

WOOD FIRING BOILER

WOOD GASIFICATION

Bio-Tec

25-45 kW

Bio-Tec steel hot water boilers (with nominal heat output of 25 to 45 kW) are designed for wood log fuel firing for the heating of small and middle sized premises. The wood gasification principle enables a complete fuel burning. Logs up to 550 mm long can be inserted into the large combustion chamber. The burning period for a single fill of logs is at least 4 hours at the rated output and can be extended to a whole day if the need for heating is less. The boiler can keep the glow even 12 hours, which means that in this period it is not necessary to fire up the boiler in order to keep the heating process going. An integral boiler control regulates the boiler's functions. The boiler is connected directly to the central heating system through a 3-way thermostat valve and a CAS accumulation (buffer) tank.



HEATING TECHNIQUE

CHARACTERISTICS OF THE Bio-Tec BOILER:

- Hot water boiler for central heating systems suitable for wood log fuel firing (moisture content less than 25%).
- The wood gasification principle enables total burning of the fuel. Therefore cleaning is necessary in minimum amount (depend of wood quality and boiler load).
- The design and construction, including the flue gas principle of complete burning assures high efficiency makes the boiler extremely economical.
- Ecologically acceptable because of an extremely low concentration of harmful components in the flue gases.
- Three big doors on the boiler enable simple cleaning and maintenance, as well as ease of filling with large logs.
- Delivery includes a pre-wired control system, boiler controller which steers the boiler.
- The boiler controller regulates the firing process through a circulation pump in the first circuit (the boiler-accumulation), a circulation pump in the heating circuit (accumulation-radiators) and a sanitary water circulation pump and indicates the information back via the boiler controller and room thermostat of the need of wood supply.
- These boilers are aimed to be connected to open or closed central heating systems only through a CAS accumulation (buffer) tank.
- The boiler is tested and certified according to the European standards EN 303-5 and EN 304 at the Faculty of Engineering in Zagreb and The boiler is tested and certified according to the European standards EN 303-5 and EN 304 at the Faculty of Engineering in Zagreb and Manufactured in compliance with ISO 9001/2008 standards.

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ADDITIONAL EQUIPMENT:

OBLIGATORY - accumulation tank CAS, 3-way thermostat valve, like ESBE LTC 141; (closed heating system) - thermal valve, safety-airvent group (2,5 bar) and expansion vessel; (open heating system) - open expansion vessel

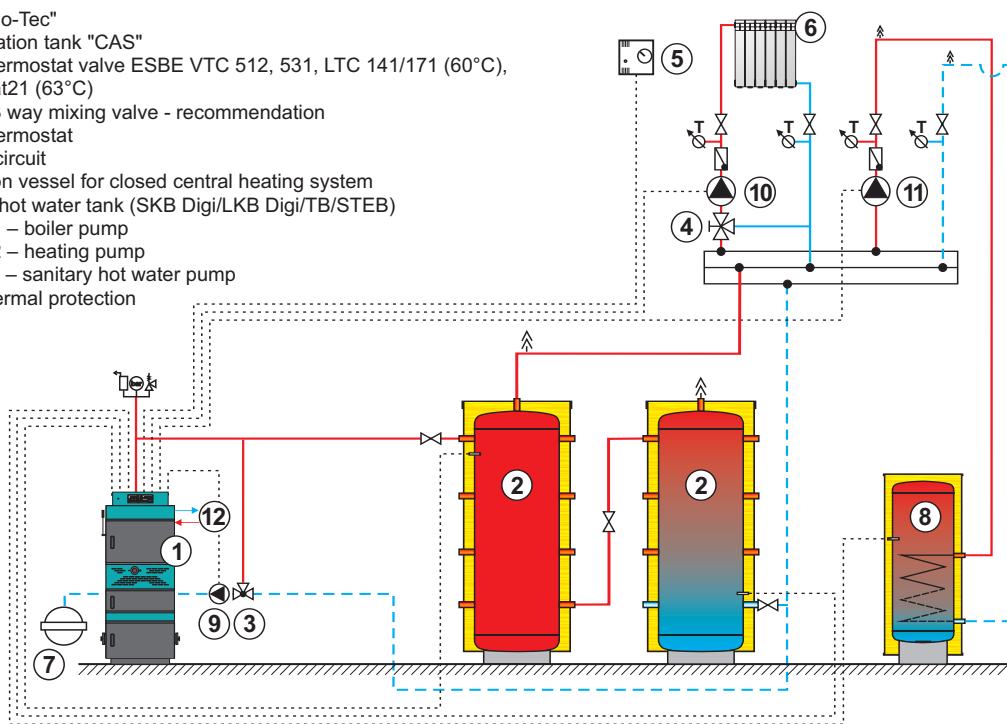


LIVING COMFORT:

With boiler Bio-Tec it is easy to handle and integrated controller assure reliable boiler operation. Also with installed accumulation tank CAS into the heating system the produced heat is accumulated into the tank and is consume when needed. With this the firing is able to be planed in acceptable time and when the outside temperature is mild the heating of the premises and heating of the sanitary hot water without firing of the boiler it is possible in duration of few days.

CONNECTING BOILER Bio-Tec TO CLOSE HEATING SISTEM AND HOT WATER TANK (principal diagram of the connection)

- ① - Boiler "Bio-Tec"
- ② - Accumulation tank "CAS"
- ③ - 3-way thermostat valve ESBE VTC 512, 531, LTC 141/171 (60°C), Laddomat21 (63°C)
- ④ - Manual 3 way mixing valve - recommendation
- ⑤ - Room thermostat
- ⑥ - Heating circuit
- ⑦ - Expansion vessel for closed central heating system
- ⑧ - Sanitary hot water tank (SKB Digi/LKB Digi/TB/STEB)
- ⑨ - Pump P1 – boiler pump
- ⑩ - Pump P2 – heating pump
- ⑪ - Pump P3 – sanitary hot water pump
- ⑫ - Boiler thermal protection



Bio-Tec		25	35	45
Nominal heat output	(kW)	25	35	45
Boiler water content	(l)	105	96	110
Boiler mass	(kg)	450	515	610
Flue gas exhaust diameter ϕ (mm)		150	150	180
Boiler inlet	(R)	6/4"	6/4"	6/4"
Boiler outlet	(R)	6/4"	6/4"	6/4"
Filling/drainage	(R)	1/2"	1/2"	1/2"
Flue gas temp.	(°C)	170	190	180
Max. Operating temp.	(°C)	90	90	90
Max. Operating pressure	(bar)	2,5	2,5	2,5
Total boiler depth	(mm)	1295	1290	1290
Total boiler height	(mm)	1345	1385	1580
Total boiler width	(mm)	595	725	725
Max. Wood piece length	(mm)	550	550	550
Wood storage volume	(lit.)	97	132	195

* - chimney inside diameter has to be determined according to the boiler rated thermal output, height of the chimney and almost always it has to be bigger then the flue gas exhaust tube diameter.

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