

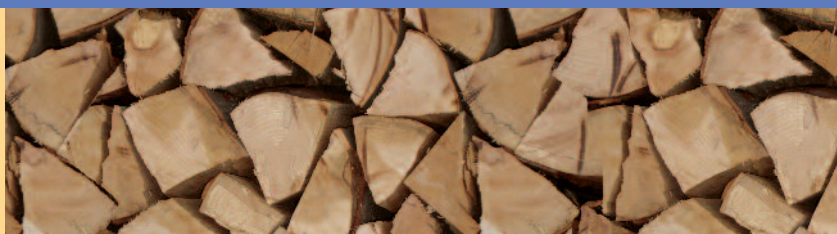


ATMOS

GASIFICATION BOILERS



The best choice for wood burning...





ATMOS

Wood-gas fuel generator DOKOGEN



ATMOS Compressors exhibition, 1945



TRADITION AND EXPERIENCE



Three generations of Cankář family

ATMOS 79 YEARS

Family company ATMOS was established in Bohemia in **1935** by **Jaroslav Cankář 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.

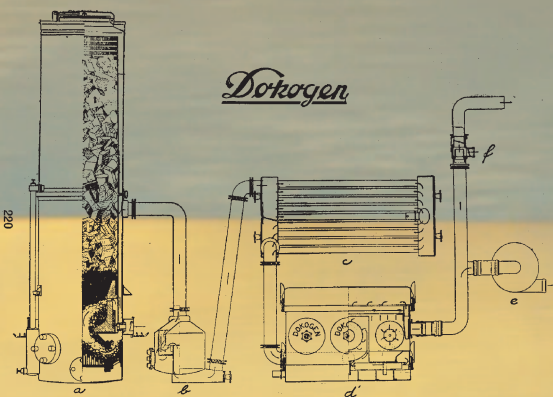
In 1985 the development was focused on gas generators for cars, ships engines.

Company ATMOS was re-established in **1991** by **Jaroslav Cankář 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 **Jaroslav Cankář** 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





ATMOS

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





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WOOD GASIFICATION BOILERS

ADVANTAGES OF WOOD BOILERS:

ATMOS WOOD GASIFICATION BOILERS DC 18 S – DC 50 S, DC 15 E – DC 70 S

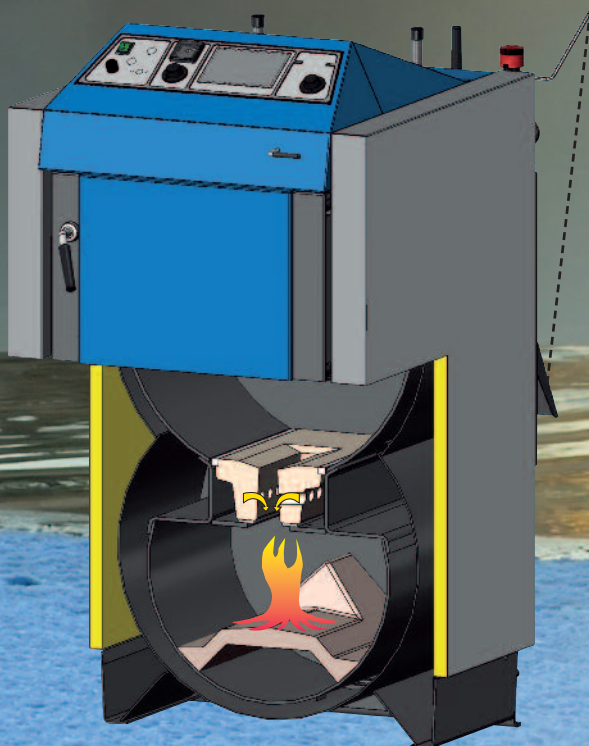
The boilers are made of round gasification chamber with rear inlet of pre-heated primary and secondary air. And of ceramic nozzle and lower ceramic shaped parts.

ATMOS WOOD GASIFICATION BOILERS DC 20 GS – DC 70 GSX

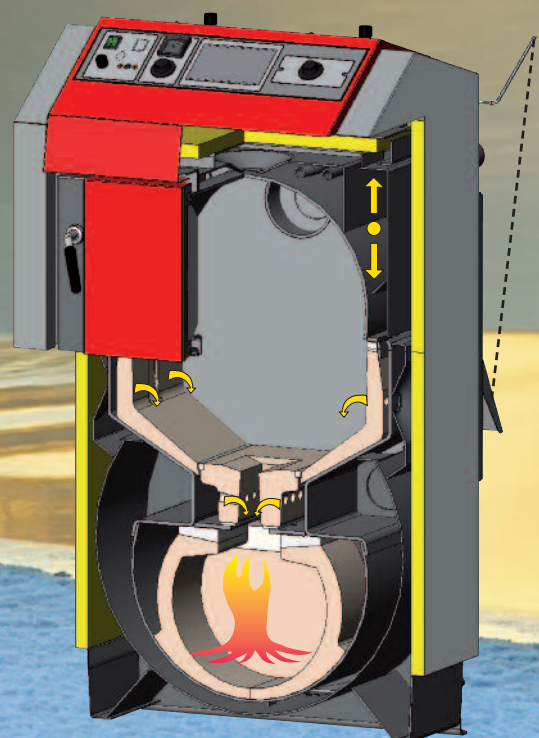
The boilers are made of rectangular gasification chamber which is laid with special ceramic shaped parts with primary air inlets in the lower section and with ceramic nozzle and in lower chamber with spherical ceramic parts.

DC 50 GSX and DC 70 GSX are not laid with special ceramic shaped parts in gasification chamber.

Ceramic shaped parts in gasification chamber = ideal combustion.



*ATMOS Timber Gas
DC 18 S, DC 22 S, DC 25 S, DC 32 S, DC 40 SX, DC 50 S*



*ATMOS Generator
DC 20 GS, DC 25 GS, DC 32 GS, DC 40 GS*



FUNCTION:

Gasification of wood (inverse burning) with subsequent combustion of wood gas in ceramic fire chamber. Air supply is controlled by suction fan. Boiler DC15 E is without any fan.

ENVIRONMENT:

Inverse burning (gasification) and ceramic combustion chamber enable practically complete combustion with a minimum of harmful exhalations. The boilers meet limits of European regulations for environmental friendly product and belong to 3rd – 5th class of boiler under EU standard CSN EN 303-5.

INSTALLATION:

The main features of Atmos boilers are small dimensions and low weight with simple regulation. The boiler must be fitted with a mixing valve at the return pipe into the boiler keeping minimum temperature into the boiler 65 °C. The operation temperature of the boiler must be maintained within 80 – 90 °C.

We recommend installation with accumulation tanks. The boilers are not allowed to be installed in habitable rooms. They are supposed to be installed in well ventilated rooms.

Control panel of the boiler with inbuilt electronic regulation unit

The control panel contains:



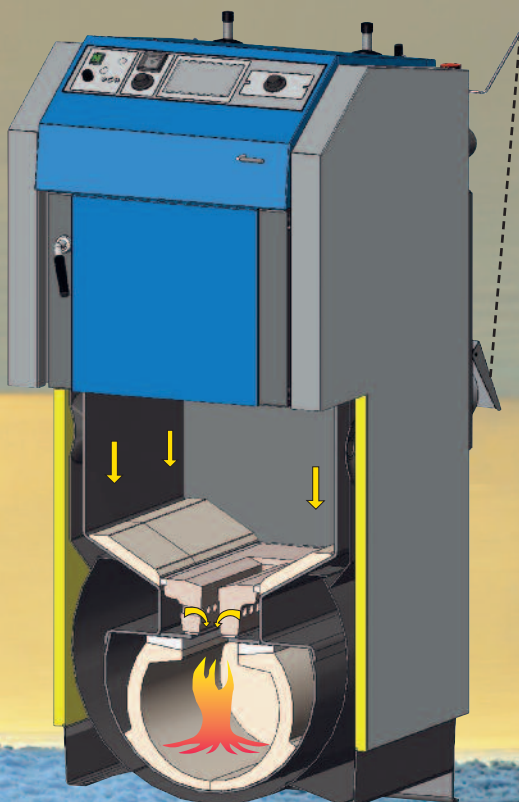
Main switch, safety thermostat, safety fuse 6,3A and electronic regulation ACD01

Control panel with basic regulation

The control panel contains:



Main switch, safety thermostat, thermometer, boiler operating thermostat and waste gas thermostat.



ATMOS Generator
DC 50 GSX, DC 70 GSX



ATMOS

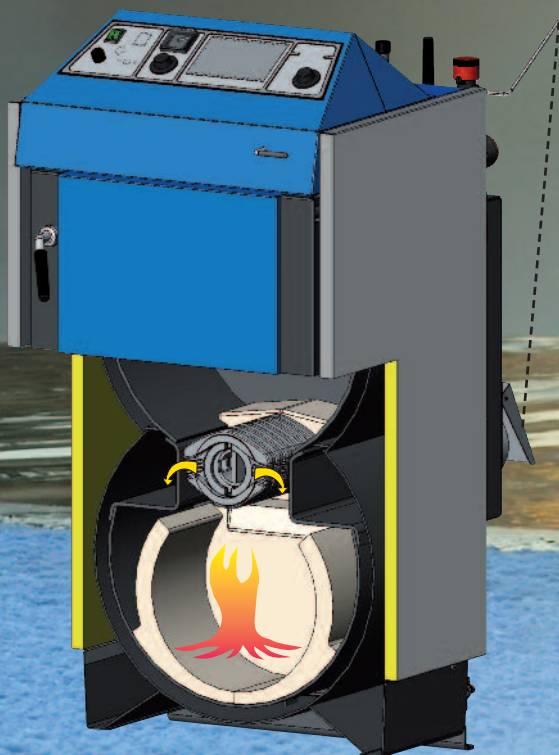
COAL AND WOOD GASIFICATION BOILERS

ADVANTAGES OF COAL AND WOOD BOILERS:

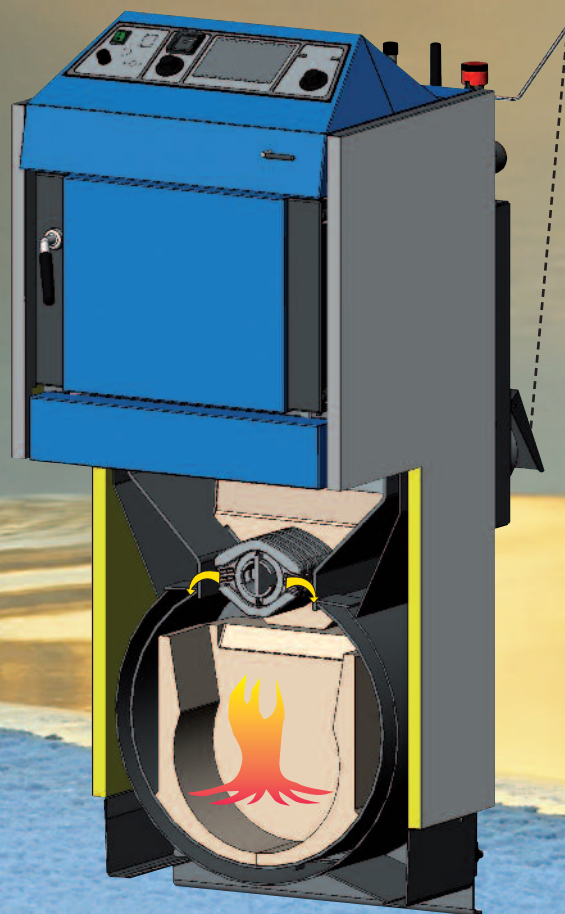
ATMOS COAL AND WOOD GASIFICATION BOILERS C 18 S – C 50 S

The boilers are made of rectangular gasification chamber with a special rotating grate with secondary air inlet. The rotating grate compensates ceramic nozzle. The lower chamber is equipped with spherical ceramic parts.

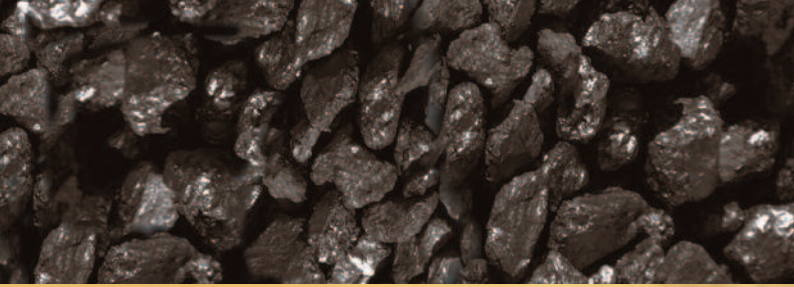
The new generation **ATMOS Kombi Gasification Boiler** offers us an innovative look at combustion of coal in combination with wood. A **combined boiler** makes coal to be used as fuel, which has a future. If you lack coal, you may use firewood, and, if you are short in wood, you may fire coal or you may combine them – by burning both fuels simultaneously.



ATMOS Kombi
C 18 S, AC 25 S



ATMOS Kombi
C 20 S, C 30 S, C 40 S, C 50 S, AC 35 S, AC 45 S



ENVIRONMENTAL ASPECT:

By utilizing coal gasification in the new ATMOS Kombi Boiler, low emission values of pollution have been achieved. Through continuous output control, with an efficiency of 81 – 87 percent, considerable economy in fuel consumption has been accomplished, too. Reverse combustion and ceramic combustion area enable practically a complete combustion with minimum harmful air pollution. Environmental parameters will be guaranteed for boiler operation at rated boiler capacity. The boilers belong to 4th class of boiler under EU standard CSN EN 303-5.

OPERATION AND MAINTENANCE:

The fuel recommended is brown nut coal 1 and dry logs (segments of unshaped timber). Other kinds of brown coal, briquettes, molded blocks of sawdust and briquettes of straw-, rape- and

cereals-based dust represent a substitute fuel. Our recommendation is to use wood combined with coal together.

Depending on the fuel used, it should be added in average twice a day to four times a day. It will suffice to remove the ashes within one to seven days, depending on the type of fuel. Exhausting fan facilitates heating up and it reduces smoking into the boiler-room to the minimum.

SELECTING THE RIGHT BOILER MODEL:

- If you intend mainly to fire **coal** – choose **ATMOS Kombi Gasification Boiler**.
- If you prefer to use **firewood** – choose **ATMOS Dřevoplyn (Timber Gas)**

Gasification Boiler or ATMOS Generator – these have been better adapted for wood burning – they have a larger chamber and enable to burn longer pieces of wood.



Wood gasification boiler modified for fitting of pellet burner



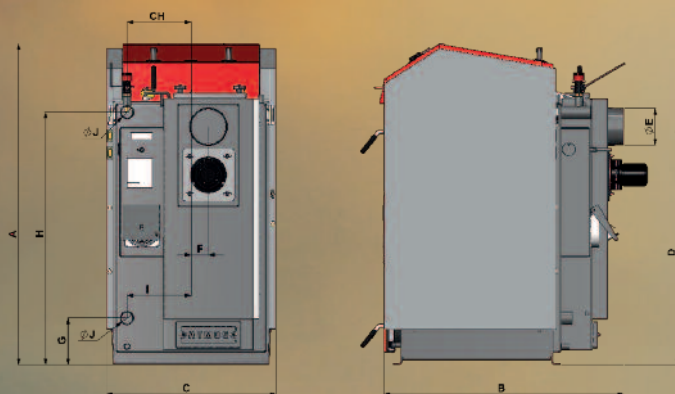
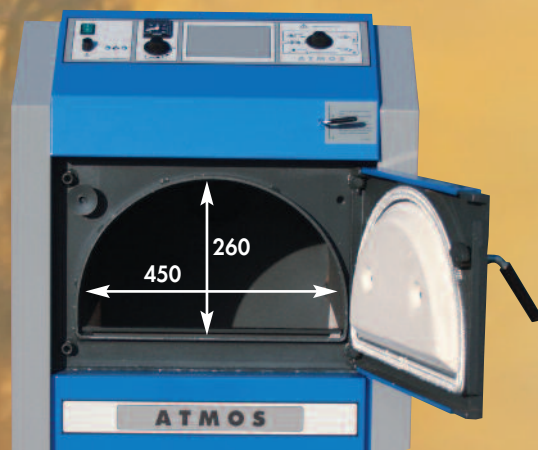
ATMOS

GASIFICATION BOILERS

ATMOS Generator – the best choice for wood burning.

The boilers were developed based on experience from development of wood gas generators (gasification units under mark DOKOGEN) used for cars and ships in years 1935–1945. The followed development of wood gas generators for cars and A.C. generators continues later in years 1980-1985 for export to Vietnam.

Modern construction of the boiler have excellent technical features and low emission. The products are exported into whole world and meet the strictest standards and ecological requirements valid since 2014.



TECHNICAL DATA:

DIMENSIONS	C 18 S	C 20 S	C 30 S	C 40 S	C 50 S	AC 25 S	AC 35 S	AC 45 S
A	1180	1420	1420	1420	1420	1180	1420	1420
B	770	770	870	970	1120	770	770	870
C	590 (624)	590 (624)	590 (624)	590 (624)	590 (624)	670	670	670
D	872	1118	1118	1118	1118	872	1118	1118
E	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)
F	65	70	70	70	70	65	70	70
G	200	200	200	200	208	200	200	200
H	930	1165	1165	1165	1165	930	1165	1165
CH	220	220	220	220	220	220	220	220
I	190	190	190	190	220	190	190	190
J	6/4"	6/4"	6/4"	2"	2"	6/4"	6/4"	6/4"

TYPE ATMOS KOMBI		C 18 S	C 20 S	C 30 S	C 40 S	C 50 S	AC 25 S	AC 35 S	AC 45 S	
POWER OUTPUT RANGE	kW	10-20	17-25	22-32	28-40	35-48	20-26	30-35	32-45	
SPECIFIED STACK DRAUGHT	Pa	20	23	25	28	28	20	23	25	
BOILER WEIGHT	kg	295	351	395	434	492	297	353	397	
VOLUME OF WATER	l	45	64	70	77	105	45	64	70	
VOLUME OF HOPPER	dm ³	66	100	125	150	150	66	100	125	
ELECTRIC INPUT	W	50	50	50	50	50	50	50	50	
CONNECTING VOLTAGE	V/Hz	230 / 50					230 / 50			
SPECIFIED FUEL		BROWN NUT COAL 1 WITH A HEAT VALUE OF 17 – 20 MJ/kg					BLACK COAL			
SUBSTITUTE FUEL		DRY WOOD CALORIC VALUE 15 – 18 MJ/kg, Ø 80 – 120 mm, 12 – 20 % OF HUMIDITY								
MAXIMUM WOOD LENGHT	mm	330	330	430	530	530	330	330	430	
MINIMUM TEMPERATURE OF RETURN WATER		65 °C					65 °C			
EFFICIENCY IN THE WHOLE RANGE OF POWER OUTPUT		83 – 86 %					83 – 86 %			
CLASS OF BOILER EN 303-5		4	4	4	4	4	4	4	4	

DIMENSIONS	DC 15 E	DC 18 S	DC 22 S	DC 25 S	DC 32 S	DC 40 SX	DC 50 S	DC 70 S	DC 20 GS	DC 25 GS	DC 32 GS	DC 40 GS	DC 50 GSX	DC 70 GSX
A	1180	1180	1180	1180	1260	1260	1260	1380	1260	1260	1260	1410	1558	1648
B	690	770	970	970	970	970	1170	1170	770	970	970	970	1042	1068
C	590 (624)	590 (624)	590 (624)	590 (624)	670	670	670	670	670	670	670	670	678	678
D	690	872	872	872	946	946	946	1050	946	946	946	1092	997	1054
E	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)	180	150 (152)	150 (152)	150 (152)	150 (152)	150 (152)	180
F	65	65	65	65	75	75	75	90	75	75	75	75	70	70
G	200	200	200	200	180	180	180	325	180	180	180	180	184	184
H	930	930	930	930	1000	1000	1000	1230	1000	1000	1000	1137	1287	1372
CH	220	220	220	220	255	255	255	-	255	255	255	255	256	256
I	190	190	190	190	240	240	240	240	240	240	240	240	256	256
J	6/4"	6/4"	6/4"	6/4"	6/4"	6/4"	2"	2"	6/4"	6/4"	6/4"	2"	2"	2"

TYPE ATMOS		ATMOS Dřevoplyn (Timber Gas)								ATMOS Generator					
		DC 15 E	DC 18 S	DC 22 S	DC 25 S	DC 32 S	DC 40 SX	DC 50 S	DC 70 S	DC 20 GS	DC 25 GS	DC 32 GS	DC 40 GS	DC 50 GSX	DC 70 GSX
POWER OUTPUT RANGE	kW	14,9	14-20	15-22	20-25/27	25-35	30-40	35-49	70	15-20	20-25	25-32	30-40	35-49	70
SPECIFIED STACK DRAUGHT	Pa	18	20	23	23	24	25	25	30	20	23	24	25	25	30
BOILER WEIGHT	kg	280	269	324	326	366	368	433	515	343	431	436	485	538	571
VOLUME OF WATER	l	45	45	58	58	80	80	89	93	64	80	80	90	120	132
VOLUME OF HOPPER	dm ³	65	66	100	100	140	140	180	180	85	125	125	170	210	210
MAXIMUM WOOD LENGHT	mm	330	330	530	530	530	530	730	730	330	530	530	530	530	530
SPECIFIED FUEL		DRY WOOD CALORIC VALUE 15 – 18 MJ/kg, Ø 80 – 150 mm, 12 – 20 % OF HUMIDITY													
MINIMUM TEMPERATURE OF RETURN WATER		65 °C													
EFFICIENCY IN THE WHOLE RANGE OF POWER OUTPUT		81 – 90 %													
CLASS OF BOILER EN 303-5		3	4	4	4	4	4	4	3	4	4	4	4	5	4



ATMOS

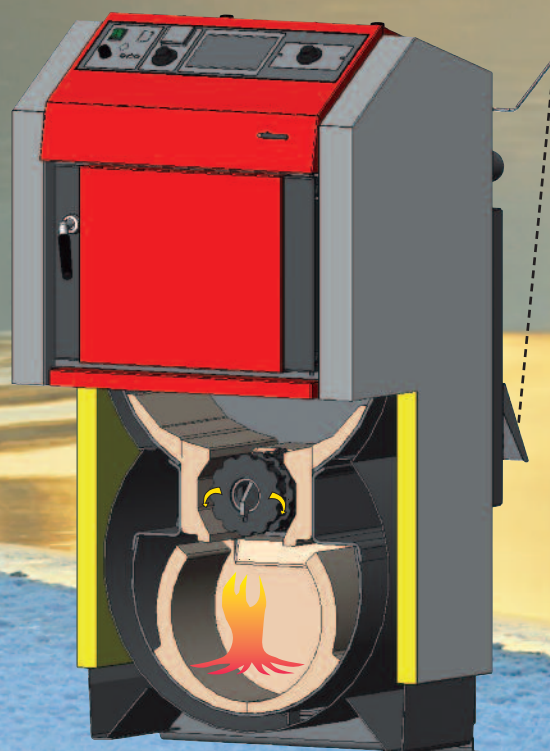


BRIQUETTES, WOOD AND

TYPE ATMOS – RS

ADVANTAGES OF ATMOS – RS BOILERS

- special boilers for gasifying
 - Wood briquettes, – Wood, – Wood pellets
- Ceramic gasifying chamber with rotating cast iron grate with intake of secondary preheated air – good combustion by firing up and fast achieving of operation temperature
- construction of the boiler shows new way of **briquettes and wood gasification**
 - the grate is set into ceramic shaped parts
- easy cleaning of boiler even by operating – simply cleaning of burning chamber rear flue way and turbulator from ash
- high efficiency around 90 %
- modern design and attractive price
- Enables fitting of pellet burner ATMOS A25.
The burner fits into the upper door.



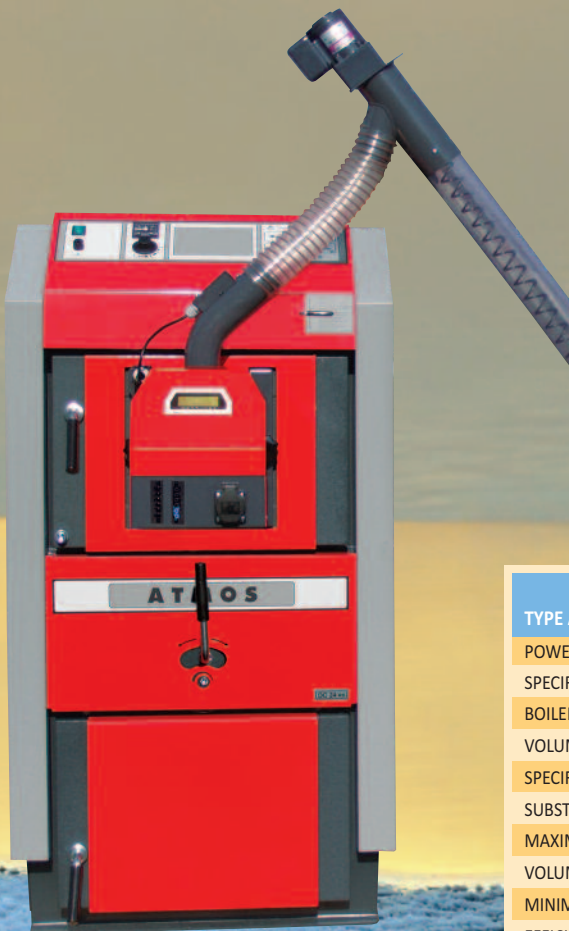
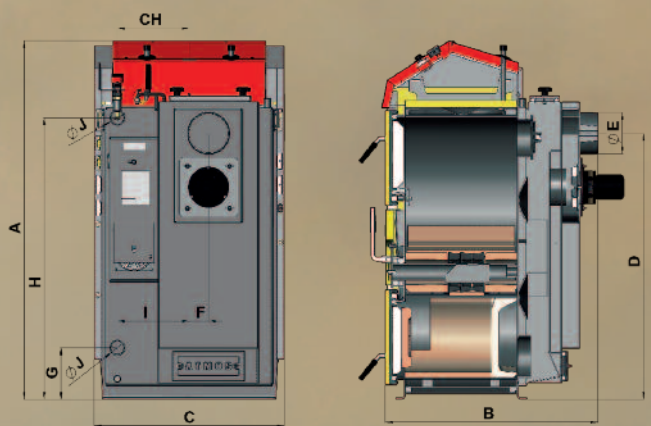


PELLETS GASIFICATION BOILERS

BOILER DC 24 RS, DC 30 RS

- boiler with suction fan
- rear flue way with turbulator (DC 30 RS)
- specified fuel – WOOD BRIQUETTES
diameter 75 – 100 mm,
length 200 – 300 mm
- alternative fuel – LOG WOOD
length 250 – 330 mm
- wood pellets \varnothing 6 – 8 mm

TECHNICAL DATA:



DIMENSIONS	DC 24 RS	DC 30 RS
A	1279	1279
B	762	842
C	678	678
D	949	722
E	150 (152)	150 (152)
F	69	69
G	184	184
H	1005	1005
CH	256	256
I	256	256
J	6/4"	6/4"

TYPE ATMOS RS		DC 24 RS		DC 30 RS	
POWER OUTPUT RANGE	kW	26	24	32	24
SPECIFIED STACK DRAUGHT	Pa	22		24	
BOILER WEIGHT	kg	347		375	
VOLUME OF HOPPER	dm ³	93		93	
SPECIFIED FUEL		Briquettes		Briquettes	
SUBSTITUTE FUEL		Wood logs	Pellets	Wood logs	Pellets
MAXIMUM WOOD LENGHT	mm	330		330	
VOLUME OF WATER	l	58		65	
MINIMUM TEMPERATURE OF RETURN WATER		65 °C			
EFFICIENCY IN THE WHOLE RANGE OF POWER OUTPUT		86,6 %		> 90,7 %	
CLASS OF BOILER EN 303-5		4		4	

The boilers are also certified as wood pellet boilers.



ATMOS

OUTPUT 70 – 100 kW

INTENDED USE

The environmentally friendly water heating boilers DC 70 S, DC 75 SE and DC 100 are intended for heating big family houses, various workshops, mountain cottages, business premises and similar buildings. The boilers are designed for burning log wood. Any kind of dry wood may be used for heating in form of wood logs with length 700 mm – 1000 mm and diameter 80 mm – 150 mm based on boiler model. Bigger logs of wood with bigger diameter can be used as well. It can gently decrease nominal output of the boiler but on the other hand it can prolong burning time. The boilers are not meant to burn waste wood or sawdust. By burning mostly waste wood or saw-

dust you could overheat the boiler and cause damage of the boiler. Waste wood or sawdust can only be burned in very small amount and mixed with logs (max. 10 % waste wood). Burning bigger logs saves our physical work and time spent by preparing and splitting wood.

BURNING METHOD

The wood gasification process happens in top chamber of the boiler where hot ash layer causes wood gasifying. The produced wood gas is mixed in ceramic nozzle with oxygen secondary air and in form of flame burns into the bottom burning chamber.



ATMOS DC 70 S



ATMOS DC 100



Such principle allows burning of all combustible substances contained in wood with very high efficiency (81 % – 88 %) and with high comfort of heating.

EKONOMY

Wood-fuel ATMOS boilers have a **very competitive price** and good economy of combustion. Combustion chamber is made of strong 6 mm thick sheet plates. The boilers allow burning of economical fuel and the operation will become in future the most economical.

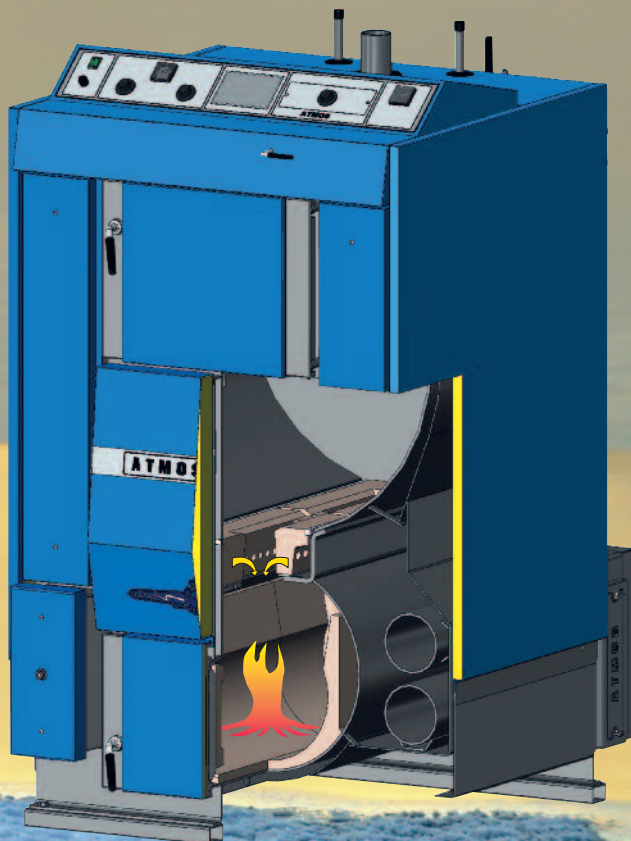
High efficiency = low fuel consumption.

INSTALLATION

We require installing of ATMOS boilers with thermoregulating valve or with 3-ways mixing valve

with servoactuator and electronic regulation for keeping minimal return temperature into boiler at 65 °C. Always install boilers with higher output with accumulation tank with minimal volume of 1000 litres which allows optimal use of nominal output of the boiler with maximal efficiency. We recommend instalation of boilers with bigger volume 5000 – 6000 litres. It decreases fuel consumption and increases burning comfort. The boilers pass European standard CSN EN 303-5 and are classified in class 3.

MAXIMAL EFFICIENCY LONG LIFETIME AND ECOLOGICAL FEATURES ARE ACHIEVED BY BURNING INTO ACCUMULATION TANKS AT NOMINAL OUTPUT OF THE BOILER.



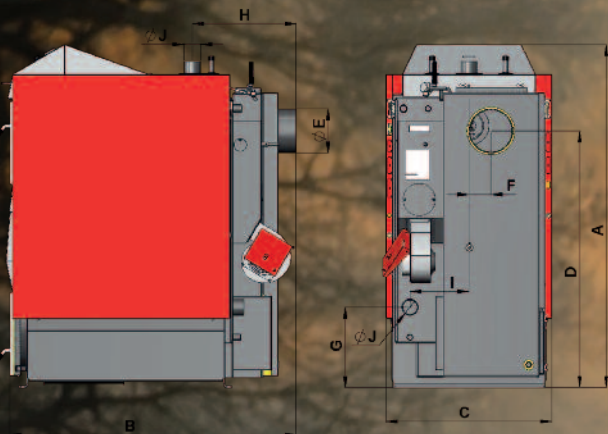
ATMOS DC 100



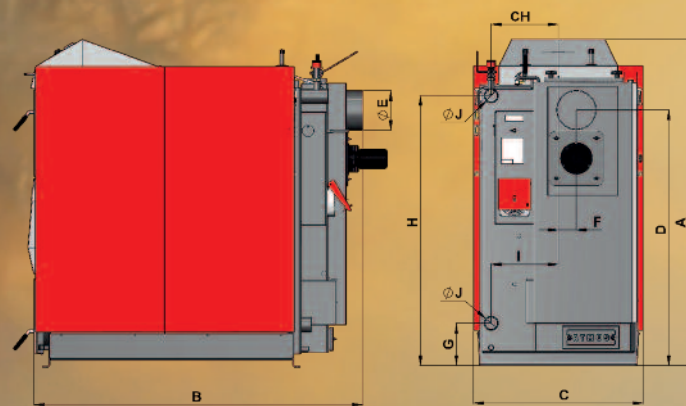
ATMOS DC 75 SE



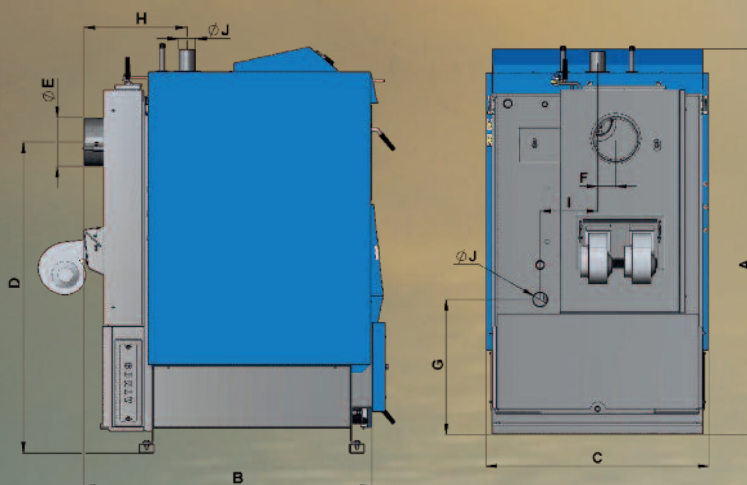
ATMOS



ATMOS DC 70 S



ATMOS DC 75 SE



ATMOS DC 100

DIMENSIONS	DC 70 S	DC 75 SE	DC 100
A	1400	1488	1679
B	1166	1487	1166
C	676	774	967
D	1047	1165	1286
E	180	180	200
F	90	82	80
G	328	194	588
H	423	1230	418
CH	-	306	-
I	240	306	250
J	2"	6/4"	2"

TECHNICAL DATA:

TYPE ATMOS TIMBER GAS		DC 70 S	DC 75 SE	DC 100
POWER OUTPUT RANGE	kW	70	75	99
VOLUME OF HOPPER	l	180	345	400
MAXIMUM WOOD LENGHT	mm	730	1000	730
SPECIFIED FUEL	WOOD LOGS CALORIC VALUE 15 – 18 MJ/kg, Ø 80 – 150 mm, 12 – 20 % OF HUMIDITY			
MAXIMUM WORKING PRESSURE WATER	kPa	250	250	250
ELECTRIC INPUT	W	50	70	100
BOILER WEIGHT	kg	515	669	820
SPECIFIED STACK DRAUGHT	Pa	30	30	35
EFFICIENCY IN THE WHOLE RANGE OF POWER OUTPUT		86 %	83 %	89 %
MINIMUM TEMPERATURE OF RETURN WATER	°C	65 °C	65 °C	65 °C
FAN		PRESSURE	EXHAUST	PRESSURE
CLASS OF BOILER EN 303-5		3	3	3



MODELS 2014





ATMOS

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

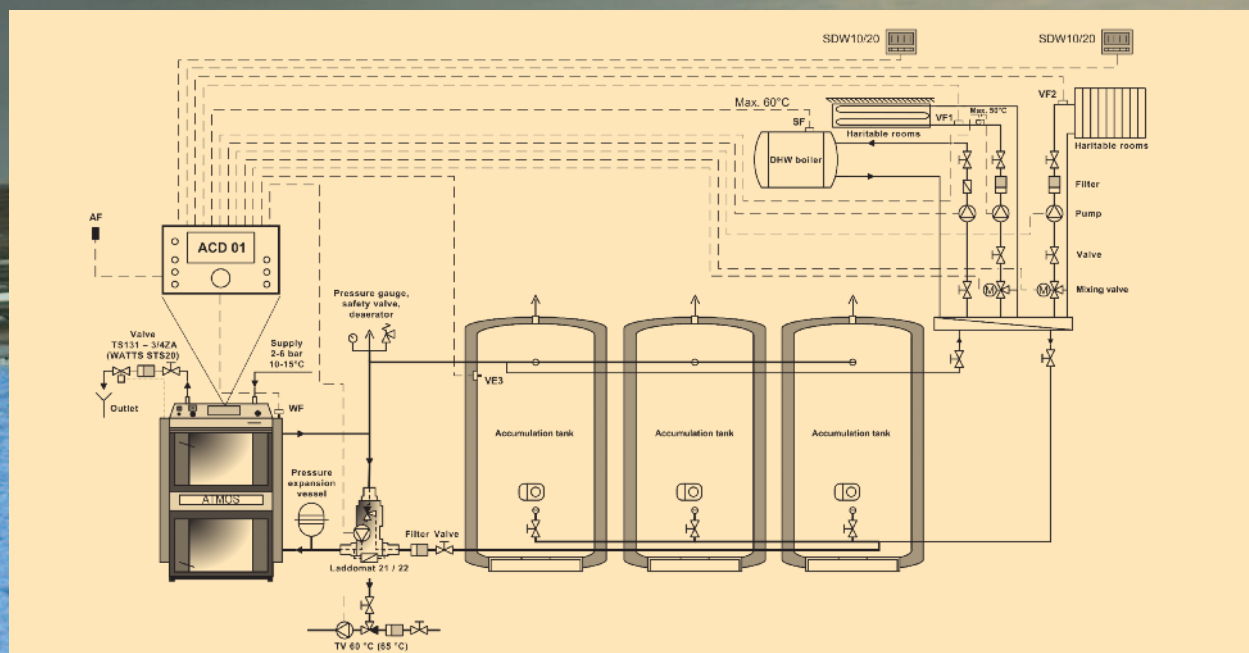
Laddomat 21



Laddomat 22



With its design, Laddomat 21 substitutes classical installation principle based on single components. It 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.





THE LATEST TECHNOLOGY





ATMOS

MANUFACTURED BY:

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ČSN
EN 303-5



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Technical changes Boiler dimensions and design
during the year are possible.

03/14 ENG