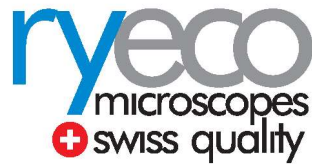


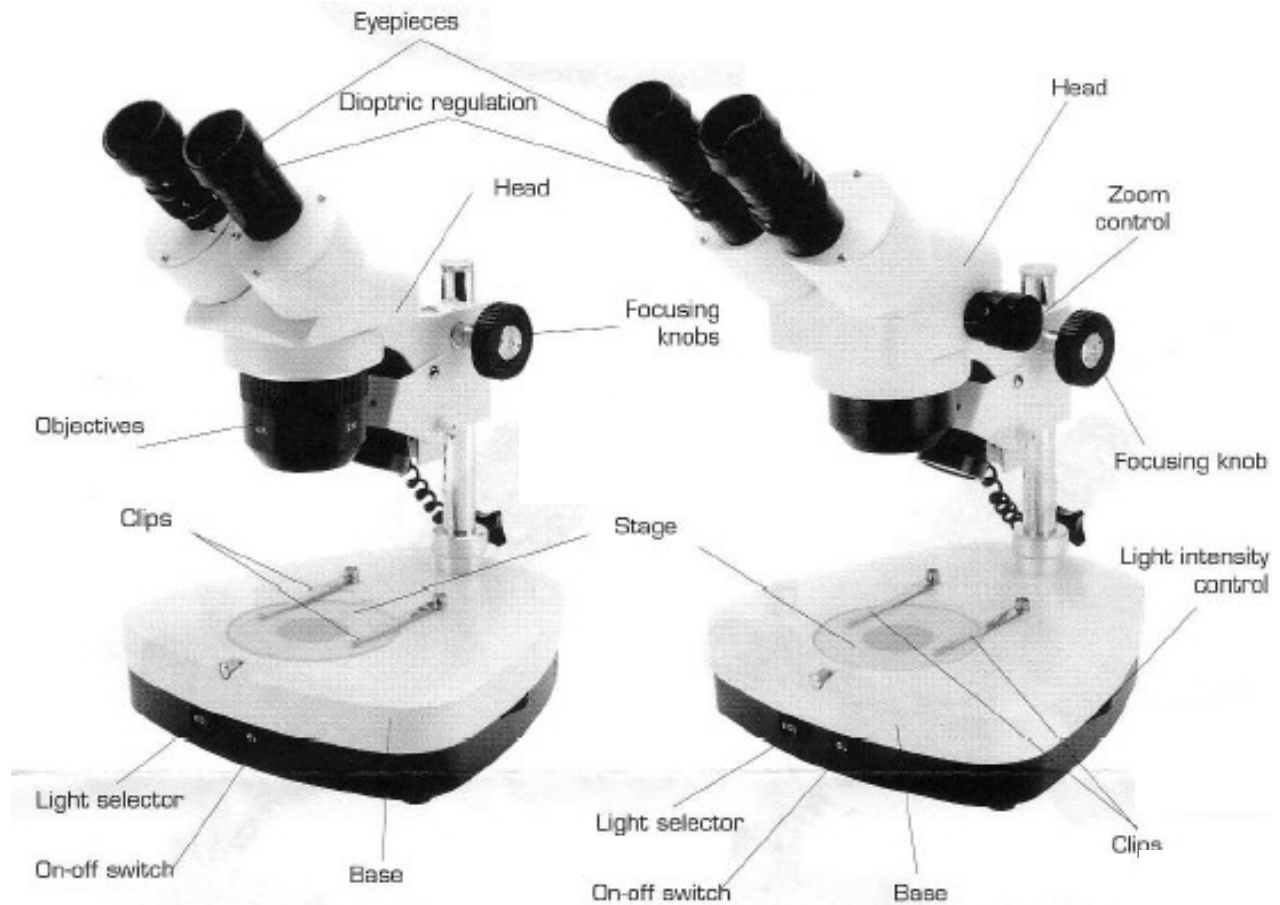
Stereo-microscope ecoline Ryeco LAB-10 // LAB-20



Instruction Manual

Ryeco LAB-10 / LAB-20

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INTRODUCTION

Ryeco Stereomicroscopes series STEREO, LAB10 and LAB20 are high level school stereomicroscopes with objectives 2x-4x (LAB10) or zoom 1x4x (LAB20). The magnification is from 5x to 120x by using additional lens (optional). These stereomicroscopes are the good choice for the professional user.

Unpacking and assembling of the microscope

The components for series stereo Ryeco LAB10 and LAB20 are shipped detached for protection. open the Styrofoam packing with care and do not leave any components attached to the packing being removed. Do not discard any of the packing materials until all components have been located. If damage occurs during transit, contact both the carrier and your supplier immediately.

When handing the components, especially all the optical parts, avoid touching any lens surface with naked hand or fingers. Any fingerprints or grease stains will negatively affect the image quality (see Ryf Cleaning Sets). After unpacking the stand, put it on a good stable table. Loosen the lock screw of the focusing carrier, adjust the height of the focusing carrier and lock the lock screw again. Make sure that the support collar is secured firmly below the focusing carrier along the vertical post This is important as this collar functions to avoid the accidental falling of the microscope along the column.

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Alignment and operation

Interpupillary distance

Move the two eyepiece tubes until only one circular field can be seen through the two eyepieces. If two circles appear the interpupillary distance is too big, and if 2 overlapped circles appear the interpupillary distance is too small.

Focusing the microscope

Try to focus the sample at the highest magnification with the focusing knob. If it cannot be done, adjust the height of the microscope along the vertical post. Remember to lock the lock screw and support collar after aligning the height of the microscope.

Turn the zoom to the highest magnification. By turning the focusing knob, focus the sample until the image is clear and sharp.

Turn the zoom (or change the objective by rotation) down to the lowest magnification. Adjust the diopter focusing knob of the right eyepiece until the image of the right eyepiece is clear and sharp.

Magnification

Select the desired magnification by adjusting the zoom knob. Change the eyepieces and, or add an appropriate magnifying objective lens if necessary

Total magnification used can be calculated by the following equation:

Total magnification = Eyepiece magnification x Zoom magnification x Normal working distance for the standard configuration is 90mm.

Knowing your microscope

For Ryeco LAB series stereomicroscope the binocular is built together with the stereo body to form a single piece named "Stereo-head".

The Stereo body is the key part of the microscope, which includes the Greenough stereo-zoom system 1x4x or fix objective 2x and 4x. This system includes two telescopic zoom optics working for the left and the right eyepiece tube separately (3D = stereo view).

With this system, the user can enjoy excellent depth of field and stereo effect. With the help of the precision optics from Ryf-Ryeco, perfect parfocality can be maintained throughout the whole zoom range.

Zoom knob in LAB-2 is located bilaterally on both sides of the microscope and is printed with scale showing the zoom magnification used.

Adjust this knob for changing the magnification of the image. If the microscope is properly aligned, the image focus should always be maintained when zoom magnification is changed [parfocal].

The stereo body is mounted onto the circular mount of the focusing carrier and is locked by the lock screw on the left hand side of the carrier. During the operation of the microscope, the Lock screw should always be locked to maintain stability.



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Cleaning and care of the microscope

Changing the bulb

Before changing the bulb, make sure that the power switch is off and the CH Power cord has been disconnected from the main supply.

For Incident light, unscrew the lamp collector piece out, remove the old light bulb from the socket, and carefully plug the new bulb in, screw the collector piece back after changing the bulb.

For transmitted light, remove the stage glass plate by pushing down its rear side, and move the old bulb from the socket and carefully plug the new bulb in.

Never touch the glass surface of the bulb with naked hand, any grease stain brought onto the bulb by the naked hand will negatively affect the heat dissipation, and thus, greatly shorten the life span of the bulb. Clean the bulb surface with Ryf Lens Cleaner or alcohol and tissue if the user has touched the bulb surface accidentally.

Cleaning

If dust is found on the optical surface, try to remove by air blower or better with canned air (Ryf cleaning Set).

For fingerprint, grease stain or dust which may not be removed by the air blower possible methods are recommended:

- To breathe lightly on the glass surface and wipe with a clean piece of cloth, lens paper or cotton swab.
- Please notice that small cotton fiber may be left onto the lens surface if cotton swab is used.
- Use a cotton swab or lens paper dip with a small amount of absolute alcohol (better results with Ryf special cleaning Set) and clean the lens surface carefully. No other aggressive solvents should be used.
- In no circumstances should the user clean any lens surface with dry cotton swab, cloth or lens paper. This will scratch the lens surface causing irreparable damage.
- Water is not recommended for cleaning of lens as it will leave some water stain on the lens surface and if water residue is left on the lens, fungus can grow causing irreparable damage.

RST-001	WF5x/22mm eyepiece pair
RST-002	WF10x/20mm eyepiece pair
RST-003	WF15x/15mm eyepiece pair
RST-004	WF20x/13mm eyepiece pair
RST-005	WF10x/20 mm micrometric eyepiece
RST-023	Additional 0,5x lens
RST-024	Additional 1,5x lens



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