

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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Food Safety & Quality	

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	Energy Management for Heat Exchangers	CIP Upgrades and Optimization
Water Recovery	Energy Recovery	



Productivity & Efficiency

Improved Running Time
Automatic CIP and Refill of Homogenizer Dampers
New Control System – Separator



Food Safety & Quality

Differential Pressure Supervision



New Requirement for your Line

Production Capability Updates – New Capacity	Production Capability Updates – New Application
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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:

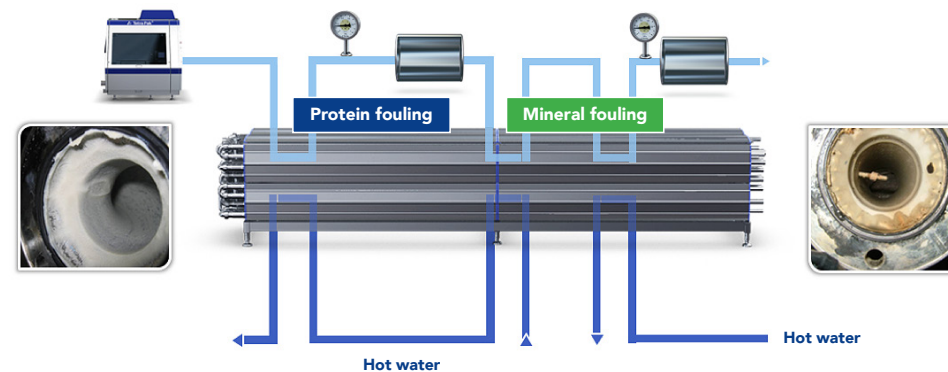
- Update of the existing software programs, PLC and local HMI
- Update of the technical, operator and electrical documentation

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

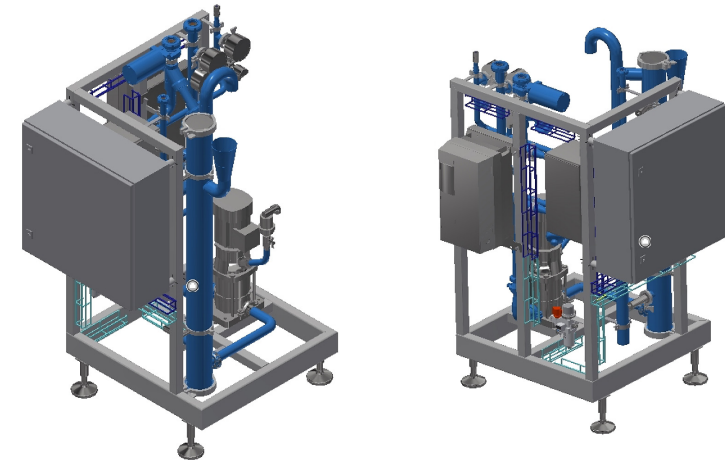
*depending on existing version the scope will vary

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



Energy Management for Heat Exchangers

UG Name	Energy Management for Heat Exchangers
System/Machine affected	Tetra Pak® Plate Heat Exchanger Tetra Pak® Tubular Heat Exchanger
Value Category	Operational Efficiency & Cost
Implementation Time	~5 days



What does it do:

Energy management is an analysis and consulting service with the purpose of improving our customers' production economy.

For many heat exchangers, increasing the heat recovery level is a hidden source of substantial yearly cost savings.

We analyze the customer's heat exchangers and propose upgrades to reduce the customer's operational cost. The focus is on increasing the heat recovery level and reducing energy consumption.

Three possible upgrades can be suggested:

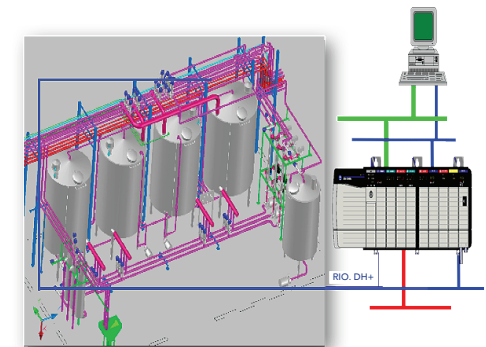
- Re-optimization (PHE & THE)
- Re-build (PHE & THE)
- Insulation (THE)

Benefits:

- Reduces operating costs by improved energy efficiency
- Minimizes environmental impact
- Improves occupational health and safety by decreasing heat loss

CIP Upgrades and Optimization

UG Name	CIP Upgrades and Optimization
System/Machine affected	Processing Units
Value Category	Operational Efficiency & Cost and Environment
Implementation Time	Depends on project size



What does it do:

There are many upgrades that can be done to the CIP station.

Following are some key upgrades:

- Upgrading CIP station from manual to automatic system
- Optimize CIP system to higher CIP functionality and improve performance
- Addition of new CIP circuits
- CIP optimization by CIP target re-arrangement and combination
- Flexible pressure lines and CIP target with valve cluster
- Higher level of automation in CIP control system

Benefits:

- Reduce the operational cost
- Ensure food safety
- Minimize waste of detergent and utility
- Shorten operation time
- Reduced environmental impact
- Increase CIP capacity



Water Recovery

UG Name	Water Recovery
System/Machine affected	All
Value Category	Operational Efficiency & Cost and Environment
Implementation Time	Depends on project size



What does it do:

Recover water from process plant and reuse for other process.

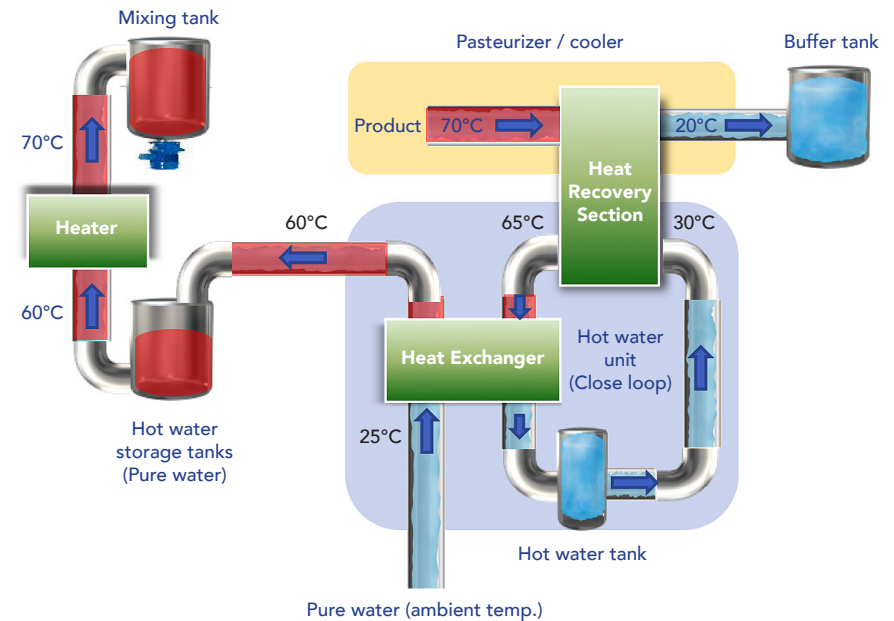
- Water recovery during start-up of plant
- Water recovery from Homogenizer
- Water recovery from cooling of deaerator
- Water recovery from rinse water tank
- Water recovery from Filling machine
- Water recovery from CIP station

Benefits:

- Reduce water consumption by recovery water from process
- Less risk of product contamination
- Lower operational cost
- Reduced environmental impact
- Reduced noise level, valid for water recovery from vacuum of deaerator

Energy Recovery

UG Name	Energy Recovery
System/Machine affected	All
Value Category	Operational Efficiency & Cost and Environment
Implementation Time	Depends on project size



What does it do:

Recover heating and cooling from heat transfer process and reuse them for other purpose.

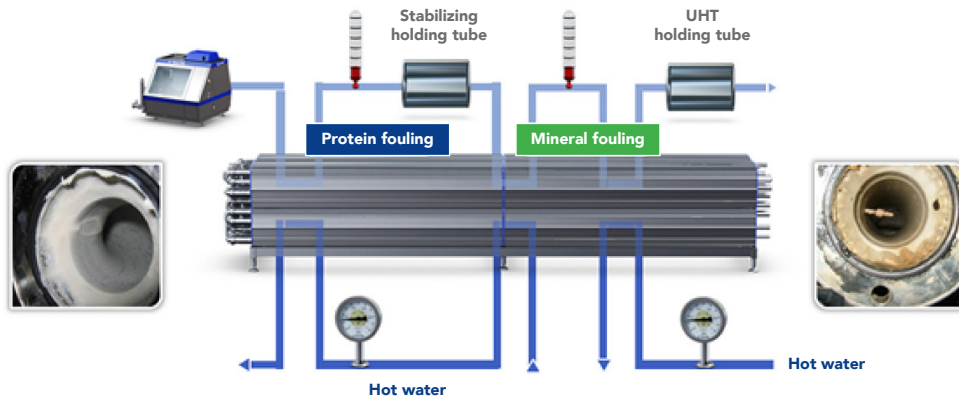
- Energy recovery with hot and cold-water tanks – collection & reuse of waste heat
- Energy recovery with hot water as steam complement – decreases heating by steam
- Energy recovery at mixing - Regenerative

Benefits:

- Reduce energy consumption by recover energy from process
- Lower water and chemical consumption
- Lower operational costs
- Reduced environmental impact

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

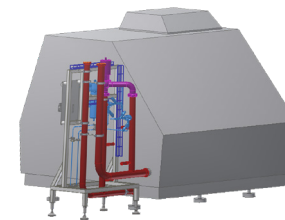
Benefits:

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

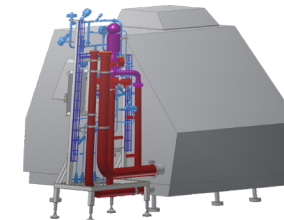
Automatic CIP and Refill of Homogenizer Dampers

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

New Control System – Separator

UG Name	New Control System
System/Machine affected	PX614, PX714, PX518, PX618, PX718, PX818, PX918
Value Category	Operational Efficiency and Life Cycle Management
Implementation Time	5-7 days



What does it do:

The replacement is composed by:

- Siemens ET200S controller or AB CompactLogix L43
- Siemens TP700 Comfort panel or AB PanelView plus 700
- 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

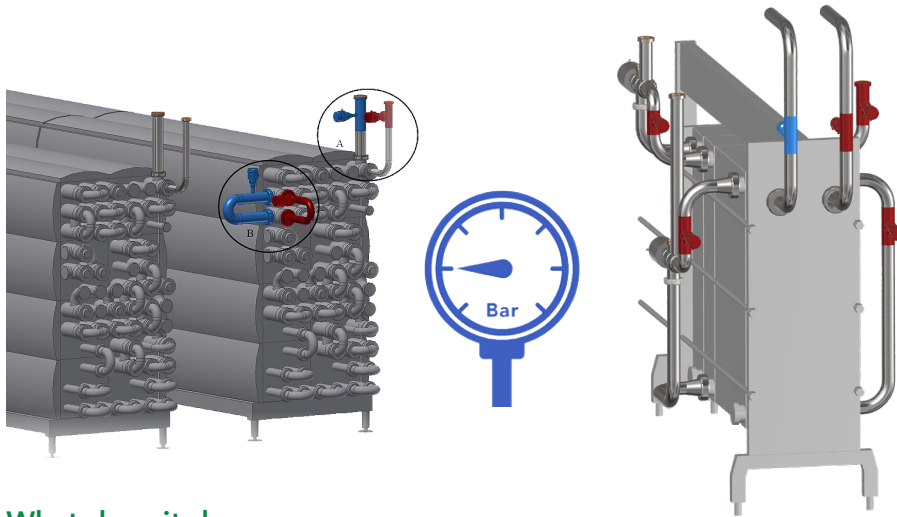
Benefits:

- Higher performance and responsiveness
- Improved process and parameter visibility
- Extended Life time with hardware and software supported by Tetra Pak
- Faster automation support via the standardized Global User Interface
- Ability to integrate new I4.0 technologies
- Improved machine monitoring



Differential Pressure Supervision

UG Name	Differential Pressure Supervision
System/Machine affected	Tetra Pak Indirect UHT Units Tetra Pak Direct UHT Units Tetra Pak Pasteurizers
Value Category	Food Safety
Implementation Time	4-6 days



What does it do:

Differential Pressure Supervision will, with added pressure transmitter, allow for measurement of the differential pressure between the product and water side, or in case of product to product regeneration, between treated and untreated product.

A number of options are available, depending on the solution and the Processing Unit. By ensuring a higher pressure on the treated side the food safety can be maintained in case of leakage as well.

Benefits:

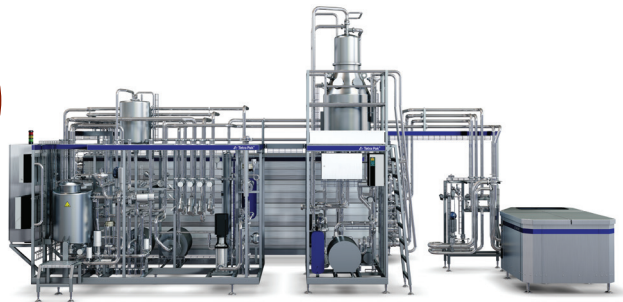
- Improved food safety
- Less risk of product contamination
- Follow legal and/or retailer requirements
- Protect and maintain trademark value
- Reduce risk of product failures being distributed to consumers



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

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

Replacement GE90-30

Replacement
DMC2 Servo Drive

Water Filtering Station

Primary Printer

Package Drier



Productivity & Efficiency

Replacement Flexbox VI

MaPS

EcoDot
CBP32 – TCBP70

02 PACKAGING



Food Safety & Quality

New Aseptic
Product Valve NAPV

Additional
External Cleaning

Dust Remover A3/CF

Dust Remover CAP30

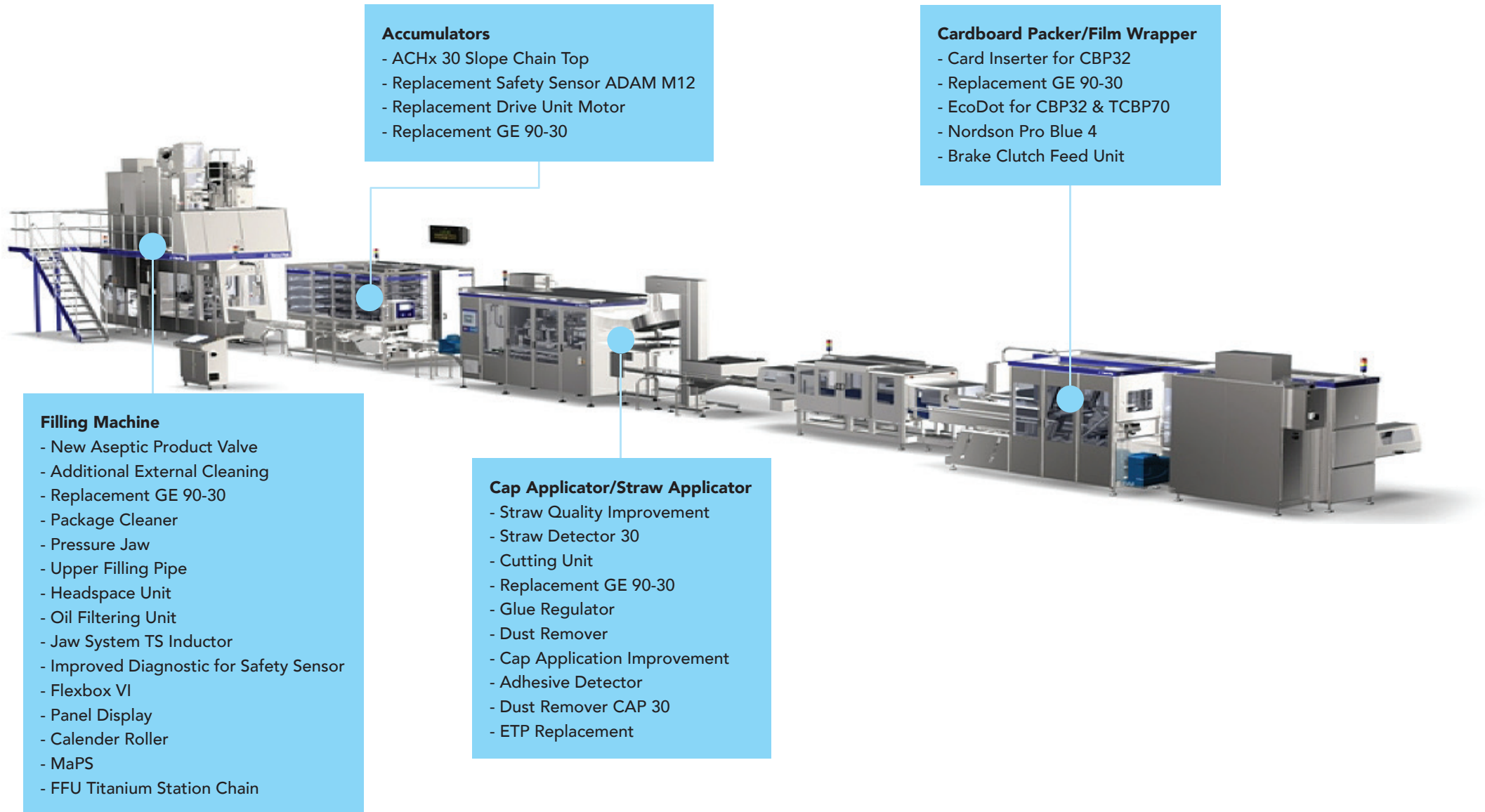
External Cleaning
A1 TFA



New Requirement for your Line

Production
Capability Upgrades
– A3/S Up Speed

PACKAGING UPGRADES PRODUCT PORTFOLIO



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

Replacement DMC2 Servo Drive

UG Name	Replacement DMC2 Servo Drive
System/Machine affected	Tetra Pak® TBA/22, -0400 and -0500 Tetra Pak® A3/Speed, -0100
Value Category	Extended Life Cycle
Implementation Time	1-2 days



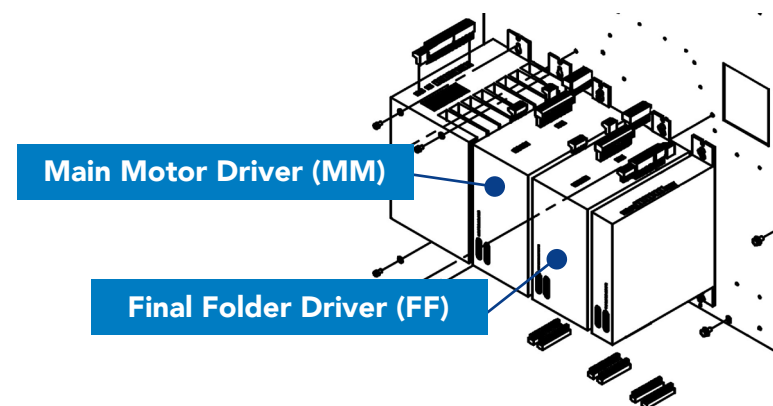
What does it do:

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.

DMC2 Servo drive 90458-0399 (obsolete)



What does it do:

This Tetra Pak® Upgrades kit consists of two (2) new Servo Drive DMC2 90458-0398, software modification, adaptation plate and connection cables to fit the new component in the electrical cabinet.

Benefits:

- Minimize un-planned downtime impact by proactive installation of this kit
- Selective replacement (possibility to use the replaced DMC2 servo drive as spare part for other equipment in same plant)
- The kit guarantees a stable and continue access to spare parts, extending equipment lifetime

► Mixed configuration (old and new DMC2) will not work



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

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



Package Drier

UG Name	Package Drier
System/Machine affected	All
Value Category	Reduce Downtime, Equipment Running Uptime
Implementation Time	~12 hours

UG Solution also for Non-Tetra Pak lines



What does it do:

Device to dry the package before the primary printer.

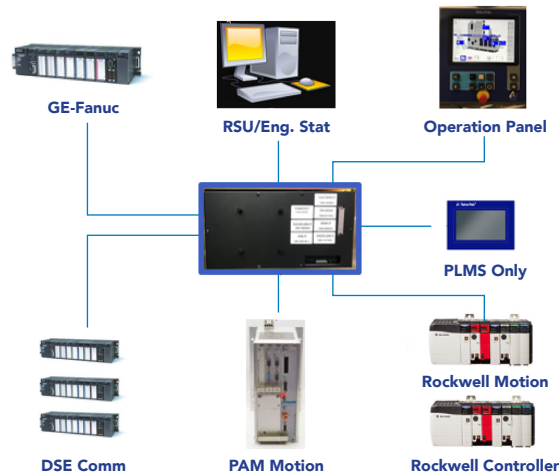
Benefits:

- Improve printability of the primary package
- Improve application of straws and caps
- In evaluation to be "Highly recommended Equipment" in line that will deploy paper straw (perfect dry package as pre-condition to have proper gluing of a "paper" envelope)



Replacement Flexbox VI

UG Name	Replacement Flexbox VI
System/Machine affected	Prio1: A3/Flex 0100 (*) TBA/8-1000 Prio2: TB/19, TBA/8-1100, TBA/8-1200, TBA/19, TBA/21, TBA/22, C3/Flex, A1
Value Category	Extended Life Cycle
Implementation Time	1-3 days



What does it do:

Industrial PC complete with panel (4:3) of 3 dimension:(8", 12", 15") depending on IPC. All IPC interfaces in scope granted including operator/PLMS panel replacement.

Benefits:

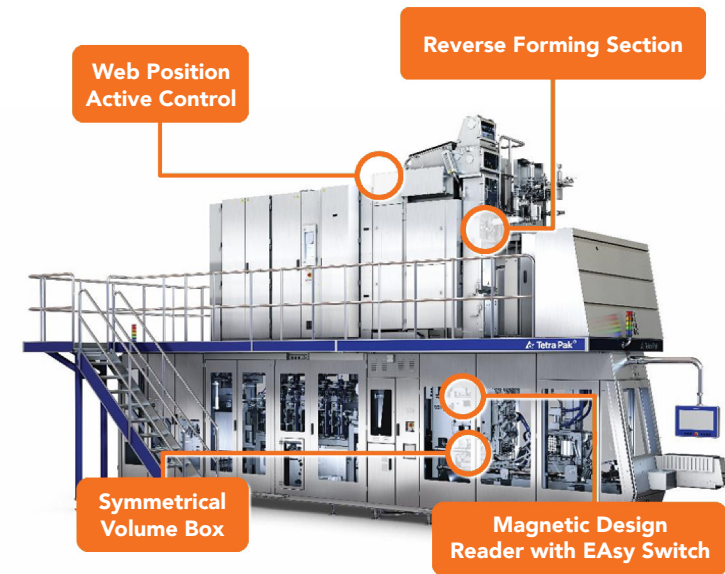
Address the obsolescence of the TPMC and extend the lifetime of the equipment.



MaPS

UG Name	Magnetic Positioning System (MaPS)
System/Machine affected	TP A3/S -0200, -0300, -0400
Value Category	Operational Efficiency
Implementation Time	5-7 days

Tetra Pak A3/Speed for TBA 125 S



What does it do:

The kit combines magnetic inks (static marks) printed into the packaging material with magnetic readers located inside the Filling Machines.

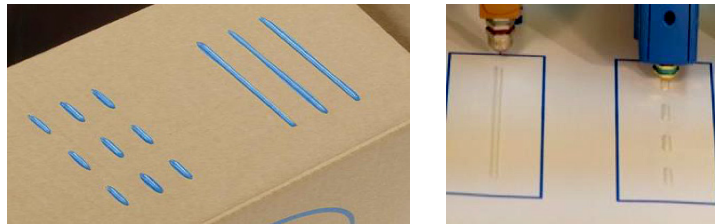
Benefits:

Reduce Customer Operational Cost by improving:

- Filling Accuracy
- MME, MTBF (Capacity increase)
- Packaging Material waste
- Product waste
- Operational activities (reduce number of operator tasks)

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



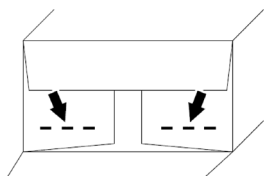
What does it do:

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.

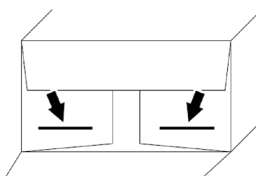
- For CB32, an EcoDot icon is introduced in the HMI
- For TCBP70, a pattern generator enables the EcoDot function

Benefits:

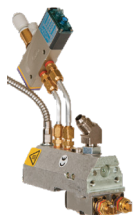
The saving of hotmelt consumption is from 15% to 30% depending on the type of distribution unit.



Intermittent adhesive dots



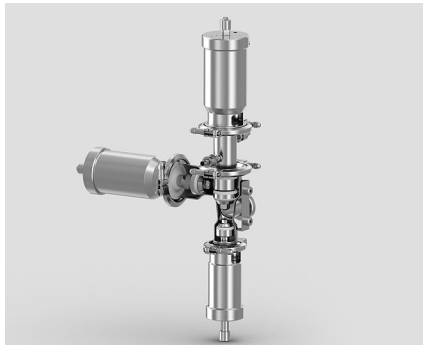
Continuous adhesive dots



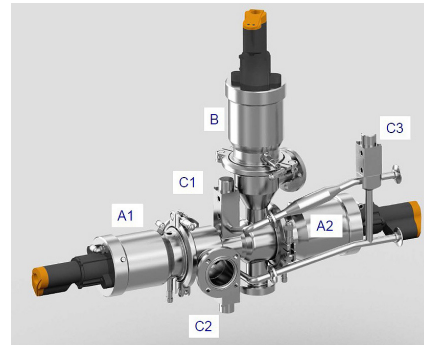
New Aseptic Product Valve NAPV

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.

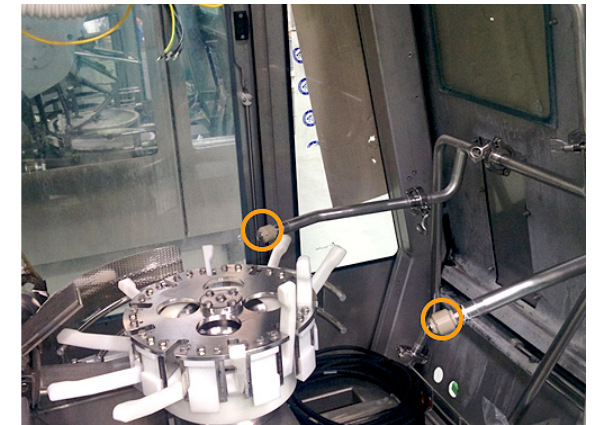
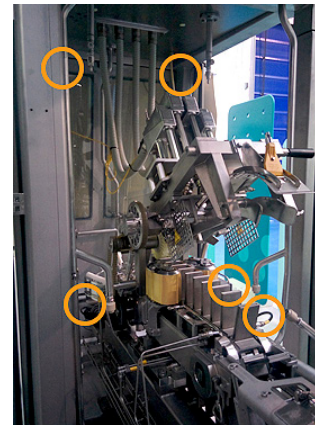
The new design aims to improve current AP-valve functionality.

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)

Additional External Cleaning

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:

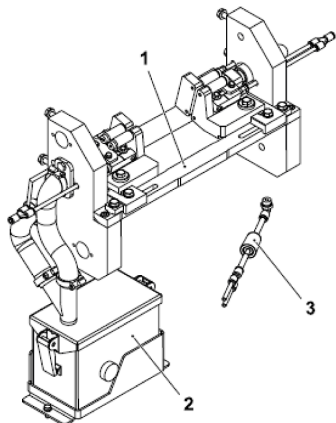
- Additional nozzles (static and rotating) installed in Jaw System, Final Folder Unit and Waste Conveyor areas.
- An external water gun (no high pressure) directly connected to the service unit (with automatic pipe reel) able to perform both rinsing and foaming phases. The functionality can be selected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

Benefits:

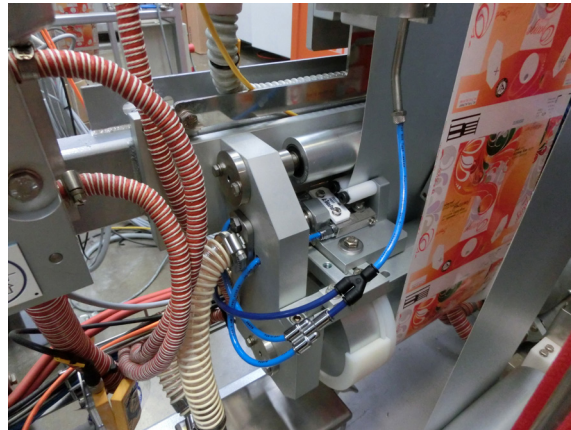
- Improve the cleaning efficiency of existing external cleaning by adding new nozzles (internal and external) and a water gun
- Decrease labour cost by reducing manual cleaning time (average daily operator time saving is 40-50%)
- Increase available production time due to reduced manual cleaning time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

Dust Remover A3/CF

UG Name	Dust Remover
System/Machine affected	A3/CF -0100, -0200, -0300, -0400 E3/CF -0100
Value Category	Operational Efficiency
Implementation Time	1-2 days



- 1 Double blower assembly
- 2 Waste box
- 3 Pneumatic connection



What does it do:

This rebuilding kit provides a blower with the aim to remove the dust along the edge of the packaging material before the strip is applied and convey it into a dust collector box.

Benefits:

Maintenance cost reduction by decreasing the cleaning frequency of Strip Applicator by Customer operator due to less paper dust accumulation in the ASU module, especially in case of usage bleached packaging material.

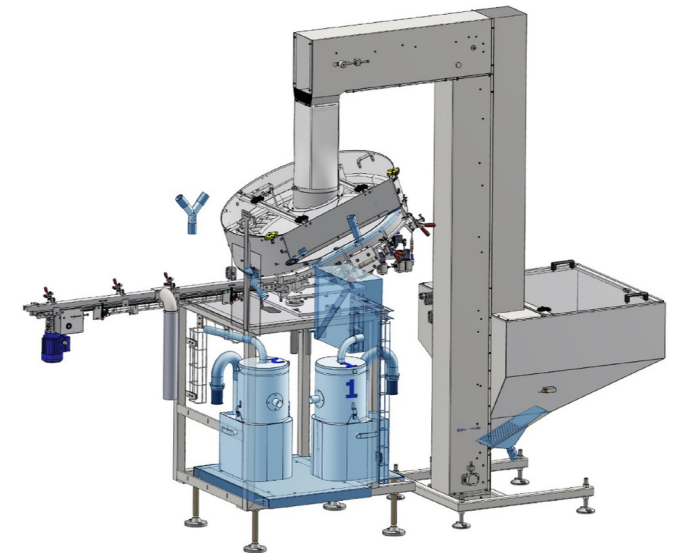
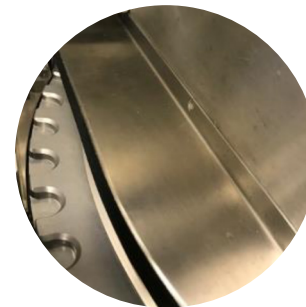
Dust Remover CAP30

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.

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



**Meeting
Volume
Demand**

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

Tetra Pak® Plant Master
Hardware Upgrades
(Virtualisation)

Manufacturing
Execution System (MES)

Productivity & Efficiency

Beijer TPOP "E" Series

Replacement TPMC
(Rockwell Solution)

CPU Upgrades

SLC 500 Upgrades

Food Safety & Quality

Tamper-Free System

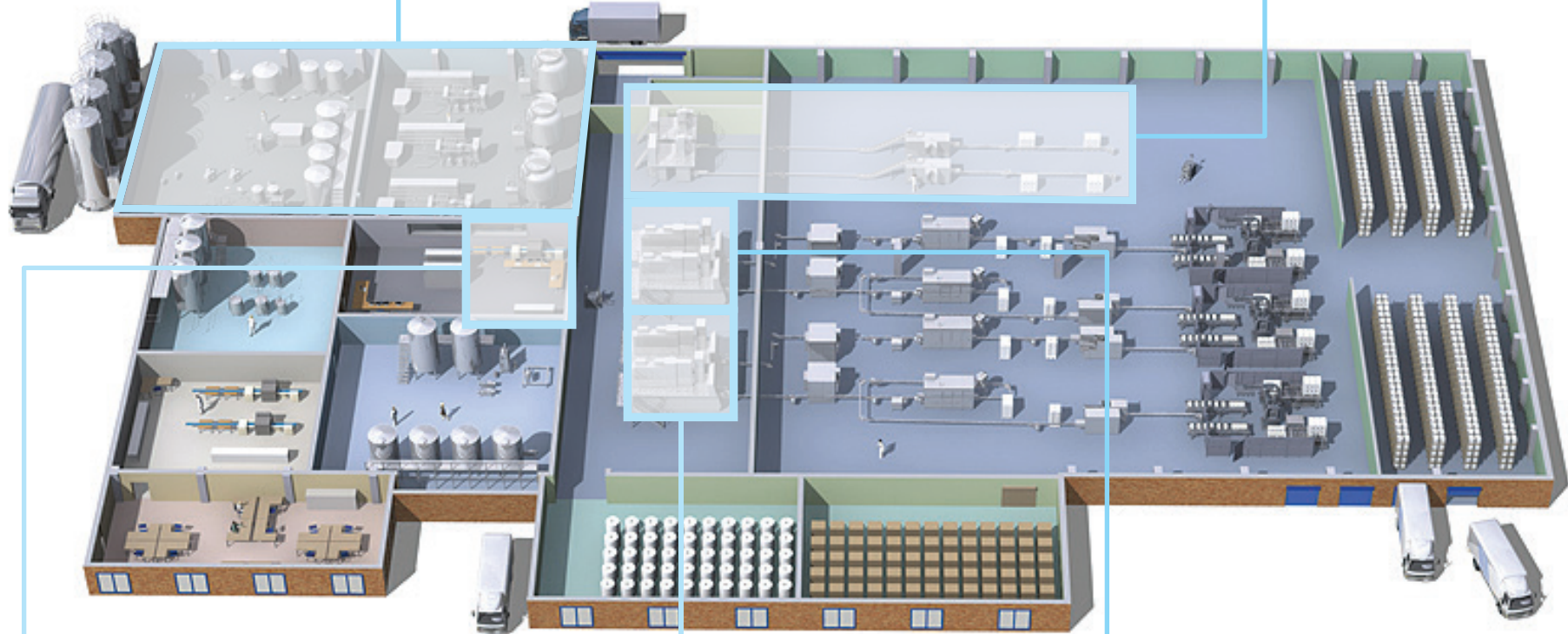
AUTOMATION PRODUCT PORTFOLIO PAGE

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

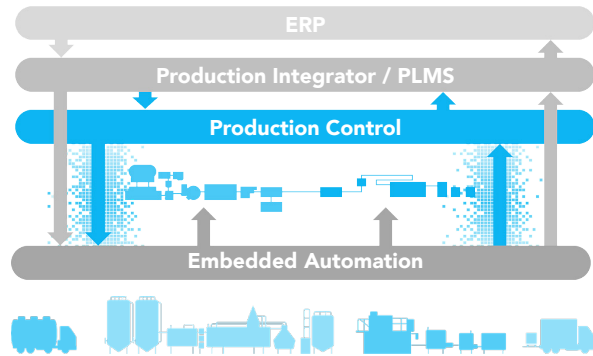
- RK PAM/SAM
- RK FLEXBOX VI
- RK GE90-30

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:

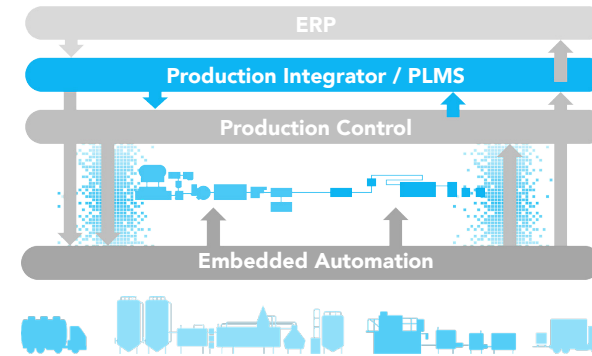
- Upgrade of controller software, such as PLC and HMI systems
- Unique configuration matching the process application and plant hardware
- Designed and delivered based on consistent and proven S88 & S95 standards
- Factory Acceptance Testing
- Installation, I/O checking & Commissioning

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:

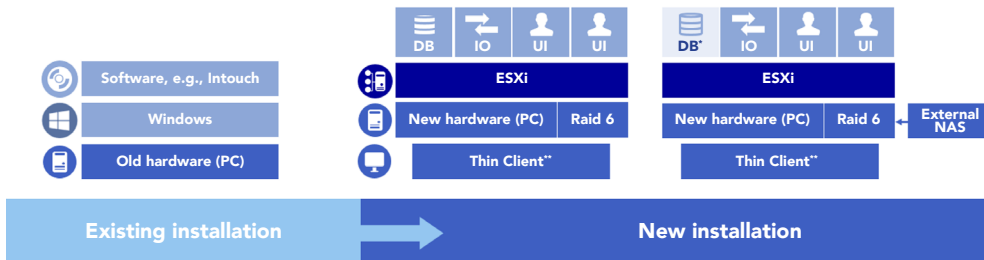
- Upgrade of production integrator software, such as SQL server, Batchkernel, system integration kit, etc
- Creation of Plant Model matching the process plant
- Designed and delivered based on consistent and proven S88 & S95 standards
- Factory Acceptance Testing
- Installation & Commissioning

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



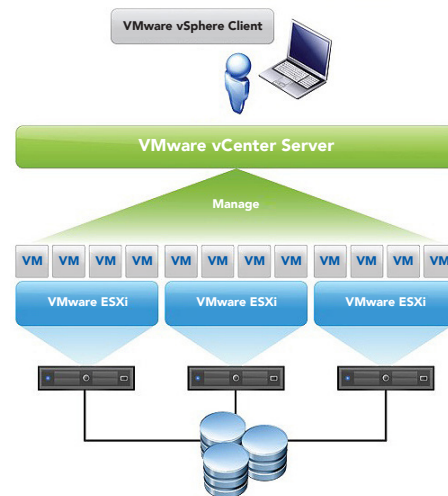
What does it do:

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

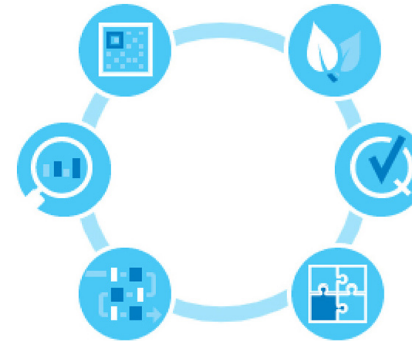
Benefits:

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



Manufacturing Execution System (MES)

UG Name	Manufacturing Execution System (MES)
System/Machine affected	MES
Value Category	Production functionality, Quality, Operational Efficiency & Cost
Implementation Time	Depends upon size of solution



MES Suite

Production Control

Embedded Automation

What does it do:

- Replacement IT hardware such as servers, network storage & performance management software
- Get the one and only MES solution for food production that covers your entire operation – from raw material reception to finished goods
- Digitalize your entire operation – across all of your sites – no matter your level of automation today and no matter what equipment you use
- Provide transparent information within your factory and in the entire supply chain – from raw material to consumption
- Secure a flexible and future proof solution thanks to scalability, modularity, software maintenance support, dynamic updates, licensing and customizable functionalities

Benefits:

- Optimal performance
- Flexible & future proof solution
- Customized base report

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

Replacement TPMC (Rockwell Solution)

UG Name	Replacement TPMC
System/Machine affected	TBA/8-090V, TBA/8-060V, TBA/8-100V, TBA/8LSC-010V, TBA/9-1400, TBA/9-1300, TTP31-0300, TTP31-1100, TTP31-2000, TTP31-2600
Value Category	Reduce Downtime, Equipment Running Uptime
Implementation Time	~1 day (avg)



What does it do:

Full replacement of the existing controller, including cards, accessories, electrical cabinet parts (in some cases including also a new door) and SW conversion. Latest generation Rockwell CompactLogix system will be used. The functionality will be at the same level than existing unit.

Benefits:

Release replacement in order to address the obsolescence of the TPMC and extend the lifetime of the equipment.

Upgrade kits will offer:

- New complete set of controlling unit (Tetra Pak design)
- Software and Firmware updates
- Review of hardware drawings, manuals and mounting plates
- Fully tested in house and on the field

CPU Upgrades

UG Name	CPU Upgrades
System/Machine affected	Tetra Pak A3/Flex -150, -160, -0200, -0300 Tetra Pak A3/Speed -0200, -0300 Tetra Pak A3/Compact Flex -0100, -0200 Tetra Pak C3/Compact Flex -0150, -0160 Plant Automation and BPU's
Value Category	Reduce Downtime, Equipment Running Uptime
Implementation Time	3 days



What does it do:

The intended use of this Rebuilding Kit is to replace the current CPU 1756-L63 with the new controller CPU 1756-L74.

Benefits:

- The CPU L74 has an increased memory and computational power and it enables installation of future Upgrade and Optional Kits
- RoHS compliant
- Extended Life time

▶ From Q4 2018, the CPU Upgrade will be a pre-requisite for all future upgrades valid for filling machines equipped with old CPU (L63)

▶ Stop releasing SW for filling machines equipped with old CPU L63 from Q4 2018

SLC 500 Upgrades

UG Name	SLC 500 Upgrades
System/Machine affected	Tetra Alcip 100
Value Category	Operational Efficiency & Costs
Implementation Time	~2-5 days (incl software test) Exact time depends on site size



What does it do:

- The panel upgrade for Tetra Pak CIP unit offers an upgrade to obsolete SLC 500 Allen-Bradley control panels. There are a few different solutions to the upgrade.
 - Upgrade of Alcip 100 with a new control panel, but kept functionality
 - Upgrade of Alcip 100 to Tetra Pak CIP unit P
- Each solution has unique advantages and the best solution is highly customer dependent.

Benefits:

- SLC 500 is obsolete so a break-down in the control system will lead to long down-time
- With an upgrade the down-time can be minimized, planned and future disturbances due to obsolescence will be avoided
- Depending on solution new functionality will be introduced

Tamper-Free System

UG Name	Tamper-Free System
System/Machine affected	Manufacturing Execution System
Value Category	Food Safety
Implementation Time	Depends upon size of solution



Risks involved with manual ingredient addition

- No strict management of raw material storage
- Incorrect materials, amounts and tanks
- Incorrect adding times and sequences
- No confirmation of process requirements
- Unauthorized personnel and actions
- Not executed according to plan





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Please contact your sales representative for further discussion