



GEKON 20, 25 kW
AUTOMATIC STEEL BOILER

FUEL: BROWN COAL UP TO 4 CM, WOOD PELLETS

ADVANTAGES:

Emission class 5 acc. EN 303 - 5



EKODESIGN



Hardened steel body 6 / 8 mm



Ecology and comfort heating



Universal burner



Efficiency up to 95 %



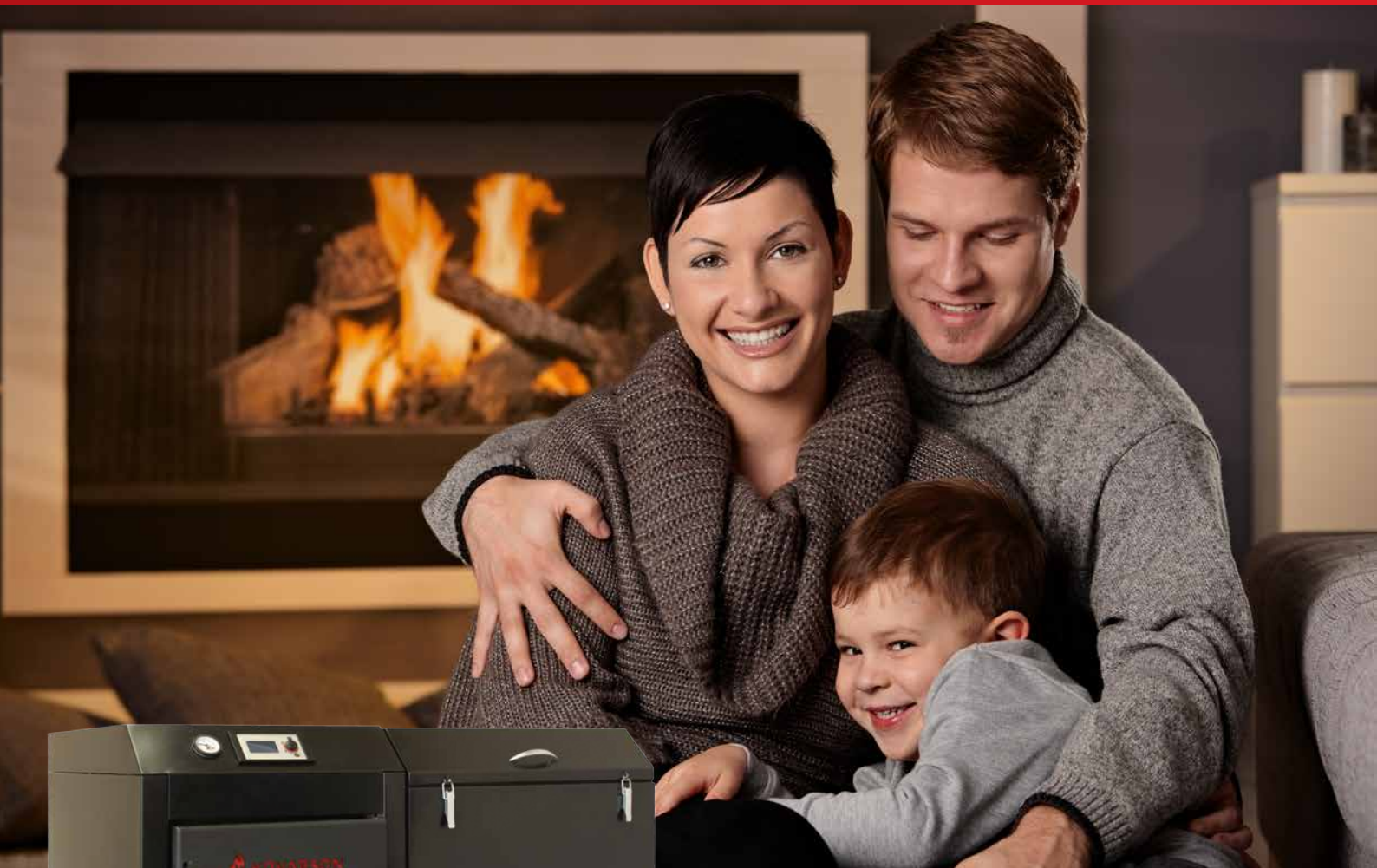
Savings up to 30 %



Modern control unit



ECOLOGY AND COMFORT



GEKON is a steel boiler with automatic feeding for solid fuels. The boiler is controlled by modern control unit which ensures minimal maintenance and ecologic, money saving heating of family houses. Boiler is used also for heating of the usage water and fullfills all the parameters according the strict norm called ECODESIGN

ECOLOGY - Gekon boiler can combust brown coal (fraction up to 4 cm) and wood pellets with the efficiency up to 95 % and meets the requirements of the emission class 5. Thanks to modern control unit with modulation of combustion this boiler is highly ecologic and economic. Therefore there are fuel savings up to 30 % in comparison with standart solid fuels boilers with manual feeding.

COMFORT - Following the efficiency of the boiler and a wast tank with volume of 300 litres this boiler is very comfortable for refilling. High capacity of the tank can offer up to 4 days of operation with average power. Operation over the summer can offer capacity up to 10 or more days depending on the usage of supply water. Boiler can be operated by room thermostat which stops the pumps and controls the mixing valves. Cleaning of this steel body is also very easy and can be done once in 3-4 weeks.

EFFICIENCY UP TO 95 %

CONSTRUCTION / BOILER PROTECTION

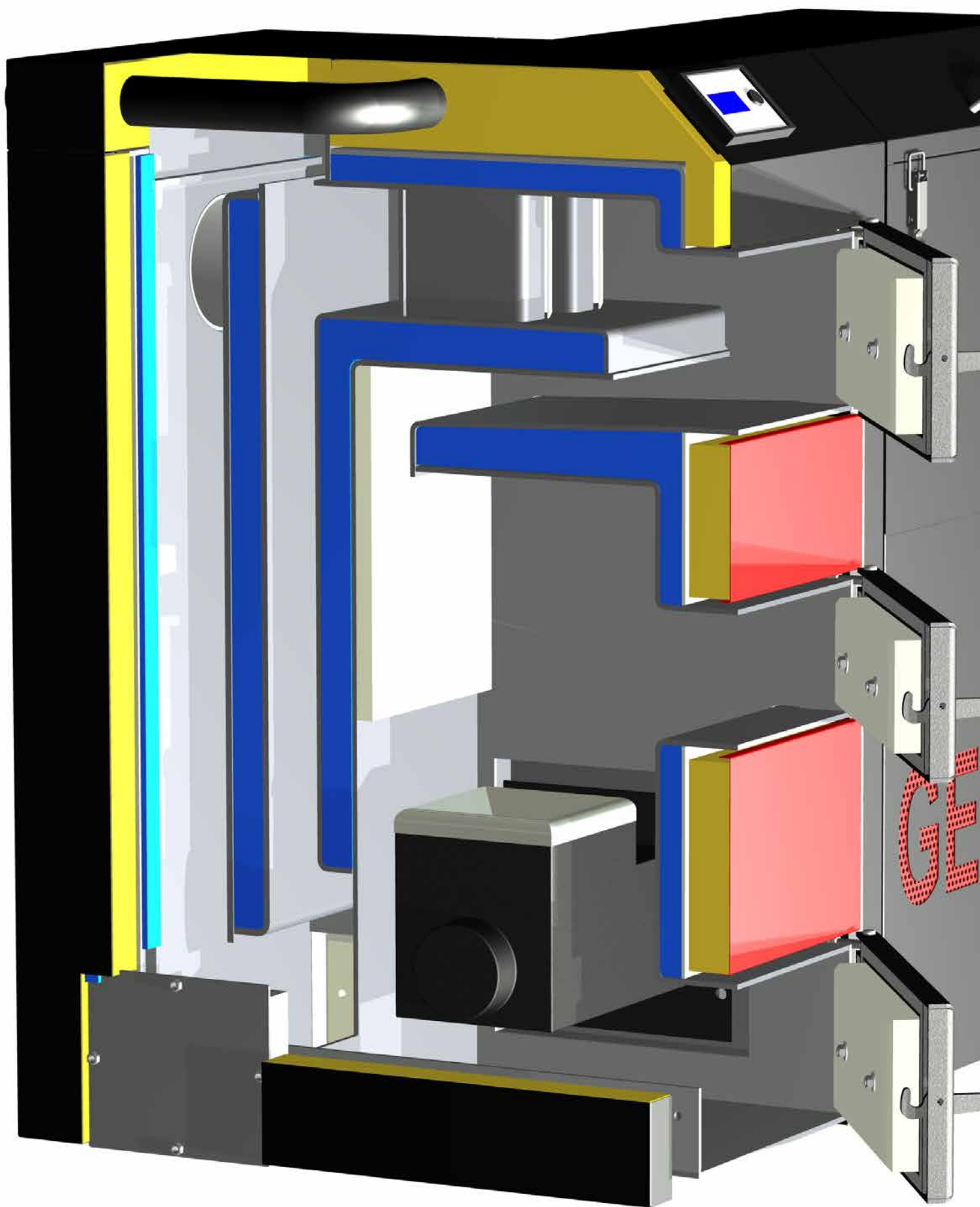
BOILER CONSTRUCTION - Body of the boiler is welded from hardened steel plates used only for the boilers. Inner area is made from 6 mm thick plates and critical places are strengthened to 8 mm. Outer body is made from 4 mm thick plates. From the front side you can find three doors. Upper for cleaning, middle for fire up and lowest for ash collection. There are also service hatches on both sides of the body for collection of the ash from vertical heat exchanger. One service hatch is also on the top for cleaning the vertical heat exchanger. On the back side you will find exhaust connection in diameter of 156 cm, Input and output for heating system and draining output. The boiler is constructed followingly. In the front part there is the main combustion chamber where is mounted the burner and there is also space for piling the ash. Heat generated from the burner follows the path to upper horizontal exchanger where are bended steel plates for decelerating the fumes and for increasing the efficiency. Fumes then follows to the main vertical heat exchanger in the back of the body. Combination of these two types of heat exchanger ensures the highest efficiency. All inner areas are used as an exchanger and it means there are in contact with water. There is about 3m² of heat exchanging areas. For isolation of the boiler body is used mineral wool.

BOILER PROTECTION - The Gekon boiler is protected from overheating by bimetal sensor, which is on when temperature rises over 90 °C. Sensor will block the feeder and fan. When this happens control unit will fully open the mixing valve and turn on all pumps connected. Another protection is for a backburn. There is also a sensor which will react when temperature goes over 70 °C and it will cause that the fan will turn off and the feeder will turn on to overdose the burner and overdose the burning material to ash tray. If this for some reason fails there is a wax joint which is connected to water tank. Wax will melt with high temperature and water will extinguish the fire in the feeder.

Boiler parameters:

Označení kotle:		GEKON		GEKON PELLETT		GEKON COMBI	
Fuels		brown coal		wood pellets		coal / pellets	
Nominal power	kW	20	25	20	25	20	25
Minimal power	kW	6,5	8	6,5	8	6,5	8
Efficiency for nominal power	%	95,5	91,2	92	92	95,5	92
Efficiency for minimal power	%	93,7	93,7	90	90	93,7	93,7
Exhaust fumes temp. nominal	°C	107	129	100	97	107	97
Exhaust fumes temp. min.	°C	69		65,5		65,5	
Required chimney draft	Pa	18-19	20-21	18-19	20-21	18-19	20-21
Recommended temperature	°C	70 - 90					
Minimal return temperature	°C	55					
Electrical connection	V	230					
Electrical consumption	W	60					
Heated area:	m ²	200	250	200	250	200	250

FUNCTIONALITY BOILERS



FUNCTION AND CLEANING

The Gekon boiler is constructed for combusting of brown coal. For this purpose is used new generation of universal burner which thanks to unique air mixing chamber inputs the optimal amount of the air to the combusting chamber. This ensures complete combusting of the material without sintering and also the amount of the fuel in the chamber is burnt with high efficiency. Fuel is fed by screw feeder from the high capacity tank. Feeding mechanism is verified by long term testing. Main advantage is that the screw feeder is fixed on both ends and the pushing up principle is created with reverse screw from the end of the feeder. This will push up the fuel in the centre of the burner where is everything perfectly burnt and nothing unburnt will fall to ashtray.

Hot fumes from the burner goes up following the back wall of the boiler chamber where is a fireclay which ensures complete burning of hard particles in the fumes. This makes the combustion process more ecological. Fumes follow the path to double horizontal heat exchanger where are the turbulators which are basically bended plates which slows down the fumes. Thanks to these parts there is lowest temperature of the fumes on the output - about 150 °C which ensures high efficiency up to 95 % and of course very low emissions.

The boiler body is isolated by mineral wool with 6 mm thickness. This ensures that the boiler sustains the heat energy in its body and transforms the heat from the fumes to water on the area of 3m².

Control panel is situated on the top of the casing and the central control module is separated and can be installed anywhere in the room where the boiler is mounted.

We make tank on both sides and thanks to low energy cost we meet the strict EKODESIGN norm.

Cleaning of the horizontal heat exchangers is very simple. Only by pulling out the turbulators and cleaning the places with scratcher. Vertical heat exchanger is the same system which you can clean only by scratcher after you open the service hatch on the top. Ash which will fall down under the vertical exchanger can be collected from one of two service hatches on the sides of the boiler body. The ash from the fuel is piling up in the front chamber where the burner is mounted and can be collected from the bottom doors simply pulling up the ash tray. Maintenance of the burner is done by middle doors and the dust which can occasionally occur in air mixing chamber is cleaned from bottom doors when you unmount the hatch on the bottom of the burner body.

Main advantages:

- Boiler body made from 6 mm steel plates and critical places from 8 mm thick plates
- long durability
- two horizontal and two vertical heat exchangers
- 3m² of fumes-water Exchange area
- easy cleaning of the exchangers
- adjusting of the doors
- turbulators for higher efficiency
- fireclay plate for cleaner fumes
- universal burner
- heat exchange right above the burner
- minimal sedimenting
- weight 550 kg

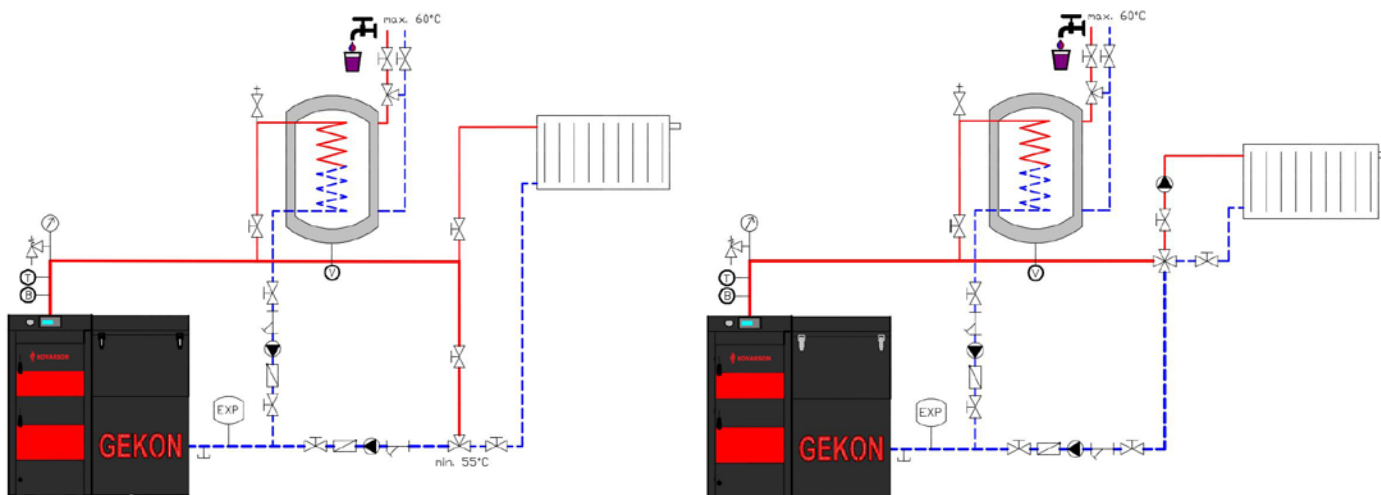
UNIVERSAL BURNER / CONNECTION



Universal Burner - The boiler GEKON is fitted with universal burner 27 kW. This burner has a three major sections: combustion chamber which is made from cast-iron for high durability, air mixing chamber made from steel and screw feeder. The screw feeder made from steel 6mm thick and runs along the entire length of the feeder right up to the furnace and is fitted with a reverse thread in the second part of the furnace, which is forcing the material move upwards. Thanks to this technology the feeding proces eliminates creation of sinter and if any appears this systém will push over the sinter to the ash tray. The shaft of the screw is extended and is firmly anchored on both ends which ensures 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 and low emmissions.



RECOMMENDED HYDRAULIC CIRCUITS:



Řídicí jednotka SPARK

Řídicí jednotka je nejmodernější elektronické zařízení pro řízení kotle na tuhá paliva se šnekovým podavačem. Jednotka využívá moderní technologie a kontroluje spalovací proces.

Nová generace řízení poskytuje uživateli intuitivní menu a jednoduché ovládání, využívání různých funkcí, stejně jako jedinečný vzhled (TOUCH & PLAY řídicí systém, výrazný displej prezentuje informace pomocí ikon). Jednotka má uživatelské a servisní rozhraní, kde jsou uchovávána data o topném systému po dobu 3 let.



Uživatel si vybírá z několika provozních algoritmů jednotky, které optimalizují proces spalování. V jednotce je zabudováno inteligentní menu, které zajišťuje, že všechny odpojené moduly jsou neaktivní. Pokud aktivní prvek není zapojen, jednotka informuje, že není připojeno dané zařízení.

Směšovací ventil – k základní výbavě jednotky patří ovládání jednoho směšovacího ventilu (možnost rozšíření až na 5 směšovacích ventilů pomocí modulu 4c-MX).

Fuzzy logic – regulátor pracuje v režimu práce s modulací výkonu kotle tak, aby dosáhl konstantní zadané teploty kotle.

Funkce BUS umožňuje rozšíření díky své modulární konstrukci, jako například rozšíření o sparkNET modul, termostat, modul směšovacích ventilů atd.

Jednotku lze vybavit dálkovým dotykovým nebo manuálním panelem, který umožňuje plnohodnotné ovládání kotle z pokoje a zároveň slouží jako pokojový termostat. Nebo lze použít venkovní čidlo.

Jako jedna z mála řídicích jednotek informuje na displeji o stavu hladiny paliva, kde je stav paliva zároveň zobrazován na dálkovém panelu sparkSTER.

Jednotku lze snadno ovládat přes internet pomocí počítače, tabletu či mobilního telefonu.

Příslušenství:

SPARKNET - ovládání přes internet a servis přes internet

Modul 4c-MX - možnost ovládání 2 směšovacích ventilů (možnost připojit dva moduly)

SPARKSTER - dálkový manuální nebo dotykový panel s integrovaným pokojovým termostatem

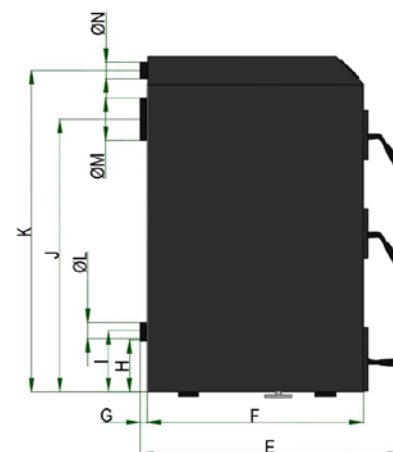
SPARKLINK – nahrávání nového softwaru (pro servisní organizace)

Venkovní čidlo – snímá venkovní teplotu

Elektronická závlačka – hlídá motor proti přetížení a v případě blokace šneku bude informovat zvukovým signálem, nedojde však ke stříhnutí pojistné závlačky



Boiler type			GEKON 20			GEKON 25
Efficiency		%	95			91
Weight		kg	550			
Water volume capacity		l	96			
Tank volume		dm ³	250			
Dimensions of the tank lling hole		mm	370x335			
Emmision class EN 303-5		-	5			
Boiler dimension	A	mm	1245	K	mm	1175
	B	mm	1220	øL	"	6/4
	C	mm	1195	øM	mm	156
	D	mm	563	øN	"	6/4
	E	mm	910			
	F	mm	829			
	G	mm	10			
	H	mm	190			
	I	mm	210			
	J	mm	1010			



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