



CKF enable Laithwaites to reach 98% productivity

CKF have recently designed, installed and commissioned an extensive new case feed and palletising system for Laithwaites wine, an established, thriving ecommerce and retail business based in Gloucester. The new system enabled Laithwaites to handle a 50% increase in demand during 2020 and improve productivity from 65% to a phenomenal 98%.

For over 50 years Tony Laithwaite and the team at Laithwaites wines have been providing their valued customers access to the very best quality wine from around the world, having uniquely developed personal relationships with over 450 passionate growers and wine makers.

The growth of customer demand, through ecommerce and online purchasing, found their ageing plant at their Gloucester facility had served them well but was no longer fully supporting their current requirements or planned future needs.

Laithwaites wines commissioned CKF Systems of Gloucester as its project partner to develop and deliver a brand new automated palletising solution without disruption to their current operation. CKF are leaders in automated palletising and case handling with more than 30 years' experience supporting different industries including Food & Beverage, Logistics, Pharmaceutical and Automotive.

The experienced engineering team at CKF gained a comprehensive understanding of the Laithwaites operational system through analysis of the available product data and driving key review meetings with the Laithwaites operations team. CKF proposed a new fully automated Layer palletising system with a multi lane accumulation feed system mounted on a new mezzanine floor.

Laithwaites wine distribution from the Gloucester facility is defined by online and retail sales, delivery routes, carriers, regions and time to customer. This requires the filled cases of wine to be automatically sorted and placed onto the correct pallet to be shipped through the correct carrier.

WATCH: See the solution in action:



A leading UK Systems Integrator



The Gloucester facility is a high-bay warehouse with a large demand on floor area. The new CKF installed system maximises the use of the ground floor by moving the accumulation and handling of filled cases to be auto palletised onto a CKF supplied new high-level mezzanine. The fully automated solution utilises conveyors from the CKF range of zoned, low pressure conveyors using Interroll multi control 24volt drive systems and multiple lanes of custom designed low friction conveyors fitted with Intralox series 400 roller top modular belts. These belts accumulate full pallet loads of cases (weighing up to 25kg per case) prior to releasing them to two Qimarox layer palletisers and finally onto an Atlanta arm wrapper, to complete the finished pallet.

The control system is housed in two multi bay Rittal panels with Siemens PLC's and a Pilz safety programmable PLC, together with a power distribution panel. There are seven HMI panels strategically positioned to provide ease of operation running a combination of Siemens Comfort HMI's and an industrial PC. Field safety equipment includes Leuze emergency stops, light curtains and Fortress gate safety locks. The conveying transfer system is driven through a combination of Interroll 24volt multi-control and SEW Movitrack Inverters.

Laithwaites operational team provide filled or part filled cases of wine in two sizes (twelve or fifteen bottles) following receipt of head set, audible instruction. The instruction results from data read off pre-printed and applied barcode labels on the case and the customer SAP system assigning data to the case. The filled and sealed cases are transferred onto the new CKF system.

Unique product case data is retrieved from the customer SAP system via Leuze bar code readers. Data conversion and transfer via TimeWise SQL data base using VB Script enables the CKF system to assign data to a zebra print engine and Herma label applicator, thus defining its destination for either Direct Wines retail outlets (manual palletising) or online orders which are directed to auto palletising.

When designated for retail distribution the cases are sent to one of four operator stations each defined with up to seven carrier locations. Barcode interrogation and interfacing with the TimeWise data base provides destination data to the operator via the HMI panel at each operator station. The operator confirms placement, (reject) and pallet identification via hand scanners.

The cases destined for auto-palletising are transported via an automated switch system and an Apollo spiral onto the new mezzanine floor where there are fifteen store lanes, each capable of storing a full pallet of cases. Dependent on the case size (12 bottle or 15 bottle) the full pallet quantity is either 44 or 32 cases. A bar code reader on entry to the store location defines the lane into which the case is to be held awaiting completion of the full number of cases.

Transfer of the cases into and out of the store lanes is via Intralox DARB and ARB conveyors respectively, whilst the store lanes, transfer belts and gates are designed and manufactured by CKF fitted with Intralox modular belts and programmed for no pressure accumulation. This enables full cases and part cases to be accumulated without any deformation or damage to the product or cases. Two lanes are able to be discharged on a fifty / fifty split (demand dependent) to the two Qimarox High Runner HR7 layer palletisers, supplied and integrated by CKF.

Two holding, dedicated lanes control the feed to each Qimarox layer palletiser. Case data is retrieved via a Leuze bar code reader prior to switching to the appropriate lane. The signal from the designated palletiser initiates the feed of the full pallet load of accumulated cases which are transferred and orientated by the Qimarox High Runner infeed to achieve the desired pallet pattern. A final inspection of each case bar code, via the Leuze reader, enables the control system to identify and store each case identification.

The Qimarox layer palletisers receive pallets on the ground floor via an automated system using two CKF standard pallet magazines (storing up to thirteen CHEP pallets each) and an arrangement utilising pallet conveyors from the CKF standard range of equipment.

Laithwaites operations apply an identification label to each pallet, prior to loading the magazines. Once the cases are automatically loaded onto the pallets within the Qimarox layer palletisers, the full, completed pallet is discharged, the pallet identification is read and the stored case data is aggregated against the pallet, recorded on an SQL control platform and delivered to the Laithwaites operations SAP system.

CKF supplied and integrated an Atlanta arm stretch wrapper, from the Revolution HS range to complete the finished pallet prior to removal from the system ready for despatch.

The CKF project team provided a planned and collaborative approach to the phased construction and commissioning windows, fully aware of the demanding production targets being attained by the Laithwaites operational team throughout this critical phase of the project. The new CKF fully automated system, was installed and commissioned in two major phases through 2020 and by working with the Laithwaites team, CKF were able to eliminate operational disruption.

Completion of the CKF system saw Laithwaites Wine record significant increases in productivity to 98%, the benefits of the new system have enabled Laithwaites Wine to meet their planned targets and achieve the substantial increase in demand for their product. The additional ground floor space afforded by the introduction of the new mezzanine configuration has also provided the opportunity for the company to improve safety for their employees by relocating manual processes safely away from their very busy trucking routes.

CKF Systems Limited

Pavilion 1, Olympus Park, Quedgeley, Gloucester GL2 4NF
+44 (0)1452728753

www.ckf.co.uk

