

# PETERSIME

Design and working principle of the X-Streamer™



Nick De Poorter

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# Content

- ▶ Product range - X-Streamer™ models
- ▶ Accessories & features inside X-Streamer
- ▶ Key components
- ▶ Concept of CO<sup>2</sup> & ventilation



# Product range: X-Streamer™ models

## Main characteristics



- ▶ X-Streamer™ range: setters, hatchers, Re-Store, Chick-Store and Fumi-Gateway machines
- ▶ Setter from 2 up to 24 trolleys
- ▶ Capacity from 9,600 to 129,024 eggs
- ▶ X-Streamer HD higher capacity for chicken eggs (+12%) with a 84-egg tray and duck eggs (+14%) with a 72-egg tray
- ▶ Hatcher from 2 up to 8 trolleys
- ▶ Available for chicken, duck and turkey eggs
- ▶ Details in Dimensions & specifications
- ▶ X-Streamer™ : single-stage incubators, equipped with Embryo-Response Incubation™ technology and intelligent software



# Product range: X-Streamer™ models

## X-Streamer™ setter



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► X-Streamer™ HD



# Product range: X-Streamer™ models

## X-Streamer™ hatcher



► X-Streamer™ HD



# Product range: X-Streamer™ models

## X-Streamer™ Re-Store



- ▶ Recover hatchability during egg storage with heat treatment
- ▶ Default 12 trolleys, available into 2, 8 & 24 trolleys

RE-STORE





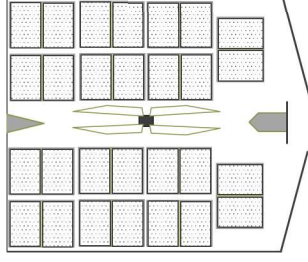
# Product range: X-Streamer™ models

## X-Streamer™ Chick-Store

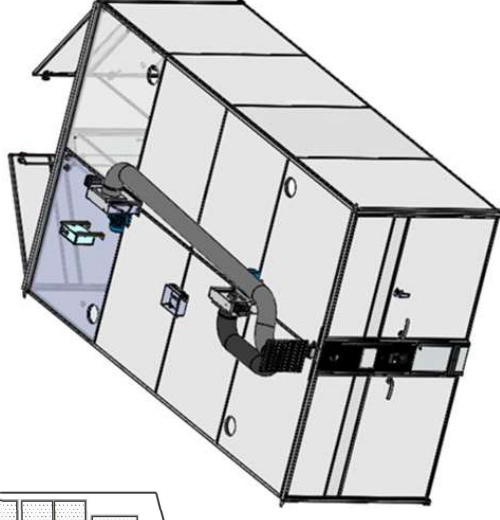


CHICK-STORE

- ▶ Optimal and animal-friendly storage of day-old chicks
- ▶ 3 models: the 8, 12 & 24
- ▶ Gateway



Gateway

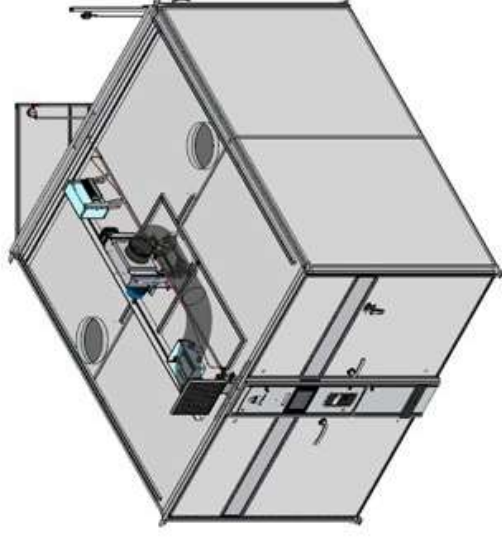


# Product range: X-Streamer™ models

## X-Streamer™ Fumi-Gateway



- ▶ Designed for optimal disinfection in uniform environment
- ▶ 3 models: 8, 12 & 24 Fumi-Gateway





# X-Streamer™ accessories & features

## Setter & hatcher trolley



- ▶ Solidly welded
- ▶ Big rubber wheels
- ▶ Suitable for automation
- ▶ Robust turning system tolerant for uneven floors



# X-Stream<sup>TM</sup> accessories & features

## Trays & basket



- ▶ Easy to stack
- ▶ Chemical-resistant
- ▶ Easy washing
- ▶ Suitable for automation
- ▶ Allows perfect airflow
- ▶ Enlarged baskets for poults and ducklings



# X-Streamer™ accessories & features

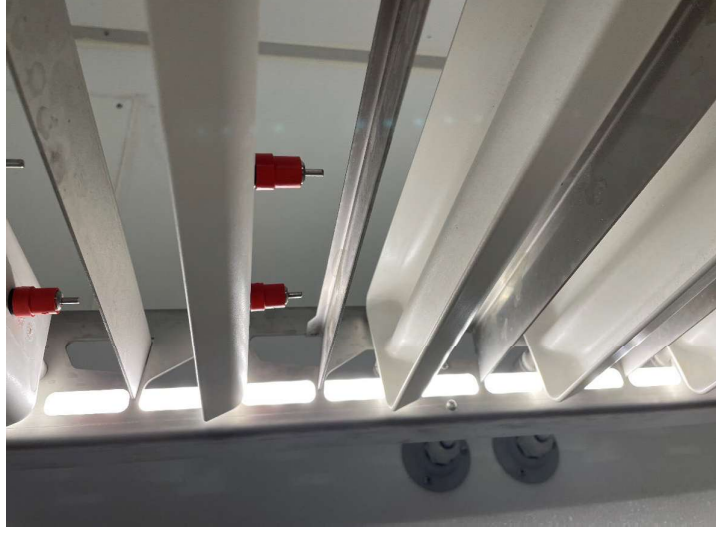
## Opti-Feed



- ▶ Special hatchery solutions dedicated to animal welfare
- ▶ Access to feed and water
- ▶ Adjusted lighting
- ▶ Retrofittable to existing hatchers



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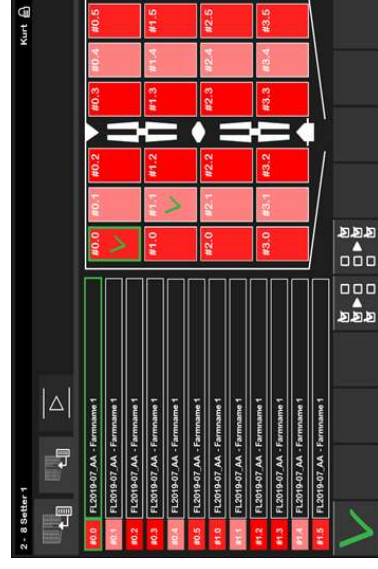


# X-Streamer™ accessories & features

## OX module



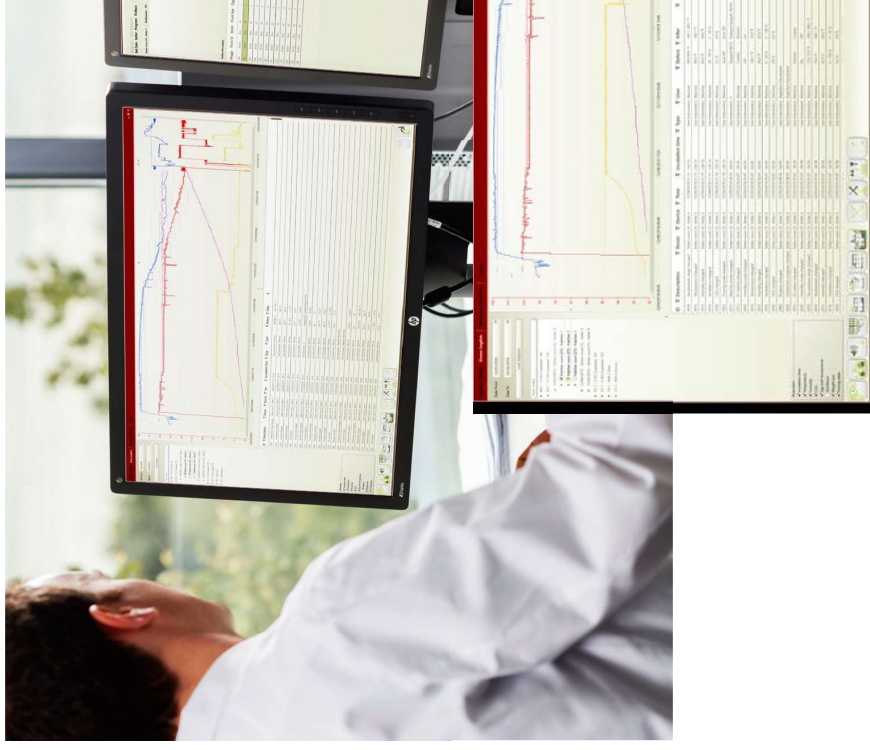
- ▶ Extended incubation library
- ▶ Profiles for different fowls, breeds and flock ages
- ▶ Incubator loading & transfer assistant
- ▶ Interconnected setter-hatcher technology
- ▶ Link with Eagle Trax



# X-Streamer™ accessories & features

## Eagle Trax connected

- ▶ Eagle Trax™
- ▶ Monitor and control the complete hatchery
- ▶ Communicates with each incubator controller
- ▶ Connects hatchery data





# Key components - Setter

## Overview



**Console**

**OX panel PC**

**Cooling**

**Pulsator**

**Turning  
mechanism**

X-Streamer™ HD 24S

**Calibration  
point**



# Key components - Setter Consoles



X-Streamer™



X-Streamer™  
HD



X-Streamer™  
Re-Store



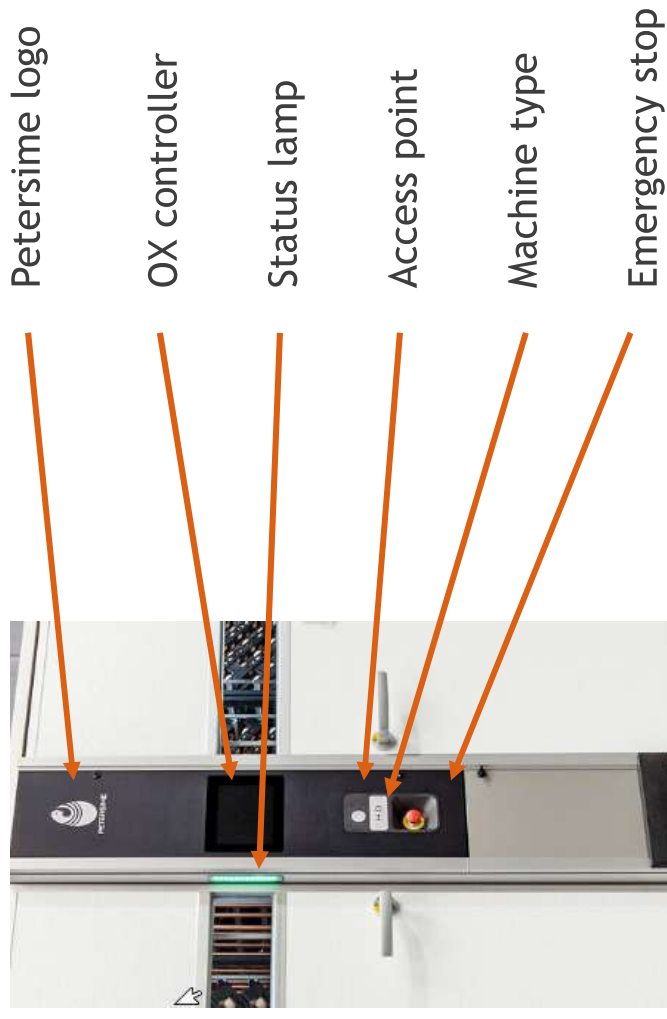
X-Streamer™  
Chick-Store

Touch display



# Key components - Setter

## Front Console



# Key components - Setter

## Electrical connection



Connection elbow



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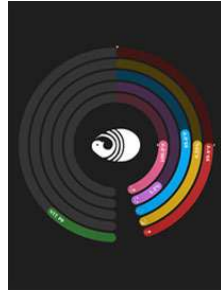
New connection box



| 17

# Key components - Setter

## Badge access system



Eye-Blink™



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# Key components - Setter

## Status LED



2 Status lamps left and right from the controller



# Key components - Setter

## Inside the console



Electrical control



1 plane

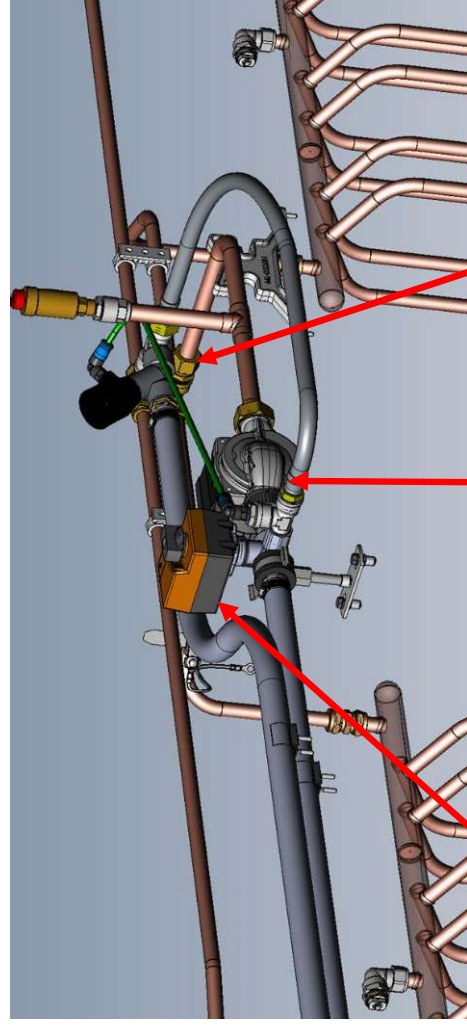
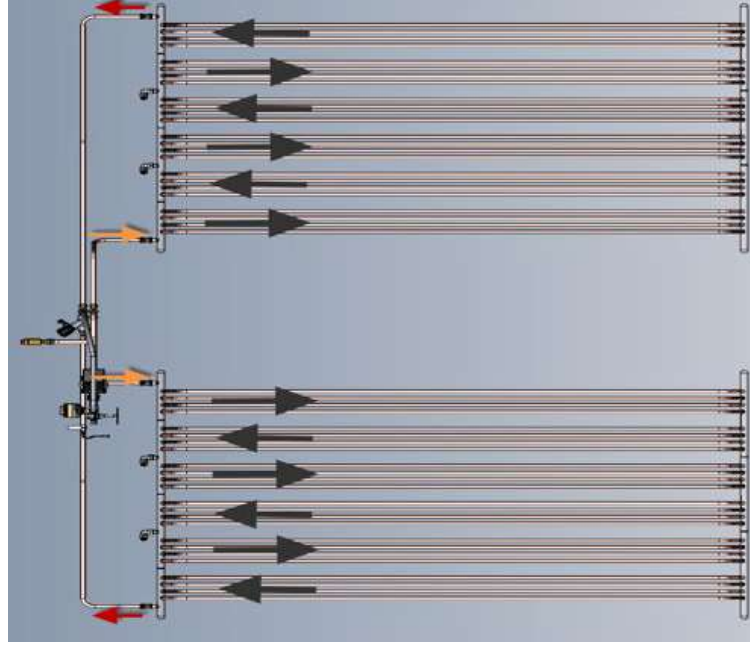


Hydro-pneumatic control



# Key components - Setter

## The cooling system



3-way valve

circulation pump

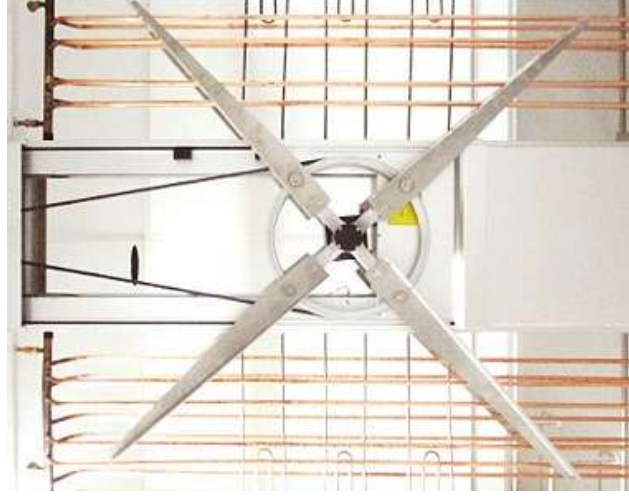
valve

# Key components - Setter

## The pulsator non-HD



- Air column behind the plates
- Pulsator wheels are mixing the air



# Key components - Setter

Pulsator in X-Streamer™ HD, Re-Store, Chick-Store

- More air to push
- Equipped with 5 blades



# Key components - Setter

## The 'engine' behind the pulsator

- ▶ Pulsator wheel is driven by belt & motor
- ▶ Motor is powered by VSD
- ▶ Eco-Drive - see later

<sup>3</sup> Eco-Drive™

For minimal energy consumption of the pulsator motor

Standard



# Key components - Setter

## Heating elements



X-Streamer™  
X-Streamer™ Chick-Store  
6 times 1 kW



X-Streamer™ HD  
6 times 1.2 kW

X-Streamer™ Re-Store  
6 times 2.2 kW



# Key components - Setter

## Spraying nozzle



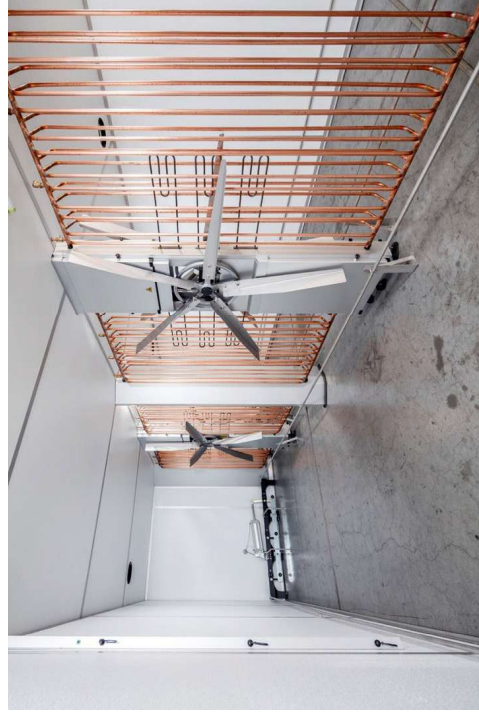


# Key components - Setter

## Pneumatic turning



- Pneumatic turning mechanism
- Easy to maintain
- L/R opposite

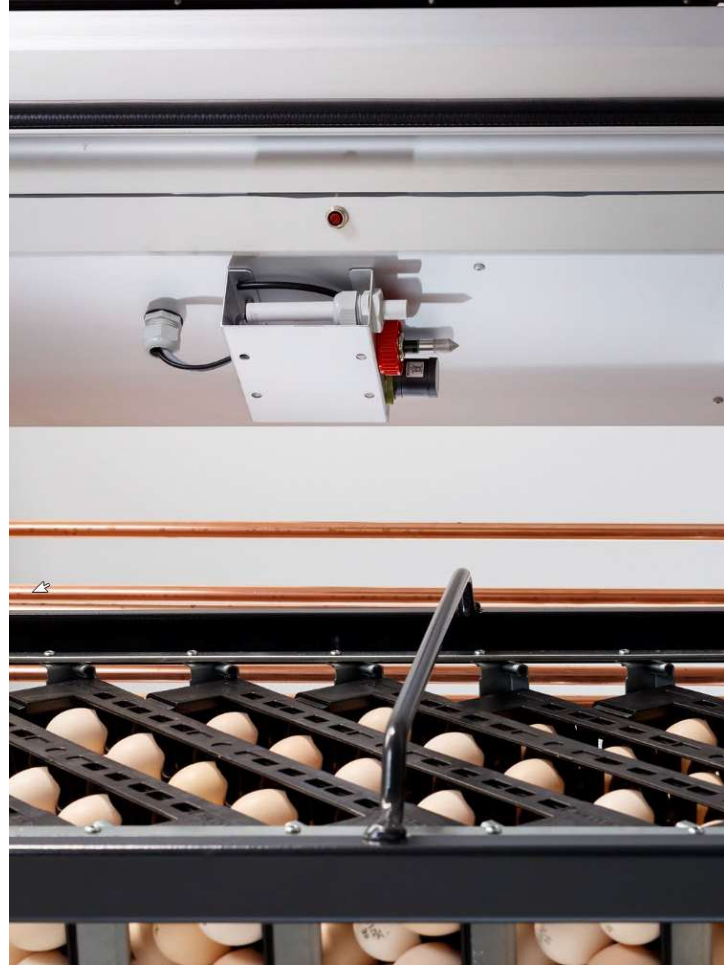
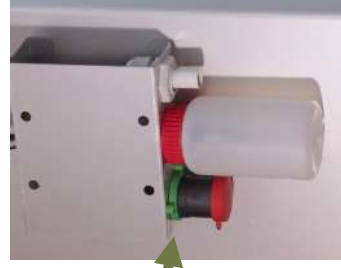


# Key components - Setter

## Set of sensors



- Temperature, Humidity & CO2 sensor
- Protection caps during cleaning



# Key components - Setter

## Ovoscan



► X-Streamer™



► X-Streamer™ HD



# Key components - Setter DWLS™ (optional)



► X-Streamer™



► X-Streamer™ HD



# Key components - Setter

## Calibration equipment



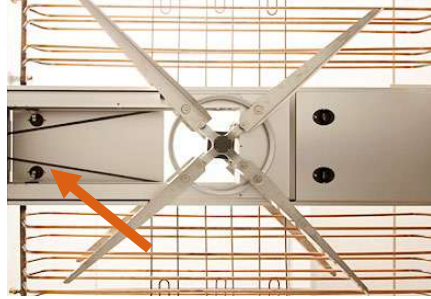


# Key components - Setter

## Air inlet



- Air tightness
- Air inlet damper is installed at the entrance of column
- Damper is sealed with a rubber

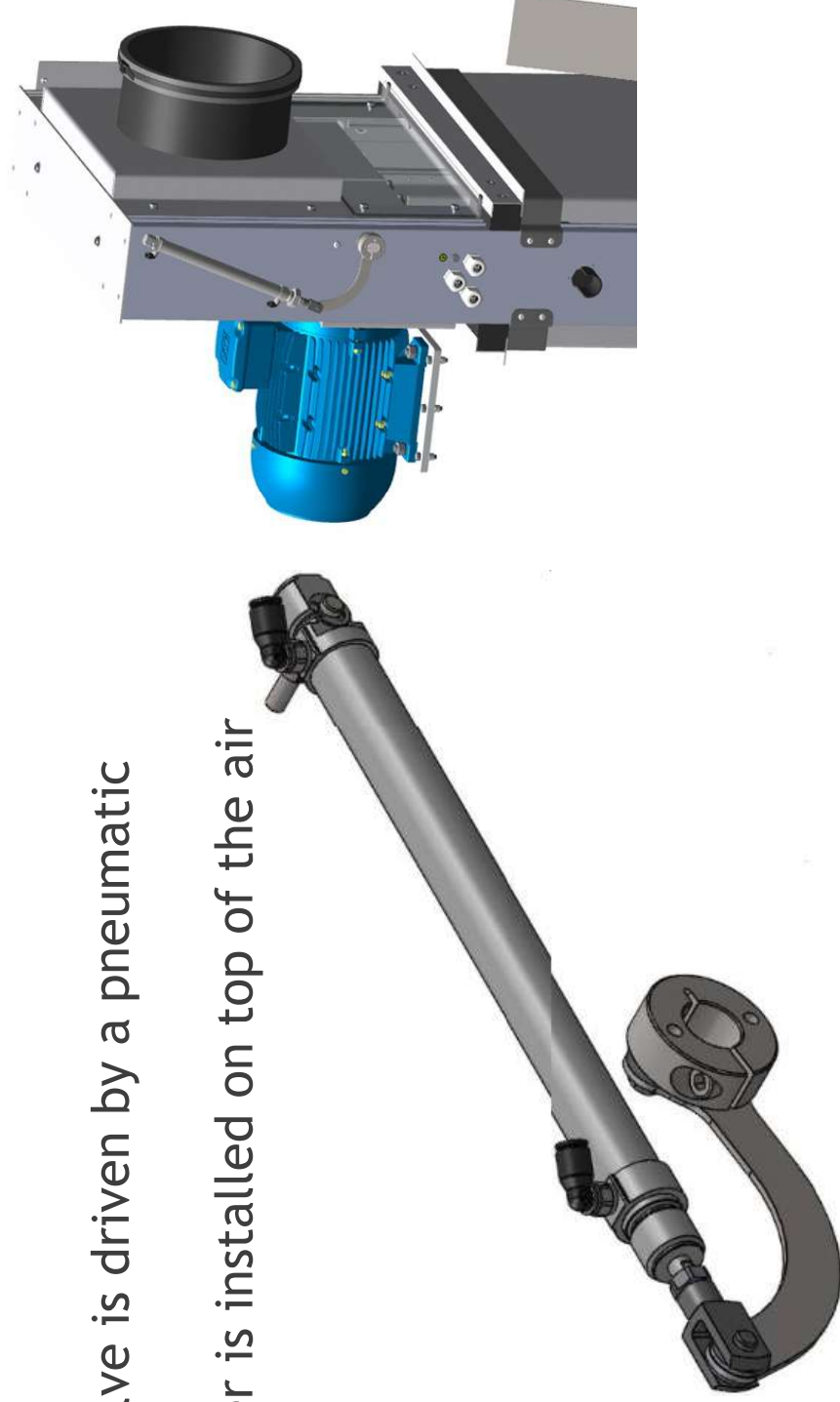




# Key components - Setter

## Air inlet valve

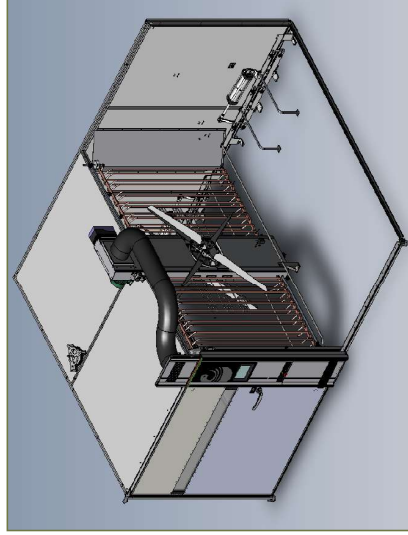
- Air inlet valve is driven by a pneumatic cylinder
- The cylinder is installed on top of the air column



# Key components - Setter

## Air inlet fan

- ▶ Forced ventilation is required on top of the air inlet damper
- ▶ Variable speed air intake fan



# Key components - Setter

## Exhaust dampers



- Exhaust of air happens by exhaust dampers
- Dampers are driven pneumatically by cylinder



# Key components - Re-store

## Typical for a Re-Store



- OvoScan
- Extra heating capacity
- Extra cooling capacity
- No turning
- No CO<sub>2</sub>NTROL



# Key Components - Chick-Store

## Typical for a Chick-Store



- Window covers
- CO<sub>2</sub>NTROL
- Extra cooling capacity 18mm coils
- Extra safety temperature sensors
- Big openings in the roof for outlet
- Chick-Store Light Kit



# Key Components - Chick-Store

## Nestsound



- ▶ Nestsound
  - ▶ By measuring the vocalizations new-born chicks make, Nestsound™ **automatically and continuously** monitors the comfort level of the chicks stored inside the Chick-Store
  - ▶ Hatchery manager can intervene whenever chicks require attention



- ▶ Microphones in Chick-Store
  - ▶ 4 in Chick-Store 24S
  - ▶ 2 in Chick-Store 12S/ 8S

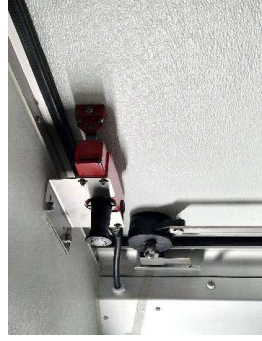


# Key components - Fumi-Gateway

## Protection



- Automatic door locking during the fumigation process
- Protection round heating elements - operators cannot touch
- Warning lights at machine front & back: fumigating/risk - finished/safe



Designed for optimal disinfection

# Key components - Fumi-Gateway

## Fumigant



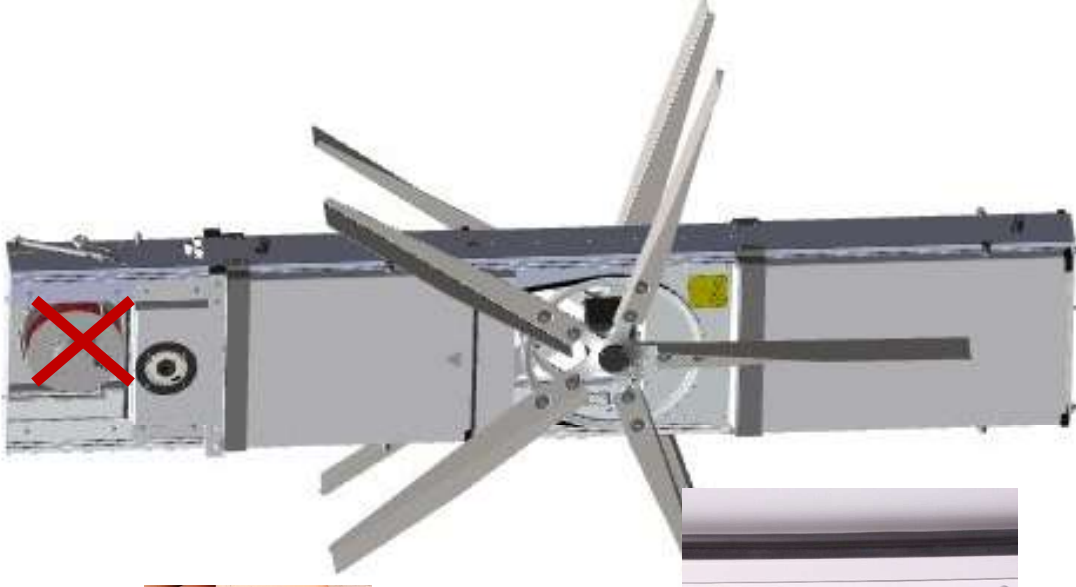
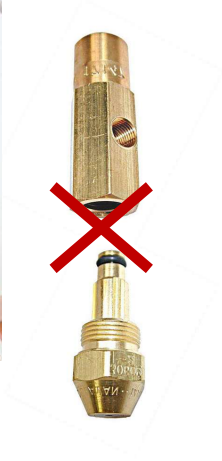
- Heating plate + heating pan (Standard)
- Stainless steel spraying nozzle (Option)



# Key components - Fumi-Gateway

## Reduced sensors

- Without OvoScan
- Without humidification nozzle
- Without CO<sub>2</sub>NTROL
- Without water cooling
- Without turning
- No air inlet fan



# Key components - Hatcher

## Door cover



➤ Covers on the doors installed



# Key components - Hatcher

## Hatcher console



► Touchscreen





# Key components - Hatcher

## Set of sensors





# Key components - Hatcher HatchScan™



► 1 sensor installed per front trolley



# Key components - Hatcher

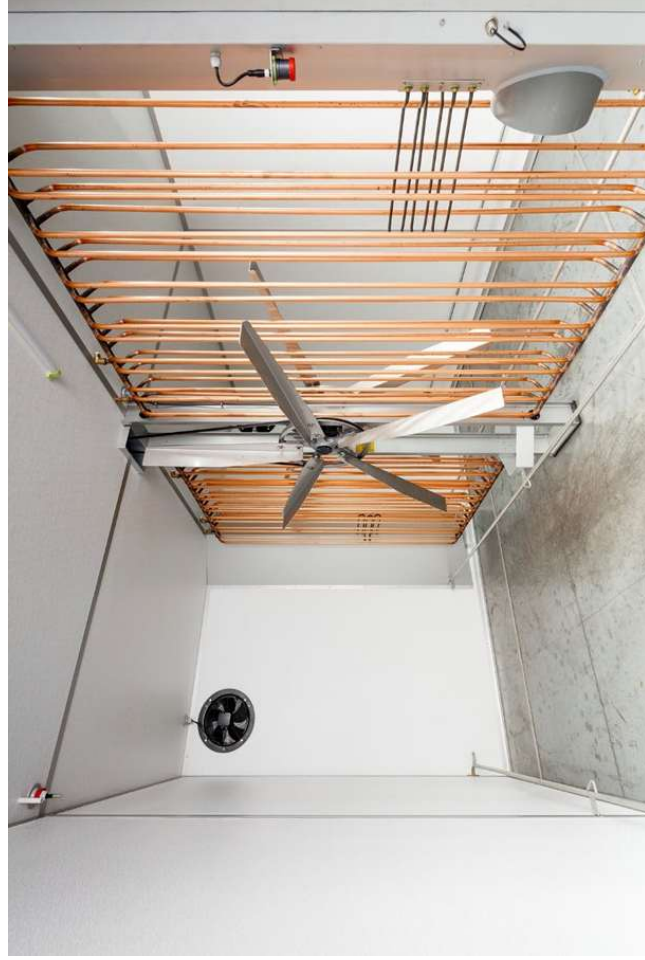
## Ventilation



► Inlet front



► Exhaust back



# Key components - Hatcher ADS



## ► Automatic Disinfection System

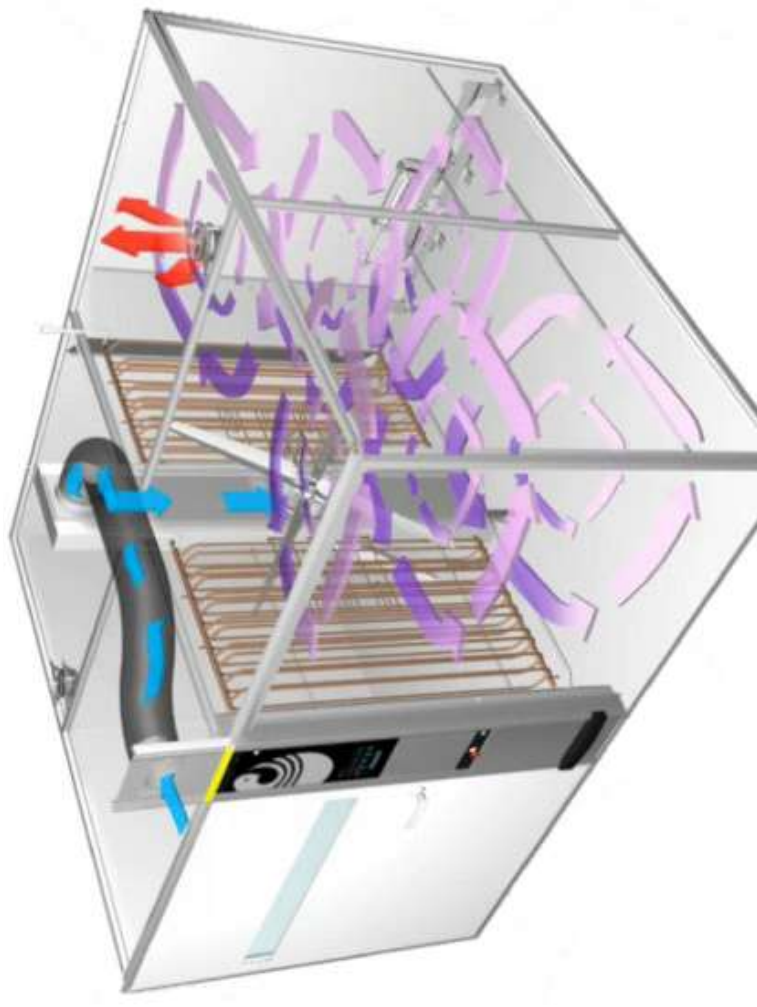


# X-Streamer™ - CO2 & ventilation

## Concept Setter



- Fresh air through the air column
- Mixing of air
- Pressure difference between corridor & plenum
- Controlled volume of air by the settings of the program



# X-Streamer™ - CO2 & ventilation

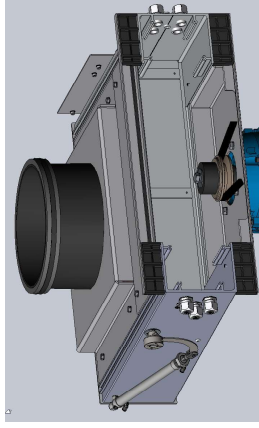
## CO2 controlled ventilation phases



- CO<sub>2</sub> control plays a crucial role in single-stage incubation
- CO<sub>2</sub> directly affects the embryo's overall development
- The CO<sub>2</sub> is controlled by CO<sub>2</sub> sensor & ventilation actuators
- 5 different phases of ventilation are relevant



Exhaust damper



Air inlet damper



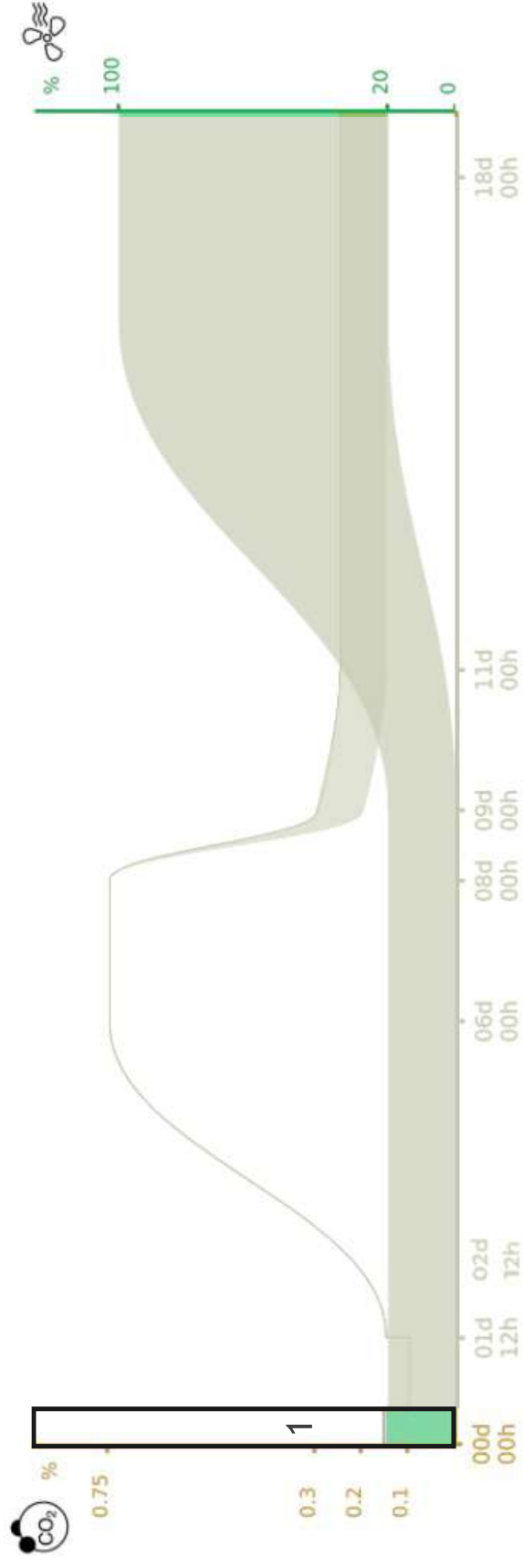
Air inlet ventilator

# X-Streamer™ - CO2 & ventilation

## Ventilation phase 1



- ▶ Heating up
- ▶ Exhaust dampers/Air inlet damper → closed
- ▶ Variable speed air intake fan → off



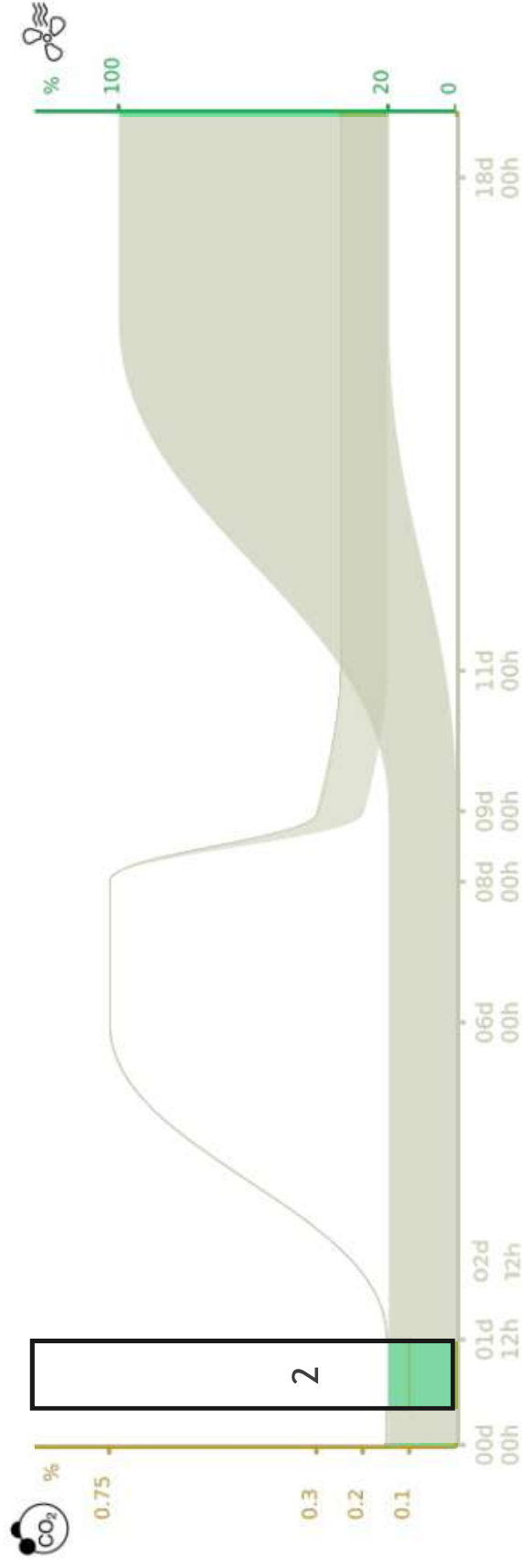


# X-Stream<sup>TM</sup> - CO<sub>2</sub> & ventilation

## Ventilation phase 2



- ▶ Controlled Ventilation
  - ▶ Exhaust dampers/Air inlet damper → open/closed
  - ▶ Variable speed air intake fan → off

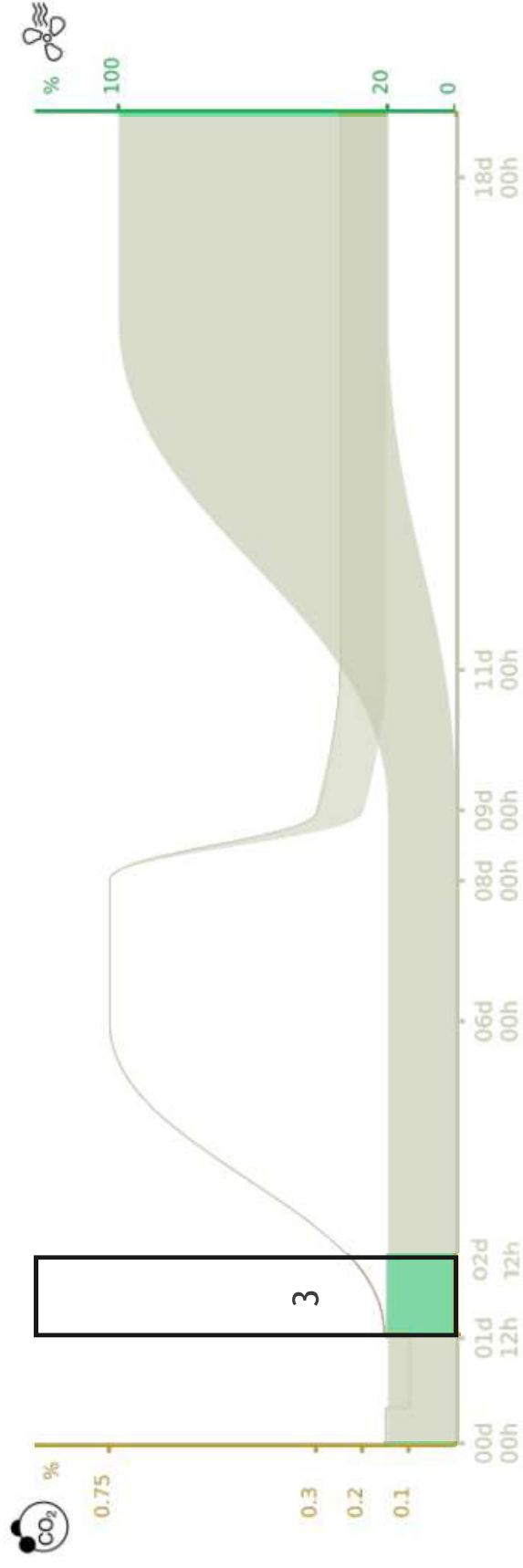


# X-Streamer™ - CO2 & ventilation

## Ventilation phase 3



- Calibration
  - Exhaust dampers/Air inlet damper → closed
  - Variable speed air intake fan → off

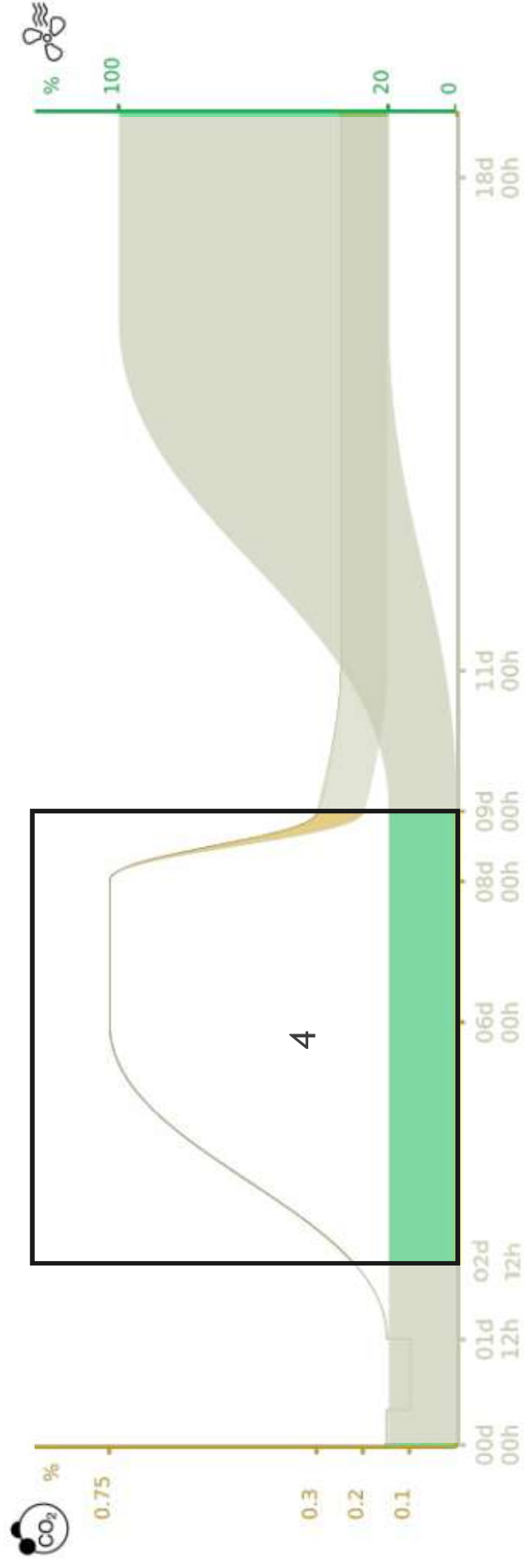


# X-Streamer™ - CO<sub>2</sub> & ventilation

## Ventilation phase 4



- ▶ Controlled CO<sub>2</sub> build-up
- ▶ Exhaust dampers/Air inlet damper → open/closed
- ▶ Variable speed air intake fan → off

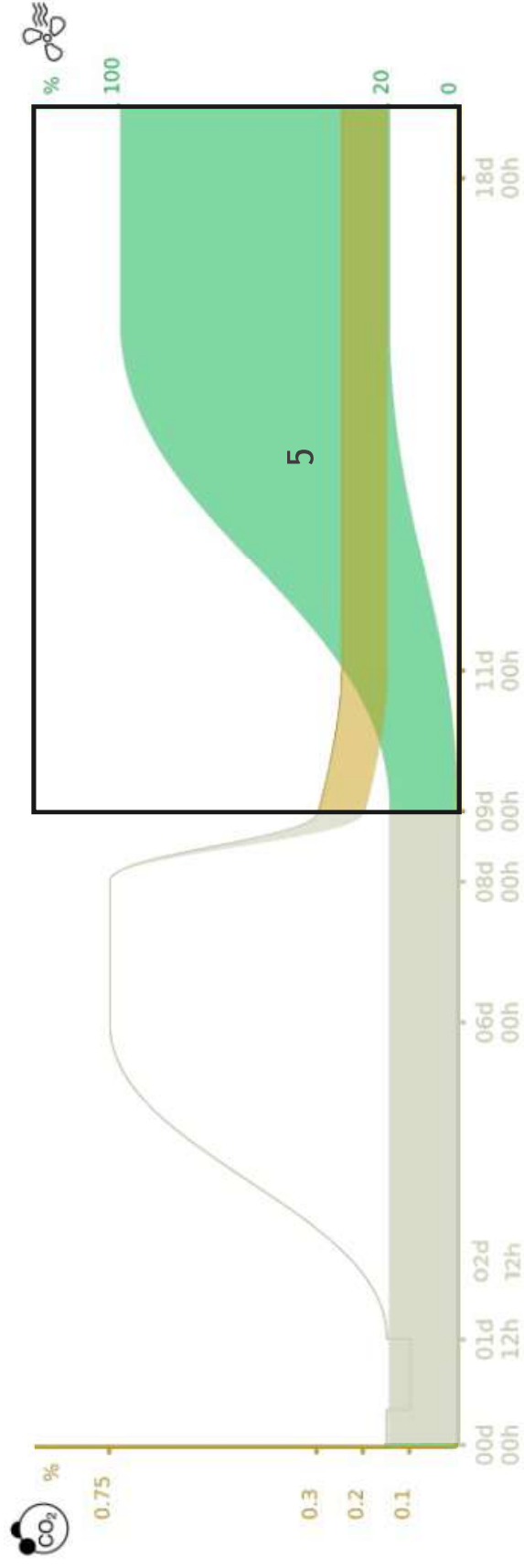


# X-Streamer™ - CO<sub>2</sub> & ventilation

## Ventilation phase 5



- ▶ Exotherm/CO<sub>2</sub> control
  - ▶ Exhaust dampers/Air inlet damper → open
  - ▶ Variable speed air intake fan → on





# Thank you!

Questions ? [nick.depoorter@petersime.com](mailto:nick.depoorter@petersime.com)