CONCEPT 302 EC

PRE INSTALLATION
INSTALLATION
USER'S MANUAL
TECHNICAL MANUAL

Eng. Version 3.1

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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 302 EC a unit designed for the Exposing of printing plates. All other steps of the process are carried out on the other components of the range.

Maximum capacity of the unit:

Capacity:	1 Exposure section
Maximum plate size:	36 x 48 inches 900 x 1 200 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 flexographic printing plates.
- The unit is operated by a specific control panel which ensures very easy handling.
- 20 channels are available to memorise the Exposure times.

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 Exposure covers during operation,*

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 user to be exposed to UV-A light radiation.

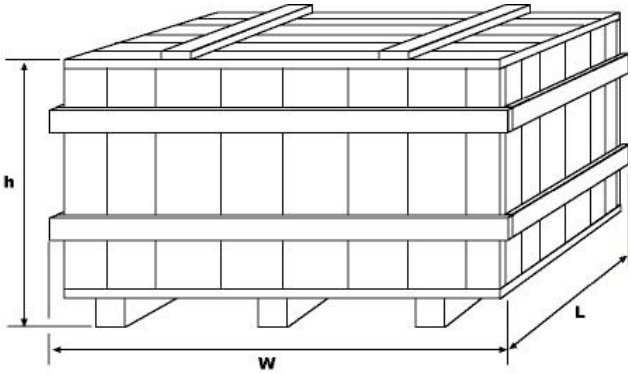
Technical datas :

Dimensions (w x l x h) :	1 800 x 1 500 x 1 030 mm				
Net Weight :	650 Kg				
Compressed air supply:	No need				
Exhaust :	100 m3/h minimum for the Dryer 800 m3/h minimum for the LF				
Power supply :	400V	3Ph / N / PE	50/60Hz	5 KW	8 A
	230V	3Ph / PE	50/60Hz	5 KW	14 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:	1 900 mm.
L:	1 650 mm
H:	1 500 mm.
Weight (crate included):	920 Kg



Floor space requirement:

- Please ensure there will be sufficient space around the machine for safe use as well as easy access for maintenance. 1.7 meter free space is needed in front of the machine to give an easy access as well as the possibility to remove the drawers from the machine for maintenance. 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 machine.

Accessories needed for the connections:

Compressed air supply:	No need
Exhaust:	No need
Power supply:	5 x 10mm2 cable for the 400V configuration
	4 x 10mm2 cable for the 230V configuration

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.
- This unit is equipped with wheels which allow the machine to be set in place very easily.
- 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. Be sure the machine is no more resting on its wheels.

Parts delivered with the machine :

Items :	Qty :
UVA lamps	Installed in the machine.
Vacuum foil	Installed in the machine.

Verify that all parts are with the machine.

Connections:

All necessary connections have to be carried out in accordance to the rules of your country.

Electrical connection:

- Connection such as electrical power supply has to be carried out by certified personnel.
- It is recommended to use a ground fault circuit breaker as well as a lockout type power switch for the electrical connection.
- Before switching the machine on, measure the voltage on the main switch of the machine and make sure that it matches the value on the identification plate, which is fixed at the back of the unit.

Filling the cooler tank:

- Remove the cover of the heater/cooler tank located at the back of the unit.
- Prepare 3 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.

Initial Operation of the machine:

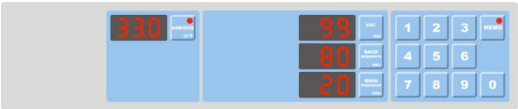
Before switching the machine on make sure that the working area around the machine is clean and free for easy movement.

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

- ✓ Electrical power supply : cable connected and not damaged.
- ✓ 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 right of the control panel of the machine.
- 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 at the right of the control panel of the machine.

Value modification:



- First select the program you want to modify (20 programs from P00 to P19 are available to store the different times): Press P and then the number of the program needed (from 00 to 19). The values memorised are now displayed.

- To modify the time press first on MEMO and then press on BACK exposure sec. or MAIN exposure min.. A small dot is then displayed on the bottom right corner 60. of the windows as well as the LED located in MEMO indicating the possibility to modify the value. Enter the new value using the numeric keyboard and then press MEMO to confirm. The dots disappear.

Start the vacuum pump :

- Press on VAC bar to start the vacuum pump.
- The level of vacuum is displayed in the window : 760 VAC bar.
- To stop the vacuum pump press a second time on VAC bar.

Start an Exposure cycle :

- Put the plate on the vacuum table.
- When doing the main exposure on conventional plate, put the vacuum foil on top of the plate (not needed for back exposure or for digital plates).
- Verify the vacuum level.
- Select the number of the program needed.
- Press P and then the number of the program needed (from 00 to 09).
- Verify all the times are correct.
- To start an Exposure process, press on BACK exposure sec. to make the back exposure of the plate, or MAIN exposure min. to make the main exposure of the plate.
- During all the process the display shows the bottom right dot blinking 60..
- At the end of the cycle the buzzer rings the window displays End.
- To clear this display and stop the buzzer, open the Exposure lid to remove the plate.

Vacuum table temperature and UVA Lamp temperature:

The set points of the vacuum table temperature and the UVA lamps temperature can be adjusted using specific programs: refer to "Machine setup" in the Technical section of the manual.

At any time the actual temperature of the vacuum table and the actual temperature of the UVA lamps can be displayed on the control panel.

- To switch from the UVA lamps temperature to the vacuum table temperature, simply press on VARIOUS. Another action on VARIOUS will switch the display to the other value.
- When one dot is displayed in the window 23.0 VARIOUS, the value corresponds to the temperature of the vacuum table.
- When two dots are displayed in the window 43.0. VARIOUS, the value corresponds to the temperature of the UVA lamps.

Exposing a plate using light integrator:

It is possible to setup the machine (refer to "Machine Setup) in order to have a light integrator controlling the quantity of UV light on the plate.
If this function has been enabled (*Please refer to special programs P61&57 in "Machine Setup" for further detail)*, the count down of the exposure may differ from seconds and minutes as it depends on the UV intensity and the adjustment of the light integrator.

Note : *When the exposure lid is open the 3 dots of the exposure time started switch on.*

TECHNICAL MANUAL

Machine setup :

- Specific programs are available through the control panel.
- To access to these parameter press P and the program number :

N°	Password needed :	Function :
00-19	NO	Exposure programs. Used to store the different exposure times.

N°	Password needed :	Function :
44	NO	Set the display in Bar (99).

N°	Password needed :	Function :
45	NO	Set the display in mm Hg (76).

N°	Password needed :	Function :
46	NO	Set Temperature to °F.

N°	Password needed :	Function :
47	NO	Set Temperature to °C.

N°	Password needed :	Function :
50	2 6 9 1 + 0 to disable. + 1 to enable.	Defect lamp detection. If enable, the number of the defect lamps will be shown on the corresponding display.

N°	Password needed :	Function :
51	NO	Automatic measurement of UVA level for exposure section when installing new lamps. Needed for lamp default detection.

N°	Password needed :	Function :
56	NO	Display the software version of the different CPU boards.

N°	Password needed :	Function :
57	NO	Display light integrator value. 512 to have 1 pulse equal to 1 second (using the potentiometer on the light integrator board).

N°	Password needed :	Function :
60	NO	Set the vacuum table temperature.

N°	Password needed :	Function :
61	2 6 9 1 + 0 to disable. + 1 to enable.	Light integrator. If this function has been enabled, the exposure time will be automatically adjusted in order to get the correct quantity of light on the plate.

N°	Password needed :	Function :
62	NO	Set Exposure lamps cooling temperature.

N°	Password needed :	Function :
64	NO	Display the lamps hours counters in the corresponding displays.

N°	Password needed :	Function :
65	NO	Set the buzzer time.

N°	Password needed :	Function :
68	1 0 0 9	Reset the exposure UVA lamps hours counter.

N°	Password needed :	Function :
69	1 9 6 2	Reset the main CPU board.

N°	Password needed :	Function :
78	2 6 9 1 + 0 to disable. + 1 to enable.	Locking of the keyboard. If this function has been enabled, the keyboard is not active until the touch 0 is pressed. Example : to start an exposure cycle, press on 0 first and then on BACK exposure sec. or MAIN exposure min.

N°	Password needed :	Function :
79	1 9 4 3	Calibration of the temperature probes. To make the temperature probe calibration ensure you have the needed precision resistors (5 x 100 ohms ; 5 x 147 ohms 0,1% precision) and the 10 points connectors. • After entering the password, the display shows - - - °C/°F. • Remove the connector of the temperature probe from the CPU board. • Insert the connector with the low value precision resistors. • Press °C/°F. • The display shows - - - °C/°F. • Remove the low value resistors. • Insert the connector with the high value resistors. • Press °C/°F. • The display shows - - - °C/°F. • Remove the resistors and put back the connector with the temperature probe. • Press °C/°F.

Electrical scheme: