



Zeroridge Biomass Ed 17A

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Fabbri industrial space heating solutions



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WOOD PELLET BOILERS

Pellet boiler range overview

Wood pellet boilers

B

WOOD PELLET BOILERS



Zeroridge Biomass Ed 17A

Pellet boiler range

Wood pellet boiler range and feed system options

Model Range	Boiler range and heat output	Output kW	Wood pellet fuelling options	Pellet specification	Page	
	SHT Evo Aqua Domestic pellet stove with boiler Nominal heat output		Manual refill to internal 35 kg hopper Vacuum refill to internal 35 kg hopper	Wood pellets Din Plus Pellets EN Plus, A1, EN 14961-1:2010 Up to thickness/length according up to D06	 B5	
	Evo 9	9 kW				
	Evo 15	15 kW				
	HDG K Series Mk 2 15 -26 Lambda controlled automatic		Manual refill to local 150 kg hopper Vacuum refill to local boiler 80 kg hopper Via single pellet probe, K10 and K15 only	Wood pellets Din Plus Pellets EN Plus, A1, EN 14961-1:2010 Up to thickness/length according up to D06	 B11	
	Nominal heat output					
	K10	9 kW	Pellet probe with vacuum switch Auger with transfer station: Sack silo			
	K15	15 kW				
	K21	21 kW				
K26	25 kW					
	SHT PNA Thermocomfort 15 - 30 Latest generation pellet boiler Nominal heat output		Manual refill options Vacuum refill to intermediate hopper Pellet probe with vacuum switch Auger with transfer station: Sack silo	Wood pellets Din Plus Pellets EN Plus, A1, EN 14961-1:2010 Up to thickness/length according up to D06	 B17	
	Nominal heat output					
	PNA 15	15 kW				
	PNA 20	20 kW				
	PNA 25	25 kW				
PNA 30	30 kW					
	HDG Compact range 25-80 Pellet boiler		TBZ90 Vacuum refill to local boiler 100 kg hopper Via Auger with transfer station PSS Auger/spring arm with transfer station FRA/PSS Vacuum with Pellet mole: vacuum with sack silo TBZ150 sluice and auger: auger direct PSZ	Wood pellets Din Plus Pellets EN Plus, A1, A2 EN 14961-1:2010 Up to thickness/length according up to D06 with vacuum system D08 with TBZ150 direct auger	 B23	
	Nominal heat output					
	Compact 25	25 kW				
	Compact 35	35 kW				
	Compact 45	45 kW				
	Compact 50	50 kW				
	Compact 65	65 kW				
Compact 80	80 kW					
	HDG Compact range 100-200 Pellet boiler		TBZ80 vacuum refill to local boiler 100 kg hopper Via Pellet probe with vacuum switch Auger with transfer station PSS Auger/spring arm with transfer station FRA/PSS: Sack silo	Wood pellets Din Plus Pellets EN Plus, A1, A2 EN 14961-1:2010 Up to thickness/length according up to D06 with vacuum system D08 with TBZ150 direct auger	 B43	
	Nominal heat output					
	Compact 100	100 kW				TBZ150 sluice and auger: Auger direct PSZ
	Compact 115	115 kW				
	Compact 150	150 kW				
Compact 200	199/200 kW					
	HDG M Series 300-500 Pellet boiler		TBZ150 pellet FRA TBZ200 sluice and auger Auger direct GRA	Wood pellets Din Plus Pellets EN Plus, A1, A2 EN 14961-1:2010 Up to thickness/length according up to D08 with TBZ150 direct auger	 B61	
	Nominal heat output					
	M Series 350	350 kW				
	M Series 400	400 kW				
M Series 500	500 kW					

Pellet boiler range explained

Which pellet boiler to choose



Evo Aqua

Domestic stove with boiler



K Series Mk2

Domestic light commercial



PNA

Thermocomfort
Domestic light commercial



Compact 25-45

Domestic and/or commercial



Compact 65-80

Large domestic and/or commercial



Compact 100-200

Commercial and process



M Series 350-400

Commercial and/or industrial

Smaller domestic properties and smaller commercial installations

Evo Aqua

Suitable smaller domestic properties

Evo Aqua 9 kW

Very well insulated modern house. 2-3 bedrooms or more if of passive type construction. Older 1-2 bedroom property.

Evo Aqua 15 kW

Very insulated modern house 3-4 bedrooms or more if passive type construction. Older 2-3 bedroom property.

K Series Mk2

The K Series Mk2 range of pellet boilers are ideally suited to domestic properties or light commercial. Purpose designed for simple and easy operation both when fuelling with wood pellets or removing ash. As a guide the K Series Mk2 pellet boilers might suit:

K10 Very well insulated modern house 2-3 bedrooms or more if of passive type construction. Older 1-2 bedroom property.

K15 Very well insulated modern house 3-4 bedrooms or more if passive type construction. Older 2-3 bedroom property.

K21 Well insulated 3-5 bedroom property. Poor insulated 2-3 bedroom. Small low energy commercial application such as high street shop.

K26 Well insulated 4-6 bedroom house. Poor insulated 3-4 bedroom. Small low energy commercial, larger shop or small warehouse.

Compact 25-50 range

Commercially constructed pellet boiler for domestic applications
As a guide the Compact 25-50 range of pellet boilers might suit:

Compact 25 Well insulated 4-6 bedroom house with larger than average hot water demand and/or swimming pool. Small to medium commercial application.

Compact 35 as Compact 55, though larger all round application.

Compact 45 and 50 Medium to large country property or large urban house. Small school or rest home, manufacturing process with heat requirement or space heating.

PNA Thermocomfort

The PNA Thermocomfort pellet boilers are ideally suited to domestic properties or light commercial. As a guide PNA Thermocomfort pellet boilers might suit:

PNA 15 Very well insulated modern house. 2-3 bedrooms or more if of passive type construction. Older 1-2 bedroom property.

PNA 20 Very well insulated modern house 3-4 bedrooms or more if passive type construction. Older 2-3 bedroom property.

PNA 25 Well insulated 3-5 bedroom property. Poor insulated 2-3 bedroom. Small low energy commercial application such as high street shop.

PNA 30 Well insulated 4-6 bedroom house. Poor insulated 3-4 bedroom. Small low energy commercial, larger shop or small warehouse.

Larger domestic properties, commercial and industrial installations

Compact 65-80 range

Commercially constructed pellet boiler designed for domestic and commercial applications. As a guide the Compact 65-80 range of pellet boilers are ideally suited for:

Compact 65 Medium to large country property or large urban house. Small school, rest home, manufacturing process with heat requirement or space heating.

Compact 80 Large country property or large urban house. Medium rural primary school, rest home, manufacturing process with heat requirement or space heating.

Compact 100-200

Commercially constructed pellet boiler for heavy load applications with continuous long operation periods or regular stop and start applications. As a guide the Compact 100-200 range of pellet boilers are ideally suited for:

Large country or urban houses. Medium to large hotels, rest homes and medical care. Large shop or showroom properties, such as car, supermarket, shopping centres or out of town stores. Process applications such as wood fuel drying, food, animal, chicken production.

M Series 350-400

Industrially designed and built wood chip boiler for heavy work loads with nominal working hours of 4,000 hours per year.

As a guide the M Series range of wood chip boilers might suit:

Schools, large country estates. Medium to larger hotels, larger rest homes and medical care establishments.

Larger shopping centres or showroom properties, such as car, supermarket, shopping centres and out of town stores.

Process applications such as wood fuel drying, food, animal, chicken production.

District heating of housing estates, industrial complexes, etc.

Cascade solutions

Euroheat offer a unique option to link multiple boilers together to match maximum heating demand and minimum requirements. Fitting a single large boiler to meet maximum heat requirements results in very poor operation during most of the year when far less heat is required.

Up to 10 Compact boilers or M Series models can be cascaded together.

Almost any application with high energy input either regular or on erratic demand can be suitable for an HDG Compact boiler.

Pellet boiler range explained

Which pellet feed/refuel system to choose

Wood pellet boilers are simple to use and very reliable

Wood pellet boilers function like fossil fuelled boilers (oil and gas). When heat is required they will automatically ignite, feed fuel to the fire, self clean and switch off when not required. Pellet boilers are now an excellent alternative to traditional oil, propane and natural gas boilers.

Almost any heating system can be retrofitted with a wood pellet boiler, either as a stand-alone heat source or as a primary or back-up heat source in conjunction with another boiler. Wood pellets are a lower cost, CO2 neutral fuel and from a sustainable source. Typically they are made from compressed sawdust which can be sourced locally within the UK. Pellets are small, dry, uniform and energy dense and flow easily. Pellets are well suited to smaller and, in some cases, more sophisticated remote delivery mechanisms.

Pellet handling

Pellets are available in pre-packed bags (normally 10 or 15 kg) for ease of handling and convenience. Pellets can be bulk delivered and stored in the most simple and clean manner. Larger domestic models can be vacuum fed from a separate store.

Pellet feed systems

For bulk deliveries, pellets can be blown directly into a large on site fuel storage hopper. Then transferred by vacuum or auger feed automatically as energy is required. Whichever method of storage and delivery is chosen, the intelligent feeding systems will only transport the right quantity of pellets to the combustion chamber. Ignition is achieved electronically and the heating output adjusts continuously to the heating needs, at the most economical rate possible.

Benefits

- ◆ Fully replace fossil fuelled boilers
- ◆ Fully automatic control/feed systems
- ◆ Automatic ignition and cleaning
- ◆ Less bulky fuel and cleaner than log or wood chips
- ◆ Boilers suitable for all size applications
- ◆ Running costs are stable and reliable
- ◆ Supports UK economy with pellets that are produced locally
- ◆ Designed for long operational life

Considerations

- ◆ Pellet quality is important for good operation
- ◆ Higher installation cost compared to fossil fuel boilers
- ◆ Requires dedicated boiler house and fuel store
- ◆ Requires electrical supply
- ◆ Can require more maintenance than fossil fueled boiler
- ◆ Require occasional ash removal and inspection

Fuelling by hand

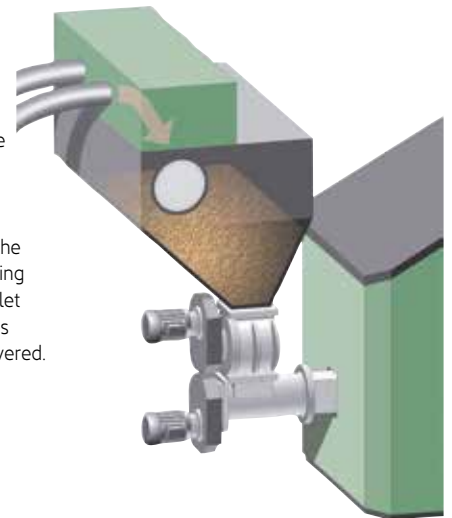
Pellets are stored in pre-packed bags (normally 10-15 kg) for ease of handling and convenience.

The bags can be purchased individually or delivered on a pallet, making them ideal for smaller domestic applications and eco properties. Refuelling commonly takes place every five or six days in midwinter.



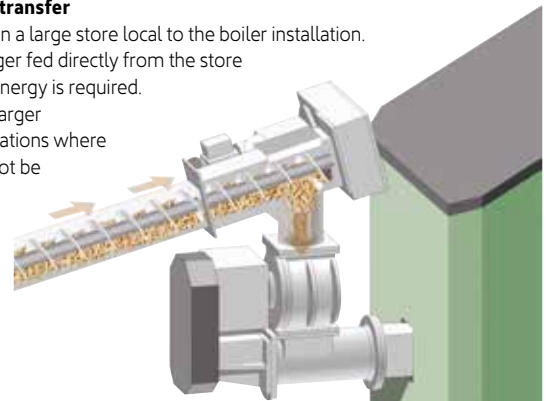
Automatic vacuum transfer

Pellets are stored remotely in a large purpose designed store or sack silo. Local to the boiler is small pellet hopper. When the pellet level of this hopper drops below the preset level, the system automatically refills using vacuum transfer from the main pellet store. Used in larger properties where pellets will be bulk delivered.



Automatic auger transfer

Pellets are stored in a large store local to the boiler installation. The pellets are auger fed directly from the store into the boiler as energy is required. Normally used in larger commercial installations where pellet quality cannot be guaranteed.



B

WOOD PELLET BOILERS



RHI (Renewable Heat Incentive)

The Domestic RHI is calculated on your properties size and heat requirement, successful applicants will receive "deemed" quarterly payments for seven years, but your boiler has to last for 20 years, replacement is not an option as this would be a new installation and the RHI payments may be withdrawn.



The Non domestic RHI is for a period of twenty years. To make full benefit of the payment structure for both domestic and commercial the boiler you choose must last the 20 year period or more without expensive repairs. Replacement is not an option as this would be a new installation and the RHI payments may be withdrawn.

Evo Aqua pellet boiler

A range of domestic pellet stoves with boiler



B

WOOD PELLET BOILERS



Pellet boiler for the home

The Evo Aqua is an ideal stove for the busy family who require reliable heat and hot water from a sustainable source. The stove comes in either a 9 or 15 kW output, with 90% of its output sent to water - making it an all year round solution. The Evo Aqua is also a highly efficient wood pellet boiler stove, featuring an integrated pellet hopper capable of holding up to 36 kg of pellets, giving days of use between refilling.

The Evo Aqua is designed for use in an unvented (sealed) system and used in conjunction with an accumulator. The stove automatically starts and stops itself according to the heating and hot water demand, and achieves over 90% efficiency. Furthermore, the Evo Aqua is MCS certified and is therefore eligible under the Renewable Heat Incentive (RHI).

With just 10% output to the room, the Evo Aqua is ideally suited to providing year round heating and hot water to low energy homes.

Choice of finishes

The Evo Aqua is available with a choice of front and side panels, from the clean and contemporary aluminium finish, to one of the three ceramic finishes in plum grey, vanilla, and earth.

The SHT Evo Aqua

- The Evo Aqua not only incorporates innovative combustion technology but the highest level of reliability and comfort
- Available in 9 kW or 15 kW
- Local pellet fuel options. Manual feed capacity of 36 kG

Standard features

- Patented combustion technology
- Automatic start/stop pellet boiler
- 36 kg pellet hopper
- 10% output to room, 90% to water
- Choice of aluminium or ceramic sides
- Automatic ash removal grate
- Patented combustion sensor
- Microprocessor controlled combustion
- Up to 94% efficient

HDG standards and approvals

- Type tested to EN 303-5 class 3
- MCS approved
- HETAS approved
- The Evo Aqua qualifies for the Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Recommended minimum accumulator size
 - Evo Aqua 9 400 litres
 - Evo Aqua 15 500 litres



Model	Colour	Order No	Price ex VAT	PG
Evo Aqua 9 kW	Aluminium	RKE301	5,789.00	40
Evo Aqua 9 kW	Earth	RKE302	6,146.00	
Evo Aqua 9 kW	Vanilla	RKE303	6,146.00	
Evo Aqua 9 kW	Plum Grey	RKE304	6,146.00	
Evo Aqua 15 kW	Aluminium	RKE401	5,789.00	
Evo Aqua 15 kW	Earth	RKE402	6,146.00	
Evo Aqua 15 kW	Vanilla	RKE403	6,146.00	
Evo Aqua 15 kW	Plum Grey	RKE404	6,146.00	

System components	Order No	Price ex VAT	PG
Integrated return temperature control kit	SHT4002	429.00	41
Accumulator sensors (pair of for upper and lower accumulator)	SHT4005	96.00	
Boiler safety module up to 50 kW	PL2001	48.00	
Bi-Metal indicator thermometer (minimum 4 per accumulator)	PL2017	19.00	
File pocket (two required per boiler)	PL2009	9.00	



Aluminium



Plum Grey



Vanilla



Earth

Evo Aqua kit pricing

Equipment kit prices and order codes

B

WOOD PELLET BOILERS



Evo Aqua 9	Order code	£ ex VAT
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Evo Aqua 9 kW Aluminium Kit	TP1024	7,494.00
Evo Aqua 9 kW Earth Kit ceramic finish	TP1025	7,851.00
Evo Aqua 9 kW Vanilla Kit ceramic finish	TP1026	
Evo Aqua 9 kW Plum Grey Kit ceramic finish	TP1027	

Includes:
Return temperature control kit, accumulator sensors, boiler safety module, thermal safety device, sensor pockets, draught stabilisers, flue starter kit, bi-metallic temperature sensors, 400 litre accumulator, 60 litre expansion vessel

The HDG K Series boilers come with:
A full 5 year SHT warranty • See page M11 for full details

Also included free of charge
Purpose designed wall mounted record keeping and service equipment centre **5 year SHT warranty**

Options
The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.

Uniko Solar Thermal Pack	Order code	£ ex VAT	PG
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Uniko Biomass Package - 4.04m ² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)	ST3001	1,938.00	24
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Mounting options











On-roof, parallel	Flat roof, 45	In-roof mounting

Evo Aqua kit pricing

Equipment kit prices and order codes

Evo Aqua 15		Order code	£ ex VAT
	Evo Aqua 15 kW Aluminium Kit	TP1028	7,734.00
	Evo Aqua 15 kW Earth Kit ceramic finish	TP1029	8,091.00
	Evo Aqua 15 kW Vanilla Kit ceramic finish	TP1030	
	Evo Aqua 15 kW Plum Grey Kit ceramic finish	TP1031	
<p>Includes: Return temperature control kit, accumulator sensors, boiler safety module, thermal safety device, sensor pockets, draught stabilisers, flue starter kit, bi-metallic temperature sensors, 500 litre accumulator, 60 litre expansion vessel</p> <p>The HDG K Series boilers come with: A full 5 year SHT warranty • See page M11 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre 5 year SHT warranty</p>			
<p>Options The Solar Thermal Pack comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.</p>			



Uniko Solar Thermal Pack		Order code	£ ex VAT	PG					
	<p>Uniko Biomass Package - 4.04m² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)</p>	ST3001	1,938.00	24					
	<p>Mounting options</p> <table border="1"> <tr> <td>  </td> <td>  </td> <td>  </td> </tr> <tr> <td>On-roof, parallel</td> <td>Flat roof, 45</td> <td>In-roof mounting</td> </tr> </table>							On-roof, parallel	Flat roof, 45
									
On-roof, parallel	Flat roof, 45	In-roof mounting							

Evo Aqua pellet boiler

Boiler design and features

Natural heat

Neither unpleasant noises nor dust from an ambient air fan is produced thanks to the natural distribution of hot air. The heat is distributed through natural convection in the same way as a woodburning stove. An optional ambient air fan can be purchased for those requiring faster heat distribution.

Fully Automated Operation

The stove's fully automatic operating function allows it to be used extremely easily and with maximum operating comfort. The stove can also be programmed which means you can, for example, set it to switch on automatically on at 5 o'clock in the morning and switch off at 10 o'clock at night.

Combustion chamber

The extra-thick material used for the combustion chamber prevents it from warping and ensures your stove can be used for many years to come. **Odourless Coatings** Our heat-resistant special coatings guarantee an odour-free heating environment from the very outset. Furthermore, our coatings are also characterised by their excellent quality and long service life.

Prolonged Burning Period Take advantage of a prolonged burning period from just one fill! The time between refills has been extended thanks to the particularly large pellet tank.

Conveniently operate the pellet stove from any place and at any time by using the telephone **remote control** function.

The innovative **pellet delivery system** ensures the operating noises generated by conventional pellet delivery systems has been omitted completely.

Cast iron doors seal completely tightly and do not distort, even when subjected to high temperatures. This enables the air to circulate optimally in the stove without any unwanted external air. Maximum combustion efficiency is ensured, sooting of the glass is prevented and fuel is utilised in an optimum manner.

The **pellet screw conveyor** moves pellets, on demand from the hopper into the burner chamber by way of an auger quickly and efficiently ensuring optimum burning at all times.

Pellet combustion chamber with resistance- glow ignition (270W).

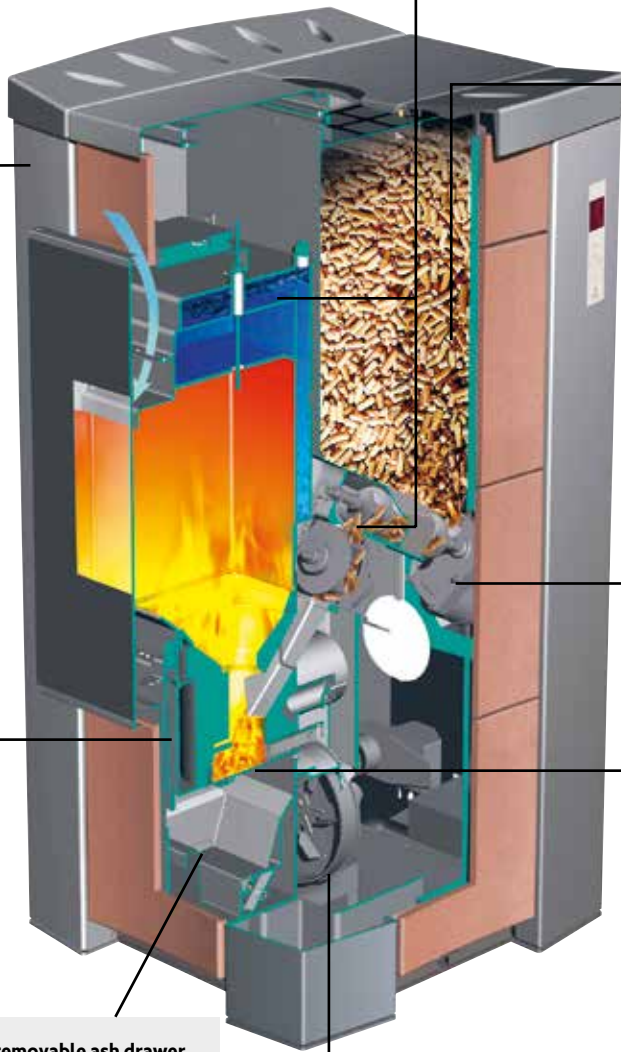
The **innovative combustion technology** our ensures minimal emissions, which therefore ensures a very high level of environmental compatibility.

Automatic ash grate cleaning and removable ash drawer

Ash is automatically dropped into the ash drawer to aid clean and easy ash removal. The removable ash drawer enables the stove to be cleaned easily with a single hand movement.

Flue gas fan

The integrated variable boiler fan ensures the system always operates in the optimum power range which ensures continued reliability.



B

WOOD PELLET BOILERS

Evo Aqua fuel delivery systems

Fuel delivery options for the Evo Aqua



Manual feed

The pellet hopper will take 36 kg of pellets. These pellets simply pour into the top of the Evo Aqua. These get transferred from the store to the boiler through the hopper and are burned.

These hoppers are ideal for installations where the heat demand is relatively low and lifestyle permits weekly refuelling. Either system can be expanded at a later date to utilize the Visionconvey suction system.



Suction probes

Pellets are conveyed by means of vacuum air movement from a remote store to the local store of the boiler. Normally three pellet probes are located in the bottom of a bulk wood pellet fuel store. These probes work independently to each other as they are controlled via a master vacuum switch. The controller uses intelligent decisions to change which probe the pellets are currently being drawn from ensuring equal distribution.



Visionconvey air suction system with pellet store

The Visionconvey air suction system enables the siting of a bulk pellet store up to 20 metres away from the boiler. The pellet store is available in a number of sizes to suit individual site requirements. It can be installed indoors or outdoors.

K Series Mk2 pellet boiler K10-K15-K21-K26

Boiler information



10 YEAR WARRANTY

Pellet boiler with automatic fuel feed from on board fuel store:

Type tested to EN 303-5, Boiler class 3 (top classification).
Suitable for installation in closed hot water systems according to EN 12828.

The K21, K26 models have integrated safety heat exchanger in the boiler body. Pressure tested, welded boiler body from independently tested quality steel with vertical heat exchanger channels.

- The compact design has very small footprint
- All water connections to the boiler are at the rear
- Boiler casing made of powder coated steel assembled on the boiler
- RAL colours - Green (RAL 6011) Traffic grey (RAL 7043)
- Easy to remove vacuum motor chamber.

Combustion technology:

High-temperature resistant stainless steel burner bowl with patented automatic cleaning.

Fully automatic dual ignition with two heaters.
Combustion and power control by combustion chamber temperature sensor and speed-regulated induced draft fan.

Wood pellet specification Ø 6 mm, length 40 mm according to EN plus, A1 or pellets DIN plus.



The HDG K Series 10-26 Mk 2 range is an automatic pellet-firing system of the latest innovation with a small footprint.

- The K Series Mk2 not only incorporates innovative combustion technology but the highest level of reliability and comfort. The modern design underlines the innovative design of K Series. This includes standard automatic ignition, the integrated IC engine and power control, automatic cleaning of the heat exchanger, as well as the patented burner cleaning system
- The K Series Mk2 offers three types of wood pellet fuelling. Option 1 and 2 are by manual feed from locally stored pellets. Option 3, automatic refuelling of the fuel hopper by vacuum transfer system
- Cleaning system: Motorised turbulators automatically clean the heat exchangers, allowing efficiencies of 93%. Fully automated ash removal by two augers. Ash from the combustion chamber and the heat exchanger surfaces are integrated into a single ash pan
- Combustion control: microprocessor controller with user-friendly full-text display. Fully automatic operation. From demand, ignition, warm up, full automatic combustion control via temperature sensors. Automatic cleaning and deashing. Controller informs user of service requirements
- Heating control without accumulator or buffer installation. This is only possible if the system meets strict minimum heat demands. Minimum constant heat demand for models K10-K15 = 5.5 kW, for K21-K26 = 7.5 kW other wise installation with an accumulator/buffer or thermal store is mandatory
- Basic controller with accumulator/buffer. The K Series Mk2 basic controller offers a simple method of installation where the accumulator activates the demand to switch the K Series boiler on/off. This allows for the installation of common UK installation practices such as "S" or "Y" plan heat distribution systems
- Touch Screen Controller: when the K Series Mk2 boiler is installed with the Touch Screen Controller, a world of advanced heating control is available. These include options for weather compensated heating as standard for 3 heating circuits. Hot water production with integrated with buffers, (thermal stores), hot water cylinders or hot water production stations. Integration with thermal solar panels, without the requirement of additional controllers and much more. (See section H for more information)
- Local pellet fuel options: manual feed capacity of 232 litre (150 kg) Simple drop on vacuum refuel system for a 80 kg capacity. This system can still be manually filled

HDG standards and approvals

- Type tested to EN 303-5 class 3
- MCS approved
- HETAS approved
- The HDG K Series Mk2 qualifies for the Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Recommended minimum accumulator size K10-15 400 litres, K21-26 500 litres




Touch Screen Control

The HDG Touch Control is at the front of the entire control strategy for the touch controller range. Connected via MODBUS to boiler specific control modules it receives information from all sensors and controls outputs to all electrical components in the boilers. The result is a clear and concise interface which displays and controls all functions including the fuel feed, combustion, power regulation of motors, automatic cleaning, ash removal, accumulator management and if installed heating distribution and solar thermal.



The standard 4.3" industrial quality touch screen is designed to work in boiler room conditions, in low light levels and a dusty environment, and can even be used while wearing gloves, unlike standard touch controls. An upgrade to 7" version with remote access is a option.














K Series Mk2 pellet boiler K10/K15/K21/K26

Equipment prices and order codes

K Series pellet boiler with manual refilling lid (approximate capacity of 107kg)		Order code	£ ex VAT	PG	Page
	HDG K10 pellet boiler 3-9.9 kW with manual refuelling lid	HDG2180	9,005.00	40	
	HDG K15 pellet boiler 4.4-15 kW with manual refuelling lid	HDG2181	9,420.00		
	HDG K21 pellet boiler 6.3-21 kW with manual refuelling lid	HDG2182	9,835.00		
	HDG K26 pellet boiler 7.5-25.9 kW with manual refuelling lid	HDG2183	10,145.00		
K Series pellet boiler with manual refilling lid (approximate capacity of 200kg)		Order code	£ ex VAT	PG	Page
	HDG K10 pellet boiler 3-9.9 kW with manual refuelling lid	HDG2184	9,120.00	40	
	HDG K15 pellet boiler 4.4-15 kW with manual refuelling lid	HDG2185	9,535.00		
	HDG K21 pellet boiler 6.3-21 kW with manual refuelling lid	HDG2186	9,950.00		
	HDG K26 pellet boiler 7.5-25.9 kW with manual refuelling lid	HDG2187	10,260.00		
K Series pellet boiler with vacuum fill system		Order code	£ ex VAT	PG	Page
	HDG K10 pellet boiler 3-9.9 kW with pellet suction system	HDG2188	10,460.00	40	
	HDG K15 pellet boiler 4.4-15 kW with pellet suction system	HDG2189	10,870.00		
	HDG K21 pellet boiler 6.3-21 kW with pellet suction system	HDG2190	11,285.00		
	HDG K26 pellet boiler 7.5-25.9 kW with pellet suction system	HDG2191	11,600.00		
Controls		Order code	£ ex VAT	PG	Page

Note, control sensors depending on type of installation are required. To determine requirement contact the Euroheat design team

	HDG Touch Control XL 7" touchscreen, integrated Web server with email and SMS. Surcharge with new boiler purchase instead of standard controller	HDG3458	435.00	40	
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Heating water distribution		Order code	£ ex VAT	PG	Page
       	Return temperature kit with energy efficient pump Includes cast iron pre-connected assembly for fast installation. Actuator SM 4.6, 2 x ball valves DN 25. Includes insulation, 180 mm, DN 25	PL2024	487.00	41	
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation. DN25, up to 50 kW	PL2001	48.00		
	Expansion vessel 60 litre. Sized to suit local installation of boiler and accumulator	EV4702	91.00		
	K 10 Accumulator 200 litres minimum type H2O Flow listed recommended 300 litres	TS4701	544.00		
	K 15 Accumulator 300 litres minimum	TS4702	579.00		
	K 21 Accumulator 400 litres minimum	TS4703	644.00		
	K 26 Accumulator 500 litres minimum	TS4704	684.00		
Accumulator temperature gauges Minimum 2 recommended	PL2017	19.00			

K Series Mk2 pellet boiler

Boiler design and features

Fuel supply options

Hand feeding

With this option the K Series Mk2 boiler is fuelled with wood pellets normally supplied in 10 to 15 kg bags. The local storage hopper fitted inside the K Series Mk2 boiler can hold 150 kg of ready to use fuel. In many cases this allows the boiler to operate for several days until refuelling is required.

Bulk wood pellet storage

Several different options are available depending on the volume of wood pellet storage required and the suitable local building space. These include sack silo options, combined auger/vacuum, suction probe/vacuum and pellet mole.

The **HDG vacuum system** includes a maintenance-free suction turbine, through which the pellets are sucked from the remote store into a tightly closed intermediate store within the boiler. Only when the suction turbine is switched off do the pellets fall into the actual 80 kg K Series integrated fuel store. An integrated limit switch monitors the closed position of the intermediate container door.

The **HDG Touch Control** is at the front of the entire control strategy for the touch controller range. Connected via MODBUS to boiler specific control modules it receives information from all sensors and controls outputs to all electrical components in the boilers.

The standard 4.3" industrial quality touch screen is designed to work in boiler room conditions, in low light levels and a dusty environment, and can even be used while wearing gloves, unlike standard touch controls. An upgrade to 7" version with remote access is a option.

The **variable boiler fan** ensures the system operates in the optimum power range. The integrated monitoring function ensures continued reliability.

The integrated automatic **flue way cleaning system** ensures excellent thermal efficiency between service periods. The build up of any ash on the water jacket exchanger surfaces will reduce the efficiency and increase running costs. The twisted auger style turbulators are activated by the on board controller. These scrape the water jacket surfaces automatically. The ash residue is collected and transferred to the on board ash container via an auger.

The **stainless steel burner chamber** includes fully automatic cleaning system which ensures high reliability and low pellet consumption. The ceramic heaters provide fast and efficient ignition. The integrated secondary air management with optimal air preheating ensures very low emissions.



The wood pellets are fed on demand to the burner chamber by an auger. The **auger chamber** includes a safety temperature sensor which if required will release water to reduce any excess temperature.

The **integrated ash container** is simple and easily removed. The container can hold the ash of up to 4 tons pellets, which in many cases is the fuel consumption of one whole year.



The fully automated combustion ash and **fly ash auger system** ensures long service intervals. Ash which is cleaned from the heat exchanger surfaces or ash from the residue of combustion is augered into a large integrated ash pan.

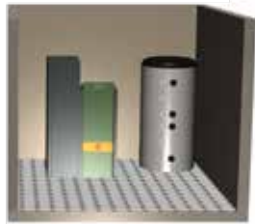
K Series Mk2 fuel delivery systems

Fuel delivery options for the K Series



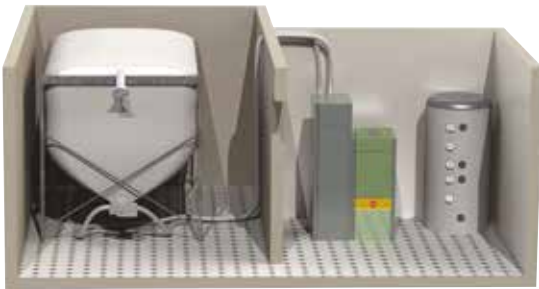
Fuelling by hand

You have the option of fuelling by hand directly into the hopper. Useful for those people who do not have the room for large pellet storage.



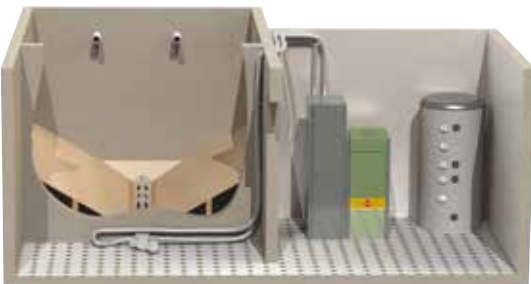
Pellet Silo

With the ability to feed a K Series Mk2 boiler the Pellet Tank has been design to offer the smallest of footprints. Dry storage allows perfect vacuum feed delivery.



Modular pellet storage system

Purpose designed modular pellet store which, when installed with the K Series Mk2 vacuum transfer system, allows the bulk pellet held in a pellet store to be transferred by vacuum as and when required to the local pellet hopper of the K Series Mk2 boiler. The vacuum tubes from the K Series Mk2 boiler connect to the pellet store via a pellet vibration head, which ensures a steady and regular pellet supply into the vacuum flow.



Auger combined vacuum system

Probably the most common and recommended system for transfer of wood pellets from a bulk store to the remote K Series Mk2 boiler installation location. A new or existing room is converted to wood pellet storage which incorporates an auger at the base of the store. The store has sloping sides so the wood pellets slide to the centre lower position where the auger is located. The K Series Mk2 automatically calculates when the local pellet hopper requires refilling. The store can be located quite some distance from the K Series Mk2 boiler. Request details from your installer or the Euroheat design team.



Probe combined vacuum system




Similar in concept to the auger vacuum system except the pellets are encouraged into the filling tubes by low pressure air. In its simplest form a single vacuum probe is placed in the base of a small pellet store. This offers limited fuel storage, though more than with hand filling. More commonly three vacuum probes are located in the base of a purpose built fuel store with sloping sides. A vacuum probe hose switch is installed in line between the K Series Mk2 boiler and the fuel store which it automatically controls the hose switch selecting which probe it wishes to take pellet from based on intelligent software.

K Series Mk2 kits


Equipment prices and order codes

B

WOOD PELLET BOILERS


K10 Series Mk2 boiler for manual fill		Order code	£ ex VAT
	K10 pellet boiler manual fill kit (approximately 107 kg capacity) with 200 litre thermal store	TP1032	10,922.00
	K15 pellet boiler manual fill kit (approximately 107 kg capacity) with 300 litre thermal store	TP1033	11,372.00
	K21 pellet boiler manual fill kit (approximately 107 kg capacity) with 400 litre thermal store	TP1034	11,867.00
	K26 pellet boiler manual fill kit (approximately 107 kg capacity) with 500 litre thermal store	TP1035	12,217.00
	K10 pellet boiler manual fill kit (approximately 200 kg capacity) with 200 litre thermal store	TP1152	11,037.00
	K15 pellet boiler manual fill kit (approximately 200 kg capacity) with 300 litre thermal store	TP1153	11,487.00
	K21 pellet boiler manual fill kit (approximately 200 kg capacity) with 400 litre thermal store	TP1154	11,982.00
	K26 pellet boiler manual fill kit (approximately 200 kg capacity) with 500 litre thermal store	TP1155	12,332.00
 Includes: Accumulator management system, return temperature control kit, boiler safety module, draught stabiliser, flue starter kit and stand, bi-metallic temperature gauges, brass cap valve, accumulator and expansion vessel The HDG K Series boilers come with: A full 10 year HDG warranty • See page M12 for full details Also included free of charge Purpose designed wall mounted record keeping and service equipment centre			


Options
 The K Series Mk2 Touch Control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

Heating Weather Compensation and Hot Water Pack		Order code	£ ex VAT
	K Series Mk2 weather compensated pump station set Temperature controlled mixed pump station, unmixed pump station, starter and extension distributors, EM8 control centre, intelligent room thermostat, flow sensor, immersion sensor	TP2003	919.00

K Series Mk2 kits

Equipment prices and order codes

K Series Mk2 pellet boiler for vacuum fill		Order code	£ ex VAT
	K10 pellet boiler vacuum fill kit with 200 litre thermal store	TP1036	12,494.00
	K15 pellet boiler vacuum fill kit with 300 litre thermal store	TP1037	12,939.00
	K21 pellet boiler vacuum fill kit with 400 litre thermal store	TP1038	13,419.00
	K26 pellet boiler vacuum fill kit with 500 litre thermal store	TP1039	13,774.00
<p>Includes: Accumulator management system, return temperature control kit, boiler safety module, draught stabiliser, flue starter kit and stand, bi-metallic temperature gauges, brass cap valve, accumulator and expansion vessel</p> <p>The HDG K Series boilers come with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			

Pellet Probe Triple Pack		
	HDG vacuum hose set 20 meter roll	HDG2109 215.00
	Vacuum switch with 3 pellet probes	HDG2144 1,045.00
		Total 1,260.00

Options
The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.

Uniko Solar Thermal Pack		Order code	£ ex VAT	PG
	Uniko Biomass Package - 4.04m ² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)	ST3001	1,938.00	24

Mounting options

		
On-roof, parallel	Flat roof, 45	In-roof mounting

SHT PNA Thermocomfort pellet boiler

Boiler information

B

WOOD PELLET BOILERS



Pellet boiler for the home and business

The PNA Thermocomfort features both Lambda sensor and flame temperature sensors for perfect combustion and maximum efficiency at all times. The high-grade refractory combustion chamber enables effective residual heat to remain for many hours, reducing the need for the electrical ignition and speeding up the start up phase.

The SHT PNA Thermocomfort

- The PNA Thermocomfort not only incorporates innovative combustion technology but the highest level of reliability and comfort. The modern design underlines the innovative design of PNA Thermocomfort. This includes standard automatic ignition, Lambda combustion control, automatic cleaning of the heat exchanger, as well as primary and secondary air control
- The PNA Thermocomfort offers two types of wood pellet fuelling. Option 1 is by manual feed from locally stored pellets. Option 2, automatic refuelling of the fuel hopper by vacuum or auger transfer system
- Cleaning system: motorised turbulators automatically clean the heat exchangers, allowing efficiencies of 93%. Fully automated ash removal by tipping grate into ash pan
- Combustion control: microprocessor controller with user-friendly full-text display. Fully automatic operation. From demand, ignition, warm up, full automatic combustion control via temperature sensors. Automatic cleaning and deashing. Controller informs user of service requirements
- Heating control without accumulator or buffer installation. This is only possible if the system meets strict minimum heat demands. Minimum constant heat demand for models PNA 15-20 = 6 kW, for PNA 25-30 = 9 kW otherwise installation with an accumulator/buffer or thermal store is mandatory
- Basic controller with accumulator/buffer. The PNA Thermocomfort controller offers a simple method of installation where the accumulator activates the demand to switch the boiler on/off. This allows for the installation of common UK installation practices such as "S" or "Y" plan heat distribution systems
- Integrated system control: the PNA Thermocomfort provides the option of advanced heating control including weather compensated heating for 2 heating circuits, hot water production with integrated with buffers, (thermal stores), hot water cylinders or hot water production stations. Integration with thermal solar panels, without the requirement of additional controllers and much more. (See section H for more information)
- Local pellet fuel options. Manual feed capacity of 170 litre (80 kg). Vacuum transfer system can be retrofitted

HDG standards and approvals

- Type tested to EN 303-5 class 3
- MCS approved
- HETAS approved
- The PNA Thermocomfort qualifies for the Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/Gj particulate matter and 150g/Gj NOx
- Recommended minimum accumulator size

PNA 15	300 litres	PNA 25	400 litres
PNA 20	300 litres	PNA 30	500 litres



Touch screen










The SHT touch controller is the very latest in boiler touch screen technology. The purpose design interface can be ordered as an alternative to the standard button controller or as an upgrade to current TC3 models. The simple and easy menu is simple to navigate. The home screen gives a clear overview of the current boilers status including boiler, buffer and heating temperatures. The current boilers status or when it is next likely to run. Simply pressing on the heating circuit button changes the screen where any time or temperature settings can be changed. The operating hours screen advises when next service is due or the diagnosis page for a more in depth over view of the combustions conditions.

SHT PNA Thermocomfort pellet boiler

Equipment prices and order codes

Model	Heat output	Order No	£ ex VAT	PG	Page
	PNA 15 Thermocomfort	15kW	SHT2020	8,670.00	40
	PNA 20 Thermocomfort	20kW	SHT2021	8,670.00	
	PNA 25 Thermocomfort	25kW	SHT2022	8,670.00	
	PNA 30 Thermocomfort	30kW	SHT2023	8,670.00	
	Touch screen option. Surcharge with new boiler purchase instead of standard controller				

Note, control and heating extensions see section H or contact the Euroheat design team

Heating water distribution	Order No	£ ex VAT	PG	Page
	Return temperature kit with energy efficient pump Includes cast iron pre-connected assembly for fast installation. Actuator SM 4.6, 2x ball valves DN 25. Includes insulation, 180 mm, DN 32	PL2028	545.00	
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation. DN25, up to 50kW	PL2001	48.00	
	Expansion vessel 60 litre. Sized to suit local installation of boiler and accumulator	EV4702	91.00	
	PNA 15 Accumulator 300 litres minimum recommended 400 litres	TS4702	579.00	41
	PNA 20 Accumulator 300 litres minimum recommended 400 litres	TS4702	579.00	
	PNA 25 Accumulator 400 litres minimum recommended 500 litres	TS4703	644.00	
	PNA 30 Accumulator 500 litres minimum recommended 500 litres	TS4704	684.00	
	Accumulator temperature gauges Minimum 4 recommended	PL2017	19.00	

PNA Thermocomfort pellet boiler

Boiler design and features

B

WOOD PELLET BOILERS

Automatic heat exchanger cleaning

Fully automatic cleaning of the heat exchangers without the need for manual operation.

Control board

Complete control of the system including all stages of combustion and heating system with weather compensation.

Speed-induced draft fan

Automatically adjusts the fan speed to ensure optimum combustion conditions.

Cleaning turbulators

Ensure the heat exchangers of the boiler are kept clean for continuously high degree of efficiency and the lowest fuel consumption.

Stainless steel tilting grate

High grade material ensures maximum working life whilst automatic tipping enables months of use without the need to attend to the boiler.

Pellet insertion auger with Rotary sluice

Modulates the exact quantity of pellet required at each stage of combustion.

Primary air motor

Automatically adjusts the primary air for optimum efficiency.

Secondary air motor

Automatically adjusts the secondary air for optimum efficiency.

Automatic deashing

The patented deashing system transfers the combustion residues into the integrated ash pan.

Refractory combustion chamber

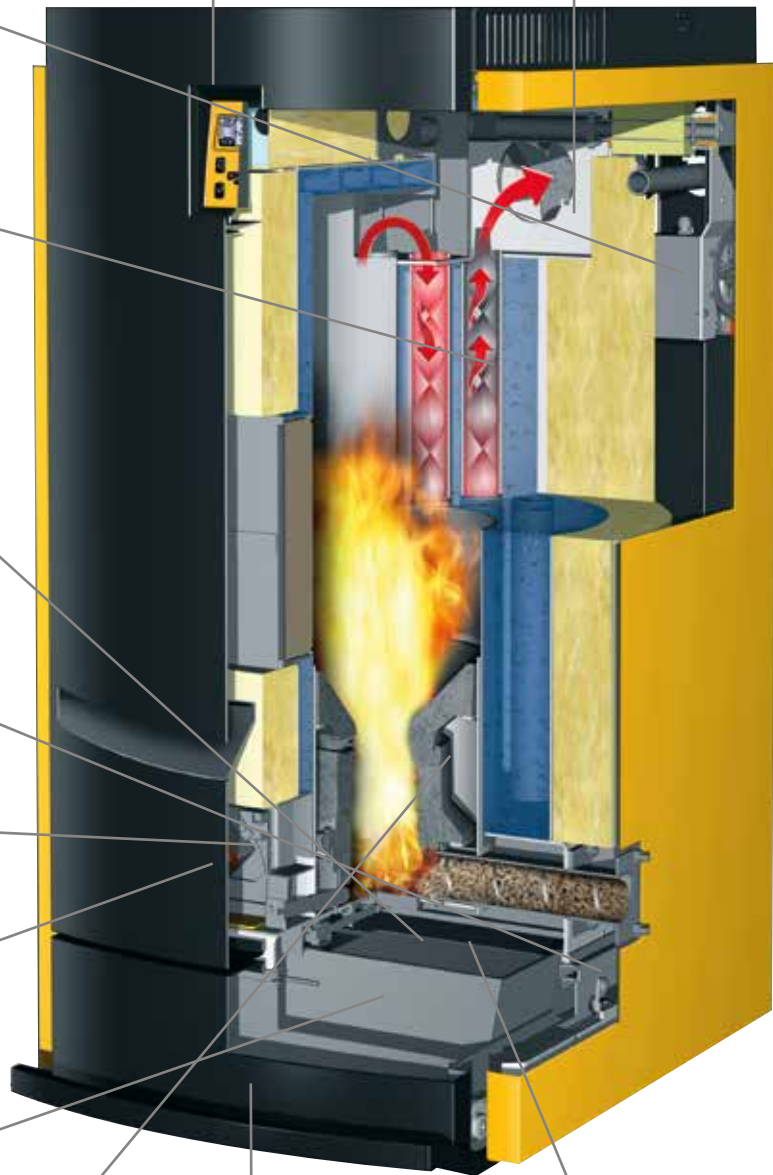
Featuring silicone carbide composite material developed exclusively for the high temperatures needed for the complete combustion of the fuel.

Ash pan drawer

Large integrated ash pan for extended periods between emptying and quick and easy emptying.

Low energy ignitor

The low energy ceramic ignitor ensures a quick and low cost ignition.





Ease of use

The automatic heat exchanger cleaning and the patented deashing system allows the boiler to run for extended periods whilst maintaining the highest efficiencies. Can be coupled with one of many pellet storage solutions as shown right.



Easy Display

A quick glance at the boiler display provides all the useful information on the system including current energy in the accumulator, operating status of the boiler, the boiler temperature and outside temperature.



Longevity

Built using the highest quality components the PNA Thermocomfort is perfectly engineered and finished to the highest standards.



Quiet periods

During the night, the boiler's tipping grate and heat exchanger cleaning system are not operated.



Flexibility

The PNA Thermocomfort is available in 4 different sizes, with a multitude of pellet feed systems.



Environmentally friendly

The low energy, 270 watt ignition element ensures an environmentally friendly lighting of the boiler. The low power consumption also means less expenditure with an average cost of just 1/3 penny per ignition.



Small footprint

The clever design of the PNA Thermocomfort gives it a small footprint, meaning it will fit into the tightest of spaces. The flue can exit either through the top or rear of the boiler, whilst the pellet feed system can be located either on the left or right hand side.



Economy

Through the use of the residual heat of the refractory combustion chamber, the boiler re-ignites without the need for the electrical ignitor. This improves both fuel consumption on the boiler and wear on the ignitor to maximise cost savings.



Efficiency

Featuring both a lambda sensor and flame temperature sensor, the PNA Thermocomfort is able to achieve the maximum combustion efficiency. This ensures the lowest fuel consumption even in variable conditions.



Weather compensation

The PNA Thermocomfort can be fully integrated to a heating system with weather compensation as standard. By integrating the boiler with the heating system, the efficiency is improved, reducing annual fuel costs by as much as 20%.



Safety

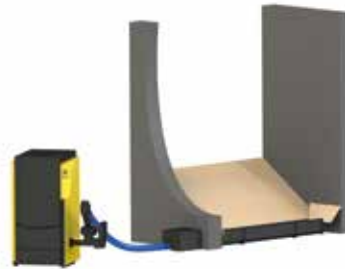
The PNA Thermocomfort features a comprehensive safety system including rotary sluice, auger temperature sensor, and boiler sensor.



Vacuum fill hopper 170 litre



Manual hoppers



Vario flexible auger



Suction probes







Visionconvey air suction system with pellet store

PNA Thermocomfort kit pricing

Equipment prices and order codes


B

WOOD PELLET BOILERS

PNA Thermocomfort		Order code	£ ex VAT
	PNA Thermocomfort 15 pellet boiler kit with 300 litre thermal store	TP1043	10,460.00
	PNA Thermocomfort 20 pellet boiler kit with 300 litre thermal store	TP1044	10,460.00
	PNA Thermocomfort 25 pellet boiler kit with 400 litre thermal store	TP1045	10,525.00
	PNA Thermocomfort 30 pellet boiler kit with 500 litre thermal store	TP1046	10,565.00
  	<p>Includes Accumulator management system, return temperature control kit, boiler safety module, draught stabiliser, flue starter kit, bi-metallic temperature gauges, accumulator, expansion vessel</p> <p>The PNAThermocomfort boiler comes with: A full 5 year SHT warranty • See page M11 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>		

Options




The PNA Touch Control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

Heating and Hot Water Pack - Weather Compensated		Order code	£ ex VAT
	PNA Thermocomfort weather compensated pump station set Temperature controlled mixed pump station type T08, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor, intelligent room thermostat	TP2005	667.00

Options
The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.

Uniko Solar Thermal Pack		Order code	£ ex VAT	PG
	Uniko Biomass Package - 4.04m ² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)	ST3001	1,938.00	24

Mounting options

		
On-roof, parallel	Flat roof, 45	In-roof mounting

PNA Thermocomfort pricing

Equipment prices and order codes

Manual fill 170 litre hopper



Quantity	Order code	£ ex VAT
1	SHT4102	645.00

Manual fill fabric hopper



Quantity	Order code	£ ex VAT
1	PS306	997.00

Vario flexible auger pack



Vario flexible auger starter kit	1	SHT4108	1,328.00
Fixed auger extension - 1m	2	SHT4009	276.00
Total			1,604.00

Sack silo pack



170 litre intermediate hopper	1	SHT4102	645.00
Visionconvey air for sack silo	1	SHT4107	1,025.00
Pellet hose set 25m including mounts	1	SHT4114	214.00
Euroheat fabric silo (W x D x H (variable)) 1.95 x 1.95 x 1.8 - 2.15 - 2.9 tons	1	PS201T	1,128.00
Total			3,012.00

Pellet probe triple pack



170 litre intermediate hopper	1	SHT4102	645.00
Visionconvey air for suction probes	1	SHT4107	1,025.00
Manual switching unit with 3 suction probes	1	SHT4111	502.00
Pellet hose set 25m including mounts	1	SHT4114	214.00
Total			2,386.00

Visionconvey auger pack



170 litre intermediate hopper	1	SHT4102	645.00
Visionconvey air auger starter kit	1	SHT4105	1,835.00
Fixed auger extension - 1m	2	SHT4009	276.00
Pellet hose set 25m including mounts	1	SHT4114	214.00
Total			2,970.00

Compact 25-35 pellet boiler

Boiler information



HDG Compatronic boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG Compatronic controls all processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the tipping grate and automatically ignited, primary and secondary air is precisely added ensuring that the fire is quickly established. Once the fire has become established the controller changes from ignition mode to Lambda control. The controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas. Information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures that maximised annual efficiencies are achieved.

Automatic cleaning of the heat exchanger is a process that maintains efficiency and cleanliness. Any products of combustion removed from the heat exchange surfaces are extracted with the ash.

Automatic ash removal promotes the fully automated ethos, ash that would normally remain in two containers within the boiler is screw fed into two convenient, simply removed wheeled containers.

Loading the accumulator is also precisely managed; one three way mixing valve and 3 x PT 1000 temperature sensors, one at the top of the accumulator and one at the bottom, they operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket. At 60°C the mixing valve gradually starts to open, allowing hot water to leave the closed loop and to start heating the top of the accumulator. Once the water at the bottom of the accumulator reaches its preset temperature the boiler switches off. The boiler is turned back on again when the water at the top of the accumulator decreases to 60°C. This procedure ensures maximum access to the high grade energy and prevents unnecessary boiler cycling.

The Touch controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started and mixing valve opened. This process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer).

The component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised. This process extends component life time and efficiency. EM4/8 components. See page H5

HDG fuel feeding systems

The Compact 25/35 boiler can be configured to burn wood chips or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another.

Zeroridge Biomass Ed 17A

HDG ash disposal

- Ash removal integral 15 litre ash container (standard)
- Ash removal automatic, 2 x 35 litre external containers with wheels (optional)

Automatic functions

- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic tipping grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management, recommended minimum accumulator size see accumulator sizing section F

HDG construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler Body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- RAL colours - Green (RAL 6011) Traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchanger
- Secondary combustion chamber: modular design, manufactured from cast refractory bricks

HDG safety features

- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger thermal discharge
- Chip – pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the Touch Control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic lock out

HDG standards and approvals


- Type tested to EN 303-5
- The Compact 25-35 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones
- MCS approved


Touch Control





Compact 25-35 pellet boiler

Equipment prices and order codes









Compact 25-35 with TBZ150 auger transfer feed system			Order code	£ ex VAT	PG	Page
	HDG Compact 25 left side version, with 4.3" touch screen	3 Phase (400V)	HDG3044T	14,065.00	40	
	HDG Compact 25 right side version, with 4.3" touch screen	3 Phase (400V)	HDG3045T	14,065.00		
	HDG Compact 25 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3060T	14,615.00		
	HDG Compact 25 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3061T	14,615.00		
	HDG Compact 35 left side version, with 4.3" touch screen	3 Phase (400V)	HDG3046T	14,065.00		
	HDG Compact 35 right side version, with 4.3" touch screen	3 Phase (400V)	HDG3047T	14,065.00		
	HDG Compact 35 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3062T	14,615.00		
	HDG Compact 35 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3063T	14,615.00		

Compact 25-35 with TBZ90 vacuum fuel transfer feed system			Order code	£ ex VAT	PG	Page
	HDG Compact 25 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3064T	16,135.00	40	
	HDG Compact 25 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3065T	16,135.00		
	HDG Compact 35 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3066T	16,135.00		
	HDG Compact 35 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3067T	16,135.00		

TBZ90 pellet vacuum versions are all single phase
 Model shown left side version with integrated ash containers
 Includes automatic flue way cleaning as standard

Controls		Order code	£ ex VAT	PG	Page
	HDG touch control XL 7" touchscreen, integrated web server with email and SMS. Surcharge with new boiler purchase instead of standard controller	HDG3505	435.00	41	

Note, control sensors depending on type of installation are required. To determine requirement contact Euroheat design team

System and hydraulic components		Order code	£ ex VAT	PG	Page
	Return temperature kit with energy efficient pump Includes cast iron pre-connected assembly for fast installation. Actuator SM 4.10, 2 x ball valves DN 32 for isolation. Includes insulation 180 mm, DN 32	PL2028	545.00	41	
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation. DN25, up to 50 kW	PL2001	48.00		
	Thermal safety device DN 20 file pocket and water connections	PL2000	68.00		
	Expansion vessel 150 litre. Minimum size to suit boiler/accumulator	EV4705	197.00		
	Accumulator 1,000 litre. Minimum size	TS4810	1,243.00		
	Accumulator temperature gauges Minimum of 4 recommended	PL2016	24.00		
	Low water pressure valve 0.5 bar activation 230V	PL2062	68.00		

Compact 45 & 50 pellet boiler

Boiler information



HDG Compatronic boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG Compatronic controls all processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the tipping grate, and automatically ignited, primary and secondary air is precisely added, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas. Information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures that maximised annual efficiencies are achieved.

Automatic cleaning of the heat exchanger is a process that maintains efficiency and cleanliness. Any products of combustion removed from the heat exchange surfaces are extracted with the ash.

Automatic ash removal promotes the fully automated ethos, ash that would normally remain in two containers within the boiler is screw fed into two convenient, simply removed wheeled containers.

Loading the accumulator is also precisely managed; one three way mixing valve and two PT 100 temperature sensors, one at the top of the accumulator and one at the bottom, they operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket. At 60°C the mixing valve gradually starts to open, allowing hot water to leave the closed loop and to start heating the top of the accumulator. Once the water at the bottom of the accumulator reaches its preset temperature the boiler switches off. The boiler is turned back on again when the water at the top of the accumulator decreases to 60°C.

This procedure ensures maximum access to the high grade energy and prevents unnecessary boiler cycling.

The Compatronic controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started and mixing valve opened. This process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer).

The component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised. This process extends component life time and efficiency.

The HDG Compatronic is extendable with HDG Hydronic and HDG Hydronic plus.

HDG fuel feeding systems

The Compact 45 and 50 boilers can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another.

HDG ash disposal

- Ash removal integral 15 litre containers (standard)
- Ash removal automatic, 2 x 35 litre external containers with wheels (optional). The boiler pictured to the left shows the automatic ash removal system

Automatic functions

- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic tipping grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management

HDG construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler Body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- RAL colours - Green (RAL 6011) Traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchanger
- Secondary combustion chamber: Modular design, manufactured from cast refractory bricks

HDG Safety Features

- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger thermal discharge
- Chip – pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the Touch Control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic lock out

HDG standards and approvals


- Type tested to EN 303-5
- The Compact 45/50 qualifies for the Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones

Touch Control




Compact 45 & 50 pellet boiler


Equipment prices and order codes


Compact 45/50 with TBZ150 auger transfer feed system			Order code	£ ex VAT	PG	Page
	Compact 45 left side version, with 4.3" touch screen	3 Phase (400V)	HDG3300T	15,070.00	40	
	Compact 45 right side version, with 4.3" touch screen	3 Phase (400V)	HDG3301T	15,070.00		
	Compact 45 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3302T	15,615.00		
	Compact 45 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3303T	15,615.00		
	Compact 50 left side version, with 4.3" touch screen	3 Phase (400V)	HDG3032T	15,995.00		
	Compact 50 right side version, with 4.3" touch screen	3 Phase (400V)	HDG3033T	15,995.00		
	Compact 50 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3048T	16,555.00		
	Compact 50 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3049T	16,555.00		

Model shown is left side version with optional automatic ash removal.







Compact 45/50 with TBZ90 vacuum fuel transfer feed system			Order code	£ ex VAT	PG	Page
	Compact 45 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3304T	17,985.00	40	
	Compact 45 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3305T	17,985.00		
	Compact 50 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3068T	17,985.00		
	Compact 50 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3069T	17,985.00		

TBZ90 pellet vacuum versions are all single phase 230V
Model shown is left side version with optional Automatic Ash Removal

Ash removal option			Order code	£ ex VAT	PG	Page
	Automatic ash removal to two external 35 litre ash containers. Left side		HDG3459	1,370.00	40	
	Automatic ash removal to two external 35 litre ash containers. Right side		HDG3460	1,370.00		

Touch controller			Order code	£ ex VAT	PG	Page
	HDG touch control XL 7" touchscreen, integrated web server with email and SMS. Surcharge with new boiler purchase instead of standard controller		HDG3505	435.00	40	

Note, control sensors depending on type of installation are required. To determine requirement contact the Euroheat design team

System and hydraulic components			Order code	£ ex VAT	PG	Page
	Return temperature kit 55-32 with energy efficient pump Includes cast iron pre-connected assembly for fast installation. Actuator SM 4.10, 2 x ball valves DN 32 for isolation. Pump U 55-32 with insulation, 180 mm, DN 32		PL2028	545.00	41	
	Boiler safety module Combined pressure gauge, autovent, pressure relief, two part insulation, up to 50 kW		PL2001	48.00		
	Thermal safety device DN 20 file pocket and water connections		PL2000	68.00		
	Expansion vessel 150 litre. Minimum size to suit boiler/accumulator		EV4705	197.00		
	Accumulator 1,250 litre. Minimum size Compact 45 and 50		TS4811	1,311.00		
	Accumulator temperature gauges Minimum of 4 recommended		PL2016	24.00		
	Low water pressure valve 0.5 bar activation 230V		PL2062	68.00		

Compact 65 pellet boiler

Boiler information



HDG Compatronic boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG Compatronic controls all processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the tipping grate, and automatically ignited, primary and secondary air is precisely added, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas. Information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures that maximised annual efficiencies are achieved.

Automatic cleaning of the heat exchanger is a process that maintains efficiency and cleanliness. Any products of combustion removed from the heat exchange surfaces are extracted with the ash.

Automatic ash removal promotes the fully automated ethos, ash that would normally remain in two containers within the boiler is screw fed into two convenient, simply removed wheeled containers.

Loading the accumulator is also precisely managed; one three way mixing valve and two PT 100 temperature sensors, one at the top of the accumulator and one at the bottom, they operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket. At 60°C the mixing valve gradually starts to open, allowing hot water to leave the closed loop and to start heating the top of the accumulator. Once the water at the bottom of the accumulator reaches its preset temperature the boiler switches off. The boiler is turned back on again when the water at the top of the accumulator decreases to 60°C. This procedure ensures maximum access to the high grade energy and prevents unnecessary boiler cycling.

The Compatronic controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started and mixing valve opened. This process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer). The component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised. This process extends component life time and efficiency.

The HDG Compatronic is extendable with HDG Hydronic and HDG Hydronic plus.

HDG fuel feeding systems

The Compact 65 boiler can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another.

HDG ash disposal

- Ash removal integral 15 litre containers (standard)
- Ash removal automatic, 2 x 35 litre external containers with wheels (optional). The boiler pictured to the left shows the Automatic Ash Removal system

Automatic functions

- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic tipping grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management

HDG construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- RAL colours - Green (RAL 6011) Traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchanger
- Secondary combustion chamber: modular design, manufactured from cast refractory bricks

HDG Safety features

- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger Thermal discharge
- Chip - pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the Touch Control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic lock out

HDG Standards and approvals


- Type tested to EN 303-5
- The Compact 65 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones

Touch Control




Compact 65 pellet boiler


Equipment prices and order codes


Compact 65 with TBZ150 auger transfer feed system		Order code	£ ex VAT	PG	Page
	Compact 65 left side version, with 4.3" touch screen	3 Phase (400V)	HDG3034T	15,995.00	40
	Compact 65 right side version, with 4.3" touch screen	3 Phase (400V)	HDG3035T	15,995.00	
	Compact 65 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3050T	16,555.00	
	Compact 65 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3051T	16,555.00	

Left side model with Automatic Ash Removal system.







Compact 80 with TBZ90 vacuum fuel transfer feed system		Order code	£ ex VAT	PG	Page
	Compact 65 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3070T	17,985.00	40
	Compact 65 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3071T	17,985.00	

TBZ90 pellet vacuum versions are all single phase
Left side model with automatic ash removal system

Ash removal option		Order code	£ ex VAT	PG	Page
	Automatic ash removal to two external 35 litre ash containers. Left side	HDG3459	1,370.00	40	
	Automatic ash removal to two external 35 litre ash containers. Right side	HDG3460	1,370.00		

Controls		Order code	£ ex VAT	PG	Page
	HDG Touch Control XL 7" touchscreen, integrated web server with email and SMS. Surcharge with new boiler purchase instead of standard controller	HDG3505	435.00	40	

Note, control sensors depending on type of installation are required. To determine requirement contact the Euroheat design team

System and hydraulic components		Order code	£ ex VAT	PG	Page
	Return temperature kit U 80A-32 energy efficient pump Includes cast iron pre-connected assembly for fast installation. Actuator SM 4.6, 2 x ball valves DN 32. Pump U 80A-32 with insulation, 180 mm, DN32	PL2035	668.00	41	 I18
	Boiler safety module Combined pressure gauge, autovent, pressure relief, two part insulation, up to 100 kW	PL2002	78.00		 I31
	Thermal safety device DN 20 file pocket and water connections	PL2000	68.00		 I16
	Expansion vessel 200 litre. Minimum size to suit boiler/accumulator	EV4706	237.00		 I19
	Accumulator 1,500 litre. Minimum size Compact 65	TS4812	1,356.00		 I31
	Accumulator temperature gauges Minimum of 4 recommended	PL2016	24.00		
	Low water pressure valve 0.5 bar activation 230V	PL2062	68.00		

Compact 80 pellet boiler

Boiler information

B

WOOD PELLET BOILERS



HDG Compatronic boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG Compatronic controls all processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the tipping grate, and automatically ignited, primary and secondary air is precisely added, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas. Information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures that maximised annual efficiencies are achieved.

Automatic cleaning of the heat exchanger is a process that maintains efficiency and cleanliness. Any products of combustion removed from the heat exchange surfaces are extracted with the ash.

Automatic ash removal promotes the fully automated ethos, ash that would normally remain in two containers within the boiler is screw fed into two convenient, simply removed wheeled containers.

Loading the accumulator is also precisely managed; one three way mixing valve and two PT 100 temperature sensors, one at the top of the accumulator and one at the bottom, they operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket. At 60°C the mixing valve gradually starts to open, allowing hot water to leave the closed loop and to start heating the top of the accumulator. Once the water at the bottom of the accumulator reaches its preset temperature the boiler switches off. The boiler is turned back on again when the water at the top of the accumulator decreases to 60°C. This procedure ensures maximum access to the high grade energy and prevents unnecessary boiler cycling.

The Compatronic controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started and mixing valve opened. This process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer).

The component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised. This process extends component life time and efficiency.

The HDG Compatronic is extendable with HDG Hydronic and HDG Hydronic plus.

HDG fuel feeding systems

The Compact 80 boiler can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another.

HDG ash disposal

- Ash removal automatic, 2 x 35 litre external containers with wheels (standard)

Automatic functions

- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic Tipping Grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management

HDG construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler body – heat exchanger: welded construction, tension rod reinforced 4-5mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- RAL colours - Green (RAL 6011) Traffic grey (RAL 7043))
- Integral thermal heat discharge within the heat exchanger
- Secondary combustion chamber: Modular design, manufactured from cast refractory bricks

HDG safety features

- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger Thermal discharge
- Chip – pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the Touch Control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic lock out

HDG Standards and approvals


- Type tested to EN 303-5
- The Compact 80 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NO_x
- Approved for use in smokeless zones

Touch Control




Compact 80 pellet boiler

Equipment prices and order codes


Compact 80 with TBZ150 auger transfer feed system			Order code	£ ex VAT	PG	Page
	Compact 80 left side version, with 4.3" touch screen	3 Phase (400V)	HDG3042T	22,085.00	40	
	Compact 80 right side version, with 4.3" touch screen	3 Phase (400V)	HDG3043T	22,085.00		
	Compact 80 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3058T	22,630.00		
	Compact 80 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3059T	22,630.00		

Includes automatic flue way cleaning and external ash containers as standard







Compact 80 with TBZ90 vacuum fuel transfer feed system			Order code	£ ex VAT	PG	Page
	Compact 80 left side version, with 4.3" touch screen	Single Phase (230V)	HDG3072T	24,070.00	40	
	Compact 80 right side version, with 4.3" touch screen	Single Phase (230V)	HDG3073T	24,070.00		

TBZ90 pellet vacuum versions are all single phase
Left side model with ash containers

Includes automatic flue way cleaning and external de-ashing

Controls			Order code	£ ex VAT	PG	Page
	HDG touch control XL 7" touchscreen, integrated web server with email and SMS. Surcharge with new boiler purchase instead of standard controller		HDG3505	435.00	40	

Note, control sensors depending on type of installation are required. To determine requirement contact the Euroheat design team

System and hydraulic components			Order code	£ ex VAT	PG	Page
	Return temperature control for HDG Compact 80 Three-way mixing valve DN 40. ID DN 40. SM 4.10 servo motor rotation time 150 seconds, 230 V, Circulation pump Wilo Stratos 40/1-4		PL2056	1,140.00	41	 I18
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation. DN25, up to 100 kW		PL2002	78.00		 I31
	Thermal safety device, DN 20 file pocket and water connections		PL2000	68.00		
	Expansion vessel 250 litre. Minimum size to suit boiler/accumulator		EV4707	293.00		 I16
	Accumulator 2,000 litre. Minimum size		TS4813	1,786.00		 I9
	Accumulator temperature gauges Minimum 4 recommended		PL2016	24.00		
	Low water pressure valve 0.5 bar activation 230V		PL2062	68.00		 I31

Compact 25-80 pellet boiler

Design and features

B

WOOD PELLET BOILERS

The temperature measured by the **combustion chamber temperature sensor** is the reference variable for required primary air and fuelling rate. If the combustion temperature exceeds the set-point, the controller will prevent more fuel being introduced until it reaches an acceptable level. In addition to combustion control, this measurement will indicate to the controller whether the ignition system will need to be used on start up, or the embers remaining from the previous burn will light the new fuel.

The **automatic cleaning system** periodically raises and lowers the turbulators which are suspended within the channels of the heat exchanger. This motion removes the ash that adheres to the exchanger surface. While not being used to clean the heat exchanger the blades of the cleaning system cause turbulence in the flue gas which serves to force more heat into the water jacket.

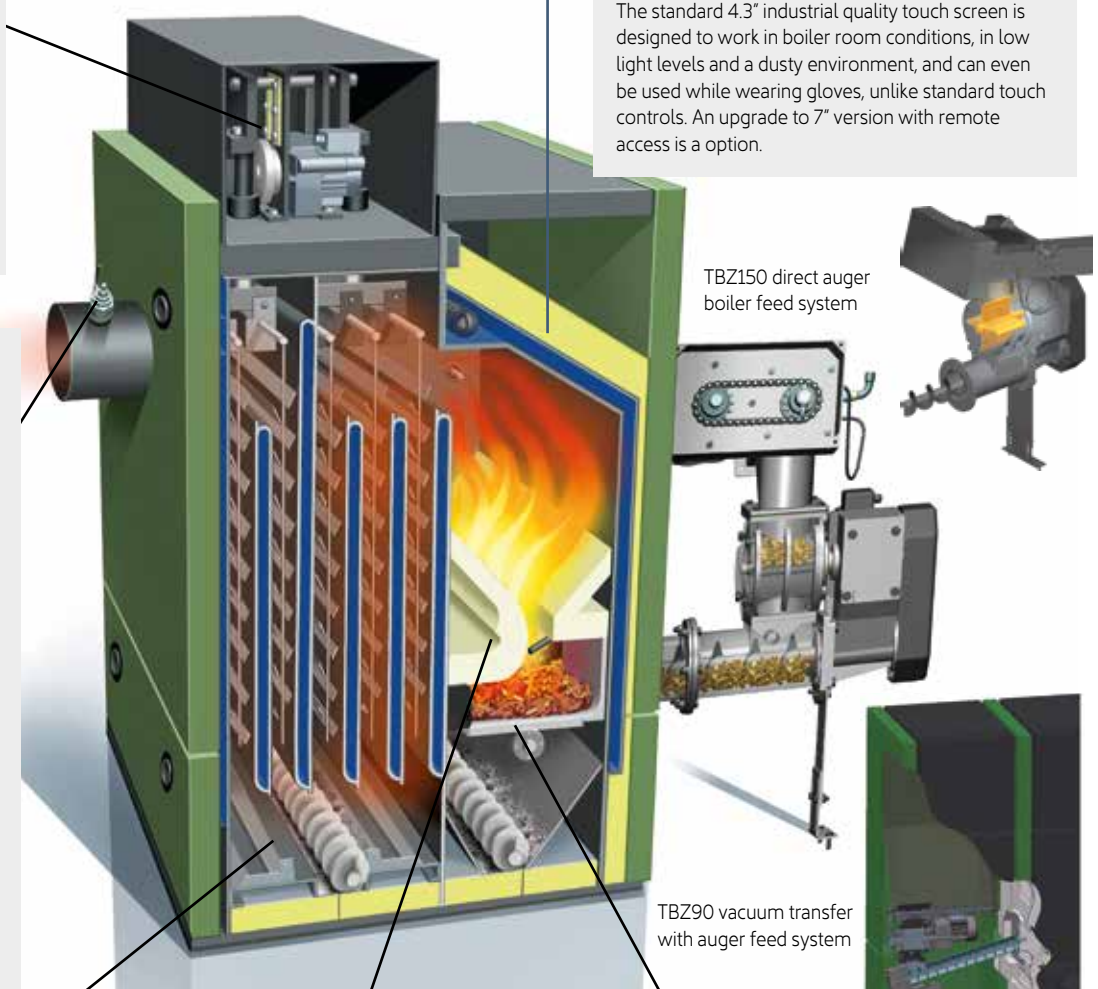
The **Lambda sensor** measures the residual oxygen in the flue and it is the reference variable for the secondary air quantity. The secondary air is transferred over a separate nozzle channel to the combustion chamber. This way even with fluctuating combustion material quality the best combustion efficiency can be achieved with the available fuel. The Lambda sensor is automatically calibrated by the control system. By means of the adjustable additional function "Lambda-Stop" the control system automatically inhibits the fuel flow, if the oxygen value falls below a minimal oxygen value. Measurements from the exhaust temperature sensor are also required for the combustion technology efficiency calculation.

The **automatic ash removal** - is standard on the Compact 80 series and optionally available for Compact 25-35/50/65. It transfers the combustion and fly ash into two external ash containers of 35-litre volume each. The two ash removal augers have 8mm auger lining. In order to achieve longer ash container operation times the combustion residuals are additionally compressed. The movable ash containers are locked on the boiler by a safety lock.

The **over fill lever** prevents too much fuel being loaded onto the grate. When the arm is moved the dosage auger is stopped ("material stop") and will re-start when the fuel has been burnt. This is one of the mechanisms which prevents the boiler from over firing. During ignition if the fuel has not ignited on the first run, the second run may activate the material stop. In this case the start up operation is moved straight to the ignition phase, and on to warm up in the usual way.

The **HDG Touch Control** is at the forefront of the entire control strategy for the touch controller range. Connected via MODBUS to boiler specific control modules it receives information from all sensors and controls outputs to all electrical components in the boilers. The result is a clear and concise interface which displays and controls all functions including the fuel feed, combustion, power regulation of motors, automatic cleaning, ash removal, accumulator management and if installed heating distribution and solar thermal. The standard 4.3" industrial quality touch screen is designed to work in boiler room conditions, in low light levels and a dusty environment, and can even be used while wearing gloves, unlike standard touch controls. An upgrade to 7" version with remote access is a option.

Compact 50 in right side version with optional ash disposal system.



Compact 25-80 pellet boiler

Fuel delivery system options

The HDG Compact 25-80 pellet boilers offer a range of wood pellet fuel store and transfer systems



PSZ direct transfer auger

The PSZ transfers fuel directly from a fuel store to the TBZ150 boiler feed auger.



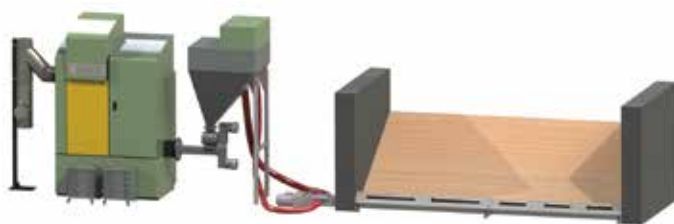
FRA spring blade direct transfer auger

The FRA transfers fuel directly from a fuel store to the TBZ150 boiler feed auger. The system includes a spring blade sweep arms.



Sack silo

Purpose designed sack silo which when installed allows the bulk pellet storage held in a sack silo to be transferred by vacuum.



PSS auger with vacuum transfer head.

The auger is positioned flat on the floor in a bulk pellet store which has sloping sides at 30-35 degrees.



FRA-PSS auger with vacuum transfer head.

The auger is positioned flat on the floor in a bulk pellet store. The spring blades draw fuel into the auger as the fuel level reduces. This system allows for the largest possible fuel store volume.



B

WOOD PELLET BOILERS

Compact 25 pellet kit pricing

Equipment prices and order codes

B

WOOD PELLET BOILERS

Compact 25 with TBZ 150 auger transfer system

Order code

£ ex VAT



Compact 25 with TBZ 150 kit - left hand three phase

TP1051

16,997.00

Compact 25 with TBZ 150 kit - right hand three phase

TP1052

Compact 25 with TBZ 150 kit - left hand single phase

TP1053

Compact 25 with TBZ 150 kit - right hand single phase

TP1054

17,547.00



Includes:

Return temperature control kit, accumulator management kit, boiler safety module, thermal safety devices, pressure switch, flue starter kit and support stand, bi-metallic temperature gauges, 150 litre expansion vessel, nickel cap valve, 1000 litre H₂O accumulator



The HDG Compact 25 boiler comes with:

A full 10 year HDG warranty • See page M12 for full details



Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre

Options

The Compact 25 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer. Ideal as a top up on shorter days.

FRA Flexiblade delivery system

Order code

£ ex VAT



FRA 2.5 flexi blade delivery system, for pellets

HDG3118

4,995.00

PSZ Wood pellet direct auger

Order code

£ ex VAT



PSZ 2.6-3.1 wood pellet direct auger

HDG3178

3,515.00

Weather Compensated Heating and Hot Water Pack

Order code

£ ex VAT



Compact 25-80 Heating and Hot Water Pack

Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor

TP2004





889.00

Compact 25 pellet kit pricing

Equipment prices and order codes


B


WOOD PELLET BOILERS


Compact 25 with TBZ 90 vacuum transfer system		Order code	£ ex VAT
   	Compact 25 with TBZ 90 kit - left hand single phase	TP1056	19,069.00
	Compact 25 with TBZ 90 kit - right hand single phase	TP1057	
<p>Includes: Return temperature control kit, accumulator management kit, boiler safety module, thermal safety devices, pressure switch, flue starter kit and support stand, bi-metallic temperature gauges, 150 litre expansion vessel, nickel cap valve, 1000 litre H₂O accumulator</p> <p>The HDG Compact 25 boiler comes with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			

Options
The Compact 25 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer. Ideal as a top up on shorter days.

PSS auger delivery system		Order code	£ ex VAT
	PSS 2.6-3.1 wood pellet auger	HDG3170	2,720.00
	Pellet hose set - standard	HDG2109	215.00
	Total		

FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 2.5 wood pellet auger	HDG3208	4,495.00
	Pellet hose set - standard	HDG2109	215.00
	Total		

Weather Compensated Heating and Hot Water Pack		Order code	£ ex VAT
	<p>Compact 25-80 Heating and Hot Water Pack Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor</p>	TP1055	596.00

Compact 35 direct auger pellet kits

Equipment prices and order codes

B

WOOD PELLET BOILERS

Compact 35 with TBZ 150 auger transfer system

Order code

£ ex VAT



Compact 35 with TBZ 150 kit - left hand three phase

TP1058

16,997.00

Compact 35 with TBZ 150 kit - right hand three phase

TP1059

Compact 35 with TBZ 150 kit - left hand single phase

TP1060

17,547.00

Compact 35 with TBZ 150 kit - right hand single phase

TP1061



Includes:

Return temperature control kit, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges,

150 litre expansion vessel, nickel cap valve, 1000 litre H₂O accumulator



The HDG Compact 35 boiler comes with:

A full 10 year HDG warranty • See page M12 for full details



Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre

PSZ Wood pellet direct auger

Order code

£ ex VAT



PSZ 2.6-3.1 wood pellet direct auger

HDG3178

3,515.00

Weather Compensated Heating and Hot Water Pack

Order code

£ ex VAT



The Compact 35 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder

Compact 25-80 Heating and Hot Water Pack

Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor

TP2004

596.00

Options

The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.

Uniko Solar Thermal Pack

Order code

£ ex VAT

PG



Uniko Biomass Package - 4.04m² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)

ST3001

1,938.00

24

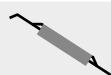
Mounting options



On-roof, parallel



Flat roof, 45



In-roof mounting

Compact 35 vacuum transfer pellet kits

Equipment prices and order codes

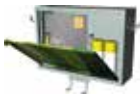
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WOOD PELLET BOILERS

Compact 35 with TBZ 90 vacuum transfer system

Order code £ ex VAT

Compact 35 with TBZ 90 kit - left hand single phase	TP1062	19,067.00
Compact 35 with TBZ 90 kit - right hand single phase	TP1063	19,067.00



Includes:

Return temperature control kit, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 150 litre expansion vessel, nickel cap valve, 1000 litre H₂O accumulator

The HDG Compact 35 boiler comes with:

A full 10 year HDG warranty • See page M12 for full details

Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre

Options

The Compact 35 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer. Ideal as a top up on shorter days. Ideal as a top up on summer days.

PSS auger delivery system

Order code £ ex VAT



PSS 2.6-3.1 wood pellet auger	HDG3170	2,720.00
Pellet hose set - standard	HDG2109	215.00
Total		2,935.00

FRA PSS flexiblade delivery system

Order code £ ex VAT



FRA PSS 2.5 wood pellet auger	HDG3208	4,495.00
Pellet hose set - standard	HDG2109	215.00
Total		4,710.00

Weather Compensated Heating and Hot Water Pack

Order code £ ex VAT



Compact 25-80 Heating and Hot Water Pack

Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor



TP2004 889.00

Compact 45/50 direct auger pellet kits

Equipment prices and order codes


B

WOOD PELLET BOILERS

Compact 45 with TBZ 150 auger transfer system		Order code	£ ex VAT
	Compact 45 with TBZ 150 kit - left hand three phase	TP1064	18,058.00
	Compact 45 with TBZ 150 kit - right hand three phase	TP1065	
	Compact 45 with TBZ 150 kit - left hand single phase	TP1066	18,603.00
	Compact 45 with TBZ 150 kit - right hand single phase	TP1067	
	Compact 50 with TBZ 150 kit - left hand three phase	TP1148	18,983.00
	Compact 50 with TBZ 150 kit - right hand three phase	TP1149	
	Compact 50 with TBZ 150 kit - left hand single phase	TP1150	19,543.00
	Compact 50 with TBZ 150 kit - right hand single phase	TP1151	
<p>Includes: Return temperature control kit, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 150 litre expansion vessel, nickel cap valve, 1,250 litre H₂O accumulator</p> <p>The HDG Compact 45 boiler comes with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			



PSZ Wood pellet direct auger		Order code	£ ex VAT
	PSZ 2.6-3.1 wood pellet direct auger	HDG3178	3,515.00

Weather Compensated Heating and Hot Water Pack		Order code	£ ex VAT
	<p>The Compact 45/50 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the Heating Weather Compensation and Hot Water Pack. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder</p> <p>Compact 25-80 Heating and Hot Water Pack Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor</p>	TP2004	889.00

Options
The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.





Uniko Solar Thermal Pack		Order code	£ ex VAT	PG
	Uniko Biomass Package - 4.04m ² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)	ST3001	1,938.00	24

Mounting options

		
On-roof, parallel	Flat roof, 45	In-roof mounting

Compact 45/50 vacuum transfer pellet kits


Equipment prices and order codes


Compact 45 with TBZ 90 vacuum transfer system		Order code	£ ex VAT
	Compact 45 with TBZ 90 kit - left hand single phase	TP1068	20,973.00
	Compact 45 with TBZ 90 kit - right hand single phase	TP1069	
	Compact 50 with TBZ 90 kit - left hand single phase	TP1152	
	Compact 50 with TBZ 90 kit - right hand single phase	TP11153	
	Includes: Return temperature control kit, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 150 litre expansion vessel, nickel cap valve, 1,250 litre H ₂ O accumulator		
	The HDG Compact 45 boiler comes with: A full 10 year HDG warranty • See page M12 for full details		
	Also included free of charge Purpose designed wall mounted record keeping and service equipment centre		


Options

The Compact 45/50 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer.
 Ideal as a top up on shorter days.

PSS auger delivery system		Order code	£ ex VAT
	PSS 2.6-3.1 wood pellet auger	HDG3170	2,720.00
	Pellet hose set - standard	HDG2109	215.00
	Total		

FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 2.5 wood pellet auger	HDG3208	4,495.00
	Pellet hose set - standard	HDG2109	215.00
	Total		

Weather Compensated Heating and Hot Water Pack		Order code	£ ex VAT
	Compact 25-80 Heating and Hot Water Pack Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor	TP2004	596.00

Compact 65 direct auger pellet kits

Equipment prices and order codes

B

WOOD PELLET BOILERS

Compact 65 with TBZ 150 auger transfer system



	Order code	£ ex VAT
Compact 65 with TBZ 150 kit - left hand three phase	TP1070	19,221.00
Compact 65 with TBZ 150 kit - right hand three phase	TP1071	
Compact 65 with TBZ 150 kit - left hand single phase	TP1072	19,781.00
Compact 65 with TBZ 150 kit - right hand single phase	TP1073	



Includes:

Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 200 litre expansion vessel, nickel cap valve, 1,500 litre H₂O accumulator



The HDG Compact 45 boiler comes with:

A full 10 year HDG warranty • See page M12 for full details

Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre



Options

The Compact 65 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer.

Ideal as a top up on shorter days.

FRA Flexiblade delivery system



	Order code	£ ex VAT
FRA 2.5 flexi blade delivery system, for pellets	HDG3119	5,385.00

PSZ Wood pellet direct auger



	Order code	£ ex VAT
PSZ 2.6-3.1 wood pellet direct auger	HDG3179	3,625.00

Weather Compensated Heating and Hot Water Pack



Compact 25-80 Heating and Hot Water Pack

Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor





	Order code	£ ex VAT
	TP2004	889.00

Compact 65 vacuum transfer pellet kits

Equipment prices and order codes


B


WOOD PELLET BOILERS


Compact 65 with TBZ 90 vacuum transfer system		Order code	£ ex VAT
   	Compact 65 with TBZ 90 kit - left hand single phase	TP1074	21,211.00
	Compact 65 with TBZ 90 kit - right hand single phase	TP1075	
<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 200 litre expansion vessel, nickel cap valve, 1,500 litre HO accumulator</p> <p>The HDG Compact 45 boiler comes with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			

Options
The Compact 65 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer.
Ideal as a top up on shorter days.

PSS auger delivery system		Order code	£ ex VAT
	PSS 3.1-3.6 wood pellet auger	HDG3171	2,830.00
	Pellet hose set -standard	HDG2148	300.00
	Total		

FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 3.5 wood pellet auger	HDG3209	4,945.00
	Pellet hose set - standard	HDG2148	300.00
	Total		

Weather Compensated Heating and Hot Water Pack		Order code	£ ex VAT
	<p>Compact 25-80 Heating and Hot Water Pack Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor</p>	TP2004	596.00

Compact 80 direct auger pellet kits

Equipment prices and order codes

B

WOOD PELLET BOILERS

Compact 80 with TBZ 150 auger transfer system

Order code

£ ex VAT



Compact 80 with TBZ 150 kit - left hand three phase

TP1076

25,727.00

Compact 80 with TBZ 150 kit - right hand three phase

TP1077

Compact 80 with TBZ 150 kit - left hand single phase

TP1078

26,272.00

Compact 80 with TBZ 150 kit - right hand single phase

TP1079



Includes:

Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 250 litre expansion vessel, nickel cap valve, 2,000 litre H₂O accumulator



The HDG Compact 80 boiler comes with:

A full 10 year HDG warranty • See page M12 for full details

Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre



Options

The Compact 80 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer. Ideal as a top up on shorter days.

FRA Flexiblade delivery system

Order code

£ ex VAT



FRA 2.5 flexi blade delivery system, for pellets

HDG3119

5,385.00

PSZ Wood pellet direct auger

Order code

£ ex VAT



PSZ 2.6-3.1 wood pellet direct auger

HDG3178

3,515.00

Weather Compensated Heating and Hot Water Pack

Order code

£ ex VAT



Compact 25-80 Heating and Hot Water Pack

Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor

TP2004





889.00

Compact 80 vacuum transfer pellet kits

Equipment prices and order codes


B


WOOD PELLET BOILERS


Compact 80 with TBZ 90 vacuum transfer system		Order code	£ ex VAT
	Compact 80 with TBZ 90 kit - left hand single phase	TP1080	27,712.00
	Compact 80 with TBZ 90 kit - right hand single phase	TP1081	
	Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 250 litre expansion vessel, nickel cap valve, 2,000 litre H ₂ O accumulator		
	The HDG Compact 80 boiler comes with: A full 10 year HDG warranty • See page M12 for full details		
	Also included free of charge Purpose designed wall mounted record keeping and service equipment centre		

Options
The Compact 80 Touch control can be expanded to provide weather compensated heating and domestic hot water production at a fraction of the normal price with the **Heating Weather Compensation and Hot Water Pack**. This increases and decreases the radiator temperatures based on current outdoor temperatures, ensuring comfort levels while saving energy. This provides safe hygienic domestic hot water from a new or existing hot water cylinder.

The **Solar Thermal Pack** comes complete and ready to install. The installation is straight forward and offers the benefit of free energy during the summer. Ideal as a top up on shorter days.

PSS auger delivery system		Order code	£ ex VAT
	PSS 3.6-4.1 wood pellet auger	HDG3172	2,945.00
	Pellet hose set - standard	HDG2109	215.00
		Total	3,160.00

FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 2.5 wood pellet auger	HDG3208	4,495.00
	Pellet hose set - standard	HDG2109	215.00
		Total	4,710.00

Weather Compensated Heating and Hot Water Pack		Order code	£ ex VAT
	Compact 25-80 Heating and Hot Water Pack Temperature controlled mixed pump station with HE35 pump, unmixed pump station with U35 pump, starter and extension distributors, flow sensor, immersion sensor	TP2004	596.00

Compact 100 pellet boiler

Boiler information

B

WOOD PELLET BOILERS



HDG Step grate system

At the heart of the Compact 100 boiler lies the HDG step grate system, step grates are usually associated with much larger boilers, because the cost of manufacturing this innovative moving grate solution would normally prevent its inclusion within a boiler of this size. However the design team at HDG considered its advantages so important that a step grate has become a standard feature on all boilers 100 kW and above. Step grates allow for greater fuel variability, by keeping the incandescent bed moving. This promotes complete fuel combustion and higher efficiency, reduced fuel sensitivity and linear output throughout the entire burn cycle.

HDG EMD boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG EMD-C215 controls all the processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the step grate system, and automatically ignited, primary and secondary air is accurately added, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas, information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures maximum annual efficiencies are achieved. Automatic ash removal and heat exchanger cleaning are processes that maintains efficiency and cleanliness, any products of combustion removed from the heat exchange surfaces are disposed of with the ash.

Loading the accumulator is also prudently managed; one three way mixing valve and two PT 1000 temperature sensors, one at the top of the accumulator and one at the bottom operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket.

EMD-C215 controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started, this process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer) the component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised, this process extends component life time and efficiency.

The HDG EMD-C25 controller has the option of remote visualisation. This allows the customer or engineer to monitor the boiler performance without a plant room visit. The visualisation software allows a historic and real time view of events. The Hydronic plus is also available to use in conjunction with the EMD-C215 controller, this product provides a weather compensated complete heating system control.

Zerodige Biomass Ed 17A

HDG fuel feeding systems

The Compact 100 boiler can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another. See section G for information regarding fuel feed and storage options.

HDG ash disposal

- Ash removal automatic 80 litres sealed containers (standard)
- 140 litre containers optional

Automatic functions

- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic step grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management, recommended minimum accumulator size 2000 litres

HDG construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler Body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- Cladding preassembled powder coated steel: main body green (RAL 6011) yellow (RAL 1007) Inspection doors, chip feeder traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchanger
- Secondary combustion chamber: Modular design, manufactured from cast refractory bricks

HDG safety features


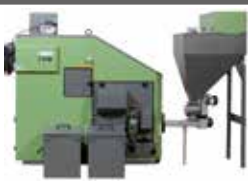



- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger thermal discharge
- Chip - pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the Compatronic control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic fuelling pause

HDG Standards and approvals

- Type tested to EN 303-5
- The Compact 100 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones

Compact 100 pellet boiler

Equipment prices and order codes

Compact 100 with TBZ150 auger transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 100 left side version	3 Phase (400V)	HDG3036	27,435.00	40	
	HDG Compact 100 right side version	3 Phase (400V)	HDG3037			
	HDG Compact 100 left side version	Single Phase (230V)	HDG3052	27,980.00		
	HDG Compact 100 right side version	Single Phase (230V)	HDG3053			
Compact 100 with TBZ80 vacuum fuel transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 100 left side version	3 Phase (400V)	HDG3080	29,235.00	40	
	HDG Compact 100 right side version	3 Phase (400V)	HDG3081			
	HDG Compact 100 left side version	Single Phase (230V)	HDG3074	29,785.00		
	HDG Compact 100 right side version	Single Phase (230V)	HDG3075			
TBZ80 pellet vacuum versions are all single phase. Right side model with standard ash containers						
High grade stainless steel grate			Order code	£ ex VAT	PG	Page
	High-performance step grate with high-grade stainless elements. For base load boiler application (> 2500 hr/year) or when using pellets		Included as standard with wood pellet models			
Chimney fan and particulate matter cyclone options			Order code	£ ex VAT	PG	Page
	Chimney assist fan	Ideal for short flue applications or where flue conditions are not ideal, or fuels maybe an issue due to moisture. Includes HDG pressure controller. Suits 300 mm flue starter kit MS9280	HDG3272	1,945.00	40	B44
	Cyclone dust extractor with chimney assist flue fan	Ideal for short flue applications or where flue conditions are not ideal. The cyclone reduces particulate matter where the fuel content is rich in ash or strict emission requirements are required. Includes HDG pressure controller. 300 mm	HDG3271	3,895.00		
System and hydraulic components			Order code	£ ex VAT	PG	Page
	HDG return temperature control for HDG Compact 100 and 115 Three-way mixing valve DN 40. ID DN 40. SM 4 servo motor.10. Rotation time 150 seconds, 230 V Circulation pump Wilo Stratos 40/1-4		PL2071	1,140.00	41	I18
	Electronic flow temperature control system Includes 0-10V module for Wilo pump. PLC control software and additional accumulator sensor		HDG4139	390.00		
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation up to 200 kW		PL2003	110.00		I31
	Thermal safety device DN 20 file pocket and water connections		PL2000	68.00		
	Expansion vessel 300 litre. Minimum size to suit boiler/accumulator		EV4708	331.00		I16
	Accumulator 2,000 litre. Minimum size		TS4813	1,786.00		I19
	Accumulator temperature gauges Minimum 4 recommended		PL2016	24.00		I31
Low water pressure valve 0.5 bar activation 230V		PL2062	68.00			

Compact 115 pellet boiler

Boiler information

B

WOOD PELLET BOILERS



HDG Step grate system

At the heart of the Compact 115 boiler lies the HDG step grate system. Step grates are usually associated with much larger boilers, because the cost of manufacturing this innovative moving grate solution would normally prevent its inclusion within a boiler of this size. However the design team at HDG considered its advantages so important that a step grate has become a standard feature on all boilers 100kW and above. Step grates allow for greater fuel variability, by keeping the incandescent bed moving. This promotes complete fuel combustion and higher efficiency, reduced fuel sensitivity and linear output throughout the entire burn cycle.

HDG EMD boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG EMD-C215 controls all the processes required to maximise combustion and fuel efficiency.

At start up, fuel is incrementally fed on to the step grate system, and automatically ignited, primary and secondary air is accurately added, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas, information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures maximum annual efficiencies are achieved. Automatic ash removal and heat exchanger cleaning are processes that maintains efficiency and cleanliness, any products of combustion removed from the heat exchange surfaces are disposed of with the ash.

Loading the accumulator is also prudently managed; one three way mixing valve and two PT 1000 temperature sensors, one at the top of the accumulator and one at the bottom operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket.

EMD-C215 controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started, this process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer) the component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised, this process extends component life time and efficiency.

The HDG EMD-C25 controller has the option of remote visualisation. This allows the customer or engineer to monitor the boiler performance without a plant room visit. The visualisation software allows a historic and real time view of events. The Hydronic plus is also available to use in conjunction with the EMD-C215 controller, this product provides a weather compensated complete heating system control.

Zeroridge Biomass Ed 17A

HDG fuel feeding systems

The Compact 115 boiler can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another. See section G for information regarding fuel feed and storage options.

HDG ash disposal

- Ash removal automatic 80 litres sealed containers (standard)
- 140 litre containers optional

Automatic functions

- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic step Grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management, recommended minimum accumulator size 2000 litres

HDG Construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- Cladding preassembled powder coated steel: main body Green (RAL 6011) Yellow (RAL 1007) Inspection doors, chip feeder traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchanger
- Secondary combustion chamber: modular design, manufactured from cast refractory bricks

HDG Safety features






- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger Thermal discharge
- Chip – pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the Compatronic control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic fuelling pause

HDG Standards and approvals

- Type tested to EN 303-5
- The Compact 115 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones

Compact 115 pellet boiler

Equipment prices and order codes

Compact 115 with TBZ150 auger transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 115 left side version	3 Phase (400V)	HDG3340	28,995.00	40	
	HDG Compact 115 right side version	3 Phase (400V)	HDG3341			
	HDG Compact 115 left side version	Single Phase (230V)	HDG3342	29,555.00		
	HDG Compact 115 right side version	Single Phase (230V)	HDG3343			
Compact 115 with TBZ80 vacuum fuel transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 115 left side version	3 Phase (400V)	HDG3336	29,855.00	40	
	HDG Compact 115 right side version	3 Phase (400V)	HDG3337			
	HDG Compact 115 left side version	Single Phase (230V)	HDG3338	30,400.00		
	HDG Compact 115 right side version	Single Phase (230V)	HDG3339			
TBZ80 pellet vacuum versions are all single phase. Right side model with standard ash containers						
High grade stainless steel grate elements			Order code	£ ex VAT	PG	Page
	High-performance step grate with high-grade stainless elements. For base load boiler application (> 2500 hr/year) or when using pellets		Included as standard with wood pellet models			
Chimney fan and particulate matter cyclone options			Order code	£ ex VAT	PG	Page
	Chimney assist fan Ideal for short flue applications or where flue conditions are not ideal, or fuels maybe an issue due to moisture. Includes HDG pressure controller. Suits 300 mm flue starter kit MS9280		HDG3272	1,945.00	40	B46
	Cyclone dust extractor with chimney assist flue fan For short flue applications or where flue conditions are not ideal. The cyclone reduces particulate matter where the fuel content is rich in ash or strict emission requirements are required. Includes HDG pressure controller. Suits 300 mm flue starter kit MS9280		HDG3271	3,895.00		
System and hydraulic components			Order code	£ ex VAT	PG	Page
	HDG return temperature control for HDG Compact 100 and 115 Three-way mixing valve DN 40. ID DN 40. SM 4 servo motor.10. Rotation time 150 seconds, 230 V Circulation pump Wilo Stratos 40/1-4		PL2071	1,140.00	41	I18
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation up to 200 kW		PL2003	110.00		I31
	Thermal safety device DN 20 file pocket and water connections		PL2000	68.00		
	Expansion vessel 300 litre. Minimum size to suit boiler/accumulator		EV4708	331.00		I16
	Accumulator 2,500 litre. Minimum size		TS4822	2,291.00		I19
	Accumulator temperature gauges Minimum 4 recommended		PL2016	24.00		
Low water pressure valve 0.5 bar activation 230V		PL2062	68.00	I31		

Compact 150 pellet boiler

Boiler information

B

PELLET BURNING BOILERS



HDG Step grate system

At the heart of the Compact 150 boiler lies the HDG step grate system. Step grates are usually associated with much larger boilers, because the cost of manufacturing this innovative moving grate solution would normally prevent its inclusion within a boiler of this size. However the design team at HDG considered its advantages so important that a step grate has become a standard feature on all boilers 100 kW and above. Step grates allow for greater fuel variability, by keeping the incandescent bed moving. This promotes complete fuel combustion and higher efficiency, reduced fuel sensitivity and linear output throughout the entire burn cycle.

HDG EMD boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG EMD-C215 controls all the processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the step grate system, and automatically ignited, primary and secondary air is accurately added, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas, information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures maximum annual efficiencies are achieved. Automatic ash removal and heat exchanger cleaning are processes that maintains efficiency and cleanliness, any products of combustion removed from the heat exchange surfaces are disposed of with the ash.

Loading the accumulator is also prudently managed; one three way mixing valve and two PT 1000 temperature sensors, one at the top of the accumulator and one at the bottom operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket.

EMD-C215 controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started, this process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer) the component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised, this process extends component life time and efficiency.

The HDG EMD-C25 controller has the option of remote visualisation. This allows the customer or engineer to monitor the boiler performance without a plant room visit. The visualisation software allows a historic and real time view of events. The Hydronic plus is also available to use in conjunction with the EMD-C215 controller, this product provides a weather compensated complete heating system control.

HDG fuel feeding systems

The Compact 150-200 boiler can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another. See section G for information regarding fuel feed and storage options.

HDG ash disposal

- Ash removal automatic 80 litres sealed containers (standard) 140 litre containers optional
- Automatic functions
- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic step grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management, recommended minimum accumulator size Compact 150, 3000 litres

HDG Construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- Cladding, preassembled powder coated steel: main body green (RAL 6011) yellow (RAL 1007) Inspection doors, chip feeder traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchange
- Secondary combustion chamber: Modular design, manufactured from cast refractory bricks

HDG Safety features


- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger Thermal discharge
- Chip – pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the EMD control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic fuelling pause


HDG standards and approvals


- Type tested to EN 303-5
- The Compact 150 -190 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones




Compact 150 pellet boiler













Equipment prices and order codes

Compact 150 with TBZ150 auger transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 150 left side version inc cyclone	3 Phase (400V)	HDG3038CF	36,580.00	40	
	HDG Compact 150 right side version inc cyclone	3 Phase (400V)	HDG3039CF			
	HDG Compact 150 left side version inc cyclone	Single Phase (230V)	HDG3054CF	39,835.00		
	HDG Compact 150 right side version inc cyclone	Single Phase (230V)	HDG3055CF			

Compact 150 with TBZ80 vacuum fuel transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 150 left side version inc cyclone	3 Phase (400V)	HDG3082CF	39,115.00	40	
	HDG Compact 150 right side version inc cyclone	3 Phase (400V)	HDG3083CF			
	HDG Compact 150 left side version inc cyclone	Single Phase (230V)	HDG3076CF	37,615.00		
	HDG Compact 150 right side version inc cyclone	Single Phase (230V)	HDG3077CF			

Grate option Compact 150			Order code	£ ex VAT	PG	Page
	High-performance stepped grate with high-grade stainless elements. (Standard with Compact 200). For base load boiler application (> 2500 hr/year) or when using pellets, pressed wood briquettes and other wood fuels approved by HDG		Included as standard with wood pellet models			

Chimney fan and particulate matter cyclone options			Order code	£ ex VAT	PG	Page
	Chimney assist fan For installations where the fuel type is low in particulate matter or particulate emission levels are not critical. Includes HDG pressure controller		Included in price of Compact 150		40	 B48
	Cyclone dust extractor with chimney assist flue fan Ideal for short flue applications or where flue conditions are not ideal. The cyclone reduces particulate matter where the fuel content is rich in ash or strict emission requirements are required. Includes HDG pressure controller		HDG3199	3,895.00		

System and hydraulic components			Order code	£ ex VAT	PG	Page
	HDG return temperature control for HDG Compact 150/200 Three-way mixing valve DN 65. 3 flange PN 6. DN 65 with seals, servo motor 3-30 230 V, Circulation pump UPS 50-60. installation length 310mm, 2 piece flange PN 6. DN 50 with seals		PL2072	1,897.00	41	 I18
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation. Up to 200 kW		PL2003	110.00		 I31
	Thermal safety device, DN 20 file pocket and water connections		PL2000	68.00		 I16
	Expansion vessel 400 litre. Minimum size to suit boiler/accumulator Compact 150		EV4709	475.00		 I19
	Accumulator 3,000 litre. Minimum size. Compact 150		TS4814	2,797.00		 I31
	Accumulator temperature gauges Minimum 4 recommended		PL2016	24.00		
	Low water pressure valve 0.5 bar activation 230V		PL2062	68.00		

Compact 100-115-150-200 pellet boiler

Design and features

B

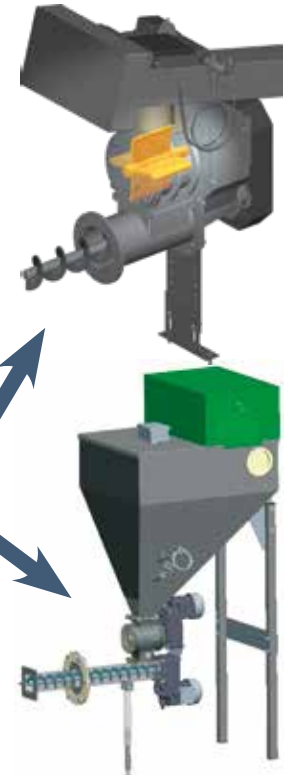
WOOD PELLET BOILERS

The **Lambda sensor** measures the residual oxygen in the flue and it is the reference variable for the secondary air quantity. The secondary air is transferred over a separate air channel to the combustion gases in the combustion chamber. This way even with fluctuating combustion material quality the best combustion efficiency can be achieved. The Lambda sensor is automatically calibrated by the control system. By means of the adjustable additional function "Lambda-Stop", the control system automatically inhibits the fuel flow, if the oxygen value falls below a minimal oxygen value.

The **automatic cleaning system** periodically raises and lowers the turbulators which are suspended within the channels of the heat exchanger. This motion removes the ash that adheres to the exchanger surface. While not being used to clean the heat exchanger the blades of the cleaning system cause turbulence in the flue gas which serves to force more of the heat into the water jacket.

The temperature measured by the **combustion chamber temperature sensor** is the reference variable for required primary air, and fuelling rate. If the combustion temperature exceeds the set-point, the controller will prevent more fuel being introduced until it reaches an acceptable level. In addition to combustion control, this measurement will indicate to the controller that the ignition system will need to be used on start up, or the embers remaining from the previous burn will light the new fuel.

TBZ150 direct auger boiler feed system



The **automatic ash removal** works in conjunction with the step grate, removing ash from the combustion chamber and fly ash from the heat exchanger. The standard containers are 80 litres, but 140 litre ash containers and a central ash removal system are also available. The ash augers have 8mm linings and the ash boxes are sealed onto the boiler with a single action lever.

TBZ80 vacuum transfer with auger feed system

The **automatic ash removal** - standard with the HDG Compact 100-200 series - transfers the combustion and fly ash into two external ash containers of approximately 80 litres volume each. By request the ash container with 140-litre volume or a central ash removal (HDG Compact 150/200) are also available. The two ash removal augers have 8mm auger lining. In order to achieve longer ash container operation times, the combustion residuals are additionally compressed. The ash containers are locked on the boiler by a safety lock.

The **over fill mechanism** is built into the ignition fan, and prevents too much fuel being loaded onto the grate. When the igniter is moved the fuel dosage auger is stopped ("material stop") and will re-start when the fuel has been burnt. This is one of the mechanisms which prevents the boiler from over firing. During ignition if the fuel has not ignited on the first run, the second run may activate the material stop. In this case the start up operation is moved straight to the ignition phase and on to warm up in the usual way.

The **step grate** in the combustion chamber is what gives the Compact 100 - 200 range the exceptionally efficient combustion characteristics. The patented linear drive enables constant power for the duration of the burn, and effective introduction of the primary air to the fuel. Fuel is fed onto the grate by the constant running TBZ auger. This is to minimise the residual fuel in the TBZ and prevent burn back. Periodically the grate walks the fire towards the ash auger while being refreshed with new fuel behind by the TBZ. By the time the pellet has reached the bottom of the grate it is burnt to ash.

Compact 100-115-150-200 pellet boiler

Fuel delivery system options

The HDG Compact 100-200 pellet boilers offer a range of wood pellet fuel store and transfer systems



FRA spring blade direct transfer auger

The FRA transfers fuel directly from a fuel store to the TBZ150 boiler feed auger. The system includes a spring blade sweep arms.



PSZ direct transfer auger

The PSZ transfers fuel directly from a fuel store to the TBZ150 boiler feed auger.



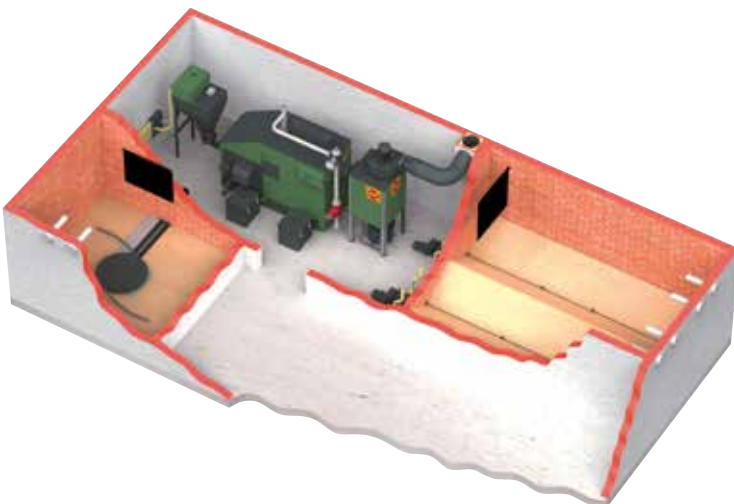
PSS auger with vacuum transfer head.

The auger is positioned flat on the floor in a bulk pellet store which has sloping sides at 30-35 degrees.



FRA-PSS auger with vacuum transfer head.

The auger is positioned flat on the floor in a bulk pellet store. The spring blades draw fuel into the auger as the fuel level reduces. This system allows for the largest possible fuel store volume.



Multiple pellet stores with different transfer systems

It is possible if required to connect up to three separate wood pellet fuel stores to one HDG pellet boiler which uses the TBZ80 feed system. The fuel stores can use any combination of PSS or FRA-PSS auger transfer systems.

On demand the system controller will automatically select which fuel store to connect to and transfer fuel to the TBZ80 local hopper. This combination of fuel stores enables large amounts of wood pellets to be stored in smaller or restricted fuel store areas.

B

WOOD PELLET BOILERS

Compact 200 pellet boiler

Boiler information

B

WOOD PELLET BOILERS



HDG Step grate system

At the heart of the Compact 200 boiler lies the HDG step grate system, step grates are usually associated with much larger boilers, because the cost of manufacturing this innovative moving grate solution would normally prevent its inclusion within a boiler of this size. However the design team at HDG considered its advantages so important that a step grate has become a standard feature on all boilers 100kW and above. Step grates allow for greater fuel variability, by keeping the incandescent bed moving. This promotes complete fuel combustion and higher efficiency, reduced fuel sensitivity and linear output throughout the entire burn cycle.

HDG EMD boiler controller

Latest generation Lambda controlled boiler 90% plus operational efficiency. The HDG EMD-C215 controls all the processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the step grate system, and automatically ignited, primary and secondary air is accurately added, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas, information gathered from this analysis allows precise primary and secondary air actuator adjustments, this guarantees low fuel consumption and ensures maximum annual efficiencies are achieved. Automatic ash removal and heat exchanger cleaning are processes that maintains efficiency and cleanliness, any products of combustion removed from the heat exchange surfaces are disposed of with the ash.

Loading the accumulator is also prudently managed; one three way mixing valve and two PT 1000 temperature sensors, one at the top of the accumulator and one at the bottom operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket.

EMD-C215 controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started, this process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer) the component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised, this process extends component life time and efficiency.

The HDG EMD-C25 controller has the option of remote visualisation. This allows the customer or engineer to monitor the boiler performance without a plant room visit. The visualisation software allows a historic and real time view of events. The Hydronic plus is also available to use in conjunction with the EMD-C215 controller, this product provides a weather compensated complete heating system control.

HDG fuel feeding systems

The Compact 150-200 boiler can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another. See section G for information regarding fuel feed and storage options.

HDG ash disposal

- Ash removal automatic 80 litres sealed containers (standard) 140 litre containers optional
- Automatic functions
- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic step Grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management, recommended minimum accumulator size Compact 150, 3000 litres, Compact 200, 4000 litres

HDG Construction

- The boiler is manufactured in left and right hand versions (facilitating simple placement)
- Boiler body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- Cladding, preassembled powder coated steel: main body green (RAL 6011) yellow (RAL 1007) Inspection doors, chip feeder traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchange
- Secondary combustion chamber: modular design, manufactured from cast refractory bricks

HDG Safety features












- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger thermal discharge
- Chip - pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the EMD control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic fuelling pause

HDG Standards and approvals

- Type tested to EN 303-5
- The Compact 150 -190 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones

Compact 200 pellet boiler

Equipment prices and order codes





Compact 200 with TBZ150 auger transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 200 left side version	3 Phase (400V)	HDG3466CF	41,255.00	40	
	HDG Compact 200 right side version	3 Phase (400V)	HDG3467CF			
	HDG Compact 200 left side version	Single Phase (230V)	HDG3468CF	44,510.00		
	HDG Compact 200 right side version	Single Phase (230V)	HDG3469CF			
Compact 200 with TBZ80 vacuum fuel transfer feed system includes high performance grate			Order code	£ ex VAT	PG	Page
	HDG Compact 200 left side version	3 Phase (400V)	HDG3462CF	42,380.00	40	
	HDG Compact 200 right side version	3 Phase (400V)	HDG3463CF			
	HDG Compact 200 left side version	Single Phase (230V)	HDG3464CF	42,930.00		
	HDG Compact 200 right side version	Single Phase (230V)	HDG3465CF			
Grate option Compact 200			Order code	£ ex VAT	PG	Page
	High-performance step grate with high-grade stainless elements. For base load boiler application (> 2500 hr/year) or when using pellets		Included as standard with wood pellet models			
Chimney fan and particulate matter cyclone options			Order code	£ ex VAT	PG	Page
	Chimney assist fan For installations where the fuel type is low in particulate matter or particulate emission levels are not critical. Includes HDG pressure controller		Included in price of Compact 200		40	B52
	Cyclone dust extractor with chimney assist flue fan Ideal for short flue applications or where flue conditions are not ideal. The cyclone reduces particulate matter where the fuel content is rich in ash or strict emission requirements are required. Includes HDG pressure controller		HDG3199	3,895.00		
System and hydraulic components			Order code	£ ex VAT	PG	Page
	HDG return temperature control for HDG Compact 150/200 Three-way mixing valve DN 65. 3 flange PN 6. DN 65 with seals, servo motor 3-30. 230 V, Circulation pump UPS 50-60. installation length 310mm, 2 piece flange PN 6. DN 50 with seals		PL2072	1,897.00	41	
	Boiler safety module Combined pressure gauge, autovent, pressure relief, with two part insulation. Up to 200 kW		PL2003	110.00		
	Thermal safety device DN 20 file pocket and water connections		PL2000	68.00		
	Expansion vessel 500 litre. Minimum size to suit boiler/accumulator Compact 200		EV4710	591.00		
	Accumulator 4,000 litre. Minimum size. Compact 200		TS4816	3,319.00		
	Accumulator temperature gauges Minimum w recommended		PL2016	24.00		
	Low water pressure valve 0.5 bar activation 230V		PL2062	68.00		


Compact 100 direct auger pellet kits

Equipment prices and order codes



B

WOOD PELLET BOILERS




HDG Compact 100 with TBZ 150 auger transfer system		Order code	£ ex VAT
   	Compact 100 with TBZ 150 auger transfer kit - left hand three phase	TP1082	33,682.00
	Compact 100 with TBZ 150 auger transfer kit - right hand three phase	TP1083	
	Compact 100 with TBZ 150 auger transfer kit - left hand single phase	TP1084	34,227.00
	Compact 100 with TBZ 150 auger transfer kit - right hand single phase	TP1085	
<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 300 litre expansion vessel, nickel cap valve, 2000 litre H₂O accumulator</p> <p>The HDG Compact 100 boiler comes with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			

PSZ Wood pellet direct auger		Order code	£ ex VAT
	PSZ 3.6-4.1 wood pellet direct auger	HDG3180	3,740.00

Options
The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.





Uniko Solar Thermal Pack		Order code	£ ex VAT	PG
 	<p>Solar controller Solar controller for Biomass boiler without integrated solar control</p>	ST2039	244.00	
	<p>Uniko Biomass Package - 4.04m² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)</p>	ST3001	1,938.00	24


Mounting options


		
On-roof, parallel	Flat roof, 45	In-roof mounting

Compact 100 vacuum transfer pellet kits

Equipment prices and order codes

HDG Compact 100 with TBZ 80 vacuum transfer system		Order code	£ ex VAT
   	Compact 100 with TBZ 80 vacuum transfer kit - left hand three phase	TP1086	35,482.00
	Compact 100 with TBZ 80 vacuum transfer kit - right hand three phase	TP1087	
	Compact 100 with TBZ 80 vacuum transfer kit - left hand single phase	TP1088	36,032.00
	Compact 100 with TBZ 80 vacuum transfer kit - right hand single phase	TP1089	
<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 300 litre expansion vessel, nickel cap valve, 2000 litre H₂O accumulator</p> <p>The HDG Compact 100 boiler comes with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			
<p>Options The Solar Thermal Pack comes complete and ready to instal. The installation is straight forward and offers the benefit of free energy during the summer. Ideal as a top up on shorter days.</p>			

PSS auger delivery system		Order code	£ ex VAT
	PSS 3.6-4.1 wood pellet auger	HDG3172	2,945.00
	HDG hose set - special	HDG2148	300.00
	Total		

FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 3.5 wood pellet auger	HDG3209	4,945.00
	Pellet hose set -standard	HDG2148	300.00
	Total		

B

WOOD PELLET BOILERS

Compact 115 direct auger pellet kits

Equipment prices and order codes

B

WOOD PELLET BOILERS

HDG Compact 115 with TBZ 150 auger transfer system



	Order code	£ ex VAT
Compact 115 with TBZ 150 auger transfer kit - left hand three phase	TP1090	35,709.00
Compact 115 with TBZ 150 auger transfer kit - right hand three phase	TP1091	
Compact 115 with TBZ 150 auger transfer kit - left hand single phase	TP1092	36,309.00
Compact 115 with TBZ 150 auger transfer kit - right hand single phase	TP1093	

Includes:

Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature guages, 300 litre expansion vessel, nickel cap valve, 2500 litre H₂O accumulator

The HDG Compact 115 boiler comes with:

A full 10 year HDG warranty • See page M12 for full details

Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre

PSZ Wood pellet direct auger



	Order code	£ ex VAT
PSZ 3.6-4.1 wood pellet direct auger	HDG3180	3,740.00

Options

The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.

Uniko Solar Thermal Pack



Solar controller

Solar controller for Biomass boiler without integrated solar control

Order code	£ ex VAT	PG
ST2039	244.00	

Uniko Biomass Package - 4.04m² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)

Order code	£ ex VAT	PG
ST3001	1,938.00	24

Mounting options



On-roof, parallel







Flat roof, 45




In-roof mounting


Compact 115 vacuum transfer pellet kits

Equipment prices and order codes

HDG Compact 115 with TBZ 80 vacuum transfer system		Order code	£ ex VAT
   	Compact 115 with TBZ 80 vacuum transfer kit - left hand three phase	TP1094	36,609.00
	Compact 115 with TBZ 80 vacuum transfer kit - right hand three phase	TP1095	
	Compact 115 with TBZ 80 vacuum transfer kit - left hand single phase	TP1096	37,154.00
	Compact 115 with TBZ 80 vacuum transfer kit - right hand single phase	TP1097	
<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 300 litre expansion vessel, nickel cap valve, 2500 litre H₂O accumulator</p> <p>The HDG Compact 115 boiler comes with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			

Options
The **Solar Thermal Pack** comes complete and ready to instal. The installation is straight forward and offers the benefit of free energy during the summer. Ideal as a top up on shorter days.

PSS auger delivery system		Order code	£ ex VAT
	PSS 3.6-4.1 wood pellet auger	HDG3172	2,945.00
	HDG hose set - special	HDG2148	300.00
	Total		3,245.00

FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 3.5 wood pellet auger	HDG3209	4,945.00
	Pellet hose set - standard	HDG2148	300.00
	Total		5,245.00

B

WOOD PELLET BOILERS

Compact 150 direct auger pellet kits

Equipment prices and order codes

B

WOOD PELLET BOILERS

HDG Compact 150 with TBZ 150 auger transfer system

Order code

£ ex VAT



Compact 150 with TBZ 150 auger transfer kit - left hand three phase

TP1098

42,663.00

Compact 150 with TBZ 150 auger transfer kit - right hand three phase

TP1099

Compact 150 with TBZ 150 auger transfer kit - left hand single phase

TP1100

45,918.00

Compact 150 with TBZ 150 auger transfer kit - right hand single phase

TP1101



Includes:

Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 400 litre expansion vessel, nickel cap valve, 3,000 litre H₂O accumulator

The HDG Compact 150 boiler comes with:

A full 10 year HDG warranty • See page N1 for full details

Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre

PSZ wood pellet direct auger

Order code

£ ex VAT



PSZ 3.6-4.1 wood pellet direct auger including FRA flexi blade delivery system

HDG3181

3,850.00

Options

The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.

Uniko Solar Thermal Pack

Order code

£ ex VAT

PG



Solar controller

Solar controller for Biomass boiler without integrated solar control

ST2039

244.00



Uniko Biomass Package - 4.04m² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)

ST3001

1,938.00

24

Mounting options



On-roof, parallel









Flat roof, 45



In-roof mounting

Compact 150 vacuum transfer pellet kits

Equipment prices and order codes

HDG Compact 150 with TBZ 80 vacuum transfer system		Order code	£ ex VAT
   	Compact 150 with TBZ 80 vacuum transfer kit - left hand three phase	TP1102	45,198.00
	Compact 150 with TBZ 80 vacuum transfer kit - right hand three phase	TP1103	
	Compact 150 with TBZ 80 vacuum transfer kit - left hand single phase	TP1104	43,698.00
	Compact 150 with TBZ 80 vacuum transfer kit - right hand single phase	TP1105	
<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 400 litre expansion vessel, nickel cap valve, 3,000 litre H₂O accumulator</p> <p>The HDG Compact 150 boiler comes with: A full 10 year HDG warranty • See page N1 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			
PSS auger delivery system		Order code	£ ex VAT
	PSS 3.6-4.1 wood pellet auger	HDG3173	3,055.00
	HDG hose set - special	HDG2148	300.00
	Total		
FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 3.5 wood pellet auger	HDG3210	5,290.00
	Pellet hose set - standard	HDG2148	300.00
	Total		

WOOD PELLET BOILERS

B

Compact 200 direct auger pellet kits

Equipment prices and order codes

B

WOOD PELLET BOILERS

HDG Compact 200 with TBZ 150 vacuum transfer system

Order code

£ ex VAT



Compact 200 with TBZ 150 vacuum transfer kit - left hand three phase

TP1106

47,978.00

Compact 200 with TBZ 150 vacuum transfer kit - right hand three phase

TP1107

Compact 200 with TBZ 150 vacuum transfer kit - left hand single phase

TP1108

51,233.00

Compact 200 with TBZ 150 vacuum transfer kit - right hand single phase

TP1109



Includes:

Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 400 litre expansion vessel, nickel cap valve, 4,000 litre H₂O accumulator

The HDG Compact 200 boiler comes with:

A full 10 year HDG warranty • See page M12 for full details

Also included free of charge

Purpose designed wall mounted record keeping and service equipment centre

PSZ Wood pellet direct auger

Order code

£ ex VAT



PSZ 3.6-4.1 wood pellet direct auger including FRA flexi blade delivery system

HDG3181

3,850.00

Options

The **Solar Thermal Pack** comes complete and ready to install excluding pipework. The installation is straight forward and offers the benefit of free energy during the summer. Suitable hot water cylinder with thermal solar coil required.

Uniko Solar Thermal Pack

Order code

£ ex VAT

PG



Solar controller

Solar controller for Biomass boiler without integrated solar control

ST2039

244.00

Uniko Biomass Package - 4.04m² gross area, 2 Uniko flat plate collectors, pump station, 24 litre expansion vessel, connection kit, sensor, mixing thermostat, glycol (20 litres)

ST3001

1,938.00

24



Mounting options



On-roof, parallel







Flat roof, 45





In-roof mounting

Compact 200 vacuum transfer pellet kits

Equipment prices and order codes

HDG Compact 200 with TBZ 80 vacuum transfer system		Order code	£ ex VAT
   	Compact 200 with TBZ 80 vacuum transfer kit - left hand three phase	TP1110	49,103.00
	Compact 200 with TBZ 80 vacuum transfer kit - right hand three phase	TP1111	
	Compact 200 with TBZ 80 vacuum transfer kit - left hand single phase	TP1112	49,653.00
	Compact 200 with TBZ 80 vacuum transfer kit - right hand single phase	TP1113	
<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 500 litre expansion vessel, nickel cap valve, 4,000 litre H₂O accumulator</p> <p>The HDG Compact 200 boiler comes with: A full 10 year HDG warranty • See page M12 for full details</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>			

PSS auger delivery system		Order code	£ ex VAT
	PSS 3.6-4.1 wood pellet auger	HDG3173	3,055.00
	HDG hose set - special	HDG2148	300.00
	Total		

FRA PSS flexiblade delivery system		Order code	£ ex VAT
	FRA PSS 3.5 wood pellet auger	HDG3210	5,290.00
	Pellet hose set - standard	HDG2148	300.00
	Total		

B

WOOD PELLET BOILERS

M 350-500 pellet boiler

Design and features

The **Lambda sensor** measures the residual oxygen in the flue and it is the reference variable for the secondary air quantity. The secondary air is transferred over a separate air channel to the combustion gases in the combustion chamber. This way even with fluctuating combustion material quality the best combustion efficiency can be achieved. The Lambda sensor is automatically calibrated by the control system. By means of the adjustable additional function "Lambda-Stop", the control system automatically inhibits the fuel flow, if the oxygen value falls below a minimal oxygen value.

The four **section heat exchanger** is connected directly to the combustion chamber and ensures optimum heat transfer. It consists of four sections, each equipped with vertical heat exchanger pipes. The fire resistant concrete is very robust, and its geometric design contributes to the retention time and the turbulence of the combustion gases in the combustion chamber being very high. The combustion gases are they completely burned off so that emissions are reduced to a minimum. Even when operating under partial load, the hot combustion chamber provides the necessary combustion temperatures for the lowest emissions.

The patented **rotary feed system** activates an automatic reversing mechanism should larger pieces of wood or foreign bodies have got into the fuel. If the rotary feeder experiences a certain amount of resistance, the wheel reverses up to three times and thereby prevents damage from occurring.

The stoker auger supplies the boiler with the precise quantity of fuel that is required for optimum combustion. The direct input of fuel on the grate and the efficient design of the gearbox ensure that the feeding system operates quietly and the energy costs are kept low.

The **stepped grate** in the combustion chamber is what gives the M Series range the exceptionally efficient combustion characteristics. The patented linear drive enables constant power for the duration of the burn, and effective introduction of the primary air to the fuel. Fuel is fed onto the grate by the constant running TBZ auger. This is to minimise the residual fuel in the TBZ and prevent burn back. Periodically the grate walks the fire towards the ash auger while being refreshed with new fuel behind by the TBZ. By the time the pellet has reached the bottom of the grate it is burnt to ash.

The ash produced in the M Series is constantly being pushed by the step grate towards the **ash removal auger**. The ash is automatically conveyed into the 240 litre ash bin connected via the ash removal auger and ascending auger. A second ash removal auger conveys the major part of the fly ash - also automatically - to the central ash removal system. This large central ash removal system, extends the service and maintenance intervals, even over extended operating hours.



M 350-500 pellet boiler

Design features

The temperature measured by the **combustion chamber temperature sensor** is the reference variable for required primary air, and fuelling rate. If the combustion temperature exceeds the set-point, the controller will prevent more fuel being introduced until it reaches an acceptable level. In addition to combustion control, this measurement will indicate to the controller that the ignition system will need to be used on start up, or the embers remaining from the previous burn will light the new fuel.

Cleaning turbulators, fitted as standard, ensure that the heat exchangers pipes are kept clean and that an ideal heat transfer takes place constantly. The turbulators clear the vertical heat exchanger tubes at regular intervals, removing fly ash by automatically moving up and down. Moreover, their shape creates further turbulence of the flue gases, improving heat transfer and efficiency. The ash scraped off by the turbulators is automatically extracted by ash removal augers into the external fly ash containers.

During combustion of the heating material in the HDG M300-400, targeted air is added by the speed-controlled combustion air fan as well as the controlled airflow cross-sections. There are three different air zones:

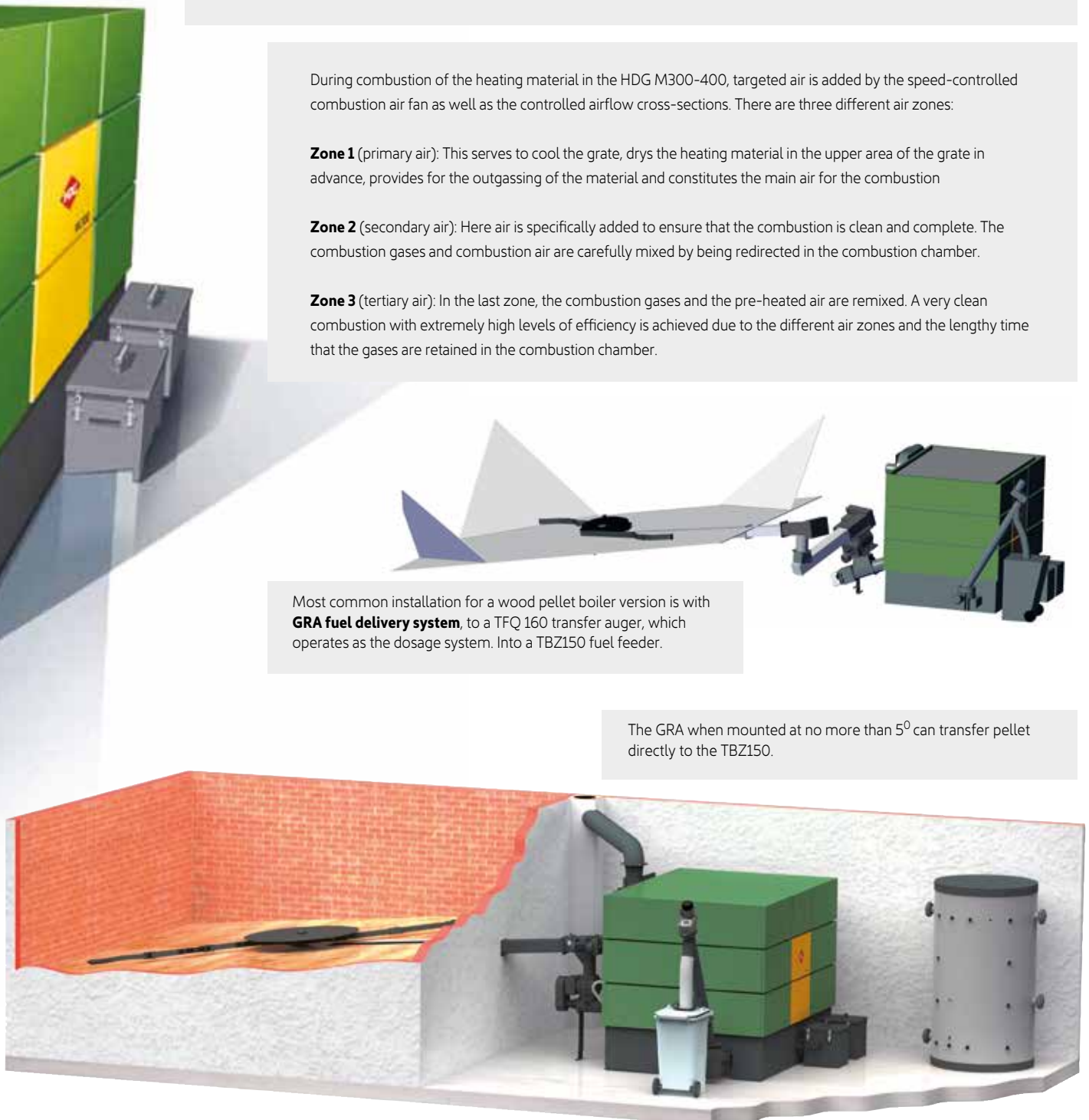
Zone 1 (primary air): This serves to cool the grate, dries the heating material in the upper area of the grate in advance, provides for the outgassing of the material and constitutes the main air for the combustion

Zone 2 (secondary air): Here air is specifically added to ensure that the combustion is clean and complete. The combustion gases and combustion air are carefully mixed by being redirected in the combustion chamber.

Zone 3 (tertiary air): In the last zone, the combustion gases and the pre-heated air are remixed. A very clean combustion with extremely high levels of efficiency is achieved due to the different air zones and the lengthy time that the gases are retained in the combustion chamber.

Most common installation for a wood pellet boiler version is with **GRA fuel delivery system**, to a TFQ 160 transfer auger, which operates as the dosage system. Into a TBZ150 fuel feeder.

The GRA when mounted at no more than 5° can transfer pellet directly to the TBZ150.



M 350-500 pellet boiler

Boiler information

B

WOOD PELLET BOILERS



HDG step grate system

The moving stepped grate of the the M Series boiler allows for for greater fuel variability, by keeping the incandescent bed moving. This promotes complete fuel combustion and higher efficiency, reduced fuel sensitivity and linear output throughout the entire burn cycle.

High temperature combustion chamber

The M Series features a water-cooled combustion unit with an air-cooled, moving, 2-zone stepping grate. High temperature combustion chamber with innovative air supplies ensure complete burning of the combustion gases and thereby ensures the lowest levels of emissions at the highest level of efficiency. An Automatic delivery system for the grate and first fly ash using an ascending auger into the available 240 litre large ash bin ensures infrequent emptying of the ash.

HDG EMD boiler controller

Latest generation Lambda controlled boiler 94% operational efficiency. The HDG EMD-C215 controls all the processes required to maximise combustion and fuel efficiency.

At start up fuel is incrementally fed on to the stepped grate system, and automatically ignited, primary and secondary air is accurately added by means of speed regulated fans, ensuring that the fire is quickly established. Once the fire has become established, the controller changes from ignition mode to Lambda control, the controller optimises combustion and emission levels by using information provided by the Lambda sensor. The Lambda sensor continuously samples the flue gas, information gathered from this analysis allows precise primary and secondary air fan adjustments, this guarantees low fuel consumption and ensures maximum annual efficiencies are achieved.

Automatic ash removal and heat exchanger cleaning are processes that maintains efficiency and cleanliness, any products of combustion removed from the heat exchange surfaces are disposed of with the ash.

Loading the accumulator is also prudently managed; one three way mixing valve and two PT 1000 temperature sensors, one at the top of the accumulator and one at the bottom operate in conjunction with one another to achieve this control. When the boiler is first ignited water circulation is limited to the heat exchanger until the temperature has risen to 60°C, this is a precautionary measure to prevent corrosion within the boiler water jacket.

EMD-C215 controller has a residual heat utilisation programme, when the temperature of the water within the accumulator falls 5°C below that of the water within the boiler, the pump is started, this process unloads the heat that was remaining within the boiler and makes it available for use within the building to be heated.

Integrated component protection, during dormant periods (possibly summer) the component protection program is always operational, all electrical components are energised periodically, the Lambda sensor is heated, and the boiler is ventilated, pumps and mixing valves are energised, this process extends component life time and efficiency.

Zeridge Biomass Ed 17A

The HDG EMD-C25 controller has the option of remote visualisation. This allows the customer or engineer to monitor the boiler performance without a plant room visit. The visualisation software allows a historic and real time view of events. The Hydronic plus is also available to use in conjunction with the EMD-C215 controller, this product provides a weather compensated complete heating system control.

Variable speed fan

To guarantee a consistent combustion quality, a pressure gauge constantly monitors the pressure within the boiler and automatically adjusts the speed of the flue gas fan to ensure a consistent pressure within the combustion chamber. This pressure control system ensures consistently high performance, specifically in respect of fluctuating fuel qualities or unfavourable flue conditions.

HDG Fuel feeding systems

The M Series boiler can be configured to burn wood chips, shavings or wood pellets. It is the fuel feed system that generally dedicates the boiler to one fuel type or another. See section G for information regarding fuel feed and storage options.

HDG Ash disposal

- Ash removal automatic to choice of ash bins
- Automatic functions
- Automatic ignition
- Automatic heat exchanger cleaning (maintains high efficiency)
- Automatic stepped grate (making the boiler less fuel sensitive)
- Integrated accumulator loading management, recommended minimum accumulator size M Series 8000 litres

HDG Construction

- Boiler body – heat exchanger: welded construction, tension rod reinforced 4-5 mm thick boiler plate
- Certified in accordance to the pressure equipment directive 97/23/EG boiler class 3 (the highest standard)
- Cladding, preassembled powder coated steel: main body green (RAL 6011) yellow (RAL 1007) Inspection doors, chip feeder traffic grey (RAL 7043)
- Integral thermal heat discharge within the heat exchange
- Secondary combustion chamber: modular design, manufactured from cast refractory bricks

HDG Safety features

- Extremely robust rotary sluice (maximum operational safety)
- Heat exchanger thermal discharge
- Chip – pellet feeder quenching
- Fuel over fill sensor
- Excess heat exchanger temperature protection. Electronic via the EMD control and mechanical via wax filled manual reset thermostat
- Automatic reverse on feed and dosing motors
- Minimum oxygen level automatic fuelling pause

HDG Standards and approvals






- Type tested to EN 303-5
- The Compact 150 -190 qualifies for the new standards to be set for Renewable Heat Incentive emission limits for total particulate matter and oxides of nitrogen 30g/GJ particulate matter and 150g/GJ NOx
- Approved for use in smokeless zones














M 350-500 pellet boiler

Equipment prices and order codes

M Series with TBZ150 feed system			Order code	£ ex VAT	PG	Page
	M 350 with TBZ150 auger feed system	3 Phase (400V)	HDG3089	68,835.00	40	
	M 400 with TBZ150 auger feed system	3 Phase (400V)	HDG3090	74,390.00		
	M 500 with TBZ150 auger feed system	3 phase (400v)	HDG3092	76,890.00		

Model shown with option 240 litre ash bin
Main combustion chamber and fly ash container not included as standard, due to the choices available
Heat exchanger 80 litre ash containers are included

Ash collection options		Order code	£ ex VAT	PG	Page
	240 litre ash bin For wheeled transport of combustion and main fly ash chamber	HDG4140	625.00	40	
	400 litre tipping ash container For transport by fork lift, with tipping mechanism of combustion and main fly ash chamber. (Special designs available on request)	MS91175	1,480.00		
	Transfer cart For ash container heat exchanger 80 Litre ash containers	HDG3232	245.00		












System and hydraulic components		Order code	£ ex VAT	PG	Page
	Return temperature control for M Series Three-way mixing valve DN 80. 3 flange PN 6. DN 80 with seals, servo motor 230 V, Wilo Stratos circulation pump 50/1-12, heat exchanger combustion unit connection pump Wilo Stratos 30/1-8 without display, including connections	PL2074	2,974.00	41	
	Boiler safety module Pressure gauge, autovent, pressure relief, with two part insulation. Up to 350kW An alternative option to this item is to purchase PL2033 and PL2057	PL2004	115.00		
	Pressure relief valve 1 1/4" x 1 1/2" 3 Bar. Must be used with item PL2057. Up to 400 kW	PL2033	62.00		
	Radial pressure gauge 0-6 bar with 50 mm face. Must be used with item PL2033. Up to 400 kW	PL2057	17.00		
	Thermal safety device DN 20 file pocket and water connections. Requires 2 per boiler. We require 1 x PL2000 for the GRA feed system	HDG3481	85.00		
	Expansion vessel 1,000 litre	EV4715	2,263.00		
	Accumulator 6,000 litre. Minimum size	TS4819	4,881.00		
	Accumulator temperature gauges Minimum 4 recommended	PL2016	24.00		

M Series pellet kit comparisons

Equipment prices and order codes

B

WOOD PELLET BOILERS

HDG M 350 Series with TBZ 150 auger transfer system		Order code	£ ex VAT
  	M350 with TBZ 150 auger transfer system kit	TP1114	82,098.00
	<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 1,000 litre expansion vessel, nickel cap valve, 6,000 litre H₂O accumulator</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>		
HDG M 400 Series with TBZ 150 auger transfer system		Order code	£ ex VAT
  	M400 with TBZ 150 auger transfer system kit	TP1115	87,653.00
	<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 1000 litre expansion vessel, nickel cap valve, 6,000 litre H₂O accumulator</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>		
HDG M 500 Series with TBZ 150 auger transfer system		Order code	£ ex VAT
  	M500 with TBZ 150 auger transfer system kit	TP1116	90,153.00
	<p>Includes: Return temperature control kit, variable speed flue fan, boiler safety module, thermal safety devices, flue starter kit and support stand, bi-metallic temperature gauges, 100 litre expansion vessel, nickel cap valve, 6,000 litre H₂O accumulator</p> <p>Also included free of charge Purpose designed wall mounted record keeping and service equipment centre</p>		
GRA Flexiblade delivery system		Order code	£ ex VAT
 	GRA 160 - 3 hinged arm delivery system	HDG3257	8,230.00
	Material auger TFQ 160	HDG3133	2,495.00
	Extension TFQ 160 - 1m	HDG3134	310.00
	Transfer hopper with level sensor for TFQ160	HDG3135	680.00
		Total	11,715.00

