

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 firing for the heating of small and middle sized premises. The wood gasification principle enables a complete fuel burning. Logs up to 550mm 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 the whole day. The boiler will stay alight another 12 hours, so that firing up is not necessary across a significant period to maintain the heating process.

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.



CHARACTERISTICS OF THE BOILER Bio-Tec:

- Hot water boiler for central heating systems suitable for wood logs firing (moisture content less than 25%).
- The wood gasification principle enables total burning of the fuel. Therefore cleaning is necessary only every three to four days if the boiler operates on maximum output. This interval could be even longer, dependant on wood log quality.
- The design and construction, including the flue gas principle of complete burning assuring 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 enables simple cleaning and maintainance, as well as ease of filling with large logs.
- Delivery includes a pre-wired control system, boiler controller and room thermostat.
- The boiler controller regulates the firing process through a circulation pump in the first circuit (the boiler-buffer), a circulation pump in the heating circuit (the buffer-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.
- Warning indicator about the need of wood supply on boiler controller and room thermostat.
- 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. Manufactured in compliance with ISO 9001/2000 standards.

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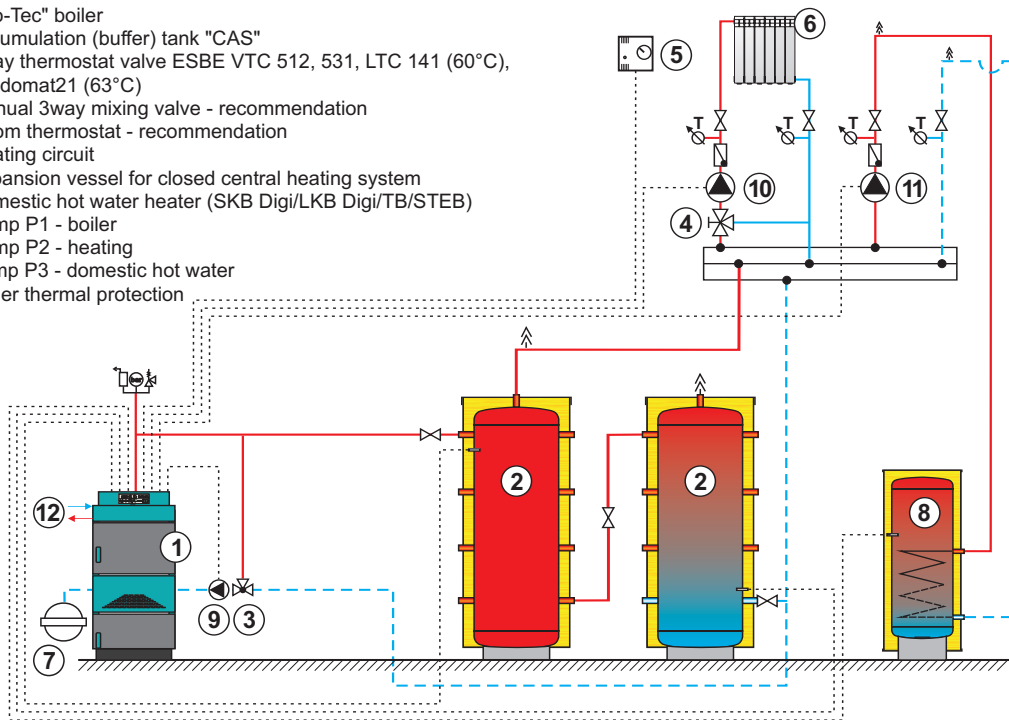
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HEATING TECHNIQUE

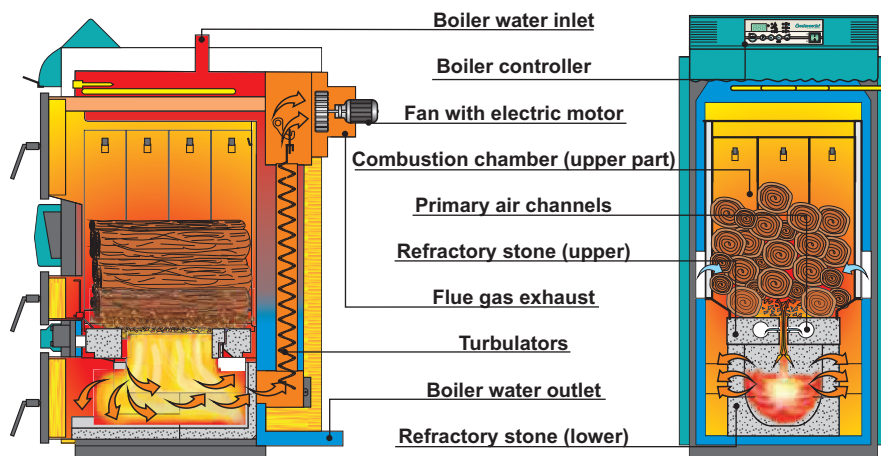
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CLOSED CENTRAL HEATING SYSTEM SCHEME (BASICALLY CONNECTION SCHEME)

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



BOILER CROSS SECTION



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/Draining	(R)	1/2"	1/2"	1/2"
Flue gases temp.	(°C)	180	180	180
Max. operating temperature	(°C)	90	90	90
Max. operating pressure	(bar)	2,5	2,5	2,5
Total boiler depth	(mm)	1285	1285	1285
Total boiler height	(mm)	1340	1300	1580
Total boiler width	(mm)	590	720	720
Max. wood log length	(mm)	550	550	550
Wood chamber 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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