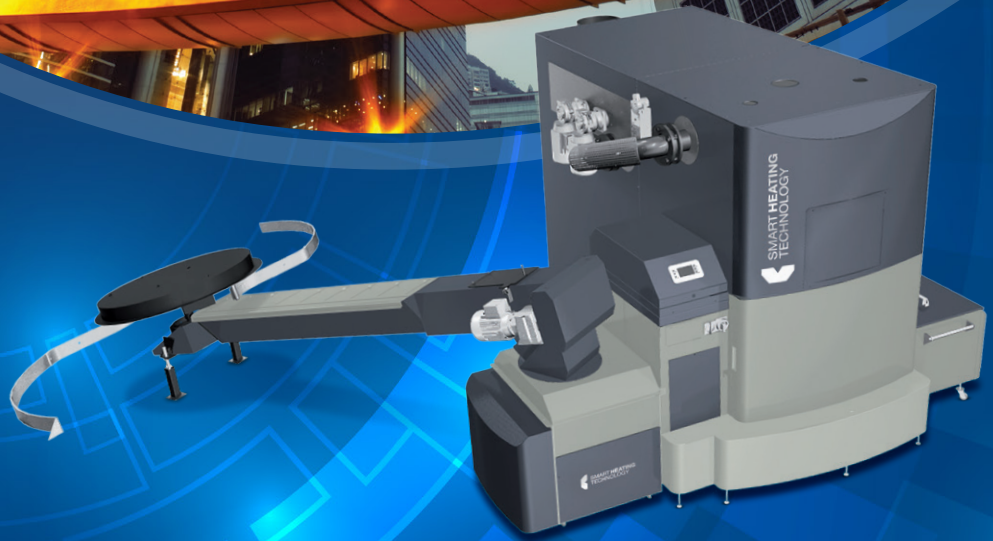




SMART HEATING TECHNOLOGY

Purity to Nature
Savings to Clients
Comfort to Users



AUTOMATIC BIOMASS BOILER

SMART 500 kW

- Fully automatic, ecologic boiler with excellent features
- Multiple fuel possibility
- Output modulation 30–100 %
- Vibrating Burner Plate Option
- Low Maintenance & Service requirements
- Cascade installation solutions
- Mobile container solutions
- Technical solution flexibility
- Economical and ecological operation
- Lambda sensor
- Mobile phone control
- Efficiency 96 %
- Ceramic Burner Option
- Heating circuits regulation
- Internet control
- Special boiler accessories

AUTOMATIC BIOMASS BOILER

SMART 500 kW

DIMENSIONS AND WEIGHTS OF TECHNOLOGY 500 kW

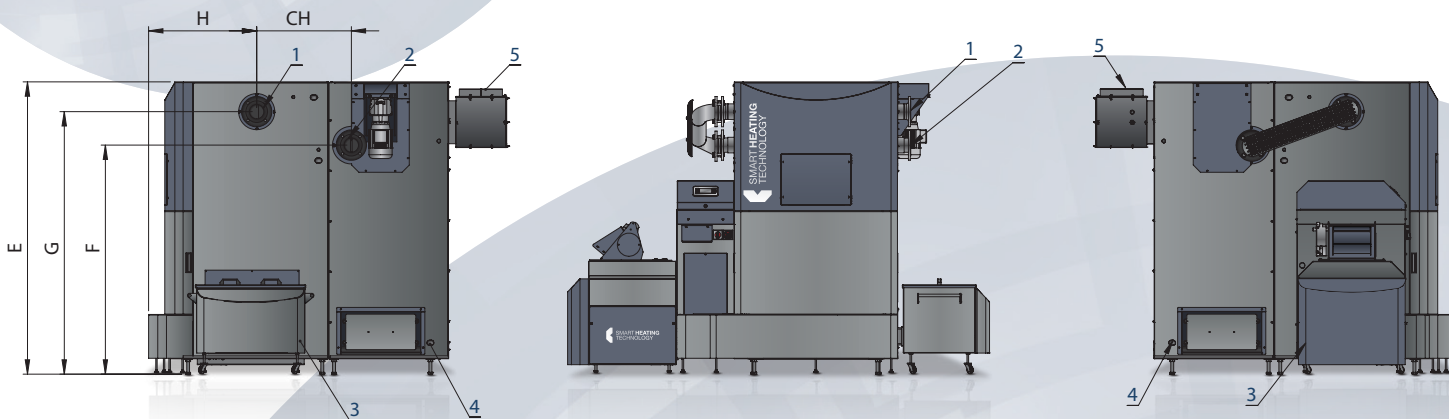


SMART HEATING
TECHNOLOGY

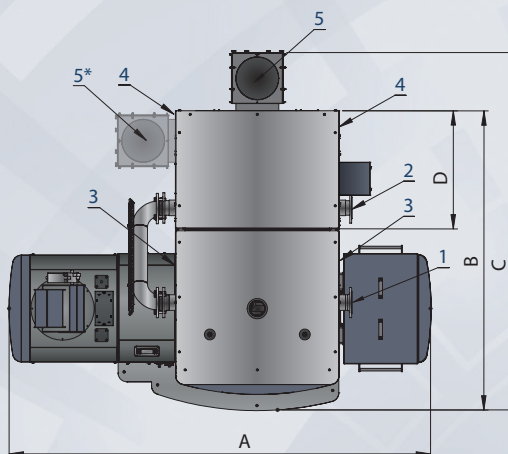


ČSN-EN 303.5/2013

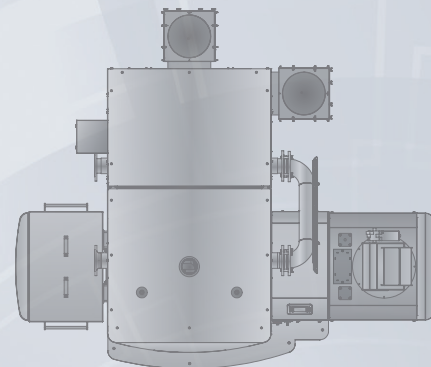
ISO 9001:2009



- 1 Water outlet DN100/PN6
- 2 Water inlet DN100/PN6
- 3 In/out water valve 3/4" of burning chamber
- 4 In/out water valve 3/4" of heat exchanger
- 5 Chimney outlet avg. 300 mm
- * Option for limited spaces



Left sided

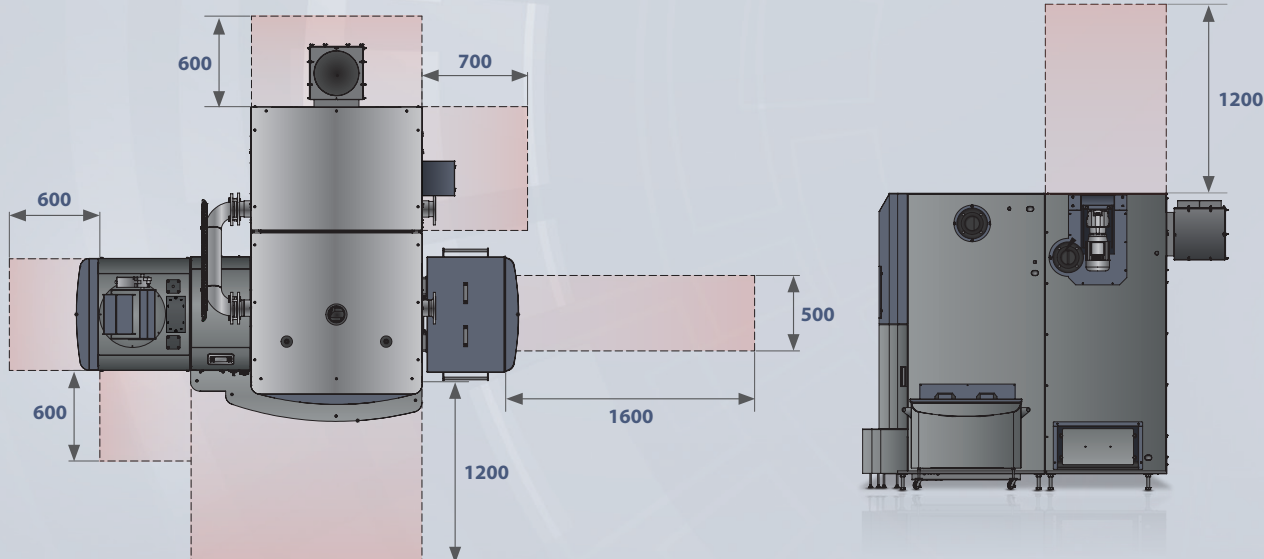


Right sided

A	B	C	D	E	F	G	H	CH
2940	2560	2960	1300	1995	1560	1790	750	655

WEIGHTS		
Burning chamber 500 kW	1 550 kg	Total weight
Exchanger 500	1 950 kg	3 550 kg

SERVICE ZONES OF TECHNOLOGY 500 kW



AUTOMATIC BIOMASS BOILER

SMART 500 kW



ČSN-EN 303.5/2013

ISO 9001:2009

TECHNICAL SPECIFICATIONS 500 kW

AUTOMATIC BIOMASS BOILER SMART 500 kW		Wood pellets		Wood chips	
		Rated	Minimum	Rated	Minimum
Measured values					
Rated heat capacity	kW	500	500	500	500
Combustion product temperature	°C	97,6	59,8	98,2	62,2
Fuel consumption	kg/hour	114,26	24,85	121,00	27,12
Input water temperature	°C	63,6	62,2	60,3	58,4
Outlet water temperature	°C	82,2	77,1	76,0	73,1
Cooling water temperature	°C	9,2	9,7	9,6	11,0
Cooling water flow rate	m ³ /hod	23,387	6,347	27,200	6,550
Draught behind boiler	Pa	215,0	25,0	210,0	26,0
Ambient temperature	°C	30,2	27,1	29,2	24,9
Relative air humidity	%	21,1	22,8	23,7	22,4
Barometric pressure	kPa	99,20	99,30	98,99	98,99
Flue gas analysis					
Oxygen O ₂	%	8,99	7,53	7,36	9,77
Carbon dioxide CO ₂	%	10,85	11,06	11,54	10,18
Carbon monoxide CO	ppm	151	67	214	153
Higher hydrocarbons OGC	ppm	16	0	0	4
Nitrogen dioxides Nox	ppm	56	78	112	81
Dust	mg/m ³	14	27	106	92
O₂ = 10 %					
Carbon monoxide CO	mg/m ³	173	68	216	188
Higher hydrocarbons OGC	mg/m ³	8	0	0	2
Nitrogen dioxides Nox	mg/m ³	105	130	185	162
Dust	mg/m ³	13	22	39	48
Auxiliary combustion values (solid fuels)					
Mass flow rate gases	kg/sec	0,356	0,076	0,323	0,081
Stoichiometric oxygen value	m ³ /kg	0,958	0,957	0,831	0,830
Stoichiometric air value	m ³ /kg	4,560	4,559	3,959	3,952
Stoichiometric volume of dry combustion products	m ³ /kg	4,448	4,448	3,880	3,873
Stoichiometric air multiple		1,73	1,55	1,53	1,85
Volume of dry combustion products, actual	m ³ /kg	7,788	7,638	6,499	7,354
Volume of H ₂ O in the combustion air	m ³ /kg	0,073	0,059	0,060	0,053
Volume of H ₂ O in the combustion products	m ³ /kg	0,928	0,914	0,906	0,899
Maximum volume CO ₂	%	19,01	19,01	19,37	19,36
Calculated values - heat overview					
Loss of sensible heat of combustion products (chimney)	%	4,9	2,3	4,6	2,8
Loss of gas underburning	%	0,1	0,0	0,1	0,1
Loss of mechanical underburning	%	0,0	0,1	0,4	0,5
Loss of heat transfer into the environment	%	0,2	0,3	0,2	0,4
Total loss	%	5,2	2,7	5,2	3,7
Efficiency – indirect method	%	94,8	97,3	94,8	96,3
Heat input	kW	525,5	114,3	517,4	116,1
Heat capacity	kW	502,4	110,2	496,5	111,5
Uncertainty of determining heat capacity	%+/-	21,1	4,6	20,9	4,7
Efficiency – direct method	%	95,6	96,4	96,0	96,1
Capacity / rated output	%	100,0	22,4	100,1	23,1

*Boilers can be operated at 90 °C only when special conditions are met

CERTIFIED OPERATING VALUES 500 kW

SMART BOILER OPERATING DATA		
Technical data of the boiler		
Marking		500
Nominal power P _n	kW	500
Partial load (power) P _p	kW	140
Boiler efficiency at P _n	%	>95
Boiler class		5
Water		
Water volume	l	900
Diameter of water connection	"	4
Diameter of water connection	DN	100
Hydraulic-pressure drop of the boiler at the temperature fall 20°	mbar	130
Boiler temperature	°C	60-90*
Minimal temperature of returnable water	°C	55
Maximal operational pressure	bar	3,5
Test pressure	bar	6,5
Temperature of furnace	°C	900-1100
Pressure of furnace	mbar	-0,04
Required draught of the chimney	mbar	0,2
Requirement for the forced draught		Yes
Combustion temperature at P _n	°C	97,2
Combustion temperature at P _p	°C	62,2
Diameter of flue gas duct	mm	300
Diameter of chimney	mm	350
Fuel classification according to norm EN 14961		
Wood pellets - C1	Tested fuel	D6, M10, A1,5, DU90,0
Wood chips - B1		P45, M30, A3,0
Electrical installation		
Electrical connection		3+N+PE 50Hz 230/400V TN-C-S
Conveyor engine	W	550
Feeding auger engine	W	550
Exchanger cleaning engine (s)	W	2 x 550
Ash-removing engine	W	550
Fan of primary air	W	66
Fan of secondary air 1	W	170
Fan of secondary air 2	W	170
Chimney exhaust fan	W	1100
Electrical ignition	W	1600
Separation flap valve	W	6,5
Total	W	4762,5

■ Measured ■ Interpolace is in compliance with EN303.5 coll. 5.3.1