

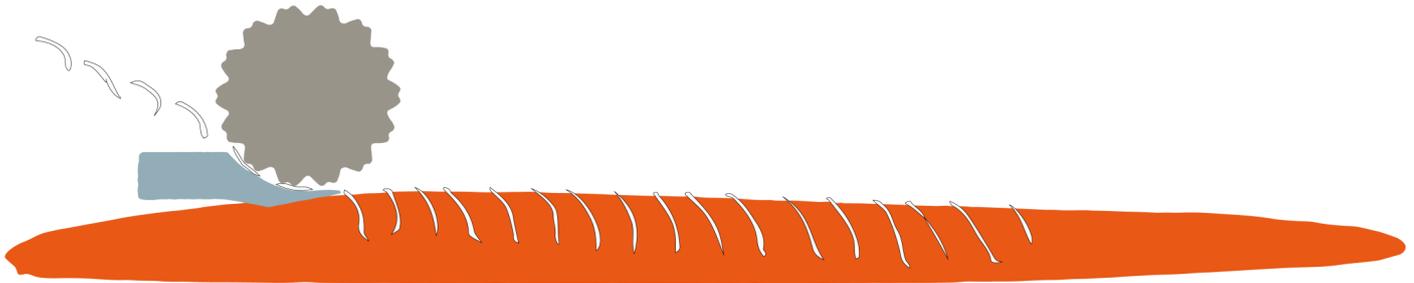
PIN-BONE SYSTEMS

400 Series & 400-NK Series



THE TECHNOLOGY

The Uni-Food Technic Pin-bone Systems remove up to 95% of pin-bones in the fillets efficiently and effectively.



Pin-bone removal

DESCRIPTION

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 of the roller and knife. Air is used for cleaning of 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.

TECHNICAL INFORMATION

- 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.

ADVANTAGES

- Extremely efficient
- Gentle to the fillets
- Minimizes production costs
- Fewer operators are needed
- Return of investment



SINGLE LANE

Pin-bone Remover 400 Single
Pin-bone Remover 400-NK Single

FOUR LANE

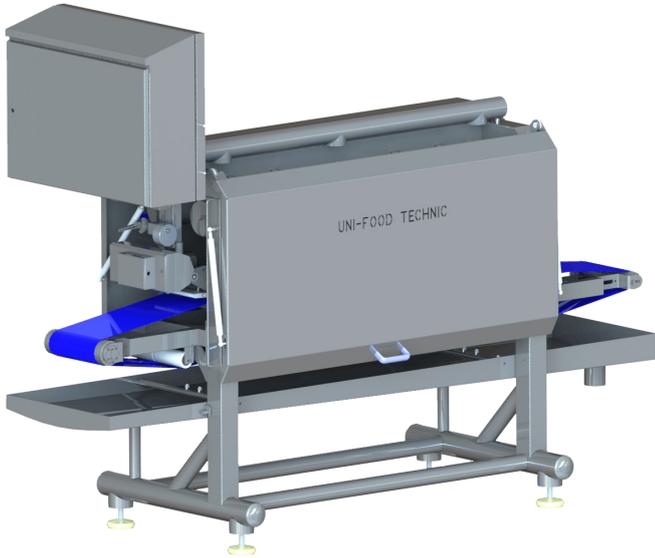
Pin-bone Remover 400 Quadro
Pin-bone Remover 400-NK Quadro

DOUBLE LANE

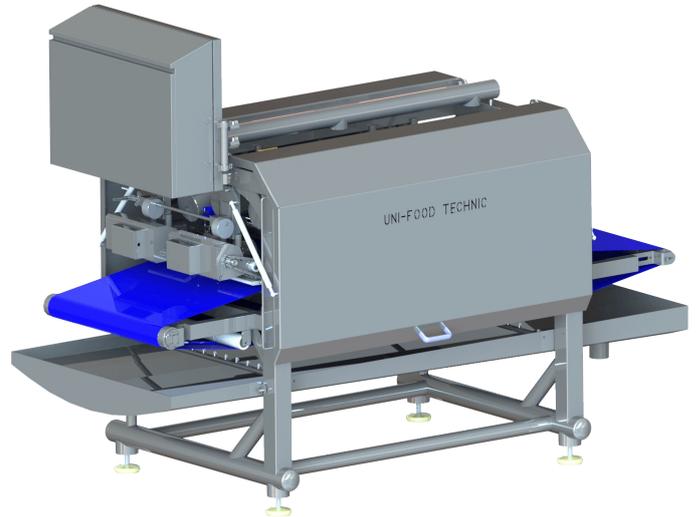
Pin-bone Remover 400 Double
Pin-bone Remover 400-NK Double

SIX LANE

Pin-bone Remover 400 Six
Pin-bone Remover 400-NK Six



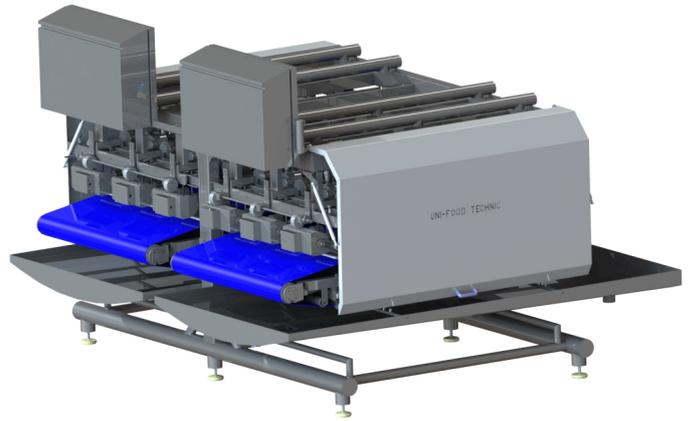
*Pin-bone Remover 400 **Single***



*Pin-bone Remover 400 **Double***



*Pin-bone Remover 400 **Quadro***



*Pin-bone Remover 400 **Six***

TECHNICAL DATA

- Capacity: Our models range from 10 to 50 fillets/min (depending on size and species)
- Process temperature: +4°C to +6°C (the machines are not suitable for frozen 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.

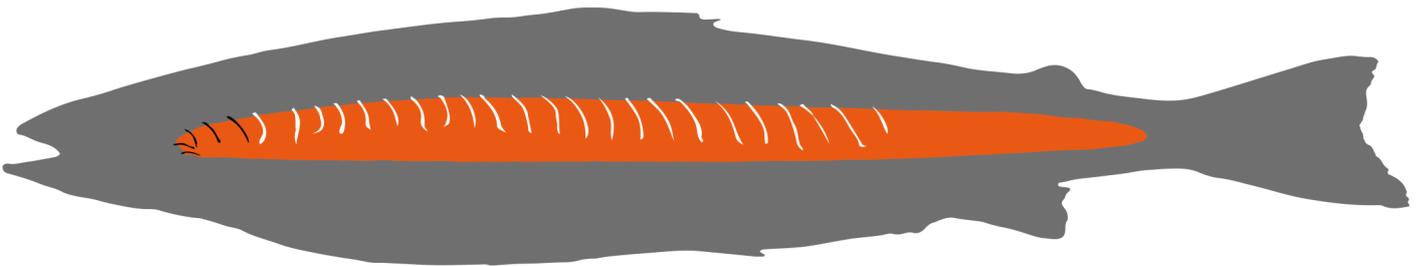
The 400 Series remove all the 23 bones in the back.

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.

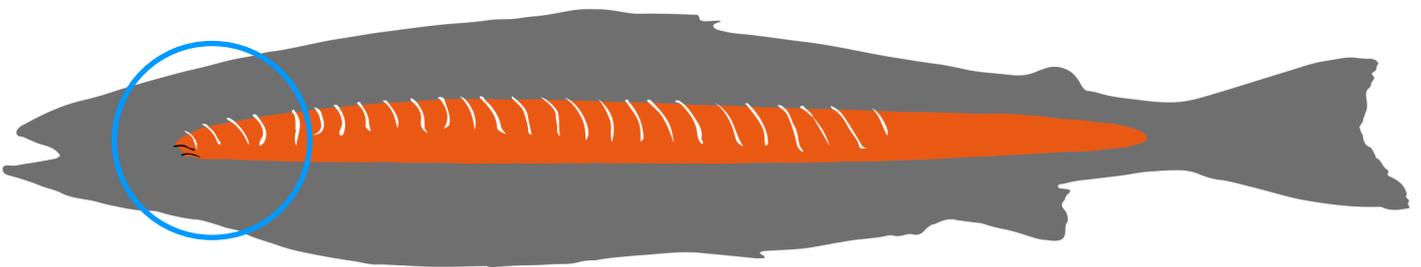
Pin-bone removal always requires manual inspection by an operator.

400 SERIES



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

400-NK SERIES

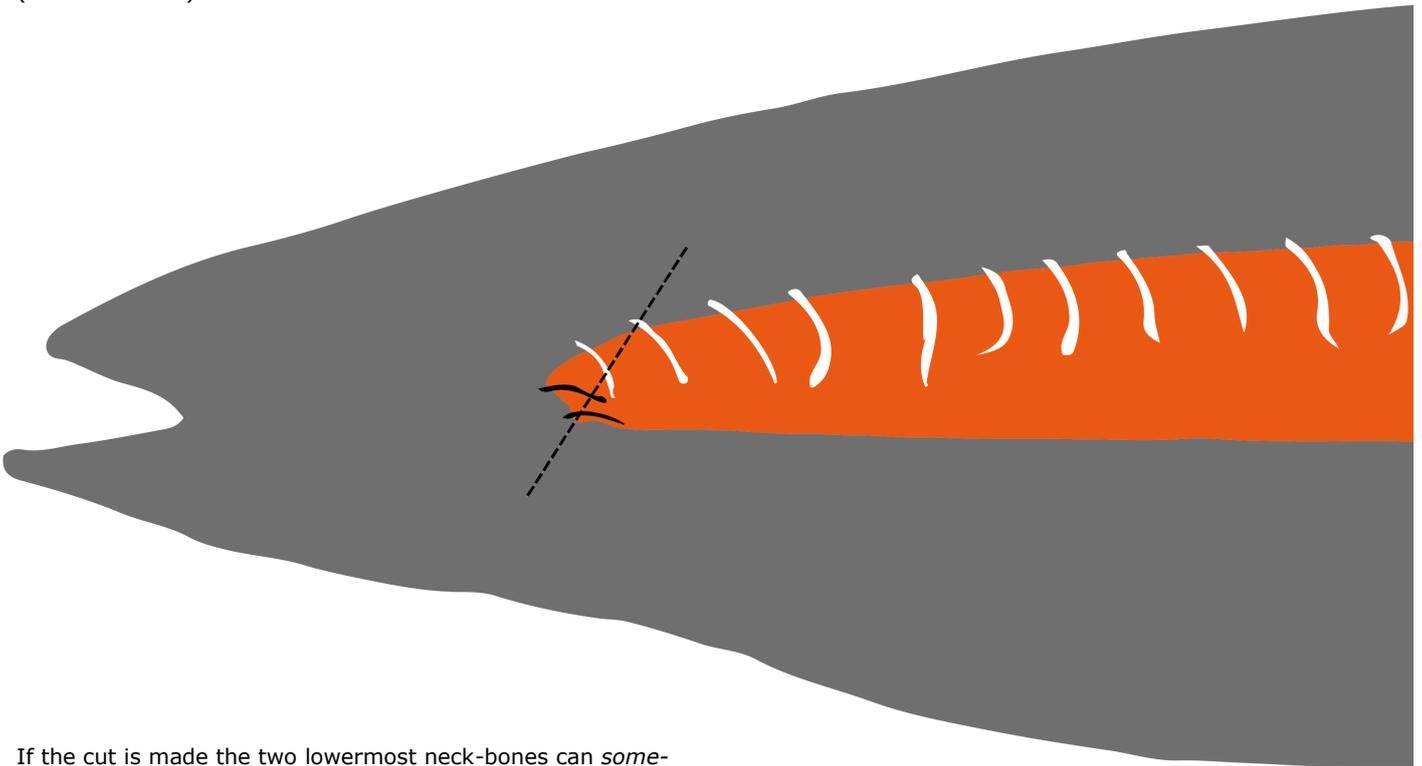


The rollers in our 400-NK Series will remove all the white bones in the fillet above (not the black bones). Please note that 3 of the neck-bones are white compared to our standard 400 Series.

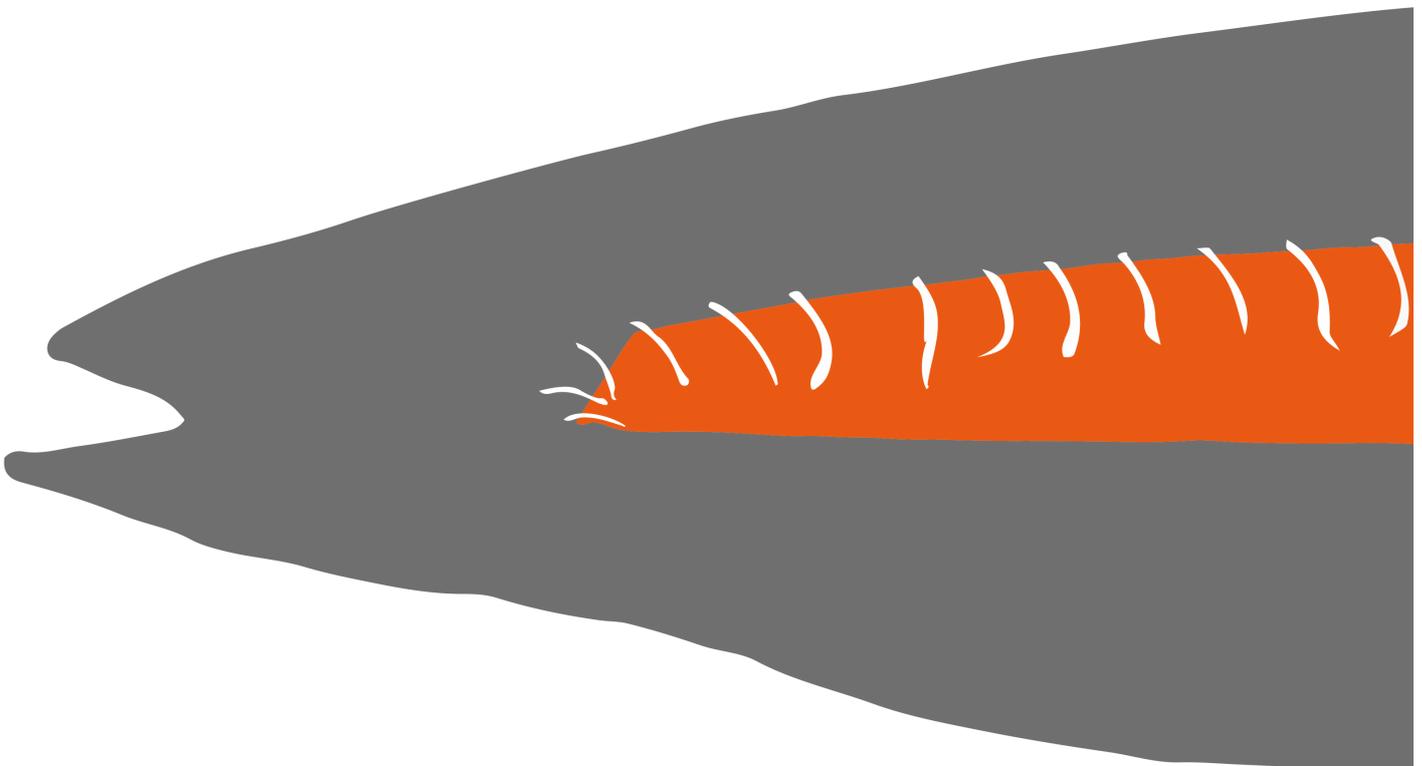


LOWERMOST TWO NECK-BONES

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 some-times be removed. But the cut results in loss of yield.



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

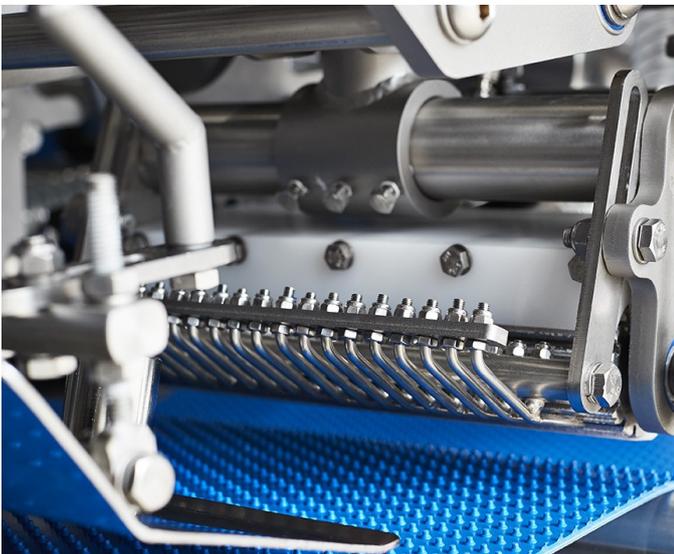
The Active Tail System is designed to lower and raise the rollers. With this system the rollers will elevate before reaching the end of the tail, ensuring higher yield and that the tail part will not get stuck in the roller.

IN-FEED ROLLER GUIDE SYSTEM

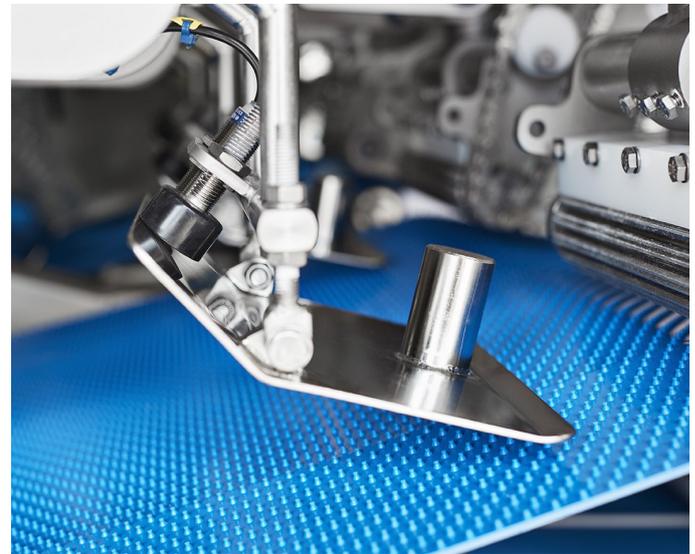
The In-feed Roller Guide System makes sure that small fish and fish with very slippery skin are held in place on the conveyor belt. This minimizes gaping issues.



The Raising Rollers are perfect when processing very fresh fillets



The In-Feed Roller Guide System is the option you need when processing fillets with very slippery skin



The Active Tail System ensures that the rollers will elevate before reaching the end of the tail



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:

300-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.*

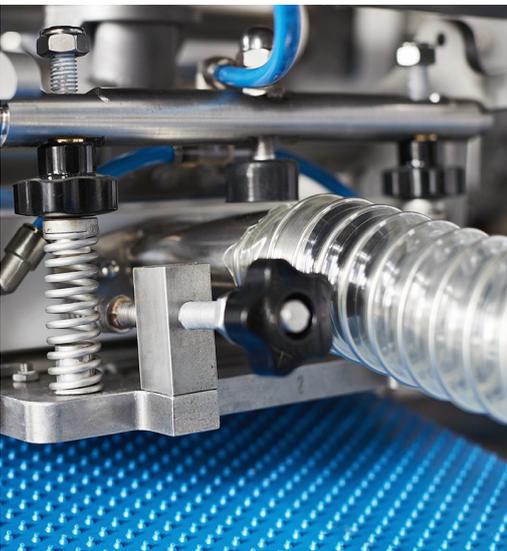
Maximum distance from the pin-bone remover is 9-12 meters.

Including level sensor, electronic control panel and inspection door for easy cleaning access.

Mono Pump 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.

Plastic Piping System connects the pin-bone machine to the cyclone tank including 9 meters pipes. *Note! Mounting brackets for the ceiling/wall are exclusive.*

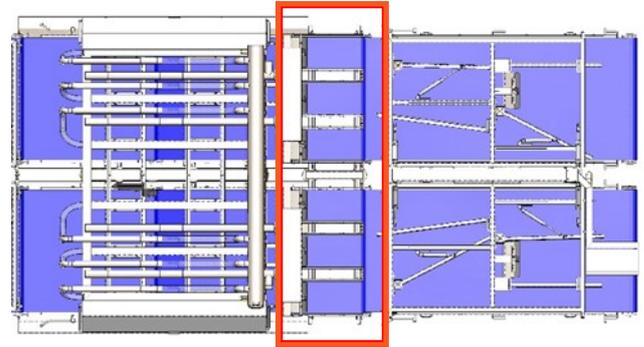
Vacuum Suction Heads, mounted on the roller heads. For automatic cleaning of pin-bone rollers. The system removes both water and pin-bones. Including hoses and pipes.



The Vacuum Suction Heads automatically clean the pin-bone rollers. This ensures a much cleaner production area since water- and bone-remains will not end up on the floor

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

IN- AND OUT-FEED CONVEYOR

The 400 Quadro and the 400 Six can be delivered with an automatic in- and out-feed conveyor for splitting up the fillets from two to four/six lanes.



In- and Out-feed Conveyor for the Pin-bone Remover 400 Quadro



Cyclone Tank



PIN-BONE SYSTEMS

Raising Rollers (Optional)

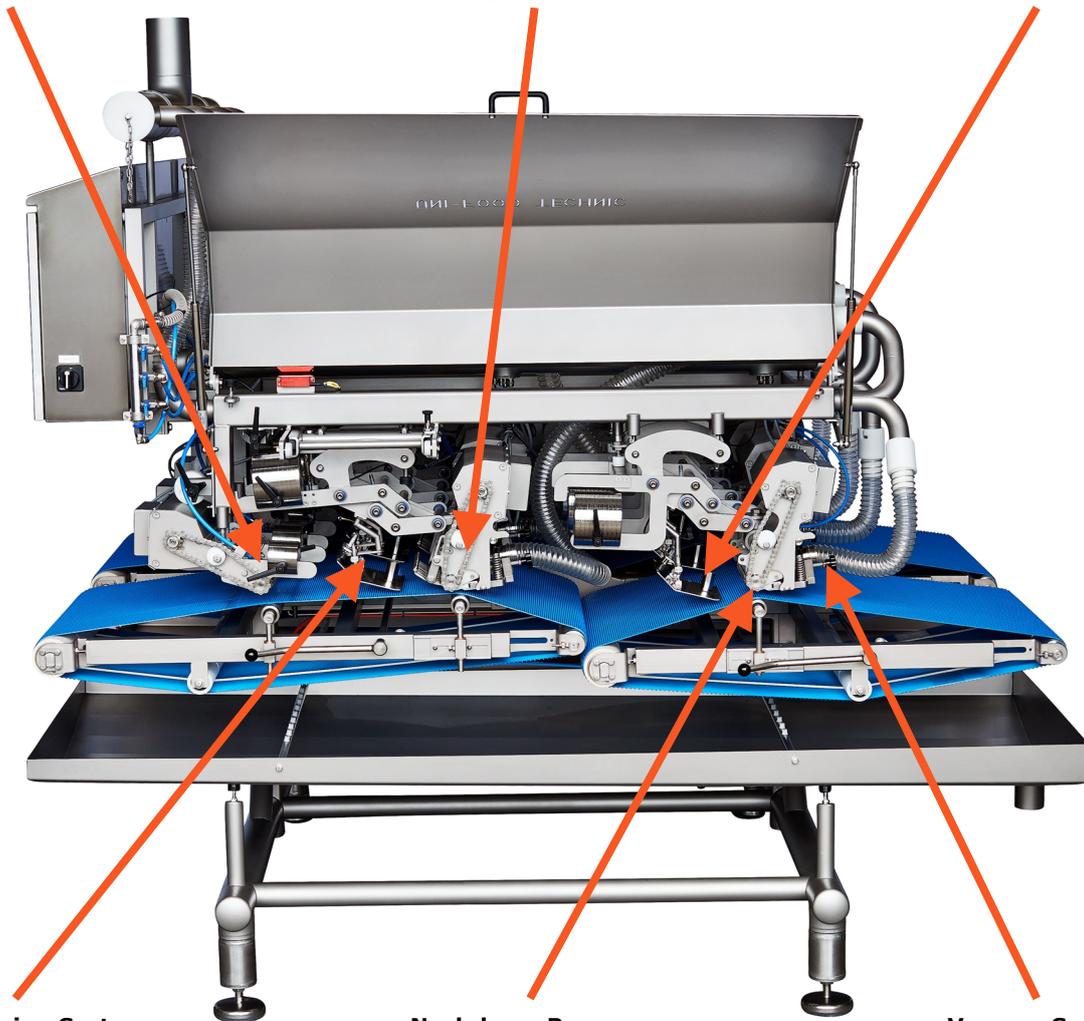
For raising the pin-bones on fresh fillets prior to removal.

Pin-bone Remover

This device removes the bones. The pin-bone device is adjustable so you can place it in a straight or diagonal position.

Active Tail System (Optional)

The system ensures that the rollers 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.

The illustrated machine in the picture is a Pin-bone Remover 400-NK Quadro

