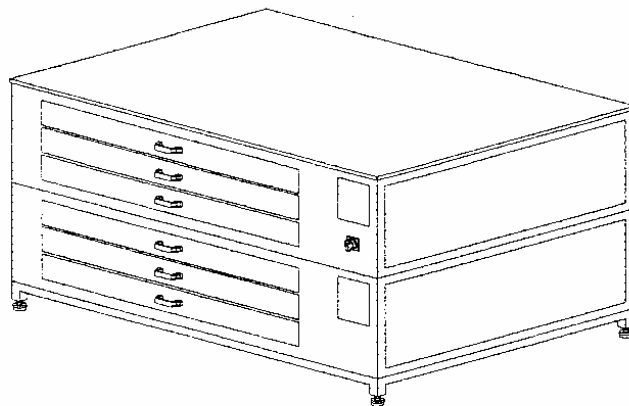
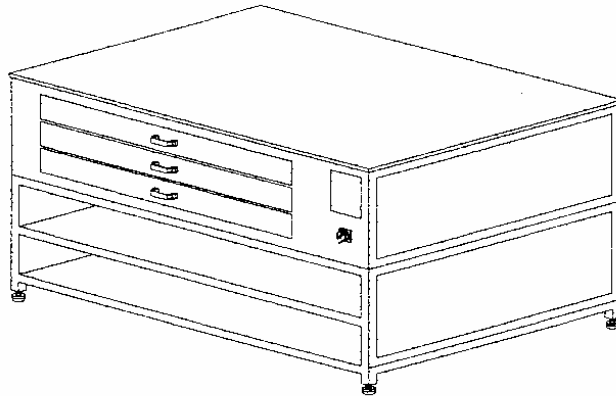


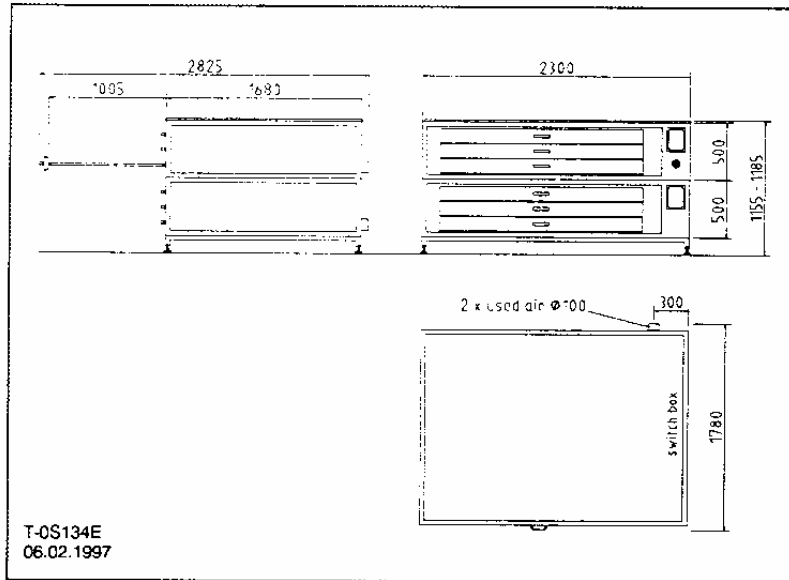
# Operation Manual

## nylocoat / nyloflex Dryer FIII/FIV



**BASF**

# Technical Information



type:	0S13.2
machine name:	nyloflex Dryer F IV
electrical connections:	400 V 3 N ~ 50 Hz power: max. 8,1 kW fusing: 3 x 16 Ampere yield
operation side:	front
servicing side:	right side (switch box) and back
maximum plate size:	1250 x 1600 mm
exhaust connection:	ø 100 mm
clearance height drawer:	50 mm
weight with undercarriage:	780 kg
width, depth, height (box):	2100 x 2600 x 1500 mm

# **Operation Manual**

## **nylocoat / nyloflex Dryer F III**

Printed July 1995

- 1. Data about the machine**
  - 2. Information about delivery and installation**
  - 3. Information about the machine setup**
  - 4. Operating Instructions**
  - 5. Data for maintenance**
  - 6. Data in case of emergency**
  - 7. Ordering spare parts**
- Appendix A**
- 1. Repair instructions for servicing**
  - 2. Spare parts list**
- Appendix B** **DIN Safety Data**

## 1. Information about the machine

### 1.1 Company address

SYSTEMTECHNIK Peter Haase GmbH  
Postfach 1206  
D-32269 Kirchlengern  
Brüderweg 1  
D-32278 Kirchlengern

Telephone: 05223 / 9725-0  
Telefax: 05223 / 9725-40

### 1.2 Guarantee and Safety

#### Important !

The machine Dryer F III type number 0S13.1 / 0S13.2 corresponds to the present safety regulations.

The nyloflex Dryer F III type number 0S13.1 / 0S13.2 has the CE-sign.

Repair work, which is not described in the service chapter 4.7, may only be done by our customer service or by service people appointed by us. Repairs must be done according to the "GSG" (machine safety laws).

Only original spare parts from the spare parts list may be used. All guarantee claims are invalid if other parts are used.

We reserve the right not to carry out technical changes on already delivered machines.

The Dryer F III may only be installed, turned on and used by trained personnel. The user must be familiar with the contents of this operation manual. This operation manual must be kept close to the machine and accessible to all persons using this machine.

Children under the age of 16 are not permitted to operate the nyloflex Dryer F III with the type number 0S13.01.

The working and safety regulations of the producers of the chemicals should be observed. The use of explosive solutions is forbidden. See also paragraph 1.3, 1.4 and 1.6.

### 1.3 Description of the uses of the machine

The purpose of the machine is drying and finishing of photopolymeric plates with a max. plate size of 920 x 1200mm.

Exposed plates are washed in a separate machine where the unexposed parts are washed off with organic solvents and brushes. The plates leave the washing machine in a predried state, which means drop free. The penetrated solution is evaporated in the dryer and cleared away with the exhaust.

The machine is designed for flexo printing plates, which are washed out in nylosolv II or other alternative solvents. The enclosed DIN safety data page is to be observed. See Appendix C.

Perchloroethylen and explosive solvents i.e. water alcohol mixtures may not be used in the Dryer F III.

If, for processing reason, one of the a. m. solvents is used in the Dryer F III, an approved testing station has to confirm the prosecution of the VBG 24 (for instance determination of the lower explosion limit) when using solvents in the Dryer F III.

### 1.3.1 Materials

The machine casing is made of a painted steel sheet and steel tubing.

Permanent materials of high grade steel and galvanized steel are built in the dryer.

### 1.4 Definition of the work stations

The Dryer F III consist of two drying units each with its own controls and three drawers per unit. There is one main switch for the whole machine.

The dryer consists of the following work stations (see diagram. 1):

1.  
The main unit with a main switch
2.  
extension unit
3.  
A clearly arranged control panel to control and survey the dryer functions
4.  
A drying station with a hot air system.
5.  
Support feet

### 1.5 Information about gases, vapors, dust etc.

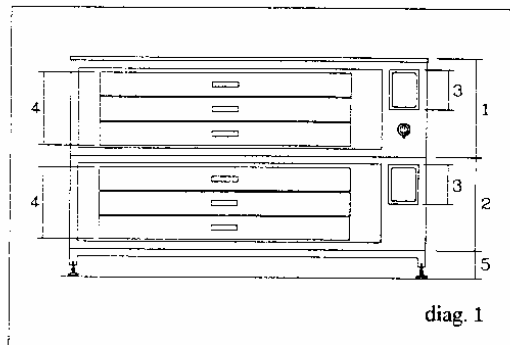
The machine may only be operated when closed and when connected to a sufficient exhaust! See chapter 2.

### 1.6 Electrical equipment

See technical data sheet.

### 1.7 Technical data

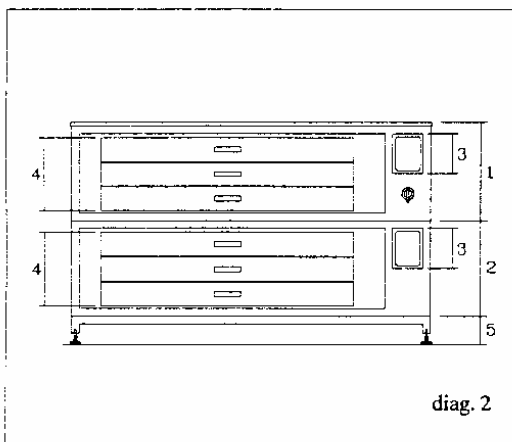
See technical data sheet.



The nyloflex Dryer F III/F IV (0S13.2) consist of one drying unit with controls and three drawers.

The dryer consists of the following work stations (see diagram. 2):

1.  
The main unit with a main switch
2.  
extension unit
3.  
A clearly arranged control panel to control and survey the dryer functions
4.  
A drying station with a hot air system.
5.  
Support feet



#### 1.5 Information about gases, vapors, dust etc.

The machine may only be operated when closed and when connected to a sufficient exhaust! See chapter 2.

#### 1.6 Electrical equipment

See technical data sheet.

#### 1.7 Technical data

See technical data sheet.

## 2. Information about delivery and transportation of the machine

### 2.1 Transportation

The machine Dryer F III/F IV is delivered in a recycleable wooden crate. It is fastened, secured and protected with plastic to prevent drops of water and dust on the machine.

The nylocoat Dryer F III weighs 320 kg with the underframe.

The nyloflex Dryer F III weighs 560 kg with the underframe.

The transportation packing, with the correctly fastened and secured machine, may only be picked up on the bottom. The forks of the fork lift must be long enough so that the pallet or wooden crate can be raised over the whole length or width.

The packed machine must be protected so that no possible damage to the machine can happen during transportation and storage i.e. through water damage.

### 2.2 Unloading and installation

Make sure that there is enough room and the way is cleared to transport the machine to its final position. Especially check that the freight elevator is large enough.

The machine may only be lifted from the bottom when unloading and installing. The forks of the fork lift must be long enough, so that they appear on the other side of the machine.

#### **Important!**

Check for transportation damages after unpacking the machine. The machine may not be pushed on its support feet.

The machine may not be installed in moist rooms. The floor of the room must be waterproof and not slippery. The lighting in the room must conform to the requirements of the printing plate manufacturer.

The positioning screws under the support feet are for exact adjusting. The reference area, for the adjusting, is the machines surface and/or the side walls.

The room must have the necessary ventilation in order to keep the allowable MAK values when in constant operation.

The Dryer F III must be connected to a ventilating system. The air vents must lead outside the building. The air vent connections must be connected so that they can be easily disconnected with tools and follow the requirements of the EN 294.

The distance to the walls must be followed according to diag. 3. The switch box must always be accessible. The ceiling may not be lower than 2,5 meters.

### 2.3 Electrical connections

The electrical connections are to be carried out by an electrician and according to the present valid VDE regulations VDE 0100, VDE 0106 (part 1 and part 100) and the connection regulations of the local EVU.

#### **Important!**

Make sure that the electrical connection for this machine is carried out according to the technical data of the machine type and/or of the technical data page.

IF the power supply does not correspond to this information, then a three-phase-current-saving-transformer must be installed.

### 2.4 Exhaust regulation of the dryer

The amount of exhaust of the dryer can be set on the machine. Every dryer has its own regulating unit that must be separately set. The starting lever with the safety screw is found inside the machine close to the switch box on the right side. The cover can not be completely closed for safety reasons.

The amount of exhaust of the dryer must be set to 300 cubic meters per hour.

The regulating cover of the exhaust regulator is secured with a safety screw after setting the amount of exhaust. It should be tightly screwed in.

### 3. Information about the machine set up

#### 3.1 Requirements for fastening and anchoring

The floor covering under the machine may not be slippery. See part 2.2.

#### 3.2 Conditions for setup and installation

Check the carrying capacity of the floor or ceiling before setting up the machine. The distances given in diagram 2 must always be kept. See 2.1 for the weight of the machine.

#### 3.3 Space needed for service and maintenance

See diagram 3.

#### 3.4 Surroundings conditions

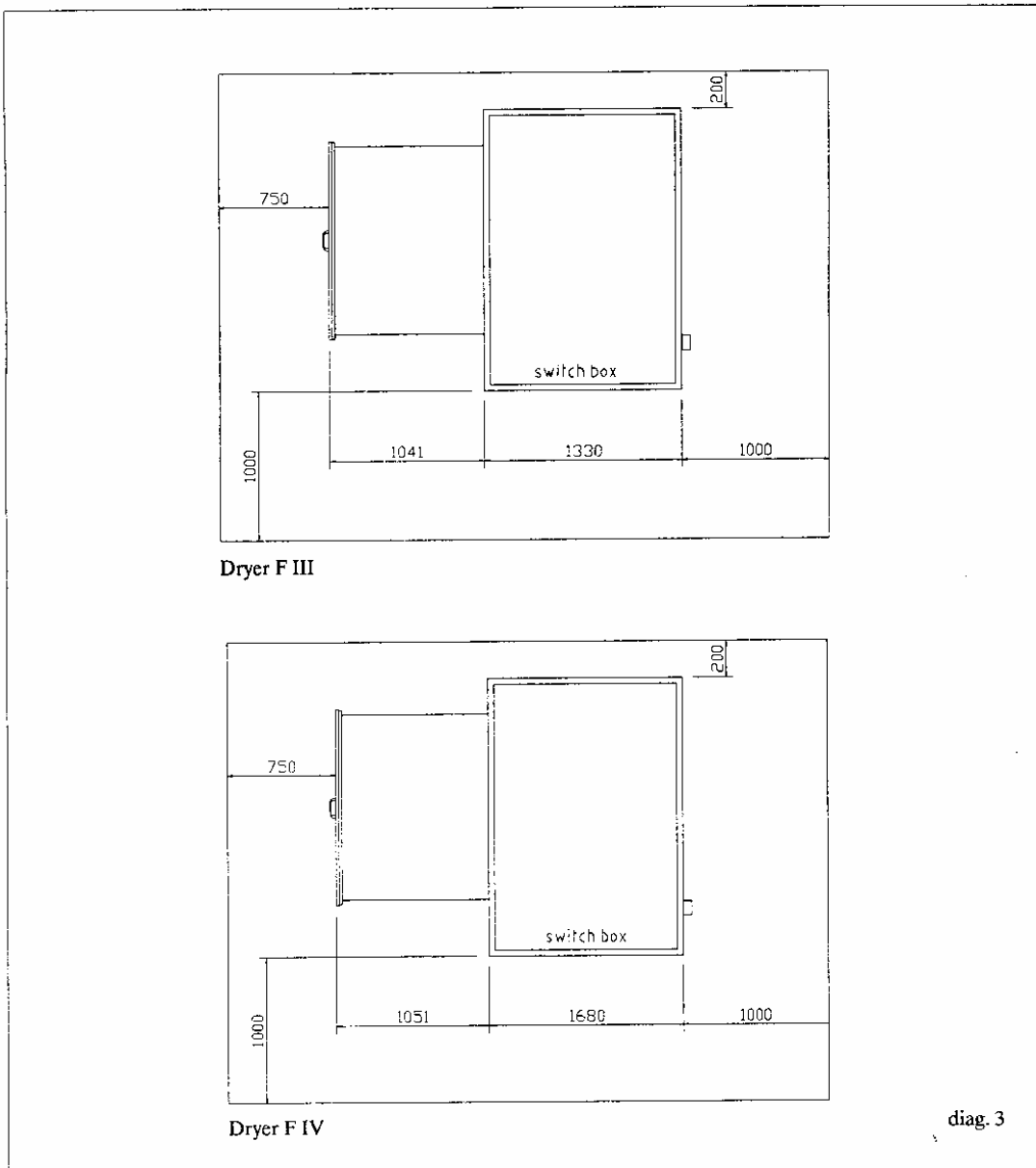
The machine may only be operated in an area where the air temperature is between +5 to +40 degrees celsius. The average temperature may not rise over +35 degrees celsius for longer than 24 hours.

#### 3.5 Information about connections to the energy station

See paragraph 2.3 and the technical data sheet.

#### 3.6 Safety regulations, that the user must observe

See chapter 2 and 6.

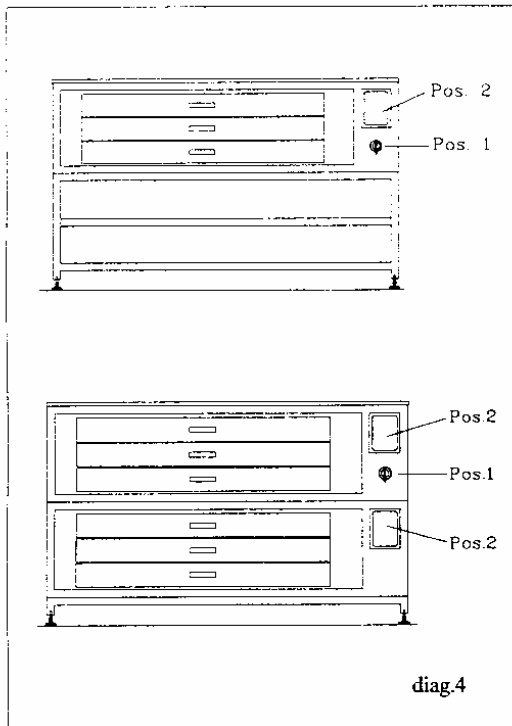


## 4. Operating instructions

### 4.1 Explanations about the controls (Diag. 4)

Pos.1 ..... Keyboard

Pos.2 ..... Main switch



### 4.2 Explanation about keyboard (Diag. 5)

The keyboard of the machine is explained on a separate page in this manual. (Pull out sheet)

### 4.3 Operation under production conditions

#### 4.3.1 Turning on the machine

To turn on the machine, turn the »main switch« to position »I«. To turn on both dryers, press the »On« key (Diag. 5, Pos.2) on the main unit and in the extension unit. The machine is ready for operation. The keyboard shows the following functions:

- All digital displays show »0.00«.
- The actual temperature of the dryer is shown.
- The light in the »On« key is green.

The preset values can now be changed or erased (timer, temperature of dryer). See chapter 4.4 **Adjustment instructions** on how to change or reset the values.

#### 4.3.2 Dryer

Every drawer has its own time setter with a digital clock. The time is set and started with the keys (Diag. 5, Pos.7, 9,

11). The set or running time is shown in hours and minutes on its corresponding digital clock (Diag. 5 Pos. 6,8, 10).

The setting of the times of the dryers and the dryer temperature is described in paragraph 4.4 **Adjustment instructions**.

The digital clock (Diag. 5 Pos. 6) and the time setter (Diag. 5 Pos. 7) are for the top drawer.

The digital clock (Diag. 5 Pos. 8) and the time setter (Diag. 5 Pos. 9) are for the middle drawer.

The digital clock (Diag. 5 Pos. 10) and the time setter (Diag. 5 Pos. 11) are for the bottom drawer.

Set the desired drying temperature as described in paragraph 4.4 **Adjustment instructions**. To turn on the dryer, press the > Heater /Ventilator < on/off key (Diag. 5 Pos. 3). The heater and the ventilator are turned on. The keyboard shows the following functions:

- The green lamp in the > Heater/Ventilator < on/off key (Diag. 5 Pos. 3) is lit green (The ventilator is turned on).
- The actual temperature is shown on the temperature indicator of the dryer (Diag. 5 Pos. 4).
- The digital clock (Diag. 5 Pos. 6, 8, 10) shows »00.00«.
- After 30 sec. the light in the dryer on/off key is red (Diag. 5 Pos. 3) (The dryer is being heated).

The light in the dryer on/off key is green after the dryer reaches the desired temperature. The dryer is ready for operation.

The moist printing plates can now be laid in the dryer. The heater and the ventilator are automatically turned off (controlled through a sensor) one after another when the dryer drawers are opened. Close the drawer(s) after laying in or taking out the printing plate(s). The drawers must be closed so that the ventilator and the heater automatically turn on again.

Press the middle key of the time setter (Diag. 5 Pos. 7, 9, 11) of the dryer in order to show the chosen count down time.

Press the middle key of the time setter (Diag. 5 Pos. 7, 9, 11) again to start the count down.

As soon as the dryer clock starts, the period in the digital indicator starts to blink. The preset time runs backwards.

To change the drying time proceed as described in 4.4 **Adjustment instructions**.

If a drawer is opened during the drying procedure, the heater and the ventilator shut off one after the other and the count down stops. The digital clock (Diag. 5 Pos. 6, 8, 10) shows "-.-". The ventilator and the heater start again when the drawer is closed.

The count down time starts again.

A loud signal beeps 5 times shortly everytime the time runs out.



The digital clock of the drawer shows "00.00" and the printing plate can be taken out.

**Attention!**

The drying time can be interrupted as follows: Press the middle key of the time setter (Diag. 5 Pos. 7, 9 or 11). Press the key (3 seconds) until the corresponding digital indicator shows "00.00" (Diag. 5 Pos. 7, 9 or 11). The drying time is now set back to the preset value.

**4.3.3 End of work**

**Important !**

The printing plates must be taken out of the drying drawer(s) before the machine is turned off.

First press the »Heater/Ventilator on/off« key (Diag. 5 Pos. 3) at the end of work.

- The heater turns off.
- The ventilator turns off automatically after a certain time.

Press the »off« (Diag. 5 Pos. 1) key after the ventilator has turned off.

The main switch must be turned to the »0« position and secured. The machine can now be cleaned

**4.4 Adjustment instructions**

The adjustment values can only be changed when the keyboard is turned on and set to »0«.

**4.4.1 Setting the dryer temperature**

The setting of the temperature of the dryer can be changed at any time.

The temperature of the dryer can be adjusted in 1 degree steps between 30 and 80 degrees celsius.

Press the middle key of the temperature adjuster (Diag. 5 Pos. 5). The temperature indicator (Diag. 5 Pos. 4) now shows the saved temperature. The keyboard now shows the following information:

- The saved temperature is shown. The period in the temperature indicator blinks.

Change the dryer temperature in the temperature setter (Diag. 5 Pos. 5) with the right and left arrow keys.

After the desired time is set, it must be confirmed and saved. Press the middle key of the temperature setter (Diag. 5 Pos. 5). Press and hold the key until a loud signal sounds (3 seconds). The changed temperature is now saved.

If the save key is let go before the signal sounds, then the previous value remains saved.

**4.4.2 Time setting for the dryer drawers**

The time of the three dryer drawers, can be read on the digital clocks (Diag. 5 Pos. 6, 8, 10) and changed with the time adjusting keys (Diag. 5 Pos. 7, 9, 11).

The time of the dryer drawers can be chosen between 0 minutes and 4 hours in full minutes. The time is shown in

hours (before the period) and minutes (behind the period) on the digital clocks of the dryer drawers.

The digital clock (Diag. 5 Pos. 6) and the time setter (Diag. 5 Pos. 7) controls the upper dryer drawer.

The digital clock (Diag. 5 Pos. 8) and the time setter (Diag. 5 Pos. 9) controls the middle dryer drawer.

The digital clock (Diag. 5 Pos. 10) and the time setter (Diag. 5 Pos. 11) controls the bottom dryer drawer.

The preset time must be stopped or run out in order to set or change the time. The keyboard must show the following information:

- »0.00« appears on the digital clock of the dryer.

Press the middle key of the time setter of the drawer (Diag. 5 Pos. 7, 9, 11) to be used. The following information appears on the keyboard:

- The digital clock of the chosen dryer drawer shows the saved value.

Change the time in the time setter of the drawer with the arrow keys right and left (Diag. 5 Pos. 7, 9, 11).

The time is shown in hours (before the period) and minutes (after the period) on the chosen digital clock.

After the desired time is set, it must be confirmed and saved. Press the middle key of the temperature setter (Diag. 5 Pos. 7, 9, 11). Press and hold the key (3 seconds) until a loud signal sounds. The changed time value is now saved. The digital clock can now be started as described in paragraph **4.3 Operation under production conditions.**

**Attention!**

If the save key is let go before the signal sounds, then the previous value remains saved. **The digital clock runs only once with the new time.**

**4.4.3 Cleaning**

Cloths without lint are necessary for cleaning. Soiling through Polymer material can be removed with nylosolv.

**4.5 How to prevent dangers**

The machine may only be operated in a closed state and when connected to an exhaust ventilator.

The machine must be unplugged when it is being serviced or repaired. The main switch must be locked.

**4.6 Information about not-allowed usage**

See paragraph 1.3

**4.7 Errors and how to remove them**

**Attention!**

Service, tests and repair work that is not described in this chapter may only be carried out by our customer service or through authorized service stations. See chapter 5.

#### 4.7.1 Fuses

The fuses are found in the switch box and can be changed when necessary. Check the fuse diagram which is included.

#### 4.7.2 The machine can not be started

First check whether the main switch and the keyboard are turned on. The green light in the »on« key must be lit.

If the keyboard is not functioning, check if the electrical connection from the keyboard and the controls are properly connected as well as the controls themselves.

The overheating protector in the dryer drawer can interrupt the electricity when overheating occurs.

#### 4.7.3 Incorrect functioning of the dryer

Check whether the dryer is switched on correctly.

Check whether all drawers are closed.

Check whether all sensors are switched.

##### 4.7.3.1 Heater defective

One or several heating rods are defective, if the set temperature is not reached.

#### 4.7.4 Error messages on the keyboard

##### 4.7.4.1 Error message »E.00« on the keyboard

The connection to the main machine is interrupted. Check the electrical connection from the controls to the keyboard.

##### 4.7.4.2 Error message »E.01« on the keyboard

The temperature feeler has a short or is broken. Change the defective temperature feeler

##### 4.7.4.3 Error message »E.02« on the keyboard

The ventilator does not work correctly or the flag switch is defective.

#### 4.7.5 Keyboard defective

The keyboard is probably defective, if nothing or totally incorrect values appear on the operating field. Check whether the machine is turned on correctly.

#### 4.7.6 Other errors

If the above described errors can not be corrected, or other problems appear, please contact your customer service.

## **5.Data for maintenance**

### **5.1 Inspection: type and how often**

The machine should be checked every half a year by a service technician.

### **5.2 Instructions for maintenance**

Maintenance work that is not described in the service work in chapter 4.7, may only be carried out by our customer service or a service person, who has been authorized by us. The repairs must be done according to the regulations of the "GSG" (Machine safety laws).

Only original spare parts from the spare parts list may be used, so that all guarantees and services may be kept.

### **5.3 Service contract**

We recommend a service contract because several service and maintenance work may only be done by authorized persons.

### **5.4 Address of the importer and from the service work stations**

BASF Lacke + Farben AG  
Druckplatten (Printing plates)  
D-70466 Stuttgart  
Telephone: 0711/8916-303  
Telefax: 0711/9816-801

BASF Gerätetechnik (Machine technique)  
Telephone: 0711/9816-211  
Telefax: 0711/9816-269

## **6. Information in case of emergency**

### **6.1 Type of fire extinguisher**

If the machine is on fire, first disconnect the electricity and then use the fire extinguisher.

If the electricity can not be disconnected, use a fire extinguisher where there is no danger of an electrical shock.

## 7. Ordering spare parts

### Important!

In order to prevent problems when ordering spare parts, please observe the following when ordering:

Choose the necessary spare parts with the help of the diagrams in the spare parts list. When ordering please give the article number and the article description.

The spare parts list is found in the appendix.

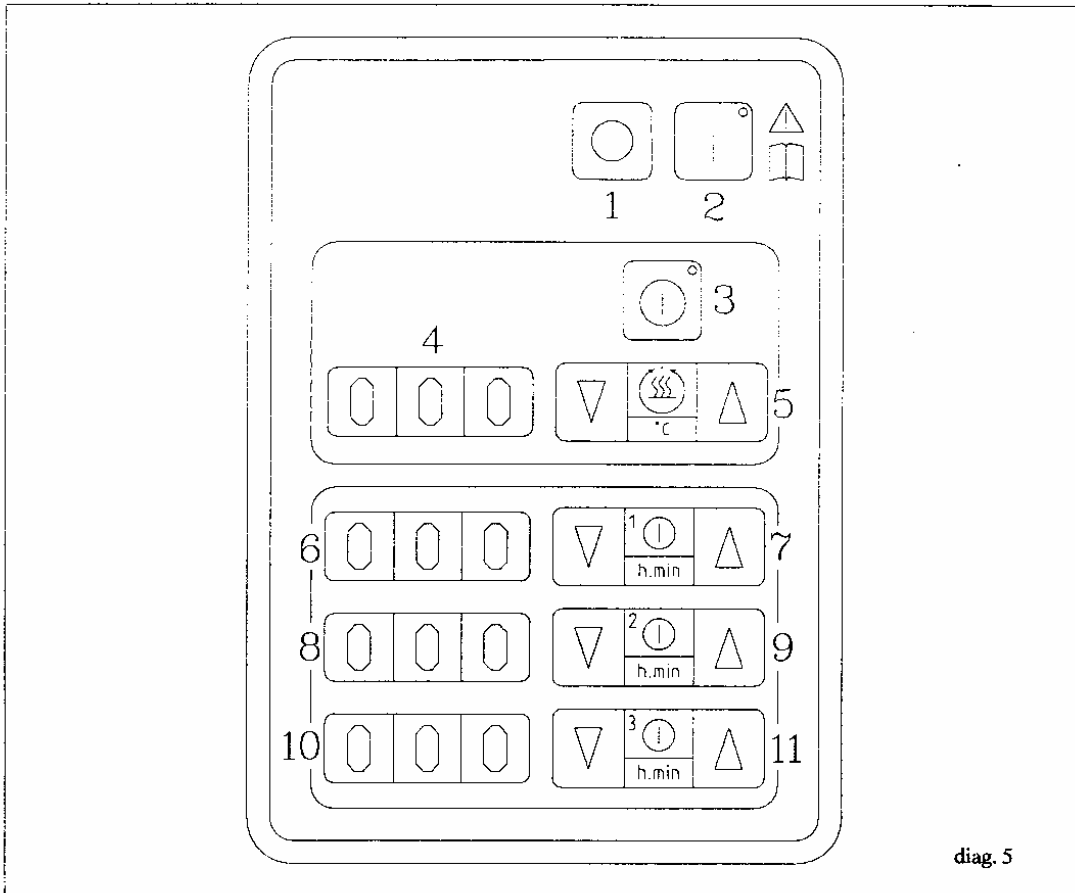
If a spare part is needed, which is not in the list, please proceed as follows:

If the spare part is on the diagram, but there is no article number, then copy the diagram and circle the needed single part.

If a part is needed which is not found in the list and not in the diagram, then write an exact description and draw a picture of the part with its approximate measurements. Send the diagram and copies with your order and give the VMN number, machine type number and year of construction of the machine. Only when the above points are observed, can the correct spare parts be delivered.

The spare parts can be ordered by telephone and/or telefax. Ordering address:

BASF Geräteservice (Machine service)  
D-70466 Stuttgart  
Telephone: 0711/9816-389  
Telefax: 0711/9816-804



diag. 5

### Explanation of the keyboard

- Pos. 1 ..... Off key
- Pos. 2 ..... On key
- Pos. 3 ..... Heater/Ventilator on/off key
- Pos. 4 ..... Dryer temperature indicator
- Pos. 5 ..... Dryer temperature setter
- Pos. 6 ..... Dryer drawer 1 digital clock
- Pos. 7 ..... Dryer drawer 1 time setter
- Pos. 8 ..... Dryer drawer 2 digital clock
- Pos. 9 ..... Dryer drawer 2 time setter
- Pos. 10 ..... Dryer drawer 3 digital clock
- Pos. 11 ..... Dryer drawer 3 time setter

The digital clock pos. 6 and the time setter pos.7 are for the top drawer (1).

The digital clock pos. 8 and the time setter pos. 9 are for the middle drawer (2).

The digital clock pos. 10 and the time setter pos. 11 are for the bottom drawer (3).

## **Appendix A**

**1. Repair work**

**2. Spare parts list**

**The repair work described in Appendix A may only be carried out by our customer service or by a service company designated by us.**

**The repairs must be carried out according to the GSG (Machine safety laws).**

## 1. Guide to recognize errors and to remove them

### Important!

The main switch of the machine must be set and secured to »0« before any repair work is carried out on the electrical parts.

See chapter 5. in the operation manual.

### 1.1 Fuses

The fuses are found in the switch box and can be changed when needed. Check the switch diagram included.

### 1.2 Machine does not start

First check whether the main switch and the keyboard are turned on. The green lamp in the »on« key must be lit. If the keyboard does not work, check the connection from the keyboard and the controls as well as the controls itself.

The overheating protector could have been released and turned off the dryer. The overheating protector is found on the right bottom in the switch box area.

### 1.3 Heater

The heater is probably defective if the set temperature can not be reached. The heater is found on the back of the dryer case. The back cover of the dryer must be taken off in order to change the defective heater.

#### Attention!

Let the machine cool down before changing the heater! There is a danger of being burned on the heater.

### 1.4 Error messages on the keyboard

#### 1.4.1 Error message »E.00« on the keyboard

The connection to the main machine is interrupted. Check the electrical connection from the micro processor to the keyboard.

#### 1.4.2 Error message »E.01« on the keyboard

The temperature feeler has a short or is broken.

Change the defective temperature feeler. The temperature feeler is found on the exhaust opening of the ventilator on the back area of the dryer. The back wall of the dryer must be taken off in order to change the defective temperature feeler.

#### 1.4.3 Error message »E.02« on the keyboard

This error message is to prevent overheating. The heater turns off in this case. The ventilator does not work correctly.

Check the fuses and the ventilator.

### 1.5 Keyboard defective

The keyboard is probably defective, if nothing or incorrect values are shown on the operating indicator. Check if the machine is correctly turned on. See paragraph 4.3.1 in the operation manual.

#### 1.5.1 Change the keyboard

##### Attention!

The main switch must be set to »0« and secured before opening the switch box.

Separate the control/electrical plug and the grounding cable from the back of the keyboard.

The clips must be removed from the back side of the keyboard after the metal cover is taken off.

Plug in the new keyboard in the opening of the machine cover. Press the keyboard carefully down until the plan lies on the metal covering. Rescrew the clips on the back of the keyboard

Reconnect the machine to the keyboard. Make sure that the plug is connected in the same position as the old keyboard.

Screw the grounding cable on again on the back of the keyboard.

Lastly a calibration of the dryer temperature must be carried out.

#### 1.5.2 Dryer temperature calibration

##### General:

The calibration of the keyboard can only be carried out after the machine is turned on (no control functions may be activated). The calibration must be carried out with the allowable values. The preferred temperature values for the calibration are 60 - 65 degrees celcius.

In order to carry out the calibration, proceed as follows: To turn on the machine, turn the main switch to »I« and press the »on« (2) key.

**The setting value for the temperature calibration can only be changed in this state.**

The control functions may not be activated. If a function is mistakenly activated, the machine must be turned off with the »off« (1) key and turned on again with the »on« key (2).

The following information is shown on the keyboard:

- All digital clocks show »0.00«.
- The present temperature of the dryer is shown.
- The lamp in the »on« key is lit green.

##### Dryer temperature calibration:

A calibration must be carried out at every exchange of a foil keyboard. Measure the temperature in the drying area of the machine with an external thermometer during the calibration.

To calibrate the dryer temperature proceed as follows:

Press at the same time the middle key of the temperature setter of the dryer (5) and the middle key of the time setter for the third dryer drawer (11) for 10 seconds.



The following information is shown on the keyboard:

- All digital clocks show »0.00«
- The desired temperature of the dryer is shown.
- The period in the temperature indicator starts blinking quickly.

- The temperature indicator switches to the present temperature after 10 seconds. The period in the temperature indicator blinks slowly.

Now the calibration with the both outer keys of the temperature setter (5) can be done. Transfer the external measured dryer temperature to the touch panel. Save the changed temperature by pressing the middle key of the temperature setter, (5) 3 seconds long.

The temperature calibration is carried out after the keys are let go.

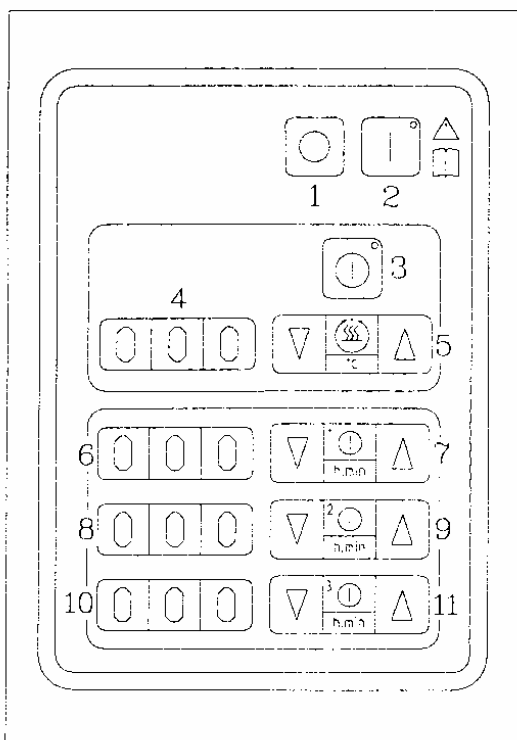
The period in the temperature indicator does not blink any more. The new set temperature of the dryer is shown.

#### 1.6 Other errors

If the above described errors can not be corrected, or other errors appear, please contact the producer of the machine:

SYSTEMTECHNIK Peter Haase GmbH  
Postfach 1206 (P.O. Box)  
D-32269 Kirchleugern  
Brüderweg 1  
D-32278 Kirchleugern

Telephone: 05223/9725-0  
Telefax: 05223/9725-40



## 2. Ordering spare parts

### Important!

In order to receive your spare parts order quickly, please observe the following when ordering:

Search for the necessary spare part with the help of the diagrams in the spare parts list and please give the article number and description when ordering.

If you need a part which is not in the list proceed as follows:

If the spare part is recognizable on the diagram, but there is no article number, then please copy the diagram and mark the needed part. If a part is needed, which is not in the list or on the diagram, please draw the part with the approximate measurements. Send the drawing and the copies with your order. Please give the machine number, type number and the year of manufacturing of the machine. A quick and correct spare parts order can only be guaranteed, if you observe the above periods.

The spare parts are classified in the spare parts list as follows:

**Part A:** The machine does not operate, if the part is not functioning.

**Part B:** The machine can operate only in certain areas, if the part is not functioning

**Part C:** All other parts

Spare parts can be ordered by fax or telephone.

Ordering address:

BASF Geräteservice (Machine Service)

D-70466 Stuttgart  
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## **Appendix B**

### **DIN Safety Data**

**DIN-Safety Data Sheet**


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Company BASF Lacke + Farben AG, 70466 Stuttgart, Tel.: (+49) +711/9816-0, Telefax: (+49) +711/9816-801

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Trade name nylosolv® II

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**1 Chemical characterization**

- 1.1 **Composition:**  
Mixture of  
Hydrocarbon (free of aromatic substances)  
1-pentanol (approx. 20 % by volume)
- 1.2 **Form:** Liquid
- 1.3 **Colour:** Colourless
- 1.4 **Odour:** Slight
- 

**2 Physical and safety-related characteristics**

tested to:

2.1	Change of state	Boiling range 138 – 215 °C	ASTM D 86 – 82
2.2	Density	20 °C 0.81 g/cm <sup>3</sup>	ASTM D 4052 – 81
2.3	Vapour pressure	20 °C 2 mbar	
2.4	Viscosity	25 °C 1.6 m Pas	ASTM D 445 – 83
2.5	Solubility in water	20 °C 0.1 g/l	Hydrocarbon
	in water	20 °C 27 g/l	Alcohol
2.6	pH-value (at .... g/l H <sub>2</sub> O)	.. °C	
2.7	Flash point	46 °C	DIN 51755
2.8	Ignition temperature	255 °C	DIN 51794
2.9	Explosion limits	lower: 1.2 upper: 7.8 Vol. %	DIN 51649, Part 2
2.10	Thermal decomposition	Carbon dioxide, water	
2.11	Hazardous decomposition products	None	
2.12	Hazardous reactions	None	
2.13	Further particulars	Not self-inflammable Non-corrosive	

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**3 Transport regulations**

GGVSea/IMDG-Code: 3.3 UN-No.: 1993 IATA-DGR: ..

GGVE/GGVS: 3.31c RID/ADR: 3.31c ADNR: ..

Other particulars:

Transport identification: 30/1993 EmS No.: 3-07

Packing Group: III MFAG No.: 305

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Trade name nylosolv® II

#### 4 Regulations

VBF:	A II	S phrases:	
Water hazard class:	1 (alcohol)	S 9:	Store container in a well-aired room.
TA-Luft:	Class III (German Clean Air Regulations)	S 16:	Keep away from all sources of ignition. No smoking.
TLV value:	Constituents not listed	S 24/25:	Avoid contact with eyes and skin
OEL value:	300 ppm	Ignition class:	T 3
	1.904 mg/m <sup>3</sup>	EC-No.:	603-006-00-7 (1-pentanol)
R phrases:		CAS-No.:	71-41-0 (1-pentanol)
R 10:	Flammable.		

#### 5 Protective measures, storage and handling

- 5.1 *Technical protective measures* Container must be earthed during filling and transferring operations. Risk of electrostatic charges. Avoid flying and impact sparks.
- 5.2 *Personal protective clothing and equipment* *Respirator:* Only by accidents *Eye protection:* Yes  
*Hand protection:* PE disposable gloves *Other:* ..
- 5.3 *Working hygiene* For open contact with nylosolv II: wear long-armed protective clothing. Extraction system. Avoid inhaling vapours and spray mists.
- 5.4 *Protection against fire and explosion* Risk of ignitable electrostatic charges. Liquid can easily evaporate at high temperatures and form ignitable mixtures. In the event of fire, cool endangered containers with water.
- 5.5 *Disposal* Incineration, preferably distillation, do **not** place on dump.  
Waste Code-No. for nylosolv II: 55370  
Waste Code-No. for distillation residue: 59703

#### 6 Action in the event of accidents and fires

- 6.1 *After spillages/leaks/gas leaks* **Accident:** Ventilate immediately, use respirators if necessary, no fire, no sparks. Absorb liquid with sand or a similar binding agent, do not allow to enter the sewage system or bodies of water.
- 6.2 *Extinguishing agent* Suitable: Halons, dry extinguishing agents, carbon dioxide  
Not suitable: Water
- 6.3 *First aid* Take those affected out of the danger zone. Check their breathing, use artificial respiration if necessary. Fetch a doctor.  
If there has been contact with the skin, wash with soap and water.  
Change clothing. If there has been contact with the eyes, rinse with water for at least 15 minutes until the irritation subsides. If ingested through stomach/intestine: **do not induce vomiting!** Call a doctor.
- 6.4 *Further particulars* ..

#### 7 Toxicological particulars

If inhaled: High concentration result in irritations of the respiratory passages, giddiness, headaches, numbness.

Eye contact: Irritation of mucous membranes, no damage to tissue.

Skin contact: Slight toxic effect. LD 50 (rabbit, dermal) 3.0 g/kg body weight.

If swallowed: Due to vomiting, the slightest amounts penetrate to the lungs; edema or pneumonia may result. LD 50 (rat, oral) 5.0 g/kg.

Chronic exposure: No clinical findings from studies of humans with normal work-related exposure.

#### 8 Ecological particulars

Water hazard class: 1 (alcohol) - slightly hazardous to water

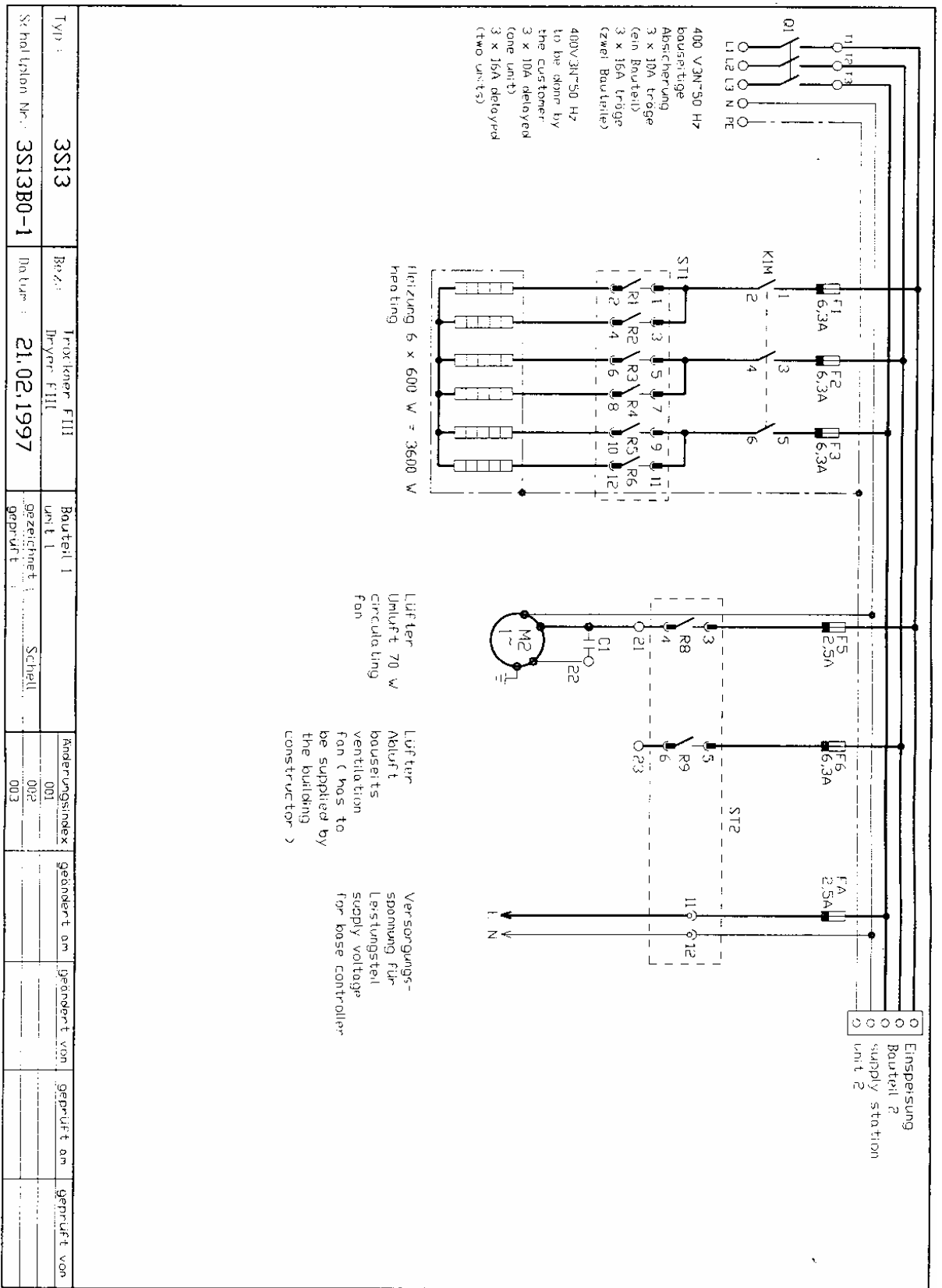
Biological decomposability: Cannot be determined, due to the low water-solubility of the hydrocarbons involved

Bacterial toxicity: Slight inhibition of escherichia coli and aspergillus niger (24 h, 20 °C)

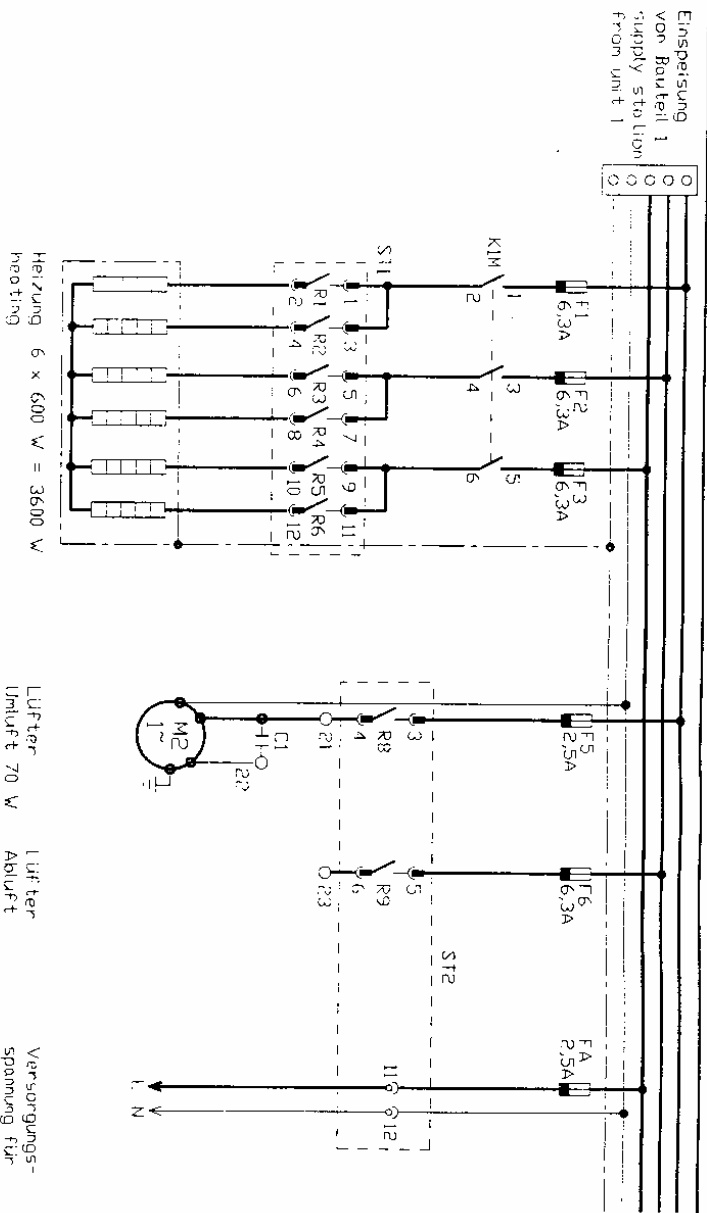
Fish toxicity: Not toxic with orfes after 48 h reaction time at a nominal active-ingredient concentration of 1 g product per litre (water)

#### 9 Further instructions

The particulars are based on the present-day status of our knowledge and do not represent any warranted qualities in the legal sense of the term. The recipient of our products bears sole responsibility for compliance with statutory regulations.



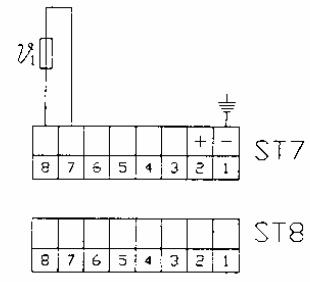
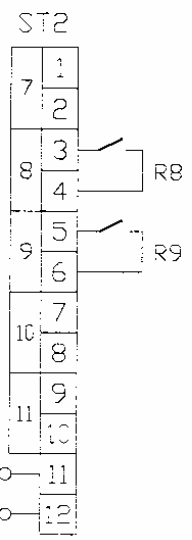
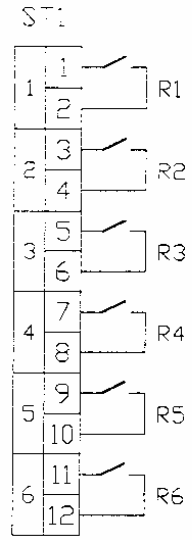
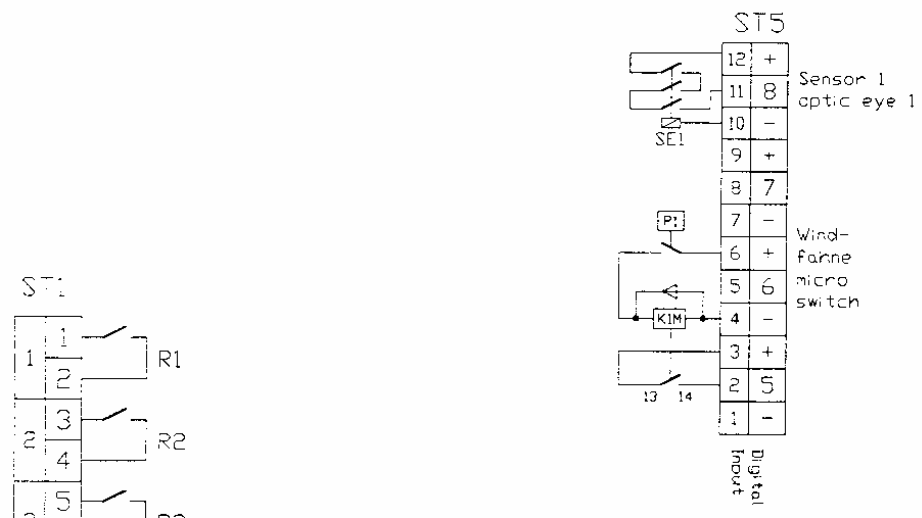
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Skizzen Nr.:	<b>3S13B0-1</b>	Datum :	<b>21.02.1997</b>	gezeichnet geprüft	Schell	003			



Lüfter  
 Umluft 70 W  
 circulation  
 fan  
 Lüfter  
 Abluft  
 bauersits  
 ventilation  
 fan ( has to  
 be supplied by  
 the building  
 constructor )  
 Versorgungs-  
 spannung für  
 Leistungsteil  
 supply voltage  
 for base controller

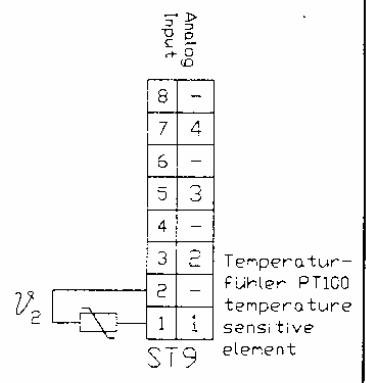
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Stahlplan Nr.:	3S13B0-2	Datum :	21.02.1997	gezeichnet : geprüft :	Schell				

Typ : 3S13	Bez: Trockner FIII Dryer FIII	Bauteil 1 und 2 unit 1 and 2	Anderungsindex 001	geändert an geändert von	geprüft am geprüft von
Schaltplan Nr.: 3S13B0-3	Datum: 21.02.1997	gezeichnet: Schnell geprüft:	002		
			003		

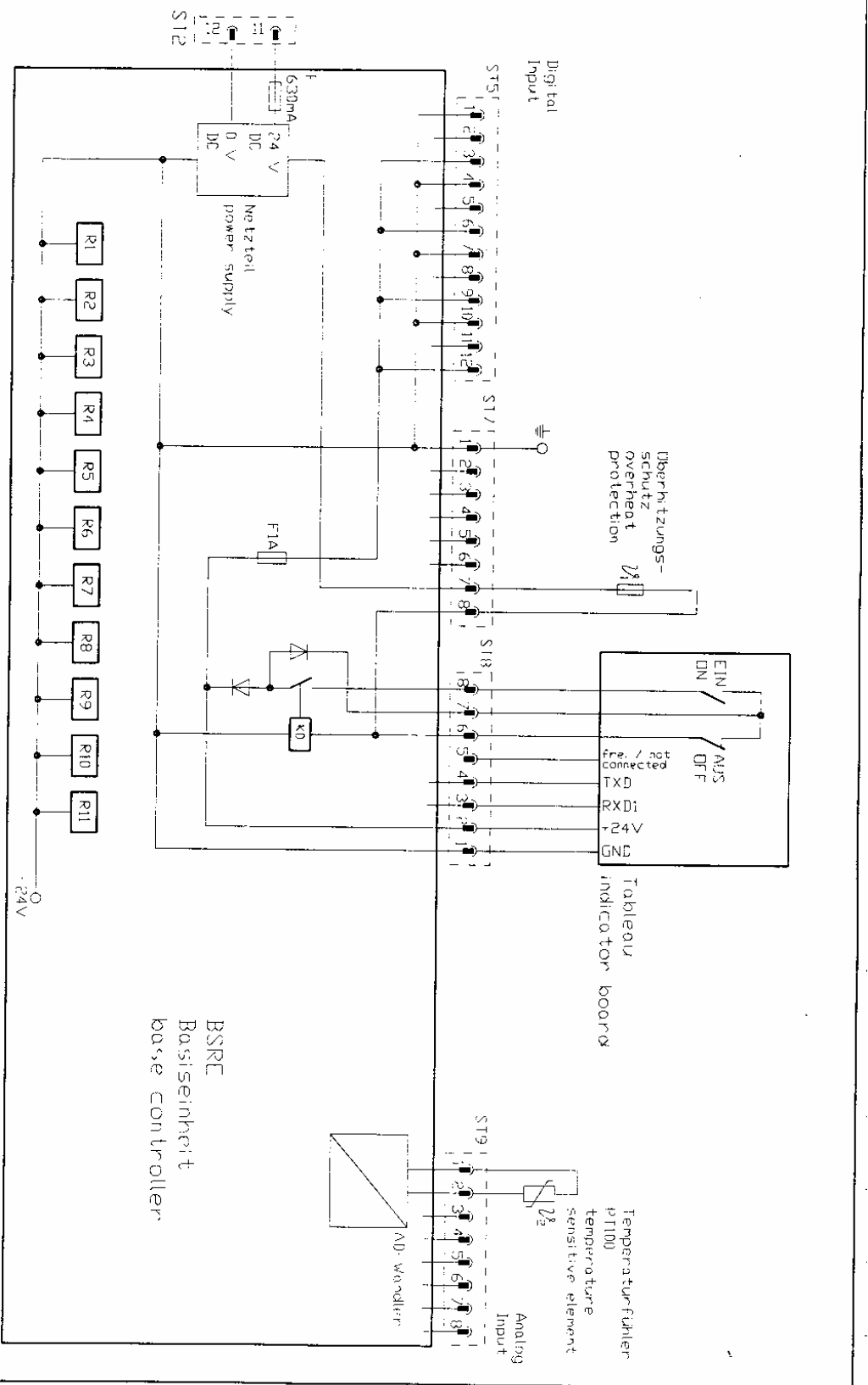


U<sub>1</sub> = Überhitzungs-  
schutz  
Overheat  
Protection

Tableau  
indicator board



Temperatur-  
fühler PT100  
temperature  
sensitive  
element



Typ :	<b>3S13</b>	Bezi:	Trockner FIII Dryer FIII	Bauteil 1 und 2 unit 1 and 2	Anderungsindex	geändert am	geändert von	geprüft am	geprüft von
Schaltplan Nr.:	<b>3S13B0-4</b>	Datum :	<b>21.02.1997</b>	gezeichnet / geprüft :	001 / 002 / 003	18.03.98	Grüppel		
				Schell					