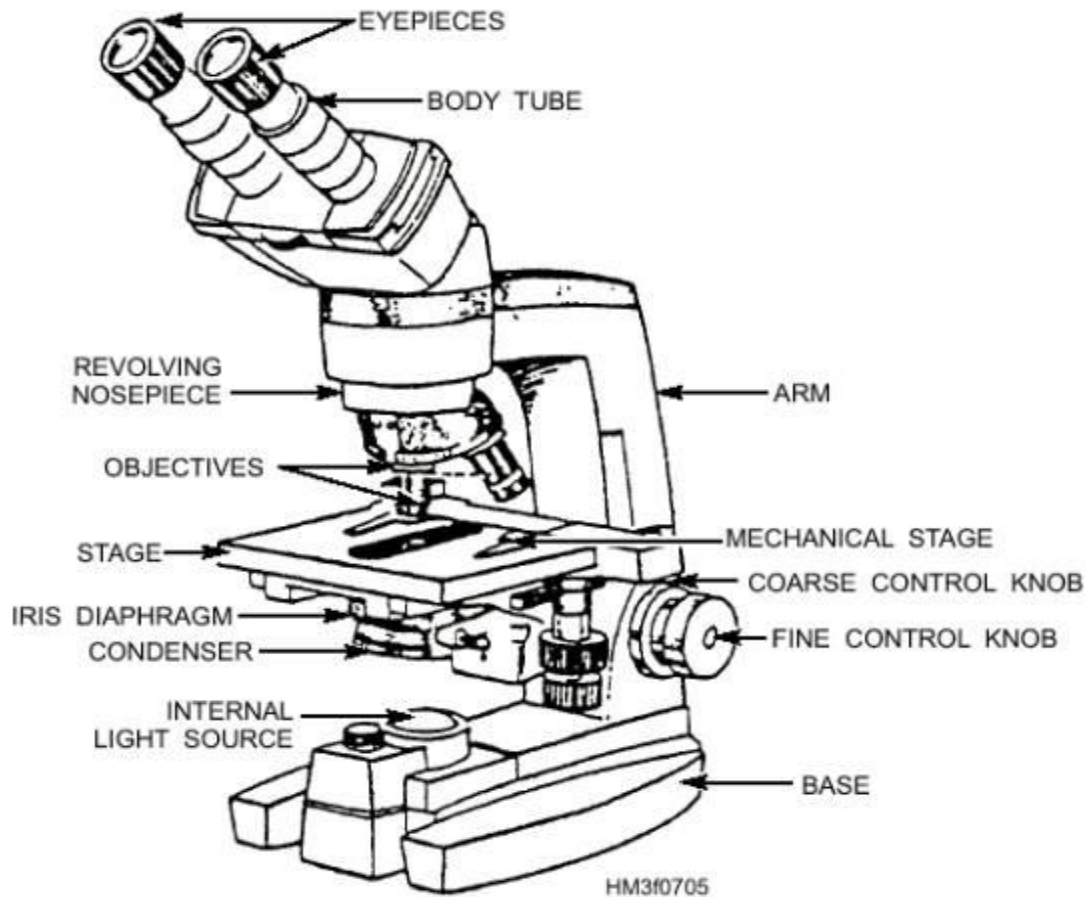


Fig. A compound microscope

Definition:

Microscope is an optical instrument that furnishes an enlarged image of an object which is invisible to the naked eye.

Kinds of Microscope:

1. **Simple Microscope:** A convex lens is used to obtain the enlarged image of an object
2. **Compound Microscope:** In compound microscope two convex lenses are used to obtain a much greater magnification than can be obtained with a single convex lens. The lens placed near the object is called the objective having a shorter focal length and the lens near the eye is called eye piece having a comparatively larger focal length and bigger diameter.

Parts of compounds microscope:

It is broadly divided into two parts:

1. Optical parts:

- i) Eye piece: It is the second lens of the compound microscope, which is used to magnify the already enlarged image produced by first lens or objective.
- ii) Objectives: It is a lens which magnify the specimen and stay on revolving nose piece.
- iii) Mirror: It is concave mirror used to reflect light upward.
- iv) Diaphragm: It controls the light transmitted through the condenser.
- v) Condenser: It condenses light reflected by the mirror.

2. Mechanical parts:

- i) Draw tube: The magnified image is seen directly by the eye through draw tube with the help of lenses.
- ii) Base/Foot: It is made of steel which is used to support the whole body of the microscope.
- iii) Objective disc: It is moveable and hold the objectives.
- iv) Stage: The specimen is set on the stage.
- v) Clip: It hold the slide and restrict the movement of the slide.
- vi) Arm: It is made of steel and is used to remove the microscope from one place to another.
- vii) Coarse adjustment screw: It is used to bring the overall image of an object.
- viii) Fine adjustment screw: It is used to bring the sharp and clean image of an object.
- ix) Body tube: It is used to hold different optical and mechanical parts e.g. eye piece, draw tube, nose piece etc., together as a unit

Operating Procedure

- Place it on the left side of the desk facing the source of light.
- Place the mirror in such a way so that it reflects maximum light.
- Check the condenser and diaphragm.
- Set the low power objective and bring it closest to the stage.
- Keep the prepared slide on the stage in such a way so that light pass through the object
- Keep your eye on the eye piece and pull down the stage very slowly until the clear image is visible with the help of coarse adjustment screw.
- Make the image more clear with the fine adjustment screw.

Precautions

Do not use high power objective for observing slide without cover slip.
Do not use coarse adjustment screw while high power objective is used.