



ATMOS

COMBI BOILERS



The best choice for wood, pellets burning...





Wood-gas fuel generator DOKOGEN



ATMOS Compressors exhibition, 1945



TRADITION AND EXPERIENCE



Three generations of Cankař family

ATMOS 79 YEARS

Family company Atmos was established in Bohemia in 1935 by Jaroslav Cankař senior.

In the beginning, the production was focused on gasification units for cars and ships with a trademark of DOKOGEN i.e. They used the same principle as that used for modern ATMOS boilers run on wood.

In 1942, the company started development and production of compressors Atmos that were exported to the entire world until nationalisation. Even after nationalisation, the production of wood-fuel boilers, gasification sets and compressors was still running.

In 1980, the firm presented at Pragoterm exhibition its first gasification boilers run on wood fuel and wood waste.

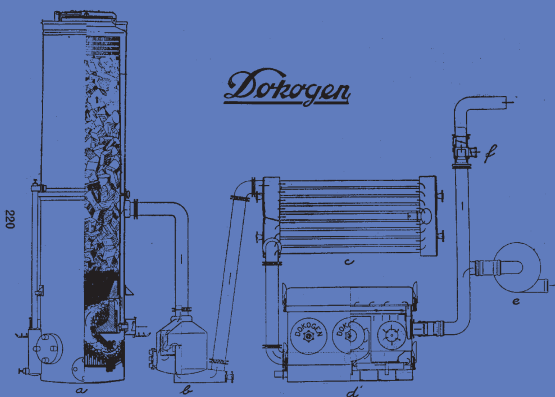
In 1985 the development was focused on gas generators for cars, ships engines.

Company Atmos was re-established in 1991 by Jaroslav Cankař junior who started the production. This was enabled by changes in the political system in the Czech Republic. By intensive development of new products, production expansion, buying and implementing of modern technologies company ATMOS has become one of the biggest manufactures of gasification boilers in Europe. To this day, the firm has developed 124 types of hot-water boilers with 15 pending patents. One of the first boilers was EKONOMIK developed in 1962.

At present, three generations of the Cankař family are working on supplying the European market with quality boilers that are environment friendly and energy saving.

The boilers are exported into 49 countries. In 2006 the company produced 31 000 hot water boilers. Currently the production capacity is 65 000 pieces of boilers per year.

Wood-gas fuel generator DOKOGEN, 1938





WE MANUFACTURE QUALITY

ADVANTAGES OF ATMOS BOILERS

- *Controlled fan – exhaust – pressure (DC 70S)*
- *Large fuel chamber*
- *Boiler without tube plate*
- *Primary and secondary air is preheated to high temperature*
- *Easy operation and cleaning*
- *Dust-free ash removal*
- *Small dimensions and low weight*
- *High quality*
- *Attractive price*
- *Simple operation and excellent parameters*
- *All-ceramic fire chamber*
- *Exhaust fan*
- *Cooling loop preventing overheating*

Production areal ATMOS 1



AND RELIABLE PRODUCTS

CURRENT PRODUCT RANGE

- *wood gasification boilers in range*
15 kW – 100 kW
- *wood and coal gasification boilers*
18 kW – 50 kW
- *pellet boilers* **15 kW – 60 kW**
- *combo boilers* **15 kW – 35 kW**
for: wood – pellets
wood – LFO's
- *gasification boilers for wood briquettes*
in range **15 – 32 kW**
- *wood burning boilers in range*
15 kW – 30 kW
- *pellet burner* A 25, A 45
in range **4 kW – 45 kW**

Production areal ATMOS 2



Training center - ATMOS 2



HOT WATER BOILERS **ATMOS**

Hot water boilers – **D 15 P, D 20 P, D 30 P, D 40 P, D 50 P** are for comfortable heating of family houses with pellets and wood as an alternative fuel in emergency.

Pellet ATMOS boilers are designed for burning pellets and as an alternative fuel you can use log wood. The boilers are designed in such a way that the burner can be installed into either the left or right side of the boiler. The boiler body is constructed from 6 mm thick

welded sheet plates. The lower part of the hopper is equipped with a moving grate for easy cleaning. The upper part of D 20 P, D 30 P, D 40 P and D 50 P is a tube plate construction and brushes through which the waste gas leaves the boiler. The brushes serve as an air-brake for maximum efficiency and for easy cleaning of the boiler. The D 15 P boiler has the same tube plate as D 20 P but without air-brake brush and without suction fan. All the combustion chamber is lined with



*Pellet boiler D 30 P
with inbuilt pellet
burner A 45*



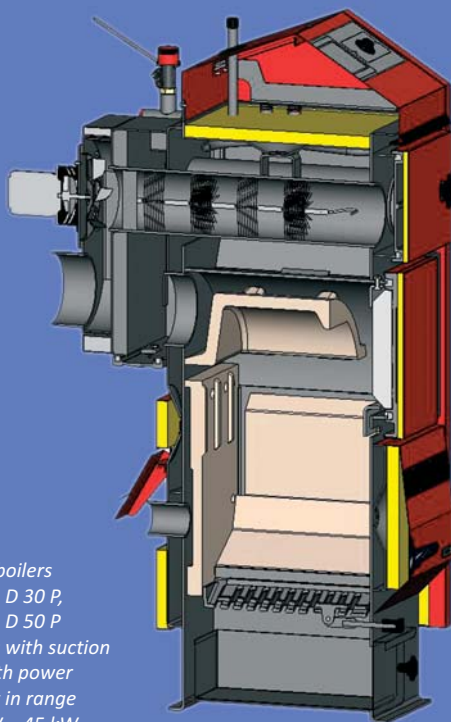


D 15 P, D 20 P, D 30 P, D 40 P, D 50 P

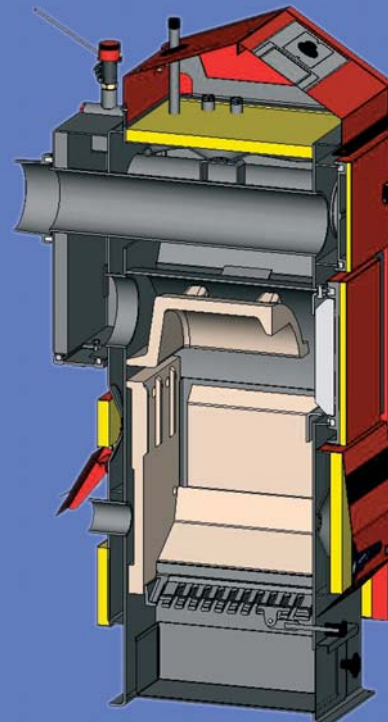
ceramic parts for clean burning with highest efficiency.

On the top of the boiler you will find a control panel with switches and thermostats. The panel is equipped and pre-wired for fitting an electronic unit for controlling a three zone heating system and solar control. At the rear side of the boiler you can find a draught regulator Honeywell FR124 which serves for regulating the air intake when burning log wood.

The boiler is equipped with a cooling loop to prevent the boiler against overheating. The possibility to burn wood is only in emergency case and helps the customer not to depend only on pellets.



*Pellet boilers
D 20 P, D 30 P,
D 40 P, D 50 P
Boilers with suction
fan with power
output in range
6,5 kW – 45 kW*

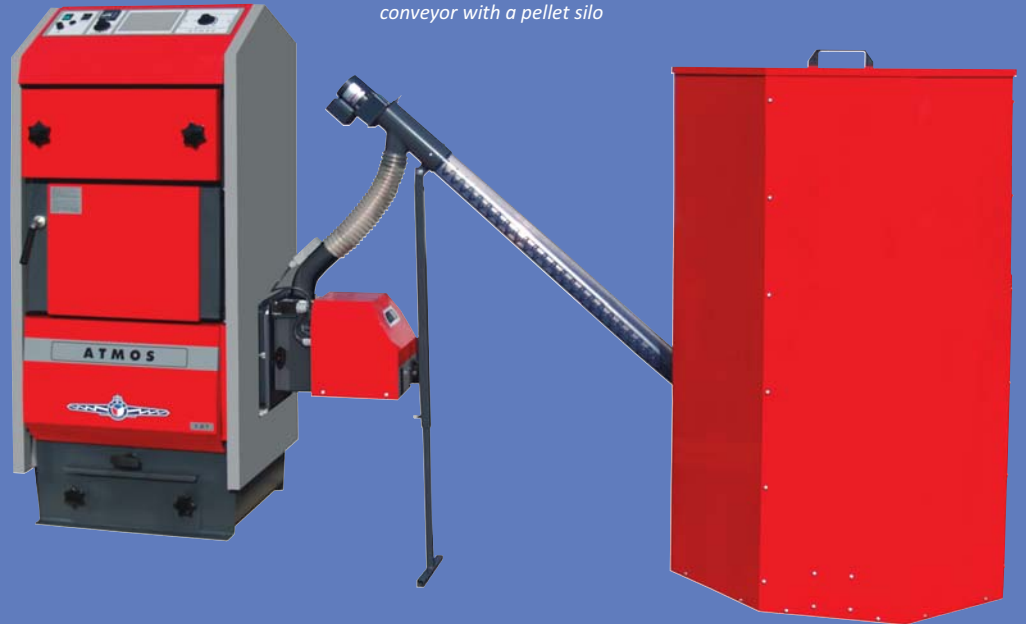


*Pellet boiler D 15 P
Without suction
fan with power
output 4,5 kW – 15 kW*

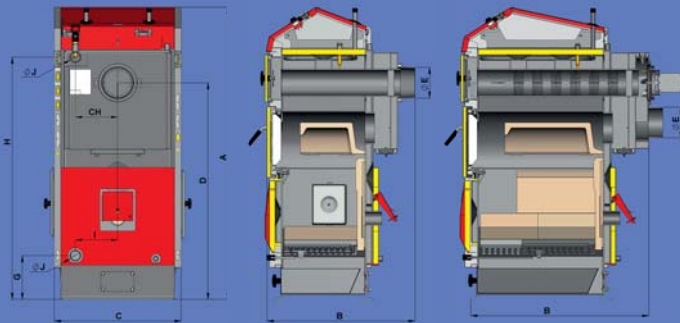




Boiler with burner and the auger conveyor with a pellet silo



TECHNICAL DATA:



DIMENSIONS	D 15 P	D 20 P	D 30 P	D 40 P	D 50 P
A	1405	1405	1405	1405	1405
B	589	652	852	852	1052
C	606	606	606	606	606
D	1040	848	848	848	848
E	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)
G	211	211	211	211	211
H	1163	1163	1163	1163	1163
CH	202	202	202	202	202
J	6/4"	6/4"	6/4"	6/4"	6/4"

TYPE ATMOS		D 15 P	D 20 P	D 30 P	D 40 P	D 50 P
POWER OUTPUT RANGE	kW	4,5 – 15	6,5 – 22	8,9 – 29,8	12 – 40	13,5 – 45
BOILER WEIGHT	kg	305	315	386	386	455
REQUIRED CHIMNEY DRAFT	Pa	18	15	21	21	23
SPECIFIED FUEL		QUALITY WOOD PELLETS Ø 6 – 8 mm (WHITE PELLETS), LENGHT 10 – 25 mm				
SUBSTITUTE FUEL		DRY WOOD CALORIC VALUE 15 – 18 MJ/kg, Ø 50 - 150 mm, 12 – 20 % OF HUMIDITY				
VOLUME OF HOPPER	dm³	70	70	105	105	140
MAXIMUM WOOD LENGHT	mm	310	310	510	510	710
VOLUME OF WATER	l	65	82	91	91	117
PELLET BURNER		ATMOS A 25		ATMOS A 45		
PELLET SILO		EXTERNAL – 250, 500, 1000 LITERS				
CONNECTING VOLTAGE	V/Hz	230/50				
POWER DEMAND JOIN STARTUP	W	522	572	530	530	530
POWER DEMAND AT THE OPERATION	W	42	92	97	97	97
EFFICIENCY IN THE WHOLE RANGE OF POWER OUTPUT	%	90,4	91,1	92,4	92,2	91,1
CLASS OF BOILER EN 303-5		5	5	5	5	5

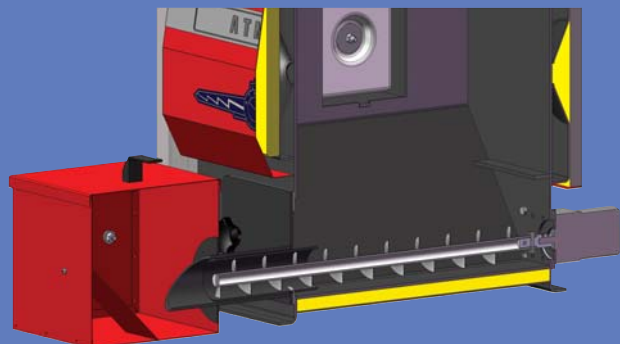


ATMOS

AUTOMATIC ASH REMOVAL FOR BOILERS

As an optional extra you can purchase an ash removal system with an external ash pan which can be fitted to every pellet boiler made since 1. 3. 2007. It does not require any special threading.

The boiler is cleaned automatically by the auger conveyor with gearbox. It cleans the ash space in the boiler in regular intervals depending on type of used fuel. Carefully choose the capacity of the ash pan based on ash content and the fuel used.





PELLET BURNER

ATMOS A25/A45

SPECIFIED FUEL:

quality wood pellets (white) with a diameter of 6 – 8 mm, a length of 5 – 25 mm and the calorific value of 16 – 19 MJ/kg.

BURNER DISPLAY:

it serves to display the current state of the burner and to set its functions.

BURNER CONTROL:

electronic control AC07X (AC07), which controls operation of the external conveyor, two ignition spirals and the fan speed according to the boiler and heating system requirements. Electronics is secured by the boiler safety thermostat, safety thermostat on the supply of pellets into the burner, the fan speed sensor and the photocell for sensing the flame. The

burner operation is indicated on the display of the electronic control.

IGNITION OF FUEL:

automatic with the help of two electric ignition spirals.

BASIC FUNCTIONS OF THE BURNER:

Possibility to use two auxiliary outputs R and R2 for different applications.

The potential involvement of four different sensors TS, TV, TK and TSV

TS – bottom sensor on the tank

TV – top sensor on the tank

TK – boiler sensor or middle sensor on the tank

TSV – combustion gases sensor or solar panel sensor



PELLET BURNER

ATMOS A25/A45

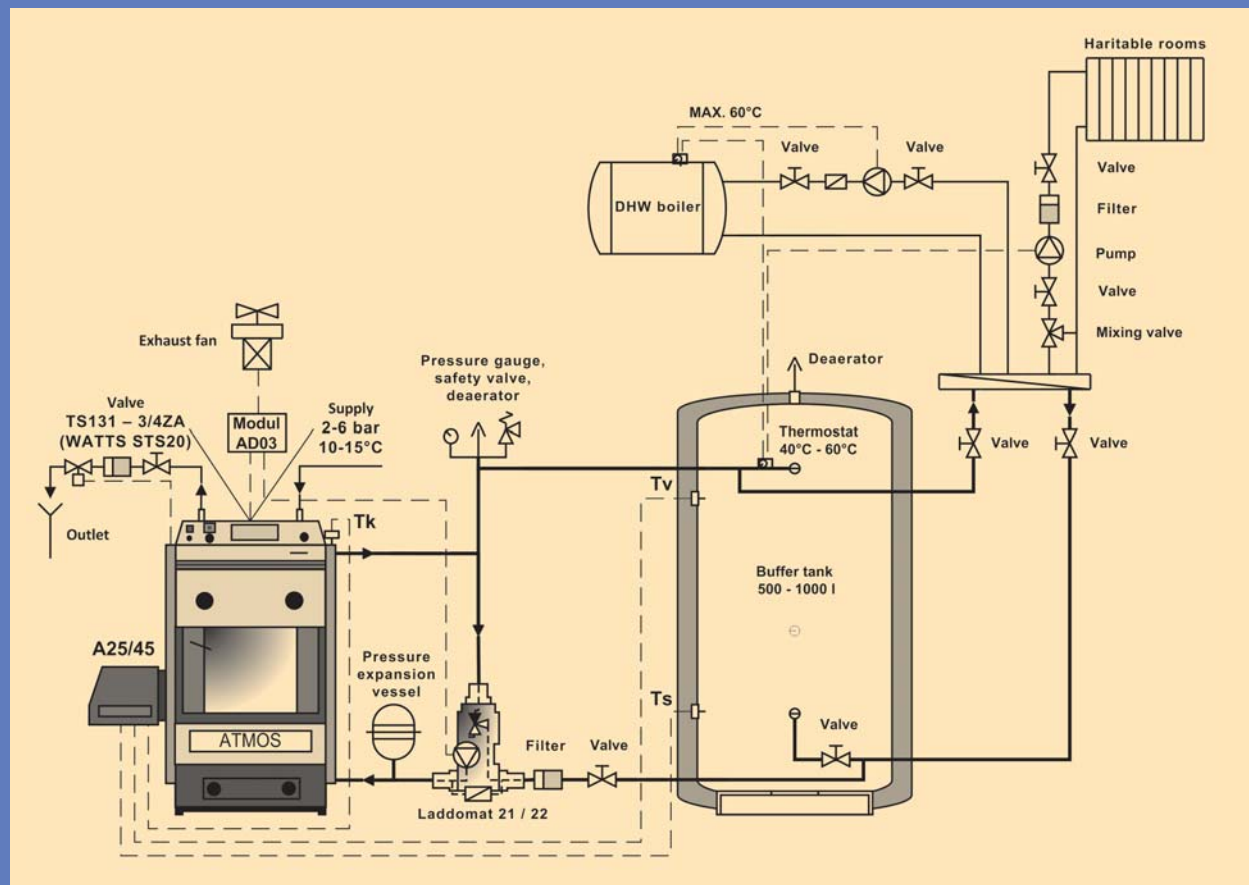
BASIC FUNCTIONS OF THE BURNER:

- burner control according to two temperatures on the expansion tank
- control of the boiler fan from the burner using the auxiliary output
- control of the boiler pump from the burner using the auxiliary output
- control of the solar system directly from the burner
- automatic burner start after burning out of wood at boilers DCxxSP

DOSING OF FUEL:

by the external screw conveyor controlled electronically from the burner.

- The external shaftless conveyors DA1500 with a length of 1.5 m, DA2000 with a length of 2 m, DA2500 with a length of 2.5 m, all with a diameter of 75 mm, are determined for the burner A25.
- The external shaft conveyors DRA50 with a length of 1.7 m, 2.5 m, 4 m and 5 m, all with a diameter of 80 mm, are determined for the burner A45.





PNEUMATIC CLEANING OF THE PELLET BURNER ATMOS A25 AND A45

This is a device designed for **cleaning of the burner combustion chamber** during combustion of the low-quality wood pellets which create cakes. This is actually the burning of wood pellets with a higher content of bark and dirt. The device itself does not offer a solution and is not intended for burning of herbal pellets and grain. In conjunction with the pellet burner, the device provides automatic removal of cakes and ash from the burner combustion chamber at regular intervals or after every burning out of the torch.

The pneumatic cleaning of the burner is **very fast, efficient and reliable**. If the customer wants to ensure that there is no cleaning at night, the kit may be supplemented by a special timer (it cannot be normally bought in the store - inductive load of 8 A).

The equipment is sold as a kit for the rebuilding of the pellet burner ATMOS A25 or A45.



RECOMMENDED INSTALLATION WITH LADDOMAT

YOU WILL BE ABLE TO ACHIEVE THE
MAXIMUM EFFICIENCY OF THE BOILER
AND ENVIRONMENTAL PARAMETERS
BY MEANS OF HEATING INTO STORAGE
TANKS AT BOILER FULL POWER.

CONNECTION DIAGRAM WITH LADDOMAT 21, 22



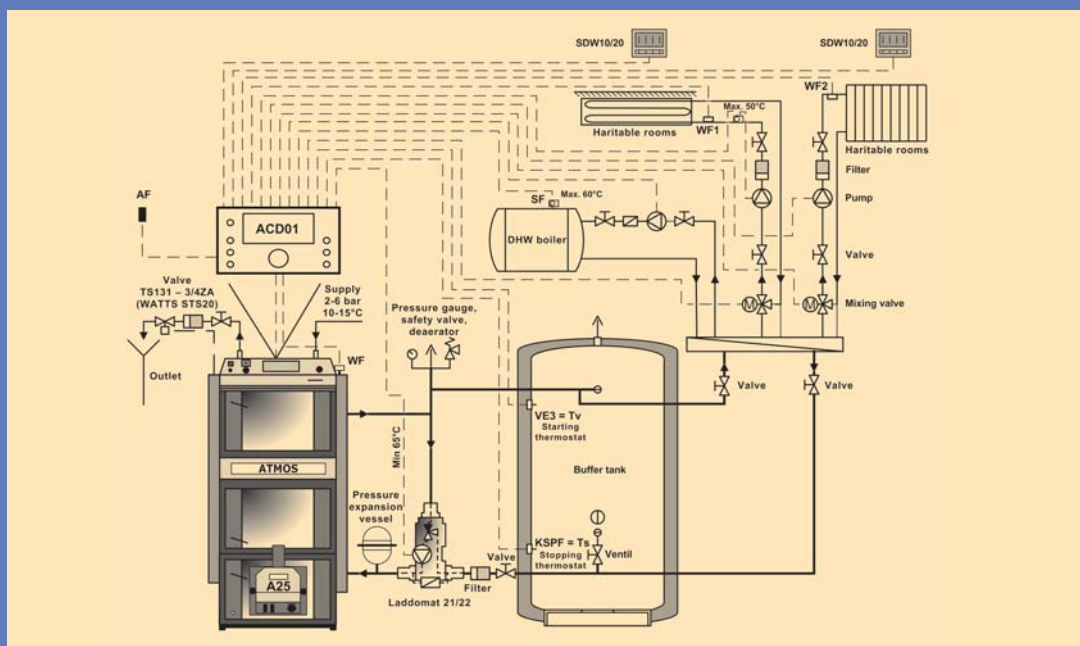
Laddomat 21



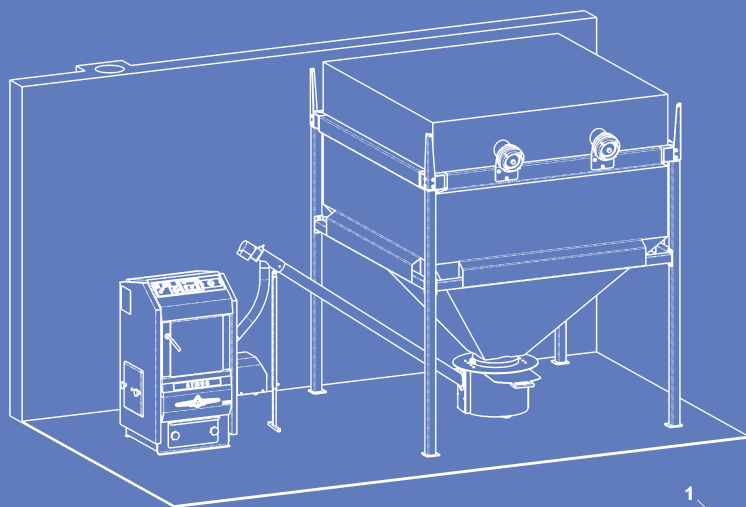
Laddomat 22

With its design, Laddomat 21 substitutes classical installation principle based on single components. Its consists of a cast-iron body, thermo-regulation valve, pump, non-returning valve, ball valves and thermometers. When water in the boiler reaches 78 °C (72 °C), the thermo-regulation valve opens supply from the return pipeline. Installation with the Laddomat 21 is much simpler and therefore we can highly recommend it.

We recommend using Laddomat 21 up to 50 kW. We recommend using Laddomat 22 to 100 kW.

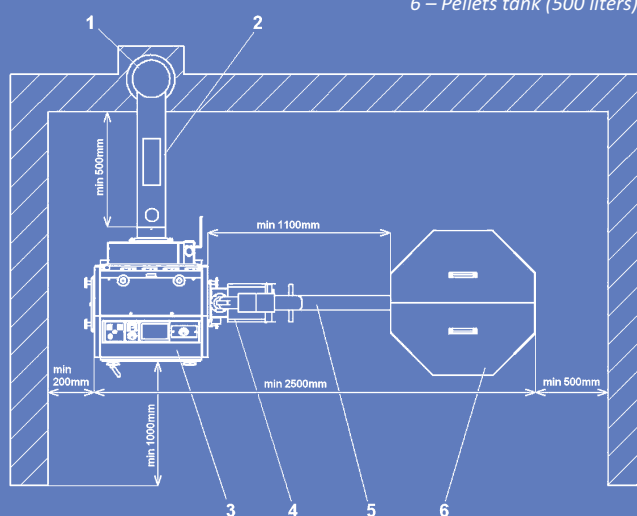


LOCATION OF THE BOILER WITH A BURNER IN THE BOILER ROOM PELLET CONTAINERS

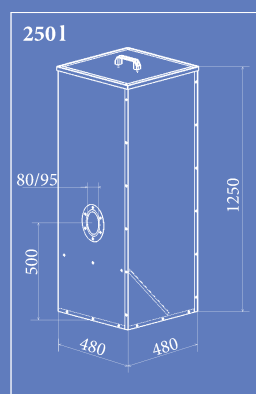


Textile silo

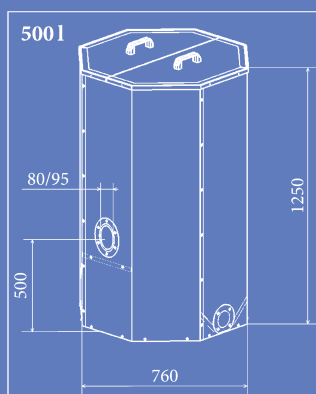
- 1 – Chimney
- 2 – Smoke
- 3 – Boiler
- 4 – Burner A25
- 5 – External auger
- 6 – Pellets tank (500 liters)



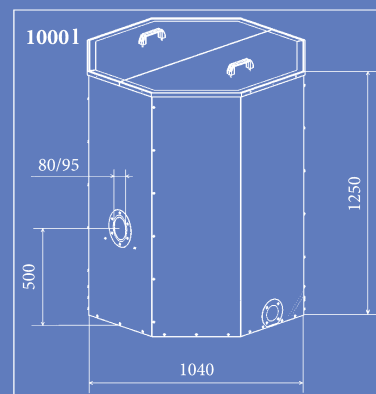
PELLET CONTAINER



This is the smallest size.
Used in the case of a small boiler room when the large volume pellet container cannot be used. 163 kg of pellets, i.e. about 730 kWh, is stored in this container.



This is the middle size.
Used in the case of a small boiler room when the large volume pellet container cannot be used. 325 kg of pellets, i.e. about 1463 kWh, is stored in this container.



This is the largest size. 650 kg of pellets, i.e. about 2925 kWh, is stored in this container.



WARM-WATER GASIFICATION BOILERS **COMBI ATMOS**

ADVANTAGES OF ATMOS BOILERS

- Combination of combustibles is possible – fuel changing without any complication
 - Replacement of burners – it is possible to change the combustible any time
 - High efficiency – it is practically the same if compared with special boilers for light fuel oil or wooden pellets (up to 92.3 %)
 - Cheaper solution – costs for installation of two special boilers are higher slightly more expensive. It is therefore economically more advantageous.
- Smaller building volume – two special boilers compared with the combined one.
 - One flue gas ducting and one chimney
 - Ecological operation – with all kind of combustibles

BOILER CONSTRUCTION

The boiler is constructed as a body with three chambers placed one above the other. The upper two chambers serve for wood gasification – which is usual in classic gasification boilers being normally produced in our factory. In the bottom chamber there is a built-in



DC 18 SP, DC 25 SP, DC 32 SP



DC 18 SPL, DC 25 SPL, DC 32 SPL



burner in front and the chamber is lined by ceramics in order to reach the optimal quality of burning process. Two systems are separated by the water jacket one on the other, the systems practically do not interact and boilers have a very high efficiency. The flue gas exhausting is solved through one outlet branch so that only one flue-gas chimney is sufficient.

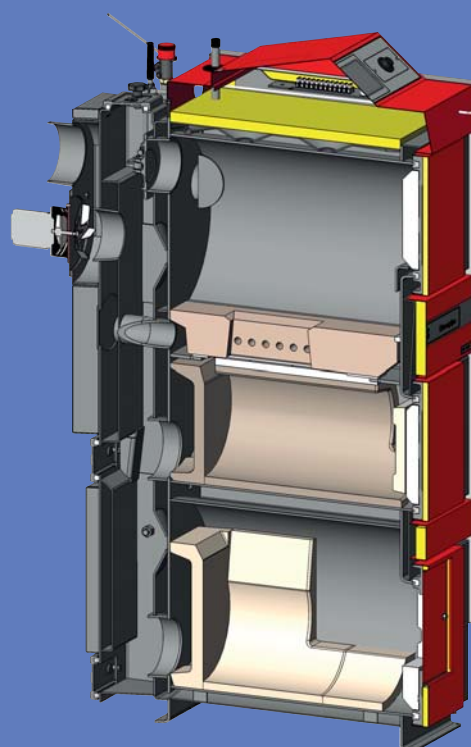
FUNCTIONALITY

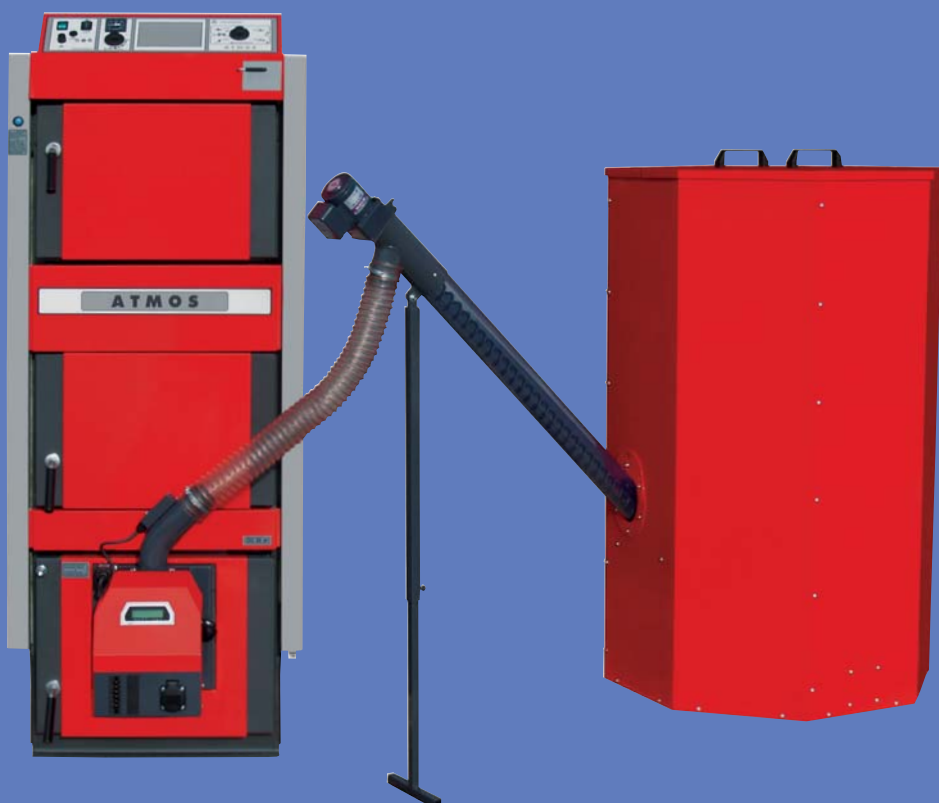
The new range of combined boilers ATMOS DC 18 SP (L), DC 25 SP (L), DC 32 SP (L) makes it possible for wood combustion – based on wood gasification principle – in combination with burner for pellets or extra light fuel oil.

Such boilers allow changing the variety of fuel; it is possible to burn pellets or light fuel oil – depending on the type of the built-in burner. If required, it is possible to purchase the boiler without burner, to choose the burner later on, or to use the burner from the old (previous) boiler.

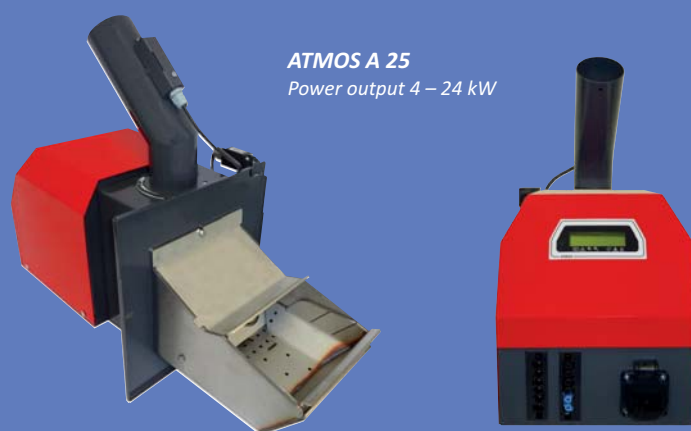
REGULATION

- Draught regulator HONEYWELL
- Regulation thermostat
- Waste gas thermostat
- Thermostat for pumping device
- Changeover switch



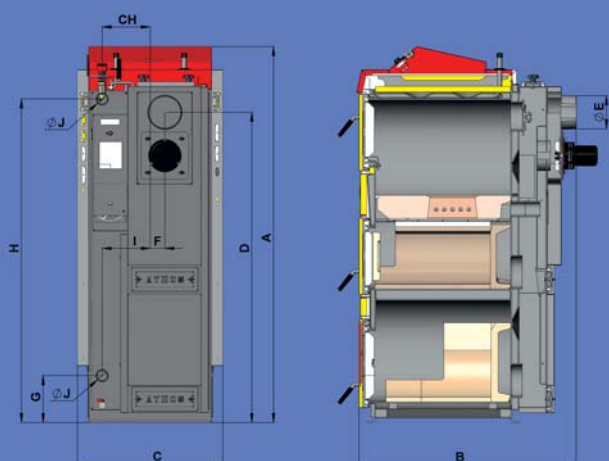


Boiler with burner, conveyor and a pellet tank



ATMOS A 25
Power output 4 – 24 kW

TECHNICAL DATA:



DIMENSIONS	DC 18 SP (L)	DC 25 SP (L)	DC 32 SP (L)
A	1695	1695	1772
B	757	957	957
C	643	643	678
D	1375	1375	1448
E	150 (152)	150 (152)	150 (152)
F	212	212	256
G	207	207	184
H	1436	1436	1507
CH	212	212	256
I	65	65	70
J	6/4"	6/4"	6/4"

TYPE ATMOS		DC 18 SP (L)	DC 25 SP (L)	DC 32 SP (L)
POWER OUTPUT RANGE - WOOD	kW	20	25	35
POWER OUTPUT RANGE - PELLETS	kW	4,5 - 15	6 - 20	6 - 20
POWER OUTPUT RANGE - LFO, NATURAL GAS	kW	15 - 20,5	15 - 30,5	15 - 30,5
REQUIRED DRAUGHT OF CHIMNEY	Pa	20	23	24
COMBUSTIBLE – WOOD		DRY WOOD CALORIC VALUE 15 – 18 MJ/kg, Ø 70 – 150 mm, 12 – 20 % OF HUMIDITY		
COMBUSTIBLE - PELLETS		QUALITY WOOD PELLETS Ø 6 - 8 mm (WHITE PELLETS)		
COMBUSTIBLE - LFO		OIL FUEL VALUE 42 MJ/m ³		
MAXIMUM WOOD LENGHT	mm	330	530	530
VOLUME OF HOPPER	dm ³	66	100	140
BOILER WEIGHT	kg	435	535	579
VOLUME OF WATER	l	78	109	160
TYPE OF BURNER FOR PELLETS		ATMOS A 25		
PELLET SILO		EXTERNAL – 250, 500, 1000 LITERS		
CONNECTING VOLTAGE	V/Hz	230/50		
POWER DEMAND JOIN STARTUP	W	572	572	572
POWER DEMAND AT THE OPERATION	W	42	42	42
EFFICIENCY IN THE WHOLE RANGE OF POWER OUTPUT	%	83,3/85/89,6	85/88,2/91,2	86/88,2/91,2
CLASS OF BOILER EN 303-5		4	5	5

Boilers for wood gasification combined with natural gas or light fuel oil combustion are marked by a postfix L (e.g. DC 18 SPL) in the denomination of boiler.

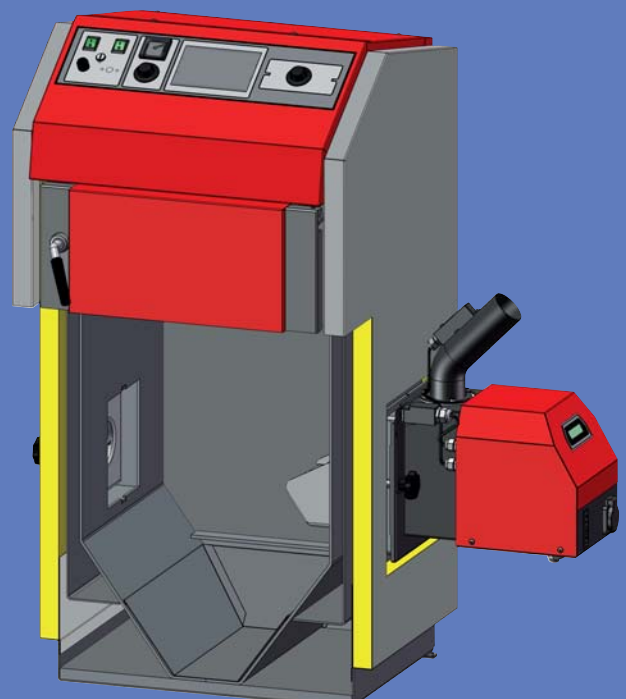


PELLET BOILERS

ADVANTAGES OF ATMOS BOILERS:

The special new construction of these boilers brings lot of advantages

- big burning chamber
- 3 pipes heat exchanger
- big ash-pan
- automatic ash removing available
- easy and fast cleaning
- small dimensions and weight
 - simply installation
- high efficiency over 90 %
- ecological parametres
- enables fitting of burner on both sides
- the D31 P boiler is equipped with an exhaust fan





MODELS D 14 P – D 21 P – D 25 P – D 31 P

The boiler is fitted with a new pellet **burner ATMOS A25**.

The system of boiler and burner achieves extremely good parameters of burning in all range of its output.

The boiler is granted in the Czech Republic.

Boiler with burner and the auger conveyor with a pellet silo





HOT WATER BOILER

The boilers are designed as a weldment with a large combustion chamber. The pellet burner is positioned to the left or right side along with the conveyor. In the lower part under the combustion chamber there is a large ashtray. In the upper part of the boiler there is a tube plate with air brake valves.

In the rear part of the boiler there is an exhaust flue with a smoke socket. The exhaust flue of the boiler D 31 P is fitted with a suction fan. In the upper part there is a control panel with control elements and a space for the placement of electronic control.

The heating with pellets using the pellet burner **ATMOS A25** and **A45** has much in common with the heating using the natural gas or fuel oil.

The difference is that the combustion of pellets produces a certain amount of ash that must be removed from the burner and boiler at a certain interval to prevent deterioration of efficiency or disruption of the burner function.



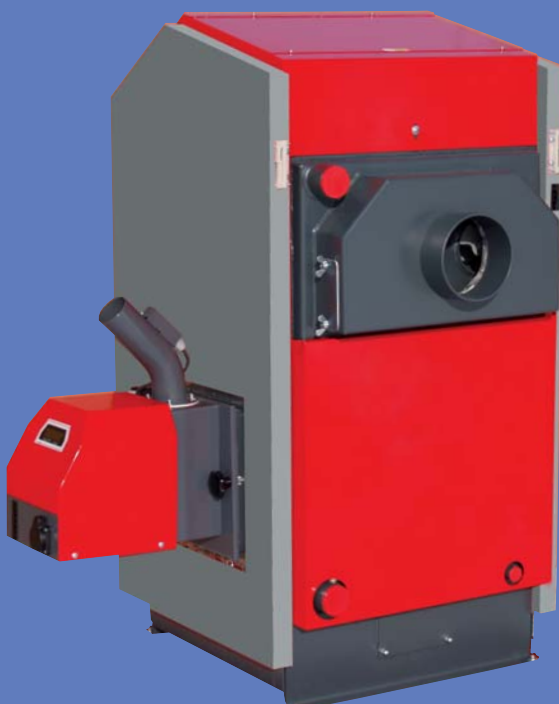


The pellet burner **ATMOS A25** and **A45** comes standard with automatic ignition of the fuel. The assembly of the burner, external conveyor and the fuel tank works automatically during operation and is controlled electronically, using the flame detector (photocell). The dosing of fuel and combustion air occurs in the body of the burner so that the fuel is burned with the highest efficiency and environmentally friendly.

Only quality pellets with a diameter of 6 to 8 mm and a length of 5 to 25 mm should be used for heating in the burner. **Pellets made of soft wood without bark, i.e. white pellets, are considered to be quality pellets.**

Common ash removal from the burner is performed through an open door of the boiler every 7 to 30 days as needed. Once a year we

recommend to perform a thorough cleaning of the inside of the burner at which the burner is removed from the boiler. For the ideal cleaning of the combustion chamber (cup) of the burner, a vacuum cleaner or a fire poker can be used.

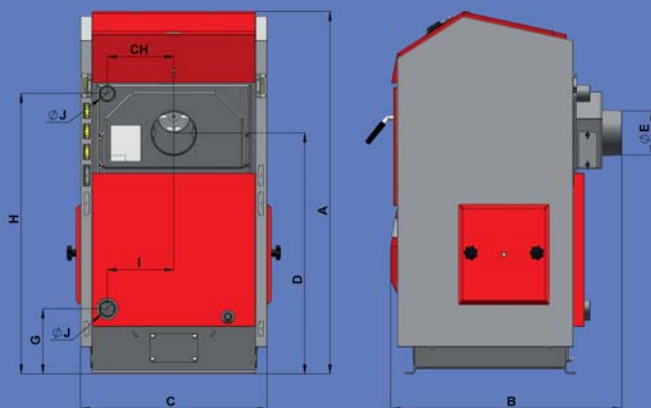


D 14 P, D 21 P, D 25 P



D 31 P

DIMENSIONS:



	D 14 P	D 21 P	D 25 P	D 31 P
A	1207	1207	1207	1307
B	768	768	868	882
C	620	620	620	620
D	801	801	801	901
E	150 (152)	150 (152)	150 (152)	150 (152)
G	215	215	215	215
H	934	934	934	1034
CH	221	221	221	221
I	221	221	221	221
J	6/4"	6/4"	6/4"	6/4"

TECHNICAL DATA:

TYPE ATMOS		D 14 P	D 21 P	D 25 P	D 31 P
POWER OUTPUT RANGE	kW	4 - 14	4 - 19,5	7 - 24	9 - 30
BOILER WEIGHT	kg	225	226	248	263
SPECIFIED STACK DRAUGHT	Pa	16	18	22	18
SPECIFIED FUEL	QUALITY WOOD PELLETS Ø 6 – 8 mm (WHITE PELLETS), LENGHT 10 – 25 mm				
VOLUME OF HOPPER	l	56	56	62	70
PELLET BURNER		ATMOS A25	ATMOS A25	ATMOS A25	ATMOS A45
PELLET SILO EXTERNAL	l	250, 500, 1000	250, 500, 1000	250, 500, 1000	250, 500, 1000
BOILER MAX ASH-PAN CONTENT	l	11	11	16	16
EXTERNAL ASH-PAN CONTENT	l	28, 68	28, 68	28, 68	28, 68
CONNECTING VOLTAGE	V/Hz	230/50	230/50	230/50	230/50
POWER DEMAND JOIN STARTUP	W	522	522	522	520
POWER DEMAND AT THE OPERATION	W	42	42	42	97
EFFICIENCY IN THE WHOLE RANGE OF POWER OUTPUT	%	90,3	90,3	90,3	90,1
CLASS OF BOILER EN 303-5		5	5	5	5



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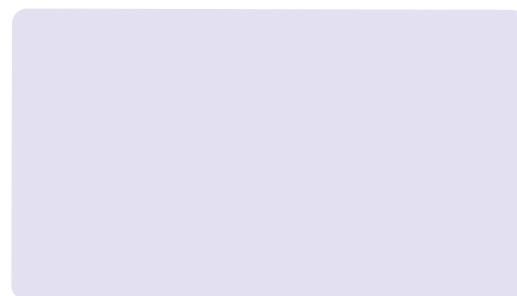
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