KWB
The Biomass Heating System

Product information

KWB MULTIFIRE

Wood chip and pellet heating system

We provide energy for life!

KWB MULTIFIRE

Wood chip and pellet heating system 20–120 kW

Robust all-rounder for economical heating

clean⁺ EFFICIENCY
Combustion technology

Biomass is best!

Four good reasons why you should use biomass as a renewable power source.

Save on heating costs

Security of supply

Protecting the climate

Creates local jobs

Valuable partnership

Erwin Stubenschrott
KWB Management

More than 2,000 installers and more than 70,000 customers put their trust in us by deciding to purchase a KWB biomass system. We regard this as a Partnership with KWB and this "valuable asset" is an integral component of our company philosophy and the basis of our business relationships. In addition, KWB focuses on customers, reliability and importantly our responsibility for our environment and future generations. This is my personal guarantee!

"We feel well cared for – which gives us security!"
The Weinbergers from Heiligenkreuz am Waasen

"I trust in KWB, because I want quality!"
Armin Kugler, European Champion in lumberjack sports

Our uniqueness sets us apart

KWB INTERMEDIATE CONTAINER

This investment pays off quickly: A heating system with a long service life that saves on energy and fuel costs. In short, a product that makes a difference thanks to well thought out details.
With hopper: 10 years full warranty on the conveyor system!

The hopper

Low energy consumption, no permanent fuel conveyance

The KWB Multifire Type ZI has a large hopper that is automatically filled with wood chips from the storage room. This means: The conveyor system starts up less often and only conveys wood chips when the hopper is empty.
For 100 % reliability, the hopper can also be filled manually.

Your benefits:
+ Energy costs saved
+ Heating system protected
+ Quiet operation, especially at night

Easy operation

KWB COMFORT 3

The KWB Comfort 3 interface has 2 buttons, a dial and a well laid out graphic display. The intuitive menu provides for easy control of the heating system.

It is also easy to configure the parameters for the boiler, heating circuits and buffer tank by using the logically structured menu system. As an option we off two control units for the living area – the digital model or the analogue model.

Control platform components:

Boiler control unit / digital remote control unit

Makes it possible to control one or more heating circuits with room sensor and to configure and monitor the heating circuit, DHWC and buffer tank management directly at the boiler or from the living room.

Analogue remote control unit

Easy operation for one heating circuit with room sensor, respectively, consisting of a dial for adjusting the desired room temperature by ±5 °C and a 4-position slide switch for selecting the heating program: automatic mode, lowering mode, frost protection mode or day operation mode.

Heating circuit expansion module

Enables the control of maximally 2 heating circuits, one DHWC and one buffer tank (with 2 sensors) per module. Operation and monitoring are carried out using the boiler control unit or optionally using digital remote control devices.

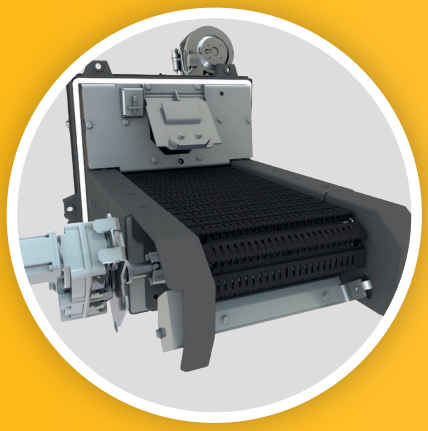
KWB Comfort Solar

The solar control system ensures the optimized storage of sun energy in the storage system and is characterized by self-explanatory and easy user navigation. A convenient commissioning wizard is available to heating engineers.

Robust all-rounder

The large power range of 20 to 120 kW combined with highest fuel flexibility makes it possible to deploy the new **KWB Multifire wood chip and pellet heating system** *in a larger single family home, in commercial facilities and including smaller district heating networks.*

You can find more information regarding the combustion technology on **www.youtube.com/biomasseheizungen**



Maximum flexibility

The system is able to use fuels of varying quality thanks to the crawler-burner technology

Safe operation

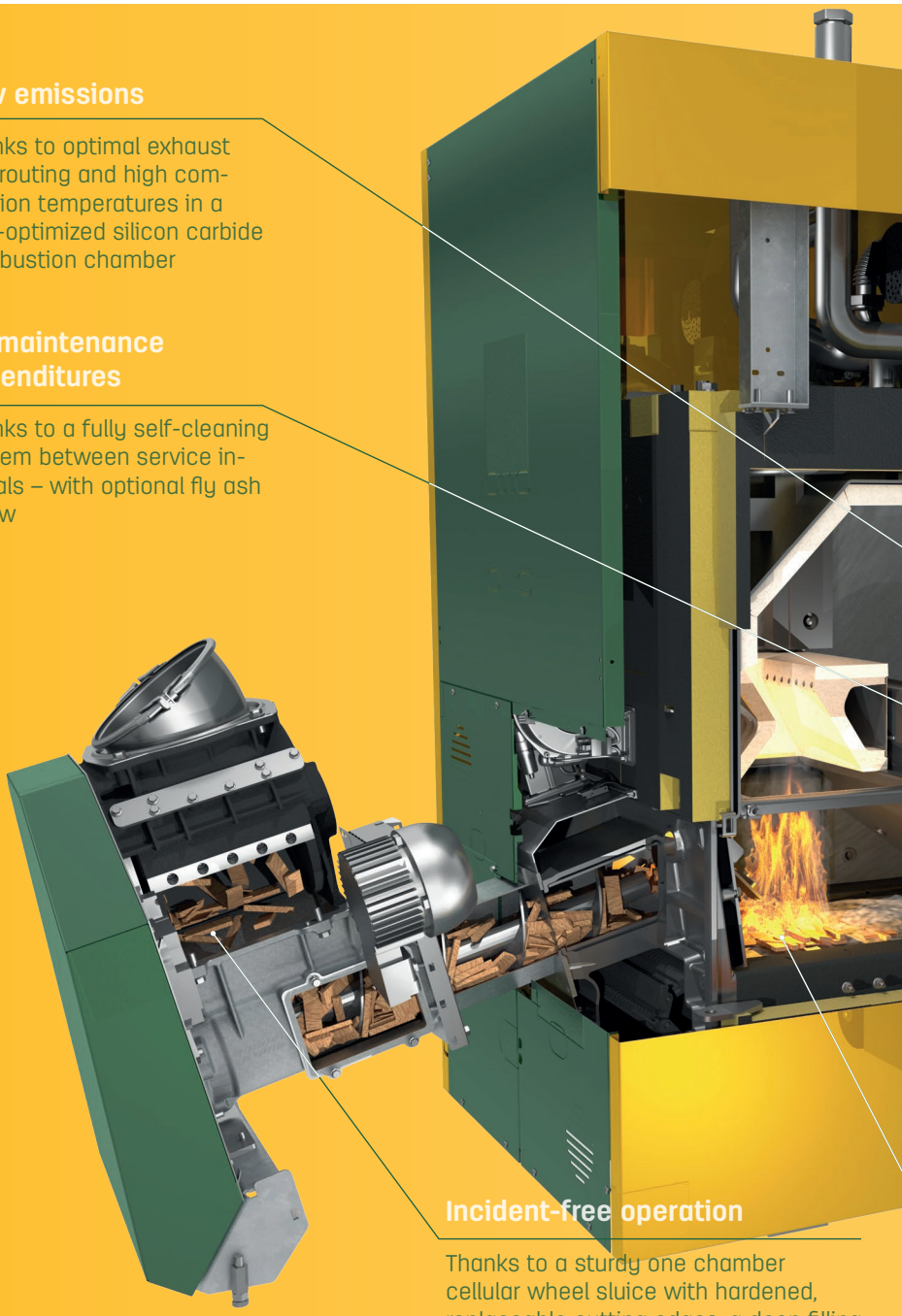
The sturdy one chamber cellular wheel sluice ensures maximum operational safety.

Low emissions

Thanks to optimal exhaust gas routing and high combustion temperatures in a flow-optimized silicon carbide combustion chamber

No maintenance expenditures

Thanks to a fully self-cleaning system between service intervals – with optional fly ash screw



Incident-free operation

Thanks to a sturdy one chamber cellular wheel sluice with hardened, replaceable cutting edges, a deep filling chamber and large sealing surfaces

Easy heat exchange

Thanks to the integrated return flow boost – optimized hydraulics fully adjusted to the system

Easy operation

Thanks to the KWB Comfort 3's control: 2-button control unit with dial and intuitive graphic display

Convenient emptying of ash

Into a mobile ash container with integrated fill level monitoring

Sturdy combustion system

Crawler burner with high-alloy cast and self-cleaning revolving grate components

Clean combustion

Highly efficient turbulators for lowest exhaust gas temperatures and a high degree of efficiency of 95 %.

Low fuel consumption

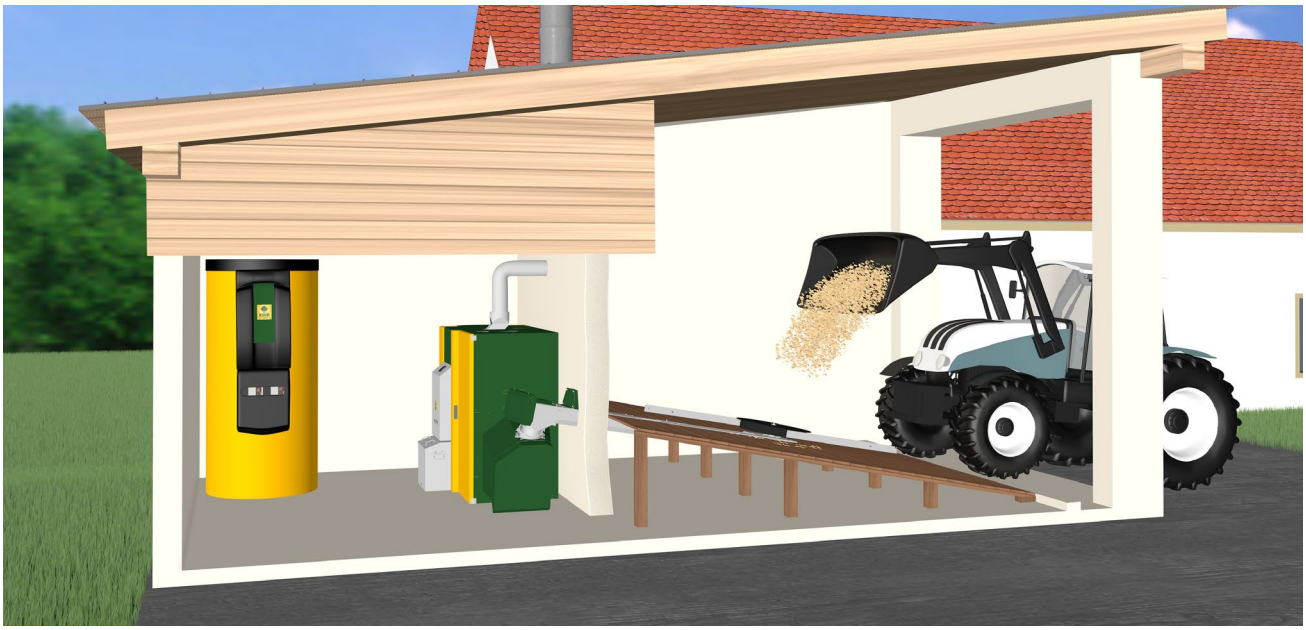
Nearly emission-free combustion thanks to a special design and the combustion chamber materials.

Designed for all store rooms

KWB STORAGE AND CONVEYOR SYSTEMS

Thanks to KWB's flexible and diverse conveyor systems, a solution can be found for almost every structural situation.

Heating system in an adjacent building



KWB Multifire with stirrer system and conveyor screw; direct storage room filling

Heating system in the basement with direct filling

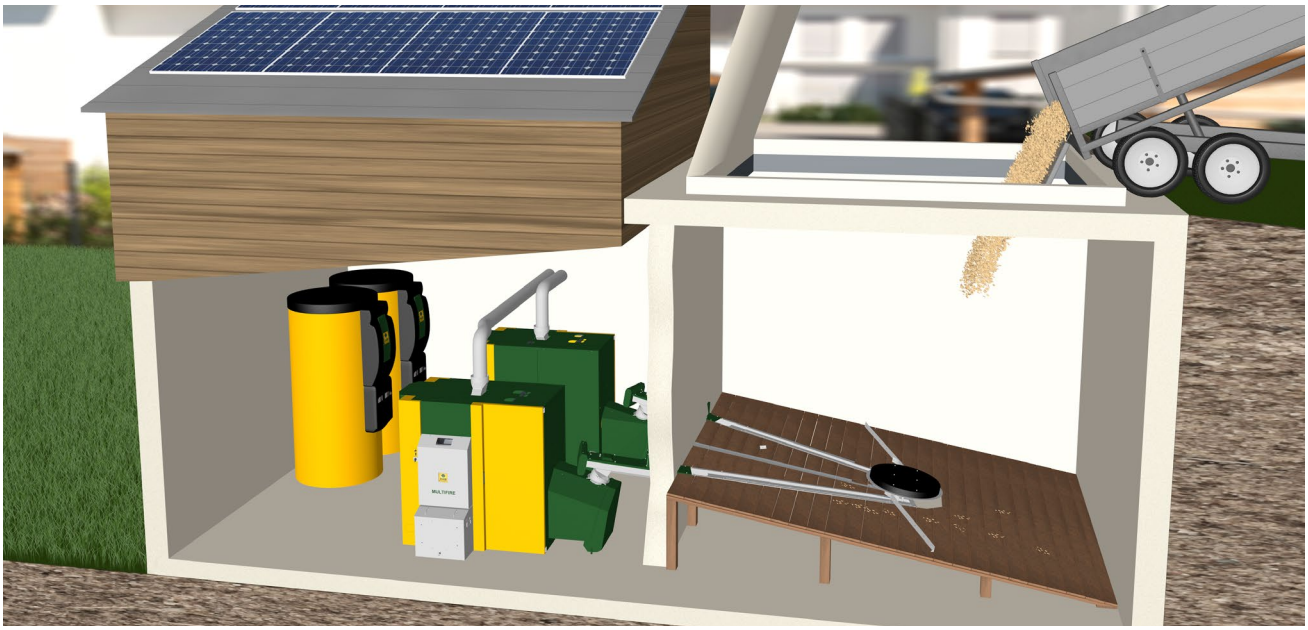
KWB Multifire with stirrer system and conveyor screw; direct storage room filling

Fuel consumption and storage room size for wood chips

Heating load of the building [kW]	Consumption per year* [m³ / a]	Storage room size for annual requirement [m³]*
20	50	74
30	75	111
40	100	148
50	125	185
60	150	222
80	200	296
100	250	370
120	300	444

* Using wood chips with 25 % moisture content and size P16S according to ISO 17225-4 Annual utilisation factor: 2.5 m³ per kW heating load, Storage room size factor for annual requirement: 3.7 m³ per kW heating load

Heating system in a separate heating house



KWB Multifire with double heating system with stirrer system and 2 conveyor screws; direct storage room filling

Heating system in the basement with filling screw

KWB Multifire with stirrer system and conveyor screw; storage room filling with filling screw

Reliable, long service life

KWB STIRRER

The KWB stirrer with conveyor screw on a massive, hollow shaft supported by two bearings, is customized in length and diameter to the specific needs of the customer. Stirrer diameters of 2.5 to 5.5 meters are possible. Storage rooms may be square, rectangular or round and can be situated above the heating room, at the same level or below it.

Broad fuel flexibility

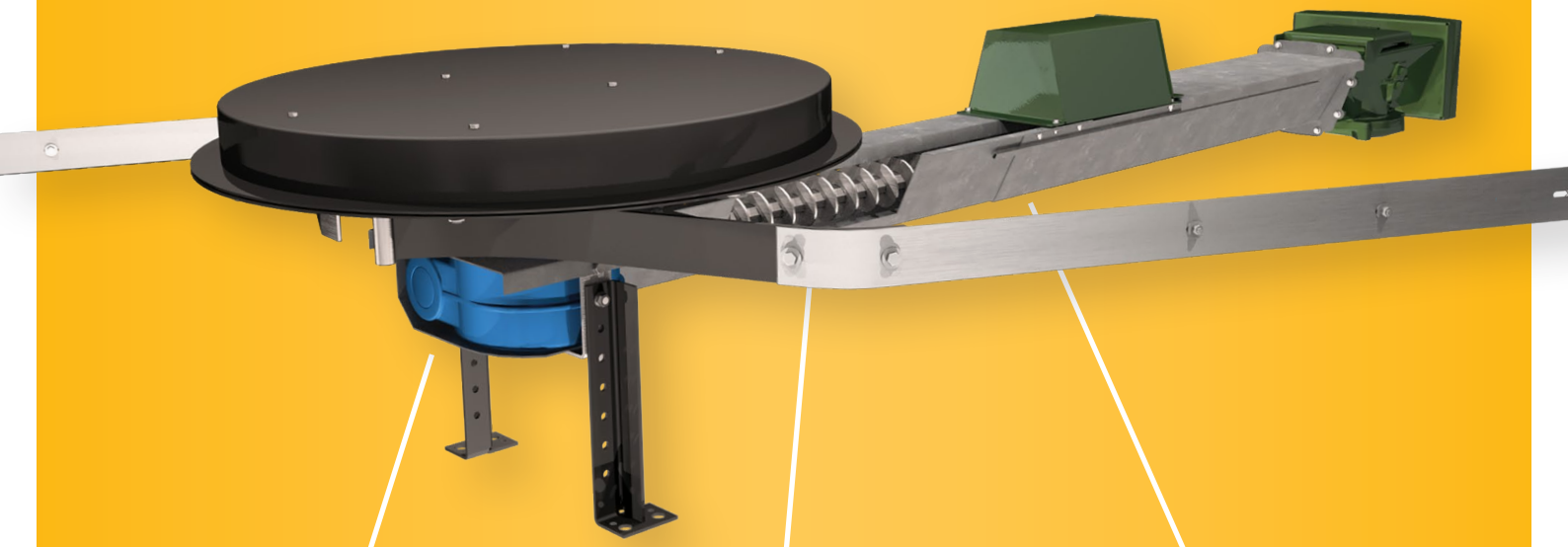
The conveyor system is suitable for wood chips of the categories A1, A2 and B1 up to a particle size of P162 (G30), P31S (G50) in accordance with ISO 17225-4 as well as for the transport of wood pellets of the quality levels A1 and A2 in accordance with ISO 17225-2.
Note: For mechanical dried and screened wood chip we offer our Multifire Type D.

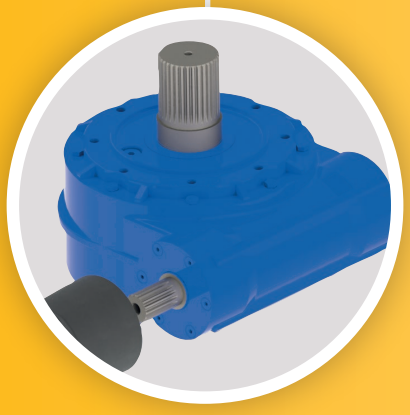
✓ **Integrated wall duct box**
replaces the additional inspection opening

✓ **Full utilization of the storage room volume**
Possible thanks to a horizontal channel construction with a separate ascending screw. The conveyor screw length can be adjusted upon customer request.

✓ **Optimal emptying of the fuel storage room**
With a uniform contact force of the articulated-blade rotary stirrer over the entire diameter.

✓ **Low energy consumption**
Thanks to reduced frictional resistance in the one-piece screws that have been welded together and highly efficient gear motors.





No maintenance expenditures

in the fuel storage room thanks to a sturdy heavy-duty gear.

High operating safety

Thanks to a one-piece screw with ascending pitch and stainless steel coil.

Long service life

Thanks to the optimized channel with separate conveyor screw.

Maximum flexibility

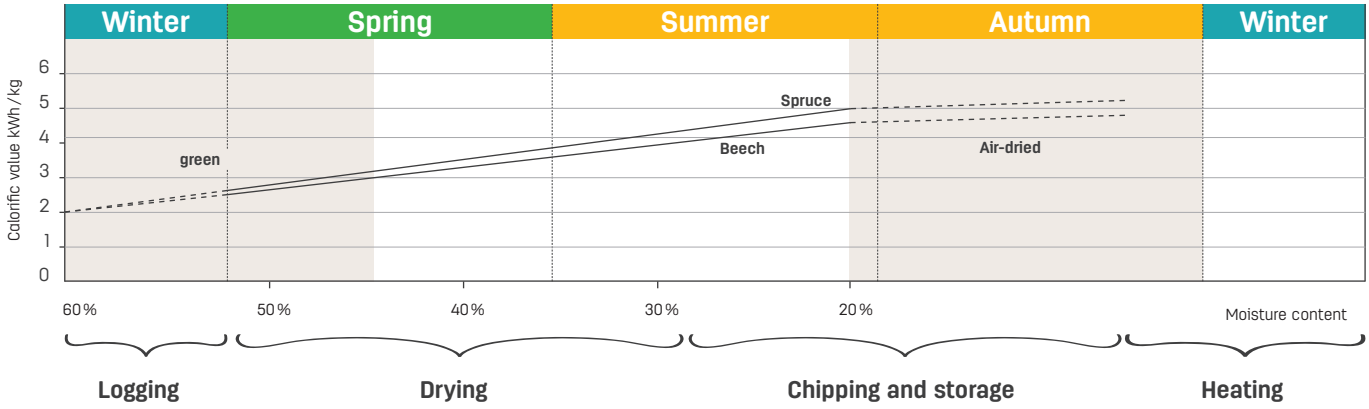
FOR USING DIFFERENT FUEL QUALITIES

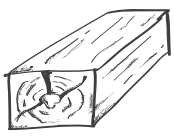
Thanks to the KWB crawler burner, wood ships with fluctuating quality can be used as fuel.

Calorific value of different wood types by volume (w=20)

The higher the proportion of kWh to loose cubic meters (srm), the lower the storage room requirements for the fuel. 1 srm corresponds to 0.4 solid measures of timber (fm). The moisture content (w) is the amount of moisture contained in the wood, specified as a % of the green wood.

Twice the energy content with optimal drying





1 solid measure of timber (fm = 1m³)
Solid wood material

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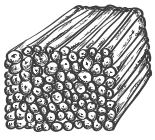

1.4 stacked cubic meter
Log wood

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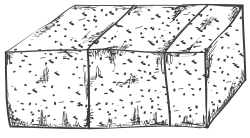


2.5 loose cubic meter (rm)
Wood chips

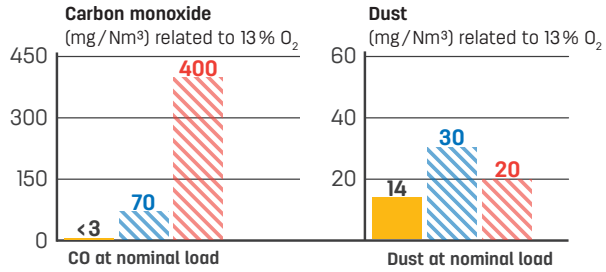
1fm beech wood (w=20%) ≈ 292 litres of heating oil	1fm spruce wood (w=20%) ≈ 210 litres of heating oil

Clean combustion

clean✦EFFICIENCY – *TECHNOLOGY*

The cleanEfficiency chart shows that we have the lowest emission values, highest efficiency and low energy consumption as well as a perfect alignment of construction and control elements.

Emission values at nominal load



- Emission values KWB Multifire 80 kW with wood chips (class A1, 13 % O_2)
- Emission limit values "Blauer Engel", valid as of 1 January 2012
- Legally prescribed emission values, BImSchV Germany, applicable as of 1 January 2015

Quick heat and more efficiency
We recommend using a KWB thermal storage. This will not only allow you to run your heating cleaner and more efficiently, you will also be able to have heat available quickly when needed.

Easy thermal storage tank size calculations:
30 litre storage volume / kW nominal boiler load.

Technical specifications

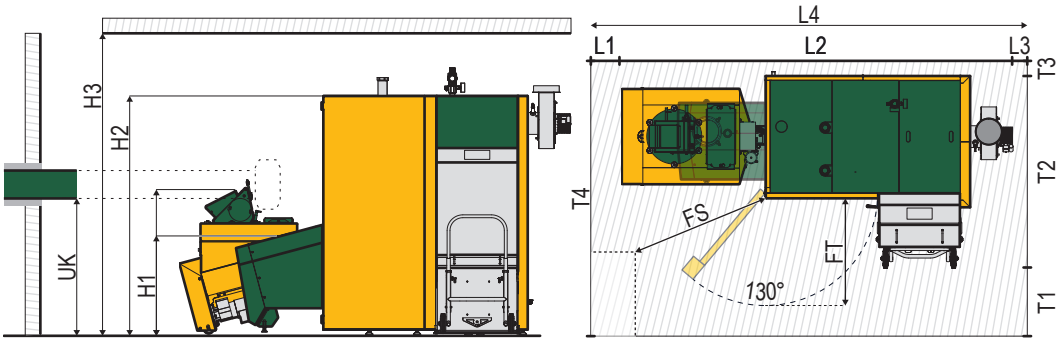
MF2 D / MF2 ZI	Unit	20	30 [1]	30 [2]	40	45 [1]	50 [1]	60 [1]	65 [1]	70 [1]	80	100 [2]	108 [1]	120
Rated power	kW	20	30	32,5	40	45	49,5	60	65	69,5	80	99 101	108	120
Partial load	kW	6,0	9,0	9,8	12,0	13,5	15,0	18,0	19,5	20,9	24,0	30,0	32,4	36,0
Boiler efficiency at rated power	%	93,0	93,6	93,8	94,2	94,2	94,2	94,2	94,2	94,2	94,2	94,3	94,3	94,4
Boiler efficiency at partial load	%	90,2	91,6	92,0	93,0	93,1	93,2	93,5	93,6	93,7	94,0	94,4	94,6	94,8
Boiler class according to EN 303-5:2012	–	5	5	5	5	5	5	5	5	5	5	5	5	5
Exhaust-gas side (for chimney calculation)														
Connection height exhaust-gas pipe	mm	>1395	>1395	>1395	>1395	>1395	>1395	>1445	>1445	>1445	>1445	>1445	>1445	>1445
Exhaust-gas pipe diameter	mm	150	150	150	150	150	150	180	180	180	180	200	200	200
Ash														
Ash container volume	l	70	70	70	70	70	70	70	70	70	70	70	70	70
Electrical system														
Connection: CEE 5-pole 400 V_{AC}	–	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A
Weights														
Boiler weight MF2 D (P16S/P31S)	kg	920	920	920	980	981	982	1100	1100	1100	1100	1200	1200	1200

1 ... Drawing inspection
2 ... Typification variants

Note: You will find detailed KWB Multifire technical specifications on our website's product pages.

Low space requirements

The KWB Multifire wood chip and pellet heating system can be placed directly in corners for optimal space utilization. Double-boiler systems can be placed back to back.



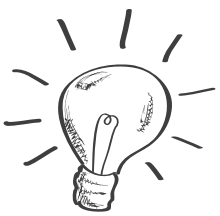
Heating room size 4 m² to 6 m²
Storage room size 50 m³ (20 kW) to 300 m³ (120 kW) without inclined floor

[cm]		MF2 20–50 kW		MF2 60–80 kW		MF2 100–120 kW	
		D	ZI	D	ZI	D	ZI
H1	Conveyor connect height: upper edge cellular sluice P16S	92	–	92	–	92	–
	Conveyor connect height: upper edge cellular sluice P31S	–	–	103	–	103	–
	Conveyor connect height: upper edge fire shutter ZI	–	102	–	102	–	102
H2	Height KWB Multifire	159	159	167	167	167	167
H3	Min. room height	198 (empf. 210)	198 (empf. 210)	200 (empf. 215)	200 (empf. 215)	206 (empf. 215)	206 (empf. 215)
	Min. room height – exhaust pipe is placed above heat exchanger	219 (∅ 150)	219 (∅ 150)	231 (∅ 180)	231 (∅ 180)	233 (∅ 200)	233 (∅ 200)
UK	Bottom edge Conveyor channel M	88 / 98	97 / –	88 / 98	97 / –	88 / 98	97 / –
L1	Clearance	30 / –	22 / –	34 / 25	21	34 / 25	21
L2	Heating system length P16S / P31S	212 / –	252 / –	234 / 243	274 / –	246 / 255	286 / –
L3	Clearance	8	8	8	8	8	8
L4	Min. room length P16S / P31S	>250	>282	>276 / >276	>303	>288 / >288	>315
T1	Clearance	40	40	40	40	40	40
T2	Heating system depth	124	124	135	135	135	135
T3	Clearance	7	7	7	7	7	7
T4	Min. room depth	>171	>171	>182	>182	>182	>182
FS	Espace libre repair	65	65	70	70	70	70
FT	Espace libre door	63	63	76	76	76	76

D ... KWB Multifire type MF2 D ZI ... KWB Multifire type MF2 ZI

Dimensions for moving the boiler into the respective space

KWB Multifire	As delivered	Disassembled Boiler body Dimensions	Disassembled Heat exchanger Dimensions
Type MF2 D / ZI 20–50 kW	154 x 66 x 166	96 x 66 x 120	86 x 65 x 166
Type MF2 D / ZI 60–120 kW	185 x 80 x 177	115 x 77 x 128	103 x 80 x 17



All dimensions in cm I Length x Width x Height I Distances stated are minimum distances!
Information regarding the hydraulics requirements can be downloaded at our websites.

Clear and simple assembly

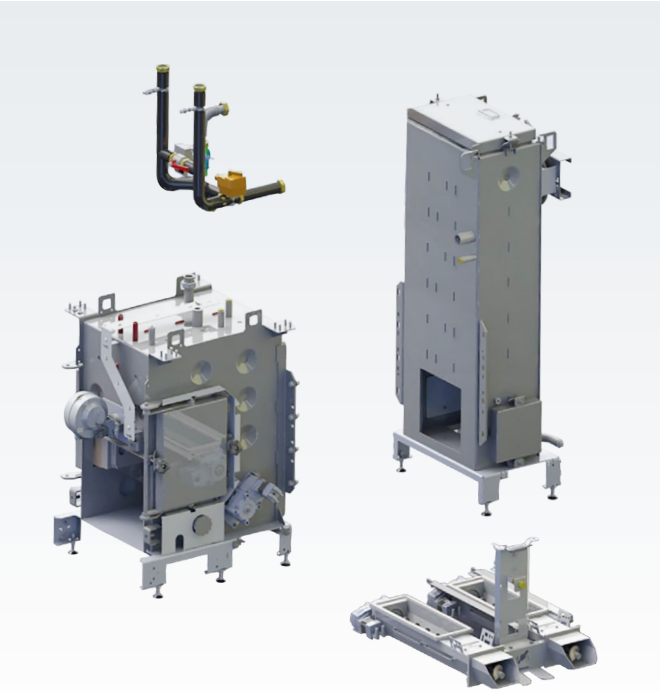
KWB'S MODULAR ASSEMBLY SYSTEM

All KWB systems can be dismantled into several modules, which allows our products to be placed in almost every heating room and easily installed even in tight spaces. We call it the **KWB modular assembly system.**

You can schedule less time because your technician can move the heating system into the heating room more quickly.

Simplified construction site coordination, since your technician does not require expensive installation aids.

The reduced weight of the individual pieces makes them less likely to scratch any surfaces thereby preserving and protecting the space.



KWB Multifire – boiler can be dismantled into 4 parts

KWB partners

AVAILABLE ON-SITE

Your KWB Partner will be happy to help you if you have any questions or other requests. If you would like to contact KWB directly, you will find your local contacts here. We look forward to hearing from you!

Scotland	+44 1330 826 504	www.kwb-heating.co.uk	info@originalheating.com
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Interested party

first name, last name*

No./street name*

Postal code/town/city*

Tel./Mobile* E-mail

Sender (your address)

first name, last name*

No./street name*

Postal code/town/city*

Tel./Mobile* E-mail

* mandatory field

Porto zahlt KWB gerne!

ANTWORTSENDUNG

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AUSTRIA

Your information will not be disclosed to third parties, but may be used for internal information purposes.

RECOMMEND US!

According to a recent customer survey, **97 %** of all KWB customers recommend KWB and its products to others.

PI Multifire MF2 2016 EN
Index 0
As at: February 2016, Subject to changes and to type and printing errors.

21-2001615