
USER MANUAL

MICROSTAR SERIE C100

COLPOSCOPE



ABOUT THIS MANUAL

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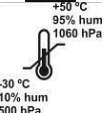









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1. SYMBOLS

	Read the related documentation		CE mark
	Warning!		Manufacturers information (Name, Address)
	Alternate current		Type of applied BF equipment
	Protect from water		Do not discard with the household waste
	This side up		Protective Earth (Ground)
	Environmental transport conditions		Equipotentiality
	Fragile		ON
	Serial number		OFF
	Manufacturing date (MM/YYYY)		Catalogue number

2. SAFETY INFORMATION

2.1 WARNINGS

It is very important to read carefully this manual before using the Ecleris Microstar C-100 Colposcope.

The Ecleris Microstar C-100 Colposcope is an electrical device that provides very high light intensity. Its use is recommended exclusively for trained personnel.

ECLERIS will not assume any liability for damages that may occur if the device is used without following the instructions and/or ignoring the following advice:

- Keep the device out of children reach.
- Do not install the device close to heat sources like stoves.
- Do not use the colposcope in places where there is explosion danger.
- Always install the device on top of firm and horizontal surfaces, on a perfect ventilated area.
- Do not block the ventilation screens. This ventilation must assure good air flow.
- Avoid device exposure to direct sun light, dust, humidity, vibration or shock.
- Do not put any container with liquids on top of the device; do not expose the device to rain or sun.
- Do not bend or tied a nut on the power cable, or any cable connected to the device.
- Do not use the device during thunderstorms.
- After the use of the device, turn it off and disconnect the power cable.
- In order to avoid Electrical shocks this system must be connected to a power grid with proper ground connection. (No exceptions)
- This system is not designed to be used in the presence of inflammable anesthetic gases mixture with air, oxygen, nitrous oxide, or ambient with high oxygen content.

- The device is provided with a connectable power cable that assures proper electrical isolation on the grid.
- In the case of electromagnetic interference between medical device and other electrical device, we recommend to increase the distance between the systems in order to minimize the interference effects.
- Do not open the device. The diagnostics, service and repairment must be performed by ECLERIS, or a company authorized by ECLERIS. ECLERIS will not be liable for the damage caused by repairment, or service performed by unauthorized personnel.
- In case of any problem, the system must be laid a plane surface and power cable disconnected.
- The device must be used only by personnel informed of all this warnings.
- Any use outside of the manufacturer specific intent use, will exclude ECLERIS of all liability.
- This user manual must be with the device for permanent review. If the system is sold or donated, the user manual must be delivered with the device.
- Although the light source does not damage the eyes, it is recommend not to look directly into the light channel or the end of the colposcope and handling it according to instructions.

If as a consequence of:

- Inadequate use of the equipment.
- No use of this manual.
- Poor care and maintenance of the equipment.
- Repair and manipulation by unauthorized personnel.

...any material or personal damage were caused to third parties, ECLERIS, the manufacturer and the supplier of the equipment, shall not assume any responsibility for such damages.



Do not dispose the device, or any of the accessories with the domestic waste. Research the local rules and laws for proper disposal. It is the user responsibility to deliver the system to the proper location for disposal or recycle of electrical and electronic device or contact the manufacturer or authorized representative to proceed on the elimination of the system on a safe and ecological way.

3. DESCRIPTION

3.1 INTENDED USE

The Ecleris Microstar C-100 Colposcope has been designed for gynecological diagnosis observations.

3.2 INTENDED USER

The device has been designed to be used by medical, paramedical or health professionals

3.3 DESCRIPTION AND COMPONENTS

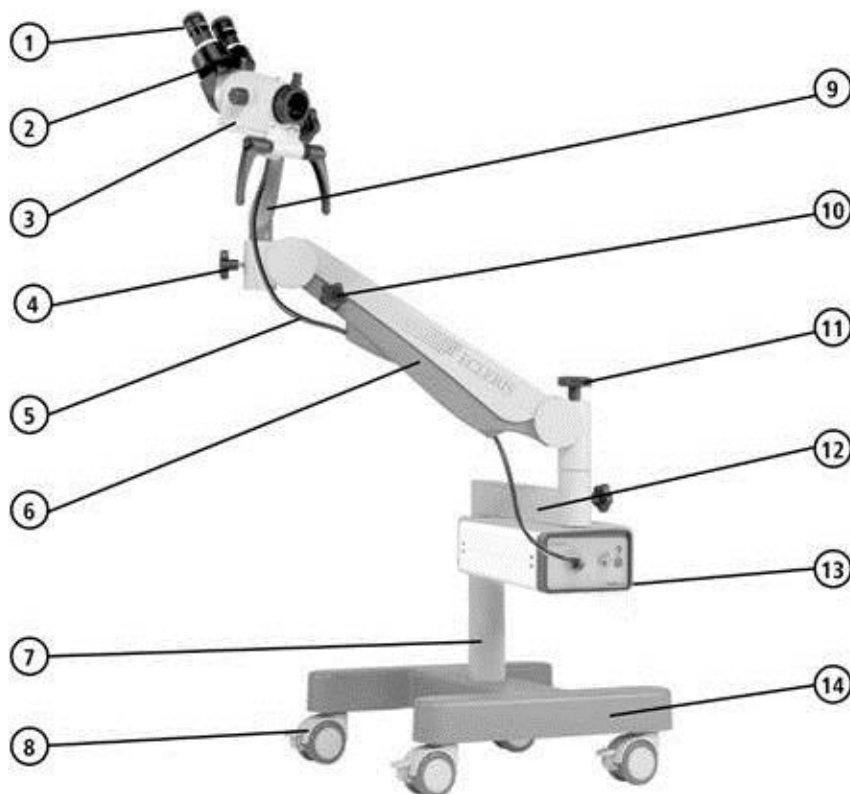
Carefully unpack the accessories and remove them from their packing. Check for missing items and evidence of shipping damage. File any complaints with the manufacturer or supplier immediately. Retain the original packing materials for later use. These can come handy when the equipment must be transported.

The Ecleris Microstar C-100 Colposcope includes the following necessary components. Please identify and check them before you proceed with the installation:

3.3.1 FLOOR STAND – PARALLELOGRAM ARM MODEL – C-100F

Components:

- 4 Wheels with brakes
- 1 Base and column
- 1 Complete pantograph arm
- 1 Light source
- 1 Head with 1 objective lens
- 1 Binocular
- 2 Eyepieces
- 1 Fiber optic cable
- 1 3 meters AC interlock cable
- 1 Cover
- 1 User's manual
- 1 3/16" Allen key
- 1 4 mm Allen key

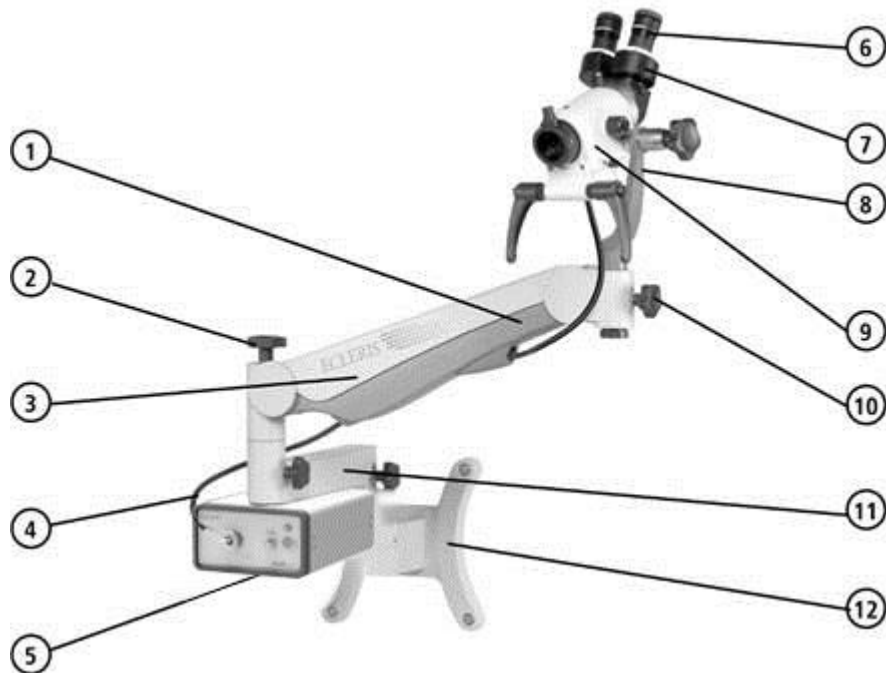


- | | |
|--|---------------------------------|
| 1. Eye piece | 8. Wheels with brake |
| 2. Binocular | 9. Head fork pole |
| 3. Head | 10. Parallelogram arm brake |
| 4. Regulation of head rotation command | 11. Weight compensation command |
| 5. Fiber optic cable | 12. Forearm |
| 6. Parallelogram arm | 13. Double light source |
| 7. Column | 14. Base |

3.3.2 WALL-MOUNTED PARALLELOGRAM ARM MODEL – C-100W

Components:

- 1 Wall mount
- 4 Wall anchors with 4 bolts
- 1 Complete pantograph arm
- 1 Light source
- 1 Head with 1 objective lens
- 1 Binocular
- 2 Eyepieces
- 1 Fiber optic cable
- 1 3 meters AC interlock cable
- 1 Wall-mount power cable
- 1 Cover
- 1 User's manual
- 1 3/16" Allen key
- 1 4 mm Allen key



- | | |
|--------------------------------|--|
| 1. Parallelogram arm brake | 8. Head fork pole |
| 2. Weight compensation command | 9. Head |
| 3. Parallelogram arm | 10. Regulation of head rotation
command |
| 4. Fiber optic cable | 11. Forearm |
| 5. Light source | 12. Wall mount |
| 6. Eye piece | |
| 7. Binocular | |

3.3.3 GYN CHAIR MOUNT COLPOSCOPE MODEL – C-100T

Components:

- 1 Gyn Chair support
- 1 Complete pantograph arm
- 1 Light source
- 1 Head with 1 objective lens
- 1 Binocular
- 2 Eyepieces
- 1 Fiber optic cable
- 1 3 meters AC interlock cable
- 1 Cover
- 1 User's manual
- 1 3/16" Allen key
- 1 4 mm Allen key

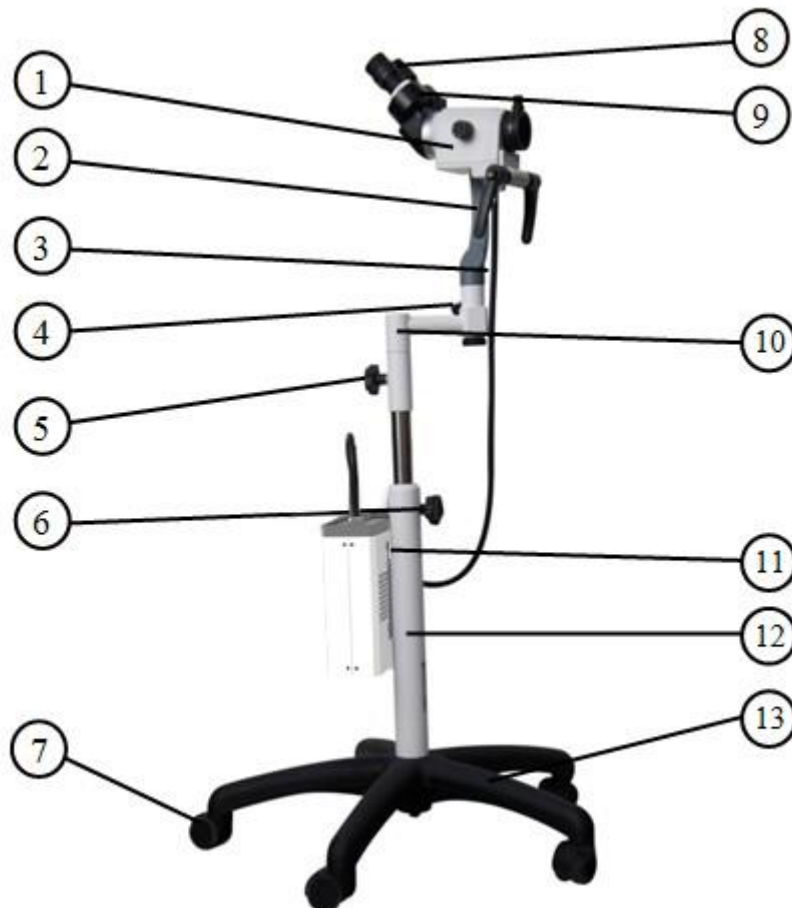


- | | |
|--------------------------------|---|
| 1. Parallelogram arm brake | 8. Head fork pole |
| 2. Weight compensation command | 9. Head |
| 3. Parallelogram arm | 10. Regulation of head rotation command |
| 4. Fiber optic cable | 11. Forearm |
| 5. Light source | 12. Gyn Chair support |
| 6. Eye piece | |
| 7. Binocular | |

3.3.4 FLOOR STAND – TELESCOPIC COLUMN MODEL – C-100A5E

Componentes:

- 1 Base with wheels
- 1 Telescopic Column
- 1 90° Arm
- 1 Light Source
- 1 Head with 1 objective lens
- 1 Binocular
- 2 Eyepieces
- 1 Fiber optic cable
- 1 3 mts. Power cord
- 1 Cover
- 1 User's manual
- 1 10 mm Allen key
- 1 4 mm Allen key



- | | |
|---|-----------------------|
| 1. Head | 7. Wheels |
| 2. Head handle | 8. Eye piece |
| 3. Fiber optic cable | 9. Binocular |
| 4. Regulation of head rotation command | 10. Elbow (90° piece) |
| 5. Regulation of elbow rotation command | 11. LED light source |
| 6. Height brake | 12. Column |
| | 13. Base |

3.3.5 COMPLETE HEAD

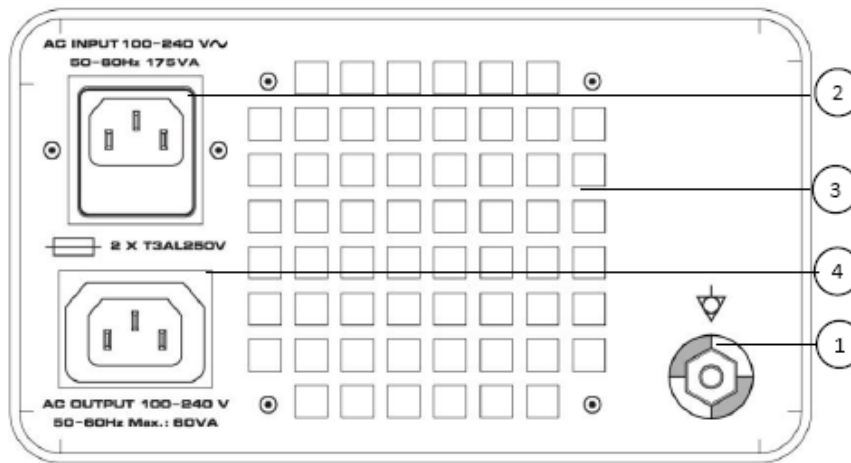


- | | |
|---------------------------|------------------------------|
| 1. Magnification selector | 7. Eyepiece rubber |
| 2. Micro focus adjustment | 8. Eyepiece |
| 3. Objective lens | 9. Binocular body |
| 4. Green filter | 10. Head body |
| 5. Head handle | 11. Balance movement control |
| 6. Fiber optic cable | 12. Head fork pole |

3.3.6 LIGHT SOURCE



1. ON/OFF Button.
2. Light Intensity Control (Dimmer).
3. Fiber optic cable connector.



1. Earth connection.
2. Power cord connector with fuse holder.
3. Ventilation grid.
4. Auxiliar Power output connector (maximun load 60 VA).

3.3.7 COMPATIBLE ACCESORIES

- LED Light source Everlux.
- Beam splitter.
- Digital photographic camera adapter.
- Converter of beam splitter to endocoupler C-Mount
- Stand for LCD monitor
- 45° inclined binocular.
- Straight binocular.
- Eyepieces 10X.
- 200 mm Objective lens.
- 250 mm Objective lens.
- 300 mm Objective lens.
- 400 mm Objective lens.
- Cover.
- Autoclavable covers kit (handles and knobs).
- Digital capturing and documentation system – Ecleris ENDODIGI.

4. INSTALLATION AND SET UP

Experienced personnel is not required for the installation of the Ecleris Microstar C-100 Colposcope. Additionally to the provided tools, for the installation of the Floor Stand - Parallelogram Arm Model (C-100F) you will need 13 mm and 27 mm wrenches or an adjustable wrench. For the Wall-Mounted Parallelogram Arm Model (C-100W) you will also need an electric drill, a 12mm widia drill bit and a 1/2" socket wrench.



To avoid accidents while handling heavy parts of the equipment, two people should perform the installation of the Colposcope, carefully following the enclosed instructions.

Once the installation is over, please continue with the procedures detailed in the Revision section.

4.1 FLOOR STAND - PARALLELOGRAM ARM MODEL – C-100F

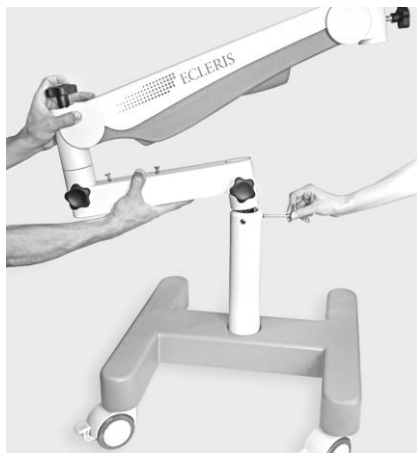
- 1) Insert the 27mm bolt as shown in the picture.



- 2) Tighten the 27mm bolt to the column as shown in the picture using a socket, fixed or adjustable wrench.



- 3) Loosen the 3 screws at the column's receiving end with the 3/16" Allen wrench. Place the colposcope's arm, as shown in the figure. You must achieve a perfect fit with the column. Fully tighten the 3 screws.



- 4) Introduce the head fork pole and its Teflon washer into the receiver at the end of the parallelogram arm and adjust the security notch firmly.



- 5) Place the binocular in the matching binocular support, verifying that the marks are aligned. Adjust the binocular screw to achieve the best possible seat.



- 6) Attach the eyepieces to the binocular. Spread the rubber protectors surrounding the eyepieces.

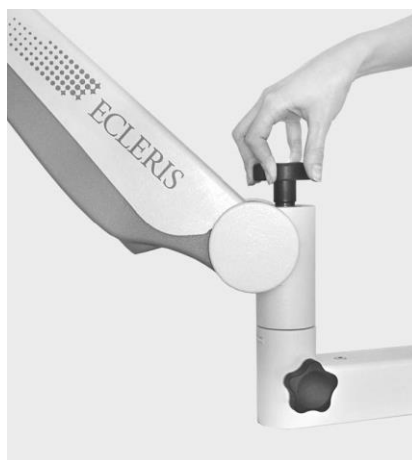
Note: If the user wears eyeglasses, leave the rubber protectors folded.



- 7) Pass the fiber optic cable connector through the parallelogram arm cover and connect it to the head I.



- 8) If necessary, once the colposcope has been installed, regulate the weight compensation command, located at the proximal end of the parallelogram arm.



4.1.1 LIGHT SOURCE

- 1) Locate the light source under the forearm, as shown in the picture.



- 2) Set the guide lugs in the holes on the upper cover of the light source.
- 3) Slide the light power supply backwards and then tighten the 4mm Allen screws.

Note: The mounting procedure is the same for both the LED light source and the Halogen light source.

4.2 WALL-MOUNTED PARALLELOGRAM ARM MODEL – C-100W

Before you proceed with the installation, you must decide the adequate height for the wall-mount, as well as the correct leveling.



The wall-mounted model must be fixed only to high resistance walls.

You should not fix the wall-mount to walls made of hollow bricks or walls with less than 15 cm thickness, or plaster panels, wooden walls or other low resistance material.

We recommend that you consult with a construction specialist, to analyze the correct support mounting.

- 1) Mark a 17 cm (7") long horizontal line on the wall, perfectly leveled to the floor at a height of 125 cm (49.2").



- 2) Place the wall mount on the line, aligning the straight lower part of the wall-mount with the drawn line. Verify with a level that it is horizontal.
- 3) Mark with a pencil the place on the wall where the upper right hole of the wall-mount is, to use as a reference.



- 4) With an impact electric drill and a 12mm wide drill bit, drill the upper right hole, introduce the wall anchor and fix the wall-mount with the bolt. Thoroughly tighten the bolt with a 1/2" socket or adjustable wrench.
- 5) Once the upper right corner is fixed you must repeat steps 3 and 4 for the upper left corner, and then the remaining lower corners.



To achieve correct operation check that the leveling is correct before drilling the wall.

- 6) The wall-mount should remain firm. Verify it by testing its resistance loading a weight eight (8) times heavier than the total weight of the colposcope.



ECLERIS is not responsible for any physical or equipment damage that may occur due to the incorrect fixation of the wall-mount.

- 7) Loosen the 3 screws at the wall-mount's receiving end with the 3/16" Allen wrench. Lift and place the colposcope's forearm as shown in the picture. You must achieve a perfect fit with the wall-mount. Tighten up the 3 screws on the wall-mount. Finally, verify that the procedure has been correctly performed by rotating the arm around the support in both directions, until you reach the end. The movement is limited to an arc of 170°
- 8) Connect one end of the wall-mount power cable from the light source to the upper connector of the wall-mount and the 3 meters AC interlock cable from the connector underneath the wall mount to the electric power network.



For proper visualization of the electrical connections, the wall-mount is shown without the forearm.

- 9) Follow steps 5 thru 9 from 4.1 section for head, binocular, eye pieces and lamp source installation

4.3 GYN CHAIR MOUNT – C-100T

- 1) Remove the 4 Allen screws using a 5mm key in order to attach the stand to the Gyn chair and tighten them firmly.
- 2) Get the 3 Allen screws loose from the stand by using a 3/16” Allen key provided.
- 3) Place the colposcope forearm achieving a perfect fit with the gyn chair stand. Fully tighten the 3 screws on the gyn chair stand.
- 4) Follow steps 5 thru 9 from 4.1 section for head, binocular, eye pieces and light source installation.



4.4 FLOOR STAND - TELESCOPIC COLUMN MODEL – C-100A

- 1) Place the colposcope's base in a vertical position.
- 2) Insert the column into the base and hold it by mean of the provided 10mm Allen screw. Place the washer between the screw and the base as shown in the picture below.



- 3) Stand the base on the floor and insert the 90° arm into the column.



- 4) Attach the light source to the column using the 4 Phillips screws provided.



- 5) Insert the head fork into 90° arm.



- 6) Place the binocular in the matching binocular support, verifying that the marks are aligned. Adjust the binocular screw to achieve the best possible seat.



- 7) Attach the eyepieces to the binocular. Unfold the rubber protectors surrounding the eyepieces.

Note: If the user wears eyeglasses, leave the rubber protectors folded.



- 8) Attach one end of the fiber optic cable to the light source and the other end to the head.



If you detect any abnormality before you start operating the Ecleris Microstar C-100A5E Colposcope, please contact the technical department of your local distributor or nearest ECLERIS office prior to using the colposcope on patients.

4.5 FOCAL LENS MOUNTING

Screw the lens to the head, tightening until the micro focus adjustment reaches the desired position. Counterscrew the nut for proper fixation of the lens.



4.6 BEAM SPLITTER AND CAMERA INSTALLATION

- 1) Remove the binocular if it is already placed.
- 2) Tightly screw the camera to the beam splitter until its end.



Do not over tight the video camera to the beam splitter in order to avoid mechanism damage.

- 3) Place the beam splitter with the camera verifying that the marks are aligned. Adjust the beam splitter screw to achieve the best possible seat.



- 4) The same way, place the binocular on top of the beam splitter.
- 5) Remove the fiber optic cable from the colposcope's arm.
- 6) Introduce the camera's cable in the head through the cover of the parallelogram arm.
- 7) Introduce once again the fiber optic cable through the colposcope's arm. Connect the fiber optic cable to the head.
- 8) Connect the fiber optic cable at the front of the light source pushing it forwards.
- 9) Connect the video cable to the video output on the light source.
- 10) Connect the other end of the video cable to the monitor's video input (Video IN).
- 11) Turn on the light source and monitor.
- 12) Locate the head at the working distance according to the focal lens (200, 250, 300 or 400 mm) and focus a flat image or object. Working distance must be measured from the focal lens to the object. It is very important to use a flat object or image during this procedure.
- 13) Set the oculars to its middle position (no dioptics correction).
- 14) Rotate the magnification selector up to the maximum factor (2.5X).

- 15) Looking through binoculars, focus the image using the micro-focus knob until all magnifications are in focus (parafocusing).
- 16) Adjust the oculars dioptrics to correct eyesight deviations, until the visualized image gets comfortable and sharp.
- 17) After the optical image is parafocused (all magnifications in focus), adjust the camera position until its image reaches the same orientation as the optical image (see image orientation).
- 18) Rotate the magnification selector up to the maximum factor (2.5X).
- 19) Focus the camera's image using the beam splitter focus control until all magnifications are in focus.



Important:



The optical Head is parafocused only at the working distance according to the used focal lens. Deviations in working distance will affect the optical parafocusing and focus adjustment should be repeated.

4.6.1 IMAGE ORIENTATION

To give the monitor's image the same orientation seen through the binocular, follow these steps:

- 1) Loose the 3 Allen screws in the beam splitter by using the supplied 1.5mm Allen key.



- 2) Rotate the video camera until the orientation of the image visualized through the binoculars is the same as the image on the monitor.
- 3) Adjust the 3 Allen screws of the Beam splitter to fix the camera position.

4.7 REVISION

Once installation is over and before starting-up the Ecleris Microstar C-100 Colposcope, please go through the following check list:

- Check that the voltage to be used is the same as the one stated on the back of the light source.
- Verify that the electrical network used has its grounding connection in perfect conditions and that it makes perfect contact with the equipment.
- Check that the fuse holder has a fuse installed and that it is the correct one (2 A, 250V for 220 V / 4 A, 250V for 110 V).
- Check that the ventilation grid of the light source is completely free, without obstruction.
- Ensure an adequate air flow.
- Verify that there are no water or liquid sources near the equipment that may damage it, such as gases or flammable emissions in the environment.



If before connecting the Ecleris Microstar C-100 Colposcope any anomaly is detected, please contact the technical service department of your local distributor or the closest ECLERIS office, prior to its use.

5. OPERATION – FUNCTIONS

This section thoroughly describes the equipment functioning.



This system must be used only for medical, paramedical or health professionals.

- 1) Turn the light source off.
- 2) Connect the power supply cable to the equipment and the electrical network.
- 3) Turn the light source on.
- 4) Insert the end of the fiber optic cable in the colposcope's head.
- 5) While the colposcope is not being used, the light source should be turned off.

5.1 LIGHT SOURCE

The Ecleris Microstar C-100 Colposcope has an integrated LED (Light-Emitting Diode) illumination module.



The focal point of the optical system reaches very high temperatures, causing the end of the fiber optic cable to get hot.

Never touch the inside-end of the fiber optic cable.

Do not look directly into the end of the light canal or the end of the objective lens of the colposcope.

It is recommended to connect the fiber optic cable before you turn on the light source.

5.2 INTERPUPILLARY DISTANCE ADJUSTMENT

To perform this adjustment you must hold the body of the binocular with both hands and turn them simultaneously. You must move these backwards and forwards until the distance between them matches your interpupillary distance.

5.3 DIOPTRIC CORRECTION ADJUSTMENT

The Ecleris Microstar C-100 Colposcope has independent dioptic correction for both eyepieces. The adjustment is made by turning the eyepieces towards the + sign or towards the – sign.

5.4 MAGNIFICATION VARIATION

The magnification selector has six positions: 4/6/10/16/25 x. The 10 x position is repeated in the selector. The mark on the body of the colposcope will show the selected magnification.

The colposcope's magnification can be changed with any of the commands located on either side of the binocular, turning them slowly until you reach the desired magnification.

5.5 COLOR FILTER

If the operator considers it necessary, a color filter can be placed between the light source and the objective lens by pulling out the proper control.

6. MANIPULATION AND MOVEMENTS

The Ecleris Microstar C-100 Colposcope has been designed with ball bearings to obtain very stable movements. Ball bearings allow easy handling and proper positioning of the head for better operation.

6.1 FOREARM MOVEMENT

Forearm rotations greater than 220° allow the proper positioning of the colposcope. The colposcope has an adjustment mode and locking that allows the regulation of the movement. It also has a rotation range in both directions that must be adjusted during installation.

The illumination system has a fiber optic cable which length avoids movement limitations, allowing the free turn of the head without damaging the cable.

6.2 PARALLELOGRAM ARM MOVEMENT

The parallelogram arm can rotate more than 220° in relation to the forearm. If a more precise movement is desired, turn the command that controls this parameter. Adjust this command tightly to completely block these movements.

The correct vertical positioning of the colposcope will be achieved articulating the arm. It has been designed and calibrated to achieve auto stability in the desired position with a minimum effort. The parallelogram arm has an adjustment and locking command for the vertical movement. It also has an auto compensation system (WBS - Weight Balance System) for weights between 3 and 7 Kg. This command allows movement adjustment according to the quantity of accessories installed.

6.3 HEAD ROTATION AXIS

For a better alignment of the optical axis in relation with the target the head can be rotated on the forked pole. The rotational range is 0-360 degrees. The movement can be adjusted or completely locked using the control knob.

6.4 HEAD TILT

The colposcope allows a 180° tilt and has an adjustment knob on the head's left hand side. This knob allows a continuous adjustment of the tilt setting or a complete tilt lock to position the colposcope's head as desired with a minimum effort thanks to the ball bearings.



Before loosening this command, verify that the fiber optic cable is not strained.

6.5 SHIPMENT

The Ecleris Microstar C-100 Colposcope has been designed to be moved over short distances within a doctor's office or room. If it is necessary to move the colposcope over larger distances, special attention should be paid to the following recommendations:



Place the arm in "closed" position over the forearm. This is the most favorable position for the stability of the colposcope.

Set the brakes to avoid movements of the forearm-arm and head.

Place the cover on the colposcope.

Disconnect the AC interlock cable from the electrical network and tie it firmly to the colposcope's column.

Loosen the wheels brakes.

Two people should move the colposcope due to its weight.

Do not circulate over slanted surfaces with an angle larger than 10°, avoiding tipping over the colposcope.

By following these recommendations accidents during transportation and any further damage to the colposcope due to incorrect handling will be avoid.

7. MAINTENANCE

To maintain optimum operation of the Ecleris Microstar C-100 Colposcope, it is recommended to perform a simple revision of the equipment once a year.

This procedure should include:

- Lubrication.
- Cleaning.
- Revision of electrical connections.

To perform any revision or maintenance work, contact your local distributor or the closest ECLERIS office.

7.1 CLEANING



Before cleaning the Ecleris Microstar C-100 Colposcope, disconnect the power supply cable form the electrical network.

Do not send to the autoclave any part or component of this device that is not specifically marked as autoclavable.

Do no sterilize or immerse the device or its accessories

The cleaning, disinfection and sterilization of accessories not provided by ECLERIS must be performed following the instruction provided by their manufacturer.

7.1.1 CLEANING THE EXTERNAL SURFACES

Clean the external surface of the equipment using a piece of cotton or cloth moistened with mild detergent or soap. Use only adequate products for the external cleaning of electrical equipment, prepared in accordance with the manufacturer's indications.



Perform the cleaning with special care, avoiding water or humidity access to the equipment.

Do not use flammable products, especially alcohol when the light source is not cold.

If flammable products were used, do not turn the light source on until one (1) hour after the cleaning since an explosive mixture may be produced.

Do not use detergents, solvents or any other abrasive agent.

Do not autoclave any part of the device.

It is recommended to clean the exterior surface of the device every 15 days.

7.1.2 CLEANING OF OBJECTIVE LENS AND EYEPIECES

Smoothly rub the lens surface using circular movements with a thin tissue paper moistened in acetone.

7.2 ELECTRICAL CONNECTIONS

Constantly check the condition of all components and their aging process.

Verify there are no:

- Faulty, broken or cut cables.
- Faulty connection between the cable and the plug.
- Oxide corrosion in connection pins.

7.3 FUSE CHANGE

To avoid wasting time due to unavailability is recommended to have spare fuse.

1. Disconnect the power cord from the power supply and equipment.
2. Under the connector for the power cord there is a small rectangular piece of plastic where the fuses are placed. With the help of a screwdriver and performing light pressure, remove the cover to replace the damaged fuse.
3. Remove the damaged fuses and replace them immediately, use fuses of the same characteristics as the replaced one.



Use ONLY fuses as indicated on the rear panel of the equipment and IEC60127 certification.

4. Place the plastic part containing the fuses again.
5. Connect the power cord.



7.4 FIBER OPTIC CABLE CHANGE

- 1) Turn the light source off.
- 2) Remove the distal end of the fiber optic cable, placed inside the colposcope's head. Release the other end of the fiber optic cable from the light source.
- 3) Slide the fiber optic cable from the parallelogram arm's plastic cover.
- 4) Insert the new fiber optic cable through the plastic cover of the parallelogram arm, beginning with the end near the arm/forearm joint.
- 5) Connect the fiber optic cable to the light source.
- 6) Connect the ac interlock cable to the colposcope, and then to the local electrical network.
- 7) Turn the light source on.

8. TECHNICAL SPECIFICATIONS

MICROSTAR C-100 COLPOSCOPE

OPTICAL SYSTEM	Composed of apochromatic lenses with a fungus-resistant coating
BINOCULAR TUBES	45° Inclined: 55 - 80 mm
OBJECTIVE LENS	Straight: 45 to 80mm f: 200 / 250 / 300 / 400 mm (uno incluido)
MAGNIFICATIONS	Apochromatic five steps magnification changer through a click-stop revolving mechanisms.
FINE FOCUS	Manual
EYEPIECES	10 x wide angle dioptric setting: + / - 5
FIELD OF VIEW (10 X)	Ø 24 mm / 0.95" (for f: 200 mm) Ø 31 mm / 1.22" (for f: 250 mm) Ø 36 mm / 1.42" (for f: 300 mm) Ø 50 mm / 2.00" (for f: 400 mm)
INTERPUPILAR DISTANCE	2.16" - 2.95" 55 - 75 mm
FILTER	Green

ILLUMINATION**LED LIGHT SOURCE**

TYPE OF ILLUMINATION	Coaxial illumination through 7 mm fiber optic light guide cable
LIGHT SOURCE	High intensity led
ILLUMINATED FIELD	Ø 70 mm / 2.75" (for f: 200 mm)
	Ø 90 mm / 3.54" (for f: 250 mm)
	Ø 107 mm / 4.2" (for f: 300 mm)
	Ø 145 mm / 5.7" (for f: 400 mm)
SUPPLY VOLTAGE	100 - 240 V, 50 – 60 Hz
Nº OF PHASES	1 (monophase)
SHOCK PROTECTION	Class I
APPLICABLE PART	BF type
USE	Continuous
DEGREE OF PROTECTION AGAINST	IPX0
CONSUMPTION	175VA
FUSES	2 x T3AL250V
COLOR TEMPERATURE	6000°K Approx.
USEFUL LIFE OF LEDS SYSTEM	Approx. 50.000 hours
LED SYSTEM POWER	80W
REFRIGERATION	Forced
THERMAL PROTECTION	Automatic shutdown of LEDS system for over temperature
DIMMER	Electronic

PANTOGRAPH ARM

TYPE	WBS-Weight Balance System
ROTATION MOVEMENTS	Proximal and distal rolling bearings system
HEIGHT ADJUSTMENT	25" / 63.5 mm

FLOOR STAND - PARALLELOGRAM ARM – C-100F

BASE	H shaped, 18.5" x 19.3" / 470 x 490 mm
OBJECTIVE FLOOR HEIGHT	21.65" / 46.45"
	Min. /Máx. 550 / 1180 mm
HEIGHT ADJUSTMENT	38.2" / 970 mm (máx.)
MIN / MAX	
HORIZONTAL REACH	120.15 pounds / 54.5 Kg

WALL MOUNTED - PARALLELOGRAM ARM – C-100W

BASE	H shaped, 10.6" x 10.6" / 270 x 270 mm
HORIZONTAL REACH	43.7" / 1111 mm (máx.)
WEIGHT	55.1 pounds / 25 Kg

GYN CHAIR MOUNT– C-100T

STAND	5.5" x 3.7" / 140 x 95 mm
HORIZONTAL RANGE	42.5" / 1080 mm (máx.)
ADJUSTING DIAMETERS RANGE	1.18"- 1.19" / 30-38 mm
WEIGHT	50.7 pounds / 23 kg

FLOOR STAND - TELESCOPIC COLUMN – C-100A

BASE	25.2" x 25.2" / 640 x 640 mm
HEIGHT REGULATION	3.8" to 4.7" / 97.5 to 120 mm

WEIGHT 46.3 pounds / 21 kg

SERVICE CONDITIONS

TEMPERATURE 50 – 104 °F
 HUMIDITY 35 - 75 % relative humidity
 PRESSURE 700 - 1060 hPa

STORAGE AND TRANSPORTATION CONDITIONS

TEMPERATURE -22 – 122 °F
 HUMIDITY 10 - 95 % relative humidity
 PRESSURE 500 - 1060 hPa

9. TROUBLESHOOTING

The following table indicates the most common problems and their quick solutions. Please consult this table for any difficulty you may encounter.

PROBLEM	PROBABLE CAUSE	ACTION
The light source does not work	It is not connected to the local electrical network The AC interlock cable is broken or cut. The plug is not in good conditions The fuse is broken or burnt out Network's voltage is not compatible with the one required	Connect the cable to the network Change the cable Change the plug Change the fuse Verify voltages

If the problem cannot be solved, please contact your local distributor or the closest ECLERIS office and request technical service.

10. TECHNICAL SERVICE

The Ecleris Microstar C100 Colposcope must be repair and/or maintained exclusively by qualified personnel trained by ECLEIRS. Only the parts designed to be repair by ECLEIRS can be serviced.

ECLERIS, will provide if required, circuits, drawings, list of components, descriptions and instructions for calibration or other useful information required by qualified trained technical personnel, to repair the parts of the device marked as reparable by the manufacture.

- 1) Contact the technical service department of your local distributor or the nearest ECLERIS office.

- 2) Give detailed information of the problem.
- 3) If the problem cannot be solved by troubleshooting, the product shall be sent for its repair.

The following product information shall be attached:

- Owner's name.
- Owner's address.
- Contact name and phone number.
- Product's serial number.
- Problem's description.

The Ecleris Microstar C-100 Colposcope shall be sent in its original packaging so that it is not damaged during transportation. ECLERIS shall not be liable for damages that may occur during transportation, caused by deficient packaging.

11. WARRANTY

ECLERIS states that the Ecleris Microstar C-100 Colposcope has complied with the required Quality Control verification and has no manufacturing defects. This guarantees the appropriate functioning under adequate use in agreement with the indications of this manual.

The warranty period is for one (1) year as from the date of purchase invoice.

ECLERIS shall not be liable for any damage caused to/by the Colposcope due to incorrect use, negligence, cleaning or incorrect storage.

Any repairs made by personnel not authorized by ECLERIS will void this warranty.

The described warranty is exclusively valid for the original buyer.

The following parts are excluded from the warranty:

- Parts and components manufactured by third parties.
- Cables and plugs.
- Damages resulting from connections to inadequate power supplies.

Disregarding the warranty situation, all shipment from and to the authorized ECLERIS technical service facilities is the sole responsibility of the client