BioTec Plus

Two combustion chamber hot water boiler – wood gasification/pellet

Steel, two combustion chamber hot water boiler **BioTec Plus** is intended for firing wood logs and pellets. In the pellet combustion chamber is a factory-installed pellet burner with the function of automatic cleaning of the grate and firing pellets, and in the second combustion chamber the logs are burned by the principle of pyrolysis (wood gasification).

Multifunctional digital boiler controller using lambda probe and modulating underpressure fan optimizes combustion in both combustion chambers thus raising the efficiency of the boiler.

The pellet tank is an integral part of the boiler on which it is possible to install automatic vacuum pellet suction system.

Next to the boiler is obligatory to install an buffer tank (CAS). Boiler controller can be extended with a control module CM2K (control 2 heating circuits according to outdoor temperature, max.4xCM2K), CM-WiFi box for connecting the boiler to the web portal, vacuum suction system, CM-GSM ...

CHOPPED WOOD, UP TO 0,5m

WOOD BRIQUETTES

WOOD PELLETS

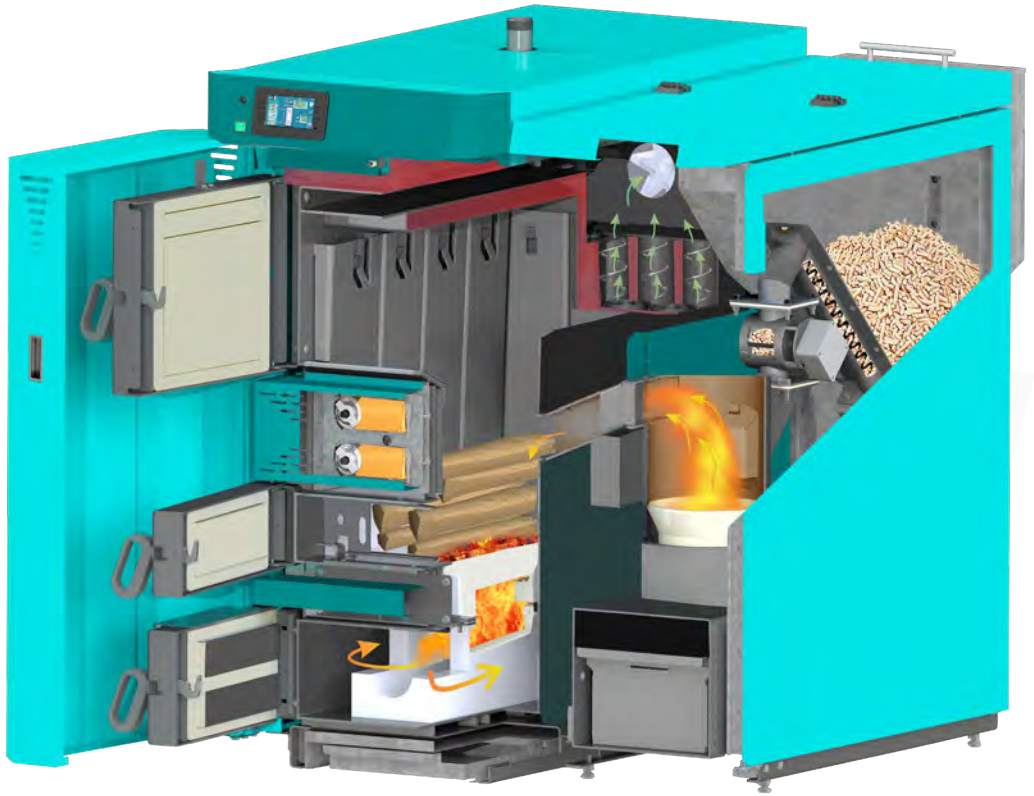
KLASA KOTLA 5

Wi Fi READY

ECODESIGN APPROVED ErP

Characteristics of BioTec Plus boilers

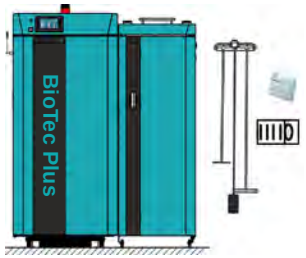
- Boiler class 5, ecodesign.
- Two combustion chamber hot water boiler on wood logs and wood pellets, power 25, 35 and 45 kW.
- Compact boiler with high efficiency and low maintenance needs (with standard automatic cleaning of the pellet grate, it is possible to additionally order automatic cleaning of flue passages).
- The factory-installed controller controls the boiler by means of a lambda probe, boiler sensor, boiler pyrolytic combustion chamber temperature sensor and flue gas temperature sensor by means of a modulating flue gas fan.
- The controller can also control 1 heating circuit with mixing valve and DHW circuit.
- Modulating boiler operation (30 -100% power).
- Fuel level sensor in the pellet tank.
- Multifunctional digital controller with color touch screen runs the wood gasification (pyrolytic) process of combustion of the boiler with logs and can automatically ignite the pellet side of the boiler when there is no more wood in the boiler.
- Designed for installation in open or closed heating systems exclusively via buffer tank (CAS), volume min. 50lit/kW.
- The boiler has been tested and certified according to EN303-5 and meets Class 5 and is manufactured in accordance with ISO 9001 and ISO 14001.



Boiler cross section

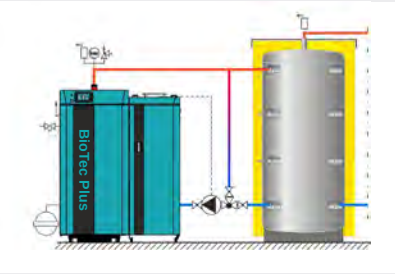
Multifunctional controller with a touch screen

Delivery, obligatory and optional accessories



Delivery

- Boiler with casing on 2 wooden pallets (left side of the boiler on one pallet, right side of the boiler on the other pallet), prewired, with 4 additional sensors, outdoor temperature sensor, room corrector CSK and cleaning accessories (2x scraper, brush, accessory holder for cleaning).



Obligatory: Buffer tank connection

- Buffer tank CAS (min. 50lit/kW)
- 3-way thermostatic valve LTC, VTC ... (60°C) or 3 way valve with actuator

Closed heating system

- Thermal valve, safety airvent group (2.5 bar) and expansion vessel;

Open heating system

- Open expansion vessel

CM-GSM module for alarm notification via mobile network // CAL // CM-WiFi box

- Boiler status notification via mobile network via SMS or call (errors, warnings ...)
- Boiler condition inquiry - operating phase, temp. boiler, via SMS in the selected language

CAL alarm set (speaker/lamp)

- Boiler error or warning signaling module with sound or light

Cm WiFi-box

- Provides web portal monitoring and boiler management

Autom. cleaning of flue passage pipes

- Boiler controller controls the cleaning of the flue passage pipes in the boiler

CM2K control module for 2 heating circuits // CSK // CSK-Touch

- Control up to 2 heating circuits according to outdoor temp. (Control up to 2 mixing valves and up to 2 heating or DHW or recirculation pumps).
- Up to 4 CM2K modules can be connected (up to 8 heating circuits)
- Up to 2 room correctors CSK / CSK-Touch per module can be connected CSK

CSK

- Room corrector

CSK-Touch

- Room corrector with touch screen

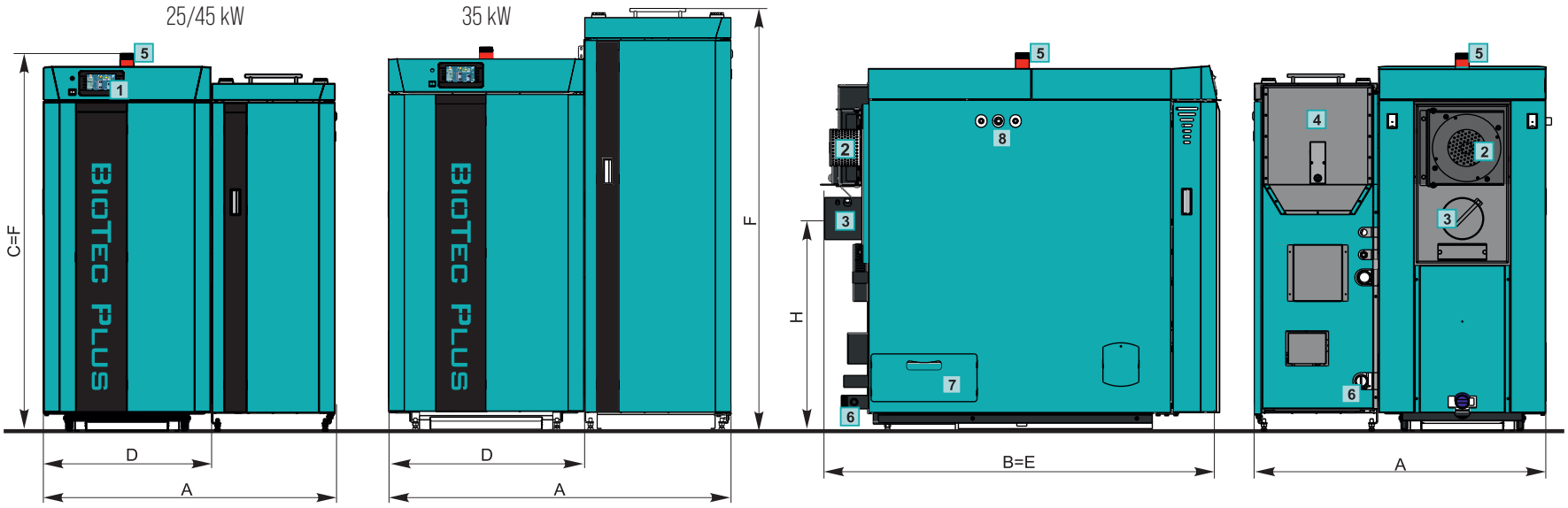
Pellet vacuum suction system

- Vacuum suction system with mole from the pellet storage
- Vacuum suction system from a large pellet tank (Centropelet box)
- Vacuum suction system by conveyor from the pellet storage
- Max. 10m long flex. pipes (in one direction) from pellet storage
- For DINplus or ENplus A1 pellets only

CVDOP

- Cyclone for pellet vacuum suction s system to remove dust from pellets

Basic dimensions



BioTec Plus		25	35	45
Nominal heat output - wood	(kW)	25	35	45
Nominal heat output - pellets	(kW)	25	35	45
Boiler width A	(mm)	1025	1230	1230
Boiler depth B	(mm)	1385	1445	1385
Boiler height C	(mm)	1350	1395	1590
Width for entering the boiler room D	(mm)	610	720	720
Depth for entering the boiler room E	(mm)	1385	1445	1405
Height for entering the boiler room F	(mm)	1350	1520	1590
Pellet tank volume	(lit.)	80	148	148
Main flow/Return flow	(G)	6/4"	6/4"	6/4"
Flue gas tube diameter*/Height H	Ø/mm	150/765	160/765	180/1265
Energy efficiency class		A+	A+	A+

* inner diameter of the chimney is determined according to the power of the boiler and the height of the chimney and must almost always be larger than the diameter of the flue gas tube

1. Digital controller
2. Fan with motor
3. Flue gas tube connection
4. Pellet tank
5. Main flow
6. Return flow
7. Side cleaning opening of flue chamber
8. Place for installation of thermal protection

3-way thermostatic valve ESBE VTC 512, 531

For installation in central heating systems, boiler + CAS

Three-way thermostatic valves ESBE VTC 512 and 531 are intended for installation in central heating systems with solid fuel boilers (BioTec-L / -C, BioTec Plus, EKO-CK P, EKO-CKB P, CentroPlus, - / B ...) and buffer tanks CAS, all for the purpose of protecting boilers from condensation of water vapor from flue gases. Valves ESBE VTC 512 and 531 enable quick achievement and maintenance of the operating temperature of the boiler by changing the ratio of the opening of the return flow from the installation of central heating and short-circuit line from the boiler. A circulation pump must also be installed in heating systems where ESBE VTC 512 and 531 are installed.

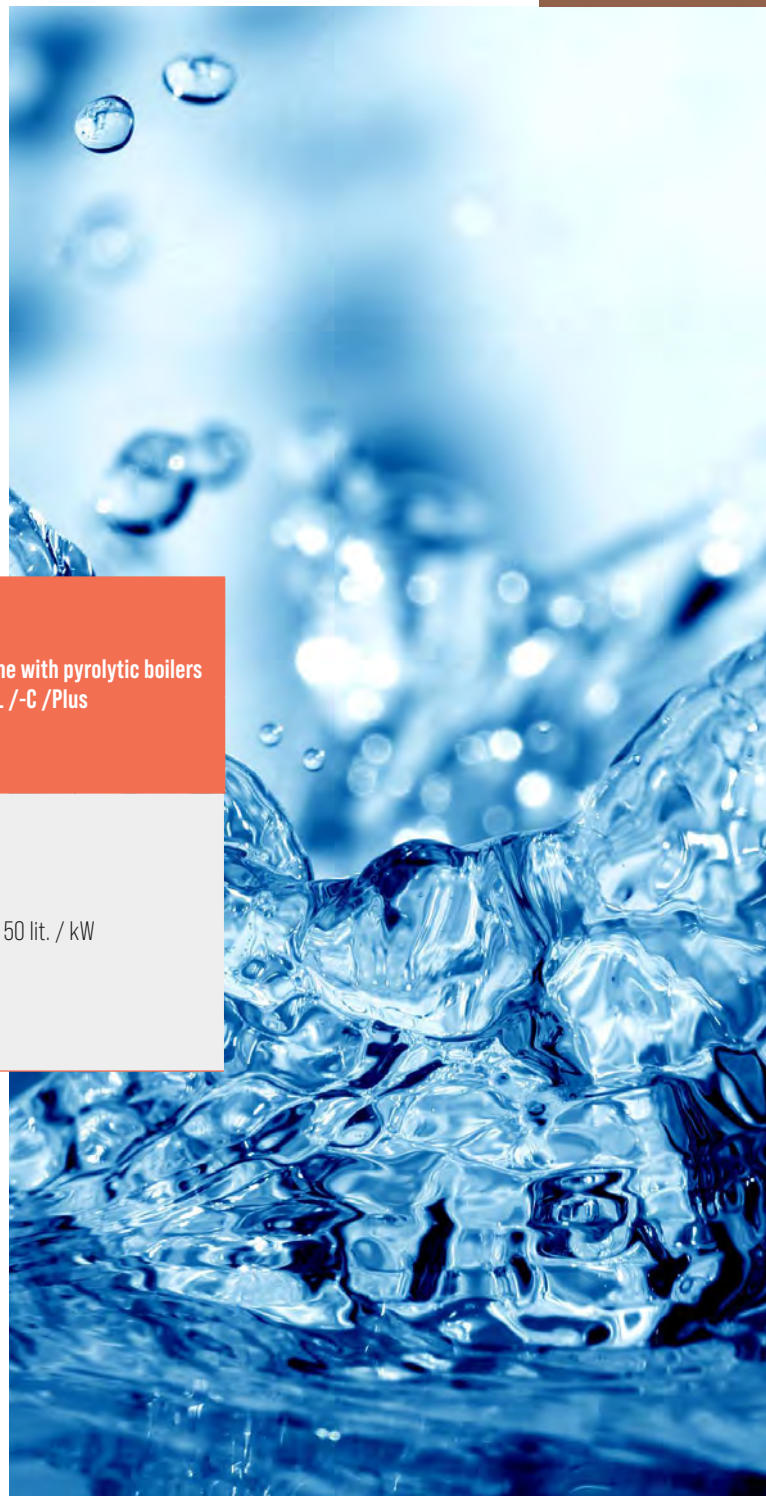
ESBE VTC 531

ESBE VTC 512

ESBE VTC 512 and 531 valve characteristics

- ESBE VTC 512 is a 3-way thermal valve with external threaded connections.
- ESBE VTC 531 is a 3-way thermal valve with 3 shut-off valves with internal thread, pump connection, 3 thermometers and insulation.
- They are installed in heating systems with solid fuel boilers with buffer tanks CAS.
- Maintaining the temperature in the boiler min. 60°C which protects the boiler from condensation.
- The built-in thermostat starts releasing water from the return flow of the installation when the boiler reaches temp. 60°C.
- At a boiler temperature below 60°C, the circulation pump returns water from the main flow to the return flow via a short circuit circuit through the VTC valve.
- The circulation pump must be selected according to the size of the boiler, i.e. from the table with recommended pumps.

Boiler heat output kW	VTC 512 connection (external thread)	VTC 531 connection (internal thread)	Circulation pump type		Buffer tank CAS volume with pyrolytic boilers BioTec-L /-C /Plus
			Grundfos	Wilo	
14 - 25	5/4''	5/4''	Alpha1 32-40	Yonos PICO 30/1-4	Minimum 50 lit. / kW
26 - 40	5/4''	5/4''	Alpha1 32-60	Yonos PICO 30/1-6	
41 - 50	5/4''	5/4''	Alpha1 32-80	Yonos PICO 30/1-8	
51 - 60	5/4''	5/4''	Magna1 32-40	Yonos PICO 30/1-8	
61 - 70	6/4''	6/4''	Magna1 32-40	Yonos PICO 30/1-8	



3-way thermostatic valve ESBE LTC 261, 271
Actuator with controller ESBE CRA 111, 121

For installation in central heating systems, boiler + buffer

3-way thermostatic valves (groups) **ESBE LTC 261 and 271** are intended for installation in central heating systems with solid fuel boilers (BioTec-L / -C, BioTec-Plus, EKO-CK P, EKO-CKB P, CentroPlus, - / B) and buffer tanks CAS, all for the purpose of protection of boilers from condensation of water vapor from flue gases.

ESBE LTC 261 and 271 enable quick achievement and maintenance of the boiler operating temperature by changing the openness ratio of the return flow from the central heating and short-circuit installation with the boiler, maintaining the boiler return line always above 60°C. They have a built-in circulation pump, thermostatic valve (60°C), shut-off valves, thermometers and insulation.

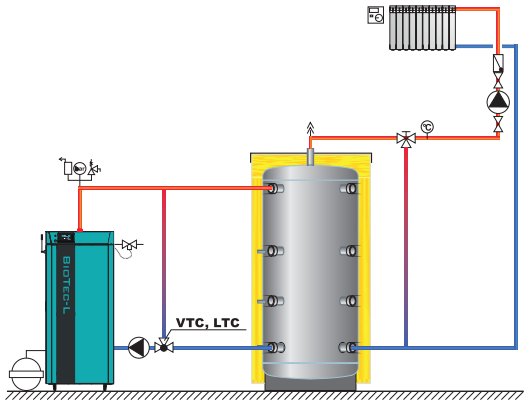
ESBE CRA 111/121 is a actuator with a controller for maintaining a constant return temperature (must be set on 60°C), intended for installation on 3-way mixing valves from DN50 to DN150. They are intended for installation with boilers of higher power (from 71-580 kW) when the boiler controller does not protect the return flow.

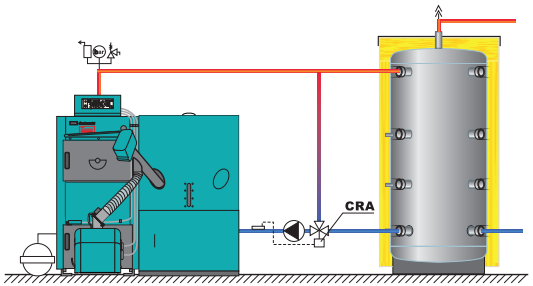
ESBE LTC 271

ESBE CRA 111

Characteristics of ESBE LTC 261, 271 / ESBE CRA 111,121

- They are installed in heating systems with solid fuel / pellet / wood chip boilers with buffer tanks CAS.
- Maintaining the temperature in the boiler min. 60°C (ESBE LTC 261, 271 / CRA 111/121 set to 60°C) for protecting the boiler from condensation.
- At a boiler temperature below 60°C, the circulation pump returns water from the flow to the return via a short circuit through the group / valve.
- The LTC 261 and 271 groups are equipped with a circulation pump, three shut-off valves and control thermometers, one on each line.
- Actuators CRA 111/121 must be set on 60°C, installed on 3-way mixing valves and a circulating pump of adequate size is required.
- CRA 111 is intended for 3-way mixing valves up to DN50. Supplied with transformer (230V) and temperature sensor.
- CRA 121 is intended for 3-way mixing valves from DN65 to DN150. Supplied with detachable controller with display, transformer (230V) and temperature sensor.





Recommended volumes of buffer tanks CAS	
With wood pellet boilers	min.10 lit/kW
With wood chip boilers	min.12 lit/kW
With solid fuel boilers	min.30 lit/kW
With wood gasification (pyrolytic) boilers	min.50 lit/kW

Proposal for selection of LTC groups and CRA actuators for 3-way mixing valves:

Boiler heat output	LTC 261 connection (internal thread)	LTC 271 connection (internal thread)	VTC 512 / VTC 531	CRA111 connection + 3-way valve + pump	CRA121 connection+ 3-way valve + pump
14 - 40	5/4''	--	--	--	--
41 - 50	--	6/4''	--	--	--
51 - 70	--	--	vidi str. 48	--	--
71 - 110	--	--	--	DN50	--
111-580	--	--	--	--	DN65-DN150