

Vacuum UV-Exposure Box

...for expose UV-ligth sensitive foils and plates



Vacuum UV Exposure Boxes shall used for exposure foto sensitive materials such as base materials, printed plates, front plates or foto sensitive films.

Using the devices is very easy and user-friendly. The oscillator-based electronic timer allows the precise adjustment of the exposure time, only with 1-knob operation (mode, time, Start/Stop). The seven-segment LED display is showing the adjusted time and while the device is active the remaining time.

The device integrates high intensive lamps (ACTINIC) and ensures by this short exposure time and good contrast.

Vacuum UV Exposure Boxes are designed for using in dry rooms, schools, living rooms, office, as well in laboratory and small factories

- Fully metal housing out of anodised aluminum profiles and plates.
- Grinded glass plate with high UV transparency for UV-A wave length
- Special flourescent lamps (ACTINIC), wave length 350 - 400nm (UV-A)
- Evenly illumination all of the exposure area
- Constant contact pressure between 22mm cellular material in lid and glass plate.
- Electronic timer with selectable time ranges 1-600seconds, or 1-100minutes, 1-knob operation, seven-segment LED display
- Electronic ballast according EN60929, EN-EC 03, EI=A2, no stroboscopic effect, no flicker, power factor >0,92

Technical Data				
Item no.:	140001	140002	140010	140020
Dimension (LxBxH)	475 x 425 x 140		625 x 605 x 140	
Mounting area	360 x 230		520 x 390	
Power consumption	135 W	260 W	225 W	440 W
Number of UV tubes	4x 15 W	8x 15 W	6x 20W	12x 20 W
UV wave length	365 nm			
Timer	1 ... 600 s / 1 ... 100 min			

Subject to technical modifications without prior notice.



ATTENTION!



DANGER!

- The UV Exposure Box is suited for light exposure of photosensitive coated materials, such as photopositive coated base material, Cobritherm, front plates and films for making printed plates. Other usings are not allowed.
- The device is designed for power supply 230V (50- 60Hz) and may be used only in perfect technical condition. Using the Exposure Box it is not allowed by children and people which are not instructed.
- All operations with the exposure box have to be done by professionals. Thereby they have to consider all instructions of the electronic industries and the accident prevention.
- Don't use the device without connecting earth line.
- Before opening the housing (e. g. to change the lamps) the device must be free of voltage. Please disconnect the power cord from mains voltage. Please note: Not all wires inside the device, which may have contact to high voltage, are covered
- Assembly and using of the device has to be done only according to the declaration of conformity.
- Ambient temperature 0 bis +40°C
Storage temperature -10° bis +60°C
- The device must not be exposed to high humidity, strong vibrations or explosive gas.
- Keep this manual carefully and undertake every user to consider. If you don't provide this manual, loss of property, risk of injury up to loss of life may happen.

1. Starting up

1.1 Placement

The device ought to be placed onto a horizontal, stable base (e. g. workbench, table) with the control elements pointing to the front. The room must be darkened.

1.2 Mounting lamps

In some devices we demount the lamps after function test and VDE check. This is because of problems while shipping the goods. In these cases the lamps are laid inside the bottom of the device and the glass plate is fixed inside PE-foam plastic at the top of the device. So, before using the Exposure Box you have to mount the lamps and the glass plate.

Instruction for mounting / changing the lamps

1. Open upper cover of the device and turn glass plate (1) to upper point. Fix the position and make sure that the glass plate can't drop down.
If you want to change the lamps, please remove the old one by turning them inside the socket (2) about 90° (2x click)
 2. Take the new lamps out of the transport package. For mounting the lamps, you must plug in the lamps at the same time in the left and the right socket and turn the lamp inside the socket 90° (2x click). Please make sure that after mounting the lamps, the label is showing to the bottom of the device.
 3. Mount the spiral springs at the thread bolt (3). Please check that no spiral springs are in contact with wires!
 4. Before mounting the glass plate in the exposure box again, you have to insert the air tube of the vacuum pump into the rubber ring of the glass plate (4).
- Note: If you take some water for lube, mounting the air tube will be easier. Move the tube approx. 5cm out of the rubber ring. Take a blade and cut the tube above the ring.
5. After this place the glass plate on the frontside spiral spring and press the plate carefully down. Now you can move the glass plate below the aluminum profile.

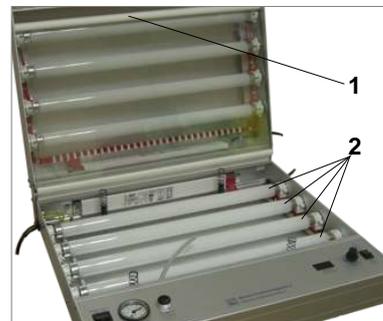


Abb.1

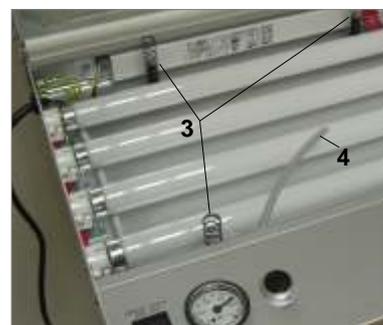


Abb.2

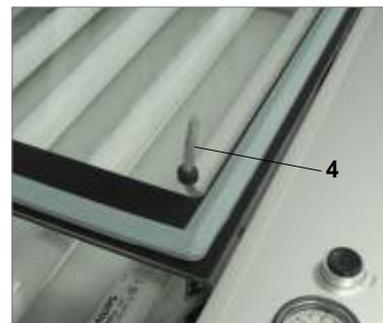


Abb.3



Abb.4

1.3 Maintenance

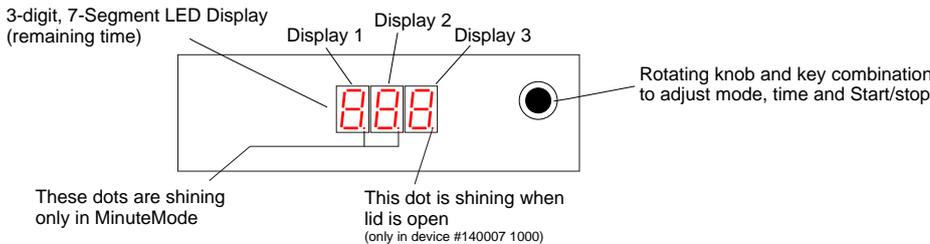
The exposure box is free of service. Only the ACITINIC lamps lose intensity during operation (approx.: 15% after 1000 h). The vacuum frame is built out of a glass plate with a thin PVC foil on top. Please pay attention to the PVC-foil and the rubber frame mounted on the base plate. If something is damaged, you won't get the vacuum.

List of spare parts:

Part no.:	140904 0625	PVC-foil
Part no.:	140901 0001	Rubber frame (450x270mm)
Part no.:	410017	UV lamp (ACTINIC), 230V/15W

1.4 Operating instruction for electronic timer

The built-in electronic timer, is used for adjust the exposure time of the device. Time setting is possible in *SecondMode* or *MinuteMode*. Switching on the device, the timer is working in “*SecondMode*”. Thereby the ON-time can be adjusted between 1 sec and 9min50sec.



Adjustment of exposure time

After switch-on the device or plug in the power cord to mains voltage, all three displays are flashing. Turning the rotating knob counterwise (cw) or counterclockwise (ccw), display 3 will change the value of the digit. If the desired value is visible, you can store them by pushing the knob. Turning the knob again the value of display 2 will be changed and by pushing the knob the desired value will be stored. After you have stored the value of display 1 in the same way, the complete display is flashing. Now you can start the count-down timer by pushing the knob once again. While the timer decrement, the power relay is on and by this the lamps of the Exposure Box are shining. The display now is showing the remaining time, until exposure unit will be switched OFF.

Seven-segment display	Range
Display 1 minutes	{0, 1, 2, 3, 4, 5, 6, 7, 8, 9}
Display 2 seconds (ten`s digits)	{0, 1, 2, 3, 4, 5}
Display 3 seconds (one`s digits)	{0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

Example: Display Value

2 3 4	corresponds to	2 minutes, 34 seconds
7 5 9	corresponds to	7 minutes, 59 seconds
0 4 5	corresponds to	0 minutes, 45 seconds

1.5 Replacement of lamps

The UV-lamps (low pressure mercury-vapor lamp) will loose UV-A intensity while using (approx.: 15% after 1000 h).

If intensity of UV-A is to less to exposure the fotosensitive plates and films, you have to replace them. Therefore you have to remove the glass plate.

Procedure::

- Unplug the power cord from mains voltage.
- Remove screws (M3x6mm) out of the small aluminum strips, which are used for holding-down and clamp the glass plate.
- Remove the glass plate carefully.
- Replace the lamps. Therefore you have to turn the tubes 90° (1x click). After this you can take them upward out of the socket .
- After replacement the lamps and mounting all metal strips you have removed before, the device is ready for operation again.

Please decontaminate “old” lamps only in special container and consider the national rules for this!

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If you push the knob while switching ON the Exposure Box, operation mode “MinuteMode” will be selected. Now Display 3 indicates the time in seconds (10 seconds each count) and Display 1 / 2 are showing the time units minutes. Therefore, you can enter times up to 99 minutes and 50 seconds.

Example:

- > 2.3.4 < = 23 minutes, 40 seconds
- > 7.5.5 < = 75 minutes, 50 seconds
- > 0.4.3 < = 4 minutes, 30 seconds

In this operation mode, the decimal point of Display 1 and 2 lights up.



It is not possible to start the timer, if the display is showing >000<.



You can interrupt the count-down at any time by pushing the rotary knob. The display flashes again and the fluorescent lamps are switched off. The display is showing the remaining time now. For continue the exposure press the rotary knob once again.



Before opening the metal housing of the exposure box (for example to change the lamps), the device must be free of voltage. Please unplug the power cord from mains voltage. Please note: Not all components inside the device, which may have contact to high voltage, are covered.



UV-lamps are customary in industry, without any special safety requirements. In spite of this, we emphasize the following pre-caution:

Switch the UV-lamps ON only when the lid is closed!

Information of Safety and Risk:

Safety:



Don't start exposure before lid of exposure box is closed.

Radiation from UV lamps is harmful to eyes and skin

2. Declaration of Conformity



**Declaration of Conformity
of Exposure Boxes**

according EC-Directive 2006/95/EG

Manufacturer:

Gie-Tec GmbH
An der Schlierbach 18
36132 Eiterfeld

**Description and
Identification of Device:**

Vakuum UV Exposure Box
Art. Nr. 140010

These device is produced in accordance to following directives

- **Low Voltage Directive** (2006/95/EG)
- **EMI-Directive** (2004/108/EG)

Quality Safety System

ISO 9001:2008
Zertifikat Nr. A1888GER

Eiterfeld, 09.Sept.2010

Place, Date

Rainer Giebel, Managing Director Gie-Tec GmbH

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