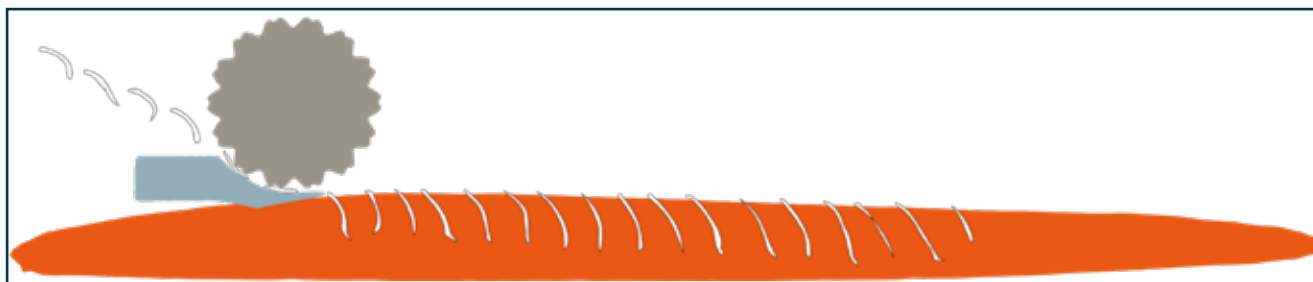


# PIN BONE REMOVER 400 SERIES

Remove pin bones.  
Reduce waste.



# Salmon pin bone removal for your capacity need



The Uni-Food Technic Pin bone Remover machines remove up to 95% of pin-bones.

After pin-bone removal the fillets pass a table for manual inspection.

The machines can work in a one-way flow with automatic in-feed after the trimming line. Regardless if the fillet has been pre-handled in a filleting machine or if it has been cut by hand, the pin-bone machines remove 90-95% of all the pin-bones.

We have obtained optimum utilization by using the machine for salmon and mackerel 18-24 hours after slaughtering depending on the structure of the fillet. Hereby, we minimize gaping issues and problems with broken pin-bones.

On fresh fillets, water is used for cleaning the roller and knife. Air is used for cleaning the rollers when smoked fillets are processed.

As a standard the machines are supplied with water cleaning, but can be provided with both water and air connection, in order for it to be used for both kinds of products. The machines are built in a strong stainless steel construction. All parts used are made in FDA approved materials.

## Technology

- Adjustment of the pressure on the fillet is made by spring pressure.
- Tooth roller with built-in water/air nozzles for automatic cleaning of the roller and knife.
- Adjustable knife holder.
- Fine adjustment of belt angle to obtain a bend on the fish to visualize the pin-bones before removal. Adjustment depends on the thickness of the fillets.
- Quick-release for removal of conveyor belt for cleaning. When the belt is removed the machine is open for cleaning. The belt can then be put into a disinfecting bath.
- Waterproof cabinet for motor and electrical parts. The electrical parts are protected in an extra box inside the cabinet.
- The knife and roller have a width of 230 and 350 mm, respectively. The width of the knife makes in-feed precision less important. The machine can therefore easily be placed after an automatic in-feeding machine.
- Can be provided with an underlying dripping tray.

# Options

The Pin-bone Removers can be delivered with a wide set of options depending on the operators' different needs.

## Water saving system

The Water Saving System ensures that the pin-bone machine consumes water only when processing fish.

## Raising rollers

With the Raising Rollers you can achieve a maximum pin-boning result when processing very fresh fillets. The rollers raise the pin-bones in the fillets including pin-bones below flesh surface making it easier for the pin-bone rollers to get hold of the bones

## Active tail system

The Active Tail System is designed to lower and raise the rollers. With this system the rollers will elevate before reaching the end of the tail, ensuring higher yield and that the tail part will not get stuck in the roller.

## In-feed roller guide system

The In-feed Roller Guide System makes sure that small fish and fish with very slippery skin are held in place on the conveyor belt. This minimizes gapping issues.



*The in-feed roller guide system is the option you need when processing fillets with very slippery skin.*



*The raising rollers are perfect when processing very fresh fillets.*



*The active tail system ensures that the rollers will elevate before reaching the end of the tail.*

# Options

## Complete vacuum system

To achieve a cleaner fillet and improve the working environment it is possible to supply our pin-bone systems with our innovative vacuum system.

Compared to conventional cleaning systems the Vacuum System removes approximately 90% of the water and bones. The Vacuum System automatically drains the tank when processing.

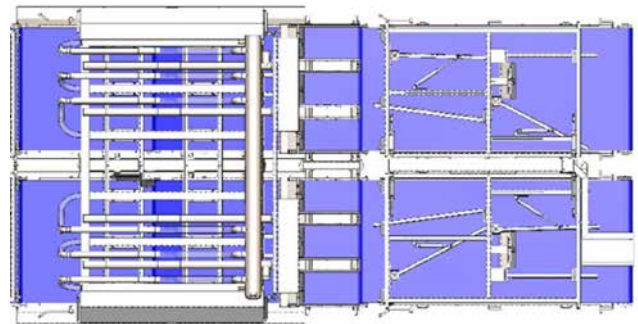
The system includes:

- 150-liter Cyclone Tank for collection of water and pin-bones from the pin-bone remover. Including rack for placement on the floor. Alternatively, the tank can be fitted onto the wall. This option needs to be specified upon order placement. Maximum distance from the pin-bone remover is 9-12 meters Including level sensor, electronic control panel and inspection door for easy cleaning access.
- for emptying the cyclone tank. The mono pump design allows for emptying the cyclone while keeping vacuum on the system. This ensures constant suction at the rollers. Thus, there is no risk of backflow and contamination of the rollers. The pump is capable of pumping a distance of 150 meters.
- connects the pin-bone machine to the cyclone tank including 9 meters of pipes. Note! Mounting brackets for the ceiling/wall are exclusive.
- mounted on the roller heads. For automatic cleaning of pin-bone rollers. The system removes both water and pin-bones. Including hoses and pipes.

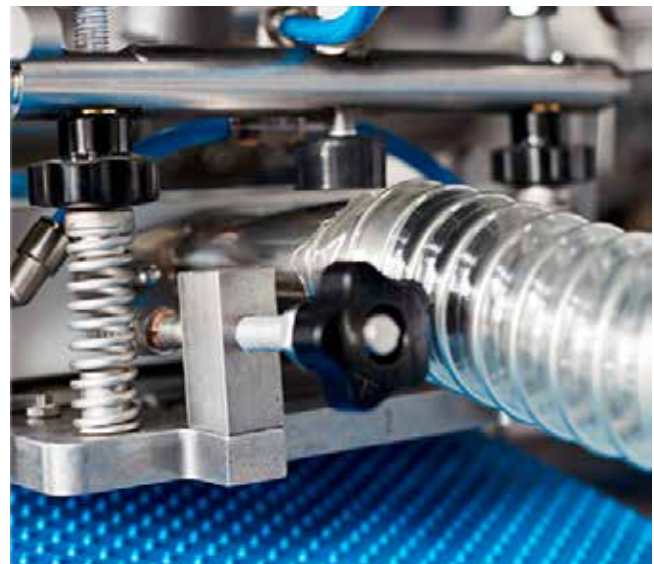
## In-feed speed control conveyor

The conveyor ensures a more accurate and gentle delivery of the fillets between the

in-feed conveyor and the pin-bone machine. The belts have a separate control system, which enables each of the belts to collect the fillets with the same speed as the in-feed conveyor and then lower the speed to the speed of the pin-bone remover.



*In-feed speed control conveyor for the Pin bone remover 400 -NK Six.*

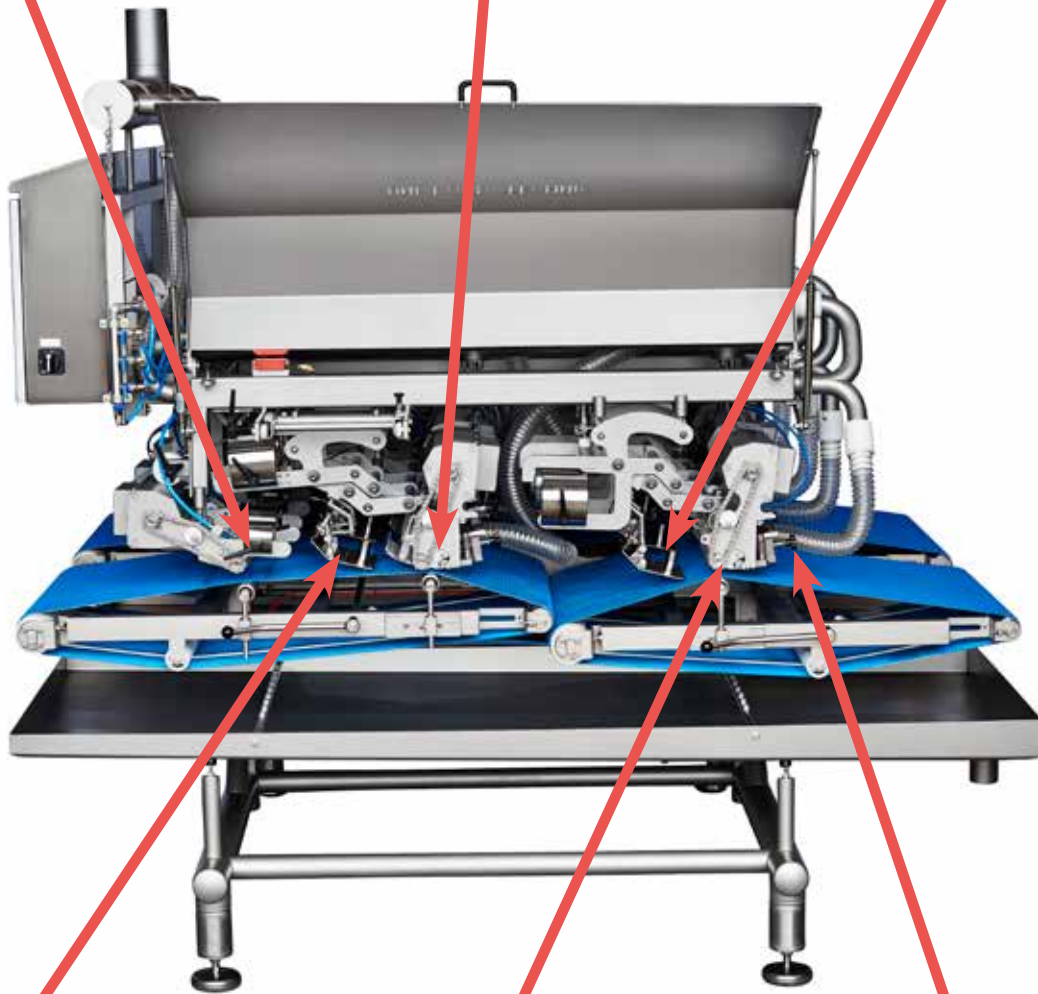


*The vacuum suction heads automatically cleans the pin bone rollers. This ensures a much cleaner production area since water and bone remains will not end up on the floor.*

**Raising rollers  
(Optional)**  
For raising the pin bones  
on fillets prior to removal.

**Pin bone remover**  
This device removes the bones.  
The pin bone device is adju-  
stable, and you can place it in a  
straight or diagonal position.

**Active Tail System  
(Optional)**  
The system ensures that the rol-  
lers will elevate before reaching  
the end of the tail.



**Water Saving System  
(Optional)**  
The Water Saving System  
ensures that the pin bone  
machine consumes water only  
when processing fish.

**Neck-bone Remover  
(400-NK Series)**  
The pin-bone roller removes  
the neck-bones. This unit can  
be adjusted into two positions:  
straight or diagonal.

**Vacuum system  
(Optional)**  
The Vacuum System removes  
approx. 90% of the water and  
bones from the fillets.

# Pin bone removal

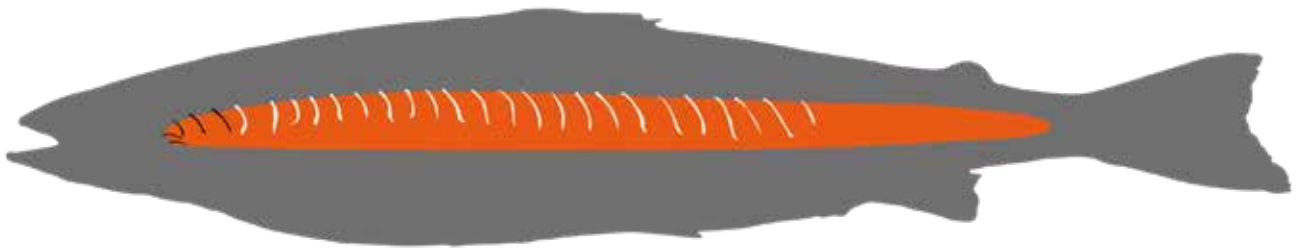
There are 28 pin-bones in salmon fillets - 23 of these bones are found in the back of the salmon and 5 bones are found in the neck.

The 400 Series remove all the 23 bones in the back.

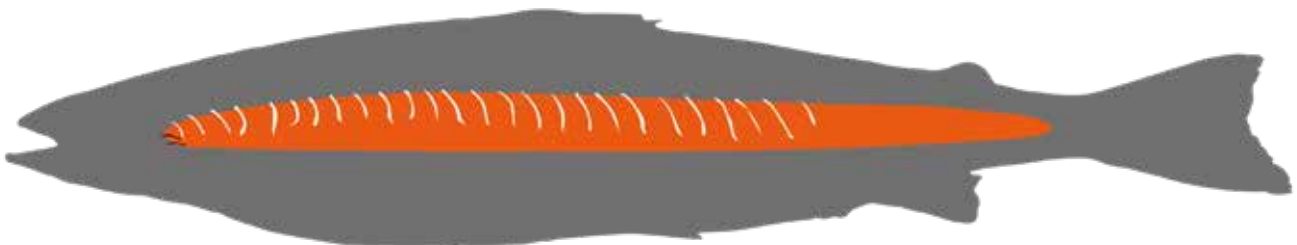
The 400-NK Series remove 3 of the total 5 bones in the neck.

The lowermost 2 neck-bones can be removed but it requires a cut in the neck which results in loss of yield.

Pin-bone removal always requires manual inspection by an operator.



*The rollers in our standard 400 Series will remove all the white bones in the fillet above (not the black bones).*

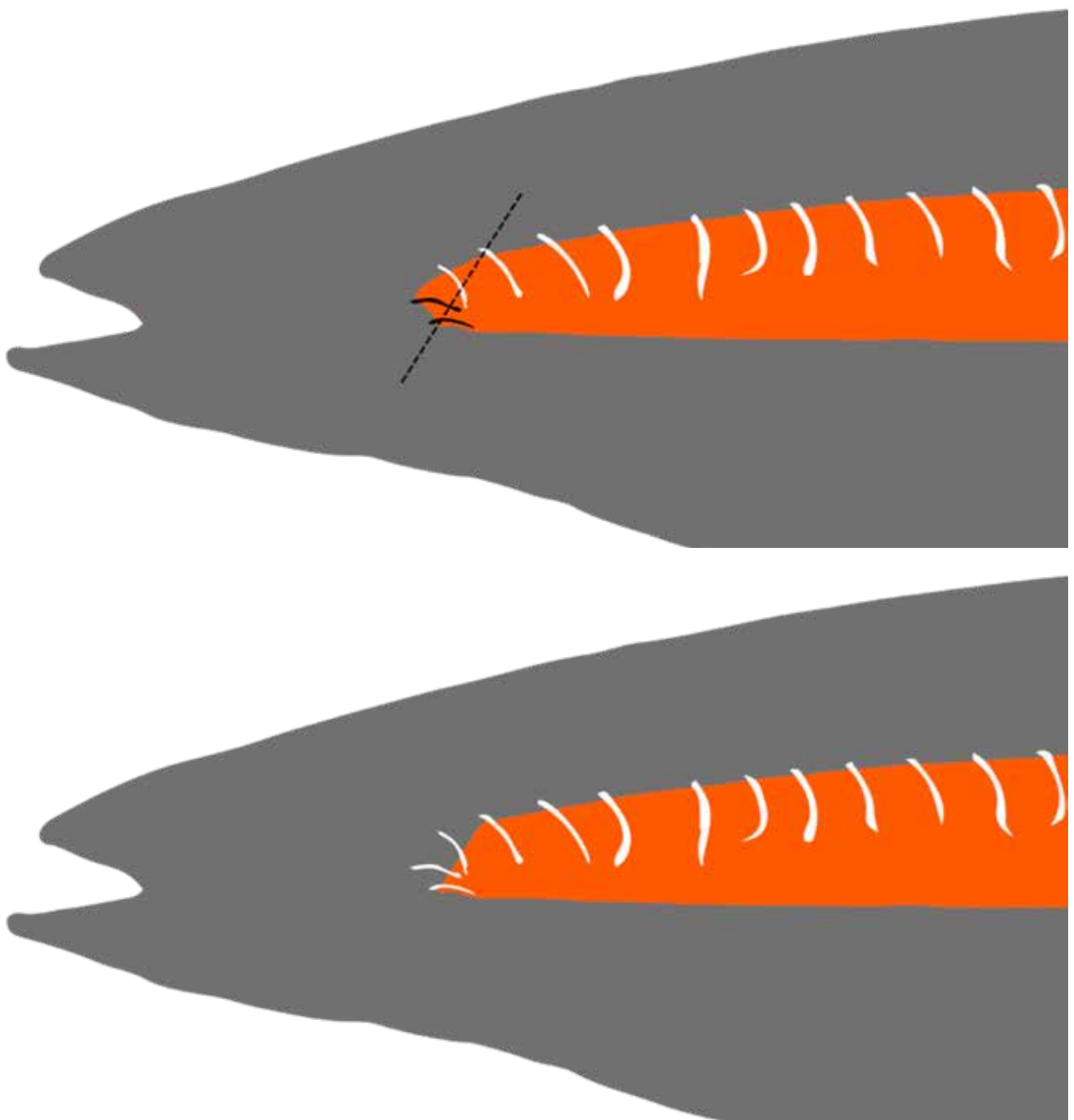


*The rollers in our 400-NK Series will remove all the white bones in the fillet above (not the black bones). Please note that 3 of the neck-bones are white compared to our standard 400 Series.*

### Lowermost two neck bones

The lowermost two neck-bones (marked black on the first picture below) can only be removed if an extra cut is made (see dotted line).

If the cut is made the two lowermost neck-bones can sometimes be removed. But the cut results in loss of yield.



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Make believe.  
Make sense.

