



ATMOS

Lignite briquettes and black coal gasification boilers



AC16S

Gasification boiler for brown coal briquettes, black coal and wood (fire up).

 **Rated power 18 kW**

 **Boiler efficiency 91,1 %**

 **Emission class nr. 5 (Ecodesign)**

 **Fuel shaft volume 45 l**

 **Log length 250 mm**

AC25S

Gasification boiler for brown coal briquettes, black coal and wood (fire up).

 **Rated power 26 kW**

 **Boiler efficiency 90,4 %**

 **Emission class nr. 5 (Ecodesign)**

 **Fuel shaft volume 60 l**

 **Log length 330 m**

Lignite briquettes and black coal gasification boilers

The boilers are constructed to burn lignite briquettes. On a base of gasification process with a exhaust fan (S) to suck waste gasses into the chimney. The boiler body is produced as a weldment of 3 – 8 mm steel sheets. The boiler consists of two chambers, one placed upon the other. The upper chamber makes up the fuel container, and the lower one, combustion chamber and ash collector. Between the two chambers, a new, rotating, patent protected grate is placed. The grate ensures perfect combustion of coal, wood, or a combination thereof, as well as simple cleaning. The primary and secondary air are pre-heated to a very high temperature for achieving high efficiency and good quality burning.

The recommended fuel are lignite briquettes. As spare fuel, logs of wood (length 330 mm), brown and black coal of a larger size (NUT1) or wooden briquettes can be used.

Advantages of ATMOS gasification boilers for lignite briquettes and hard coal

- Large fuel tank - long burning time - up to 12 hours, depending on boiler type
- High efficiency - primary and secondary air is preheated to a high temperature
- Ceramic combustion chamber
- Ecological combustion - boiler according to EN 303-5:2012 class 5, EKODESIGN 2015/1189
- Exhaust fan - dust-free ash removal, smokeless boiler room
- Cooling loop against overheating - without the risk of damaging the boiler
- Automatic shutdown of the boiler after the fuel burns out - flue gas thermostat
- Convenient ash removal - large ceramic combustion chamber for ash
- Small size and low weight
- Possibility of choosing a door R / L (right/left) for selected types
- Possibility of connection without accumulation tank
- High Quality

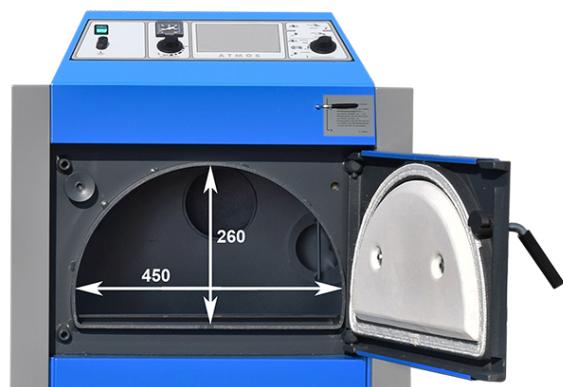
Installation

ATMOS boilers must be connected via the LADDOMAT 22 or thermoregulation valve (three-way valve controlled by an actuator in case of using electronic control ATMOS ACD 03) to achieve and keeping the minimum temperature of water returning to boiler at 65 °C. We keep the outlet temperature of the boiler in the range of 80 – 90 °C and set the temperature of the water to the radiators or floor heating on the mixing three-way valve as needed (e.g. 30 – 80 °C).

The default configuration of all boilers includes a cooling loop to prevent overheating. We recommend installing a boiler with accumulation tanks, which will reduce fuel consumption and increase heating comfort.



View of top feeding chamber



Filling hole dimensions



View of bottom feeding chamber



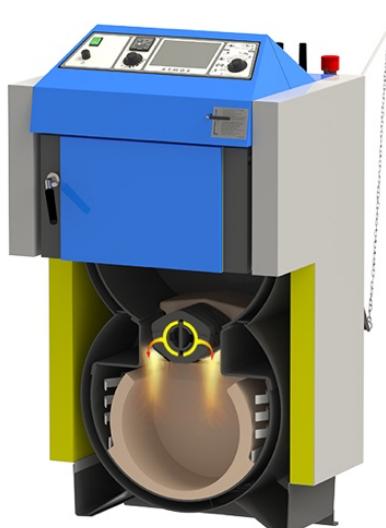
Lower combustion chamber with flame



Boiler upper cleaning lid



Exhaust fan and flue gas neck



Boilers ACxx

Boilers regulation

Electromechanical regulation – boiler performance is regulated by an air regulating valve controlled by a draft regulator, FR 124 type, which automatically opens or closes the air valve according to the set water outlet temperature (80 – 90 °C). In addition to performance regulation, the draft regulator helps protect the boiler against overheating. Its advantage is a quick ignition and firing up to the required output when the air valve is fully open. The boilers are equipped with a control thermostat on the instrument panel, which controls the exhaust fan according to the set water outlet temperature (80 – 85 °C) and a flue gas thermostat, which is used to shut down the boiler and turn off the exhaust fan after the fuel has burned out. In the case of connecting a boiler with accumulation tanks, the flue gas thermostat also controls the operation of the pump in the boiler circuit.

The advantage of regulation and design of ATMOS boilers is that the boilers work with a good chimney draft up to 70% of the nominal power even without a fan.



Regulating air flap



Overheating protection cooling loop



Boiler control panel with standard regulation

Panel composition:

Main off switch, safety thermostat, thermometer, regulator thermostat and combustion thermostat
Electro-mechanical regulation is an optimum solution for easy management of the operation of the boiler (ventilator). The design of the panel with standard regulation is a basic design for all produced boilers.

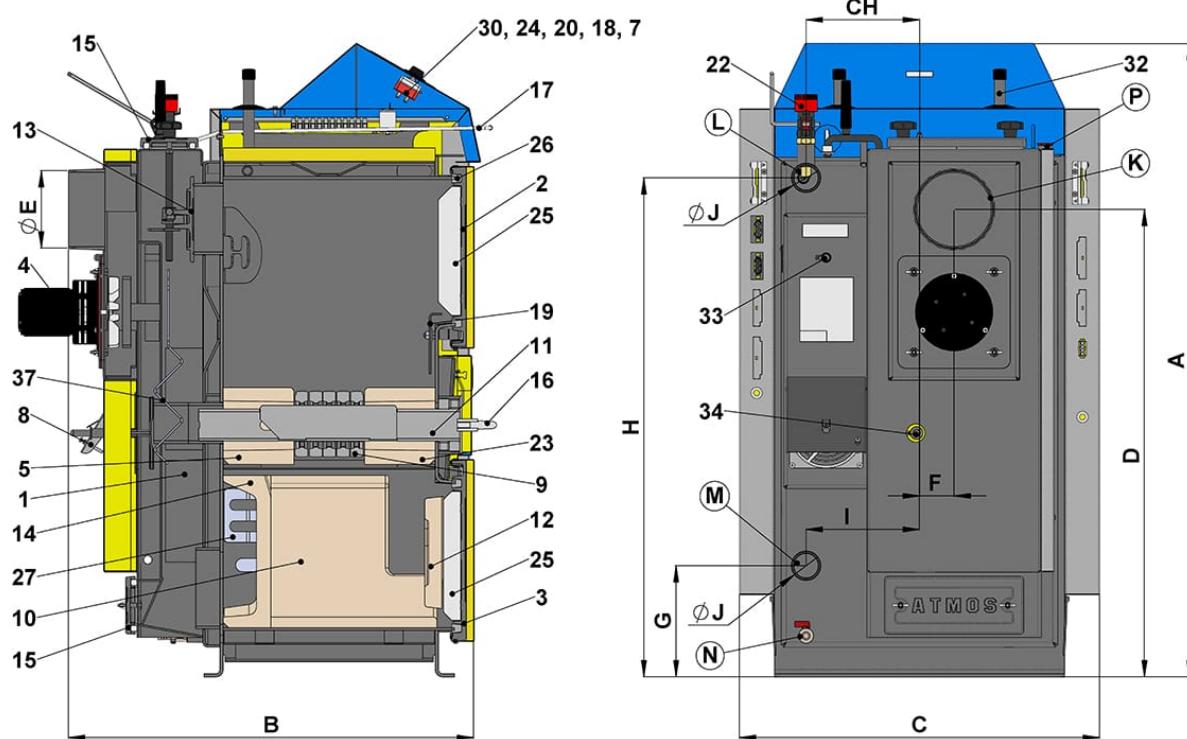
Equithermal regulation ACD 03

Each boiler can be equipped with a modern touch electronic control ATMOS ACD 03 for controlling the entire heating system depending on the outdoor temperature, room temperature and time. This regulation is able to control the boiler itself with a fan with many other functions.



Boiler control panel with equithermal regulation ATMOS ACD 03

Technical information



Description of the boiler drawing

1. Boiler body	22. Draught regulator – HONEYWELL FR124
2. Filling door – upper	23. Heat-resistant fitting – front cube
3. Ashtray door – lower	24. Fan control (boiler) thermostat
4. Exhaust fan (S)	25. Door panel – Sibral – thin (32 mm)
5. Heat-resistant fitting – rear cube	26. Door seal – cord 18 x 18
6. Control panel	27. Flue gas brake (AC25S)
7. Safety thermostat	30. Flue gas thermostat
8. Control flap	31. Capacitor for exhaust fan – 1µF
9. Grate (segment)	32. Cooling loop against overheating
10. Heat-resistant fitting – spherical space	33. Primary air regulation
11. Grate pipe	34. Secondary air regulation
12. Heat-resistant fitting – half-moon	37. Flue gas break – four-armed (AC25S)
13. Firing up valve	
14. Heat-resistant fitting – rear part of spherical space	
15. Cleaning lid	K – the flue-gas duct neck
16. Grate lever	L – water outlet from the boiler
17. The rod for firing up flap	M – water inlet to the boiler
18. Thermometer	N – filling valve pipe sleeve
19. Frame shield	P – socket for the sensor of the valve controlling the cooling loop (TS 131, STS 20)
20. Switch with an indicator light	

Boiler dimensions (mm)		
	AC16S	AC25S
A	1166	1185
B	658	758
C	593	675*
D	874	874
E	150/152	150/152
F	65	65
G	210	210
H	933	933
CH	212	212
I	212	212
J	6/4"	6/4"

Specifications	The boiler type	
	AC16S	AC25S
Boiler heat output	kW	18
Boiler thermal input	kW	20,3
Heating surface	m ²	1,6
Fuel shaft volume	dm ³ (l)	45
Filling hole dimensions	mm	450 x 260
Prescription chimney draft	Pa/mbar	16/0,16
Max. working water overpressure	kPa/bar	250/2,5
Boiler weight	kg	273
Gas-outlet pipe diameter	mm	150/152
Ingress protection of electric parts	IP	20
Electrical power input (auxiliary)	W	50
Electrical input in standby mode	W	0
Ignition mode	manual	
Efficiency over the entire performance range	%	88,5
Boiler class		5
Boiler category	1	
Operating mode	non-condensing	
Energy efficiency class	B	
Waste gas temperature at nominal output	°C	165
Waste gas combustion products flow weight at nominal output	kg/s	0,010
Specified fuel (preferred)	lignite briquettes with calorific value 19 – 23 MJ/kg ⁻¹	
Specified fuel	black coal ORECH 1 with calorific value 20 – 30 MJ/kg ⁻¹	
Spare fuel (firing up)	dry wood with calorific value 15 – 17 MJ/kg ⁻¹ , water content 12 – 20 %, size 80 – 150 mm	
Prescribed wood length	mm	250
Combustion time at nominal output	Hours	4
The volume of water in the boiler	l	37
Boiler hydraulic loss	mbar	0,17
Minimum buffer tank volume	l	500
Connecting voltage	V/Hz	230/50
Eco-design		

*The width of the boiler after removing the side hoods is 555 mm