CONCEPT 401 D

PRE INSTALLATION
INSTALLATION
USER'S MANUAL
TECHNICAL MANUAL

TABLE OF CONTENTS

MACHINE DESCRIPTION
Manufacturer's address: 3
Range of application: 3
Maximum capacity of the unit: 3
Principle description: 3

PRE-INSTALLATION:
Technical datas : 5
Crate dimension: 5
Floor space requirement: 5
Connections Location : 5
Accessories needed for the connections: 5

INSTALLATION
Unpacking: 6
Parts delivered with the machine : 6
Connections: 7

USER'S MANUAL:
Power On the machine. 8
Value modification : 9
Start the Dryer : 9
Start a drying cycle : 10

TECHNICAL MANUAL:
Machine Setup : 11
Spare part list: 13
Electrical Scheme: 18
CE Certificate : 26

Manufacturer's address:

Degraf srl
"Il Girasole" - Palazzo Donatello 8/03b
I-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 400 DRYER is a unit designed for the drying of solvent washable printing plates.

All the other steps of the process are made with the other equipment of the range.

Maximum capacity of the unit:

Number of drawers:	6
Minimum plate size:	A4
Maximum plate size:	47 x 63 inches 1200 x 1600 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 dry flexographic printing plates after the washout process.
- The dryer has a capacity of 6 drawers with dedicated drying time.
- The dryer is divided in three sections with dedicated temperature control which can be started separately.
- The operator interface is made by a specific control panel which ensures a very easy interface.

SAFETY WARNINGS:

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

Safety Interlocks

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

- *Opening the Drawers drawer during operation, the blowers stop in order to limit the amount of solvent fumes going out of the unit.*
- *Detection of the Exhaust airflow.*

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.

Technical datas :

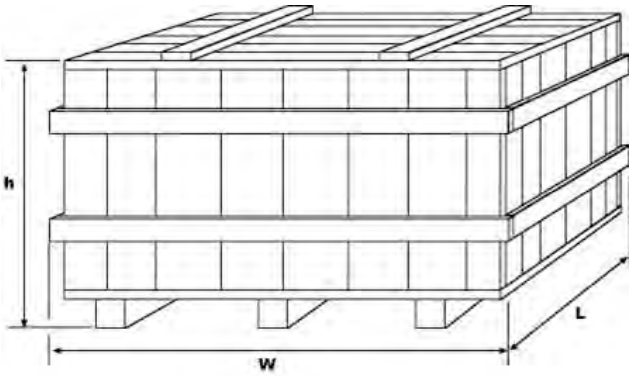
Dimensions (w x l x h) :	2 080 x 1 600 x 1 130 mm				
Weight :	650 Kg				
Compressed air supply:	No need				
Exhaust :	100 m3/h minimum for the Dryer				
Dryer Power supply :	400V	3Ph / N / PE	50/60Hz	5 KW	8 A
	230V	3Ph / PE	50/60Hz	5 KW	14 A

Note: *In case the CONCEPT 400 LIGHT FINISHER is used on top of the dryer, the exhaust blowers of the light finisher may be fitted on the back of the dryer and increase the depth by 150mm.*

Crate dimension:

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

W:	x mm.
L:	x mm
H:	x mm.
Weight (crate included):	x Kg



Floor space requirement:

- Please ensure 1200mm on the front, 500mm on the back, 800mm on the right and 200mm on the left will be available as free space to ensure a safe use of the machine as well as an easy access for maintenance.

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 :	80 mm hose
Power supply :	5 x 4mm2 cable for the 400V configuration
	4 x 4mm2 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 the blocking pieces of wood and the blocking nuts fixing the machine on the crate.

- In case the Light finisher is delivered with the Dryer: Start by removing the Light finisher located on top of the dryer by using the appropriate forklift. Get it into its installation location. Be sure that the forks are long enough to lift the machine without damage. Then remove the wood legs in order to access to the Dryer.

- Ensure there is sufficient space around the machine (see Pre-installation section).
- Remove all the 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 :**
Hose 80 mm.	3 m.
Locking collars	2
Panel key	1
Feet (12mm diameter)	4

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.

Exhaust blower connection:

- Connect all the exhaust to the appropriate location (directly to the outside or to the building exhaust installation). Ensure the airflow is correct.

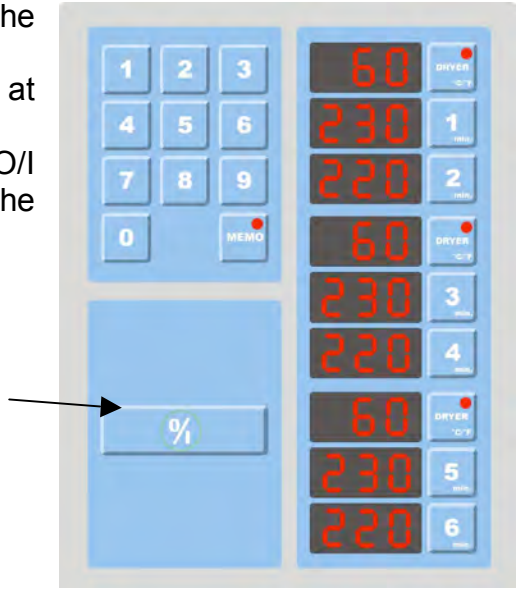
Power On the machine.

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

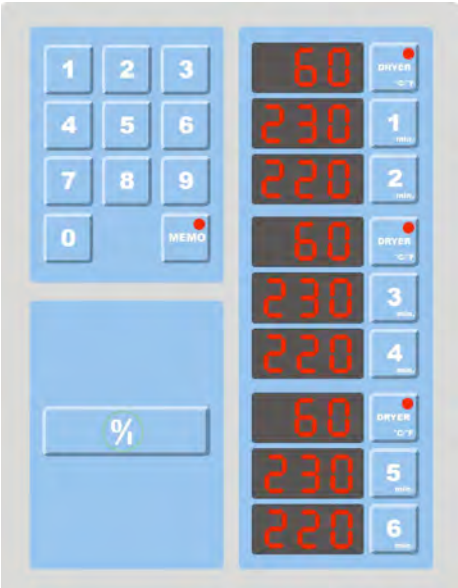
Check if there is any leaks of solvent as well as all the needed supplies:

- ✓ Electrical power supply: cable connected and not damaged.
- ✓ Exhaust: hose connected and not damaged.

- You are now at the stage to power On the machine.
- Turn the main switch of the machine located at right side of the machine to the "On" position.
- Switch On the machine by pressing the O/I button located on the control panel of the machine



Value modification :



- To modify the temperature value press first on MEMO and then press on DRYER corresponding to the desired section. 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 dot disappear.

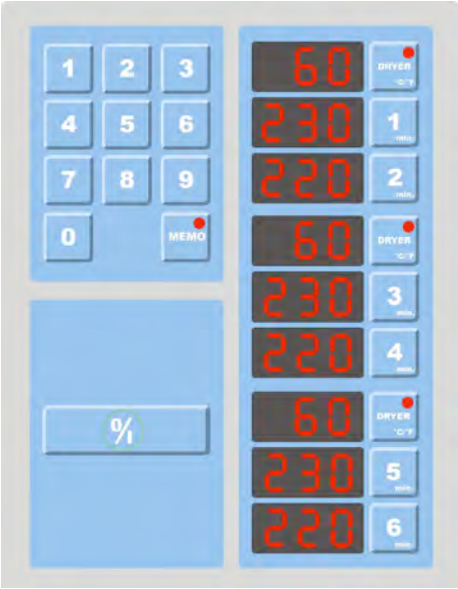
- To modify the drying time press first on MEMO and then press on 1 corresponding to the value to modify. A small dot is then displayed on the bottom right corner 60. of the windows as well as the LED located in MEMO indicating the possibility to modify the value. Enter the new value using the numeric keyboard and then press MEMO to confirm. The dots disappear.

Start the Dryer :

- To start the dryer press on DRYER located nearby the temperature indication of the section desired. At this point the dot located in the bottom right corner of the temperature windows 60. blinks indicating the heating is ON. The display change from the temperature setup to the real temperature in the dryer.
- Wait until the temperature reaches the setup point to start loading plates in the unit.

Start a drying cycle :

- To start a drying process, press on the 1 corresponding to the drying drawer loaded.
- During all the process the display shows the bottom right dot blinking 60.
- At the end of the cycle the window displays End.
- To clear this display, remove the plate from the drying section and press on the corresponding touch.



Note : *when one of the drawer is open the corresponding sections is blinking.*

Warning: *all available functions in this section should be accessed by trained and skilled people only. Bad manipulation in this section may result in poor plate quality, damage of the machine or safety risks.*

Machine Setup :

- Specific programs are available through the control panel.
- To access to these parameter press MEMO, 0 and the program number :

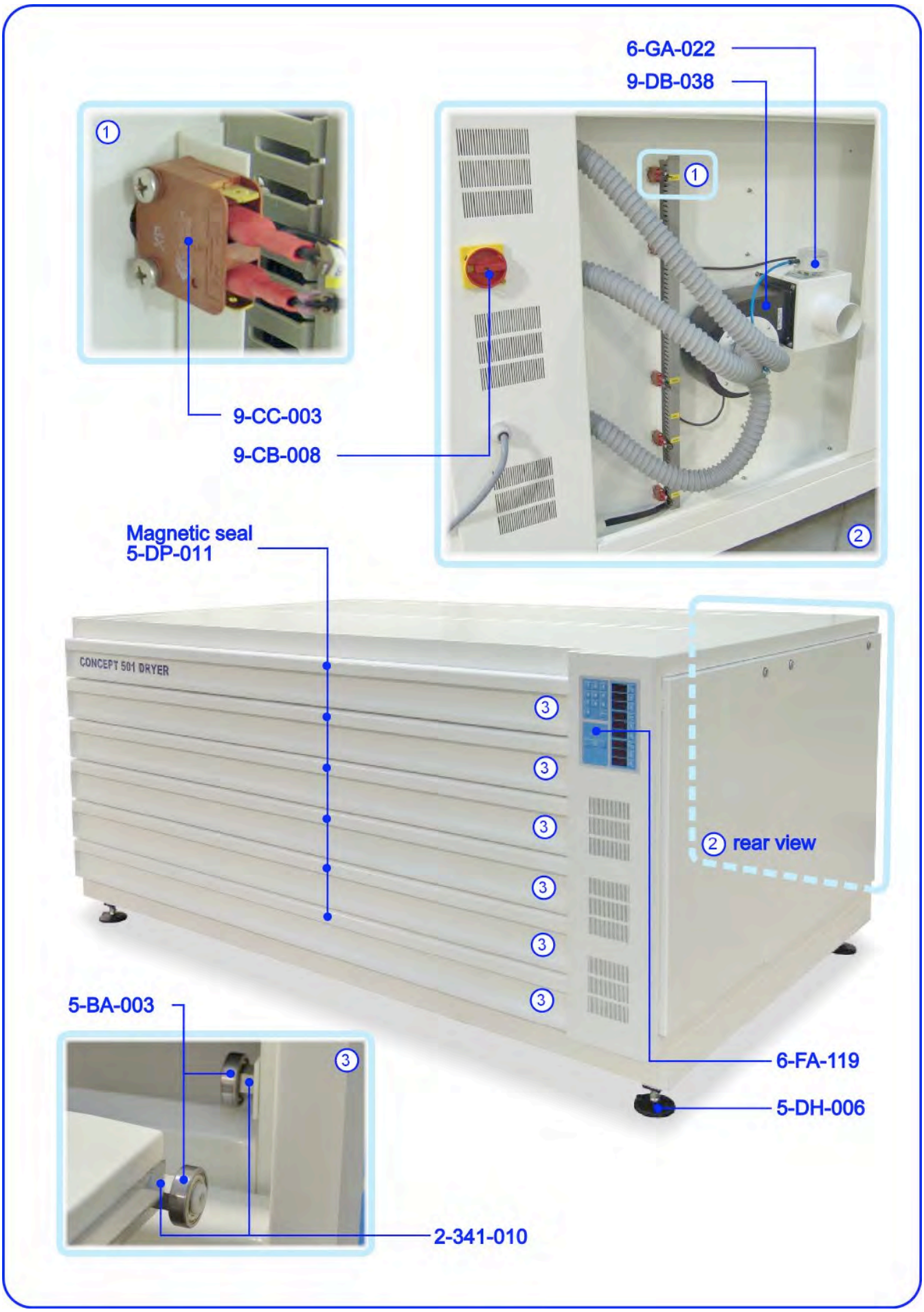
Note: Temperature calibration for one section of dryer always refers to 2 specific programs: one for the lateral temperature (front and back of the drawer) and one for the temperature in the middle of the drawer.

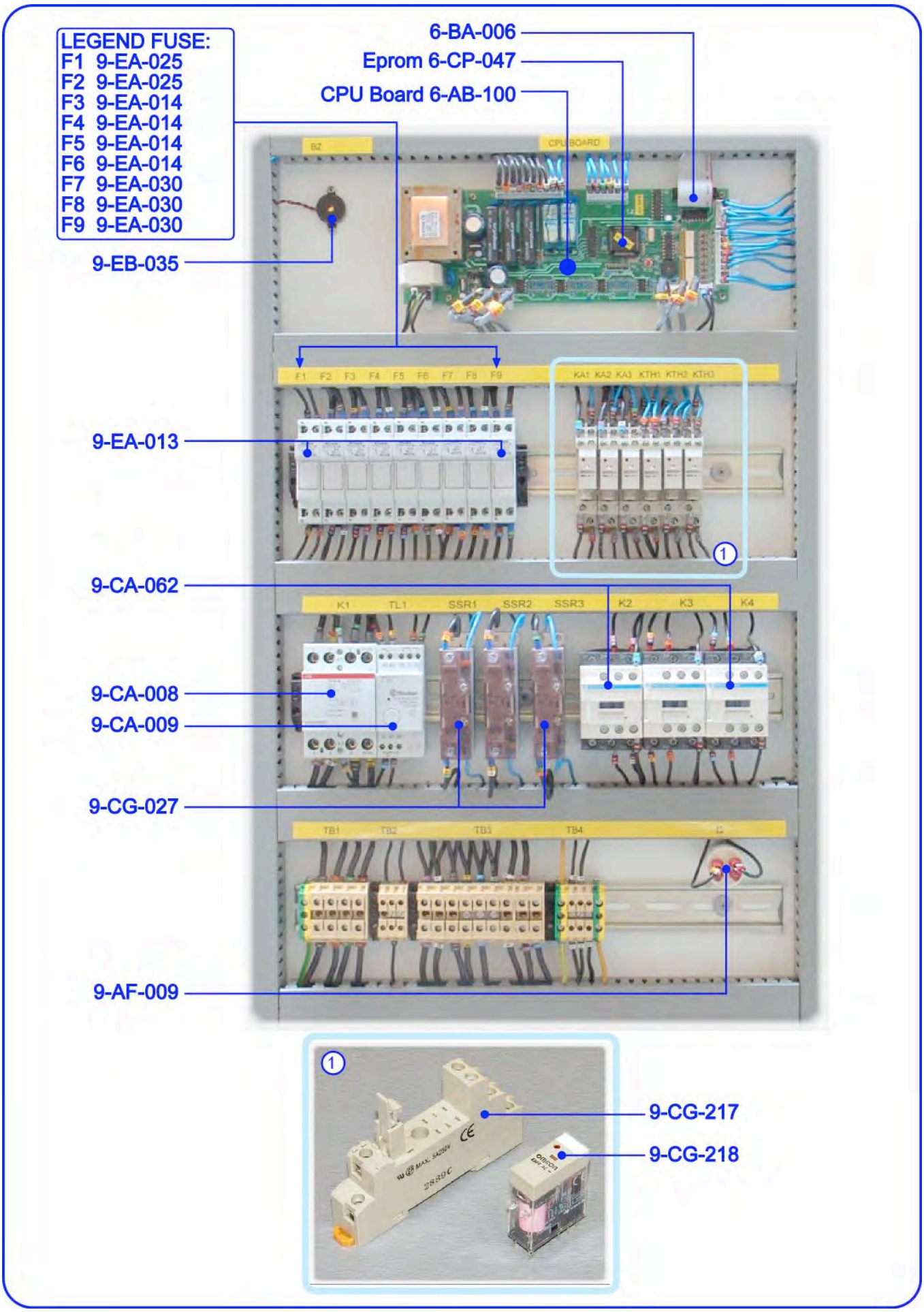
N°	Password needed :	Function :
30	No	Automatic switch OFF of the heating after the last drying time
36	No	Set the temperature display to °F
37	No	Set the temperature display to °C
55	No	Display the software number
56	1 9 6 2 (see "*Note*")	Correction of the dryer 1 temperature in middle of the drawer Before entering the new value, it is required to check the difference between the temperature displayed and the temperature inside the dryer. For example if the value displayed is 60°C and the temperature inside is 56°C, 4 °C will have to be subtract from the value displayed in P56 prior to re-enter the new value. Has to be done when the dryer is in the regulation phase.
57	1 9 6 2 (see "*Note*")	Correction of the dryer 2 temperature in middle of the drawer Before entering the new value, it is required to check the difference between the temperature displayed and the temperature inside the dryer. For example if the value displayed is 60°C and the temperature inside is 56°C, 4 °C will have to be subtract from the value displayed in P56 prior to re-enter the new value. Has to be done when the dryer is in the regulation phase.
58	1 9 6 2 (see "*Note*")	Correction of the dryer 3 temperature in middle of the drawer Before entering the new value, it is required to check the difference between the temperature displayed and the temperature inside the dryer. For example if the value displayed is 60°C and the temperature inside is 56°C, 4 °C will have to be subtract from the value displayed in P56 prior to re-enter the new value. Has to be done when the dryer is in the regulation phase.

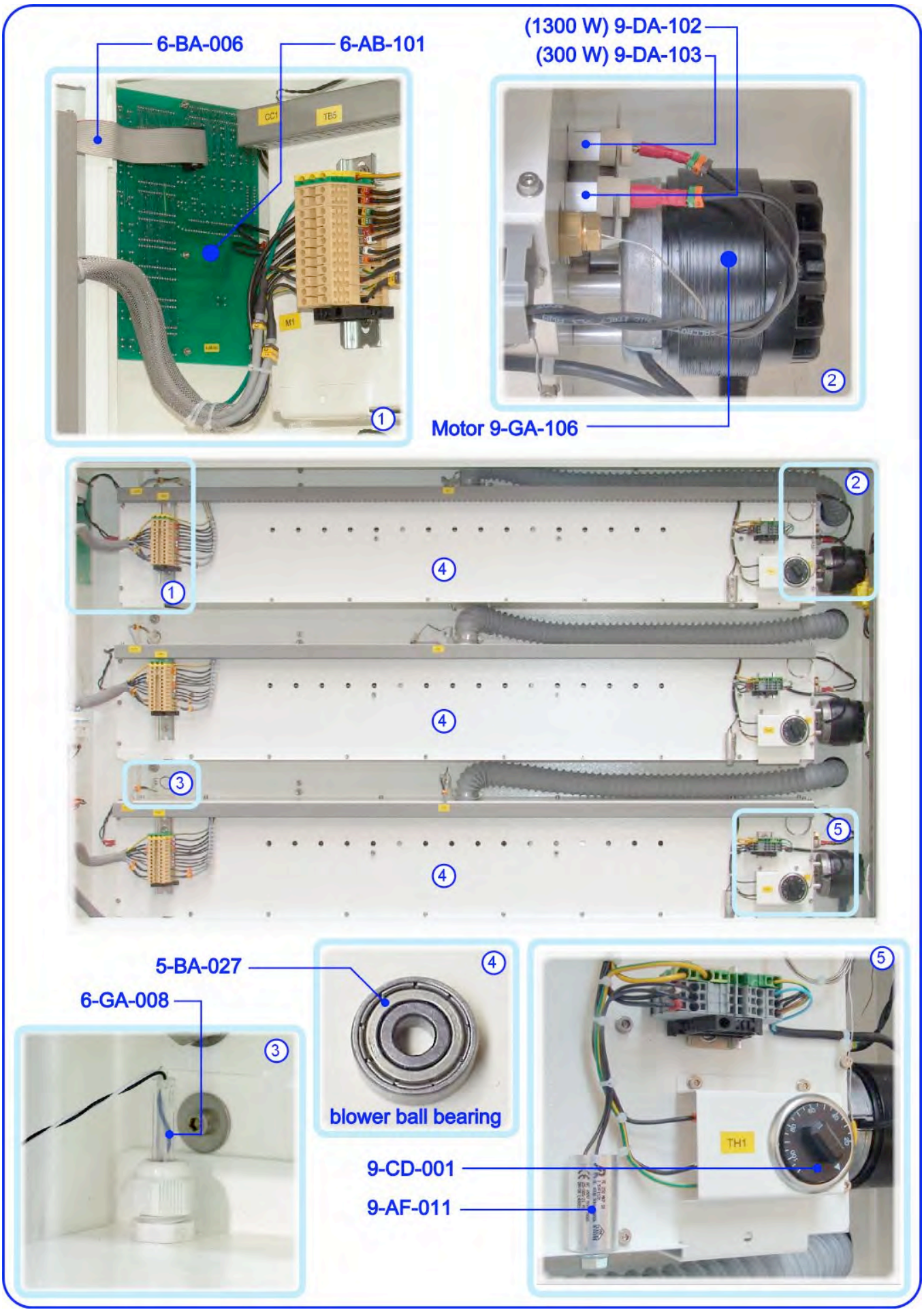
59	1 9 6 2	Calibration of the temperature probes. To make the temperature probe calibration ensure you have the needed precision resistors (3 x 162 ohms ; 3 x 100 ohms 0,1% precision) and the 6 points connectors. • After entering the password, the display shows . • Remove the connector of the temperature probe from the CPU board. • Insert the connector with the low value precision resistors. • Press . • The display shows . • Remove the low value resistors. • Insert the connector with the high value resistors. • Press . • Remove the resistors and put back the connector with the temperature probe.
64	No	Display the temperature on the front of the drawers for all dryer sections.
65	1 9 6 2 (see "*Note*")	Correction of the dryer 1 lateral temperature Before entering the new value, it is required to check the difference between the temperature displayed and the temperature inside the dryer. For example if the value displayed is 60°C and the temperature inside is 56°C, 4 °C will have to be subtract from the value displayed in P56 prior to re-enter the new value. Has to be done when the dryer is in the regulation phase.
66	1 9 6 2 (see "*Note*")	Correction of the dryer 2 lateral temperature Before entering the new value, it is required to check the difference between the temperature displayed and the temperature inside the dryer. For example if the value displayed is 60°C and the temperature inside is 56°C, 4 °C will have to be subtract from the value displayed in P56 prior to re-enter the new value. Has to be done when the dryer is in the regulation phase.
67	1 9 6 2 (see "*Note*")	Correction of the dryer 3 lateral temperature Before entering the new value, it is required to check the difference between the temperature displayed and the temperature inside the dryer. For example if the value displayed is 60°C and the temperature inside is 56°C, 4 °C will have to be subtract from the value displayed in P56 prior to re-enter the new value. Has to be done when the dryer is in the regulation phase.
68	No	Buzzer time
69	1 9 6 2	Init of the memory

Note: Temperature calibration for one section of dryer always refers to 2 specific programs: one for the lateral temperature (front and back of the drawer) and one for the temperature in the middle of the drawer.

Spare part list:


6-GA-022
9-DB-038
1
1
9-CC-003
9-CB-008
2
Magnetic seal
5-DP-011
CONCEPT 501 DRYER
3
3
3
3
3
3
2 rear view
5-BA-003
3
6-FA-119
5-DH-006
2-341-010


LEGEND FUSE:
F1 9-EA-025
F2 9-EA-025
F3 9-EA-014
F4 9-EA-014
F5 9-EA-014
F6 9-EA-014
F7 9-EA-030
F8 9-EA-030
F9 9-EA-030
6-BA-006
Eprom 6-CP-047
CPU Board 6-AB-100
9-EB-035
9-EA-013
9-CA-062
9-CA-008
9-CA-009
9-CG-027
9-AF-009
9-CG-217
9-CG-218
BZ
CPU BOARD
F1 F2 F3 F4 F5 F6 F7 F8 F9
KA1 KA2 KA3 KTH1 KTH2 KTH3
K1 TL1 SSR1 SSR2 SSR3 K2 K3 K4
TB1 TB2 TB3 TB4
1


6-BA-006
6-AB-101
CC1
TB5
M1
1
(1300 W) 9-DA-102
(300 W) 9-DA-103
2
Motor 9-GA-106
1
2
4
4
3
5
4
5-BA-027
6-GA-008
3
4
blower ball bearing
5
TH1
9-CD-001
9-AF-011

REFERENCE	DESIGNATION
5-BA-003	BALL BEARING 6200 Dia 10
5-BA-027	BALL BEARING 61900 Dia10
5-DC-002	HINGE NICKELED 40x50
5-DH-006	FOOT M16
5-DH-009	THREADED BLOCK M16 50x50mm
5-DP-002	PANEL LOCKER (TRIANGLE SHAPE)
5-DP-003	KEY FOR PANEL LOCKER (TRIANGLE SHAPE)
5-DP-011	MAGNETIC SEAL DRYER 400
5-FA-008	HOSE D40mm
5-FA-012	HOSE D80mm
6-AB-100	CPU BOARD D / LF
6-AB-101	KEYBOARD 501 D
6-BA-006	FLAT CABLE 50cm 20P E-E
6-CP-047	SOFWARE CHIP FOR DRYER 501
6-FA-119	JEXAN 501 D
6-GA-008	TEMPERATURE SENSOR PT100 HEL-705-T-0-12-00
6-GA-022	AIR PRESSURE SWITCH 604
7-HA-004	LOCKING COLLAR 30-45mm
7-HA-006	LOCKING COLLAR 70-90mm
9-CA-008	CONTACTOR ESB 40 40
9-CA-009	CONTACTOR (PULSE TYPE) 13.01.8.230
9-CA-062	CONTACTOR 230V AC 50/60 LC1D09P7
9-CB-008	MAIN SWITCH BRETTER
9-CB-015	CONTACT FOR CONNECTOR MOLEX F 5556TL
9-CB-016	CONTACT FOR CONNECTOR MOLEX M 5558TL
9-CC-003	SAFETY SWITCH XP-2 4
9-CD-001	THERMOSTAT 06-100°C 100176
9-CG-207	SOLID STATE RELAY 15A MONO
9-CG-217	SOCKET FOR CONTACTOR G2RF - 08 - E
9-CG-218	CONTACTOR G2R-2-SN 230 AC (S)
9-DA-102	HEATING RESISTOR 230 V 1300W 1299 mm DRYER 400
9-DA-103	HEATING RESISTOR 230 V 300W 1299 mm DYER 400
9-DB-038	BLOWER VC 15LAH15 ROT EST
9-EA-009	LOCK FOR TERMINAL BLOCK CABUR BT/3
9-EA-013	FUSE HOLDER VIMEX 32A 2P
9-EA-014	FUSE 10x38 1A AM
9-EA-025	FUSE 10x38 1A
9-EA-030	FUSE 10x38 10A GG
9-EB-035	BUZZER D50 12V
9-GA-106	MOTOR FOR BLOWER ECOFIT

Electrical Scheme:

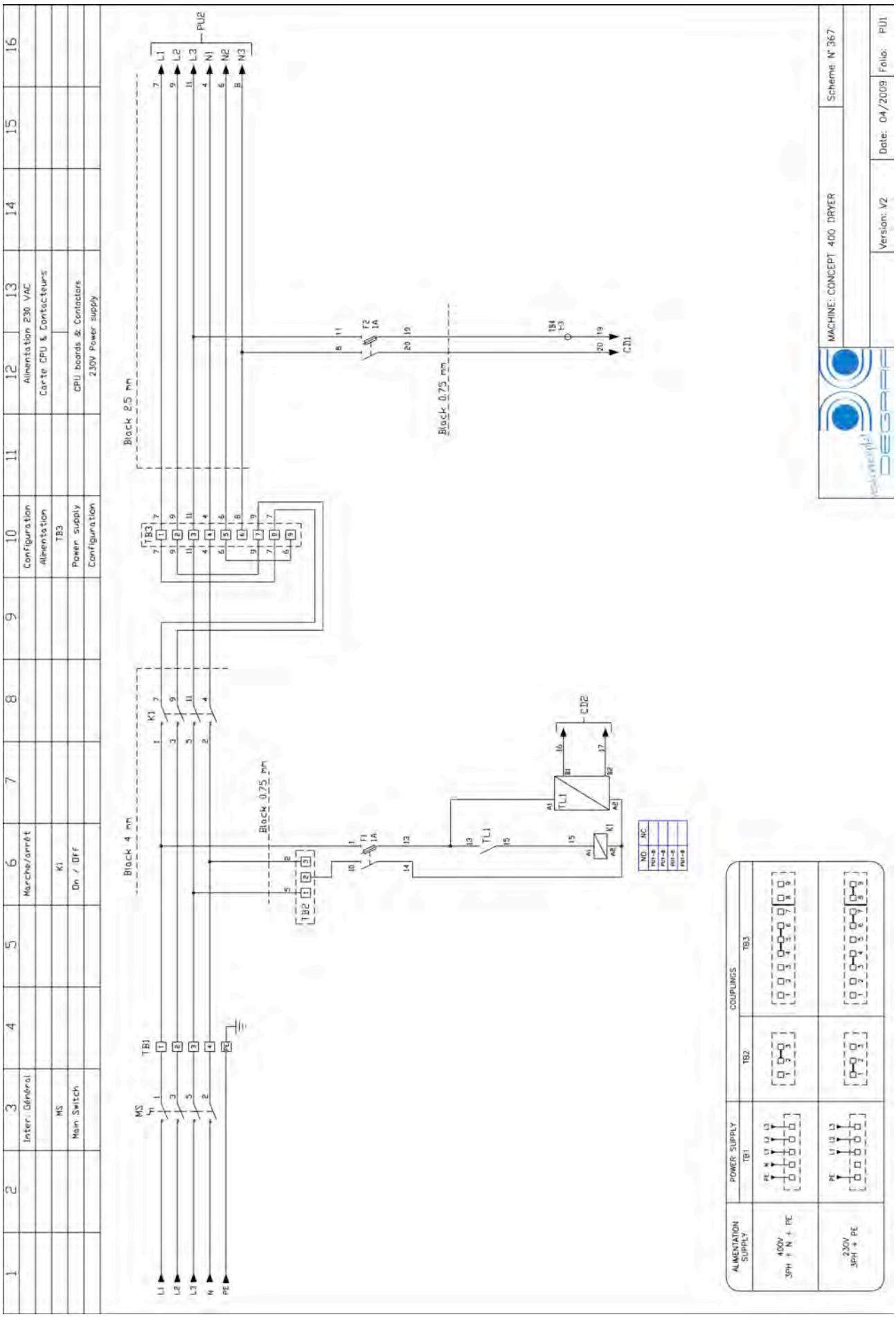
Electrical Scheme

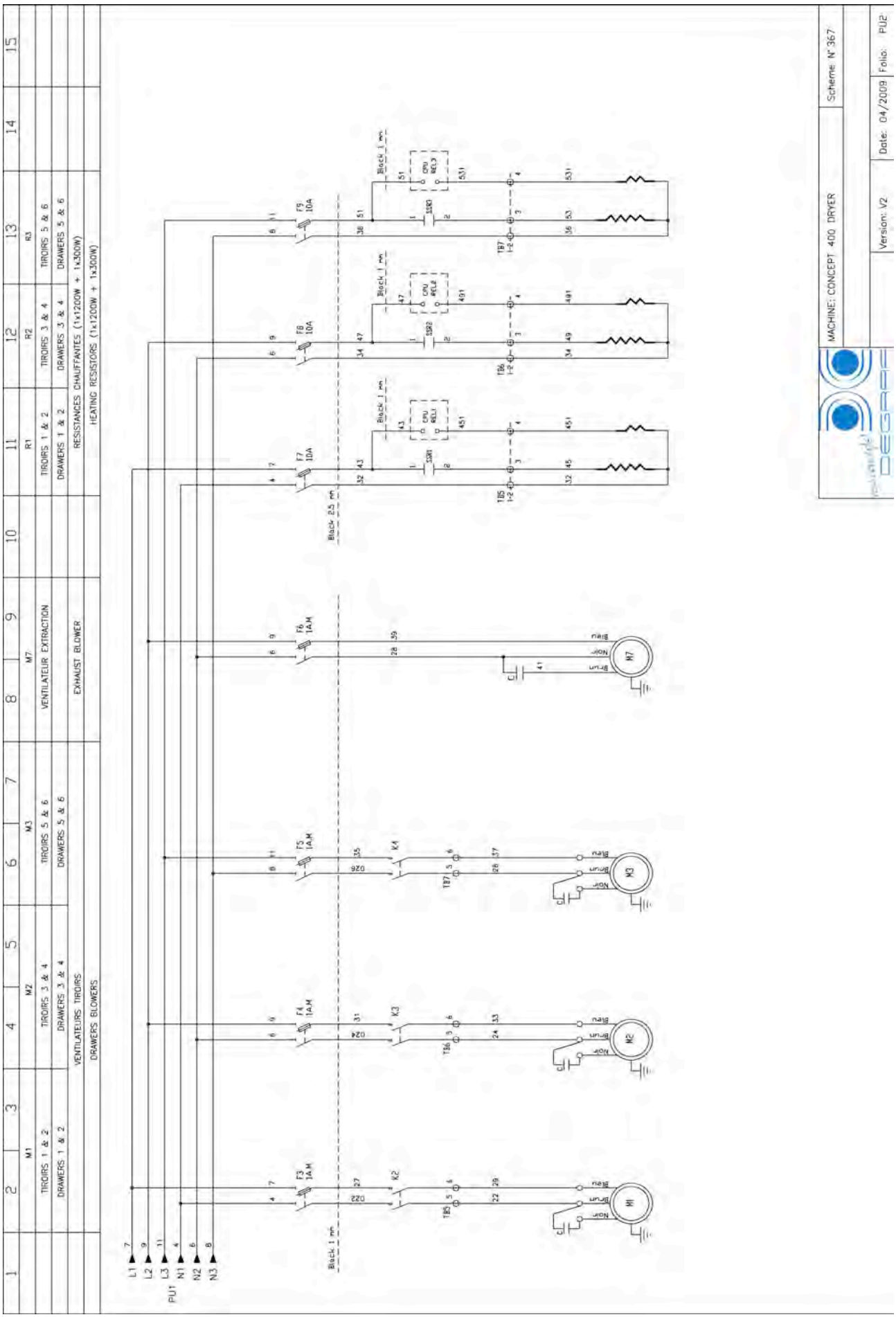
CONCEPT 400 DRYER

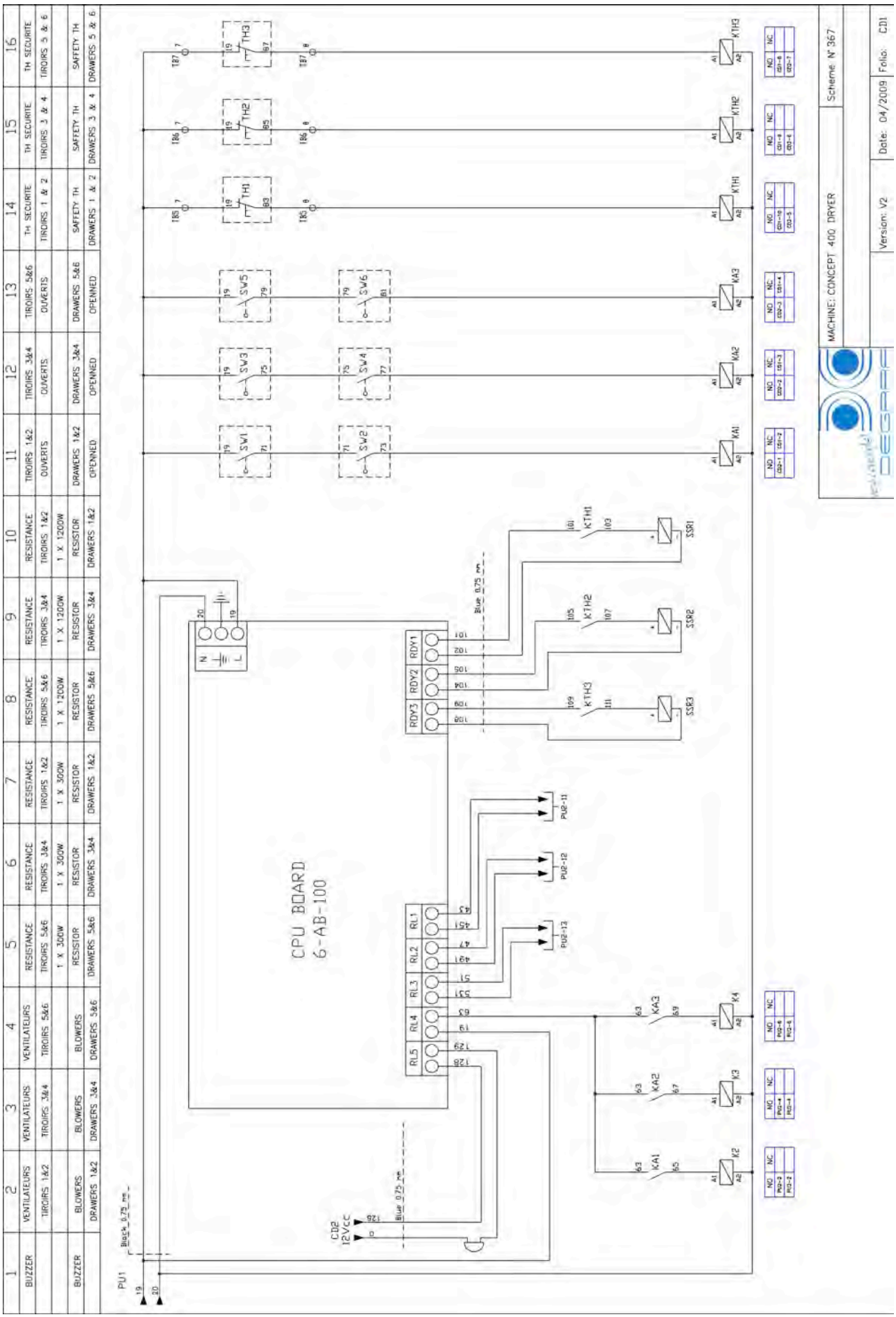
DATE : 04/2009

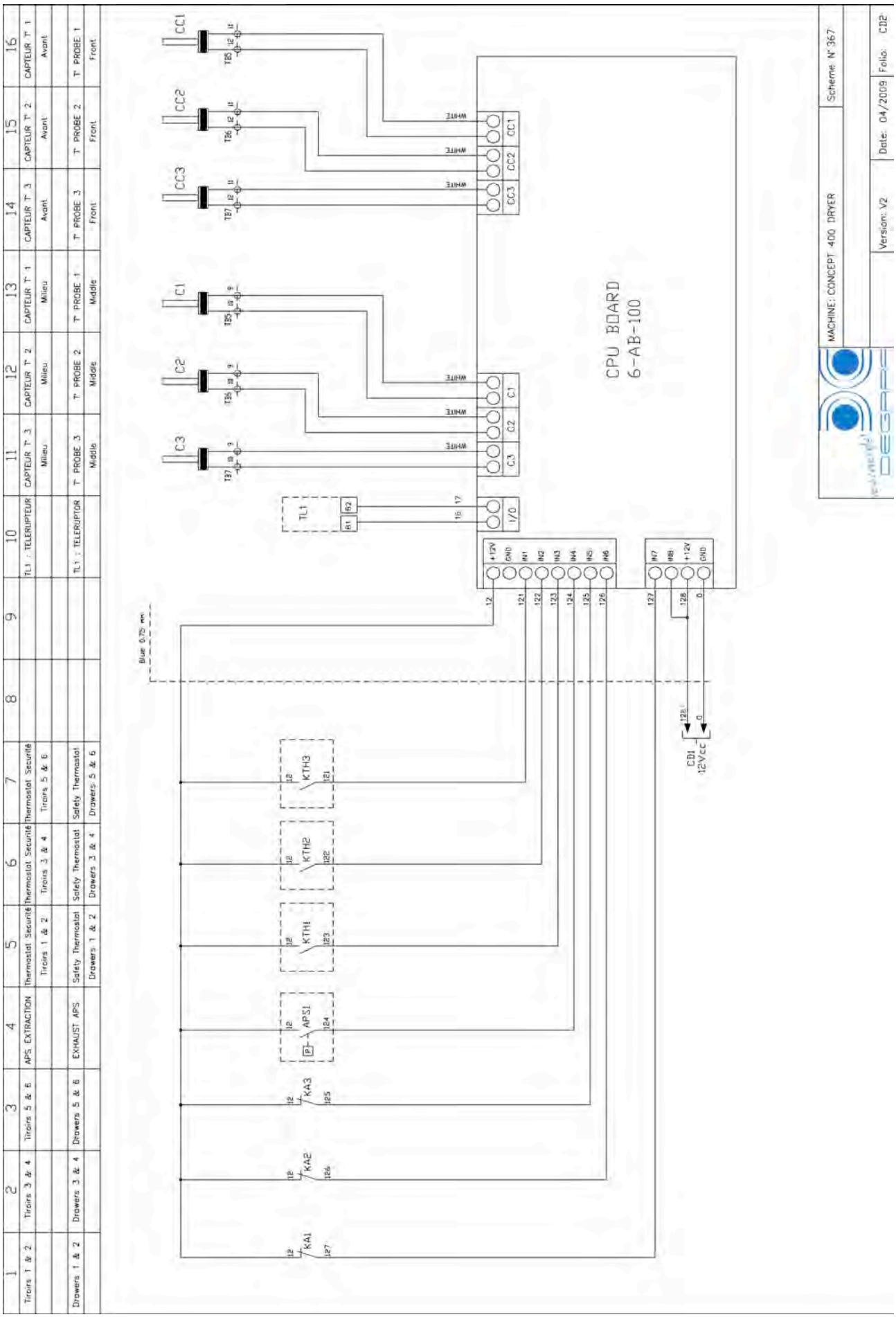
Scheme N° : 367

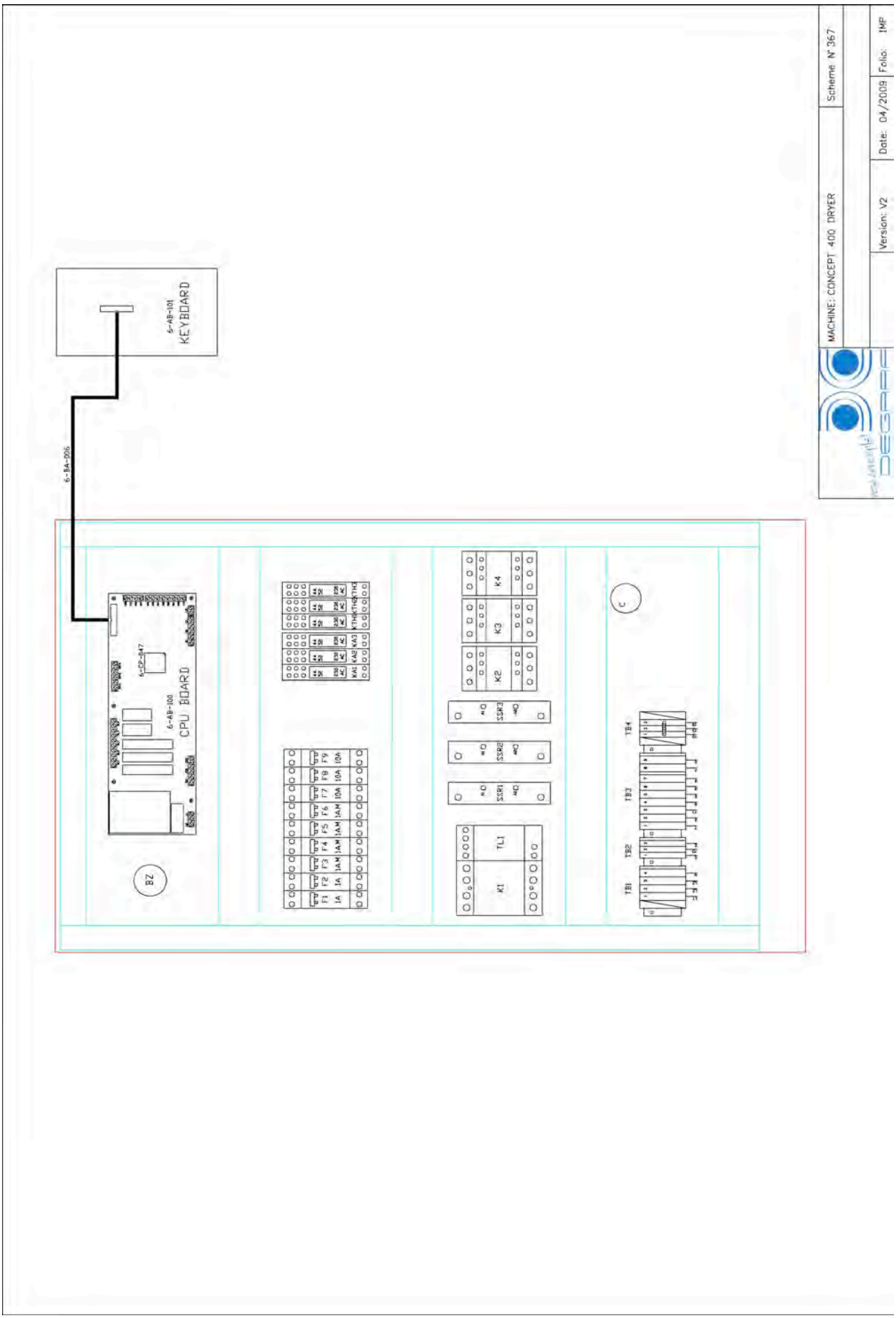
SN° : 367 010 / 012 -->


Inter. Général
Alimentation 230 VAC
Marche/arrêt
Configuration
Carte CPU & Contacteurs
Alimentation
Kl
On / Off
TB3
Power supply
Configuration
CPU boards & Contactors
230V Power supply
MS
Main Switch
Black 2.5 mm
Black 0.75 mm
Black 4 mm
Black 0.75 mm
PU2
CD1
CD2
TB1
TB2
TB3
F1 1A
F2 1A
TL1
K1
MACHINE: CONCEPT 400 DRYER
Scheme N° 367
Version: V2
Date: 04/2009
Folio: PU1
ALIMENTATION SUPPLY
POWER SUPPLY
COUPLINGS
400V 3PH + N + PE
230V 3PH + PE


M1
TIROIRS 1 & 2
DRAWERS 1 & 2
M2
TIROIRS 3 & 4
DRAWERS 3 & 4
VENTILATEURS TIROIRS
DRAWERS BLOWERS
M3
TIROIRS 5 & 6
DRAWERS 5 & 6
M7
VENTILATEUR EXTRACTION
EXHAUST BLOWER
R1
TIROIRS 1 & 2
DRAWERS 1 & 2
R2
TIROIRS 3 & 4
DRAWERS 3 & 4
R3
TIROIRS 5 & 6
DRAWERS 5 & 6
RESISTANCES CHAUFFANTES (1x1200W + 1x300W)
HEATING RESISTORS (1x1200W + 1x300W)
L1
L2
L3
PU1
N1
N2
N3
F3 1A,M
F4 1A,M
F5 1A,M
F6 1A,M
F7 10A
F8 10A
F9 10A
K2
K3
K4
M1
M2
M3
M7
Black 1 mm
Black 2,5 mm
MACHINE: CONCEPT 400 DRYER
Scheme N° 367
Version: V2
Date: 04/2009
Folio: PU2


CPU BOARD
6-AB-100
MACHINE: CONCEPT 400 DRYER
Scheme N° 367
Version: V2
Date: 04/2009
Folio: CD1
DEGREE


CPU BOARD
6-AB-100
MACHINE: CONCEPT 400 DRYER
Scheme N° 367
Version: V2
Date: 04/2009
Folio: C12
DEGRAD
CC1
CC2
CC3
C1
C2
C3
TL1
KTH1
KTH2
KTH3
KA1
KA2
KA3
APS1
CD1
12Vcc
Blue 0.75 mm
Tiroirs 1 & 2
Tiroirs 3 & 4
Tiroirs 5 & 6
APS EXTRACTION
Thermostat Securité
Thermostat Securité
Thermostat Securité
TL1 : TELERUPTEUR
CAPTEUR T° 3
CAPTEUR T° 2
CAPTEUR T° 1
CAPTEUR T° 3
CAPTEUR T° 2
CAPTEUR T° 1
Drawers 1 & 2
Drawers 3 & 4
Drawers 5 & 6
EXHAUST APS
Safety Thermostat
Safety Thermostat
Safety Thermostat
TL1 : TELERUPTOR
T° PROBE 3
T° PROBE 2
T° PROBE 1
T° PROBE 3
T° PROBE 2
T° PROBE 1
Middle
Middle
Middle
Front
Front
Front


6-AB-101
KEYBOARD
6-BA-006
6-CP-047
6-AB-100
CPU BOARD
BZ
F1 F2 F3 F4 F5 F6 F7 F8 F9
1A 1A 1AM 1AM 1AM 1AM 10A 10A 10A
KA1 KA2 KA3 KTH KTH KTH
K1
TL1
K2
K3
K4
SSR1
SSR2
SSR3
TB1
TB2
TB3
TB4
MACHINE: CONCEPT 400 DRYER
Scheme N° 367
Version: V2
Date: 04/2009
Folio: 1MP

Eng. version V3.1:	*04/05/2010* *New blower assembly*
Eng. version V2.0:	*17/04/2009* *New motors for blowers. New contactors.*
Eng. version V1.1:	*29/11/2007* *Add illustrated spare parts list.*
Eng. version V1.0:	*25/10/2007*

EEC Declaration of Conformity

Manufacturer's Name: **DEGRAF S.p.A.**

Address: "Il Girasole" - Palazzo Donatello 8/03b
20084 – Lacchiarella (MI), Italy
Tel.: +39 02 900 90 164 – Fax: +39 02 900 90 196

The manufacturer declares that the equipment here below mentioned has been designed and manufactured according to the EEC safety and health standards.

Product Name: **CONCEPT 401 D**

Serial Number:

Year of Production:

EEC Directive:
- 2006/42/CE for machines II A
- 2006 /95/CE for low voltage
- 2004/108/CE for electromagnetic conformity

Standards Applied:
ISO 12100.1
ISO 12100.2
EN 294
EN 349
ISO 13849-1
CEI 60 204-1

Noise Emission: < 70 dB (A)

Signature:

Riccardo de Caria
(Managing Director)

DEGRAF S.p.A. - “Il Girasole” - Palazzo Donatello 8/03b - 20084 Lacchiarella (MI) - ITALY
Tel.: +39 02 900 90 164 / 900 90 203 - Fax: +39 02 900 90 196 - Internet: www.degraf-group.com
Part. IVA / VAT Number: IT 03344270156 - REA: MI 961447