

INSIDE

The Q Newsletter
18. volume



INSIDE



By Niels-Erik Lundvig

The Customer is Always The Centre of Our Attention

It has always been one of Q-System's strengths that we know our customers' changing requirements in a turbulent world and have adapted our products and services to

always meet modern production requirements.

In Denmark and in the rest of the Western European countries where we are selling our solutions we experience a still increasing attention to health and safety issues.

It is therefore obvious that we focus on designing equipment that will eliminate heavy lifting and improve health and safety performance in general while at the same time increasing the output of the enterprise.

Examples of companies that face the problem of heavy lifting are those selling their products in 25 kg sacks. We have, however, found a solution to this from which benefit both the workers and the enterprise.

We Widen Our Product Portfolio

by new designs and technologies; but also by enhancing existing, well-functioning units which are now available in different versions to meet the individual customer's wish for design and additional safety.

Life goes on after the financial crisis – at Q-System with dynamic design and old virtues – as you will probably know, we have promised to always be here!

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"GREEN" TECHNOLOGY

We have sold pallet dispensers for different types of pallets for many years but these dispensers have always been for integration in a conveyor system.

In a co-operation with the Danish company of DN Group specialised in industrial design we have now developed and introduced a stand-alone pallet dispenser.

The majority of the pallet dispensers on the market requires both electric power and compressed air. On this point the Q pallet dispenser stands out being all electric. In fact, the power consumption is so low that it can be compared with the consumption of an ordinary coffee machine. That's why we call it "green technology".

The operation of the dispenser is done through a very user-friendly control panel based on pictograms.



Companies use pallet dispensers in different ways. In some companies they load a stack of pallets using a forklift truck and remove them one by one with a manual pump truck.

In other companies they stack the pallets one by one and finally unload the whole stack using a forklift truck – and some load and unload pallets continually.

The Q pallet dispenser automatically stacks or destacks a pallet at a time. One push on the control panel to shift from stacking to destacking mode. Also, it is possible to load or unload a whole stack of pallets at once.

The dispenser is primarily designed for EURO pallets but it can also be supplied for other types – and it is, of course, available too as an in-line unit for integration in a conveyor system.

Heavy lifting eliminated using a robot and roller conveyors

Many companies encounter health and safety problems when employees are lifting goods which at the end of the day total many kilos – this possibly combined with awkward working postures as well.

Alfix of Denmark, a manufacturer of adhesives, grouts, and levelling compounds for the construction industry, were having health and safety problems in connection with their order picking as the employees had to lift many 25 kg sacs from the floor to a pallet placed on a manual pump truck.

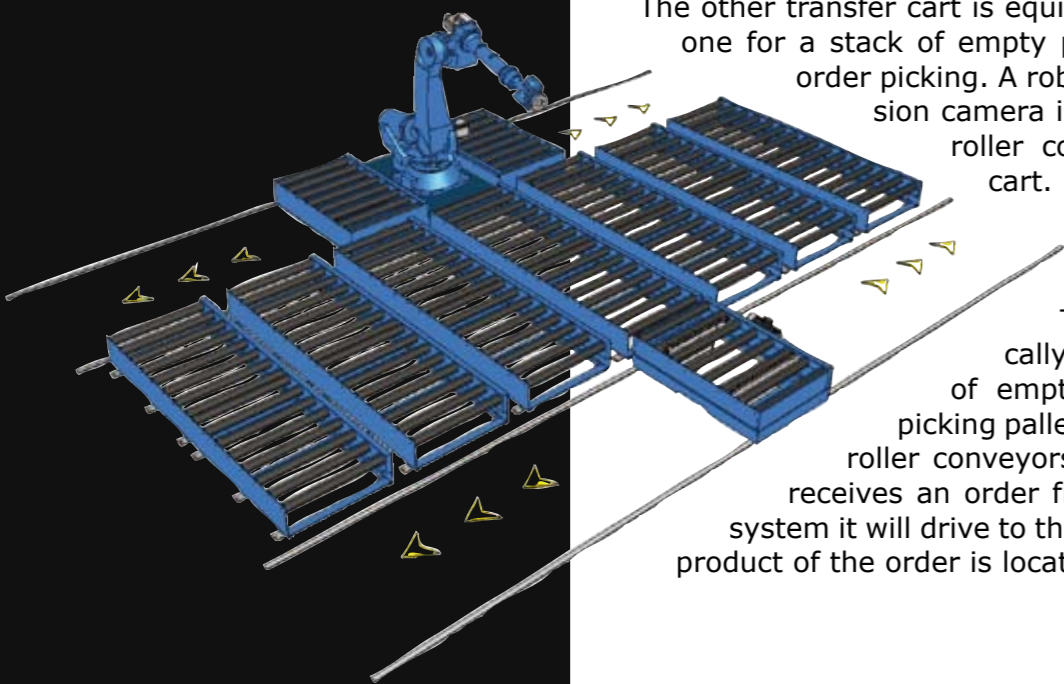
An automation of the order picking process has now eliminated this health and safety issue and led to increased productivity and accuracy in order picking.

The new system consists of a number of roller conveyors placed side by side. One or more conveyors are allocated a specific product.



Fully automatic transfer carts are running along the in-feed and the out-let ends of these conveyors. One of the transfer carts will bring full pallets to the approach conveyors.

The other transfer cart is equipped with two conveyors, one for a stack of empty pallets, the other one for order picking. A robot with catchers and a vision camera is placed between the two roller conveyors on the transfer cart.



The robot has "eyes"

The robot will automatically pick-up and place a stack of empty pallets and an "order picking pallet" on the two transfer cart roller conveyors. When the transfer cart receives an order from the order processing system it will drive to the conveyor where the first product of the order is located.

The robot is equipped with a vision camera enabling it to place the suction cups correctly and find the right suction point. This enables the robot to place the sacks correctly on the pick pallet so that a stable pallet pattern can be built.

The transfer cart will drive to the relevant conveyors and the robot will pick the products ordered. When all the goods of the order have been placed on the pick pallet the transfer cart brings the pallet to the outlet conveyor where a bar code label is automatically attached. The pallet will then be transported to the shipping dept. on a pump truck.

Having delivered the pallet on the outlet conveyor the robot will pick another empty pallet from the stack of pallets on the transfer cart and place this pallet on the "pick conveyor". Now, it can start the picking of goods for the next order.

Empty pallets on the approach conveyors are removed by the robot

The robot can "see" an empty pallet on an approach conveyor and it will pick this up and use it for an order.

When the robot has removed an empty pallet the pallet behind it will move forward. Simultaneously, a message is sent to the stock control system that another pallet with the product in question must be delivered from the production.

Prepared for future extensions

Today, the order picking system starts up a few hours before the start of the working day meaning that pallets with orders are ready for removal when the staff shows up.

Alfix, however, have prepared for future requirements: the system can work night and day and it has been placed strategically to the effect that it is possible to increase the capacity by doubling the number of approach conveyors.



The transfer cart stands ready to receive another pallet to be fed into the order picking system.

Cairo – The City of Traffic Jams



By Henning Andersen

In connection with the installation of a conveyor system in Egypt I had the opportunity to see quite a different culture.

Seeing it is perhaps a bit over the top. For 24 days I drove the same route morning and evening so I know the road and the traffic.

Cairo is a city of 19.6 mio. inhabitants and I think that around 10 mio. of them own a car.

The orbital road of Cairo has three lanes but often there are eight cars across. No wonder that there are several car crashes every day. It should be mentioned that they do not use traffic rules such as duty to give way and rules for merging – they have one rule only: “who is first”.

You see cars that you wouldn't imagine would exist any longer so you get a fine look back to the history of cars. Some of the cars are more than



Morning traffic jam in Cairo

30 years old, and they can be driven – or pushed! One of the big traffic problems is, in fact, that the old cars break down and block the road.

If a car driver sees someone he knows walking along the road, he will just stop to talk.

It happens now and then that there are wrong-way drivers on the Danish motorways. In Cairo you can expect to meet them every day – and in the evening without lights – because the car lacks both head and rear lights.

The Installation Job

I had quite a few rather special experiences in connection with the installation job. The Egyptians are very nice and very helpful but it was a bit difficult for them to assist me. I had 5-8 helpers but the only tools available were the ones I had brought along from Denmark. So, only one man could work while the rest of us could cheer on him.

Poverty does not necessarily imply low and skinny people

The first part of the installation work was to hoist up some conveyors to the first and the second floor. The foreman was of the opinion that “a block and tackle and a few big and strong Egyptian men could do the job”.

Among the men who pulled the rope there were two of a weight well over 90 kg. After about 20 min. they had to realise though that even Egyptian men cannot hoist conveyors in this way. However, after this episode we can establish

that it was not by using a block and tackle that the Egyptians placed the top stones on the pyramids. How they did it remains a mystery. It took four days till a decent electric hoist arrived. How they could smile seeing how easy it could be done!

Poverty is relative, but the difference between the rich and the poor is obvious. Every day 1-3 weddings were celebrated at the hotel and there were always between 250 and 300 guests. The pictures to the right show one of these weddings.

Considering that a night at the hotel would cost 130 € and that almost all the guests would stay overnight it is obvious that some have more than enough money and others have very little.

There was of course music too. My colleague and I know all the tunes for an Egyptian wedding. So it wouldn't be difficult to blend in if an Egyptian girl would like to marry one of us – we know all the tunes and dances!

In spite of various troubles the installation was finalised with a delay of only a few days and I'm absolutely prepared to go to Egypt again if we get another order from this company.





GB

**Andrews
Automation**

Yet Another Order From Magnet Kitchens

by Andy Formon of Andrews Automation, The U.K.

We have supplied many metres of non-driven roller conveyors to Magnet Kitchens which is a part of the Swedish Nobia Group with around 8,000 employees in European kitchen factories.

This time, however, Magnet needed additional belt conveyors for their customer order sortation system.

This system consists of a cross transfer and a series of belt conveyors in lanes. The customer orders in the form of ready assembled kitchen units come down the system and get routed automatically to the required lane which then accumulates and feeds to a manual packing station at the end. Here an operator manually unloads the lanes onto pallets ready for shipping.

The very end lane was a simple short gravity lane. Magnet needed an extra powered lane for additional storage and powered to eliminate the manual operation of moving units down the line for unloading and packing.

We installed around production taking 1 day to install, wire and commission - start to finish!



ERGOLIFT

By Jens Ahlblad, Ergolift AB, Finland

Frozen Vegetables and Herbs for The Finnish Market Are also Rolling on Q Conveyors

The Famifarm is an old "house" – they started growing crops back in 1674. Today, they grow a number of different kinds of vegetables and herbs, which are frozen and freeze-dried, respectively before they reach the consumers.

In February 2005 we installed some lifting tables and roller conveyors for automatic transport of the frozen vegetables from the freeze tunnel to the cold store.

Recently, we supplied additional conveyors. This time it was a lifting table with a driven roller conveyor and an automatic transfer section, which delivers the pallets to the existing roller conveyor leading to the freeze tunnel.

At Famifarm they used to place the pallets on the roller conveyor by truck. Unfortunately, a worker had his foot injured and therefore, truck driving is now forbidden in this area of the factory.

Now, after the installation of the lifting table and the angle transfer section they use a manual pump truck for placing the pallet on the lifting table. The lifting table will raise and the pallet will roll onto the transfer section and be angled onto the roller conveyor taking it to the freeze tunnel.



FIN

UKR



WE COMPLAIN

– but doing business is in fact easy in the EU countries

By Bente Ory

We have sold one of the new stand-alone pallet dispensers to a company in Ukraine. This sale has given me an idea of how difficult it is to do business in a country with heavy bureaucracy.

After having received a quotation from us our Ukrainian customer sold the pallet dispenser to a production company in Ukraine.

Then all the paperwork began: Our customer needed a pro forma invoice and a packing list which they had to send to some public authority for acceptance of the wording. Not good enough, so the papers were modified and resent for acceptance. The next step was a contract in Russian and English which we received from our customer. This contract was also modified 3-4 times so a lot of Emails to and from our customer. Only when all the papers had been OKed by the authorities our customer was allowed to transfer the purchase price to our account. "This is the easy part", my Ukrainian contact wrote, "the show will begin when the cargo comes here!"

The above-mentioned papers, all stamped and signed by request of our customer who claimed that the Ukrainian customs authorities love stamps and signatures, were to be sent with the pallet dispenser. On arrival at the custom house the Ukrainian customs authorities demanded another document from Q-System – a document in which the price of our pallet dispenser should be split up in costs for materials, wages, profit etc.

"Our legendary customs officers have invented a new obstacle for business" our deeply frustrated customer wrote, and continued "I will not even ask you for this". Instead he suggested a text for a letter from Q-System to the customs authorities stating that the information requested was a trade secret and could not be revealed. Off with the letter – and no more about this from the customs authorities – but it took two days to have the pallet dispenser cleared. I understand from our customer that the clearance had required many "resources" and visits to the customs house to have the formalities finalised and the goods released.

I have counted the Emails that I have replied to in connection with the sale of the pallet dispenser: 39!

NO MORE LIFTING AT JKE DESIGN

Throughout industry the safety regulations on lifting and carrying heavy objects have caused concern. How to protect the health and safety of the workers when wrapping and shipping tall or heavy products while at the same time maintain efficiency.

At the Danish kitchen factory, JKE Design, the workers had to lift many high and heavy cabinets and place them in a horizontal position in order to among other things fix the corners protections.

Afterwards, they had to lift them again and place them in a vertical position before palletising. Additionally, the small cabinets were to be stacked on a pallet before shipment. So, much repetitive handling of objects during the day.

The solution to the health and safety issues has now been implemented: a conveyor line which eliminates both the many daily liftings and the strenuous manual handling of high and heavy cabinets.



The High And Heavy Cabinets Are Now Placed in a Horizontal Position Just by Pushing a Button

All cabinets, big and small, are fed into the new roller conveyor line in a vertical position but it is no problem to have them placed horizontally.

The cabinets will run ahead until being stopped against a tilting unit. When the operator pushes a button the tilting unit will tilt from a 90° angle and level with the roller conveyor, whereupon the cabinet, now in a horizontal position, will continue down the conveyor line.



The Last Section Is Also With a 90° Tilt

The operator standing here will transfer one cabinet after the other to the last section, being a tilting unit too, and place the cabinets in the best possible order for palletising.

When activated via his push button panel the roller conveyor will tilt into a vertical position so that the cabinets will now stand on top of each other. The high cabinets too will again be standing upright.

Now, the operator can easily push the stack onto a transfer cart and drive it to a palletising station, which is also supplied by Q-System.

Stacks Are Moved Smoothly On Wheeled Rails



An empty pallet has already been placed on the palletising station. When the operator pushes a button, four wheeled rails will raise between the pallet bearers.

The stack can now be pushed from the transfer cart onto the wheeled rails and put in the right position on the pallet. When the pallet is full, the wheeled rails are lowered leaving the cabinets standing on the pallet, ready for pick-up with a manual pump truck.

Both Staff and Management Are Happy

The operators all agree that the tilting units are a real H & S godsend. The production manager is pleased too; employees' health and safety are secured and the new conveyor line has even increased productivity.

Dynamic Storage and Retrieval System Improves the Efficiency at Kuma Romania



Kuma is a successful Danish manufacturer of moulded wash basins and table tops for bathrooms and kitchens. Recently, we participated for the second time in a project for their factory in Romania.

This new project was the installation of a vertical carousel with an integrated roller conveyor and a number of conveyors before and after the carousel.

The carousel was delivered by the company of Kardex, a producer of dynamic storage and retrieval systems. As our specially designed roller conveyor was to be integrated in the carousel we had a close cooperation with Kardex on this project.

The vertical carousel is used for storage and retrieval of the products while hardening in the mould for a couple of hours.

The moulds are brought from the production to the carousel on Q roller conveyors. As the moulds are to be stored in the carousel on some special trays

they need to be transferred to a tray before going into the carousel. Here the built-in roller conveyor gets into the picture.

The carousel will push out a tray. As the tray is running on rails at both ends it can be placed precisely over the built-in roller conveyor. The rollers will raise between the bottom ribs of the tray, and the moulds being lined up on the conveyor before the carousel can now be pushed onto the rollers between the tray ribs.

When the tray is full, the rollers will return to their bottom position and the tray with moulds will run into the carousel. After 2-3 hours of hardening in the carousel the moulds will be retrieved and transported to the finishing dept. on roller conveyors.

Q89 Deluxe

During recent years we have experienced that our customers want bright colours and nice design in the production area too.

The example shown here is a turntable which has been provided with a side skirt and infill plates between rollers.



The rollers are shown levelled with the adjacent conveyor



1 A tray is pushed out from the carousel and will be positioned over the rollers.



2 The rollers will raise between the ribs of the tray. The item can now be pushed ahead.



3 The tray with an item runs into the carousel.



(Pictures taken during test run)



THE BLUE HOUR

This is the evidence that "the blue hour" really exists and is not just something you read about in novels.

This picture was taken at 15.50 on a winter day where the lamps outside our main entrance had got a hat on.

PRODUCTION LINE WORK THE HUMAN WAY

Gram Commercial of Denmark, producer of freezers and refrigerators for professional use, has changed from series production to a 100 per cent customer-oriented production system. To meet this requirement, they have invested in state-of-the-art production processes and automated manufacturing from order to final assembly.

For the assembly of Gram's new generation of refrigerators and freezers having a very low energy consumption (up to 74% savings) they chose a compact conveyor system from Q-System. The reason why the system is characterised as compact is that a part of it is installed in a pit under the assembly line.

Health and safety issues were top priority when designing the system

As the assembly work implies much repetitive handling during the day it was a must that the workers would be able to work in individual heights. Therefore, the assembly work takes place on lifting tables, which are height pre-programmed on the basis of ergonomics studies of each individual worker. Just by pushing a button the lifting table will raise or lower to the right working height.

The assembly line consists of 5 lifting tables placed in line. The first and the last table of the line are installed in a pit. The 3 middle tables are the work stations where the assembly of the side panels, the bottom, the inserts etc. is taking place.

There is a free space between the lifting tables enabling the worker to move around the cabinet while assembling it. Hereby he avoids awkward and health-hazardous work postures.

The Fixtures are circling; half above half below floor level

A fixture is used to support the sides and the top while the cabinet is being assembled. This fixture will be transferred to the first work station from the lifting table installed in the pit, and the cabinet is now transported through the 3 work stations placed in this fixture.

When the assembly is completed, the cabinet is transferred to the last lifting table in the line, i.e. the second lifting table installed in the pit. Here the cabinet will be held in top and bottom by a so-called pressing unit while the lifting table with the fixture retracts to its bottom position in the pit. The fixture is then transported ahead on a driven roller conveyor and will end standing on the other lifting table, ready to be lifted up again at the start of the assembly line.

The production line requires a co-operation between the 3 workers

The works on each work station are defined on the basis of a time study but it can't be avoided that now and then one of the workers get behind. If so, the colleagues will step in and help finishing the works on the station in question. The reason is that the transfer of the cabinets from one work station to the next is taking place simultaneously by one push on the operator panel.

When the button is pushed all 5 tables of the line will level and a support roller is pushed out from each lifting table hereby closing the passage between the tables. The cabinet will now run automatically to the next assembly station whereupon the support roller will retract to its position under the lifting table.

The last process is the injection of insulation foam

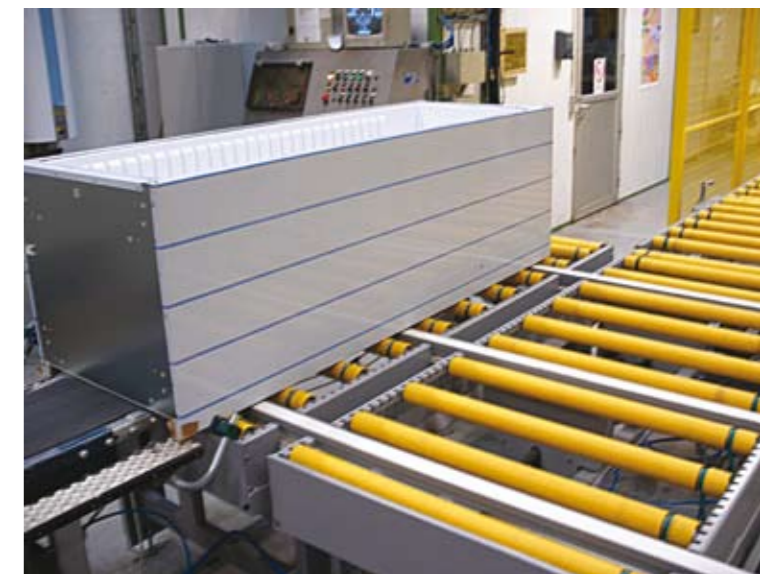
but before this can take place the cabinet must be turned so that the front turns upwards. Earlier in this article we left the cabinet in the pressing unit. What happens next is that the pressing unit makes a 90 degree turn and places the cabinet on a parallel roller conveyor; now with the front turning upwards. The cabinet will now be transported ahead and then transferred to another conveyor taking the cabinet to the foaming machine.

Shorter turn around time than expected

The users are very happy with the design of the production line and so is the management – it has turned out that the assembly of the cabinets takes a shorter time than calculated so the only change of the system that was made was to increase the speed.



The cabinet is turned by means of a pressing unit which adjusts automatically to the height of the cabinet.



The finished cabinet is angled onto the conveyor that takes it to insulation foaming.



Anniversaries

40 Poul Sørensen's welding booth is his second home. This is obvious when you visit him there. Among other things he has a pin-up board on which there is a copy of all internal notices on special occasions such as round-number birthdays, anniversaries and jubilee celebrations during the past 40 years. If you are in doubt about a year and date you just need to visit Poul at his booth – he will in no time give you the information you need.



Poul is our expert on making trucks and trolleys and with very few exceptions all trucks and trolleys leaving the factory have been welded by Poul.



25 During her 20 years' of employment Marian Ravn has made the CAD plant drawings for our customers; the drawings that form the basis of the further discussions with the customer on designing the optimum conveyor solution. Marian has, however, an additional job at Q-System: On behalf of Henrik Thomsen, one of our sales engineers, she makes appointments by phone with potential customers. She loves it and this is probably why she is so extremely good at it.



25 Finn Sørensen, one of our skilful blacksmiths, is able to weld our standard products almost in the dark. So many have passed through his hands over the years. Previously, when the company was smaller I welded the units and assembled them too," he tells. "Today, with a higher degree of specialisation, others are taking care of the assembly. So, nowadays I'll go to the assembly dept. when I have welded a new product to see the final result."

25 All steel that must be bent pass through Leif Nielsen's hands – he is the expert on the press brake and in the course of time it has run into many tonnes of bent steel. However, Leif has other skills too; he can weld and he can assemble. Therefore, you can meet him both in a welding booth and in our assembly dept. if assistance is required there. "I prefer job variety", he says, "and I get that here at Q-System."



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