

## SIGMA SPECIFICATIONS SHEET



### SIGMA

Sigma boilers burning wood with gasification process.

Modern wood gasification boilers are up to two times more efficient than traditional combustion system and harmful substances into the atmosphere emission is much lower.

#### FUEL



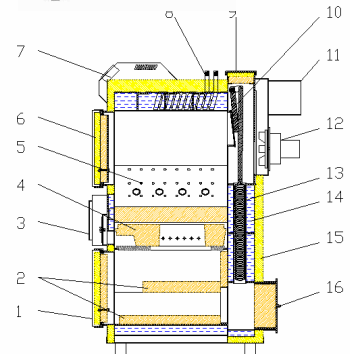
Recommended fuel: chunk of wood. Humidity max. 15-20% , diameter 10-20 cm and length do 50 cm. Wood should be from deciduous trees like: Oak, Bebec, Acacia, Hornbeam, Ash. or softer wood like birch or poplar. As substitute can be use wood from coniferous trees.

#### TECHNICAL DATA

Model			Sigma 20	Sigma30	Sigma 50
Power	Wood		23,2	30	50
Efficiency	%		91	90	86
Water capacity	dm <sup>3</sup>		145	165	180
Max working pressure	bar		2		
Min outlet temperature	°C		65		
min. inlet temperature	°C		55		
max. Outlet temperature	°C		90		
Flue gas temperature at nominal power	°C		120-160		140-200
Boiler class. PN-EN – 303-5			3		
Water-side resistance; Δt=10K	mbar		3,5-4,0		
Water-side resistance ; Δt=20K			1,4-2,0		
Chimney pressure	Pa		15-20	15-20	20-25
Recommended chimney heigt	m		8	8	8
Recommended chimney section	cm <sup>2</sup>		400	400	400
Max. Wood length	cm		50	50	50
Loading chamber capacity	dm <sup>3</sup>		115	162	162
Fuel consumption	Nominal power and calorific value>14MJ/kg	kg/h	6.52	8,7	14,8
Approximate working time at one load		h	2-4		
Power consumption	W		90	90	170
Approximate heating area	m <sup>2</sup>		150-230	250-350	450-600

#### BOILER CONSTRUCTION

1. Combustion chamber doors
2. Ceramics
3. Primary and secondary air regulation (Fans in Sigma 50)
4. Ceramic burner with secondary air nozzle
5. Primary air outlet
6. Loading doors
7. Boiler controller
8. Cooling coil (option)
9. Upper cleaning hole
10. Easy fire up flap with clearing mechanism
11. Flue outlet
12. Exhaust fab (models 20/30kW)
13. Turbulizers
14. Water coat
15. Insulation
16. Lower clearing hole



#### CONTROLLERS



Various controllers – from simple devices with central heating and domestic hot water pumps operatem, to the complex controller using lambda sensor and several heating circuits with mixers and buffer tank.

#### EMISSION

Model	Unit	Sigma 20	Sigma30	Sigma 50
CO Emission (O <sub>2</sub> =10%)/(O <sub>2</sub> =13%)	mg/m <sup>3</sup>	333/242	1054/767	2480/1803
OGC Emission (O <sub>2</sub> =10%)/(O <sub>2</sub> =13%)	mg/m <sup>3</sup>	33/24	55/40	134/24,72
Dust Emission (O <sub>2</sub> =10%)/(O <sub>2</sub> =13%)	mg/m <sup>3</sup>	20/14	101/74	126/92

#### BOILERS DIMENSIONS

Sigma	20	30	50
A	1460	1460	1500
B	730	730	830
C	1020	1090	1150
D	1260	1260	1150
E	180	180	180
F	180	180	180
G	1240	1240	1280
a	1 1/2"	1 1/2"	2"
b	1 1/2"	1 1/2"	2"
c	1/2"	1/2"	1/2"
d	160	160	200

#### EXAMPLE INSTALATION DIAGRAM

