



Wood chip
& pellet
20 - 150kW

Wood chip & Pellet heating systems 20-150 kW

Technology & Planning 2024



KWB Multifire type MF2

Wood chip and pellet heating system 20–120 kW

KWB combustion system:

- Crawler burner with high-alloy cast and self-cleaning revolving grate components
- Fully automatic ignition by means of a ceramic igniter element
- 2 combustion air fans
- Backfire protector (standard: cellular wheel sluice P16S; type MF2 D)
- Stoker screw with stainless steel spirals incl. drive unit and automatic ash removal
incl. ash compaction into an integrated grate ash container with fill level monitoring

Suitable for the burning of wood chip material according to quality categories A1, A2 and B1 up to grain sizes P16S and P31S in accordance with ISO 17225-4 (rating-based use) as well as for wood pellets Ø 6 mm or Ø 8 mm quality category A1 pursuant ISO 17225-2, category A1. When using wood chips of quality categories A2 and B1 pursuant to ISO 17225-4, additional technical measures may be required in order to comply with statutory dust emission limit values depending on the aerosol-forming ash content.*

KWB heat exchanger: upright tubular heat exchanger with fully automatic heat exchanger cleaning, consisting of screw turbulators

Also optionally available as an extra-charge item:

Fuel recognition Plus, additional cooling for terminal box, full ash removal in a convenient design, external ash extraction 120l or 240l, increased boiler/forward setpoint temperature (settable to 95°C), 4th and 5th buffer sensor, one-chamber cellular wheel sluice as of 60 kW for wood chips up to grain sizes P31S in acc. with ISO 17225-4, hopper with 175l fill volume (type MF2 ZI), exhaust gas circulation for highest system protection thanks to optimal combustion temperature control required for the combustion of technically dried fuels (moisture content less than 15%) and for basic load operation. Mandatory for KWB Multifire type MF2 as of 80 kW in pellet operation (warranty-relevant).

Planning advice: Environmental conditions for operation: Temperature -10 to +40 °C, Rel. humidity 5% to 95%, not condensing.

KWB Comfort 4 control comprising: Exclusive control unit incl. buffer storage tank and domestic hot water management, expandable with internal or external heating circuit control

KWB dust filter E^{plus} with automatic cleaning

E^{plus} dust filter features:

- The dust filter operates based on the electrostatic separation principle
- The fully automatic electrode cleaning takes place mechanically in dry operating mode
- The separated filter dust is collected in a generously dimensioned ash pan (capacity 26 l) which can be conveniently and cleanly operated from the front

Installation:

- The filter unit can be installed either by directly attaching it to the boiler without wasting space or by placing it as a stand-alone unit in an adjacent area in the heating room and installing it in the exhaust pipe between boiler and chimney.
- The E^{plus} dust filter must be installed by default on the suction side between boiler and induced draught fan
- An installation on the pressure side downstream of the induced draught fan is only permitted in combination with the exhaust gas recirculation at the boiler if the exhaust gas pipe is installed pressure-tight (at least 10 Pa) and if sufficient chimney draught is ensured.
- The exhaust gas pipe must be as short as possible (max. 4 m length) and benefit the flow (max. 8 Pa pressure loss), and it must be insulated by the customer so that no condensation can form

Control system:

- The high voltage module regulates the ionisation with up to 30 kV to ensure maximum separation efficiency.
- The KWB Comfort control and the filter electronics work together so that the cleaning of the filter is impulse-driven and is performed at the same time as the heat exchanger cleaning. This minimizes interrupted operations and the reintroduction of the separated dust.

Degree of separation:

The particle separator achieves a separation effect of up to 90%, provided the system is run and maintained properly as per operating and maintenance instructions. Compliance with dust limit values in Germany pursuant to the 1st BlmSchV Level 2 and the Swiss Clean Air Act (LRV) assumes that

- only wood chips are used in accordance with EN ISO 17225-4 of fuel categories A1, A2 and B1, P16S, P31S with a moisture content of max. 35% (M35) or wood pellets in accordance with EN ISO 17225-2 categories A1 and A2.
- the raw gas dust content in the boiler exhaust gas due to aerosol-capable ash portions is max. 100 mg/Nm³ at 13% O₂ (dry).



CLEAN 2.0
EFFICIENCY



KWB's modular and easily transportable system

The KWB Multifire wood chip & pellet heating system can be dismantled into several modules, which allows it to be placed in almost every heating room and easily installed even in tight spaces.



* The statutory dust emission limit values for Germany pursuant to the 1st BlmSchV Level 2, and the national dust emission values of the Swiss LRV are met when using wood chips of quality category A1 pursuant to EN ISO 17225-4 without additional technical measures.

KWB Powerfire type TDS

Wood chip and pellet heating system 150 kW

KWB heat exchanger:

- Self-cleaning revolving grate system (fuel transport occurs via the rotation of the grate)
- Stoker screw with stainless steel spirals incl. drive unit (equipped with a spiral progressively increasing in size to prevent congestion)
- Backfire protector (gas-tight and automatically closing fire shutter) and thermally acting backfire safeguard (emergency fire extinguisher)
- Primary combustion air supply via speed-regulated fans below the revolving ring grate via a special air-distribution system which allows for a progressive, staged air supply including a control for the combustion speed at the grate.
- Suitable for the combustion of wood chips categories P16S and P31S with a moisture content of up to 45% in accordance with ISO 17225-4 as well as wood pellets of quality categories A1 and A2 in accordance with ISO 17225-2.

KWB ash removal system: specially developed grate cleaning system and dropping of the ash onto an extraction screw situated under the grate, which extracts the ash and takes it to the attached 66l ash container or, optionally, to an 120 l / 240l ash bin.

- Vertically standing cyclone combustion chamber as post-combustion unit
- Secondary air supply occurs through speed-regulated fans via specially developed and optimised secondary air nozzles.
- KWB heat exchanger: upright tubular heat exchanger with fully automatic heat exchanger cleaning, consisting of screw turbulators
- The underbody in the area of the burner system is cooled with water, the cover of the heat exchanger is cooled with water in the KWB Powerfire type TDS 150 as a result of which the radiation loss is reduced considerably. Thanks to the all-around insulation the radiation loss is further minimised.

KWB Comfort 3 control comprising: Control unit incl. buffer storage tank and domestic hot water management, expandable with external heating circuit control (on a C4 basis)

Connection of the KWB Powerfire to a Comfort 4 heating management network:

The KWB Powerfire is linked to the Comfort 4 heating management module autonomous through a Modbus connection. The Comfort 4 heating management module controls the entire heat distribution and storage and requests the Powerfire boiler in a performance-modulating manner. The Comfort 3 control of the boiler controls the entire combustion, return flow temperature boost and the boiler circuit pump.

Optionally available as an extra-charge item:

Grate ash extraction in 120l or 240l, exhaust gas recirculation (mandatory for fuels with a moisture content < 20%), cellular wheel sluices with long-pieced fuel, external E-Filter, forward flow temperature 95°.

KWB dust filter E^{Plus} with automatic cleaning

If required, an external dust filter can be implemented. It is suitable for wood-chip and pellet heating systems and designed for the required boiler type (for wood chips with up to 35 % moisture content). It is based on an electrostatic filter principle with separation efficiencies of up to 90 %. Boiler and filter control communicate within the meaning of an operationally safe, fully automatic cleaning. The cleaning and ash tray emptying occurs from the front.

Optionally available: Double shutter bypass, automatic ash removal from the filter



CLEAN **2.0**
EFFICIENCY

Wood chip
& pellet
20 - 150kW



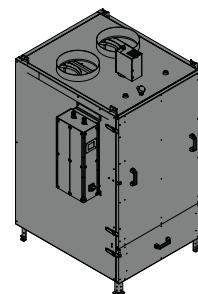
Wood chip operation for KWB Multifire and KWB Pelletfire

Wood chips of quality category A1 according to EN ISO 17225-4

The statutory dust emission limit values for Germany pursuant to the 1st BlmSchV Level 2, and the national dust emission values of the Swiss LRV are met without additional technical measures.

Wood chips of quality categories A2 and B1 according to EN ISO 17225-4

In order to comply with the 1st BlmSchV Level 2 in Germany and to meet Swiss cantonal requirements and depending on the aerosol-forming ash content, additional technical measures may be necessary in order to comply with statutory dust emission limit values. In such a case, it will be necessary to coordinate with KWB.



KWB's modular and easily transportable system

The KWB Powerfire wood chip & pellet heating system can be dismantled into several modules, which allows it to be placed in the heating room and also to be easily installed even in tight spaces.



Notes

Wood chip
& pellet
20-150kW



Wood chip
& pellet
20 - 150kW

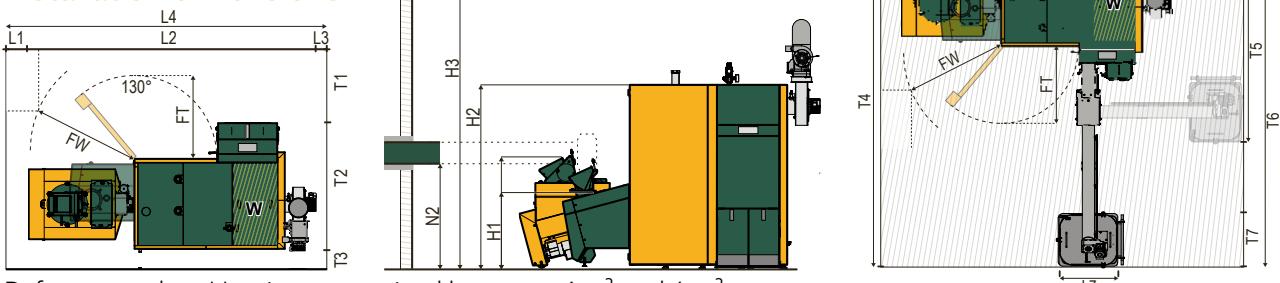
Technology & Planning

Wood chip & Pellet heating systems 20-150 kW



KWB Multifire

Installation dimensions



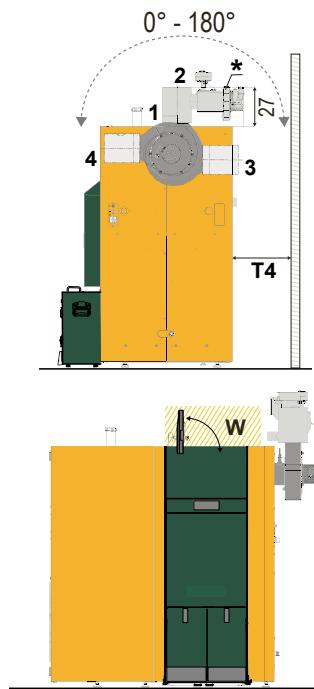
Reference value: Heating room sized between 4 m² and 6 m²

[cm]	MF2 20–50kW	MF2 60–80kW	MF2 100–120kW	
D	ZI	D	ZI	
H1 Connection boiler - conveyor system: upper dropping edge cellular wheel sluice P16S	92	-	92	-
H1 Connection boiler - conveyor system: upper dropping edge cellular wheel sluice P31S	-	-	103	-
H1 Connection boiler - conveyor system: upper dropping edge fire shutter ZI	-	102	-	102
H1 Connection boiler - conveyor system: upper dropping edge cellular wheel sluice ZI	-	134	-	134
H2 Height KWB Multifire	159	159	167	167
H3 Min. room height	198 (rec. 210)	198 (rec. 210)	200 (rec. 215)	200 (rec. 215)
H3 Min. room height – exhaust pipe is placed above heat exchanger	219 (Ø 150)	219 (Ø 150)	231 (Ø 180)	231 (Ø 180)
H3 Minimum room height-exhaust recirculation with installation version (1) vertically upwards	225 (Ø 150)	225 (Ø 150)	234 (Ø 180)	234 (Ø 180)
N2 Lower edge conveyor channel M P16S / P31S	88/98	97/-	88/98	97/-
L1 Free space P16S / P31S	30/-	22/-	34/25	21
L2 Heating system length P16S / P31S	212/-	252/-	234/243	273/-
L3 Free space	7	7	7	7
L4 Min. room length P16S / P31S	>254	>284	>276/>275	>306
L5 Heating system length with ext. ash extraction (90° placement)	297	337	319/328	332
L6 Min. room length for heating with external ash extraction (90° placement)	327	359	353/353	353
L7 Length ash bin 240l/120l	65/56	65/56	65/56	65/56
T1 Free space	53	53	53	53
T2 Heating system depth	112	112	122	122
T3 Installation version 1 (exhaust pipe upward without exhaust gas recirculation)	Without exhaust gas recirculation minimum distance to the wall 11 cm			
T3 Installation version 2 (exhaust pipe upward with exhaust gas recirculation)	Vertically upward without minimum distance to the wall 14 cm			
T3 Installation version 3 (exhaust pipe towards the rear)	Horizontally towards the rear with minimum distance to the wall 40cm			
T3 Installation version 4 (exhaust pipe towards the front)	Horizontally towards the front			
T4 Min. room depth (heating with external ash extraction, straight placement), type MF2 60–80kW	336	336	336	336
T4 Min. room depth (heating without external ash extraction, straight placement)	176	176	186	186
T5 Depth of the heating with external ash extraction (90° placement), type MF2 60–80kW	190	190	190	190
T6 Depth of the heating without external ash extraction (straight placement)	325	325	325	325
T7 Depth of ash bin 240l/120l	58/48	58/48	58/48	58/48
FW Clearance for maintenance	65	65	70	70
FT Clearance for the door	63	63	76	76
W Maintenance area	25	25	36	25

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

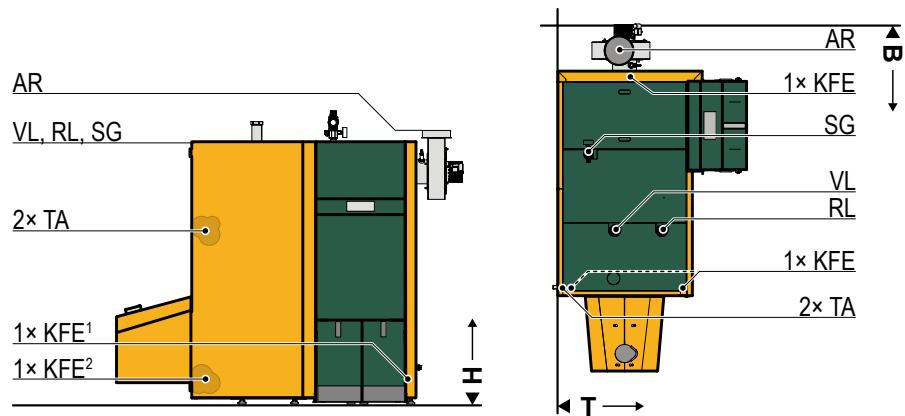
Dimensions for boiler transport and placement

KWB Multifire	Delivery condition	Disassembled state combustion chamber	Disassembled state heat exchanger
Type MF2 D / ZI 20–50 kW	154x66x168	96x66x120	72x66x168
Type MF2 D / ZI 60–120 kW	185x80x180	115x77x130	86x80x180



KWB Multifire

Connecting dimensions



Legend on previous page.

[cm]	Connecting dimensions MF2	20 - 50kW	60 - 80kW	100 - 120kW
AR	Exhaust gas pipe	Ø 15 B: 14	Ø 18 B: 17	Ø 20 B: 17
	Exhaust pipe upwards	H: 166 T: 37	H: 175 T: 39	H: 175 T: 39
	Exhaust pipe upwards with bend	H: 184	H: 192	H: 192
	Exhaust pipe upwards with bend above heat exchanger	H: 196	H: 206	H: 215
	Exhaust pipe 90° rear (for fuel supply from the left)	H: 140 T: 11	H: 144 T: 16	H: 144 T: 16
	Exhaust pipe 90° front (for fuel supply from the left)	H: 140 T: 64	H: 152 T: 69	H: 152 T: 69
	Exhaust pipe 90° rear (for fuel supply from the right)	H: 140 T: 11	H: 152 T: 16	H: 152 T: 16
	Exhaust pipe 90° front (for fuel supply from the right)	H: 140 T: 64	H: 144 T: 69	H: 144 T: 69
		Ø 32, G 5/4" H: 166 B: 121 T: 32	Ø 50, G 2" H: 180 B: 131 T: 36	Ø 50, G 2" H: 180 B: 143 T: 36
VL	Forward flow			
RL	Return flow	Ø 32, G 5/4" H: 166 B: 121 T: 57	Ø 50, G 2" H: 180 B: 131 T: 66	Ø 50, G 2" H: 180 B: 143 T: 66
SG	Safety group	Ø R 1" H: 163 B: 78 T: 20	Ø R 1" H: 171 B: 82 T: 19	Ø R 1" H: 171 B: 95 T: 19
TA	Thermal safety valve - inlet	Ø R 1/2" H: 97 B: 145 T: 0	Ø R 1/2" H: 116 B: 166 T: 0	Ø R 1/2" H: 116 B: 179 T: 0
TA	Thermal safety valve - outlet	Ø R 1/2" H: 93 B: 145 T: 0	Ø R 1/2" H: 113 B: 166 T: 0	Ø R 1/2" H: 113 B: 179 T: 0
KFE1	Connection height boiler filling and emptying	Ø Rp 3/4" H: 23	Ø Rp 3/4" H: 23	Ø Rp 3/4" H: 23
		B: 23	B: 28	B: 28
		T: 37	T: 42	T: 42
KFE2	Connection height boiler filling and emptying	Ø Rp 3/4" H: 22	Ø Rp 3/4" H: 22	Ø Rp 3/4" H: 22
		B: 117	B: 137	B: 150
		T: 66	T: 77	T: 77

H ... Height T ... Depth B ... Width

All dimensions in cm

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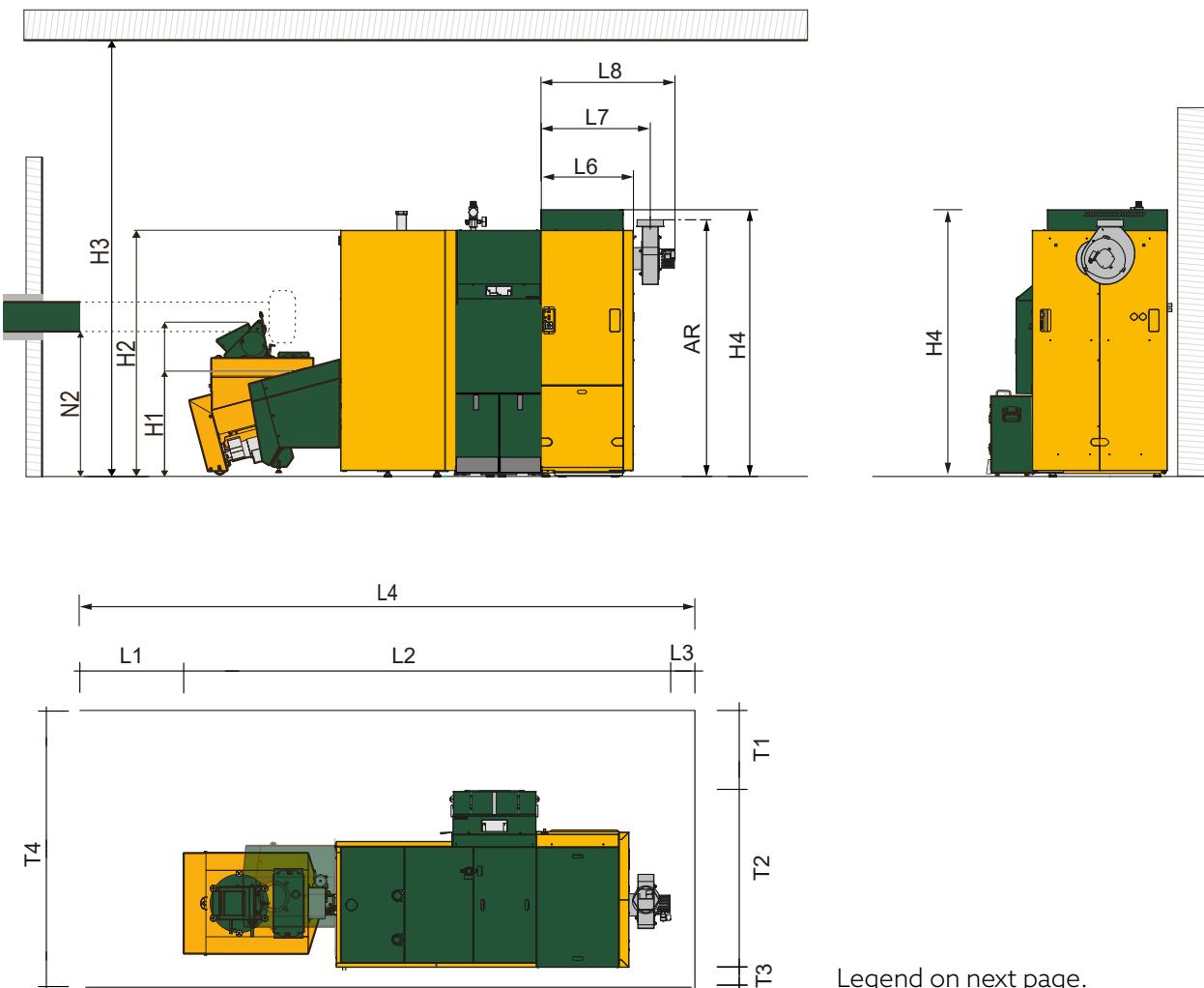


Wood chip
& pellet
20 - 150kW

KWB Multifire

Integrated KWB dust filter E^{plus} with automatic cleaning

Wood
chip
&
pellet
20-150kW



KWB Multifire

Integrated KWB dust filter E^{Plus} with automatic cleaning

Wood chip
& pellet
20 - 150kW

		Direct attachment					
		MF2 20 - 50kW		MF2 60 - 80kW		MF2 100 - 120kW	
[cm]		D	ZI	D	ZI	D	ZI
H1	Connection boiler-conveyor system: upper dropping edge cellular wheel sluice P16S	92	-	92	-	92	-
	Connection boiler-conveyor system: upper dropping edge cellular wheel sluice P31S	-	-	103	-	103	-
	Connection boiler-conveyor system: upper dropping edge - fire shutter ZI	-	102	-	102	-	102
	Connection boiler-conveyor system: upper dropping edge, cellular wheel sluice ZI	-	134	-	134	-	134
H2	Height KWB Multifire	159	159	167	167	167	167
	Min. room height	198 (rec. 210)	198 (rec. 210)	200 (rec. 215)	200 (rec. 215)	206 (rec. 215)	206 (rec. 215)
H3*	Min. room height - exhaust pipe is placed above heat exchanger	219 (Ø 150)	219 (Ø 150)	231 (Ø 180)	231 (Ø 180)	233 (Ø 200)	233 (Ø 200)
	Minimum room height-exhaust recirculation with installation version (1) vertically upwards	225 (Ø 150)	225 (Ø 150)	234 (Ø 180)	234 (Ø 180)	235 (Ø 200)	235 (Ø 200)
H4	Height dust filter	173	173	182	182	182	182
N2	Lower edge conveyor channel M P16S / P31S	88/98	97/-	88/98	97/-	88/98	97/-
L1	Free space P16S / P31S	30/-	22/-	34/25	21	34/25	21
L2	Heating system length P16S / P31S	258/-	298/-	290/299	328/-	301/310	340/-
L3	Free space	7	7	7	7	7	7
L4	Min. room length P16S / P31S	> 295	> 327	> 331	> 356	> 342	> 368
L6	Length dust filter with casing	53	53	63	63	75	75
L7	Length dust filter to middle of exhaust gas connection	63	63	75	75	86	86
L8	Length dust filter incl. exhaust gas connection	76	76	92	92	103	103
T1	Free space	53	53	53	53	53	53
T2	Heating system depth	112	112	122	122	122	122
T3	Installation version 1 (exhaust pipe upward without exhaust gas recirculation)	Without exhaust gas recirculation minimum distance to the wall 11 cm					
	Installation version 2 (exhaust pipe upward with exhaust gas recirculation)	Vertically upward without minimum distance to the wall 14 cm					
	Installation version 3 (exhaust pipe towards the rear)	Horizontally towards the rear with minimum distance to the wall 40cm					
	Installation version 4 (exhaust pipe towards the front)	Horizontally towards the front					
T4	Min. room depth (heating with external ash extraction, straight placement), type MF2 60-80kW	336	336	336	336	336	336
	Min. room depth (heating without external ash extraction, straight placement)	176	176	186	186	186	186
AR	Exhaust gas pipe	Ø 15, B: 14	Ø 15, B: 14	Ø 18, B: 17	Ø 18, B: 17	Ø 20, B: 17	Ø 20, B: 17
	Exhaust pipe upwards	H: 166, T: 37	H: 166, T: 37	H: 175, T: 39	H: 175, T: 39	H: 175, T: 39	H: 175, T: 39
	Exhaust pipe upwards with bend	H: 184	H: 184	H: 192	H: 192	H: 192	H: 192
	Exhaust pipe upwards with bend above heat exchanger	H: 196	H: 196	H: 206	H: 206	H: 215	H: 215
	Exhaust pipe 90° rear (for fuel supply from the left)	H: 140, T: 11	H: 140, T: 11	H: 144, T: 16	H: 144, T: 16	H: 144, T: 16	H: 144, T: 16
	Exhaust pipe 90° front (for fuel supply from the left)	H: 140, T: 64	H: 140, T: 64	H: 152, T: 69	H: 152, T: 69	H: 152, T: 69	H: 152, T: 69
	Exhaust pipe 90° rear (for fuel supply from the right)	H: 140, T: 11	H: 140, T: 11	H: 152, T: 16	H: 152, T: 16	H: 152, T: 16	H: 152, T: 16
	Exhaust pipe 90° front (for fuel supply from the right)	H: 140, T: 64	H: 140, T: 64	H: 144, T: 69	H: 144, T: 69	H: 144, T: 69	H: 144, T: 69

D ... KWB Multifire type MF2 D ZI ... KWB Multifire type MF2 ZI
All dimensions in cm

* Installation versions exhaust gas recirculation - see T&P heating systems



KWB Multifire – wood chip operation

Technical data

MF2 D/ZI	MF2 E D/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	33	40	45	50	60	65	70	80	99/100/101	108	120	
Partial load	kW	6,0	9,0	9,8	12,0	13,5	14,9	18,0	19,5	20,9	24,0	30,0	32,4	36,0	
Boiler efficiency at rated power	%	94,8	95,1	95,2	95,4	95,3	95,3	95,2	95,1	95,0	94,9	95,3	95,5	95,7	
Boiler efficiency at partial load	%	92,4	93,5	93,8	94,6	94,6	94,5	94,5	94,4	94,4	94,3	95,0	95,2	95,6	
Fuel thermal output at rated power	kW	21,1	31,5	34,1	41,9	47,2	51,9	63,0	68,3	73,2	84,3	104,9	113,1	125,4	
Fuel thermal output at partial load	kW	6,5	9,6	10,4	12,7	14,3	15,7	19,0	20,7	22,1	25,5	31,6	34,0	37,7	
Boiler class according to EN 303-5:2012	-							5							
EU Energy label	-							A+							
Water side															
Water content	l	155	155	155	135	135	135	165	165	165	165	195	195	195	195
Water connection, forward/return flow (internal thread) without return-flow boost device	Inch	5/4	5/4	5/4	5/4	5/4	5/4	2	2	2	2	2	2	2	2
Water connection, forward/return flow (internal thread) with return-flow boost device	Inch	5/4	5/4	5/4	5/4	5/4	5/4	6/4	6/4	6/4	6/4	2	2	2	2
Water connection for filling and/or emptying (internal thread)	inch							3/4							
Water connection for thermal safety valve (external thread)	Inch								1/2						
Thermal safety valve: pressure	bar								2-4						
Thermal safety valve: required cold water temperature	°C								20						
Water-side resistance at 10 K	mbar	37,0	37,0	85,4	153,8	200,2	242,1	56,1	67,2	77,2	100,6	158,0	172,8	228,7	
Water-side resistance at 20 K	mbar	8,5	8,5	20,2	37,0	47,2	58,7	13,5	16,3	18,7	24,5	38,7	42,3	56,1	
Boiler-entry temperature	°C						55-70								
Working temperature/operating temperature	°C							90							
Working temperature/operating temperature (optional)	°C	95	95	95	95	95	95	95	95	95	95	95	95	95	95
Maximum permitted temperature	°C							110							
Max. operating pressure	bar							3,5							
Exhaust-gas side (for chimney calculation)															
Combustion chamber temperature	°C							900-1100							
Combustion chamber pressure	mbar							-0,5...-5							
Required draft at rated power	mbar							0,05							
Required draft at partial load	mbar							0							
Suction required: yes	-							✓							
Exhaust-gas temperature at rated power	°C							140							
Exhaust-gas temp. Partial load	°C							100							
Exhaust-gas mass flow at rated power	kg/h	51,3	51,3	77,0	102,6	115,5	128,3	154,0	166,8	178,3	205,3	256,6	295,1	307,9	
Exhaust-gas mass flow at partial load	kg/h	18,5	18,5	27,8	37,0	41,7	46,3	55,5	60,2	64,3	74,1	92,6	106,5	111,1	
Exhaust-gas volume at rated power	Nm ³ /h	40,1	40,1	60,1	80,2	90,2	100,2	120,2	130,3	139,3	160,3	200,4	230,5	240,5	
Exhaust-gas volume at partial load	Nm ³ /h	14,5	14,5	21,7	28,9	32,5	36,1	43,4	47,0	50,2	57,8	72,3	83,1	86,7	
Incline of the exhaust-gas pipe	°							≥ 3							
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	
Chimney diameter (approx. values)	mm	180	180	180	180	180	180	200	200	200	200	220	220	220	
Chimney design: Moisture-resistant	-							✓							
Electrical system															
Connection: CEE 5-pole 400 V _{AC}	-							50 Hz 13 A							
Connected power MF2 D: P16S/P31S	W	1769	1769	1769	1769	1769	1769	1827	1827	1827	1827	1827	1827	1827	
Connected power MF2 ZI	W	1655	1655	1655	1655	1655	1655	1713	1713	1713	1713	1713	1713	1713	
Connected load dust filter	W							115							
Ash															
Ash container volume	l							32							
Ash container filled	kg							36							
Ash removal system	-							✓							
Ash-container volume (optional)	l							120							
Weight of ash container, full	kg							-140							
Ash-containervolume (optional)	l							240							
Weight of ash container, full	kg							-265							
Weights															
Heat exchanger module, assembled	kg	300	300	300	340	340	340	360	360	360	360	450	450	450	
Burning chamber module, assembled	kg	265	265	265	265	265	265	320	320	320	320	320	320	320	
Boiler weight MF2 D (P16S/P31S)	kg	920	920	920	980	980	980	1100	1100	1100	1100	1200	1200	1200	
Boiler weight MF2 ZI	kg	890	890	890	930	930	930	1070	1070	1070	1070	1170	1170	1170	
Weight dust filter (stand-alone)	kg	138 (152)	138 (152)	138 (152)	138 (152)	138 (152)	138 (152)	168 (203)	168 (203)	168 (203)	168 (203)	191 (203)	191 (203)	191 (203)	
Noise emissions (EN 15036-1)³															
Normal operating noise at rated power	dB(A)							< 70							
Brennstoff: Holzbackgut nach ISO 17225-4															
Maximum water content	-							M40							

¹⁾ Drawing inspection²⁾ Typification variants³⁾ Normal operating noise at rated power: Leq(A) at 1 m distance (ISO 11202:2010)
mg/Nm³ ... milligram per standard cubic meter (Nm³ - standard cubic meter under 1013 hectopascal at 0 °C)

KWB Multifire – pellet operation

With exhaust gas recirculation

Technical data

The exhaust gas recirculation is used for highest system protection thanks to optimal combustion temperature control and is mandatory for the combustion of technically dried fuels (moisture content less than 15%), and for basic operation. Mandatory for KWB Multifire type MF2 as of 80kW in pellet operation (warranty-relevant).

MF2 RD/ZI MF2 ERD/ZI	Unit	40	45 ¹⁾	50 ¹⁾	60 ¹⁾	65 ¹⁾	70 ¹⁾	80	100 ²⁾	108 ¹⁾
Rated power	kW	40,0	45,0	49,5	60,0	65,0	69,5	80,0	99/100/101	108,0
Partial load	kW	12,0	13,5	14,9	18,0	19,5	20,9	24,0	30,0	32,4
Boiler efficiency at rated power (pellets)	%	96,5	96,4	96,3	96,1	96,1	96,0	95,8	95,8	95,7
Boiler efficiency at partial load (pellets)	%	94,8	94,9	94,9	95,1	95,2	95,2	95,4	95,7	95,8
Fuel thermal output at rated power (pellets)	kW	41,5	46,7	51,4	62,4	67,6	72,4	83,5	104,4	112,9
Fuel thermal output at partial load (pellets)	kW	12,7	14,2	15,7	18,9	20,5	22,0	25,2	31,3	33,8
Boiler class according to EN 303-5:2012	-				5,0					
EU Energy label	-					A+				
Water side										
Water content	l	135	135	135	165	165	165	165	195	195
Water connection, forward/return flow (internal thread) without return-flow boost device	Inch	5/4	5/4	5/4	2	2	2	2	2	2
Water connection, forward/return flow (internal thread) with return-flow boost device	Inch	5/4	5/4	5/4	6/4	6/4	6/4	6/4	2	2
Water connection for filling and/or emptying (internal thread)	inch mm					3/4				
Water connection for thermal safety valve (external thread)	Inch					1/2				
Thermal safety valve: pressure	bar					2-4				
Thermal safety valve: required cold water temperature	°C					20,0				
Water-side resistance at 10 K	mbar	153,8	200,2	242,8	56,1	67,2	77,2	100,6	158,0	172,8
Water-side resistance at 20 K	mbar	37,0	48,4	58,7	13,5	16,3	18,7	24,5	38,7	42,3
Boiler-entry temperature	°C				55-70					
Working temperature/operating temperature	°C				90					
Working temperature/operating temperature (optional)	°C				95					
Maximum permitted temperature	°C				110					
Max. operating pressure	bar				3,5					
Exhaust-gas side (for chimney calculation)										
Combustion chamber temperature	°C				900-1100					
Combustion chamber pressure	mbar				-0,5...-5					
Required draft at rated power	mbar				0,05					
Required draft at partial load	mbar				0,03					
Suction required: yes	-				✓					
Exhaust-gas temperature at rated power	°C				140					
Exhaust-gas temp. Partial load	°C				100					
Exhaust-gas mass flow at rated power	kg/h	102,6	115,5	128,3	154,0	166,8	178,3	205,3	256,6	295,1
Exhaust-gas mass flow at partial load	kg/h	37,0	41,7	46,3	55,5	60,2	64,3	74,1	92,6	106,5
Exhaust-gas volume at rated power	Nm ³ /h	80,2	90,2	100,2	120,2	130,3	139,3	160,3	200,4	230,5
Exhaust-gas volume at partial load	Nm ³ /h	28,9	32,5	36,1	43,4	47,0	50,2	57,8	72,3	83,1
Incline of the exhaust-gas pipe	°				≥ 3					
Connection height exhaust-gas pipe	mm	>1395	>1395	>1395	>1445	>1445	>1445	>1445	>1445	>1445
Exhaust-gas pipe diameter	mm	150	150	150	180	180	180	180	200	200
Chimney diameter (approx. values)	mm	180	180	180	200	200	200	200	220	220
Chimney design: Moisture-resistant	-				✓					
Electrical system										
Connection: CEE 5-pole 400 V _{AC}	-				50 Hz 13 A					
Connected power MF2 D: P16S	W	1769	1769	1769	1827	1827	1827	1827	1827	1827
Connected power MF2 ZI	W	1655	1655	1655	1713	1713	1713	1713	1713	1713
Connected load dust filter	W				115					
Ash										
Ash container volume	l				32					
Ash container filled	kg				36					
Ash removal system	-				✓					
Ash-container volume (optional)	l				120					
Weight of ash container, full	kg				~140					
Ash-container volume (optional)	l				240					
Weight of ash container, full	kg				~265					
Weights										
Heat exchanger module, assembled	kg	340	340	340	360	360	360	360	450	450
Burning chamber module, assembled	kg	265	265	265	320	320	320	320	320	320
Boiler weight MF2 D (P16B/P45A)	kg	980	980	980	1100	1100	1100	1100	1200	1200
Boiler weight MF2 ZI	kg	-	-	-	1129	1129	1129	1129	1229	1229
Weight dust filter (stand-alone)	kg	138 (152)	138 (152)	138 (152)	168 (203)	168 (203)	168 (203)	168 (203)	191 (203)	191 (203)
Noise emissions (EN 15036-1)³⁾										
Normal operating noise at rated power	dB(A)				< 70					

¹⁾ Drawing inspection²⁾ Typification variants³⁾ Normal operating noise at rated power: Leq(A) at 1 m distance (ISO 11202:2010)
mg/Nm³ ... milligram per standard cubic meter (Nm³ - standard cubic meter under 1013 hectopascal at 0 °C)

KWB Multifire – pellet operation

Technical data

Without exhaust
gas recirculation

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	20,0	30,0	32,5	40,0	45,0	49,5	60,0	65,0	69,5	80,0	99 ¹	101	108,0
Partial load	kW	6,0	9,0	9,8	12,0	13,5	14,9	18,0	19,5	20,9	24,0	30,0	32,4	36,0
Boiler efficiency at rated power (pellets)	%	93,6	94,4	94,5	95,1	95,0	94,8	94,6	94,4	94,3	94,0	94,0	94,1	94,1
Boiler efficiency at partial load (pellets)	%	90,4	91,9	92,3	93,4	93,6	93,7	94,0	94,2	94,3	94,6	94,4	94,3	94,0
Fuel thermal output at rated power (pellets)	kW	21,4	31,8	34,4	42,1	47,4	52,2	63,4	68,9	73,7	85,1	106,3	114,8	127,5
Fuel thermal output at partial load (pellets)	kW	6,6	9,8	10,6	12,8	14,4	15,9	19,1	20,7	22,2	25,4	31,8	34,4	38,3
Boiler class according to EN 303-5:2012	-											5		
EU Energy label												A+		
Water side														
Water content	l	155	155	155	135	135	135	165	165	165	165	195	195	195
Water connection, forward/return flow (internal thread) without return-flow boost device	Inch	5/4	5/4	5/4	5/4	5/4	5/4	2	2	2	2	2	2	2
Water connection, forward/return flow (internal thread) with return-flow boost device	Inch	5/4	5/4	5/4	5/4	5/4	5/4	6/4	6/4	6/4	6/4	2	2	2
Water connection for filling and/or emptying (internal thread)	Inch							3/4						
Water connection for thermal safety valve (external thread)	Inch							1/2						
Thermal safety valve: pressure	bar							2–6						
Thermal safety valve: required cold water	°C							20						
Water-side resistance at 10 K	mbar	37,0	37,0	85,4	153,8	200,2	242,1	56,1	67,2	77,2	100,6	158,0	172,8	228,4
Water-side resistance at 20 K	mbar	8,5	8,5	20,2	37,0	48,4	58,7	13,6	16,3	18,7	24,5	38,7	42,3	51,1
Boiler-entry temperature	°C							55–70						
Working temperature/operating tempera	°C							90						
Maximum permitted temperature	°C							110						
Max. operating pressure	bar							3,5						
Exhaust-gas side (for chimney calculation)														
Combustion chamber temperature	°C							900–1100						
Combustion chamber pressure	mbar							-0,5...-5						
Required draft at rated power	mbar							0,05						
Required draft at partial load	mbar							0,03						
Suction required: yes	–							✓						
Exhaust-gas temperature at rated power	°C							140						
Exhaust-gas temp. Partial load	°C							100						
Exhaust-gas mass flow at rated power	kg/h	51,3	51,3	77,0	102,6	115,5	128,3	154,0	166,8	178,3	205,3	256,6	295,1	307,9
Exhaust-gas mass flow at partial load	kg/h	18,5	18,5	27,8	37,0	41,7	46,3	55,5	60,2	64,3	74,1	92,6	106,5	111,1
Exhaust-gas volume at rated power	Nm ³ /h	40,1	40,1	60,1	80,2	90,2	100,2	120,2	130,3	139,3	160,3	200,4	230,5	240,5
Exhaust-gas volume at partial load	Nm ³ /h	14,5	14,5	21,7	28,9	32,5	36,1	43,4	47,0	50,2	57,8	72,3	83,1	86,7
Incline of the exhaust-gas pipe	°							≥ 3						
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
Chimney diameter (approx. values)	mm	180	180	180	180	180	180	200	200	200	200	220	220	220
Chimney design: Moisture-resistant	–							✓						
Electrical system														
Connection: CEE 5-pole 400 VAC	–							50 Hz						
								13 A						
Connected power MF2 D: P16S	W	1769	1769	1769	1769	1769	1769	1827	1827	1827	1827	1827	1827	1827
Connected power MF2 ZI	W	1655	1655	1655	1655	1655	1655	1713	1713	1713	1713	1713	1713	1713
Ash														
Ash container volume	l							32						
Ash container filled	kg							36						
Ash removal system	–							✓						
Ash-container volume (optional)	l							120						
Weight of ash container, full	kg							~140						
Ash-container volume (optional)	l							240						
Weight of ash container, full	kg							~265						
Weights														
Water jacket	kg	300	300	300	340	340	340	360	360	360	360	450	450	450
Boiler body	kg	265	265	265	265	265	265	320	320	320	320	320	320	320
Boiler weight MF2 D (P16B/P45A)	kg	920	920	920	980	980	980	1100	1100	1100	1100	1200	1200	1200
Boiler weight MF2 ZI	kg	890	890	890	930	930	930	1070	1070	1070	1070	1170	1170	1170
Noise emissions (EN 15036-1)														
Normal operating noise at rated power								< 70						

1... Drawing inspection

2... Typification variants

mg/Nm³ ... milligram per standard cubic meter (Nm³ - standard cubic meter under 1013 hectopascal at 0 °C)

Notes

Wood chip
& pellet
20 - 150kW

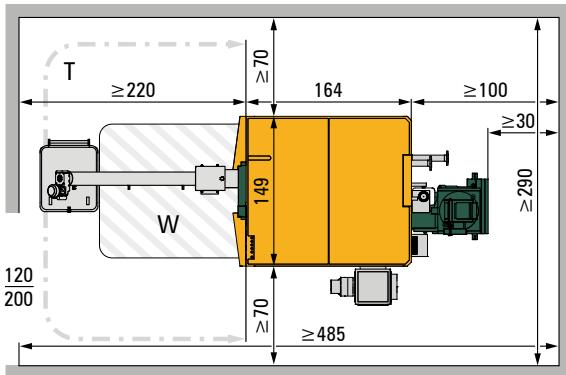


KWB Powerfire 150 kW

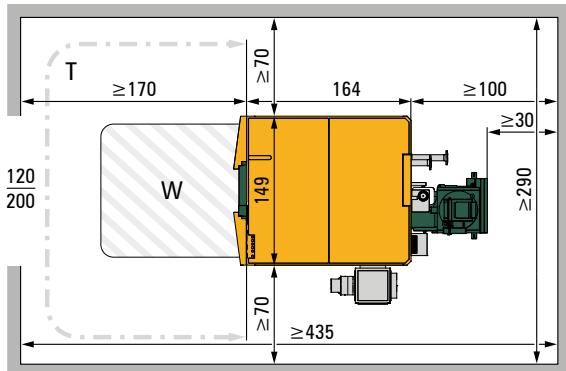
Installation dimensions

A minimum unobstructed door width of 1,2 m must be provided to be able to transport the system into the room. The unobstructed door height should be 2 m. For a prompt and smooth installation, it is necessary to notify KWB of the unobstructed door widths in the planning stage. Due to the weight of the ash container, we recommend a lifting device in the event of stair access to the heating room.

External ash container in front (A1)



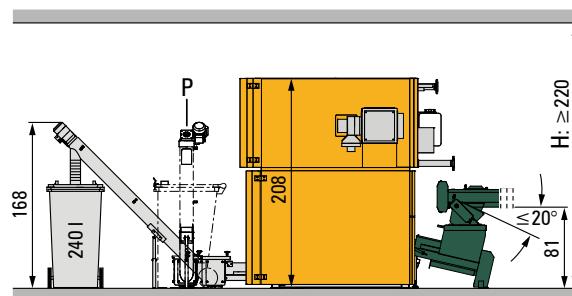
Internal ash container (A2)



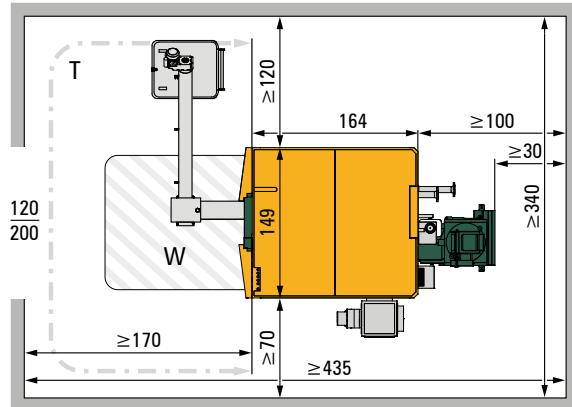
Legend

H	Room height: For room heights below 280 cm, the customer must provide suitable lifting tools (electrical forklift, wheel front loader, etc.).
P	Alternative position
T	Door area: Valid for all models. The door must be in the drawn-in area – deviations require consultation with KWB! If the door is not directly in front of the system, the space requirement in front of the system increases to at least ≥ 220 cm.
W	Maintenance area

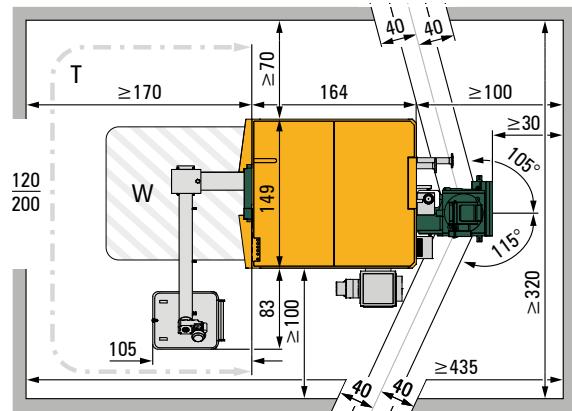
View from the right



External ash container on the left (A3)



External ash container on the right (A4) (with swing range of the conveyor system and wall duct)



Minimum room dimensions of the built-in ash container variants (cm)

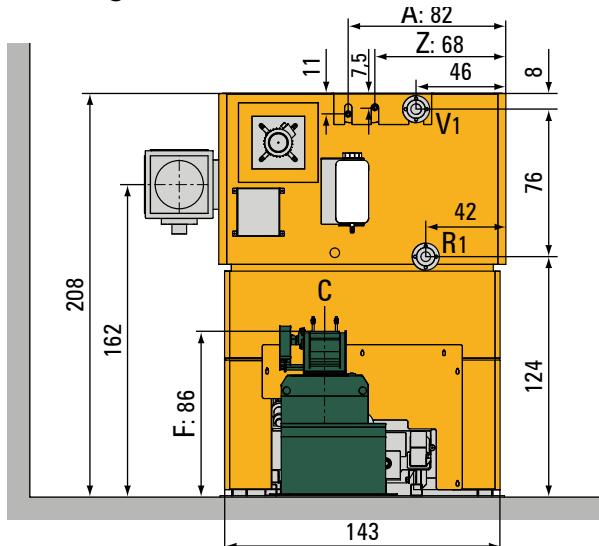
	Ash-container position				
	front	internal	left	right	any
Version:	A1	A2	A3	A4	
Room width (B)	290	290	340	320	370
Room length (L)	485	435	435	435	485
Room height (H)	220	220	220	220	220

REI90 according to ÖNORM EN 13501; EI₂ 30-C according to ÖNORM EN 13501, E30 according to ÖNORM EN 13501
All distances stated are minimum dimensions and apply only to the installation variants shown! With regard to space requirements, please also note the exhaust gas pipe routing and chimney position – the space requirements for reducers and elbows may influence the minimum distances! It must be possible to dismantle the entire casing at any time.

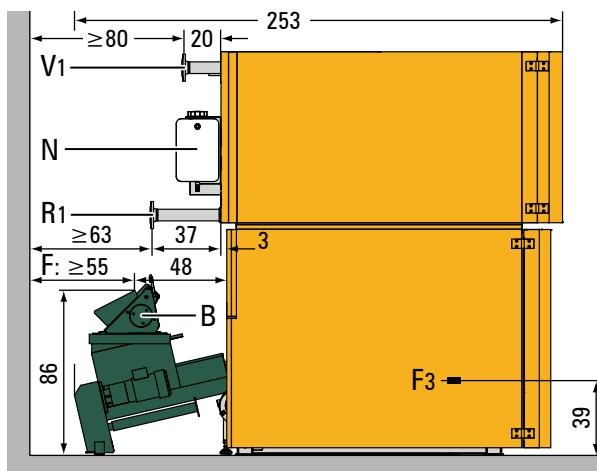
KWB Powerfire 150 kW

Connecting dimensions

Drawing

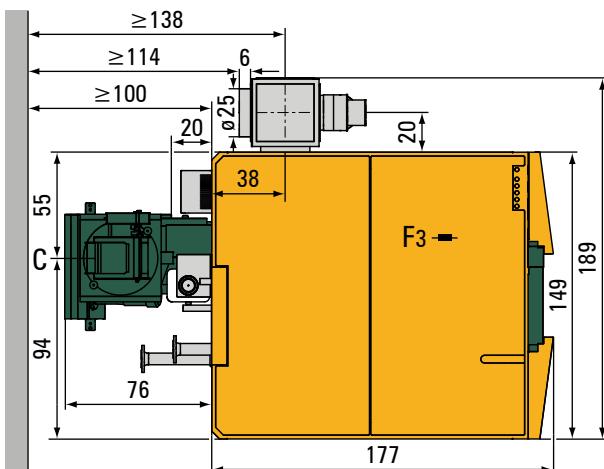


Side view with fire shutter

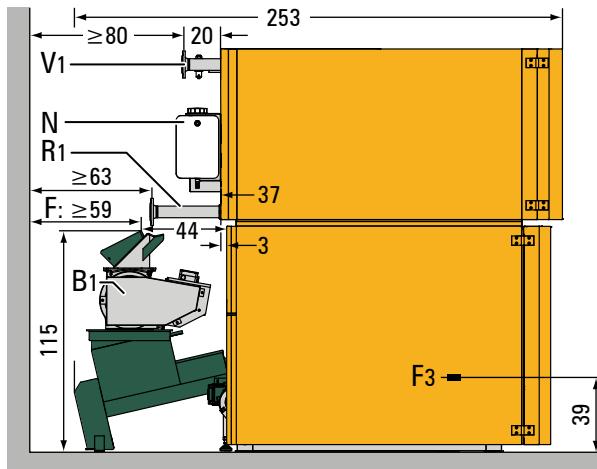


Wood chip
& pellet
20 - 150 kW

Plan view



Version with cellular wheel sluice



Legend

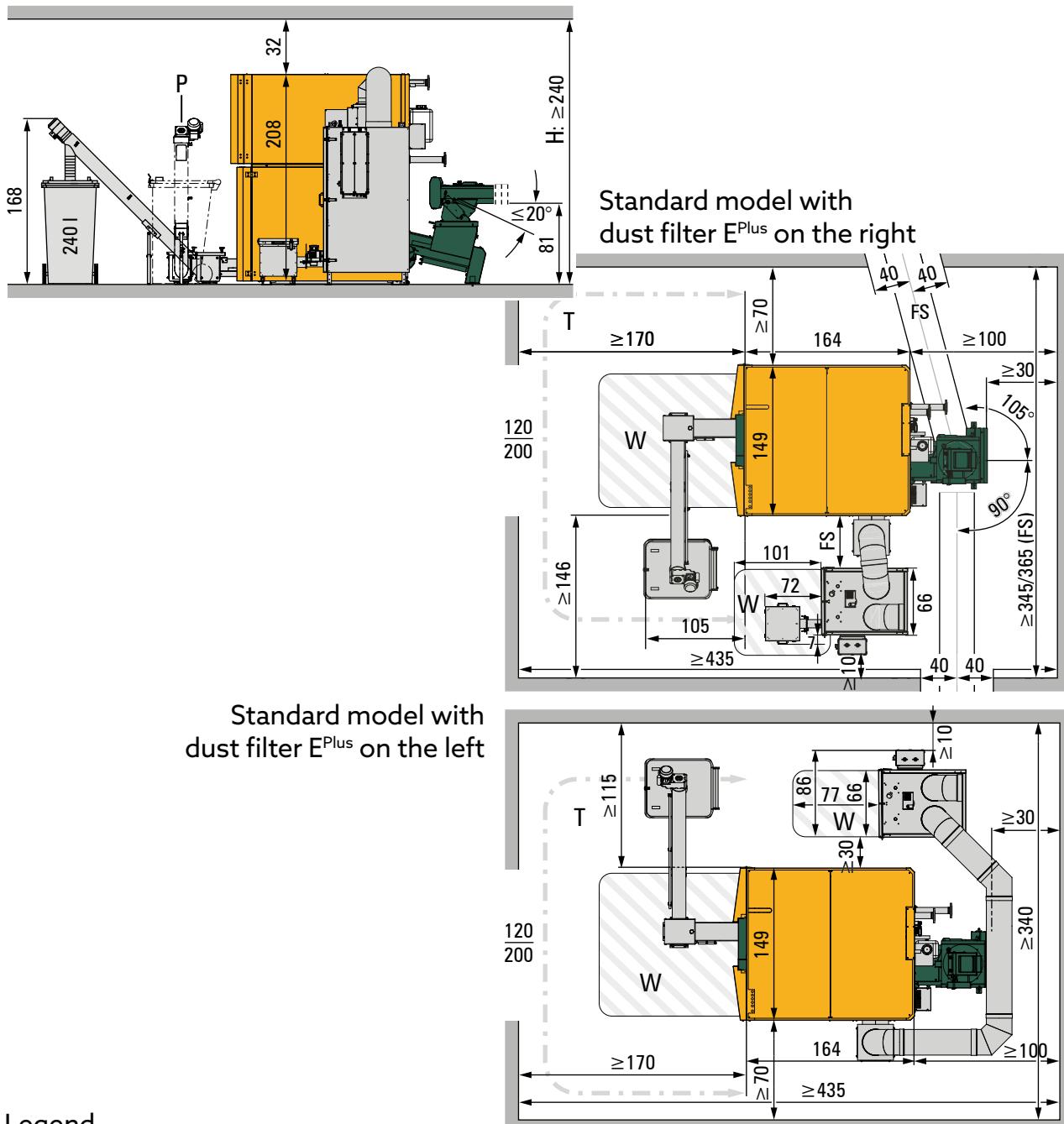
A	Outlet for thermal safety valve 3/4" (female thread)
B	Fire shutter
B1	Cellular wheel sluice (alternative to the fire shutter)
C	Conveyor system axle
EF	E-Filter
F	Conveyor system connection
F3	Boiler filling and emptying 3/4" (female thread) – Burner housing area (in front under the combustion chamber door)
N	Emergency fire-extinguishing equipment
R1	Return flow DN 50, PN 6
V1	Forward flow DN 50, PN 6
Z	Inlet for thermal safety valve 3/4" (female thread)

All illustrations are shown without the external ash removal system. All distances stated are minimum dimensions and apply only to the installation variants shown! With regard to space requirements, please also note the exhaust gas pipe routing and chimney position – the space requirements for reducers and elbows may influence the minimum distances! It must be possible to dismantle the entire casing at any time.



KWB Powerfire 150 kW with dust filter E^{Plus}

Installation dimensions with dust filter E^{Plus}



Legend

CS It is recommended to always place the conveyor system on the E-Filter side to keep open the access to the maintenance areas. In this case, the recommended distance between E-Filter and boiler is ≥ 40 cm instead of ≥ 60 cm.

H If a bypass attachment is planned, the min. room height increases by ≥ 40 cm.

P Alternative position
Door area: Valid for all models. The door must be in the drawn-in area – deviations require consultation with KWB!

T If the door is not directly in front of the system, the space requirement in front of the system increases to at least ≥ 225 cm.

W Maintenance area

* If the conveyor system is installed diagonally, the planning must include an additional clearance of ≥ 20 cm to the rear wall! You must also take the gear unit and motor positions into account.

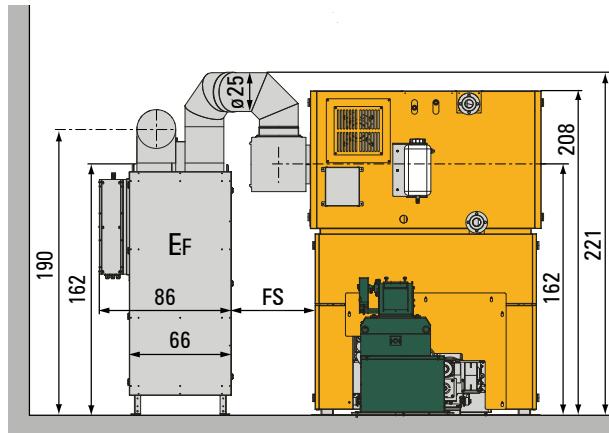
REI90 according to ÖNORM EN 13501, EI2 30-C according to ÖNORM EN 13501, E30 according to ÖNORM EN 13501

All distances stated are minimum dimensions and apply only to the installation variants shown! With regard to space requirements, please also note the exhaust gas pipe routing and chimney position – the space requirements for reducers and elbows may influence the minimum distances! It must be possible to dismantle the entire casing at any time. The minimal room dimensions for the ash containers as displayed in the illustration. Individual planning is possible after consultation with KWB.

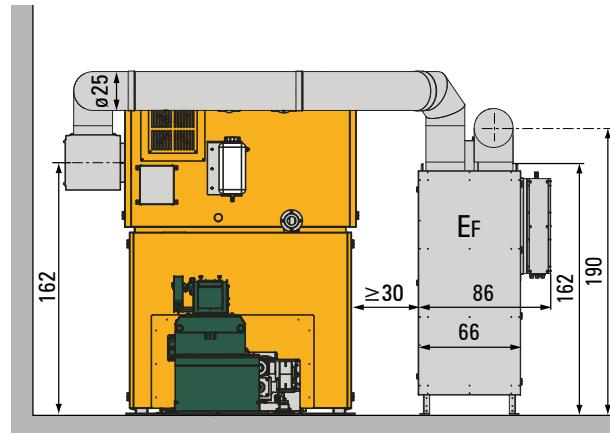
KWB Powerfire 150 kW with dust filter E^{Plus}

Connecting dimensions with dust filter E^{Plus}

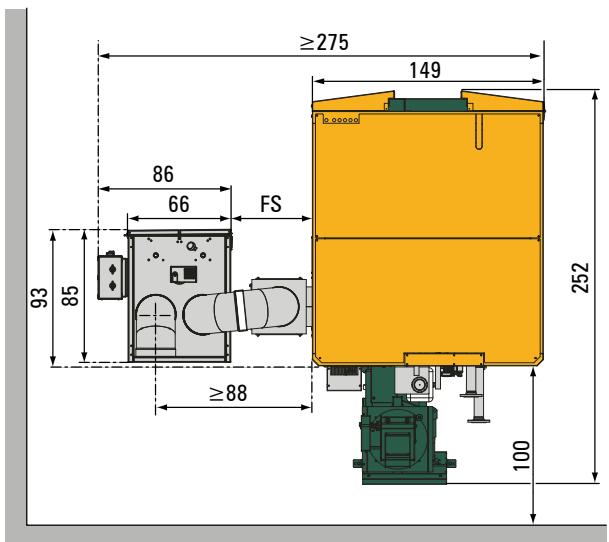
Standard model with
dust filter E^{Plus} on the right



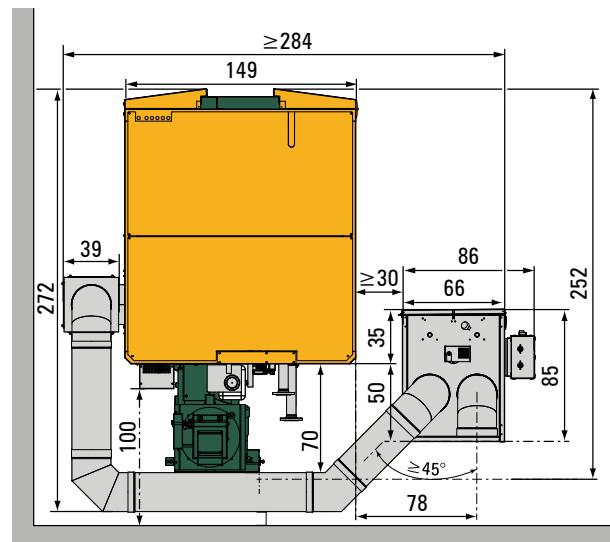
Standard model with
dust filter E^{Plus} on the left



Standard model with
dust filter E^{Plus} on the right



Standard model with
dust filter E^{Plus} on the left



KWB Powerfire 150 kW

Technical data

TDS	Unit	TDS 150	
		Pellet	Wood chips
Rated power	kW	150	150
Partial load	kW	45	45
Boiler efficiency at rated power	%	93,2	92,5
Boiler efficiency at partial load	%	92,1	92,4
Fuel thermal output at rated power	kW	160,9	162,2
Fuel thermal output at partial load	kW	48,9	48,7
Boiler class according to EN 303-5:2012 + KWB dust filter	-	5	5
Water side			
Water content	l	295	295
Water connection diameter flow/return (flange)	-	DN 50 PN 6	DN 50 PN 6
Water connection for thermal safety valve	Inch	3/4	3/4
Thermal safety valve: temperature ¹	°C	10	10
Thermal safety valve: pressure ¹	bar	2	2
Boiler filling and emptying at the burner (internal thread)	Inch	3/4	3/4
Boiler emptying at the flame pipe (internal thread)	Inch	-	-
Boiler emptying at the heat exchanger (internal thread)	Inch	-	-
Water-side resistance at 20 K ²	mbar	28	28
Water-side resistance at 10 K ²	mbar	112	112
Boiler inlet temperature ≤ w30	°C	55–70	55–70
Boiler inlet temperature > w30	°C	-	65–70
Working temperature/operating temperature	°C	90	90
Maximum permitted temperature	°C	110	110
Maximum operating pressure	bar	3,5	3,5
Flue-gas side (data for chimney design)			
Combustion chamber temperature	°C	900–1200	900–1000
Combustion chamber pressure	mbar	-0,2.. -0,3	-0,2.. -0,3
Delivery pressure at rated power / partial load	mbar	0,10 0,06	0,10 0,06
Induced draught required	-	✓	✓
Exhaust-gas temperature at rated power / partial load	°C	160 80	160 80
Exhaust-gas connection height (boiler side)	mm	1.615	1.615
Exhaust-gas connection height: variant up	mm	-	-
Exhaust-gas connection height: variant right (pipe centre, 0–90° pivoting) ⁷	mm	-	-
Exhaust-gas connection diameter	mm	250	250
Incline of the exhaust-gas pipe	°	≥ 3	≥ 3
Recommended chimney diameter	mm	300	300
Chimney design: moisture-resistant	-	✓	✓
Maximum water content	-	M10	M30/M45
Exhaust-gas mass flow at rated power ³	kg/s	0,108	0,137 0,157
Exhaust-gas mass flow at partial load ³	kg/s	0,031	0,038 0,044
Exhaust-gas volume at rated power ³	Nm ³ /h	300	388 455
Exhaust-gas volume at partial load ³	Nm ³ /h	87	130 180
Electrical system			
Connection: 5-pin	-	400 VAC 50 Hz 16 A	400 VAC 50 Hz 16 A
Unit switch and main switch: present	-	✓	✓
Connected power boiler	W	3010	3010
Connected power total incl. fuel extractor	W	4510	4510
Auxiliary power consumption in trial operation at rated power ⁵	kW _{el} /MW _{th}	1,24	1,92
Auxiliary power consumption in trial operation at partial load ⁵	kW _{el} /MW _{th}	2,51	4,43
Auxiliary power consumption at rated power ⁵	W	182	270
Auxiliary power consumption at partial load ⁵	W	110	190
Standby power	W	20	20

»

KWB Powerfire 150 kW

Technical data

TDS	Unit	TDS 150
Ash		
Ash-container volume - fly-ash	l	23
Ash-container volume - grate-ash	l	66
Ash container, grate ash, full	kg	75
Ash-container volume, comfort version (optional)	l	-
Ash-removal system	-	✓
Ash-container volume (optional)	l	120
Weight of ash container, full	kg	~140
Ash-container volume (optional)	l	240
Weight of ash container, full	kg	~265
Weights		
Heat exchanger incl. cleaning grille	kg	725
Burner housing incl. chamotte	kg	796
Flame pipe incl. chamotte	kg	-
Stoker trough	kg	113
Total weight (empty)	kg	1634
Assembly case	kg	174
Weight of transport packaging (in each case)	kg	25
Noise emissions ⁶		
Normal operating noise at rated power	dB(A)	60
Operating peaks at rated power	dB(A)	68
Test report		
Test report no.	-	14-UW/Wels-EX-321/1

¹⁾ In acc. with EN 303-5; higher temperatur respectively lower minimum admission pressure available on request

²⁾ The water-side restistance is specified and determined in each case on the boiler interface (flange RF/FF)

³⁾ with reference to damp flue gas

⁴⁾ Wood chips: Provision of the rated power to M30, above there is a reduction in power dissipation.

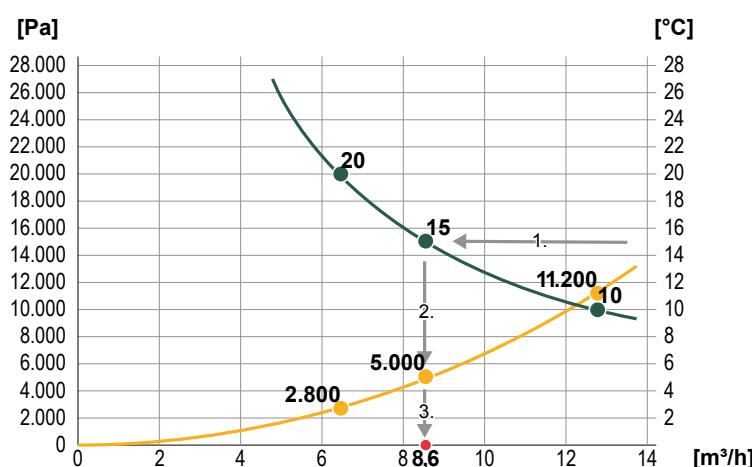
⁵⁾ The noise measurements were executed in normal operation with wood chips.

Leq(A) at 1 m distance (ISO 11202:2010)

⁶⁾ Values only for standard-boiler-configuration. NOT for cellular wheel sluice, cyclone or E-Filter (own dimensioned drawings)
mg/Nm³ ... Milligram per standard cubic meter (Nm³... under 1013 hectopascal at 0 °C)

Water-side resistance

The return flow boost groups for KWB Powerfire 150 can be found in module „K“.



Legend

1. Read from right to left to the intersection of the spread
 2. Read downward to the intersection of the resistance
 3. Read downward to the volume flow
- HW-side resistance
 - HW-side resistance
 - HW-side spread
 - HW-side spread

Recommended parameters for boiler circuit pumps, control valves or return flow mixers

Boiler pumps - parameters		Control valve or return flow mixer
Boiler performance [kW]	min. Ø forward, return flow	Kvs [m3/h]
150	DN50	44



Conveyor system M

Floor-level stirrer

The floor-level stirrer is available in two different designs depending on requirements: As a spring-blade rotary stirrer (stirrer diameter: from 2,5 to 4,0 m) and as articulated rotary-blade stirrer (from 4,0 to 5,5 m stirrer diameter).



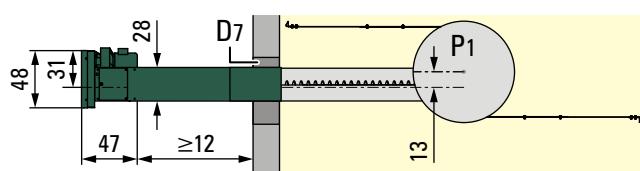
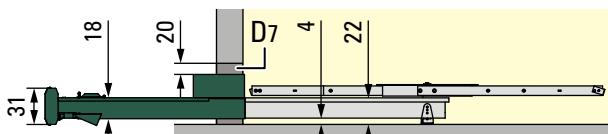
Compatible with

KWB Multifire type MF2 20-120 kW

KWB Pelletfire^{Plus} type MF2 45-135 kW

KWB Powerfire type TDS 150-300 kW

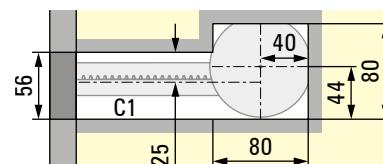
Standard channel



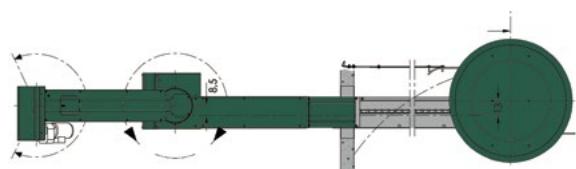
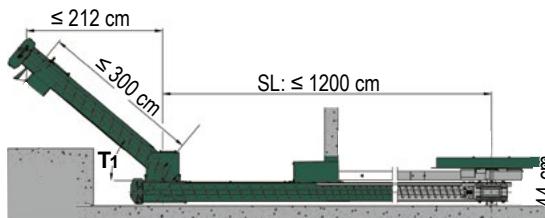
Combine suction conveyor only with spring-blade rotary stirrer!

Cutouts for the floor

(if the conveyor is installed in the floor.)



Ascending screw with upward transfer

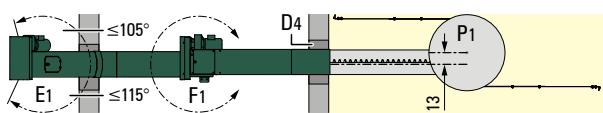
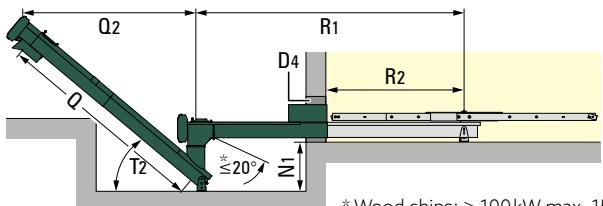


Connection
KWB Multifire
max. angle 220°

Pivoting
360°

Spring-blade rotary stirrer - Ø 85
Articulated rotary blade stirrer
- Ø 110

Ascending screw with downward transfer



* Wood chips: > 100 kW max. 15°

Legend

D4	Wall duct 60 x 60 cm: Seal after installation; the channel must be acoustically decoupled (Ø 2 cm acoustic insulation)
N1	Height difference: 0°-25°: ≥ 45 cm, 26°-35°: ≥ 50 cm 36°-45°: ≥ 60 cm
SL	Screw length conveyor channel maximally 12 m (install horizontally!)
	Angle when wood chips are used and channel length < 2 m: 35°-45°
T1	Angle when wood chips are used and channel length 2-3 m: 35°-40°
	Angle when pellets are used and channel length < 2 m: 35°-40° (45° with channel insert)
	Angle when pellets are used: 2-3 m: to 35° (45° with channel insert)

T2	Angle when wood chips are used: 0°--45° Angle when pellets are used: 0°-40° (45° with channel insert)
P1	Diameter of the stirrer cover plate: Spring-blade rotary stirrer: Ø 85 cm, articulated rotary blade stirrer: Ø 110 cm.
E1	Diameter of the stirrer: Spring-blade rotary stirrer: Ø 2,5 m, 3,0 m, 3,5 m, 4,0 m (4,5 m only for pellets), articulated rotary blade stirrer: Ø 4,0 m, 4,5 m, 5,0 m, 5,5 m
F1	Swing range ascending screw; max. angle to the KWB Multifire 220°
Q	Free rotation
Q2	Screw length (from connection point head section drop shaft to the fire shutter): Up to 15°: ≤ 12 m; 15°-40°: ≤ 6 m (pellets 45° with channel insert)
R1	(pellets 45° with channel insert)
R2	45°: ≤ 4,39 m, 15°: ≤ 11,60 m
R3	Screw length: Up to 15°: ≤ 12 m; 15°-20°: ≤ 6 m
R4	Screw length open

Storage room adjacent to heating room



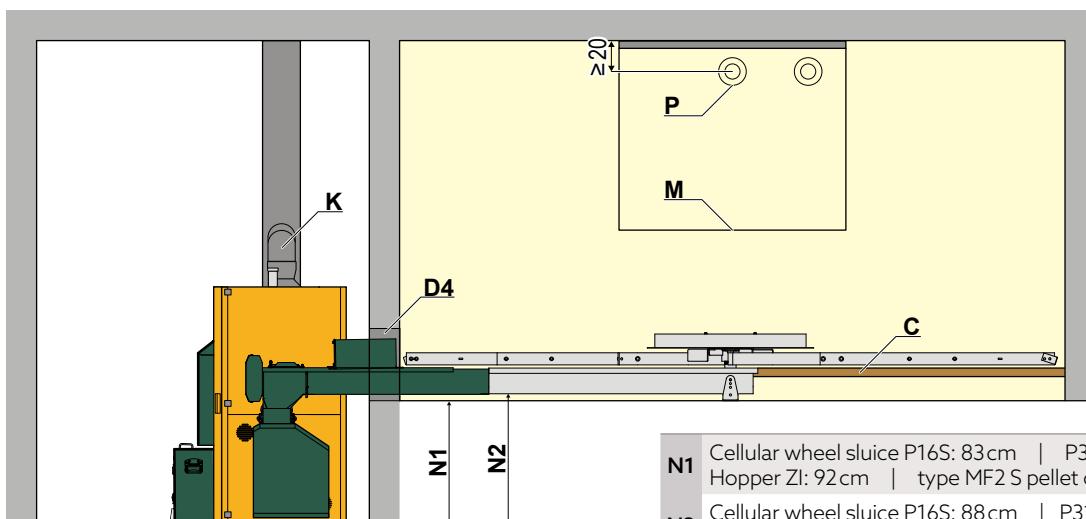
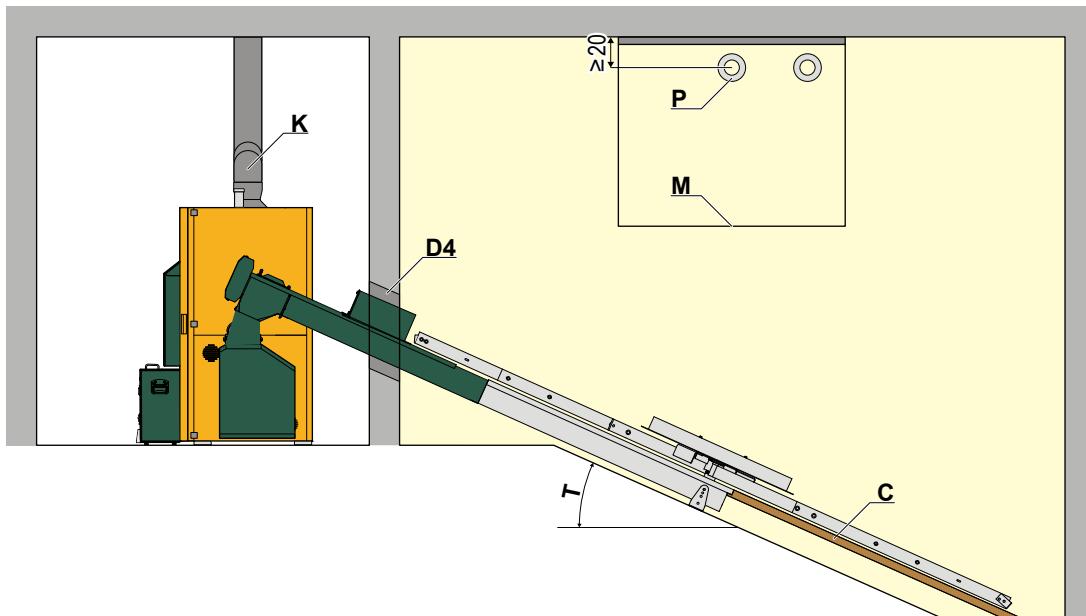
Compatible with

KWB Multifire type MF2 20-120 kW

KWB Pelletfire^{Plus} type MF2 45-135 kW

KWB Powerfire type TDS 150-300 kW

Stirrer with conveyor channel and direct connection



Legend

- C** False floor optional – it is possible to install the conveyor channel in a recess in the floor. (Rear ventilation recommended)
- D4** Wall duct 60×60 cm; seal after installation; the channel must be acoustically decoupled (at least 2 cm acoustic insulation)
- K** Keep access to the chimney free: >60 cm; exhaust pipe and chimney design according to "Technical data" table; energy-saving damper: installation with blowback flap
- M** Ricochet protection mat

- | | |
|-----------|--|
| N1 | Cellular wheel sluice P16S: 83cm P31S: 93cm
Hopper Zl: 92 cm type MF2 S pellet operation: 73cm |
| N2 | Cellular wheel sluice P16S: 88cm P31S: 98cm
Hopper Zl: 97 cm type MF2 S pellet operation: 78 cm |
| T | Wood chip operation: from > 100 kW max. 15°
up to ≤ 100 kW max. 20°
Pellet operation: up to ≤ 135 kW max. 20° |
| P | Ventilated filling nozzles (injection & suction nozzles)
Place the injection connector in the middle of the room and the suction nozzle ≥ 50 cm to the side of the injection connector in the direction of the storage room door. The suction nozzle should always be cut as short as possible inside, almost flush with the wall (it must still be possible to mount the earthing clamp!). Both nozzles should be attached ≥ 50 cm from the side walls and ≥ 20 cm from the ceiling. |



Fuel pouring heights

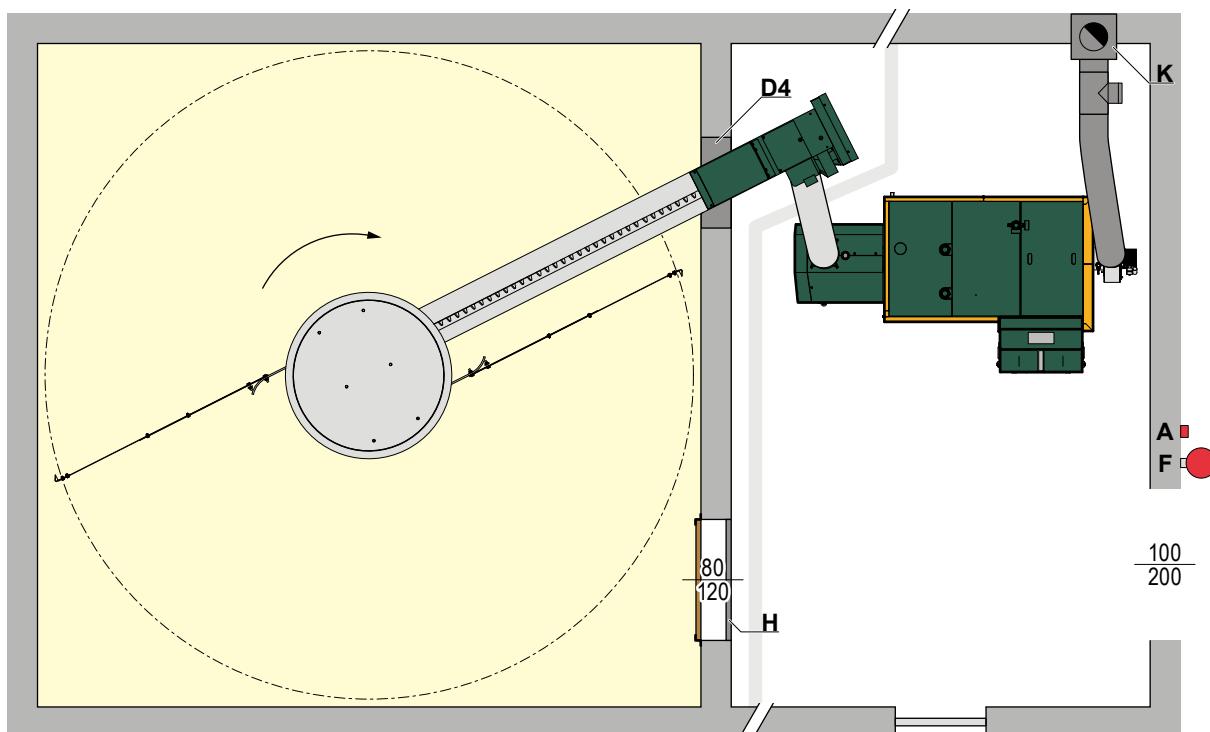
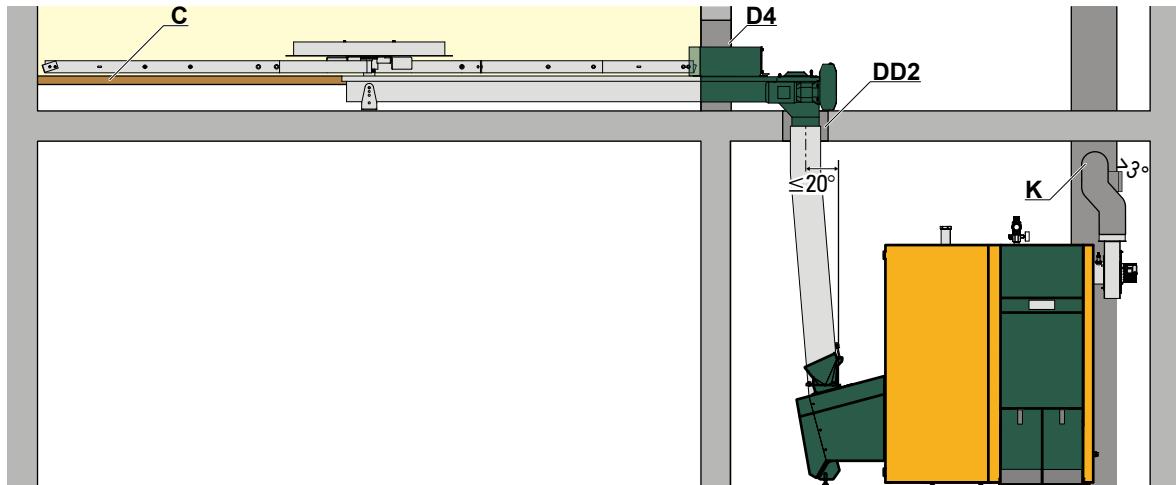
For the use of the spring-blade rotary stirrer or articulated rotary blade stirrer applies: the maximum pouring height for pellet operation is 8m; for wood chip operation, the maximum pouring height is 1,5 x the stirrer diameter. Greater pouring heights must be clarified based on specific site conditions. Please comply with the EN ISO 20023 standard when designing the pellet storage.



Storage room above heating room

Compatible with

- KWB Multifire type MF2 20-120 kW
- KWB Pelletfire^{Plus} type MF2 45-135 kW
- KWB Powerfire type TDS 150-300 kW



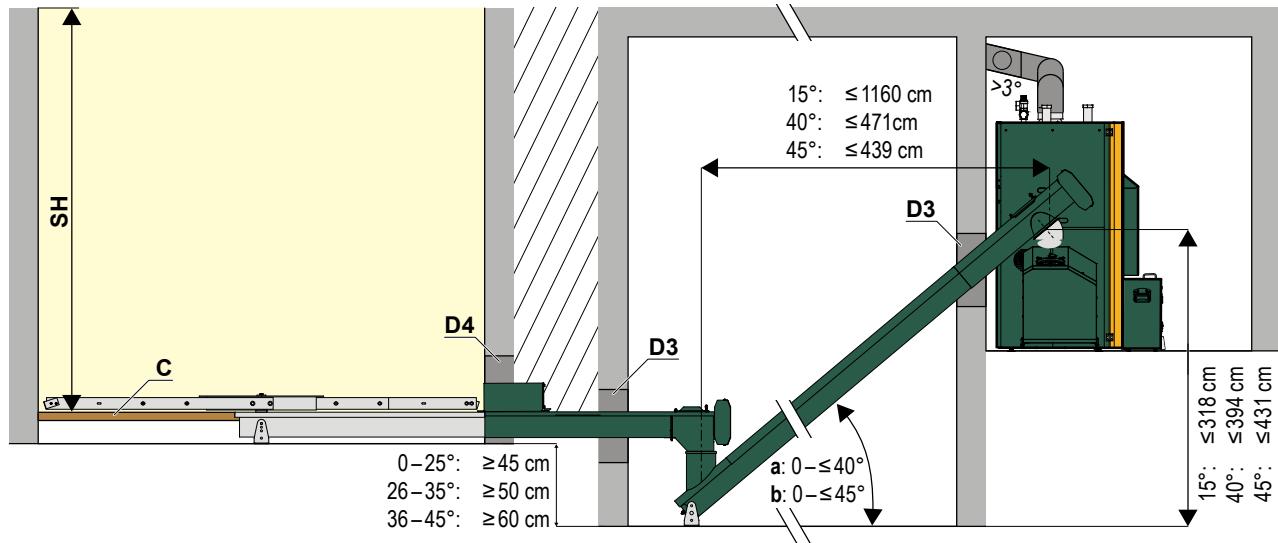
Legend

- A** Emergency-stop switch: Boiler NOT de-energised, but combustion stopped – heat dissipation continues!
- C** False floor optional – it is possible to install the conveyor channel in a recess in the floor. (Rear ventilation and acoustic decoupling are recommended)
- D4** Wall duct 60×60 cm; seal after installation; the channel must be acoustically decoupled (> 2 cm acoustic insulation)

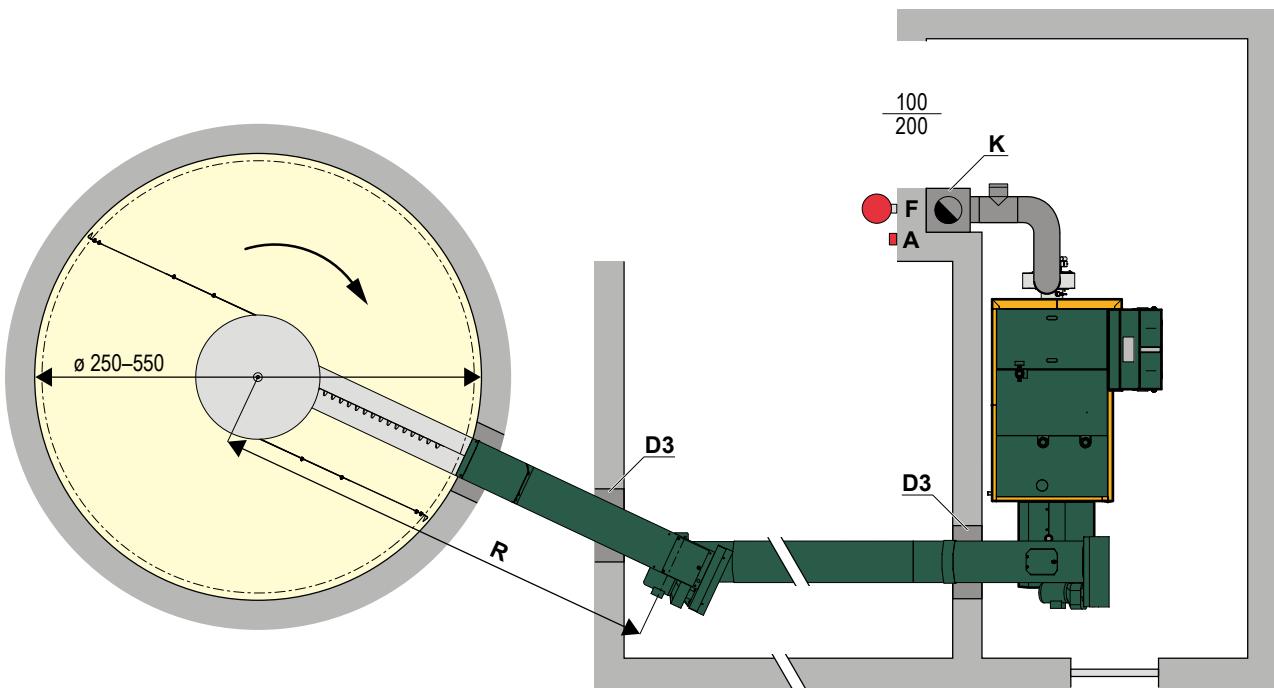
- | | |
|------------|---|
| F | Fire extinguisher |
| H | Hatch: Protective door boards for pressure relief |
| K | Chimney: Exhaust pipe and chimney design according to "Technical data" table, energy-saving damper: Installation with blowback flap |
| DD2 | Ceiling duct 30×30 cm, seal after installation; the channel must be acoustically decoupled (> 2 cm acoustic insulation) |

Storage room at a distance from the heating room

Compatible with
 KWB Multifire type MF2 20-120 kW
 KWB Pelletfire^{Plus} type MF2 45-135 kW
 KWB Powerfire type TDS 150-300 kW



Wood chip
& pellet
20–150 kW



Legend

- A** Emergency-stop switch: Boiler NOT de-energised, but combustion stopped – heat dissipation continues!
- C** False floor optional – it is possible to install the conveyor channel in a recess in the floor. (Rear ventilation and acoustic decoupling are recommended)
- D3** Wall duct 50x50 cm; seal after installation; the channel must be acoustically decoupled (at least 2 cm acoustic insulation)
- D4** Wall duct 60x60 cm; seal after installation, channel must be acoustically decoupled

F	Fire extinguisher
K	Chimney: Exhaust gas pipe and chimney design according to "Technical data" table, energy-saving damper: Installation with blowback flap
N1	Dumping height upon request (depends on storage room width and length, and fuel)
R	Screw length ≤ 1.200 cm
SH	dumping height
a	Wood chip
b	Pellets

Notes

Wood chip
& pellet
20-150kW