FTNON

Magnetic Onion Peeler

Yield - Hygiene - Convenience

FRESH-CUT, ROBOTICS, STEAMING

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Yield - Hygiene - Convenience. These are the key features of the new onion peeling machine developed by JBT FTNON in collaboration with Gills Onions and the American USDA. The design, components and materials have been specially selected to ensure that the machine gets a very high score on all the points listed above. JBT FTNON has applied a technology using permanent super magnetism, eliminating the use of wires, tubes, belts and springs resulting in a machine running with frictionless components, tremendously reducing the costs of maintenance.

The MOP-200 clearly sets new standards in onion peeling.
The machine is designed to meet the new hygiene standards.
Moreover, the system is simpler than ever.
The result:

- More 'up-time'
- Lower maintenance costs
- Greater ease of use
- Optimum peeling performance.

Appearance

Even at first glance, it is clear that the MOP-200 looks different from existing machines. Sleek lines, very few protruding parts and controls integrated into the design give the machine a completely unique look. But appearance isn't the main reason why JBT FTNON chose this design. The purpose of the design is, to make the machine easy to operate, clean and maintain and to give optimum peeling performance.

The new hygiene standard

The hygiene requirements in the food sector are becoming more stringent all the time. There is increasing emphasis on preventing sources of bacteria, and the problem of cross-contamination is receiving the full attention of governments, consumers and health inspectors. The risk of recalls is becoming more real, and can sometimes even lead to factory closures. The new MOP-200 is fully prepared to meet these requirements through its design and choice of components.

Convenience

Thanks to its convenience and the available scope for cleaning and operation, the MOP-200 sets new standards in the onion peeling sector. The machine is also much easier to use. Furthermore, the new machine does not need to be elevated and the main part of the machine can be positioned slightly above the factory floor, saving on platforms and space in general. Operators, cleaners and service personnel can therefore carry out their work from the floor.

Working principle

The Magnetic Driven Onion Peeler operates as follows:

- The onions are fed into the hopper and are transported up via adjustable fingers. A wiper system assures that onions are singulated before they are positioned in cups which move into the peeling section
- An operator has to position the onion horizontally in the cup, after which the onion is topped and tailed via the top-and tail knives that dynamically follow the shape of the onion. As the onion moves through the peeling section it is kept in the cup via an adjustable pressure system
- An incision cutting mechanism makes a horizontal incision at the back and at the front of the onion to ease the removal of the outer skin of the onion
- The depth of the cutting can be set to cut one or more layers depending on the required quality.

After the horizontal incisions have been made the Magnetic Driven peeling wheel takes the onion off the cup and rotates the onion, completely frictionless, in a double horizontal Magnetic Driven onion holder. All rotating, clamping and opening actions of the Magnetic Driven peeling wheel occur completely frictionless, based on magnetism, without springs, belts or other components. While rotating the onion around its own axes, another incision is made around the entire circumference of the onion. The incision depth can be regulated so that either one or more layers can be cut. A directed jet of air, limiting the air consumption, blows the cut skins from the onions. The waste is transported to a waste hopper via a funnel.

Characteristics in short

Maximum 'up-time'

The machine can be cleaned better in a short time. Its open structure provides easy access to every part of the machine. Covers can be removed easily, and the onion topping, tailing, pressing and cutting units are directly accessible once the covers on the machine are open.
These units are modular in structure and attached in such a way that they can be installed and removed in seconds.

Convert to a different onion size in minutes

This machine always holds the centre of the onion. Therefore, there is no longer any need to enter the numerous settings that are required to give good peeling results in conventional onion peeling machines.
With just a few simple actions, the machine can be adjusted for optimum peeling of any type or size of onion.

Optimum yield

Thanks to its careful design and construction, the MOP-200 gives even higher yield performance, partly due to the fact that setting and adjustment have been greatly simplified.

No contamination of product and waste

Another feature of this machine is that it does not have a fan to separate the waste from the finished product. As a result, no waste is accidentally blown into the surrounding area. On this machine, the waste peel is removed at the rear of the machine, while the peeled product is discharged at the side. Waste and the peeled product are therefore separated at the earliest possible stage so the machine suffers less contamination, which makes a big difference in terms of cleaning.

Design for hygiene

The sleek design and lack of chains and other hygienically vulnerable components are not the only distinctive features of this new machine. The design is without pipes and tubes. The entire structure is based on sheet metal solutions. In addition, the number of the number of components has also been drastically reduced.

Optimized maintenance

Maintenance and repair of the machine have also been made much more straightforward as the main machine components are modular in structure and simple to remove.
Modules can be changed easily and the machine continues to run during maintenance of the modules.

Innovation

The uniqueness of this product lays in the application of a design that is completely new. Because of the application of this new design machines can be build and maintained easier with less components, are more hygienic because of less components that are easier accessible, are more sustainable since permanent super magnets do not wear and run without friction and the technology is used to replace components that do wear (springs, belts, moving components).

Sustainability

All components that move and have friction, such as friction belts, springs, arms moving on a curve disk, have wear and require periodical replacement, using up the earth's resources. The permanent super magnets used by JBT FTNON have a permanent magnetic field, with no loss of strength, no wear. The clamps are driven by magnets, opening and closing the clamps completely frictionless, thus no wear. The rotation of the onion in the onion clamp holder is done by magnets, without physical contact, thus completely frictionless. If ever a technology excels in sustainability, it is the super magnetism technology patented worldwide by JBT FTNON.

Single infeed, dosing, and singulating belt

- Infeed hopper with continuous moving back plate
- Continuous belt with flexible transportation pins
- Turning wiper system to remove double laying onions.

Capacity

± 80-100 onions per minute.
The capacity is determined by the size of the onions, the capacity and experience of the operator(s) and feed system to the onion peeler.

Product requirements

- Onions with a diameter of ±. 60 mm-140 mm / 2 ½" - 5 ½"
- The diameter variation of the onions per operation run should not exceed ±. 20 mm / 0.8"
- The onions should be of a reasonable quality, in general round shape and have to be deleafed.

Controls

The machine is provided with a stainless steel control panel. The control panel is placed next to the machine.

Example MOP-200 in line, consisting of Infeed bunker IFB-004, Magnetic onion peeler MOP-200, Spiral roller inspection system SRI-200 and a Slide chain conveyor (SCC) for the disposal of waste.

Technical Data

The peeler is completely made in stainless steel 304, including electro motor and gearbox and equipped with fully enclosed bearings.

Air connections	½"
Water connection	½"

Motor power needed total

Topping and tailing	1.1 Kw
Drive of cup belt and peeling wheel	1.5 Kw
Drive pressure belt	0.18 Kw

Volume of air

±. 1.2 m3/min. / 42.4 ft3/min., max. 7 bar (clean and dry air, no oil) at the machine.

Volume of water

± 5 liters/shift / 13.2 US Gal/shift (excl. tail and topping knife) for pick up units and cleaning the belt

Options

Outfeed peeled onions

Outfeed of peeled onions is possible on the left or right side.

Water on knife

Water on tail and topping knife	½"

Internet connection

Internet connection with JBT FTNON for technical support.

Spare parts kit

This Spare parts kit includes wear items so you can produce for 3 months.

This product may be covered by one or more of the following patents: US8328000, BE2277397, DE2277397, ES2277397, FR2277397, GB2277397, PL2277397, NL2277397.

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