KOVARSON | CZECH PRODUCER OF BOILERS

THINK ECOLOGICALLY

LION 20 - 35 kW

AUTOMATIC CAST IRON BOILER

FUEL: BROWN COAL NUT 2

ADVANTAGES:

- Emission class euro 5, ČSN EN 303 – 5
- Ecological and comfort heating
- High efficiency up to 88%
- High quality of cast iron body
- Savings of the fuel up to 30%
- Modern control unit
- Long durability of the boiler

ECOLOGY AND COMFORT

Czech cast iron boiler LION or brown coal nut 2 with automatic control and minimal operating requirements provides environmentally-friendly and cost-cutting heating for houses, business premises and medium-large buildings, and is often used for heating water as well.

ECOLOGY - Combustion is regulated by an electronic unit which ensures utilization of all the energy from the fuel, making the automatic boiler very environmentally-friendly. The boiler meets emission class 5 under EN 303-5 - the strictest values for emissions released from a boiler into the atmosphere. The boiler combustion chamber is equipped with the ceramic which ensures perfect burn out of all gases, which would otherwise leaked in the flue gas to the chimney. The maximum economy mode of combustion offers savings up to 30% compared to ordinary solid fuel boilers. The boilers achieve an efficiency level up to 88 %.

COMFORT - Thanks to boiler efficiency and the 250 litre storage container, the boiler are easy to feed. The capacity of the storage container will ensures boiler operation for 3 to 4 days of normal output. In summer mode, the fuel can provide hot water for up to 10 days. The boilers can be controlled by a room thermostat which switches off the central heating pump and opens or closes the mixing valve. The boilers need cleaning once every 3 weeks on average.

EFFICIENCY OF CAST IRON BOILER **UP TO 88%**

REGULATION / BOILER DESIGN

BOILER REGULATION

The boilers are regulated using the latest SPARK units. The units use a Fuzzy Logic program which works to adjust boiler output so that the desired boiler temperature is maintained continuously. The units enable the regulation of 4 pumps and a mixing valve. They can be extended to cover up to 5 mixing valves and 8 pumps. Each mixing valve can be controlled by an external sensor and a room thermostat. The room thermostat fully regulates the boiler. The unit's display panel shows how much fuel is in the storage container. The SUMMER/WINTER mode can be selected at any time in the year. Separate menus are available for users and maintenance engineers. The boilers can also be controlled via the Internet using a sparkNET module.

BOILER DESIGN

The main part of the boiler consists of a cast-iron body made up of a number of cast iron components, which are pressed together using inserts and secured with anchoring screws. The element always consists of front, back and middle components. The main heat energy transfer from combustion products to heating water takes place in the boiler element. The top cleaning door and middle door are located on the front cell. The smoke nozzle taking the flue gases to the chimney is located on the rear component.

The complete cast iron body is then placed on a base. The base is a 5mm thick welded steel sheet metal. The ashtray door is on the front.

The square universal burners consist of a cast-iron furnace, air mixing chamber and feeder for combustion. The feeder screw runs along the entire length of the feeder right up to the furnace and is fitted with an opposing thread where it meets the furnace, forcing the material upwards as required. This get rids of any sinter, which is forced out through the sides into the ashtray. Thanks to its extended shaft, the feeder is firmly anchored and makes no squeaking noises during operation. Thanks to the square shape and drawing in of air from four sides to the centre to encourage combustion, the burners achieve high combustion temperatures and efficiency levels even without the use of deflectors. The top part of the burner consists of two cast iron rings. The burners are placed in the base, on the left or right side.

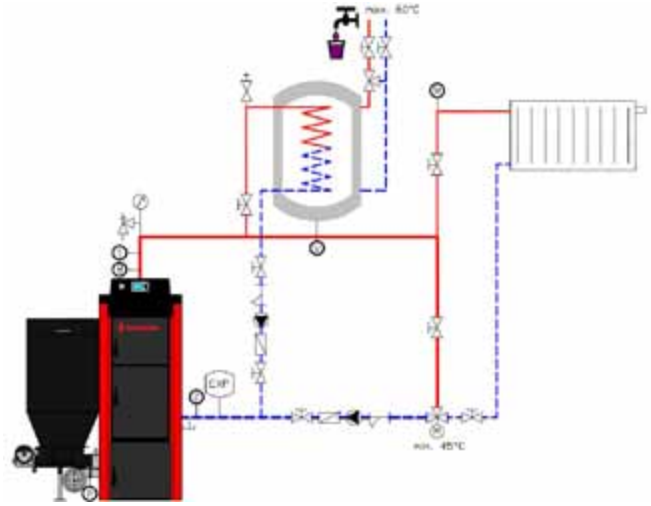
In the heat exchanger are positioned ceramic slabs and cast iron bulkhead, which create pockets in exchanger and this leads to a better utilization and energy transfer to the water and thereby a high efficiency of the boiler. So-called turbulators are fitted to the boiler vents to improve the transfer of heat to the heat exchanger

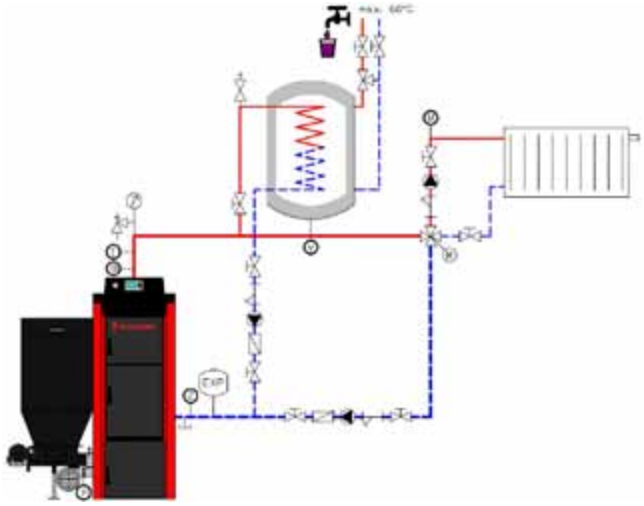
The fan positioned on the burner flange beneath the fuel storage container blows primary air into the burner. The fan speed is set electronically.

The fuel storage container is located next to the boiler above the feeder screw.

The feeder is fitted with a wax plug for securing the system against back-burn.

RECOMMENDED FOR INSTALLATION with a three-way valve or a four-way mixing valve.





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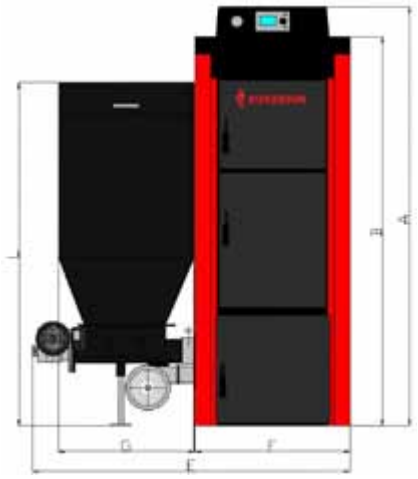
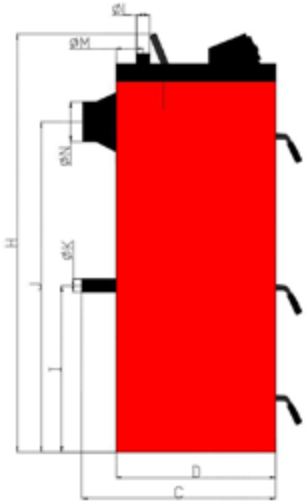
CZECH PRODUCER OF BOILERS

Boiler type			LION 20			LION 30
Nominal power output		kW	20		25	30
Minimal power output		kW	7		8	10
Efficiency		%				
Weight		kg	500		550	600
Water volume capacity		l	31		35	39
Chimney draft		pa	20			
Dimensions of the tank filling hole		mm	440x300			
Boiler class per ČSN EN 303-5		-	4			
Heating areas of up to		m^2	200		250	300
Boiler dimensions	A	mm	1590	I	mm	635
	B	mm	1480	J	mm	1260
	C	mm	740-940	K	„	ø 2
	D	mm	610-810	L	„	ø 2
	E	mm	1245	M	mm	105
	F	mm	590	N	mm	ø 150
	G	mm	500	O		2“
	H	mm	1600	P		2“

Efficiency





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