



# Pellet boiler HDG K10-26 V2 operating principle with HDG pellet vacuum feeder system

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Pellet heating



The **HDG fabric pellet hopper** offers you an innovative fuel storage system. It allows you to create an optimised pellet storeroom with major construction work. The anti-static polyester fabric hopper is dust-tight and breathable – making it the ideal storeroom for moisture-sensitive pellets. You can find a selection of popular hopper sizes in Section D. The fabric pellet hopper is filled via a pressure-filling pipe; it does not require an air extraction pipe.

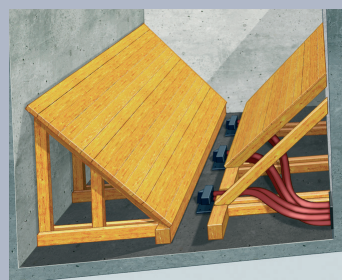
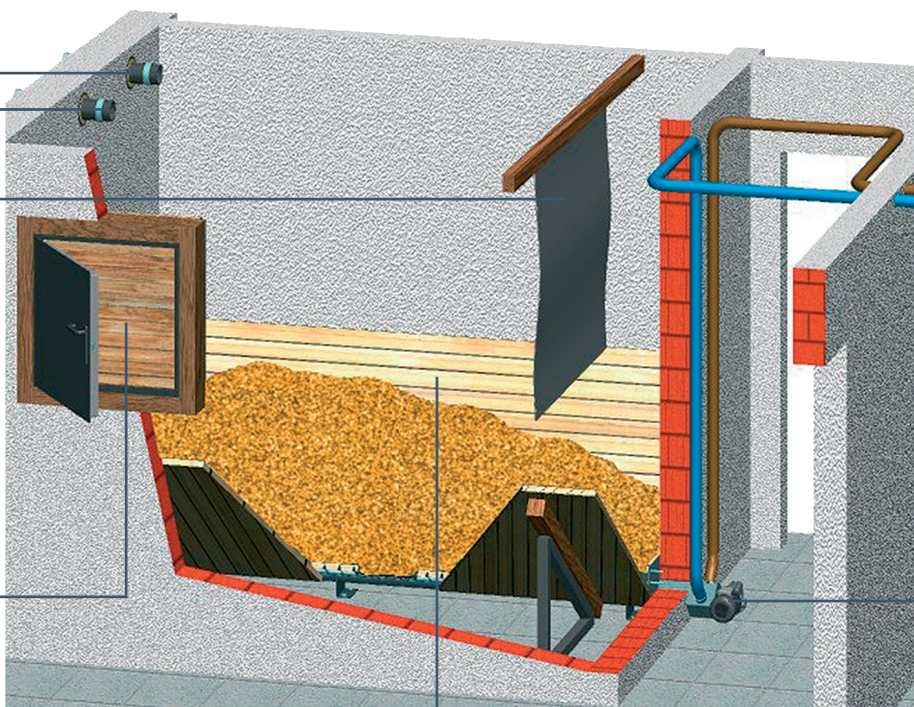
For connection to the HDG vacuum feeder system you require the HDG hose set (see Section D).



The **HDG pellet mole** is a fuel store extraction system for pellet boilers with vacuum fuel feed. It is suitable for use in combination with the HDG K10-60 pellet boiler. For the use of the HDG pellet mole, the fuel storeroom should ideally be square with a max. floor area of 2.5 x 2.5 m. The room height should be no less than 1.8 m and no more than 2.5 m. A certain remaining amount of fuel that cannot be extracted is inherent in the design and may vary according to the type of installation, the control parameters of the boiler or the pellet quality. For connection to the HDG vacuum feeder system you require the HDG hose set (see Section D).

If an existing, dry storeroom is used as the pellet store, the room is pressure-filled via an earthed **pressure-filling pipe**. The **pellet blast guard mat** placed opposite the pressure-filling pipe and approx. 30 cm from the wall protects both the pellets and the wall. The required **air extraction pipe** is for connecting the supplier's air extraction fan (230 V outlet socket required). The filling and air extraction pipes can be adapted to the required length by means of the extensions. The pellet boiler has to be switched off 30 minutes before the filling process is started.

The **access hatch** must be a dust-tight design. The slot-in boards for the hatch must be provided on site. The boards can be slotted in via the HDG door rails.



The **HDG hose junction** allows the pellets to be extracted simply and reliably via three selectable vacuum extractor probes using the HDG pellet vacuum feeder system (see Section D).

For installation of the **HDG transfer station** and the associated **fuel feed auger**, a **smooth wooden floor** must be constructed on site. The wooden floor must be installed at an angle of 35°. For easier installation of the wooden floor, HDG sloping floor supports can be used. The number required depends on the length of the storeroom. Depending on the thickness of the wooden floor, a structural timber, with optional sloping floor support if required, is fitted every 50 cm to 70 cm. The transfer station and the fuel feed auger are screwed onto the finished smooth wooden floor.





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Connected to the transfer station are the **DN 50 vacuum hoses**, which are attached by means of the hose clips supplied. The integrated copper braid wire is attached to the earth clips. The distance from the pellet boiler can be up to 20 m horizontally. The vacuum hoses have to be attached to the wall/ceiling by means of hose brackets provided on site. In addition, they are attached to the HDG vacuum feeder system using hose clips and likewise earthed. The HDG pellet vacuum feeder system with fuel auger makes optimum emptying of the **pellet storeroom** possible. Alternatively, the HDG hose junction with 3 vacuum extractor probes or the HDG pellet mole can also be used. In general, roughly 2/3 of the total storeroom volume can be used for storing pellets. Ideally, the total storeroom volume should be 0.9 m<sup>3</sup> per kW of boiler output. Please also take account of the relevant combustion boiler regulations for your country (according to the official recommendations for Germany, pellet storerooms with a capacity of 10,000 l or more (approx. 6.6 t) should be rated F90).

The **HDG pellet vacuum feeder system** consists of a zero-maintenance vacuum fan by which the pellets are pumped into a sealed intermediate hopper. Only when the vacuum fan is switched off do the pellets dropped down into the main fuel hopper. An integrated limit switch monitors the closed position of the intermediate hopper and simultaneously detects when the main hopper is full. The pellets are pumped on demand, taking account of the configurable lock-out times, into the main hopper, which has a capacity of approx. 71 kg.

The **HDG Control** boiler controller acts as the brains for the entire combustion process and controls all electronic processes on the HDG K10-26 pellet boiler. The required quantity of pellets and the associated flue draught fan speed are determined with the aid of the combustion chamber temperature sensor. By adding HDG Control expansion modules heating circuits can be conveniently controlled.

The infinitely adjustable **flue draught fan** keeps the system operating in the optimum output range. The integrated function monitoring feature provides for optimum operational safety and reliability. The flue exit can be at the top or rear.

The **fully automatic cleaning system** efficiently removes combustion residues from the upright rectangular heat exchanger surfaces. The falling ash is carried away to the external ash bin by the fully automatic ash extraction system.

The **stainless steel burner bowl** with fully automatic de-ashing function ensures a high level of operational safety and reliability combined with economical pellet consumption. Automatic ignition by means of ceramic heating elements enables fast and efficient boiler start-up. The integrated secondary air ducting with optimum air preheating ensures the lowest possible emission levels.

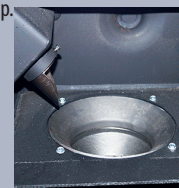


The pellets are fed into the burner bowl via a timer-controlled **fuel metering auger** and subsequent sloping fuel chute. The attached temperature monitor with integrated water reservoir provides for maximum operational safety and reliability.

The external **ash bin** can take the combustion and fly-ash from up to 4 t of pellets. The ash bin hooks onto the boiler and can be sealed with a cover for transportation.



The **fully automatic ash removal system** for the combustion and fly-ash provides for long service intervals. Control of the de-ashing system is linked to the cleaning of the upright heat exchanger surfaces.





# Pellet boiler HDG K10-26 V2

## Technical data

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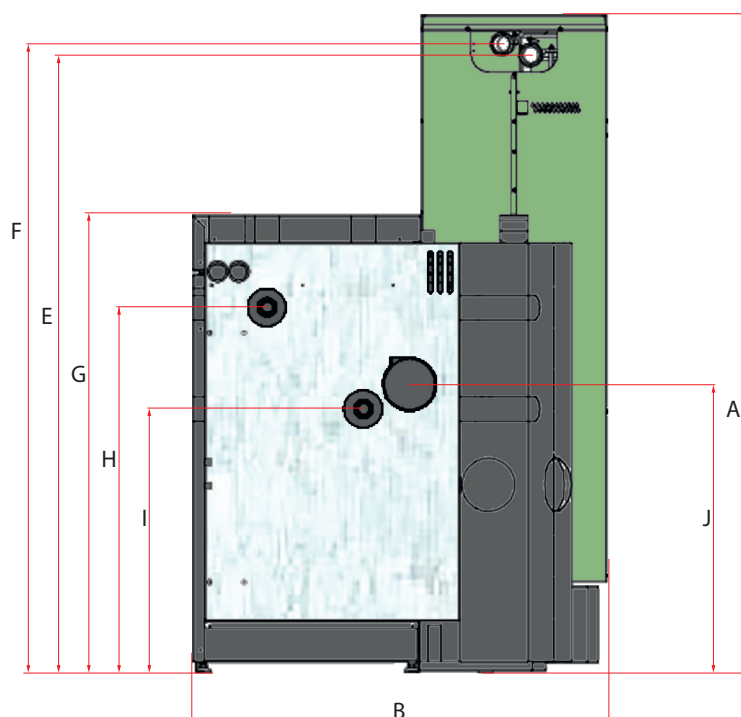
Pellet heating

Boiler type	Unit	Pellet boiler HDG K10 V2	Pellet boiler HDG K15 V2	Pellet boiler HDG K21 V2	Pellet boiler HDG K26 V2
<b>Performance data (measured according to DIN EN 303-5)</b>					
Nominal thermal power	kW	9.9	15.0	21.0	25.9
Minimum thermal power	kW	3.0	4.3	6.3	7.6
Boiler efficiency at nominal thermal output <sup>1)</sup>	%	94.4	93.8	93.9	93.9
Electrical power consumption at nominal thermal power	W	28	33	41	48
Electrical connection: Voltage/frequency	V/Hz	230/50	230/50	230/50	230/50
Electrical connection: Back-up fuse	A	16	16	16	16
<b>General boiler data</b>					
Boiler class		5	5	5	5
Maximum permissible operating pressure	bar	3	3	3	3
Maximum flow temperature (if operated with thermal store)	°C	60-75 (85)	60-75 (85)	60-75 (85)	60-75 (85)
Minimum return temperature (if operated with thermal store)	°C	60	60	60	60
Water capacity	l	39	39	47	47
Weight	kg	261	261	283	283
<b>Dimensioning data for flue calculation (DIN EN 13384-1)</b>					
Flue gas temperature (Tw) at nominal load	°C	98	119	127	134
Flue gas temperature (Tw) at lowest thermal power	°C	73	77	82	85
Flue gas mass flow at nominal load <sup>1)</sup>	kg/s	0.0058	0.0085	0.0118	0.0146
Flue gas mass flow at lowest thermal power <sup>1)</sup>	kg/s	0.0025	0.0034	0.0044	0.0049
Required flue draught (Pw)	Pa	5	5	5	5
Required flue draught (Pw) at rated minimum output	Pa	0	0	0	0
Diameter of flue pipe connection	mm	130*	130	130	130
CO <sub>2</sub> content at nominal thermal power <sup>1)</sup>	%	13.4	14.2	14.2	14.2
CO <sub>2</sub> content at lowest thermal power <sup>1)</sup>	%	9.7	10.1	11.3	12.1
<b>Water-side connections</b>					
Flow and return connections, int. thread	DN	25	25	25	25
Recommended minimum pipe dimensions	DN	25	25	25	25
Water-side resistance at nominal thermal power, 10K <sup>1)</sup>	Pa	360	760	1430	2150
Water-side resistance at nominal thermal power, 20K <sup>1)</sup>	Pa	100	210	390	580
<b>Other information</b>					
Noise emission level (Lp <sub>A</sub> at distance of 1 m, without vacuum system)	dB(A)	45.7	45.7	45.7	45.7
Min. air inlet cross section <sup>2)</sup>	cm <sup>2</sup>	150	150	150	150

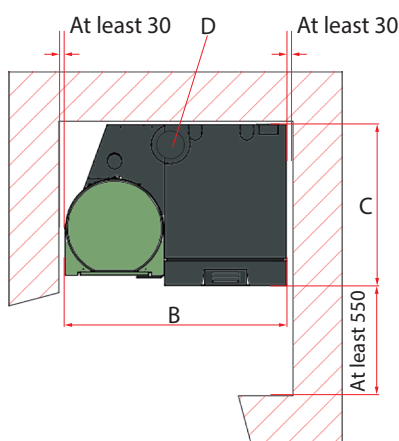
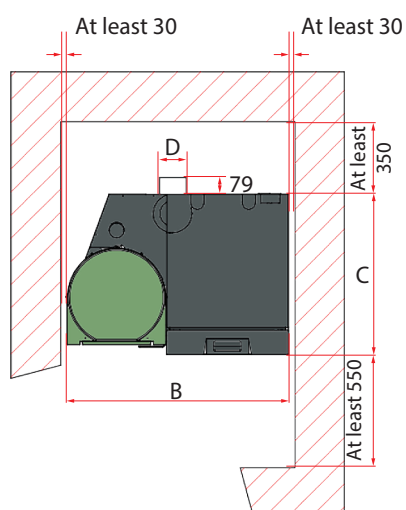
<sup>1)</sup> Figures as per type-approval test to DIN EN 303-5 by TÜV-Süd

<sup>2)</sup> Observe country-specific guidelines

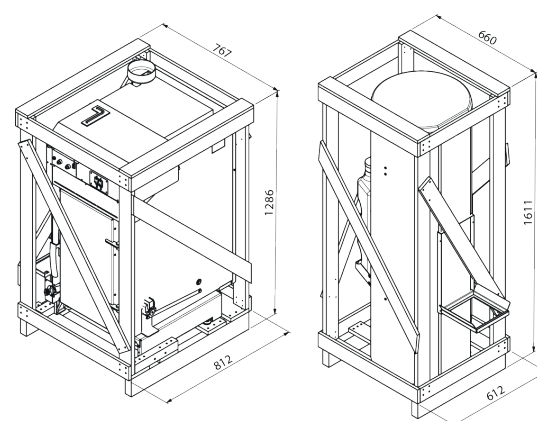
\* In borderline cases the flue connecting pipe dia. may be reduced to 100mm



Dim. (in mm)	Description	Pellet boiler HDG K10/15			Pellet boiler HDG K21/26		
		Manual filling	Vacuum delivery system	Week container	Manual filling	Vacuum delivery system	Week container
A	Height of boiler including fuel hopper	1453	1705	1470	1453	1705	1470
B	Overall width of boiler	1075	1075	1422	1075	1075	1422
C	Boiler depth excluding flue connecting pipe	710			780		
D	Flue pipe diameter	130					
E	Height to centre connect. for return air vacuum fan	-	1602	-	-	1602	-
F	Height to centre connect. for pellet feed vacuum fan	-	1630	-	-	1630	-
G	Height of boiler control panel	1153					
H	Height to centre of boiler flow connection	946					
I	Height to centre of boiler return connection	684					
J	Height to centre of rear flue connecting pipe	747					
	Weight of boiler body inc. accessories	215			236		
	Weight of fuel hopper	42	56	107	42	56	107



Minimum required access clearance is 671 mm  
Minimum boiler room height 1850 mm



Example packing unit sizes  
HDG K26 with pellet vacuum feed system