

Webinars for Cold Chain Professionals COLD CHAIN RISK WEEK: FIRE STARTING AT 10:00AM

SUPPORTED BY:



BETTER SOLUTIONS IN FIRE PROTECTION







COLD CHAIN RISK WEEK 20th – 24th February

21 FEBRUARY @ 10:00 INSURANCE IN THE COLD CHAIN 22 FEBRUARY @ 10:00 FIRE RISK IN THE COLD CHAIN 24 FEBRUARY @ 10:00 COMPLIANCE IN THE COLD CHAIN

For more information and to register for these sessions go to www.coldchainfederation.org.uk/events

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CCF Presentation

Automation in Cold Chain

22/02/2023



Think Tomorrow.



History



Fritz Schäfer **founded** his family-owned company for "factory manufacturing of sheet metal goods"

1953



2002

HUBs throughout the world founded



Salomon Automation, **an expert in software**, became part of SSI SCHAEFER



SSI SCHÄFER

1937

1958

The revolutionary **"Lager-Fix-**Kasten" was developed



2008

Noell and Peem diversified the portfolio of SSI SCHAEFER with **automation solutions** and merged under the

umbrella brand SSI SCHAEFER



Today

SSI SCHAEFER is a globally active corporate group and the first point of contact worldwide for manual, partially automated and fully automated intralogistics solutions including releasable software



Market Sector Approach



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10



Cold Store Challenges



Cold Store Challenges

People

Before we look at technology, we must first understand our customers challenges before we can resolve them.

EUROPE

They are, of course, multiple and complex but we hear some consistent themes. Let's start with one of the biggest, people



Availability

The available labour market has seen contractions in the last 3-4 years in particular. Since 2020, both employment of population and unemployment dropped, with inactivity rising.



Conditions

Working in a cold store does not appeal to everyone. This creates a ceiling in terms of labour pool and adds restrictions such as working times and increased pay to entice.



Reliability

People can be unreliable. We all get sick, we all have changing circumstances. This creates a need to have a surplus of people in many cases to cover this unreliability



Cold Store Challenges

Cost

It's fairly obvious but it's hugely important. The building, storage equipment, MHE, people, personnel provisions, the list is seemingly endless.

Whilst automated technology is often a high CAPEX solution, it can offer savings in other areas which are faced within coldstores.



Land

We live in a country where land costs can be hugely prohibitive. The less floorspace that can be used the better



Temperature

It's obvious, but the more cubic space that needs to be temperature controlled, the more money that will cost ongoing



People

Linked to what we said before, people are a huge ongoing cost. Not just salaries but training, national insurance, PPE and everything else included with hiring and maintaining staff.



Cold Store Challenges

Customer Diversification

Our needs are continuously changing. Whether through shocks like COVID or expectation, this adds additional strain to all supply chains

If we focus on some of those relevant to cold stores, we see a trend in additional complexity.



Lead Time

Next day delivery is now the expectation rather than the norm. This adds huge strains to retailers, passed on to wholesalers who must facilitate such needs.



Range

Customers expect to be able to order more from fewer spaces. It's an expectation, again, fronted in retail with expectation of supply chains to adapt



Quantities

Not only is the expectation that customers can order what they want, there is a growing expectation to order as much as they want. This creates an additional level of complexity to counteract and maintain standards.



Exyz

Our high bay crane offering is known as Exyz, which can be operated in a deep freeze environment.

Pallets are stored in racks, with one crane per aisle to feed. Front zone consists of either pallet conveyor or a monorail. Each system offers multiple customisation options, dependent on client requirements.



Storage

Single, double or channel depth all available as standard. This is dependent on the SKU range, depth of stock and storage to throughput ratio



Rack Clad

Systems can be installed within a standard building, but also as a rack clad construction. Here the racking supports the cladding directly, increasing density of cube.



Height

As standard, systems can be installed up to 40m. Minimising the footprint to save on overall project costs is a huge driver in utilising height as best possible and improving economics of scale.



Deep Freeze

A standard option, SSI can install installations at up to -30 degrees Celsius

55I SCHÄFER



Flexi

Single level shuttles offer a solution to a different range of operational questions.

They allow the ability to pick a more diverse range of small quantity goods, allowing wholesalers to offer a more tailored approach.



Throughput

Multiple concurrent moving parts allow for a high throughput system. Multiple lifts and shuttles move at the same time ensuring maximum efficiency.



Resilience

Having multiple parts to the system also increases the uptime. If one shuttle goes down, only that maintenance section is stopped. If a lift goes down only that lift stops, the rest of the aisle and system continues to function.



Flexible Load Unit Sizing

As the name suggests, the system offers flexibility. Within the same rack totes and cartons can be stored from 200mm x 200mm up to 860mm x 680mm



Deep Freeze

A standard option, SSI can install installations at up to -30 degrees Celsius



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Supplementary

Multiple other technologies are available to assist with other tasks within the warehouse

Varying in specificity, some solutions are within the SSI portfolio, others have been integrated from others in to full solutions.



Layer Picking

Automated picking from pallet by layer is possible, saving labour in frequent use sites. Particularly useful in low SKU, high order sites.



Robotic Picking Picking at case or unit level is also possible, bu

Picking at case or unit level is also possible, but there is more restriction based on case size, material and various other characteristics.



Pallet Wrapping

Securing picked pallets is an essential but labour intensive role. This can be automated with regular feeds to reduce this operation.



Loading and Unloading

In closed circuit transport operations it is possible to implement whole truck loading and unloading. This only works in closed circuit operations due to truck modifications.



References











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Fire prevention is environmental protection

WAGNER Fire Safety Consultung

Global Account Management Jesper Hansen 22.02.2023



- Is environmental protection an issue of concern to you?
- Your sustainability goals? Does fire protection play a role?
- Holistic fire protection solutions are targeted precisely at this:
- ✓ Protection of persons
 ✓ Asset Protection
 ✓ Environmental and climate protection



A warehouse fire is not uncommon They inflict considerable irreversible damage on our environment



- Focus on developing energy-saving, environmentally friendly products, systems and services for 47 years
- Our goal: to successively reduce energy consumption
- Our vision: to bring the first completely CO2-neutral fire prevention systems to the market
- 1976

Company foundation



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1976

1984

Company foundation Market launch of

TITANUS® aspirating smoke detectors for earliest possible fire detection



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1994

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1984

1998

Replacement of Market Introduction chemical extinguishing of the fire gases by natural ones. prevention For the first time. technology residue-free and non-OxvReduct ® in destructive in Germany extinguishing is



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Market Introduction technology

1998

Further development of the fire prevention technology OxyReduct ® with respect to energy efficiency

2005



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1976	1984	1994	1998	2005	2011
Company foundation	Market launch of TITANUS® aspirating smoke detectors for earliest possible fire detection	Replacement of chemical extinguishing gases by natural ones. For the first time, residue-free and non- destructive extinguishing is possible.	Market Introduction of the fire prevention technology OxyReduct ® in in Germany	Further development of the fire prevention technology OxyReduct ® with respect to energy efficiency	In terms of energy efficiency, OxyReduct ® systems achieve savings potentials of up to potentials of up to 80%



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2023 => => => => => => => => => 2050

- Even higher sensitivity in Smoke Detection
- Even lower energy consumption
- Systems adapted to climate changing



=> 2050 - Risk analysis for a compact storage system As Risks increase the benefits of OxyReduct ® become even more apparent

More Compact design – Higher Risks

- Higher fire load
- Higher value concentrations
- Extremely dense storage
- Fires become increasingly difficult to extinguish

More automated Warehouses - higher risk concentration

- Higher number of electrical components as additional fire source.
- Li-ion batteries becoming more common / Protection concepts in development

Centralization of Storage - yet regional presence

- Small load carriers made of plastic (polyethylene/polypropylene)
- Packaging materials (cardboard/plastic)
- Better understanding of the value and benefit of OxyReduct



Fig.: Fire risks in automated compact storage systems



The fire and smoke detection system TITANUS®



WAGNER"



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Latest technological developments

- Highly sensitive, even more accurate detection
- Still more energy-saving (less electricity, batteries, waste)
- IoT / Industry 4.0
- Predictive Maintenance



DxyReduc

The fire prevention system OxyReduct®



OxyRedu

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OxyRed

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Future Nitrogen Generation

- Intelligent Energy Concepts: nitrogen production where electricity is available from renewable energy sources (wind energy, photovoltaics, etc.)
- More efficient nitrogen generation
- Intelligent Air Conditioning Concepts: Use of waste heat as an energy source in the course of nitrogen production



Our promise





Thank you for your attention

www.wagnergroup.com









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COLD CHAIN

