pellettop

productdesign by www.acabuna.com

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SOLARFOCUS

Comfortable and environment tally friendly heating with pellets!

Based on the importing independence of pellets, there are only slight price fluctuations and the supply is guaranteed.

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you are on the right track!

 Highest efficiency
 Compact structure
 Futuristic control

Pellet boiler pellettop

efficiency pellet^{top} 15 kW: Full load: **94,8%** efficiency pellet^{top} 25 kW: Full load: **94,9%**

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It works so easily

- Based on its compact structure, the **pellet**^{top} can be easily integrated in the boiler chamber. The space requirement is no greater than for an oil-fired boiler.
- If the pellet storage area is directly next to the boiler room, the pellet^{top} is used with a direct conveyor screw.
 The pellet^{top} with a vacuum system is used when the pellet storage area is further away from the boiler room.

The boiler advance and return are connected directly to your heating system or preferably to a buffer storage as with an oil-fired boiler.

Due to the "ready" delivery of the **pellet**^{top} (wired, assembled, inspected and pre-set), additional expenses for an electrical installation are eliminated.

... select your system

pellet^{top} with vacuum system Schematic diagram pellet^{top} 15 kW

pellet^{top} with screw conveyor Schematic diagram pellet^{top} 15 kW deben

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Pellet feed (1)

From the intermediate tank, the pellets are transported from the stainless steel feed screw to the single axle rotary-vane feeder.



- Wear-proof stainless steel design.
- Gentle, non-destructive transport of the pellets.

Single axle rotary-vane feeder (2)

- The single axle rotary-vane feeder closes the boiler room similar to a revolving door in supermarkets hermetically from the screw feeder.
- Six chamber system in one axle to the feed screw with a directly attached, maintenance-free geared motor.
- 100% burnback safe even at a 🕨 power failure. Lowest power consumption - approx. 100 W at full operation. No additional wear-parts such as chains, gears... Quiet and maintenance-free

Boiler grate (3)

- The pellets drop to the stainless steel burner grate from above via the single axle rotary-vane feeder.
- The boiler funnel and the boiler grate are of stainless steel.
- The firebed is not destroyed, since the pellets drop to the firebed from ABOVE and are not forcibly pushed through the firebed = best efficiency!

Ignition (4)

- The pellets are automatically ignited by a glow pencil.
- High temperature resistant fully ceramic heating element.
- The glow pencil only requires 260 W - in a comparison, a hot air blower requires 1,500 W to 1,800 W. The glow pencil operates quietly and is maintenance-free.

Downburn system (5)

- Downward burn: The flame is suctioned through the boiler grate by the speed controlled induced draft fan. Temperatures of up to 1,200 °C develop in the boiler chamber. This guarantees the complete consumption of the burning material. The last remnants of combustible parts remaining in the ashes are also burned.
- Regulated flame manipulation (no campfire). Controlled primary and secondary air supply.

The ashes automatically drop into the boiler chamber. Perfect emissions values benefit the environment. The downburning system guarantees the highest efficiency and reduces your heating cost budget. A complete consumption of the combustible material (no charred pellets in the ashes).

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Vacuum motor (6)

- In order to overcome greater distances from the boiler chamber to the pellet storage area, the vacuum motor is used.
- A closed cycle (suction pressure system) provides the filling of the **pellet**^{top} intermediate storage in set intervals.
- Boiler chamber and pellet storage area do not have to be directly next to each



Prinzipdarstellung pellet^{top} 15 kW

Induced draft fan (7)

The combustion air needed in various power ranges



- is supplied by the speed-controlled induced draft fan. It is controlled by the microprocessor which is built-in in the control and/or by the measuring values determined by the lambda sensor.
- Stainless steel fan with attached single phase motor.
- Quiet, maintenance-free, 20 years experience.

Lambda sensor (8)

- In order to achieve even combustion of the pellets, the lambda technology is used in the **pellet**^{top}, which has been used in automotive technology for several decades and since 1981 at **SOLARFOCUS**. The lambda sensor measures the "residual air content" of the emissions and forwards the values to the control of the **pellet**^{top}. The control calculates the optimal air volume required for the combustion from these actual values and sets the dampers and/or regulates the speed of the
- induced draft fan. Even standardized combustion materials such as pellets contain variable residual moisture and must be burned differently at full or partial load.
- In order to achieve the highest efficiency in these various "load areas", the lambda technology is indispensable.
- Bosch lambda sensor.
- Guarantees environmentally friendly, energy saving combustion in all load ranges. Long-term experience (since 1981).

Heat exchanger cleaning system (9)

- Even the optimal combustion achieved with the **pellet**^{top} cannot prevent that deposits accumulate on the walls of the heat exchanger. An increase in the smoke gas temperature designates an efficiency loss. Clean heat exchangers save fuel!
- AUTOMATIC means AUTOMATIC! Endless screws that operate in the "meat grinder principle", clean the walls of the heat exchangers in set intervals. The endless screws affect the heat exchangers at a close distance and transport the deposits on the heat exchangers to the ash chamber.
- Constant efficiency saves energy cost. A manual cleaning is not required. Maintenance-free.

pellettop

- Highest efficiencyCompact structureFuture-oriented control

- 1 Downburn system
- 2 Lambda sensor
- 3 Induced draft fan 4 Single axle rotary-vane feeder (patented) -100% burnback protec-
- tion 5 Heat exchanger with automatic cleaning system
- 6 Energy efficient glow pencil
- 7 Primary air duct
- 8 Secondary air damper with servo motor (combustion control)
- 9 Ash chamber and door
- 10 Pellet storage container with vacuum motor
- 11 Full graphics control panel
- 12 Vacuum motor
- 13 Air return hose
- 14 Pellet filling hose

Option:

You can also obtain the pellettop in the version with conveyor screw.



Boiler efficiency (Full load)

pellet^{top} 15 kW 94,8 %

Depth Weight

pellet^{top} 25 kW

357 kg

329 kg

94,9 %

Pellet storage options

Pellets are delivered similar to oil in a tanker truck and blown into the storage chamber. The pellet storage chamber and/or the fill couplings should not be any further than a 30 m distance from the parking space of the tanker truck, since the max. pump hose length is generally 30 m.

If possible, the pellet storage area should border onto an exterior wall to be able to install the filling connections to be easily accessible from the outside. However, if this is not possible for structural reasons, the blower and vacuum pipes should be brought up to the exterior wall. Please observe the regional fire safety regulations!

The boiler room should also border onto an exterior wall to promote natural ventilation. If the boiler room is still on the interior, a vent pipe (at least 200 cm²) must be brought to the exterior wall. The vent pipe must be designed to correspond with regional fire safety regulations.

Storage area directly next to the boiler room



Storage in a pellet box

SOLARFOCUS

Calculation of the storage area volume:

At a 35° slanted floor, the following formula applies:

 $V = (b x (h - 0,5) - b^2 x 0.15) x I$

- b = storage room width
- h = storage room height
- I = storage room length
- V = storage room volume

The pellet box provides storage of pellets in the basement. It is supplied by a vacuum system.

Advantages:

- ✓ Variable container height for each room
- Robust and durable

Volume: from 5,000 l to 11,000 l

Basement space-saving alternative: "The earth tank"



This solution provides storage outside (next to the house).

Advantages:

- Space savings
- Delivery by the vacuum system
- Absolutely compatible and flexible
- Robust and durable

Volume:	8,000 I or 11,000 I
Diameter:	235 cm
Height:	240 cm or 320 cm

Detailed information may be found in the SOLARFOCUS-planning folder

Control engineering ecomanager

Remote monitoring and system control

SOLARFOCUS Control engineering It controls: Performance + combustion

The heart of your new heating system

The control has special significance in order to provide daily comfort. You determine when and how warm it will be. ecomanager thinks when measuring and regulating. The changing outdoor temperatures are considered as well as your personal heating requirements.

ecomanager provides individual adjusting options.

Simple control with a control knob



Control ecomanager:

Full graphics display with background illumination • Easy operation with a control knob • Clear visual display of the system parameters (system values are processed graphically) • Integrated solar control • Weather controlled heating cycle control for 2 separate heating cycles. (Optionally expandable to 4 or 6 heating cycles) • 32 bit processor • Fully digital combustion control • Updateable system (software can be updated via telephone line) • Remote monitoring and system control is possible via ISDN connection.. Maximum of 5 Watt power consumption in standby operation • Control panel may be located on the pellet^{top} or in the living area.

G+rop SOLARFOCUS

PELLETS - the fuel of the future

Heating value: 1 kg of pellets: approx. 5 KWh

2 kg of pellets: approx. 1I of heating oil

1 m³ of pellets: Approx. 650 kg

Heating in the cycle of nature

Trees absorb exactly the quantity of CO_2 from the air which is later released during combustion (or decomposition).

The CO_2 released by the combustion is reused to grow new biomass.





























This speaks for ...

pellets

- Environmentally friendly and CO₂ neutral
- Native energy supplier
- Crisis and supply secure
- Price stability
- Provides comfortable heating
- Standardized fuel
- Simple, small storage room
- Easy delivery with a tanker truck
- Best in combination with solar systems
- Low ash volume

the **pellet**top

- Downburn system
- No moving parts in the boiler chamber
- Lambda sensor technology since 1981
- Fully automated heat exchanger cleaning system
- Modern control concept
- Lowest space requirement
- Single axle rotary-vane feeder
- Automatic ignition by glow pencil
- Supply optionally with vacuum system or conveyor screw
- Combustion efficiency up to 97%
- Integrated solar control
- Modern design

You can obtain information regarding grants by the federal, regional or city government from your personal **SOLARFOCUS** consultant.

Everything from one source, with 25 years of experience:

SOLARFOCUS solar systems - SOLARFOCUS biomass heating - SOLARFOCUS storage technology

