

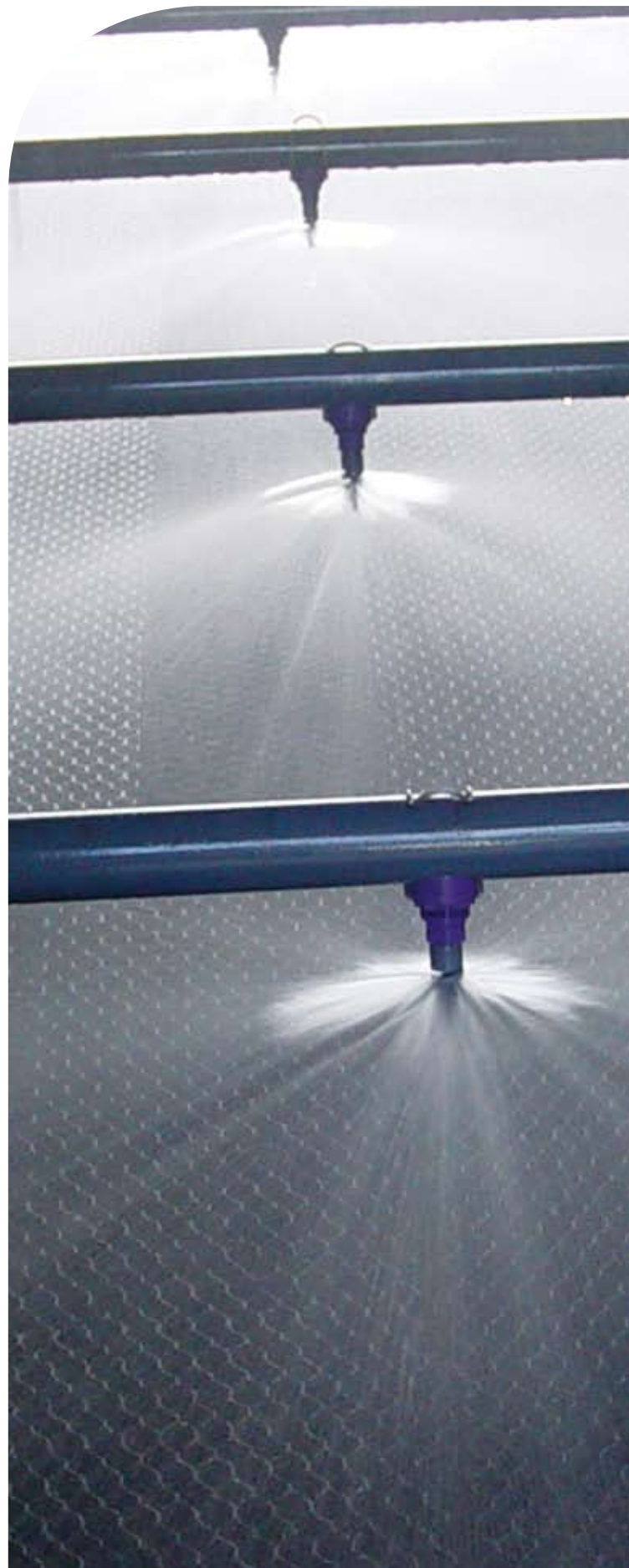
# AIR CLEANING SYSTEMS

**Delivery Program:**

- Biological Combi Washer
- Biological Air Washer
- Chemical Air Washer

**For:**

- Industry
- Pig Farming
- Poultry Farming
- Drying Systems



Dorset Farm Systems produces and develops air washing systems. Over the past few years reducing ammonia emission has been a major focus for the Dutch pig farming industry. The Dorset Air Washer makes use of bacteria, which remove odour and dust in one go. The Dorset Biological Air Washer is custom-made for each barn.



## Principle and Denitrification

In the Dorset Bio Washer the bacteria do all the work for you. They decompose aromatic substances and ammonia in a single filter layer. On top of that, the dust is washed out of the air. No chemicals are used. The bacteria convert ammonia into nitrate, which after the next step evaporates into the air as dinitrogen – closing the cycle.

The Bio Washer has a large surface, allowing for the use of normal fans. The filter layer is just 90 cm high and 50 m<sup>2</sup> for cleaning a maximum of 100.000 m<sup>3</sup>/h. It has a self-cleaning capacity; therefore it does not have to be cleaned. The check-up is limited to sprinklers and / or drip catchers. In a second biological step, the wash water can be cleaned and conducted back to the washer (denitrification). Drain water is therefore kept to a minimum. The system can be compared to a water treatment plant.

Results of the DLG-Signum (German Agricultural Society-Signum) test:  
Dust reduction: 93%  
Ammonia reduction: 90%  
Odour reduction: 80%



If required, the air washer can be built as a synthetic container and then placed above the central corridor, in the ridge of the barn. The wash water can be placed on the ground floor as a silo or water tank. Washers can also be delivered with the wash water placed on the upper floor. In that case, extra attention has to be paid to the barn construction due to the total weight of the washer.



**Dorset has been producing biological air washers for the pig farming industry since 1994.** They can be equipped with or without a central ventilation system. The Dorset Bio Washer fits in every barn because it is custom-made on request, in both the centre of the stall (smaller air channel) as in the outer walls at the side and the end.



**The Biological Air Washer** for laying hens is equipped with an extra dust collector. The biological air washer can clean 70% of the annual amount of barn odour with a capacity of 2m<sup>3</sup>/h per laying hen.

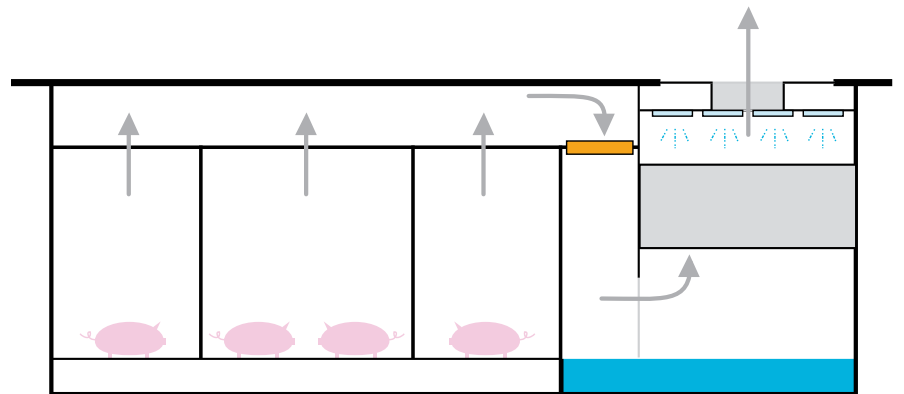
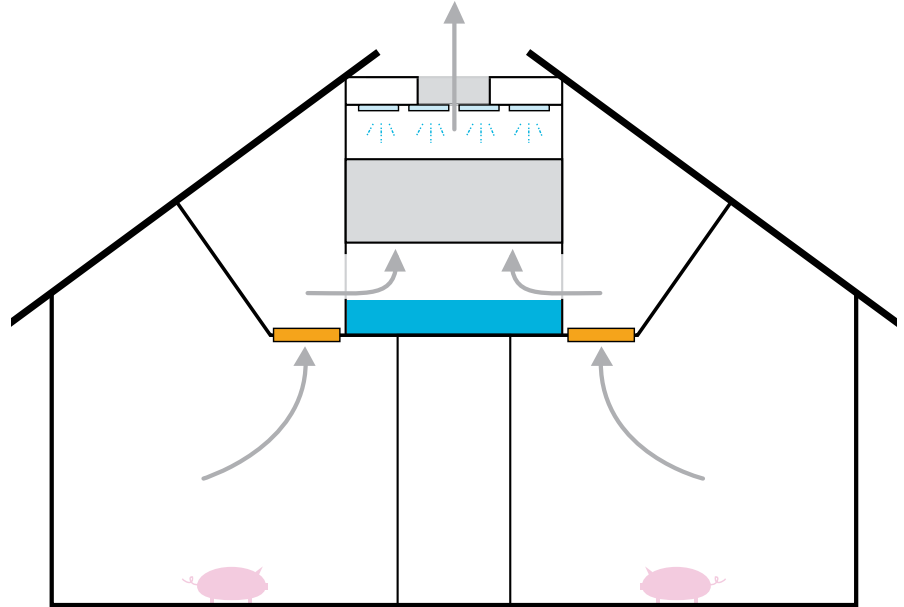


**The Combi Washer** for cleaning air out of drying systems. The Dorset Three-Step Air Washer has been specifically designed for dusty air filled with ammonia for biomass drying systems.



**The Combi Washer for Broilers** is currently being tested. Tested by Animal Sciences Group in Wageningen. Preliminary results: ca. 70-90% Ammonia reduction and 50-70% odour reduction.





**Biological Air Washer**

BWL 2004.01 V1

70% Ammonia reduction

**Biological Combi Air Washer**

BWL 2007.02 V1

85% Ammonia reduction





## The Dorset Biological Combi Washer combines well with other Dorset products!



**Dorset FS's Sorti-system** allows for farming pigs in large groups (200-350). The Sorti-system automatically selects the animals for delivery to the slaughterhouse. This stall system can be perfectly combined with the Dorset Biological Air Washer.



**When drying (fermented) biomass,** Dorset drying technique is combined with a Three-Step Combi Washer, which is specifically designed and will be delivered with control and pump room in a container.



**For a Chemical or Three-Step Washer** the use of sulphuric acid is needed. This can be stored in a solid tank (see picture) or in containers of ca. 1000 liter.



**Storage Tank Drain Water**

**DORSET GP**

DORSET GROUP

RFID-Technology,  
electronic identification

**DORSET ID**

IDENTIFICATION

Drying Technology  
to make use of residual heat

**DORSET GM**

GREEN MACHINES

Air cleaning, feeding systems  
and sorting systems

**DORSET FS**

FARM SYSTEMS

**Dorset Farm Systems B.V.**

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