

# KOWORASE X

## Operating Manual

KOWORASE X

Erase device for CR Imaging Plates (IP)



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## 1. General information on operation

### 1.1 General notes

- Stable set up of erase device on desk.  
Other equipment (i.e., CR Scanner) can be set up on top of erase device.
- UV-light sources in erase device generate ozone! (like photocopying machines and laser printers)
- Room must be well ventilated.
- Connection to power supply (90 ... 260 V / 47 ... 63 Hz).
- Before opening the housing disconnect from power supply!

### 1.2 Intended use

- The erase device is to be used exclusively for additional erasing of CR Imaging Plates (IP).
- Product is for indoor use only!
- Product is intended exclusively for professional and not for private use.
- Intended use includes that corresponding documentation and in particular, these „Safety Instructions“ must be completely read and understood.

### 1.3 Unintended use

- Any other use as the one described in intended use is not intended and hence inadmissible.
- The user carries sole liability for any damages in case of unintended use.
- Unintended use of the products includes:  
Sanitize of objects.

### 1.4 General safety information

- The safety regulations and -instructions of the country, in which the product is used, must be observed.
- Special safety requirements in laws, standards and guidelines must be observed.
- The valid regulations for accident prevention and environmental protection must be observed.
- The product may only be used if in technically correct condition.
- The specified technical data and environmental conditions in the product documentation are to be observed.
- The use in potentially explosive atmospheres according to ATEX Guidelines 94/9/EG is not allowed.
- The product in general may not be changed or modified.
- The user only may perform works described in this „Operating Manual“.

### 1.5 Note symbols



**Warning:** Caution! dangerous situation. Safety regulations must always be observed!



**Note:** Pay attention to these special notes.



**Tip:** Useful or further information for better understanding.

2. General description and scope of supply

2.1 General description

KOWORASE X is a highly efficient tool for external erasing of CR imaging plates (IP).

Due to the 2-phase cleaning process even highly stressed imaging plates can be recovered to performance levels requested in ASTM E2445 for both tests – Erasure and Burn-In ( $\leq 2\%$  PV or nonvisible).

Even so-called Ghost Images or Burn-Ins can be erased satisfactory - Ghost Images or Burn-Ins are artefacts which are nonvisible after erasure but become visible on image of following exposure.

In phase 1 the IP is exposed to complete saturation (ca. 65,000 grey values) with UV-light while in phase 2 IP is erased with LED-light to ca. 90 grey values – ready for new excellent X-ray exposures. Total time for an erase process is between 3 and 6 minutes.

2.2 Scope of supply

**KOWORASE X**

- 1 Power supply cable, 3 m
- 2 Fuses, T 2.5 A



3. Operation

3.1 Elements and function

Erase device KOWORASE X



① 0 / I - Main switch - ON / OFF

② Fuse holder – 2x T 2.5 A fuse

③ Socket for power supply cable

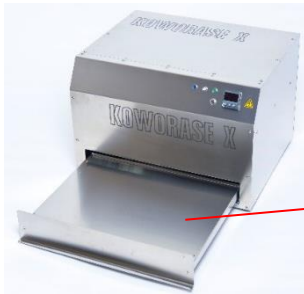
④ Type plate



⑤ Indicator lights  
 green ready – drawer closed  
 blue phase 1 – exposure (UV-light)  
 white phase 2 – erasure (white light)

⑥ Controller

⑦ Start / stop key



⑧ Drawer – for Imaging Plates (IP)  
 IP must be placed within markings

Controller



⑨ Display - ACTUAL countdown time (green)  
 Set.1 or Set.2 (in SET mode)

⑩ Display - SET countdown time (red)  
 (C1 erasure time – min.sec)  
 (C2 exposure time – min.sec)

⑪ SET key

⑫ ⑬ UP-/ DOWN Keys

- ▼ time setting - shorter (C1 or C2)
- ▲ time setting - longer (C1 or C2)

- C1 phase 2 - erasure time (white light)
- C2 phase 1 - exposure time (UV-light)

3.2 Initial start-up



Before first operation of KOWORASE X make following installations:

- Stable set up of erase device on desktop – other devices like CR Scanner can be set up on top of erase device.
- Connection of power supply cable to **socket ③** and power supply (90 ... 260 V / 47 ... 63 Hz, min. 10 A)



Before opening the housing disconnect from power supply!



*During exposure process UV-light sources generate ozone (like photocopying machines and laser printers). Sufficient ventilation of the room must be ensured.*

3.3 Operation

➤ **Switch ON**

Switch on erase device by pushing **main switch ①** from „0“ to „I“.

**Controller ⑥** executes a test run and starts operation.

**Display GREEN ⑨** ACTUAL countdown time (0.00)

**Display RED ⑩** SET countdown time (Stop)

➤ **Set process run times for exposure and erasure**

Press **SET key ⑪** for setting of erasure time.

**Display GREEN ⑨** shows >Set.1< and **Display RED ⑩** shows actually set countdown time for erasure (phase 2).

Set desired time by pressing **arrow keys ⑫** or **⑬** of controller **⑥**.

Press **SET key ⑪** again for setting of exposure time.

**Display GREEN ⑨** shows >Set.2< and **Display RED ⑩** shows actually set countdown time for exposure (phase 1).

Set desired time by pressing **arrow keys ⑫** or **⑬** of controller **⑥**.

Press **SET key ⑪** again or wait 5 sec. to complete set mode.



*It is recommended to start with preset process times. Phase 1 with 2 min. and phase 2 with 3 min.*



*Time setting is possible when timer is active – process time can be extended or shortened during process.*

➤ **Loading imaging plates**

Pull out **drawer ⑧** to stop position – **Indicator light ⑤ green** is OFF.

Place imaging plates within markings on drawer.

Close drawer - **Indicator light ⑤ green** is ON and erase device is ready for process.



*Load only flat imaging plates on **drawer ⑧**. If IP is crooked due to use on pipes, flatten IP before loading into erase device. Crooked IP may jam when opening **drawer ⑧**.*

➤ **Start process**

Start exposure process by pressing **start / stop key** ⑦.

**Indicator light** ⑤ **green** changes to **blue**.

**Display GREEN** ⑨ now shows countdown time in format M:SS for exposure.

After set time (*preset value 2:00 min*) reaches 0:00 process changes to erasure, automatically.

**Indicator light** ⑤ **blue** changes to **white**.

**Display GREEN** ⑨ now shows countdown time in format M:SS for erasure.

After set time (*preset value 3:00 min*) reaches 0:00 process stops, automatically.

**Indicator light** ⑤ **white** changes to **green**.



*Stop process at any time by pressing **start / stop key** ⑦ or opening **drawer** ⑧.*

➤ **Unloading imaging plates**

Pull out **drawer** ⑧ to stop position – **Indicator light** ⑤ **green** is OFF.

Take out imaging plates.



*If imaging plates have not reached desired erase level, start process again with estimated process times. Adjust Process times, accordingly.*



*Process times are dependent on condition (number of exposures), intensity of burn-in and age of imaging plate. Tests are necessary to find appropriate process times.*



*There are imaging plates with surface protection on the market. This surface coating efficiently absorbs and so prevents UV-light to reach active layer of IP.*

*This means in phase 1 imaging plate is not exposed to saturation and Ghost Images or Burn-Ins cannot be erased to required level.*

**Switch OFF**

Erase device is switched off with **main switch** ① - „1“ to „0“.

4. Technical data

Housing			stainless steel
Drawer			500 x 400 mm
Active Erasure Area	W x D		490 x 370 mm
Imaging Plates (IP)	1x	14 x 17 inch (35 x 43 cm)	
(max. possible IPs per erasing process – exemplary)	2x	15 x 48 cm	
	3x	10 x 48 cm	
	6x	10 x 24 cm	
Light Sources	phase 1 - exposure	UV-CCFL	250 nm – 40 W lifetime/ cycles 9,000 h/ ≈ 200,000
	phase 2 - erasure	LED	6500 K – 80 W lifetime/ cycles 30,000 h/ ≈ 500,000
Controller	TI484801		dual process timer
Power supply			90 ... 260 V / 47 ... 63 Hz / 90 W
Dimensions, outside	W x D x H		58 x 48 x 39 cm
Weight			29 kg

5. Parts and accessories

Due to the design, there are no spare parts or accessories necessary.

6. Maintenance, service, and repairs


This device was designed and manufactured for maintainability and durability. Consequently maintenance- and service works could be reduced to a minimum.

6.1 Maintenance

Maintenance work	Intervals
Cleaning drawer surface	as required
Cleaning housing	as required

6.2 Service and repairs

No service or repair works foreseen.

In case of electrical failure or surge fuses may blow. Pull out **fuse holder** , check fuses and exchange if necessary.

Please contact below service address if troubles occur.



## 7. Service address

KOWOTEST Gesellschaft für Prüfausrüstung mbH  
Solinger Strasse 186  
40764 Langenfeld  
Germany

fon +49 2173-22383

fax +49-2173-22335

eMail info@kowotest.de

## 8. Decommissioning and disposal

### 8.1 Decommissioning

This device was designed and produced for long life.

After a long-term use at some point it comes to decommissioning, which should be simple for this product.

- Disconnect device from power supply and remove it.

### 8.2 Disposal

Selection of used material for this product was made on priority of recyclability and environmental disposal.

Regulations of local waste management authorities must be observed.

# KOWORASE X



**KOWOTEST**

Gesellschaft für Prüfausrüstung mbH

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