

1 FLUE GAS COLLECTION

According to the permitted type of installation, both individual units and preassembled groups may be connected to one or more flue(s).

For sizing the flue serving a single unit, refer to the data and information in Section B of the specific product.

If sizing a flue serving several units, Table 1.1 p. 2 below summarises the main combustion parameters for each single unit.

If sizing a flue serving several units, consider the following:

- ▶ The flues must be designed, sized, verified and realized by a qualified firm, with materials and components in accordance with regulations.
- ▶ Always provide the necessary sockets for smoke analysis in an accessible position.
- ▶ The GAHP A, GAHP GS/WS and AY00-120 modules are condensation units and require exhaust of the flue gas with appropriate piping, with forced draft and residual head shown in Table 1.1 p. 2.



If several forced draft appliances (GAHP A, GAHP GS/WS and AY00-120) are connected to a single flue, it is obligatory to install a check valve on the exhaust of each.



In case the flap valves are installed outside, an appropriate UV ray protection must be assured (if the valve is constructed in plastic material) as well as protection from potential winter freezing of condensate backflow into the siphon.

- ▶ GAHP/AY modules with different flue gas exhaust features cannot be connected to the same flue, but must be connected to different and separate flues.
- ▶ GAHP-AR modules are fitted with a combustion blower towards the combustion system, but the residual head indicated in Table 1.1 p. 2 is sufficient only to reach the terminal of the exhaust kit supplied. If flue gas exhaust of GAHP-AR modules must be extended over the supplied kit, the pressure head at the exhaust kit terminal must be considered equal to 0 Pa.
- ▶ If the exhaust kit of GAHP-AR modules supplied with other types of flue is replaced, the residual head indicated in Table 1.1 p. 2 must be considered.
- ▶ It is recommended to insulate the stainless steel flues of GAHP-AR units.



If several GAHP-AR appliances are connected to a single flue, NO check valves must be installed.

- ▶ The GA ACF units have no flue gas exhaust.

Table 1.1 Combustion products characteristics

			GAHP GS/WS	GAHP A	AY00-120	GA ACF	GAHP-AR
FUMES FLOW RATE							
Nominal thermal capacity	G20	kg/h	42	42	55	-	42
	G25	kg/h	42	42	62	-	42
	G25.1	kg/h	45	45	49	-	-(1)
	G27	kg/h	42	42	55	-	42
	G2.350	kg/h	42	42	56	-	42
	G30	kg/h	43	43	49	-	43
	G31	kg/h	48	48	56	-	42
Minimal thermal capacity	G20	kg/h	21	21	13	-	-
	G25	kg/h	21	21	15	-	-
	G25.1	kg/h	23	23	12	-	-
	G27	kg/h	21	21	13	-	-
	G2.350	kg/h	22	22	13	-	-
	G30	kg/h	22	22	12	-	-
	G31	kg/h	24	24	13	-	-
Flue temperature							
Minimal thermal capacity	G20	°C	46,0	46,0	71,6	-	-
	G25	°C	45,7	45,7	72,0	-	-
	G25.1	°C	46,0	46,0	71,0	-	-
	G27	°C	46,0	46,0	71,5	-	-
	G2.350	°C	46,8	46,8	72,0	-	-
	G30	°C	46,0	46,0	71,5	-	-
	G31	°C	46,0	46,0	71,5	-	-
Nominal thermal capacity	G20	°C	65,0	65,0	72,5	190,0	186,0
	G25	°C	63,6	63,6	72,0	193,9	178,0
	G25.1	°C	65,0	65,0	72,0	-	-(1)
	G27	°C	64,0	64,0	72,0	-	169,0
	G2.350	°C	62,7	62,7	72,0	-	165,0
	G30	°C	65,0	65,0	71,5	190,0	181,0
	G31	°C	65,0	65,0	72,5	181,0	190,0
Percentage CO₂ in fumes							
Nominal thermal capacity	G20	%	9,10	9,10	9,40	8,70	8,70
	G25	%	9,10	9,10	9,40	8,50	8,70
	G25.1	%	10,10	10,10	10,70	-	-(1)
	G27	%	9,00	9,00	9,35	-	8,54
	G2.350	%	9,00	9,00	9,15	-	8,48
	G30	%	10,40	10,40	12,40	9,30	10,20
	G31	%	9,10	9,10	10,60	9,10	10,50
Minimal thermal capacity	G20	%	8,90	8,90	8,90	-	-
	G25	%	8,90	8,90	8,90	-	-
	G25.1	%	9,60	9,60	10,20	-	-
	G27	%	8,50	8,50	8,90	-	-
	G2.350	%	8,70	8,70	8,80	-	-
	G30	%	10,10	10,10	11,50	-	-
	G31	%	8,90	8,90	10,20	-	-
Installation data							
NO _x emission class		-	5	5	5	4	5 (2)
NO _x emission		ppm	25,0	25,0	19,5	56,0	30,0 (3)
CO emission		ppm	36,0	36,0	8,4	17,0	23,0 (3)
Fume outlet	diameter (Ø)	mm	80	80	80	-	80
	residual head	Pa	80	80	100	-	12

(1) Not available.

(2) All values measured with G20 (natural gas) as reference gas.

(3) Values measured with G20 (methane), as gas of reference. NOx and CO levels measured in compliance with EN 483 (combustion values at 0% of O2).

Table 1.2 Type of installation

	GAHP A			GAHP-AR	GAHP GS/WS	AY00-120	GA ACF
	GAHP A Indoor	GAHP A HT Standard	GAHP A HT S1				
Installation data							
type of installation	-	C13, C33, C43, C53, C63, C83	B23P, B33, B53P	B23, B53	C13, C33, C43, C53, C63, C83, B23P, B33	B32P, B33, B35P, C13, C33, C34, C53, C63, C83	-