ADVANCED PROCESSING SOLUTION
- with ProLogix

- Clean Air Chilling System
- Weigh/Transfer
- Vision Quality Classification
- ProFlex Premium Cut-up System
- Intelligent Deboning System
- Belt Weighing with FlexFeeder
The production speed in a modern slaughterhouse is up to 12,000 birds per hour on the killing line and the evisceration line. As a principal rule, the products are distributed to many types of end products, putting demands on the secondary process. The Advanced Processing Solution (APS) from LINCO BAADER covers the sub-processes chilling, distribution, cut-up, deboning, trimming, inspection and batching and packing.

**Optimize decision making**

A modern poultry production needs to know the performance of the production. That is why real-time key performance indicators are so important. Only by monitoring and controlling yield, throughput and quality throughout all production phases, the correct decisions can be taken by plant directors or area managers.

ProLogix is all about monitoring and controlling: monitoring production performance and obtaining real-time information for decision makers in order to fully control all processes. In other words when you know the key indicators: throughput, giveaway, quality etc., you can optimize profit.

LINCO BAADER offers a wide range of processing equipment linked to ProLogix: individual machinery, weighing units, bird counters, Vision systems, shop floor applications. All this equipment provides a continuous real-time data flow that gives the management a clear and logical overview of production performance.

**Benefits:**
- Cut-up and Breast Deboner can manage significant difference in bird size
- Boneless fillets and high yield
- Flexibility in end production
- Final batching to fixed weight
- Flexible layout for in-line production, labour saving

**Quality in all phases**

By committing ourselves to provide quality in all phases, LINCO BAADER help our customers to a more profitable business. Damage to the bird caused in the catching, transportation, killing or evisceration process can have significant effect on the results in the cut-up and deboning processes. Therefore, care must be taken when processing the birds in all phases of the process.

**Carcass care**

Primary carcass care means careful and responsible processing of every single bird, avoiding the damage which could influence secondary processing. This is achieved by optimizing the process flow upstream as well as downstream. Any sign of problems with meat quality or yield anywhere in the process downstream is an indication of problems earlier in the process upstream.
CLEAN AIR CHILLING

**Air chilling makes progress**
LINCO BAADER manufactures different types of chilling systems: water chilling, and the highly advanced Clean Air Chilling System. The primary reason for preferring air chilling is the increased control of cross contamination. A major benefit from using air chilling instead of water chilling is the stabilization and control of the bacteriological growth on the surface of the chicken. Furthermore, air chilling without adding water in the process only leads to weight loss of max 0.8% including free water on the surface of the chicken.

**Clean Air chilling process**
The actual clean air chilling takes place while the birds are suspended in two-point shackles which open the carcass to a stream of cold, dry air from specially designed channels. The channels effectively exhaust residual warmth from within the bird and allow the deep muscle temperature to be reduced from +39° to less than +4° in less than 60 min. for a chicken with an eviscerated weight of 1200 g. The clean, cool air surrounding the bird provides a uniform chilling of all parts including wings and drumsticks. Thanks to this direct clean air chilling, the danger of frozen extremities and surfaces is successfully avoided.

**Benefits:**
- Control of cross contamination
- Stabilization and control of the bacteriological growth
- Shorter chilling time with guaranteed deep muscle temperature of +2° to +4°
- Uniform and frost-free chilling
- Drip-loss less than 0.8 %

**AUTOMATED DISTRIBUTION**

**- BASED ON WEIGHT AND VISION QUALITY CLASSIFICATION**

**Visual Quality Classification**
Modern processing lines often operate at line speeds of up to 12,000 bph. This means that a constant manual quality control of different skin defects on the birds is impossible.

The Vision Quality Classification System operates with multiple different quality parameters relating to defects such as blood spots, bruises, damaged skin, broken or missing wings, etc. In addition to providing a greater consistency in quality grading with correct allocation bird by bird for cut-up, deboning or whole bird packing, the Vision System can be used to indicate possible problems with machines upstream in the processing line.

**Benefits:**
- High accuracy static weighing at high speed
- Constant detection of defects
- Uniform quality grading from user definitions of defects
- Simulate production result based on weight and quality of actual raw material combined with historical data

**Unique accuracy at 12,000 bhp**
The Weigh/Transfer model 520 operates with a static weighing principle. A wide weighing ‘window’, combined with the fact that the birds are weighed bird-by-bird while in a static position ensures the unique accuracy.

After the weighing process, the birds are automatically transferred onto the next line, allowing the weighing wheel sufficient time for the crucial resetting and zeroing in preparation for the next bird. The 520 is incorporated either before the chilling line and/or between the chilling line and the distribution line in the APS.
The ProFlex Premium Cut-Up System is one of the market’s most advanced cut-up systems and offers unsurpassed flexibility and efficiency. It automatically cuts up whole birds and drops off the cut pieces exactly where required. As an option, units can be by-passed. This is automatically controlled based on information from the Weigh/Transfer and the Vision Quality Classification.

**Benefits**

- Flexibility in layout
- Clean anatomical A-grade cuts, increasing meat yield and product value while minimizing costly trimmings
- High-speed workflow – up to 7,000 bph – without compromising the quality
- Customized intelligent system that supports by-pass and automatic rehanging regardless of production layout and the type of bird to be processed, for instance chickens, hens, or free-range chickens
Intelligent Deboning System
With the revolutionary Breast Deboner 656 machine, we are able to offer customers a new approach to front half deboning. By automatically measuring each front half and then automatically adjusting all of the deboning tools, we maximize the yield and fillet quality bird-by-bird. Utilizing servo controlled cutting and scraping tools to ‘custom debone’ each front half, we can process a larger size range and avoid the challenges faced when the meat is pulled off the frame. Combining this automation with ‘on the fly adjustments’ of the cutting and scraping tools, real-time production data and remote diagnostics, the 656 fits the description of an ‘intelligent deboning system’.

Superior product mix flexibility
The 656 can process 65 front halves without wings per minute and 50 front halves per minute with wings. The 656 breast deboning machine can produce 130 single fillets or 65 butterfly fillets of high quality each minute. Additional cuts available include whole wings or segmented variations, tender in or tender out, and back meat attached to fillet or harvested separately.

The computer controlled deboning process allows maximum performance within two front half size ranges: 550-1100 g and 800-1500 g. Production data accumulated by the 656 can be viewed real-time on production floor LCD screen or remotely via our Management Information System.

Benefits
• Individual front half measuring to ‘custom debone’ a large size range
• Processes wing on or wing off front halves
• Produces single or butterfly fillets with tender-in or tender-off
• Recovers the back meat separately or attached to the fillet
• On the fly adjustments
• Real time production data

Circular Blade Sharpener
An important component in the Intelligent Deboning System is The Circular Blade Sharpener designed to sharpen all kinds of circular blades.
Intelligent design
LINCO BAADER offers a great variety of hardware grading solutions ranging from simple, stand-alone graders to complex portioning and batching operations. Emphasis is on open and hygienic design as well as flexible and fast in feed and transportation systems. We offer unique tailor-made grading solutions to fit customers.

Weighing and check weighing throughout the production is becoming a prerequisite for measuring the yield of each operation. Individual monitoring gives better performance out of each process. It motivates people to see how they are doing compared to the average, and it becomes easier to see where additional training is needed for each operator. If you optimize your yield, you optimize your profit!

LINCOflex
The ProLogix module LINCOflex 2000 allows you to monitor and control all grading operations in your production plant and makes it easy to manage all weighing related processes including graders, static scales, label printers, bar code scanners etc. You can actually define an unlimited number of grading programmes.

LINCOflex 2000 has a large number of programme facilities. Based on the in-weighing data, the LINCOflex 2000 gives you visual real-time access to any relevant product information. A unique feature for this software is the fact that you can control and alter all set-up or production parameters while production is running. This gives you full access to optimize your production: You may choose any weighing programme in the database – Whether a simple sizing / grading programme or an advanced batching programme. You can then monitor how the programme is performing.

PERFECT CONTROL of PRODUCT MIX - MULTIPURPOSE GRADING SOLUTIONS

Working Process:

1. Infeed to dynamic weighing: open and hygienic design makes it easy to clean the equipment.
2. High speed, high precision weighing unit: products are weighed before trimming in order to control yield.
3. High speed infeed conveyor with correct spacing of products onto the belt grading system for packing.

4. Gentle product handling when transferring the products to the belt weighing system. (Paddle system)
5. Weighing input for further distribution on grader and yield control of trimming station.
6. Automated data collection: monitoring and control of all grading operations. Shop floor terminal makes it easy to access and interfere with grading operations from the shop floor.
7. Unique portioning and batching into bags, trays, boxes or directly to another conveyor.
What’s the quantity and quality of raw material entering the process, what’s the best end product fit of this raw material and how much end product has been produced?

Utilizing overhead weighing and Vision Quality Classification for whole bird distribution to cut-up, deboning or whole bird packing combined with all of the end product weights collected from the dynamic belt grader and packing scales we have the key measurements of the overall process. Now we need the production results of the individual machines and operators.

What are the production results of the individual machines and operators?

Measuring individual machine performance throughout the overall process using dynamic belt weighing of front halves and fillets combined with key machine performance information such as speed, throughput, uptime/downtime we get a more detailed insight into the overall process. Now we need to see the “real time” production events that can impact these measurements.

What “real time” production events impact the performance of the overall process, individual machines and operators?

Real time production events such as lack of raw material, lack of operators, machine/conveyor downtime, deviances in raw material quality etc. are manually entered through production floor data input terminals.

What is the real performance?

Combining the key measurements of the overall process, the production results from individual machines and operators and real time production events gives you a better insight into what is really happening on the production floor and helps you focus on performance and profit by reducing downtime and give-away and maximizing yield and throughput – if you can see it you can fix it.

INFORMATION IS POWER!

- The APS continues to grow to meet your needs

Eight simple steps show how ProLogix for APS works:

Step 1: The weight of the whole chicken is entered into the system. At the plant the information comes from a weigh transfer or a weighing bridge.

Step 2: The chickens are loaded onto the ProFlex Premium Cut-Up line. At this demo the Vision Quality Classification is mounted on the cut-up frame but in real life it can be placed anywhere after the evisceration.

Step 3: High Yield Anatomic Wing Cut, Breast Pre-cut, Front Halves Cut.

Step 4: We move on with the front halves and get the weights using the belt weighing unit.

Step 5: The front halves are loaded onto the Breast Deboner 656 and single fillets back meat on are processed.

Step 6: Weighing the fillets. At the terminal it is possible to manually enter production events such as lack of raw material, lack of operators or machine downtime.

Step 7: It is possible to follow the process on a big screen and if we gather the collected data we will get an indication on yield. The difference between the yield on fillets can show if the Breast Deboner 656 needs to be adjusted.

Step 8: All together you get a differentiated picture of the production with an exact insight into where your give-away is and how to maximize yield and throughput.
ADVANCED PROCESSING SOLUTION
WITH INTELLIGENT PRODUCTION MANAGEMENT CAPABILITIES

The APS now includes intelligent production management capabilities. Production information related to raw material input and end product output, individual machine and operator performance/production results and real time production events are collected automatically and manually from the production floor. The key information needed “real time” to run the process will be made available via direct mail to floor production managers or visualised on shop floor light houses. The goal is to remove the paper from the floor and take corrective actions! ProLogix will be available for APS solution sale from 2011.

Distribution line
1. Weigh/Transfer 520
2. Vision Quality Classification
3. Whole Bird Drop-off
4. ProFlex Premium Cut-Up system
5. Hanging Area
6. Neck Cutter
7. Wing Stretcher
8. High Yield Wing Cutter
9. Tail Cutter
10. Breast Pre Cutter
11. Front Half Cutter
12. Leg Processor
13. Whole Leg Conveyor
14. ProFlex Premium Cut-Up system

Intelligent Deboning System
13. Dynamic weighing belts*
14. Breast Deboner model 656
15. Loading front halves
16. Dynamic weighing belt for fillets*
17. Trim Table
18. Soft Separator BAADER 605

Weighing and Packing
19. Singulation fillets with FlexFeeder
20. Belt Grader
21. Packing of wings
22. Packing of by-products (yagen)
23. Packing of tenders
24. Shop floor data input terminal

* Can be replaced by hopper scales