CONCEPT 200 C

V 1.1

USER'S MANUAL

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Manufacturer's address:

DEGRAF Srl
"Il Girasole" - Palazzo Donatello 8/03b
20084 Lacchiarella (MI)
Italy

Range of application:

This unit is a part of a full range dedicated for the treatment of flexographic printing plates. This range includes Exposure, Processor, Dryer and light finisher.
The CONCEPT 200 C is a unit designed for the exposure, the washout, the drying as well as the post exposure and light finishing of solvent washable printing plates.

Maximum capacity of the unit:

	CONCEPT 200 C
Number of plates:	1 in washout section 1 in exposure section 4 in dryer section 1 in light finisher section
Minimum plate size:	4 x 4 inches 100x100mm
Maximum plate size:	26 x 32 inches 660 x 810 mm

Warning: *This unit is designed to work with solvent and has been tested with conventional product. Always ask your dealer before trying to change the type of solvent. This may result in major damages and safety issues. This machine has not been designed as an explosion proof unit.*

Principle description:

- This unit is designed to expose, wash, clean, dry, post expose and light finish printing plates.
- The machine is divided in major sections
  - Control panel: allow the operator to select the correct parameters to process the plates.
  - Washout section: designed to provide high quality and even washout of the plates as well as high performance cleaning.
  - Exposure section : 18 lamps of 60W to ensure even exposure
  - Dryer section: 4 drawers. 2x 800W heating reistors.
  - Post exposure /light finishing section: 12 UVA lamps (60W) and 11 UVC lamps (75 W).
- The operator interface is made touch screen which ensures a very easy interface.

Safety Warnings:

To use this unit safely, it is essential that operators and maintenance people follow the safety instructions and safety precautions and warnings specified in the manuals.

The unit is equipped with emergency switches which allow the operators to stop the machine in case of an emergency.

These emergency switches cut off the power supply of the entire machine.

Make sure that the risk or the problem has been eliminated before restoring the power on the unit.

To release the emergency switches, turn clockwise. The unit has to be re-started following the "Initial Operation"- procedure.

Safety Interlocks
For the safety of operators, interlocks exist for the following:

- *Opening the top covers during operation,*
- *Opening the Exposure covers during operation,*
- *Opening the Light Finisher drawers during operation,*
- *Opening the Dryer drawers during operation,*
- *Removing the rear panels of the unit.*

If any of the interlocks are not installed or closed, the unit or a specific section of the unit will not operate.

If an interlock is activated during operation, the unit or a specific section of the unit stops immediately. Do not open the side or rear panels during plate preparation.

NOTE : The Exposure section is fitted with a safety interlock to prevent the user to be exposed to UV-A light radiation.

NOTE : The Dryer section is fitted with safety interlocks to prevent the user to be exposed to solvent fumes.

NOTE : The Light Finishing drawer is fitted with a safety interlock to prevent the user to be exposed to the UV-C and UV-A light radiation.

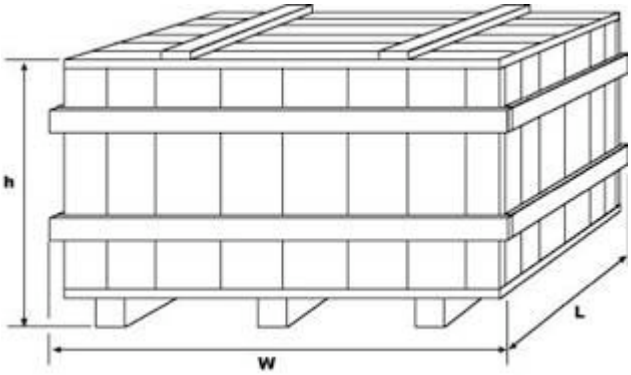
WARNING
UV-C light radiation is dangerous for human skin and particularly the eyes. Even a short exposure time may cause burnings in the lower skin layers and damages the eyes retina. Due to the SAFETY systems installed, it should never be required to check the UV-C tubes by view the UV-C light directly when operating, maintaining or servicing the unit. However, in case of need it is mandatory to wear a welding helmet with at least shade 6.

Technical datas :

Dimensions (w x l x h) :	1 550 x 2 110 x 1 300 mm				
Net Weight :	880 Kg				
Compressed air supply:	6 bars minimum				
Exhaust :	Washout : 400 m3/h minimum Dryer : 100 m3/h minimum Post exposure/light finisher: 400m3/h minimum				
Power supply :	400V	3Ph / N / PE	50/60Hz	8,2 KW	12 A
	230V	3Ph / PE	50/60Hz	8,2 KW	20 A

Crate dimension:

- Please ensure the handling of the crate will be compatible with the building configuration: doors dimensions, load capacity of the floor …



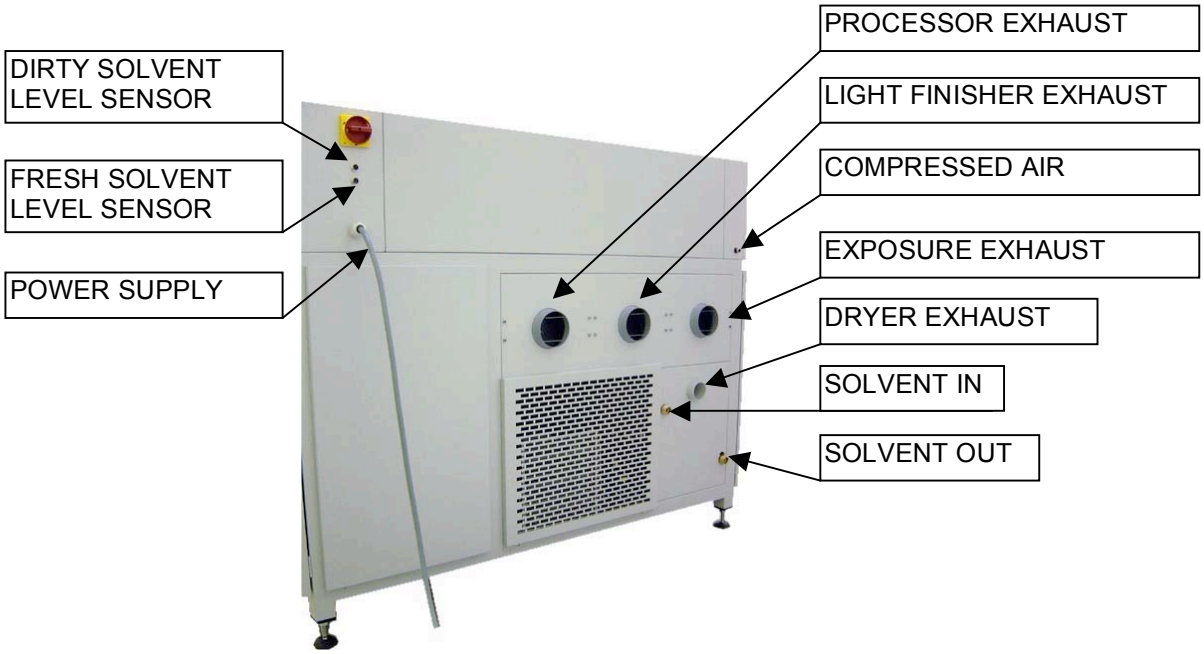
W:	1 750 mm.
L:	2 200 mm
H:	1 610 mm.
Weight (crate included):	1130 Kg

Floor space requirement:

- Please ensure there will be sufficient space around the machine for safe use as well as easy access for maintenance. 1 meter free space is needed in front of the machine to give an easy access. On the sides and the back of the unit 500 mm are requested to allow the access.

Connections Location :

- All the connection points are located on the back of the unit.



Accessories needed for the connections:

Compressed air supply:	6 mm diameter hose
Exhaust :	100 mm. hose (Processor, Light finisher) 60mm hose (Dryer)
Power supply :	5 x 4mm2 cable for the 400V configuration
	4 x 4mm2 cable for the 230V configuration
Solvent :	20 mm diameter solvent resistant hose

Upon receipt of your machine please check with the carrier the status of the crate. Notify him of any damage you see on the crate.

Before starting to unpack the unit, make sure you have all required tools ready to hand.

Unpacking:

Warning: For safety reasons, please wear appropriate protective clothing (gloves, glasses, and safety shoes) while unpacking.

- Start by removing the top section of the crate.
- Remove the sides one by one.
- The machine is now resting on the base of the crate.
- Remove all blocking pieces of wood.
- Use the appropriate forklift to lift the unit and get it to its installation location. Take care that the forks are long enough to lift the machine without causing damage.
- Ensure there is sufficient space around the machine (see Pre-installation section).
- Remove all protection from the unit (do not use sharp tools to prevent damages).
- No special anchorage is needed for this unit. The unit will rest only on its feet.
- Align the machine precisely by means of a water gauge. The alignment is made by using the adjustable feet.

Parts delivered with the machine :

Items :	Qty :
Hose 100 mm.	6 m.
Locking collars (100mm)	4
Hose 60 mm.	3 m.
Locking collars (60mm)	2
Panel key	1
High level used solvent sensor.	1
Plug and cable for used solvent sensor.	1
Low level fresh solvent sensor.	1
Plug and cable for fresh solvent sensor.	1
Dirty solvent barrel adapter.	1
Fresh solvent barrel adapter.	1
Solvent hoses (20mm diameter) with fittings.	2 x 3 m.
Set of fuses	1
Tube for compressed air	3 m.
Front cover handle	1
Lamps	Already installed in the unit.

Verify that all parts are with the machine.

Connections:

All the needed connections have to be made in accordance with the rules of the installation country.

Electrical connection :

- Connection such as electrical power supply has to be made by certified people.
- It is recommended to use a ground fault circuit breaker as well as a lockout type power switch for the electrical connection.
- Before switching on the machine, ensure that the voltage measured on the main switch of the machine match the identification plate fixed on the back of the unit.

Exhaust blower connection:

- Connect all the exhaust, except the exposure exhaust which may blow into the room, to the appropriate location (directly to the outside or to the building exhaust installation). Ensure the airflow is correct.

Compressed air connection:

- Connect the compressed air line to the unit.

Solvent connection:

- Connect the solvent lines to the correct points.
- Connect the solvent level sensors (high level used solvent and low level fresh solvent) in the correct plugs.

Filling the heater/cooler tank:

- Remove the panel located on the left side of the unit.
- Remove the cover of the heater/cooler tank.
- Prepare 4 litters of a solution based on 70% of de-mineralized water (or distilled water), 30% of ethylene glycol and some drops of algaecide (anti-foam action).
- Fill the tank to the maximum.
- After running the unit for a couple of minutes, it may be needed to check again the level of the heater/cooler tank and to add solution to reach the correct level.

Note: *This operation has to be made with the machine switched OFF.*

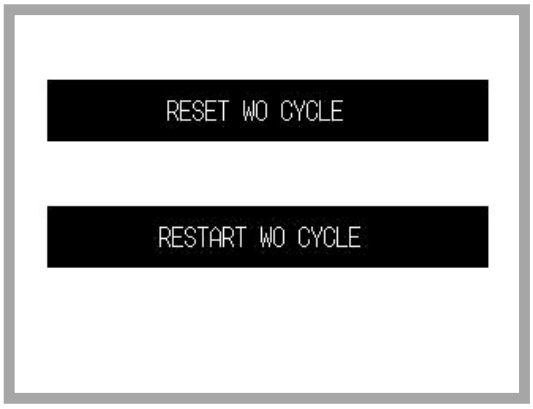
Initial Operation of the machine:

Before switching the machine on make sure that the working area around the machine is clean and free for easy movement.

Check if there are any leaks of solvent as well as all the needed supplies:

- ✓ Electrical power supply: cable connected and not damaged.
- ✓ Compressed air: filter clean and pressure correct.
- ✓ Exhaust: hose connected and not damaged.

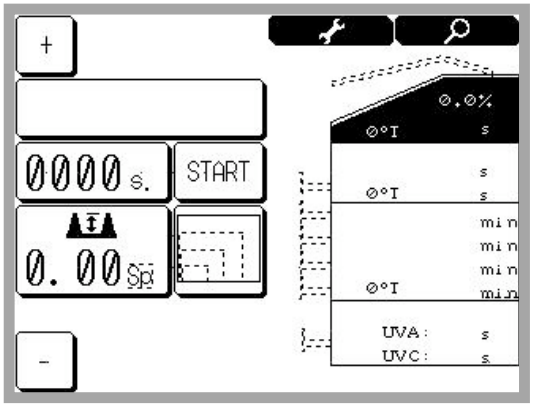
- You are now ready to switch the machine on.
- Turn the main switch of the machine which is located at the back of the machine (right-hand side).
- Verify, that all emergency stop buttons are released. If not, release them by turning them clockwise.
- Switch the machine on by pressing the ON/OFF button which is located beneath the control panel of the machine.
- When the machine is switched on different screens can be displayed on the touch screen:



➢ The machine has been stopped with at least 1 plate in process in the processor section.

Keep pressing "RESET UNIT" for a few seconds to reset all the on going cycle.
Keep pressing "RESTART UNIT" for a few seconds to restart the processor at exactly the same status of the power switch OFF. This allows to continue the process of a plate remaining inside the processor.

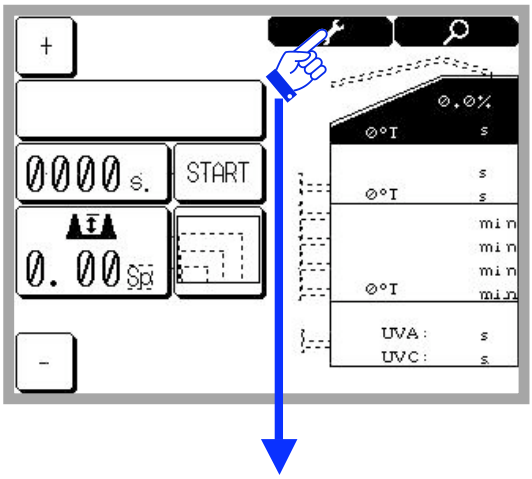
NOTE: All the other process carried on at the switch OFF of the unit will be reseted in both case. It is only possible to restart the processor cycle.



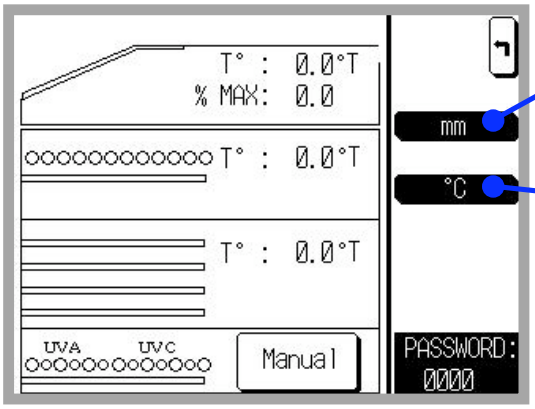
➢ The machine is ready to be used.

Machine configuration:

For access to the machine set-up, press the designated key.



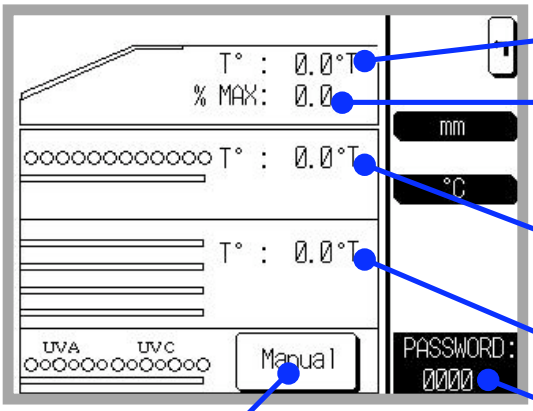
The machine configuration screen allows you to set the machine:



Sets the display of the machine in "mm" or in "inches". Simply press the corresponding key to switch the machine to the desired mode.

Sets the display of the machine in "°C" or in "°F". Simply press the key to switch from one mode to the other.

The machine configuration screen allows you to modify:



The solvent temperature (displayed in °C or °F).

The maximum percentage of solids in the solvent (for the replenishment of the washout solvent).

The cooling temperature of the lamps in the exposure section.

The temperature in the dryer section..

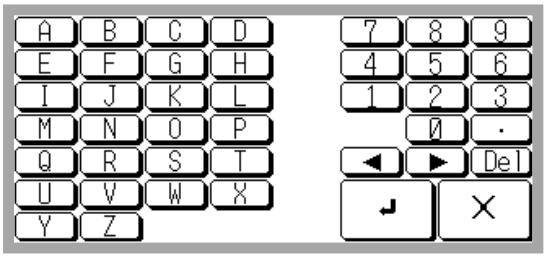
Select the Light finisher mode :
Manual: UVA and UVC can be started separately or all together.
Automatic: UVA and UVC will be made one after the other in a sequence depending of the first one started.

Password : used to access the restricted access screen (refer to "Technical manual").

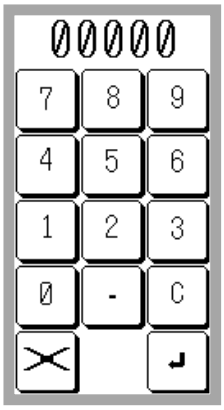
Value modification:

- To change a value (numeric or alpha numeric) directly press the desired value and the corresponding keypad will appear.

Alpha numeric keypad:



Numeric keypad:

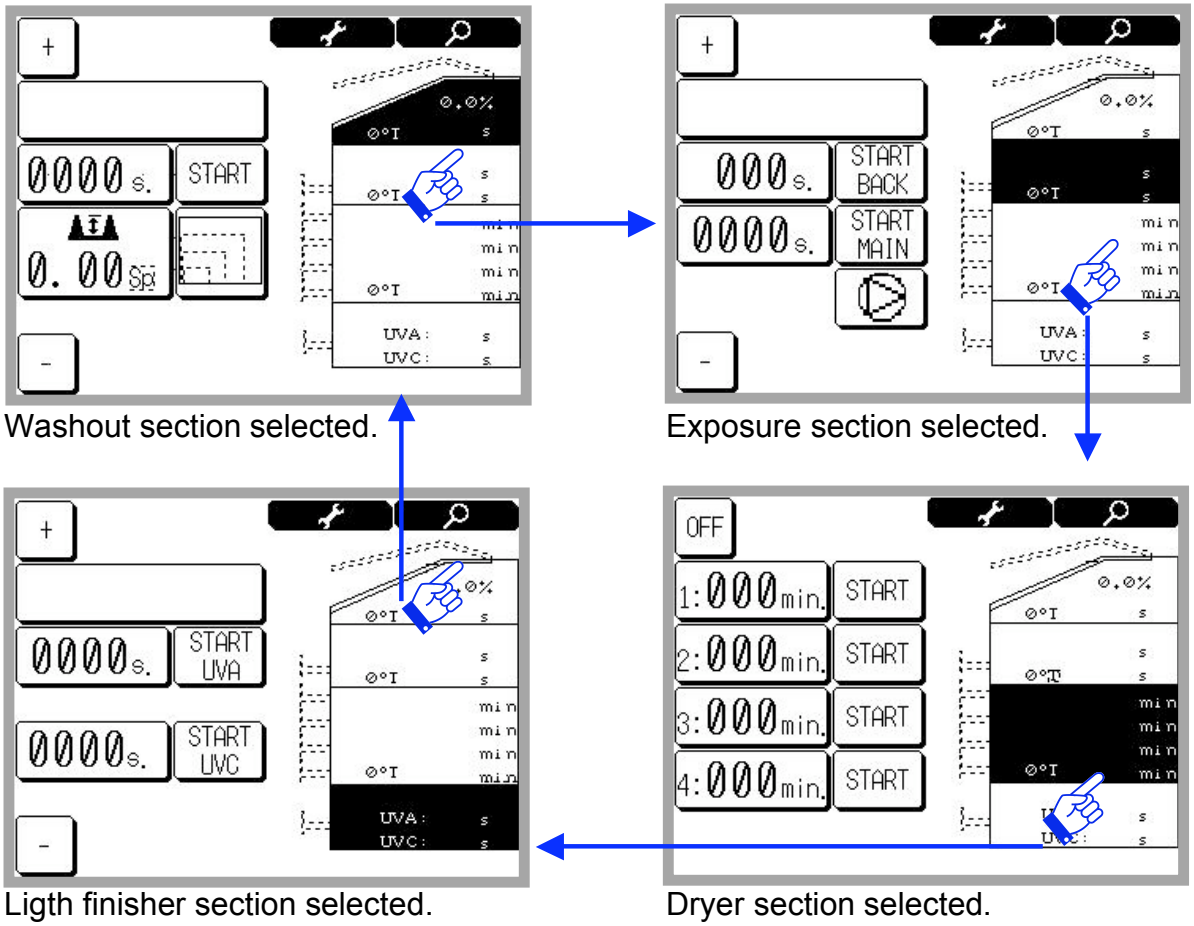


- Enter the new value and then confirm by pressing ↵.
- To close the keypad, press ✕.
- If the entered value is out of range of the data it will return automatically to the minimum or maximum range limit. Note: these range limits are different for the same data depending on the setup of the machine.

The data are automatically stored in memory as soon as the key ↵ is pressed.

Section selection:

It is possible to change from one section to another one simply by pressing on the section desired on the right of the screen. The activated section is shown in black.



Washout section selected.

Exposure section selected.

Ligth finisher section selected.

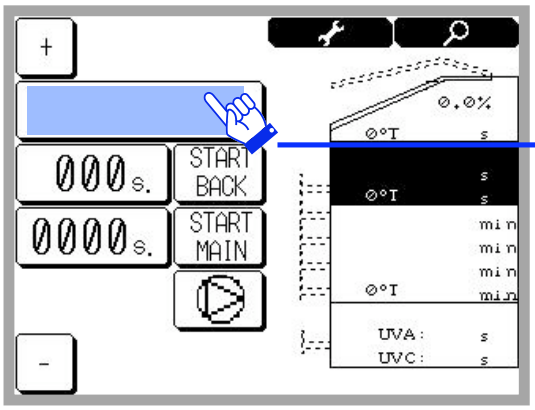
Dryer section selected.

Plate data memorisation:

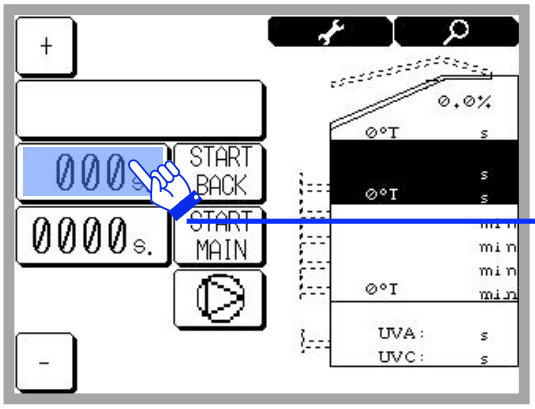
20 memory channels are available to store the plate data.

To switch from one channel to another simply press + or -. The memorised data are then displayed. It is possible to memorise the plate parameters for the Processor section, the exposure section as well as the Light finisher section. The drying time of the dryer section are memorised but not linked to any memorised plate channel.

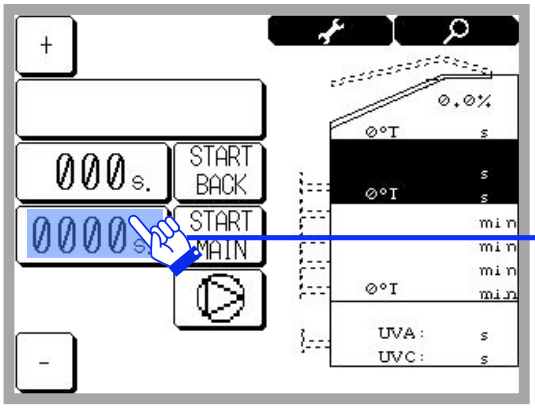
Exposure section:



Press this zone to enter the plate type with the alpha numeric keypad.
Note: The plate name is the same for all sections for the same memorisation channel.

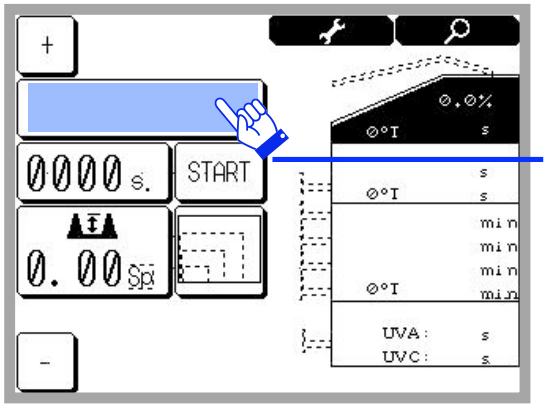


Press on this zone to enter the back exposure time with the numeric keypad.

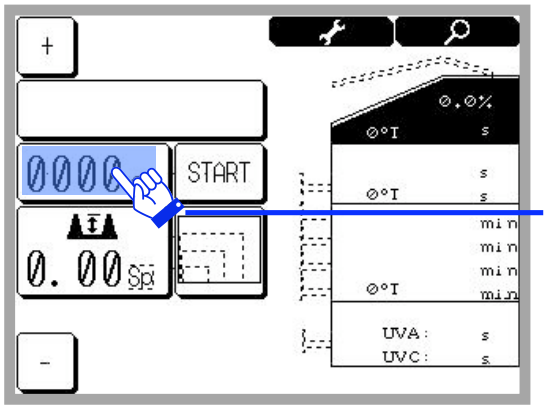


Press on this zone to enter the main exposure time with the numeric keypad.

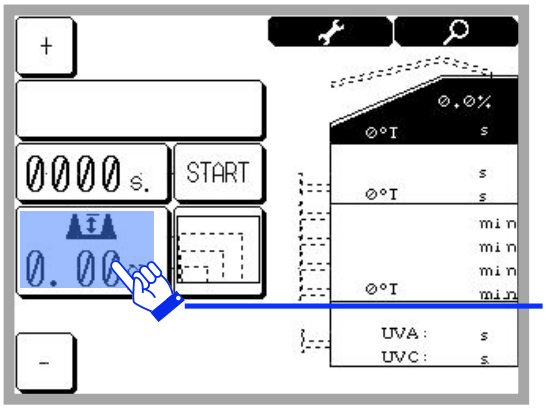
Processor section:



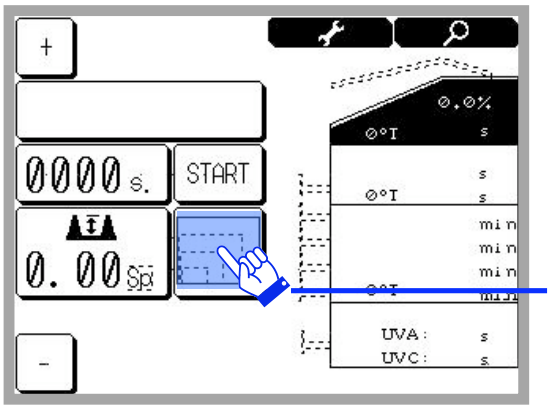
Press this zone to enter the plate type with the alpha numeric keypad.
Note: The plate name is the same for all sections for the same memorisation channel.



Press this zone to enter the washout time with the numeric keypad.

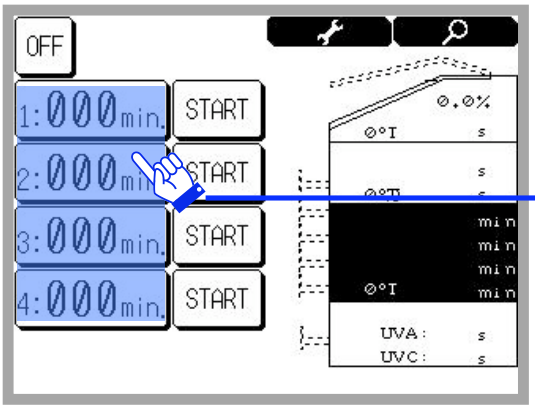


Press this zone to enter the relief expected on the plate (used only for the replenishment calculation when the solid content measurement device is not activated).



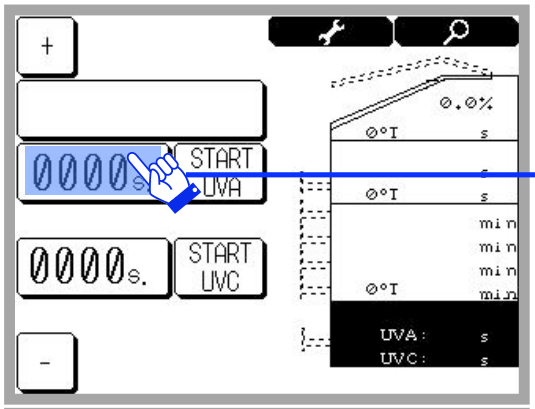
Press this zone to enter the plate size (in mm or inches depending on the machine configuration). The selection is made by step of 25% of the maximum size. Every press on the touch increments the plate size from 25 to 50 to 75 to 100% and then back to 25 (used only for the replenishment calculation when the solid content measurement device is not activated).

Dryer section:

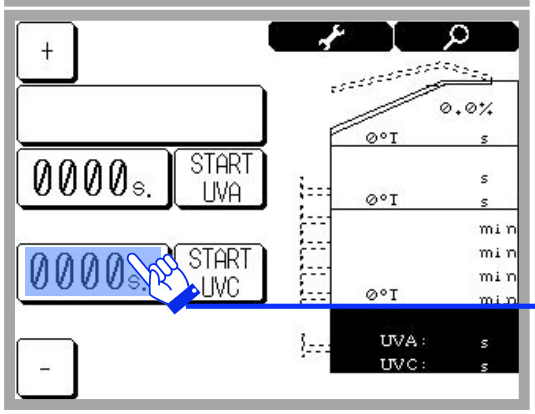


Press on the desired time to enter the drying time of the corresponding dryer drawer.

Light Finisher:

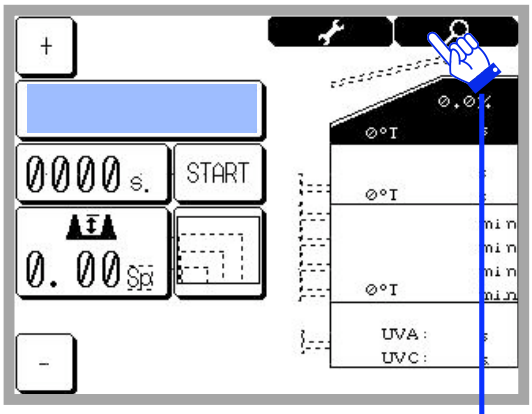


Press on this zone to enter the Post exposure time (UVA lamps).



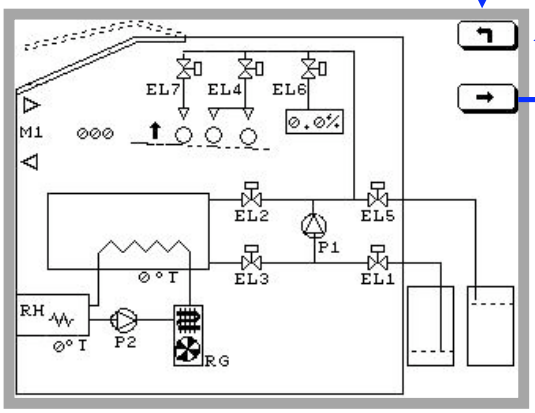
Press on this zone to enter the Light Finishing time (UVC lamps).

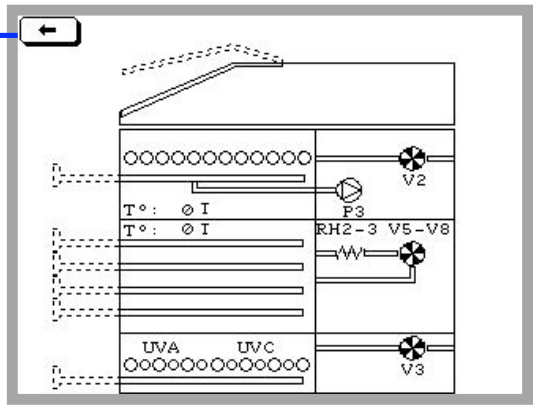
Process visualisation:



- During a cycle, it is possible to see which function is On or OFF in the machine. Simply press on the dedicated touch to access to the visualisation screens.

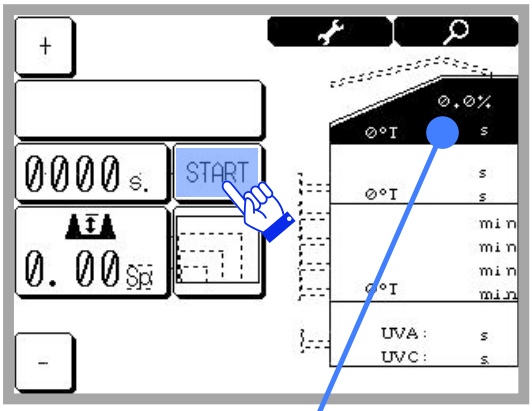
- All functions running are coloured in black.





Start a Washout cycle:

- First select the required program by using the keys [+] or [-].
- Verify, that all parameters are correct.
- Open the entrance cover.
- Fix the plate on the transport table and ensure the plate is well fixed. It is not possible to have the plate well fixed if the sticking material is still wet.
- Close the entrance cover.
- To start the cycle, press [START].



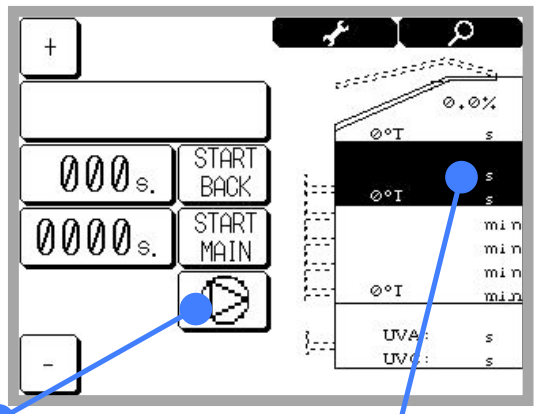
Note: During the Washout process it is possible to see the remaining time on the right part of the screen.

Note: It is required to wait between two plates the sticky material is well dry to ensure a good fixation of the plate.

WARNING: In case the sticky plate holder is not completely covered with the plate(s) to process, the non covered area must be protected with the cover sheet of flexo plate (for example) to prevent long contact between the sticky material and the solvent. Not doing this may result in very short life time of the sticky material.

Start an Exposure cycle:

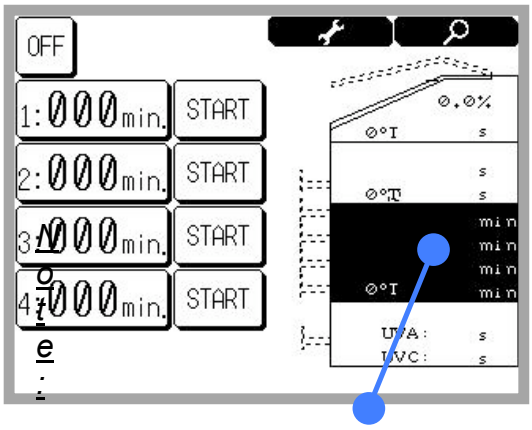
- First select the required program by using the keys [+] or [-].
- Verify that all parameters are correct.
- Open the Exposure drawer.
- Put the plate on the vacuum table in order to make the Back exposure or the Main exposure.
- When doing the main exposure on conventional plate, put the vacuum foil on top of the plate and the film(not required for back exposure or for digital plates).
- Start the vacuum by pressing on the dedicated touch. To stop the vacuum, press again. It is not possible to stop the vacuum when the exposure cycle has been started.
- Close the drawer.
- To start the cycle, press "START BACK" or "START MAIN".



Note: During an Exposure process it is possible to see the remaining time on the right part of the screen.

Start a Drying cycle:

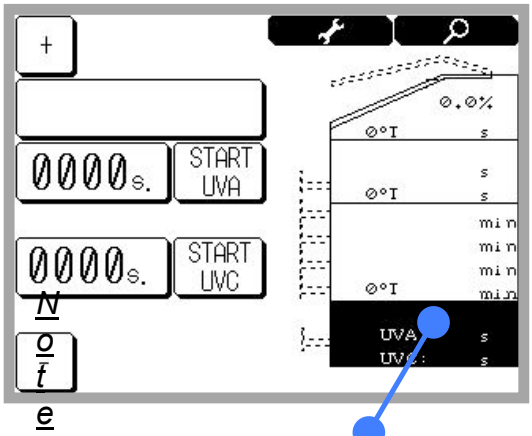
- Verify that the drying time is correct.
- Open the Dryer drawer.
- Put the plate in the drawer.
- Close the drawer.
- Press the "START" touch correponding to the desired drawer.



Note: During the Washout process it is possible to see the remaining time on the right part of the screen.

Start a Post-Exposure / Light Finishing cycle:

- First select the required program by using the keys + or -.
- Verify that all parameters are correct.
- Put the plate in the Light finisher drawer.
- To start the cycle, press "START UVA" or "START UVC".



Note: During an Exposure process it is possible to see the remaining time on the right part of the screen.

Specific cycle:

The unit offers the possibility to have an automatic sequence of Post exposure and Light Finishing.

- *Sequence exposures:*

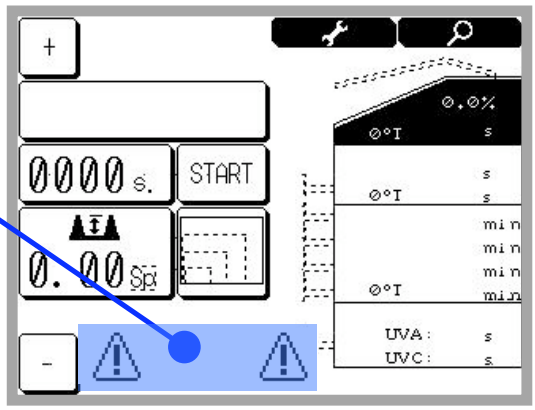
  If this function has been enabled (refer to "Machine Configuration" section) the cycle is proceeding as followed:

  If « START UVA » is pressed : the UVA lamps start until the end of the selected time, and after a time delay, the UVC lamps start until the end of the selected time.

  If « START UVC » is pressed : the UVC lamps start until the end of the selected time, and after a time delay, the UVA lamps start until the end of the selected time.

Alarms:

- If an alarm is detected an intermittent sound as well as a specific alarm sign are switched on.
- To see which alarm is on press the alarm sign to switch to the dynamic synoptic screen.



- A graphic alarm signal indicates the type of alarm (refer to following examples):
    - Level problem of the different solvent tanks. The warning signal is blinking near the corresponding level indication.
    - Excess temperature (of solvent or water). The warning signal is blinking near the solvent or water temperature indication.
    - Problem on a circuit breaker for the pumps and motors. The warning signal is blinking near the malfunctioning motor, pump or circuit breaker.