

SPRAY DRYERS

ECONOHEAT SPRAY DRYER MODELS NC

OVOBEL is supplier of SPRAY DRYER machines for egg processing.

The Econoheat spray dryer has become the model for processors around the world. Pasteurized egg white, yolk and whole egg powder.

Systems are available in capacities ranging from 220 lbs (100 litre) to 6600lbs (3000 litre) per hour water evaporation rates.

Air heating options include direct-fired gas, indirect steam, thermal fluid oil and indirect gas fired systems. The choice depends upon fuel sources, market area, and products to be dried.



Egg products are dried because it results in several advantages:

- it is the best preservation method for long terms
- it is easy to handle and cheaper to transport (water has been evaporated)
- it slows down growth of micro organisms and chemical reactions
- powder is easy and clean to use
- it is used and necessary for many new convenience foods

We use the box type dryer because it offers several advantages:

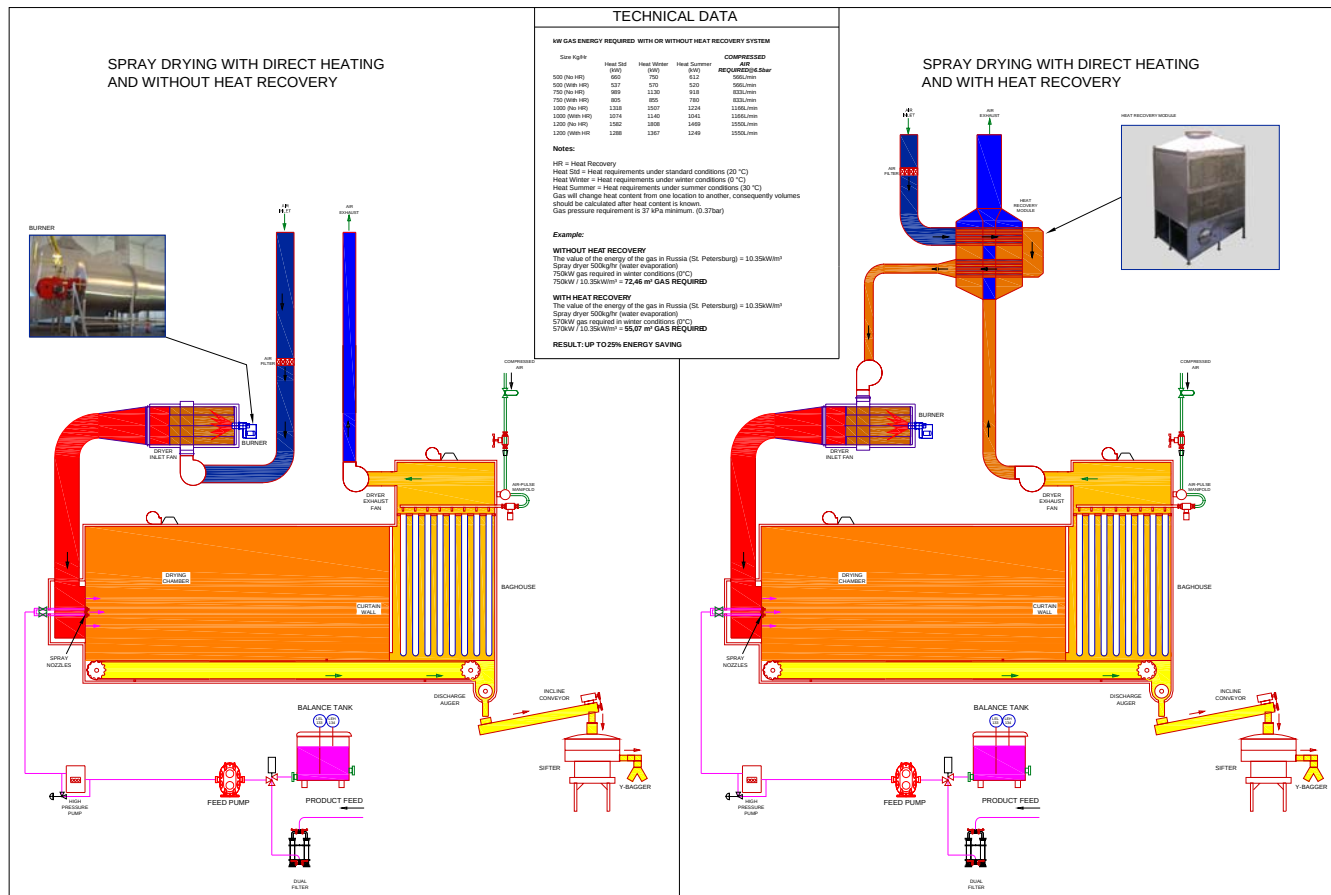


- The use of a low inlet temperature (125°C to 160°C) combined with low pressure in the drying chamber in order to have the smallest possible damage to the product (especially less protein destruction and no burned particles in the powder).
- Higher bulk density of the product and better solubility
- minimum loss of product with the outgoing air.
- easy controls in order to determine the moisture levels in the end product
- low energy consumption thanks to the heat recovery system from the exhaust air.



The product is inserted at the side of the drying chamber by means of a high pressure pump. The drying air inlet plenum includes adjustable fins designed to cause air to contact the product in a venturi action. The drying chamber is so designed that all product falls on the floor and is moved by means of a drag bar system to one side of the dryer containing a recessed screw conveyor. This conveyor discharges the powder from the dryer into a companion unit which conveys the powder to a sifter. The air is drawn through the drying chamber bag section by means of an exhaust fan. The dryer chamber operates under approximately 1 cm water column vacuum. The exhaust air goes through the regeneration section (heat recovery system) and heats the incoming air to save energy. The inlet air is heated by means of gas or steam.





Technical Information

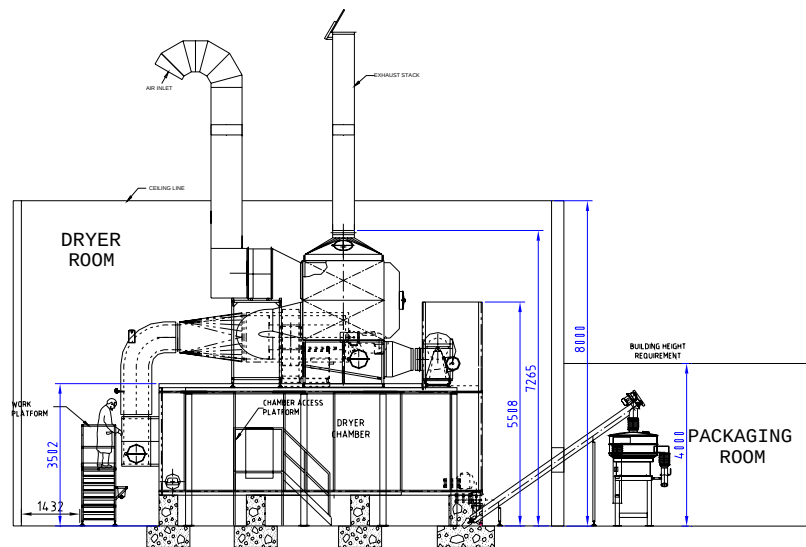
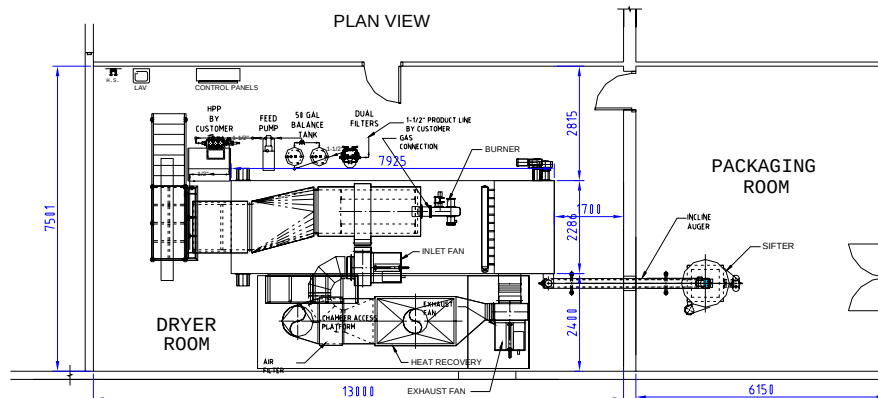
Egg Breaking and separating Machines
 Continuous Scraper
 Filters and automatic filters
 Tube or Plate Coolers
 Homogenizers
 H.T.S.T., batch & UHT Pasteurizers
 Tanks
 Spray Drying Equipment
 Aseptic Liquid Packing
 Egg Shell Driers
 C.I.P. Equipment
 Laboratory Equipment
 All Auxiliary Equipment

Description

TECHNICAL INFORMATION ABOUT SPRAY DRYERS

TYPE: DRYER 350 without heatrecovery

Capacity:	<i>350L/hr</i>
Electricity:	<i>3ph.400V+N+PE 25 kW</i>
Air Consumption:	<i>400L/min @ 6,5bar</i>
Cold Water:	<i>15L/min @ 4bar</i>
Gas Consumption:	<i>@-30°C: 622kW or 60,1m³/hr @ min 37,5kPa (0,37bar) @-15°C: 573,5kW or 55,41m³/hr @ min 37,5kPa (0,37bar) @ 0°C: 525kW or 50,72m³/hr @ min 37,5kPa (0,37bar) @ 15°C: 462kW or 44,63m³/hr @ min 37,5kPa (0,37bar) @ 30°C: 428kW or 41,4m³/hr @ min 37,5kPa (0,37bar)</i>



DRYER ELEVATION VIEW

TYPE: DRYER 350 with heatrecovery

Capacity: 350L/hr

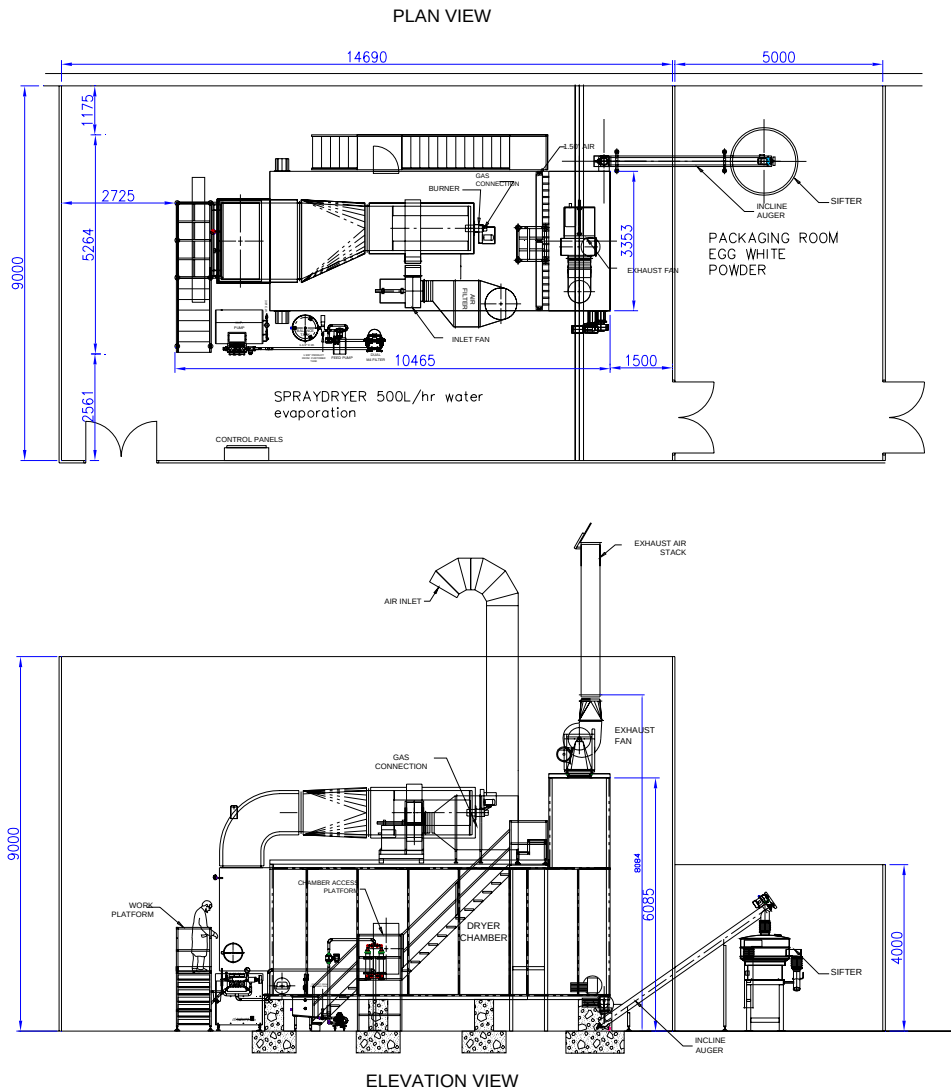
Electricity: 3ph.400V+N+PE 25 kW

Air Consumption: 400L/min @ 6,5bar

Cold Water: 15L/min @ 4bar

Gas Consumption:

- @ -30°C: 435kW or 42,03m³/hr @ min 37,5kPa (0,37bar)
- @ -15°C: 417kW or 40,28m³/hr @ min 37,5kPa (0,37bar)
- @ 0°C: 399kW or 38,55m³/hr @ min 37,5kPa (0,37bar)
- @ 15°C: 375kW or 36,23m³/hr @ min 37,5kPa (0,37bar)
- @ 30°C: 363kW or 35,07m³/hr @ min 37,5kPa (0,37bar)



TYPE: DRYER 500 without heatrecovery

Capacity: 500L/hr

Electricity: 3ph.400V+N+PE 50 kW

Air Consumption: 585L/min @ 6,5bar

Cold Water: 15L/min @ 4bar

Gas Consumption:

- @-30°C: 885kW or 85,5m³/hr @ min 37,5kPa (0,37bar)
- @-15°C: 817,5kW or 78,98m³/hr @ min 37,5kPa (0,37bar)
- @ 0°C: 750kW or 72m³/hr @ min 37,5kPa (0,37bar)
- @ 15°C: 660kW or 64m³/hr @ min 37,5kPa (0,37bar)
- @ 30°C: 615kW or 59,42m³/hr @ min 37,5kPa (0,37bar)



Capacity: *500L/hr*

Electricity: *3ph.400V+N+PE 50 kW*

Air Consumption: 585L/min @ 6,5bar

Cold Water: *15L/min @ 4bar*

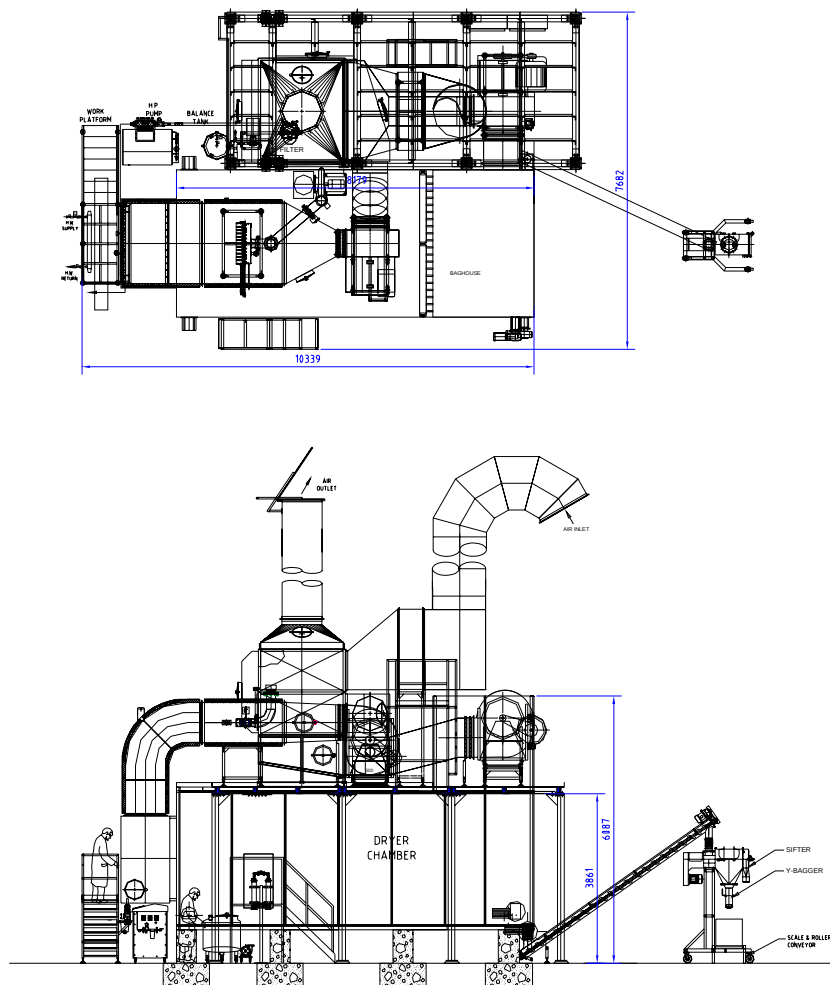
Gas Consumption: @-30°C: 705kW or 68,11m³/hr @ min 37,5kPa (0,37bar)
 @-15°C: 637,5kW or 61,59m³/hr @ min 37,5kPa (0,37bar)
 @ 0°C: 570kW or 55m³/hr @ min 37,5kPa (0,37bar)
 @ 15°C: 537kW or 52m³/hr @ min 37,5kPa (0,37bar)
 @ 30°C: 492kW or 47,53m³/hr @ min 37,5kPa (0,37bar)

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TYPE: DRYER 750 without heatrecovery

Capacity:	<i>750L/hr</i>
Electricity:	<i>3ph.400V+N+PE 80 kW</i>
Air Consumption:	<i>835L/min @ 6,5bar</i>
Cold Water:	<i>30L/min @ 4bar</i>
Gas Consumption:	<i>@-30°C: 1342kW or 129,66m³/hr @ min 37,5kPa (0,37bar) @-15°C: 1236kW or 119,42m³/hr @ min 37,5kPa (0,37bar) @ 0°C: 1130kW or 109m³/hr @ min 37,5kPa (0,37bar) @ 15°C: 989kW or 95,5m³/hr @ min 37,5kPa (0,37bar) @ 30°C: 918kW or 88,7m³/hr @ min 37,5kPa (0,37bar)</i>



TYPE: DRYER 750 with heatrecovery

Capacity: 750L/hr

Electricity: 3ph.400V+N+PE 80 kW

Air Consumption: 835L/min @ 6,5bar

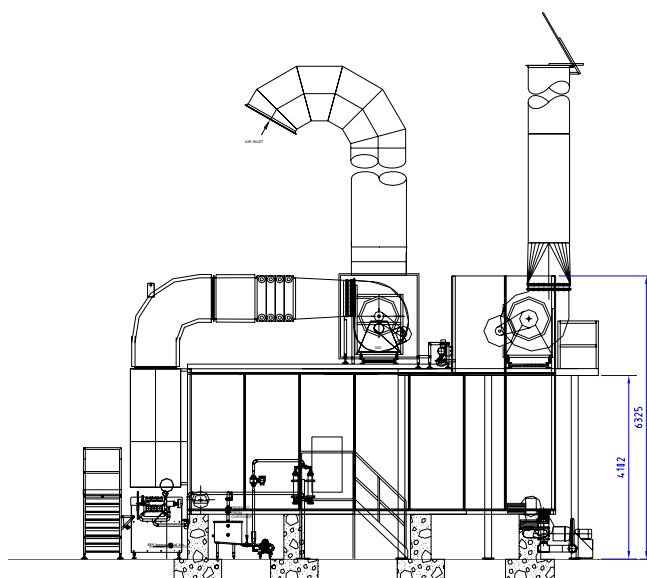
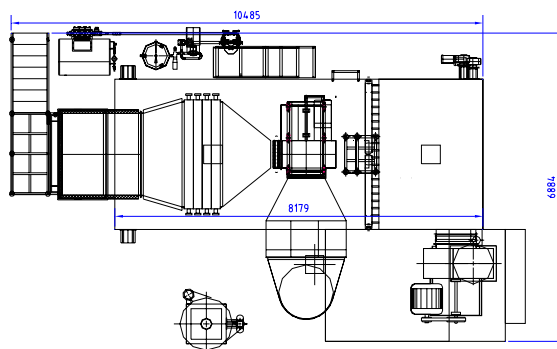
Cold Water: 30L/min @ 4bar

Gas Consumption:

- @ -30°C: 930kW or 89,85m³/hr @ min 37,5kPa (0,37bar)
- @ -15°C: 892,5kW or 86,23m³/hr @ min 37,5kPa (0,37bar)
- @ 0°C: 855kW or 82,6m³/hr @ min 37,5kPa (0,37bar)
- @ 15°C: 805kW or 77,7m³/hr @ min 37,5kPa (0,37bar)
- @ 30°C: 780kW or 75,36m³/hr @ min 37,5kPa (0,37bar)

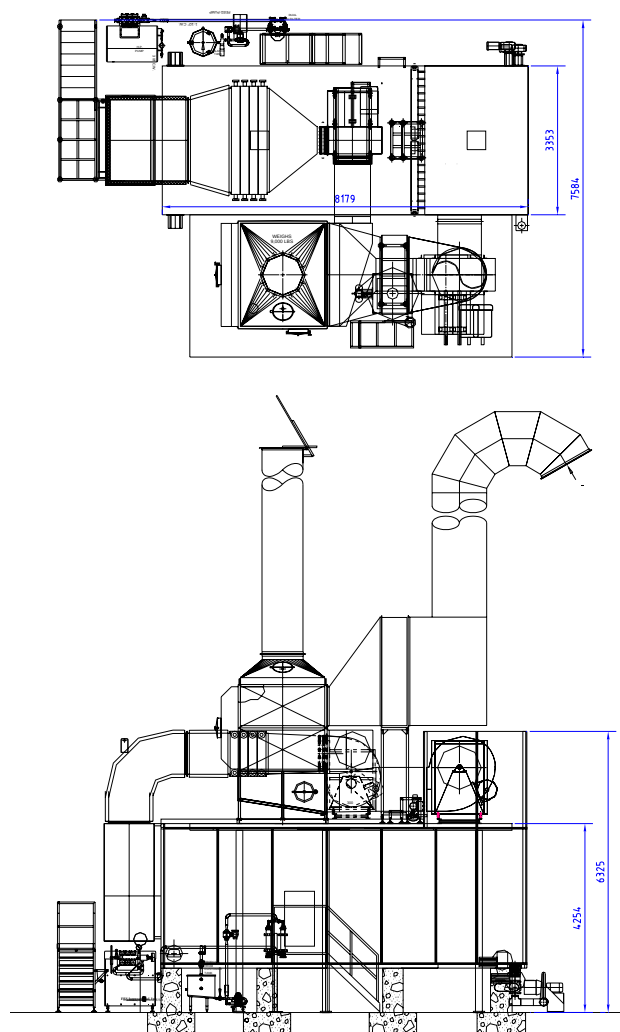
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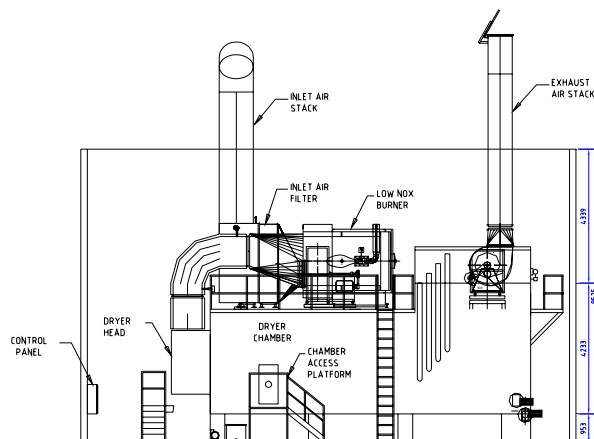
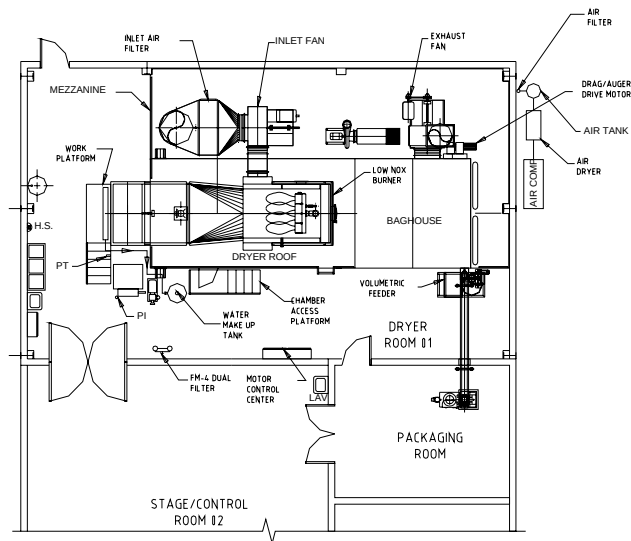
TYPE: DRYER 1000 without heatrecovery

Capacity:	1000L/hr
Electricity:	3ph.400V+N+PE 100 kW
Air Consumption:	1170L/min @ 6,5bar
Cold Water:	30L/min @ 4bar
Gas Consumption:	@-30°C: 1790kW or 172,94m ³ /hr @ min 37,5kPa (0,37bar) @-15°C: 1648,5kW or 159,27m ³ /hr @ min 37,5kPa (0,37bar) @ 0°C: 1507kW or 146m ³ /hr @ min 37,5kPa (0,37bar) @ 15°C: 1318kW or 128m ³ /hr @ min 37,5kPa (0,37bar) @ 30°C: 1224kW or 119m ³ /hr @ min 37,5kPa (0,37bar)



TYPE: DRYER 1000 with heatrecovery

Capacity:	1000L/hr
Electricity:	3ph.400V+N+PE 100 kW
Air Consumption:	1170L/min @ 6,5bar
Cold Water:	30L/min @ 4bar
Gas Consumption:	@-30°C: 1239kW or 119,71m³/hr @ min 37,5kPa (0,37bar) @-15°C: 1189,5kW or 114,92m³/hr @ min 37,5kPa (0,37bar) @ 0°C: 1140kW or 110m³/hr @ min 37,5kPa (0,37bar) @ 15°C: 1074kW or 104m³/hr @ min 37,5kPa (0,37bar) @ 30°C: 1041kW or 100m³/hr @ min 37,5kPa (0,37bar)



TYPE: DRYER 1200 without heatrecovery

Capacity: 1200L/hr

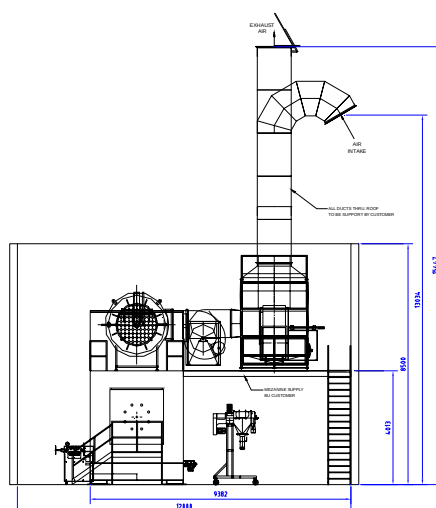
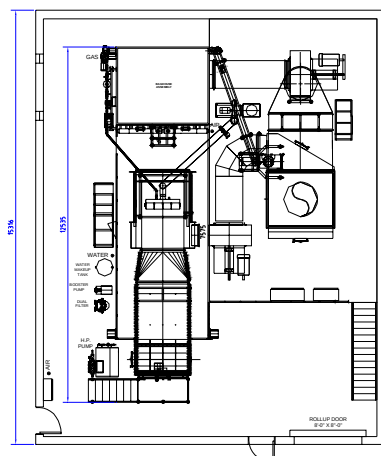
Electricity: 3ph.400V+N+PE 120 kW

Air Consumption: 1550L/min @ 6,5bar

Cold Water: 30L/min @ 4bar

Gas Consumption:

- @-30°C: 2147kW or 207,43m³/hr @ min 37,5kPa (0,37bar)
- @-15°C: 1977,5kW or 191,06m³/hr @ min 37,5kPa (0,37bar)
- @ 0°C: 1808kW or 174m³/hr @ min 37,5kPa (0,37bar)
- @ 15°C: 1582kW or 152m³/hr @ min 37,5kPa (0,37bar)
- @ 30°C: 1469kW or 142m³/hr @ min 37,5kPa (0,37bar)



TYPE: DRYER 1200 with heatrecovery

Capacity: 1200L/hr

Electricity: 3ph.400V+N+PE 120 kW

Air Consumption: 1550L/min @ 6,5bar

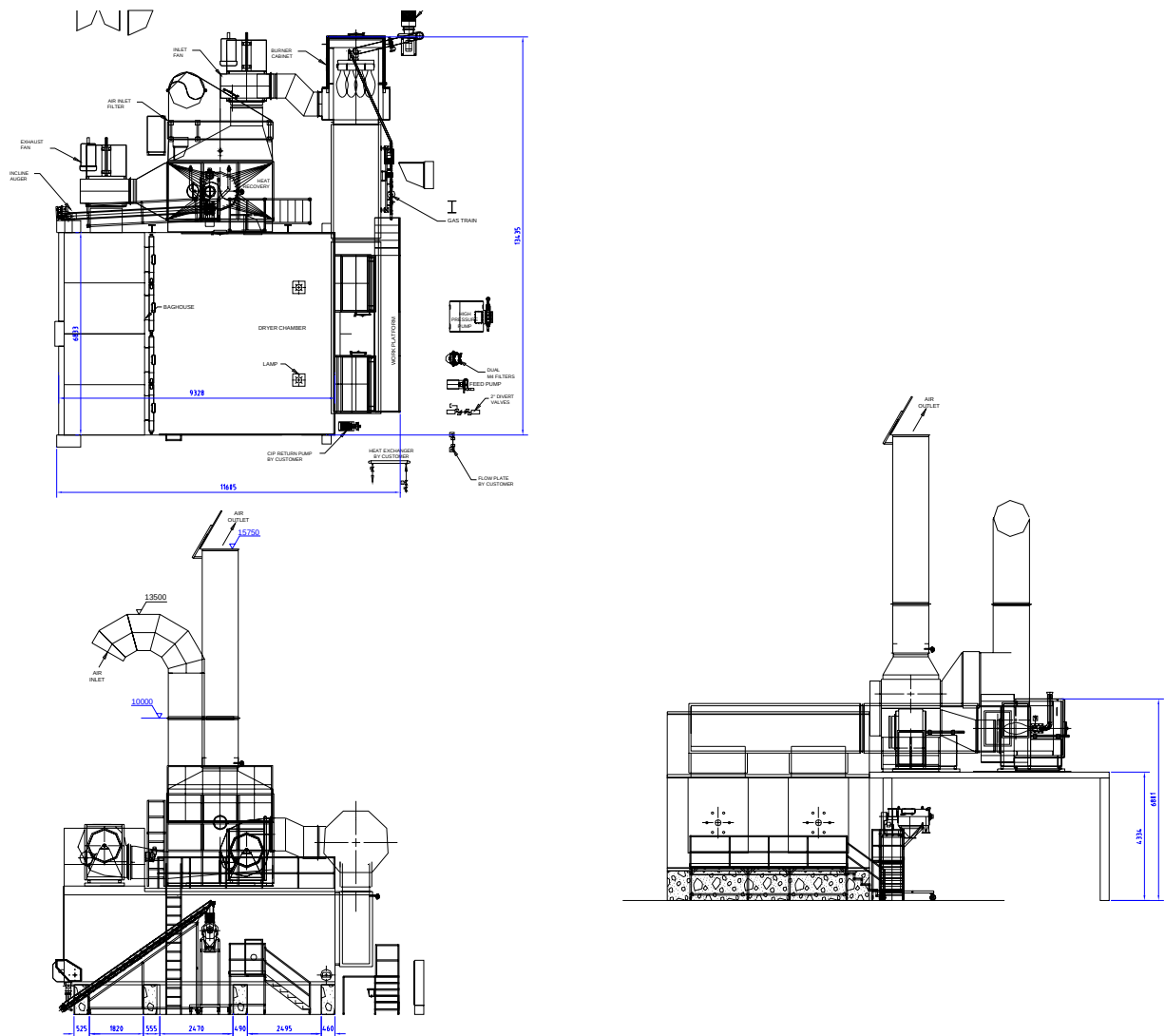
Cold Water: 30L/min @ 4bar

Gas Consumption:

- @-30°C: 1485kW or 143,47m³/hr @ min 37,5kPa (0,37bar)
- @-15°C: 1426kW or 137,77m³/hr @ min 37,5kPa (0,37bar)
- @ 0°C: 1367kW or 132m³/hr @ min 37,5kPa (0,37bar)
- @ 15°C: 1288kW or 124m³/hr @ min 37,5kPa (0,37bar)
- @ 30°C: 1249kW or 120,6m³/hr @ min 37,5kPa (0,37bar)

TYPE: DRYER 1800 without heatrecovery

Capacity:	<i>1800L/hr</i>
Electricity:	<i>3ph.400V+N+PE 160 kW</i>
Air Consumption:	<i>1700L/min @ 6,5bar</i>
Cold Water:	<i>30L/min @ 4bar</i>
Gas Consumption:	<i>@-30°C: 3052,91kW or 294,96m³/hr @ min 37,5kPa (0,37bar) @-15°C: 2806,05kW or 271,11m³/hr @ min 37,5kPa (0,37bar) @ 0°C: 2551,03kW or 246,47m³/hr @ min 37,5kPa (0,37bar) @ 15°C: 2224,75kW or 214,95m³/hr @ min 37,5kPa (0,37bar) @ 30°C: 2058,84kW or 198,92m³/hr @ min 37,5kPa (0,37bar)</i>



TYPE: DRYER 1800 with heatrecovery

Capacity:	1800L /hr
Electricity:	3ph.400V+N+PE 160 kW
Air Consumption:	1700L/min @ 6,5bar
Cold Water:	30L/min @ 4bar
Gas Consumption:	@-30°C: 2114,50kW or 204,3m³/hr @ min 37,5kPa (0,37bar) @-15°C: 2023,55kW or 195,51m³/hr @ min 37,5kPa (0,37bar) @ 0°C: 1932,6kW or 186,72m³/hr @ min 37,5kPa (0,37bar) @ 15°C: 1811,25kW or 175m³/hr @ min 37,5kPa (0,37bar) @ 30°C: 1750,57kW or 169,13m³/hr @ min 37,5kPa (0,37bar)

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TYPE: DRYER 2400 without heatrecovery

Capacity:	<i>2400L/hr</i>
Electricity:	<i>3ph.400V+N+PE 220 kW</i>
Air Consumption:	<i>1700L/min @ 6,5bar</i>
Cold Water:	<i>75L/min @ 4bar</i>
Gas Consumption:	<i>@-30°C: 5226,28kW or 504,95m³/hr @ min 37,5kPa (0,37bar) @-15°C: 4854,82kW or 469,06m³/hr @ min 37,5kPa (0,37bar) @ 0°C: 4464,55kW or 431,35m³/hr @ min 37,5kPa (0,37bar) @ 15°C: 3959,8kW or 382,58m³/hr @ min 37,5kPa (0,37bar) @ 30°C: 3698,36kW or 357,33m³/hr @ min 37,5kPa (0,37bar)</i>

TYPE: DRYER 2400 with heatrecovery

Capacity:	<i>2400L/hr</i>
Electricity:	<i>3ph.400V+N+PE 220 kW</i>
Air Consumption:	<i>1700L/min @ 6,5bar</i>
Cold Water:	<i>75L/min @ 4bar</i>
Gas Consumption:	<i>@-30°C: 3619,81kW or 349,74m³/hr @ min 37,5kPa (0,37bar) @-15°C: 3500,99kW or 338,26m³/hr @ min 37,5kPa (0,37bar) @ 0°C: 3382,24kW or 326,78m³/hr @ min 37,5kPa (0,37bar) @ 15°C: 3223,81kW or 311,48m³/hr @ min 37,5kPa (0,37bar) @ 30°C: 3144,6kW or 303,82m³/hr @ min 37,5kPa (0,37bar)</i>

