



Leica DM E

Koehler Illumination Instruction Manual

Leica

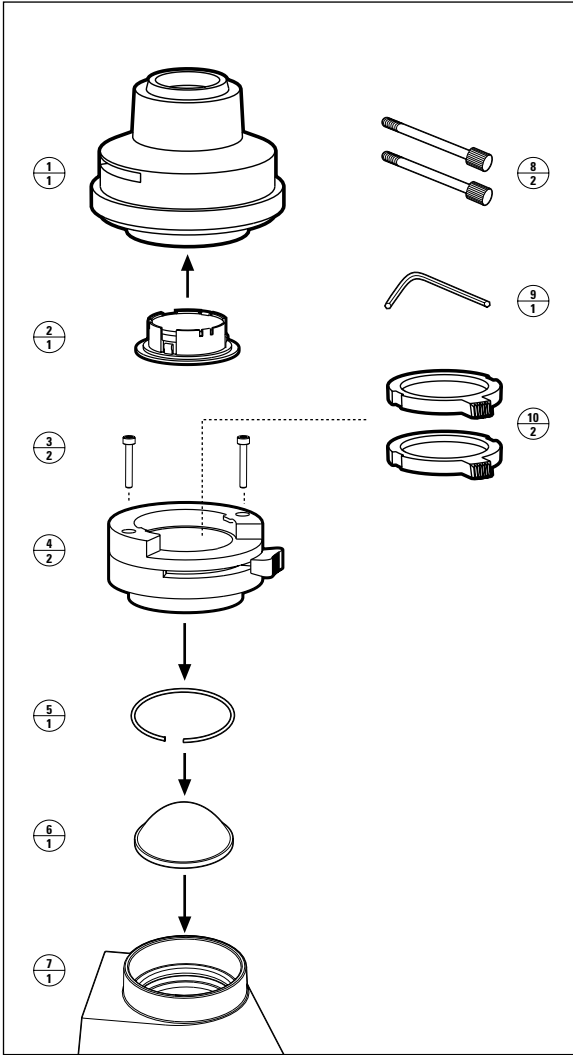


Figure 1

- 1 Standard or Phase Turret condensers
- 2 Lens in holder*
- 3 Mounting bolts*
- 4 Koehler field diaphragm*
- 5 Mounting ring
- 6 Aspherical lens*
- 7 DM E light port
- 8 Condenser centering screws (2)*
- 9 2.5mm Allen wrench*
- 10 Blue daylight and green filters*

*included with Koehler Illumination Kit



Leica DM E Koehler Illumination Instructions

1.0 Introduction2
2.0 Installation3
3.0 Proper Adjustment5

1.0 Introduction

The installation of the Koehler kit is best done by an authorized Leica Microsystems Service or Sales Representative, but can be done by anyone who has mechanical experience.

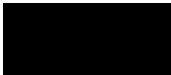
Koehler Illumination provides bright and level illumination and allows you to precisely center the condenser as well as eliminate stray light from entering the field of view with the use of a field diaphragm. This is done by a combination of precision optics, condenser adjustment, and adjusting a field diaphragm so only the field of view is illuminated. The proper adjustment for Koehler illumination is described after the installation instructions.

Check that you have the following components in your Koehler illumination Kit (see page 1):

- 1 Lens in holder
- 1 Koehler field diaphragm
- 2 condenser centering screws
- 1 Blue daylight and 1 green filter
- 2 Mounting bolts
- 1 Aspherical lens
- 1 2.5mm Allen wrench



Do not touch any lens surfaces with your fingers.



2.0 Installation

- 1 Unplug the microscope and remove the eyepieces.
- 2 Raise the stage to the highest position using the microscope coarse focus control knob.
- 3 Lower the condenser to the lowest position using the condenser focus control knob.
- 4 Using the Allen wrench which came with the microscope, remove the two alignment set screws which are holding the condenser in place. Save these alignment set screws for possible later use.
- 5 Remove the condenser from the condenser bracket.
- 6 Raise the condenser bracket to the highest position using the condenser focus.
- 7 Remove the blue daylight filter from the underside of the condenser. Save this filter for possible later use.
- 8 Insert the lens holder from the Koehler kit into the underside of the condenser.
- 9 Using the 2.5mm wrench provided with the Koehler kit, remove the mounting bolts holding down the light port window to the microscope stand.
- 10 Remove the light port window. Save this for possible later use.
- 11 Remove the power cord from the back of the instrument.
- 12 Carefully tip the microscope on its back and remove the 4 screws holding the rubber feet.
- 13 While holding the base in place with one hand, tip the microscope back onto its base to its normal operating position.
- 14 Carefully lift the microscope off of its base.
- 15 Looking into the light port, you will see a lens held into a circular fixture with a mounting ring. At the six o'clock position of the circular fixture (closest to you) there is a notch.
- 16 Insert the ball of the 2.5mm wrench into the notch and pull up on the mounting ring. The mounting ring should pop out of the light port.
- 17 Hold a tissue over the light port and turn the base upside down. The lens will fall into the tissue. Save this for possible later use.
- 18 While the base is upside down, open the lamp door.
- 19 Take the aspherical lens which is provided with the Koehler kit and insert it into the light port so that the diffused, spherical side is flush with the bottom of the light port. You will be able to see this through the opened lamp door.

- 20 Close the lamp door securely.
- 21 Hold the aspherical lens in the light port and turn the base right side up again.
- 22 Drop the mounting ring into the light port so it surrounds the aspherical lens.
- 23 Using the ball end of the 2.5mm wrench, press one of the opened ends of the mounting ring into the groove around the circumference of the lens. Put tissue on one of your fingers and hold this end of the mounting ring into the groove.
- 24 Using the other hand with the ball end of the 2.5mm wrench, run the ball around the circumference of the lens pressing the mounting ring into the groove along the way.

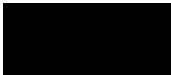


Do not touch the lens surface with your fingers.

- 25 Once the mounting ring is in the groove, use an air syringe or slightly blow on the aspherical lens to remove any dust. Using a lens tissue if necessary, remove any fingerprints or marks.
- 26 Lift the stand and reposition it over the base, making sure to align the back plate with the stand's groove.
- 27 Tip the microscope on its back holding the base with one hand.
- 28 Remount the four rubber feet with screws and tip the microscope back onto the base, returning it to its normal operating position.
- 29 Reconnect the power cord into the back of the microscope and reattach the cord wrap / lock if necessary.
- 30 Position the field diaphragm with protective window onto the light port so the holes in the stand align with the holes in the field diaphragm and the lever for the field diaphragm assembly is facing you.
- 31 Using the 2.5mm wrench and the mounting screws provided, attach the field diaphragm to the microscope.
- 32 Lower the condenser bracket with the condenser focus.
- 33 Install the condenser into the condenser bracket so the numbers on the condenser are facing forward and the pin on the back of the condenser is aligned with the slot in the condenser bracket.
- 34 Screw the condenser centering screws into the condenser bracket simultaneously until the pin in the rear of the condenser is half way into the notch.
- 35 Raise the condenser to the top position with the condenser focus

3.0 Proper Adjustment

- 1 Reset the eyepieces, then plug in the microscope power cord and turn it on.
- 2 Lower the stage using the microscope focus adjustment control knob and put a standard stained microscope slide on the stage.
- 3 Rotate the nosepiece to move the 10x objective into working position.
- 4 Raise the stage using the microscope coarse adjustment focus knob until you reach its positive stop. Using the fine adjustment knob, bring the specimen into sharp focus.
- 5 Adjust the eyetubes for interpupillary distance and eye difference.
- 6 Adjust for eye difference focus (for binocular and trinocular bodies).
- 7 Close your left eye and focus on the specimen with your right eye using the fine focus knob.
- 8 Close your right eye and focus on the specimen by rotating the left focusable eyepiece tube.
- 9 While viewing through the microscope, close the field diaphragm which you have just installed using the field diaphragm lever. You will see the iris leaves imaged within the field of view.
- 10 Using the condenser adjustment focusing knob, focus the condenser until the leaves of the field diaphragm are in sharp focus.
- 11 Center the image of the field diaphragm by turning the condenser centering screws. This is best accomplished by rotating the two screws simultaneously. After centering, open the field diaphragm until the iris leaves disappear just beyond the field of view.
- 12 Remove an eyepiece and view the back aperture of the objective. Close the condenser diaphragm and then reopen the condenser diaphragm leaves until approximately 20% of the leaves fill your field of view. This will obtain the full resolving power of the microscope. Replace the eyepiece.
- 13 When changing to other objectives, the positions of the condenser and field diaphragms must be reset as in steps 6 – 9 above for optimum resolution and contrast.



Due to a policy of continuous development, we reserve the right to change specifications without notice.

Aufgrund der fortlaufenden Neuentwicklungen behalten wir uns das Recht vor, jederzeit ohne Vorankündigung Änderungen vornehmen zu können.

En raison de notre politique de développement continu, nous nous réservons le droit de modifier les spécifications sans préavis.

En vista de nuestra política de desarrollo continuo, nos reservamos el derecho de modificar las especificaciones sin previo aviso.

Leica Microsystems Inc.
Educational and Analytical Division
PO Box 123
Buffalo, New York USA 14240 0123

Tel 716 686 3000
Fax 716 686 3085
www.leica-microsystems.com
ISO-9001 Certified

The Leica logo is written in a classic, elegant script font with a thin underline beneath the letters.