

Automated Boiler VARIKOT VK 25

NEW TYPE Graded coal and pellet boiler



The Boiler consists of the followings parts:

- Flue gas exchanger
- Combustion chamber
- Cascade grid with drive
- Fuel feeder
- Ashtray
- VMT 180 fan
- JA 1 electrical installation

The boiler with the nominal output of 25kW is designed for combusting powdered solid fuels with a grain size 5 to 40 mm e.g.: small graded coal or pellets from wood or vegetable substances. It is designed for heating domestic properties and also heating hot treated water with the power loss requirements of 7,5 to 25kW.

The output is controlled on the control box by changing the setting of the output temperature of the heating medium or the time cycle for feeding fuel. The boiler is fed fuel to the grid in intervals set by the control cycle, until the temperature of the heating medium at the output from the boiler reaches the set value. During that time the chimney fan is in operation and sucks necessary air to the grid for combustion. When the set value of the output medium temperature is reached the chimney fan is shut down and fuel feed is interrupted until the boiler is cooled down by water returning from the heating system. Then the operation of the chimney fan and circular fuel feed is re-commissioned.

The boiler is a welded construction of iron sheets and pipes. Heat transfer from the combusted fuel into heat transfer medium is executed over the walls of the combustion chamber protected with ceramic fittings. The fuel, pulled from the area below the hopper, is combusted on a cascade grid. The combustion air is sucked from the areas below the parts of the grid (grid bar) to the combustion chamber by draught generated by a chimney fan.

The generated flue gases are led to two thrust tubular heat exchangers. Twisted iron belts (turbulators) are fitted in the exchanger tubes to increase the heat exchange from flue gases to the shell side. These also serve for rough cleaning of ash ma-

terial from the internal surface of the tubes. In passing through the exchanger the flue gases are cooled down to ca 250°C. The flue gases are sucked from the smoke box at the rear of the exchanger through the flue gas ducting of the fan and thus blown to the chimney.

The fan is usually installed in the chimney as the rectangular base of the fan with the suspended blocks fixes to the chimney brickwork with screws and pegs.

The boilers are designed with the control elements, ash and soot doors on either the right or left hand side of the boiler, one. On the upper deck of the boiler there are two holes covered with heat insulated cast iron hoods. The holes are designed for monitoring the combustion chamber and cleaning the tubular heat exchanger.

The heat transfer medium is carried via an inlet hopper at the base of the rear wall of the ash tray into a split casing. In the upper section the heat is led into the bottom of the boiler drum which also consists of a split casing. In the lower section a bank of tubes has been installed to cool the flue gases. The heating medium outlet header is located at the side of the upper central section of the boiler.

When connecting the boiler to a heating system the standard defined for steel boilers must be followed: the inlet water temperature to the boiler in operation should not be lower than 65°C and the quality should meet the parameters defined for hot water heating systems.

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Technical feature

Boiler type according to efficiency/emissions		3/3
Nominal output	kW	25
Maximum output	kW	302
Nominal water flow	liter/hour	1075
External diameter of flue gas ducting	mm	120
Water flanges	Js/Jt	50/6
Water capacity in boiler	liter	90
Total weight of boiler	kg	595
Usable volume of hopper	liter	110/51,5
Fuel consumption nominal output	kg/hour	5-7 lignite, 8-10 pellets
Boiler input fan + drive	W	180 + 370
Total input (reference)	W	550
Boiler discharge pressure	Pa	200
Boiler dimensions (depth/width/length)	mm	500/1215/1635
Hopper depth	mm	1200



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