

# AeroScalder

**STORK**  
POULTRY PROCESSING

**marel**



- A perfect scald with no immersion
- Substantial water and energy savings
- Virtually no cross-contamination

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# Perfect scalded products with no immersion

Immersion scalding has been around for decades. Although the technique is effective and has been much improved over the years, its potential for further development is limited. The time was therefore ripe for a technological breakthrough, which did not rely on immersing carcass in hot water.

## Scalding without immersion

Some years ago Marel Stork Poultry Processing began serious research into a new scalding method using knowledge and experience gained in heat treatment processes for the further processing of poultry. Concepts were tested and proved in pilot plants in Australia, the Netherlands and elsewhere in Europe.

This work has resulted in the launch of AeroScalder, a radically new departure in the scalding of broilers. AeroScalder scalds carcasses using moisturized hot air.



The airflow on the carcass is adjusted for perfect scald results.



The perfect scald

AeroScalder can be used for all scalding regimes; hard, medium and soft. Scald times are equivalent to those needed in conventional immersion scalders.

Moisturized hot air is blown forcefully onto the wings, back and abdomen but not directly onto the breast of the carcasses. The air temperature will depend on whether carcasses are to be hard or soft scalded. The moisturized hot air penetrates and separates the feather pack, transferring heat effectively to the feather follicle. The follicle then relaxes allowing easy feather removal.

Precise control of the temperature of the scalding air ensures a perfectly scalded product.



Accessibility for cleanability.

Substantial water and energy savings

It is no longer necessary to fill a scald tank and heat it up before production starts.

The water, used to heat up and humudify the air blown onto the carcasses, is re-circulated. The amount of water used during the scalding process itself is considerably less than that used in a conventional immersion scalding operation. Carcasses no longer drag out significant quantities of hot water when they leave the scalders. Considerably less make-up water is therefore required.

AeroScalder is made from insulated polypropylene panels and both its infeed and outfeed are at a lower level than the scalding process. This keeps heat loss to a minimum. As a result energy consumption is much lower.



Recycling and filtering un-absorbed water reduces water and energy consumption.

■ Introducing AeroScalder

AeroScalder is a modular system. The number of modules needed depends on hourly throughput and whether carcasses are to be hard, medium or soft scalded.

The system is entirely enclosed and consists of two chambers; an air conditioning chamber where the moisturized hot air is prepared and, next to it, the scalding chamber itself. Carcasses are conveyed on our normal overhead conveyors through the scalding chamber into which the scalding air is blown.

The AeroScalder comes complete with all necessary heat exchangers, regulating valves and pumps. These are skid-mounted and installed under the air conditioning chamber.

How it works

AeroScalder involves the circulation of three media; heat, water and air.

Heat is generated by a customer supplied boiler and transported to the heat-exchangers in the skid of the AeroScalder. The heat-exchangers heat-up the process-water. The temperature to which process-water is heated and kept depends on whether carcasses are to be hard, medium or soft scalded.

This hot process-water is sprayed into the air in the air conditioning chamber to bring the air to the correct temperature and humidity. Only a small amount of water is absorbed by the air. The rest falls on to the chamber floor. It then passes through a waste gate and rotating filter before being heated up for re-use in the conditioning chamber.



The skid-mounted utilities provide easy access and maintenance.

Moisturized hot air is blown downwards and sideways onto the carcass through ports in the top and sides of the scalding chamber. Air is blown onto the abdomen of the carcass through nozzles mounted on the rotating corner wheels of the overhead conveyor system. To allow the air to circulate round the wings, corner wheels are equipped with a “skirt”, which pushes carcasses outwards creating more distance between them.

Free moisture together with any feathers and dirt from the carcasses drops into a gutter at the bottom of the scalding chamber. This flows in the opposite direction to the carcasses and is discharged via a waste gate at the scalders’ in-feed. Fresh water is supplied to the system to make up for this small loss.

After having been blown over the birds and scalded them, air is drawn back into the conditioning chamber and re-conditioned for re-circulation to save energy.

Sensors monitor the temperature of the scalding air and ensure that it is kept constant at the pre-set value throughout the system.



Specific air circulation around legs and wings.

### Controls

The system’s switch panel is installed in a remote control room. If required, an optional additional panel can be installed in the de-feathering area. This would allow plant management to set scald temperatures locally.

### Smell and cross-contamination

The system is entirely enclosed and virtually smell-free, giving a more pleasant plucking/picking room environment.

Any loose feathers and dirt detached from each bird during scalding are blown downwards, well away from the flow of product through the AeroScalder.

Cross-contamination by pathogens such as salmonella and campylobacter has been shown to be significantly lower.



Stable airflow provides for a stable scalding process.

### Cleaning

Full-size doors provide generous access to both conditioning and scalding chambers. Full lighting and the ability to draw damp air out of the AeroScalder before cleaning begins make this job easier and more pleasant.

All pipe-work is automatically flushed through after production has finished. The conditioning chamber is cleaned automatically through the integrated CIP system using a program with detergent and rinsing cycles.



CIP cleaning and easy access.

## ■ Advantages at a glance...

- A perfect scald with no immersion
- Substantial savings in water and energy
- Virtually smell-free
- Much lower risk of cross-contamination with pathogens
- A visually much cleaner scalding process
- Quick start-up.

### Technical details

- Modular system
- Complete with all necessary T90 stainless steel track and corner wheels
- Capacity between 6000 - 13500 bph / 100 - 225 bpm
- Stainless steel frame, insulated polypropylene panels and in-feed and out-feed covers. Pipework, spray heads and other fittings from stainless steel and other non-corroding materials
- Optional control panel close to the scalders itself.



## Contact details

### **Marel Stork Poultry Processing B.V.**

P.O. Box 118, 5830 AC Boxtmeer  
The Netherlands  
T: +31 485 586 111  
F: +31 485 586 222  
E: [info.poultry@marel.com](mailto:info.poultry@marel.com)  
[marel.com/poultry](http://marel.com/poultry)

### **Marel Stork Poultry Processing Inc.**

P.O. Box 1258  
Gainesville GA 30503  
USA  
T: +1 770 532 70 41  
F: +1 770 532 57 06  
E: [usa.poultry@marel.com](mailto:usa.poultry@marel.com)  
[marel.com/poultry](http://marel.com/poultry)

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