THERMOBILE

IMAC 2000 PELLET

41.731.000

THERMOBILE INDUSTRIES V
Konijnenberg 80
4825 BD Breda Nederland

Postbus 3312
4800 DH Breda Nederland
Bedrijfsnummer: 3502

T +31 (0)76 587 34 50
F +31 (0)76 587 27 89
info@thermobile.com
www.thermobile.com

THERMOBILE UK LTD
12, Buckingham Close
Bermuda Industrial Estate
Nuneaton, Warwickshire
CV10 7JT
Groot-Brittannië

T +44 (0)2476 35 79 60
F +44 (0)2476 35 79 69
info@thermobile.co.uk
www.thermobile.co.uk

THERMOBILE FRANCE sarl
3, rue Denis Papin
45240 LA FERTÉ ST. AUBIN
Frankrijk

T +33 (0)2 38 76 59 25
F +33 (0)2 38 76 58 93
info@thermobile.fr
www.thermobile.fr

Member of the Honing Beheer Group of Companies

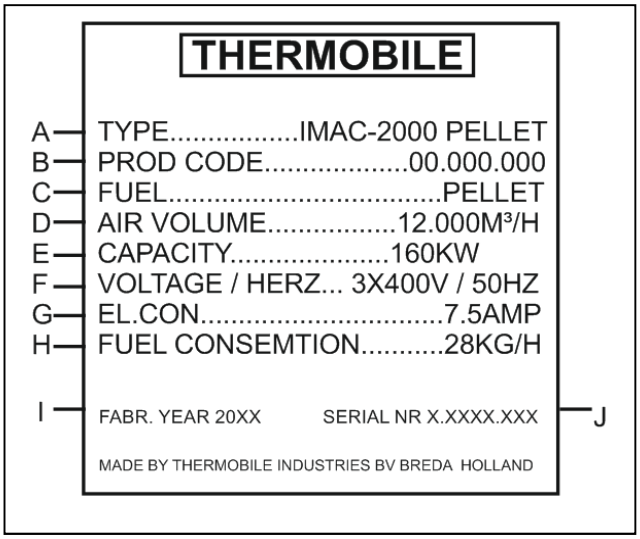


Fig 1

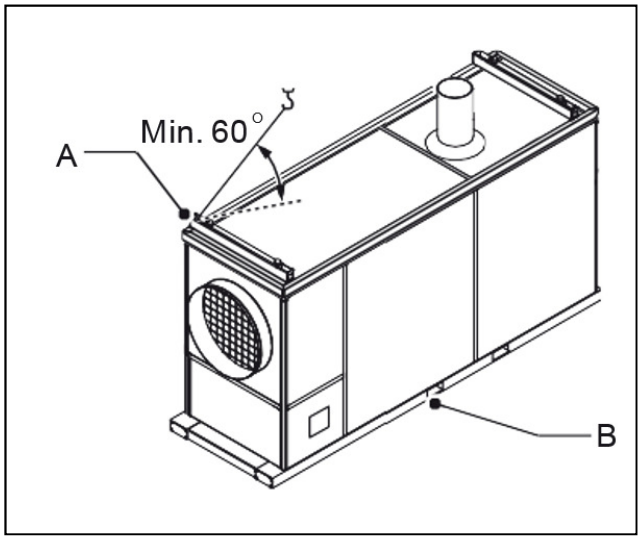


Fig 2

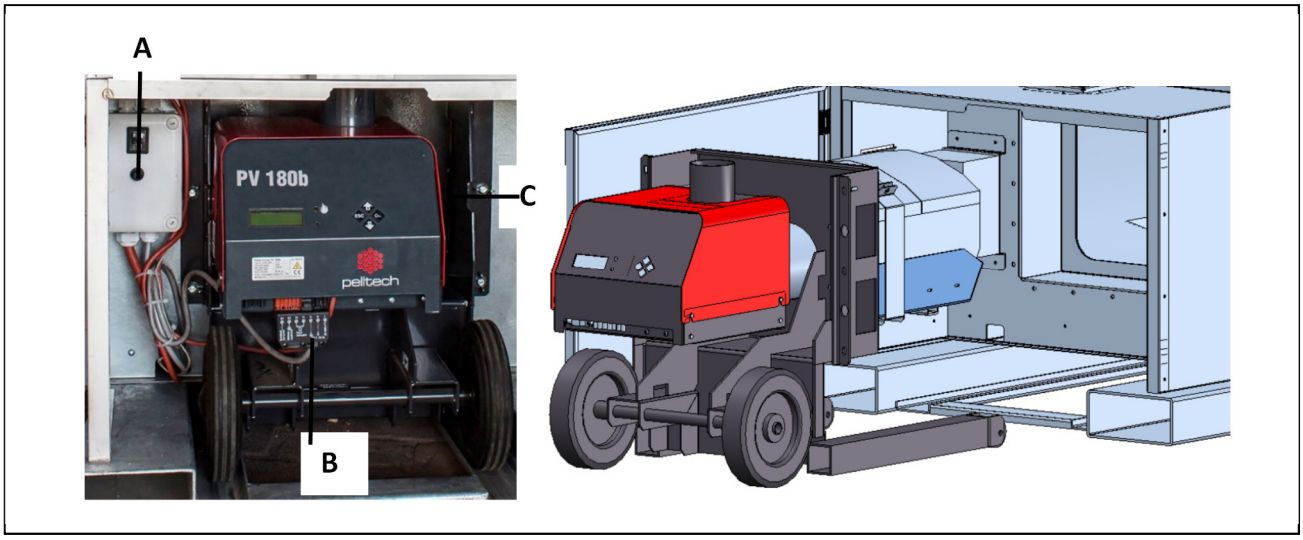


Fig 3

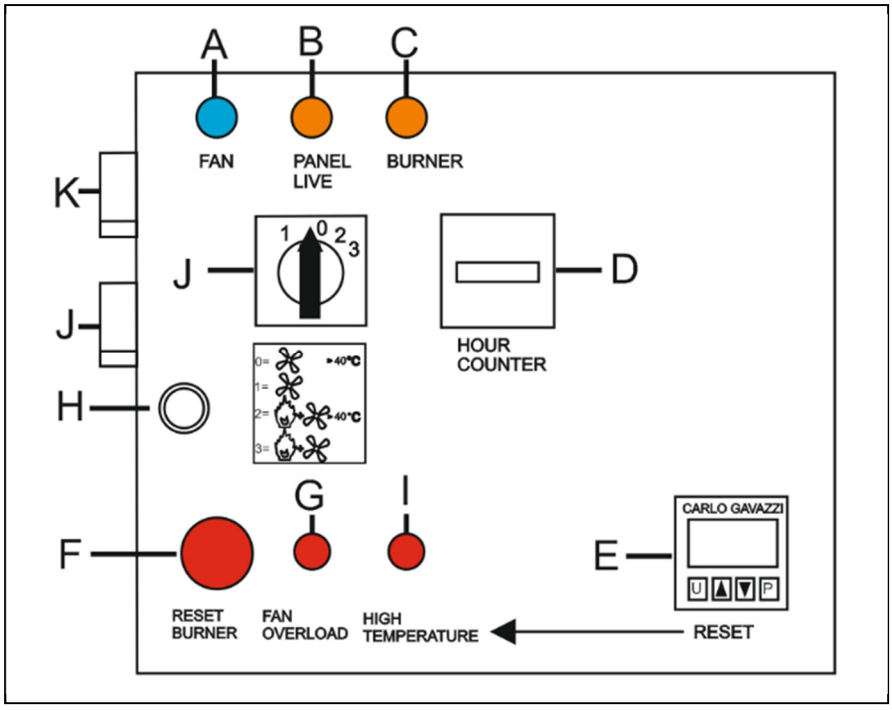


Fig 4

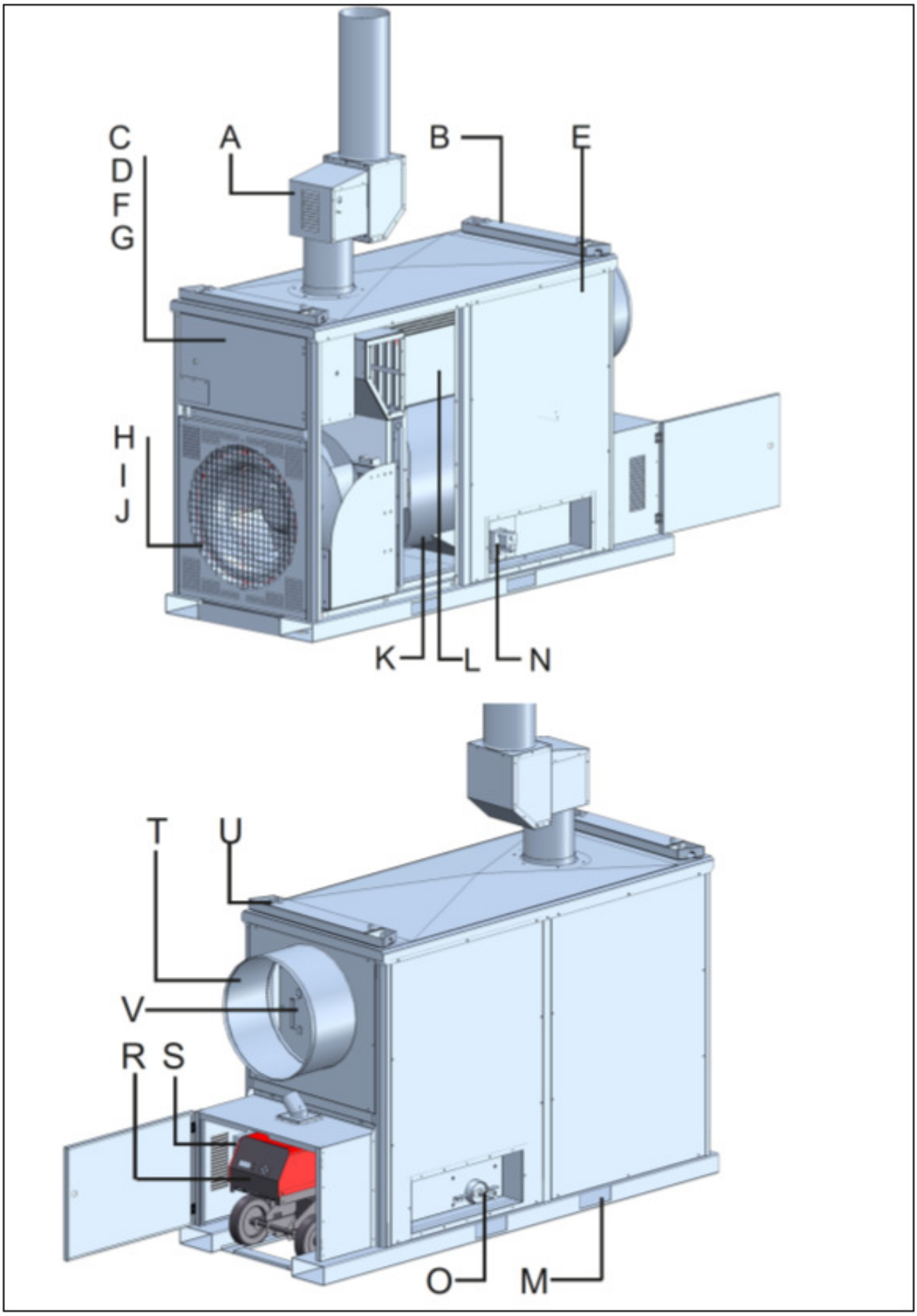


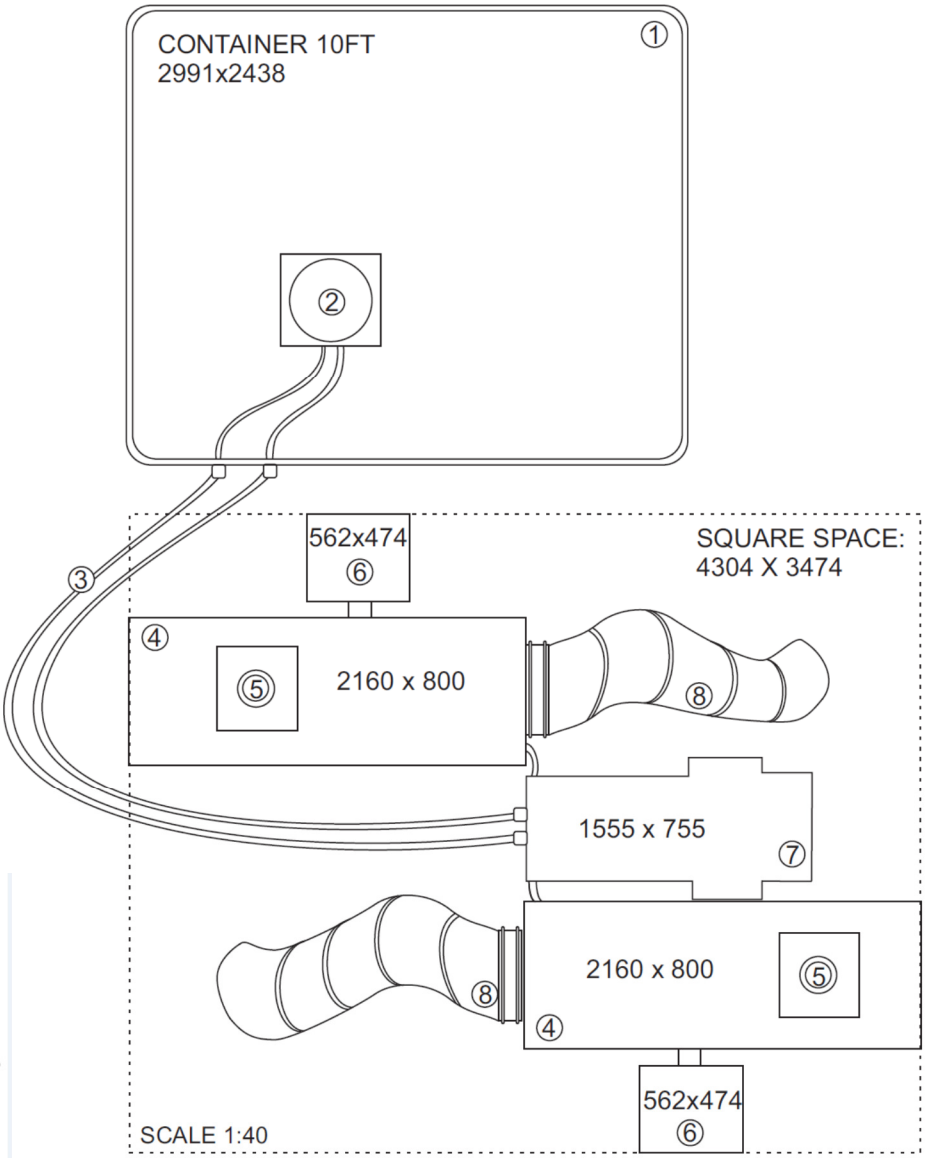
Fig 5

1) CONTAINER 10ft

2) MAULWURF

3) PELLET SUCTION HOSE

4) HEATER



5) EXHAUST FAN

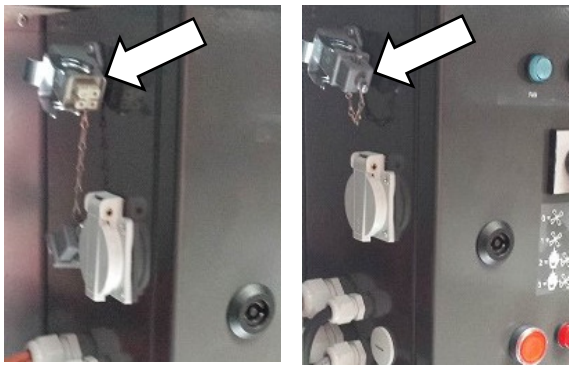
6) ASHCONTAINER

7) PELLETSTORAGE

8) AIR HOSE

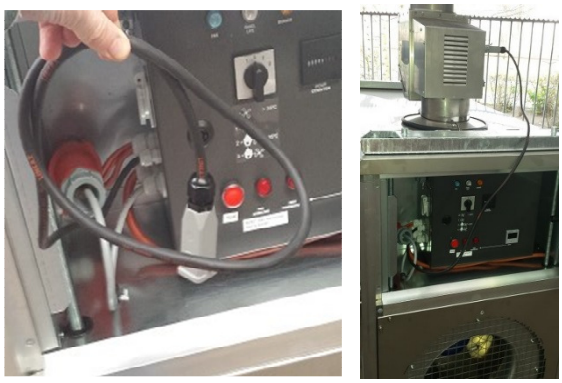
Fig 6

Fig 7



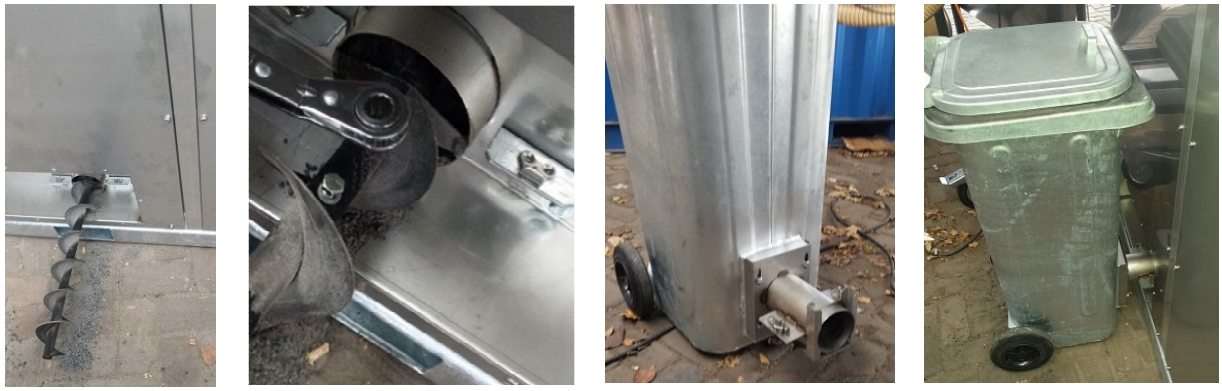
In case no external thermostat is used the cap must be placed in the connector as shown.

Fig 8

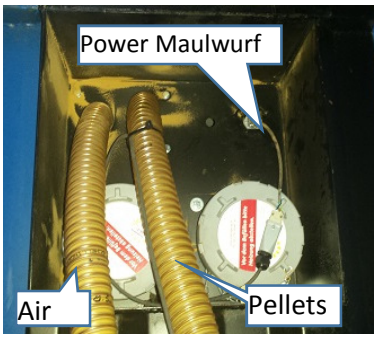


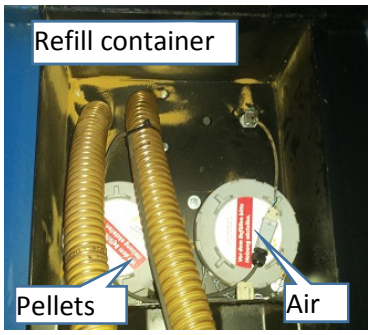
Installation exhaust fan.

Fig 10



Mounting the ash auger. Positioning and mounting the ash bin. Fig 11





Connecting the 10ft container to the temporary pellet storage Fig 12

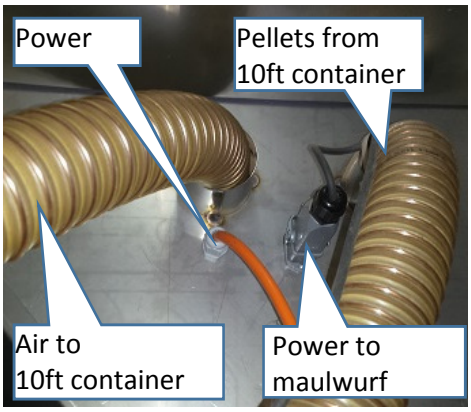
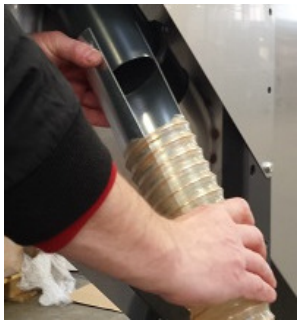
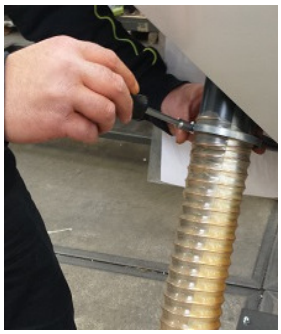
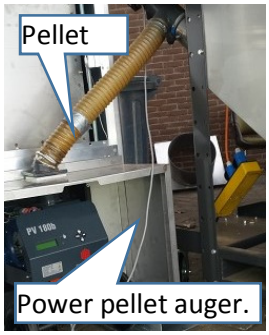


Fig 13







Installation temporary pellet storage, connecting the Maulwurf, mounting the Pelletslide. Fig 14

Contents

Preface
This manual contains the instructions for use of the convector heater shown on the cover. The information in this manual is important for the correct and safe operation of the convector heater.

Identification of the product (Fig. 1)
The identification plate is mounted on the side of the convector heater. The identification plate contains the following information:

A Type of machine
B Production code
C Type of fuel
D Air output
E Net capacity (Hi)
F Voltage / frequency
G Current
H Fuel consumption
I Year of manufacture
J Serial number

Service and technical support
For information about the convector heater, please contact your dealer of the manufacturer. Make sure you have the following information at hand: type and serial number of the convector heater.

Warranty and liability
For warranty and liability, please refer to the general warranty conditions.

Environment
Note
The heater is made of various metals and synthetic materials. The heater also contains electronic parts, which must be treated as electronic waste. Please contact your dealer for further information.

Only applicable to the European Union

Waste disposal of electric & electronic equipment for business use.
For further information regarding the disposal of products for business use at the end of their life span, please contact your dealer or distributor in your country. This product may not be disposed of together with commercial waste or as commercial waste.

1 SAFETY INSTRUCTIONS

1.1 Pictograms used in the manual

Caution

Points to risk of damage to the equipment.

Warning
Points to a dangerous situation, which may result in death or serious injury.

Warning
Always switch off the power supply before carrying out any maintenance of repair work to the convector heater!

Hot
Some surfaces may be hot! Wait until these parts have cooled down before carrying out any maintenance.

Suggestions and tips to facilitate the necessary tasks or actions.

1.2 Lifting instructions (Fig. 2)

A Lifting hooks
B Shafts for lifting using a fork-lift truck

Warning
Do not use any unsuitable material for lifting the convector heater.

To find out the weight of the convector heater, refer to table C in the Appendix at the back of this manual.

1.3 Icons on the burner (Fig. 3)

A Switch for manual turning on the ash auger.
B Burner connection
C Burner fixation
To take out the burner disconnect B and C.

1.4 Use this product for the purpose it was intended for

The convector heater was designed for the heating of tents, building sites, showrooms, sports halls, storage sheds, workshops, round-the-clock projects, warehouses, greenhouses, polytunnels, spray arrangements, and for the drying of agricultural produce and bulbs.

1.5 General instructions Warning

- Make sure to read this manual carefully before using the convector heater.
- Keep this document near the convector heater.
- Follow the procedures described.
- Do not lean on the convector heater.
- Keep at least 2 meters away from the exhaust opening of the convector heater.
- Make sure there is sufficient air for proper combustion.
- Make sure there is no highly flammable material near the convector heater.
- Make sure that the convector heater has cooled off sufficiently and that the plug has been removed from the socket before carrying out any repair or maintenance work.

2 INTRODUCTION

2.1 Purpose

This convector heater is an indirectly fired heater with safety thermostat protection, connections for a room thermostat, and a flue with rain cover.
The convector heater has been tested at sea level at a temperature of 20 □C.

2.2 Working principle

Using the selection switch, the convector heater can be used in one of two ways:

- Position 1: the fan will switch on to supply ventilating air to the room only.
- Position 2: the burner will switch on, after which the fan will switch on as well, after a short while. The hot air can be conveyed to the room to be heated by means of a system of channels or tubes.

A room thermostat can be connected to the control cabinet. It can be used to control the temperature in the room to be heated.

The external auger transports the pellets from a pellet container to the burner. The controller board contains a microprocessor system that tests main safety components, monitors and regulates the burning procedure, starts and stops the burner automatically according to the heater temperature. A warm air element (electrical igniter) ignites the pellets. The start procedure is designed to create a quick and smoke free ignition.

The burner starts burning when the heater temperature cools down and heater thermostat switches on. Burner runs until the pre-set maximum heater temperature (switch-off temperature) has been reached. After that burner stops safely burning procedure and goes to waiting (stand by) status.

Main supply interruptions (blackouts) are taken care of by the control system. After a main supply interruption burner stops safely burning and goes to stopped status. When a blackout occurs, the burner ends safely burning process. If there is a safety risk, the burner switches off.

2.3 Main components of the convector heater (Fig. 5)

A Flue connection
B Lifting hook
C Operating panel
D Socket
E Identification plate

F Connection for room thermostat
G Socket for power connection
H Fan motor
I Air inlet
J Fan

K Burner room
L Heat exchanger
M Shaft for lifting purposes
N Ash auger motor
O Ash auger

R Burner
S Auger switch (fig.xx A)
T Hot-air outlet
U Armature nut
V Thermostat sensor

2.4 Burner (Fig. 3)

Make sure to read the burner Manual carefully before using the convector heater

With this heater is it is easy to take out the burner for cleaning and servicing. To take out the heater disconnect B and unscrew C.

2.5 Control panel(Fig. 4)

A Indicator light, blue: Ventilator is running
B Indicator light, white: Panel is live
C Indicator light, orange: Burner in operation
D Hour counter
E Digital thermostat
F Pushbutton with indicator light, red: Burner reset
G Indicator light, red: Ventilator overload
H Door lock
I Indicator light, red: High temperature
J Rotary switch for ventilator and burner:
-0: The convector heater is switched off
-1: The ventilator is running continuously
-2: Burner setting, after a set interval the ventilator will start automatically
-3: The ventilator is running continuously, burner in

2.6 Digital thermostat

The digital thermostat (E) has three functions:

- Ventilator thermostat:
  The thermostat will switch on the main ventilator as soon as the convector heater has reached the preset temperature. After switching off the convector heater, the ventilator will continue to run. The ventilator will cool down the convector heater to prevent damage by overheating. The ventilator will automatically stop.
- Burner thermostat:
  The thermostat will stop the burner as soon as the temperature of the hot air has risen too much. When the air temperature has dropped sufficiently, the thermostat will turn on the burner again.
- Maximum thermostat:
  The maximum thermostat will switch off the convector heater completely if an overheating problem has occurred in the convector heater. The burner cannot be switched on again until the thermostat has been reset by pressing the U key for two seconds.

2.7 Accessories (Fig. 6)

- Container 10ft
- Pelletstorage
- Ashcontainer
- Air supply hose (diameter 500 mm)
- Thermostat for room temperature
- Pellet transport hose
- Exhaust air fan

3 PREPARATIONS

Caution Make sure to always follow the local standards and guidelines.

3.1 Removing the packaging

1. Remove the packaging material from the convector heater.
2. Lift the convector heater to transport it to its location of use.

Caution Lift the convector heater according to the instructions (fig. 2).

3.2 Installation

1. Make sure the convector heater is level.
2. Connect the pellet storage to the burner.(See fig. 14). (See APPENDIX D for settings suction unit.)
3. Connect the ash container to the heater.(See fig. 11).
4. Connect the exhaust air fan and flue to the heater.(See fig. 8).
5. Make sure there is sufficient distance between the wall and the air inlet. Minimum distance is 1 m.
6. Ensure that the heated air is allowed to flow freely. The minimum distance between the outlet and any obstacle is 5 m.
7. Check the ventilation surface: per kW, a surface area of 25 cm2 is required.
8. Check the connection of the room thermostat.
9. Make sure the convector heater is switched off. (See fig. 4.)
10. Check the power supply: refer to the identification plate.
11. Connect the convector heater to the socket of the electric power supply. The indicator light “Panel live” is on (white).
12. If necessary, press pushbutton 'Reset burner', (See fig. 4.)
13. Reset the thermostat. (See fig. 4.)

Caution Use certified pellets only.

Certified pellets	**ENplus-A1, ENplus-A2 EN-B (EN14961-2)**
Calorific value	4700-5100 kWh/ton
Bulk density	ca 650-670 kg/m3
Volume of 1 ton	1.5-1.6 m³
Section	6-8 mm
Length	3-5 x diameter
Fines content (<3,2 mm)	< 1%
Moisture content	8-10 %
Ash content	< 3%
Ash fusion	> 1100 c°
1000 L light oil	ca 2000KG or 3 m³
1m³ Pellets	330L oil
5 kWh/kg Pellets	11,9 kWh/kg Oil

3.3 Starting up

To start up the heating:

1. Switch on suction unit
2. Switch the rotary switch to position 2. (**See fig. 4.)** The burner starts and produces heat. After some time the ventilator switches on automatically.
3. Set the room thermostat.

To start up the ventilation:

1. Switch the rotary switch to position 1. **See fig. (4).** The fan will start up.

4 OPERATION

4.1 During operation Hot

Do not touch the flue and exhaust opening! The flue and exhaust opening will become hot during operation!!

4.2 Switching off

To switch off the heating:

1. Switch the rotary switch to position “0”. The pellet supply will stop and the pellets that are inside the heater will burn out.

Caution

After switching off the convector heater, the ventilator will continue to run. The ventilator will cool down the convector heater to prevent damage by overheating. The ventilator will automatically stop. Do not remove the plug from the socket until the fan has stopped completely.

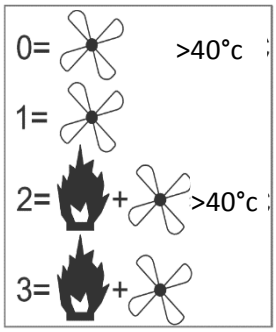
2. Remove the electrical plug.

To switch off the ventilation:

1. Switch the rotary switch to position “0”. (See fig. 4.)
2. Remove the electrical plug.

4.3 Transport after use

1. Switch off the convector heater and wait until the fan has stopped completely.
2. Switch off the power supply.
3. Remove the connection from the room thermostat and place the cap on the thermostat connection.
4. Remove the air hoses.
5. Remove the flue and the exhaust air fan.
6. Remove the pellet supply hose.
7. Remove the ash container



0 → Off. **Warning: The fan can still start ventilating to prevent overheating**.

1 → Ventilation. Only the fan wil run.

2 → Automatic heating. The ventilation will start if the temperaure exceeds 40°c.

3 → Heating. Ventilation will start immediately.

5 MAINTENANCE

5.1 Maintenance table

After each winter season, register any maintenance carried out in the table at the back of this manual.

Description	Period	
Check and clean burnerchamber and heat exchanger	2 times a week	2000 kg pellets
Check and clean exhaust air fan	2 times a week	2000 kg pellets
Check ash container and if necessary empty it.	Weekly	
Check burner and clean burner	Every two months	

Hot
Do not touch the flue and air outlet! Wait until the flue and the air outlet have cooled down sufficiently before carrying out any maintenance.

General Warning
Switch off the power supply before carrying out any repairs!

6 TROUBLESHOOTING

Make sure the electric power supply is switched off and the fuel tank is full, before you start troubleshooting.

Warning Switch off the power supply before carrying out any repairs!

6.1 Troubleshooting table

Fault		Cause	Solution	Action
The convector heater does not start up.	1	The convector heater is not live.	Check the electrical connections.	User
	2	The burner is not working.	Press the reset button in the operating panel. See fig 4.	User
	3	The thermostat has not been set	Correct the settings.	Dealer
	4	The room thermostat is defective.	Replace the thermostat.	User
	5	There is no cap on the thermostat connection.	Replace the cap if the room thermostat is not in use.	User
	6	The pellet hose is not connected	Check Pellet hose	User
	7	The maximum thermostat is stopping the convector heater.	Check (and correct) the air flow. Reset the convector heater.	User
	8	The digital combination thermostat is defective.	Replace the combination thermostat.	Dealer
	9	The capacitor of the burner motor is defective.	Replace the capacitor.	Dealer
	11	The exhaust air fan is not working.	Check and clean the exhaust air fan	User
	12	The room thermostat has been placed in the hot-air flow.	Install the room thermostat away from the hot-air flow.	User
	13	The dooron the burnerside is not closed correctly.	Check and close the door.	User
	14	The cleaning door in the heatexchanger is not closed	Check and close the door.	User
The fan is starting up immediately.	13	The fan thermostat has not been set correctly. Out 1.	Correct the settings. See malfunction 9.	Dealer
The convector heater is starting up, but no flame is forming.	14	The pellet auger is not working	Check and correct	User
	15	The flame sensor is dirty or defective.	Check the flame sensor and replace if necessary. See Burner Manual.	Dealer
	16	The exhaust air fan is not working correctly	Check and clean the exhaust air fan	User
	17	Exhaust opening or flue connection is in poor condition.	Connect the convector heater to a flue that is in good condition. Correct the connections.	User
	18	The igniter is not working.	Check and replace	Dealer
The burner is starting up poorly (stutters).	19	There are problems in the burner room or heat exchanger.	Clean the burner room and heat exchanger, if necessary.	User
The convector heater burns intermittently.	21	The burner thermostat has not been set correctly. Out 2.	Set the burner thermostat according to the manufacturer's specifications.	Dealer
The convector heater stops.	22	An overheating problem has occurred in the convector heater.	Reduce the resistance at the outlet.	User
			Reset the thermostat.	User
			Contact the dealer if the error is repeated.	Dealer

7 SPARE PARTS

We advise you to keep spare parts in stock. See the service manual for details.

8 TECHNICAL INFORMATION

• For technical specifications, refer to table A in the Appendix at the back of this manual.

9 INSTALLATION OF ACCESSORIES

9.1 Exhaust air fan (Fig. 8)

The convector heater has to be connected to the exhaust air fan.

1. Slide the exhaust air fan in to the heat exchanger.

Caution

The flue should point upward. Do not let the flue point sideways. An angle of 45° is acceptable; the length of the flue should be at least 1000 mm.

2. Place a rain cover (A) on the end of the flue.

9.2 Container 10ft and Pelletstorage (between-container) (Fig. 13)

Pellets can be filled by a truck in the 10ft container. The 10ft container should be placed near the road so it can be easily reached by the filling truck. The 10ft container is connected to the Pelletstorage. The maximum distance between them is 20meters. It is important that the Pellet storage is leveled correctly.

9.3 Ashcontainer (Fig. 11)

Set the Ashcontainer correctly.

9.4 Pellet transport hose and Pellet connection hose. (Fig.12,13,14)

Between the 10ft container and the pellet storage the Pellet transport hose is connected. This is a firm hose that can't be blocked easily. The Pellet storage and the heater are connected through the pellet connection hose this is a special melting hose the will melt incase a fire occurs.

9.5 Air hose

Hoses may be connected to the exhaust opening of the convector heater to convey hot air elsewhere.

Caution

Check the temperature resistance of the hose used.

Contact your dealer for information about the maximum resistance and the diameters of the exhaust hoses, bends, manifolds and hose clamps.

9.4 Diameters of exhaust hoses

The outlet diameter of the IMAC 2000 s Pellet is Ø500mm.

9.5 Room thermostat

Refer to the instructions of the thermostat.

10 EC DECLARATION OF CONFORMITY

For the EC declaration of conformity, go to www.thermobile.nl.

APPENDIX A.

Product Specifications			
The Pellet Heater operates according to specifications below.			
Bruto Capacity, gross Leistung,		kW	120-160
Fuel consumption	Brennstoffverbrauch	Kg/h	28
Air capacity Luchtopbrengst	High	m³/h	10.000
Air capacity Luchtopbrengst	Low	m³/h	12.500
Max counter pressure, max druck,	30m Ducting	Pa	600
Delta T		℃	56
Delta T		℃	47
Power		V	3x400
Current Stroom	Courant	A	6.5
Frequentie Frequency	Fréquence	Hz	50
Fan thermostat, Ventilator	Thermostat du ventilateur,	℃	40
Brander thermostaat Burner	Thermostat du brûleur	℃	100
Maximaal thermostaat Maximal	Thermostat maximal	℃	110
Dust		mg/m³	30
CO		ppm	129
Length Länge Lengte	Longueur Longitud Lengde	mm	2400
Width Breite Breedte	Largeur Ancho Bredde	mm	800
Height Höhe Hoogte	Hauteur Alto Høyde	mm	1370
Outlet		mm	Ø 500
Weight		kG	550
Fan Ventilator Ventilator	Ventilateur Ventilador Vifte	Ziehl	
Vacuum system. Zuiginstallatie	Schellinger		
Burner Brenner Brander	Brûleur Quemador Brenner	Pelltech	180 pv
Burner Stroom	Courant	A	1,5
Burner Spanning Power	Puissance	V	230
Burner Frequentie	Fréquence	Hz	50
Burner Ventilator	Ventilateur	W	240
H_i = 42.689 MJ/k	H_S = 45.5 MJ/kg	1 kW = 860 kcal/h	1 kW =

APPENDIX B.

The burner menu is indicated below. The complete burnermanual is supplied with the heater. It is of great importance that the user will take notice of the complete burnermanual.

Hoofd Menu

- Status → Testing / Waiting / Stopped / Read failure
- Info → Total Use Count / Battery Status / F= oxygen / flue / Capacity / Outside temperature
- Burner → On/Off
- Pilot → On/Off
- Pellets → Light/Normal/Heavy
- Power → 100-160kW
- Base Air → -2,-1, 0, 1,2,3,4,5
- Language → Selectable
- Parameters → Parameters adjustment Thermobile:

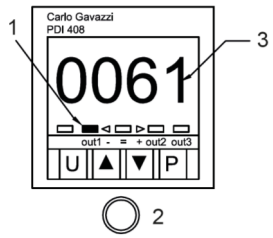
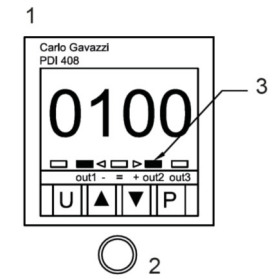
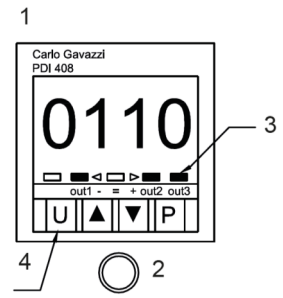
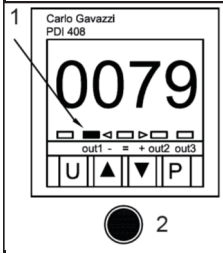
Parameters adjustment Thermobile:

Warning:
These settings are pre-programmed by Thermobile. It is very unwise to change them.

PAR: 05.	45
PAR: 06.	48
PAR: 21.	85
PAR: 22.	80
PAR: 23.	92
PAR: 27	250
PAR: 30	1
PAR: 34	45
PAR: 35	50
PAR: 36	55
PAR: 38	125%

Restore Factory Settings:
Go to Par 99 select type of burner PV 100 and confirm with OK. Then select burner PV 180 and confirm with OK. Burner is now put back to factory settings.

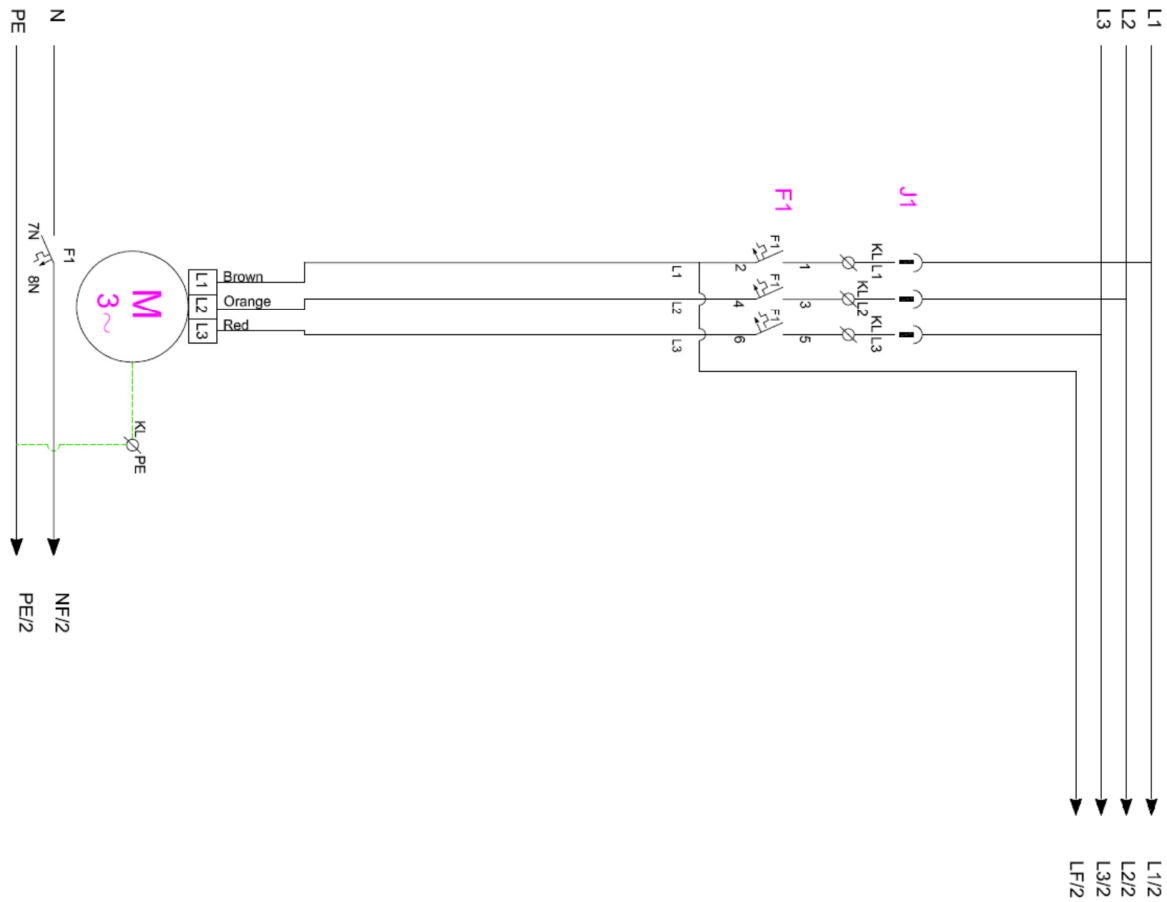
APPENDIX C.

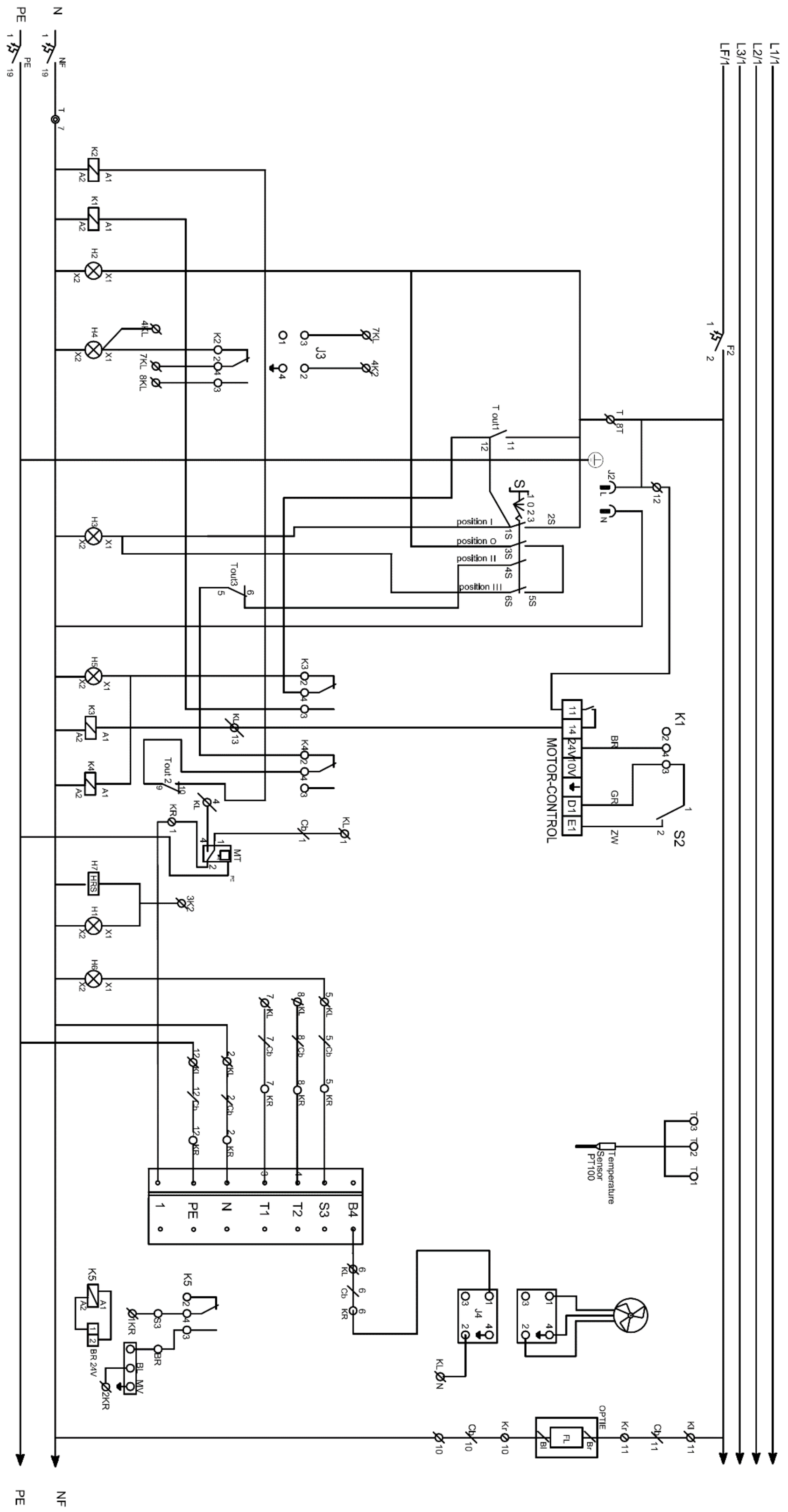
		EXPLANATION TEMPERATURE CONTROLER Carlo Gavazzi
	1. 3.	1 led = okè Outlet temp >35°C 0061 ≠ 61°C outlet temp. 0061 = temp. Pt 100 sensor
	1. 3.	2 leds ≠ okè Burner out at 100°C fan still on, wait till temperature is below 80°C than burner start automatically. Burner goes on and off, cause is mostly too much resistance in the outlet.
	1. 2. 3. 4.	3 leds + high temperatur lamp on ≠ okè High temperature. Burner out and does not start automatically. Wait till the temperature is below 80°C and than reset.
	1. 2.	1 led + high temperature lamp on ≠ okè High temperature. Reset Jumo thermostat.

APPENDIX D.

SCHELLINGER / Vacuum system pellet mole/silo with extraction screw.				
Instruction manual suction unit page 10-16				
NO	**Unit**	**Function / discription**	**DEFAULT**	**THERMOBILE**
1	Sec	Suction lead time	5	5
2	Sec	Suction time	40	?!
3	Sec	Suction following time	10	10
4	Sec	Pause time	10	10
5	Min	Max filling time	60	60
6	-	Pause time between fillings	3	30
7	Sec	Run period extraction motor direction 2	1	1
8	Sec	Pause time extraction motor direction 2	1	1
9	-	Number of repetition cycle 2	3	3
10	h/min	Time unit of parameter pause time in hours or minutes 0=min 1=hours	1	0
Par 2 must be set according to the length of the extraction system. If this time is set to long there will be too much pellets in the cyclone separator. In that case the filter will be blocked. This can lead to equipment damage.				
Set active timer: Thermobile will program this time standard: 0:01h – 23:59h. This means that the suction unit is active between 0.01h and 23.59h (And will be in rest for 2 minutes between 23.59 and 0.01h)				

APPENDIX E


PE
N
L1
L2
L3
F1
J1
7N
8N
M
3~
Brown
Orange
Red
KL
PE
PE/2
NF/2
LF/2
L3/2
L2/2
L1/2


PE
N
PE
NF
L1/1
L2/1
L3/1
LF/1
MOTOR-CONTROL
K1
S2
J3
J4
Temperature
Sensor
PT100
position I
position O
position II
position III
OPTIE

APPENDIX F

DatumDate Datum Date Fecha Dato	Omschrijving: Onderhoud of Storing Description: Maintenance or Failure Beschreibung: Wartung oder Fehler Description: Entretien ou Erreur Descripcíon Mantenimiento o fallo Beskrivelse: Vedlikehold eller feil	Actie door Action by Aktion durch Action par Accíon por Handling foretas av