

# Retail quality with inline efficiency

Stork ACM-NT Thigh Fillet System



- Automated thigh filleting up to cut up line speed
- Retail quality deboned thigh meat with or without skin
- Revolutionary knee cap removal, keeping maximum yield

# High-capacity thigh filleting with 'butcher quality'

Many people around the world are already convinced of it, and the rest will follow soon: boneless thigh meat is the best, most tasty part of a chicken you can get! The market for thigh fillet is opening up, offering plenty of opportunities worldwide. To benefit fully from this development, poultry processors can now process thighs by using the all-new Stork inline Thigh Fillet System's advanced technologies. The new solution is an extremely fast automatic system, at the same time hitting very high meat yields. Top quality thigh fillet produced on Marel Poultry's system can now truly compete with breast fillet as an attractive, high value, tasteful fresh product.

Marel Poultry has developed a unique inline thigh deboning concept, which can handle high speed lines. The Marel Poultry solution can produce deboned thigh meat of high yield and quality with minimal trim operators or inspectors required. Installed in a Stork ACM-NT cut up system, the modules can keep up with this system's high hourly throughputs while processing thighs with high precision..

## Worry-free

The Thigh Fillet System is a worry-free system and is easy to adjust. It is simple to choose which thigh products should be deboned with easy control of production orders.

The system can be turned on and off as required; the modules can simply be disengaged from the line. With a simple press on the knob, it starts running again flawlessly.

## Butcher quality from an automatic system

The new deboning technique, which mimics the work of a skilled manual operator, ensures "butcher quality" thigh meat, ultimately suitable for retail sale. Stork's Thigh Fillet System maximizes yield, reduces rework and leaves virtually no residual bone. Its ability to harvest thigh meat consistently, accurately and at high speed is truly an industry first.





**Manual shackling or rehangng is no longer necessary, as the process remains completely inline.**

**STORK**  
POULTRY PROCESSING

## How it works

### Five carrousel

The Stork Thigh Fillet System consists of up to five carousel machines.

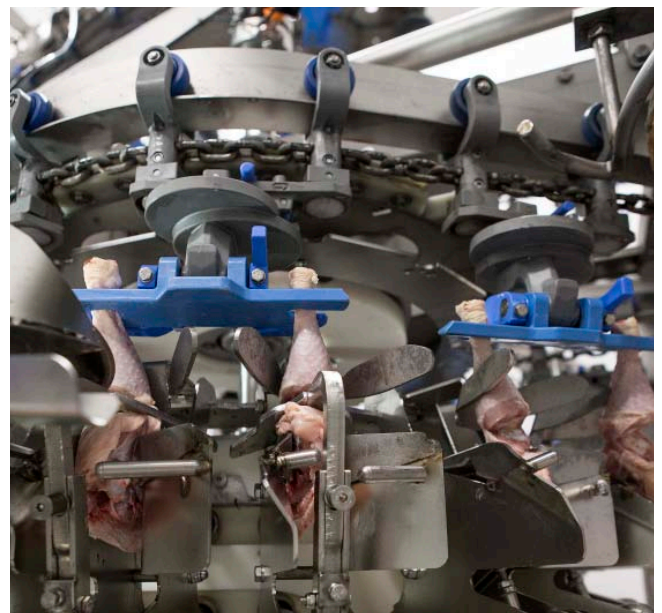
1. The **Knee Joint Cutter** performs the first operation by making a pre-cut. This extremely precise drumstick cut guarantees optimal process results as well as quality drumsticks.
2. The **Thigh Skinner** carousel is an excellent example of Marel Poultry's ability to carry out precise operations at high speed. Automated skinning is critical for premium product presentation and hygienic processing.
3. The **Thigh Deboner left** removes the bone of the left thigh. A unique, ingenious though simple technique separates bone and meat in the most effective and profitable way.
4. The **Thigh Deboner right** does the same with the right thigh.
5. The **Thigh Fillet Harvester** demonstrates the art of removing the knee cap without leaving meat on it. Meat surrounding the knee cap remains attached to the thigh meat.

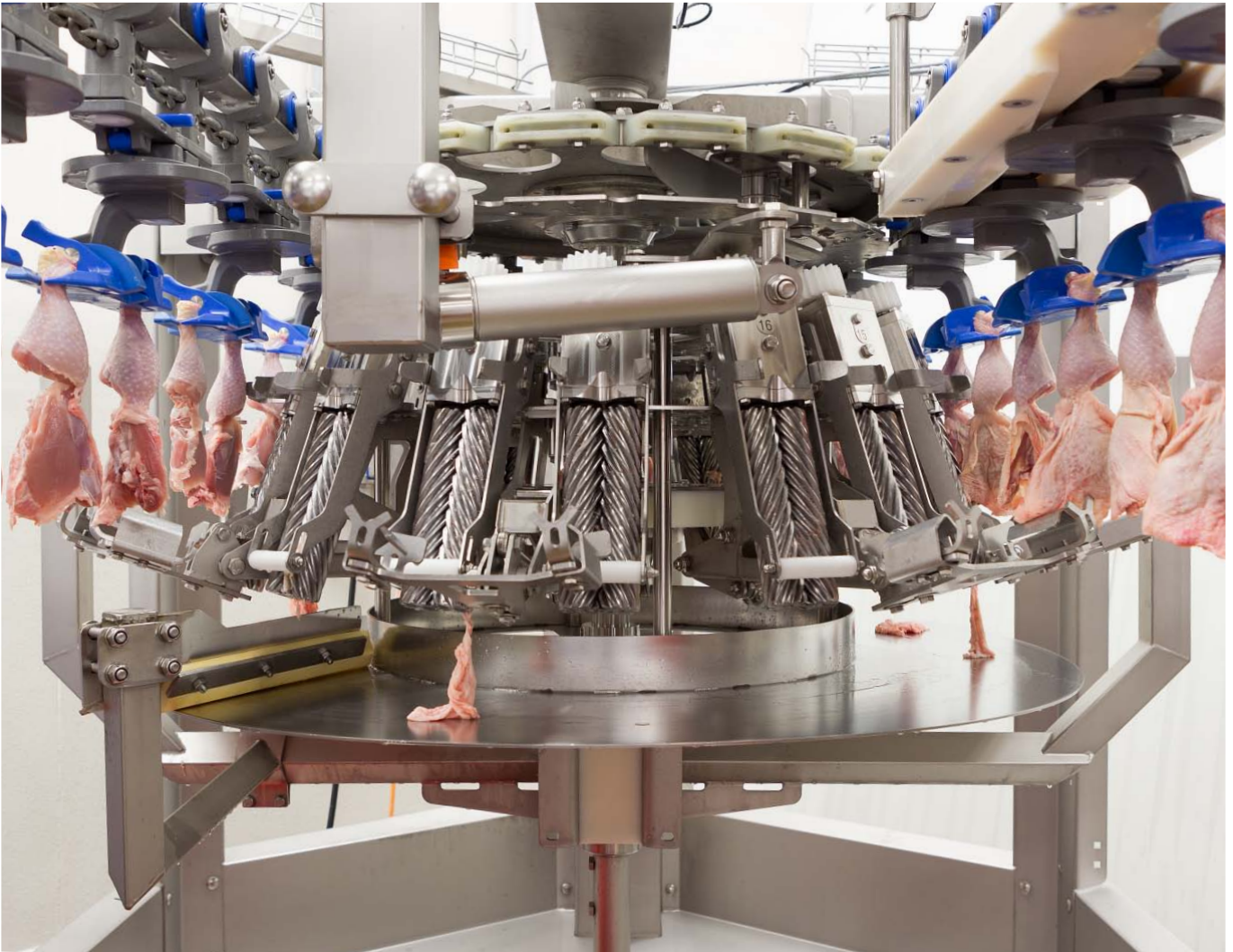
### Inline infeed

Manual shackling or rehangng is no longer necessary, as the process remains completely inline, using the same shackles as the ACM-NT cut-up line. When deboning thighs in an ACM-NT line, the infeed product is an anatomic leg, produced by the JLR leg cutting module. The JLR ensures the supply of correct infeed material to the thigh deboning system.

### Optimized positioning

Crucial to the success of thigh deboning is the positioning of the leg in the machine, before operations are executed. Marel Poultry manages to master this process splendidly. Hanging in the ACM-NT shackles, legs are presented to the various thigh deboning modules. Each leg is automatically positioned for gentle and precise processing in the system's carrousel.





Having adopted its natural bend, the leg will undergo thigh deboning much easier. The system even manages to perform a 180 degree turn of a supplied leg, when necessary. The first module makes a pre-cut comparable to a drumstick cut with the thigh remaining attached to the drumstick. Depending on the desired type of anatomic cut, the knife of this module can be adjusted. This ensures optimum automated skinning in the next carousel.

After the skinning module has removed the skin, the result is a drumstick from which a skinned thigh with bone hangs down. The skinning module is by-passable, which means that skin-on thigh fillets can be produced as well.

### Keeping the oyster

The technology used in ACM's JLR leg processing module results in a very good yield with almost all oysters harvested cleanly. It is therefore the job of the Thigh Fillet System to ensure that the quality of the anatomic legs supplied is preserved throughout the deboning process.

That's why bone handling is very gentle and far from being "aggressive". Pushing too hard to get the bone out could mean the loss of a carefully harvested oyster and thus a loss of quality, which is exactly what Marel Poultry is trying to prevent.

### Pushing and pulling

In the separated carousels for left and right thighs, the actual deboning takes place. While its meat is being scraped off, the thigh bone isn't subjected to excessive forces. Instead, the system works by pushing and pulling, a unique solution which assures long-term reliability and low cost of ownership, at the same time providing maximum yield.



## A revolutionary knee cap solution

Around the knee cap, there is valuable meat which usually isn't harvested. Stork's Thigh Fillet System succeeds in efficiently scraping this meat from the knee joint and harvesting it together with the higher value thigh meat. A maximum of meat from around the knee cap is removed without putting undue stress on the drumstick. The bare knee cap is then removed. This revolutionary system is as reliable as can be; virtually no knee caps will be left behind in the harvested fillets.

The art of being able to pop out a meatless knee cap means extra thigh meat. This can amount to 3 to 5 grams of additional meat, which would normally have been discarded with the knee cap. All of this is done automatically, inline, without any human labor needed. Loss of attached knee cap meat has never before been so low!

Knee caps, which can serve as end products in certain markets, can be collected and transported in several ways, e.g. in bins or on conveyor belts.

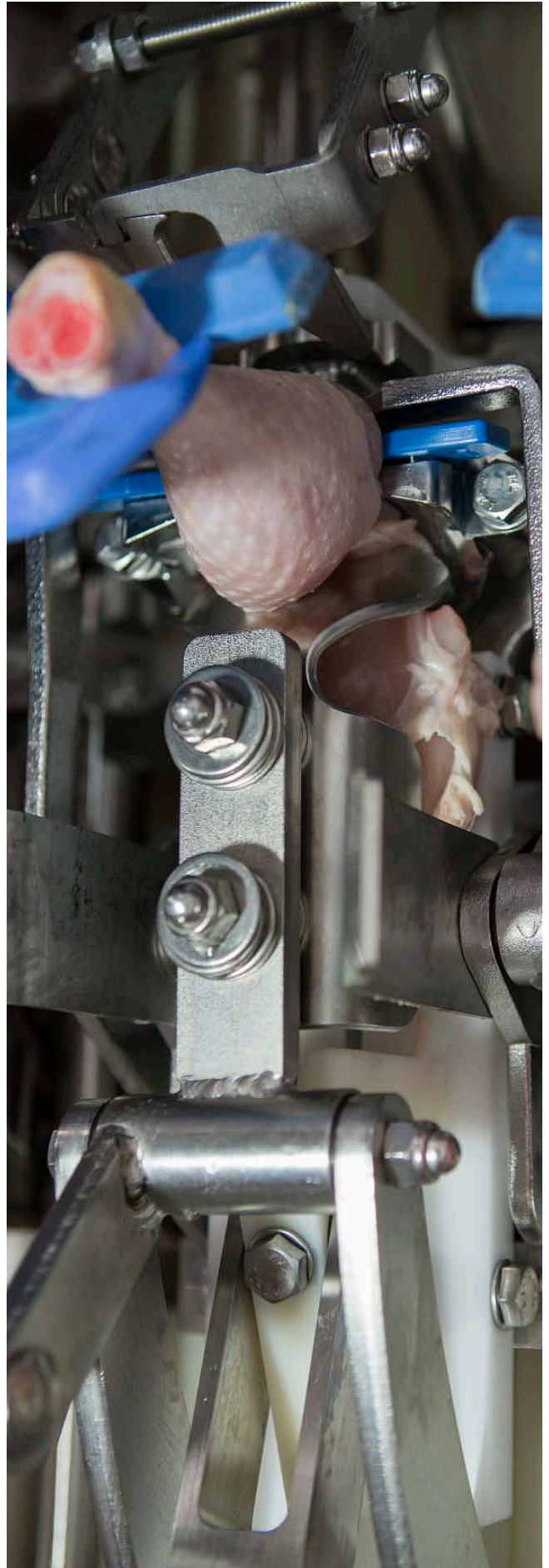
## No splinters

Using the Stork Thigh Fillet System, the chance of broken bones or bone splintering is reduced to an absolute minimum. No big pressure is put on the thigh, not in any stage of the process. Should, in case of exceptional circumstances, excessive force be applied to the bone, it breaks in two pieces, but won't leave any splinters.

## Stable performance

The tolerance of products entering the module is set by the ACM-NT system: simply all products that are qualified to enter this line can be processed. Within these margins the intelligent system senses bigger or smaller legs than average, and manages to handle these deviations also in an adequate way. So the Stork Thigh Fillet System is less dependent of the supplied weight range.

In this way, a consistent performance for all products entering can be achieved. The process is more stable than manual deboning by skilled workers could ever be.





**There's a global trend to upscale thigh meat.**

## A fast inline process

### Labor saving

Up to now, thigh filleting solutions around the world have depended on manual hanging of the infeed product. Marel Poultry has now definitely put an end to this capacity-reducing practice. To begin with, manual shackling or rehanging is no longer necessary, as the process remains completely inline, using the same shackles as the ACM cut-up line.

The precise positioning of the product – a precondition for proper deboning – is also fully automated, just like the entire skinning operation. Thanks to the optimized process an absolute minimum of operators are needed to check and trim. Thigh fillets leaving the system can go straight to SensorX x-ray inspection without any human check needed.

### Speed and precision

The thigh deboning modules do their work very quickly and accurately. Their high capacity won't be needed in all cases, but in this way Marel Poultry creates flexibility. On the fly, a processor can decide to vary the quantity of thigh products to be deboned.

### Easy control

The Thigh Fillet System can deal with a wide variety of leg weights and sizes. With fewer adjustments needed than you can imagine, its performance always stays stable, an important asset when industrializing a manual operation.

Even though it's an advanced system with five carrousel, controlling the operation couldn't be easier. This is the result of Innova PDS control software integrated in the entire ACM-NT system, also the preceding cut-up modules. What is more, the system needs hardly any after-care or servicing.



## Yield and quality

Stork's Thigh Fillet System produces thigh fillet with high yield and with minimal loss of valuable meat.

As far as product presentation is concerned, the meat produced looks perfect! Thigh fillets can have a maximum amount of meat attached, with almost no losses, damage or bone remnants.

Meat is smooth without roughness or raggedness. Product presentation – natural or marinated – is truly first class and is eminently suitable for retail sale.

## Solutions

There are a lot of reasons to opt for a thigh deboning system. Companies currently deboning thighs manually off-line can make huge labor savings by switching to Stork's new automatic in-line Thigh Fillet System.

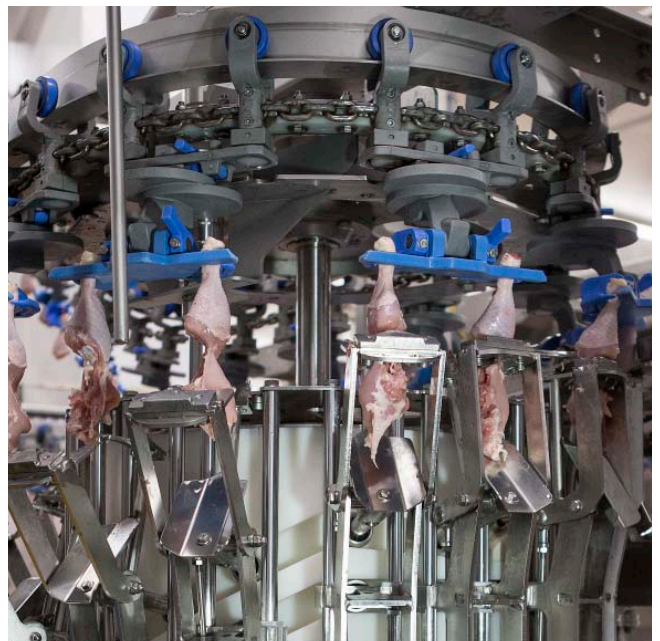
The solution is also ideal for those processors who freeze whole legs. They will now be able to sell popular thigh fillet fresh at a higher price and only freeze drumsticks.

## Thigh meat on the rise

Around the world, thigh meat is getting more and more popular. There's a global trend to upscale thigh meat. Especially for its taste, thigh meat is getting more and more appreciated.

Reason enough to pave the way for the Thigh Fillet System, which is the first one to succeed in completely industrializing the art of thigh filleting.

While replicating manual deboning standards in a very stable way, the automated process stays fully inline at the highest speeds. This is what makes the Stork Thigh Fillet System truly unique!





## Advantages at a glance...

- **Unique: fully inline thigh deboning**
- **The world's fastest thigh deboning system**
- **Guaranteed highest thigh meat yield in the market**
- **Upscaling boneless thigh meat to an A-class, retail quality product**
- **Labor saving – no manual hanging, skinning, kneecap trimming needed**
- **Revolutionary knee cap removal and scraping**
- **Maximum thigh meat harvesting with minimum residues at the bones and knee cap**
- **Capable of handling all capacities, up to the highest speeds, with 15,000 products per hour (in an ACM-NT line)**
- **Controlled by Innova PDS**
- **Stable performance within a wide weight range**
- **Easily adjustable controlling**

**Marel is the leading global provider of advanced equipment and systems for the fish, meat and poultry industries.**

© Copyright Marel Stork Poultry Processing B.V., 2016: All rights are reserved. Any reproduction or modification of all or part of this publication, regardless of the method of reproduction or modification used and regardless of the carrier used, is strictly prohibited, unless prior written authorization by Marel has been obtained beforehand. Those acting in breach of this notice expose themselves to criminal and civil prosecution, in accordance with the international conventions and copyright laws. The data published herein answer to most recent information at the moment of publishing and are subject to future modifications. Marel reserves the right to modify the construction and the execution of their products at any time without any obligation on their part to modify any equipment delivered before accordingly. The data mentioned are meant as an indication only. Marel assumes no responsibility for errors or omissions in the data published or use of the data published. The publication of these data may not be interpreted as a warranty or guarantee of any kind (either expressed or implied).

**Marel Stork  
Poultry Processing B.V.**  
P.O. Box 118,  
5830 AC Boxmeer  
The Netherlands  
**t** +31 485 586 111  
**f** +31 485 586 222  
**e** [info.poultry@marel.com](mailto:info.poultry@marel.com)

**Marel 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)

