

OCS

in focus

A magazine from OCS –
Overhead Conveyor System

1/2003



From the content

Assembly
on the **move**

“Big brother”
of **conveyor** systems

Smart, simple,
flexible and **reliable**



your need is our know-how

Changes

SOME PEOPLE CLAIM that the only thing that's constant, is change.

This might well be true in life, and it definitely is in business. Markets change, technologies change, as do customers and competitors.

Some of these changes are very minor, such as a new company magazine. Other changes are more substantial, such as the introduction of a new product or even a total change of a company's approach to its own activities. Some of our customers are, for example, changing their production to be able to control it relative to customer orders, which often is a major change.

A company such as OCS of course benefits from change. After all, we market and sell equipment that can facilitate changes in other companies. And the equipment we sell is well adjusted to future changes. Our systems are designed to be flexible and easy to adapt to new products or production methods, to new changes when that time comes.

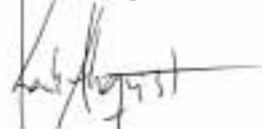
We also have a lot of experience in changes. OCS, in its own and through its predecessors, has more than 30 years experience of design and construction of logistic and production systems. And with every new customer we add to this know-how, building a unique competence in our field.

Our aim is, and has always been, to use that know-how together with the expertise of our customer, in order to find the best possible solution to that customer's needs.

That is what it says in our motto: Your need is our know-how. It's the way we want to work, and it's something that isn't going to change; which proves that there is an exception to every rule.

And, on the subject of change: Welcome to In Focus, the new company magazine from OCS. As the name hints, this magazine will focus on OCS, our products, our customers, and our business. With this magazine we hope to give you a picture of how we at OCS deal with the possibilities of a changing world.

Welcome and pleasant reading!



Kenth Almqvist
Managing Director, CEO



Facts about OCS

The main office and production facilities of OCS Overhead Conveyor System are situated in Viared, Borås. The company has sales offices in Stockholm and in Löhne, Germany.

OCS is privately owned by Jan-Eric Lundgren, Christer Lundgren, Anders Persson, and Kenth Almqvist.

Employees: 22

Turnover 2002/2003: €5 million
(Total turnover including USA and Japan € 9 million)

The business concept of OCS is to produce reliable, high quality, overhead conveyor systems and, by contributing new approaches to logistics, make internal materials handling simpler, less costly, and more efficient for industries with complex needs for production and storage.

A continuously driving fixture

Some of the most demanding customers for a company like OCS are found in the automotive industry. OCS has been a supplier to Lear Corporation for more than ten years and only last summer OCS supplied the transport system for a new advanced Lear plant in Gothenburg.

Just a few kilometres from the large Volvo plant in Gothenburg, Lear opened a new plant in the summer of 2003. The plant assembles cockpits for Volvo cars, and it is the first time ever Volvo has outsourced the assembly of such an important part of their cars to an external contractor.

The building period for the plant was short and intensive. In just three months the plant developed from an empty building to full production. The OCS part of this installation is not one but three assembly lines, all interconnected and synchronised.

In the main line the production of a so-called Driving Unit begins with a cross bar, which is mounted on to an OSC carrier. Air condition, heating systems and a number of other parts, such as cables and control equipment, are then mounted on the cross bar.



Together the three lines uses 120 carriers; 10 for the dashboards, 40 for the Driving Units and 70 for the radio line.

At the same time in another line, the assembly of the dashboard begins, and at a given place these two lines meet, and the right dashboard is mounted onto the right Driving Unit.

A few stations further down the line, a third twin track system meets the main assembly line. This is the radio line, which brings down audio and RTI equipment from the upper floor of the building, via conveyors and elevators.

At the end of the assembly line, complete cockpits, weighing some 150 kilograms, are lifted off at a rate of approximately one cockpit per minute. These are then transported in the right sequence to the Volvo plant and mounted into their respective cars.

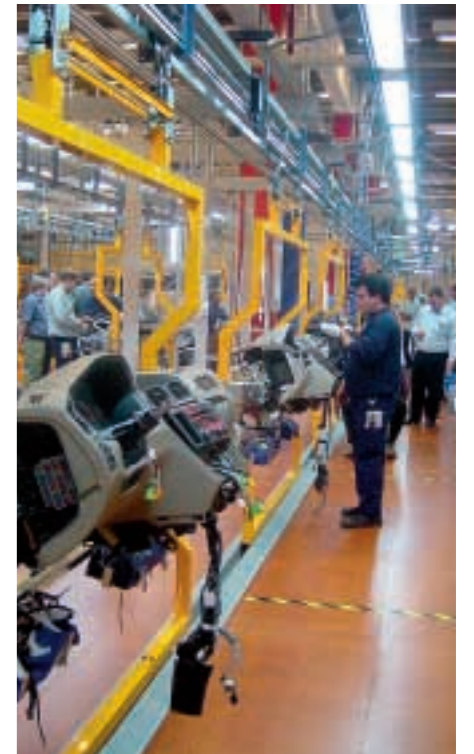
Together the three lines uses 120 carriers; 10 for the dashboards, 40 for the Driving Units and 70 for the radio line.

"The most difficult part of this system is that it must run continuously at the same speed, which is frequency controlled in some parts, and then move faster in the parts where there are no work stations," comments Kenth Almqvist, managing director of OCS.

"At the same time the operators are assembling a complete cockpit on the carrier while it is moving forward. This means that the carrier must not swing or halt, but move continuously at an even speed."

This is achieved by metal guides on the floor, which stabilise the carrier in the workstations.

Another difficulty is of course the absolute need for synchronisation



Lear use three assemblylines from OCS.


between the lines – the right dashboard and audio equipment must be mated with the right driving unit. This places high demands on the PLC that controls the assembly lines and communicates with Lear's own production computers.


Finally there is the need for the assembly lines to always be running, without fail. Availability must be 98 percent or more, which has been met with special packages of spares and extra training of the maintenance staff at Lear.

"This is of course a very important order for us," says Kenth Almqvist. "The concept is new to Lear and they are trying to interest other customers in the automotive industry in this new production system. This fits very well with our aim to continue to focus on the sub-suppliers of the automotive industry."

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The OCS universal system – a smart and reliable solution

Smart, simple, flexible, and reliable. Those are just a few of the words normally used to describe the OCS universal system. Profitable is another term often used in connection with the universal system.

Like all transportation systems from OCS, the universal conveyor is an overhead system, opening up valuable and useful floor space, allowing, for example, operators to move freely around the carrier for order picking or assembling.

The carrier itself can be one of a number of standard product carriers, or it can be a unique design for a special product or use.

The heart of the OCS system is the patented driving system. The moving trolley, to which the carrier is attached,



has four drive wheels. These wheels are mounted at an angle to the tube on which the trolley is hung, and which provides the moving power. As the tube rotates, the trolley moves forward on the four wheels.

It's a simple, quiet, and reliable solution that requires no lubrication.

The rotating tube itself is made of aluminium and by controlling the rotation speed of the tube the driving speed of the system can be adjusted from 1 to 30 meters per minute.

The speed adjustment can be made by using different gears or by frequency control of the motor. It's also possible to use different speeds on different sections of the system.

A transportation system also needs curves, and the universal system includes curves from 5 up to 180 degrees.

A flexible polyurethane tube transfers the driving power through the curves.

Another important part of the system is the upper freely rotating wheel on the trolley. This is used when the trolley is moved manually or on lines driven by gravity.

The system also includes a Power and free function, which makes it possible to halt the trolley or move it manually on powered lines, which is useful in for example assembly lines.



The universal system includes a complete set of reliable components for controlling the movement of the trolleys between various sections of the transport system, such as switches, in-, and outfeeders. There are powered switches as well as manual switches for gravity rails.

In order to control the transport of the trolleys and their loads, several systems can be used to identify and address the trolleys.

There is a built-in mechanical system for addressing the trolleys, and of course it is also possible to use automatic systems such as barcodes or transponders.

The maximum load for a single trolley in the OCS universal system is 30 kilograms, but there is also an option with double trolleys, which can handle loads up to 70 kilograms. The system is capable of handling inclines/declines up to 20 degrees, and if there is need for steeper movements, elevators can be included in the transport system.

A basis for effective material handling

Effective material handling is a prerequisite for making a company competitive. The OCS twin track system is a highly effective and easily adapted transport system, with the added space-saving advantage of an overhead, hanging, system.

The OCS twin track system is in every aspect the "big brother" of the OCS universal system. The similarities are many, such as the functionality, the flexibility, the reliability, the profitability and the drive system.

The main difference is that the twin track system is designed to carry considerably heavier loads.

While the maximum load of the universal system is 70 kilograms with a double trolley, the twin track can handle approximately 500 kilograms with the standard double trolley.



With the twin track system the weight of the load is carried by two steel rails, on which the silent wheels of the carrying unit rolls. The trolleys are moved by the patented OCS system with four angled wheels transferring the power from a rotating aluminium tube. It's a well-proven system that is simple, reliable and quiet.

The speed of the trolleys can be varied from 3 to 30 meters per minute through the use of different gear ratios or frequency control of the motor. The system can handle incline/decline up to 20 degrees. A useful detail is the power and free function, which makes it possible to halt the trolley or move it manually on powered lines, something that is useful in for example assembly lines.

The twin track system also comprises all the components needed to construct an efficient transport system. This includes such things as driving curves from 5 to 180 degrees, switches of various types to direct the trolleys around the system, and a compact vertical elevator.

Perhaps the most important part in making the twin track such a flexible and adaptable system is the carrier that is attached to the trolley. There are a number of standard carriers, but the OCS system allows for the carrier to have almost any form, which means that the carrier can be totally adapted for the customer's needs.



A transport system also needs a control system in order to function rationally and effectively.

"This is another strength of the OCS systems," says Kenth Almqvist, managing director of OCS. "We co-operate with partners in the control field that develop and deliver computer-based systems for material handling. These systems are characterised by their easy to use interfaces and the fact that they can be adapted to work and communicate with most computer-based productions systems."

"This kind of system also can handle the more advanced demands of controlling the production relative to customer orders, which is a development more and more companies are going through today."

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A major clothes hanger

Sweden has approximately nine million inhabitants. Statistically, two thirds of them each year buy a coat, a jacket or some other garment that has passed through a single OCS system located at Green Cargo in Gothenburg.

Green Cargo is a transport company that traces its roots to the freight division of the Swedish state-owned railway company Statens Järnvägar. Rail freight is still the major activity for Green Cargo, but there are other activities as well. One of them is the role as one of Sweden's largest distributors of clothing.

The hub for clothes distribution is a big building in Gothenburg. In this building OCS has installed a universal system, consisting of 500 metres of driven line and 3 000 metres of manual or gravity line. In addition to this there are countless switches, feeders, and bar code readers. This system circulates no less than 4 000 trolleys with carriers for clothes on hangers.

If you add all the clothes that pass through this terminal in boxes of all sizes, the total will be in the vicinity of 100 million a year. The clothes on hangers are about six million, which is more than half of all clothes distributed on hangers in Sweden every year.

Earlier all these clothes were sorted more or less by hand in a mainly manual system.

Today the clothes are delivered to the terminal by truck. Telescopic arms of the universal system are extended into the



Green Cargo is Sweden's largest clothes distributor.

trucks where the clothes are hung on the OCS carriers. These carriers are then moved to the arrival check, where a barcode label is put on the clothes and scanned into the controlling system, together with the barcode of the trolley. The clothes' barcode shows to which shop in what region the garment is to be distributed.

After this the automatic sorting begins. The carriers are shifted from line to line until they are not only on the line of a specific distribution route; they are also sorted in the order in which they will be delivered to the shops. After this they are moved into distribution containers and sent on their way by road or railway.

"The new system uses less space and 40 per cent less personnel than our old system," says Per Isacsson, business

developer at Green Cargo Road & Logistics.

"At the same time we have cut the time needed to process the goods and reduced the manual lifting and hanging of clothes significantly" he adds.

According to Per Isacsson the possibility of automatic sorting was a major factor in Green Cargo's decision to buy the OCS system, and so far they feel that they made the right call.

"The basic installation and the functions that we ordered are working very well and the system has really met our expectations. In addition to that it has been very nice working with the people from OCS, both in the design phase and during the installation." ends Per Isacsson.

Datalogic - your supplier of bar code equipment

Datalogic is the largest European manufacturer of CCD and laser-based bar code readers and portable data collection terminals. The vast range of Datalogic products includes both manual readers and fixed industrial scanners.

Datalogic supplies OCS Overhead Conveyor System with the DS1100 fixed position scanners for their transport systems.



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"We always want the best solution"

"Our ambition is always to find the best possible solution for the customer, and once in a while we find that the best solution is not an overhead conveyor. Then that is what we tell the customer." Christer Lundgren, sales manager at OCS, is totally convinced: What's best for the customer is, in the long run, also best for OCS.

The people at OCS made up their minds a long time ago. The company will not become just an ordinary supplier of internal transport systems. It has the ambition to be something a little bit more.

"We're not just a supplier of transport systems. Our aim is to work with our customers to find the optimum solutions to their needs," claims Christer Lundgren.

"This means that we see ourselves as application experts and that our experience from many different branches of industry often helps us see many different possibilities. It's by no means certain that a transport system should run from A to B. Instead we turn and twist the layout until we find the optimum."

The way they work with the customers is becoming something of a

trademark for OCS. Over the years a number of successful cases have accumulated. One such case that Christer Lundgren is pleased to talk about is the Norwegian manufacturer of sofas.

The result of the introduction of an OCS system and modern production techniques was that the throughput time for a sofa dropped from 17 days to one day!

Success on that level is of course not guaranteed, but Christer Lundgren feels that the OCS and its products have a number of advantages for the customer.

"We are very flexible and adaptable in meeting the customers demands and needs, and we have a very flexible and unique product that is of interest to many companies."

"To use a hanging transportation system frees useful space and improves access to different areas of the plant. The free areas are a very important reason why many companies choose equipment from OCS. Another is the fact that the OCS products are simple, flexible, and easy to rebuild and adjust as business changes," says Christer Lundgren."

An example of the flexibility of the OCS products is that the carriers can be moved manually if there should be a problem with the driving mechanism or power problems.



"Our ambition is always to find the best possible solution for the customer", says Christer Lundgren.

"This is something that in particular interests the automotive industry," comments Christer, "since they have a need to keep the production going even if a problem should occur."

Another fact that adds to the interest in OCS systems is a reasonable prize level, which always, and naturally, is an important factor when companies are discussing investments in production equipment.

"Most of our customers have a demand that the payback time should be no more than 30 months, and I'm happy to say that the average payback time for our products is around two years," ends Christer Lundgren.

Miles of profiles

OCS enjoys long-standing relationships with a number of suppliers in and outside Sweden. One of them – with an emphasis on long – is Rullprofil AB. Each year for more than a decade Rullprofil have supplied OCS with miles of steel profiles.

Rullprofil i Örebro AB is one of

Sweden's leading companies in the area of developing and producing profiles for the industry. Based in Örebro with a staff of 26 Rullprofil have specialised in producing specialty-profiles without or at a very low cost for new tools. The profiles are produced through rollforming, mainly of steel but other materials such as

aluminium, copper, brass etc. are also used.

Rullprofil AB is OCS' supplier of the profiles used for gravity rails and guide rails in the universal system, as well as the rail profile used in the twin track system. These profiles are delivered in batches of approximately 5 000 metres, several times each year.

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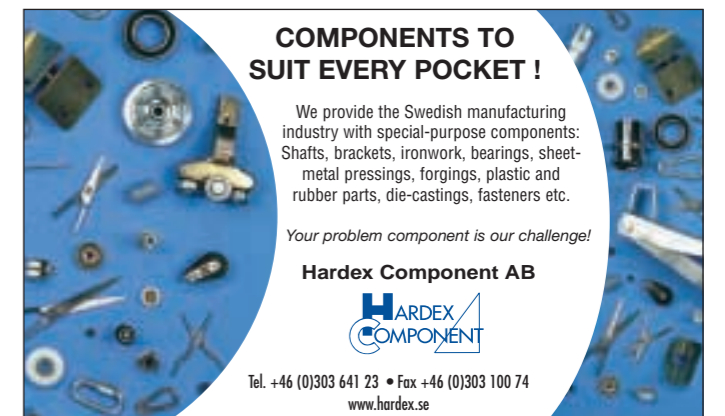
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