



Technical data

Shop roaster

P series



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Information material!



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1 Connected loads

1.1 Electrical supply

Voltage supply	
Power supply voltage and frequency	200 V; 50 Hz/60 Hz, 3-phase 230 V; 50 Hz/60 Hz, 3-phase
P 05 III	380 V; 60 Hz, 3-phase
P 12 III	400 V; 50 Hz/60 Hz, 3-phase
P 25 III	480 V; 60 Hz, 3-phase
P 05 III e	380 V; 60 Hz, 3-phase 400 V; 50 Hz, 3-phase

Current consumption	
P 05 III	< 0.3 kWh / 5 kg
P 05 III e	< 6.0 kWh / 5 kg
P 12 III	< 0.4 kWh / 12 kg
P 12 III e	
P 25 III	< 0.7 kWh / 25 kg

Nominal capacity	P 05 III	P 12 III	P 25 III
Drum drive	0.12 kW	0.18 kW	0.37 kW
Stirring mechanism drive	0.12 kW	0.12 kW	0.12 kW
Electrical heating (only e version)	17 kW		-
Roaster fan	0.22 kW/50 Hz 0.30 kW/60 Hz	0.65 kW / 50 Hz 1.10 kW / 60 Hz	
Cooling fan	0.22 kW/50 Hz 0.30 kW/60 Hz	0.65 kW / 50 Hz 1.10 kW / 60 Hz	



Connected loads



Attention!

Frequency converters with internal or external interference filters normally have a leakage current to PE potential which is higher than AC 3.5 mA or DC 10 mA.



REMARK!

Within the EU, a hard wiring of the machine is mandatory and urgently recommended by PROBAT! Apart from that, the local prescriptions and regulations apply!

Connected loads
1.2 Gas supply

Gas group	Gas pressure	Countries of destination
I3B/P	28-30 mbar	CY, IS, MT
II2E3B/P	20, 30 mbar	PL
II2ELL3B/P	20, 50 mbar	DE
II2H3B/P	20, 28-30 mbar	BA, CH, CZ, DK, EE, FI, HR, LT, LU LV, NO, SE, SI, SK, TR
II2H3B/P	20, 50 mbar	BE, ES, FR, GB, GR, IE, IT, PT
II2H3B/P	20, 50 mbar	AT, CH
II2H3B/P	25, 50 mbar	HU
II2L3B/P	25, 28-30 mbar	NL

Nominal heat load

Roaster	Nominal heat load	
	Gas	Electrical
P 05 III	14 kW	17 kW
P 12 III	28 kW	
P 25 III	60 kW	-

Gas consumption

Gas group*	Calorific value H _i kWh/m ³	Gas consumption during nominal load m ³ /h		
		P 05	P 12	P 25
E/H (G20)	9.45	1.48	2.94	6.35
L/LL (G25)	8.58	1.63	3.24	6.99
3B/P (G30)	32.25	0.43	0.86	1.86



	<p>REMARK!</p> <ul style="list-style-type: none"> ● The gas supply duct must be on the connection of the roaster Rp 1/2" (ISO 7-1) and must not exceed the gas pressure mentioned above. ● The gas pressure (see: chart) has to be adjusted by a pressure reducer (existing at the customer) before the gas shut-off cock. ● The indicated gas pressures refer to the flow pressure during the operation. This is for all gas types at least 15 mbar and needs to be provided by and at the charge of the customer so that the machine can be operated properly.
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* Categorie as per DIN EN 437:2009-09 = **DE: II 2ELL 3B/P**

	<p>REMARK!</p> <p><i>In Germany, the technical rule for gas installations (DVGW-TRGI) and the technical rules for liquid gas (TRF) are particularly valid.</i></p>
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1.3 Exhaust air volume

	Process	Quantity
P 05 III	Roasting	110 m ³ /h norm
	Cooling	400 m ³ /h norm
P 12 III	Roasting	260 m ³ /h norm
	Cooling	800 m ³ /h norm
P 25 III	Roasting	540 m ³ /h norm
	Cooling	800 m ³ /h norm

1.3.1 General remarks concerning the exhaust air pipe lines

- The exhaust air pipe line should be as short as possible and slightly descending towards the condensate drain to prevent condensate from flowing back into the machine. Sharp redirections and neckings have to be avoided.
- Exhaust air pipe lines after the roasting cyclone and cooling fan
 - which are longer than 15 m,
 - that have a 1 m horizontal part and/or
 - have more than 2 x 90° bends,need possibly an additional fan.
- Easy accessible cleaning openings are recommended. As the formation of condensate cannot be completely ruled out, the installation of a condensate drain is recommendable.
- The application of folded spiral-seam pipes as exhaust air ducting is not recommended since the pressure loss in these pipes is higher in comparison with smooth pipes. Apart from that the contamination trend is stronger and thus the risk of fire.
- The roaster emits an exhaust gas volume flow; for this purpose see: the technical data. The roasting and cooling exhaust air are conveyed towards the chimney with up 500 Pascal. Pay attention that the exhaust air pipe lines have an appropriate pressure tightness.
- The sufficient ventilation of the installation room has to be ensured.
- Pipe lines and chimney have to be regularly (monthly) examined with regard to deposits.
- The emanation of the roast exhaust air into the open should be vertically above the roof.
- Wall and roof openings must be insulated in a fire-resistant way against the exhaust air pipe line.
- The relevant regulations for the installation of chimney/exhaust gas units and the local regulations have to be adhered to (e.g. referring to the height of the chimney and the exhaust air speed on the chimney outlet).
- Please contact the responsible chimney sweeper and a specialist firm.
- **The operator is responsible for the duly execution of the connecting lines.**
- **Please note: The actual diameter of the exhaust air pipe line (chimney) has to be calculated depending on the local conditions and the data provided by PROBAT concerning exhaust air and volume flows! Machine and equipment-specific emission data sheets are provided by PROBAT on request.**



1.3.1.1 Is it possible to connect several roasters to one exhaust gas unit?

An installation of several roasters to one exhaust gas pipe line is not recommendable. There is the risk that the exhaust air of the roaster in operation will flow into the installation room via the roaster which is not in operation. The same goes for the roaster with separate roasting and and cooling fan. Due to the reasons mentioned above, a roasting machine should not be connected to an exhaust air pipe line/chimney with multiple outlets (e.g. roaster and heating unit).

1.4 Environmental conditions

When using the unit the following max. values must not be exceeded.

P III	
Relative air humidity	10 – 95 %
Installation height	1,000 m above sea level
Temperature max.	30°C
Design control hardware	IEC 61131 part 1
Protective class	IP 4X

1.5 Sound pressure level

P III	
Without product	
Roaster ²⁾	65 db(A)
Roaster ²⁾ + Cooling	76 db(A)

P III	
With product	
Roaster ²⁾	70 dB(A)
Roaster ²⁾ + Cooling	72 dB(A)
Emptying of the cooling sieve	79 dB(A)

²⁾ Details refer to the operating location.



2 Set-up and function

2.1 Overview

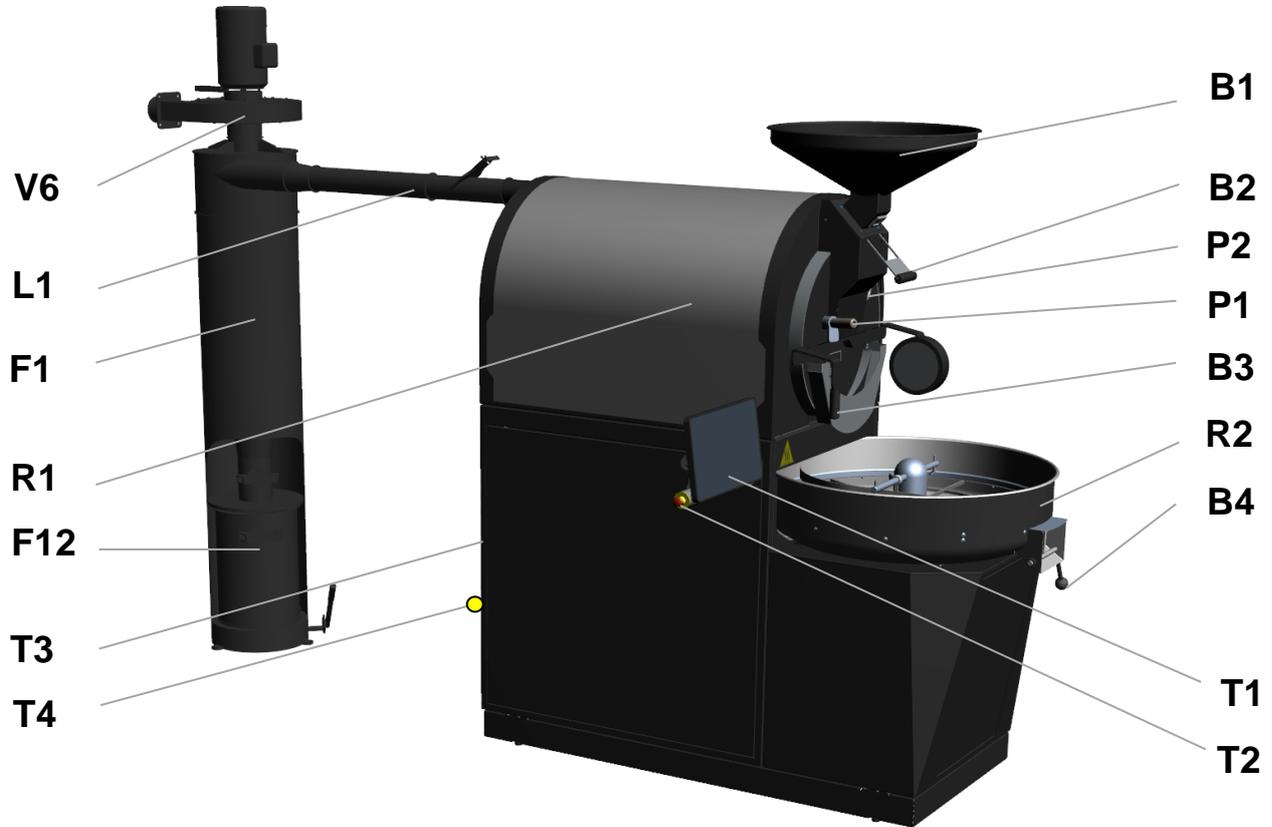


Illustration 1: Set-up

Components P III			
B1	Filling hopper	F1	Roasting cyclone
B2	Filling slide gate	F12	Chaff collecting bin
B3	Emptying flap Roaster	T1	Operating panel
B4	Emptying flap Cooler	T2	Emergency-off key
R1	Roasting drum	T3	Main switch
R2	Cooler with stirring mechanism	T4	Network connecting bushing
P1	Sampler	V6	Roaster fan
P2	Sight glass		
L1	Connecting pipe line		

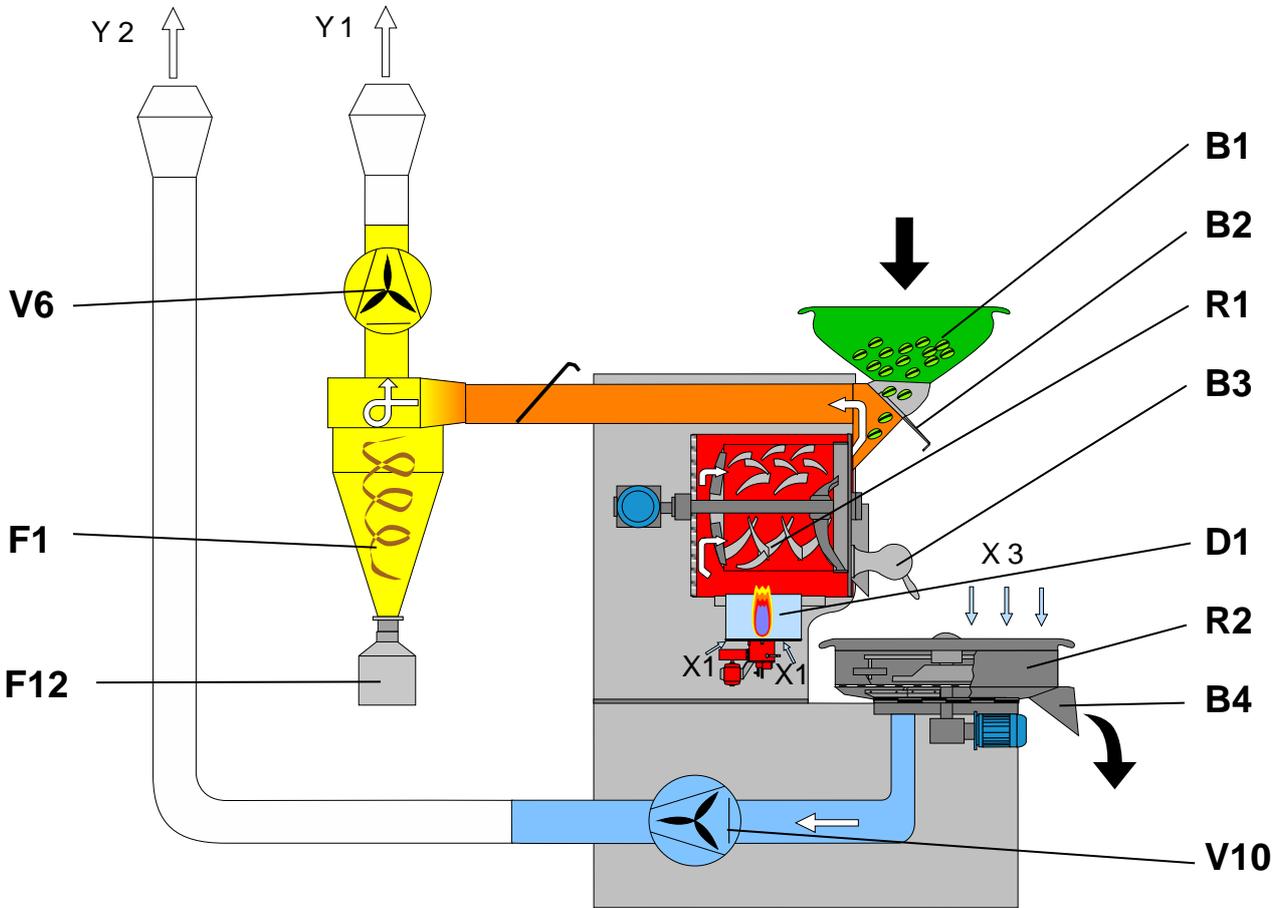
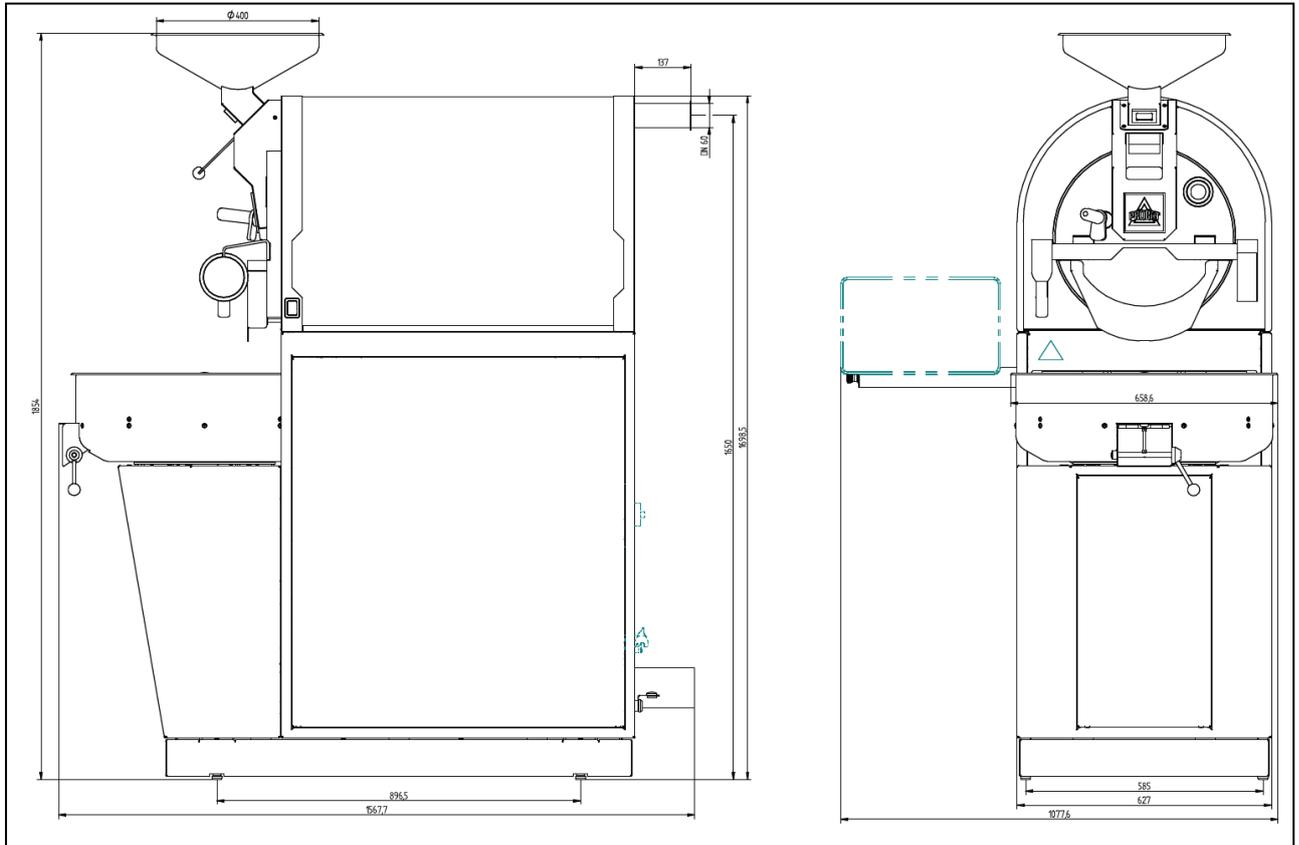


Illustration 2: Process scheme (variant 2: roasting/cooling exhaust air separated)

B1	Filling hopper	F1	Roasting cyclone
B2	Filling slide gate	F12	Chaff collecting bin
B3	Emptying flap Roaster	V6	Roaster fan
B4	Emptying flap Cooler	V10	Cooling fan
R1	Roasting drum	X1	Supply air Burner
R2	Cooler with stirring mechanism	X3	Supply air Cooler
D1	Burner	Y1	Exhaust air Roaster
		Y2	Exhaust air Cooler

3 Dimensions and weight

3.1 P05 III



P05 III (roaster)

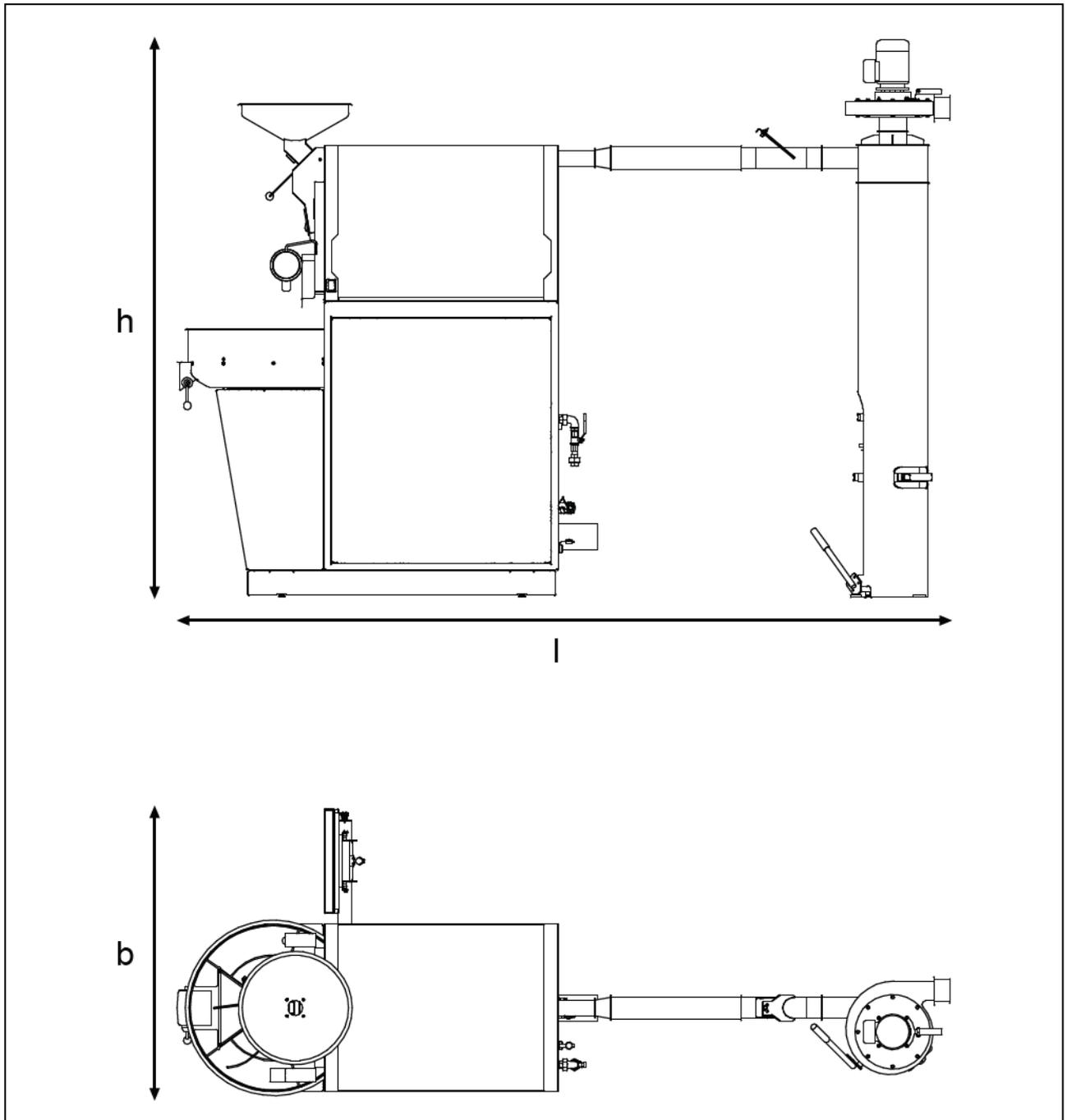
Dimensions in mm approx.	l	1,567
	w	1,077
	h	1,854
Roasting exhaust air pipe line in mm approx. (connecting pipe line roaster / cyclone)	Ø d	DN 80
Cooling exhaust air pipe line in mm approx. (connecting pipe line roaster / into the open)	Ø d	DN 100
Gas connection in mm approx.	h	493.5
Operating weight in kg approx.	Roaster	440



Dimensions and weight

P05 III (cyclone)		
Dimensions in mm approx.	l	586
	w	439
	h	2,114
Exhaust air pipe line in mm approx. (after cyclone; to chimney/ smokestack)	Ø d	DN 80
Operating weight in kg approx.	Cyclone	50

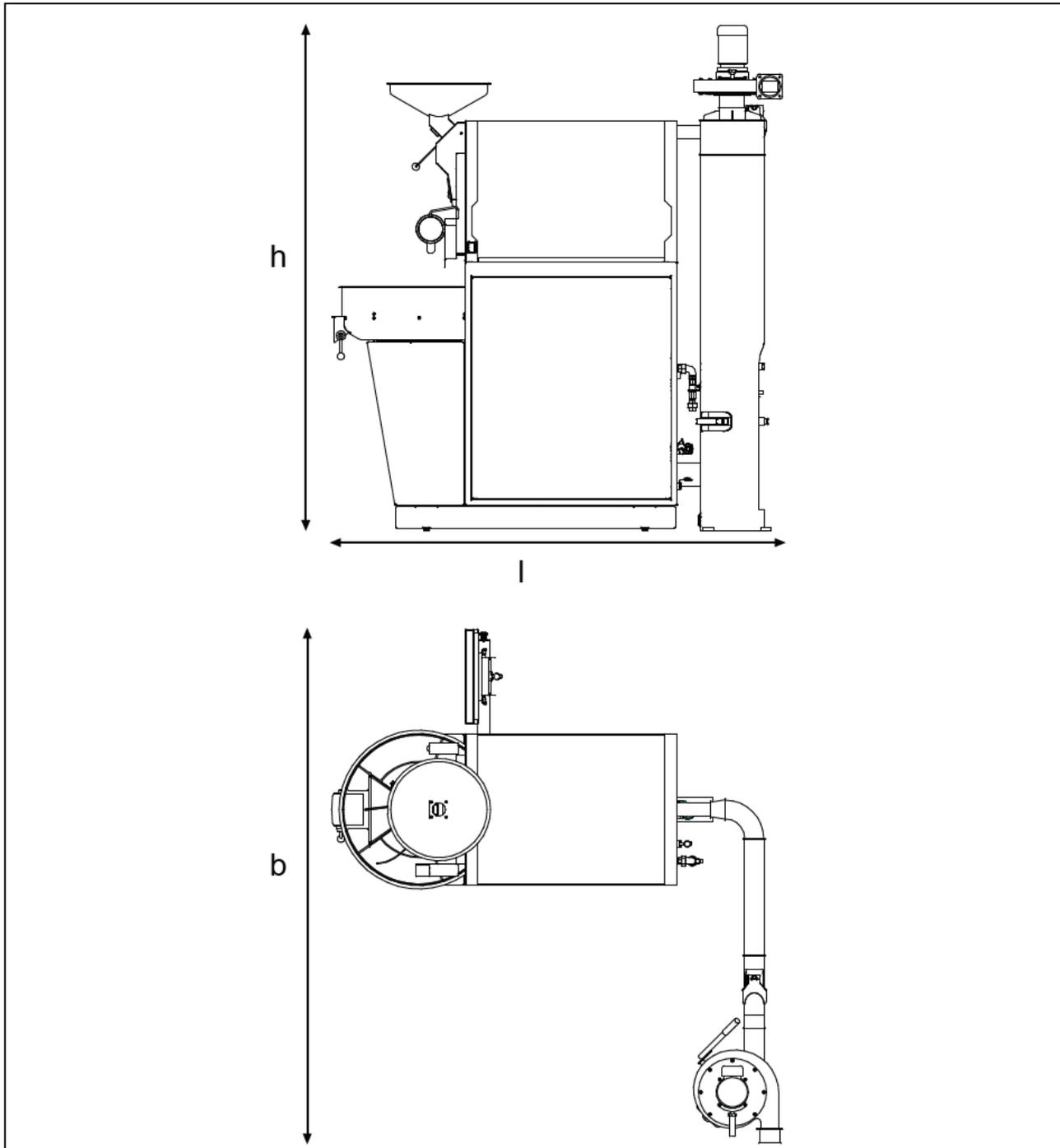
3.1.1 Layout plan Variant 1



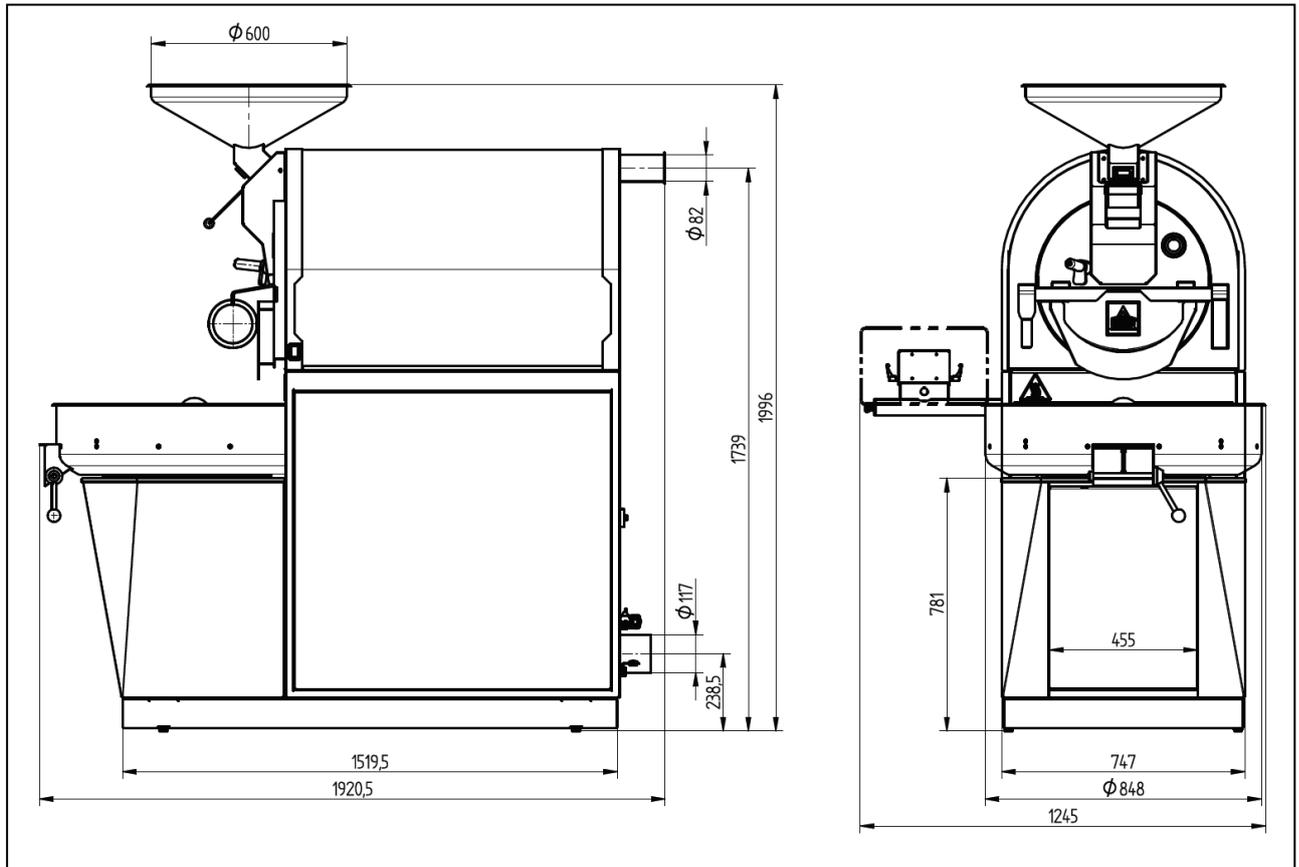
Space required P05 III		
Dimensions in mm approx.	l	2,882
	w	1,077
	h	2,092



3.1.2 Layout variant Variant 2



Space required P05 III		
Dimensions in mm ca.	l	1,852
	w	2,132
	h	2,092

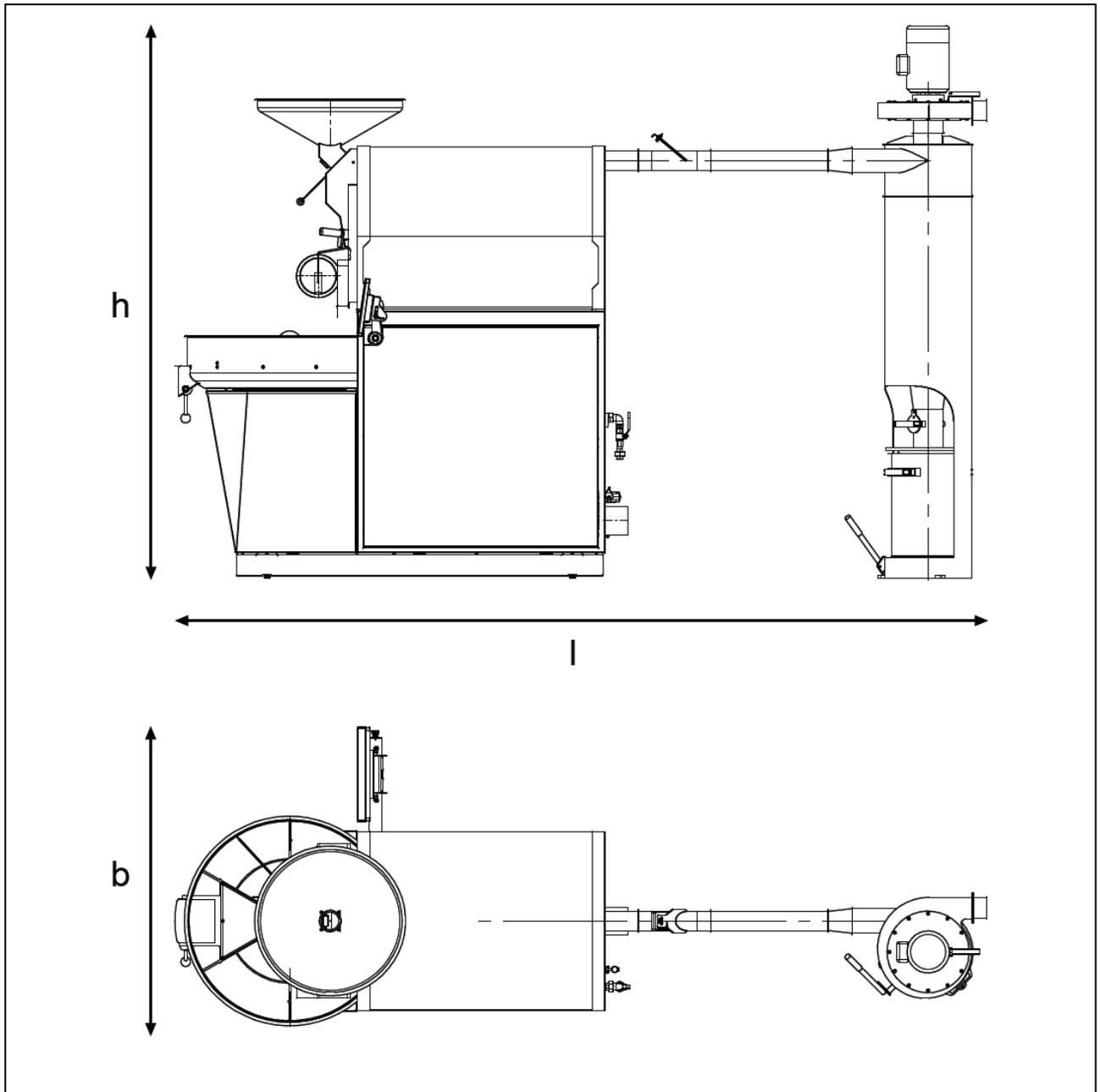
3.2 P12 III

P12 III (roaster)

Dimensions in mm approx.	l	1,920.5
	w	1,250
	h	1,996
Roasting exhaust air pipe line in mm approx. (connecting pipe line roaster / cyclone)	\emptyset d	DN 80
Cooling exhaust air pipe line in mm approx. (Connecting pipe line roaster / into the open)	\emptyset d	DN 120
Gas connection in mm approx.	H	493.5
Operating weight in kg approx.	Roaster	530

Dimensions and weight

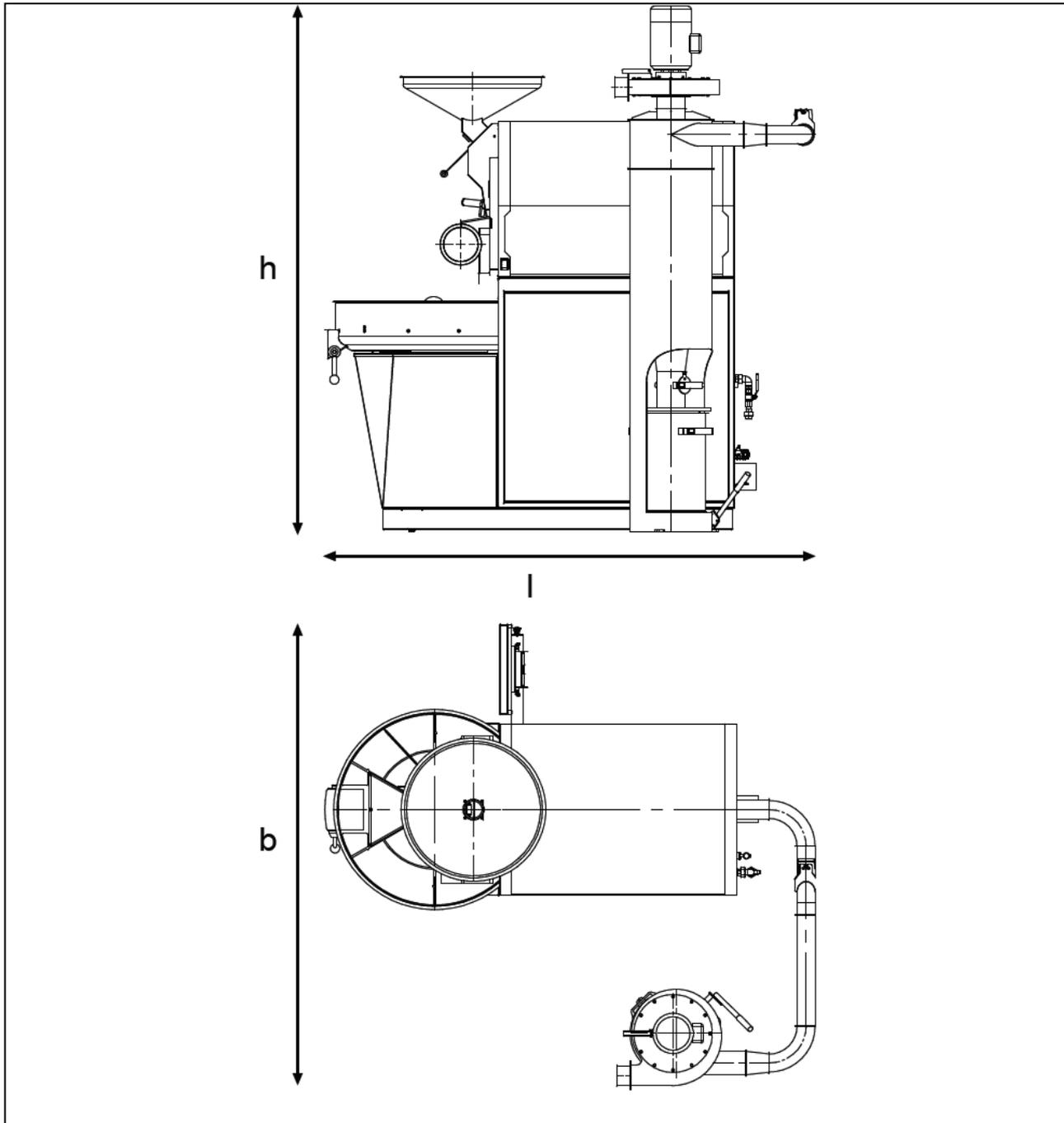
P12 III (cyclone)		
Dimensions in mm approx.	l	587
	w	439
	h	2,300
Exhaust air pipe line in mm approx. (after cyclone; to chimney / smokestack)	Ø d	DN 80
Operating weight in kg approx.	Cyclone	60

3.2.1 Layout plan Variant 1

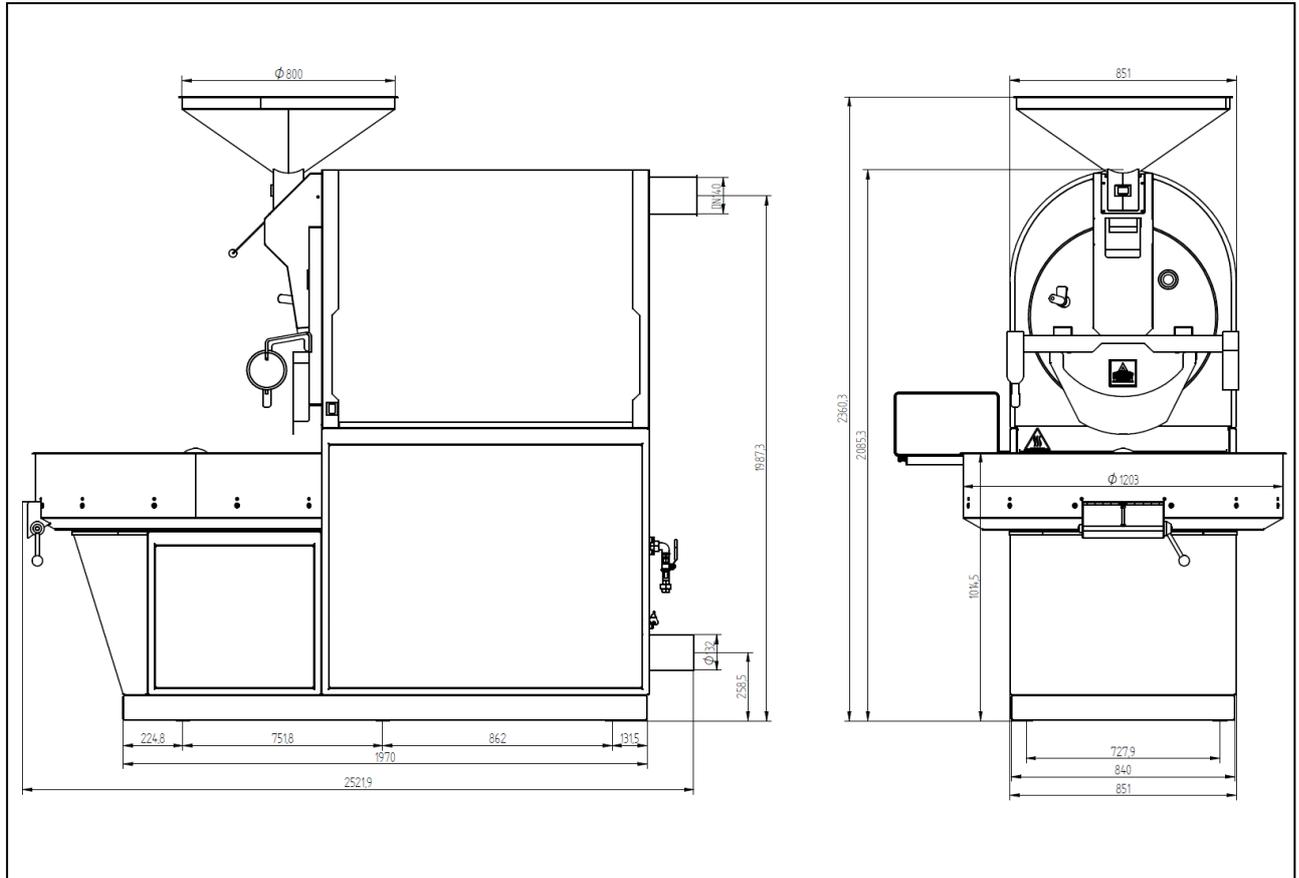


Space required P12 III		
Dimensions in mm approx.	l	3.364
	W	1.250
	h	2.300

3.2.2 Layout plan Variant 2



Space required P12 III		
Dimensions in mm approx.	l	2,129
	w	2,030
	h	2,300

3.3 P25 III

P25 III (roaster)

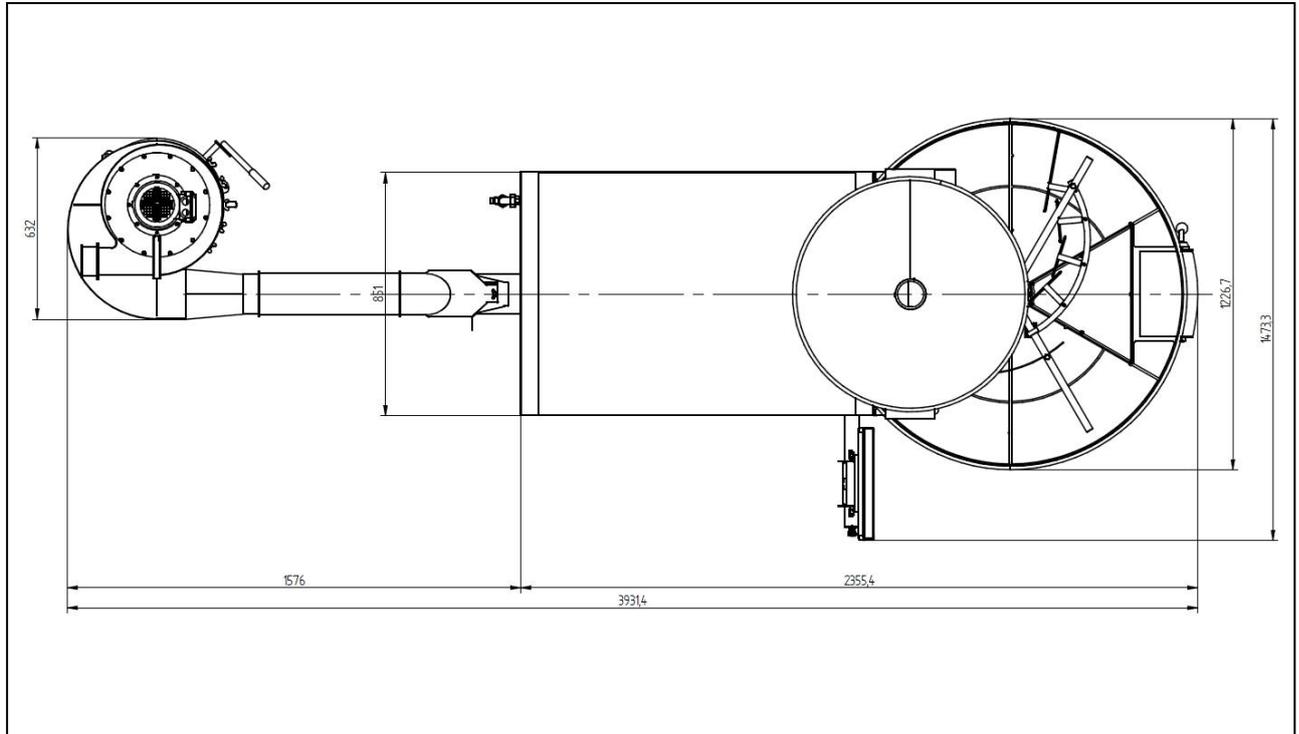
Dimensions in mm ca.	l	2,522
	w	1,473
	h	2,360
Roasting exhaust air pipe line in mm approx. (connecting pipe line roaster / cyclone)	ϕ d	140
Cooling exhaust air pipe line DN 140, in mm approx. (connecting pipe line roaster / into the open)	ϕ d	132
Gas connection in mm approx.	h	493.5
Operating weight in kg approx.	Roaster	1,000 kg



Dimensions and weight

P25 III (cyclone)		
Dimensions in mm ca.	l	492
	w	645
	h	2,559
Exhaust air pipe line in mm approx. (after cyclone; to chimney/ smokestack)	Ø d	DN 100
Operating weight in kg approx.	Cyclone	100 kg

3.3.1 Layout plan Variant 1

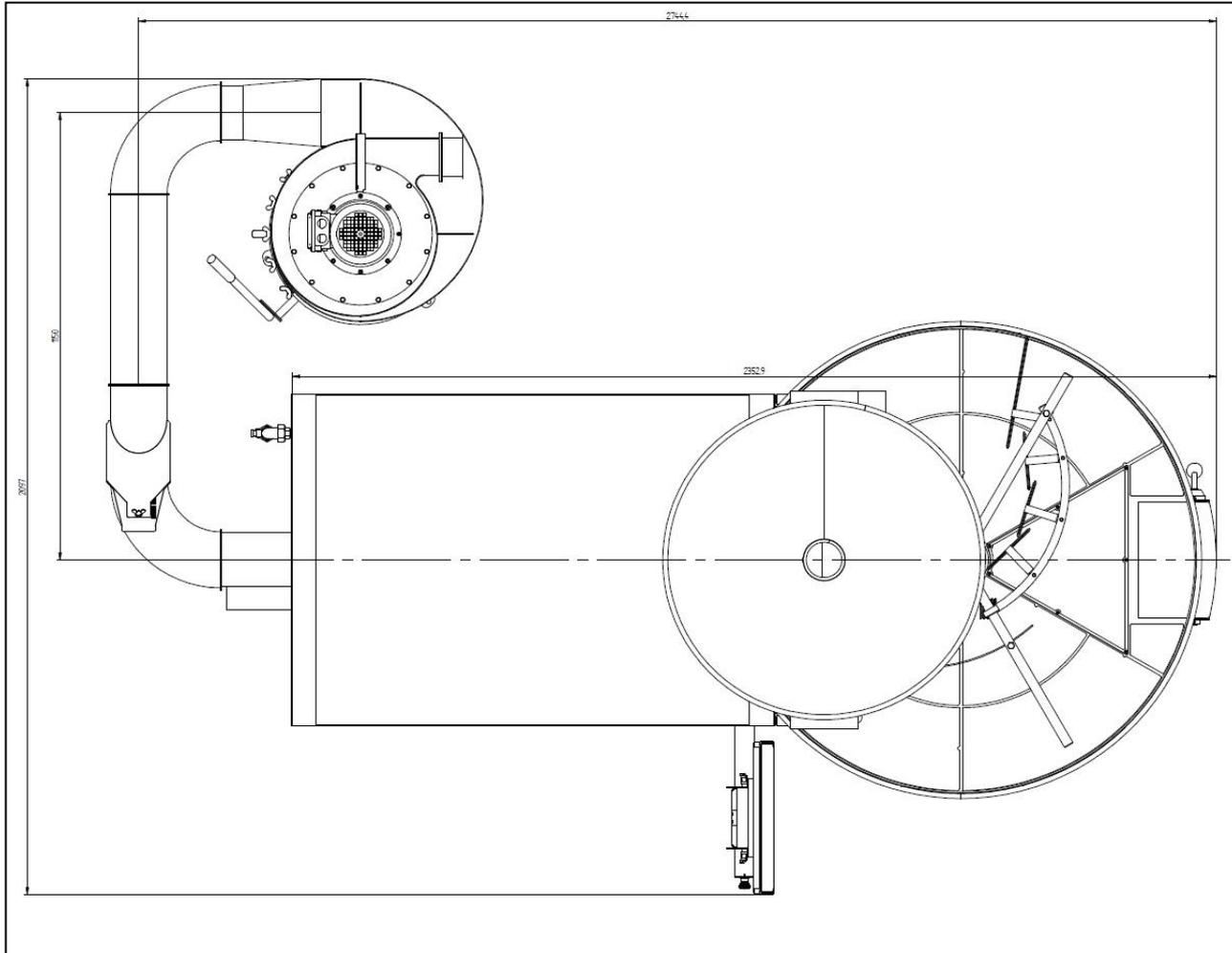


Space required P25 III

Dimensions in mm approx.

l	3,931
w	1,473
h	2,555

3.3.2 Layout plan Variant 2



Space required P25 III		
Dimensions in mm approx.	l	2,830
	w	2,097
	h	2,555



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