Appendix Nr.1

PELLET BURNER
PELH30A

MANUAL FOR ATTENDANCE
Manual for installation and start-up

EN - 01.07.2010

Content

Important information

Please, read this manual befor burner start-up. Burner has to be installed by approved and trained professional.

Keep this instruction for attendance at suitable place in boiler room. We recommend to keep it in plasstic cover and to hang it on visible place on the wall to be reached by technician, who will perform service in your boiler room.

Device for pellet burning, PELH30A has to be connected to boiler that *is suitable for heating with solid fuel*. Suitable boiler is ATTACK PELLET 30, resp. 30A. Boiler door and connections between boiler and chimney have to be airtight.

Overpressure in combustion chamber has to be min. 5 Pascal (0,5mm of water column, resp. 0.05hPa).

The PELH30A appliance is intended for combustion of wood pellets, it cannot be used for combustion of other fuel types.

The PELH30A device can be installed only in the boiler room, in conformity with prescriptions of the local fire protection / construction institute.

Warning sign ⚠

Warning sign will appear in this manual to prevent possible risk at breaking the instructions. In this manual, two types of warning signs are used:

⚠**WARNING** advises you of dangerous situations by breaking of essential proceeding

⚠**NOTE** advises you of less safe actions that may lead to safety threat or to damage of property.

Technical description

PELH30A is designed on basis of fuel feeding by *principle of falling*, when the pellet fall by self-force from pellet feeder through inlet hose and inlet tube on the grate, where the combustion runs.

PELH30A has electrical ignition that automatically ignites pellets fallen on the grate. Ignition begins only after the thermostat gives instruction to burner.

PELH30A has own built-in thernmostat (for the case that there is no boiler/external thermostat installed, resp. combined connection with room thermostat). Its temperature sensor has to be inserted into suitable case in water jacket of the boiler. The *on- and off-temperature* is adjustable via menu buttons of the burner. Information about actual operation data is given on display.

NOTE: Head for boiler temperature sensor <u>must not be</u> treated with contact liquid or paste.

PELH30A has production pre-set range of output 14-30 kW and three degrees of output: 1 (14 kW), 2 (22 kW) and 3 (30 kW).

Selected output degree is projected on display during operation. It is possible to change output via menu buttons of burner and information on dipslay. It possible to change range of output in two levels - from 8 to 12kW and from 14 to 30kW and according to this there are three degrees of output from 8 to 12 kW or from 14 to 30kW in the extended menu.

PELH30A has own self-cleaning grate mechanism. When thermostat reaches adjusted off-temperature, cycle of burn-out begins and afterwards the grate moves out and it is cleaned by scraping. This enables longer time of usage, during which it will not be necessary to remove burner from boiler. Amount of pellets that is possible to combust before the ash is removed is given by size of the boiler´s ashpan. It is possible to prolong this interval by automatic ash removal from boiler into ashpan outside of the boiler. Burner is equipped with control system that regulates gear of the ash removing feeder.

Convectional parts of boiler have to be cleaned in regular intervals to keep high efficiency of heating.

PELH30A is intended for combustion of wood pellets with diameter of 6-10 mm.

Burner PELH30A is made under industrial norms and prescriptions and it was tested and approved in conformity with directives about low voltage appliances as well as with directives about electromagnetic interference.

Dimensions / range of delivery
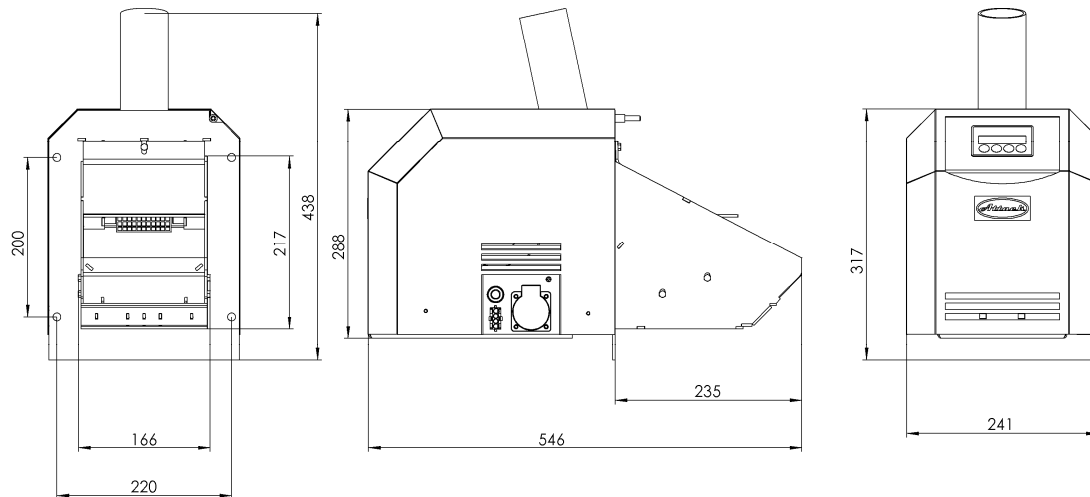
PELH30A is delivered in paper box filled with polysthyrene to improve stability. If the box is damaged, check burner for possible damage by transport. Reclamation of damage by transport has to be recorded by spediteur.

Paper box shoul content these parts:

1 pc. Burner PELH30A

1 pc. Inlet tube with emergency thermostat of back-burning

1 pc. External thermal sensor for boiler temperature

Technical data

Model	PELH30A
Fuel	Wood pellets, 6-10 mm
Regime	8 – 12 kW; 14 – 30 kW
Scale of output	8 - 30 kW, graduated by 2 kW
For boilers with heat chamber up to	3 m²
Weight	22 kg

Main voltage	Main current	Hz
~230V	10A fuse	50

⚠️ **WARNING** Electrical installation has to be done by certified electrotechnician. Main cables can be replaced only by eletrotechnician approved by us.

Voltage and energy consumption

Component	Mains/Volt	Min./Max. Voltage	Fuse
Display	5V DC	1 W	---------
Ventilator	230V~	15-58W	800mA
Circuit plate	230V~		--------
Grate cleaning	24V DC	10-50W	Being switched
Ignition	230V~	600W	6.3A
External pellet feeder	230V~	15-220W	1A
Ash removing	230V~	15-220W	1A

Description of function

⚠ **NOTE:** PELH30A works only by usage of boiler thermostat or built-in digital thermostat, resp. with additional room thermostat. In both cases the burner has to be connected through fuse against boiler overheating.

Normal start-up

When the thermostat gives instruction to burner, ventilator starts and fotocell controls fire. If there is no fire, comes instruction to blow the burner through. Afterwards, pellets start to fall into burner during period stated by control system, then is ignition activated.

When is the phase of fuel feeding for ignition finished, control system waits for fire signalisation from the photocell.

When the photocell recognizes fire, small amounts of pellts fall during *transition period*. Duration of it depends on output level set on the burner. Pellet inlet is gradually increased, until the necessary fuel amount for required output.

This amount is further delivered into burner until operation thermostat gives instruction to stop.

This signal stops pellet inlet, while ventilator continues to air inlet into burner.

When photocell recognizes burn-out of pellets, the blow-through of burner begins.

According to adjusted delay, after burn-out of fuel is the burner cleaned - grate moves out towards scraper and ash with unburned elements falls through fron wall of the burner´s bottom into the ashpan.

After the grate shifted, the burner waits for new signal from thermostat.

⚠ **NOTE:** unit for grate moving is very strong and it might cause a threat. Never put any body parts or foreign articles into burner, while it is working.

Normal start-up, when there is still fire in the burner

If the photocell recoginzes fire during beginning phase (e.g. after short-time current shortage), control system directly begins the transition-phase and pellet burner continues to operate as by normal start. (see above)

Normal start-up, when control system does not recognize fire

Normal start-up process followas, also when control system does not receive the fire signal. Shortly after, system begins new start-up try with reduced fuel amount for ignition to cca 45% and it can be reduced within the whole ignition period. These parameters are adjustable in service menu, only by the trained person. If the second try fails, all functions are turned off and alarm is turned on. This alarm is indicated on display.

⚠ **NOTE:** Make sure, that sufficient flue gas temperature was reached. It has to be at least 60°C - one meter under the chimney top. If is the temperature lower, consult it with your chineyer. Flue gas temperature lower than 60°C during combustion process increases risk of chimney damage by condensation.

How to use pellet burner

Pellet burner needs air for combustion, so the boiler room has to have air channel. Air channel for air inlet must jave at least same surface as chimney and it must be opened.
Pellet burner must not be started, until it is safely approved that smoke can freely go through boiler and chimney into the enviroment air.

Pellets are feeded into PELH30A from external feeder connected to pellet container. For better function and the most balanced feeding, the feeder should be leant under angle of 45°. Feeder should be able to feed at least cca 10kg of pellets per hour of continuous operation / demand for pellet feeding.
Pellets have to be stored in well ventilated room without moisture or in specially adjusted container.

⚠ **NOTE:** PELH30A consists from components of high quality that must not be replaced with spare parts of lower quality. If the components are replaced with other than original spare parts, the validity of warranty expires.

Menu buttons and their functions

Funtions of burner are set per menu buttons under display. (see also options of settings under **Production settings,** below).
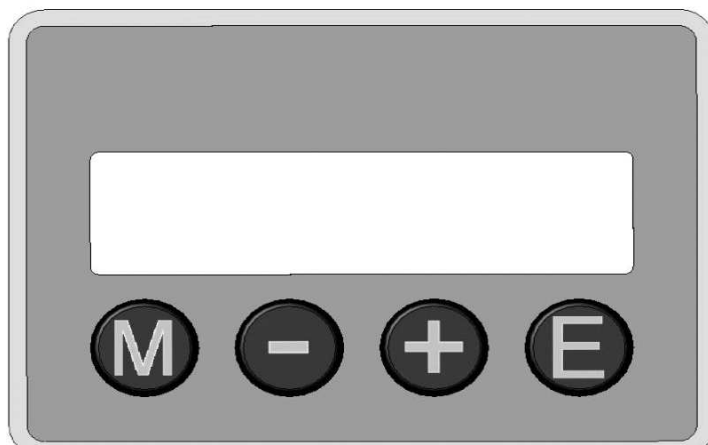
How to change settings of pellet burner:

„M"   Menu/Enter: For activation of further records and ENTER/SAVE of changes.
„–„   For comeback in menu and reduction of adjustable values.
„+"   For advance in menu and increasing of adjustable values.
„E"   Exit/Escape: For exit form menu without saving of new values.

Values that can be set by user are given in the following schedule:

MENU	Explanation
EFFECT ADJ.	Required output degree (1, 2 or 3)
PELLET-TRIM	Setting of feeded pellet ration
LOG	Record of faults for control purposes
FINAL COMBUST.	Instruction to burner for burn-out
MENU/ ADVANCED	Access into service menu via code

Indications on display

Emergency regime

PAUS.	
OFF	FC: 0 %

Nothing in the burner is started, burner waits for start signal from thermostat.

Thermostat starts.

Step 1 *Test blow-through*

TEST BLOWING	
ON	FC: ? %

Fan starts to operate and when the photocell recognizes value under 5%, program continues.

Step 2 *Fuel ration for heating up*

IGNITION 1	
ON	FC: ? %

Fuel ration for heating up is feeded into burner and program waits for „fire" signal from photocell.

Step 3 *Transition phase*

TRANS. PHASE	??KW
ON	FC: ? %

Transition phase begins, when photocell and control system recognize the fire. Small, gradually increasing amounts of pellets are feeded into burner, until required pellet ration is achieved.

Step 4 *Combustion*

COMBUST.	??KW
ON	FC: ? %

Combustion phase runs, until it is interrupted by thermostat.

Step 5 *Burn-out*

FINAL-COMBUST.	
OFF	FC: ? %

Thermostat interrupted combustion phase and burner begins the phase of burning-out.

Step 6 *Cleaning*

SCRAPING	
OFF	FC: 0 %

Grate moves out and when it is out completely, fan runs at full rotations, until the grate moves back.

Step 7 *Ash removal*

ASH AUGER	
OFF	FC: 0 %

After expiration of the set period (e.g.6 hours), the burner starts auger for ash removing for adjusted time (e.g. 3 minutes).

Step 8: Comeback into standby regime.

Menu Indications

PAUS. OFF FC: 0 %	Burner is in standby regime.

Press the"M" button.

EFFECT LEVEL ENTER EXIT	Here you can change burner output. Level 1 = 8 (14)kW, 2 = 10 (22)kW, 3 = 12 (30)kW. Range and Levels of Output are adjustable in advanced menu.

Press the "+"button.

PELLET-TRIM ENTER EXIT	Here you can set feeded pellet amount. It is not necessary, if correct pellet weight was set in Pellet dosing in service menu.

Press the "+"button.

FINAL-COMBUST ENTER EXIT	If you wish to clean the burner or interrupt operation from other reasons, press the „M" button, and the burn-out regime begins. For burner restart after ash removing, press „M."

Press the "+"button.

LOG ENTER EXIT	This internal setting can be helpful by trobleshotting, if burner stops and starts alarm. Last 10 different error codes are recorded. For more information about error codes, see the „Troubleshooting".

Press the "+"button.

MENU/ADVANCED ENTER EXIT	To enter into advanced menu you need password (code) and it is necessary to know program functions of burner.

Production settings

Before delivery was burner set in the following way:

Generally available menu:

Menu	Settings	Option	Adjustable
Effect level	1 = 14 kW	1, 2, 3	8-30 kW
Pellet-trim	95 %	50-200 %	50 – 200 %
Final combustion	90 sec.		10-600 sec.
Log	10 – 26	Not adjustable	Not adjustable
Advanced menu	Random number	+ 5	Not adjustable

" Log " means, that control system saves last 10 error codes. See also „Troubleshotting".

Advanced menu

Advanced menu	Production settings	Min. – max.	Unit
Effect adj.	1, 2, 3, 8, 10, 12, 14, 22, 30,	8 – 12 14 - 30	kilowatt kilowatt
Ignition setting	90%	50 – 300 %	%
Test-blow time	15	0-60	sec.
Transition phase	240-480	60 - 600	sec.
Transition pellet-trim	15	10-50	%
Clean-blow time	45	10 - 600	sec.
Ash auger Run Interval	3 6	0 – 10 1 - 200	Min. Hour
Max. comb. time	360	0 - 1080	Min.
Anti-cycling	10	0 - 60	Min.
Modulation effect ΔT	75 10	0 – 100 1 - 100	% K
Photocell (sensibility)	50	40-80	%
Thermostat	External	Extern./Intern./Comb. with room thermostat	
Cleaning active Start if thermostat	1 Turns off	0, 1 Turns on/off	
Language *)	ENGLISH		
Effect span	1	0 (8-12), 1 (14-30)	
Stoker adj. heat. amount	46 1100	45-50 0 - 2000	10xkwh/kg g/6 min.
Fan factor	95	10 - 500	%
Stoker time	0		hod.
Menu/ Test		Auto/Manual	

Menu/ Settting		See Extended	
Menu / Log	Saves error codes	See Extended	

*) Languages: Slovak, English, German, Italian, French, Polish.

How to change production settings

To change settings, select required menu/parameters. By pressing of the „+" button, change actual values. O: ...shows actual temperature, N:...can be changed to new value.

It is possible to increase vaues by „+" and decrease them by „-". By the „M" button is change confirmed and saved. If you do not wish to save the values, press „E" button (Exit/Escape).

Please, do not make any changes, until you have not read this manual.

Example:

```
EFFECT ADJ.


O: 1                    N: 2
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Comeback to production settings

To reset production settings, select extended menu and enter password (code number after „O"+5). Then, select Menu/Setup and press the „M" button. This starts reset of the production settings.

Here you can also save your own settings, in the following way: by pressing of „+" button go to „Save settings?" and save your settings by „M" button. Exit menu by „E" button.

Regulation of pellet dosing

Before starting-up of burner, it is necessary to set pellet feeding through parameter of „Stoker Adj." in Advanced menu. Thermostat cannot start heating during setting.

First, set parameter of „heat value" to value given by your pellet supplier. If supplier gives 4,8kWh/kg, set parameter to 48, etc.

Now, put plastic bag around opening of the pellet feeder. Then, confirm by „M" button and keep the instructions. Weigh pellets fallen into the plastic bag, put their weight in gramms via „+/-" buttons and press „M" to save values. This setting has to be done within 15 minutes, otherwise the burner switches to emergency regime. Weigh pellets very exactly!

After setting of above mentioned parameters, the control system automatically sets all parameters relative to pellet feeding.

How to install pellet burner

Pellet burner PELH30A can be installed only by qualified, specifically skillfull personnel. Burner *door* are from production mounted to boiler.

Put the burner on door screws and fasten it by nuts (B). Connect inlet pipe to pellet feeder under the required angle. Fix inlet pipe into stable position and fasten clamping screws.
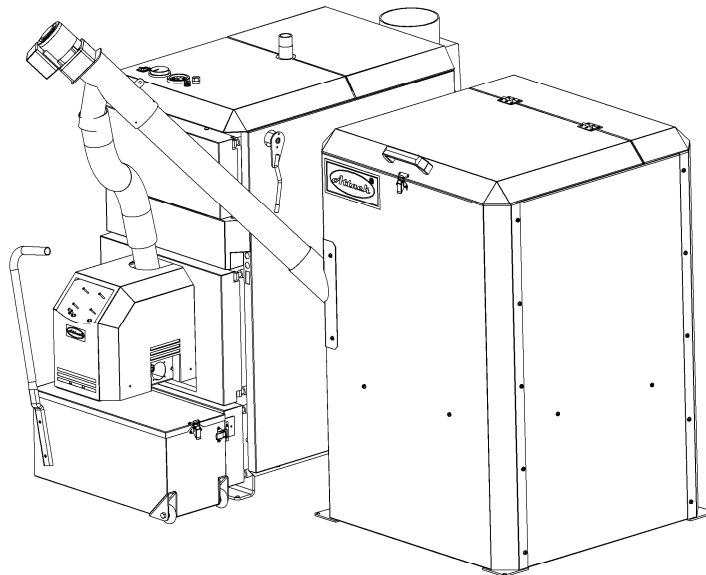
Install pellet container and pellet feeder. There should be height gap between feeder´s opening and inlet pipe of min. 400mm. In horizontal position there should be gap between inlet pipe and feeder´s opening of min. 1500mm (i.e. not vertically aligned).

Fill container with pellets and connect feeder into mains socket (230V~). Let feeder run, until you reach continual pellet feeding. We recommend to fix plastic bag to feeder´s opening to collect falling pellets. Disconnect feeder from mains socket. Install inlet hose between feeder´s opening inlet pipe and set length of the hose.
Hose should not be straight, nor too incurbed, to prevent pellets from stucking and cumulating. Connect feeder into burner´s socket.

Burner start

By turning the boiler´s main switch on is the burner automatically turned into emergency regime. Burner is put into operation by turning the burner´s switch on and by turning boiler´s thermostat into position adequate to required boiler temperature. Following demand for heat supply is the burner ignited and burns pellets, until the thermostat gives instruction to stop.
Burner is alternatively controled by thermal boiler sensor connected to TS1 inlet on the right upper side of the circuit board. Make sure, that connection is fixed into one position.

Burner stop

Burner turnes off by turn-off-signal of the boiler thermostat, by turning off the burner´s switch (emergency regime, or via *Burn-down = Final combust.*) initiated per menu.

Emergency stop

⚠ NOTE:

In case of emergency can be burner turned off by the main boiler switch and by plugging-out of the boiler´s mains cord from mains socket.

Cleaning and maintenance

It is necessary to clean the burner after every consumption of 2000kg of pellets. It is based on presumption, that boiler accepts appropriate amount of ash and quality pellets are being burned.

Moreover, it is recommended to sweep exchanger´s parts of the boiler at least twice a month.

1. Clean pellet inlet into burner by brush for bottles or other suitable tool.
2. Scrape the ignition board and the grate and clean holes in the grate.

⚠ NOTE:

Keep ash in closed containers from uninflammable material.

Maintenance once a year or in case of need (by qualified person)

Start *burn-down* by menu buttons and wait, until the fuel in burner burns-out. Turn the burner off by burner switch and by the main switch, plug out mains cord of the boiler from mains socket. Open door with burner to cca 90°.

1. Put down burner cover and wipe photocell by rag and soft abrasive agent (tooth paste) Be carefull by flat cable of display and buttons!
2. Clean air wings of the fan. Most suitable is to blow them with compressed air.
3. Screw out the scrape and ignition board.
4. Clean space behind the ignition board.
5. Scrape ignition board and scraper.
6. Brush grate utterly and clean holes in the grate.
5. Mount all parts back.
6. Clean container and pellet feeder from dust and small dirt.
7. Check state of inlet hose for pellets.
8. Put pellet feeder into operation by plugging of feeder´s mains cord into mains socket (230V~) to fill it with pellets.
9. Set feeded amount of pellets.

Trobleshooting

Burner turned off.
Check, which alarm was indicated on display.

If display is black and without text, check thermal fuse of the boiler. If there is no error, probably is only the burner´s thermal fuse turned off. To start again, turn energy supply into burner off, remove cover and press small button between overheating fuse connections. Thermal fuse is placed directly in the fuel-inlet tube. After restart, mount the cover back and turn on the energy supply. Thermal fuse of the burner is switched off at the temperature of 93°C.

Signal text on display	Explanation	Error code at recording
ERROR: IGNITION FAILED		10
ERROR: LOST FIRE IN COMBUSTION	Extinction at heating, restart failed	11
ERROR: fire sensor	Faulty photocell, abnormal light	12
ERROR: CIRCUIT BOARD OVERHEATED	Temperature under cover is too high	13
ERROR: TEMPERATURE SENSOR „TOO LOW"	Faulty thermal sensor of built-in operation thermostat	14
ERROR: TEMPERATURE SENSOR „TOO HIGH"	Faulty thermal sensor of built-in operation thermostat	15
ERROR: OPTO-SWITCH	Faulty circuit board	16
ERROR: FAN ALWAYS ON	Ventilator rotates, when it is not supposed to	18
ERROR: FAN STOP	Ventilator is stopped, when it is not supposed to be	19
ERROR: FAN SLOW	Ventilator rotates too slowly	20
ERROR: IGNITION 1	First ignition trial failed	21
ERROR: STOCKER	Pellet feeder is not connected to the burner	22
ERROR: BURN-DOWN FAILED	Photocell recognizes signal also 15 minutes after setting „Burn-down"	23
ERROR: LIGHT LOST DURING BURNING	Photocell does not recognize fire, restart failed	24
ERROR: SCRAPER NOT OPERATING	Fault in circuit board of scraper or in grate gear	25
ERROR: SCRAPER JAMMED	Grate moves too slowly	26

Possible causes of faults

Error code	Possible cause	Actions to correction
10	Feeder does not supply enough of pellets. Empty pellet container. Faulty ignition fuse. Faulty ignition spiral. Photocell needs to be cleaned.	Set pellet ration. Fill the container. Replace fuse. (6.3A). Replace spiral. (48 Ώ +/- 5%). Clean photocell.
11	Feeder does not supply enough of pellets. Empty pellet container. Faulty ignition fuse. Faulty ignition spiral. Photocell needs to be cleaned..	Set pellet ration. Fill the container. Replace fuse. (6.3A). Replace spiral. (48 Ώ +/- 5%). Clean photocell.
12	Short circuit or other fault of photocell.	Replace photocell.
13	Too high temperature in boiler room.	Prevent from heat leakage.
14	Faulty sensor of thermostat	Replace sensor.
15	Faulty sensor of thermostat	Replace sensor.
16	Faulty circuit board	Replace circuit board.
18	Ventilator runs, while the burner is in pause regime.	Replace circuit board.
19	Ventilator does not run, when it should.	Change ventilator fuse (800mA); check connections; replace ventilator
20	Ventilator runs too slowly	Clean ventilator; replace ventilator
21	First ignition trial failed	Set pellet ration.
22	Pellet feeder missing	Connect pellet feeder
23	Incorrect pellet feeding	Set pellet ration.
24	Incorrect amount of pellets feeded. Faulty photocell	Set pellet ration. Replace photocell.
25	Cleaning does not work	Check connection between circuit board of scraper and main circuit board.
26	Cleaning is slow	Clean grate

Decomposed view

ITEM NO.	PART NUMBER
1	PELH30900_1
2	H30920A
3	H30921A
4	H30930A_1
5	H30940A
6	H30950A
7	H30951A
8	H30960A
9	H30961B
10	H30980
11	H30982
12	H30952
13	H30008
14	H30001
15	H30002
16	H30003A
17	H30009
18	H30118A
19	H30012A
20	H30014
21	H30970
22	H30701B
23	H30803
24	H30804
25	H30806
26	H30807
27	H30808
28	H30809
29	LA12
30	TH31
31	TH33
32	TS101
33	H30016
34	PR15
35	TS094A
36	DK001A
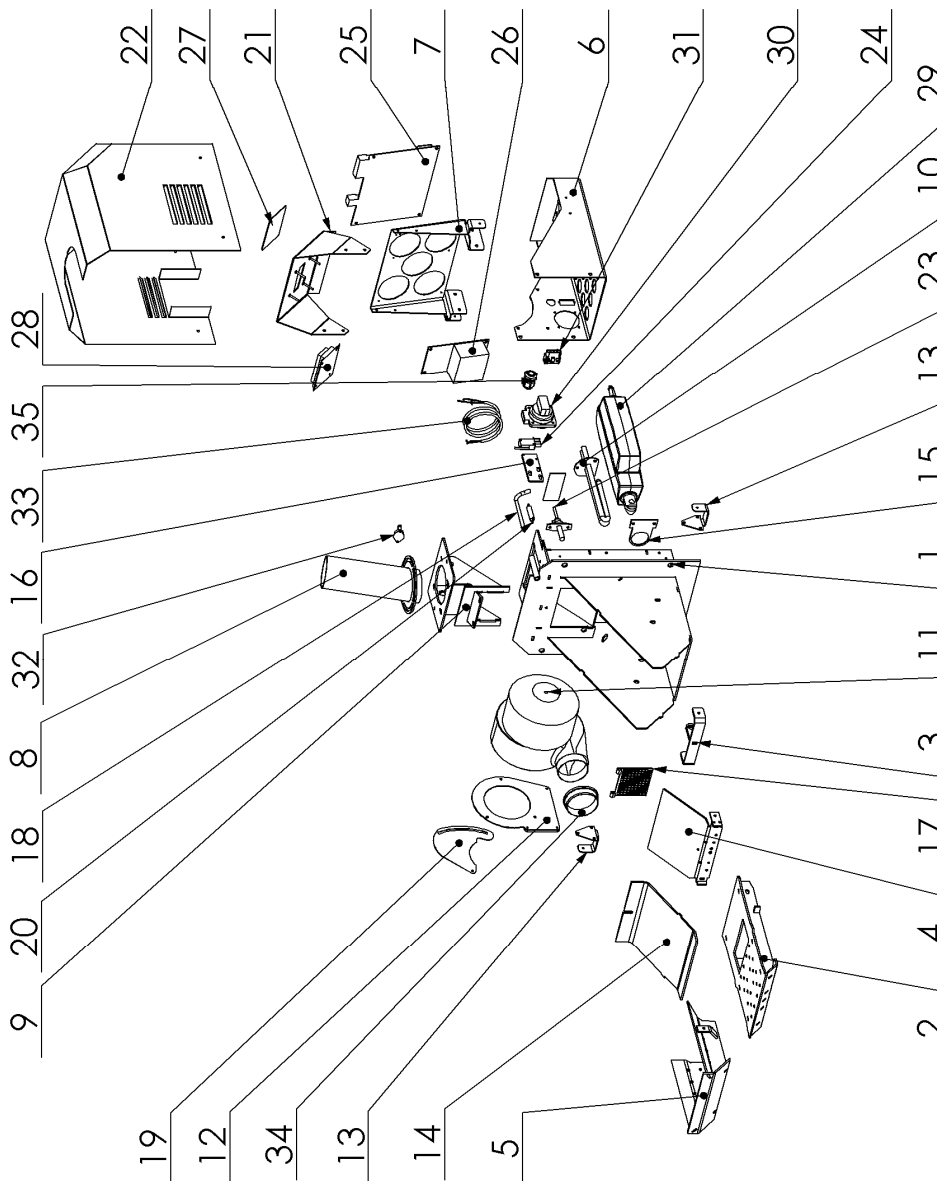
Spare parts   Codes of spare parts

1. Combustion chamber
2. Grate
3. Grate clamping
4. Plate of ignition
5. Scraper
6. Basket of burner
7. Platform of electronics
8. Pellet inlet
9. Reduction of fuel inlet
10. Ignition coil
11. Radial fan
12. Fan bracket
13. Shield with covering bracket
14. Hearth covering
15. Sealing flange
16. End-switch bracket
17. Pellet brake
18. Pin of end-switch
19. Blind of suction
20. Tension spring
21. Platform of display
22. Burner cover
23. Photocell
24. End-switch
25. Control panel
26. Grate panel
27. Self-adhesive control panel
28. Display panel
29. Grate gear
30. Socket
31. Connector
32. Emergency thermostat with reset
33. Burner cabling
34. Silicon cuff
35. Cable lead-in
36. Logo „ATTACK"

El. scheme of connection, burner PELH30A
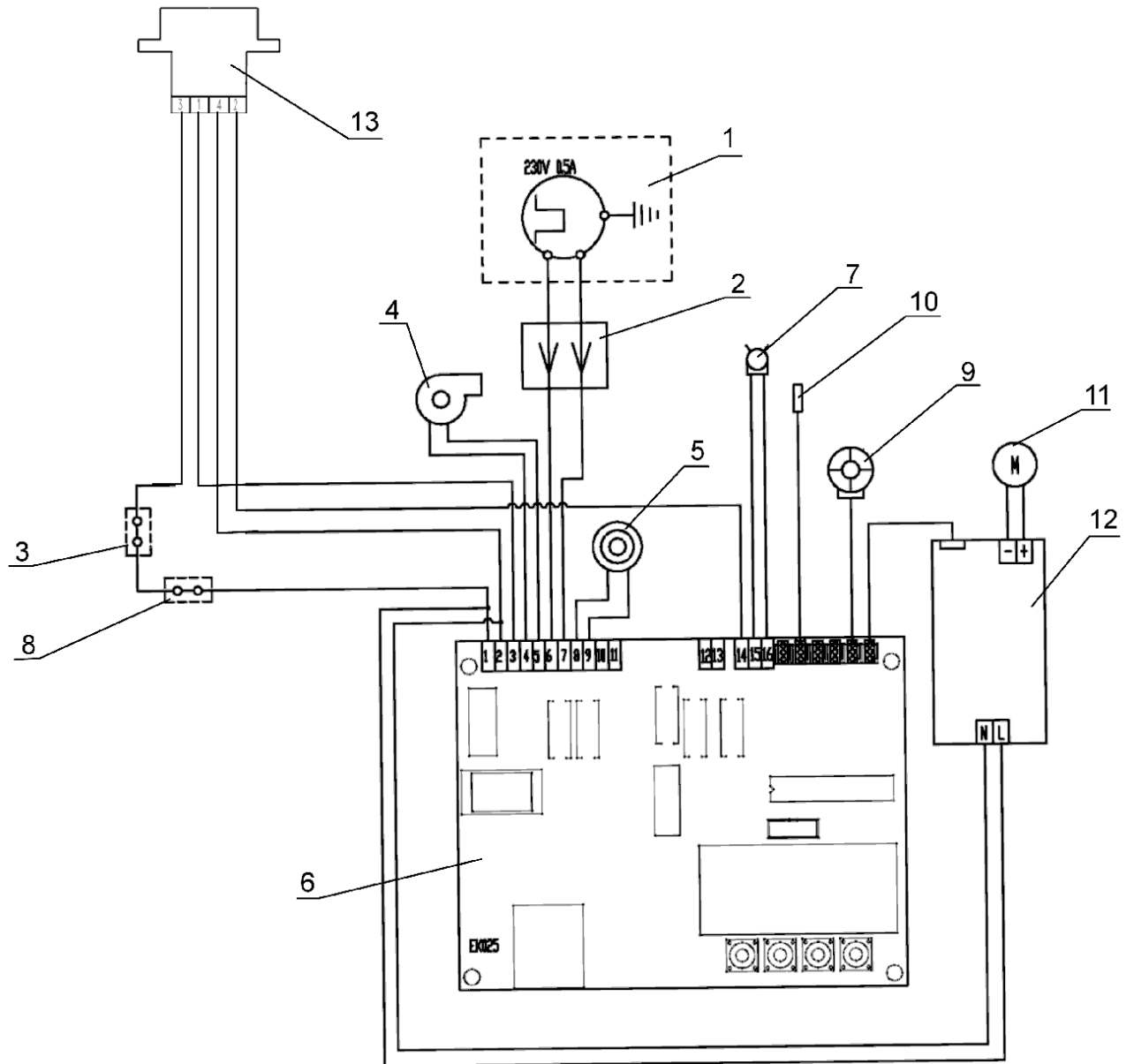
Endings and connections, fuses

1. 230 VAC – Phase
2. 230 VAC – Directly earthed conductor
3. 230 VAC – Phase of thermostat
4. Ventilator – Directly earthed conductor
5. Ventilator – Phase
6. Feeder – Directly earthed conductor
7. Feeder – Phase
8. Ignition – Directly earthed conductor
9. Ignition – Phase

12. Ash removing - Directly earthed conductor
13. Ash removing - Phase

19. Earthing
20. Photocell
21. Photocell

Thermal sensor

Placing and sizes of fuses

F1 = F800mAL250V	for ventilator
F2 = F1AL250V	for feeder
F3 = T6.3AL250V	for ignition
F4 = N/A	
F5 = F2AL250V	for gear of ash removing

Accessories

Name	Number
Ashpan	
Pellet container, 300l	PEL9600
Pellet feeder, 1.5 m long	
Pellet feeder, 2.5 m long	
Pellet feeder, 5 m long	

Contact person and electrotechnician

Date of installation	
Installed (by):	
Address-street	
ZIP Code, City	
Telephone	
Cell phone	

Service record

Date	Servised/ Checked	CO_2	Flue gas temperature	CO ppm	Service performed by:

Advanced menu

Following data/parameters are adjustable only by qualified person.

All points of advanced menu are available by pressing "M". actual setting is permanently displayed in the left bottom corner under „O:" (time/value), whereas new value is displayed in the right bottom corner under „N": (time/value).

To increase and decrease time or values, press buttons „+" and „-". To confirm and save new values, press „M". To exit without saving, press „E".

By enter into advanced menu, add 5 to displayed random number. Example: it can be „18 on both for „O:" and „N:". Now press „+", until „N:18" is changed to „N:23", then press „M". This enables access into extended value.

For example:

MENU/ ADVANCED	
O: 18	N: 23

Old   New

Output setting:

EFFECT ADJ.		
ENTER	>	EXIT

Here you select three required outputs like „ACTUATOR OUTPUTS" as ACTUATOR OUTPUTS in generally accessible menu (8-30 kW).

After pressing the „M" by displayed „EFFECT ADJ." is in the left upper corner displayed „OUTPUT 1 (kW)" . In the left bottom corner will be „O:14" (i.e. actual value of actuator output in kW).

To change actuator output, press „+" button, until required value is displayed in the right bottom corner, i.e. „N:18". If you press „M" now, this new value (18 kW) will be saved for output level 1. After this, output level 2 is displayed („OUTPUT 2") and it can be set to required value. If it will not be changed, press „M" to save value indicated on display, i.g. „N:22", i.e. output level 2 (OUTPUT 2) will be 22 kW.

If you wish to let display without saving of changes, press „E".

Setting of ignition:

IGNITION SETTING		
ENTER	< >	EXIT

Here you can adjust ignition ration of fuel in %; this value was automatically calculated adequately to weight given in Feeder setting - amount.

By pressing „M" button, „Ignition amount 1" is dipslayed in the left upper corner. Changed are made in %, starting amount was pre-set to 170g. If you increase this amount to 110%, starting amount will be changed to 187g.

If the first trial of burner ignition fails, Ignition amount 2 is activated, which is pre-set from production to 45% from 170g, i.e. 76,5g.

Setting of time of test blow-through

TEST BLOWING
ENTER   <   >   EXIT

Time of test blow-through defines time, within which will be boiler and chimney ventilated before beginning of combustion (10-100 seconds).

For boilers, at which there is tough to achieve their draught, it is recommended to increase time of test blow-through, Pre-setting from production is for 15sec.

Setting of transition period:

TRANS. PHASE
ENTER   <   >   EXIT

Here you select duration from first recognizing of fire up to feeding of full amounts of pellets adjusted by actuator output.

There are two parameters of transition phase: first is 14 KW and second is 30kW. Time set by the first parameter determines, how long it will take to achieve 14kW, time of the second parameter determines time to achieve 30kW from fire recognition.

Setting of dosing during transition phase:

TRANS. FEED.
ENTER   <   >   EXIT

Here you can set fuel amounts that are feeded during transition running from fire recognition until burner achieves output of 14kW.

Set required amount feeded into burner after fire recognition. Feeded amount will be gradually increased with every ration during set period. Pre-set from production is 15% from full ration for14kW.

Time setting of cleaning by blow-through:

CLEANBLOW TIME
ENTER   <   >   EXIT

Cleaning by blow-through is activated, when thermostat switches off and value recorded by photocell decreases under 12%.

Setting of ash removing:

ASH AUGER
ENTER   <   >   EXIT

Ash removing is activated automatically in set intervals from 1 up to 200 hours for stated period.

Setting of maximum burning time:

COMBUST. TIME
ENTER   <   >   EXIT

By this parameter it is possible to set maximum time of continuous burner operation.

Setting of minimum duration of break between burn-down and ignition:

MIN. PAUSE TIME
ENTER   <   >   EXIT

This parameter ensures, that it comes to next burner ignition only after stated time, not immediately after burn-down.

Setting of time of blow-through clening:

MODULATION.
ENTER   <   >   EXIT

By the stated value of ΔT , before achieving required boiler temperature, boiler output decreases automatically to the pre-set level.

Setting of photocell sensibility:

```
PHOTOSENSOR

ENTER      <   >  EXIT
```

Here you can set photocell sensibility, i.e. light value in (%), to which should system react as to fire. It should not be necessary to set the light sensibility, if correct photocell is installed. Pre-set from production is: 50%.

Selection of thermostat:

```
THERMOSTAT

ENTER      <   >  EXIT
```

Here you select required thermostat: external boiler thermostat or burner thermal probe, or combination with room thermostat.

If you use burner thermal probe , it is possible to set 2 parameters. First, select *starting temperature,* save value by pressing „M" button, then you can change *stop temperature.* By repeated pressing of „M" you save also this value. Burner will now work in the range of the actually set temperature values. There should be difference between starting and stop temperature of at least 5°C.

Grate cleaning:

```
SCRAPER

ENTER      <   >  EXIT
```

By this parameter you can set, if the grate cleaning will be activated and when it has to be turned on - before ignition or after burn-down.

Language selection:

```
LANGUAGE

ENTER      <   >  EXIT
```

There is possibility to select these languages: Slovak, English, German, Italian, French, Polish.

Setting of output range:

```
EFFECT SPAN

ENTER      <   >  EXIT
```

Burner can operate in the output range of 8 – 12 kW, or 14 – 30 kW, acoording to the range selected by this parameter.

Adjustment of pellet dosing:

```
FEEDER ADJUST.

ENTER      <   >  EXIT
```

= The most important parameter of the control system! Here you set pellet ration supplied by feeder at full operation. During setting of pellet ration you need plastic sack and very exact weighing machine. After entering into parameter you have to set Heat value (kWH/kg) as the first. Then, the text „Put on the sack" is displayed (pellet feeder should be filled with pellets up to bore). Put the sack on the feeder and press the „M" button.

Now check countdown on display, until feeder works for 6 minutes. Then enter weight of fallen pellets by pressing „+" and „-" buttons and confirm/save by „M" button.

Ventilator setting:

```
VENTILATOR.

ENTER      <   >  EXIT
```

By this parameter it is possible to adjust flue gas adequately to flue gas analyzer for content of CO and O2 in flue gas.

Operation time of feeder:

```
OPERATION  TIME
OF FEEDER.


ENTER        <   >   EXIT
```

Here you can see, how long the pellet feeder worked. You can use it to calculate energy consumption, etc.

Test:

```
MENU/TEST


ENTER        <   >   EXIT
```

Use by troubleshooting. Here you can manually or automatically control components.
This function is very helpful by troubleshooting with particular components. In manual regime you can test every component individually, by pressing „M" for start and „E" for stop. For step forwards to required part, press ,,+/-". They are displayed in the following order:

Ventilator (during ventilator test should displayed rotations per minute stabilize to 2000);
Pellet feeder (start/stop by buttons „M"/"E");
Ignition coil (activated by „M" and stopped by „E");
Grate (moves out „M" and moves back „E". Here you can see, how many mA are consumed by unit during shift, it should not exceed 1800mA - limit for error start of Grate blockage).
Next displayed options:
Actual temperature, if thermal probe is connected; actual photocell value; shows light (On/Off); closing of this application

Settings:

```
MENU/SETUP          _

ENTER        <   >   EXIT
```

Settings made during installation are stored here, or it is possible to reload production or installation settings..

Accessible are three main options: Loading of settings, Saving of settings and Production settings.

- „Loading of settings" - means, that you can reset original settings

- „Saving of settings" - means final input of burner settings, made by installator. This eases browsing of settings, if it would come to too many parameter changes.

- „Production settings" - are original settings, that can be reloaded again.

Log:

```
LOG


ENTER              >   EXIT
```

All errors are saved and displayed here, together with the frequency of their incidence. Also final number of ignition trial is here to read.
There are four options: number of errors, number of first ignitions, number of second ignitions, newest errors

- „Number of errors" - displayes every error code individually, e.g. E-CODE 10(X). See page 17 for codes and explanation.

- „Number of first ignitions" - displays, how many times did ignition run.

„Number of second ignitions" - displays, how many second ignition trials were made by burner (i.e. how many times did first trial fail).

- „Last errors" - displays codes of errors in order according to their incidence. It eases troubleshooting.

Record about installation for warranty claim

Date of installation: 20…..-……-…...

Installed in :……..……..……………… Telephone:………………………

Street:…………………………………...... Fax:………………………….

ZIP Code and City: ………………….Mobil:……..………..

…………………………………………

Installed on boiler:
Trademark:.. Model:………………………

Pellet burner:………………………….... Serial number:………………..

Pellet feeder:
Trademark:……………………………... Length:………………………..

Serial number:………………………………

Settings of pellet burner:

Menu	Production settings	Options of settings	Set to
Output level	1 = 14kW	1, 2, 3	
ON/OFF temperature	ON 72 °C, OFF 82 °C	Difference min. 5 °	
Pellet ration	95 %	50 – 200 %	
Advanced menu	Random nr. + 5	No	No
Pellet ration	1100 g/6 Min.		
Energy content	48 kW/10 kg	45 – 60	

Installed by:……………………………………………………………

Telephone:……………………………… Fax:……………………………….

Contact person:…………..……………………………………………..

This copy is for customer.

Date of installation: 20…..-……-…...

Installed in :……..……..………….…… Telephone:……………………

Street:………………………………....... Fax:………………………….

ZIP Code and City: ………………..Mobil:……..………..

…………………………………………

Installed on boiler:
Trademark:.. Model:……………………

Pellet burner:………………………….... Serial number:………………..

Pellet feeder:
Trademark:…………………………….. Length:………………………..

Serial number:…………………………

Settings of pellet burner:

Menu	Production settings	Options of settings	Set to
Output level	1 = 14kW	1, 2, 3	
ON/OFF temperature	ON 72 ˚C, OFF 82 ˚C	Difference min. 5 ˚	
Pellet ration	95 %	50 – 200 %	
Advanced menu	Random nr. + 5	No	No
Pellet ration	1100 g/6 Min.		
Energy content	48 kW/10 kg	45 – 60	

Installed by:……………………………………………………………

Telephone:…………………………… Fax:……………………………….

Contact person:………..……………………………………………..

This copy is for installator.
Please, make copy also for seller and send it there.

ATTACK, s.r.o.
Dielenská Kružná 5
038 61 Vrútky
SLOVAQUIE

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