

DISCOVERY

ADVANCED VISION SYSTEM FOR ALL MUSICAL INSTRUMENTS



USER'S GUIDE 2.0

BACKGROUND INFORMATION ON THE DEVICE

DISCOVERY consists of an illuminator and a camera. The illuminator is a light source independent from the camera. It has two LED light sources with different cable structure: a rigid and a flexible one. The LED light with rigid cable allows to reach with accuracy every internal point of the instrument. The LED light with the flexible cable, is placed stable into the eye of a lower f-hole, allowing you to work handsfree. The illuminator is in itself also useful for other operations inside the instrument: for example for fitting the soundpost.

The camera is composed of a semi-rigid probe with integrated electronics. It can be inserted even through the narrowest f-holes of any violin and also allows viewing the inside of a strung up instrument. The focus is manual with excellent depth of field. The sensor has a very high sensitivity and a VGA resolution which allows a clear and defined vision with very good colour performance. The system is easily connected to your computer via USB cable and is managed by a simple software with which you can shoot movies and take pictures of the inside of the instrument you want to examine.

INTERFERENCES

The device is subject to interferences (radio and light) that can affect performance.

USE SENSIBLY

Use only in its normal position as explained in the product documentation.

QUALIFIED PERSONNEL

Only MICROTEx can install or do technical reparation on this product.

ACCESSORIES AND BATTERIES

Use only approved accessories and batteries. Do not connect incompatible products.

RESISTANCE

The device is not waterproof. Keep it dry.

CONNECTING TO OTHER DEVICES

When you connect to any other device, read its user guide for detailed safety instructions. Do not connect incompatible products.

CARE AND MAINTENANCE

This device is designed with care, and a very sophisticated product and should be handled with attention. The suggestions below will help you safeguard your rights during the warranty period.

- Keep the device dry. Rain, humidity and all types of liquids or moisture can contain minerals that may damage electronic circuits. If the device gets wet, remove the battery and dry the device completely before putting the battery back.
- Do not use or store the device in particularly dusty or dirty environments as it could become irreparably compromised in its functionality.
- Do not store the device in particularly hot environments. High temperatures can shorten the life of electronic circuits, damage batteries and warp or melt plastic parts.
- Do not store the device in particularly cold places. When the device returns to its normal temperature, moisture may condense inside the device and damage electronic circuit boards.
- Do not attempt to open the device in other ways than those indicated in the manual.
- Do not drop, hit or shake the device since internal circuits and mechanisms of the device may be damaged.
- Do not use corrosive chemicals solvents or detergents to clean the device.
- Do not paint the device. Paint can damage the mechanism and prevent proper operation.
- Use a soft, clean, dry cloth to clean any parts of the device.
- Use the battery charger indoors.

These suggestions apply equally to your device, the battery, the battery charger and any accessory. In case of malfunction of any of these devices, contact MICROTEx.

ADDITIONAL SECURITY INFORMATION

The device and its accessories contain small parts. Keep out of reach of small children under the age of 48 months.

Operating environment: Windows and Mac

When using the features in this device, obey all laws and local habits privacy and rights of others, including copyrights.

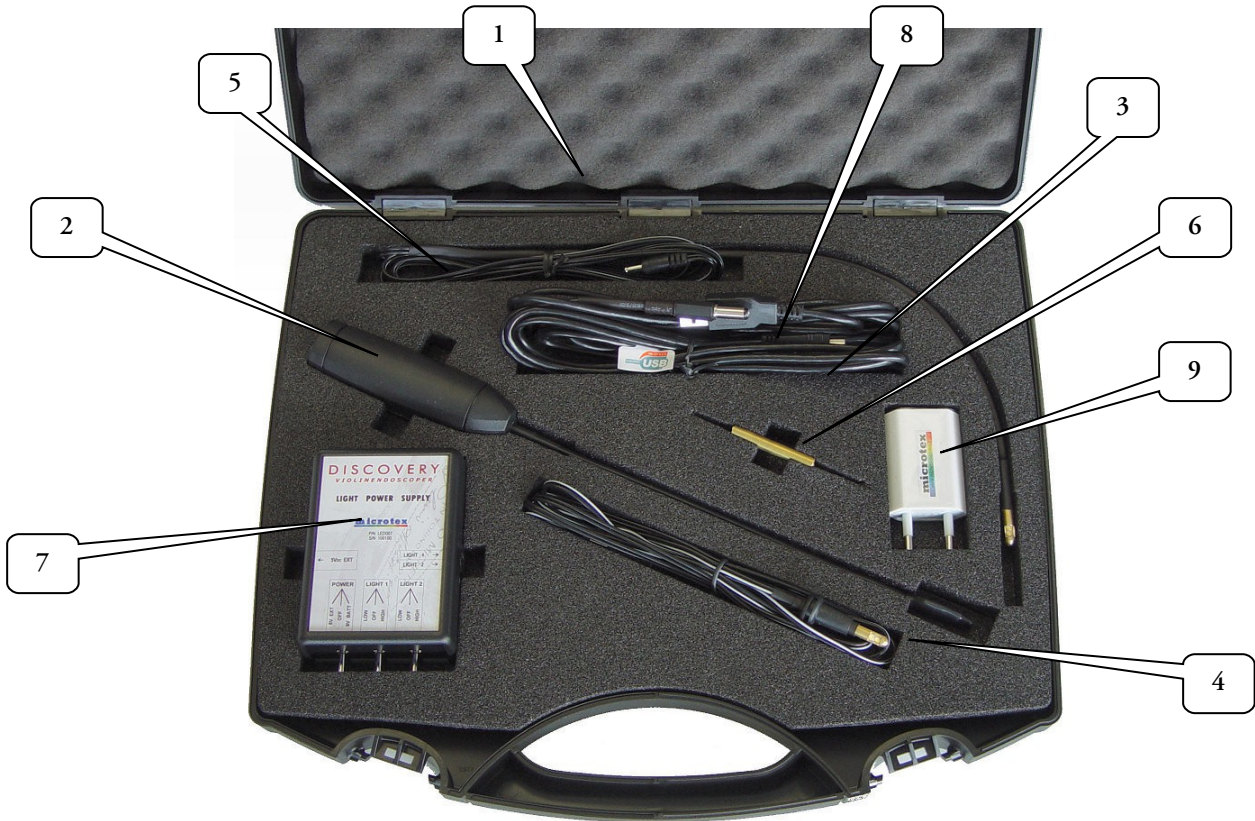
Copyright protections may prevent you from copying, modifying, transferring or forwarding some pictures videos and other elements..

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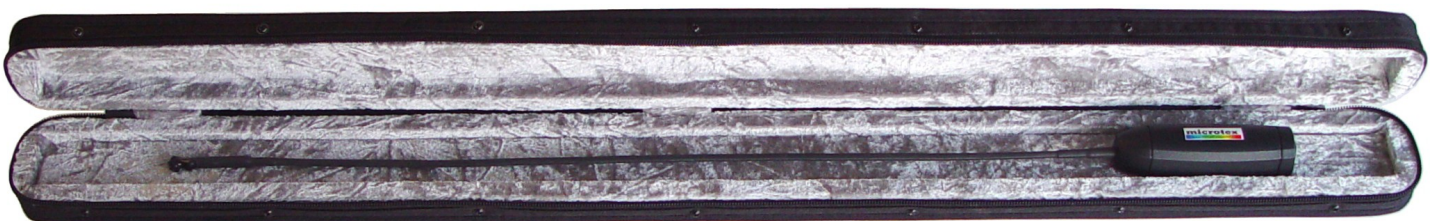
FIRST USE

After installing the vision program on your computer we recommend to start using the DISCOVERY without bending the stem. Begin to insert the camera head inside an instrument through the opening of an f-hole, make some videos, take some pictures, change the depth of field and you begin to get used to everything and learn to operate the camera. When these operations will be easier for you, bend the stem as indicated below in order to reach difficult viewable parts. Do this with all the required care because the circuit inside the stem can be bent only to an radius of 16cm otherwise it could be badly compromised in its functionality and durability.

COMPONENTS OF THE DISCOVERY VISION SYSTEM

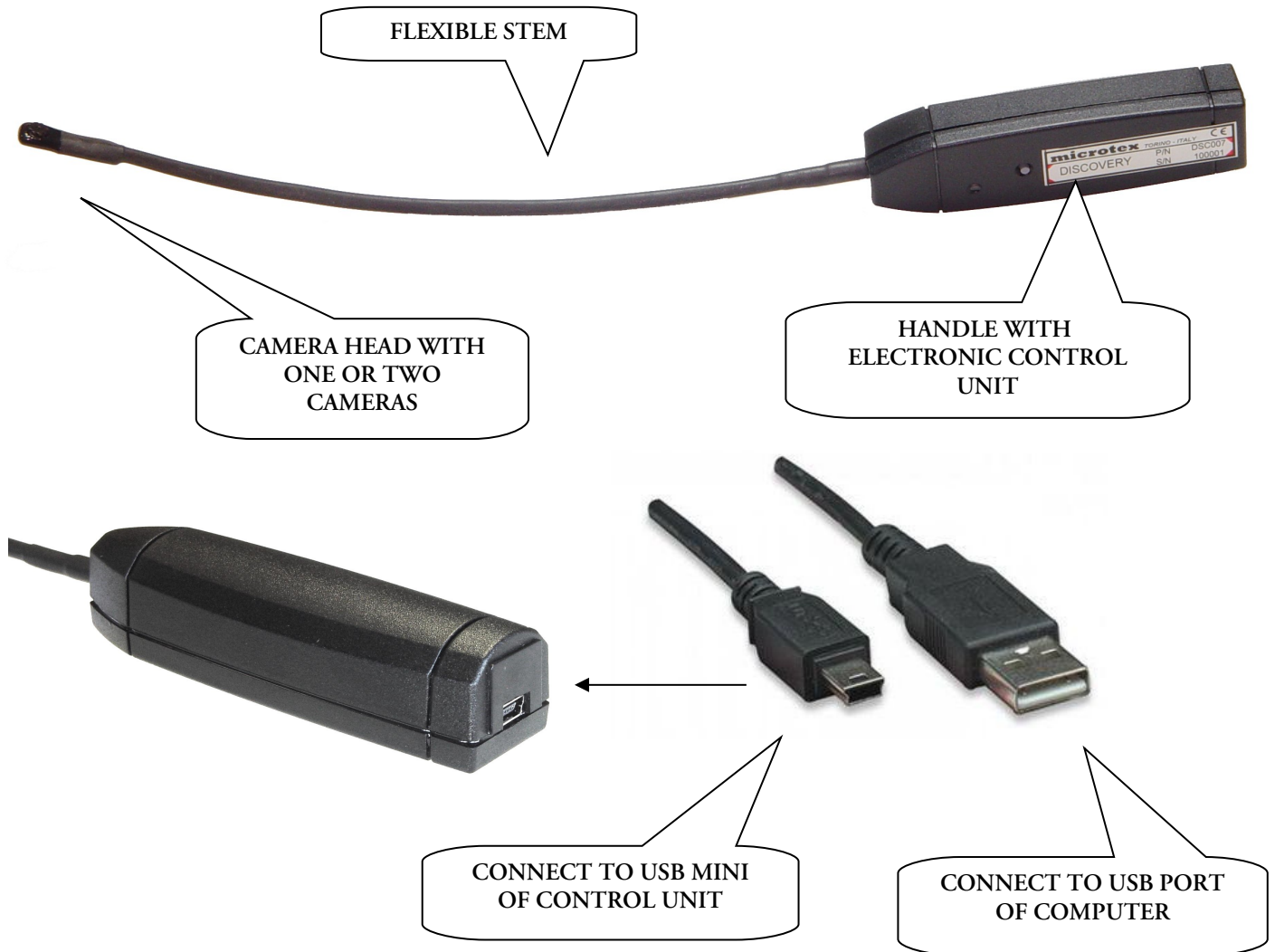


1. CARRYING CASE for the Discovery Vision System
2. SHORT CAMERA CAM007
3. USB-MINI CABLE to connect the camera to a computer
4. SHORT LED LIGHT to be inserted in the instrument through the lower f-hole eyes
5. LONG FLEXIBLE LED LIGHT
6. LENS TOOL to vary the focal length of the lens
7. LED POWER SUPPLY to control the LED lights
8. USB-PLUG CABLE to power the LED power supply from the USB 2.0 port of your computer or from the 220V power supply with USB 2.0 port
9. TRANSFORMER 220Vac → 5Vdc USB
10. LONG CAMERA CAM027



CAMERA

The camera consists of an optical head connected to the electronic control unit via a flexible stem. The camera connects to your computer via the USB-mini cable.



DISCOVERY CAM007 and CAM027 are cameras built according to the UVC standard, compatible with all modern LINUX - WINDOWS - MAC OS X operating systems. The format is 640 x 480, 15fps, YUV.

Windows XP, Vista, Windows 7, Windows 8 users

Install on your PC the free software "Debut Video Capture Software" downloadable from the website www.cremonatools.com or from the website <http://www.nchsoftware.com/capture/index.html>

Once the program is installed connect the camera with its MINI-USB cable to a USB 2.0 port of your PC. Wait for the operating system to install the drivers.

With the drivers installed, the LED is steady green. Open the "Debut Video Capture Software". Open the menu "Options". Select "Webcam / Capture Device". Select the camera "Discovery UVC camera". Give OK. Automatically the menu "Device" is activated and we see the image coming from the Discovery vision system on the screen.

Blinking orange LED and steady on green LED indicate that the camera works properly.

With the program "Debut Video Capture Software" we can both take pictures or make videos.

MAC OS X users

Use the programs already installed on your Mac, such as "Photo Booth". After launching for example the program "Photo Booth" (which you can find in your "applications" folder), select the camera "Discovery UVC camera".

If the camera is not recognized by the computer after opening the program "Photo-Booth", install the program I-GLASSES downloadable from the website <http://www.ecamm.com/mac/iglasses/>

You can download Debut "Debut Video Capture Software" for MAC also.

LINUX users

Install the program "Cheese".

Note for all operating systems

In fact, a lot of others free and commercial programs can be used to operate the DISCOVERY, a lot of which are already installed by default on computers.

A very interesting and innovative use is the use of DISCOVERY with **Skype**. In this way you have the opportunity to share the vision in real time with colleagues or customers to exchange opinions and evaluate quotes.

USING THE CAMERAS

DISCOVERY-CAM007:

short endoscopic camera for all instruments from violin to a larger size.

DISCOVERY-CAM027:

long endoscopic camera for cello, double bass.

Examples:



DISCOVERY-CAM007

The camera has manual focus. To adjust the focus use the supplied tool.

A rotation by a few degrees is sufficient to vary the focus significantly.

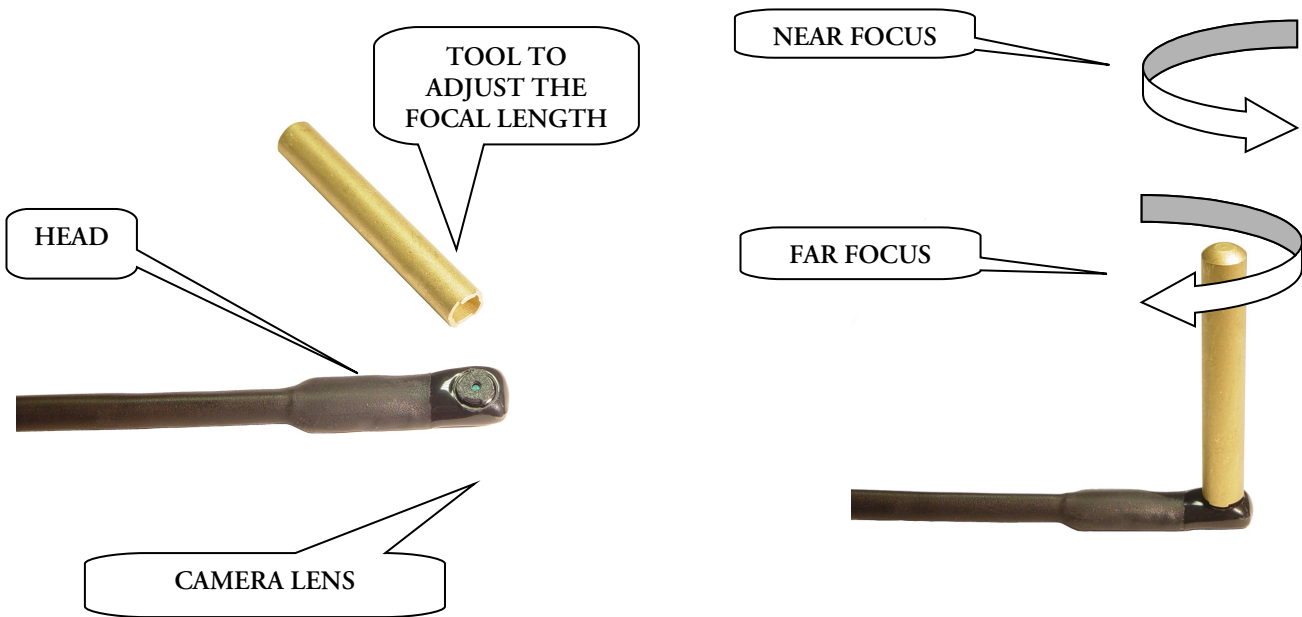
The camera was delivered with a depth of field adjusted from about 10 to 35 cm.

To focus further away rotate the lens clockwise.

To focus more closely (down to 3cm) rotate the lens counterclockwise.

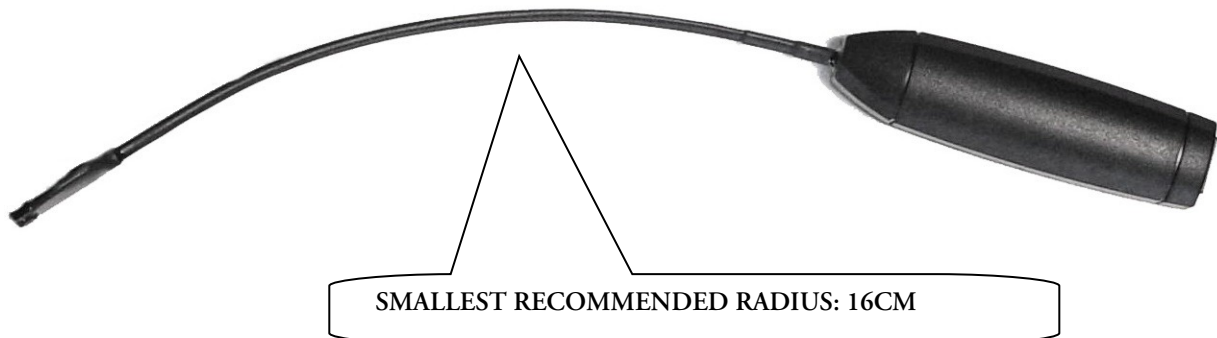
Before you turn the lens please check the focus by looking at the image on the computer screen.

This is a delicate operation: Be careful not to damage the threaded part where the lens is inserted and do not to dirty the vision sensor. In the case of damage to the lens, the lens can be removed by turning it counterclockwise and replaced with a new one that can be supplied by the technical assistance.

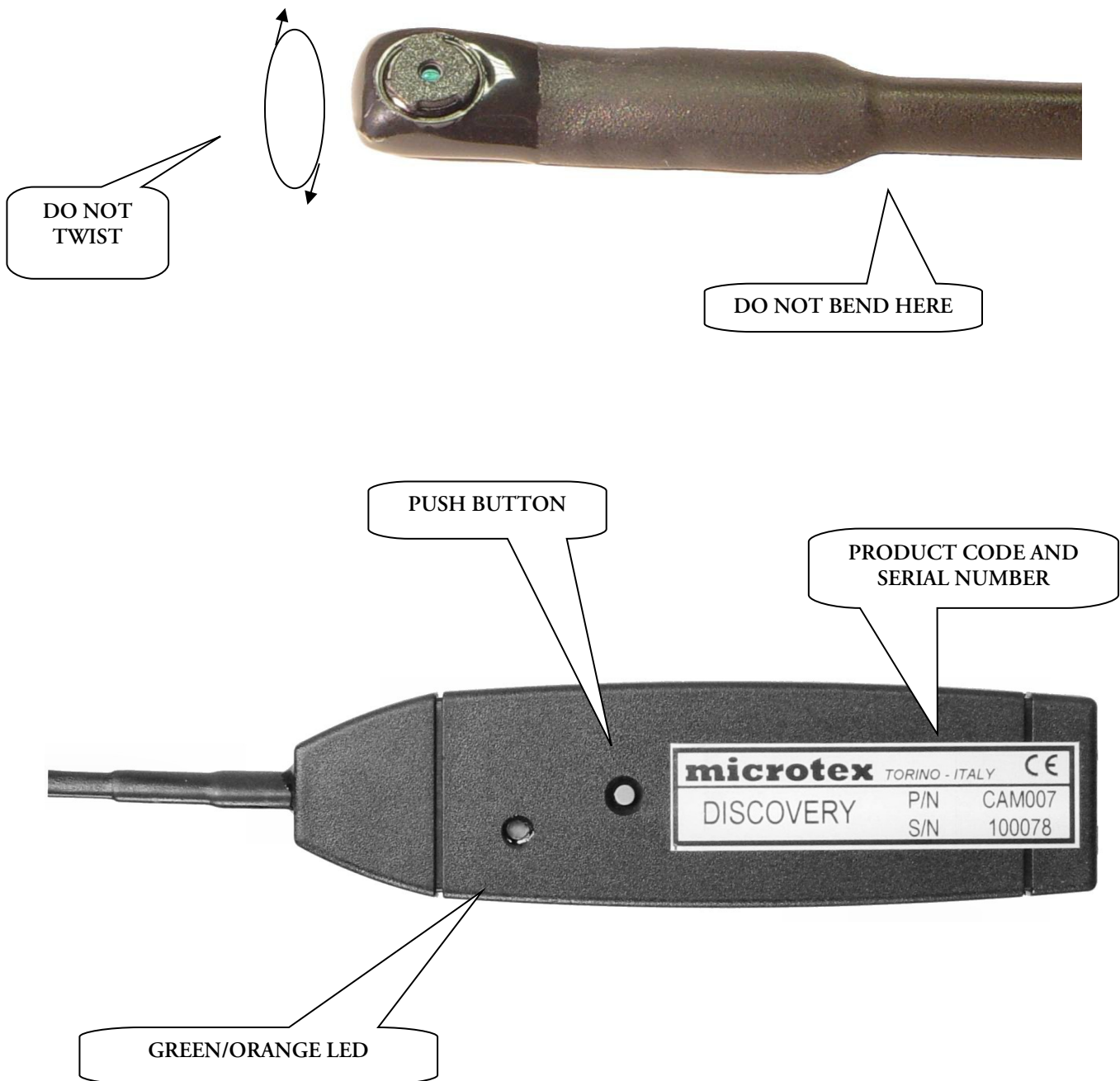


The stem of the camera is very thin so you can easily reach and see every part of the instrument through the f-holes of the mounted instrument. The stem is flexible in order to observe at best the inside of the instrument. This must be done carefully. The recommended limit of the curvature is equal to a radius of 16cm and has to be done along a **regular curve**. Beyond this radius the stem continues to bend but the life span of the camera will be affected.

The stem can be bent but must not be twisted.



CAUTION: bend the stem only as indicated in the figure, following the plane of the head. **DO NOT BEND** in other ways!



The small button in the center of the handle has two main functions.

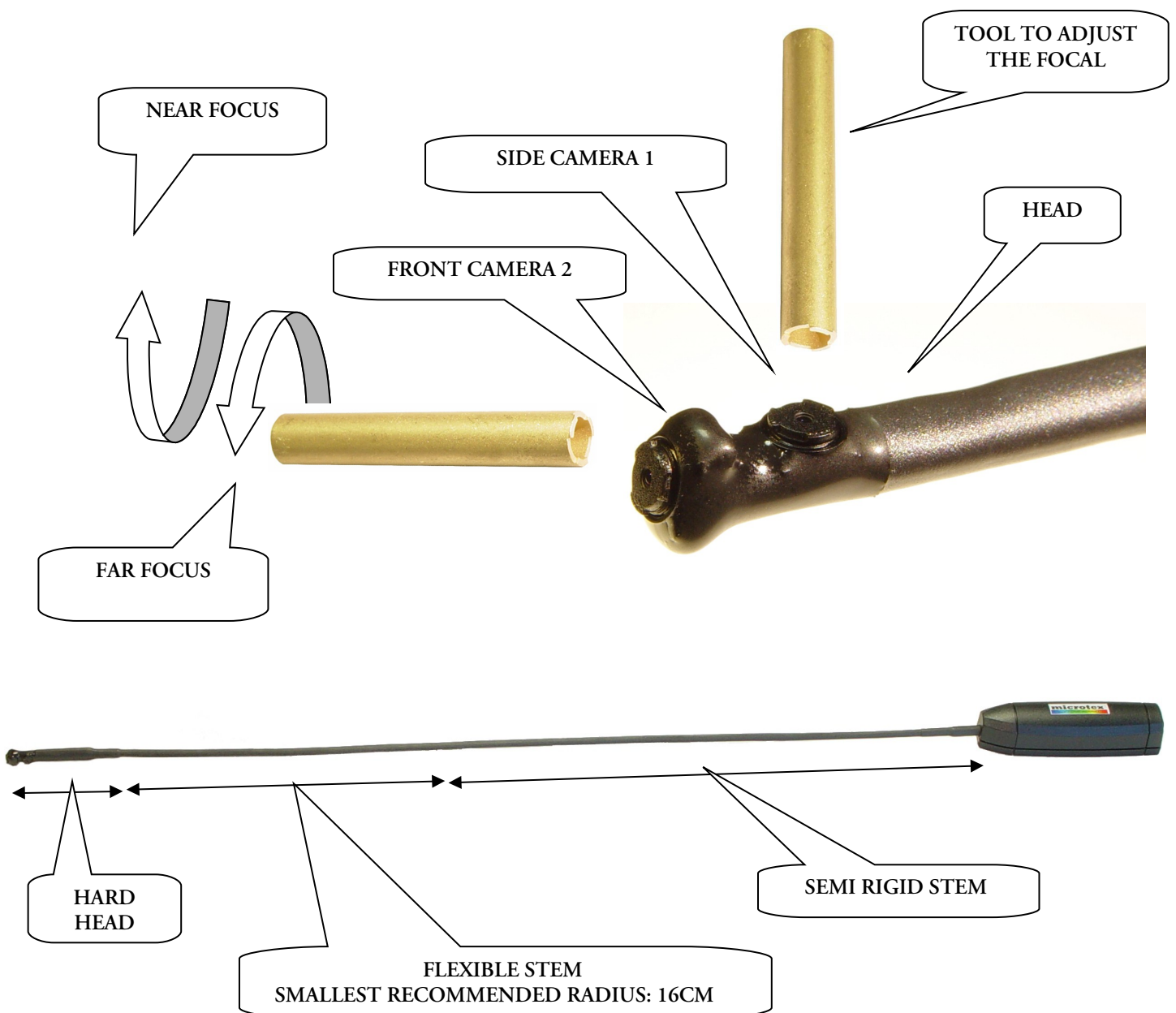
If we click when we are framing a particular image the image will be flipped (mirror effect) allowing us to read better as writings, labels, or view a detail with the right orientation and not reversed.

The second function will be requested during an update of the internal camera program.

DISCOVERY-CAM027

The camera CAM027 is designed for instrument with larger access as cellos and guitars. The camera has the stem 52cm long and has a head with two cameras: you have alternately a side view or a front view. Can observe the entire instrument from every point of view and also very easily without bending the flexible portion of the stem.

The cameras are equipped with optical both with manual focus. To vary the focus use the tool supplied as for CAM007. Just a few degrees of rotation to vary significantly the focus. To focus further rotate the lens clockwise. To focus more closely, even at 3cm, turn the lens counter-clockwise. Before you rotate the lens, check the focus observing the image on the computer screen. This is a delicate operation: be careful to not damage the threaded part where the lens is inserted and not to dirty the vision sensor. In case of damage of the optic portion, the lens can be removed, by turning it anti-clockwise, and replaced with a new one to be requested to MICROTEx assistance.

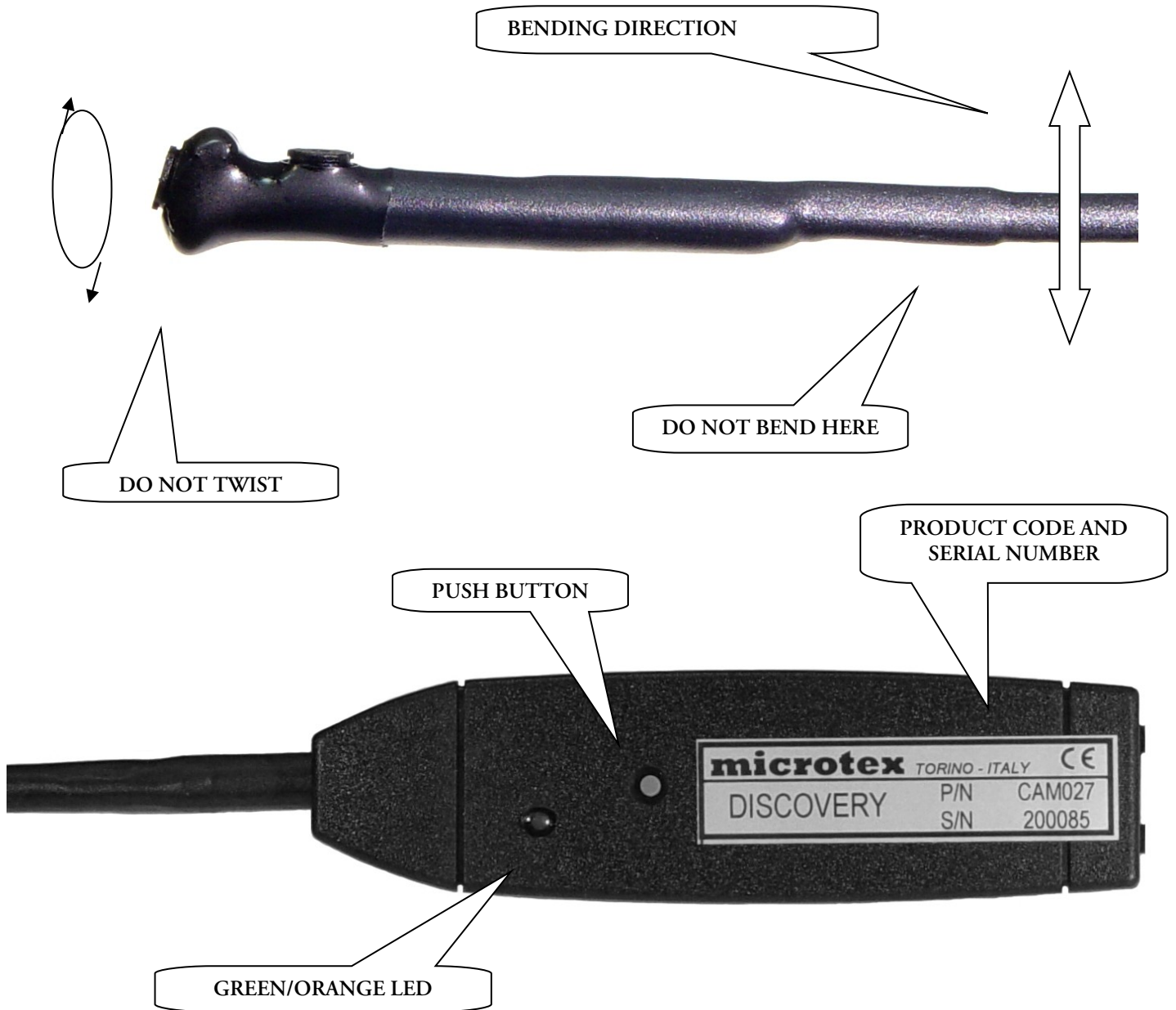


The stem of the camera has a progressive flexibility: the first part, from the end of the head to about 1/3 of the stem, is very thin and flexible, in the same way the camera short CAM007. The remaining part, from 1/3 of the stem up to the handle, is stiffer and larger cross-section ensuring a good handling of the camera and contained oscillations of the head, allowing to reach and easily observe every part of the instrument through the ff of the cello or the mouth

of the guitar instrument mounted. The operation of curvature of the flexible part must be done carefully. The recommended limit of curvature is equal to a radius of 16cm and avoid sharp bends.

In addition the stem continues to flex but is affected the duration of the camera. The blade can be bent but you should not twist.

CAUTION: bend the stem along the flexible portion only as indicated in the figure, following the plan of the head. **DO NOT BEND** in other ways!

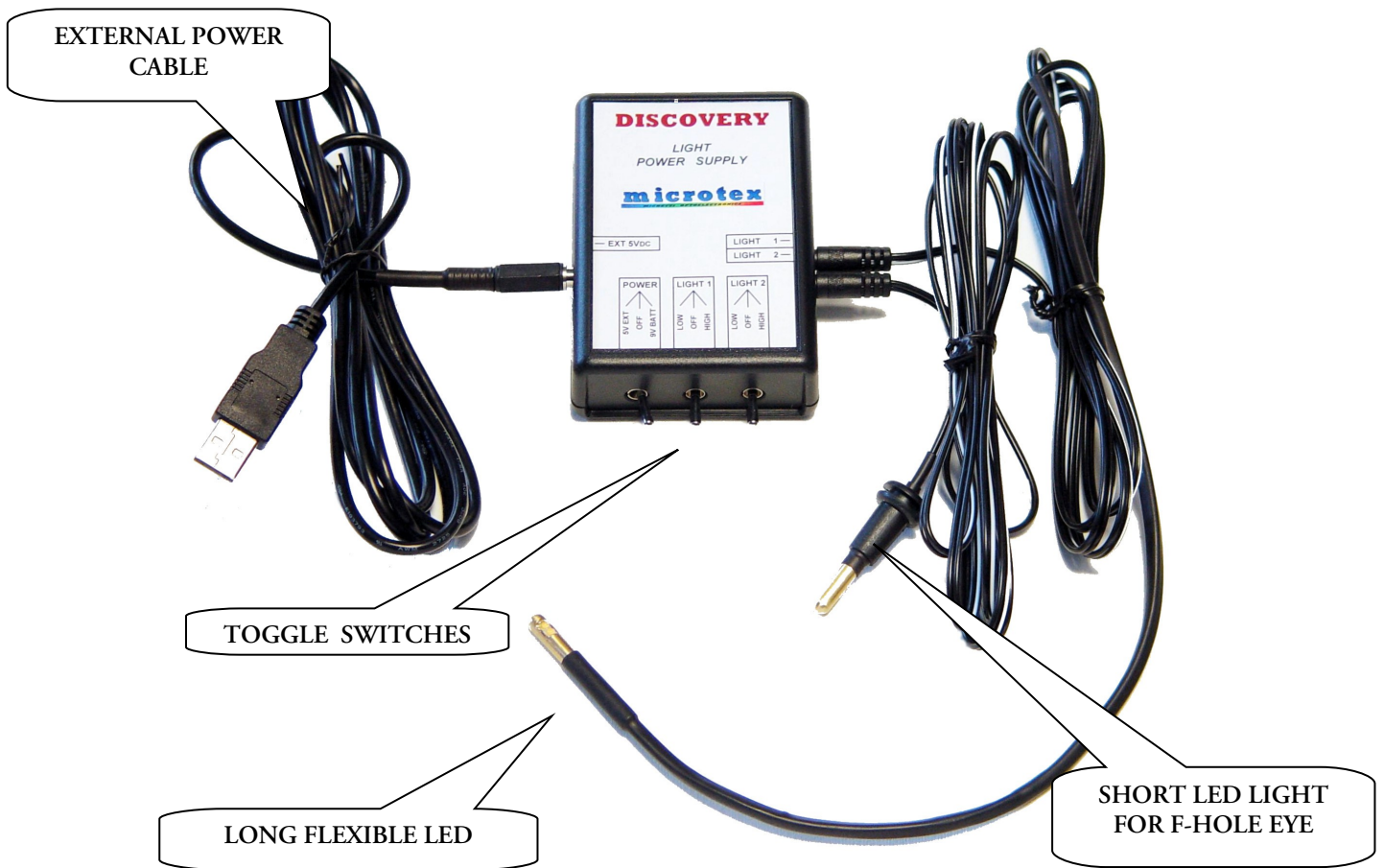


Management of the two cameras with the small button at the center of the handle.

In the camera CAM027 by briefly pressing the small button gray visualize alternately the two cameras. Appears on the screen for the first camera 1 (side view) then, by briefly pressing the small button gray, camera 2 (front view). To flip/mirror the image of the room that we are viewing just hold down the small button gray for 1 second.

To update the software and code reading camera will be given detailed instructions.

LIGHTING SYSTEM



The LIGHT POWER SUPPLY can be powered in three ways: :

- from the USB 2.0 port of your computer
- with a transformer from the mains to 5Vdc
- by internal power supply 9V PP3 battery



Debut Video Capture Software

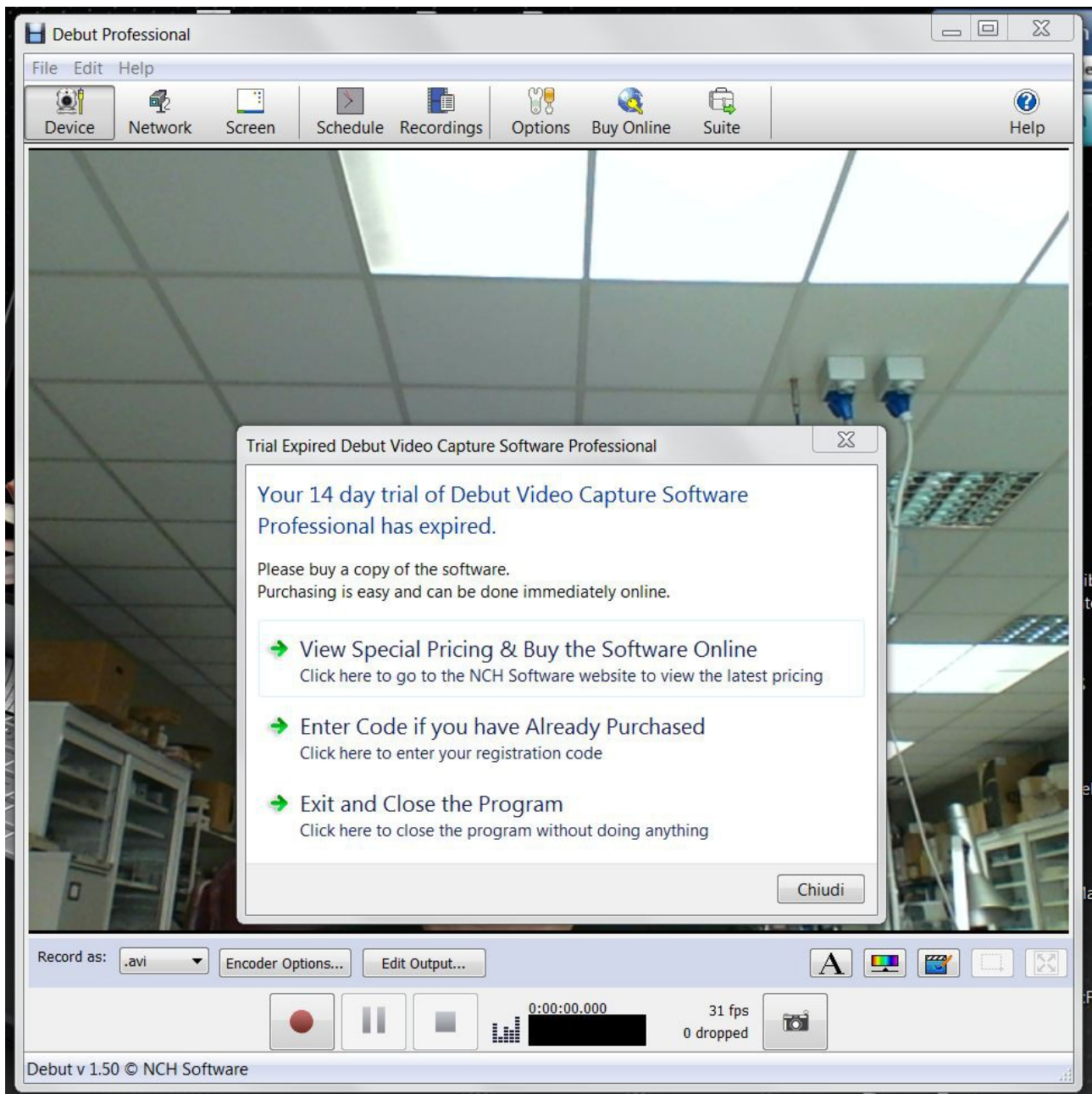
Record video from a webcam, recording device or screen
capture video files on your Mac or PC with this easy video recorder software

please see <http://www.nchsoftware.com/capture/index.html> for more futures

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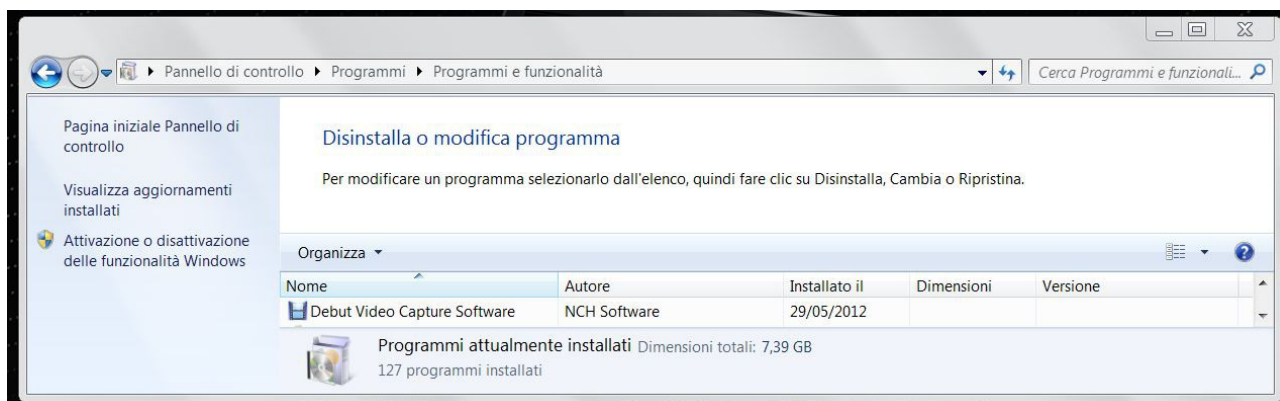
Tip: how downgrade DEBUT from professional edition to free edition

When DEBUT trial time has expired, this is the window you will see on your screen:

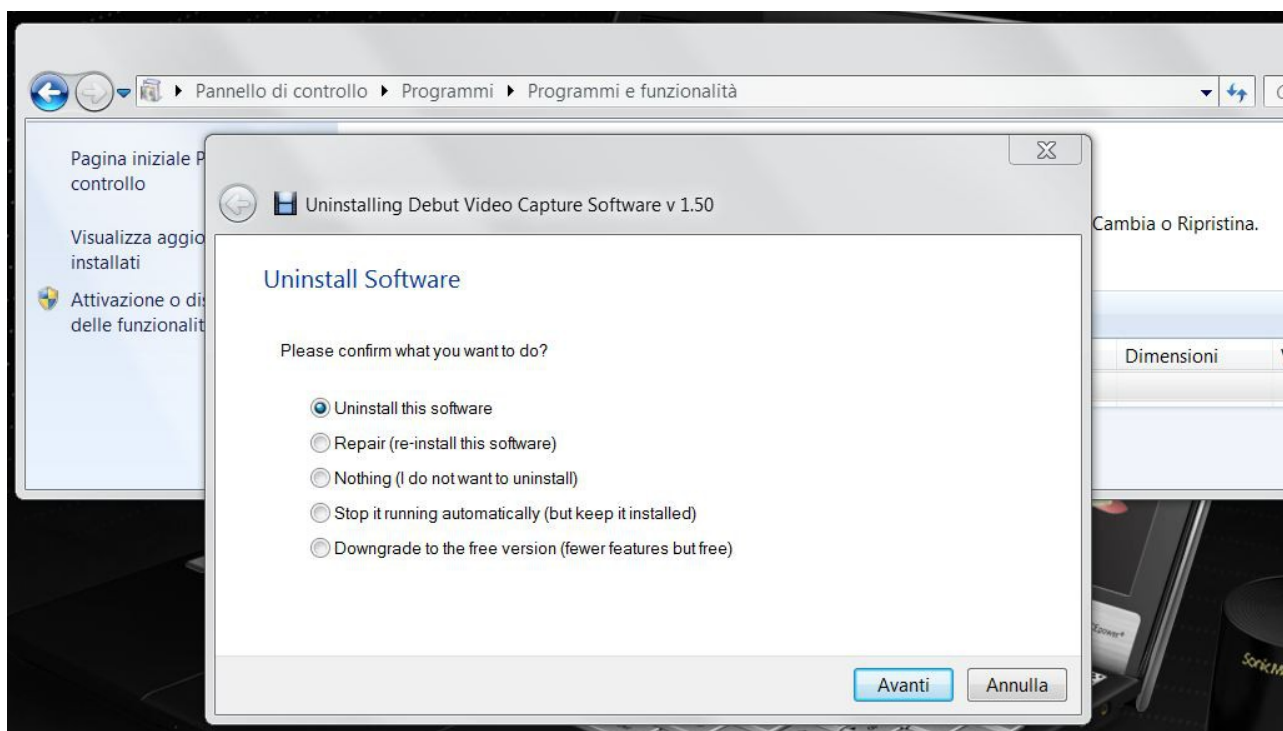


STEP 1:

Close the program and go to “control panel / uninstall programs”, select **Debut Video Capture Software**, then uninstall.

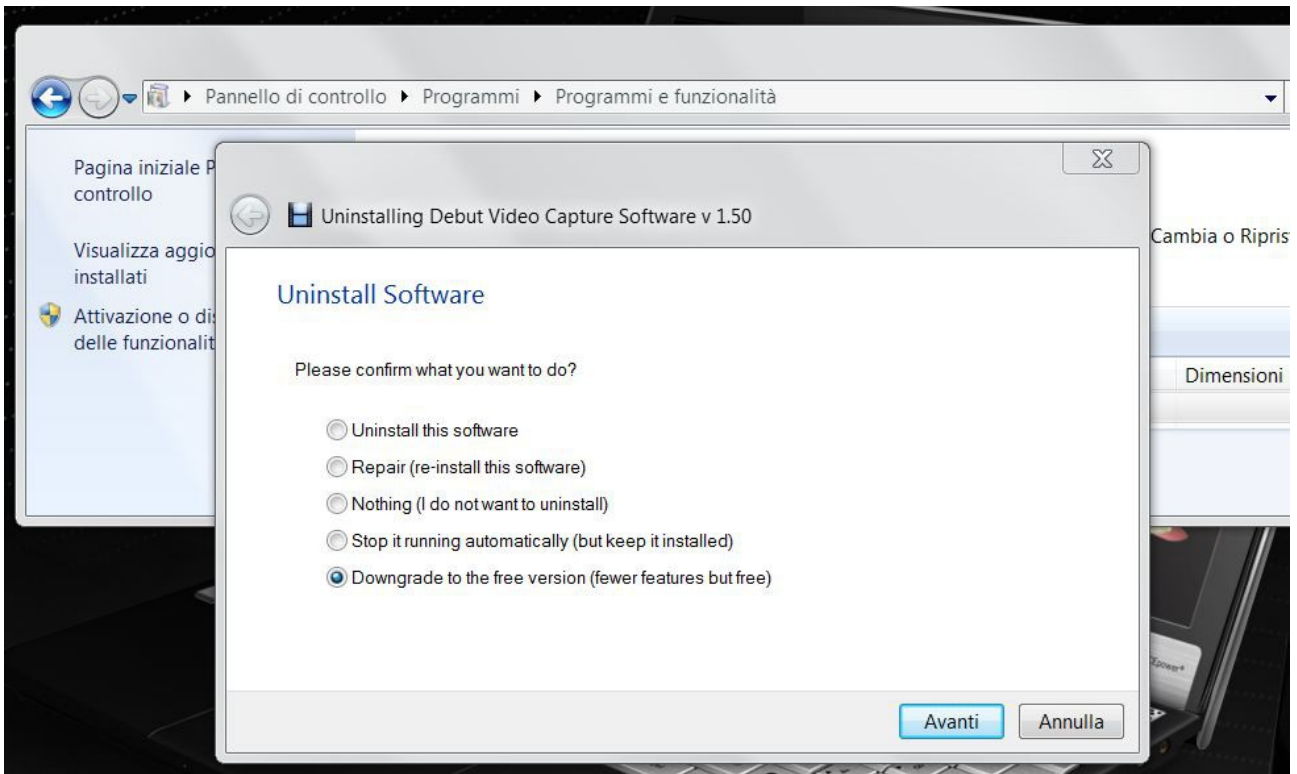


DEBUT will shows this window:



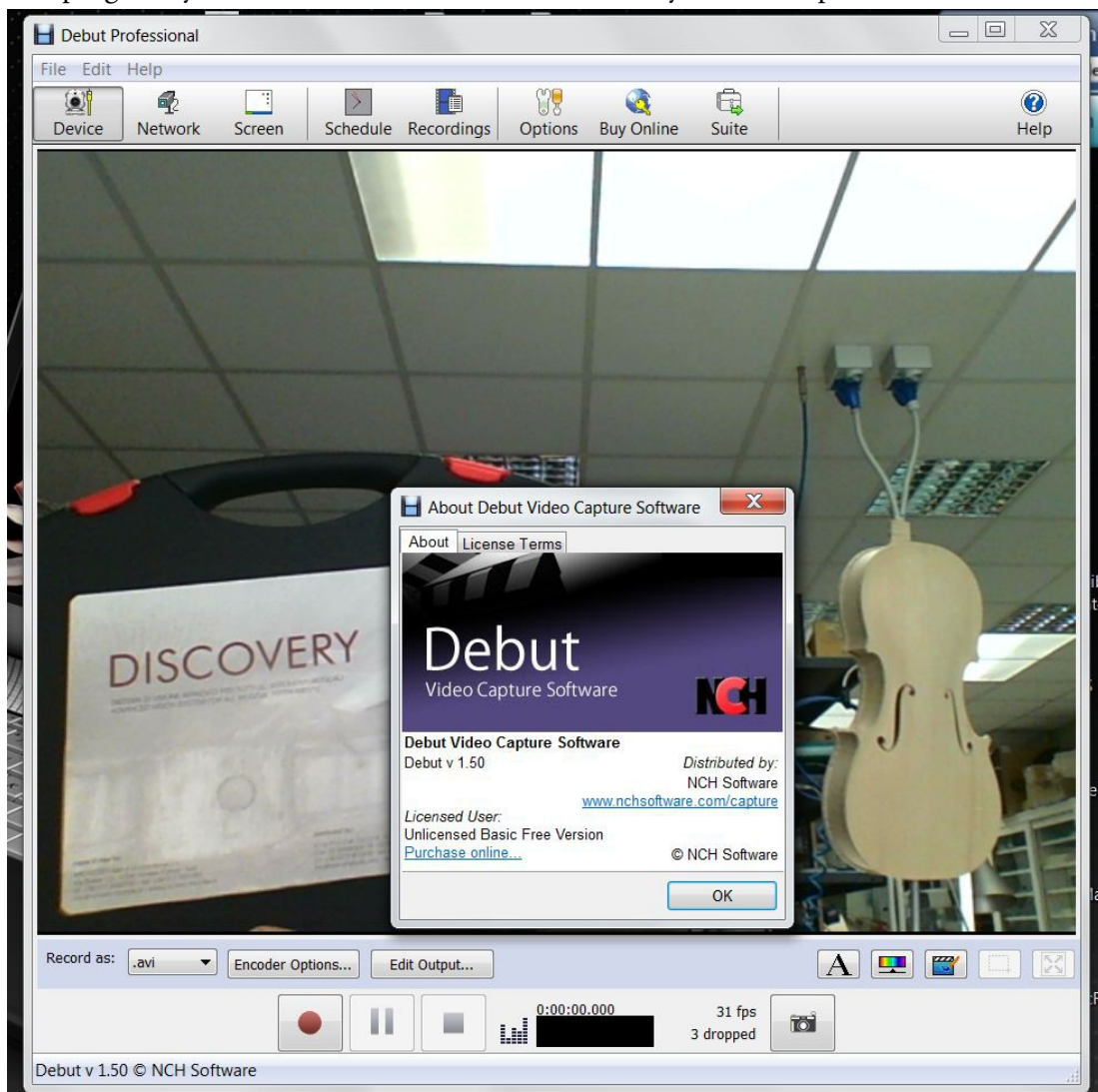
STEP 2:

Select last option: **Downgrade to the free version**



Then confirm with Enter or clicking on Next button

When you restart program, you can check that license is now free by select: help / about debut video capture...



WARRANTY

Unless otherwise stated MICROTEX ensures that supplies are free from defects and guaranteed in accordance with applicable laws. The Discovery comes with 2 year warranty from the date of purchase for private customers and 1 year for professional customers as European regulations. The warranty is granted after that we will choose the appropriate remedy, either repair of the defective product or its replacement. This warranty does not cover the defects and the related damages due to negligence in the use or storage of Discovery by the customer or by any circumstance unrelated to the Manufacturer or Supplier. The customer, to make use of this warranty under penalty of forfeiture, must report to the Supplier the existence of defects, following the procedures set out below within 8 (eight) days from the discovery of the defect itself.

How to make a warranty claim

In order to exercise the right of warranty for defects and to obtain repair or replacement of the purchased product the customer must send via registered mail a communication that specifies: (a) the date of the order (b) the type and quantity of purchased products (c) the date of receiving the Products (d) a description of the found defects. The customer will receive the replacement of the products accompanied by the fiscal documents as imposed by law after returning the tainted products at her/his own care but at the expense of the Supplier. Only if the above procedure is performed correctly, the Supplier will replace the Products under warranty.

We would like to receive your opinion on the DISCOVERY to improve it.
For any request for clarification, advice, critiques or suggestions, please write to:

info@michetti-microtex.it

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