

PELLET BURNERS

B-70 B-90



Code EBM0032 - 05/2020 - R2

INSTRUCTIONS FOR USE, INSTALLATION AND MAINTENANCE

EN

Before installing and using the burner, read this manual carefully and keep it near the burner.



INTRODUCTION

Dear Customer,

We would like to thank you for choosing a device with B-max Technology.

The model you have chosen is a high-performance product, with an advanced technological concept, high reliability and excellent build quality. We recommend that you entrust the operation and maintenance of this product to qualified professionals you know, and also that you use only original spare parts when necessary.

This manual contains important guidelines and tips that you should follow to achieve easy installation and best possible use of the appliance.

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SYMBOLS USED IN THE MANUAL AND THEIR MEANING



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WARNING

To indicate information about particular details.

ATTENTION ATTENTION

To indicate information about especially sensitive details.



ATTENTION DANGER

To indicate actions which, if not performed correctly, may cause general injury or may cause malfunction or material damage to equipment; therefore, they require special attention and adequate preparation.

ING ELECTRICAL HAZARD

To indicate actions which, if not carried out correctly, may cause injuries from electrical contact; which is why they require special attention and proper preparation.



IT IS PROHIBITED

To indicate actions that SHOULD NOT be taken.



1 GENERAL INFORMATION

1.1 General warnings

WARNING

- This manual is the property of Elmec Group Srl and its content may not be copied or transmitted to third parties. All rights reserved.
- The product is not designed to be used in environments with potentially explosive atmospheres.
- This manual is an integral part of the product; make sure that it is always kept with the appliance, even in the case of sale/transfer to another owner, so that it can be consulted by the user or by the authorized personnel to carry out maintenance and repairs. Read this manual before using the appliance in order to ensure operational safety.
- In case of doubts regarding the condition and/or operation of the machine or its parts, the local distributor should be contacted for further information.
- Use only original or manufacturer-approved spare parts to avoid damage to the product.
- In case of damage to the packaging of the products, inform the courier and the product supplier of the problem immediately.
- Carry out operational tests on the device and inform the product supplier of any anomalies or defects found during operation.

1.2 **Restrictions**

IT IS PROHIBITED

- Do not use the appliance in areas with a potentially explosive atmosphere.
- Do not make any modifications to the product without written permission from the manufacturer.
- Do not open the boiler door when it is operating.
- Do not store flammable materials near the burner, to minimize the risk of fire.
- Do not leave the appliance exposed to the elements.
- Do not install the appliance on heat generators (boiler, boiler) located in rooms with little or a lot of ventilation. humid. The ventilation openings in the boiler room must be of a size that ensures combustion. complete.
- Do not touch the appliance with wet or damp body parts and/or barefoot.
- The appliance must not be used by children or inexperienced persons.

1.3 Accordance

The burners **B-70** and **B-90** comply with European directives:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EC
- Low Voltage Directive 2014/35/EC

as indicated in the Certificate of Conformity supplied with the equipment.



1.4 Structure





- 2 Crankcase cover
- 3 Flexible hose connection socket
- 4 Boiler connection flange
- 5 Washer
- 6 Combustion chamber
- 7 Connection for optional applications
- 8 Room thermostat connection
- 9 Boiler water probe connection
- 10 External auger motor connection
- 11 Connection for optional applications
- **12** Fuse (T 3.15 A)
- 13 Main switch
- 14 Fuse (F4 A)
- **15** *Power outlet (230 volts)*
- 16 Power socket for external auger fan
- 17 RJ11 computer connection socket, modem upgrades
- 18 Flame detection photocell
- **19** Burner safety thermostat
- 20 Internal worm gear motor
- **21** Bottom air grille
- 22 Connection for compressed air self-cleaning kit (OPTIONAL)
- 23 Internal auger
- 24 Screen
- **25** Electronic card
- 26 230V/24V transformer
- **27** Burner fan
- 28 Resistance on
- **29** Combustion grate







1.5 Burner Description

The B-70 and B-90 burners are extremely versatile and can cover a wide range of uses, from installation in new generation boilers, bread ovens, hot air generators, to the transformation of old boilers.

They consist of a round combustion head, a variable speed main fan, a reliable ignition system thanks to the igniter and the flame detection photocell, an internal screw to feed the fuel, and are designed for the installation of self-cleaning kits with compressed air.

ForEfficient cleaning with compressed air of the B-70 and B-90 models, a compressor or at least 50 liters is recommended capacity with a maximum pressure of 8 bar.

They must be completed with a fuel supply system consisting of an auger, with a flexible hose connecting to the burner and a pellet tank, supplied separately as an accessory.

The burners and the entire system are managed by a microprocessor control panel mounted on the appliance which, in addition to managing all the functions, also allows the programming of time slots; a useful possibility for the User to operate the appliance only when necessary.

1.6 Safety devices

The burnersB-70 and B-90They are equipped with the following safety devices:

- Burner safety thermostat
- Non-return valve (optional)

1.7 Dimensions



Model	A [mm]	B. [Ø mm]	C. [mm]	D. [mm]	E. [mm]	F. [Ø mm]	G. [mm]	H. [mm]	l. [mm]	L. [mm]	M. [mm]	N. [mm]
B-70	30.7	193.7	78	290	18.7	60	260	300	250	27	21	571
B-90	30.7	193.7	78	290	18.7	60	232	300	300	27	21	621

1.8 Accessories

The following accessories can be ordered separately from the burner. Their use is recommended for proper operation of the burner.

Model	Code
Pellet container	EBT0013-P00
Pellet container	EBT0002-PWO
Compressed air kit	EBK0018-P00



1.8.1 Feeding auger: dimensions and weight



A	B.	C.	D.	E.	F.	G.	H.	[Kg of weight]
[mm]	[mm]	[mm]	[mm]	[Ø mm]	[mm]	[Ø mm]	[mm]	
1760	190	1168	402	60	190	60	120	9

1.8.2 Pellet container: dimensions and weight



Description	Capacity [Kg]	A [mm]	B. [mm]	C. [mm]	[Kg of weight]
EBT0013-P00 pellet container	150	780	500	1225	33
EBT0002-PWO pellet container	300	800	800	1230	55

1.9 Technical data

DESCRIPTION		U / M	B-70	B-90
Burner power		kW	70	90
Power supply		V ~ Hz	230 ~ 50	230 ~ 50
Average energy consumption		W	60	60
On		W	170	170
Electronic board fuse		A	T 5.0	T 5.0
Power screw fuse		A	T 3.15	T 3.15
Noise level		dBA	40	40
Flame length		mm	350	400
	Height	mm	450	450
Minimum size of boiler combustion chamber W		mm	560	5600
	Depth	mm	650	700
Chimney draft		Pa	30	30



1.10 Operational wiring diagram





PIN		Function	
1	L	Power supply	230 Vac ± 10% 50/60 Hz F1
2	N		= Fuse T5.0 A
3	NN	Combustion fan	Triac regulation 0.9 A max.
4	FF		
5	NN	Internal auger	Triac regulation 0.9 A max.
6	FF	_	_
7	N	Lighter	Triac regulation 0.9 A max.
8	F		
9	N	External auger	Triac regulation 0.9 A max.
10	L		
11		AT1 safety thermostat input	Normally closed contact ON/OFF Short
12			circuit if not used
13		Safety pressure switch input	Normally closed contact ON/OFF Short
14			circuit if not used
15	Red +	Smoke probe (not used)	K thermocouple
16	Green -		
17		IN2 (not used)	NTC
18			
19		Boiler water probe	NTC
20			
21	+ 5V	Not used	TTL signal 0/5 V
22	GND		
23	SEG		
24	GND	Room thermostat	ON/OFF contact
25	SEG		DO NOT TURN ON WITH 220V (avoid irreparable damage to the electronic board)
26	GND	IN6 (not used)	
27	SEG		
30	+ 5V		
28	GND	Pressure sensor	
29	SEG		
30	+ 5V		
31	+ 12V		
32	F.		
33	COM/N	External auger fan	Relay 3 A max.
35	NO / PHONE		
34	NC / FOFF		
36	СОМ	Compressed air valve	Relay 1 A max., Free contact output
37	NO		
38	SEG	Photocell	ON/OFF contact
39	GND		
40	SEG	IN9 (not used)	
43	+ 12V		
41	GND	(not used)	
42	SEG		
44	+ 5V		
RS232		RS232 connector	Connection to programmer, modem, computer
CN1		Screen connection	Flat wire



1.11 Operation

The operation of the device is controlled by a control panel with a microprocessor that programs the following phases:

- When a heat request is sent in on mode, the main fan, external auger and the internal loading auger to supply the amount of pellets needed for ignition. The internal auger starts 8 seconds after the external auger;
- Once the pellet has been loaded for ignition, the ignition resistor is supplied with electrical power, and this It lights the flame whose brightness is recorded by the photocell. If the ignition fails, the burner goes into OFF mode. In case of OFF, to reactivate the normal operating conditions, it is necessary to disconnect the appliance from the mains, eliminate the cause of the malfunction and then reconnect it to the mains;
- Once the flame is correctly detected, normal operation of the appliance begins with a gradual increase
 of the delivered power until reaching the maximum adjusted value and continues operating in modulation, until
 reaching the programmed temperature for the boiler water or that of any installed accumulator.
 The external and internal augers, during burner operation, will also operate according to the set on and off times;
- Once the programmed temperature is reached, the augers, both internal and external, are stopped by the control panel, and the pellets remaining in the combustion chamber continue to burn;
- When the photocell brightness drops below the minimum Lux level for shutdown, the fan speed increases to free the combustion chamber of the last residue and then stops.

The burner is then ready for the next start-up.

- Parameter programming MUST be performed EXCLUSIVELY BY QUALIFIED TECHNICIANS AUTHORIZED by Elmec Group Srland only after providing the password.
- The burner's operating and stopping periods must be taken into account, regardless of whether the "time slots" are activated or not.
- If the COMPRESSED AIR KIT is also present, the combustion chamber is cleaned at the end of each burner operating cycle and during normal operation at adjustable intervals.



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Programming technical parameters from the User Menu.

1.12 Pellets

The devices are designed and built for quality pellet burning with the following features:

Description	U / M	Pellets
Diameter	mm	6 Din Plus
Length	mm	25 (maximum)
Density	Kg/m ³	650
Lower calorific value	kWh/kg	5
Humidity percentage	%	Max 8 (by weight)
Percentage of ashes	%	Max 1 (by weight)



1.13 control Panel



1.13.1 OPERATIONAL KEYS

Button	Function					
K1	Exit menu/submenu	Exit menu/submenu				
K2	Power on/off (press for 3 sec seconds), activation of the o	Power on/off (press for 3 seconds), reset errors (press for 3 seconds) seconds), activation of the chrono				
K3	Enter user menu 1/submenu, enter user menu 2 (press for 3 seconds), save data					
K4	Access the Views menu, Zoom in					
K5	Enter the Views menu, Dec	rease				
LED	Function	LED	Function			
1	Room thermostat arrived until	×	Lack of fuel in the tank.			
Ж	Winter)¢(Summer			
***	Pellet mode					

1.13.2 SCREENS byenter press K4/K5

T. Smokes	Flue gas temperature [°C] (not used)
Flame light	Flame light
T. Boiler	Boiler temperature [°C]
Puffer T.	Puffer Temperature [°C] (optional)
T. environment	Ambient temperature [°C] (optional)
Pressure	Pressure [mbar] (not used)
Endless	Working hours [i]
Recipe	Combustion program [nr]
Product code:	Product code reserved for the manufacturer



1.13.3 USER MENU 1

To access the menu, press the K3 key

Combustion management	Pellet power Menu to configure the combustion management of the system in Pellet mode. You can choose between automatic mode (the system sets the power) and manual mode (the user sets the power).			
	Pellet recipe			
	Menu for selecting the pellet combustio	n recipe		
	Calibration of auger			
	(not used)			
	Fan calibration			
	(not used)			
Heating management	boiler thermostat Menu to change the value of the boiler thermostat.			
	Summer - Winter Menu to change the operation of the hy season.	draulic system depending on the		
remote control	(not used)	ised)		
Chrono	Menu to select the Chrono programming mc	select the Chrono programming mode and the burner on/off timers.		
Mode Allows you to select the desired mode or dis • Enter edit mode using the K3 key • Select the chosen mode (Daily, W • Activate/deactivate chronograph m save the settings with the K3 key	able all configured programs. eekly or Weekend) node with K2 key	Disabled Diary Weekly Weekend		



Programming The system includes three types of p	rogramming: daily, weekly, weekend.	
After selecting the desired programmin	g type:	
 Select the time programming w Enter setting mode (selected till using the K3 key Change the time using the K4/I Save the programming with the enable (a "V" is displayed) or d displayed) by pressing the K2 K 	ith the K4 / K5 keys ne will flash) K5 keys K3 key isable the time zone (a "V" is not key	
Dian		
Select the day of the week you want times.	to schedule and set the on and off	Monday Tuesday
Drogramming around midnight		Wednesday
		Thursday
20:30	o the desired value: for example,	Friday
Set the shutdown time for the previou	is day to: 23:59	
Set the next day's ON time to 00:00		Monday
Set the next day's OFF time to the de	esired value: Ex. 6:30	ON OFF
The system will turn on at 8:30 p.m. o	on Tuesday and turn off at 6:30 a.m.	09:30 11:15 v
on Wednesday.		00:00 00:00
		00:00 00:00
Weekly		
The schedules are the same for all da	ays of the week.	
Weekend Choose between Monday-Friday and on/off times	Saturday-Sunday bands and set	Mon - Fri Sat-Sun
Charging	This menu allows you to manually charge t state to perform the charge.	he auger. The system must be in the Off



1.13.4 USER MENU 1

To access the menu, press the K3 key

Keyboard Configuration	Time and date Used to set the current day, month, year and time.
	language Menu to change the keyboard language.
Display menu	List of nodes This menu displays: board communication address, board type, firmware code and firmware version.
	Contrast Menu used to adjust the screen contrast.
	Minimum light Menu used to adjust the display illumination when the controls are not in use.
	Sound Allows you to enable or disable the keyboard audible alarm.
System menu	Menu to enter the technical menu. Access is password protected (access to this menu is restricted to qualified and authorized service only).



2 FACILITY

2.1 Delivery and identification of the product

B-Max Technology devices are delivered in separate packages and placed on wooden pallets.



Burner (1)

It comes packaged in a duplex corrugated cardboard box.

Feeding auger (2)

It comes packed in a duplex corrugated cardboard box and is supplied separately from the burner.

Label (3)

It is placed on the outside of the package for product identification.

2.1.1 ID

Identification of each package is possible through the label placed on the outside of each package.



WARNING

Once the product has been received, it is necessary to verify that the delivery is complete and in case of noncompliance or complaint, it is necessary to contact the entity that sold the equipment.

2.1.2 package contentsBurner

- Burner
- O-ring
- Burner support gasket and flange
- Power cable
- Room thermostat connection cable
- Water probe
- Documentation envelope

The following material is provided in the documentation envelope:

- Instruction manual
- Warranty certificate
- Declaration of conformity
- Bag of bolts and screws

Anti-kickback safety device

Non-return valve (optional)

Compressed air self-cleaning kit

- Kit to connect the burner to a compressor (optional)

Feeding auger

- Complete feeding auger with:
 - Fanelectric wire
 - 3.15 A T-fuse.
 - Hose

2.2 Management

The B-70 and B-90 burners have been designed to operate exclusively in heat generators that have the combustion chamber under negative pressure; therefore, the smoke duct and chimney must be designed and built to meet these requirements. The joints must be watertight and resistant to the maximum temperatures that the fumes can reach.



2.3 Place of installation

The pellet burner must be installed in a location that complies with current legislation, regulations and directives against the risk of fire. The positioning of devices and components must be arranged in such a way that there is sufficient space for maintenance, cleaning and removal of soot from the burner, boiler and chimneys.





ATTENTION DANGER

The room must have sufficient ventilation openings of adequate size and correctly positioned.

2.4 Mounting the burner

When mounting the burner on the boiler:

- Check that the opening (1) of the boiler door (2) is wide enough to allow the passage of the burner combustion chamber. If not, adjust it to the diameter
- Drill four threaded holes (3) (M8) for fixing the burner support flange
- Place the gasket (4), supplied with the burner, between the flange (5) and the door (2) of the boiler
- Insert the 4 screws (6) (M8) but ONLY tighten the two screws securing the lower split flange. The two screws on the upper split flange MUST ONLY BE IN PLACE but not tightened.
- Insert the burner combustion chamber into the boiler as needed
- Tighten the two half flanges with the screws (7) and the screws (6), previously placed.





ATTENTION DANGER

- The burner**NEEDS**be mounted**ONLY**I inposition shown in the figure. Any other positionIt is prohibited.

- The flame will extend in a straight line through the burner combustion chamber hole.



ATTENTION DANGER

The boiler burner assembly must be airtight to avoid possible and dangerous leaks. smoking. Use the gasket supplied with the burner.

2.5 Assembly of the loading screw and the pellet container

The assembly of the external loading screw and the pellet container is very important for the correct operation of the burner. It is advisable to purchase and use the original accessories, as they have been specifically designed to ensure the correct operation of the burner.



WARNING

The manufacturer Elmec Group SrI DOES NOT ASSUME RESPONSIBILITY for damage to persons, animals or things caused by the use of non-original components.

2.6 Smoke escape

The B-70 and B-90 burners have been designed to operate exclusively in

heat that the combustion chamber has in depression; therefore, the smoke duct and the chimney must be designed and manufactured to meet these requirements.

The joints must be watertight and resistant to the maximum temperatures that the fumes can reach.

ATTENTION DANGER

- Applications other than those listed above may present a fire hazard.

- Uninsulated exhaust ducts are potential sources of danger.
- It is possible to install an exhaust valve that complies with applicable legislation.

2.7 Electrical connection

The B-70 and B-90 burners are factory wired and it is essential that only professionally qualified personnel carry out the work listed below.



- 1 Power socket (230V ~ 50Hz)
- 2 Power socket for external auger fan
- 3 External worm motor
- 4 Boiler water temperature probe
- 5 External thermostat connection
- 6 RJ11 connection socket for upgrades, computers, modems
- 7 Connection for optional applications

WARNING ELECTRICAL HAZARD

- Remember that it is MANDATORY:

- The use of an omnipolar thermal-magnetic switch, line disconnector, compatible with EN standards
- Respect the connection L (Phase) N (Neutral)
- Connect the ground wire to an effective ground system. The manufacturer Elmec Group Srl REJECTS ALL RESPONSIBILITY for any damage to persons, animals or things caused by the lack of grounding of the appliance and for failure to comply with the information provided in this manual.



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Use the water pipes to ground the appliance.



3 START-UP

3.1 Before lighting the burner

Before starting the appliance, make sure that:

- the burner is correctly mounted on the boiler door and the latter is properly closed
- the feed screw and the burner connection hose are positioned correctly (see image paragraph 2.3). Check that the flexible tube connecting the feed screw to the burner is perpendicular to the trunnion placed on the upper part to promote correct pellet fall. A non-linear positioning of the flexible tube encourages the accumulation of pellets which can cause uncontrolled dosing with consequent damage to the machine.
- the pellet tank has been filled
- The water temperature probe is correctly positioned
- The boiler and system have filled with water
- the hydraulic circuit valves are open
- the smoke evacuation duct has been suitably prepared (particularly compact or narrow ducts may hinder the correct evacuation of smoke, causing the return of heat or flame).

3.2 First ignition

Connect the power supply to the burner by placing the main system switch and the main burner switch in the "ON" position, and check that the display lights up.

The burner leaves the factory calibrated at minimum power. During the first ignition it is important to calibrate the pellet (see paragraph 3.5) to ensure that the burner is suitable for the power required by the system. To avoid flame or heat flashback,

It is essential not to make mistakes when overdosing the machine.

Leave the burner running continuously at maximum power for about 15 minutes, then use a smoke analyzer to check that the values recorded are close to those indicated in the table:

Description	U / M	Correct value
02	%	~ 10
CO (average)	mg/cm ³	<500
Smoke temperature	°C	120 ÷ 200

Press the on/off button to turn off the burner and allow it to cool.

WARNING

This operation must ONLY be performed by authorized and qualified technicians.

3.3 Checks to be carried out after first ignition

After first ignition, with the burner cold:

- Disconnect the pellet feed tube from the burner
- Open the boiler door and check that there is NO unburned material on the combustion chamber grate. Otherwise, it is necessary to change the settings according to specific needs (combustion air and fuel quantity) and repeat the "FIRST IGNITION" phase described above.

3.4 Automatic shutdown and subsequent starts

Once the heat request is satisfied, the pellet feed is interrupted, the burner adjusts its speed to

the combustion of the residual pellets, present in the combustion chamber, up to the minimum illuminance detected by the photocell. When the minimum lux level is reached, the fan reaches maximum speed to clean the combustion chamber of any residue and then switches off. At each request for heat, all the steps described above are repeated.

3.5 **Pellet calibration**

The calibration of the amount of pellets required for the ignition and operation of the burner is obtained as follows:

 Remove the flexible hose from the burner cap and place it in a container (tank) while the burner is operating at power 5, to collect the pellets loaded by the external auger.

- Put the flexible tube back in place to prevent the burner from going into alarm due to lack of pellets.
- Weigh the pellets in the container, without tare.



Calculate the maximum burner power using the following formula:

[(Y/T) * 3.6] * P = z (kW/h)

Where is

- AND Quantity of pellets (in grams) weighed with burner at power 5
- P The lower calorific value of wood pellets (PCI)
- T Interval between pellet loading with auger (seconds)
- **3.6** 3600 seconds in one hour / 1000
- Z Power in kW generated by the burner with the configured parameters



CAUTION

If you change the type of pellet used (not recommended) or change the feeding position/tilt auger, the pellet calibration MUST be repeated, because the combustion characteristics will change.



3.6 List of parameters

Display on screen	screen		LL / M	Range	Factory default settings		
		Description	0710	Range	B-70 B-90		
FEEDER							
C01	Not used						
C02	Stabilization	Loading time performed by the external auger during the stabilization phase.	seconds	0:60	3.00		
C03	Power 1	Loading time performed by the external auger at power 1.	seconds	0:60	2.00		
C04	Power 2	Loading time performed by the external auger at power 2.	seconds	0:60	3.50		
C05	Power 3	Loading time performed by the external auger at power 3.	seconds	0:60	4.50		
C06	Power 4	Loading time performed by the external auger at power 4.	seconds	0:60	5.50		
C07	Power 5	Loading time performed by the external auger at power 5.	seconds	0:60	6.50		
C08	Not used						
C10	Second ignition	Charging time performed by the external auger during the second start attempt.	seconds	0:60	2.00		
C11	Not used						
C12	Not used						
P05	Period of the cochlea	Interval between one load of the external auger and the next	seconds	0:60	45,00		
P15	Not used						
P27	Not used						
P35	Not used						
NOTE							
The filling time de	epends on the program	nmed power level and the type of fuel used.					
FAN							
V01	On	Fan speed during power on	V.	0:230	145		
V02	Stabilization	Fan speed during stabilization	V.	0:230	140		
V03	Power 1	Fan speed in power 1	V.	0:230	140		
V04	Power 2	Fan speed in power 2	V.	0:230	145		
V05	Power 3	Fan speed in power 3	V.	0:230	150		
V06	Power 4	Fan speed at power 4	V.	0:230	155		
V07	Power 5	Fan speed at power 5	V.	0:230	160		
V08	Not used						
V09	Extinction	Fan speed during shutdown	V.	0:230	230		
V10	Second ignition	Fan speed during second start attempt	V.	0:230	145		
V11	Not used						
V12	Not used						
P14	Not used						
P30	Not used						
P16	Not used						
P22	Not used						
P24	Not used						
V70	Not used						
V71	Not used						
NOTE The fan speed de	epends on the fuel (typ	e and quantity) and the smoke flow.					
HEATING FAN							
F01	Not used						
F02	Not used						
F03	Not used						
F04	Not used						
F05	Not used						
F06	Not used				-		
A03	Not used						
A04	Not used				**		
A08	Not used						
A11	Not used						
P06	Not used						
P95	Not used						
Th05	Not used						
D04	Not used						
D05	Not used						
T69	Not used						



Exhibition on		Description		Danga	Factory default settings		
display		Description	U / IVI	Range	B-70 B-90		
THERMOSTATS							
L00	System off in pellet mode	Light level below which the burner/alarm switches off	LUX	0: 100	7		
IL00	Not used						
L01	System switched on in pellet mode	Minimum light level to set the burner ignition	LUX	0: 100	15		
IL01	Not used						
Th01	Not used						
Th02	Not used						
Th03	Not used						
Th06	Not used						
Th07	Not used						
Th08	Not used						
Th09	Not used						
Th11	Not used						
Th12	Not used						
Th13	Not used						
Th18	Not used						
Th19	Not used						
lh19	Not used						
Th20	Not used						
Th21	Not used						
lh21	Not used						
lh24	Boiler thermostat hysteresis	Hysteresis for regulating the water temperature. When the programmed temperature is reached, the burner stops. If the temperature drops, of the set hysteresis value, lower than the set value, the burner restarts.	° C	1:20	2		
Th25	Not used						
Th26	Not used						
Th27	Not used						
Th28	Not used						
lh33	Not used						
Th35	Not used						
Th36	Not used						
Th37	Not used						
Th38	Not used						
Th39	Not used						
Th40	Not used						
Th43	Not used						
Th51	Not used						
Th52	Not used						
Th56	Not used						
lh56	Not used						
Th57	Not used						
lh57	Not used						
lh58	Not used						
Th59	Not used						
lh59	Not used						
Th63	Not used						
Th64	Not used						
Th66	Not used						
Th68	Not used						
Th69	Not used						
D01	Not used						



Exhibition on		Description	U/M	Range	Factory default settings
					D-70 D-90
THERMOSTAT	Water temperature for	T = set the water temperature • Water temperature \leq T -D08 the system operates at maximum power (power 5) • T -D08 <water <t="" combustion="" is="" power="" selected<br="" temperature="" the="">proportionally (the greater the difference between the water temperature and T, the greater the power chosen) • Water temperature \geq T The system enters modulation D08 must be a multiple of 5 (power level number 1,2,3,4,5)</water>			
D08	automatic combustion management	Example: T=60°C, D08=20°C Water temperature °C Power ≤ 40 5 $40 \div 45$ 4 $46 \div 50$ 3 $51 \div 55$ 2 $56 \div 60$ 1 ≥ 60 1	°C	1:30	10
D23	Delta to switch from modulation to off (to add to boiler thermostat)	value. If the temperature value achievable above the set value. If the temperature value exceeds the set value of the selected entity (5 ° C) the burner stops and restarts when the set water temperature is reached	°C	0:50	5
D41	Not used				
SP01	Not used				
SP08	Not used				
TIMER					
T01	Not used				
T02	Not used				
Т03	Preload of auger	Loading time performed by the external auger in the pre-loading phase.	seconds	0:900	10
T04	Not used				
T05	Not used				
T06	Not used				
Т07	Cleaning cycle	Interval between cleaning the combustion grate by the centrifugal fan	Min.	5: 600	60
Т08	Time to clean up	Duration of cleaning cycle with centrifugal fan operating at maximum power.	seconds	0:900	30
T09	Not used				
T10	Not used				
T11	Not used				
T13	Not used				
T14	Not used				
T15	Not used				
T16	Not used				
T17	Not used				
T18	Not used				
T21	Not used				
T22	Not used				
T23	Not used				
T24	Not used				
T27	Not used				
T29	Not used				
T30	Not used				
T31	Not used				
T32	Not used				
T33	Not used				
T34	Not used				
T40	Not used				
T41	Not used				
T42	Not used				
T43	Not used				
T46	Not used				
T53	Not used				



Exhibition on		Description	U/M Range		Factory default settings		
display					B-70 B-90		
TIMER	I	1	ſ				
T54	Not used						
T57	Not used						
T58	Not used						
T66	Not used						
T68	Not used						
T71	Not used						
Т84	Working time before system shuts down	Interval between cleaning the combustion grate with the compressed air system. During this phase, the burner switches off and on immediately.	Min.	1:9600	1200		
T85	Not used						
T86	Not used						
T87	Not used						
T92	Not used						
T99	Not used						
TM18	Not used						
TM41	Not used						
TM42	Not used						
TIV142	Not used						
T 1V143	Not used						
TIV144	Not used						
TM45	Not used						
TM46	Not used						
TM47	Not used						
TM48	Not used						
TO ALLOW							
A01	Room thermostat management	0 = On/Off; 1 = Normal / Modulation For this parameter only values 0 and 1 can be used. IMPORTANT DO NOT USE OTHER VALUES!!! to avoid compromising the correct functioning of the system	Nr	0: 5	0		
T18	Not used						
T21	Not used						
A06	Not used						
A13	Not used						
A14	Not used						
A26	Not used						
A27	Not used						
A28	Not used						
A29	Not used						
A36	Not used						
A30	Not used						
A40 A57	Not used						
A57	Not used						
A61	Not used						
ADI	Not used						
A/3	Not used						
P02	Not used						
P03	Not used						
P04	Not used						
P09	Not used						
P11	Not used						
P20	Not used						
P25	Not used						
P26	Not used						
P36	Not used						
P37	Not used						
P42	Not used						
P44	Not used						
P48	Not used						
P49	Not used						
P51	Not used						



Exhibition on		Description	U / M Range Factory default		Factory default settings
					D-70 D-30
TO ALLOW	Matural				
P52	Not used	Activista ar departivista the ream thermeater 0			
P70	Room thermostat management	a deactivated in eactivate the fourth thermostation = deactivated 4 = activated IMPORTANT DO NOT USE OTHER VALUES !!! to avoid compromise the proper functioning of the system	°C	0:50	5
D41	Not used				
SP01	Not used				
P71	Not used				
070	Not used				
P74	Not used				
P74	Not used				
P70	Not used				
P81	Not used				
P83	Not used				
P86	Not used				
P92	Not used				
P93	the auger speed/time during periodic cleaning	Percentage variation in the loading time performed by the external screw during the periodic cleaning of the combustion grate performed by the centrifugal fan	%	-100: 100	- 50
PA23	Not used				
PA29	Not used				
PA44	Not used				
PA72	Not used				
CURRENT METE	R				
A24	Not used				
A25	Not used				
A31	Not used				
A70	Not used				
A71	Not used				
T19	Not used				
T20	Not used				
T70	Not used				
T72	Not used				
T73	Not used				
T80	Not used				
T90	Not used				
U60	Not used				
C60	Not used				
FL20	Not used				
FL22	Not used				
FL23	Not used				
FL24	Not used				
FL25	Not used				
FL26	Not used				
FL27	Not used				
FL30	Not used				
FL40	Not used				
FL70	Not used				
FL71	Not used				
FL52	Not used				
FL53	Not used				
FL54	Not used				
FL55	Not used				
FL56	Not used				
FL57	Not used				
FL60	Not used				



Exhibition on display	Description	U / M	Range	Factory settings	default
				B-70	B-90
ACCOUNTANTS	T				
Ignition No.	Number of ignition attempts made				
Mistire No.	Number of failed ignition attempts				
Time in run	Uptime in normal and modulation states				
mode					
Reset counters	Reset All Counters: Reset all counters				
Service	Menu to reset the "System Maintenance" function.				
EXIT TEST					
Combustion fan	Combustion fan	V.	0:230		
V2 output	Internal auger		ON OFF		
Endless	External auger		ON OFF		
R	Resistance lighter		ON OFF		
Aux1 output	Auger fan		ON OFF		
Aux2 output	Activates the 24V solenoid valve power supply for the compressed		ON OFF		
	air kit		on on		



3.7 Alarm messages

In the event of a breakdown or malfunction, the following signals appear on the display:

Description	System status	Code
Shutdown due to lack of light in the brazier	Block	Er03
Stop due to water overheating	Block	Er04
Incorrect date/time values due to extended power outage	Block	Er11
Misfire	Block	Er12
Shutdown due to power failure	Block	Er15
RS485 communication error	Block	Er16
Lack of fuel (pellets)	Block	Er18
Boiler probe or inertial accumulator probe open	Block	Er23
Display of the status of the temperature probes. The message is displayed during the Verification phase and indicates that the temperature read on one or more probes is equal to the minimum or maximum value (depending on the probe considered). Check that the probes are not open (reading the minimum value of the temperature scale) or short-circuited (reading the maximum value of the temperature scale).		Sound
Message that appears if the system is not switched off manually during the power-up phase (after pre-charging): the system will switch off only when it has reached its maximum capacity.		Ignition lock
Active periodic cleaning		Cleaning in progress
Lack of communication between the keyboard and the control board.		Connection error

3.8 **Problems - Possible Causes - Solutions**

The following table shows the most common problems with their possible solutions.

Problem	Possible cause	Solution
	Empty pellet container	Fill the container
	External auger cable disconnected or broken	Reconnect the cable or check for a break.
	Broken ignition resistor	Check resistance and/or replace
	The combustion grate is blocked	Remove the grill and clean it
Misfire	Internal feed screw blocked	Check the internal auger and remove any obstructions
	External feed auger blocked	Check the external auger fuse or other possible causes of auger blockage
	The combustion fan does not work	Check if it is cracked or clogged with dust
	Poor quality or wet pellets	Check the condition of the fuel used and if it cannot ensure optimal combustion, replace it.
	Dirty photoresistor	Clean the photoresistor
		Check the mains power supply
No power outpoly	There is no newer supply to the human	Check that the electrical cables are connected correctly
no power suppry	There is no power supply to the burner	Check that the main switches and breakers on the burner are in the correct position
		Check the fuse (No. 14 page 4) and replace it with one of the same amperage.
Water proba	The probe is not placed or connected correctly	Check your location and connections
water probe	Faulty probe	Replace the probe
	Empty pellet container	Fill the container
Plaakaga dua ta laak of light in the brazier	Power auger cable disconnected or broken	Reset connection
DIOCKAGE QUE LO IACK OF IIGHT IN THE DIAZIER	The feed auger motor does not work	Check the engine
	Dirty photoresistor	Clean the photoresistor



4 MAINTENANCE

4.1 **Periodic maintenance**

Periodic maintenance, in addition to being necessary for the optimal functioning of the burner and the system, is required by law and failure to follow the maintenance rules may result in problems or even fines.

Maintenance must be commissioned and carried out EXCLUSIVELY by qualified technicians.

The B-70 and B-90 pellet burners have been designed to require minimal maintenance, the frequency of which directly depends on the quality and size of the pellet used (certified or not) and how the burner is regulated.



WARNING ELECTRICAL HAZARD

Before carrying out any maintenance activities, disconnect the appliance from the power supply by placing the main system switches and the main burner and boiler switches (if present) in the OFF position.



CAUTION

- When carrying out maintenance, all personal safety devices required by current legislation must be present.

- Periodic maintenance refers to the entire system in which the burner is installed.
- In case of using non-certified pellets, the indications given below are void, since the characteristics of the fuel are not known.
- In case of use of non-certified pellets. Elmec Group SrIWE ASSUME NO RESPONSIBILITY for any breakage or malfunction or for any damage to persons, animals or things, or to the environment.
- The table is for suggestion purposes only and is not binding.
- byTo clean the burner casing, use a damp cloth with soap and water or water and denatured alcohol, or with specific nonabrasive products.

Description	FREQUENCY					
Description	when necessary	weekly	half a year	annual		
BURNER CLEANING						
Combustion chamber - ash and slag		Х		Х		
Combustion grate	Х	Х				
Burner fan			Х	Х		
Photocell Internal auger Resistance there is ignition			Х	Х		
Pellet container	Fill out	Х		Х		
Combustion air inlet grille		Х		Х		
External worm bearings Possibility of greasing or lubricating				Х		
External auger fan				Х		
Control of perishable parts			Х	Х		
Control of cables and electrical connections			Х	Х		
CLEANING OF PLANTS						
Smoke channel and chimney			Х	Х		
Interior and rear of the boiler			Х	Х		
Control of perishable parts			Х	Х		
Exhaust smoke control			Х	Х		



CAUTION

- After each maintenance operation it is necessary to carry out checks to ensure that the burner is working correctly.
- Using the appliance in a poorly maintained state could cause unexpected and potentially extremely dangerous breakdowns.
- If parts need to be replaced, use only original parts.
- When replacing fuses, it is important to replace them with fuses of the same amperage, as indicated in the manual.
- LendPay particular attention to the correct positioning of the combustion grate, and to its attachment to the closing system, after it has been removed for periodic cleaning. Incorrect positioning of the brazier could cause the pellets to fall into the underlying part of the brazier, creating irreparable deformations or damage in a short time.
- Pellets are a solid fuel that produces dust, so it is recommended to check weekly for obstructions in the path that the pellet takes inside the machine.



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WARNING

The manufacturer Elmec Group SrI DOES NOT ASSUME RESPONSIBILITY for damage to persons, animals or Things caused by using non-original components.

Any modification or alteration of the burner will void the WARRANTY, as well as the RESPONSIBILITY of the Manufacturer.

4.2 Disposal



At the end of its life, the burner must be disposed of separately and in accordance with the provisions by current legislation, for example European Directives 2002/95/EC RoHS and 2002/96/EC WEEE.









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