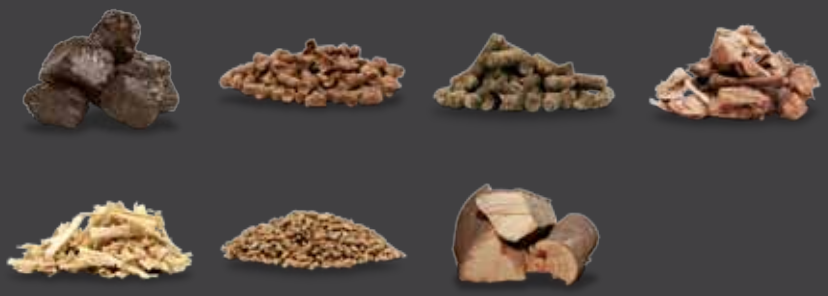
KOVARSON

CZECH PRODUCER OF BOILERS

THINK ECOLOGICALLY



ADVANTAGES:

- Greater boiler efficiency
- Unattended operation
- Cast iron furnace burner
- Metal feeder and screw
- High combustion efficiency
- Controlled by electronic unit
- Reverse operation
- Combustion fan
- Savings of up to 30% on heating

BOILER CONVERSIONS

FUEL: BROWN COAL, WOOD PELLETS, PLANT PELLETS, SMALL CHIPS, WOOD WASTE AND PLANT MATERIAL, WOOD

CONVERSIONS

A simple modification of an existing cast-iron or sheet metal solid fuel boiler will bring you comfortable, automatic operation for hot water boilers of up to 90 kW output. After conversion the boilers can also be used with the original fuel. The boilers become combination boilers with manual feeding and automatic operation.

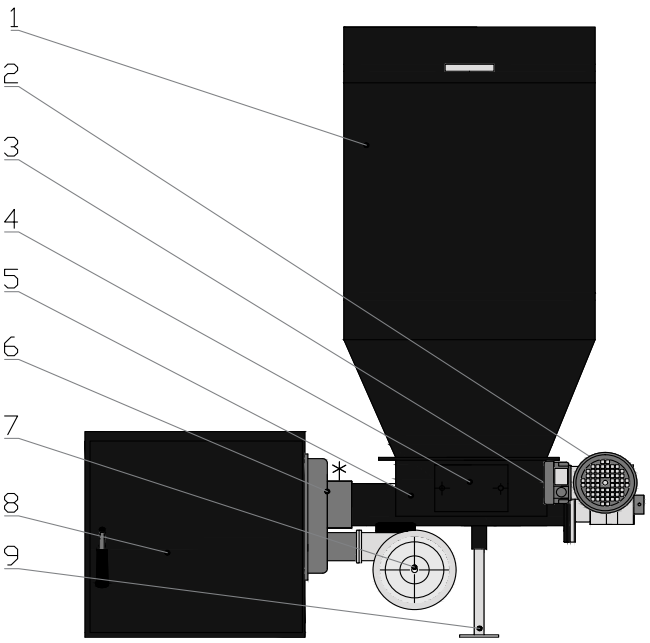
The conversion consists of placing the boiler on a base 44 cm high and connecting a burner on the left or right side of the boiler in such a way that access to the boiler will not be blocked. First, an opening is cut in the bottom of the existing boiler, and the heating then takes place under the actual grate of the boiler. The incandescent gases that rise up then heat the entire boiler body. The big advantage is the option of heating with solid fuel or switching to automatic mode.

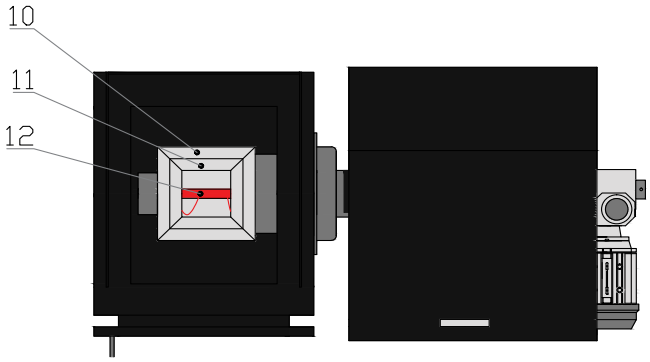
The fuel feeder is controlled by an electronic unit with a temperature sensor which monitors the desired temperature of the boiler and the central heating against the pre-set values on the control unit. It can also be connected to an external room thermostat and can thus be regulated directly from a room. You can then enjoy comfortable warmth.Another advantage is the connection of the central heating pump to a temperature sensor. The device also includes a sensor to guard against back-burn. The system offers additional protection against back-burn in the form of a hermetically sealed storage container and a sprinkler system that can be connected up. It consists of a cannister with water and a wax plug. The boiler will have the same emission class after conversion, as the universal burner operates only as an additional device. Following installation of the conversion package, some boiler types can obtain a higher emission class and a new sticker for emission class 3 or 4.

The feeders can be extended to any length.

PARAMETERS FOR CONVERSIONS

DESCRIPTION AND DIMENSIONS OF CONVERSION

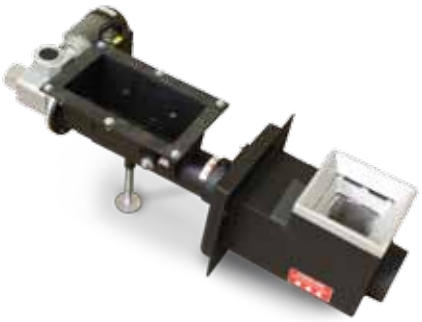




1 - storage container
2 - motor
3 - transmission
4 - storage container cleaning cover
5 - feeder tube
6 - fan
7 - air mixing chamber
8 - base
9 - storage container support
10 - upper rim of burner
11 - middle rim of burner
12 - steel screw

BURNERS AFTER CONVERSION

SQUARE UNIVERSAL BURNER 27 – 90 kW



Square universal burners consist of a cast-iron furnace, air mixing chamber and feeder. 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. The burners take all materials, such as coal, all types of wood pellets, plant pellets, chips, sawdust, wood shavings or plant materials. In the case of alternative materials such as sawdust or wood shavings, the material must be able to fall freely into the feeder. A sufficiently fast transmission design is also important, due to the low weight of the material. 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.

Universal self-cleaning 25 kW burner

The burner consists of a cast-iron combustion grate and an air mixing chamber located beneath the grate and a feeder screw that pushes the material forward onto the grate, where it is burned. The burners are also self-cleaning, as the ash falls through the open side into the ashtray.

This type is best for burning wood pellets, plant pellets, coal and wood shavings. It is not designed for small, light materials. Thanks to its design, it can easily push out any sinter.

The air is primarily blown in from the two lower sides of the burner, and it therefore has a lower combustion efficiency. The combustion is less efficient because there is less air to encourage burning and the boiler is more prone to clogging up.

Retort burners 25 – 150 kW

The burners work on the principle of placing the screw only on one side, next to the transmission, and forcing the material into the furnace in the shape of a knee. Here, the material is crushed and compacted. The material is not forced out in a specific direction and therefore coking materials cannot be burned, as they cannot be forced out and can thus cause the flame to be extinguished. The ash falls through the rim of the retort into the ashtray beneath the burner. The burners provide efficient combustion thanks to the air coming in from all sides to the centre. High temperatures are not achieved in burning and a deflector is therefore used above the burner, which returns some of the heat back to the furnace, increasing the burning temperature and the efficiency. One disadvantage is the placing of the screw on one side, which can lead to an unpleasant squeaking sound when the feeder is in operation. This type of burner is not normally used today.

BURNER ACCESSORIES

SPARK control unit

The control unit is the latest electronic device for controlling solid fuel boilers with screw feeders. The unit uses modern technology and controls the combustion process.

The new generation controls provide users with an intuitive menu and simple controls, the use of various functions and a good layout (a TOUCH & PLAY control system with a strong display presenting information through icons). The unit has both a user and a service interface, storing data on heating systems for 3 years.

Users select from a number of operating algorithms in the unit which optimise the combustion process. The unit incorporates an intelligent menu which ensures that all disconnected modules are inactive. If an active component is not switched on the unit reports that the module in question is not connected.

Mixing valve - the basic features of the unit include the regulation of one mixing valve (which can be increased to a maximum of 5 mixing valves by using module 4c-MX).

Fuzzy Logic - the regulator works to adjust boiler output so that the desired boiler temperature is maintained continuously.

The BUS function allows for extensions thanks to its modular design, so that a sparkNET module can be included, for example, or a thermostat or mixing valve module etc.

The unit can be fitted with a remote or manual touch panel, enabling full regulation of the boiler from a room and at the same time serving as a room thermostat.

It is one of the hew control units to display information about fuel levels, while fuel levels can also be displayed on a sparkSTER remote panel.

The unit is easy to operate over the Internet using a computer, tablet or mobile telephone.

Retrofitting options:

SparkNET - control over the Internet and servicing over the Internet
module 4c-MX - the possibility of controlling 2 mixing valves (two modules can be attached)
SparkSTER - remote or manual touch panel with integrated room thermostat
SparkLINK – uploading new software (for maintenance service organisations)
electronic pin - guards the motor against overloading and gives a warning signal if the screw gets blocked, but without cutting the cotter pin

ACCESSORIES

PANDA control unit

The PANDA control unit ensures maintenance of the required water temperature in a boiler fitted with a screw feeder. Thanks to its advanced functionality, it works automatically and economically with entire central heating, hot water and underfloor heating systems and circulation pumps. In contrast to traditional units, it offers operational modes such as day/night, economy settings and a new algorithm for controlling fan speeds. Panda offers simple, easy and comfortable control of room thermostats. The use of a room thermostat in combination with simple operation makes this unit one of the easiest and most popular on the market. Any PANDA control unit can be linked to up to three remote panels which are the same as the main panel on the boiler. Boilers can thus be controlled from any location.

Retrofitting options:

Room thermostat - any wired or wireless model can be used.
Remote panel - for regulating the boiler from another part of the house.
GSM module - information and settings via GSM.
Storage container opening sensor - monitors the storage container so that it is not left open.
Electronic pin - guards the motor against overloading and gives a warning signal if the screw gets blocked, but without cutting the cotter pin.

Fan

High quality aluminium construction ensures a long life. The opening for connecting the primary air ends at the feeder in a flange with gasket. The fan is fitted with a cable for easy communication with the control unit. The fan speed can be regulated at any time based on the set temperature of the heat exchanger or the room temperature.

Fans		VPA 06	VPA 145 KL	K 117
Max. compression	Pa	360	375	560
Max. capacity	m^3/hod	255	485	600
Revolutions	ot./min	2500	2400	2100
Output	W	90	160	240
Burner output	kW	27, 35, 60	60, 90	90

BASE BELOW BOILER, PACKAGES, ACCESSORIES

Storage containers

The storage containers are produced in sizes of 250 l, 300 l or 500 l. The airtight vessel is closed, and therefore protects the entire system against back-burning. A larger hopper can be ordered if required. Steel thickness - 2 mm.

		250 l	350 l	500 l
width	mm	500	500	700
depth	mm	600	600	700
height	mm	1000	1200	1200
dimensions of filling hole	mm	NO	NO	YES

Base below boiler

Firm support for the hot water heat exchanger. The robust construction of the base guarantees the stability of the entire heating system. The base is welded from high-quality 5mm steel with cast-iron doors. The universal burner is installed in the base. The base is 44 cm high. With outputs greater than 40 kW, it is 54 cm high. The bases are usually produced for cast-iron boilers, but can be produced for all types of boiler. We can produce non-standard bases of any size, according to customer requirements.

Water base

The base is intended for VIADRUS U22 and U26 boilers - 5 to 7 components. Thanks to the robust design of the base, the heating system will be perfectly stable. The base is welded from high-quality 5mm steel with cast-iron doors. The universal burner is installed in the base. The base is 55 cm high. The water base above the burner is connected with the rear of the cast-iron body.

VIADRUS U26 and U22 conversion packages

After the conversion of a boiler to automatic operation using a universal burner, a base under the boiler and all the original components of KOVARSON'S conversion package, we give the boiler a new emission class 3 or 4 sticker, depending on the type of boiler! The sticker must be placed in a visible location on the heating system. Following installation of the package, the boiler will use the prescribed fuel only in automatic mode. The package can be installed at any time without disconnecting the boiler from the system, and with very little work.

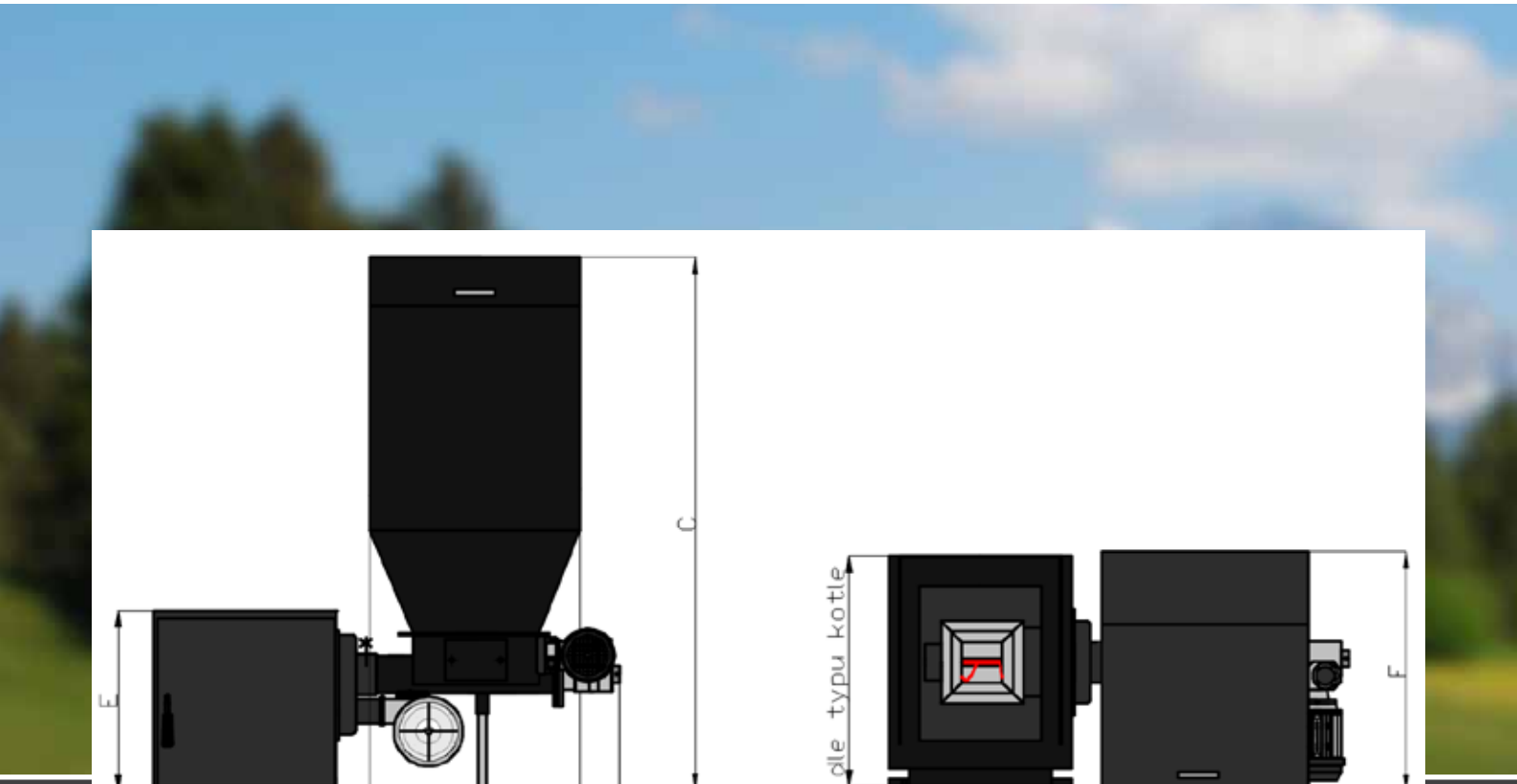
Boiler type U26 – emission class 3 **Boiler type U22** – emission class 4. We are working on other boilers.

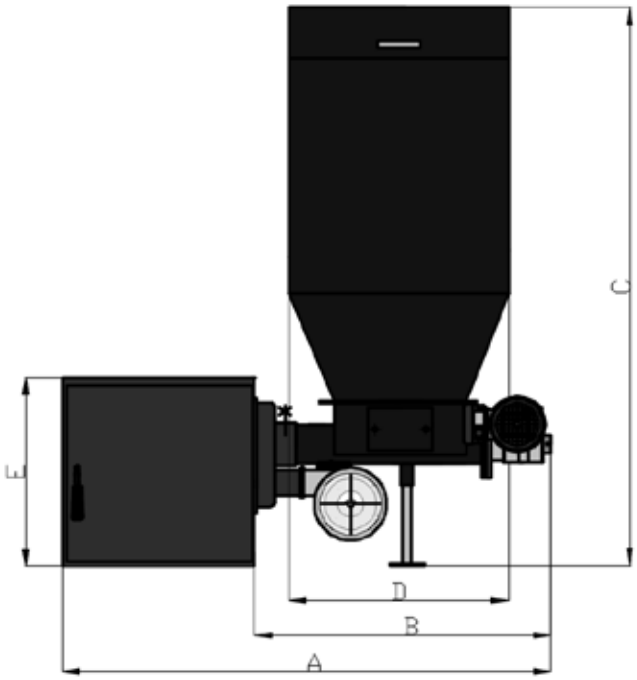
Electronic pins

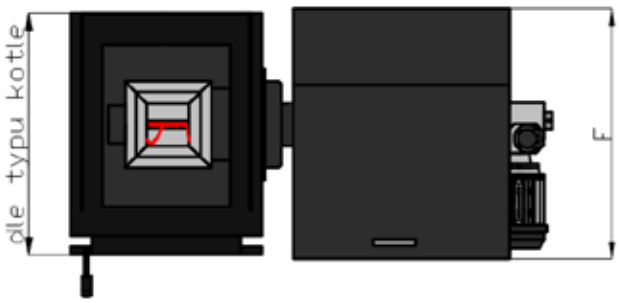
Electronic pins guard the motor against overloading and give a warning signal if the screw gets blocked or the motor heavily loaded, but without cutting the cotter pin. It can be unblocked simply by pressing a button, or by switching on reverse mode the screw can be unwound and then the whole system restarted without having to replace the cotter pin.

Storage container opening sensor

The sensor monitors the opening of the storage container cover. When the storage container is opened, it automatically switches off the feeder and the fan. It shows an alarm on the display screen and emits a noise signal. Can be used only for the PANDA control unit.







		A	B	C	D	E	F
Dimension	mm	1180	730	1300	500	440	600

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