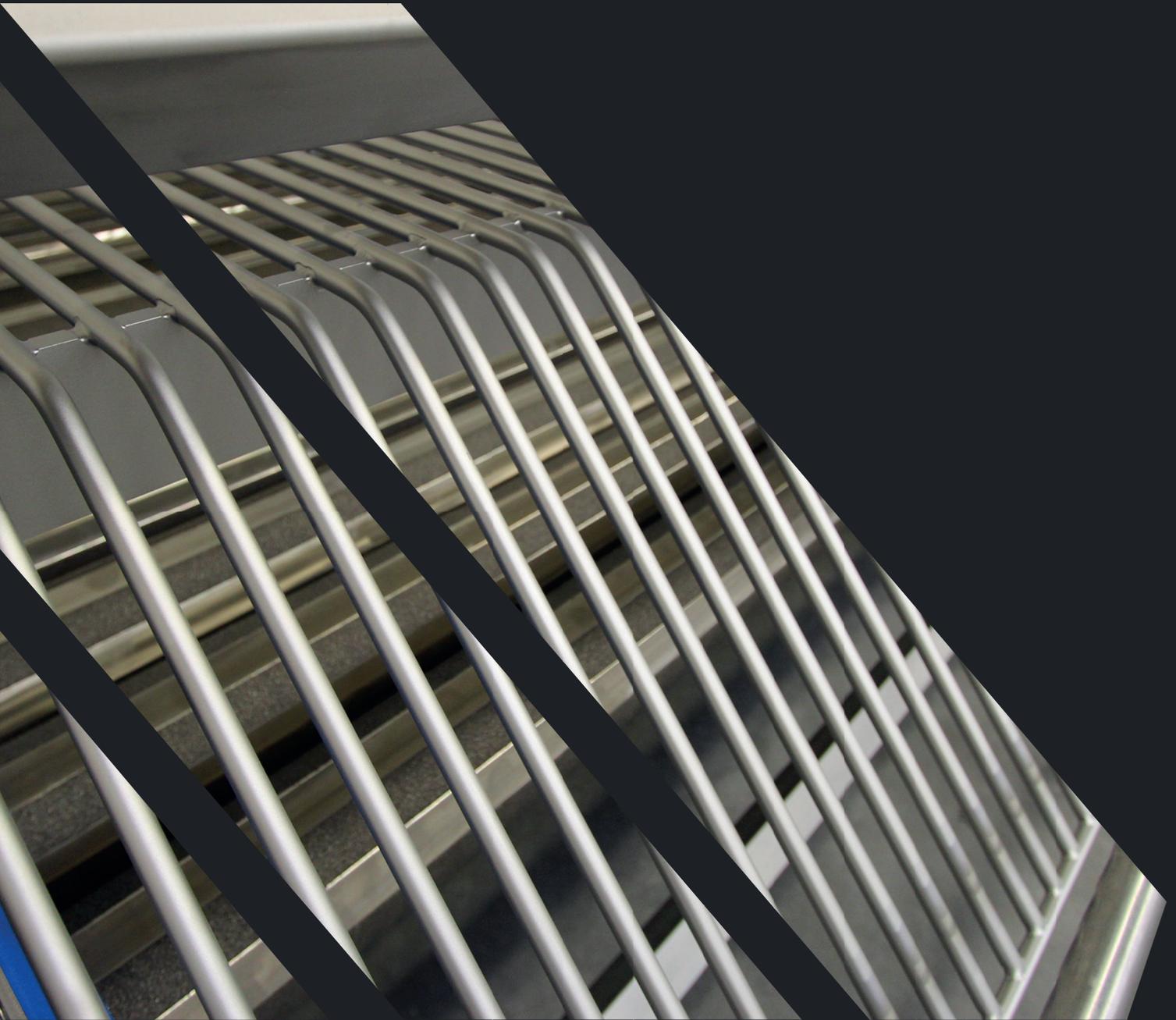


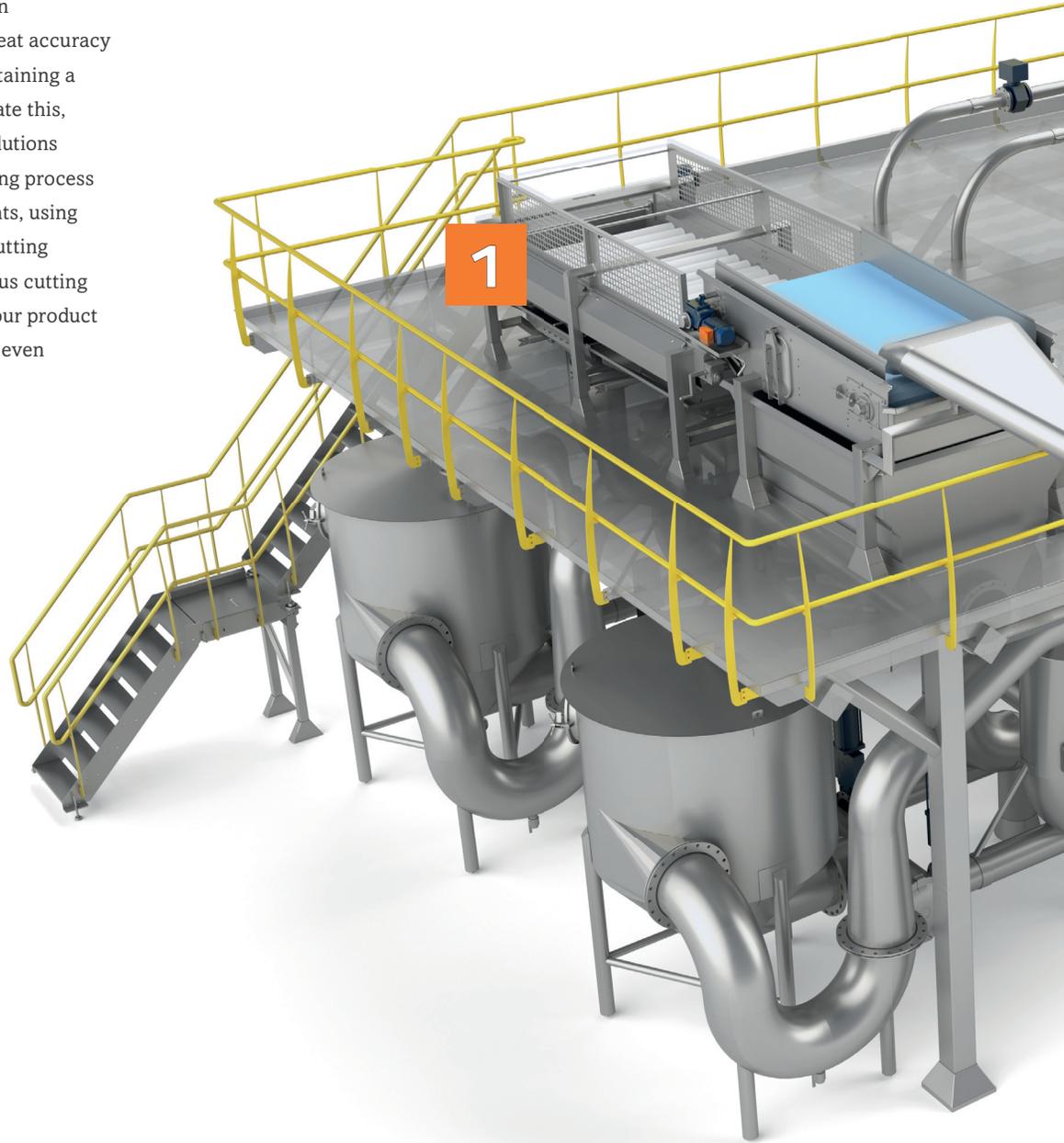


CUTTING LINE



THE CUTTING PROCESS

Cutting potatoes for human consumption requires great accuracy and is an important step in obtaining a perfect end product. To facilitate this, Tummers Food Processing Solutions assembles a high-quality cutting process line based on your requirements, using a series of innovative hydro-cutting technologies. We supply various cutting blocks that allow you to cut your product into slices, wedges, sticks and even crinkle-cut French fries.

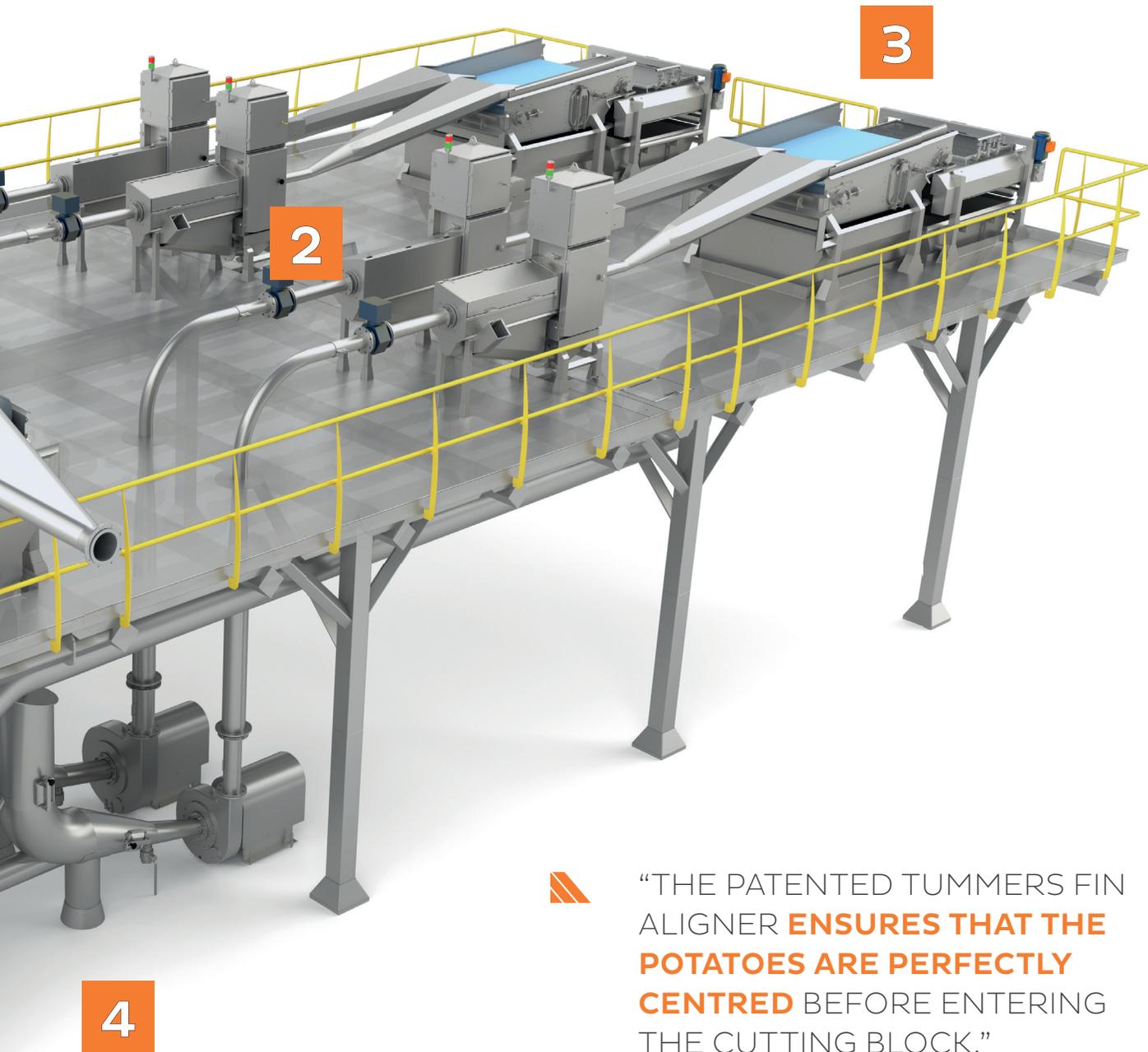


STEP 1: SORTING

Because potatoes are not all the same size, they first enter a continuous sorter on arrival. This machine sorts the potatoes by diameter and size. The Tummers Fresh Produce Pump then transports the products to the correct cutting block for each diameter. The number of cutting blocks and the blade dimensions selected depend on the amount and variation in diameter of the initial product.

STEP 2: CUTTING

The patented Tummers Fin Aligner ensures that the potatoes are perfectly aligned before entering the cutting block. This prevents damage and ensures that the end product always has the optimal length, regardless of the initial dimensions or shape. The perfect alignment and the Tummers Cutting Block reduces “feathering”, which results in optimal product yield and minimal oil absorption during frying.



“THE PATENTED TUMMERS FIN ALIGNER **ENSURES THAT THE POTATOES ARE PERFECTLY CENTRED** BEFORE ENTERING THE CUTTING BLOCK.”

STEP 3: DEWATERING AND SLIVER SORTING

After the product is cut at high speed, it is slowed down on a dewatering belt to prevent damage. A sorting machine then separates the slivers produced during the cutting process from the product with the required size. Because the slivers can be reused in other processes, for example a flake or speciality line, none of your product is lost. This avoids food waste.

STEP 4: WATER RECYCLING

During the process, the pumping water that circulates in the cutting line is cleaned in a balance tank. Starch sinks to the bottom of the tank and is removed for other applications, while the purified water is continuously fed back for reuse in the closed system. This water-saving, low-maintenance solution guarantees you a controlled water level and pumping water at a constant quality.

SORTING AND FEEDING



CONTINUOUS SORTER

Prior to the cutting process, the Tummers Continuous Sorter sorts potatoes by diameter. The stepless adjustable sorting setting contributes to the high efficiency of this sorting machine. The system can be adjusted during operation, which allows production to continue uninterrupted while the sorting settings are changed.

ACCURATE SORTING

During the sorting process, the product to be sorted passes over the machine's transport rollers, which consist of star wheels. The product drops through the openings that correspond with the set size. As we offer the ability to select two or three sorting types, your product is always sorted accurately for the right cutting block.

LOW MAINTENANCE

The components of the Continuous Sorter are made from industrial stainless steel. All parts are selected with care and the machine is fitted with a single drive chain, which means the only maintenance required is lubrication of the bearings and chains.

DOES NOT DAMAGE PRODUCT

As well as sorting potatoes, the Continuous Sorter is also highly suitable for removing stones, dirt and undersized product from field crops. The star wheels on the roller conveyors are made of food-safe PU rubber, which avoids damaging your product.

BENEFITS

- Continuous production while sorting
- User friendly and maintenance friendly
- Suitable for various applications and crops
- Does not damage product

MODEL

CAPACITY

CS-750x1550	22,000 LBS/hour
CS-1000x1550	44,000 LBS/hour
CS-1500x1550	66,100 LBS/hour



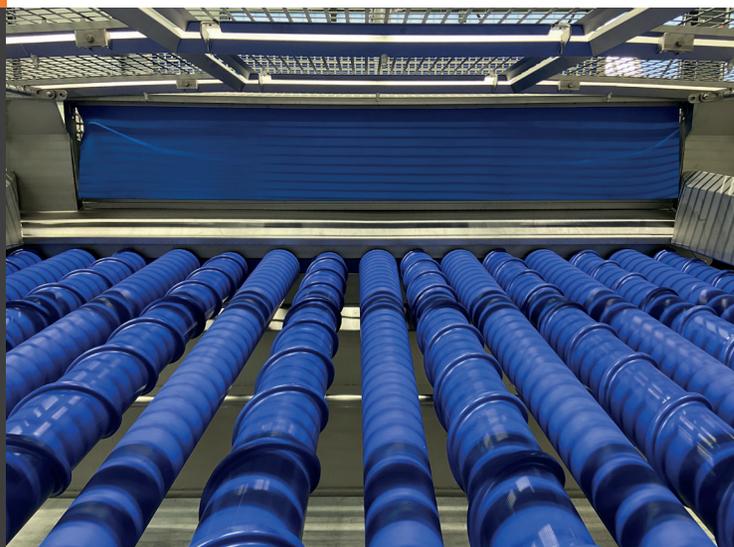


“CUSTOMERS TELL US THAT **THEIR DOWNTIME AND MAINTENANCE COSTS** HAVE **DROPPED DRAMATICALLY** AFTER INSTALLING THE CSS”



CONICAL SPIRAL SORTER

Making something that already exists better, leading to something unique as a result. A challenge you can confidently leave in the hands of our R&D department, as they are always keen to update and innovate. Our Conical Size Sorter (CSS) is a perfect example. Because we would never claim that we invented the potato sorter: that's just not true. Unfortunately. But the way we offer potato sorting now with the CSS is unique and progressive in several ways.



EFFICIENCY

We have improved efficiency in many areas compared to existing sorters. The way we control gap adjustment, for example, the improved distributor valves, the signaling and communication from the machine and the direct drive system.

EASILY ADJUSTABLE IN 6 SIZES

The machine is available in up to six different sorting sizes, and improved technology has made the adjustment mechanism in the CSS very easy to use. During machine operation, that is, thanks to some inventive engineering. The heart of the solution consists of 4 linear actuators that control everything. The unique feature of the CSS is its flexibility. Each shaft has its own drive allowing you to set widths and margins on both sides. This provides all the flexibility you need to fully control and configure the sorting process, and eliminate manual labour.

EASY TO MAINTAIN

Every machine needs maintenance, but the direct drive per roller eliminates the need for chains and minimises the number of moving parts prone to wear in the CSS. Good access to the components also makes the maintenance technicians' work much easier. So keeping the machines well-maintained is less of a challenge and helps us keep our quality at the desired high level.

HYGIENE

Our designers responsible for the CSS obviously took the strict hygiene requirements of the potato industry into account. The design does not use hydraulic systems or chain lubrication, so the working environment is also significantly more hygienic. Furthermore, the use of new SKF Foodline bearings also eliminates the need for periodic lubrication. This allows you to clean the CSS quickly and safely.

All in all, the Conical Size Sorter is a real asset in your sorting process. Especially if you are looking for a solution that you can fully automate, and that is maintenance-friendly and hygienic. Contact us for more information about the models available, our short delivery times and other high-quality aspects of this machine.

MODEL

CAPACITY

CSS-1400x2400-7R

53,000 LBS/hour

CSS-2300x2400-11R

92,600 LBS/hour

CSS-3200x2400-15R

132,300 LBS/hour

FEEDING AND WATER CIRCULATION



BENEFITS

- Renowned technology
- Maintenance friendly
- Does not damage product

PUMP SIZE BALL PASSAGE

4"	3.2 inch
6"	4.3 inch
8"	5.5 inch
10"	7.9 inch

FRESH PRODUCE PUMP

Our fresh produce pump is versatile, gentle with the product and easy to integrate. They are used in several parts of a process line to transport product with water or solely water. With its stainless steel housing, this pump delivers high performance at an attractive price.

RENOWNED TECHNOLOGY

The Tummers Product Pump is the result of our unique collaboration with Pomac, a leading manufacturer of pumps for the food and non-food industries. The pump was originally designed for our cutting lines, but is now used in almost all our fresh produce transportation processes.

MAINTENANCE FRIENDLY

This versatile pump is used to move products through closed water systems when conveyor belts are insufficient or where there is a lack of space. Its simple design, direct drive and only one mechanical seal makes it a very durable machine. Which also means the Tummers Fresh Produce Pump is very maintenance friendly.

DOES NOT DAMAGE PRODUCT

During the cutting process, the pump draws in water on one side and releases it under pressure on the other side. The fully stainless steel version of the pump housing guarantees hygienic transport, while the smooth surface of the cast fan prevents damage to the product.

BALANCE TANK

Tummers hydro-cutting lines consist of a closed water system in which the product is continuously pumped around. To ensure a hygienic production process, the water in the system must be continuously cleaned. Throughout the process, the circulation water flows through a Balance Tank, which filters out starch residues and other sediment.

CONTINUOUS CLEANING

Once the process water enters the Balance Tank, heavier contamination and free starch particles sink to the pneumatically operated draining point at the bottom. A valve discharges the waste concentrate into the drain at specific times. The purified water is continuously discharged from the centre of the tank for reuse.

CONSTANT QUALITY

As well as cleaning the circulating water, the Balance Tank also stabilises the water transport. This low-maintenance, water-saving solution guarantees a controlled water level with pumping water at a constant quality.

STARCH RECYCLING

A pressure sensor monitors the water level in the system and a spray ball at the top of the tank feeds in fresh water, which automatically cleans the inside of the tank. When used in hydro-cutting systems, the tank can also be connected to a starch recycling unit to reclaim free starch particles for use in other products.

BENEFITS

- Continuous cleaning of pump water
- Controlled water quality
- Maintenance friendly
- Ability to reclaim free starch particles

TUBING

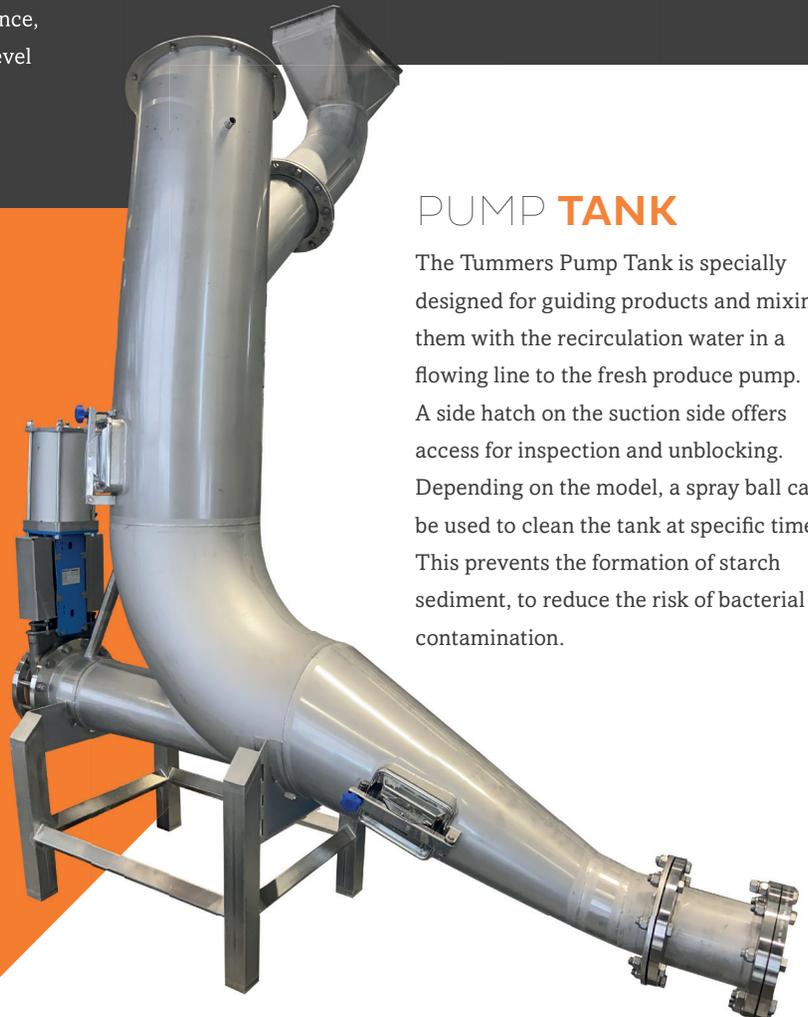
When transporting potatoes from the pump to the process, the water speed needs to be set correctly for the product. Depending on the size of your product, we always set up the right configuration of pumps and tubing to obtain exactly the right cutting speed.

PUMP TANK

The Tummers Pump Tank is specially designed for guiding products and mixing them with the recirculation water in a flowing line to the fresh produce pump. A side hatch on the suction side offers access for inspection and unblocking. Depending on the model, a spray ball can be used to clean the tank at specific times. This prevents the formation of starch sediment, to reduce the risk of bacterial contamination.



“OUR FRESH PRODUCE PUMP IS **VERSATILE, GENTLE WITH THE PRODUCT AND EASY TO INTEGRATE.**”



CUTTING

SWITCHBOX

In industrial food production, blockages can occur and knife blocks wear out. Because swapping knife blocks or resolving blockages manually interrupts your continuous production process, we have developed the Switchbox. This renowned industrial machine swaps your cutting blocks safely and quickly without interrupting production for even a moment.



“THE SWITCHBOX IS
EASY TO OPERATE
USING A MENU-DRIVEN
TOUCHSCREEN PANEL.”



GUARANTEED **PRODUCTION**

The Switchbox features a stainless steel casing with two cutting blocks that switches when the machine detects a dip in production. When this happens, a pneumatic cylinder moves vertically, positioning a new block in front of the central supply tube. Because the Switchbox operates automatically when a dip is detected, continuous production is guaranteed.



EASY **INTEGRATION**

The stainless steel Switchbox can be integrated into any Tummers hydro-cutting line, including existing systems. The machine's unique construction permits easy installation in almost any situation, even where there is limited space.



USER **FRIENDLY**

The Switchbox is easy to operate using a menu-driven touchscreen panel. Two panels provide access to the control components. The acceleration tube and alignment system are easy to (dis)connect using a quick-release system.

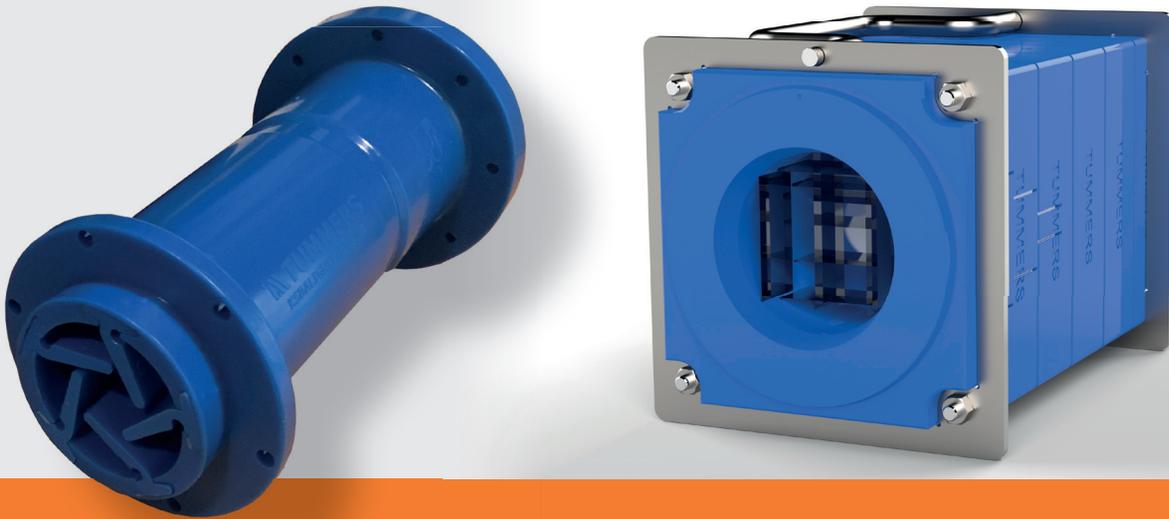


RELEASE **SYSTEMS**

We offer multiple options for connecting the acceleration tube and alignment system to the Switchbox. The most user-friendly option consists of an acceleration tube and Fin Aligner in a mounting cabinet. This is coupled to the infeed side of the Switchbox. This system tensions and relaxes the acceleration tube and Fin Aligner before the cutting block in a single operation. A more budget-friendly alternative consists of an acceleration tube and Fin Aligner that are connected to the Switchbox using two stainless steel handles.

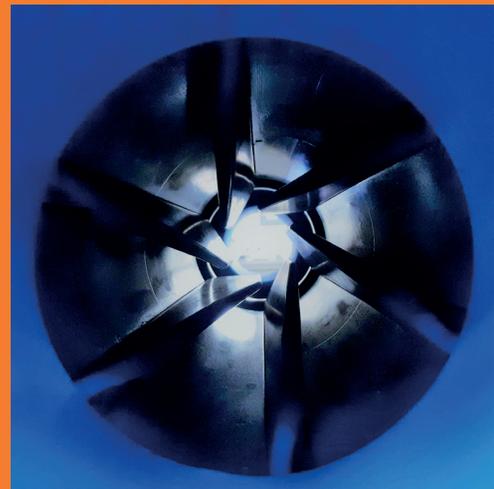
BENEFITS

- Continuous production
- Easy integration
- The compact design of the Switchbox means it can be installed almost anywhere, even where there is limited space.
- User-friendly operation
- Quick attachment of acceleration tube and alignment system



FIN ALIGNERS

Perfect alignment of your product in front of the cutting block is crucial to obtain the best possible end product. So we also offer Fin Aligners, which can be integrated into any hydro-cutting system. These aligners ensure that your product is perfectly centred and aligned for cutting. This means the end product always has the maximum possible length and keeps product waste to a minimum. We supply Fin Aligners in various diameters.



CUTTING BLOCKS

Tummers Food Processing Solutions' Cutting Blocks are known for their perfect cutting quality and long service life. They guarantee an optimal cut and cutting length, particularly when combined with our unique alignment system. We supply knife blocks for all possible cutting methods, including French fries, slices, wedges and sticks. We can also supply specials with specific outside dimensions or flanges to integrate in other cutting systems on request.

CENTER BOXES

Tummers Center Boxes are reliable stand-alone hydro-cutting systems that consist of a mounting cabinet with either a single or double hydro-cutting system. In both systems, the acceleration tube, Fin Aligner and cutting block are tensioned simultaneously using a quick-release system. This allows for rapid changing and cleaning of these components, which minimises downtime.



DEWATERING AND SLIVER REMOVAL

DEWATERING BELT

Our Dewatering Belt separates the cutting water from the product after it has been cut. The continuously circulating water then flows back into a Balance Tank, where it is thoroughly cleaned. This allows it to be reused in the hydro-cutting line, which avoids wasting fresh water.



DEWATERING AND TRANSPORT

Dewatering belts separate solid product from the water flow. After high-pressure cutting, a specially designed spreader first gently brings the mix of product and water to the belt. The water then flows into a dewatering container, while the stainless steel wire link belt transports the product to the sliver remover.

CONTINUOUS RINSING

Dewatering through a belt ensures that the return water is continuously cleaned. Because this quiet machine does not cause vibration, product damage is minimized. Dewatering belts are therefore a cost-effective and less intrusive to the traditional drainage-through-vibration method.

BENEFITS

- Transport during dewatering
- Continuous water rinsing
- No vibration
- No noise

MODEL

OBD-B-1000
OBD-B-1250
OBD-B-2000

CAPACITY

22,000 LBS/hour
44,000 LBS/hour
66,100 LBS/hour

SLIVER REMOVER

Despite the efficiency of the Fin Aligner, which minimises product loss, the natural shape of potatoes causes your batch to still contain slivers. Our Sliver Remover is the most effective way of removing these smaller parts.



DURABLE ROLLERS

Our stainless steel Sliver Remover is designed for industrial-scale production. It separates slivers from sliced French fries and other products. The machine contains octagonal formed rollers with flat and round sides. A durable carborundum coating on the round sides of these rollers provides grip to transport the product. During this process, slivers and nubbins fall between the rollers' flat sides and are removed and possibly rerouted to the potato flake line.

ACCURATE SORTING

The user-friendly design of our Sliver Remover allows for high adjustability and accurate sorting. Thanks to the carefully designed mechanism, the opening between the rollers can be adjusted to match the requirements for the cut product without slowing down production. A receptacle beneath the machine catches the slivers so they can be reused in a flake or speciality line, for example.

BENEFITS

- Accurate sorting
- Minimal maintenance
- User friendly
- Durable sorting rollers
- Prevents food waste

MODEL CAPACITY

SR-0750-07	8,800 LBS/hour
SR-1450-07	16,500 LBS/hour
SR-1450-11	33,000 LBS/hour
SR-2000-07	26,500 LBS/hour
SR-2000-11	39,700 LBS/hour



“THANKS TO THE **CAREFULLY DESIGNED MECHANISM**, THE OPENING BETWEEN THE ROLLERS **CAN BE ADJUSTED TO MATCH THE REQUIREMENTS** FOR THE CUT PRODUCT **WITHOUT SLOWING DOWN PRODUCTION**”



HYDRO-CUTTING SKID



“TUMMERS ALSO OFFERS READY-TO-USE UNITS FOR CUTTING AND CORING A LARGE VARIETY OF FRESH PRODUCE.”

HYDRO-CUTTING SKID

In addition to complete hydro-cutting lines, Tummers also offers ready-to-use units for cutting and coring a large variety of fresh produce. Our compact Hydro-Cutting Skid consists of an independent, mobile hydro-cutting system, which has all the features required for a perfectly cut end product. This machine can be used for testing different products and cutting methods, as well as processing volumes of up to three tonnes an hour.

MULTIPLE CROPS

Just as our hydro-cutting lines, the Hydro-Cutting Skid can be used to cut a wide variety of products. This unit can even be used for de-coring products such as peppers. In addition, when integrated with an optional Switchbox, interruptions to your production process are a thing of the past.

MULTIPLE ACTIVITIES

We supply our Hydro-Cutting Skid as a ready-to-use system. Thanks to the use of high-quality parts, this machine always delivers a perfect cut. After cutting, the product is dewatered and offered for further processing.

BENEFITS

- Compact dimensions
- High capacity
- Suitable for multiple crops
- User friendly, low maintenance and robust

OPTIONS

Due to years of experience and in-depth knowledge about cutting lines, Tummers can help you with setting up your complete turn-key cutting line. The specific options within your line all depend on the requirements for your final product. We are able to create your perfect cutting line, including integration of extra components such as:



OPTICAL SORTING MACHINES

Optical sorting machines quickly identify and sort foreign materials and B-grade potatoes with abnormalities and defects such as mechanical damage. This guarantees you a perfect quality end product. Tummers has extensive knowledge of the various optical sorting machines on the market and can help you select the right machine for your process.



AUTOMATED CONTROL SYSTEMS

Automated Control Systems (ACSs) transform processing lines into turn-key systems by allowing the process to be managed with a minimum of human intervention. These systems can be integrated into any Tummers processing line.



PLATFORMS

Our high-grade stainless steel platforms are used to reach different sections of your processing line for inspection, service and maintenance. These platforms are specially designed for optimum access and safety.



KNIFE GRINDER

The Tummers Knife Grinder sharpens the knives of the cutting blocks to guarantee a perfect cutting edge. This prevents the “smiley effect”. As the knives are continuously water-cooled, this grinding machine is very safe and maintenance-free.



MECHANICAL CUTTERS

Mechanical cutters are ideal for cutting specific shapes, such as crinkle-cut French fries or blocks. These machines can cut almost any shape imaginable. We can fully integrate these cutters, regardless of the configuration of your process line.



RFID CHIPS

The integration of Radio-frequency identification (RFID) chips into hydro-cutting lines is one of the most recent developments in food manufacturing. When deployed in specific components, these chips allow you to quickly verify that all the components required to manufacture your product are present.



DEWATERING SOLUTIONS

The dewatering of your product flow is an important step in obtaining a perfect end product. The ideal solution depends on various factors, including the configuration of your process line and your wishes for the end product. We offer tailor-made dewatering solutions, including bar strainers, sieve bends etc.



STARCH RECOVERY

Once purified, the white starch produced during potato cutting is a versatile raw material. To extract this valuable product, we can equip your cutting line with a starch recovery system. This system extracts the starch from the residue in the cutting water, which prevents product waste.

OTHER PROCESSES

Next to cutting, our turnkey range can provide almost any potato end product. Washing, peeling and drying are among those specialisms. At Tummers we work with you as customer to find the ideal setup for your process line. The possibilities are endless. It just comes down to the form, quality, and quantity in which you want to supply your product. With the utmost care we deliver a suitable solution that meets your requirements.

PEELING LINE



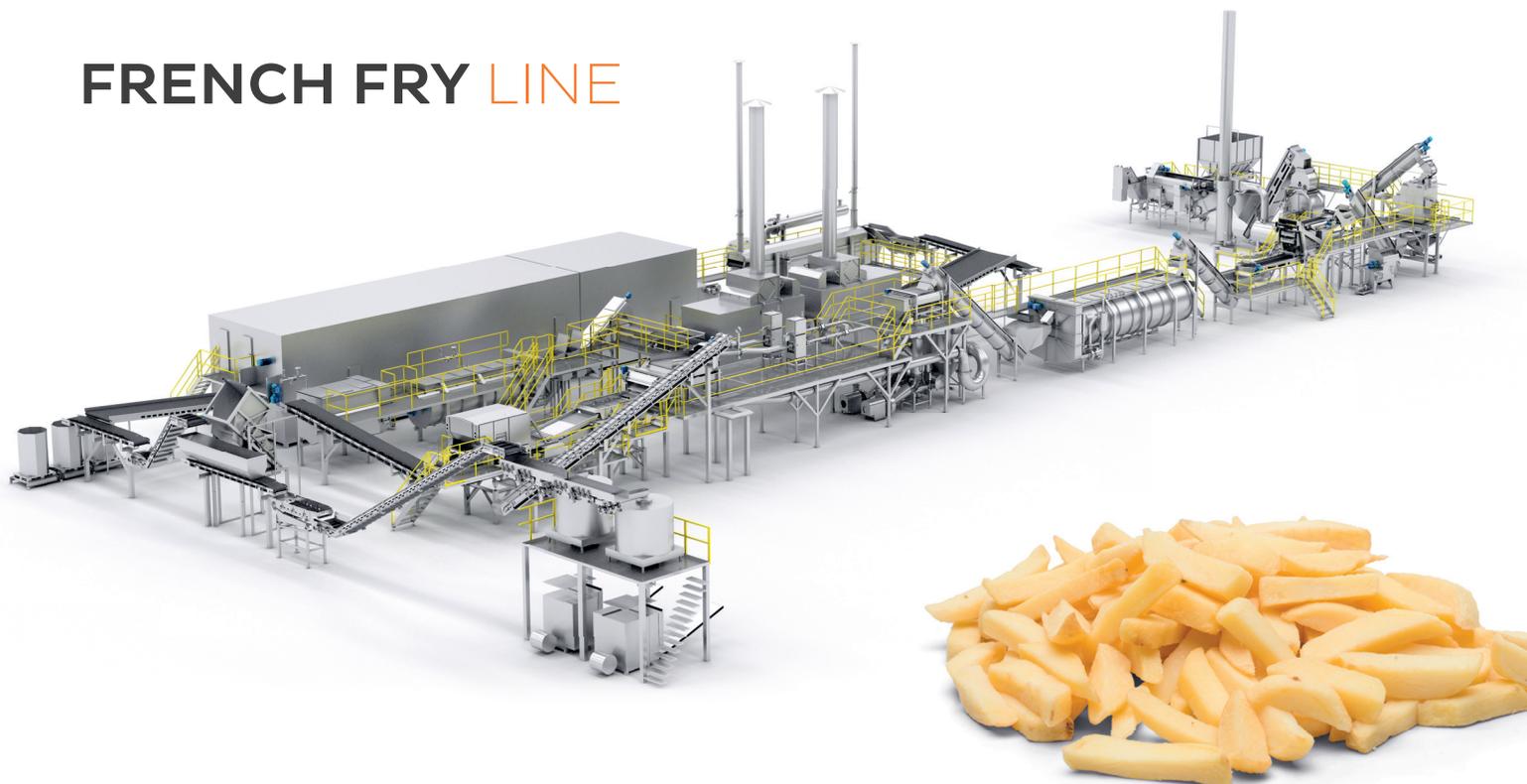
WASHING LINE



FLAKE LINE



FRENCH FRY LINE



GLOBAL SERVICE

At Tummers, we are committed to sustainability, quality and service. Because we design and manufacture our systems in-house, our employees possess broad knowledge. Across the globe, our team of service engineers are ready to assist you and to obtain the highest possible yield from your equipment at the lowest possible cost.





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