User Manual
XY-IMAGER Photo Equipment

Version 1.5 / 1.6

www.xyimager.com

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Introduction

Dear Customer,
congratulations on your purchase of the new XY-IMAGER photography device!

You have selected an innovative Austrian product that is the ideal choice for everything a photographer needs in the area of 360 degree and 3D product photography.

These devices were conceived specifically for photo studios to quickly execute all types of photography situations simply and efficiently. This system was designed in such a way that its components can be combined with each other and sometimes even used with multiple functions.

The use of industry-standard parts and serial cables lets users find quick solutions on their own in case of any problems.

Thanks to the central control unit with a touch display, the system can be operated without any computer connection. This means that PC or Mac users will have no compatibility problems with various operating systems.

We would like to point out that this system can only be used for the semi-automatic production of 360 degree and 3D photos. Additional suitable programs are required to present the products on the Internet.

All functions and safety aspects of these devices were tested before shipment.
Although they were produced with the utmost care, errors caused e.g. by transport or improper handling are not excluded.
Please read the following user instructions carefully and follow the specified guidelines to ensure safety and a long product life.

Safety guidelines

Caution! When using technical electronic devices, please keep the safety information in mind to avoid electric shocks, injuries, and risks of fire.

· The devices should be protected against sprayed water and direct sunlight.
· Please do not clean the devices, specifically the displays, with cleaning products. Clean them with a slightly moist cloth.
· Only connect your devices to the specified power supply.
· **Never** connect your devices to other power sources.
· Do not open the devices in any event. An incorrect assembly may lead to fire or electrical shocks.
· Keep the devices in a temperature range from -05 to 40°C”
· Always keep the connecting cable away from the functional area of the machine.
· Before turning the device on, make sure the connecting cable is securely attached.
· Always screw on the plug connections.
· Do not use cables from third-party manufacturers.
· Make sure the device is switched off before connecting it to the power supply.
· For your own safety, avoid moisture or wetness.
Always pull the plug from the electrical outlet when the devices are not in use.
· Do not connect any third-party devices to the control unit and do not connect the robotic boom to other devices by third-party manufacturers.
· Use the control cable on the control unit only in the direction of the devices. **Never connect the jacks on the control unit with each other - this will destroy the control unit!**

The warranty is invalid if the device is used in a way that does not comply with the user instructions!

Caution - risk of injury!

· The devices may only be operated on solid and level surfaces.
· Make sure they can operate freely and prevent blockages.
· Make sure that the device stands solidly and check that the weight is balanced adequately.
· Use the mobile supports and base extension to prevent the system from falling over.
· Adhere to the maximum weight specifications; these only refer to the center of the rotating disks. Avoid one-sided loads.
. Do not overload the devices with weights that exceed the limits specified on the identification plates.
· No body parts or objects may be held in the direction the devices are running in during the automatic operation. Always pay attention to the movement and sufficient leeway.
· Only use the system in rooms with sufficient ceiling height. Make sure that the robotic boom can move freely and without obstacles.

An obstacle can cause the boom to topple!
· Observe the robotic boom's safety area (blocked area). Caution: moving parts. Danger of pinching!!
· Only trained people may use this device.

Note: If it can be assumed that a risk-free operation is no longer possible, the entire system has to be deactivated and secured against unintentional operation! It can be assumed that a risk-free operation is no longer possible, when:

· the connecting cables or power cables have visible damage.
· the system is no longer working.
· it has been stored for a long period under unfavorable conditions.
· there is a risk of heavy transport damage.

Caution - laser light!
Avoid looking directly into the laser light source with bare eyes. This may lead to serious and permanent eye damage.

Activation

Please unwrap the devices carefully. Any bumps or falls can interfere with a smooth operation.

Activation of rotating unit XY-SPIN TOP 50 and XY-SPIN 300
The rotating unit XY-SPIN TOP 50 is XY-IMAGER's smallest rotating unit and intended for maximum loads of up to 50 kg. You can operate this device as a standing device with a small rotating plate with a diameter of up to 70cm, or as a suspended rotating device on the XY-Rack. A synchronous operation in the same rotational direction is possible in combination with the rotating unit XY-SPIN 300.
Items that are suspended while also resting on the rotary disk are moved together synchronously. The rotating unit XY-SPIN 300 is an exclusively standing device for loads up to 300 kg.

Keep in mind that the weight specifications of the rotating units and suspension devices always refer to the center of the rotary disk. Loads at the edges of the plate that are too high or one-sided can result in toppling, injuries or damages to the system. Even if they are below the maximum load capacity, heavy weights can benefit from the optionally available rolling bases XY-FIRM. The rotating unit XY-SPIN 300 also has a ball bearing ring that is better suited to support heavy loads. A widened

base is also available for this. The maximum diameter of the photography plates may not exceed 70 cm for the rotating unit XY-SPIN TOP 50. Photography plates with a diameter of up to 250 cm can be used with the rotating unit XY-SPIN 300. This requires attaching four additional supports along with the four basic supports.

Assembly of rotating unit XY-SPIN TOP 50 as a standing device

Make sure that the device stands securely and horizontally on a solid surface.
Attach the support cross with the four enclosed screws and then insert the pin for the centering. Place the 70 cm rotating plate onto the support in such a way that the centering pin slides into the indentation of the plate. Make sure that the pin only protrudes 5 mm above the height of the support. It isn't necessary to screw down the plate. Check to ensure that the plate is positioned properly and securely. Keep in mind that the maximum weight specifications of the XY-IMAGER SPIN devices always refer only to the center of the rotation axis. One-sided loads can damage the device or result in risks to the user.

Assembly of rotating unit XY-SPIN TOP 50 as a suspended device

Using the rotating unit XY-SPIN TOP 50 as a suspended rotating device requires the XY-Rack and flange plate for the suspension. Attach the flange plate at the center of your XY-Rack. Make sure the screw terminals are positioned properly and securely.
Unscrew the support bases on the rotating unit XY-SPIN TOP 50 by about 1.5 cm and hook the device upside-down onto the flange plate. The device has to be inserted completely into the holding fixture of the flange plate. Now tighten the support bases of the rotating unit 50 again and ensure that the rotating unit is positioned securely and properly. Use the enclosed steel cable to secure the device to the XY-Rack by the handle. Now attach the installation rod.
Keep in mind that the maximum weight specifications of the XY-IMAGER devices always refer only to the center of the rotation axis. One-sided loads can damage the device or result in risks to the user.

Assembly of rotating unit XY-SPIN 300

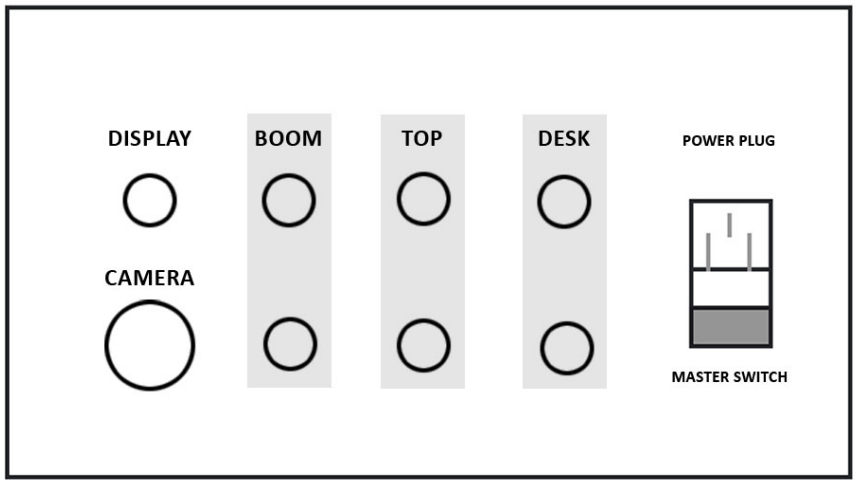
Use the enclosed screws to install the basic supports for the plate base with the rubber side facing up. Make sure their attachment is secure and level. The base plate offers different kinds of screw attachments and is designed for additional longer supports (optional accessories).
Screw the plate positioning aid (10 mm bolt) into the center of the base plate. Make sure that it only protrudes slightly (approx. 5 mm). If it protrudes too far, this could damage the photography plate. Place the photography plate on the rotating unit and make sure that the center snaps into the positioning aid. The plate does not have to be screwed down. Make sure you use the optionally available rolling supports if you use larger photography plates or place items in excess of 50 kg on the plate. The loose plate could flip over, possibly resulting in injuries. Keep in mind that the maximum weight specifications of the XY-IMAGER devices always refer only to the center of the rotation axis. One-sided loads can damage the device or result in risks to the user.

Connecting the control unit XY-CONTROL and laser

Do not connect any cables before making sure the system is switched off. Otherwise the system could be damaged or the program sequences could stop functioning properly. If this should happen anyway, completely disconnect the system from the power supply for two minutes.

If you operate the rotary disk XY-SPIN TOP 50 or XY-SPIN 300 as a standing device, use the DESK connections on the back of the control unit. If you use the TOP connections for a suspended operation, the rotary plate will run in the opposite direction as a standing device.

Follow the connection template shown here.



In each case, two cable connections to the control unit are required. These are always arranged below each other on the back of the control system. First connect both cables to the rotating unit XY-SPIN and then to the central control system. Make sure the plug connections are positioned properly and securely. Always screw the plugs and sockets together. Inexact and insufficient connections can damage the plug connections and lead to errors in the operation. If you are using a cross laser as a positioning aid, connect it to the rotating unit XY-SPIN 300 or XY-SPIN TOP 50.

Check the rotational direction of the plate.

Photography table XY-DESK

The photography table is designed to be operated with the rotating unit XY-SPIN 300. Assemble the table according to the specifications and make sure that no parts of the table frame are protruding in the circular cut-out while attaching the table surface. Attach the supports for the rotating units to the bottom of the cross bars. Now the assembly height of the rotating unit XY-SPIN 300 is set correctly. Make sure the table is level as you screw the elements together.
Now lift the rotating unit on the supports and unscrew the bases so that the support for the photography plate is slightly higher than the bottom edge of the table top.
Carefully place the rotating plate into the notch on the rotating unit XY-SPIN 300. Make sure that the rotating unit is positioned exactly in the center to prevent the plates from grinding against each other. Ensure that it can run without obstacles. Twist the bases of the rotating unit until the photography plate is a few millimeters above the table top. This makes it possible for any backgrounds that are used to rotate smoothly above the table top.

You can also use the photography plate without background papers or foils. The gap between the plates will not be too obvious because of the heightened position of the rotating plate on the table (depending on the photography position). To protect the photography plate and table top or use colorful backgrounds, it is recommended to use background papers or foils. Cut out the background material in the size of the table top recess and attach the paper to the table top with adhesive strips. For the rotary plate, you should use a cut-out that is slightly larger than the rotary plate itself. The protrusion should be about 2-4 cm. With the corresponding light set-up, this makes it possible to take photos without edge transitions.

XY-RACK

Assemble the elements according to the images. Make sure the bolts for the cross connections are positioned properly. Insert the locking pins and make sure the assembly is solid and has enough leeway before adding any weight to the rack. Rack extensions are optionally available to widen the clearance. In the shipped version, the rack with a width of 2 m has a maximum load of 200 kg. The available lifting element XY-LIFT is designed for a maximum load of 200 kg. This specification can change if there are changes to the model. Make sure that you follow the load specifications on the identification plate of the lifting equipment.

The XY-RACK can be used in a variety of ways. Either as a suspension with the rotating unit XY-SPIN TOP 50, which requires the optionally available flange plate, or as a lifting aid for heavy objects, to lift these onto larger rotating plates.

Caution - risk of injury!

When lifting heavy loads, take care that you do not exceed the load limits and move the rack slowly and carefully if heavy loads are attached. A smooth and level subsurface is mandatory.
If the suspended load begins to swing, this can result in a toppling of the XY-RACK and serious injuries!

Using the XY-RACK combined with the photography table XY-DESK

Since the table XY-DESK and the XY-RACK do not have fixed connections, you can quickly adjust them to the various photography situations. The optionally available cross lasers make it possible to quickly and easily position the rack in a central rotation axis again.

Using the cross lasers

First off, please remember that looking at a laser beam can cause health damage. Pay attention to the safety instructions.
The lasers can be connected directly to the rotating units on the designated jacks. They are directly controlled by the central control system. You can use the magnetic holder to attach the cross laser wherever a positioning aid is needed.
One arrangement that has proven advantageous is attaching a laser on the table side and directing it towards the center of the plate. It is recommended that you attach a second cross laser on the rack and position it near the suspended rotating unit 50. Now direct this laser on the table top directly onto the axis extension of the suspended unit with the aid of a plumb line. You now have two laser crosses that can be directed towards the same rotational center by moving the table or the rack. This setup has proven successful especially when the shooting conditions require quick and frequent changes with and without the table.
Use the laser when you take 3D pictures with boom. Insert the laser into the laser holder on the rotational axis of the XY-BOOM. Adjust the cross of light exactly in the middle of the opposite openings. Only in this way it is ensured that the laser beam is properly aligned in the axis of rotation.

3D Robotic boom XY-BOOM

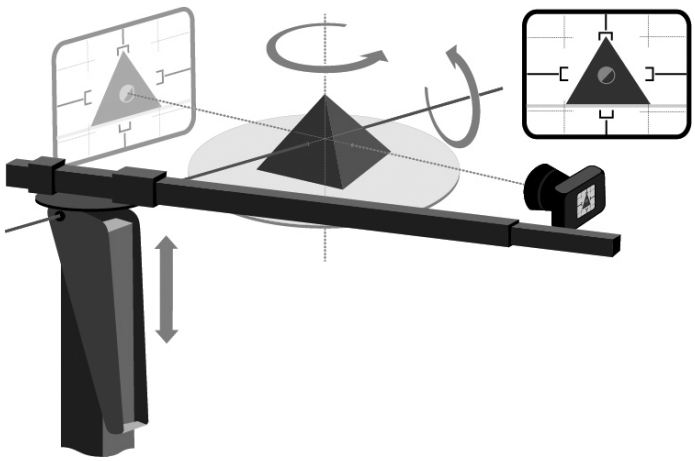
Shooting conditions across several axes require a robotic boom that automatically handles the positioning across the desired number of axes and angle settings.
Set up the XY-BOOM robotic boom in such a way that the axis of the tilting movement intersects the center of the photography plate. This is important, since the photographed objects might otherwise stray from the center of the image once the boom is raised. It can be helpful to slide the cross laser into the swivel axis of the robotic boom XY-BOOM. The exact orientation of the swivel axis will be shown to you.
Use the positioning aid for the base of the XY-BOOM in combination with the photography table. Once this has been set up, the robotic boom will always be in the right position.

Make sure that the connections to the BOOM connection on the central control unit are correct.
Always connect both cables to the robotic boom first and then connect them to the central control unit.
Switch off the entire system before plugging in or unplugging anything.
The robotic boom may only be operated on a level, horizontal surface!

Attach your camera in such a way that the center of the lens is exactly at the height of the rotation axis. Use the cross laser in the XY-BOOM swivel axis for this purpose.
Release the stop at the bottom of the swivel element and set the angle along with the shooting distance.
Make sure that the stop snaps in again and tighten the clamping screws of the boom. If the robotic boom swings up without a properly secured stop or clamping screws, it can cause great damage and injuries!
It is recommended to use a tripod head that can be tilted in all directions.
When the boom is moved, it is subjected to additional forces that could make it topple or lower on its own if the screws are loose or the counterweight is insufficient. This would pose a risk to your camera as well as a risk of injury. To guarantee that the device stands securely, pull out the balancing weights embedded in the bases. This is absolutely mandatory when the boom is extended.
The optionally available stabilizer is recommended when using a fully extended boom to prevent swiveling. You can use velcro strips to secure the cable connections to your camera or for image transfers to your computer to your robotic boom. Use the controls to move the boom up and down to ensure that it and its cables can move freely and without obstacles. An obstacle can cause the boom to topple, which is why it is important to do a test movement before operating it automatically.
The control of the boom for the various shooting conditions is described in the section “Central control unit”.

Adjustment of the rotation axes by 3D images

The axis of the robot arm must be cut exactly the axis of rotation of the plate. If the pivot axis from XY-BOOM is not exactly aligned with the center of rotation of plate, the subject is running out from the center. Take a blank sheet of paper, fold it in half and put exactly it in the center of the turntable. So you can the pivot axis of the robot arm precisely adjust.



Adjust the axis exactly on the center of the object.

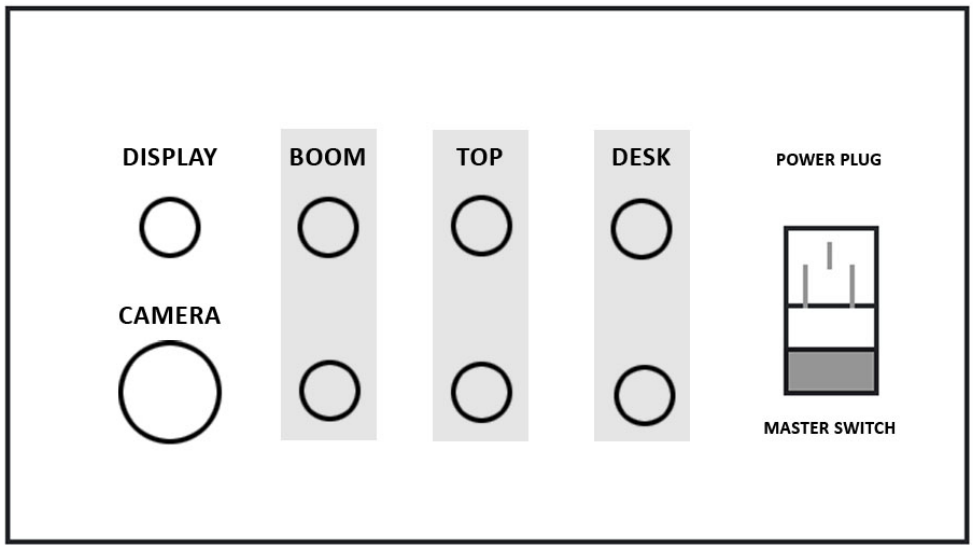
Central control unit XY-CONTROL

The central control unit XY-CONTROL is designed for the central operation of all XY-IMAGER devices. No additional electrical devices or controls are needed. All XY-IMAGER devices are centrally integrated and synchronized by the control system. The system is operated exclusively with the touch display and does not need a computer to run. There is also no need for continuous updates or adjustments to computers' operating systems. You can conveniently operate the system from any position with the touch display on the mobile console. Since the photographer is usually near the photography table, it is very practical and comfortable to keep the display at the table or near the camera.
You will need to use a computer of your choice only to process the image data from your shots. You can also save the images in your camera and process them later.

Assembly of the central control unit XY-CONTROL

Connect the display with the central control unit XY-CONTROL with the provided control cable to the DISPLAY port. Connect all of your XY-IMAGER devices.

Follow the connection template shown here.

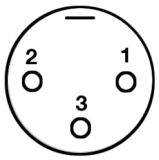


Make sure that the plug connections are always connected to the devices first, followed by the connections to the control unit. Connect the power plug to an electrical source listed on the identification plate.
You will need a camera-specific remote release cable to operate your camera. The central control unit emits a two-step signal that is standard for nearly all camera models.
Special adapters are available for nearly every type of camera.

Connecting the camera to the remote for XY-CONTROL

The camera jack has two potential-free contacts with a shared com that are activated successively within two seconds (focus - release).
Max. load for the contact 240V 1A AC/ DC.
XY-IMAGER uses an XLR female connector for the connection. To control your camera properly, use an appropriate remote cable or a cable release and solder the contacts directly to an XLR connector according to the following description.

Contact 1 = com, contact 3 = autofocus, contact 2 = release



View of the connector

Since the contacts carry no voltage, there is no damage if a cable is connected incorrectly. Start the photography process to ensure that the autofocus is triggered first, followed by the release. If this is not the case, the wires might be crossed. Use an additional XLR cable extension (about 5 m) for the connection to the control system. If the cable is damaged e.g. by rolling over it with a heavy tripod, only the XLR extension has to be replaced.

Note! If it isn't possible to focus when the autofocus is activated, the second release contact will still take place. This could result in missing image sequences. For that reason we recommend always turning off the autofocus on the camera.
Turn on the power switch MASTER SWITCH next to the electrical cable. If the display stays blank, the emergency off switch is probably activated. Deactivate it. The display always shows only the relevant options. There is no need for separate settings or adjustments.

Keep in mind that moving parts can always pose a risk. Always secure photographed objects against toppling or pinching.

In a dual operation with the rotating unit XY-SPIN 300 and suspended rotating unit XY-SPIN TOP 50, you can suspend the photographed objects at the top or secure them with transparent strings. The two rotating units are synchronized and move together at the same distance to each other.

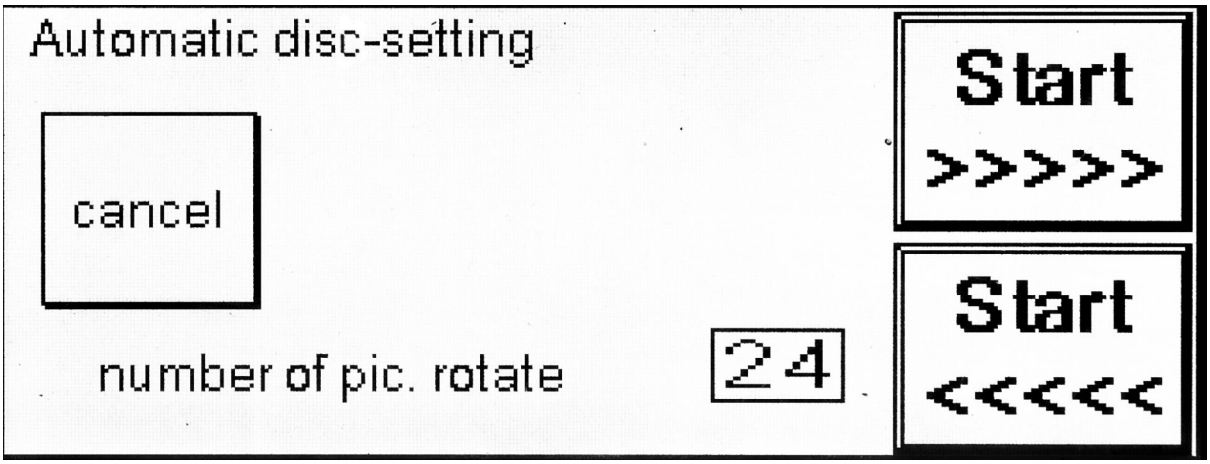
Operation of the central control unit XY-CONTROL

If you only use the rotating units without the robotic boom, the buttons **"automatic disc, system, laser on, and rotate"** are relevant for you. Only use the buttons **"...boom"** for the connected robotic boom XY-BOOM. If a device assigned to the buttons is not connected, an error message may be displayed. In that case, check the connections and restart the controls.

You can use the **"rotate"** buttons to move the rotating units manually and possibly select the best start position. The rotating units do not require any zero positioning; they can start from any rotating position.
You can use the "**laser on"** button to switch on the cross lasers for the positioning. Once the photography mode has started, they will switch off automatically and turn back on at the end of the photography mode.

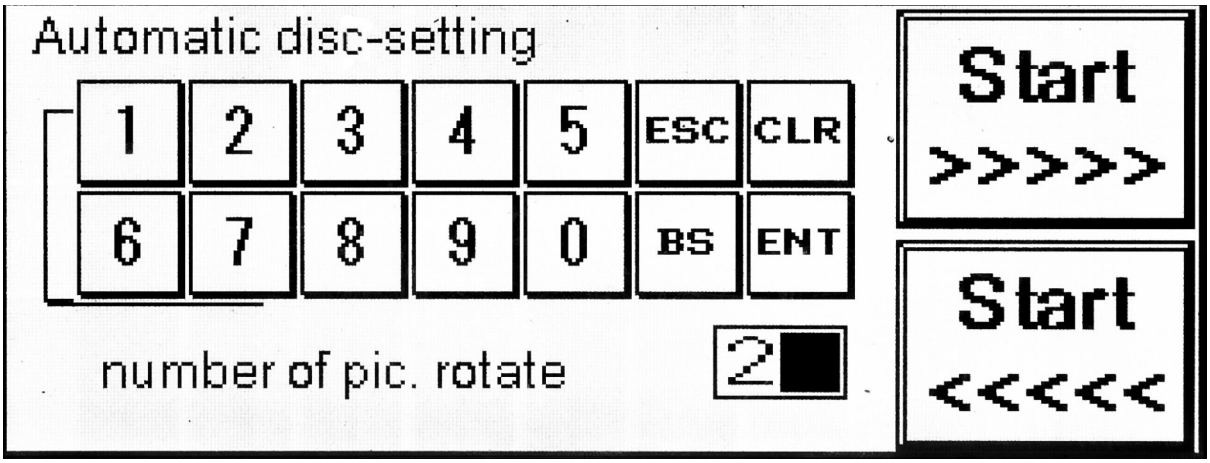
If your photographed object is ready to shoot, press the **"automatic disc"** button if you only use the rotating units or **"automatic disk+boom"** if you want to make full 3D photographs with the robotic boom XY-BOOM in several axes.

Display of the automatic podium



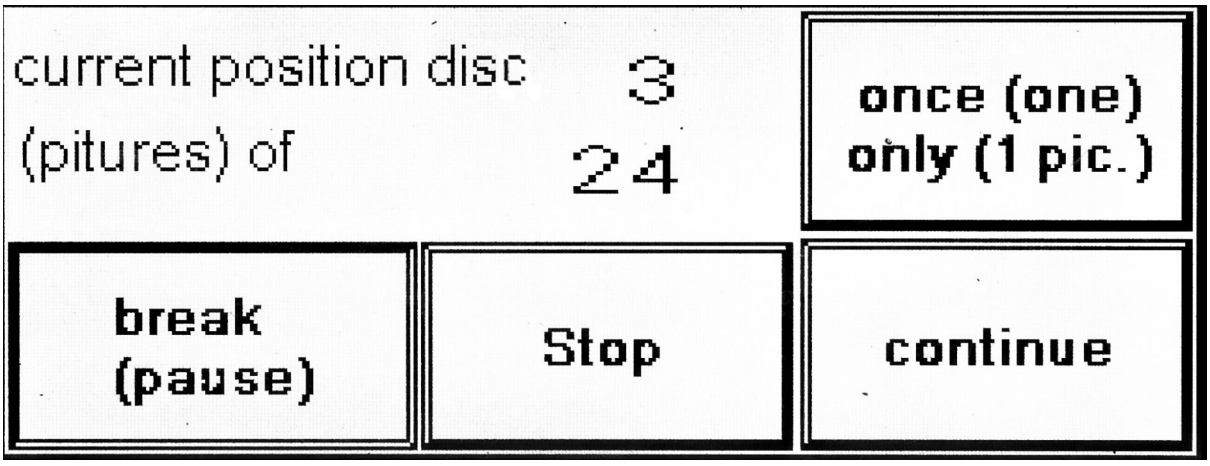
Press the button for the number of pictures to make a change or start the photography operation in the desired rotational direction.

Change the number of pictures and confirm with ENT



Start the photography process in the desired rotational direction by pressing **"Start"**

Display with automatic photography operation for photography only with rotating units XY-SPIN

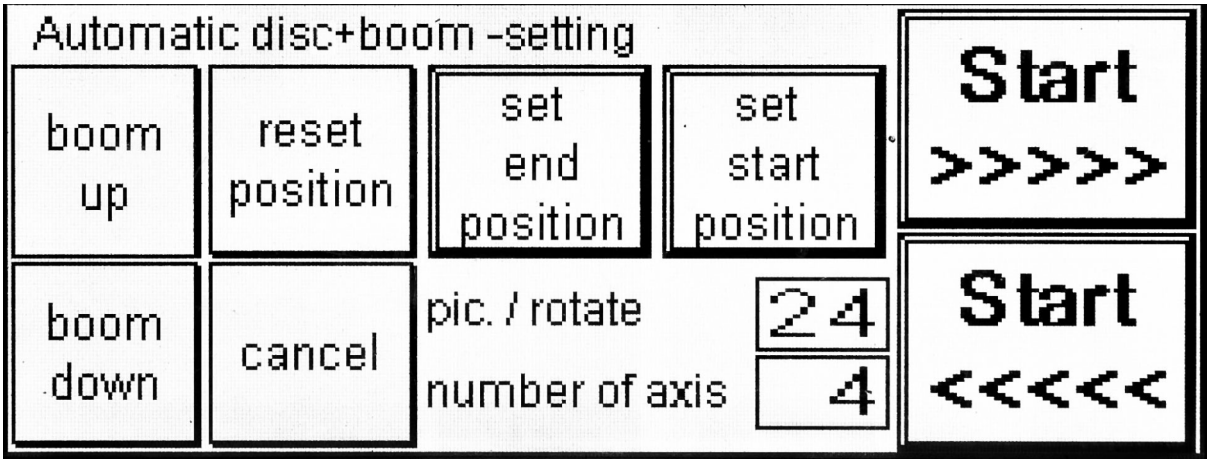


This shows the current image position and the total set quantity of the photos. Pressing the **"break"** button gives you the option of pausing the photography process. This is required if you would e.g. like to do an animation or make incremental changes in the photographed object. These can be realized quickly and easily with the **"once (one)"** button. Use the **"continue"** button to continue the process up to the specified photo quantity.
You can immediately stop the process by pressing "**stop".**

Display with automatic photography operation for photography with the rotating unit XY-SPIN and 3D robotic boom XY-BOOM

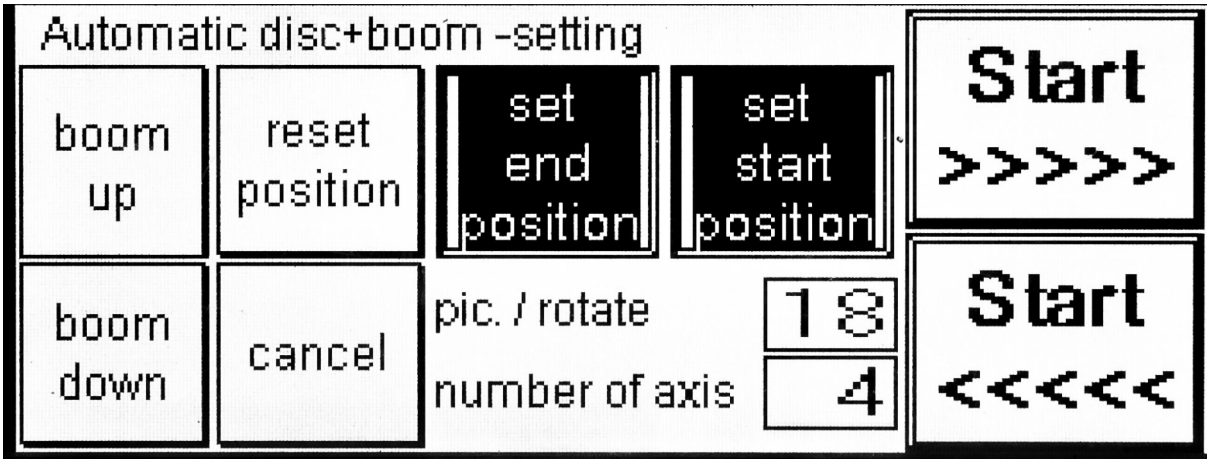
Press the **"automatic disk+boom"** button on the start screen. You can change the settings for the operation with the XY-BOOM in combination with XY-SPIN in the following user interface.

Just as with the settings in the previously shown operation, you are changing the quantity of the photos as well as the quantity of the robotic boom's photography axes with the same setting.



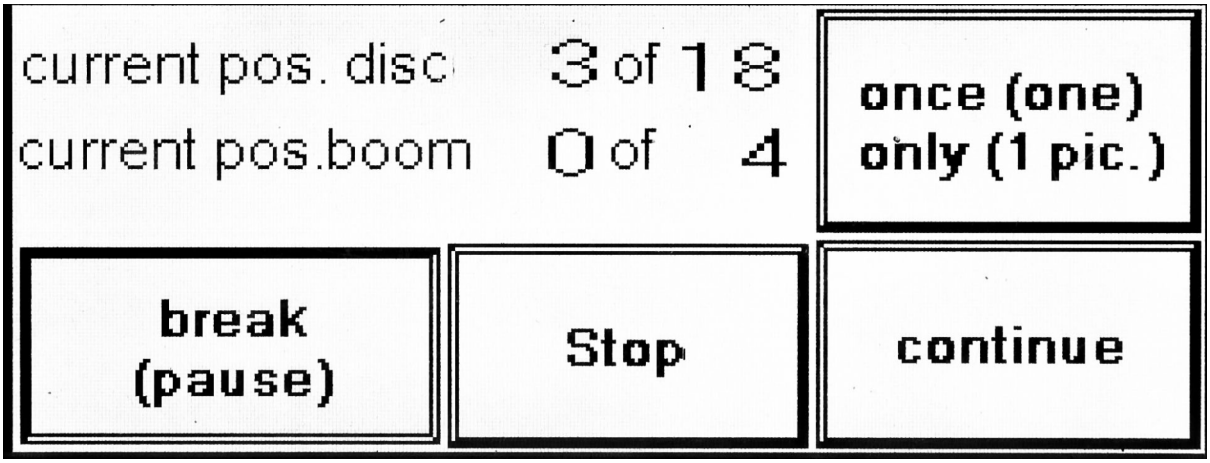
Setting the starting and ending position of the robotic boom XY-Boom

Use the **"boom up"** button to move the robotic boom to the desired highest axis position and now determine the ending position by pressing the **"set end position"** button. Use the **"boom down"** button to move the robotic boom to the desired lowest axis position and now determine it by pressing the **"set end position"** button. The two buttons are shown with black backgrounds once a position has been determined.



Start the photography process in the desired direction.

Caution! If the boom is still in the highest axis position or anywhere outside the axis of the starting position, it will automatically lower to the lowest starting position before the first shot. An error message on the display will briefly indicate this process. Confirm this message.



After the photography process has started, the current image positions and current axis positions are shown.

You can again stop the photography process in any desired position and e.g. only move ahead one image, perhaps to do animations with the products. Press the **"continue"** button to continue this process to the end. By pressing the **"stop"** button, the entire process is stopped.
The system remembers previously set axis positions and image quantities as long as it is connected to a power supply.

By pressing the "start" button, the process is restarted with the previously set values.
When the photography process is finished, the robotic boom XY-BOOM stops in the last axis position. When it starts again, the boom is automatically lowered into the first axis position.
Make sure that no objects, such as camera flashes, obstruct the free mobility of the boom and that no persons are in the area. The touch monitor will show a warning.

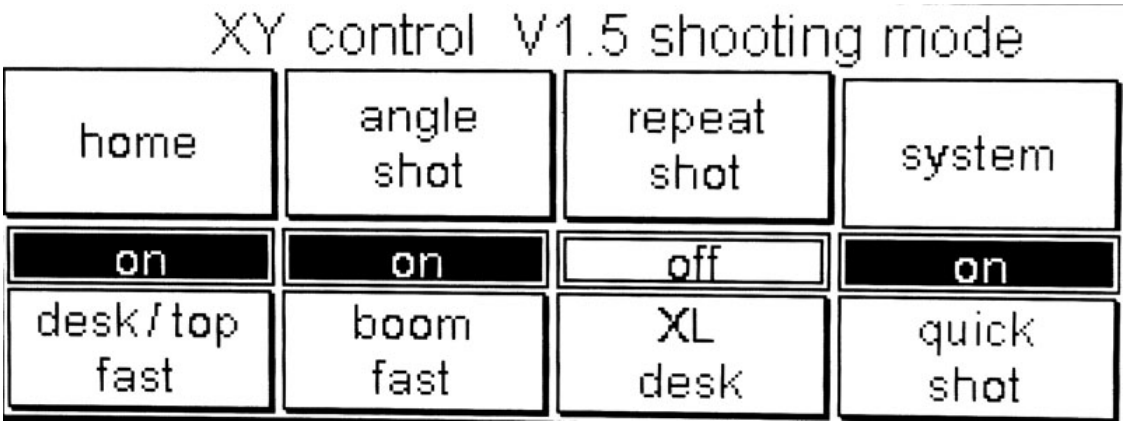
Switching off the system resets all the values back to the basic settings. Then the axis positions for the robotic boom as well as the image quantities have to be reset.
Pressing the emergency off switch immediately shuts down the system and resets all values to the standard settings.

Operation of the cross lasers

The cross lasers are operated through the touch display. The lasers automatically switch off during the photography process.

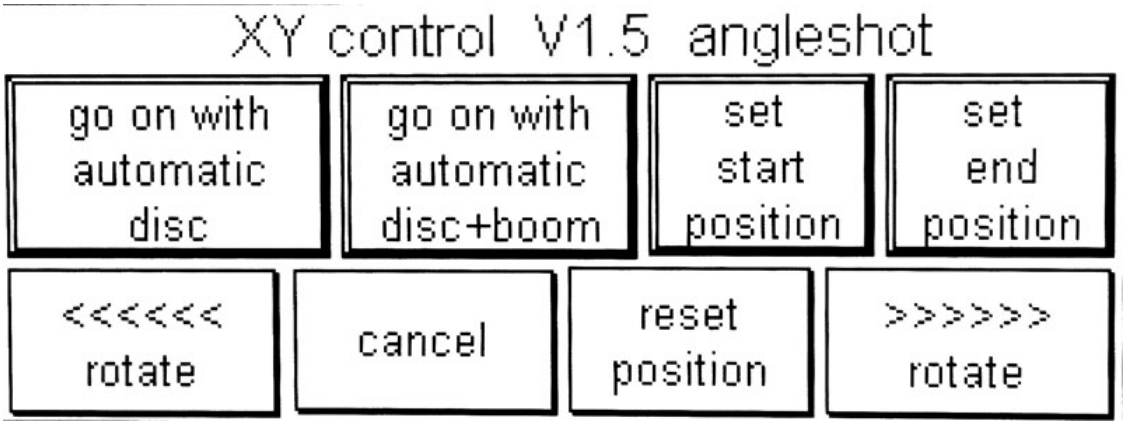
Shooting Mode

In software version V1.5 you have more different shooting modes.

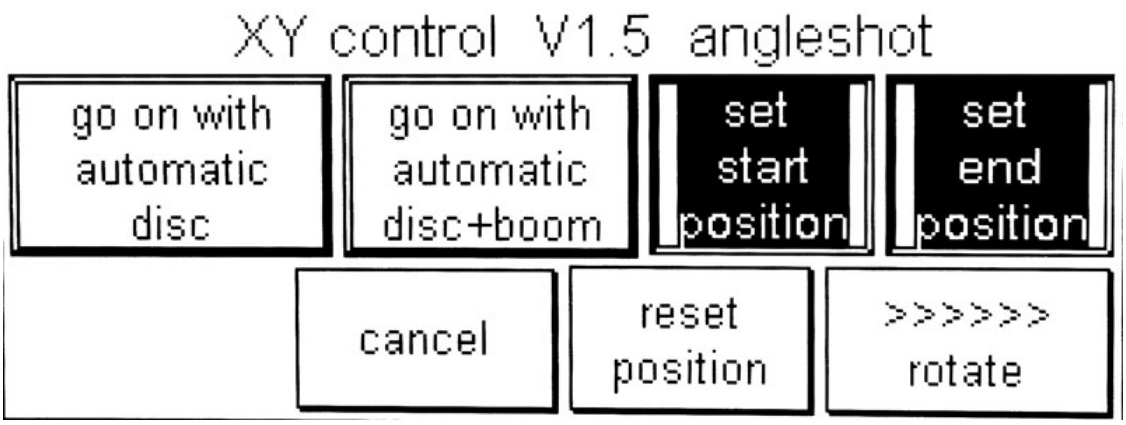


By the button "**desk /top fast**" and "**boom fast**" you can set a higher movement speed.
The button **"XL desk**" is for XY CAR DESK and XY SPIN 1200. When they use these devices, this switch must be active.
If the button **"quick shot"** is active, the rotating unit rotates continuously for one revolution. The images are shot at the right angle.

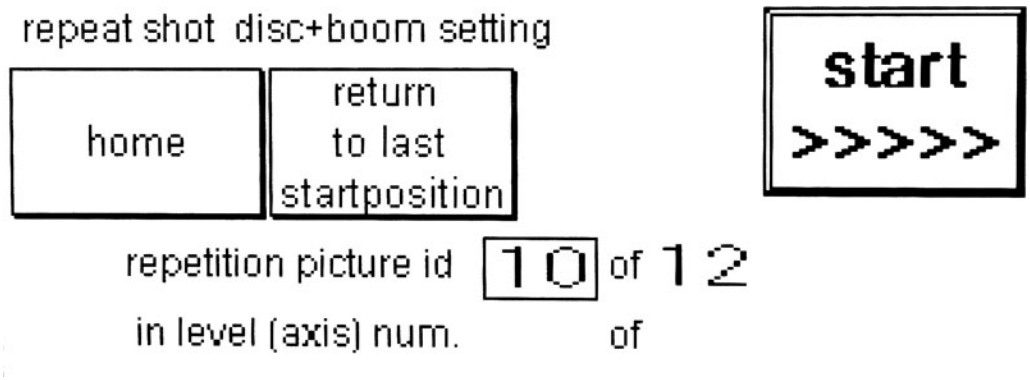
Mode **"angle shot"** The angle shot mode allows you, to shoot only in a certain angle and not shoot in full 360 degrees.



Turn your object into the start position, and set the start point, then turn the object to the end position, and set the end point. Press **"go on automatic disc"** the turntable automatically moves into the start position. Type the number of image and press **"start"**

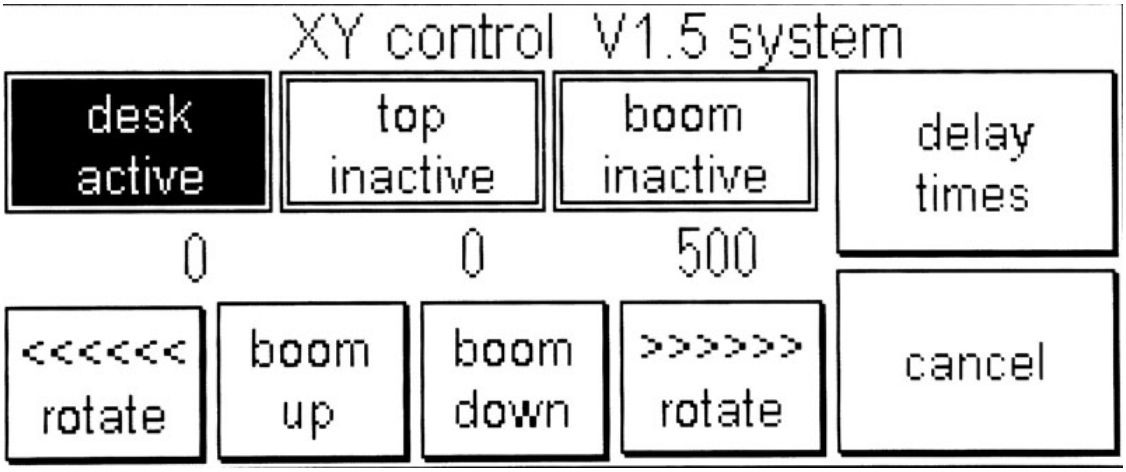


Mode **“repeat shot”** You can repeat shots when the flash has not been triggered. Choose this mode, if you want to repeat a picture from the last picture series. Enter the number of the picture and the axis if you work with the boom. Press start and the turntable turns in the right position. The image will shoot automaticly.



System settings

The **“system”** button will take you to the system settings. Here it is possible to control the connections to the devices. If a device is not connected properly or at all, e.g. the message “**desk inactive**” will appear. The value below the display is a control value and shows the return signal of the connected device. If the value changes when the “**rotate**”, “**up**” or “**down**” buttons are turned, the device is connected properly.



“Delay times” button

This button is described in the update manual. It is only relevant for service technicians.

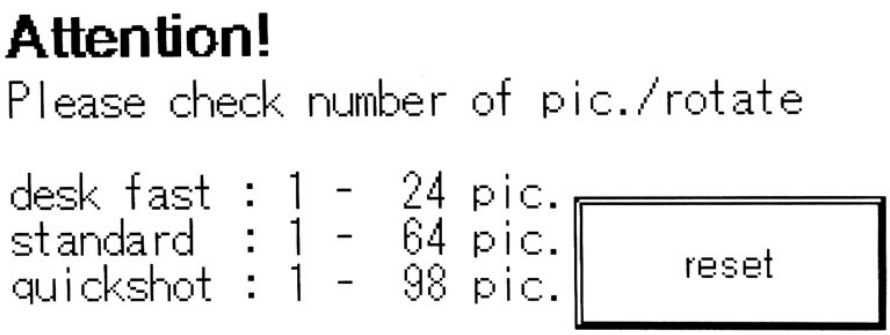
Using the XY IMAGER system with software from other manufacturers

The software version V1.6 is optimized for use with the USB adapter. The firmware V1.6 or higher must be installed before use.
It is possible to use the XY-IMAGER system with software solutions from other manufacturers such as Object2ver from Gardengnome Software. To connect to these solutions, you need a special USB adapter, which is available as an accessory. The connection from your computer to XY-CONTROL you can find in the instruction manual of the software.

Please understand - XY-IMAGER does not warrant a proper function of the system, in conjunction with software solutions from other manufacturers!

error message

If you enter an excessive number of images, this error message appears.
Choose a lower rotation speed or reduce the number of images.
The maximum number of images will be displayed.



Troubleshooting

Error	**Cause / remedy**
Central control system has no function, the display is blank	Check the electric supply and possibly the fuse next to the power plug.
The central control system has power, the red control light is on, the display is blank.	Check the cable connections between the display and the control unit. Control the emergency off switch.
The rotating unit or robotic boom function only partially or not at all	Check the cable connections, check the sockets and plugs to make sure there are no bent pins. Press “system” and check if the devices show the “active” status.
Laser won’t come on	The laser switches itself off during automatic operation. Check the cable connections.
The camera won’t release	Check the release cable to see if the configuration is correct. The adapter might be incorrect. The camera is set to autofocus but can’t find a focal point. The battery in the camera is empty, there is no card in the camera, the connection to the computer is disrupted.
The rotating unit turns in the wrong direction	The connections DESK and TOP might be switched.
The motor of the rotating unit is running but the plate isn’t rotating with it.	The load is too high, the slip clutch is loosening. The subsurface rollers are tilted or misaligned.
The automatic photography program is not working according to the program.	Stop the process, completely switch off the system or disconnect it.

Error message: No data from device!	No return signal from the devices is recognized. Check the cable connections and press “reset”. If the error message continues, switch the entire system off for a short time. After restarting it, check the connections under “system” (disc active).
Error Message: Please check number of pic./rotate	Choose a lower rotation speed or reduce the number of images. The maximum number of images will be displayed on screen.
By fast quick shot, the camera does not trigger at the right angle.	If you control the system from your computer or with software from other manufactures, don't trigger the camera via the USB connection. This connection is to slow for fast shooting. Control the camera directly from the XY-CONTROL unit.

CE certificate of conformity

Producer:

Haberl

Maschinenbau - Elektrotechnik
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AUSTRIA

Certificate of Conformity

This is to certify that the below mentioned equipment have been produced in accordance with the mentioned instructions and are thus marked with the CE.

Products: **XY-IMAGER Line**

XY Spin Top 50 and XY Spin 300	**Machinery Directive 2006/42/EG** **EMV- Directive 2004/108/EG** **Low Voltage Directives 2006/95/EG**
XY Boom	**Machinery Directive 2006/42/EG** **EMV- Directive 2004/108/EG** **Low Voltage Directives 2006/95/EG**
XY Control	**Machinery Directive 2006/42/EG** **EMV- Directive 2004/108/EG** **Low Voltage Directives 2006/95/EG**

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