MANUAL | TAGARNO MOVE

VERSION: 1.6 | FIRMWARE 8.10 | 2023-06-22

CONTENTS

TAGARNO®

1. INTENDED USE

The product is a digital magnifying system consisting of a camera unit, Power box, mechanical parts and power supplies. The product is intended for marketing worldwide and is designed for manual visual inspection.

2. WARNINGS

Read all safety information before you use the product.
Please pay attention when you see a warning label on the product.

This product is for indoor use only.

You must not discard this electrical/electronic product in domestic household waste.
Please dispose at your local recycling centre.

1. Read the manual before you use the product
2. Use the product only as specified, or the protection supplied by the product can be compromised
3. Do not position the equipment so that it is difficult to operate the disconnecting device (appliance inlet of external power supply, equipment input connector)
4. If fluids are spilled on the product, turn the system off immediately by pulling the power supply out of the electrical outlet
5. In case of fire close to the product, please turn off and disconnect the system
6. Avoid subjecting the lens to sharp or hard objects
7. Please do not connect the product, if visible damages appear
8. Do not dismantle any parts of the product, except where noted in the manual
9. Never disassemble or clean internal optical surfaces
10. Use only the power supply provided from TAGARNO
11. Always turn off the system before unplugging, when possible

3. LASER POINTER WARNING

This product is equipped with a red laser pointer to enable easy alignment of the camera and areas of interest during the inspection process.
This product is a Class 2 laser product that complies with IEC60825-1 international standard for lasers.

CAUTION
Follow these safety instructions when using the product.
- Never look directly into the laser aperture
- Do not point towards anyone deliberately
- Leave the laser on only when necessary
- Always turn off power during service and maintenance
- Service may only be performed by trained personnel appointed by TAGARNO

This label is placed near the laser aperture

The label below is placed on the camera head

CAUTION

CLASS 2 LASER RADIATION   RAYONNEMENT LASER CLASSE 2
DO NOT STARE INTO BEAM   NE PAS REGARDER DANS LE FAISCEAU

<1mW, 650nm CW

IEC/CEI 60825-1:2007 COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXPECT FOR DEVIATIONS
IEC/CEI 60825-1:2014   PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007
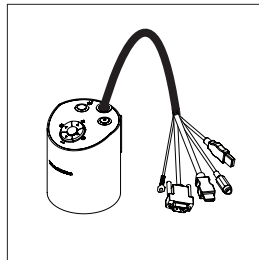
4. YOU HAVE RECEIVED

DELIVERY (1/2)

> Please note that the content of your delivery will vary depending on whether you have purchased a complete MOVE microscope or a MOVE Upgrade kit to an existing ZAP microscope.
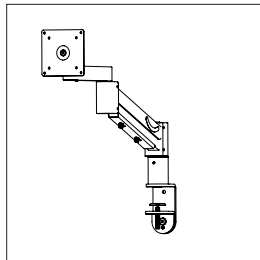
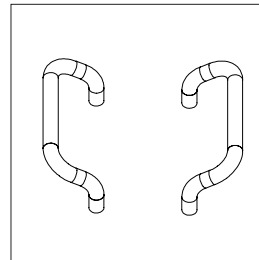### RECEIVED WHEN PURCHASING MOVE AS A COMPLETE MICROSCOPE
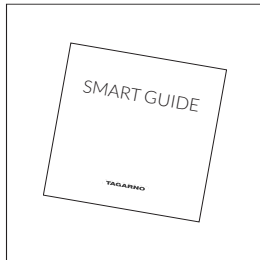
Smart guide

Camera head with lens and cables

Flex arm advanced

Handles
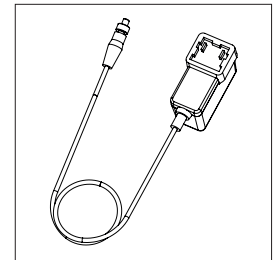
Power supply
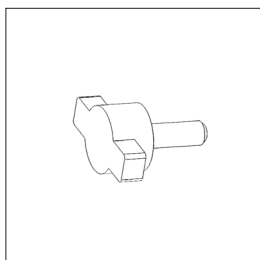
Finger screw
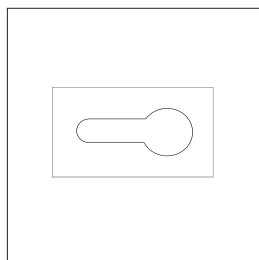
Cable holder
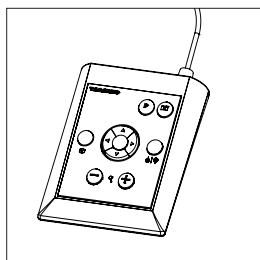
XPLUS FHD control box
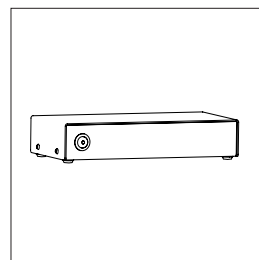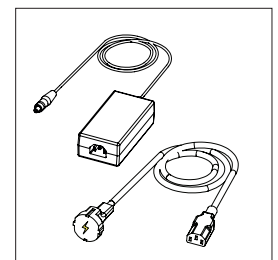
Power box

Power supply for Power box
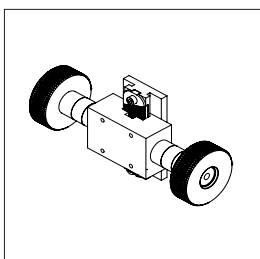
Height adjustment wheels
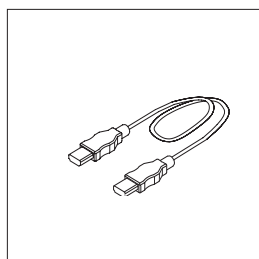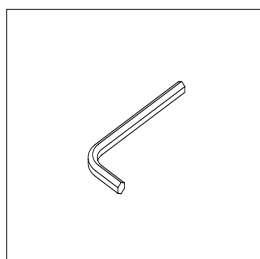
HDMI - HDMI cable
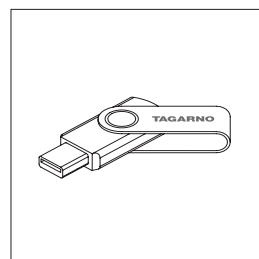
Hex keys

USB memory stick

DELIVERY (2/2)

RECEIVED WHEN PURCHASING A MOVE UPGRADE KIT
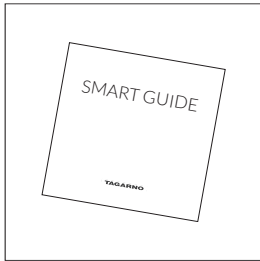
Smart guide
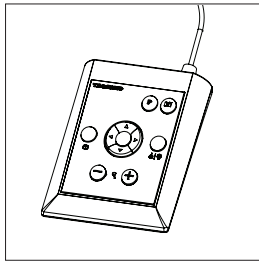
XPLUS FHD control box
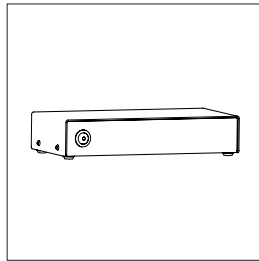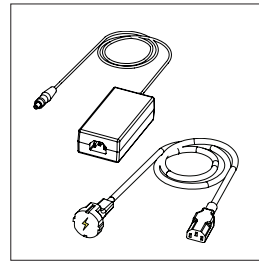
Power box

Power supply for Power box
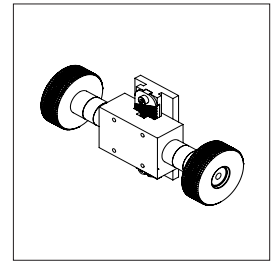
Height adjustment wheels
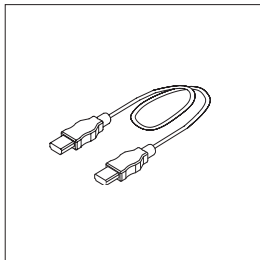
HDMI - HDMI cable
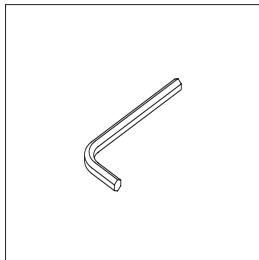
Hex keys
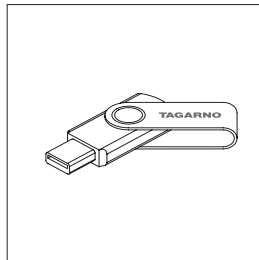
USB memory stick

5. ASSEMBLING - MOVE

ASSEMBLING | MOVE (1/3)
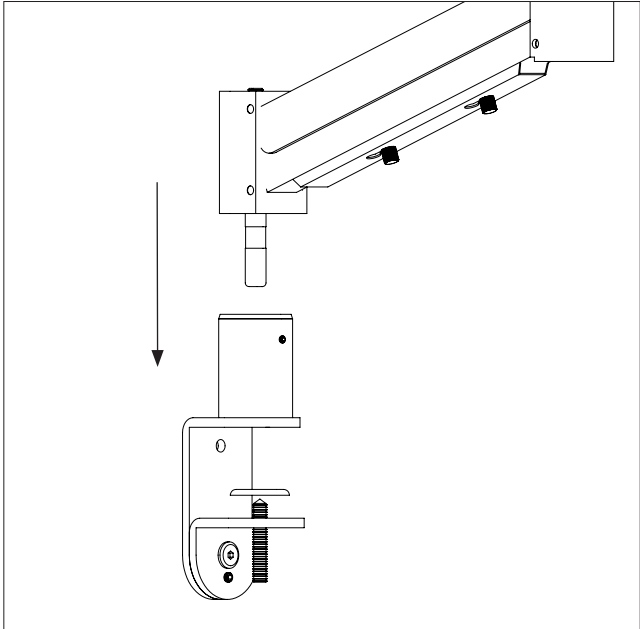
Mount the table mount using the table clamp. Assemble the bottom of the flex arm and the table mount.

NB: For maximum stability at all magnfication levels, make sure to mount the microscope on a sturdy table.
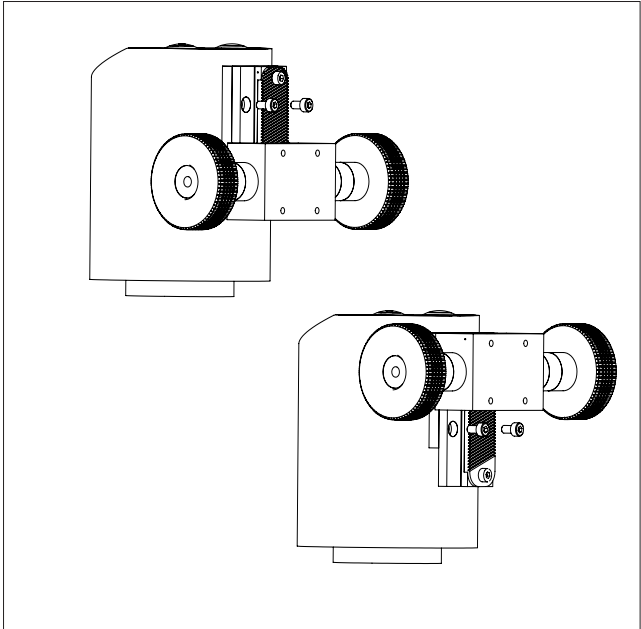
Mount the height adjustment wheels to the camera head with two of the four provided screws. Then, adjust the position of the height adjustment wheels and secure them to the camera head with the two remaining screws.
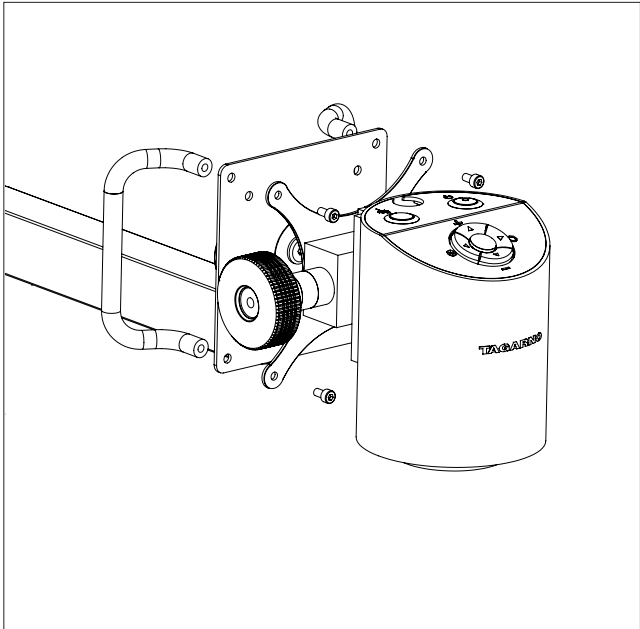
Mount the microscope to the top of the flex arm using the vesa bracket, screws and handles.
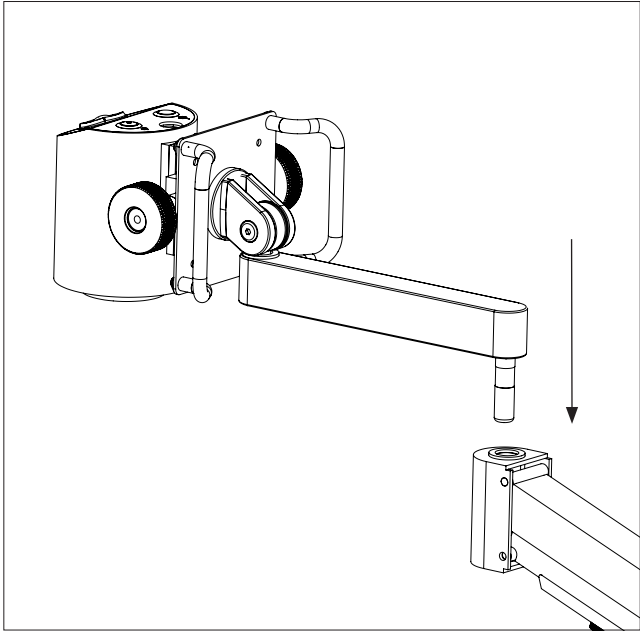
Assemble the flex arm by slotting the two arms together.
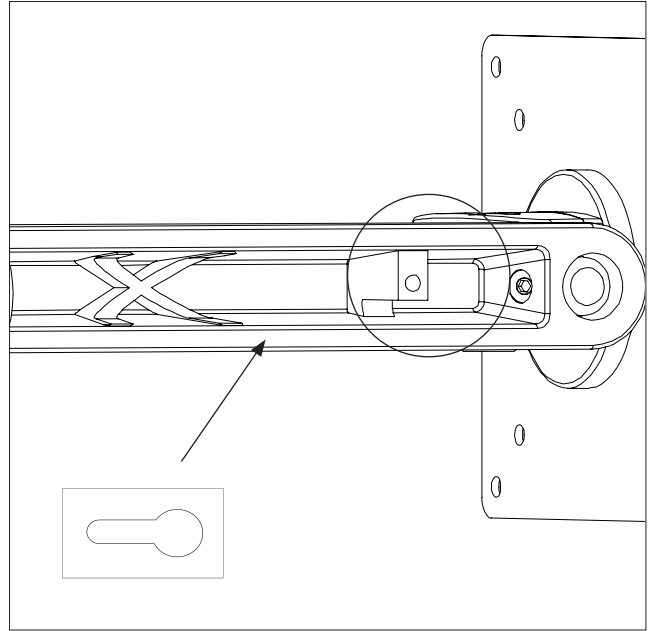
Press the cables into place in the slot on the flex arm and secure them by screwing the cable holder into place on top.
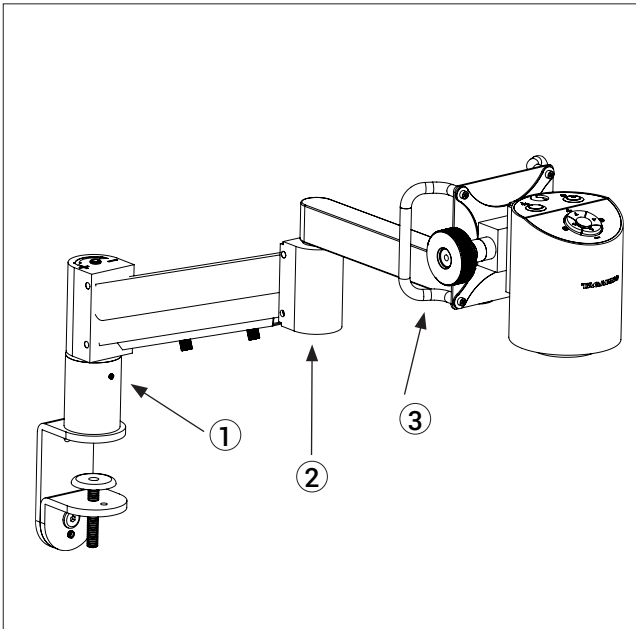
Tighten the 3 pinol screws to remove slack.
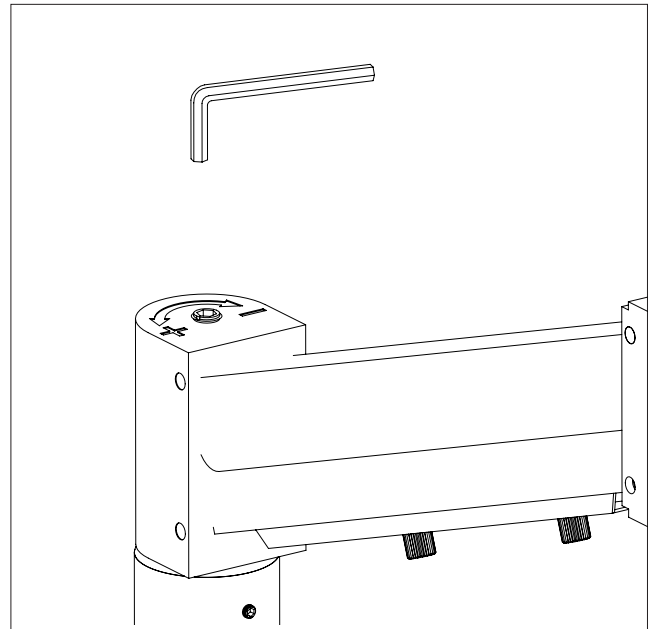
To increase stability, adjust the flex arm weight with the included allen key. Turn it clockwise to decrease stability or counterclockwise to increase stability.

ASSEMBLING | MOVE (3/3)
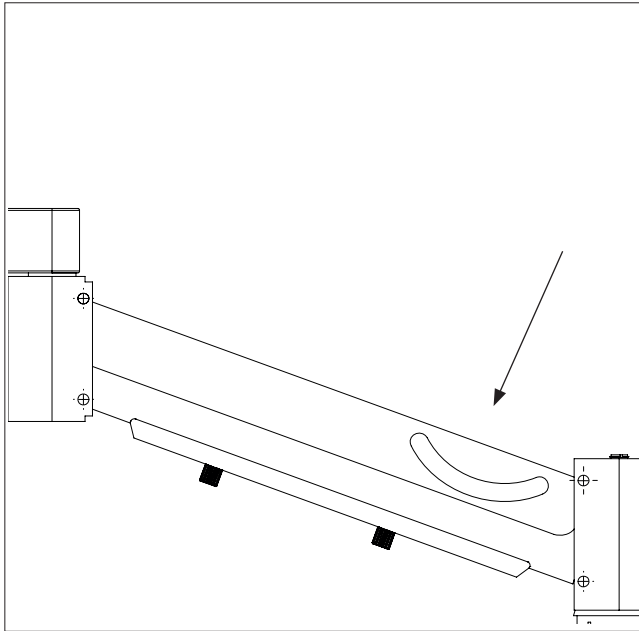
For extra stability in locked positions, remove the rubber covering on the side of the flex arm.
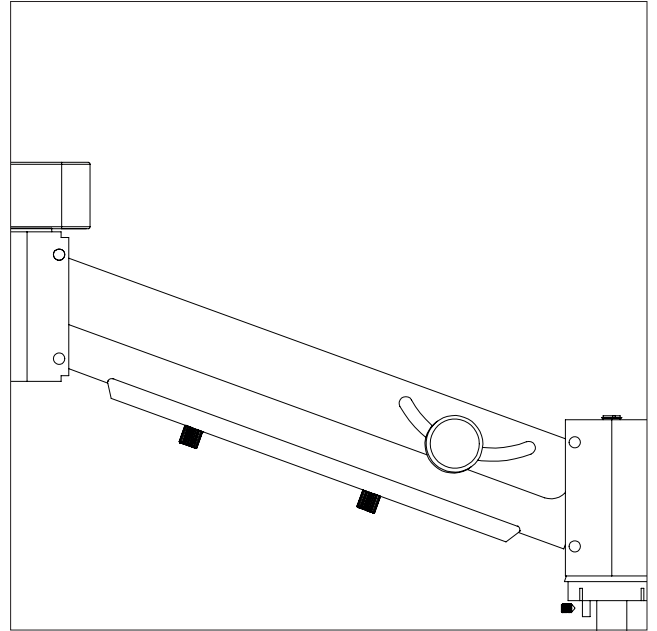
Then, use the included finger screw to lock vertical movement.
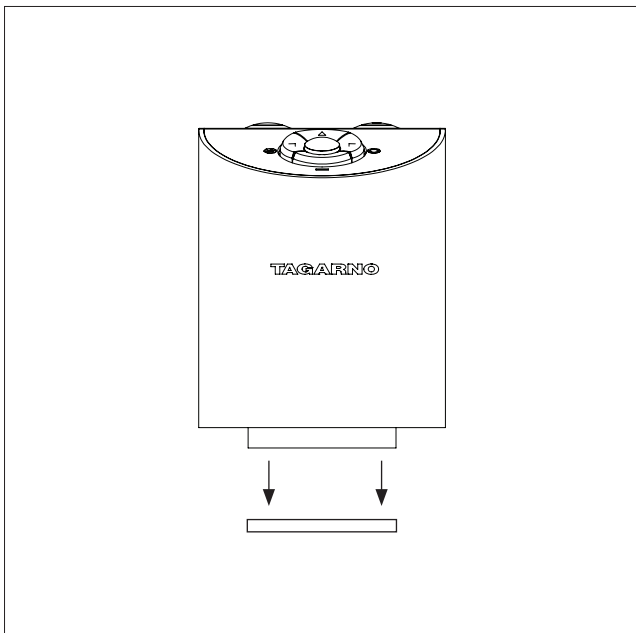
IMPORTANT U.S. only information: Laser beam attenuator mounted. Unmount lens protection cap when using this microscope.

6. ASSEMBLING - MOVE UPGRADE KIT

ASSEMBLING | MOVE UPGRADE KIT (1/2)
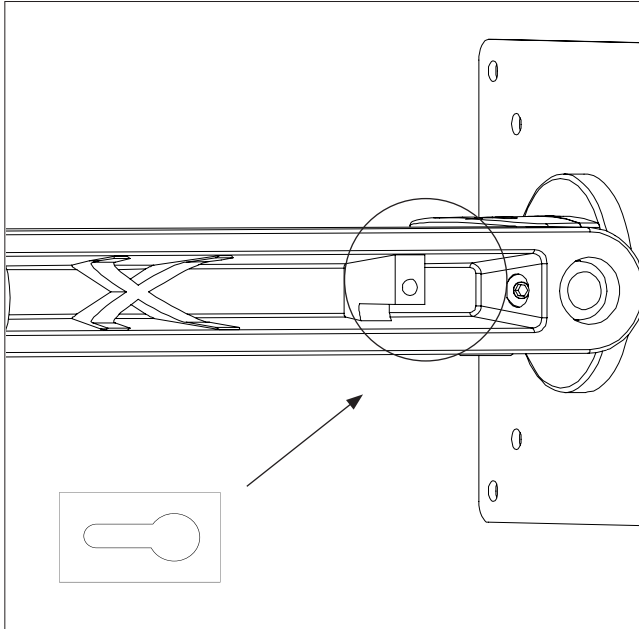
Release the cables from the flexarm by unscrewing the cable holder.
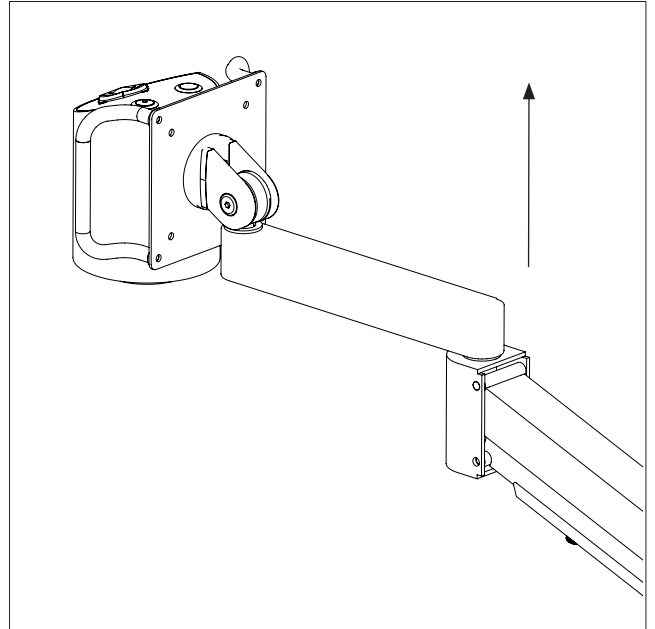
Disassemble the flexarm by pulling the two arms apart.
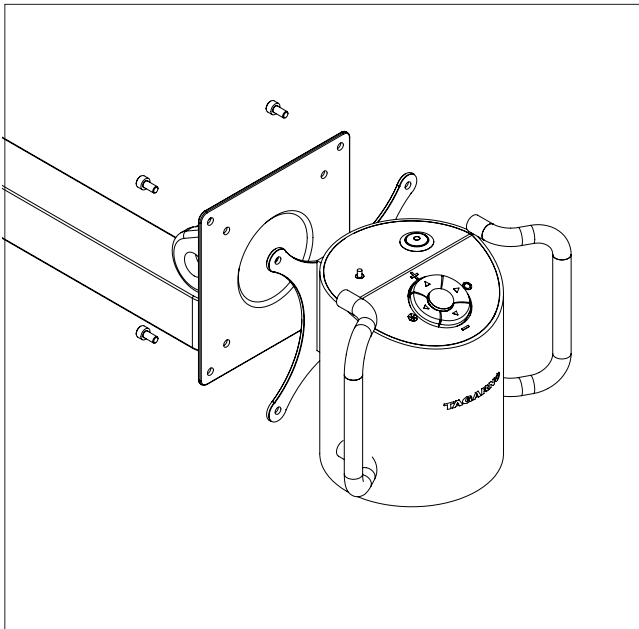
Unmount the microscope from the flexarm by unscrewing the four screws on the back of flexarm head. This will also unmount the handles.
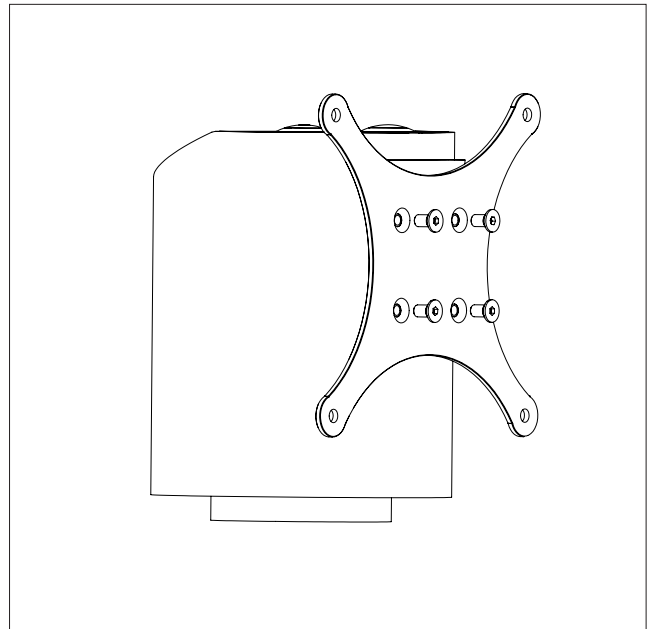
Unmount the camera head from the vesa bracket by unscreweing the four screws on the back of the vesa bracket.
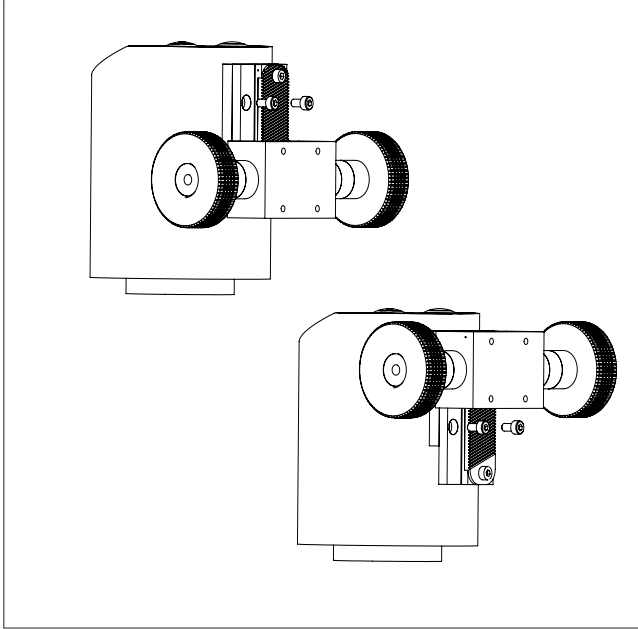
Mount the height adjustment wheels to the camera head with two of the four provided screws. Then, adjust the position of the height adjustment wheels and secure them to the camera head with the two remaining screws.
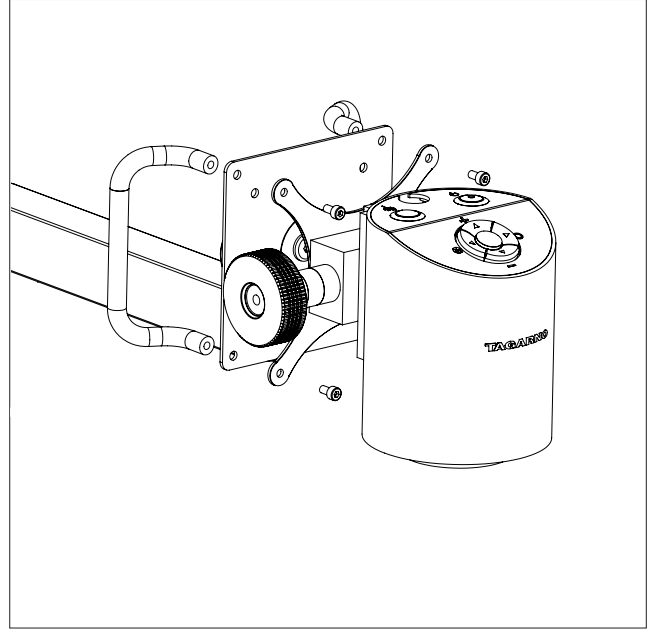
Mount the microscope to the top of the flex arm using the vesa bracket, screws and handles.
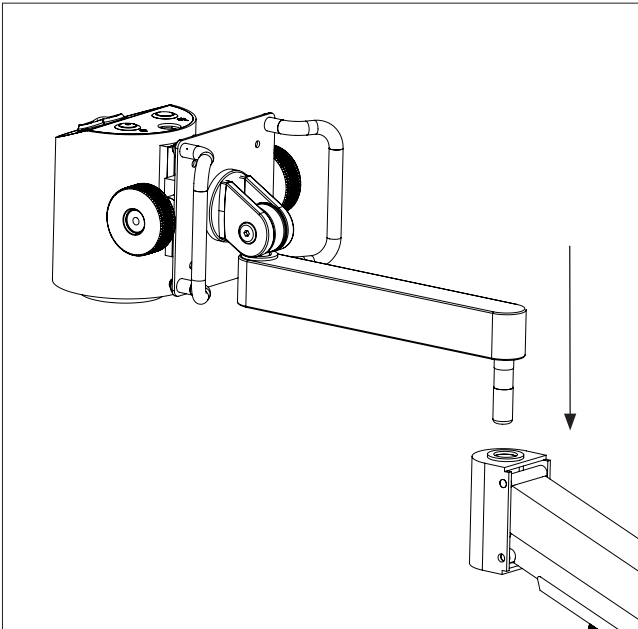
Assemble the flex arm by slotting the two arms together.

Press the cables into place in the slot on the flex arm and secure them by screwing the cable holder into place on top.

7. CONNECTING

Connect cables in the order below.

Power supply cable (camera head)
Connect cable **from** camera head
to a power socket **1**
Power cable length = 3.050mm.
Power supply cable length = 1.600mm.

**Note regarding
monitor connection**

If DisplayPort is used, the
HDMI cable becomes obsolete.

DisplayPort Full Size cable
Connect cable **from** power box
to monitor **(cable not included)**

or

HDMI **HDMI Standard Type cable**
Connect cable **from** power box
to monitor
Cable length = 2.000mm. **7**

Power supply cable (Power box)
Connect cable **from** power box **6**
to power socket

ESD grounding cable
Connect cable **from** camera head
to grounding outlet **2**
Cable length = 3.180mm.

Control box XKEY cable (obsolete)
Obsolete when using the MOVE
(dedicated for TAGARNO ZAP)
Cable length = 3.030mm.

HDMI cable (obsolete)
Obsolete when using MOVE
(dedicated for TAGARNO ZAP)
Cable length = 2.780mm.

USB 3.0 cable
Connect cable **from** camera head
to (any) power box USB 3.0 output **3**
Cable length = 2.800mm.

Ethernet cable
Connect cable **from** power box
to ethernet wall socket *(if needed)* **4**
Cable length = 3.000mm.

Control box XPLUS cable
Connect cable **from** control **5**
box **to** power box

Foot switch
Connect cable **from** control box
to foot switch and **from** foot switch
to power box **5A**

8. OPERATION

OPERATION (1/5)
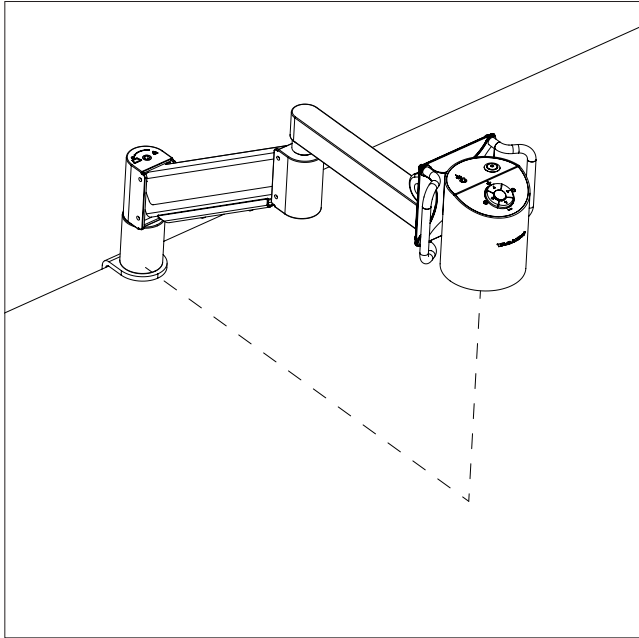
Place the camera arm in the appropriate height according to the lens you are using.

Distance from table mount to camera focus point ranges from 623mm with Lens +3 to 668mm with Lens +10.
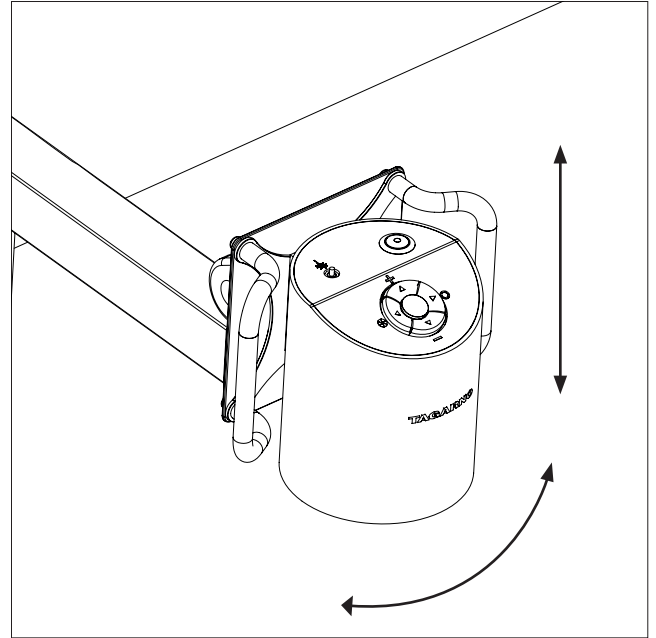
Rotate the camera sideways or up and down to secure the best view of your sample. Camera can be angled +/- 180 degrees in all directions.

NB: Adjust rotation tension by adjusting the screws highlighted and numbered in Flex arm assembly section.
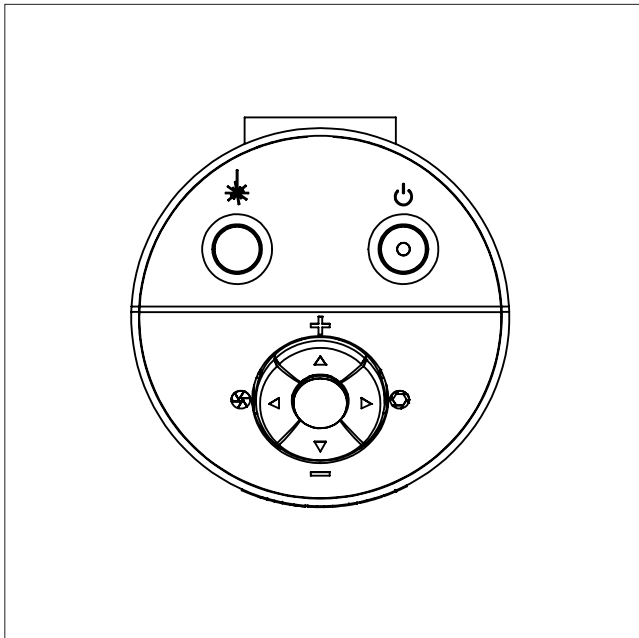
Turn off/on
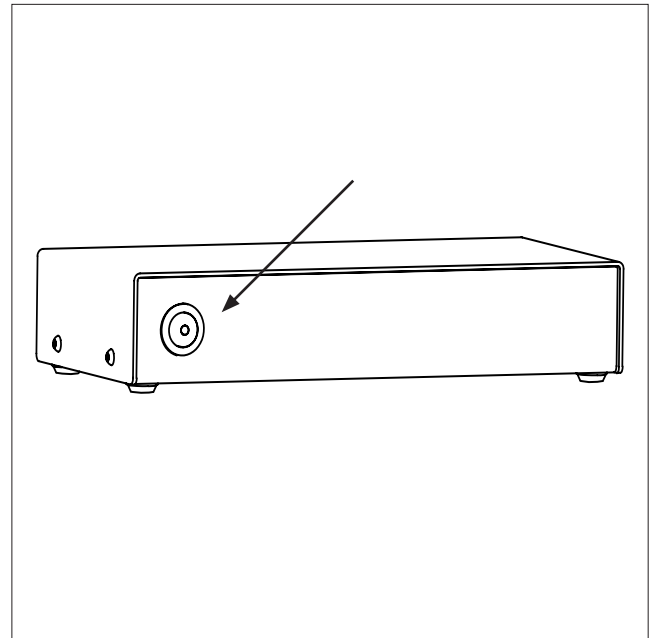
Power on/off.
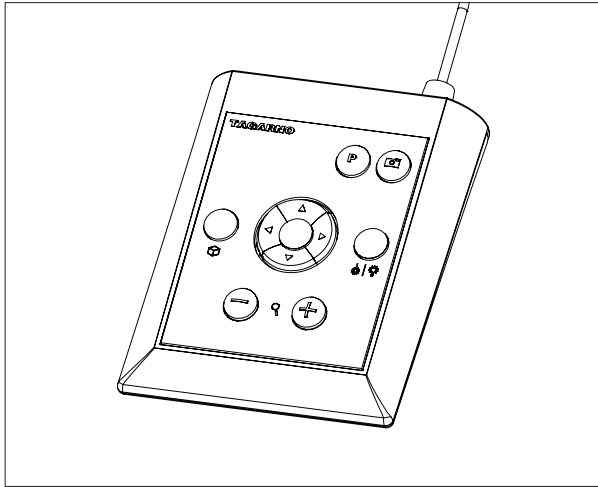
Control box XPLUS for TAGARNO functions.
Do only connect equipment distributed by TAGARNO.

Dimensions
H: 45mm/1.8" | W: 120mm/4.7" | D: 150mm/5.9".

On screen display (OSD)
The on-screen display provides you with the relevant information when you push a button on the control box or Setup menu.
In this way you always know which function you are activating and which parameters you are using.

Zoom
Push this button on the control box to zoom in.

Push this button on the control box to zoom out.

The magnification level will show via On Screen Display.

NB: It's also possible to zoom in/out by using Ctrl + the plus or minus key on a keyboard.

Manual and Auto exposure mode
Open current exposure mode menu with key arrows up and down in standard magnification mode or any active application. Then, navigate the menu with arrows up and down and adjust each setting with key arrows left and right.

Switch between Manual and Auto exposure mode with a short press to the round center button.

In Manual exposure mode, you can manually adjust the iris, gain and exposure time with key arrows left and right. Activate advanced camera settings in the microscope camera settings to also enable contrast, saturation, sharpness and noise reduction adjustment.
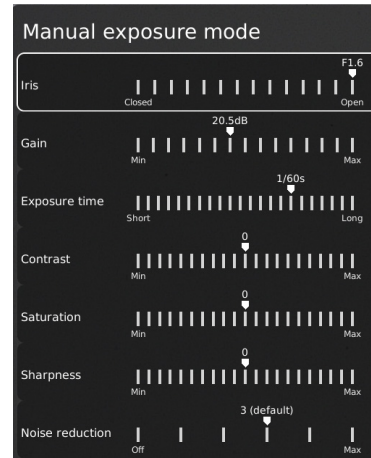
These settings will also be activated in Auto exposure mode. Otherwise, exposure compensation is the only setting visible. Iris, gain and exposure time will automatically be adjusted to recommended settings and cannot be adjusted in this mode.
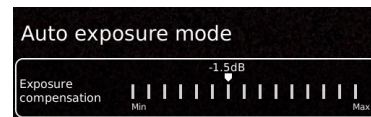
Wait a few seconds for the menu to close and save your settings.

Manual focus
Turn autofocus off by pushing both zoom buttons (plus and minus) on the control box at the same time until you hear a beep. You can now adjust focus manually with the help of the zoom buttons.

Push this button on the control box to adjust focus if you wish to focus on something very close.

Push this button on the control box to adjust focus if you wish to focus on something that is farther away.

To turn the autofocus on again, simply push both zoom buttons (plus and minus) at the same time until you hear a beep. The focus values will show via On Screen Display.

NB: It is not possible to adjust Manual focus in the following applications as they are reliant on the Ruler application: DXF overlay, Particle analyzer, Speck counter, Color analyzer and PNG reference.

Setup menu
Access the Setup menu by pressing the round center button for 1 second. See separate section regarding the Setup menu.

Snapshot function
To take a picture and transfer it to USB or your microscope internal storage, press the image capture button until you hear a beep. Long press on the same button will save an image with graphics, causing the live image to freeze for a few seconds. This button also turns Auto Snapshot on/off when activated via the Setup menu.

When taking a picture, an information window will appear for a few seconds showing the file name and storage location.

NB: A snapshot can also be captured by using the keyboard shortcut Ctrl + S.

Save image on USB memory stick
The image will be saved on the inserted USB memory stick. However, if your USB memory stick is not compatible with your microscope, a pop-up warning will instead ask you to format your USB memory stick (for more information, see section 4 in Setup Menu).

Format USB storage

Incompatible or unformatted USB storage detected. The USB storage must be formatted before it can be used.

Press OK to start formatting.

Cancel   OK
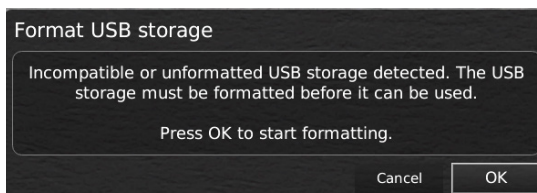
When clicking OK, a second pop-up will ask you to confirm your selection. All files on the USB memory stick will be deleted once formatting begins. Formatting time will vary.

Press the image capture button again to take a new photo and save it directly to your USB memory stick.

Save image on microscope
If a USB memory stick is not attached, the image is saved internally on the microscope, provided the share file mode is turned on. Otherwise, an error message will appear and you are not able to save images.

To access saved files, see manual section ACCESS SAVED FILES.

Preset Function
To save a favorite setting, press the "P" button.

A Preset Manager menu appears. Here you can choose which of the 10 presets to use/overwrite. This is done by marking and clicking the right hand icon to save the given preset. To prevent users from accidentally overwriting a saved preset, lock presets in the microscope general settings.

To use a preset, simply press "P" on the control box and press the center button to choose the preset you want to recall. Alternatively, use key number 0-9 to choose preset on a keyboard or numpad.

The preset values will show via On Screen Display.

To rename a preset, choose the given preset in the Preset Manager and press F2. Complete the renaming by pressing "Enter". Please note that presets can be renamed regardless of whether the presets are locked or not.

Laser pointer (TAGARNO TREND only)
Press this button to turn the laser pointer on/off. You will hear a warning when turning the laser pointer on. NB! Never look directly into the laser pointer. The laser pointer can only be used with lenses +3, +4 and +5.

If you are using another TAGARNO unit than TAGARNO TREND, a window on the screen will provide you with information.

Light on/off (TAGARNO TREND and PRESTIGE only)
Press and hold this button to turn the light on/off.

Application shortcut
Program an individual application shortcut by long-pressing the button and choosing a listed application.

You are now able to quickly access this application by short-pressing the button.

Factory default directs to the Ruler application with both horizontal og vertical ruler activated.

Multi Function Buttons
When the Setup menu is deactivated, you are able to use the Multi Function Buttons to control the iris, gain and exposure time.

Press the center button to switch between auto and manual exposure mode.
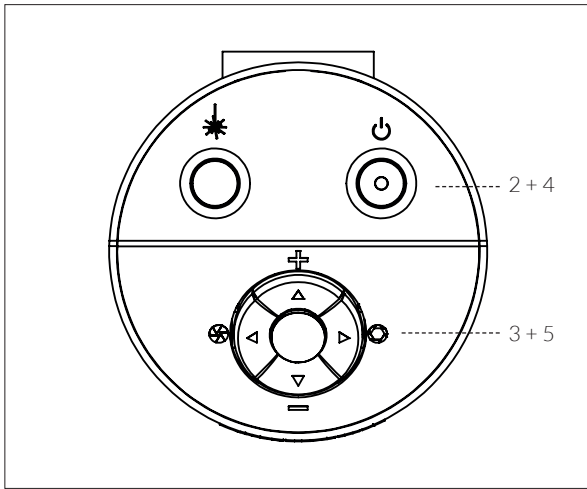
Zoom
Push this button on the control box to zoom in.

Push this button on the control box to zoom out.

The magnification level will show via On Screen Display.

Manual Focus
Turn autofocus off by pushing both zoom buttons (plus and minus) on the control box at the same time. You can now adjust focus manually with the help of the zoom buttons.

Push this button on the control box to adjust focus if you wish to focus on something very close.

Push this button on the control box to adjust focus if you wish to focus on something that is farther away.

To turn the autofocus on again, simply push both zoom buttons (plus and minus) at the same time.

The focus values will show via On Screen Display.

Multi Function Buttons
Use the Multi Function Buttons to control the iris, gain and exposure time.

Press the center button to switch between auto and manual exposure mode. When the On Screen Display is open, all four arrows can be used for navigating the menu and adjustment of settings.

The window will automatically close after 3 seconds inactivity.

Laser on/off
WARNING! Laser radiation when turned on

Camera head configuration
To switch between TAGARNO ZAP and TAGARNO MOVE/FRONT configuration, perform a camera head configuration.

To start the configuration please follow the steps below.

1. Make sure that the power box is turned on and connected to TAGARNO ZAP

2. Power of TAGARNO ZAP

3. Press and hold the four arrow keys on top of the camera head

4. While holding the keys, power on the ZAP

5. Let go of the arrow keys when a popup window appears
   on the screen:

6. In the popup window select the MOVE/FRONT option - use the arrow keys and center button on the XPLUS control
   box to navigate and select

7. Follow the instructions on the screen and wait until the
   system has completed the change

Revert configuration
To revert back to ZAP configuration, follow steps 1 - 5 above and then continue with steps 6 and 7, while selecting
the ZAP option in the popup window in step 6.
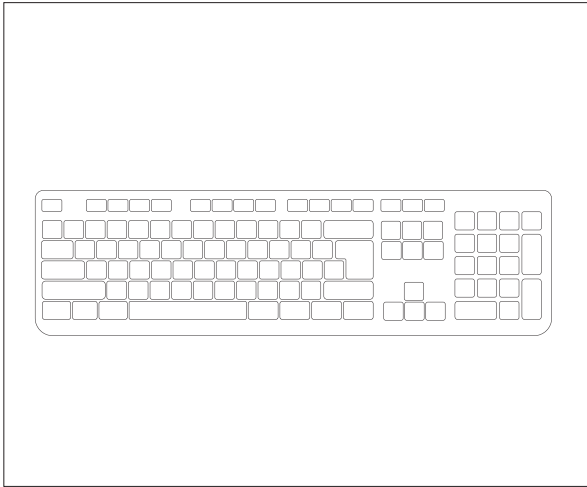
When using a keyboard, you can use the shortcuts below to operate your TAGARNO FHD digital microscope.

NB: These shortcuts only work when you are not using one of the applications or renaming a photo.

Open menu and navigate menu (arrows)
Use the up and down arrows to open the microscope menu. These arrows can also be used to move up and down the menu or choose between settings in the microscope menu.

Activate an application or submenu by pressing Enter. If you have selected Exit, pressing Enter will close down the menu.

Preset (Ctrl + P)
As an alternative to using the Preset funtion on the XPLUS control box to access presets, use Ctrl + P.

Glare removal (Ctrl + G)
Enable the Glare removal setting in the Camera menu

Activate presets (number keys 0-9)
Using number keys 0-9 will activate Preset 1 to 10. Press number key 1 to activate Preset 1, key 2 to activate Preset 2 and so on. Press number key 0 to activate Preset 10.

Zoom (Ctrl + plus / minus)
Using Ctrl + the plus or minus key on a keyboard will allow you to zoom in or out without using the XPLUS control box.

Snapshot (Ctrl + S / Ctrl + Shift + S)
Choose between saving an image of the raw camera image only (Ctrl + S) or saving a full screendump (Ctrl + Shift + S).

NB: The applications may have app specific shortcuts as well. To learn more about these, we refer to the application manuals.
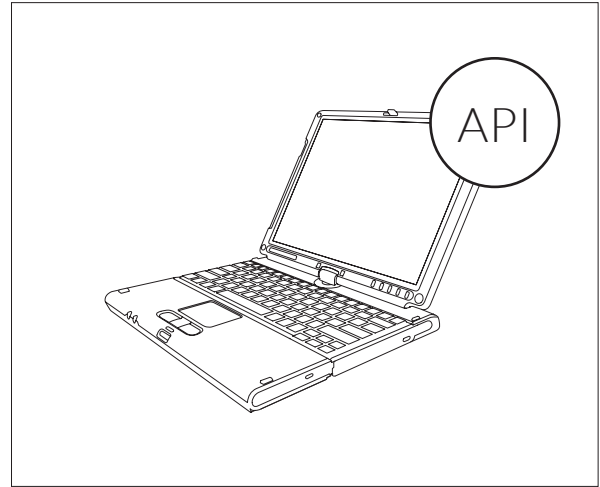
With an API license, you can integrate a digital microscope with other systems or applications to control the microscope or exchange data as part of performing or documenting your work.

You can see the full TAGARNO API documentation, including control options and full protocol, here.
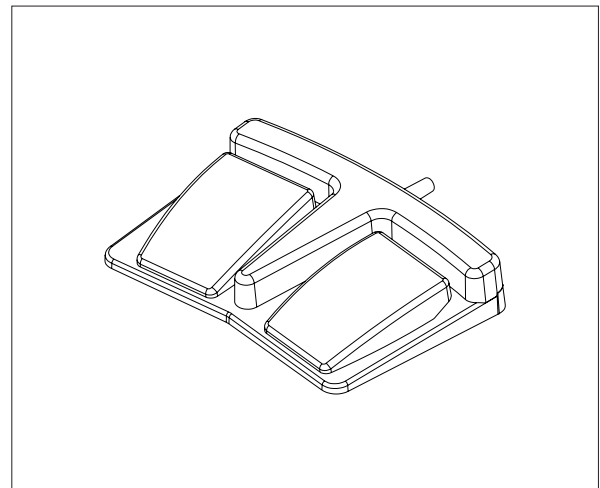
Use a two-pedal footswitch from TAGARNO to control magnification or manual focus with your feet.

+ Zoom in or focus on something close

− Zoom out or focus on something further away

+
− When enabled in the microscope settings, push both plus and minus to change from auto focus to manual focus.

9. SETUP MENU

SETUP MENU (1/7)

The setup menu in your TAGARNO FHD microscope provides you with 2 entrances to setup your microscope exactly as you like it.

◯ Access the Setup menu by holding the round center button on the XPLUS FHD control box until the Setup menu appears.

The Setup menu contains 6 submenus:

1. Camera settings   2. General settings
3. Applications   4. Files
5. Information   6. On/off

To navigate in the set-up menu, use the multi function buttons on the control box.

When applicable, sliding the button to the right, will activate the feature. Sliding the button left will deactivate the functionality.

Exit setup menu
You can always exit the setup menu by pressing the center button on the control box for 1 second or by choosing Exit in the Setup menu.

Same procedure is valid regardless of the menu option accessed.

1. CAMERA SETTINGS

White balance calibration	--- 1
Optimal working distance	--- 2
Glare removal	--- 3
Close-up lens +4	--- 4
Start magnification 5.0x	--- 5
Lock magnification	--- 6
Advanced camera settings	--- 7
Wide dynamic range	--- 8
Picture flip	--- 9
Mirror image	--- 10
IR filter	--- 11
White balance calibration at LED light change	--- 12
Video format 1080p60	--- 13
Computer view View all	--- 14
Image format png	--- 15
Image prefix img	--- 16
Assign image name	--- 17
Image preview Center	--- 18

1. White balance calibration
Perform an automatic white balance adjustment in order to get colors displayed correctly on screen. There must be a white object present in the camera's field of view when the white balance is being adjusted. A white balance calibration is made each time the camera is turned on to adjust to the given light conditions.
NB: If the camera's field of view does not contain a white object, when the unit is turned on, the white balance will be incorrect and it will be necessary to perform the white balance adjustment process as described previously.

2. Optimal working distance
This setup works in 2 steps and needs to be carried out on a flat surface. Follow the on-screen directions to find the optimal working distance. The magnification settings prior to performance will be restored.

3. Glare removal
Capture glare free images by enabling feature and connecting a TAGARNO Ring light to the microscope via USB. When capturing a photo, the microscope will automatically capture and combine a series of individually lit images to obtain one glare free image.

NB: For best results, perform a White balance calibration after enabling the Glare removal feature.

NB: If you change the setting of the Ring light or internal LED light, Glare removal will be disabled in the menu.

4. Close-up Lens
Indicate which lens is mounted on your TAGARNO microscope, to get the right magnification levels displayed in the On Screen Display when zooming in and out.

5. Start magnification
Choose the start magnification level you want your TAGARNO microscope to automatically set when turning your system on.

6. Lock magnification
Lock your magnification level, so your microscope is always working at your start magnification level and you are not able to manually zoom in/out.

7. Advanced camera settings
When activated, the advanced camera settings can be modified in detail for optimum visual inspection result. Deactivated by default

8. Wide dynamic range

When this option is selected and auto exposure mode is active, the camera uses individual exposure settings for dark and light areas. This option can be useful to reduce glare when inspecting reflective objects.

NB: If the camera live image is grainy, increase Exposure compensation in Auto exposure mode.

9. Picture flip

Select if you want to display your image on screen as placed below the camera or flip it 180 degrees.

10. Mirror image

Mirror the live image for an unmirrored inspection.

11. IR filter

Turn Infrared filter off when using Infrared ring light.
To use regular ring lights turn the Infrared filter on.

12. White balance calibration at LED light change

Switch on if you want an automatic white balance calibration to be performed when LED light is changed. Deactivated by default.

Switch off if you do not want an automatic white balance calibration to be performed when LED light is changed.

13. Video format

Choose between various available video formats:
1080p60 / 1080p50 / 1080p30 / 1080p25. This choice is not available in MOVE/FRONT, since this system runs 1080p60 per default.

14. Computer view

TREND/PRESTIGE only: Choose between Camera only (default) and View all. If View all is selected, menus and applications will be overlayed on the live video of the USB 3.0 output. This feature allows you to use a computer to display the microscope live image and screen share the output during video conferences.

MOVE/FRONT only: Choose between Stopped (default) and Streaming to get an the live view from the camera displayed in a browser. To start Streaming, please connect ethernet and access remoteview.tagarno. com in a browser. Locate the session ID and enter the ID in the window on the microscope. Please go to tagarno.com/remoteview-help for further help and details.

15. Image prefix

Choose between different image formats when saving an image. Available formats are TIFF, PNG, JPG or BMP.

NB: The following EXIF data are included when saving images in .jpg format: Brand and model of microscope, creation data, keyword data from apps, serial number and field of view. Any annotations added in the Measurement application are also included here.

16. Image prefix

Replace the default image prefix (img_) preceding the date and time stamp in filenames of captured images. This feature requires an attached keyboard.

17. Assign image name

When this setting is active, the microscope will prompt for an image name before storing a captured image.

NB! When using an attached scanner to name captured images on the TAGARNO FHD microscopes we advise that the scanner is connected directly to one of the two USB ports on the microscope.

It is not recommended to connect the scanner to an attached USB Hub unless it has been thoroughly tested. The communication through some hubs can unfortunately introduce data loss resulting in one or more random characters missing in the scanned image name.

18. Image preview

This feature allows users to quickly inspect and capture images of new samples. When an image is captured the default behavior is to preview the image at the center, left or right side of the display for 5 seconds. Image preview can now be disabled, which will display a more discrete text box for 3 seconds.

2. GENERAL SETTINGS

Auto power off	◄	Never	▶	--- 1
Lock presets	◄	⬛ o	▶	--- 2
File share mode	◄	I ⬛	▶	--- 3
Auto capture mode	◄	⬛ o	▶	--- 4
Auto interval		hh : mm : ss		--- 5
Monitor auto detect	◄	I ⬛	▶	--- 6
Monitor width	◄	598 mm	▶	--- 7
System units	◄	Metric	▶	--- 8
Numeric format	◄	1,234.56	▶	--- 9
System language	◄	English	▶	--- 10
Keyboard layout	◄	US	▶	--- 11
Foot switch configuration	◄	Zoom/Focus	▶	--- 12
Scale bar	◄	I ⬛	▶	--- 13
Time zone	◄	UTC+01:00	▶	--- 14
Time		14 : 10 : 54		--- 15
Date		2021 - 11 - 16		--- 16
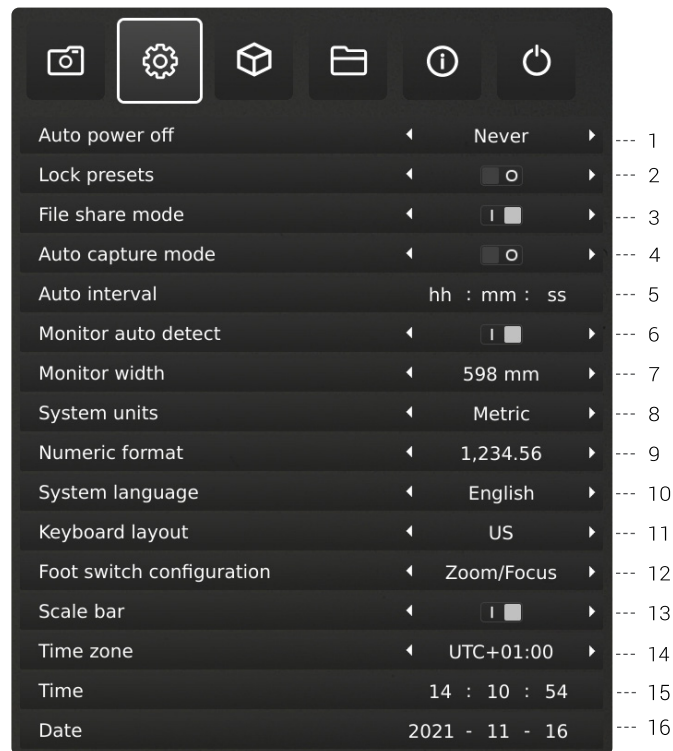
1. Auto power off
Choose when the microscope should automatically shut down after a period of inactivity. Select between: Never, 1 hour and 3 hours.

2. Lock presets
When this feature is enabled, users are prevented from accidentally overwriting presets in the Preset manager.

The XPLUS control box can therefore simply be removed. The operator can instead use an attached numerical USB keyboard to operate the digital microscope.

3. File share mode
Activate File share mode to save images to the internal storage of the microscope. The images can then be accessed via computers on the same network as the microscope.

To access photos saved on the internal storage, see section ACCESS SAVED FILES.

NB: To minimize security risk, it is highly recommended to disable SMB 1.0 support on any Windows based operating system on your corporate network. You do this by accessing Programmes and Features in your Control Panel.

4. Auto capture mode
To automatically capture images at a certain interval, activate the auto image capture mode.

5. Auto interval
Set the function to automatically capture images at a certain interval. Intervals start from 2 seconds and up. Start/stop the interval capturing by pressing the image button on the control box.

6. Monitor auto detect
Turn off to manually set monitor width

7. Monitor width
Manually set your monitor width, if you do not wish to use the automatic monitor auto detect, which is enabled by default. This automatically changes the magnification level shown in the OSD. Please note that manually changing the Monitor width while Monitor auto detect is enabled, will disable the Monitor auto detect function.

8. System units
Choose to display metric or imperial units when using the microscope.

9. Numeric format
Here you can select the numeric format based on your preference. Choose between 1,234.56, 1.234,56 or 1 234,56.

10. System language
The following languages are available as system language:
Chinese, Danish, English, French, German, Hungarian, Italian, Japanese, Korean, Polish, Romanian, Russian, Slovene and Spanish.

11. Keyboard layout
Select your horizontally language by pressing buttons left or right on the XPLUS control box. The available languages are listed alphabetically. The microscope is by default set to GB. The available languages are: AF, AL, AT, BE, BR, BW, CA, CD, CZ, DE, DK, EE, ES, FI, FR, GB, HR, HU, IS, IT, LT, LV, ME, MT, NL, NO, PH, PK, PL, PT, RO, RU, SE, SI, SK, SN, TZ, US, VN and ZA.

12. Foot switch configuration
With this function, you can choose between Zoom Only and Zoom/ Focus on the foot switch.

Zoom/Focus is the default configuration. Setting the option to Zoom Only allows you to zoom in/out with the foot switch, even if the microscope is set in Manual focus mode by the control box.

13. Scale bar
Scale bar indicates the size of an inspected object. The scale bar will operate in standard magnification and in all activate applications, except for Verification lines and Measurement application. The scale bar will adjust to match current magnification level. Activated by default.

NB: The scale is approximate and does not take lens distortion into account.

14. UTC time zone
Set up this feature by identifying and setting the UTC time zone applicable to your geographical region. Complete this step before setting the time/date to match the local time in the next steps as described below.

MOVE/FRONT only: When the time zone has been set up correctly (and the power box has internet acces), the date and time will set itself automatically, if the Power box has been disconnected for more than half a day.

15. Time
Set the current time, which will affect the time registered when saving images.

If you have a MOVE or FRONT system, please see the `MOVE and FRONT only points below the point ´Date`.

16. Date
Set the current date, which will affect the date registered when saving images.

MOVE and FRONT only: The time will set itself automatically, if the Power box has been disconnected for more than half a day. Please note that the UTC time zone must be set up correctly and the Power box must have internet access.

MOVE and FRONT only: The real-time clock (time and date as described above) has a limited retention time of approximately 12 hours and is dependent of the main switch not being switched off. If the Power box has been without external power for more than 12 hours, it will be necessary to set the time/date correctly again.

To prevent losing the date/time, use only the standby button at the front of the Power box or the Power off menu, when switching the unit off.

When the clock is unset, a clock icon will be flashing in the status window of the screen:

3. APPLICATIONS

Focus stacking					1
Measurement application					2
Ruler	◄	Off	►		3
Watermark					4
Verification lines					5
Image analysis					6
Image comparison					7
DXF overlay					8
PNG reference					9
Trichinoscope application					10
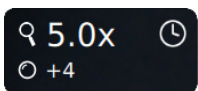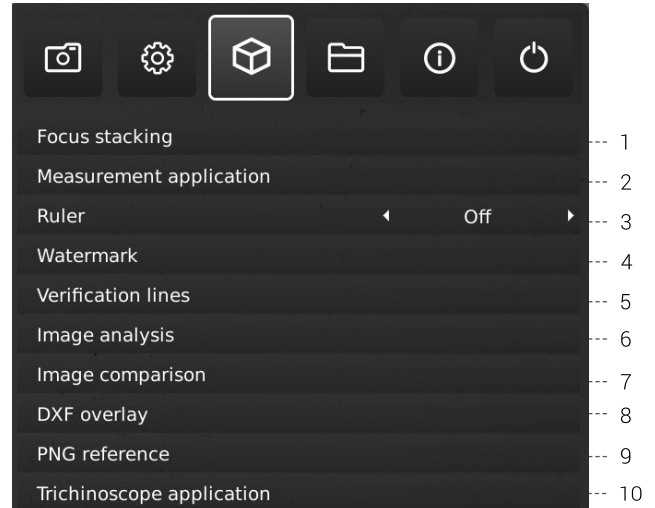
30-day trial license
Select any of the unlicensed applications to start your 30-day trial license. This allows you to test the apps for free for a period of 30 days.

You can see the state of the Trial license in the System Information of the microscope.

Once the trial license has ended, only purchased licenses will remain available. You can of course purchase full access to all apps by contacting your distributor.

1. Focus stacking
In the Applications menu point, you are able to turn on the Image Focus Stacking feature, enabling you to stack images with different focuses on top of each other, creating one ultra-sharp image. For more info, see manual section STANDARD APPS.

2. Measurement application
This application enables you to perform precise measurements such as line, radius or angle measurements directly from the microscope.

3. Ruler
Turn the Ruler application on horizontally (Top, Center or Bottom), vertically (Left, Center or Right) or both directions and get a ruler displayed on top of your live image on screen. For more info, see manual section STANDARD APPS.

4. Watermark
Create an info field on captured images with an image prefix, time stamp, horizontal field of view, microscope model plus serial number and/or import and add a custom defined watermark. The watermark will then appear on all captured images. For more info, see manual section STANDARD APPS.

5. Verification lines
This application provides you with an opportunity to quality check objects based on accurate calibrated measures by placing vertical and/or horizontal lines as a layer on top of your object, directly from the microscope.

6. Image analysis
Choose one of the three Image Analysis apps in the drop down menu when entering this application: Color analyzer, Particle analyzer and Speck Counter.

7. Image comparison
The app enables you to compare a sample or live image to a reference image in various ways.

8. DXF overlay
Import a DXF file and add it as overlay on top of your live image. You can also search for component names in the DXF file with this app.

9. PNG reference
Import a PNG file and add it as overlay on top of your live image. The PNG file can be recalled via the Preset feature.

10. Trichinoscope application
Use this application with a TAGARNO Trichinoscope to inspect pork meat for trichinella parasites.

4. FILES

File manager — 1
Storage information — 2
Format USB storage — 3
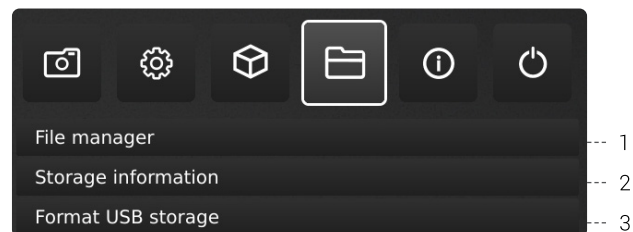
1. File manager
Access files stored on the microscope or a connected USB memory stick directly on the microscope. Rename, search, copy, move (from folder to folder or from USB memory stick to internal storage and vice versa) and delete files, all without using a computer.

Images (captured on or tranferred to the microscope) can be viewed in full screen or preview mode. The latter allows the images to be used as reference for future inspections.

NB: If the DXF overlay app is available, selecting a DXF file will open the DXF overlay app with the selected DXF file.

Changes to preview mode
In preview mode, the entire photo will visible in a small window. The display scale is visible in the top left corner of the preview window. Resize the window with the mouse if needed.

Change the display scale of the photo with the scroll wheel on the mouse or right click on the area of the photo you want to see in scale 1:1. Use scroll bars or drag the photo with the mouse to adjust what is visible. It is also possible to zoom in further by using the scroll wheel again.

Right click during scale 1:1 display to return to default preview display mode or right click at scales higher than 1:1 to return to scale 1:1 display.

Navigation
Navigate the File manager menu with the XPLUS control box or with a mouse or keyboard (if connected). For navigation help, press the "P" button on the XPLUS control box or press F1 on the keyboard to open the help window in the bottom left corner of the monitor. Similarly, hover over the menu icons with the mouse to show tool tips.

NB: When File manager is open, it is not possible to change magnification level or short pressing the Image capture button on the XPLUS control box to save photos without graphics. Long pressing this button to save with graphics is however still supported.

2. Storage information
When choosing this function, an information window will show the internal storage capacity on the microscope and, if connected, the USB memory stick.

3. Format USB storage
This TAGARNO device is designed to only support USB storages with a FAT32 formatted file system. If your USB storage does not currently have this file system, use this function to format the USB storage. A second pop-up will ask you to confirm your selection. Please notice that all files on the USB memory stick will be deleted once formatting begins. Formatting time will vary.

5. INFO
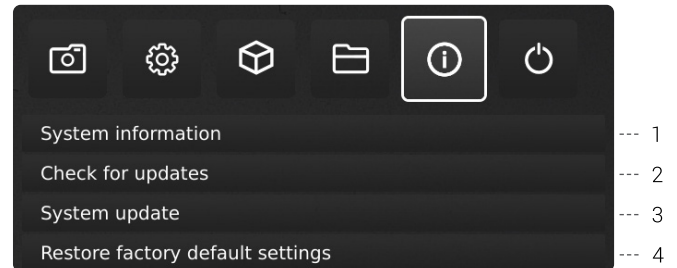
NB: An orange dot next to to the Info menu icon indicates that a new firmware is available and a system update should be performed.

1. System information
This enables you to see model number, serial number, firmware versions, URL path to download the latest firmware and product manuals, state of the Trial license, all available licenses and other information about the product.

2. Check for updates/Install updates
Check for available firmware updates if the microscope is connected to a network. If a new firmware version is available for installation, see separate section about System update for more information.

If the microscope has already detected that a new firmware update is available, the text will change from Check for updates to Install updates and an orange dot will appear next to it.

3. System update
See separate section about System update.

4. Restore factory default settings
Restore the system to the factory default settings, all your personal settings will be erased, including calibrations and images.

6. OFF
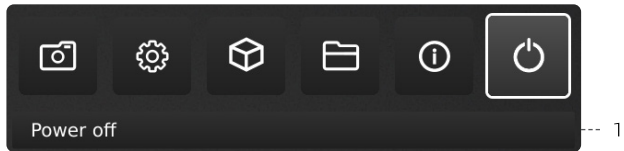
1. Power off
Turn the TAGARNO microscope off.

Menu options, layout and messages might slightly vary from one version of this microscope to another. Please contact your TAGARNO distributor if you have any questions regarding your TAGARNO microscope.

10. STANDARD APPS

STANDARD APPS | FOCUS STACKING (1/3)

With Focus stacking, you can stack images with different focuses on top of each other to create one ultra-sharp image.

1.   Magnification level
Set the magnification level of choice by using arrows up or down.
The actual magnification level is displayed inside the zoom option and can also be typed if a keyboard is connected.

Plus/minus buttons on the control box are active as an alternative to using the onscreen zoom menu point.

2.   Focus 1: Focus setting far
Manually set focus to the part of the object farthest away.

3.   Focus 2: Focus setting near
Manually set focus to the nearest part of the object.

4.   Steps
Choose number of images to stack between 5 and 50.
Available intervals: 5, 10, 15, 20, 30, 40, 50

5.   Quality
•   Normal: This is the default fast mode with a typical processing speed of 8 seconds for 15 images.
•   High: In this mode the processing speed is reduced and 15 images can take up to 13 seconds.

By extending the image processing time, visual artifacts are decreased and the image quality heightened.

6.   Start
Press Start to start the process. Wait until the menu displays Done.

7.   Save image
Choose this option to save the image. The image save settings will adapt from setup chosen from the general camera settings. To access saved files, see manual section ACCESS SAVED PHOTOS.

8.   Exit
Close application.

NB: Long pressing the center key on the control box will close the Focus stacking application or cancel an ongoing focus stacking.

All current settings used during Focus stacking, except zoom level, are persisted during power down.

With Ruler, you can add vertical and/or horizontal rulers in a variety of colors on top of your live image.

1.   Get started with the app
Before using the application, make sure to specify which lens is currently mounted on the microscope in the microscope camera settings. If the mounted lens is not available in the microscope camera settings, please perform a ruler calibration.

Close-up lens	◀	+4	▶

2.   System units
Choose your preferred system units (metrics or imperial) under the General settings menu point in the setup menu.

System units	◀	Metric	▶

Ruler			
Ruler	◀	O	▶	--- 4
Horizontal	◀	Center	▶	--- 5
Vertical	◀	Center	▶	--- 5
Color	◀	White	▶	--- 6
Calibration				--- 3

3.   Ruler calibration
Perform a linear calibration of the Ruler app using printable TAGARNO calibration rulers if the mounted lens is not available in the microscope camera settings. If a calibration is not performed, the Ruler app will be inaccurate.

Supported lenses are +3, +4, +5 or +10.

NB: Make sure to use the calibration ruler matching the mounted lens as different lenses require different rulers. NB: The system can only support one +10 lens at a time.

4.   Activate the Ruler
Activate the Ruler by moving the slider to the right. Deactivate the Ruler by moving the slider the left.

5.   Ruler direction
Turn the Ruler application on in the Applications menu with the left and right arrow buttons on the XPLUS control box. Choose between Horizontal (Top, Center, Bottom, Off) and Vertical (Left, Center, Right, Off).

When moving the Ruler to a left, right, top or bottom position, the precision can be affected. The lower the magnification, the lower the precision. At minimum magnification with a +4 lens, the precision can reach 5%.

6.   Ruler color
Set the ruler color to your prefered color to separate it from your displayed object. Choose between 6 different colors: Yellow, blue, red, black, white and green.

7.   Manual focus setting
When the Ruler is chosen, the system will automatically start in manual focus setting to focus on the part of the object furthest away.

If needed, manually adjust the focus by adjusting the height of the microscope to get the desired object in focus. Then, use the zoom in and zoom out buttons to fine adjust the magnification.

Manual focus mode	
🌷 Near	▲ Far
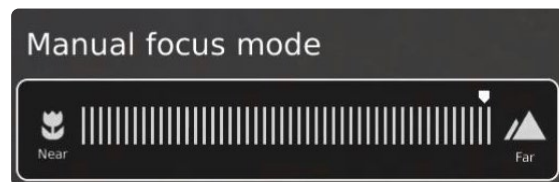
If encountering problems finding focus, please use "Optimal Working Distance" in the microscope camera settings menu, before using the Ruler app.

8.   Save image with or without graphics
It is also possible to save an image with the Ruler graphics by long-pressing the image button on the control box. Short-pressing the button will save the image without graphics.

To access saved files, see manual section ACCESS SAVED PHOTOS.

9.   Application shortcut
When used as an application shortcut via the XPLUS control box, the Ruler is switched on and off, based on its last setting.

Note: If both rulers are set to off when the application shortcut are activated, the ruler will be set to the default position.

With Watermark, your saved images will have an info field containing specifications from the time of use (time stamp, horizontal field of view, microscope model and serial number) and/or a custom defined watermark (e.g.: logo or CONFIDENTIAL).

When activated, the watermark will appear on all captured images.

1. Creating a Watermark

To use Watermark, create a PNG file that measures 1920x1080px and give it a file name ending with ".png". We recommend using GIMP, which is a free graphics editor or Adobe Photoshop.

2. Enable or disable all settings

Choose to enable or disable all watermark settings at the same time.

3. Enable or disable info field

Enable or disable an info field, automatically stating an image prefix (default or as stated under Camera settings), time stamp, horizontal field of view plus microscope model and serial number.

4. Enable or disable a custom watermark

Choose to enable or disable the latest imported custom watermark.

5. Import a custom watermark

At this stage, you are able to import a custom watermark by inserting a USB memory stick into the microscope containing a watermark file.

It is possible to import only one custom watermark at a time. This means that if you wish to change the current watermark, you need to follow the steps above to import a new watermark.

NB: It is only possible to import watermarks from USB storages with a FAT32 formatted file system. If your USB storage does not currently have this file system, a dialogue box allows you to format the USB storage. A second pop-up will ask you to confirm your selection. Please notice that all files on the USB memory stick will be deleted once formatting begins. Formatting time will vary.

After importing, you can see a preview of the watermark before closing the dialogue box.

To access saved files, see manual section ACCESS SAVED PHOTOS.

11. ACCESS SAVED FILED
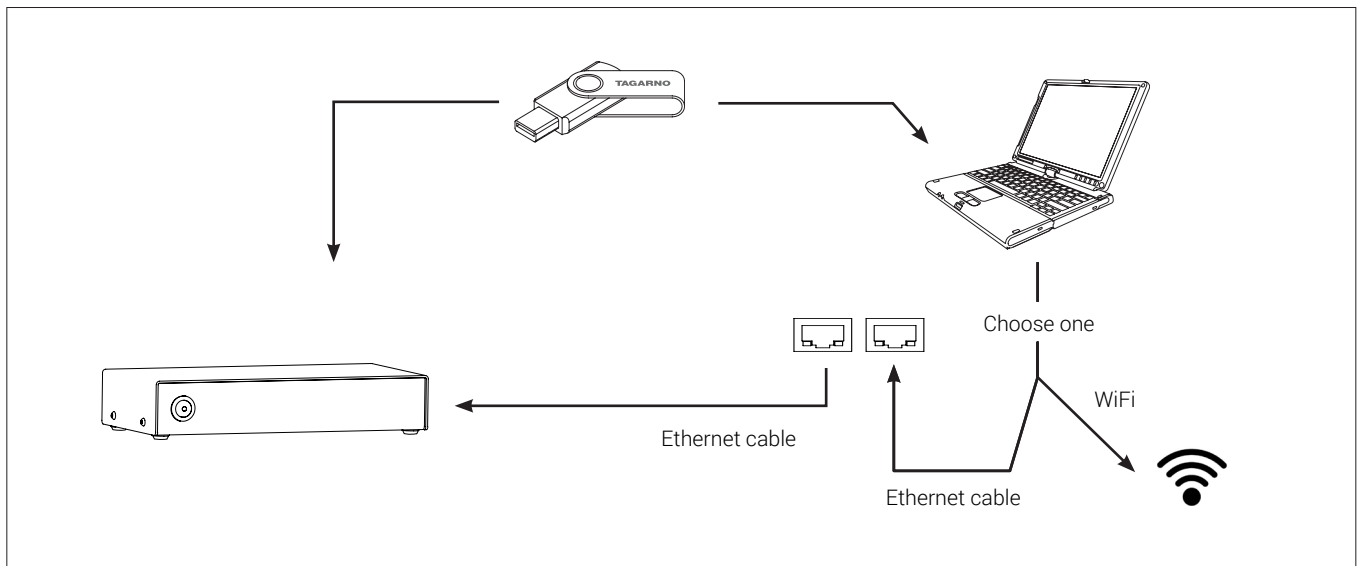
Access files directly on microscope
Use File manager (see Setup menu section) to access files saved on the internal storage of the microscope or a plugged in USB memory stick without using a computer.

NB: To save images to internal storage of the microscope, activate File share mode in the microscope setup menu.

Access files on USB memory stick via computer
Unplug the USB memory stick from the microscope and insert it in a computer to access photos saved on the USB memory stick.

Access files on internal storage via computer
To access files saved on the internal storage of the microscope via a computer, the microscope itself must be connected to a network. Use one of the two methods below:

Method 1
- Connect the cable from the wall socket to the microscope. Then, connect a computer to the same network either by cable or WiFi.

Method 2
- Connect a computer and the microscope to a stand-alone router without internet acess to create a closed network. This solution is useful if you cannot connect the microscope to your network

Regardless of method, verify that an IP address of the microscope is displayed in the microscope System information. If no IP address is stated, check that all cables are connected correctly or consult a network administrator.

Afterwards, follow the description below matching your operating system to access the files:

NB: xxxxx denotes the microscope serial number which is available on the product label and via the System information window in the microscope Setup menu.

Access files with Windows operation system:
• Open the File Explorer and type: \\tagarno-snxxxxx

Access files with mac operation system:
• Open the Connect to server window and type: smb://tagarno-snxxxxx/
• Press connect
In both cases, a window will appear and you can type:
• User name: \public (Windows) or public (mac)
• Password: pub1234

Access EXIF data
The EXIF data on .jpg images can be accessed when transferred to a computer. EXIF data are not available when images are accessed directly on the microscope.

Text annotations in the Measurement app and Image comparison app are saved in IPTC/XMP format:

• In *Windows 10/11* these appear as tags. Tags are searchable in File Explorer by entering "tags:keyword" in the search field.

• On *MacOS* these will appear in the Keywords Inspector. Open the image with Preview, press ⌘ -I and click on the magnifying glass icon.

12. SYSTEM UPDATE

SYSTEM UPDATE (1/4)

This is a step by step guide to perform a system update on your TAGARNO.

A system update can either be performed online or with a USB memory stick. See Online system update section or Manual system update section for more information on the two processes.

ONLINE SYSTEM UPDATE

To perform an online system update, the microscope must be connected to a network. For more information, see Connection section.

When a new firmware version is available, an orange dot next to the Info menu icon will appear. The menu option Check for updates will also change to Install updates and an orange dot will also appear here.

To perform the system update, follow this step by step guide:

Step 1: Start installation

1. Access the Setup menu by holding the round center button on the XPLUS FHD control box until the Setup menu appears. Note that there's an orange dot next to the Info menu icon. This indicates that a new firmware is available and a system update should be performed.

2. To navigate in the Setup menu, use the multi function buttons on the XPLUS FHD control box

3. Go to Info menu icon in the top menu, navigate to Install update and choose it by pressing the round center button.
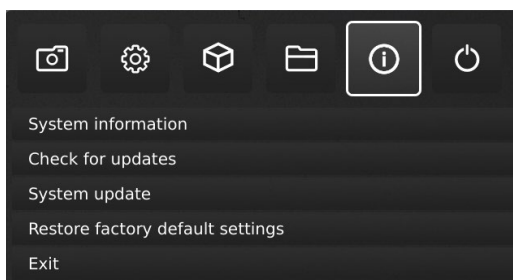
Step 2: Perform installation

Screen dialogues will now guide you through the update process.

1. A New update available window appears. Press OK to start the download and installation process.
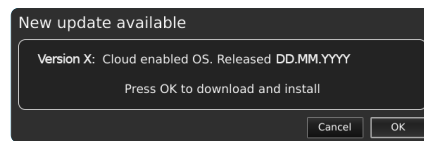
Note: At this point, the update process can be cancelled safely by pressing Cancel.

⚠ NB: Do not switch off or disconnect the microscope during a system update. This will damage your device and render it useless.

2. When the system update is complete, the microscope will automatically restart.

Step 3: Verify installation

1. Verify the system update by checking that the Application version (displayed in the Setup menu - Info - System information) matches the recently installed system update.
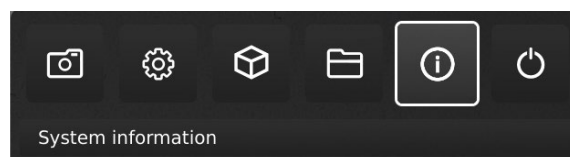
Step 4: Access new application

If a new application is available (either through the 30 day trial license of after application installation), a new menu point will appear in the Setup menu under pt. 3 Applications, showing the new application.

Note: To activate an application after installation, you need a unique license key generated from the microscope serial number.

See the license activation section for further explanation on how to activate your license.

After activating your license, you are now able to access and use the new application or feature.
Please see the user manual for further information regarding the use of TAGARNO applications.

If you have trouble performing a system update, please contact the TAGARNO distributor from which you have purchased the product or send an e-mail to **support@tagarno.com**.

MANUAL SYSTEM UPDATE

To perform a system update manually, a system update file needs to be installed directly on the microscope.

Note: In some cases, it is necessary to complete more than one system update processes, if an update contains substantial improvements and considerable file sizes. The microscope will notify you if this is needed.

Follow the few steps below to perform a system update to your TAGARNO microscope.

Step 1: Download installation file

1. Locate and access the installation file(s) via this link:

   www.tagarno.com/firmware-download

2. Download the installation file(s) to a USB memory stick (FAT32 formatted)
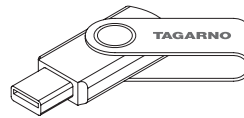
3. If the file(s) is in a ZIP folder, unzip the files and make sure that only the correct installation file(s) or previous system update files appear on the memory stick.

Note: File names always have the following format:
tagarno_fhd_system_vx_xx.image
tagarno_fhd_system_vx_xx.system
tagarno_fhd_system_vx_xx.update
(x_xx denoting the system version)

The installation file(s) is identical for TAGARNO FHD TREND/ PRESTIGE/UNO.

Step 2: Plug in the USB memory stick

1. Plug the USB memory stick into one of the USB inputs at the back of the microscope or the Power box, depending on the microscope model.
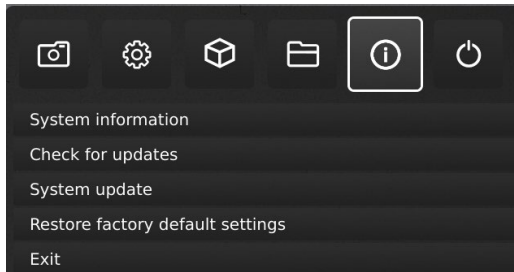
Step 3: Start installation

1. The system update process is initiated in the Setup menu - Info - System Update

 A. Access the Setup menu by holding the round center button on the XPLUS FHD control box until the Setup menu appears

B. To navigate in the Setup menu, use the multi function buttons on the XPLUS FHD control box

C. Go to the fourth menu point (Info) in the top menu, navigate to System Update and choose it by pressing the round center button

Step 4: Perform installation

Screen dialogues will now guide you through the update process

1. A System Update Warning appears - Read the warning and press OK to start the system update.
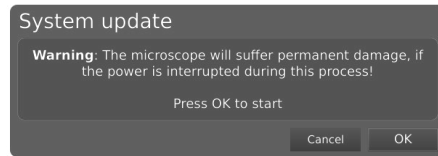
Note: At this point, the update process can be cancelled safely by pressing Cancel.

⚠ NB: Do not switch off or disconnect the microscope during a system update. This will damage your device and render it useless.

2. When the system update file has been read and validated, information about the new version is shown. Wait for the system to update.
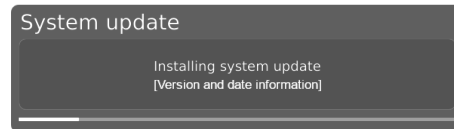
3. When the system update is complete, the microscope will automatically restart.

Note: The microscope might switch off after restart. In that case, turn it back on manually.

4. After restarting the microscope, the system might need to be updated again by following the same procedure as described above entering system update
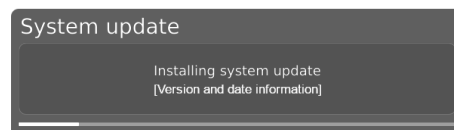
SYSTEM UPDATE (4/4)

Step 5: Verify installation

1. Verify the system update by checking that the Application
    version (displayed in the Setup menu - Info - System
    information) matches the version of the system update file.
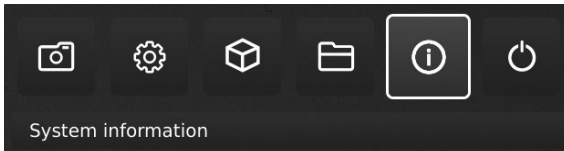
Step 6: Access the application

If a new application is available (either through the 30 day trial
license of after application installation), a new menu point will
appear in the Setup menu under pt. 3 Applications, showing the new
application.

Note: To activate an application after installation, you need a unique
license key generated from the microscope serial number.

See the license activation section for further explanation on how to
activate your license.

After activating your license, you are now able to access and use the
new application or feature.

Please see the user manual for further information regarding the use
of TAGARNO applications.

If you have trouble performing a system update, please contact the
TAGARNO distributor from which you have purchased the product or
send an e-mail to **support@tagarno.com**.

13. LICENSE ACTIVATION

After purchasing a TAGARNO application, you need to activate it with a unique license key file.

To activate a license key on your TAGARNO microscope, follow the steps below:

Note: The license can only be paired with the microscope which has the serial number stated in your license. The license can not be removed and transfered to another microscope.

STEP 1: DOWNLOAD LICENSE KEY FILE

1. You will receive an e-mail with a unique license key file after placing an order, receiving an activation code and requesting the license via **www.tagarno.com/request-license**

   Note: If you are missing your license key file, please contact **license@tagarno.com** to retrieve the file.

2. Download the license key file to a USB memory stick (FAT32 formatted)
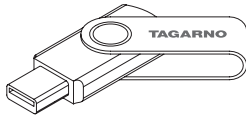
3. If the file is in a ZIP folder, unzip the folder and make sure that only the correct license file and no ZIP folders appear on the memory stick. Make sure to also place the license file in the root of the USB.

STEP 2: PLUG IN THE USB MEMORY STICK

4. Plug the USB memory stick into one of the USB inputs at the back of the microscope or the Power box, depending on the microscope model.

STEP 3: START ACTIVATION

5. The activation process is initiated in the Setup menu - Info - System Update

   A. Access the Setup menu by pressing the round center button on the XPLUS FHD control box until the Setup menu appears

   B. To navigate in the Setup menu, use the multi function buttons on the XPLUS FHD control box

   C. Go to the fourth menu point (Info) in the top menu

   D. Navigate to System Update and choose it by pressing the round center button

STEP 4: PERFORM ACTIVATION

6. A System Update Warning appears - Read the warning and press OK to start the system update.
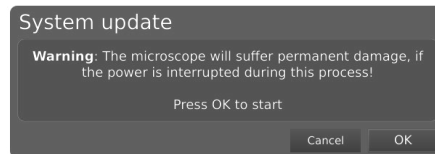
7. Press OK and the update will be processed. Please do not press the control box unless the installation menu tells you to.
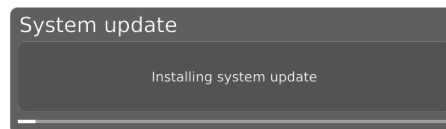
STEP 5: ACCESS THE APPLICATION

After activating your license you are now able to access and use the new application.

Please see the user manual for further information regarding the use of TAGARNO applications and features.

If you have trouble activating the application, please contact the TAGARNO distributor from which you have purchased the product.

14. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS (1/4)
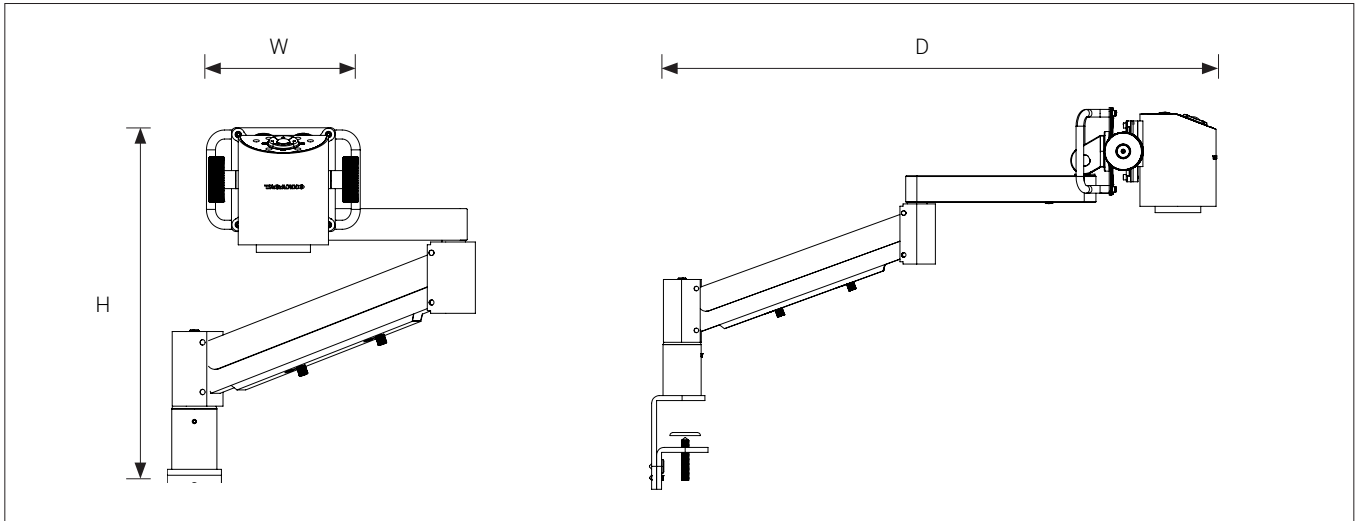
Dimensions	H: 539mm / 21.2"	
	W: 160mm / 6.2"	
	D: 680mm / 26.8"	
Weight (incl. flex arm)	7.5 kg / 16.5 lbs	
Camera resolution	FHD 1080p, 1920x1080p at 59,94/50/29,97/25Hz	
	HD 720p, 1280x720p at 59,94/50Hz	
Camera zoom	30x optical	
Autofocus	Yes	
Work height	Min: 78mm / 3.07"	Max: 374mm / 14.72"
Work depth (max)	630mm / 24.8"	
Auto Monitor Detect	No	
Power requirements	Line voltage	100 - 240V ~ ± 10%
	Line frequency	50/60Hz
	AC current consumption (typ.)	70mA/100V~ 30mA/240V~
	DC current consumption (typ.)	0.5A/12V ⎓
Environmental conditions	Temperature	Storage -5 to 60°C / 23 to 140°F Operation 5 to 40°C / 41 to 104°F
	Humidity range	Storage 20 to 90% RH non-condensing Operation 20 to 80% RH non-condensing
	Altitude	0 to 2000m / 0 to 6500ft above sea level
	Pollution degree	2

Dimensions	H: 44 mm / 1.7"	
	D: 104 mm / 4.1"	
	W: 214 mm / 8.4"	
Weight	1 kg / 2.2 lbs	
Power requirements	Line voltage	100 - 240V ± 10%
	Line frequency	50/60Hz
	AC current consumption (typ.)	100mA/100V 45mA/240V
	DC current consumption (typ.)	800mA/12V
	Standby power	0.2W
Environmental conditions	Temperature	Storage -5 to 60°C / 23 to 140°F Operation 5 to 40°C / 41 to 104°F
	Humidity range	Storage 20 to 90% RH non-condensing Operation 20 to 80% RH non-condensing
	Altitude	0 to 2000m / 0 to 6500ft above sea level
	Pollution degree	2

Wire	Description	Type	Connect to	Specification
1	Power supply (DC)	DC Jack	Power socket	Input: 12V ⎓ 800mA
				⚠ Use only the power supply provided by TAGARNO:
				Brand/Model: Mean Well/GSM40A12
				Protection class I Overvoltage category II
				Input: 100-240V ∼ 1.0-0.5A, 50/60Hz Output: 12V ⎓ 3.34A Max
2	* Control box or foot switch	D-SUB 9-Pin Female	Control box or foot switch	Output: 3.3V ⎓ 5A Max ⚠ Use only control boxes supplied by TAGARNO
3	Ethernet	RJ-45	Ethernet wall socket	Ethernet LAN, 100BASE-TX/1000BASE-T ⚠ Use only shielded STP Ethernet Cable
4	USB 3.0 output	Type A	Camera head	Output: 5V ⎓ 500mA
5	Output option #1	HDMI Standard Type A	Monitor	HDMI Out 1080p60
6	Output option #2	DisplayPort Full Size	Monitor	DisplayPort Out 1080p60

* Note: If you're using the foot switch, connect the cable to the foot switch and then connect the footswitch and control box.

LENS	Lens to object distance	Magnification on 24" monitor
+3	333 mm/13.22"	1.3x - 40.1x
+4 (Included)	250 mm/9.84"	1.7x - 53x
+5	200 mm/7.87"	2.2x - 66x
+10	78 mm/3.07"	4.3x - 133x

FIELD OF VIEW	MAXIMUM		MINIMUM	
Lens	X-Direction	Y-Direction	X-Direction	Y-Direction
+3	409 mm / 16.10"	230.10 mm / 9.06"	13.40 mm / 0.53"	7.54 mm / 0.02"
+4	290 mm / 11.42"	163.10 mm / 6.42"	10.50 mm / 0.41"	5.91 mm / 0.02"
+5	245 mm / 9.65"	137.80 mm / 5.43"	8 mm / 0.32"	4,50 mm / 0.18"
+10	87 mm / 3.42"	48.94 mm / 1.93"	4 mm / 0.16"	2,25 mm / 0.089"

RECOMMENDED MONITOR FORMAT

Panel format	16:9 (Widescreen)
How to link	HDMI input
Response time	2 ms
Signal format	FHD 1920x1080

ACCESSORIES

Lens +3, +4, +5, and +10	Backlight kit	Circular tilting table
Magnetic lens ring	TAGARNO Ring light White	XY table
Foot switch	TAGARNO Ring light IR	Glass table
FHD monitors per request	TAGARNO Ring light UV	Cleaning kit
Flex arms	Coaxial light	

15. MAINTENANCE

- Store and use the product in a dry, clean and ventilated room.
- Do not place the product in direct sunlight, next to a radiator/heater or some place where the system may be subjected to liquids.
- All plugs are designed to be used in one way only. Therefore, you should never use force when you connect the system.
- Remember to disconnect all elements if you intend to move the product.
- If you move the product from a cold to a hot room, you must wait at least an hour before you turn it on to avoid short circuits due to condensation.
- Remove the cables by pulling the plug itself - never by pulling the cable.
- If the product needs repairing, never do it yourself, contact your distributor.
- When cleaning the product, please turn off the system and wait untill the system has cooled off.
- Clean the product with a damp cloth. Never use strong cleaning agents or chemicals
  - these may damage the microscope.
- Clean the lens regularly with isopropyl alcohol and a microfiber cloth or with the TAGARNO cleaning kit.

16. WARRANTY

Warranty terms for the product shall be as follows:

TAGARNO warrants that the product will correspond with the specification at the time of delivery and will be free from defects in material and workmanship for a period of 24 months
(2 years) from date of invoice from Supplier.

This warranty covers:
- a.   The replacement of defective parts.
- b.   All labour costs to exchange defective parts in product.
- c.   Complete functions test of product before return to end user's site.
- d.   Return transport costs of product from TAGARNO to end user's site.

The warranty only applies if the product is packed, shipped, stored, handled and maintained correctly.

Failures due to improper packing and transport are not covered.
Failures due to drops and sudden blows are not covered.
Failures due to storage and handling in extreme high or low temperatures are not covered.
Failures due to storage or handling in extreme high humidity are not covered.

17. LICENSE AGREEMENT

This TAGARNO product contains open source and third-party components.
www.tagarno.com/license-agreement

18. ERGONOMICAL RECOMMENDATIONS

Please be careful when carrying the product from one place to another.
Always lift the microscope with one hand around the rod and the other hand beneath the base.
Please do not lift the microscope by grabbing the camera arm.

19. LABELS

All TAGARNO MOVE and FRONT digital microscopes are marked with the following product labels and cMETus labels:

TAGARNO ZAP
Model No.: XXXXX
Serial No.: XXXXX
Supply: 12V === 0.5 A
TAGARNO A/S - Finlandsvej 2, 8700 Horsens, Denmark. YYYY-MM-DD

UK CA
CE

TAGARNO MOVE POWER BOX
Serial no.: XXXXX
Version: 5.28
Supply: 12V===800mA

CE UK CA

CAN ICES-3(B)/NMB-3(B)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation

TAGARNO A/S - Finlandsvej 2, DK-8700 Horsens, Denmark. YYYY-MM-DD

MET
c   us

Complies with:
UL 61010-1
CSA C22.2 No. 61010-1
E115318

Values marked with X varies from product to product and are replaced by specific numbers and letters.

TAGARNO MOVE and FRONT digital microscopes sold in the US are also marked with the following FDA label:

Manufactured by: TAGARNO A/S
Finlandsvej 2
DK-8700 Horsens
Denmark
Made in Denmark
Manufactured: Month-Year

20. DECLARATION OF CONFORMITY

PRODUCT
MODEL   TAGARNO MOVE | Type no.: 883100 (U.S.) / 880100 (Rest of world)
ART   Inspection camera unit

MANUFACTURER
NAME   TAGARNO A/S
ADDRESS   Finlandsvej 2
ZIPCODE/CITY   8700 Horsens
COUNTRY   Denmark
PHONE   +45 76251111

$C\epsilon$

DESCRIPTION
TAGARNO A/S hereby declares that the product listed above, consisting of a camera unit, a Power box and 12V power supplies, complies with the following European directives:

2006/25/EU	**Artificial Optical Radiation**
2014/30/EU	**Electromagnetic Compatibility**
2014/35/EU	**Low Voltage Directive**

By conforming to the following harmonized standards:

Camera head:

IEC 60825-1:2014	**Class 2**
EN 61326-1:2013	**Class B / Basic Electromagnetic Environment**
IEC 61010-1:2010	**IECEE CB Scheme Ref. Certif. No. NO104184**

Power box:

EN 61326-1:2020	**IECEE CB Scheme Ref. Certif. No. DK-11145-FC**
IEC 61010-1:2010/AMD1: 2016	**IECEE CB Scheme Ref. Certif. No. DK-11137-FC**

THE DECLARATION IS ISSUED BY
MANUFACTURER   TAGARNO A/S

TAGARNO ®

TAGARNO A/S
Finlandsvej 2
8700 Horsens
Denmark

+45 76251111
mail@tagarno.com

tagarno.com

21. COMPLIANCE STATEMENTS

INDUSTRY CANADA COMPLIANCE STATEMENT

CAN ICES-3 (B)/NMB-3(B)

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

FCC COMPLIANCE STATEMENT (UNITED STATES)

Federal Communications Commission (FCC) Statement
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.