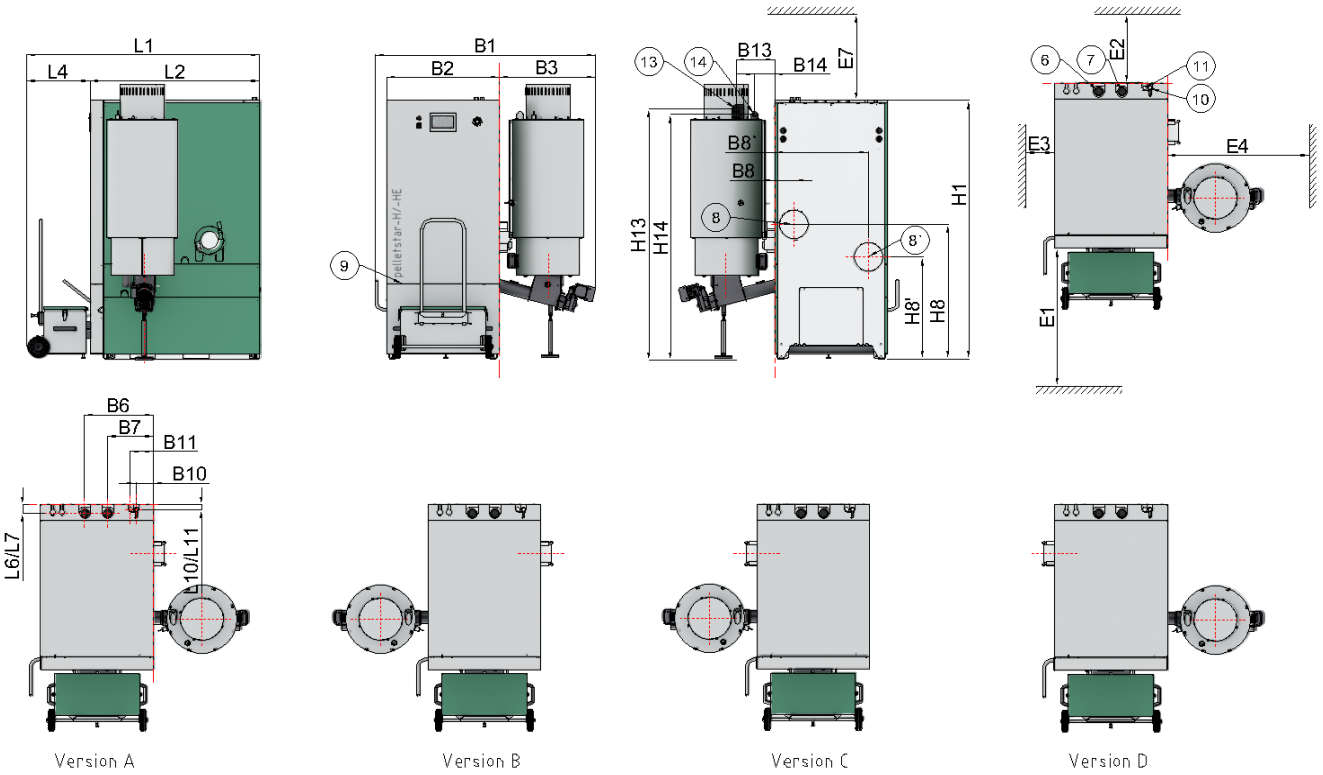
pelletstar-H 70-105
Suction Discharge System

Development / Technical Documentation / Standard Specification Sheet — TD_NB_pelletstar-H 70-105_Saug_ENG_rev.04

Created: MaPö — Responsible: SSZ (Construction)

Created: 02.06.2023 — Approved / Valid: 15.01.2024



Dimensions			70 - 105
L1	length	mm	1640
L2	length	mm	1200
L4	length	mm	445
B1	width	mm	1560
B2	width	mm	800
B3	width	mm	680
H1	height	mm	1880

Minimal gap			70 - 105
E1	minimal gap front	mm	800
E2	minimal gap back	mm	500
E3	minimal gap left (Version A/B/C/D)	mm	200 / 750 / 750 / 200
E4	minimal gap right (Version A/B/C/D)	mm	750 / 200 / 200 / 750
E7	minimal gap (over boiler)	mm	500

Inserting Dimensions		70 - 105
length	mm	1440
width	mm	880 (800***)
height	mm	1900

***by dismounting locking lever

Connections			70 - 105	
6	Flow		2" IT	
B6	Flow (length)	mm	470	
L6	Flow (width)	mm	65	
7	Backflow		2" IT	
B7	Backflow (length)	mm	310	
L7	Backflow (width)	mm	65	
8 / 8`	Flue gas pipe connection		Ø 180 mm	
B8 / B8`	Flue gas pipe connection	mm	660	137
H8 / H8`	Flue gas pipe connection	mm	980	740
9	Filling / Depletion (behind casing)		1/2" IT (3/4" ET)	
	inkl. KFE-valve			
10	Input Safety heat exchanger		1/2" IT (3/4" ET)	
B10	SHE (width)	mm	120	
L10	SHE (length)	mm	35	
11	Output Safety heat exchanger		1/2" IT	
B11	SHE (width)	mm	165	
L11	SHE (length)	mm	35	
13	Pellet Suctiontube connection		Ø 50 mm	
H13	Suctiontube connection	mm	1820	
B13	Suctiontube connection	mm	275	
14	Returnair connection		Ø 48,3 mm	
H14	Returnair connection (length)	mm	1780	
B14	Returnair connection (width)	mm	145	

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Power Data		**70**	**80**	**100**	**105**
		pellets	**pellets**	**pellets**	**pellets**
Power range - declaration at rating plate	kW	20,5-70	20,5 - 80	20,5 - 99	20,5 - 105
Fuel heat output	kW	73	84	107	112
Efficiency*	%	95,4		93,7	
Boiler class EN 303-5		5			
Energy efficiency class		A+			

Boiler Data		**70**	**80**	**100**	**105**
		pellets	**pellets**	**pellets**	**pellets**
Boiler weight	kg	~ 1085			
Operation temperature [max]	°C	90			
Setting Safety Temperature Limiter [max]	°C	95			
Grate area	m²	0,047			
Volume ash drawer combustion chamber	l	25			
Volume ash drawer heat exchanger	l	25			
Volume suction hopper	l	125			
Volume combustion chamber	m³	0,065			
Chimney draft (underpressure) [min-max]	Pa	5 / 20			
Operating pressure [min-max]	bar	1,5 / 6			
Number of Thermal safety valves - BFP		1			
Opening temperature Thermal safety valves - BFP	°C	95			

Heat Exchanger		**70**	**80**	**100**	**105**
		pellets	**pellets**	**pellets**	**pellets**
Heat exchanger [Nr. conduits / Nr. tubes]		2 / 1: 2x3; 2: 6x6			
Surface heat exchanger	m²	2,35			
Surface safety heat exchanger - SHE	m²	2 x 0,21			
Water flow rate - SHE [min]	l/h	> 1200			
Pressure cold water [min]	bar	2			

Hydraulic Data		**70**	**80**	**100**	**105**
		pellets	**pellets**	**pellets**	**pellets**
Water capacity	l	241			
Water flow rate (ΔT=15K) [min]	l/h	1163			
Water flow rate (ΔT=10K)	l/h	6020	6880	8600	9030
Water flow rate (ΔT=20K)	l/h	3010	3440	4300	4515
Flow resistance (ΔT=10K)	mBar	154,3	205,1	330,1	366,3
Flow resistance (ΔT=20K)	mBar	35,2	46,8	75,3	83,6
Recommended buffer volume [min]	l	1000			

Electrical Data		**70**	**80**	**100**	**105**
		pellets	**pellets**	**pellets**	**pellets**
Power consumption	kW	2,4			
Electrical connection	V/Hz/A	~230 / 50 / 16			
Electrical power consumption (nominal)*	kW	0,125		0,162	
Electrical power consumption (partial)*	kW	0,067			
Electrical power consumption (Stand By)*	kW	0,007			

Test Report Data	**70**	**80**	**100**	**105**
Test report reference number	32-10976/1/T		32-10976/2/T	
Test institute	SZU			

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Emmission Data (Nominal Load) (ΔT=20K)		**70**	**80**	**100**	**105**
		Pellets	**Pellets**	**Pellets**	**Pellets**
Flue gas temperature	°C	~ 115	~ 125	~ 135	~ 140
Flue gas mass flow**	kg/h	147,7	166,9	213,4	217,7
Flue gas flow rate**	Nm³/h	113,7	128,4	164,2	167,5
Flue gas flow rate**	Bm³/h	149,9	169,4	235,7	240,4
CO_2-Content*	Vol. %	13,95		14,47	
Efficiency*	%	95,4		93,7	

Emmission Data (Partial Load) (ΔT=20K)		**70**	**80**	**100**	**105**
		Pellets	**Pellets**	**Pellets**	**Pellets**
Flue gas temperature	°C	~ 70			
Flue gas mass flow**	kg/h	49,6			
Flue gas flow rate**	Nm³/h	38,2			
Flue gas flow rate**	Bm³/h	46,8			
CO_2-Content*	Vol. %	12,34			
Efficiency*	%	95,4			

Note:
* measured value according to test report
** calculated with fuel values from test report
calculation according to EN 13384.
Nm³/h = Standard cubic meters / hour
Bm³/h = Operating cubic meters / hour
Door hinge on the right of the boiler standard --> door hinge on the left optionally possible

Permissible fuel:
Wood pellets for non-industrial use according to Enplus, Swisspellet, DINplus or pellets according to EN 17225-2 according to the following specification:
.) property class A1
.) the maximum permissible fines content in the fuel store must not exceed 8% of the stored fuel volume (determined with perforated screen hole diameter 5mm)!
.) fine fraction at the time of loading: < 1.0 m-%
.) heating value in delivery condition > 4.6 kWh/kg
.) bulk density BD in delivery condition > 600 kg/m³
.) mechanical strength DU, EN 15210-1 in delivery condition, m-%: DU97.5 ≥ 97.5
.) diameter 6mm

Heating water:
Please observe ÖNORM H 5195 (current edition), EN 12828 Part 1 with regard to the condition of the heating water and VDI 2035 for Germany.
Irrespective of the respective standards or directives, the following values apply as minimum requirements for filling and supplementary water:
.)pH: 8,2 - 10
.)conductivity: <150µS
.)total hardness: <0,1mmol/l
If a standard or guideline requires a lower value, this must be used. The heating water must be checked at regular intervals in accordance with the applicable regulations. The results must be documented and stored.

Chimney:
The chimney system must be moisture-resistant and approved for solid fuels. The diameter of the chimney system must be calculated according to EN 13384-1, but the diameter must be at least equal to the diameter of the flue pipe connection (connection 8). The chimney system must achieve tightness class N1 or P1 according to the calculation.
The connecting pipe must be installed so that it rises steadily (min. 5%). In addition, all regional regulations must be observed.

Buffer tank:
A buffer tank is not required if guaranteed:
permanent minimum heat decline: 100% of the nominal power for min. 0,75 hours or 30% of the nominal power for mind. hour.
The size of the buffer depends on the system. This must be calculated by a planner in accordance with the present heating system!

Maintenance/service:
The specified free areas must be strictly adhered to when carrying out maintenance and service work.