High performance evisceration

High capacity, more flexible and more intelligent evisceration
Carcass quality and food safety
The evisceration process is the very heart of any poultry processing plant. This is where the bird is prepared for consumption or secondary processing. The process has two basic purposes: produce an A-grade bird for chilling and harvest the giblet pack for further processing and packing.

During the evisceration process, the poultry processor faces several important challenges, such as carcass damages, carcass contamination, labour efficiency, workers' safety, etc. Our high-performance evisceration line addresses these challenges and prepares the bird for whole bird packing or cut-up and deboning.

Our poultry vision
To be the first choice of poultry customers wanting intelligent, sustainable, biosecure and leading animal welfare solutions for safe food processing factories
High capacity maintaining quality
The global poultry industry has seen significant automation and line speed increases during the last decades. Faster line capacities mean higher production and greater profit opportunities. Today, BAADER LINCO offers evisceration equipment capable of processing up to 13,500 birds per hour with focus on carcass quality and food safety.

Flexible production to meet market demands
Your poultry production needs to be just as flexible as the market you operate in. Our evisceration process is flexible to handle varying flock sizes, and tolerates some degree of size variations within the flocks and breeds being processed.

Enhanced biosecurity and food safety
Through single machine adjustments that match the flock size, we minimise faecal contamination caused by poor positioning and damages to the carcass and the giblet pack. Thorough bird washing further reduces contamination risks.

Processes included in this brochure
- Bird transfer and weight capturing
- Venting
- Opening
- Evisceration
- Giblet harvesting
- Cropping
- Final inspection/neck breaking
- Bird washing

Workers’ safety
Automation and high line speed place great demands on the security around the machines. Therefore, our CE certified machines are equipped with safety features to ensure that they meet the most demanding safety requirements worldwide.

Easy maintenance and hygiene
Our evisceration machines are not only simple and easy to operate and adjust, they are also easy to maintain and clean. In the design, we have focused on minimising lubrication points, implementing easy-release units, and using service-friendly bearing constructions. Thereby, we optimise machine uptime and facilitate maintenance and access for cleaning.
Flexibility to meet farming and market demands

Flexibility to face diverse and varying market demands means being able to produce multiple products from varying flock sizes. A high degree of production flexibility opens up new market opportunities and responds to changes in market requirements. In other words, flexibility provides a competitive advantage.

**Flexible evisceration processing***
- Multiple adjustment features to process bird flocks from 1.6 kg (2.2 lbs) to 3.8 kg (6.6 lbs) live weight. Changeover from small to larger spoons is generally performed when average flock weight changes from 1.8 kg (2.2 lbs) to 2.2 kg (4.4 lbs). This changeover takes approximately 30 minutes. The adjustment flexibility allows a single line processor to supply multiple markets, such as food service, retail and deboned meat.
- Within the same machine set-up, our evisceration machines can effectively process bird sizes that vary with +/- 350 grams (12 oz).
- Fine-tuning adjustments can be performed during production to optimise uptime.
- Correct adjustment ensures high yield and minimises faecal contamination.
- A bypassing feature is available for Vent Cutter 196, Opener 246, Cropper 426, Final Inspection/Neck Breaker 472 (not available if the machine is equipped with a neck trimming feature), and the Inside-Outside Washer 494.

* Note: processors that handle multiple breeds on a daily basis need to consult further with one of our evisceration specialists.
Intelligent use of each bird

By installing our Weigh Transfer 520 between the slaughtering and the evisceration process, early information about the slaughtered weight/count versus the live weight/count is obtained.

If a Weigh Transfer 520 is also installed after the inside-outside washing, evisceration yield can be calculated across the EV line. While the Weigh Transfer 520 captures individual bird weight, our ClassifEYE® vision system captures the quality grade of each bird. Together, these individual bird characteristics determine the best fit bird distribution to whole bird packing and cut-up - intelligent use of each bird and fulfilment of sales orders.
Venting

The Vent Cutter 196 removes the vent from the chicken by a circular cut around the vent opening. During cutting, the birds are firmly positioned using specially designed hip huggers. Correct positioning is key to accurate cutting. After cutting, the vent is lifted out of the bird by vacuum, and left hanging beside the tail on the outside of the bird.

An improperly adjusted venting machine can cause damages to the intestines, causing faecal material to contaminate the carcass during evisceration. To ensure correct cutting, the Vent Cutter 196 is equipped with three hand-operated hydraulic jacks that allow for adjustments of the:

- main shaft height
- hip huggers' height
- blade depth

Two different blade sizes are available for big and small birds.

The Vent Cutter 196 has a mechanical blade drive system and self-adjusting back pushers for optimum positioning. The machine is also equipped with a tail puller to avoid cutting the tail during vent cutting.

Removal of vents while the bird is firmly positioned in the hip huggers and the leg loops

Tail puller holds the tail during cutting to avoid mis-cuts

Vents are removed but still attached and hanging outside the bird
Precise adjustment features ensure a proper abdominal cut to provide access for the evisceration spoon, without causing damages to the breastbone or the skin covering the breast.
Evisceration

The Eviscerator 218 automatically removes the giblet and intestines pack. The pack is transferred to a separate clip overhead conveyor to avoid faecal contamination from the intestines to the carcass. Using this unique clip system improves pack transfer efficiency.

Adjusting the evisceration machine to fit the actual flock size allows for obtaining a complete pack removal, protecting the pack and the ribcage, and minimising contamination with gall or faeces. The Eviscerator 218 can be height adjusted and spoons come in different sizes to obtain the most efficient evisceration of the bird. The machine is equipped with a quick spoon release that makes adjustment easy between flocks. This flexibility allows a single line processor to supply multiple markets, such as food service, retail and deboned meat.

The giblet clip system is designed to transfer the giblet and intestines pack directly to a manual harvesting line or our automatic Giblet Harvesting System.

Optional: monitor the pack transfer performance

The giblet pack transfer performance on the Eviscerator 218 can be monitored. Adjustments to the evisceration equipment can be carried out and the overall pack transfer performance can be optimised.
Inspection

Ensuring food safety
Pack and bird are synchronised for presentation to inspectors, and a user-friendly overhead switch selection function can be activated to drop pack and/or bird for further assessment.

By using a clip overhead system, the pack is positioned and presented to inspection in a comfortable and manageable way, and it is prepared for manual or automatic giblet harvesting.

Implementing a feet handling system synchronised with the bird rejection point allows for rejecting feet that belong to rejected birds to further ensure food safety.

All inspection platforms are equipped with emergency stops.

Easy qualification and unloading of selected birds
When installing a selective Bird Unloader 3621, the condemned birds and birds requiring further inspection can automatically be released from the evisceration line after selecting the birds during veterinary inspection. The selection of birds can be done either on an overhead switch selection function as above, or on our Quality Control Station shown next to this text. The activation will send a signal to a pneumatic cylinder on the Bird Unloader 3621 and the condemned bird will be released from the line.

1 Chain conveyor with selection levers. The levers are synchronised below the bird over four metres.
2 Mirror to observe the bird’s opposite side. While passing the mirror area, each bird can be inspected and classified by pulling or pushing the corresponding selection lever.
3 Fluorescent lighting on top of the Quality Control Station to improve inspection

Quality Control Station with selection levers

Bird Unloader 3621 able to selectively release birds from the evisceration line

Synchronised bird and pack inspection with an overhead switch selection
Giblet harvesting

After the Eviscerator 218 has transferred the giblet pack to the giblet clip overhead conveyor, the giblet and intestine pack is ready for semi or fully automatic giblet harvesting.

**Fully automatic harvesting (version one release)**
In the Automatic Giblet Harvesting System, intestines and gall are automatically removed from the remaining part of the pack. Liver, heart and gizzard are separated and sent to further processing, inspection and packing.

Throughout the Automatic Giblet Harvesting System, focus is on high recovery, gentle product handling and hygiene in order to deliver a sellable end product of all edible parts.

**Manual harvesting**
Manual giblet harvesting can be comfortably performed leaving the pack in the clip system and harvesting directly on the giblet line.

On the clip system, the workers performing manual harvesting have easy access to all edible parts ensuring high liver yields and fewer damages to the gallbladder.

We offer solutions for harvesting, cleaning and packing the edible parts of the giblet pack.
Cropping

After evisceration, the Cropper 426 removes the crop and the windpipe attached to the neck of the bird by introducing a cropping probe into the bird’s cavity.

The machine is easy to adjust to varying flock sizes by using hand-operated hydraulic jacks placed on the outside of the machine to adjust the main shaft. Correct adjustment ensures a proper bird and probe positioning. This again ensures an effective removal of crops and windpipes, and avoids damaging the neck skin and the breast.

The probes are available in small, medium and large to best fit the bird sizes being processed.

The adjustment flexibility enables the single line processor to produce varying product sizes and thus supply multiple markets, such as food service, retail and deboned meat.

The probe enters the bird through the body cavity, cleans out anything attached to the neck, including crop and windpipe, cleans itself and then withdraws from the bird.
Final inspection/neck breaking

The combined Final Inspection/Neck Breaker 472 first removes possible lungs and other residues using a vacuum probe. Then the machine performs a neck bone removal by breaking the neck bone and pulling it out, while leaving the neck skin attached to the bird.

Three settings can easily be adjusted on the machine using hydraulics:

- main shaft height
- hip huggers’ height
- positioning of the neck breaking

Cutting the neck skin

Three options are available for cutting the neck skin:

- Built-in neck skin cutter in the Final Inspection/Neck Breaker described above: the skin is cut and removed together with the necks
- Separate Neck Skin Cutter after the Neck Breaker
- Neck Skin Cutter on the cut-up system
Inside-Outside washing

Inside-outside bird washing after evisceration has been shown to reduce both residuals and bacterial populations on the meat.

The Inside-Outside Washer 494 performs a thorough washing of the carcass, thus reducing debris and bacteria on the inner and outer bird surface. Water nozzles enter the bird to clean it inside and the water drains through the neck opening. On the outside, water jets wash the bird from top to bottom.
Hygiene and maintenance

Biosecurity is a constant focus area at BAADER LINCO, and the hygienic design of our evisceration equipment plays an important role in controlling microbiological safety and quality of the poultry product being processed.

Safety

Our machine engineers are always looking to improve machine safety without compromising production targets. Our CE certified evisceration machines meet the highest safety requirements. All machines are fully covered and offered with safety doors for total enclosure. Also, inspection platforms are equipped with safety devices. Safety cords and safety bars ensure easy access to machine stop in case of emergency. As an additional safety measure, safety screens prevent direct access to the cutting process. Torque sensors protect both operators and machines from damages caused by overloads. Machines are stopped immediately at jam-up.
The Vent Cutter 196 with open doors
This brochure is current as from the publication date and supersedes all previous versions. The English version is perceived as the master document and all other versions are subject to incorrect translation. The indicated limits of the working ranges and performances may vary as a function of the proportion, quality and nutritional conditions of the birds. In order to achieve an optimal result, it is recommended to adjust the machine within the working ranges of the bird sizes mainly to be processed. Illustrations and dimensions are approximate and not binding. Subject to design changes in the interest of technical progress. Actual scope of supply is specified in our quotations and order confirmations and may differ from descriptions and photos of this brochure.

Attention! For the illustration of the technical details the safety devices and protection mechanisms are partly not shown in operative condition. When operating the machine, all corresponding devices and instructions referring to the safety of the machine are to be utilised and/or observed.