

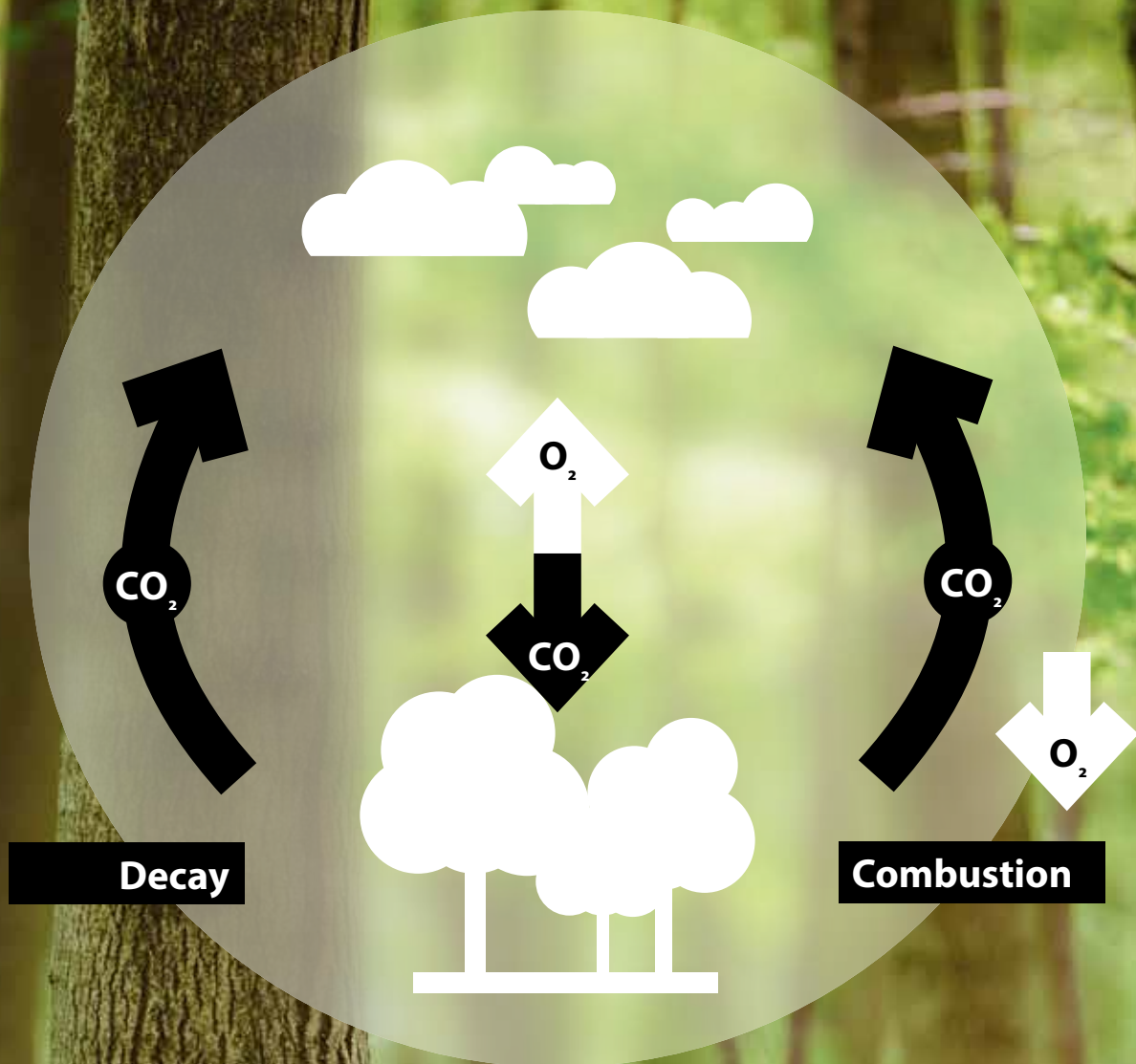


# Wood chip and pellet boiler

175–400 kW



Over **40** years of experience and competence



## ENERGY IN THE CYCLE OF NATURE

During growth, trees need  $\text{CO}_2$ , which they take from the air and store in their wood and leaves.  $\text{CO}_2$  is released when wood burns or decays – but only as much as the tree has extracted from the atmosphere in the course of its growth. If you heat with wood, you are therefore heating sustainably in the cycle of nature, i.e. the heating is  $\text{CO}_2$ -neutral. In German homes alone, almost 20 million tonnes of  $\text{CO}_2$  are already being saved today.



HDG Managing Director Martin Ecker

## WHEN SUSTAINABLE ACTION MEETS INNOVATIVE THINKING



**Climate-friendly heating.  
With wood!**

For more than 40 years, HDG has been dealing with the topic of heat from wood and renewable, non-fossil fuels. During this time, we have continuously developed our products and services – always oriented to the needs of the market and our customers.

We are a Bavarian family business and the expert for wood heating systems from Germany. HDG is proud to produce in the region and to be able to offer flexible solutions to its prospective customers. A total of over 100,000 satisfied customers speaks for itself.

HDG has become so successful because people trust central-heating boilers from Lower Bavaria. This is because of our sophisticated, robust products, detailed and honest advice, individual support in planning and, last but not least, responsible action and human appreciation both internally and externally.

Martin Ecker  
Managing Director  
of HDG

# FROM A FAMILY BUSINESS TO A MODERN FAMILY COMPANY

As a modern family company, we still rely on the values and ideals of the family business from which we are descended.

Customer satisfaction and long-term employee retention show us that decency and honesty, responsibility for employees and our home, and reliable products are still a valuable asset today.

1978  
COMPANY FOUNDED BY  
KARL & THERESE ACKERMANN



EVA ACKERMANN  
SHAREHOLDER  
GROWN UP ALONGSIDE HDG



MARTIN ECKER  
MANAGER AT HDG  
SINCE 1996



ROBERT KALTENHAUSER  
FINAL ASSEMBLY  
AT HDG SINCE 1991



STEPHAN EBERL  
PLANNING  
AT HDG SINCE 1992



MATHIAS VIEHHAUSER  
MASTER ELECTRICIAN  
AT HDG SINCE 2010



CLAUS ZIMMER  
DESIGN TEAM LEADER  
AT HDG SINCE 2013



CONNY WAGNER  
SERVICE TEAM LEADER  
AT HDG SINCE 1994





## TAKING ACTION FOR THE FUTURE TODAY

Our central-heating boilers comply with the strictest emission limits and are characterised by particularly high efficiency levels. Many have therefore been awarded innovation prizes by the kwf and the Federal Republic of Germany.

For this reason, HDG wood heating systems also receive special government subsidies – for example, via BAFA (the Federal Office of Economics and Export Control) in Germany or within the framework of the Austrian Ecolabel.

However, just like the sustainability of our products, protecting the climate, environment and nature in practical ways is also a cause close to our hearts. HDG has been dedicated to this for many years.

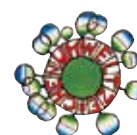
**GOGREEN** mailing via DHL

**ENERGY** from 100% local, environmentally friendly hydropower

**GREEN IT** that uses resource-saving information technology

**BAVARIAN ENVIRONMENTAL AND CLIMATE PACT** for taking personal responsibility in environmental protection

We are supporters of **GEMEINWOHL-ÖKONOMIE** (economy for the greater good)





## MANUFACTURING WITH EXPERTISE AND PASSION

Customers rightly expect a particular level of quality from our "Made in Germany" heating systems.

We guarantee that their expectations are by implementing a quality-assurance process that accompanies every boiler through every manufacturing stage, using the latest machines and manufacturing processes, using high-quality materials and employing well-trained, qualified staff who put their whole heart into the production of HDG central-heating boilers.

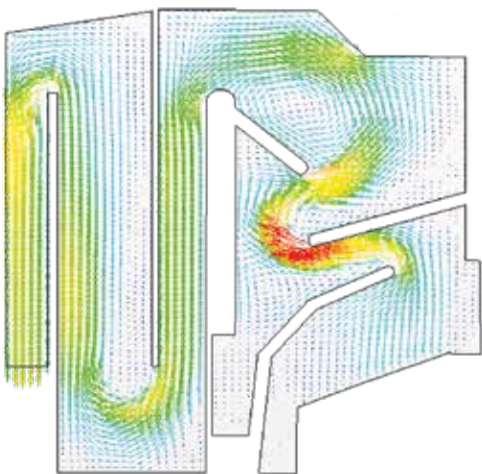


## COMPETENCE LEADER AND INNOVATOR

All HDG products stand out thanks to their robustness, convenience, reliability and continuous innovation. That is our performance promise.

For this reason, since the early days, we have been driving forward the development of wood heating systems. In doing so, we always think outside the box – for instance, when considering alternative renewable fuels and developing innovative approaches in boiler technology from this.

As a member of numerous networks for renewable energies, we focus on the exchange of lived experiences because we believe that the shift from fossil fuels to a truly sustainable heat supply can only be achieved together.



Optimum emissions and dust values thanks to the combustion chamber geometry that was developed together with Fraunhofer

## HDG M175/200/240

The new HDG M175-240 wood chip boiler makes **innovative cutting-edge technology available in a low power range** too for the first time. This also guarantees the highest levels of efficiency for variable fuel quality. Furthermore, despite its compact shape, the HDG M175-240 does not cut any corners when it comes to equipment, and it **sets standards where comfort and reliability are concerned.**







### THE LITTLE POWERHOUSE IN ACTION

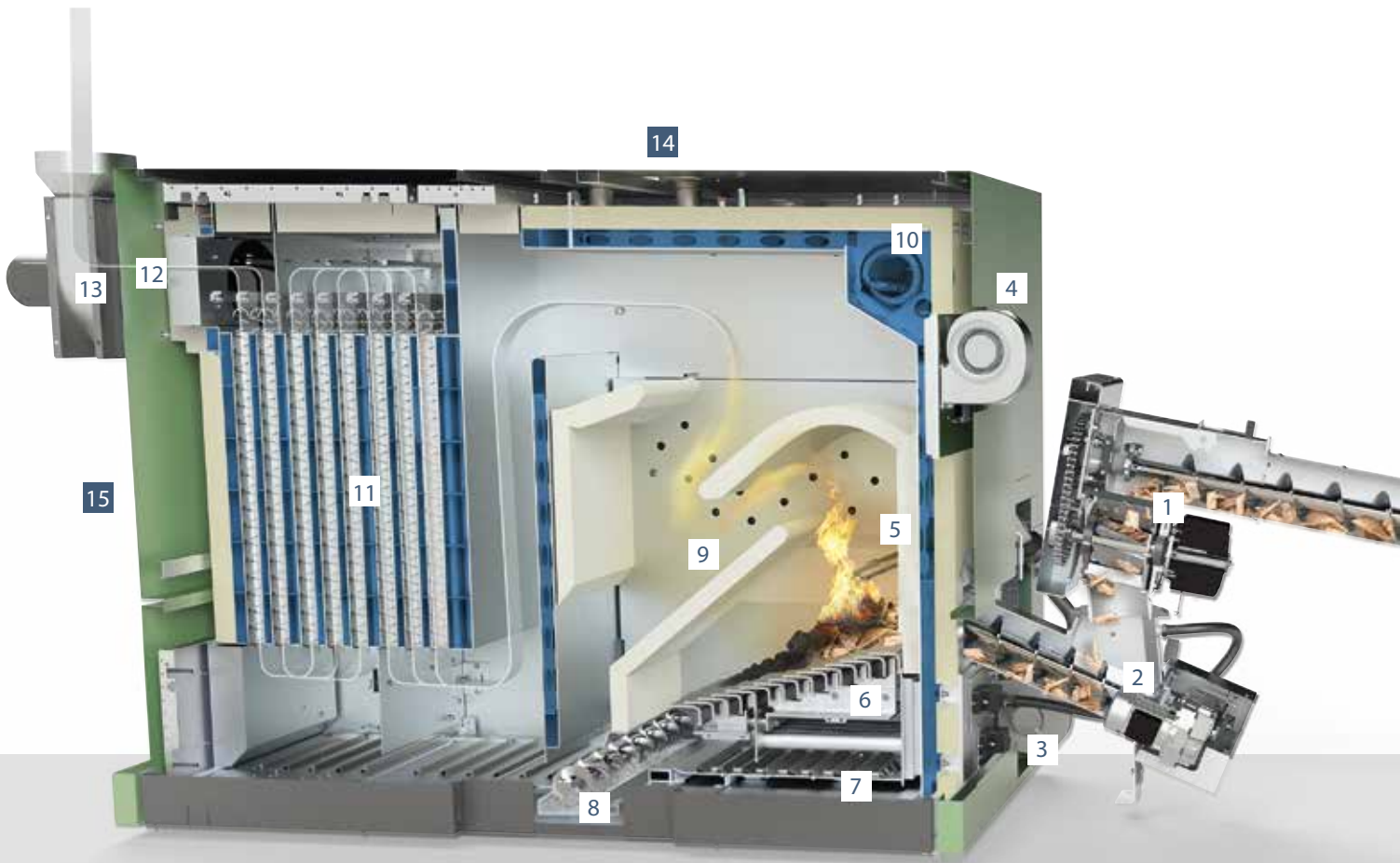
- ✓ Agricultural enterprises
- ✓ Hotels and gastronomy
- ✓ Municipal buildings and industry
- ✓ Wood processing businesses
- ✓ Local heating networks



**"HDG M,  
BECAUSE ...**

... in addition to our own wood chips,  
wood from the carpentry business  
can also be used"

**Andreas Wimmer**  
Forester and carpentry business



**FUEL**

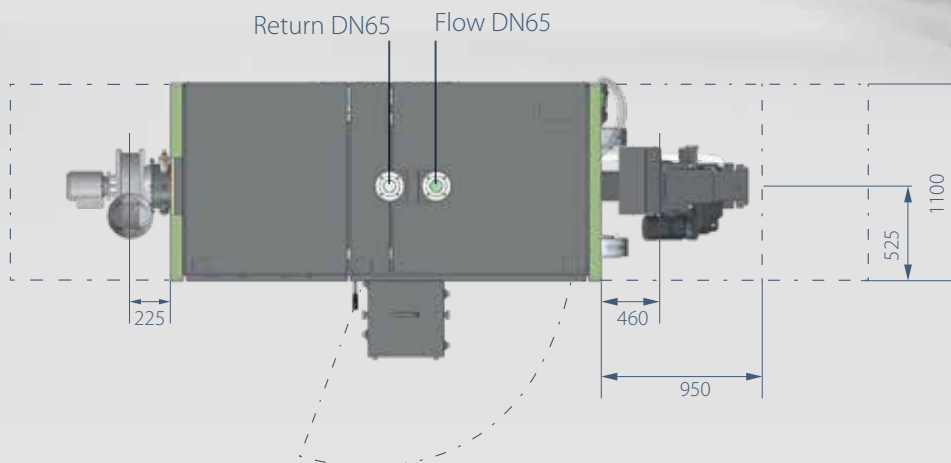
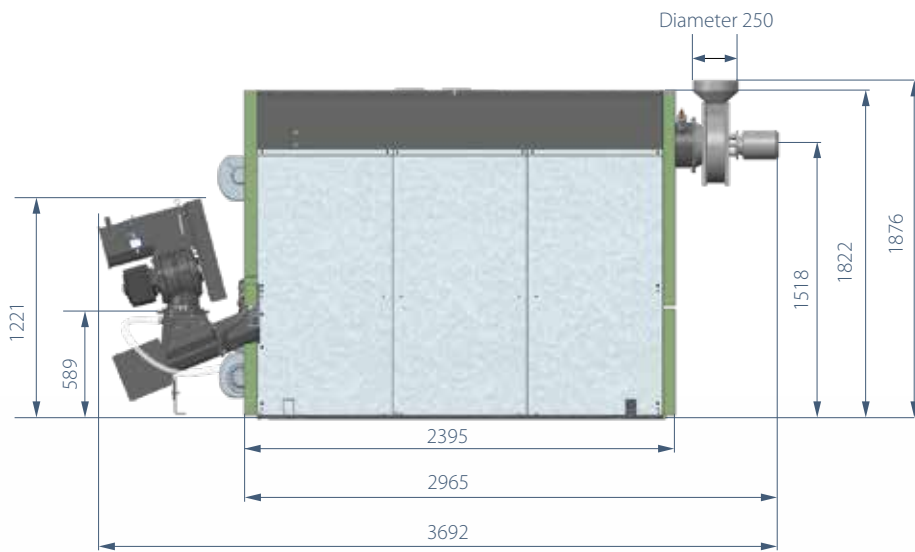


Pellets



Wood chips

- 1** Four-chamber rotary wheel
- 2** Stoker auger with level indicator
- 3** Primary air fan
- 4** Secondary air fan
- 5** Automatic ignition with overfill protection
- 6** Two-zone stepping grate
- 7** Under-grate ash removal
- 8** Integrated central ash removal system
- 9** Secondary and tertiary air supply
- 10** Safety heat exchanger
- 11** Heat exchanger pipes with automatic cleaning system
- 12** Flue gas temperature sensor and lambda sensor
- 13** Flue gas fan with underpressure control
- 14** Supply and return connections
- 15** Integrated fine-dust separator  
(only on the HDG M175-240E; for more information, see page 27)



	Unit	HDG M175 Wood chips/pellets	HDG M200 Wood chips/pellets	HDG M240 Wood chips/pellets
Nominal thermal power	kW	175	200	240 (200*)
Minimum thermal power	kW	52	60	72
Flue gas temperature (Tw) at nominal thermal power	°C	165	180	195
Flue gas mass flow at nominal load	kg/s	0.116/0.104	0.131/0.118	0.156/0.139
Water capacity	l	515	515	515
Operating pressure	bar	6	6	6
Required flue draught (Pw)	PA	5	5	5
Max. flow temperature	°C	100	100	100
Weight	kg	2.555	2.555	2.555

\* Continuous load

## HDG M300/350/400

The HDG M300-400 is the ideal heating system where a **high heat demand meets the most exacting requirements when it comes to efficiency and reliability**. It combines tried-and-tested technologies with **intelligent innovations** and therefore achieves an unsurpassed high level of efficiency. This makes the HDG M300-400 the "power cube" for a variety of areas of application.





**THE POWER CUBE IN USE**

- ✓ Agricultural enterprises
- ✓ Hotels and gastronomy
- ✓ Municipal buildings and industry
- ✓ Wood processing businesses
- ✓ Local heating networks

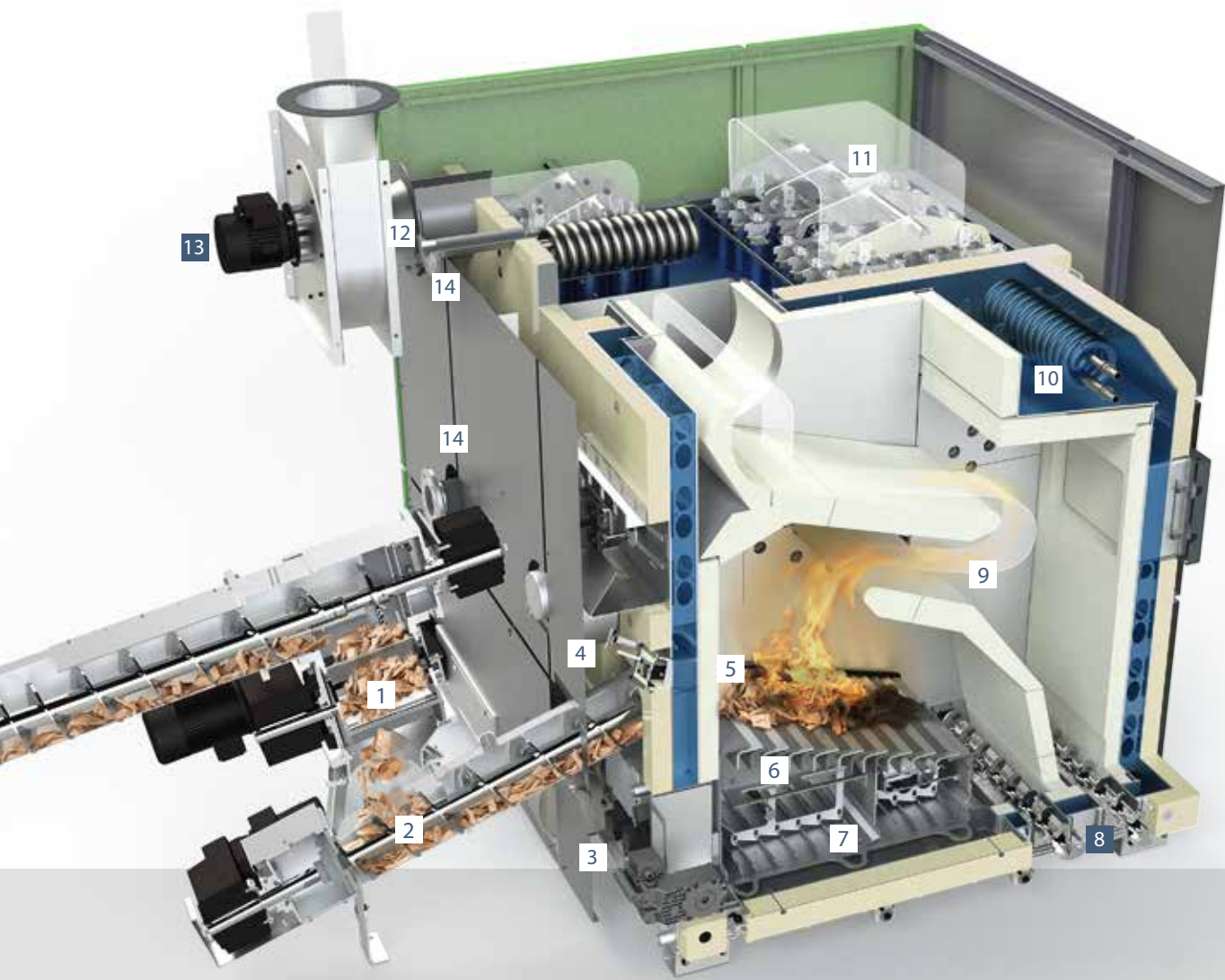


**"HDG M, BECAUSE ...**

... we use our own raw materials for heating. Independent of speculation and in harmony with nature. Isn't that fantastic?"

**Andreas Ramelsberger**  
Farmer from Massing





- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1 Four-chamber rotary wheel</li> <li>2 Stoker auger with level indicator</li> <li>3 Primary air fan</li> <li>4 Secondary air fan</li> <li>5 Automatic ignition with overfill protection</li> <li>6 Two-zone stepping grate</li> <li>7 Under-grate ash removal</li> </ul> | <ul style="list-style-type: none"> <li>8 Integrated ash removal</li> <li>9 Secondary and tertiary air supply</li> <li>10 Safety heat exchanger</li> <li>11 Heat exchanger pipes with automatic cleaning system</li> <li>12 Flue gas temperature sensor and lambda sensor</li> <li>13 Flue gas fan with underpressure control</li> <li>14 Supply and return connections</li> </ul> |
|---|---|

## FUEL



Pellets



Wood chips



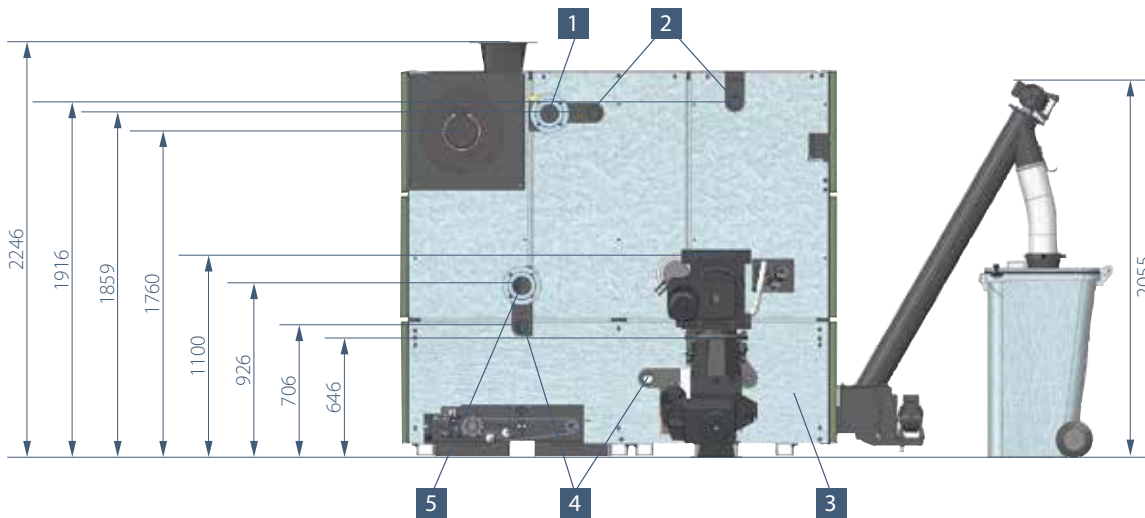
Fuels in classes 6 and 7 in accordance with German Federal Emission Limits (1. BImSchV) permitted in wood working and wood processing businesses



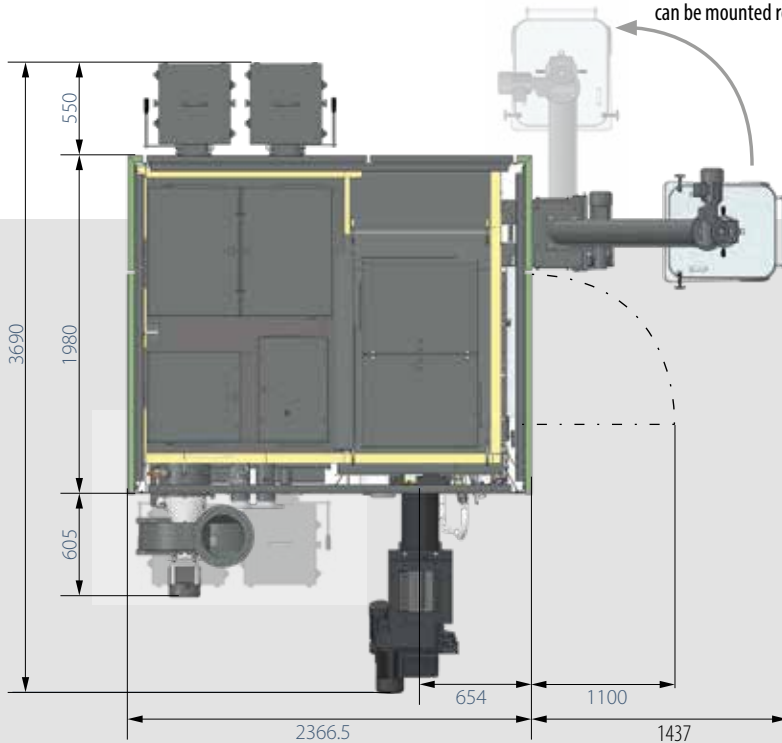
## INSERTION AND ASSEMBLY

The heating system is delivered disassembled into its individual parts (combustion unit and heat exchanger) and can therefore be easily inserted.

Alternatively, the ash containers can be mounted on the opposite side. The ash removal system can be rotated by 90°.



Alternatively, the ash removal system can be mounted rotated by 90°.



**WATER-SIDE CONNECTIONS  
HDG M300/350/400**

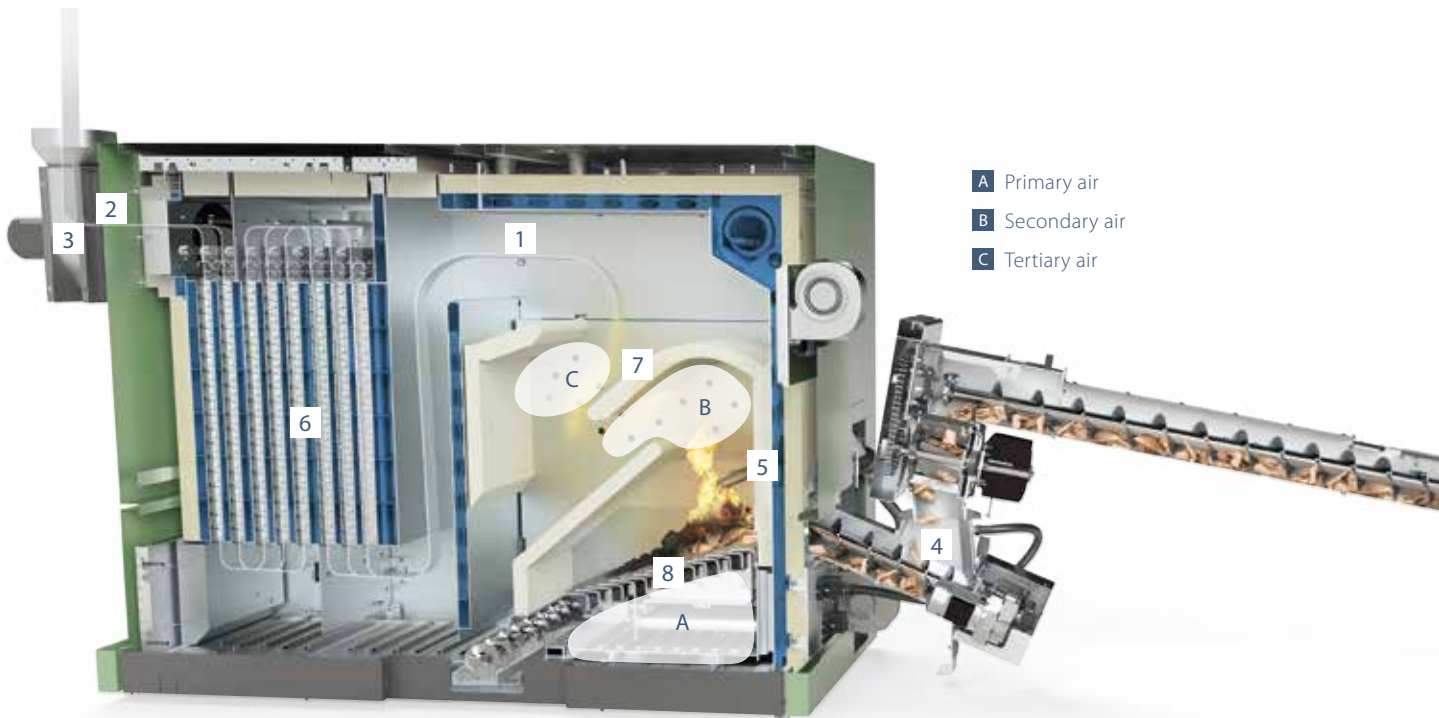
- 1 Boiler supply connection (DN 100 flange)
- 2 Connection (DN 50 sleeve) between heat exchanger and combustion unit
- 3 Filling/draining connection (DN 25 IG) for combustion unit
- 4 Connection (DN 50 sleeve) between heat exchanger and combustion unit
- 5 Boiler return connection (DN 100 flange)

	Unit	HDG M300 Wood chips/pellets	HDG M350 Wood chips/pellets	HDG M400 Wood chips/pellets
Nominal thermal power	kW	310/328	350/350	400*/400*
Minimum thermal power	kW	92/97	105/105	120/120
Flue gas temperature (Tw) at nominal thermal power	°C	150	160	170
Flue gas mass flow at nominal load	kg/s	0.167/0.169	0.186/0.177	0.210/0.196
Water capacity	l	2110	2150	2200
Operating pressure	bar	6	6	6
Required flue draught (Pw)	PA	10	10	10
Max. flow temperature	°C	100	100	100
Weight of combustion unit	kg	2.640	2.700	2.730
Weight of heat exchanger	kg	2.860	2.900	2.920

\* Continuous load, depending on material

# COMBUSTION TECHNOLOGY

The technology in the HDG M175-400 combines a cleverly designed combustion chamber geometry with targeted control of the combustion air and the tried-and-tested HDG stepping grate. Together with the PLC control system, which is perfectly tailored to the boiler, it achieves heat generation that is as **powerful as it is economic**.



## THREE-ZONE CONTROL SYSTEM

The unique three-zone control system with **combustion chamber temperature sensor**, **lambda sensor** and **underpressure control** is setting new standards. This is because the control system for the combustion air has a significant influence on a wood heating system's efficiency and emissions.

### 1 Combustion chamber temperature sensor

The combustion chamber temperature sensor provides information about the control of the material quantity, the ignition and, above all, the primary air supply. This is required for pre-drying and outgassing the fuel, and provides the main air for the combustion.

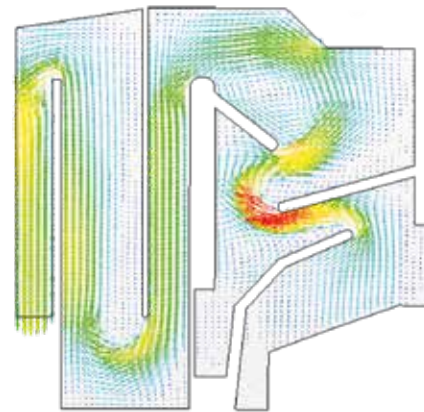
### 2 Lambda sensor

The lambda sensor measures the residual oxygen following combustion and therefore determines the values for the secondary and tertiary air. Both are admixed with the combustion gases at different times and therefore guarantee extremely clean combustion with the highest levels of efficiency.

### 3 Flue gas fan with underpressure control

The speed-controlled flue gas fan is controlled using underpressure control and guarantees a constant underpressure in the combustion chamber. Fluctuating fuel properties and unfavourable flue conditions are therefore effectively compensated.





Optimum emission values and dust values thanks to the combustion chamber geometry that was developed together with Fraunhofer

#### 4 Perfect fuel dosing

The stoker auger with dosing container controls the consistent material supply via a photoelectric sensor. This guarantees a constant output even when the fill levels are low in the fuel storage room, and forms the basis for especially low-emission operation.

#### 5 Ignition with integrated overflow protection

A moving ignition tube in direct contact with the material ignites even damp material quickly and reliably. It also serves as overflow protection in order to guarantee ideal material dosing.

#### 6 Forced-flow heat exchanger

The layered flow of the heat exchanger optimises the heat transfer and guarantees maximum levels of efficiency. All heat exchanger surfaces are cleaned fully automatically, whereby the maintenance effort is reduced to a minimum.

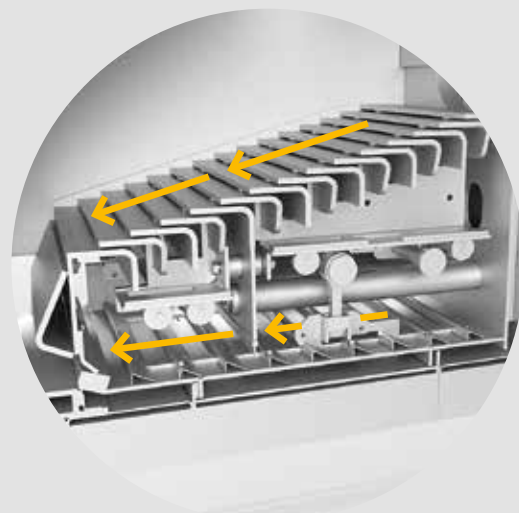
#### 7 Maximum efficiency and low emissions

The geometry of the durable combustion chamber, which is made from highly fire-resistant SiC, was developed in collaboration with the Fraunhofer Institute. The core of this is the integrated centrifugal separator with downstream slowdown and depressurising zone. Thanks to a 180° diversion of the combustion gases, dust is already separated in the combustion chamber, rendering a cyclonic separator unnecessary. Furthermore, the combustion control takes control right from the start phase and therefore guarantees almost smoke-free combustion. All of this guarantees extremely clean combustion with optimum emission values and high levels of efficiency.

#### 8 Flexible combustion thanks to stepping grate technology

The stepping grate technology relies on proven robustness and quality from the large-scale production. In this case, continuous movements prevent slag formation and mean that challenging combustion material can be used.

The newly developed under-grate ash removal reliably transports fine particles away and means that cleaning rarely has to be carried out. This allows for round-the-clock operation and is ideal for the basic thermal load. Furthermore, the primary zones guarantee particularly good output modulation and efficient partial load mode.



# FROM THE FUEL STORE TO THE BOILER

How does the fuel get to the boiler? This is where HDG's **solutions stand out from the crowd** – from the conventional flexi-blade delivery system and hinged-arm, auger and moving-floor systems, right through to the customer-specific special production. We can therefore work together to find the best solution for every situation.

**100% maintenance-free and particularly robust:**

HDG has produced over 10,000 augers. This experience forms the basis for the fully maintenance-free gearbox. Furthermore, a newly developed housing provides better protection for the gearbox.

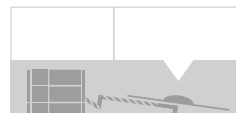


**The basic principle**

The delivery system transports the material directly to the boiler. Different systems can be considered depending on the size and shape of the store, the fuel that is used, and the structural conditions.

**HDG FILLING SYSTEMS**

With our individually planned filling systems, even large fuel storage rooms can be filled quickly.



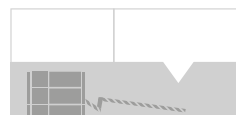
Example: Fuel store directly adjacent, filling directly or using a filling auger system



Example: By using downpipes or additional screw conveyors, remote storage can also be used



Example: Specifically for pellets without an agitator, ideal for fuel store located above



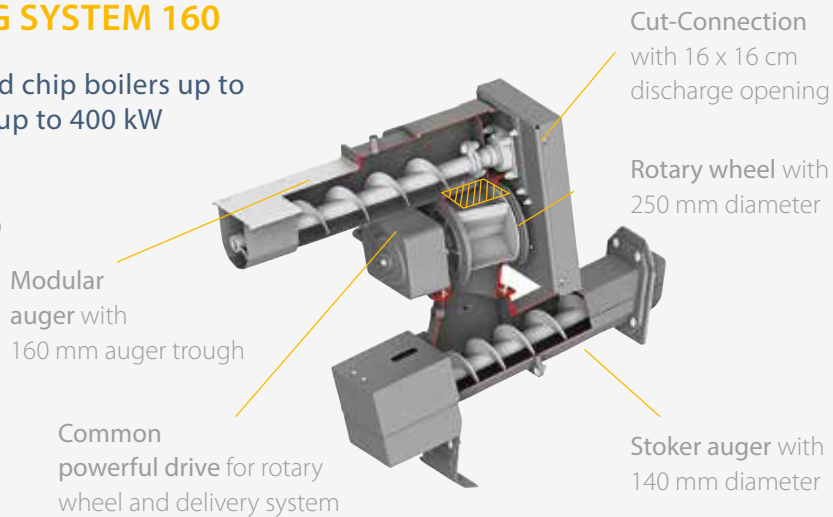
## HDG VARIO FEEDING SYSTEM WITH CUT-CONNECTION

A sophisticated feeding system is fundamentally important for **safe and reliable operation** of an automatic wood heating system. It doses the added fuel, guarantees the back burn protection via the rotary feeder and cuts up oversized combustion material in the Cut-Connection. The **HDG Vario feeding systems with 160 mm or 200 mm auger trough** are based on the same technical foundation. However, differences in the detail mean that they are specialists for an extremely wide range of areas of application.

### HDG VARIO FEEDING SYSTEM 160

The ideal solution for wood chip boilers up to 240 kW and pellet boilers up to 400 kW

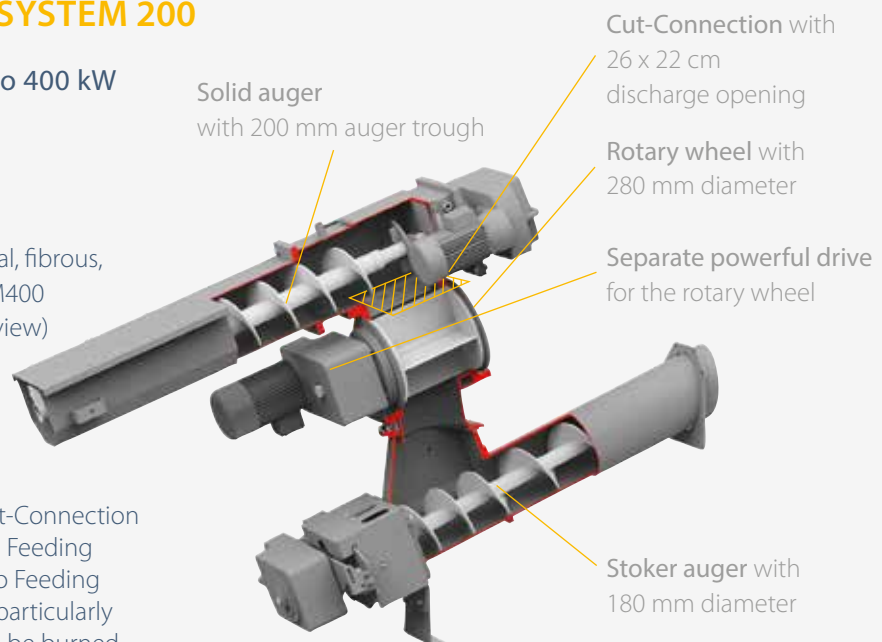
- Pellets up to HDG M400
- Wood chips up to HDG M240 (max. P45S, previously G50)



### HDG VARIO FEEDING SYSTEM 200

Suitable for wood chips up to 400 kW

- Wood chips up to HDG M400 (max. P45S, previously G50)
- Wood chips and residue material, fibrous, shredded material up to HDG M400 (max. P63 following material review)



The discharge opening on the Cut-Connection is **120% bigger** on the HDG Vario Feeding System 200 than on the HDG Vario Feeding System 160. This also means that particularly **large and coarse wood chips** can be burned without hesitation.

# HDG VARIO FLEXI-BLADE DELIVERY SYSTEM

## for wood chips and pellets

The most common delivery system version in combination with an HDG M175-400 is a HDG Vario flexi-blade delivery system. The robust and flexible design always guarantees reliable fuel supply. The optimal area of application is fuel stores with a diameter of 2.0 to 5.5 metres.

### 100% MAINTENANCE-FREE AND PARTICULARLY ROBUST

HDG has produced over 10,000 augers. This experience forms the basis for the fully maintenance-free gearbox. Furthermore, a newly developed housing provides better protection for the gearbox.

### EXTRA-HIGH LEAF-SPRING PACKS (80 mm)

transport more fuel with fewer rotations. This **optimises the material flow** and protects against unnecessary wear.

### THE FUEL STORAGE ROOM IS COMPLETELY DRAINED

Since the flexi-blades on the Vario room feed are also suitable for square rooms and the fuel dosing takes place via the stoker auger, the fuel storage room can be completely drained without any loss of power.

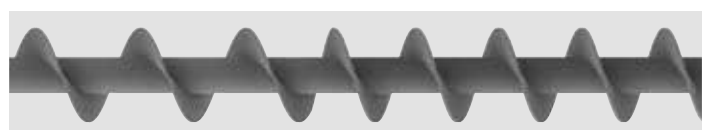
### OPTIMISED AUGER CHANNEL

Higher filling capacity of the auger channel and improved transport of different fuels are the result of collaboration with the Technical University of Munich. The special interval operation of the fuel dosing **reduces the start-up phases by up to 80%** of the delivery, whereby the drive components are also protected and the power consumption is significantly reduced.



### CONICAL SCREW CONVEYOR

The **conical and gradually rising screw conveyor** guarantees **smooth material transport**. Special attention was paid to ensuring good **accessibility** for any maintenance work. This means that the auger channel is easy to access via a screwed lid and the auger coupling is located outside of the fuel storage room.





### FOUR-CHAMBER ROTARY FEEDER

The design of the rotary wheel (250 mm diameter) offers absolute back burn protection and **prevents friction surfaces**. This



reduces the stress on the components and **increases the life expectancy**.

### HDG CUT-CONNECTION

The Cut-Connection with 160 x 160 mm discharge opening between the auger and the rotary wheel prevents material blockage and guarantees **reliable operation**. Replaceable, drawing ground counter-cutters and the sorting finger **shorten over-length material**.



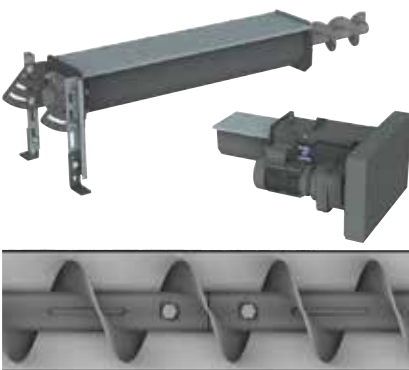
Thanks to the diagonally arranged cutting edges, the pulling cut has a great deal of strength at the intersection for reliable crushing.

### POWERFUL DRIVE

In keeping with the motto "as little energy as possible – as much energy as needed", the powerful, yet economical drive combines **low power consumption with high performance reserves**.

### SIMPLE INSTALLATION AND ASSEMBLY

The HDG Vario room feed is delivered as separate parts for simple installation. This means that the individual components **can be installed within no time**.



### STOKER AUGER WITH DOSING CONTAINER

The stoker auger with hopper doses the fuel via a photoelectric sensor and therefore guarantees a **consistent material supply**. This guarantees a **steady output**, even for different fill levels in the fuel storage room. Furthermore, the fuel storage room is **completely drained** by the intermediate buffer without any loss of power.



# THE RIGHT DELIVERY SYSTEM FOR YOU

## Alternatives for wood chips and pellets

Besides the HDG Vario flexi-blade delivery system, HDG also offers alternative systems which can be adapted perfectly to individual requirements.

- ✓ Ideal for high demand
- ✓ Ideal for even larger fuel storage rooms and large fill levels



1

### HDG VARIO FLEXI-BLADE DELIVERY SYSTEM for wood chips and pellets

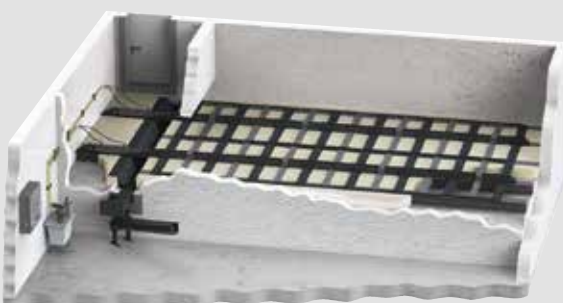
The most common delivery system version in combination with an HDG M175-400 is a HDG Vario flexi-blade delivery system. The robust and flexible design always guarantees reliable fuel supply. The optimal area of application is fuel stores with a diameter of 2.0 to 5.5 m.



2

### HDG VARIO HINGED-ARM DELIVERY SYSTEM for wood chips and pellets

For the frequent use of difficult and/or fibrous combustion materials, the HDG hinged-arm delivery system can be used as an alternative to the flexi-blade delivery system. Thanks to the two pre-tensioned arm elements, even large fuel storage rooms with a diameter up to 6 m and large fill levels are drained reliably.



3

### HDG WALKING-FLOOR DELIVERY SYSTEM TAK Wood chips

The walking-floor delivery system allows for simple material removal from rectangular fuel storage rooms of up to 200 m<sup>2</sup> and is ideal for high power ranges and large quantities of fuel. In this case, fuel storage rooms of up to 4 m in height can be drained. Heating material is transported via hydraulically driven rake elements to a recessed cross auger and transported to the boiler in this way.

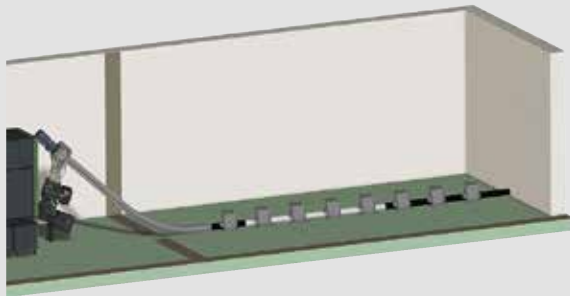
# HDG SPIRAL-SCREW CONVEYOR

## for pellets



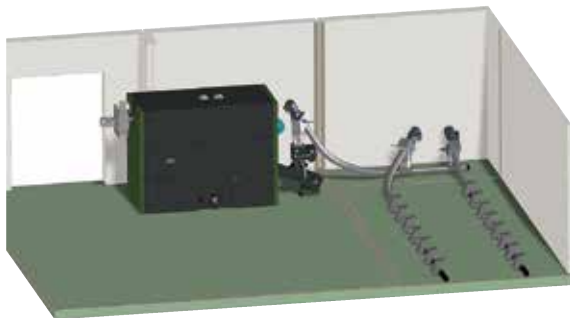
The HDG spiral-screw conveyor was developed for the exclusive transport of pellets. Using a flexible spiral, the fuel is transported to the boiler directly or via additional conveyor lines.

- ✓ The flexible spiral made from hardened steel allows for transport even in curves and inclines, horizontally and vertically
- ✓ Particularly quiet transport of pellets thanks to low speeds and a low-noise motor
- ✓ Low-maintenance and energy-efficient
- ✓ Low level of dust formation thanks to the protected transport of the pellets



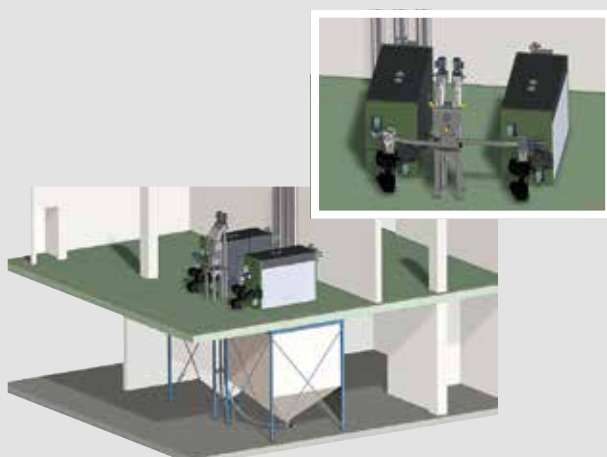
### 4 DIRECT CONNECTION

The HDG spiral-screw conveyor can transport pellets directly from the fuel storage room to the boiler.



### 5 COMBINATION OF MULTIPLE HDG SPIRAL-SCREW CONVEYORS

**The combination of multiple conveyor lines** allows the feeding system for a boiler to be made up of multiple fuel storage rooms or multiple boilers from one room with consistent draining.

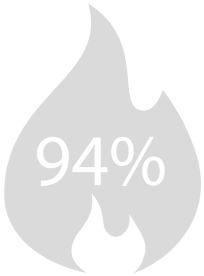


### 6 COMPLEX APPLICATIONS ARE EASILY SOLVED with the HDG spiral-screw conveyor

Thanks to this flexible system, a combination of multiple conveyor lines with a total length of **up to 60 m** is possible. **Height differences** between the fuel storage room and the boiler room of **up to 20 m** and fill levels of up to 8 m can be achieved.

# EVERYTHING UNDER CONTROL

To control the entire heating system, we rely on the combination of the HDG Control PRO boiler control and the HDG Control consumer regulation. This duo guarantees reliability, comfort and maximum flexibility when removing the heating system.



## HDG CONTROL PRO COMBUSTION TECHNOLOGY

The combustion control of the HDG Control PRO always feeds the combustion air according to requirements. The reference variables are determined via the combustion chamber temperature sensor and the lambda sensor. The continuous **adjustment of the optimal air and fuel quantity** allows for a maximum **efficiency of 94%**.

## OUTPUT CONTROL IN ACCORDANCE WITH "QM FOR BIOMASS DH PLANTS"

"QM for Biomass DH Plants" is a quality management system for biomass district heating plants with strict specifications regarding the production and distribution of heat. HDG fulfils this with a PLC-supported output control. To do this, the temperature zones in the buffer are determined in order to fully automatically control the required output of 30–100% while taking into consideration consistent operating hours.



### READY FOR EXPANSION

With its PLC modules, the HDG Control PRO supports numerous interface protocols for optimal integration into building management and into smart home systems.

### SIMPLE HYDRAULIC PLANNING

With the HDG hydraulic finder, specialist companies can carry out the hydraulic planning, including the electrical wiring diagram:

- ✓ **Three steps** to the right basic diagram
- ✓ Access to almost **3000 basic hydraulic diagrams**



# DOUBLE THE OUTPUT – DOUBLE THE RELIABILITY

## HDG M CASCADE 350-800E

For increased power requirements, HDG heating systems can be combined with each other as a dual system (cascade). The advantages of a cascade solution are, for example, the high power range, maximum operational reliability and demand-oriented heat supply, especially when energy demand fluctuates. Using myHDG and the myHDG app, the entire system can also be managed with single access.

### FAIL-SAFE

If one boiler is not working, the second boiler takes over the basic supply for the connected heating components. This guarantees an uninterrupted power supply. Required maintenance can therefore also take place during operation. When demand is low, e.g. in summer, only one boiler is switched on alternately.

### SPACE-SAVING

Thanks to careful positioning of the boilers, minimum clearances can be cut in half to some extent. The space requirement of a cascade is therefore comparable to that of a single-boiler installation with the same output.



*Example of an HDG cascade with two HDG wood chip boilers.*





## SYSTEM CONTROL WITH HDG CONTROL

### CONSUMER REGULATION

The HDG Control offers everything that you would expect from an intelligent energy manager: Control of accumulators, external heat sources, heating circuits, network pumps, domestic hot water tank as well as solar systems.

### CONTROLLED AT THE CORRECT LOCATION

HDG Control allows up to 11 controls to be combined. In doing so, the entire local heating network, with the external touch display, can be monitored and controlled from one location.

### CONTROL OF LOCAL HEATING NETWORKS

The HDG Control can control two separate local heating networks and 12 control variants. For individual planning, including heat transfer stations and funding for local heating networks, we are happy to use our experience to provide you with support.



### NEW! MYHDG AS AN APP

Quick and easy: Use all the functions of myHDG conveniently in our **free app for iOS and Android.**



App: myHDG

### THE HEATING SYSTEM IN YOUR POCKET

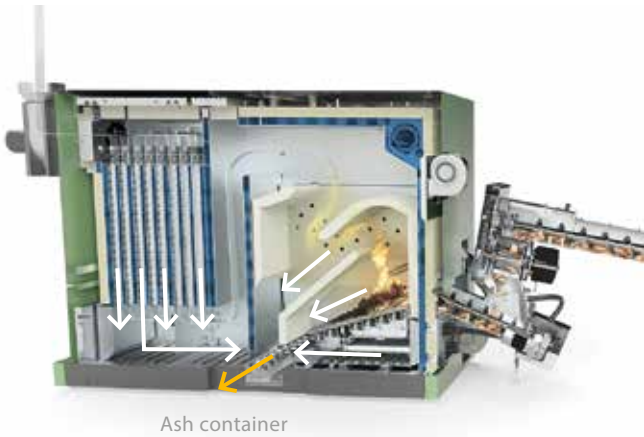
Bring the heating system onto the screen using a click of the mouse or simply change settings by touch on a smartphone or tablet. With the HDG WebControl systems, this can be done quickly and easily at any time.

- Secure data transfer (HTTPS standard)
- Direct network access (without "outside" connection) possible
- Query and change parameters, such as operating status, temperature, etc.
- View notifications – also via e-mail or SMS as an option
- Remote access by the heating engineer/HDG factory customer service is possible



## ASH REMOVAL SYSTEMS

HDG offers flexible ash removal systems for all requirement profiles. In this case, combustion residues can be quickly and easily disposed of, even if they come from difficult, particularly dry or slag-rich material. Since the ash is compressed in external containers, this results in long draining intervals.



On the HDG M175-240, thanks to the **integrated central ash removal system**, all residues that occur (combustion ash, flue ash and, in some cases, filter ash) are collected in just **one large-volume ash container**.



On the HDG M300-400, the ash is disposed of in the same way. However, the **combustion ash and heat exchanger ash** are conveyed through the split design, into **separate containers**.

### THE RIGHT SOLUTION FOR EVERY AREA OF APPLICATION

Depending on the area of application, various ash containers can be used. We work together with you to plan an individual solution.



**80 l ash box**  
Ideal for pellet operation and when limited space is available.



**230 l ash box with Euro interface**  
Ideal for agricultural enterprises. Can be transported using the front loader.



**Trolley**  
For easily transporting the 80 l ash box.



**400 l tipping trough**  
Large volume for industrial use. Can be transported using the forklift truck.



**Ascending auger**  
The ascending auger can be used to fill ash drums and tipping troughs from above.



**120 l or 240 l ash drum**  
Perfect for when the ash is removed by a disposal company.

# FINE-DUST SEPARATOR

HDG wood chip boilers also meet the highest standards when it comes to particulate matter emissions. When using conventional combustion material, an additional fine-dust separator is therefore superfluous. In individual cases, e.g. for difficult, high-ash fuels, in order to comply with the **tightened limit values**, we have developed an **optional fine-dust separator system**. The separator can be installed directly on the central-heating boiler and can also be subsequently retrofitted.

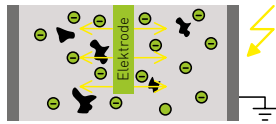
## FUNCTIONAL PRINCIPLE

The separator works on the electrostatic principle.

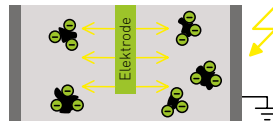
The following illustrations show the operating principle of the filter in schematic form:



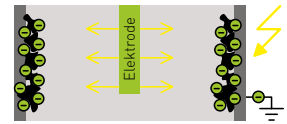
1. Fine-dust particles flow through the flue duct with the extract air.



2. A high-voltage electrode is used to release electrons.



3. Electrostatic forces move the electrons to the chimney wall. In doing so, the fine-dust particles are charged and also moved to the wall.



4. The fine dust collects on the wall and clumps into coarse flakes. These deposits are removed by the automatic cleaning systems.

## INTEGRATED SEPARATOR TECHNOLOGY FOR THE HDG M175-240E

On the HDG M175-240E, the filter can be integrated directly into the boiler. The fine dust particles that accrue are collected and conveyed to the central ash container just like all other combustion residues.





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- Pellet boiler
- Combined boiler for logs/oil or for logs/pellets
- Heat + power from wood – energy concepts with wood gasification
- HDG accumulator and system components



To protect our environment, we only use paints that do not contain mineral oils.  
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