# Pellet boilers

**10 – 100 kW**

KWB
Biomasseheizungen

# With Warmest Recommendations

KWB, the "Kraft und Wärme aus Biomasse GmbH" ("power and warmth from biomass"), is Europe's leading manufacturer of heating systems for biomass fuels with its own research, development and manufacturing departments. But KWB is more than this: staff and customers alike demonstrate together what the utilization of renewable energy is all about — We Provide Energy for Life! We would be happy to show you how we work in our company in Styria and in those of our partners.

# Innovation with Tradition

The company's own Research & Development department works hand in hand with assembly in three production halls on the optimization of existing potential and on new solutions for the future. KWB thus offers high-tech products at the cutting edge of technology and is setting international standards for highest ease of operation, clean combustion and optimum heat generation. Furthermore, the wishes and suggestions of our customers are systematically collected and continually integrated into the development processes.

# Pellets: Fuel of the Future

Whoever wants an environmentally friendly and comfortable heating system, relies on pellets. Pellets are produced from sawdust without synthetic additives and their quality and purity are constantly checked by in-house and third party inspections. Their production and utilization are environmentally friendly, they create more jobs, and the $CO_2$ content always remains constant in the atmosphere when pellets are burned. Furthermore, due to their high energy content and convenient delivery and storage features, etc., pellets are the ideal fuel for fully automatic heating systems.

# You Have the Choice

New thinking and modern design. The new development of the KWB design line follows the slogan **"Design-Evolution instead of Revolution".** This harmonious line stands for constancy and continuity; and for pioneering engineering at its most beautiful. The clear and modern language of form expresses a timeless competence, reliability and safety.

To ensure that each person finds a boiler suited to their taste, our customers have the choice between elegant design and a fully-closed casing.

Full casing

# We Provide Energy for Life!

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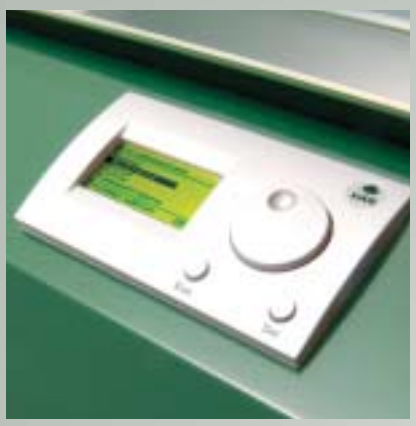
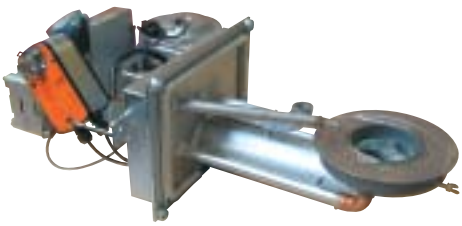
Designer casing



## THE KWB COMFORT MICROPROCESSOR CONTROL

The menu-driven **2-button control unit with scroll wheel** and innovative, clear **graphic display** is a world-wide novelty in the industry. From now on, boiler control and configurable heating-circuit control is no longer the exclusive domain of experts. A logically structured menu system shows you, the customer and user of KWB heating systems, the way to adjust your personal parameters for heating circuit, buffer tank and domestic hot water cylinder, etc. And an added advantage: the control unit can be removed from the boiler and easily placed in the living area in a prepared base.

# KWB Advantages of th



## KWB BOILER SYSTEMS

The boiler heating system is implemented as an underfeed firing system with afterburn ring. **Ignition is carried out fully automatically.** In the primary combustion area (burner plate), the fuel is fed in from underneath in a controlled way and, together with the slow primary-air flow, provides for a smooth fuel bed, low dust emissions and und o**ptimum gasification conditions.**

## KWB AFTERBURNING

Due to the special arrangement of secondary air jets in the afterburning ring, perfect turbulence, high combustion temperatures and thus **cleaner combustion** of the combustion gases are guaranteed. Easy accessibility and fast, automatic ignition with preheated air (power requirement a mere 250 W), **automatic ash elimination,** etc. = all this demonstrates how a sophisticated technology has been perfected to the benefit of customers and the environment.

## THE KWB HEAT EXCHANGER WITH AUTOMATIC CLEANING

The standard daily cleaning of the heat exchanger works fully automatically and takes only 15 seconds. The built-in **special springs not only** clean the heat exchanger but also guarantee an optimum heat exchange. The result is a **steady high degree of efficiency,** and a side effect is that fuel costs for our customers are brought down to a minimum.

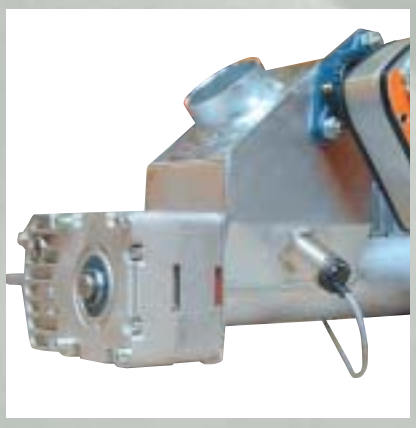
# e Boiler Series USP 10-30 kW

## KWB ASH COMPACTION

The Pellet Boiler USP is equipped with a fully automatic ash compaction unit as standard. The ash is thus compressed and so it is only necessary to empty the ash box (depending on boiler output) every 1 to 3 months. Ash contains pure minerals and is the **perfect fertilizer** for garden, lawn and forest.

## KWB BACKFIRE PROTECTION

Our **safety concept** consists of a completely air-tight underfeed worm trough which prevents drafts, an absolutely **gas-tight fire shutter,** and a **level sensor.** This monitors the fuel amount in the underfeed trough and prevents overfilling. The fire shutter also closes independently in emergencies – such as e.g. during a power failure – and thus a separation between conveying system and burner is guaranteed. We make sure our customers enjoy **optimum safety.**



As a leading manufacturer of biomass heating systems, KWB offers you two series of boilers to choose from. First, let us introduce the 10 – 30 kW USP series. This is used in the new low-energy house as well as in renovated and modernised buildings of all kinds. The 40 – 100 kW USV series, whose description follows, is specially designed to heat micronetworks, large buildings, commercial premises, schools and public buildings. The USV series is moreover suitable to be installed without any necessary rebuilding (when used with the appropriate fuel extractor for the biofuel) and is also suitable for alternating use with industrial pellets and wood chips.

# Pellet boilers USP: 10 – 30 kW

An overview of different conveying systems for the boiler series USP from A to F

### A ELBOW WORM CONVEYOR

This well-proven (1000 times) conveying system is the optimum solution for rectangular storage rooms. With careful early planning (arrangement of boiler room and storage room), the elbow worm conveyor is the most economical, fully automatic fuel-feeding system.

## Small and Fine!


Other added advantages: careful pellet conveying thanks to the optimized shape of the worm trough, **electricity saving and maintenance free.** Apart from this, KWB applied an acoustic design programme during development for the first time. The successful outcome: **extremely quiet operation!**

### D STORAGE CONTAINER

For those who want to enjoy the comfort of environmentally friendly heating with pellets despite a shortage of space, this system is the best. The generous size of the container **(400 litre)** allows **very long filling intervals.**

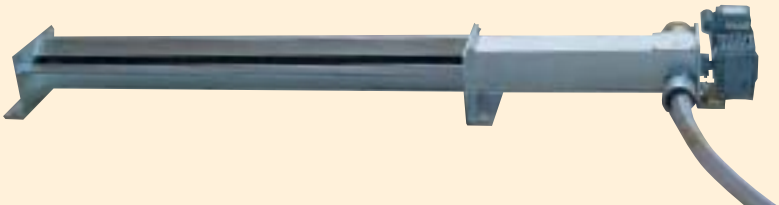
## B STIRRER

USP systems with rotary stirrers are further proof of innovation on the part of KWB. Although in principle a stirrer is not required with today's pellet quality, this fuel-extraction system guarantees an **optimum use** of, for instance, square storage rooms. The optimized shape of the worm trough allows **quiet, electricity-saving and pellet-protecting operation of the stirrer.** The worm gearing under the stirrer is maintenance free. Stirrer fuel-extraction technology has been well proven for a long time in the field of wood chip heating and is extremely r**obust and reliable.**

# We Have the Optimum Solution for Each Person ...

## C SUCTION SYSTEM

The KWB suction system consists of a **hopper (120 litre),** a suction turbine, the conveying hose and the worm conveyor system. In this way pellets from storage spaces some distance away (cellar, buried tank, silo made of fabric) can be transported to the boiler by means of special hosepipes up to 20 m long. The pellets are first brought to a buffer container integrated into the heating system. This buffer container is designed in such a way that the **fuel-extraction system,** which is in any case very **quiet,** only operates when the customer wishes. Under the hopper, a pellet-dosing valve and a fire shutter supply the pellets to the burner according to requirements, and provide optimum safety.



## E SILO MADE OF FABRIC

A silo made of fabric is an economical method of storing pellets when a F90 design of the storage room is not required (this applies e.g. in **Germany** with boiler nominal outputs below 50 kW). Instead of using a separate room for storage, a porous, dust-tight and antistatic silo made of fabric supported by a metal frame is put in place. Removal of pellets from the silo is carried out using a suction lance or worm conveyor. Of course, attention must be paid to the respective valid structural engineering and fire protection regulations.


## F BURIED TANK

If there is no space for a separate storage room in the building, pellets can be stored in a buried tank **outside the house,** from where they are transported to the boiler by means of a suction conveying system. KWB recommends the buried tank system of the Geoplast company, which is compatible with the KWB Pellet Boiler USP GS with suction conveying.

For further information and prices of buried tank systems, please contact:
Geoplast Kunststofftechnik GmbH
Bahnstraße 45, A-2604 Theresienfeld
Tel.: +43 2622 652 42 • Fax: +43 2622 65242-17
E-mail: office@geoplast.com

# Boiler Series USV: 40 – 100 kW

## A ELBOW WORM CONVEYOR

The conveying capacity of the KWB elbow worm conveyor allows boilers with **nominal outputs of up to 100 kW** to be supplied. This well-proven (1000 times) conveying system is the optimum solution for rectangular storage rooms. With careful early planning (arrangement of boiler room and storage room), the elbow worm conveyor is the most economical, fully automatic fuel-extraction system. Other added advantages: careful pellet conveying thanks to the optimized shape of the worm trough, **electricity saving and maintenance free.** Apart from this, KWB applied an acoustic design programme during development for the first time, with the successful result that operation is **extremely quiet!**

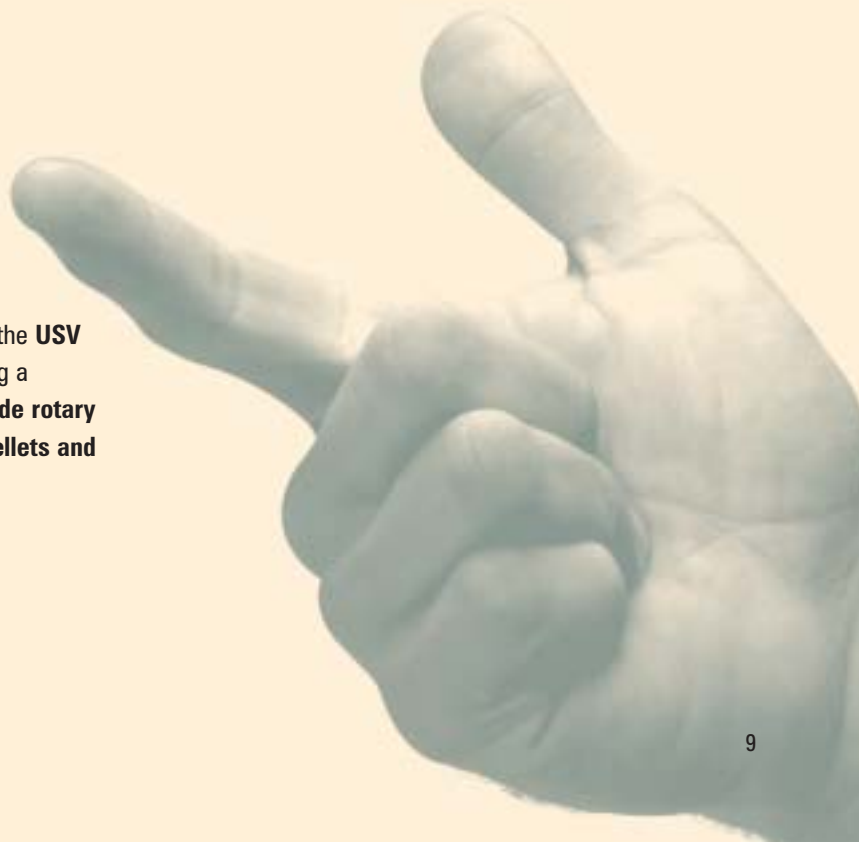
A

## Great Class!



B

Other conveying systems can also be used with the **USV series,** such as e.g. fuel-extraction systems using a **spring blade rotary stirrer** or an **articulated blade rotary stirrer.** These can be **used** for conveying **both pellets and wood chips.**



## The New KWB Control System

The new KWB comfort microprocessor control makes operation of the heating system **a pleasure** and is **child's play.** The newly developed 2-button technology with scroll wheel combined with the generous **graphic display** results in a phenomenal ease of operation for the customer, in a way never experienced before with traditional heating systems.

## Simply Comfortable

But the new control system from KWB offers even more: the **operator's control unit** can be easily removed from the boiler and **placed** in a prepared base **e.g. in the living room** like a remote control unit. Walking down to the cellar to adjust the heating is now a thing of the past – thanks to KWB.

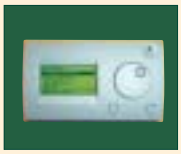
## Successfully Under Control!


## KWB Comfort Consists of:

**CONTROL UNIT**
The output of the boiler can be adjusted to your heating needs according to requirements, **fully automatically** and step-wise, from stand-by to full-load operation. The most important parameters can be easily entered and read by means of the graphic display on the control unit. Operation is menu driven by means of one wheel and two control keys.

**KWB comfort is expandable in modules:**
- Heating circuit expansion module for 2 heating circuits at a time, management for 1 domestic hot water cylinder and 1 buffer tank
- Digital remote control unit
- Analogue remote control unit.

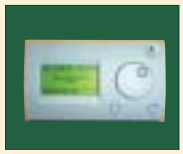
With the exception of the analogue remote control unit, all the individual control components communicate with each other by means of a RS 485 bus.



Boiler control unit

Analogue remote control unit

Heating circuit expansion module



Digital remote control unit

Maximum configuration:
- 34 heating circuits
- 17 domestic hot water cylinders
- 17 buffer tanks

# An Ecological and Economic Success Story: KWB

The basic idea behind KWB emerged from the bold vision of a committed scientist, Dr August Raggarn, of the Graz University of Technology, who had dedicated himself since 1973 to research in biomass combustion. His ambitious objective: finding practical applications for his research and helping mankind to switch over to renewable energy.

Tolerated with a smile at the beginning, he was nevertheless able to gain the enthusiastic support of others, such as e.g. Erwin Stubenschrott, who since the founding of the "Kraft und Wärme aus Biomasse GmbH" company in 1994 has directed the fortunes of KWB as executive manager.


Today, the international company has established itself both as an expert in the field and market leader in the area of biomass combustion.

# Responsibility for Generations

At the end of the 21st century mankind's energy supply will be based on renewable energy sources, such as e.g. biomass. And we want to contribute to this to the best of our ability. We have thus formulated a mission statement, binding for us, through whose realisation our quality and environmental policies and their objectives can be secured.


# The KWB Mission Statement

**As part of society and nature, we are bringing about economic, social and ecological health.**

This means for us:

- Raising our corporate value in order to be in a position of negotiation
- Cultivating contacts with employees, customers, suppliers, authorities and all those involved, on a partnership basis
- Through our thoughts and actions we make an essential contribution to mankind's changeover to renewable energy sources. Here, the combustion of biomass plays a foremost role
- We are securing the realisation of this mission statement through our quality and environmental policies and objectives.

# Respect for Nature

Whoever uses KWB heating systems, actively contributes to the protection of the environment. But even more, we at KWB go one step further and make sure that only the highest environmental standards are adhered to in the manufacture and sales of our products.

- Efficient and economical utilization of all resources
- Preference given to renewable and recyclable raw materials
- Minimization of exhaust gas, ash and noise emissions in the operation of our heating systems
- Operation of our heating systems based exclusively on environmentally friendly fuels
- Selectivity of purchase: choice of suppliers and products according to our guidelines
- Adherence to all legal regulations and working out future standards.

# We Think of Tomorrow

- Reduction of environmental pollution through our production plants
- Promotion of a sense of responsibility to the environment on the part of all our staff
- Promotion of biological diversity in the care and maintenance and shaping of the KWB site
- Pursuance of an open and concrete information policy for the public
- Orientation to the latest findings in environmental protection in our attitude and deeds.

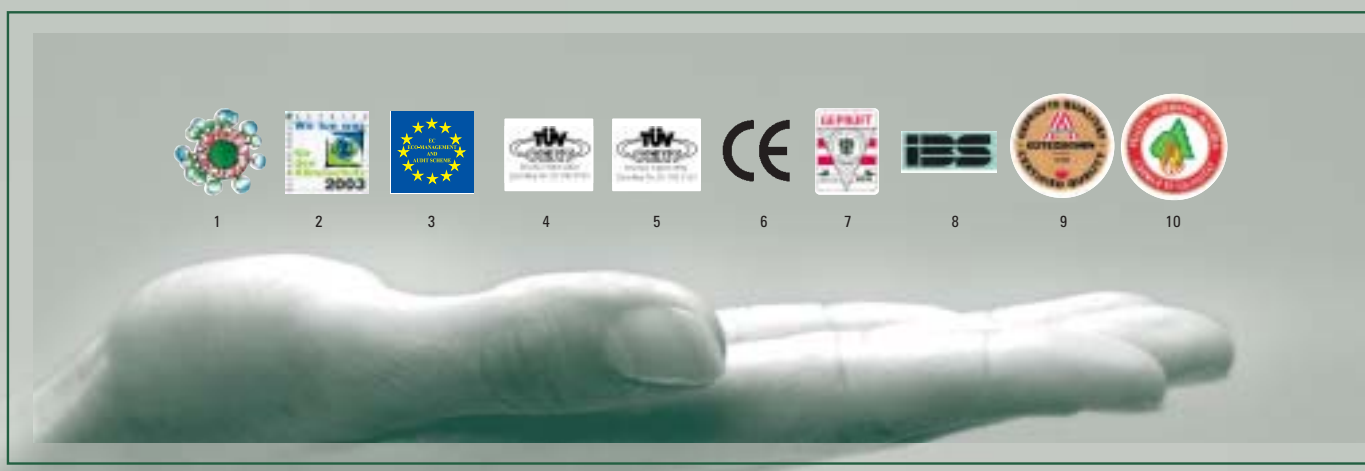
Furthermore, we make sure that our products are manufactured exclusively under working conditions conforming to the European standard. Flexible working hours and independent thinking and acting are a matter of course for our staff.

# Subsidies

KWB biomass heating systems are economical because their purchase pays for itself relatively quickly. Subsidies from the public sector are making the environmentally friendly alternative even more attractive and are awarded according to regional subsidy guidelines. The responsible authorities in your region will be happy to give you information of exact subsidy amounts.

# Trusting in Quality

All KWB heating systems are **Austrian products of quality** and fulfil the most rigorous **European standards, inspections** and **guidelines.** Internal and external **quality assurance systems** provide for the best processing and highest operational efficiency. Our constant objective is a higher than average industry manufacturing quality – so that you can rely on us 100%.




# More Safety under Guarantee

We at KWB place great value on the fact that our heating systems prove themselves under all conditions. For this reason, as a special service, we have raised our guarantee from 5 to 8 years.

Whoever relies on quality as KWB does, can be confident of providing the best guarantees:

- 3-year full guarantee on all biomass boilers on conclusion of a maintenance contract
- 8-year guarantee on boiler bodies on the installation of a working return-flow temperature maintenance device
- 15-year spare parts guarantee

1 Austrian environmental prize • 2 Climate alliance company • 3 Environmental management • 4 Quality management acc. to ISO 9001 • 5 Quality management acc. to ISO 14001 • 6 Conformity to EU guidelines • 7 Emissions and efficiency degree inspection, Wieselburg • 8 Safety certificate from the Institute of Fire Protection Technology • 9 Austrian model company, Austrian seal of quality • 10 Member of the Austrian Pellet Association


# Priority for Service to the Customer!

## A KWB Biomass Heating System Can Be Yours at Anytime

KWB heating systems are available everywhere in Central Europe. Sales and services are provided by over 21 sales representative partners as well as over 1000 heating engineers and heating system fitters. The best trained and motivated staff make sure that KWB's mission statement is lived out to the full and experienced by the customers.

The wide-area customer service network enables optimum customer care and thus customer satisfaction.

More information about our partners
is available under **www.kwb.at**

KWB Partners

Heating engineers

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