



TETRA PAK® UPGRADES

Extended value from your equipment



We maximize client operational life cycle performance.

Tetra Pak® Services cover every aspect of your food production, from daily routines to business insights. Our tailored service solutions improve performance, optimise costs and ensure food safety throughout the lifecycle of your operation.

With Tetra Pak as your partner, you get the people, portfolio and presence to achieve your performance goals.





TETRA PAK® UPGRADES

A complete portfolio of services for all your operational needs

Tetra Pak® Upgrades are retrofittable kits, pre-defined products or customised solutions that further improve the performance of your installed equipment.

We will support you in

- 1 Understanding the effect of changes from production demands
- 2 Enhancing upgrade solutions
- 3 Minimizing installation time and downtime
- 4 Maintenance across entire equipment life cycle

We provide services for a diverse range of industries to help you improve



Sustainability



Productivity
& Efficiency



Food Safety
& Quality



New Requirement
for your Line



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01 PROCESSING



We focus primarily on 5 different food applications, namely dairy, beverages, prepared food, ice cream and cheese. All our applications and technology have been developed primarily for processing these food categories.



Sustainability

Hibernation Mode	IntelliCIP™ 2.0
Mix Phase Reduction	Eco Cooling Homogenizer
Seal Water Recovery	Green Flush



Productivity & Efficiency

Improved Running Time	Automatic CIP and Refill of Homogenizer Dampers
Improved Homogenising Efficiency	Improved Homogenizer Performance for Abrasive Products
Vacuum Control	Powder Valve



New Requirement for your Line

Production Capability Updates – New Capacity	Production Capability Updates – New Application	Aseptic Line Flexibility	Non-Aseptic Line Flexibility
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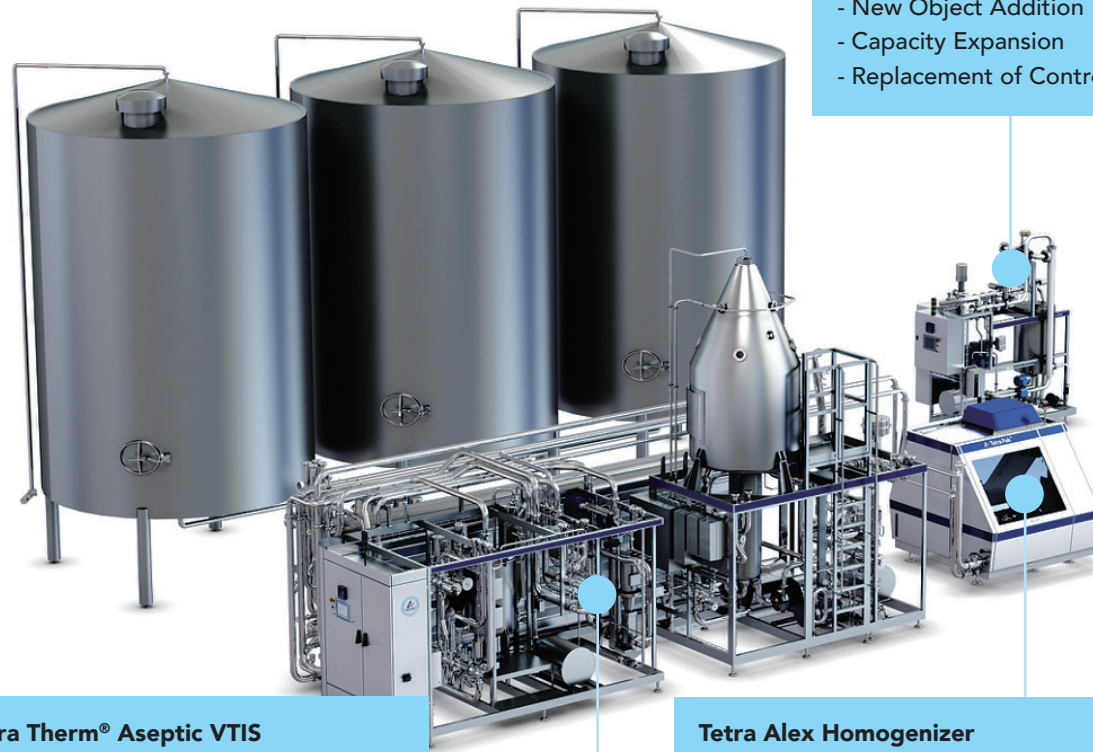
PROCESSING UPGRADES PRODUCT PORTFOLIO

Plant Level Upgrades

- Water recovery to rinse-water tank
- Product recovery systems
- Energy recovery systems
- CIP Station Upgrades
- Valve cluster & piping upgrades
- Key component upgrades
(Separator, Homogenizer, Pasteuriser)

Tetra Alcip®

- New Object Addition
- Capacity Expansion
- Replacement of Control Panel



Tetra Therm® Aseptic VTIS

- Aseptic Energy Hibernation
- Differential pressure measuring
- Conductivity switch
- New Control Panel
- E-Series HMI Upgrade
- Mix phase reduction
- Increased capacity & add new product

Tetra Alex Homogenizer

- Homogenizing Device, HD 100 & Energy IQ
- Eco Cooling Homogenizer
- Cross Head Seal Mushroom Valves
- Turnable Disk (TD)
- Valves Solid Ceramic Pistons
- Machine Control
- Remote reading 1st and 2nd stage

Tetra Alsafe®

- Low Fouling End Valve Cluster
- Aseptic Filling Flexibility, Single ISB Connection
- Aseptic Filling Flexibility, Double ISB Connection
- New Control Panel
- E-Series HMI Upgrade
- Full Aseptic Line Flexibility



Hibernation Mode

UG Name	Hibernation Mode
System/Machine affected	Tetra Pak® Pasteurizer, Tetra Pak® Indirect UHT, Tetra Pak® Direct UHT (Tetra Therm family)
Value Category	Operational Efficiency & Environment
Implementation Time	~5 days



What does it do:

The hibernation mode is a feature that will reduce steam, energy, cooling water and ice water during sterile water circulation.

Sterile water is circulated in the module during the stand by phase until the production starts again. With the hibernation mode, the module will automatically or by manual operation after a set time, go into hibernation mode.

The capacity is reduced to a minimum and extra cooling sections are shut off. This reduces the amount of energy and cooling water by up to 90%.

Hibernation Mode upgrade is composed by:

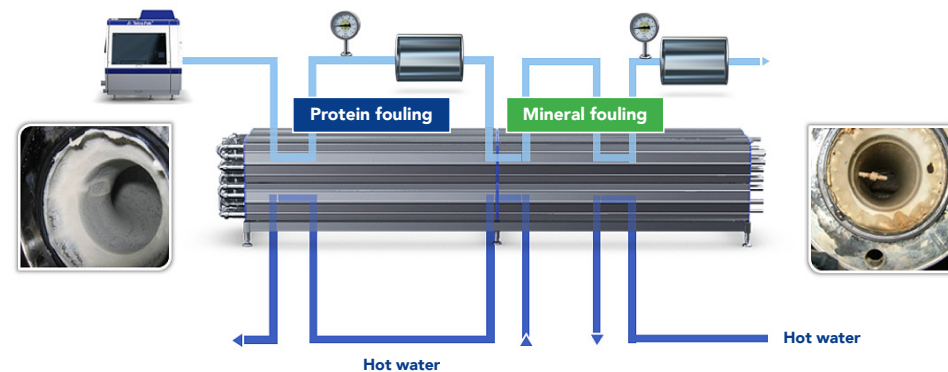
- Update of the existing software programs, PLC and local HMI
- Update of the technical, operator and electrical documentation

Benefits:

- Improving the operational efficiency & environmental impact
- Reduced consumption of steam/water/electricity
- Opex Optimisation

IntelliCIP™ 2.0

UG Name	IntelliCIP™ 2.0
System/Machine affected	Tetra Pak® Indirect UHT (Tetra Therm Aseptic Flex)
Value Category	Operational Efficiency & Environment
Implementation Time	~5 days



What does it do:

IntelliCIP™ 2.0, including CIP sensors for monitoring of CIP result enables the customer to follow how the fouling is removed (presented as a graphs in the HMI) from the surfaces inside the plant while cleaning is in progress. This gives the opportunity to optimize the cleaning procedure and only cleaning according to need.

- Demand-adapted CIP
 - type of product
 - length of production cycle
 - amount of fouling (ΔT and ΔP)

IntelliCIP™ 2.0 upgrade is composed by:

- Pressure sensors
- Update of the existing software programs, PLC and local HMI
- Update of the technical, operator and electrical documentation

Benefits:

- Improving the production efficiency, environmental impact & increasing uptime
 - Safeguard CIP result and maximize uptime
 - Accurate dosing cuts detergent consumption
- Optimizing energy consumption in different phases due to shorten CIP time based on level of fouling



Mix Phase Reduction

UG Name	Mix Phase Reduction
System/Machine affected	Tetra Therm Family
Value Category	Operational Cost and Environment
Implementation Time	~5 days



What does it do:

Mix Phase reduction enables the customer to reduce product losses when switching between water and product and vice versa. Due to a very specific solution of the inlet valve arrangement of the balance tank, a reduction of the mixing phase can be realized. Other improvements apply to the inlet solution, which carries an electronic level control. The device controls the feed pump if cream is processed and the inlet valve if milk is processed. The frequency controlled product pump is also linked to this device. In addition, a frequency controlled pump will have a lower energy consumption.

Mix Phase Reduction is composed by*:

- Sensors
- Update of the existing software programs, PLC and local HMI
- Valves

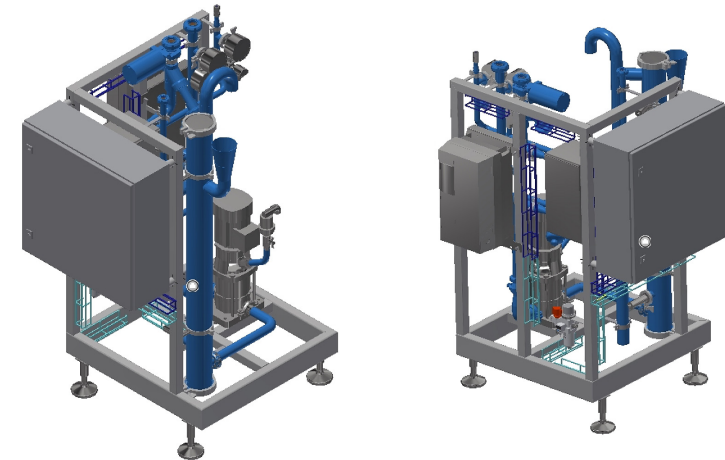
*depending on existing version the scope will vary

Benefits:

- Reduced product loss
- Reduced operational cost
- Reduced environmental impact

ECO Cooling Homogenizer

UG Name	ECO Cooling Homogenizer
System/Machine affected	Tetra Pak Direct UHT Tetra Pak Homogenizers
Value Category	Environment
Implementation Time	~2 days



What does it do:

ECO Cooling Homogenizer is a water recirculation unit able to collect and reuse the cooling water from the homogenizer. It is a complete skid ready for installation.

Benefits:

- Improved environmental footprint
- Reduced operational cost
- Improved brand image



Seal Water Recovery

UG Name	Seal Water Recovery
System/Machine affected	All filtration plants, in production areas with shaft seal water depending pumps (many pumps in a larger filtration system and water running on floor)
Value Category	Environment, OHS
Implementation Time	1-2 days



What does it do:

- The unit recovers and circulates shaft seal water in a closed circuit
- Fits all types of filtration plants MF, UF, NF and RO
- Designed as a plug-in module with its own control panel
- It reduces the amount of water running to the floor of the process room
- Existing shaft seal water distribution system is modified
- Shaft seal water is completely replaced after each production

Benefits:

- Reduces seal water consumption and related costs
- Reduces effluent cost
- Improves process area working environment
- Easy integration into all types of filtration plants

Green Flush

UG Name	Green Flush
System/Machine affected	MF, UF, NF and RO spiral membrane systems. Systems from 2012 or older, depending on original brand.
Value Category	Environment, Production Efficiency
Implementation Time	2-3 days



What does it do:

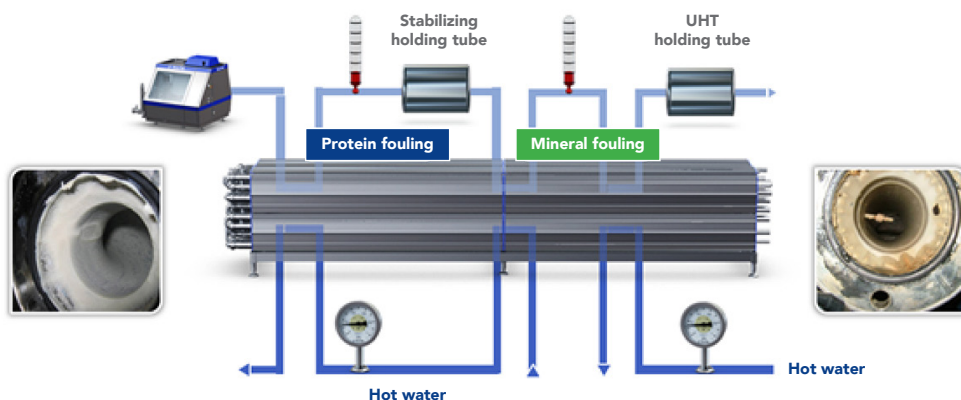
- Software based solution.
- Automation and design incorporated into MF, UF, NF, and RO Spiral Membrane Systems to optimize water usage, energy usage, and time in the production and CIP flush steps.
- Green Flush technology utilizes frequency inverter and automation code to control/monitor baseline pressure and feed flow flush rates. This is to drop loop boost pressures independently upon reaching the predetermined period of time required to flush each loop.
- By reducing the output speed on booster pumps, the agitation in the loop is reduced compared with a traditional flush principle.

Benefits:

- CIP flush water volume reductions up to 40% compared to traditional full plant flush
- Reduced CIP flush times
- Reduced water effluent streams
- Energy savings

Improved Running Time

UG Name	Improved Running Time
System/Machine affected	Tetra Pak® Indirect UHT (& Tetra Therm Aseptic Flex)
Value Category	Operational Cost & Environment
Implementation Time	Depends on level of upgrade



What does it do:

Improved running time is often an effective way to reduce operational cost. Depending on processed product mix and if the need for flexibility in production is low, extending production time between CIP/AIC is a good way to reduce operational cost. There are different options on how production time can be improved, from simply adding a protein stabilization holding cell without temperature control to adding heating surface and rearranging the tubular heat exchanger.

Improved running time is a concept which contains different options:

- Protein stabilization holding cell 60 – 120 sec (if not existing)
- Correction cooler/heater
- Additional heating surface
- Process & automation engineering

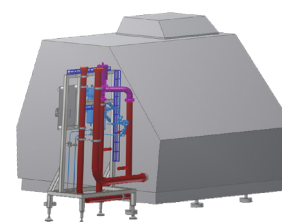
Benefits:

- Improved running time is a concept which contains different options:
- Reduced product losses
- Reduced operational cost and environmental impact

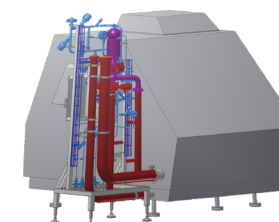
Automatic CIP and Refill of Homogenizer Dampers

UG Name	Automatic CIP and Refill of Homogenizer Dampers
System/Machine affected	Tetra Pak® Pasteurizer, Tetra Pak® Indirect UHT and Tetra Pak® Direct UHT (Tetra Therm Family)
Value Category	Occupational Health & Safety and Operational Efficiency
Implementation Time	5-10 days

Non-aseptic version



Aseptic version



What does it do:

This Upgrade allows for automatic filling of the homogenizer dampers with air during production, which enables good running conditions for the homogenizer. Automatic cleaning of the dampers means no manual dismantling and cleaning is needed. The feature is available in aseptic and non-aseptic version.

The automatic CIP and refill of homogenizer dampers upgrade consists of:

- A skid mounted module with inlet and outlet damper, air blow valve, level transmitter, bypass valve, back pressure valve
- Update of the existing software programs, PLC and local HMI
- Update of the technical, operator and electrical documentation

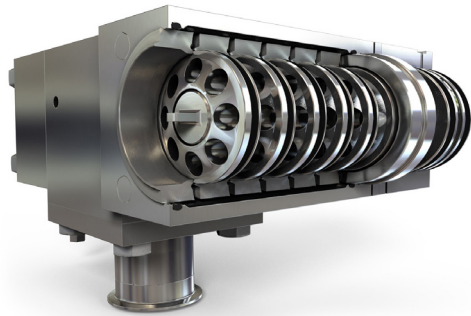
Benefits:

Homogenizer dampers absorb pressure variation and shocks before and after the homogenizer. Automatic air refill maintains the air cushion in the homogenizer damper to ensure smooth operation. Without the air cushion, vibration and cavitation would occur and shorten the running time. Fully automated CIP is included - increasing operator safety, improving hygiene and further optimizing the production cycle.

- Improved running conditions for the homogenizer thanks to automatic air filling of the dampers during production and longer running hours
- Automatic CIP, no manual cleaning is needed
- Increased Human Safety

Improved Homogenising Efficiency

UG Name	Improved Homogenising Efficiency
System/Machine affected	Tetra Pak® Homogenizer
Value Category	Operational Efficiency & Cost
Implementation Time	5-10 days



What does it do:

The design of the homogenizing device has a significant effect on the amount of energy that is needed to reach the desired homogenization effect of milk.

As a result of decades of research and product development, we can offer efficient and durable devices as upgrades for your Tetra Pak® Homogenizers.

Based on an analysis of your present situation, we can suggest an upgrade solution that will improve the homogenizing efficiency, and reduce your operational cost.

Possible upgrade solutions:

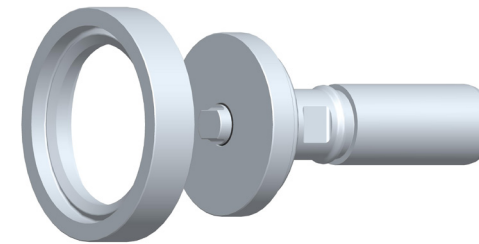
- From HD 1 to HD 100
- From HD 100 to HD EnergyIQ

Benefits:

- Reduces energy consumption
- Reduces the environmental impact
- Prolongs lifetime of wear and tear parts

Improved Homogenizer Performance for Abrasive Products

UG Name	Improved Homogenizer Performance for Abrasive Products
System/Machine affected	Tetra Pak® Homogenizer
Value Category	Operational Efficiency
Implementation Time	5-10 days



What does it do:

If you are processing a more highly abrasive product, or experiencing too much wear, it is recommended to upgrade the homogenizer with wear resistant parts to maintain the same life time as before.

It is important to to:

- Ensure that an equipment assessment has been performed before committing to the potential upgrade solution.
- Secure that the homogenizer is maintained and operated as per the supplied equipment manuals.

Typical areas of upgrade:

- Pistons
- Homogenizing device
- Valves

Benefits:

Improved operational efficiency through prolonged lifetime of wear parts.

Vacuum Control

UG Name	Vacuum Control
System/Machine affected	Tetra Pak® High Shear Mixers
Value Category	Environment, Health & Safety
Implementation Time	1-2 days



What does it do:

Tetra Pak can introduce frequency converter control on the vacuum pump to control how it operates. Since 2012, this feature has been standard on all mixers. Upgrade available for all existing Tetra Pak vacuum mixers without vacuum control.

The replacement is composed by:

- Frequency converter to be able to control the vacuum level. The frequency converter can be stand-alone or fully integrated into the software system.
- Software upgrade will include full integration to existing recipe control for high and consistent food quality.

Benefits:

- Improved environmental footprint:
Vacuum control reduces the use of water with 25% and energy with 50%.
- Improves process area working environment:
The vacuum pump is not operating as frequently which means less noise within the production. If the residue cooling water is spilled onto the floor this upgrade will ensure less water for safer operator working environment.

Powder Valve

UG Name	Powder Valve
System/Machine affected	Tetra Pak® High Shear Mixers
Value Category	Operational Efficiency & Costs
Implementation Time	1-2 days



What does it do:

Adding dry ingredients to a vacuum mixer is now faster, more efficient and more reliable with the Tetra Pak® Powder Valve. It features a robust design, with rapid opening and closing action of the valve to ensure a one-way flow of powder into the tank, with no risk of liquid entering the powder inlet and causing clogging. The improved design includes a skater ramp that protect the valve gasket, which combined with the reinforced gasket gives longer service intervals.

This upgrade fits all Tetra Pak High Shear Mixers and will fit current Ø51 and Ø63,5 flanges.

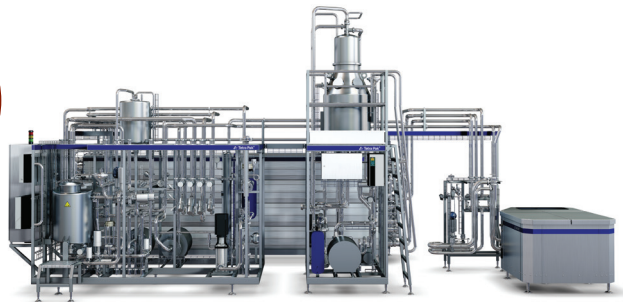
Benefits:

- Increased maintenance intervals:
Thanks to the unique design including the skater ramp of Tetra Pak Powder Valve, the robustness has increased and by that the cost of operation has decreased. With the reinforced material on the valve gasket the expected life-time has increased three times.
- Improved uptime:
The more robust design and the rapid release of air has minimized the risk of backflush that can happen when valves get worn. This has led to product leaking out to the powder side and creating a blockage of highly wet powder, which is difficult and time consuming to clean.

Production Capability Upgrades – New Capacity

UG Name	Production Capability Upgrades – New Capacity
System/Machine affected	Liquid Food Processing Units such as, Tetra Pak® Heating Units & Key Components
Value Category	Production Capability
Implementation Time	Depends on level of upgrade

**Meeting
Volume
Demand**



What does it do:

By re-designing the Tetra Pak Processing units and/or Key Components the capacity can be changed to customer's new requirements. Thus, enable you to tailor make your production schedule, making it easier to introduce new filling machines.

The configuration of the existing process design might need to be modified in order to get optimal production performance at the specified capacity. Depending on the capacity change, heat exchanger, holding tube, valves and pumps needs to be modified or changed to correspond to the changed capacity.

Production Capability Upgrades – New Capacity is composed by:

- Process Upgrade
- Automation Upgrade
- Update of the existing software programs, PLC and local HMI
- Update of the technical, operator and electrical documentation

Benefits:

- Increased Flexibility
- Improved Utilization
- Short Payback Time

Production Capability Upgrades – New Application

UG Name	Production Capability Upgrades – New Application
System/Machine affected	Liquid Food Processing Units such as, Tetra Pak® Heating Units & Key Components
Value Category	Production Capability
Implementation Time	Depends on level of upgrade



Dairy



Beverage



Prepared Food

What does it do:

Adding a new product or changing the product specification increases the product lines performance and optimizes the flexibility.

Various changes have to be made to the existing Tetra Pak Processing units and/or Key Components depending on the demand of the new product. By this upgrade the time to introduce a new product in the market is short, which improves business competitiveness.

Production Capability Upgrades – New Application is composed by:

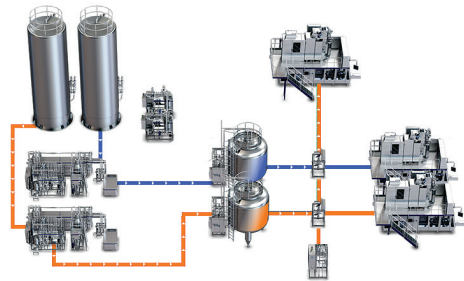
- Process Upgrade
- Automation Upgrade
- Update of the existing software programs, PLC and local HMI
- Update of the technical, operator and electrical documentation

Benefits:

- Increased Flexibility
- Improved Utilization
- Short Payback Time

Aseptic Line Flexibility

UG Name	Aseptic Line Flexibility
System/Machine affected	Tetra Pak® Aseptic tank (Tetra Alsafe)
Value Category	Operational Efficiency & Cost and Environment
Implementation Time	Depends on level of upgrade



What does it do:

Aseptic Line Flexibility – the line designed to meet the highest demands on flexibility. It enables UHT treatment with multiple lines feeding buffer tanks, based on an ALF (aseptic line flexibility) valve cluster that offers full flexibility for feeding to different tanks and filling machines under aseptic conditions. The ALF line concept does not require a production stop for CIP before changing filling machines.

The valve cluster upgrade consists of:

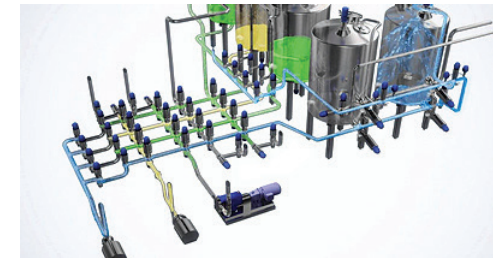
- Necessary components for the aseptic filling line valve cluster.
 - Main Air Valve Cluster (up to 20 connections)
 - Connection Valve Cluster
 - Line End Valve Cluster
- Separate control system including soft and hardware
- Assembly drawings
- Technical and electrical documentation

Benefits:

- Improving the operational efficiency, environmental impact & increasing uptime
- Aseptic line flexibility will increase the production efficiency due minimizing stops for CIP due to batch size, change of recipes etc.
- Possibility to maximize uptime of filling machines

Non-Aseptic Line Flexibility

UG Name	Non-Aseptic Line Flexibility (Valve Cluster)
System/Machine affected	All
Value Category	Operational Efficiency & Cost and Environment
Implementation Time	Depends on level of upgrade



What does it do:

Valve cluster can be designed with exact number of lines or row to match the exact requirement of the process. Multiple products from various resources can run to multiple destinations while other lines/tanks are being cleaned.

To optimise the valve cluster design, it is important to consider factors such as:

- Complexity of flow management
- Product viscosity
- Type of process
- Product & CIP sequences
- Complexity of flow management
- Separate control system including soft and hardware
- Assembly drawings
- Placement of pump before & after the valve cluster

Benefits:

- Improving the operational efficiency, environmental impact & increasing uptime
- Increase the production efficiency due minimizing stops for CIP due to batch size, change of recipes etc.
- Flexibility
- Reduce manual intervention in process

02 PACKAGING

Consumer trends around the world indicate a demand for more advanced food and beverages and our customers are actively staying ahead launching new products and product variations to meet market demand. As a result, the range and complexity of products filled in Tetra Pak packages has increased immensely over the last few years. To meet these evolving technology demands, our equipment will need to meet different and new requirements to secure performance when packing more complex products.



Sustainability

Water Filtering Station

Replacement GE90-30



Productivity & Efficiency

Jaw System
Cutting Knife

EcoDot
CBP32 – TCBP70

Dust Remover CAP30

Pressure Jaw

Primary Printer

02 PACKAGING



Food Safety & Quality

New Aseptic
Product Valve NAPV

Lower Filling
Pipe Cleaner

Additional Water Gun

Glue Regulator
CAP30 Flex &
CAP30 Speed

Additional External
Cleaning for A3/S

Additional External
Cleaning for A3/CF

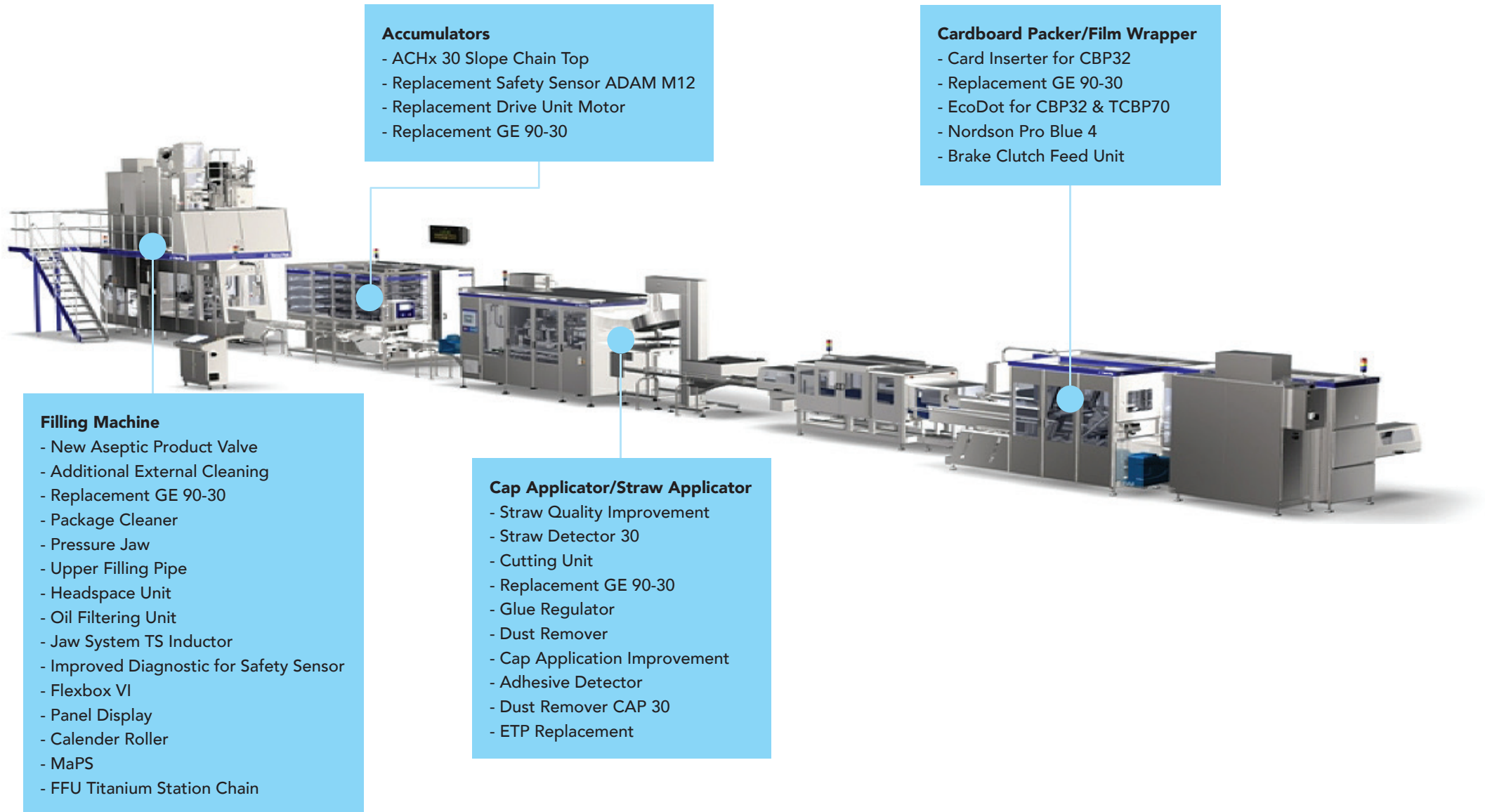
External Cleaning
A1 TFA



New Requirement for your Line

Production
Capability Upgrades
– A3/S Up Speed

PACKAGING UPGRADES PRODUCT PORTFOLIO





Water Filtering Station

UG Number	351468-00XX (see table below)
UG Name	Water Filtering Station
System/Machine affected	Tetra Pak A3/F -0100; -0150; -0160; -0200; -0300; -0400 Tetra Pak A3/S -0100; -0200; -0300; -0400 Tetra Pak A3/CF -0100; -0200; -0300 TBA8 -0900; -1000; -1100; -1200; -6000 TBA19 -0100; -2000; -0300; -0400; -0500 TBA22 -0400; -0500
Value Category	Environment
Implementation Time	~ 5 days for start up (excluding mechanical installation)

Material Number	Description
351468-0015	WFS 40 l/min AISI
351468-0016	WFS 70 l/min AISI
351468-0017	WFS 100 l/min AISI
351468-0025	WFS 40 l/min C-PVC
351468-0026	WFS 70 l/min C-PVC
351468-0027	WFS 100 l/min C-PVC
351468-0035	WFS 40 l/min C-PVC FRAME AISI 304
351468-0036	WFS 70 l/min C-PVC FRAME AISI 304
351468-0037	WFS 100 l/min C-PVC FRAME AISI 304
351468-0100	Raw Water Pump



What does it do:

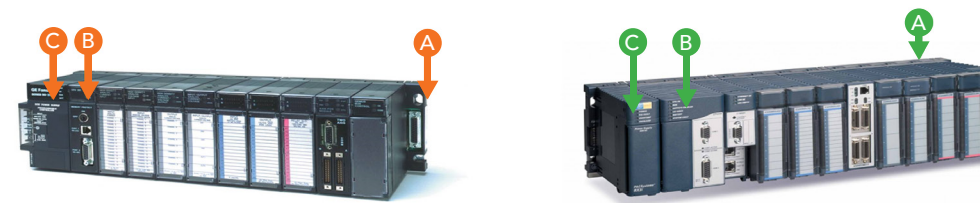
The Tetra Pak® Water Filtering Station (WFS) removes particles, oil, grease, peroxide and other contaminants and circulates clean water that is free from all contaminants back into the system.

Benefits:

- Improve water-use efficiency by recycling the water up to 95%
- Improve environmental profile
- Reduce environmental impact in water scarce areas
- Improve Filling Machine component lifetime by improving the water quality

Replacement GE90-30

UG Name	Replacement GE90-30
System/Machine affected	All Filler Machines and Downstream Equipment with GE 90-30 PLC
Value Category	Capability
Implementation Time	1-2 days



GE 90-30 Series

All other GE 90-30 parts are compatible and legally compliant

PAC Systems™ RX3i

What does it do:

Replacement of back plate, CPU and power unit of the GE-Fanuc 90-30 with the new Rx3i.

Benefits:

Address the obsolescence of the GE-Fanuc 90-30 PLC series and extends the lifetime of the equipment.

Jaw System Cutting Knife

UG Name	Jaw System Cutting Knife
System/Machine affected	Tetra Pak A3/F -0100, -0150, -0160 Tetra Pak A3/F -0200, -0300, -0400, -0600 Tetra Pak A3/CF -0100, -0200, -0300 Tetra Pak A3/S -0100, -0200, -0300, -0400, -0500 Tetra Pak TBA22 -0500
Value Category	Operational Efficiency and Food Safety
Implementation Time	4~6 hours



What does it do:

The kit introduces new knives in a more durable material (Stellite 6K chromium-cobalt alloy) with outstanding property of corrosion resistance and hardness.

Benefits:

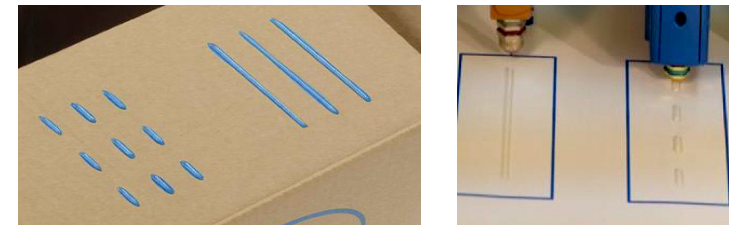
Reduce downtime by improving component life time when packing complex and very complex products.

Additional Benefits:

- Reduce stops (in FFU) due to a better output quality
- Stable cutting quality

EcoDot CBP32 – TCBP70

UG Name	EcoDot
System/Machine affected	CBP32 -0200 to -0700 TCBP70 1100 to 1200
Value Category	Operational Efficiency
Implementation Time	8 hours



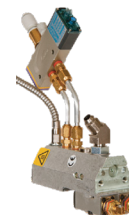
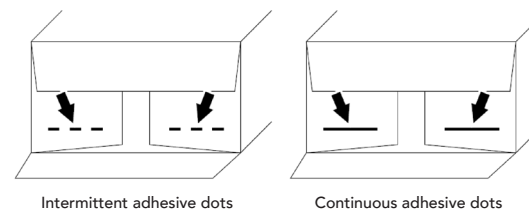
What does it do:

The kit is composed of new hotmelt guns and gun holder and it applies short, intermittent beads in place of long continuous beads of hot melt.

- For CB32, an EcoDot icon is introduced in the HMI
- For TCBP70, a pattern generator enables the EcoDot function

Benefits:

The saving of hotmelt consumption is from 15% to 30% depending on the type of distribution unit.



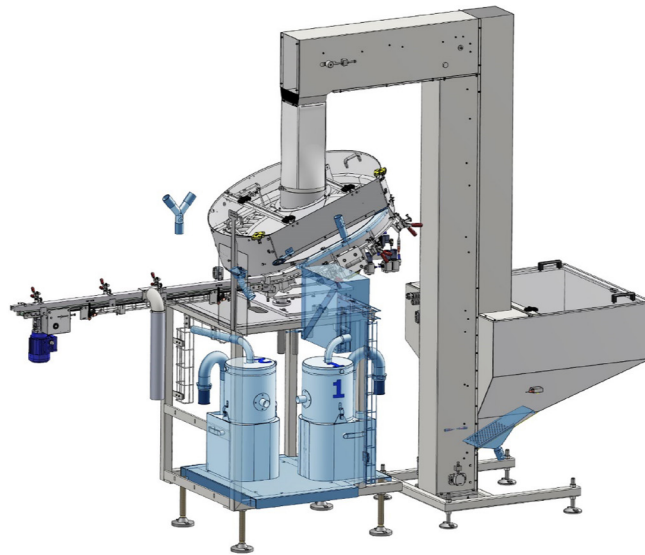
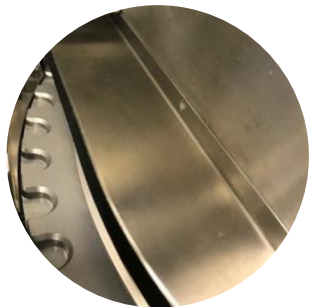
Dust Remover CAP30

UG Name	Dust Remover
System/Machine affected	CAP30 Flex -0100, -0200, -0300, -0400
Value Category	Operational Efficiency
Implementation Time	10 hours

Before kit installation



After kit installation



What does it do:

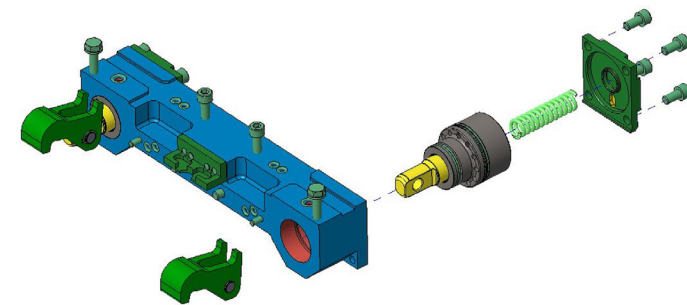
The kit is composed of two aspirators with separate tanks which collect dust, particles and other foreign objects from the cap tank, feeder and chute feeder of the cap applicator.

Benefits:

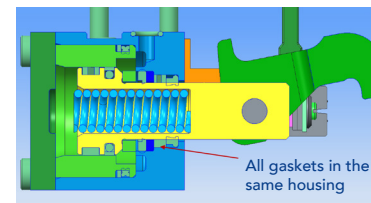
The need for frequent manual cleaning inside the cap applicator is removed resulting in increased uptime and improved utilization of the operator. Risk of particles ending up in the product is reduced minimizing potential impact of customer claims.

Pressure Jaw

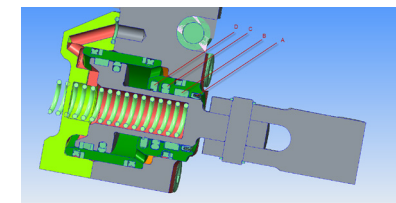
UG Name	Pressure Jaw
System/Machine affected	Tetra Pak®A3/CF -0100, -0200, -0300 Tetra Pak®A3/F -0100, -0150, -0160, -0200, -0300, -0400
Value Category	Operational Efficiency
Implementation Time	6 hours



Existing Solution



New Solution



What does it do:

This Tetra Pak® Upgrades kit is composed by 2 complete bearing housings with new piston cartridges.

Benefits:

Improvements introduced:

- Protection against water penetration and the hydraulic system seal is secured
- Simplified replacement of gaskets during maintenance (plug and play)
- Maintenance cost reduction (compared to existing solution)
- Additional barrier against water penetration during pressure transient
- New gaskets housing and material



Primary Printer

UG Name	Primary Printer A520i
System/Machine affected	TP A3/F all dev step TP A3/S all dev step TP A3/CF all dev step TP C3/F -0100 TP A1 -0900 TBA/19 -0300, -0400, -0500 Simply 8 -0100
Value Category	Efficiency
Implementation Time	5 days



What does it do:

The intended use of this Upgrade Kit is to replace the existing Domino printer A300 series with the new A520i for Tetra Pak by Domino.

Benefits:

Lower Customer Cost of Ownership by reducing the operator intervention, the frequency and the duration of yearly intervention needed. The A520i also reduces the need of solvents, make-up and washing solutions.

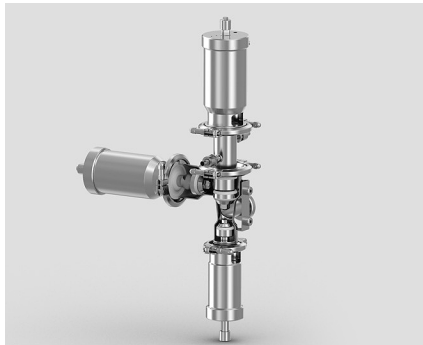
- Easy of Use (Touch Panel)
- Reliability and consistency
- Advanced ink selection
- Less environmental impact



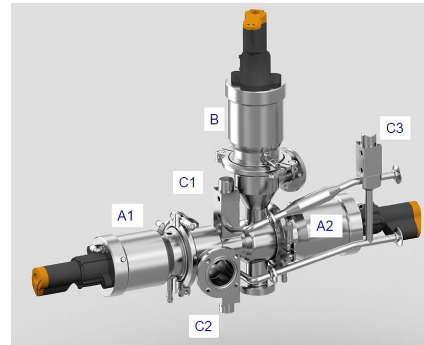
New Aseptic Product Valve NAPV

UG Name	New Aseptic Product Valve NAPV
System/Machine affected	Tetra Pak A3/CF, A3/F, A3/S
Value Category	Food Safety
Implementation Time	3-5 days

New design to improve the current AP valve functionality



Current Aseptic Product Valve



New Aseptic Product Valve

What does it do:

Replace the current Aseptic Product Valve (ABC Valve) with the new Aseptic Product Valve. This kit includes also pipe connections from-to the new valve with steam system, sterile air system, filling and cleaning system.

The new design aims to improve current AP-valve functionality.

Benefits:

- Reduction of operational downtime by A-valve seat automatic cleaning during CIP – no need of weekly manual cleaning
- Lower operating temperature (minimizing the product burnt) by having the sterile condensate steam barrier (as option) instead of sterile steam barrier
- More accurate and reliable coupling by using new mechanical connections (DIN 11864) instead of clamps – the tightening does not rely on the operator
- Easier operator task during cleaning in place enabled by a new position of swing bend/ flow switch (A3S – A3CF)

Lower Filling Pipe Cleaner

UG Name	Lower Filling Pipe Cleaner
System/Machine affected	A3/CF -0200, -0300 (with ICU only)
Value Category	Food Safety
Implementation Time	3~10 hours

UG Name	Lower Filling Pipe Cleaner
System/Machine affected	A3/F -0150 from T-Order 21211/00049 * A3/F -0160, -0200 * A3/Flex 0300, 0400 (released in 2014)
Value Category	Food Safety
Implementation Time	1~6 hours

What does it do:

Kit is designed to integrate the cleaning of the lower filling pipe, floater, and counter pressure flange into the integrated cleaning system.

Benefits:

- Increasing the hygienic performance with automatic cleaning of the lower filling pipe and the accessories.
- Reduce operator cost by saving ~30 minutes of operator working time per cleaning cycle

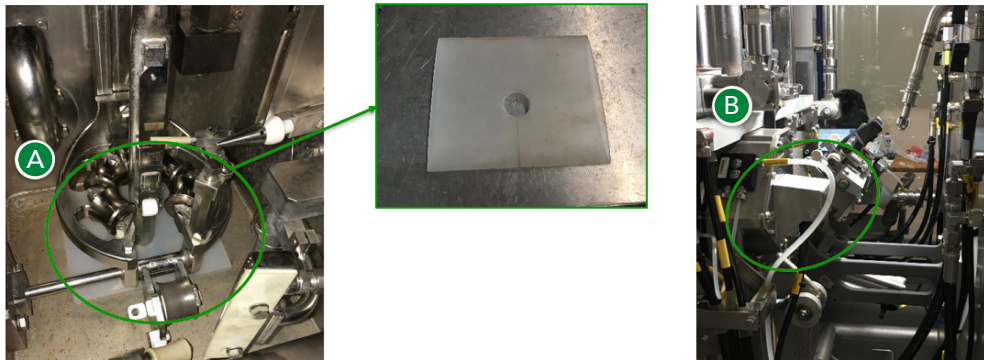
*only with ICU

- ▶ Introduced as standard from serial number: 21218/00245 (A3F 0400)



Additional Water Gun

UG Name	Additional Water Gun
System/Machine affected	A3/S -0200 to -0400 A3/F -0200 to -0400 A3/CF -0100 to -0300
Value Category	Food Safety and Operational Efficiency
Implementation Time	6 hours



- A** Silicone protection to avoid water drops in aseptic chamber
- B** Steel protection for Jaw System cables

What does it do:

The kit is composed by an external water gun (no high pressure) directly connected to the service unit (with automatic pipe reel) able to perform both rinsing and foaming phases. The functionality can be selected from Filling Machine TPOP.

Benefits:

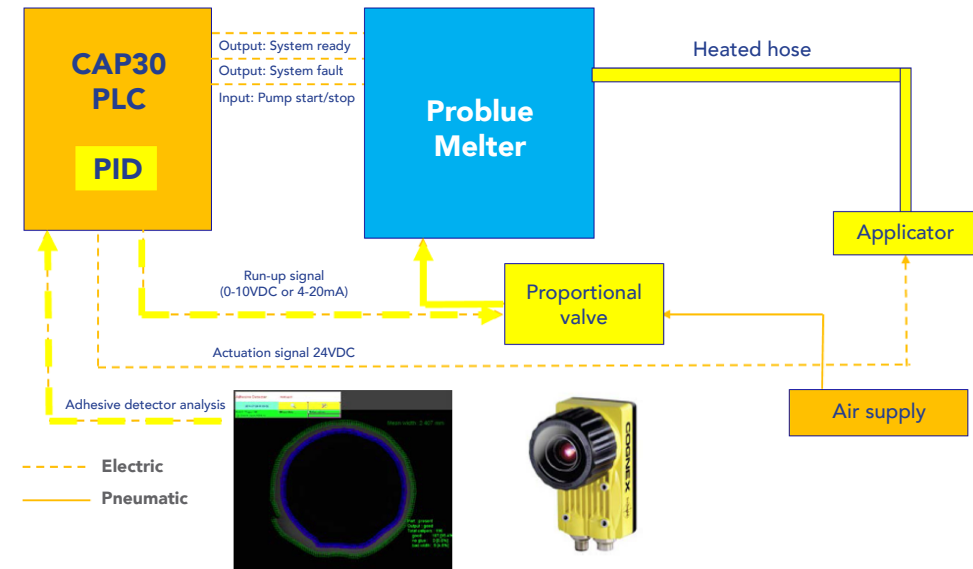
Increase external cleaning efficiency in terms of:

- Decrease labour cost by reducing manual cleaning time
- Increase available production time due to reduced manual cleaning time
- Increase the overall cleaning quality of equipment and production output



Glue Regulator CAP30 Flex & CAP30 Speed

UG Name	Glue Regulator
System/Machine affected	CAP30 Flex & CAP30 Speed
Value Category	Food Safety
Implementation Time	2 days



What does it do:

This Upgrade Kit is composed by a new hot melt gun group equipped with an automatic closed loop system aimed at stabilizing the glue amount applied on the caps.

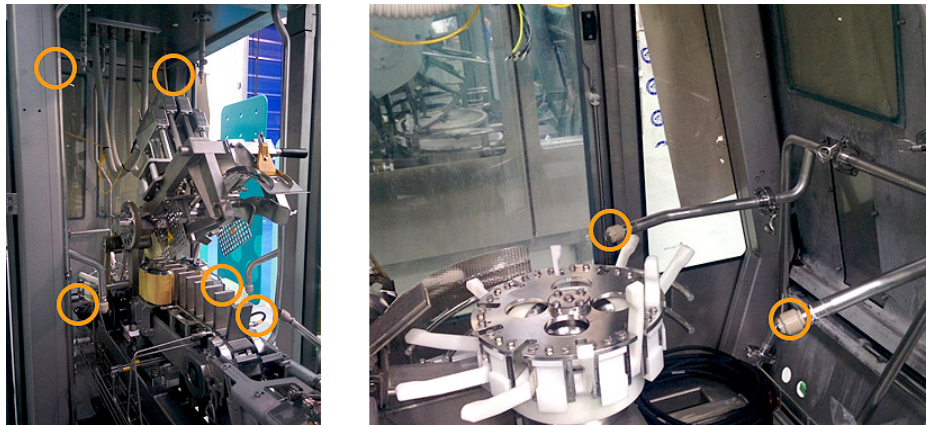
Benefits:

The automatic closed loop system minimizes the risk of openability issues (too much glue) and tightness issues (too little glue) thereby reducing the waste of filled packages. It also reduces the need of manual quality control of the cap application.

► Adhesive Detector & Hot Melt Hose (*) are pre-requisites for the Glue Regulator

Additional External Cleaning for A3/S

UG Name	Additional External Cleaning
System/Machine affected	A3/Speed -0200, -0300, -0400 (*)
Value Category	Food Safety and Operational Efficiency
Implementation Time	22 hours



What does it do:

The kit is composed by:

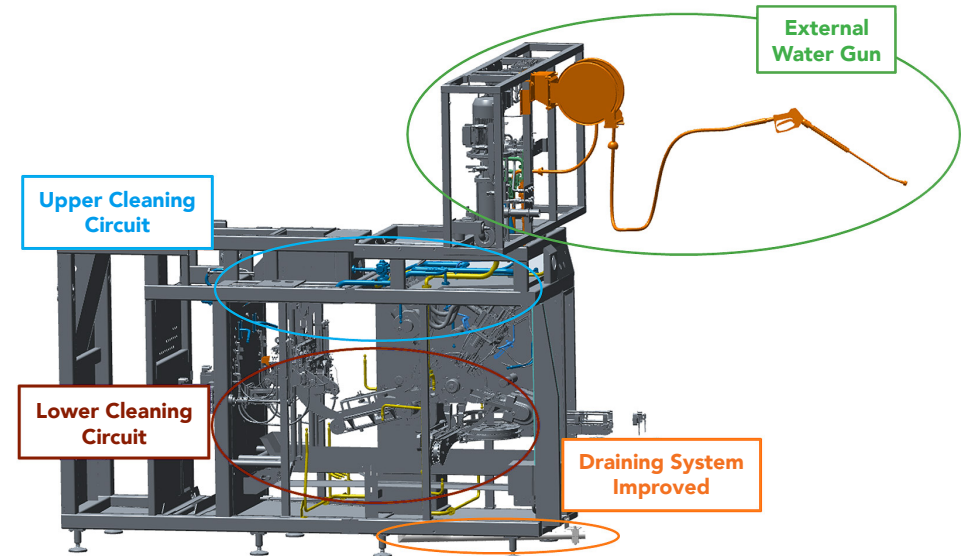
- Additional nozzles (static and rotating) installed in Jaw System, Final Folder Unit and Waste Conveyor areas.
- An external water gun (no high pressure) directly connected to the service unit (with automatic pipe reel) able to perform both rinsing and foaming phases. The functionality can be selected from Filling Machine TPOP.

Benefits:

- Improve the cleaning efficiency of existing external cleaning by adding new nozzles (internal and external) and a water gun
- Decrease labour cost by reducing manual cleaning time (average daily operator time saving is 40-50%)
- Increase available production time due to reduced manual cleaning time
- Increase the overall cleaning quality of equipment and production output

Additional External Cleaning for A3/CF

UG Name	Additional External Cleaning
System/Machine affected	A3/CF 0200, 0300, 0400
Value Category	Food Safety and Operational Efficiency
Implementation Time	22 hours



What does it do:

The kit is composed by:

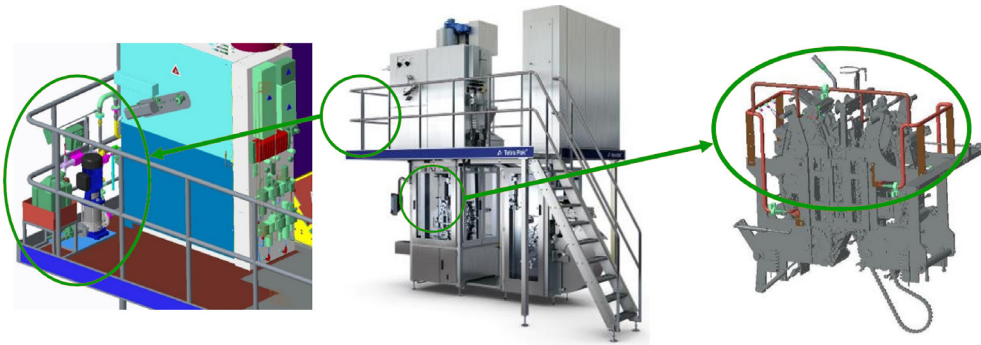
- Additional nozzles (static and rotating) installed in Jaw System, Final Folder Unit and Waste Conveyor areas.
- An external water gun (no high pressure) directly connected to the service unit (with automatic pipe reel) able to perform both rinsing and foaming phases. The functionality can be selected from Filling Machine TPOP.

Benefits:

- Decrease labour cost by reducing manual cleaning time
- Increase available production time due to reduced manual cleaning time
- Increase the overall cleaning quality of equipment and production output

External Cleaning A1 TFA

UG Name	External Cleaning A1 TFA
System/Machine affected	Tetra Pak® A1 0800 to 1000
Value Category	Operational Efficiency
Implementation Time	~16 hours



Upper Cleaning Circuit

- Water Pump
- Dosing Pump
- Pipping
- Detergent Tank

Lower Cleaning Circuit

- Cleaning Pipping
- 12 nozzles in the Jaw System area

What does it do:

The kit is composed by 2 main parts: the upper cleaning circuit, installed on the platform and the lower cleaning circuit, installed around the machine body; 12 nozzles spray the water around the Jaw System.

Benefits:

Decrease Customer Operational Cost by:

- Reducing the labour cost for manual cleaning
- Reducing the water and detergent consumption (based on FT result)
- Improve the overall cleaning performance of the equipment



Production Capability Upgrades – A3/S Up Speed

UG Name	Machine Up-Speed
System/Machine affected	A3/S (Depends on Product & Packet Size)
Value Category	Production Capability
Implementation Time	Depends on level of upgrade



What does it do:

By re-designing the Tetra Pak machine, the capacity can be changed to customer's new requirements.

The configuration of the existing process design might need to be modified in order to get optimal production performance at the specified capacity. Depending on the capacity change, some parts need to be modified or changed to correspond to the changed capacity.

Installing the kit increases the nominal capacity of the filling machine from 24,000 packs/hour to 26,000 packs/hour (depending on product & machine type).

Benefits:

- Increased Flexibility
- Improved Utilization
- Short Payback Time
- Match market demand with a limited investment



03 AUTOMATION

Food production today is complex. It requires detailed control of plant operations - from the reception and processing of raw materials to the packaging and distribution of finished products. The greater your control, the more value you can squeeze out of your production.

We bring you over 40 years of experience in providing automation and information solutions tailored to the needs of the food industry – your needs – and have embedded that intelligence in our equipment and production solutions. This ensures you total control of plant operations, and the benefits that brings: enhanced and guaranteed performance, consistent product quality, uncompromising food safety and reduced environmental impact.



Sustainability

Tetra Pak® Plant Master
Software Upgrades
– Production Control

Tetra Pak® Plant Master
Software Upgrades
– Production Integrator



Productivity & Efficiency

Tetra Pak® Plant Master
Hardware Upgrades
(Virtualisation)

Beijer TPOP "E" Series

New Control System BPU

Control Panel Upgrade
for Tetra Pak Separator

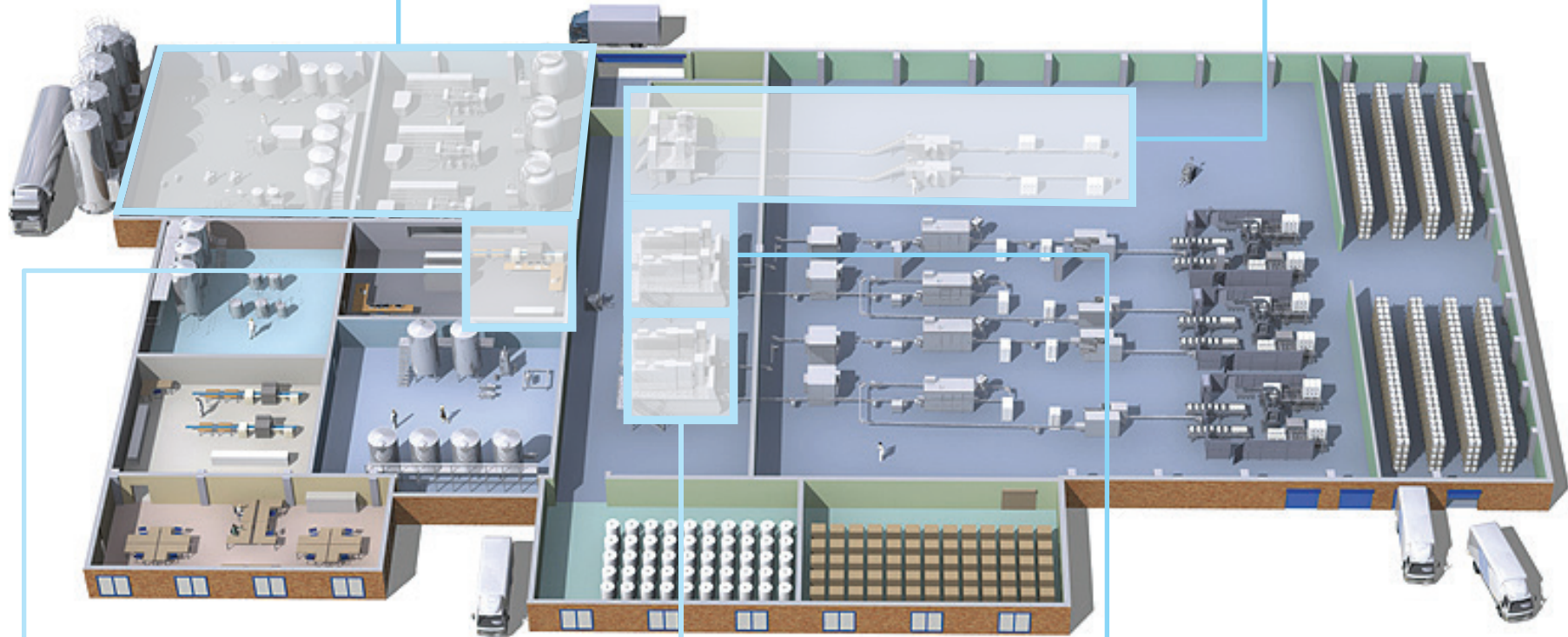
AUTOMATION PRODUCT PORTFOLIO

Processing Units

- Replacement HMI (Beijer, Proface, etc)
- Replacement PLC (ABB->Siemens, Rockwell)
- New Control Panel (Latest Platform)
- Cheese Vat Coagulation Sensor

Packaging

- Tetra Pak® Line Controller
- Tetra Pak® Line Gateway (LiGa)



Plant Automation

- Tetra Pak® Plant Master:
 - Production Control
 - PI/MES/PLMS
- Tetra Pak IT/OT Infrastructure (Virtualisation)
- Tetra Pak® Plant Master Traceability Upgrades
- SCADA System & Report Generation
- Wonderware Intouch Upgrade
- MES Manufacturing Execution System

Packaging

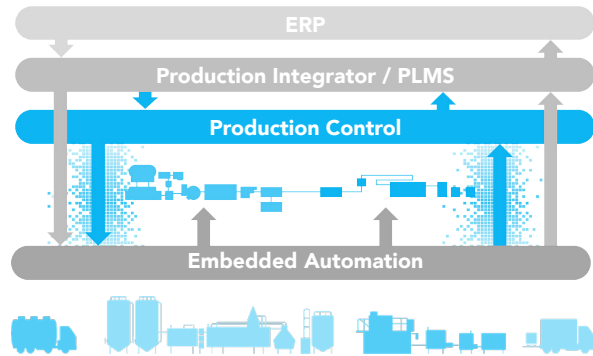
- RK PAM/SAM
- RK FLEXBOX VI
- RK GE90-30

Packaging

- RK TPMC
- RK Rockwell L63 PLC

Tetra Pak® Plant Master Software Upgrades

UG Name	Tetra Pak Plant Master Software Upgrades – Production Control
System/Machine affected	Tetra Pak Plant Master Solutions & Non-Tetra Plant Master automation solutions
Value Category	Production functionality, Quality, Operational Efficiency & Cost
Implementation Time	Depends upon size of solution



What does it do:

The TPPM PC comes with:

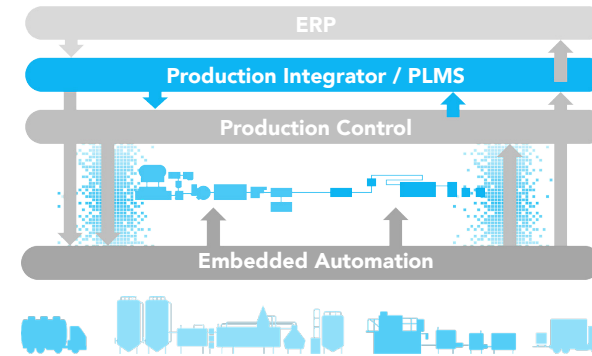
- Upgrade of controller software, such as PLC and HMI systems
- Unique configuration matching the process application and plant hardware
- Designed and delivered based on consistent and proven S88 & S95 standards
- Factory Acceptance Testing
- Installation, I/O checking & Commissioning

Benefits:

- Get total control for guaranteed food safety and consistent product quality
- Greatly simplify operation with one user interface and intuitive, task-based navigation
- Maximize OEE and cut operational cost by reducing downtime, waste and recalls
- Increase process stability and reliability by reducing risk of human error
- Base for future platform for advanced and rapid traceability information available at the click of a button

Tetra Pak® Plant Master Software Upgrades

UG Name	Tetra Pak Plant Master Software Upgrades – Production Integrator
System/Machine affected	Tetra Pak Plant Master Solutions & Non-Tetra Plant Master automation solutions
Value Category	Production functionality, Quality, Operational Efficiency & Cost
Implementation Time	Depends upon size of solution



What does it do:

The TPPM PI comes with:

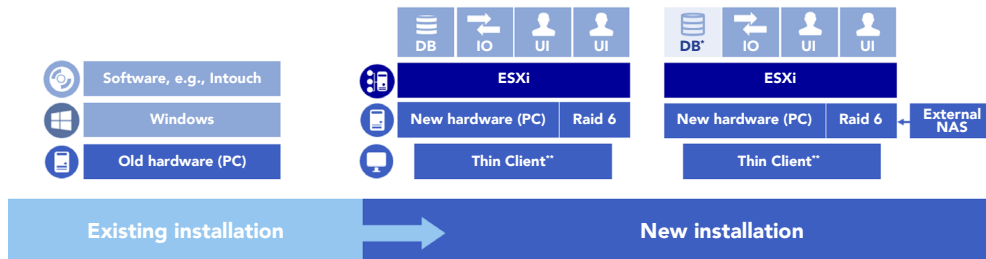
- Upgrade of production integrator software, such as SQL server, Batchkernel, system integration kit, etc
- Creation of Plant Model matching the process plant
- Designed and delivered based on consistent and proven S88 & S95 standards
- Factory Acceptance Testing
- Installation & Commissioning

Benefits:

- Get total control for guaranteed food track & trace
- Greatly simplify operation with one user interface traceability navigation
- Maximize OEE and cut operational cost by enhanced analysing reports
- Get a modular and scalable integrated solution
- Collect correct and relevant data through our expertise in process design
- Advanced and rapid traceability information available at the click of a button
- Get real time performance of your production lines

Tetra Pak® Plant Master Hardware Upgrades (Virtualisation)

UG Name	Tetra Pak Plant Master Hardware Upgrades (Virtualisation)
System/Machine affected	Tetra Pak Plant Master Solutions
Value Category	Life Cycle Management and System Reliability
Implementation Time	Depends upon size of solution



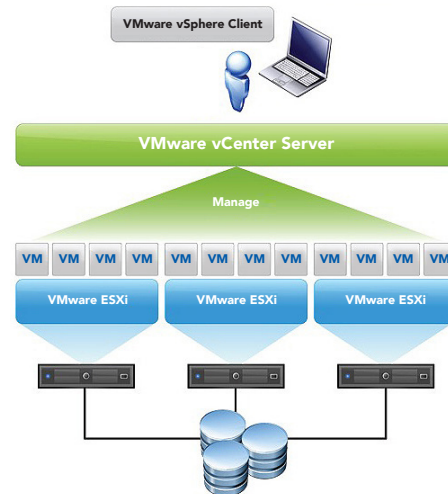
What does it do:

The TPPM Hardware upgrade comprises of:

- Replacement IT hardware such as servers, network storage & performance management software
- Configuration of host, operating and application software
- Factory Acceptance Testing
- Installation & Commissioning
- Fault tolerance check & recovery training

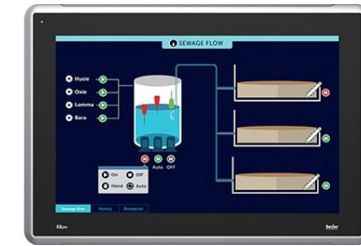
Benefits:

- Secure modern hardware
- Application independent
- Scalable customized solution
- More efficient use of the technology
- Reduction in Capex and Opex costs
- Improved security



Beijer TPOP "E" Series

UG Name	Beijer TPOP "E" Series	
System/Machine affected	Tetra Alsafe® Tetra Alcip® Tetra Therm® Lacta Tetra Therm® Drink	Tetra Therm® Flex Tetra Therm® VTIS Tetra Therm® Visco
Value Category	Operational Efficiency and Life Cycle Management	
Implementation Time	1-2 days	



What does it do:

The replacement is composed by:

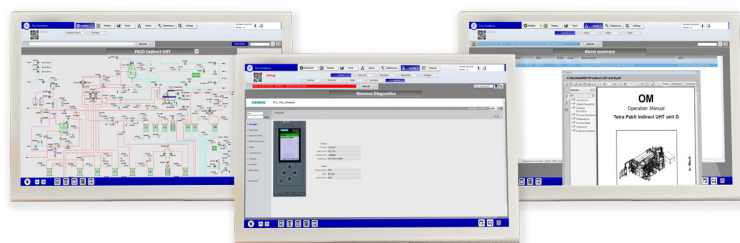
- X2 pro operator panel
- Electrical connection
- Update HMI program
- Update technical, operator and electrical documentation if applicable & available in electronic version
- Delivery and installation of the hardware
- Adapter plates for mounting
- Recommissioning

Benefits:

- Higher performance and responsiveness
- Improved process and parameter visibility (higher resolution)
- Extended Life time with hardware and software supported by Tetra Pak
- Ability to integrate new I4.0 technologies
- All essential functions you need are included, such as data logging, recipes, alarms, trends and audit trail

New Control System BPU

UG Name	New Control System BPU
System/Machine affected	Tetra Pak Pasteurizer, Tetra Pak Indirect UHT, Tetra Pak Direct UHT/Tetra Therm® Family Tetra Pak Aseptic Tank/Tetra Alsafe Tetra Pak Standardization unit/Tetra Alfast
Value Category	Operational Efficiency and Life Cycle Management
Implementation Time	System related (5-10 days)



What does it do:

The replacement is composed by:

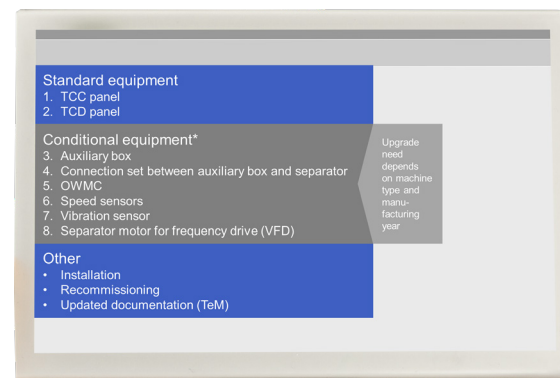
- Siemens TIA S7-15xx controller or Control logix 1756-Lx
- B&R panel pc with latest TPM 6.5 Intouch Modernapp user interface
- New electrical panel and electrical connection
- Update technical, operator and electrical documentation if applicable & available in electronic version
- Delivery and installation of the hardware and software
- Recommissioning
- Operator training

Benefits:

- Higher performance and responsiveness
- Improved process and parameter visibility
- Extended Life time. Hard and software supported by Tetra Pak
- Fast automation support via standardized automation platform
- Ability to integrate new I4.0 technologies
- All essential functions you need are included, such as data logging, recipes, alarms, trends and audit trail, operating manuals

Control Panel Upgrade for Tetra Pak Separator

UG Name	Control Panel Upgrade
System/Machine affected	Tetra Pak Separator
Value Category	Operational Efficiency
Implementation Time	5-10 days



What does it do:

This upgrade replaces obsolete separator control equipment.

Sourcing spare parts and supplying support for obsolete equipment may take a long time, if at all possible. A modern control system, on the other hand, secures spare part supply availability, and significantly shortens the downtime in case of a component failure. The upgrade also introduces a modern HMI and safety features, and enables function extensions and easy integration in the plant control system.

Each upgrade is customized to your needs and includes all necessary components, installation, re-commissioning as well as updated documentation.

Benefits:

- Secures reliable, safe and user-friendly operation
- Minimizes risk of downtime
- More user-friendly operation
- Improves machine monitoring

04 ICE CREAM

Ice cream may be one of the world's favourite desserts, but as manufacturers know only too well, the demand for novelty is relentless. Product innovation is essential, and it's not only a question of new flavours; the product has to look irresistible too. Regular variations in shape, dipping, toppings and wrapping all help attract attention. Explore ways with Upgrades to take performance to a whole new level.



Sustainability

Control Upgrade
for Tetra Pak®
Continuous Freezer



New Requirement for your Line

New Product Upgrade
– Extrusion

New Product Upgrade
– Rotary Moulder



ICE CREAM UPGRADES PRODUCT PORTFOLIO

Freezing

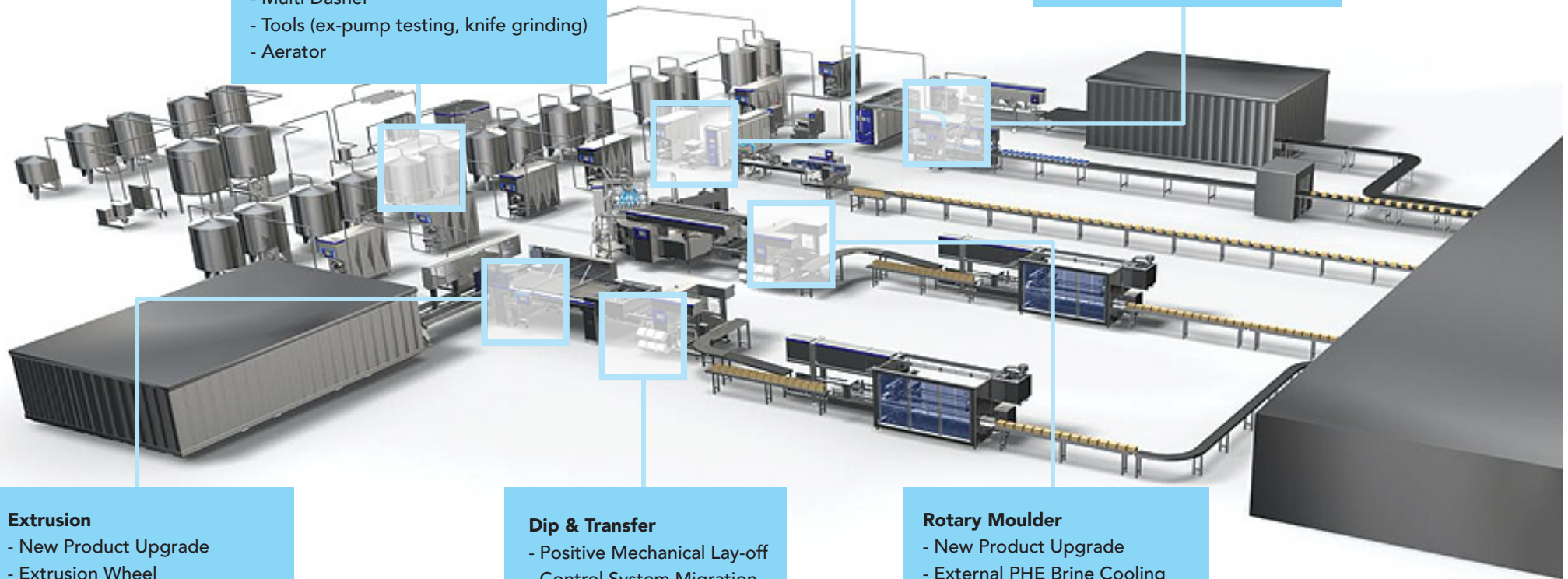
- Control Upgrade
- Dynamic pressure distributor
- Multiple Cream Pump
- Dry run protection
- HMI Panel
- Multi Dasher
- Tools (ex-pump testing, knife grinding)
- Aerator

Ingredient Dosing

- Feeder Pump Upgrade
- Control Upgrade

Filling

- New Product Upgrade
- Airless Chocolate Spray
- Cone, Cup & Lid Dispensers
- Swirl Effect
- Dynamic Pressure Distributor



Extrusion

- New Product Upgrade
- Extrusion Wheel
- Swirl Effect
- Dynamic Pressure Distributor
- Control System Migration
- Automatic Stick Single

Dip & Transfer

- Positive Mechanical Lay-off
- Control System Migration
- Tongs Surveillance

Rotary Moulder

- New Product Upgrade
- External PHE Brine Cooling
- Positive Mechanical Lay-off
- Automatic Stick Multi A2
- Dynamic Pressure Distributor
- Control System Migration
- Tongs Surveillance
- Safe Tong
- Individual Emergency Release

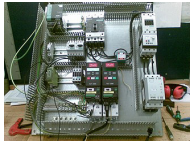


Control Upgrade for Tetra Pak® Continuous Freezer

UG Name	Control Upgrade for Tetra Pak® Continuous Freezer
System/Machine affected	Tetra Pak Continuous Freezers
Value Category	Operational Efficiency, Production Capability, Automation Life-Cycle Management, Environment
Implementation Time	5 days approx



PLC and electrical components mounted on backplate



OP panel installed in new cabinet door



Optional motor and gear direct drive

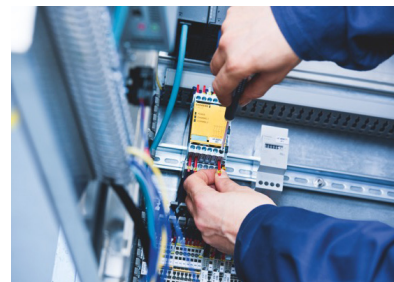


What does it do:

- All necessary parts/units such as new sensors and control components are included in the upgrade kit
- Upgrade kits are designed based on the original configuration of the freezer
- Kits are delivered ready to build into the freezer
- The upgrade secures spare part supply availability and includes an extensive service maintenance program
- Active pump speed control and instant read-out of essential process parameters

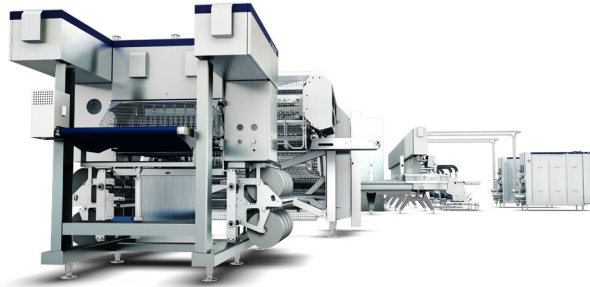
Benefits:

- Higher output constancy, reducing production cost and ensuring constant quality ice cream
- Faster start-up reducing product loss and rework
- More user-friendly operation
- Reduced and secured maintenance cost
- Proven solution with >200 systems in operation
- Allows remote connectivity and support
- Enables I4.0 possibilities



New Product Upgrade – Extrusion

UG Name	New Product Upgrade
System/Machine affected	Tetra Pak Extrusion Line
Value Category	Operational Efficiency
Implementation Time	Depends on new product



What does it do:

- New product upgrade for an existing extrusion line.
- Meeting and exceeding consumer expectations requires launch of innovative products.
- Various changes have to be made to the existing equipment depending on the demand of the new product. By this upgrade the time to introduce a new product in the market is short, which improves business.

Benefits:

- Increased Flexibility
- Improved Utilization

Ice Cream Sandwich



Candy Bar / Bite Size



Wafer Cups / Cones



Sticks

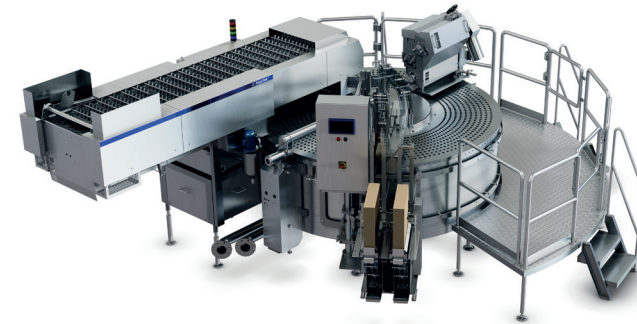


Cakes



New Product Upgrade – Rotary Moulder

UG Name	New Product Upgrade
System/Machine affected	Rotary Moulder
Value Category	Operational Efficiency
Implementation Time	Depends on new product

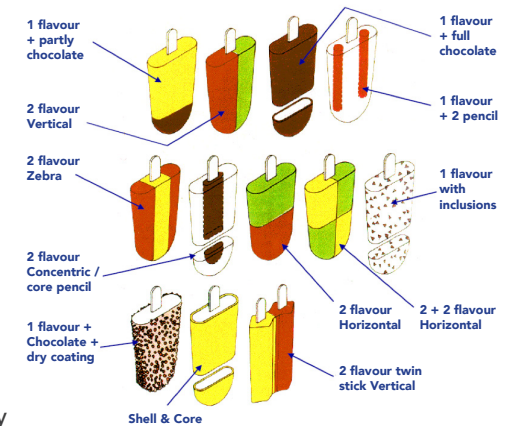


What does it do:

New stick moulded product upgrade for an existing rotary moulder line. Meeting and exceeding consumer expectations requires launch of innovative products.

Examples:

- Combination Filler
 - For small inclusions, up to 10mm (fruit pieces or similar)
 - Water ice, Ice cream & slush ice
 - One or two color filling
 - Less than 1% standard deviation between lanes
- Dry Coating
 - Equipment will create a “mist of nuts” (or similar dry material) in which the coated, but still “wet” product is dipped
 - Easy operation even in case of chocolate dip creating block-up – clean-out on the fly



Benefits:

- Increased Flexibility
- Improved Utilization
- Short Payback Time

05 CHEESE & POWDER

At Tetra Pak, we have brought together the world's leading systems and equipment supply companies for the industrial production of cheese and powder under the name Tetra Pak Cheese and Powder Systems - Tetra Pak CPS. With the addition of powder handling equipment to the portfolio via Guerin Systems SAS, we are now the only company in the world that can provide full line solutions for cheese and powder applications. We offer complete services in engineering, manufacturing plant construction, personal training and full automation.

In addition, our fully automated solutions are high sanitary, dust-free systems, meeting all of the European quality standards and, our powder handling systems are easily maintained, with local service and spare part capabilities via the Tetra Pak worldwide network.




Sustainability

Spray Monitoring System



Food Safety & Quality

Evaporator Hygienic Upgrades



Productivity & Efficiency

Coagulation Sensor for Curd Making Vats

New Knives for TT OST Cheese Vats

Shaking Bed Upgrades

Dryer Inlet Air Dehumidification Unit

CHEESE PLANT UPGRADES PRODUCT PORTFOLIO

OST Vat Upgrades

- Coagulation Sensor
- Cordless Whey Sieve
- OST Knives Upgrade
- OST Drive Upgrade
- Control Upgrade OST Vat
- Rennet Dosing
- LED Lighting

Blockformer Column Upgrades

- Automatic Weight
- Door
- Elevator Cylinder
- Extended Column
- High Capacity
- Automatic Bagging System

Cheddaring Machine Upgrades

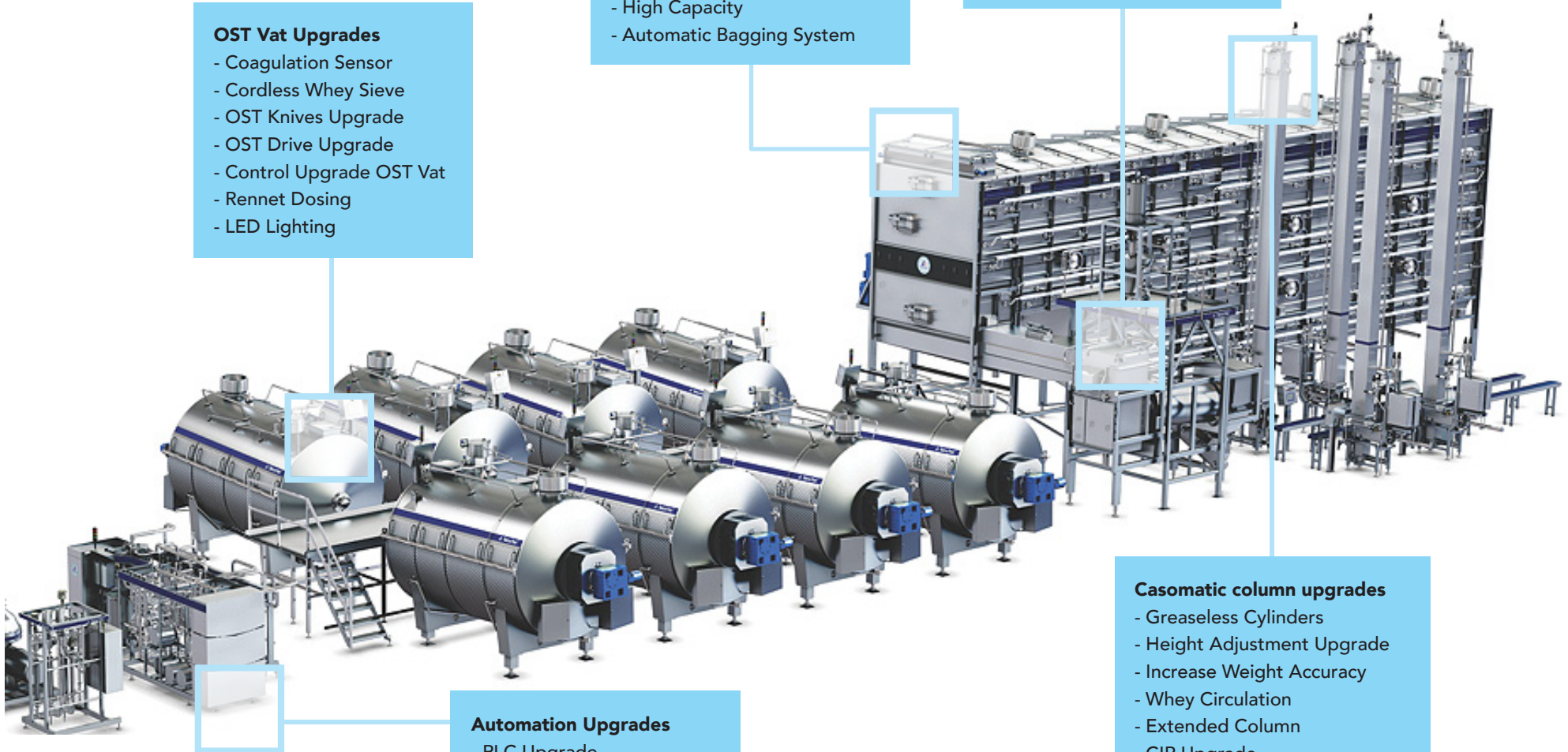
- Chip Mill
- CIP Improvement
- Water Saving
- Fine Saver

Automation Upgrades

- PLC Upgrade
- IT Upgrades
- Tampering Free Production
- Virtualisation

Casomatic column upgrades

- Greaseless Cylinders
- Height Adjustment Upgrade
- Increase Weight Accuracy
- Whey Circulation
- Extended Column
- CIP Upgrade
- Control Upgrade
- Improved Buffer Tank Stirring
- Separate Cleaning Buffer Tank



TYPICAL EVAPORATION & DRYING PLANT

Automation Upgrades

- PLC Upgrade
- IT Upgrades
- Tampering Free Production
- Virtualisation

Plant Level Upgrades

- Water recovery to rinse-water tank
- Product recovery with automatic sorting of mix phase
- Energy recovery with hot and cold water tanks
- Energy recovery with hot water as steam complement

Evaporator Upgrades

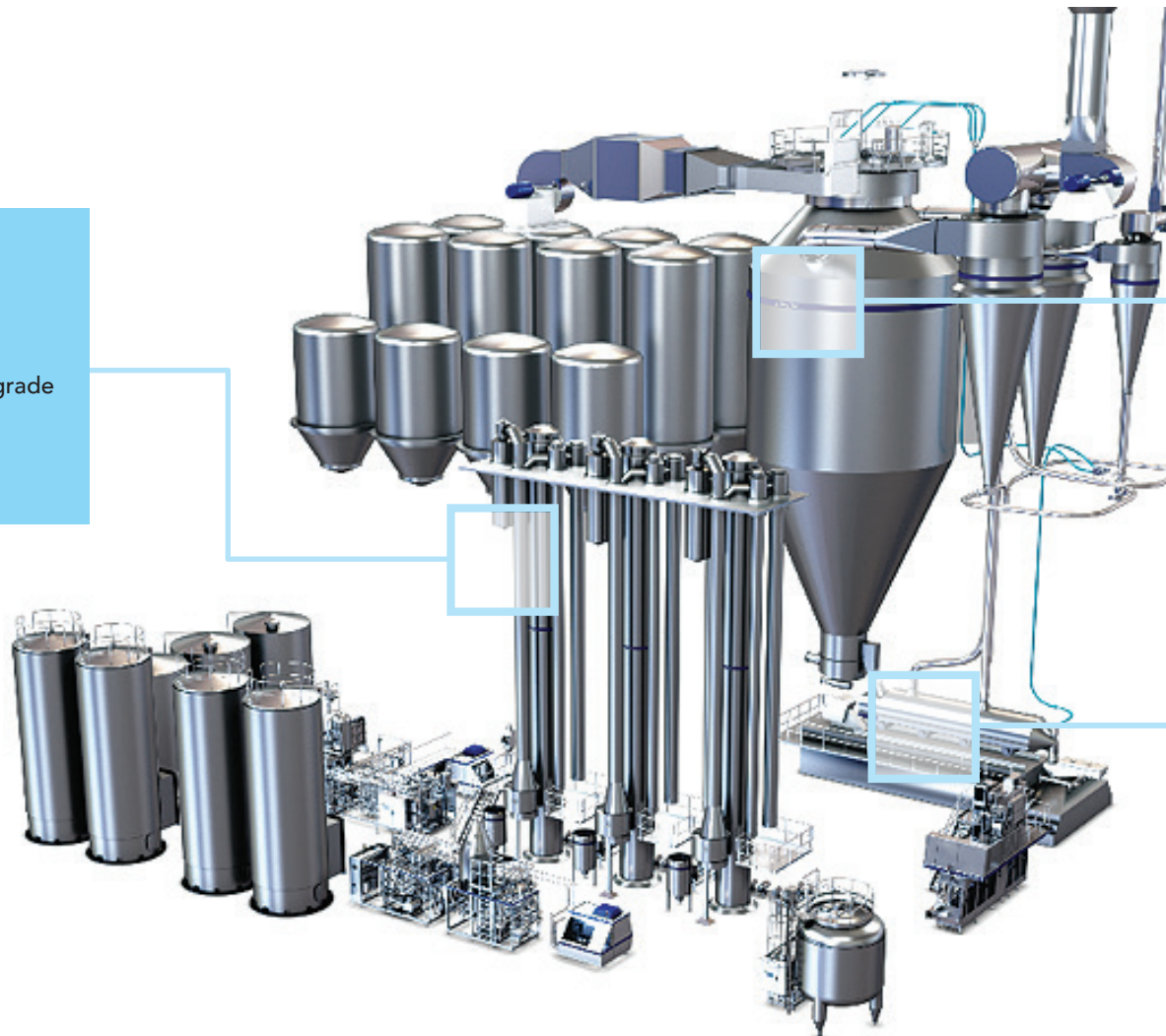
- Vacuum Skid
- Hygiene Upgrade
- DSI
- Distribution Plate Upgrade
- Heat Recovery
- CIP Upgrade
- MVR Upgrades

Dryer Upgrades

- Safety Upgrades
- Concentrate Pre-heater
- Spray Monitoring
- Dehumidifier
- APC
- Baghouse
- Powder Humidity Control
- Powder Samplers
- CIP Upgrade
- Fan Upgrades
- Heat Recovery
- HP Set Upgrade

Shaking Bed Upgrades

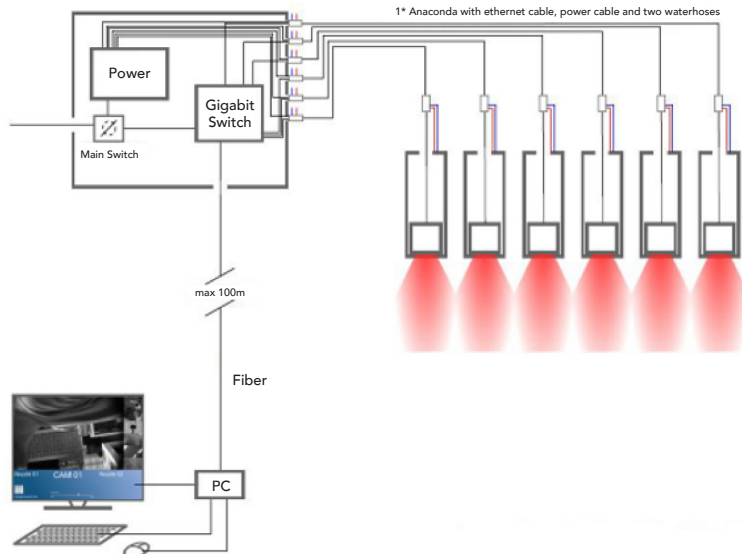
- Air Distribution Plates
- GVK Springs
- Drive Upgrade





Spray Monitoring System

UG Name	Spray Monitoring System
System/Machine affected	Former Stork and Tetra Pak spray dryers
Value Category	Safety and Performance
Implementation Time	On request



What does it do:

The spray monitoring system comprises of:

- Actively cooled camera housing
- High intensity LED ring for illumination
- Preconfigured optics
- High resolution ethernet camera
- Control station
- Remote workstation

Benefits:

- Early detection of nozzle leakage or product build-up significantly reduces the risk of a fire or an explosion and prevents unnecessary shutdowns.
- Monitoring of the spray pattern enables optimum operational performance of the spray dryer:
 - Enhances plant safety
 - Optimizes view of nozzles and sprays
 - Reduces downtime



TETRA PAK® BLOCKFORMER SYSTEM WHEN CONSISTENT RESULTS COUNT

- Creates cheese blocks of a uniform size and weight.
- Low losses thanks to features like the double action door, interceptor plate and angled ejector block.
- Food safety is embedded throughout the design, including folded stainless-steel base unit.

Coagulation Sensor for Curd Making Vats

UG Name	Coagulation Sensor for Curd Making Vats
System/Machine affected	Tetra Pak and suitable third party supplied curd making vats (that have appropriate process parameters)
Value Category	Operational Efficiency
Implementation Time	2-5 days



What does it do:

A sensor is fitted to the vat with appropriate software algorithms to allow the progress of coagulation process to be monitored. That information can be used to determine the optimum cutting time, to automatically step on to cutting or to provide early warning of an issue. By logging the data externally the unit will allow detailed process analysis and comparison between vats and batches.

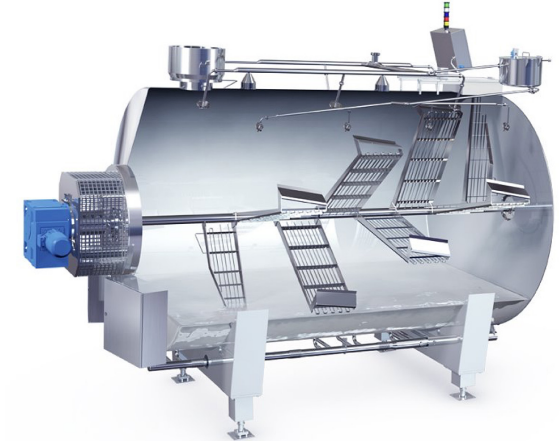
- Measures backlight scattering during coagulation to determine flocculation point
- Helps to maintain optimal cutting-time selected by the cheese-maker
- Can be used for automatic starting signal for the cutting sequence

Benefits:

- Reduces operator input and provides consistency in cutting times
- Early warning in case of deviations
- Allows analysis and insight into the coagulation process
- Supports external data logging for long term analysis

New Knives for TT OST Cheese Vats

UG Name	New Knives for TT OST Cheese Vats
System/Machine affected	TT OST Cheese Vats
Value Category	Operational Efficiency and Food Safety

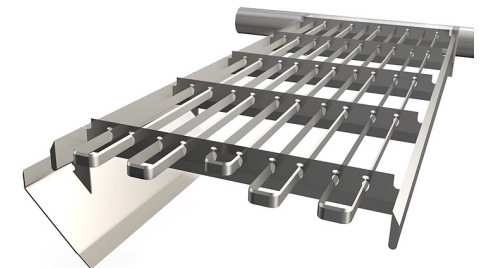


What does it do:

- Upgrade consists of the delivery of complete sets of knife frames, to be installed inside the TT OST vat.
- The knife blades on the new knife frames are made of hardened and special sharpened material. The harder and thinner knives generate less cutting and fat losses.
- Overall, the new design gives better overall cutting performance, including along the side walls of the cheese vat.
- Loose knife end-tips and welds are avoided enabling a more hygienic design.

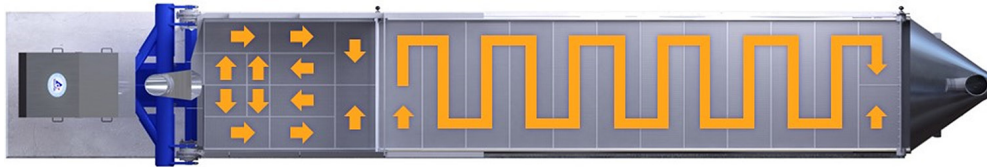
Benefits:

- New knife design reduces product losses and improves yield
- Less fat and fines losses
- Improved hygienic knife frame construction because of thin, sharp, hardened knife blade material.
- Improved cleanability
- Improved mechanical stability



Shaking Bed Upgrades

UG Name	Shaking Bed Upgrades
System/Machine affected	Former Stork and Tetra Pak Spray dryers
Value Category	Process Efficiency
Implementation Time	On request



What does it do:

This upgrade package consists of two new improvements for the shaking bed that can be installed separately:

- New air distribution plate
- New shaking bed drive

Benefits:

- Air distribution plate:
 - a minimum risk of product downgrade by microbiological contamination and deformation of the plate
- Single rod drive:
 - extra capacity because of less downtime for preventive maintenance and maintenance overhauls
- Air distribution plate:
 - improved drying and cooling performance (without lump formation or extensive fouling)
- Single rod drive:
 - proven design with less wear of critical components such as bearings

Dryer Inlet Air Dehumidification Unit

UG Name	Dryer Inlet Air Dehumidification Unit
System/Machine affected	Stork- Tetra Pak and non Tetra Pak Spray dryers
Value Category	Operational Efficiency
Implementation Time	3-6 days



What does it do:

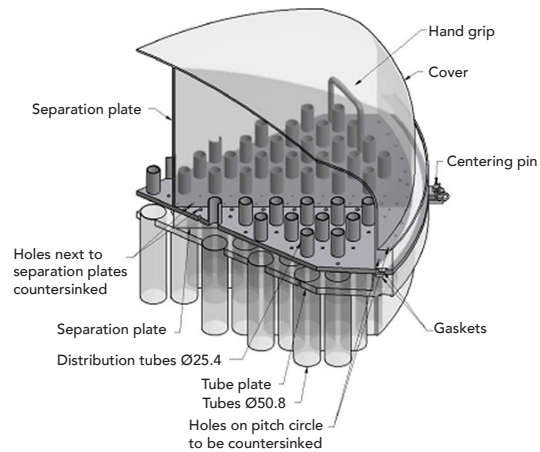
Modern infant food plants are successfully running with these dehumidification units which enables them to produce at a higher capacity for difficult powder products made from sticky substances.

Benefits:

- Reliable and stable production of complex milk powder products like infant formula that contain syrups or GOS and FOS, at a 15–30% higher capacity and with 5–20% lower CO2 emissions
- Improved product and process stability
- Dryer operations not dependent of weather conditions
- Improved hygiene quality and food safety

Evaporator Hygienic Upgrades

UG Name	Evaporator Hygienic Upgrades
System/Machine affected	Former Scheffers/Stork/CPS and Tetra Pak evaporators
Value Category	Process Efficiency
Implementation Time	On request



What does it do:

- The revised product inlets improve the distribution of the product over the distribution plate and are designed without dead spots.
- The revised distribution plate ensures equal distribution of product over the boiling tubes, removes possible dead spots with risk of fouling and improves CIP by better wetting the same area.
- The new splash rings solve fouling problems caused by poor wetting under the lower pipe plate by diverting product in this area; the splash rings have this function for both production and CIP.

Benefits:

- The upgrades reduce the risk of microbiological contamination due to less fouling and consequently reduce downtime during CIP and thereby increase productivity
- Creates a better performing evaporator
- Extended running times
- Shorter CIP times
- Eliminates need for regular manual cleaning





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Please contact your sales representative for further discussion