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CE

TECHNICAL INSTRUCTIONS

USE AND MAINTENANCE

Cm Pelet-set - touch

(60-90 kW)

For boilers:
EKO-CK P 70-110

TUPS-90K-07-2017-E-N-eng-touch_1.07

CONTENTS

1. Introduction

Cm Pelet-set 90, wood pellet based heating system (nominal burner output **60** to **90 kW)** designed for installation in combined boilers or biomass firing boilers **EKO-CK P** with thermal output from **70** to **110 kW.** These technical instructions provide basic product information, its technical characteristics and instructions on use and maintenance of its components. Cm Pelet-set 90 components are of modern design and construction, made of high quality materials having all required certificates. Cm Pelet-set 90 installation and start-up must be carried out by a professional or authorized fitter of manufacturer.
Instructions for fitters/servicemen presenting setting of all parameters of pellet regulation are also supplied with these instructions.

2. Status at delivery

1. Pellet burner CPPL-90
2. Lower boiler door CPDV 60/70 for burner CPPL-90 (for boiler EKO-CK P 70) and CPDV 90/110 (for boilers EKO-CK P 90 and 110)
3. Boiler control unit CPREG - touch
4. Pellet feeder CPPT-90
5. Pellet tank CPSP-800

2.1 Pellet burner CPPL-90

Pellet - burner **CPPL-90** (nominal thermal output 60 to 90 kW, for boilers EKO-CK P 70-110) consists of high quality components and made of certified built-in materials. The burner includes high-efficiency fan which, by aid of specially shaped burner grate creates a flame as in standard burners. The burner also includes electrical heater which, via the control unit, automatically ignites pellets when required. A built-in photo-cell serves for flame detection in the burner. Special shape of a combustion chamber enables good mixing of air and fuel which gives high efficiency of combustion. Depending on the operating phase and set output, fan revolution number, i.e. air supply to the chamber is changed. The burner is designed for installation into prepared openings at the lower boiler door CPDV 60/70 for burner CPPL-90 (for boiler EKO-CK P 70) and CPDV 90/110 (for boilers EKO-CK P 90 and 110). The burner is factory wired and it has to be connected to the boiler control unit CPREG - touch.

2.2 Lower boiler door - factory mounted onto EKO-CK P boilers

Lower boiler door CPDV 60/70 for burner CPPL-90 (for boiler EKO-CK P 70) and CPDV 90/110 (for boilers EKO-CK P 90 and 110) with an opening adapted for pellet burner is supplied with the pellet burner CPPL-90 (except in case of supply of a boiler with Cm Pelet-set 90, when the lower boiler door CPDV is pre-installed onto boiler). Standard boiler door has to be dismantled from the boiler instead of which the supplied boiler door CPDV is installed onto which the pellet burner is assembled.

2.3 Boiler control unit CPREG - touch

Sophisticated digital boiler control unit **CPREG - touch** controls the burner in accordance with the need for heating and sanitary water. Characteristics of the boiler control unit CPREG - touch: microprocessor control, bimetal safety thermostat, safety pressure switch, micro switch for lower boiler door, control unit which turns on and off the burner according to set temperatures and operation regimes, regulates pellet supply by the feeder, operation in winter or summer regime, boiler protection against condensation, display the boiler current status on the screen, error messages on the screen, with boiler sensor and sanitary water sensor supplied.
Operation and setting of individual parameters are described in details hereinafter.

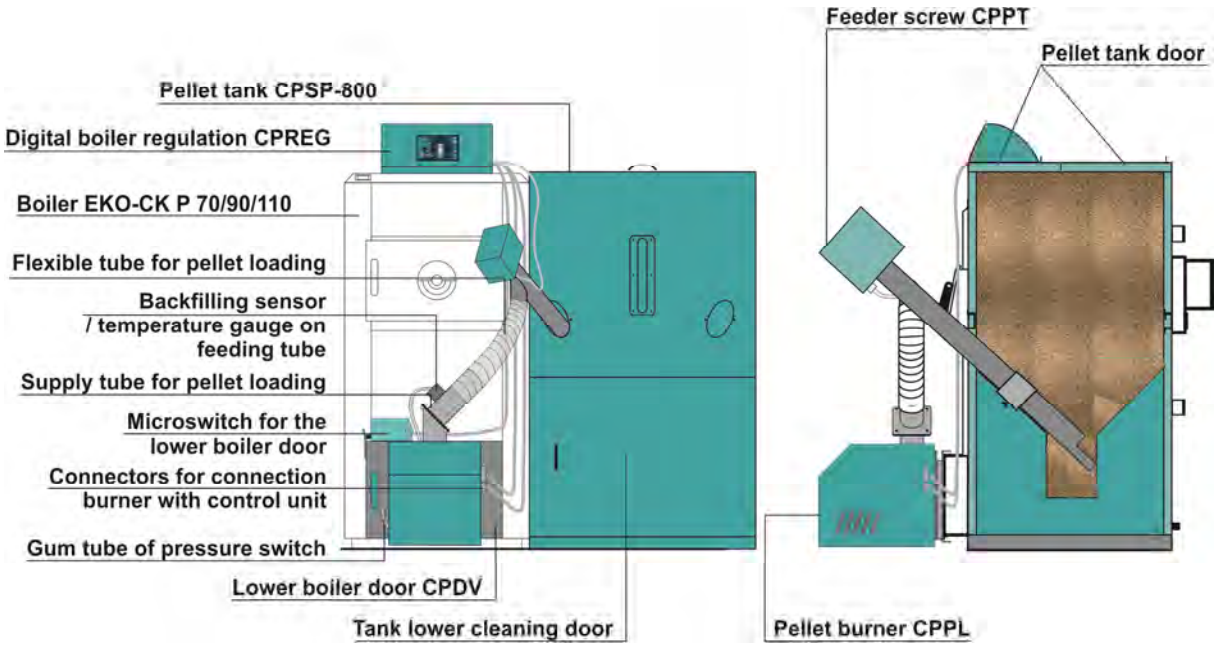
2.4 Pellet feeder CPPT-90

From tank to the burner pellets are transported by a pellet feeder **CPPT-90**. The feeder tube contains an Archimedean spiral which, with the assistance of an electric motor with gearbox, conveys pellets from the tank to the burner via a flexible tube. Electric motor is factory wired and it has to be connected to a connector at the rear side of the boiler control unit CPREG. If a power cable is damaged, its replacement should be done by an authorized service man or a person trained for such works in order to avoid risk of electric shock or damage of equipment.

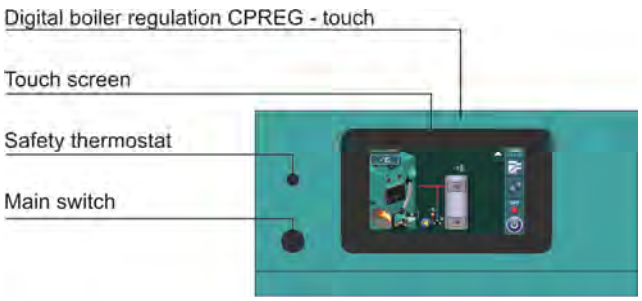
2.5 Pellet tank CPSP-800

Pellet tank **CPSP-800** shall be located to the right (recommended) or left side, next to the boiler. After it has been positioned, a pellet feeder should be installed into the tank. Before filling of the tank, it is necessary to open the lid on the tank top and check whether the tank is free from solid objects or any other foreign objects which should not be there. Assembly of the pellet tank is described in assembly instructions of the pellet tank.

3. Component description and technical information



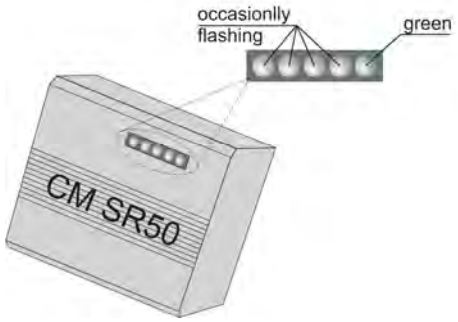
Cm Pelet-set type		**90**	**90**	**90**
Burner CPPL type		CPPL-90	CPPL-90	CPPL-90
Set thermal output	(kW)	60	70	90
Boiler type		EKO-CK P 70	EKO-CK P 90	EKO-CK P 110
Pellet tank volume	(l)	800		
Pellet tank height	(mm)	1420		
Pellet tank depth	(mm)	980		
Pellet tank width	(mm)	1010		
Supply voltage	V/Hz	230/50		
Boiler width	(mm)	640	690	690
Lower boiler door CPDV	(mm)	CPDV 60/70 for burner CPPL-90 (for boiler EKO-CK P 70) and CPDV 90/110 (for boilers EKO-CK P 90 i 110)		



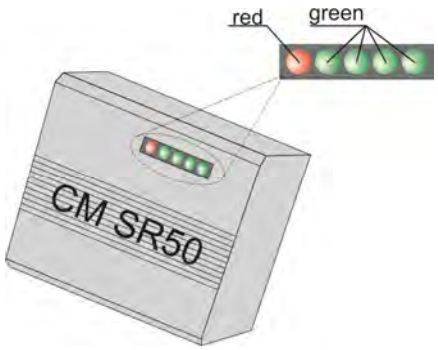
4. Safety components

The burner is equipped with several safety mechanisms:

Backfilling sensor / temperature sensor on inlet tube that is installed tube for connecting of pellet feeding flexible tube. At excessive temperature on feeding tube error is displayed at control unit. At backfilling supply tube error is displayed at control unit.



Backfilling sensor in normal mode (green LED flashing while the other green flash depending on the amount of pellets that fall through the supply tube)



Backfilling sensor in a mode where the registered supply pipe backfilled with pellets (all LEDs light for 10 seconds without blinking, the regulation is displayed error)

- Safety pressure switch built in the burner controls overpressure in the boiler combustion chamber. If the set overpressure in the boiler combustion chamber is exceeded, pressure switch stops feeding of pellets, the burner shut down and the error is displayed at control unit.
- If lower boiler door is opened while the burner is working, micro switch on lower boiler door cuts the el. power to the control unit and burner. After closing the lower boiler door control unit continues to work according power supply interruption regime.
- If there is no flame (the built in photo-cell does not detect the flame within set time), control stops the burner operation and error is displayed or it goes to blowing off and error is displayed
- Control unit has a built in protective function which protects the boiler against overheating. If temperature in the boiler exceeds 93^0C, regardless heating or sanitary water is needed the boiler pump and/or the sanitary water turns on and works until temperature in the boiler falls below 93^0C.

When temperature in the boiler exceeds 110°C (+0°C / -9°C), power supply is turned off by the safety thermostat (via control unit).

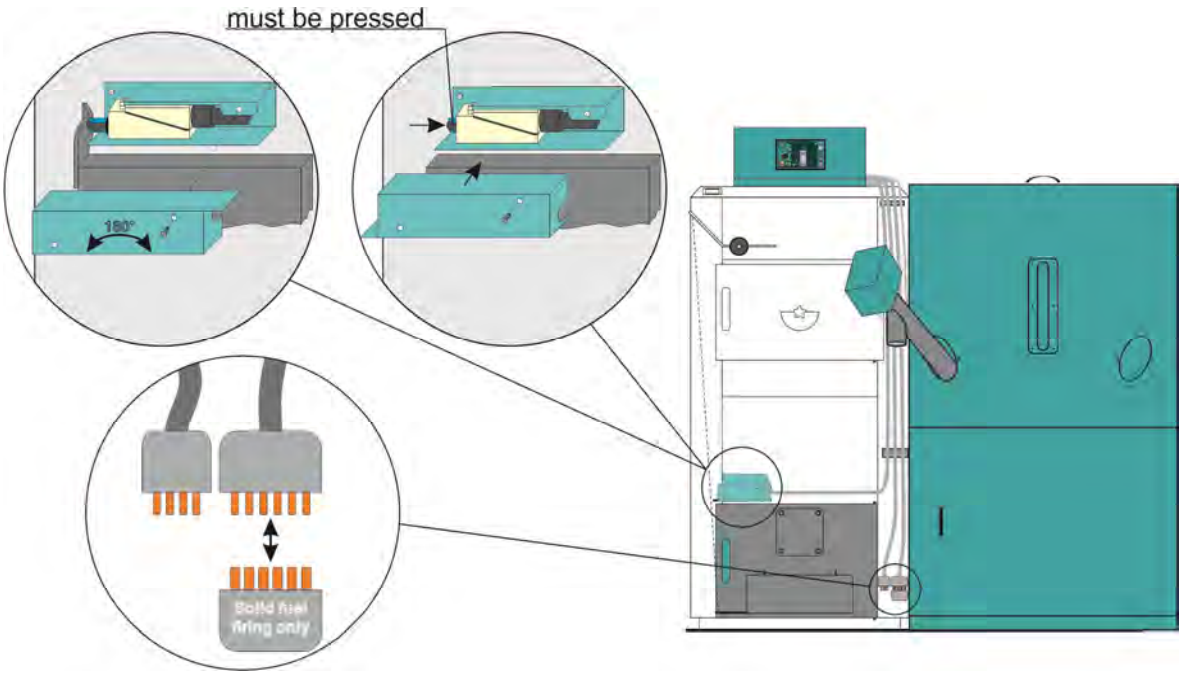
Thermal protection built in coils of the fan electric motor at the burner and the screw feeder motor, protects them against overheating caused by failure or locking.

A flexible tube connecting the pellet burner and pellet tank is made of plastic material reinforced with metal wire which, in case of back flame from the burner to the tank, melts and prevents flame to penetrate to the pellet tank.

5. Fuel

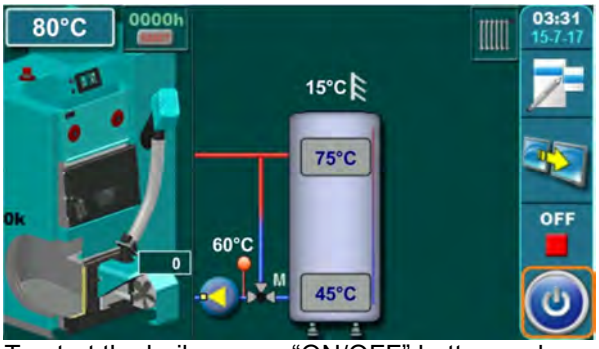
Wooden pellets are used as fuel in boilers with built in Cm Pelet-set-90. Pellets are bio-fuel made of wooden wastes. Pellets can be stored in different ways: in bags of 15 kg, big bags of 1000 kg and in bulk form in large tanks (4 to 15 m^3) dug in soil or located in basement premises. The recommended pellet properties for firing in Cm Pelet-set:

- Heating value >= 5 kWh/kg (18 MJ/kg)
- Diameter = 6 mm
- Max. length = 50 mm
- Max. moisture content = 12 %
- Max. dust content = 1.5 %.

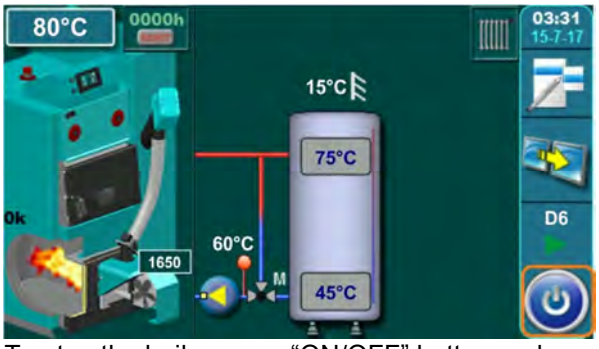


Solid fuel firing

6. Start/stop



To start the boiler press “ON/OFF” button and confirm it pressing the “OK” button



To stop the boiler press “ON/OFF” button and confirm it pressing the “OK” button

To start the boiler press “ON/OFF” button and confirm it pressing the “OK” button

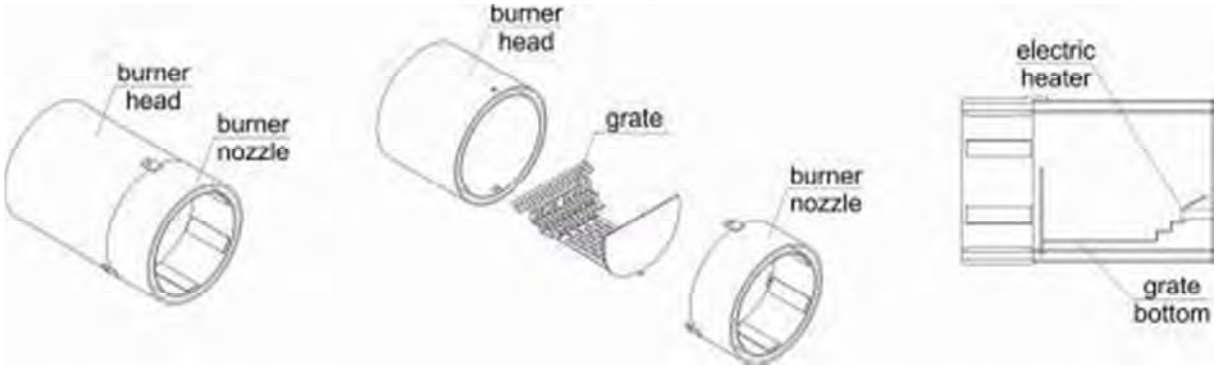
To stop the boiler press “ON/OFF” button and confirm it pressing the “OK” button

7. Maintenance of Cm Pellet-set

It is recommended to clean the burner and boiler combustion chamber after each consumed pellet tank (approx. 200 kg).

If required, cleaning frequency can be increased or reduced compared to the recommended one, depending on **quality of pellets** and frequency of the burner turning on/turning off.

The following has to be checked:
- sediment in the boiler combustion chamber and clean it when required;
- Ash in the burner combustion chamber (under the grate) – remove the burner cover to make cleaning easier (see figure).
- sediment at burner grate and clean it when required;
- ash amount in ash tray and empty it as required

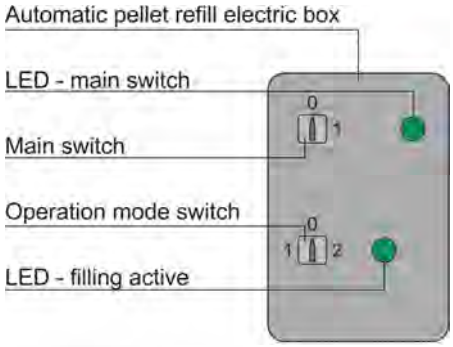


Removal of the front burner covers for easier cleaning and correct grate position

The following components must be thoroughly checked/cleaned:
- Clean thoroughly burner, grate...
- Clean photo-cell
- Empty and clean pellet tank
- remove and clean pellet feeder

Cleaning frequency of above items depends on pellet quality and it should be adjusted accordingly
- Check flexible connecting tube and place it so that flexible pellet feeding tube is inclined toward the burner so that pellets can fall freely into the burner,
- Check wires and connections and replace them when required.

9. Automatic pellet refill – additional equipment



Operation mode switch:
0 - OFF
1 - Auto
2 - Manual

Main switch – on/off power supply for the filling system

LED – main switch – on when there is power supply

Operation mode switch – select working mode:
0 – OFF (disabled)
1 – Auto filling (working until tank sensor stops it)
2 – Manual filling (working until manual switching off, doesn't working according to tank sensor)

LED – filing - on when filling is working (manual or auto)

1.07

Macinec, 07/2017.